


Green Comet

A vibrant green comet with a bright red nucleus and a long, wispy green tail, set against a dark blue starry background. The comet is the central focus, with its tail extending across the middle of the frame. The background is filled with numerous small, bright blue and white stars.

The Green Comet Trilogy

Green Comet

Parasite Puppeteers

The Francesians

Jim Bowering

The Green Comet Trilogy

Green Comet
Parasite Puppeteers
The Francesians
by Jim Bowering

First published 2012, 2015, 2017

The Dunyazad Digital Library
www.dunyazad-library.net

This work is licensed under the Creative Commons Attribution-ShareAlike 4.0
Generic License. To view a copy of this license, visit
<http://creativecommons.org/licenses/by-sa/4.0/> or send a letter to
Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.

Cover design by the author, using a photograph by NASA — public domain

greencomet.org
arjaybe@greencomet.org

A Dunyazad Digital Library book
Selected and typeset by Robert Schaechter
First published February 2018
Release 1.0a · August 2020

For Carolyn

ABOUT THE AUTHOR

Jim has fought forest fires and controlled traffic in the air and on the sea. Now he writes stories. He lives in the Okanagan Valley with his wife, Carolyn.

Connect with Jim:

The Green Comet blog: <https://greencomet.org/>

Contact: <https://greencomet.org/contact/>

ABOUT THIS EDITION

The text of the present edition is identical to that of the three books of the *Green Comet* trilogy — *Green Comet*, *Parasite Puppeteers*, and *The Francesians* — which the author has published separately and in multiple file formats on his website; there are differences in layout and typographical details, and there may be the occasional difference in proofreading results.

~

This book is published under a CC BY-SA license, which means that you can copy, redistribute, remix, transform, and build upon the content for any purpose, even commercially, as long as you give appropriate credit, provide a link to the license, and indicate if changes were made. If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original.

License details: <https://creativecommons.org/licenses/by-sa/4.0/>

ABOUT THIS BOOK

When you read this tale you may notice some gaps and omissions, or you may struggle, like I did, to understand some technical points. Please understand, though, that this text has been handed down through millennia, across interstellar space, and that, we may assume, parts of it have been lost in the process, while details may have been misunderstood and misunderstandings been glossed over by innumerable generations of scholars, copyists, translators and librarians. Jim Bowering, focusing on the story he has to tell, has left gaps and omissions for the attentive reader to fill in.

Frances and Elgin and all the others are not human, their planet is not Earth, their science, technology and terminology are not ours, they only appear to be, to make the text better readable to us. Explanations of some technical issues may be missing from the text, or may be cryptic or incomplete, but they exist — after all, we know that all of this has happened. Do not let any of this distract you from getting captivated by this tale — its magic, its horrors, its humanity, and its unexpected twists.

R. S.

TABLE OF CONTENTS

Book I: Green Comet	13
1. Elgin Wakes Up	14
2. The Comets — Introduction	15
3. Elgin's First Day	21
4. They Go to the Comets	22
5. The Second Day	26
6. The Rise of the Synesthetes	28
7. Elgin Meets Minder	34
8. The Square	39
9. Yellow Comet	74
10. Armful	82
11. Flashball	88
12. The Visitor — Introduction	103
13. The Visitor Stops Blinking	105
14. The Visitor is Revealed	109
15. Elgin Meets Stanton	119
16. Elgin has Vertigo	125
17. Elgin Eats and Goes Out	131
18. Elgin Goes to Work	147
19. Elgin Plays Flashball	165
20. Elgin Fixes the Ball	181
21. Elgin Meets Frances	197
22. They Become Friends	212
23. Shimmer's Idea	220
24. The Joining Debates	231

25. They Move In Together	239
26. The Swimming Hole	248
27. They Go to the Doctor	262
28. The Lottery	273
29. The Joining	284
30. Annihilation	302
31. Communication	309
32. Orange Replies	321
33. They Need a Debate	329
34. The First Debate	337
35. Elgin's Fractal	343
36. Nigel's Debate	353
37. Separation	362
38. The Scout Arrives	380
39. They Lose Buzzard	389
40. Losing Fran	395
41. Fran Goes to Sleep	413
42. Elgin Goes to Sleep	419
43. They Wake Up Together	426
44. Fran Goes Down for Good	439
45. Elgin Goes to the Bubble	449
46. The Get-Together	457
47. Elgin Goes to Sleep	483

Book II: Parasite Puppeteers	487
1. They Wake Up	489
2. Tea and Biscuits	491
3. One Chore at a Time	495
4. Vacuum	499
5. They Explore	504
6. Nobody There	510
7. Laika	519
8. The Statues	531
9. The Assembly	537
10. Good-Bye Orange	541
11. Preparing the Message	547
12. Sending the Message	552
13. Umbra and Penumbra	560
14. Whispering Gallery	564
15. Another Shadow	571
16. The Tonsure	576
17. Change of Plans	582
18. Don't Shoot	590
19. Going Home	603
20. Smarter Down Here	606
21. Stanton's Pair	609
22. Pharos	619
23. Epiphenomena	626
24. Split Beams	628
25. Space is Big	636
26. Closer to the Fire	647
27. Lucid Dreams	660

28. Just Visiting	661
29. Departure	676
30. Cutting the Corner	689
31. Feeling Different	700
32. Going Home	702
33. Shapes	712
34. Too Many Auras	721
35. Relics	727
36. Parasite Puppeteers	729
37. Under the Skin	736
38. First Contact	750
39. Pursued by Fire	758
40. Communication	765
41. Motives	775
42. The Cutting	786
43. Just a Few Questions	796
44. I'll Show You Mine	808
45. The Law of Property	817
46. Cellmates	826
47. They Always Win	836
48. The Transformation	843
49. The Armada	857
50. Showdown	867
51. Master of the Prime	875
52. A Mat Divided	885
53. Stranded	893
54. Savage Joy	900
55. A Pretty Puzzle	910

Book III: The Francesians	915
1. Elgin Wakes Up	917
2. Coming Home	918
3. This Was Plub	924
4. Lesser Cuttings	938
5. Fertile Soil	945
6. Going Back	953
7. Power and Politics	958
8. A Lot to Take In	969
9. Patterns and Reflections	977
10. The Bazaar	988
11. One Bad Apple	996
12. Goodbye to the Prime	1006
13. No Failures Allowed	1015
14. Flipping the Sail	1029
15. Return to Green Comet	1035
16. Salvage	1048
17. What's That Smell?	1057
18. Was it Something I Said?	1076
19. Perfectly Wrong	1086
20. The Grand Court	1099
21. They Get Dressed	1109
22. Story Time	1124
23. Free Alterations	1132
24. Division of Labor	1142
25. The Bees	1156
26. Scarface	1171
27. The Blue Square	1184

28. Working Alone	1200
29. Too Tacky	1213
30. Rudely Awakened	1231
31. Elgin Wakes Up Again	1233
32. That's what Friends are For	1242
33. The Right Thing to Do	1251
34. The Singer	1259
35. This Was Nana	1269
36. There's No Song for That	1274
37. A Song for Going	1276
38. Green, Blue and Indigo	1283
39. Saving Frances	1298
40. The Balcony	1317
Epilogue	1331
How it Happened	1341

Book I
GREEN COMET

1.

ELGIN WAKES UP

“Rannie?” His question disappeared in the gray light.

Elgin didn’t want to wake up, but he knew he was going to. He recognized the signs. First came the gray light, when he came aware. It happened instantaneously, with no transition. Just this awareness where there was none before, at least none that he remembered.

“Rannie?” There was the question again. Who was he asking in this gray place?

He almost recalled why he didn’t want to wake up, but it was shattered by a series of vignettes. A woman? Huge dark caverns. A glittering menace. Iceberries. The taste of iceberries. The woman.

Things began to happen. Flashes of light first, then colors, and the grayness was broken by transient hints of shape. “Rannie!” He blurted her name, then didn’t recognize it. Shapes and shadows started to resolve into the contours of a room, and he began to remember. They were waking him up again. He didn’t know why yet, but it made him feel sad.

2.

THE COMETS — INTRODUCTION

By the time they began visiting them, the comets had been in the sky for over a hundred thousand years. The people, according to the fossil record, probably weren't interested before about eighty thousand years ago. There were plenty of stone tools, but nothing like jewelry or art to indicate symbolic thinking. So, when they became curious enough to wonder what they were, the comets had been up there for at least twenty thousand years.

The time was an approximation, of course. With something like a shower of comets, which could last for millions of years in extreme cases, a few tens of thousands of years either way would easily fit inside the margin for error. So they set a parameter, that at least two comets would be visible at any given time, and approximated when that would have begun. The answer was close enough to round to a hundred thousand years, so as long as people had been aware enough to be interested, there were at least two comets visible in their sky.

Eventually, after eighty thousand years or so, they were able to do the math and they realized that comets were not only features of the sky. Probability dictated that some of them would come inside the moons, and a few even strike the planet. Geology showed that some already had, leaving behind many craters large and small.

Evidence indicated that the planet had suffered repeated comet strikes, some with devastating effects on the biosphere. That provoked a range of responses, from angst and worry through stoicism and fatalism. There was even a faction of the population that said they

deserved to be hit because they were bad, and they welcomed the impending retribution.

They were rewarded. As the science slowly improved, astronomers were able to identify several comets that had the potential to strike the planet. It was a cluster of returning comets whose orbits were observed several centuries earlier by amateurs. The observations were good, and if they were accurate then there were three comets that were destined to come close. Within the next century there was a high probability that at least one of them could collide with the planet.

The response was good, on the whole. Preparations were made. Buildings and infrastructure were built with some margins for safety and durability. Social structures evolved to be resilient in disasters. While they were thinking of the comets, it also served them well in normal planetary disasters. Every hurricane and earthquake helped them test and improve their plans. But it wasn't as good as it should have been. There were naysayers and heel draggers, and there was a sense that the problem was only theoretical and the preparations just cautious formalities. When the time came and all three comets missed the planet, though not by much, the people relaxed and went back to more immediate concerns.

When astronomers announced another possibly dangerous comet in the following decade, the reaction was naturally sceptical. Their estimates were initially imprecise and every subsequently improved one only served to highlight the lack of certainty. The naysayers had a wonderful time and the air was full of cruel jokes at the astronomers' expense. The more they tried to emphasize the danger the more they were mocked. Even people with the inclination to believe them were unsure of what to think. Only a very few took steps to prepare, and they were very discrete about it. Fear of ridicule is a powerful emotion.

By the time they were finally sure to a sufficiently high probability, the astronomers had only a couple of months left to convince people. The problem was exacerbated by the ingrained disbelief and they couldn't get people moving until they could all see it with their own eyes. Then it was too late to mount a proper response and they were left with a disorganized collection of inadequate plans fueled mainly by panic and desperation.

During the final month the people of the world lived under the uncaring gaze of a comet growing ever larger in their sky. Every day they looked up, hoping to see that it was drifting away from its course, but its aim was unwavering. The astronomers, who were now being blamed by some for not doing more, for not warning them sooner, were now able to predict when and where it would strike.

Frantic efforts were made to move people out of the area, and they were remarkably successful considering the size of the problem and the lack of time. Still, millions would be stranded.

When the day finally came and the great horror was so adamantly real, everyone was left to ultimately decide how they would deal with it. Some threw themselves into their work, maintaining a normal existence by sheer willpower. Some partied themselves into oblivion. Others prayed or preached, laughed or wept, even killed themselves and others in answer to this declaration of the insignificance of their actions. Thankfully most people were with their families, ready to face it together in spite of the cold indifference of reality.

The comet was clearly visible. It shone even in the daylight sky as brightly as one of their moons. It was over eighty kilometers in diameter and its spherical shape was plain to see. They were already within its coma, which gleamed in the night sky and twinkled like diamond dust in sunlight. Those unfortunate millions left within the

impact zone would see it rise over their eastern horizon just before it obliterated them.

~

It was debated for years afterward whether or not there was an impact. The most compelling evidence was in the seismic records. While there was plenty of sign of a tremendous shock at the passing of the comet, it didn't have the sharpness of direct contact. The jolt was most likely attributable to the airburst explosion of searing steam that devastated that side of the globe. The consensus verdict was that it had been a near miss, so near that the comet had dipped well into the atmosphere on its way by.

It was still catastrophic. Many people died in the airburst, save an unlucky few who lingered in its aftermath. There were continent wide fires, filling the air with smoke and blocking out the sun for two years. There were tsunamis around the world caused both by the slug of ocean that rose to meet the comet and by the shockwave from the airburst. There were earthquakes in every fault zone, while old and new volcanoes came to life. Even the weather was roiled up as the atmosphere dealt with being ripped up and sown with vortices. The steam condensed out in the Great Comet Rain.

It was a catastrophe but it wasn't the end of the world. Not quite. Their halfhearted preparations were what made the difference in the end. Even then it was too close for comfort. Agriculture failed. Transportation and communication were severely limited. The normal things that keep the world civilized, such as supply lines for essential goods and open contact among people, were almost lost. Only the presence of the durable parts of the infrastructure, and especially the social networks people had built, kept them from collapsing into chaos.

It was still grim. There might have been mass starvation had they not worked together to prevent it. There could have been hoarding, rioting and war. Instead, inspired by the millions who were already dead, people pulled together.

There was adequate food, though severely rationed, to get everyone through the next few months while they labored to grow more. With no sunlight they had to use artificial lights on a grand scale in greenhouses and hydroponic farms. Even with their best efforts, once the supplies were gone everyone ate nothing but algae cakes for almost six months.

In the three years it took to struggle back to where success looked plausible, only twenty percent of the remaining population died. There was enough food to survive, even to fuel normal activity, but they were so close to the line that it was inevitable to lose some. Things as simple as injury or illness can be too much to overcome when the resources to deal with them are spread so thinly.

~

When they finally were able to anticipate better times, to lift their heads from endless urgent tasks and look ahead, it was with sober resolve. They had won this confrontation with fate, but only at a terrible cost, and only with the enduring shame of their inadequate, almost flippant preparations for it. They pledged both privately and publicly that it would never happen again.

Much good came of it in the long run. They now had a global perspective of things. They had survived a global catastrophe together and now they would live together in a global community. What it had cost them ensured that they never took that for granted.

As they rebuilt their civilization they built in toughness and

durability. Structures were designed to protect lives and to remain useful during and after emergencies. Well stocked relief centers were established at strategic locations. The most essential means of transportation would remain viable. Communication and vital social interaction would be preserved. Supplies of food and other necessities were stored to sustain them for at least six years in the total absence of any other source. They didn't forget the algae cakes, either. They just wanted to be sure that they weren't going to have nothing but algae cakes ever again.

In an unexpected quirk, astronomers suddenly became sexy. Since the incident, people tended to pay them more respect. As a result, astronomy became a desirable field of study. Not only did students fill astronomy classrooms and trigger a boom in the construction of observatories, but sales of telescopes soared as amateur astronomy swept the world. Everyone wanted to discover a new comet, and many dreamt of being the first to see "the next one." With that many eyes on the sky it was very unlikely that they would ever be surprised again. After eighty thousand years of living with them, the people were finally doing something about the comets.

3.

ELGIN'S FIRST DAY

The first day of his waking was confusing, but by the end of it Elgin was beginning to put it together. The morning was the worst. It was completely disorienting. Although his senses were functioning and transmitting information to his brain, it was indistinguishable when it got there. He didn't know if he was hearing the light or smelling the sound. His senses weren't filtering the stimuli, just dumping everything on the brain, and the brain didn't know what to do with it all.

Mixed in with that, part of that for all Elgin knew, random images from his memory flashed briefly, giving him tantalizing hints of coherent reality. They were so clear compared to the rest of it that he couldn't be blamed for thinking that they would be what he would see when all this confusion settled down.

He didn't know it but someone was talking to him during all this. As far as he was concerned it was just another smell, or maybe a taste. Then some time in the afternoon things began to make a little more sense. The senses themselves started to segregate, sight becoming sight and sound becoming sound. Colors became less random and shapes began to get edges. Then he could sense that there was someone with him, and they were talking.

"Frances is all right, Elgin," they were saying. "She's still at the Center." He couldn't understand the words, didn't even realize that he might, but he could understand the tone. It was soothing and reassuring, so he relaxed as he drifted off to sleep.

4.

THEY GO TO THE COMETS

After their close call, when their civilization was nearly lost, the people spent a lot more time concentrating on comets. Soon it became obvious that watching them wouldn't be enough. No matter how good their preparations were, there would eventually be a disaster so great that it would destroy them. That's when they began to wonder if it would be possible to destroy a comet before it struck their planet.

Calculations showed that destroying the comet would make things worse. Unless they could vaporize it, or at least break it down into small pieces that would burn up in the atmosphere, they would end up with many devastating comet strikes instead of only one. The smaller comets were possible candidates for attempted destruction, but it was beyond reason to think they could deliver enough explosive power to the larger ones that way.

They turned their minds to the possibility of diverting a comet away from their planet. If they could change its course so it didn't hit them then that's all they needed. Of course they would want to ensure that it wouldn't strike them on any of its future orbits either, but averting disaster now was the main thing.

Comets had been part of their sky since before they were inclined to notice them. They featured in their myths, in their ancient folk tales, even in prehistoric petroglyphs. They were familiar with them. They thought they knew plenty about them, and they did. They could tell whether they were returning or new visitors. They could tell their size to a close approximation. They knew what kind of orbit a comet had

almost before calculating it. But for all their intimate familiarity, when they began to think about how they might divert one, they realized they had no idea of their composition.

Of course they knew they were mostly water. Spectrographic analysis told them that. And they knew space was cold, so it would be ice. But was it a solid chunk of ice? Was it densely packed snow? Was it a loose aggregate of crystalline rubble? They didn't know, and if they were going to be pushing on comets in some way, as they had to if they wanted to alter their orbits, then they needed to know what they would be pushing on. If you thought you were pushing on something solid and it was really crumbly, then you would be wasting your time and endangering everybody's lives. To find out for sure they were going to have to go out there and see.

They had plenty of targets to choose from, since there were always at least two comets in their sky at any time. When they began, their technology was improving at such a rate that by the time some of their early missions were completing, some of their later ones had already done so. They learned what they needed to know. Although every comet had its individual peculiarities, they were all quite similar, confirming their theories about where and how they formed. As expected, the larger the comet, the more densely packed it was. While the smaller ones, up to a few kilometers, didn't really have a surface in the sense of something you could stand on, the larger ones did. When they got up to a hundred kilometers or more they were getting quite effectively compacted by gravity.

As it turned out, the comets more or less sorted themselves out. The smaller ones could be herded by spacecraft that would fly alongside them, while the larger ones were better suited for landing on. The machines would then do their work right on the comet itself.

From there the next step was obvious. After not too many decades, people were going.

At first it was small crews on short missions. They would pick a comet that was going to pass fairly close — fortunately there were none on a collision course during those early days — and they would rendezvous with it. They would fly alongside it, making observations and trying out the techniques they hoped would change the comet's orbit.

They learned a lot from those missions, about comets, about spaceflight and about how it affects people. As soon as they could, they increased the size of the crews. They also began to send two or more vessels on each mission. The redundancy not only increased the safety and effectiveness of their efforts, it also had the effect of ameliorating their sense of being alone out there. Two little spacecraft might still be impossibly insignificant in the cold abyss, but it felt infinitely better than being one little spacecraft.

Soon they graduated to landing on larger comets to try out some hands-on techniques. Over time they extended those missions, first to months then years. Eventually they were meeting the comets in the outer system and riding them in.

Those voyages took decades and they had to change the way they thought about them. No longer were they simply missions, where you went out, did your job and came back. Now they were spending a significant portion of their lives out there. They weren't just visiting comets anymore, they were living on them.

The composition of the crews changed. They became more like a community than a team. Their operations were more like a village than a base. Long term relationships developed. Marriages were formed and some were broken. People learned how to deal with it and get on with

their lives and their jobs. The communities had to develop their own laws and manage their own problems. They couldn't wait until they got back to deal with it and they found that trying to handle it by long distance, with communication delays rising into hours, was impracticable.

They got very good at it over the decades and centuries. Going out and spending a large part of one's life herding comets became a reasonable career choice, especially when hibernation techniques got to the point where a fifty year mission took only ten subjective years. The transition from looking at it as a mission to making it an adventurous working vacation was invisible.

Eventually, the procedure became so well established that private groups began going to comets purely for the adventure. Comets were chosen for reasons other than their threat, reasons like their size or where their orbits might take them. Comet people made the transition from public service to private enterprise.

5.

THE SECOND DAY

Elgin's second day started better than the first, except for the vertigo. He woke up dizzy and knew from experience that he didn't want to move his head any more than absolutely necessary. It wasn't as bad as it was in his early wakings, especially his first where Stanton was his minder. Repeated practice seemed to be inuring him somewhat to the effects of hibernation. More immediately important though, was the improvement in the coherence of his perceptions.

He knew who he was, where he was and how he got there. He knew that the person in the room with him was his minder, someone assigned to take care of him for a few days while he recovered from the effects of hibernation. He remembered who Rannie was, and why she was so important to him. She was the one he loved, the best woman in the universe, but she was lost to him. Unless ...

He tried to speak, to ask his minder about her, but it came out as a croak and a gargle. That frustrated him, but the minder seemed to understand. He said, "Frances is okay, Elgin. She's still in the Hibernarium. She's safe."

That was both a relief and cause for anger. Fran was safe, but she wasn't here. Again they'd awakened him to her absence, in spite of his express desire to sleep until she could be brought up too. He croaked angrily at the minder, scowling.

"I know," the minder said. "You didn't want them to wake you up until they could bring Frances up at the same time." He shrugged and

looked innocent. “They didn’t let me in on their decision,” he said. “I just entered the competition to be your minder.”

Elgin’s attention wandered before he was finished talking. As soon as he mentioned Fran’s name he lost Elgin to memories and fleeting, teasing glimpses of his time with her. Just watching her move massaged his spine.

Elgin endured the rest of the day. Experience told him that was the best way to get through the confusion and discomfort of waking from hibernation. One thing happened that intrigued him though, and engaged his puzzle-solving engineer’s mind. He hadn’t yet seen the minder’s legs. It could have been a simple coincidence, but some subtle, unconscious clues told him it wasn’t. He suspected the minder was deliberately keeping him from seeing his legs, and his curiosity was aroused.

That night he awoke from an intense, confusing dream. Fran was in it but he couldn’t get close to her, and when he talked her attention was always somewhere else. He realized he couldn’t see her legs, and he became obsessed with it. There was a bewildering series of images ending with one that showed the full length of her body, legs and all. He couldn’t make out what he was seeing but it startled him awake, his heart pounding.

6.

THE RISE OF THE SYNESTHETES

By the time they were into their fifth century of space faring, they reached such a level that nearly every comet that came into the inner system had people on it. It wasn't even necessary that it pose a threat to their planet, as long as it was close enough to get to and big enough to support occupation. Some comets were so popular that they had permanent resorts built on them. They became common destinations, often chosen by students for a break between their childhoods and their higher academic careers. The recreational comets were occupied only during the part of their orbit that was close to home, though. People might ride a comet as far as the gas giants, but no further.

There was a feeling that, while comet engineers might venture into the outer system if there was a comet that needed it, the distances and times involved were beyond what anyone would do for entertainment or adventure. That was before the synesthetes came along, though. They took comet travel to the next level. They weren't interested in just visiting a short period comet for a few months. Even meeting one out by the gas giants was too tame for them. Their aim was to ride one all the way out, staying with it for a full orbit.

It took a lot of preparation. The planning alone took over a decade. They had to decide what would make a suitable comet. How big would it have to be to support people long enough? What about the composition? The comets explored so far were known to have some useful materials in them. Could they count on finding resources on theirs, or would they have to plan to bring everything with them? How

difficult would it be to transport a thousand people halfway across the system? They were going to need at least that many because eighty percent of them would be in hibernation at any time, and two hundred made for quite a small village. They were going to need all essential skill sets represented by whoever was awake at the time. This wasn't a trip to a vacation resort.

Raising the money wasn't difficult. There were many synesthetes in the world, seemingly more all the time. Although they existed in a fragmented distribution, separated by distance and political boundaries, they were virtually a single community. They had become aware of their difference. It was rare for a synesthete to grow up not realizing that the people around them couldn't sense things the way they did. Only under the most repressive regimes were they prevented from supporting each other.

Even in these enlightened times, though, synesthetes still felt like outsiders. It wasn't as bad as earlier times when their difference frightened people. Back then they were rare enough to really stand out. When at most only one family in a whole village was so afflicted, it was easier to ostracize them. In those dark times it was easier to single them out and use them as scapegoats. Easier to impute to them evil characteristics. In the worst times, in the worst places, they were abused, tortured and killed, for the good of everyone.

These times were on the whole better. The prejudices were generally more subtle and less lethal. Most parts of the world didn't practice institutionalized discrimination against synesthesia any more. Most synesthetes enjoyed much the same freedoms as their fellow citizens, and the minority who didn't often had others to stand up for them. As a rule, it was impossible to victimize synesthetes merely because of their difference.

It wasn't perfect, though. It could be very difficult for children alone among non-synesthetic children, for example. And at any stage of life there was the risk of offending someone just by having something they did not. The synesthetes had something other people didn't understand, and they dimly feared it. It was something they envied without knowing why, and so it was something they had to despise. In the end they blamed their discomfort on the synesthetes, accusing them of thinking they were better than everyone else.

So, a combination of worldwide community and a general sense of exclusion from the greater community contributed to the willingness of a small percentage of synesthetes to go on this extreme quest. And those who wanted to go had the support of the rest who would stay home. Even though it was an enormous project it never suffered from lack of funds.

It did have one, perhaps surprising, consequence. It put synesthetes in the spotlight again, for better and worse. They became targets for those who wanted to find fault, and every bad thing ever done by a synesthete became proof of their imperfect nature. Their defenders came forward with examples of good done by synesthetes, and of the exceptional qualities of a few. Those exceptions became further proof of their difference. So their defenders showed that synesthetes were, on average, just as ordinary as everybody else. In other words it was the same old thing all over again and, other than a spike in assaults and vandalism, had minimal effect on the real world.

There was one difference this time. There was a widespread feeling that this was a recent development, a feeling that became embedded in the culture. Anything more than a cursory observation would show otherwise of course. There were obvious examples of synesthesia throughout history. Later ones were positively identified by the careful

recording of symptoms, but it was easy to infer many earlier cases, even from their less objective accounts. Those early ones were often found wrapped in superstition, either as signs of divinity or of demonic possession. Going even further back, some researchers claimed to see synesthetic effects in cave art, but their findings were disputed.

Despite the evidence to the contrary, the feeling was that the synesthesia phenomenon was a recent one. Even those who knew better rationalized the feeling by saying that it might have always been around, but that there had been a sharp increase lately. Suggestions that it was a mere artifact of more knowledge and better reporting fell on deaf ears. Feelings trump dry logic all the time. Now they needed an explanation for the increase and they didn't have to look far. It was the Great Comet Rain of course. It fit so well and felt so good that it quickly assumed the role of common knowledge.

That it should lead back to a comet was not surprising. People had been doing that throughout history and presumably long before. They had always attached significance and meaning to the appearance of comets. Yes, most people now knew that comets were lumps of mostly water, but they also knew with comfortable certainty that it all meant something, that it was significant to their lives. Not surprisingly they were able to confirm their beliefs with all the obvious effects in the world. Their history was full of events that correlated with the motions of the comets, and this case was no different.

The fact that the prevalence of synesthesia was increasing gradually anyway did nothing to dissuade the Great Comet Rain theorists. People don't tend to see gradual change, so it became a sudden jump in the public consciousness. Of course the proximity of an important event like the global disaster and the ensuing deluge couldn't be a coincidence. Their ultimate argument, the one that they held up as

final proof that they were right, was that their opponents couldn't prove that it wasn't so.

However it happened though, synesthetes had become a sizable portion of the population. There were estimated to be between two and three people out of ten who had some degree of some form of synesthesia. For most of them it was a mild form, like sensing shapes or textures in association with words or ideas. For some though, maybe for as many as ten percent of the total world population, it was strong synesthesia, defined by the presence of at least two forms of it, well integrated with the rest of their perceptions and reliably heritable.

The effect it had on their lives was no longer incidental. Interacting with normal people was becoming noticeably unsatisfying. It was almost like talking with someone who had an adequate grasp of the language, but no idea at all about idioms.

As a result it wasn't hard to find a thousand strong synesthetes who were ready to take this grand adventure. Still, just as much as the selection of the comet would take time, so would all the other preparations. The logistics of getting people off the planet and out to the comets was well understood, but never had this many been moved all at once. There were too many for one or two spacecraft. Even with most of the people hibernating, they would have to use a minimum of ten ships. Then they would want to move as a fleet, not individually, so they would have to gather somewhere before heading for the rendezvous.

They decided to split the mission into two parts, a method that worked so well that it was used for all subsequent synesthete comets. Two ships with two hundred crew flew out to meet the comet. Their job was to land on it and prepare it for occupation. Years later the rest of the people went. First they assembled at a Lagrangian point, where

most of them entered hibernation. Then, tended by a small crew, ten ships swung around the Sun for a gravitational boost and headed out toward deep space. The comet came around the Sun after them and caught up with them out by the gas giants. That was Red Comet, the first of the full orbit class.

7.

ELGIN MEETS MINDER

When Elgin woke up on the third day he found his senses nearly integrated, except the common sense of synesthesia. He knew where he was, if not why they had woken him. After a few minutes of concentration he was able to recall that his minder had told him his name, even though he found it confusing that he would be called Minder.

He lifted his head and it wasn't too bad, but when he tried to bend at the waist the movement sent the whole room tumbling end over end. He closed his eyes and tried to force his body back flat on the bed. He only knew he'd done it when he felt himself come in contact with the bedding, felt its gentle grip holding him firmly in place. Lying still, eyes closed, breathing calmly and steadily, Elgin waited while the dizziness slowly subsided.

While he was waiting he thought about his situation. Once again he was awake, and alone. No Frances. She was still too ill and it wasn't safe to bring her up from the Center. So here he was again, in spite of his wish to remain at the Center with her, awake in a world that was just a hollow ache because she wasn't in it. And — he could never resist doing the calculation — getting older while she didn't age. In the many centuries this had been happening, he had continued to age and was now eighty, while she was still only fifty-seven. If she ever was able to come back to life, would she want an old man like him?

He heard the door open, felt the change in air pressure more than heard it, and cautiously opened his eyes. There was Minder at the foot of the bed, looking flustered or hurried somehow. He must have come

at high speed because his nictitating membranes were just retracting. Elgin risked the dizziness and lifted his head to see the rest of him, but he was hidden from the waist down by the footboard. He sighed and put his head back down. "How long has it been this time?" he asked.

"How long? I only took a few minutes," Minder protested. "I was asleep. It's not morning yet."

Elgin looked at him sharply. He was sure he'd seen colored light reflecting off Minder's face. He looked up at the medical displays behind him. There were lights up there. They didn't look bright enough, but he decided that must be it. He was still a little disoriented, so it shouldn't be surprising if funny things happened. "No," he said peevishly, "how long was I asleep this time?"

Minder glanced at the display. "It looks like you only got about four hours," he said his voice full of concern. He was surprised to find Elgin frowning at him.

"How long," Elgin said slowly, "was I at the Center?"

"Oh!" Minder looked sheepish. "Of course. You were down for fifteen hundred years this time." Elgin looked but couldn't make out which lights were reflecting off his face.

"Fifteen hundred years," Elgin mused. "I understood some of what you told me yesterday." He took a quick glance, but Minder always seemed to find a way to keep his lower body concealed. "Your name is Minder, right?" Minder nodded. "Is that your birth name or your comet name?"

"It's my comet name."

"Did you always want to be a minder? Is that why you chose the name?"

“Not really. I took it when I found out I was going to be your minder.”

“My minder? Why?”

“Well, it just seemed natural. I was going to be Elgin’s minder, so what could possibly be a better name?”

Elgin peered at him closely. “Is there something I need to know?”

Minder glanced away, colored lights playing across his face. “What do you mean?”

“What’s so special about being my minder?”

Minder’s mouth fell open. “But, you’re Elgin. One of the Five.” Elgin made a face at him. “Really! One Hand Against Annihilation. The Five. You’re a hero. Everybody knows about you.”

“Fine.” Elgin had heard enough. “You also told me that Frances is still at the Center. Still no change?”

“That’s right.” Minder cast his eyes down.

“And you woke me up this time to decide on crossing to the next star?”

“Yes.”

“And last time you woke me it was to welcome the comet catchers home.”

“Not me,” protested Minder. “I wasn’t even born then.”

“Well, if not you then someone just like you.” Elgin turned his face away. “Fifteen hundred years ago. The time before that. And the time before that.” He looked back. “It’s always for some good reason,” he said quietly, “and she’s never here. You’re always telling me she’s not here.”

Minder was crushed. “I’m, sorry Elgin, I ...”

“Just get out of here. I want to sleep now.”

“Of course. Are you sure there’s ...”

“Go on. Leave me alone.” Elgin didn’t sound angry, just sad.

Minder nodded, took a last look at the displays over the bed, picked up a few things and left. Elgin tried to sneak a peek, but the sheets Minder was carrying covered his legs as he backed out the door.

~

In some ways the third day was the worst. Coming out of hibernation could be a storm of sensations, a confused jumble of impressions, but by the third day they usually settled down. Then, for some people more than others, it was the turn of their thoughts to take over. Most found it confusing and a few found it unbearable. What they needed was to be up, to be active, to be restarting their lives. If it wasn’t for the persistence of the vertigo they could be. Instead they had to lie still, waiting and thinking.

Elgin got a few more hours of sleep before waking up again. This time it was really morning, comet time. The door opened and there was Minder, looking as if he had just awoken too. Elgin’s brief hope was immediately dashed by the sight of a sleeping bag Minder had clutched at chest height.

The morning passed that way, with Elgin slipping in and out of sleep. At midday he didn’t want to eat, didn’t want to talk, didn’t want anything. Minder suggested a light dose of a mild sedative, just enough to help him sleep a little more and wake up less often. “You can’t do anything anyway. It will let you rest up for a big day tomorrow.”

“We have a big day tomorrow?” asked Elgin.

“Tentative plans,” said Minder. “If you feel up to it.”

Elgin nodded. “That sedative sounds good. In fact, I don’t mind if I sleep straight through.”

“Right,” said Minder. “Pleasant dreams, Elgin.”

“Thank you, son,” Elgin said as his eyes got heavy. “See you in the morning.”

“See you in the morning.”

8.

THE SQUARE

Elgin was awake when Minder arrived. He was determined to find out why the young man was so careful to conceal his lower half. He'd been trying since he noticed, with peeking and surprise looks. He'd even tried feigning sleep to catch him off guard. Now he was planning on being by the door when Minder came in. He figured he wouldn't expect that, but if this didn't work he didn't know what he'd do. He damned well wasn't going to ask.

Fifteen minutes went by. Elgin could hear Minder moving around in the anteroom. Why wasn't he coming in? What could he be doing out there all this time? Elgin frowned just a little bit and waited another ten minutes. Finally he got fed up and went out.

"Minder! What are you doing hanging around out here?"

"Ah, Elgin," said Minder, "awake at last."

"I've been awake for an hour," snapped Elgin.

"An hour?" Minder smiled at him and smoothed his apron. It was a big apron. It covered a lot. "What have you been doing in there for an hour?"

"I was waiting for you." Elgin couldn't take his eyes off the apron. "Why didn't you come in?" He casually sidled over, hoping to see around it.

Minder turned to follow him. "I was preparing breakfast." He gestured at the table. "I thought you'd be feeling like getting up today, so I wanted to have something nice ready for you." The table was covered with tasty looking food.

Once Elgin noticed it, he realized he'd been smelling its delectable aroma all along. His stomach growled, distracting him from Minder's apron. He enjoyed the pleasant sensation of hunger for the first time since waking up. He drifted over and picked up a piece of toast, inhaled its redolent aura of iceberry jam and took a big bite.

Minder joined him at the table and they shared breakfast, chatting between bites. They talked about little things. How was Elgin feeling? How did this compare with his previous wakings? Minder, being young, only had one waking to compare, so he appeared fascinated by Elgin's rich experience. They got to know each other a little better in that half hour.

When they were done Minder turned more serious. "Elgin, there's something I have to tell you."

Elgin looked at him, and the expression on Minder's face set his skin pricking. His synesthesia was re-integrating his senses, but the rush of smells and colors and other sensations was still a little un-coordinated. "What is it?" His worst fear flared. "Frances? Has something happened to her?"

"No, no!" Minder was quick to reassure him. "There's been no change in her condition. If there ever is, you'll know first thing. No one would ever keep that from you."

Elgin relaxed. "Alright then. What is it?"

Minder moved away from the table and began to untie his apron. "I know you've been curious about this and now it's time to show you."

Elgin waved his hands. "You don't have to. It's your prerogative. It's none of my business if you've got ... if there's something ..." Elgin sputtered to a stop. He was embarrassed. Felt caught out.

Minder smiled at him, making it worse. “You know you’re dying to find out. You’ve been trying for the last two days.”

“I have not!” Elgin lied. Now he felt foolish.

“It’s all right. We knew you’d be curious, but we wanted to wait until you were mostly recovered from hibernation disorientation first.” He pulled the apron aside.

Elgin stared, blinking. At first he couldn’t make out what he was looking at. He knew there was something wrong with Minder’s legs. He could see that they were deformed somehow. They were too short and the knees didn’t bend the right way. And the feet were all wrong. He gasped when he saw one of them flexing like a hand. A couple of seconds of disbelief, then the shock of realization. It was a hand! And the leg it was attached to wasn’t a leg at all. It was an arm. The other one was a perfectly symmetrical replica. Minder had four arms and four hands.

He looked up, full of concern and pity. “What happened?” And, thought Elgin, why hadn’t it been corrected?

“It’s okay. You don’t have to feel sorry for me.” Minder spread his four arms. “This isn’t a birth defect or a mutation.”

Elgin was speechless. He was a bit ashamed now of his presumptuous pity, but still at a complete loss.

“Then,” Elgin began, and stopped. “I mean, if it’s,” he tried, and, “that is, if it’s not.” He stared at Minder’s lower arms. They were slightly larger than his regular arms, and more robust. The hands were larger, too. Not so much longer in the fingers as thicker and heavier looking. They didn’t look as if they would have the dexterity of the upper hands, but they certainly looked stronger. They were oriented the same way as the original ones. With his arms at rest, all four

thumbs were on top, so using the new hands would be similar to what he was used to.

Elgin soon realized that having arms in place of legs must be something that Minder chose. It would be something like the thick coat of fur that everyone wore for their necessarily cold environment. Or the enhancements to their eyes. Or cryptic genitalia. Once he saw that, he really started to stare. Now, instead of a slightly uncomfortable social problem, it became an interesting technical problem, and that was right up Elgin's alley.

Minder finally began to feel awkward under the intense scrutiny. Elgin noticed a slight withdrawal, with the arms folding in a little. He also thought he saw a play of light on Minder's cheeks. That seemed odd, since out here there were none of the colored lights that were on the medical instruments in the bedroom. Just normal yellow daytime lighting. He chalked it up to a lingering aftereffect of hibernation and got back to Minder's arms. Seeing Minder's discomfort, Elgin said, "Sorry, I don't mean to stare."

"Not at all," said Minder. "It's perfectly natural for you to be curious." He smiled, while faint hints of light glowed in his cheeks. "I'll let you examine them to your heart's content, any time you want."

"If it doesn't bother you too much, I wouldn't mind having a closer look." Elgin floated over and took hold of the lower hand Minder offered to him. He closely examined the palm and felt its texture. He felt the leg, or arm, jerk and saw Minder squirm. "Sorry, still ticklish, eh?" He chuckled, then continued the inspection. "It has the same setae?" Minder nodded and Elgin worked his way up the arm, feeling the bones. They didn't feel exactly like arm bones, but just like modified leg bones should feel. They had more mobility than leg bones, but they were still sturdier than arm bones. The elbow retained

characteristics of a knee, but with more rotational freedom and without all the mass and ligaments of a joint built for support under gravity. The shoulder felt peculiar. “This is still a hip joint, isn’t it?”

“Yes,” said Minder, feeling decidedly odd. “We don’t really need the same range of motion there, so we’ve opted to keep it simple.”

Elgin nodded. “The original shoulder is a bit of a kludge,” he said. He felt Minder beginning to tense up and let him go. “So, I can see the benefit of an extra pair of hands.” He smiled. “As an engineer, they would have been useful.”

“Oh, they are. You’d be surprised.”

“I bet. And they probably get in the way less, too.”

“Yup. Getting around is a lot easier.”

“Anything else?”

“Yes. It sidesteps the whole issue of legs pushing blood into the upper body in microgravity. And it feels better balanced too, although that’s quite subjective.”

“Well, I admit it took me by surprise, but I can see why you would do it,” said Elgin.

“More and more people are having it done, usually during their first sleep. And a few people are starting to make it a heritable trait. Do you think you might do it?”

Elgin thought for a while, looking at Minder’s unfamiliar proportions. It was a bit much to contemplate at his age. He said, “Probably not.” Then, “Hibernation disorientation? Couldn’t you find a longer way to say that? What happened to ‘sleep lag?’”

“Sorry, my fault. I should have done more research. I wasn’t sure if we were using ‘sleep lag’ when you were last awake.” Minder took a deep breath, then said, “Elgin, I can see that something else has caught your attention, too.”

“What?”

“I’m sure you’ve noticed lights in my face from time to time. I’ve seen you looking.”

“They’re real?”

“Yes.”

“That’s a relief.” Elgin peered and was rewarded with a little reddish glow. “First I thought it was the medical lights reflecting off your face. Then I thought it was, what did you say, hibernation disorientation.” He saw the glow deepen slightly. “My sensual integration has been slow this time.”

“No, your senses are fine. Well, your vision in this case.”

“Good,” Elgin said. “So all that remains is the obvious question. Why do you have lights in your face?”

“Let’s see if you can guess.”

“Okay, sure.” Elgin thought for a moment. “Alright, first, is it biological or technological?”

“Biological.”

“So it’s something you had done during hibernation, or did you inherit it from your parents?”

“It’s heritable.”

“Is it just you or do other people have it?”

“Virtually everyone has had it for the past two centuries.”

“Ah, so it’s not a fad then.”

“No, it’s on a par with fur or vision.”

Elgin pondered, frowning. “That means it’s considered a necessity. It’s something that everyone agrees is important to life on this comet.”

“Yes,” said Minder.

“Is it some form of communication?” That made sense. In the dim lighting and with their good vision, such lights could be used to

communicate. Could there be a whole language of the lights? That alarmed him. “Am I going to have to learn another language?”

“No,” said Minder, “you already know this language.”

Then Elgin had a clear flash of the right answer. “It’s the blush reflex, isn’t it.” Minder nodded. “And you’ve modified it, replaced, or maybe enhanced the vasodilation with bioluminescence.”

“That’s right.”

Elgin moved in closer, peering at Minder’s cheek. He reached out and parted the fur, trying to see the skin at the base of the dense growth. Minder obliged him with a little blush and he could see both a reddening in the skin and a glow as well. “Kept the blush itself I see.”

“Yes. It’s felt that the warm sensation is an important part of the reflex.”

“So you know when you’re blushing.”

“Yes. It’s a social display and it’s most effective when everyone’s involved.”

“I see what you meant about already knowing the language. Now that I know what it is, it all makes sense.” He looked Minder in the eyes. “You sure blush a lot,” he said with a smile.

Minder glowed brightly. “I know. I always have. Kids used to tease me to make me blush.” He shrugged his shoulders. “Sometimes I wish I didn’t have the bioglow.”

“Yeah, that’s what I was wondering. It might be nice to hide your blushing. Save some embarrassment.”

“I know!” Minder compressed his lips and shook his head. “But everyone agrees that the social communication is more important. The way we live, we need to know how each other is feeling.”

“Even you? Do you think it’s worth it?”

“Absolutely. A little discomfort is a small price to pay for the good of the comet.”

Elgin nodded. Minder’s willingness to sacrifice for the comet was practically a universal trait among its inhabitants. “Good attitude. And don’t worry, people tend to like you better if you blush once in a while.”

“Sure, thanks,” Minder said with a flat smile. “So, do you think you’ll ...”

“Probably not.” Elgin couldn’t imagine doing it without Frances. Especially the legs.

As soon as he thought of her he saw her in his mind’s eye. She was beautiful, with her golden fur and eyes, and her long, straight legs. Now he realized that her legs were part of what he found especially attractive about her. At the time he didn’t particularly single them out, but now he could see that they were part of her overall gracefulness. When he thought about it, he wasn’t sure if he would want to go for the leg modification even if she were here. He’d wait and see what she said. She’d know.

“Do you have more questions?” asked Minder, while clearing the table.

“No,” said Elgin, bemused to see the young man absently holding a plate in one of his lower hands. “It’s just quite a lot to take in all at once.”

“I know,” said Minder, looking despondent. He picked up another plate. “Sorry.”

“Don’t be sorry,” said Elgin. “I’m glad you showed me.” He watched as Minder picked up another plate and added it to the others. “I was going to find out eventually and you’ve saved me from what could have been quite a shock.”

“That was the idea,” said Minder. “We thought you should be prepared.”

“I agree. That was a good decision.”

“Thank you, but ...”

“But what?” He could see that the youngster was having a difficult time. He looked as if he was disappointed about something.

Minder looked ready to speak, but he closed up. “No, it’s nothing to bother you with. It’s my problem.”

“Okay,” said Elgin, “I understand.” He wouldn’t pry if the boy didn’t want to talk about it. But still, “I’m happy to listen if you do want, though.”

Minder’s expression relaxed. He said, “Okay. I guess I could tell you.” He organized his thoughts. “I failed. I had a few simple things to accomplish as I assisted your waking, and I didn’t do it. I needed to show you my second arms and the bioglow, and with three days to do it I ended up dropping them on you all at once.”

“I see,” said Elgin.

“Now I really feel stupid.”

“For the way you handled it? Don’t feel stupid. You did alright. That was a good way to do it.”

“No. I mean here I am making a big deal out of it. You’ve got more important things to think about than this.”

“Not right now.” Elgin made sure he had Minder’s attention. “Listen, Minder, I’ve worked with a lot of people, a lot of good engineers. The ones who became great engineers are the ones who did just what you’re doing now.”

“Really?”

“Really. The great ones are never completely happy with their work. They’re always looking for what they can do better.”

“They are?” Minder started to smile.

“They are. I think you have what it takes to be a great minder.”

“A great minder.” He blushed self-consciously, embarrassed to be compared to Elgin’s associates. “Not really in the same league though, am I?”

Elgin frowned at him. “Don’t sell yourself short. This job is just as important as theirs.”

“Really?”

“Really.”

Minder didn’t believe it. Elgin could see it in his face and in his body language. It was obvious he couldn’t equate his work to the great engineering accomplishments that had made Green Comet into a comfortable and beautiful place to live. He said, “I’ve known a lot of great engineers, Minder, and every one of them needs a minder when they come out of hibernation.”

Minder looked up, surprise and dawning awareness in his face. “Like you,” he said. “Even the greatest of men like you need a minder when they wake up.” He was brightening right up. “This job really is important, isn’t it? Being a minder for someone like you ...” He stopped abruptly when he finally saw the glower growing on Elgin’s brow.

Elgin spoke quietly, but there was no mistaking the power there. “Every job is important. Every waking sleeper is important.”

“Of course, of course,” Minder said hastily, remembering what he’d learned about Elgin’s violent rejection of any attempt to elevate him above others. He tried hard to see the truth of the lesson he was getting from Elgin. “I think what you’re telling me is that, well, all jobs are important. All work is valuable.”

“That’s right,” Elgin said gruffly.

“And,” Minder quickly added, “that we should honor our work by giving it ... by doing it with the dedication it deserves. Oh, I know what I want to say but I just can’t get it right.”

“You’re doing fine,” said Elgin, his aura softening a little. “I can tell you understand it.” With one last riveting glance he said, “All that’s left is to see if you can live it.”

“Right.” Minder looked abashed. He wasn’t entirely sure he’d be able to live up to Elgin’s expectations.

“So,” said Elgin, “what else is on the agenda? Whatever it is, it’ll have to be pretty good to stand up to what’s happened so far.”

“Oh, right,” said Minder. “I completely forgot, what with, you know, everything.” He got a look on his face that Elgin would come to recognize as an attempt to quell a blush. It didn’t work. “So, anyway, yes, there is something else on the agenda for today. That is, if you’re up to it.”

“Let’s hear it and we’ll see.”

“Right, of course. We thought, if you were doing well and the vertigo was under control, you might like to go out for a little excursion.”

“What? Leave these rooms?” Elgin said, feigning horror. “What were you thinking?”

“So it’s okay then? You’d like to go out?”

“Yes, of course. I’m tired of lying around here.”

“Good. I’ll just finish cleaning up and we can go.”

Elgin had a thought. “Hold on a minute. This is just you and me going out for a little exercise, right? You’re not planning any surprises are you?”

“No,” said Minder. “I just thought we’d go to the Square. It’s only a couple of kilometers and we can come back the minute you’re tired.”

“The Square? You mean the same Square?”

“Yes, the same.”

“The Square,” mused Elgin, a rapid series of memories riffling by. The construction of it. The social outings, presentations, art installations and public announcements that just naturally took place there. Its destruction and rebuilding. “That brings back memories,” he said. “And now I know where I am, too.” People tended to give directions or describe events relative to the Square. “If we’re that close to the Square, then I know just where we must be.” He saw Minder’s face get worried again and quickly figured out what it must be. “No, Minder, you haven’t failed. There was no reason for you to think of telling me our exact location before now.”

Minder blushed yet again, then made a good recovery. “I’ll take your word for that,” he said.

“Good. So, if you’re done there, let’s go!”

~

Minder led the way out into the corridor and Elgin slowly followed him, glancing left and right. The passage tapered toward the vanishing point in both directions, with a gentle curve cutting off the view after many hundreds of meters. Elgin had to stop and collect himself as he experienced a slight residual effect of waking vertigo. He focused on a point on the wall directly opposite their doorway and held utterly still. With the comet’s microgravity being far less than one percent of that of their planet of origin, there was no way to plant one’s feet firmly on the ground to steady oneself. Comet people learned that the best way to settle things down was to concentrate on a fixed point in the middle distance. Normally it was never a problem for Elgin, but no one was immune to post hibernation vertigo. So he stared at the opposite wall,

about thirty meters away, and waited for it to pass. It was a mild event and it didn't last long.

Minder waited patiently, as one did on these occasions. No need for concern and no need for comment. When Elgin was ready, in less than a minute, they set out again without a word.

They went to the right, pushing off from the doorstep launching block. With some minor adjustments to attitude and trajectory, they were soon coasting at two meters per second, about five meters out from the wall. It was a leisurely pace, but it wasn't very far. They could easily cover the two kilometers in less than twenty minutes. The micro-gravity caused a slow sinking toward the floor and the drag of the air gradually decreased their speed, but neither was going to tire Elgin unduly.

They continued to fly in silence. Elgin's eyes were traveling over the corridor, taking in the lines and angles. His engineering instincts asserted themselves, causing him to pick out more details in the construction. This corridor was new to him, built while he was asleep, no doubt. He looked at it even harder now, as one engineer assessing the work of another. He followed the near wall down to the floor and up again, over twenty meters to the ceiling. He looked over at the other wall and followed its tapering perspective forward. He saw the ceiling stretch ahead, approaching and disappearing behind the floor as it curved down out of sight.

It looked good to Elgin, and that expressed itself in his body as it always did. Whether abstract specifications, scale drawings or the finished product, Elgin could feel when it was right. This corridor felt smooth. The comfort he felt in his body, as if everything was where it should be, all his bones perfectly aligned and in their proper places, told him it was good workmanship. He felt glad to see that the

engineers, with whom he still felt an allegiance, were as good as ever. The comet was okay.

“You’ve got a nice look on your face,” Minder said. “What are you thinking about?”

“Oh, I was just looking at the engineering work here.” He took another look at it and gave a satisfied nod. “They did good work. It made me feel good to know the comet’s still in good hands.” He smiled happily at Minder. “Just as I’m in good hands.”

Minder made a face. “I know my work is important and all that, but I just can’t see how you can compare it to this.” He gestured at the grand dimensions of their route.

“I can only hope,” sighed Elgin, “that your vision improves.”

Minder grimaced, but it was as much smile as anything else. “So, how do you feel?” he asked in a conciliatory tone. “Are you getting tired or anything?”

“No, I’m fine. It feels good to get out and stretch my legs, so to speak.” They were stretched out behind him as he glided along, but they weren’t getting much exercise.

“Very funny.”

“What? Oh, right. Sorry.”

“Never mind. I’m very happy with four arms.”

Elgin looked at Minder’s peculiar outline again. It actually did look more efficient. It was more compact, more practical looking. He had no trouble forming an intellectual understanding of the advantages of the modification, but he couldn’t make the emotional leap to imagining having it done to himself. “I can see that. You look very comfortable. Obviously it’s going to take a while before it’s old hat to me, though.”

“Well, I hope you’re a little bit used to it anyway, because there will be people in the Square and probably most of them will look like me.”

Elgin nodded, then looked ahead with anticipation. He could sense that they were nearing the Square. He could feel the space opening up just beyond their sight. There were subtle, nearly subliminal cues in the air pressure gradients and in audible sounds as well. They created the impression of relative looseness in the air ahead compared to behind.

Soon they could see the opening where their corridor let out into the Square. They began to be able to resolve the sounds into distant voices and to see details in the buildings on the far side. When they broke out into the open space they came to a stop a few meters in so Elgin could have a look. The Square was indeed square. The opposite wall was two hundred meters away, its facade of windows and terraces stretching up another hundred twenty-five to the ceiling. Elgin instinctively approved of that golden ratio. There were entrances to other corridors like theirs spaced all around, with theirs being in the middle of their wall. The corridors fed into the Square at floor level, although in a space this size one could as easily call it the ground. The walls had ornamental columns reaching up the first ten meters with friezes at their tops which continued around the walls.

There were a few dozen people in the Square, some traveling through while others seemed to be here for its own sake. Directly across the Square they could see a group of children in the company of an adult, apparently on a school field trip. The children, about twenty of them, were in a constantly circulating swarm that moved this way and that in a random walk, while the adult calmly pointed out the Square's important features. They seemed to be making their way, in spite of everything, in the general direction of the middle of the Square.

Elgin could see there was something there, some kind of instal-

lation or display. He glanced at Minder, who nodded, and they began to move slowly in that direction. As they got closer, he saw that there were several statues, and he tried to think who they might be of.

The squirming cluster of children got there before they did and immediately surrounded the statues, blocking their view of them. They had to get almost right up to them and then make their way around to the front before he could identify them.

Elgin gasped when he recognized Frances, looking almost as she had when they were young. She was standing in her familiar speaking pose, a subtle look of motherly love and concern on her face. Elgin looked at Minder, who was observing him closely.

Standing at Frances' shoulder was another statue. It was of a man with a warning scowl on his face and one wing cupped protectively around her back. He looked at Minder again, the beginnings of a scowl on his own face. "Is that supposed to be me?"

"Yes, Elgin."

Elgin looked at the statues again, back and forth between them for a while, then a long, penetrating stare at the face of Frances. "She never looked like that."

"But it looks just like her. It was done from real images."

"It might look like her," Elgin said, getting lost for another long moment, "but she never looked like that."

Minder couldn't see what he meant. Couldn't figure out what he was saying. "Elgin?"

"Well, that look on her face. It's too ... soft. She never looked like that when she was speaking. Especially during the debates over the separation." Elgin fell back into his reverie, speaking quietly, as if to himself. "Her face had steel in it, and her eyes had fire." He smiled at the pain of memory.

Minder was surprised. His picture of Frances was based largely on this statue. He'd just assumed it was right. "Well," he said weakly, "artistic license?"

"Artistic license? Who gave them license to lie?" Elgin was getting agitated. It looked as if he was about to say more when he was surrounded by a fluttering swarm of children. He spun around, surprise approaching alarm in his face.

"Children!" It was the adult who was tending them. "Where are your manners?" They listened to her and dropped back, giving him some space. They still surrounded him and they were staring at him, most of them agape with wonder and curiosity. "I'm sorry," she said. "They always love to come here and look at the statues, and seeing you ..."

Elgin glanced at Minder, who looked half worried and half relieved. He looked at the children, whose expressions varied from eager to frightened. That shocked Elgin badly, to see fear in the faces of children, especially if the fear was because of him. Frances would be horrified. Elgin looked at her likeness again, and was ashamed at his earlier reaction. She would have looked like this if she was talking to children. She loved them, a feeling intensified by her decision to not have any herself. Elgin turned to the guardian and said, "It's alright. They just startled me." He smiled at the children, who surged forward, fear forgotten.

The children were in a constant swirl of motion. They all wanted to be close to him, preferably in front where they could look into his face. As with any system of energetic particles confined to a small space, this resulted in collisions and much jostling. Their little wings were flapping constantly, raising a small wind and occasionally slapping Elgin around the head and shoulders. He was ducking and grinning.

“Children!” cried their guardian, almost laughing, trying not to.

“It’s okay,” said Elgin, laughing out loud, making it okay. The children shrieked, giddy with the joy of the moment. Elgin reached out and patted a few heads and they began to calm down. When things were more or less normal, he asked them, “You come here a lot, do you?” Twenty little voices combined to convey their answer.

One boy said excitedly, “We like Frances!”

“Of course you do,” said Elgin. “Everybody does.”

Another one blurted, “Are you really Elgin?”

And another, “You were with Frances, weren’t you?”

“Of course he was,” declared another.

“Where is she? If he’s here, where is she?”

And one small voice said, “Is Frances dead? Is she?” All their faces asked him, “Is she?”

The smile froze on Elgin’s face. It was only by force of will that it didn’t disappear altogether. He would not show his hurt or anger to these children. Not here, so close to Frances. But it didn’t do any good. They knew anyway. They were pulling away from him, their faces full of apprehension. Some of them turned on the one who had said it, punishing him with words and blows. The guardian was trying to usher them away, her arms spread like a shepherd.

“Wait.” Elgin found his voice. “Wait.”

They stopped moving away and turned to face him solemnly. All but the little boy, apart from the crowd, curled in on himself. He looked so miserable that Elgin felt the pain in his own stomach. He held out his arms. “Come here,” he said. The boy looked at him but didn’t move. “Come on. I’m not mad at you.” The boy looked at the other children, who were glaring at him. He looked at the guardian, who nodded. He looked at Elgin, searching for any sign of anger. When he

saw none he slowly, cautiously moved closer. When he was within reach, Elgin gently took his hand. "You didn't ask a bad question," he told the child. "It just caught me by surprise, that's all." He gestured at the statue of his beloved. "I just miss her so much," he said, his voice suddenly shaky.

Alarm filled their expressions. The boy grabbed Elgin's hand, shaking his head. This Elgin wasn't like the statue, strong and unfeeling. This real Elgin could feel sad, just like him. He came close and said, "Me, too." The other children crowded back in, murmuring their support. They had never known Frances, not really, but they knew a lot about her. They heard the stories, grown to legends, about Elgin's powerful love, so seeing him now, seeing how much he missed her, they could understand.

And it helped. The strong flood of simple childish sympathy bolstered Elgin's spirit. It also magnified the presence of her spirit and helped him to respond to their curiosity. He told them a story of a time when he and Frances were young. A time before the awful circumstances that made them famous. Frances took a group of kids, a lot like this group here, on an outing. There weren't any statues then, so they didn't come to the Square. Instead, they went swimming.

Elgin painted a good picture for them. They could see her golden fur glistening with water droplets. They knew just what she looked like as she watched them swim. They laughed at the other kids' antics. In a few minutes the sadness was forgotten and Elgin had another twenty people who would love him forever.

Their escort gave Elgin a look that conveyed an apology for the intrusion, sympathy for his loss, gratitude for his actions and an enigmatic combination that he saw a lot but could never really interpret. Minder noticed it and saw admiration, respect, even love. But there was

also a strong shade of awe with something else strongly associated that he reluctantly realized was fear. That was something he'd have to think about.

The children were finally shepherded away, waving and calling his name as they went. Their commotion and the excited chirping of their voices turned heads all over the Square, until they disappeared into the mouth of a corridor. A small group of adults had to move aside to let them by, and they stared in Elgin's direction afterward.

"Well," Minder said, raising his eyebrows at Elgin, "how about that?"

Elgin was smiling. It still showed the joy the children had given him, but it was filling up with melancholy. He glanced at Minder, then turned to gaze at the statues. "Children, eh?" he said. "They get right to the point, don't they?"

Minder didn't speak. He just stood shoulder to shoulder with him, looking at the statues, trying to assimilate all the new revelations. He thought he knew about Elgin and Frances, even more than everyone else. Maybe it was time to examine that assumption.

"I noticed," said Elgin, "that all of the children had legs. Is that a pretty good indicator of how rarely people make it a heritable trait?"

"Yes," Minder confirmed. "So far it's less than five percent, so zero out of twenty is a reasonable sample."

"You said it was increasing, though?"

"Yes. Most of us have it done during our first sleep, so it's only a matter of time. And there doesn't seem to be any advantage to having legs for the first twenty years, either. I think we've reached a kind of phase transition on that one."

"But they all had the bioluminescence. Which makes sense, since you said it's heritable now." His voice trailed away as he drifted in for

a close look at the statues. They were life-sized. At least they weren't monumental, Elgin thought. He couldn't imagine what it would be like if the statues towered over everything. It was embarrassing enough having them here at all. "What are they made out of?" He thought a metal of some kind, since any ice, even water ice, wouldn't hold up here where the temperature was almost at the melting point of water.

"Bronze," said Minder. "Very traditional."

"Did they find copper and tin here?"

"No. The materials came with the migration."

"But those are limited resources! They're only supposed to be used when absolutely necessary."

"People decided it was necessary. The vote was nearly unanimous."

"But still. For statues?"

"Sometimes symbolism is a necessity. The people wanted to honor their heroes and they wanted to use up valuable resources to do so." Minder went up and put his hand on the chest of the bronze Elgin. It was obvious that he wasn't the first. Both statues had a polished, nearly worn look to them. "People need to be able to come here and touch you, Elgin."

"Humph!" Elgin tried to stay stern, but he couldn't hide a little glimmer of pleasure. All the years of scrimping and fiercely guarding their resources ingrained in him a certain abhorrence of waste. Maybe he'd have to learn to define waste differently now. "I don't know about being a statue. That will take some getting used to. But if the people think it's worthwhile, then I'll learn to live with it."

"I'm sure the people will be relieved to hear that," Minder said, with a little smirk.

"Alright, enough of that," Elgin laughed. Then he remembered the

third statue, and got a shock when he looked at it. “What’s he doing here?”

The third statue was standing off a few meters, oriented to be looking at the first two. Elgin was sure it was looking at Frances, but it had its head slightly bowed and there was a look of acceptance about it. It was Nigel, Fran’s greatest adversary. “What’s he doing here?”

“Well,” said Minder, “he’s a hero, too.”

“A hero? He fought against her every step of the way. He was opposed to her plan. How can they both be heroes?”

“Well ...” Minder was extremely uncomfortable. He really didn’t want to be the one to explain this to Elgin, so he was glad of an interruption.

~

“Elgin?” came a voice from behind them. “Sir? Are you Elgin?”

They turned and saw a group of half a dozen people clustered deferentially some distance from the grouping of statues. They were obviously at pains to not be intruding.

Minder moved forward, unconsciously protective. “Can we help you?”

There were four men and two women. One of the men spoke for the group. “We’re talking to Elgin, not you, armful.”

Minder was shocked speechless. Elgin had never heard the term ‘armful’ before, but he could tell it wasn’t meant to be friendly. “Hey, now,” he said, coming to Minder’s defence.

Minder turned and held up his hand. “It’s all right. I’ll take care of it.” He had seen the symbol of two comets they all wore on their

chests and now he knew who they were. Elgin saw his firm resolve and decided to let him take charge. He thought it might be interesting.

Minder turned back to the Francesians. The icon they wore was a representation of two separated comets. It was symbolic of the great sacrifice that must be made for the greater good. They wore it to show their devotion to Frances, the focus of their theology. Minder adopted a placating tone. "Elgin is still recovering from hibernation," he said. "This is the first time he's been out since waking up. Maybe this isn't the best time."

"Do you speak for Elgin?" asked the man, taking offence on Elgin's behalf. "Why don't you just move aside?" They began to shove past him.

Minder tried to throw himself in front of all of them at once, but they manhandled him out of the way. Seeing his helpless desperation, Elgin barked, "Hold on, now!" The scuffling stopped.

"Let him go! Back off!" Elgin pulled Minder out of the crowd while the Francesians backed away, their faces a confusion of emotions. He saw a strange mixture of reverence and fear, rapture and loathing. He held them back with a flick of his eyes while he pulled Minder away.

He put the statues between them before he spoke to Minder. "What's going on? Who are these people?"

Minder was blushing. He found it hard to meet Elgin's eyes. "I'm sorry. I had no idea this was going to happen."

"But what is it? What's happening?"

Minder looked at the small mob, shaking his head. "This was something else I had to tell you. I was waiting for the right time, but I guess that's now."

Elgin glanced suspiciously around the wing of his own statue. “Are you saying this is about me somehow?”

“Yes,” said Minder, his head drooping. “Although, more accurately, it’s about Frances.” Elgin tensed up and Minder hurried on. “It’s nothing bad, really,” he said hastily. “They actually like Frances.” As Elgin relaxed he added, “They like her a lot. They worship her, really.”

Elgin smiled. “Lots of people worship her,” he said.

“Well, these ones literally worship her. They call themselves Francesians. She’s their saint.”

Elgin didn’t register it right away. He heard the words. He knew what they meant. But the concept was so far out of context for him that he didn’t understand what he was hearing. He just looked at Minder blankly.

“It’s a new theology, Elgin, and Frances is the basis of it.”

“Saint?” whispered Elgin.

“Yes,” admitted Minder.

“There’s a church founded on Frances?”

“Yes. Actually, it’s not just her.” Minder’s blush flared and he added warily, “You’re a saint, too.”

Elgin’s mouth opened but nothing came out. He noticed and clapped it shut again. He looked at Minder’s face and found no humor there. He looked at the people on the other side of the statues and, now that he knew, thought he could see signs of religious zeal there. Looking back at Minder he finally saw how miserable he looked. “So, you knew about this?”

“Yes. Everyone knows about the Francesians.”

“Francesians.” Elgin frowned. He hated to think of what this would do to Frances if she knew. His protective instinct flared at the thought.

“You were going to tell me but, what with everything else, you put it off, right?”

“That’s right,” murmured Minder. “I never thought we’d run into any. I thought nothing much could happen if we went to the Square for an hour.” Minder mercifully stopped before he could start to babble. And he was puzzled to see Elgin grinning.

“What could possibly go wrong, eh?” He patted Minder’s arm. “Never mind, I’m not laughing at you. That’s just an old engineer’s joke.”

Minder laughed weakly. “I’m really sorry, Elgin. I just seem to be screwing up one thing after another.”

“Don’t worry about it, son. Once again, I don’t think you handled it wrong. This is just one of those things.” He looked at the group of people. Francesians? They obviously didn’t know Frances. Saint Elgin? He barked a laugh. They obviously didn’t know him, either. “I’m going to talk to them.”

“No, wait!”

“It’s all right. I think I can handle it.”

“But that’s my job. My responsibility. I’m your minder.”

“I know that, and I don’t want to step on your toes or take anything away from you. But I’m a grown man. I think I’ve recovered enough from hibernation disorientation by now. And there are some things a man has to take care of for himself.”

Minder agreed reluctantly. He knew Elgin was right about that. It might be his job as minder, but it was Elgin’s right as a citizen of Green Comet to deal with his own problems. They nodded and moved out from behind the statues. Elgin glided up to the huddle while Minder hung back a couple of body lengths.

Elgin addressed the group. “Hello, I’m Elgin. I believe you wanted to talk to me?”

The same man moved forward, obviously assuming the role of representative, and one of the women fell in just behind one of his shoulders. They all clasped their hands in front of their breasts. “Oh, Elgin,” said the man, “protector and champion of Frances, take pity on your humble servants and grant us your blessing.” They stared at him, expressions of awe and servitude, some real and some practiced, filling their faces.

Elgin got hold of himself before he could snort, but he couldn’t be sure that nothing showed in his face. He replied quietly, “And lover.”

They were brought up short, the spell they were under wavering slightly. “Pardon?” said the man.

“You forgot lover. I was Frances’ protector and champion and lover. That’s important.”

The man was struck speechless. The woman looked disgusted and furious. The rest of them looked at each other and there was a buzz of voices. The man recovered first. “Will you grant us your blessing?” he asked.

“That depends,” said Elgin, feeling the beginnings of a rebellious uprising inside him. He looked them over, slowly and thoroughly, not bothered at all by their growing discomfort. “I notice that you all have legs,” he said. He was thinking of what they called Minder.

“Why, of course,” said the man, supported by an upwelling of affirmation behind him. They were surprised that he would bring it up. “We keep our bodies in the form God made them. In the form of the Saints!”

“Is that why you insulted my friend?” Elgin indicated Minder, floating behind him in his obvious armfulness.

“What?” They were incredulous. How can you insult anyone who’s destroyed the handiwork of God?

“You called Minder a name and you didn’t allow him to do his job.” He enjoyed their confusion. Their mission was so important and he, one of their saints, was talking trivia. They didn’t realize they were being tested. “He’s my minder and I’d appreciate it if you would show him more respect.”

The woman looked as if she wanted to spit out some foul tasting thing. The others produced a hubbub of anticipation. But the man was made of sterner stuff. This was why they let him be their leader. He adopted a tolerant posture, waved the others to silence and said, “Of course. The Saints instruct us that all people are due our love, no matter what.” He turned to Minder, getting the rest of them to follow suit, even the very plainly reluctant woman. “Sir,” he said, “we are truly sorry for the way we behaved and we beg for your forgiveness.” The others, including the woman after a stare down, also begged his forgiveness. The man smiled at Minder, looking proud of himself.

Minder decided to back Elgin’s play, whatever it was. “Your gesture is accepted in the spirit it is given. Thank you.”

The man’s smile cracked a little, but he had to overlook the scepticism in the reply or admit the insincerity of the gesture. He looked back at Elgin expectantly.

“Well, that’s more respect and that’s what I asked for.” Elgin’s face was serene, his smile gentle and his temper mild. He looked just like a kindly old man. The Francesians relaxed, but Minder perked up. He didn’t know why, but he could sense something below Elgin’s placid exterior. “I notice also,” Elgin continued, “that none of you has bioluminescence, either. Minder tells me it’s heritable, so you must be getting it reversed deliberately. Why?”

“Primitive animals have bioluminescence. The Saints did not and neither do we.”

“The saints do not, you mean.”

“What?” They looked at him suspiciously.

“As one of your saints I resist the notion of being in the past tense.”

If the man had bioglow it would be showing. “Of course,” he said. “I didn’t mean ...” The woman couldn’t stand it any more. She pushed forward and said, “Quit dithering.” Then to Elgin, with a nasty glance at Minder, “The point is we refuse to perform these blasphemies on our bodies. There’s no place at the side of the Saints for anyone who does.” She glared triumphantly.

Elgin, still smiling, said. “I understand.” He nodded at them and they relaxed a little. The woman even looked slightly abashed. “You want your bodies to be as your god made them.”

“Yes,” said the man. “In the image of the Saints.”

Still nodding, Elgin said, “And because your saints have fur and wings, it’s okay for you.”

“Yes,” ventured the man, a little less enthusiastically.

“I think I understand,” said Elgin. “Let’s see if I’m right.” He was still the kindly smiling old man, speaking softly. “You keep the necessity of warmth and the convenience of flight because your saints do.” They nodded dutifully. “But you reject extra arms and blushing.”

It sounded funny when he said it like that, and the man hastened to be sure that Elgin didn’t misunderstand. “No, no. It’s not like that.” He struggled to find the words. “God has shown us how we are meant to be. God has given us the Saints as a guide.”

Elgin nodded, looking thoughtful. “Your god is using us as examples.”

“Yes. But not just our God. Your God, too. And the God of Frances.”

There was a very slight change in Elgin’s appearance. Nothing about him was especially different from before, as far as Minder could see, but he definitely looked different. He was still smiling, but now it wasn’t likely to make anyone relax, as it had before. When he spoke, his voice was still gentle, though. He said, “I wasn’t aware Frances had any gods.”

“But she did. I mean she does.” He looked desperate to make Elgin understand. “It’s everyone’s God, the Creator of the Universe.”

“Well, I hope your god has a sense of humor, because Frances didn’t believe that the universe was created by it.” In a photograph, Elgin’s expression would have conveyed the fact that he was sincerely hoping to help these people to better understand his Frances. In the room, the temperature dropped five degrees. Behind him, Minder began to move in, sensing trouble.

“But of course it was!” The man was re-animated. The woman looked furious. Even the others spoke up, adding their chorus to their leader’s words.

Elgin, still earnest, said, “But Frances didn’t think so, and neither do I.” It wouldn’t do any good, though. He could see them change. Gone was any openness they might have enjoyed, replaced by a familiar argumentative posture.

“How do you know there’s not a Creator behind everything?” The man smiled smugly. The woman sneered. This was the question that had no answer, especially from the relativists.

“I don’t,” said Elgin. Then, into their gloating faces, “Any more than you do.”

The smirks fell away. Even in the heat of battle they could see that

arguing over who knew better would not make them look good. Especially with one of their Saints. The man decided to assume victory instead. “So,” he said, “you admit it.”

“Yes I do,” said Elgin, “if you will.”

“We’re not admitting anything! We know there’s a God and our God created the universe.”

“I have no problem with that. I believe people have the right to turn their religion instinct into whatever kind of theology they want.” Elgin was trying to be placating. He didn’t want to upset these people. He really believed what he said about their religious beliefs. But he had rights too and, not least because she couldn’t be here to stand up for them, so did Frances. “It’s just that I can’t allow you to speak for me, and you’re certainly not going to speak for Frances, either.”

“But we do speak for her. We are the Church of Frances.” The man suddenly seemed to realize where he was, and with whom. He tried to become gracious, but it came out as wheedling. “Come to our Church, Elgin. See for yourself. See how we have honored Frances.” When Elgin didn’t reply right away, he took it as a good sign. Maybe Elgin had seen the light. Maybe he was winning him over. “Come on, Elgin. Maybe you’ll learn something. Maybe you’ll see that you don’t know our Frances as well as you think you do.”

Elgin’s pause had nothing to do with the Church of Frances, though. Rather it was his synesthesia. Something, possibly stress but more likely the affront to Frances, had triggered his senses to complete their re-integration with a firm, somatic click. He thought he was fully conscious and aware before, but now he could see what had been missing. “Oh, yes,” he thought, “this is what it’s like.”

It was as if everything was two dimensional before, then flatness gave way to rich textures. Or as if monochrome were replaced by full

color. Everything was still the same, but it was now laced with extra meaning, layered with added complexity. He became aware of the light and how it felt on his skin. The sounds of the people in the Square combined into an ephemeral music that spoke to him of their feelings. Closer, he could feel the anger of the Francesians. It beat on his face like the wings of insects. It tasted like acid in his mouth.

The man was still talking and, now that he could hear properly, Elgin knew why he found it so offensive. It was wrong. The quirky talent that came from his synesthetic common sense could detect the simple wrongness of what they were saying. There was no music in it. Now he knew it was time to end this.

His gaze came back from his inner world and fixed on the man, who stopped talking as if he'd been slapped. Elgin said, "You're not doing Frances any honor. You know nothing about her, or about me for that matter." He looked at their pendants. "Do you really think she would have wanted this? No. Go away and find something useful to do." He turned away. It was over.

The man was stunned into muteness and the hangers-on were already making to leave, but the woman had other ideas. "You can't tell us what to do!" she shouted. Faces turned their way all over the Square. "We bring the message of Frances to the people. We speak for Frances, not you!" Her words seemed to echo endlessly in the shocked silence. It was as if the comet itself was holding its breath.

As Elgin slowly rotated to face her, Minder saw something that he thought was only a legend. Elgin's face had changed again. No longer was it that of a kindly old man smiling, even superficially, in response to the tiresome demands of strangers. Now it was the expressionless, chiseled mask of Frances' champion. This was the face that had sent grown men into early hibernation during the Great Debates. It wasn't

angry. There was no malice in it. Minder couldn't say exactly how it had changed. Maybe there was something in the jaw below the ears. Maybe the brow was a little heavier, he didn't know. He did know he was glad Elgin wasn't looking at him like that. The Francesians gasped and shrank in on themselves. Even the woman looked less sure of herself.

Elgin spoke quietly, without heat. "As long as I'm alive," he said, "I will speak for Frances." The comet seemed to release its breath. "As for you, you can say what you want, but here's a little advice." Elgin looked each of them in the eye, ending with the woman. "Maybe you should wait until your saints are dead, so they can't contradict you." Elgin turned his back on them again, drifting in Minder's direction.

Minder kept his eye on the Francesians, especially the woman. She had such an expression of anger and loathing that he wanted to be ready in case she came after Elgin. The man finally had to physically pull her away from there, and they straggled disconsolately back the way they came.

They left the Square under the gaze of the people who had seen them harassing Elgin. Some of the eyes were hostile. Everyone knew Elgin's story. They understood his loss and his pain. They all knew that Elgin would rather be hibernating than living without his beloved Frances. And when he had to be up, always to perform some duty for the good of the comet, he preferred to be left alone. So their sympathy crossed the Square to him, but they did not.

Minder didn't say anything. He just let Elgin sort through his thoughts and feelings, while staying close for whatever support or comfort he might give. The last vestiges of the legendary face were already fading away, with a sadness deeper than anything Minder had

ever seen settling in its place. It hurt him to see that. He felt helpless and angry. Why did those people have to do that?

Elgin roused himself and looked at Minder. He was glad to see the young man looking back at him, strong and level, his eyes not flinching at all. In there he also saw anger and sadness, a charming protectiveness and no pity whatsoever. Elgin liked this boy more all the time. “Well,” he said, “that’s that, then, eh?”

That caught Minder by surprise. “That’s that?”

“Yes. They’re gone now, and that’s the important thing.”

“But what they did. What they said to you. I thought that one woman was going to attack you.”

“But she didn’t. And if she had, you would have stopped her.” Elgin winked. “I noticed you back there. I knew you had my back.” He got more serious again. “They went away, that’s what matters.”

“Just making them go away.”

“Yes. You can’t do anything about what they think or believe, so the best you can do is make them go away.”

Minder was still young enough that the confrontation itself seemed more important. The merits of the arguments. The rightness of the actions. But he was smart enough to know that Elgin was probably right. Especially since it was Elgin’s ordeal and not his. “You knew you couldn’t change their minds,” he ventured, “and listening to them wasn’t going to, uh, make things any better.” Elgin nodded. “So the only reasonable option is to make them go away?”

“That’s right. As soon as possible. Before it starts would be best.” Elgin shook his head. “If it hadn’t been about Fran, this wouldn’t have happened.”

“What made you so negative about religion in the first place?”

“I’m not. I’m in favor of religion. I think the way we look at things

through our religious filter helps us to understand better, just like our science filter.”

“Then this was all about Frances?” It hadn’t seemed that way to Minder.

“Not entirely,” said Elgin. “I’m suspicious of theology. I think theology can sometimes pervert religion just as technology can sometimes misuse science.”

“Do you think the Church of Frances is misusing religion?”

“Not really. Oh, they’re certainly misguided. And they don’t know the first thing about their saints. But they haven’t descended to the level of manipulating people for evil purposes.” Elgin heaved a sigh. “You should read up on Yellow Comet. That will give you an idea of what I worry about.”

“Yellow Comet. We learn about them in school. They were all killed, right?”

“Yes. The killers are usually referred to as ‘religious fanatics.’ I don’t think they were very religious, but they were surely fanatical.” Elgin made a bitter mouth. “The thought of such a thing being done in the name of my Frances ...” He shook himself vigorously. “Well,” he said, rubbing his hands, “what else is on for today?”

Minder told him that the Square and the statues were all he’d planned, and apologized again that there’d been more than he planned for. Elgin laughed and suggested that they take a tour around the Square. He wanted to check out the engineering up close, particularly now that his senses were whole again. Then they could head back home.

He took one last, long look at the statues. He stared into Frances’ eyes, and admitted once again that her expression was okay, even if it wasn’t what he remembered. He looked at his own statue and snorted.

Finally he looked at the third one, set a ways off from the other two, and frowned. He wasn't quite sure what to think of that one.

9.

YELLOW COMET

Minder was planning to look up Yellow Comet in the Commons, but first he wanted to check out the relationship between awe and fear. And also between adoration and fear. He wasn't concerned with the children's fear. That was a natural reaction to such an event in their young lives. They were experiencing something new and uncertain, but all they needed was a little reassurance. What did concern him was their guardian's reaction, and that of the Francesians.

A little research gave him a working hypothesis: the fear was probably due to the realization of their vulnerability. Whether they were conscious of it or not, they instinctively knew that the power of their adoration or awe could overwhelm them. They could lose themselves to the object of their feeling.

Minder stopped and thought about it. In a few minutes he conceded the logic, and that made him wonder about his own relationship with Elgin. He knew he was in awe of him, and he certainly adored him, but was he afraid of him? He thoroughly explored his feelings and decided not. He was afraid of disappointing him. He was afraid of failing in his responsibility to him. But that was all. He wasn't afraid of Elgin himself, and he wasn't afraid of his feelings toward him.

Minder relaxed. A contemplative smile spread over his face. Elgin might be gruff sometimes, even cranky, but Minder knew that was nothing to be afraid of. That was just Elgin dealing with his life. He was a special man who had responded admirably when circumstances required it. He acted heroically and had to endure heroic pain and loss.

He deserved his elevated reputation in Green Comet and he lived up to it as well as any man could. But Minder knew the real Elgin, or at least he was trying to. You could love him and stand in awe of him, but that was because he did those things in spite of being only a man, not because he was unlike everyone else. Minder knew why people put Elgin on a pedestal, but he knew they didn't have to.

~

The Commons had a great deal of material about Yellow Comet. In addition to the straight encyclopedic entries, full of dates and facts and numbers, there were in-depth analyses, a great many theories, plenty of rants and screeds and just as many emotional homages. Minder realized that he had seen most of it already, or at least something like it. It was just the sort of thing one picked up in the normal course of living. The fact that it was common knowledge was why he was surprised when Elgin made such a point of it. But he had, therefore Minder would study the material in the Commons until he understood why.

He settled on the factual accounts, thinking that it would be best to just get the data and allow his mind to come to its own conclusions. It might be drier than the more colorful and tempting opinion pieces, but it would be worth it in the long run.

Yellow Comet was the third in a series of comets that were selected to be inhabited for one or more orbits. The idea of catching and colonizing comets suddenly struck Minder as a brazen one, and he had a renewed admiration for his ancestors. Looked at in the long view though, it was a natural step for his species, which had such a long and intimate relationship with comets. Especially after their planet was

nearly destroyed by one, it was inevitable that the relationship would develop as it had.

~

In preparation for their migration to the comet, ten thousand people marshaled at the launch site. There they would register and prepare for departure, checking through their one hundred kilograms each of luggage. Of all the planning they did for the journey, most of them agreed that choosing what would make up that hundred kilos was one of the most difficult parts. What do you take when you might be gone for centuries?

All of the passengers were synesthetes, most with strong expressions of the complex. It was the first time that most of them found themselves surrounded by their peers. Being in such a large crowd of people who shared their experiences was a delightful liberation. The air was full of a happy roar of conversation. The place rang with the laughter of people who found that everyone they met understood the predicaments they faced in their lives.

Fast friendships were formed in those few days. That was especially obvious in the gangs of children running and laughing everywhere. It was a happy time and an affirmation of their decision to take this journey. There were a few, though, who had second thoughts. As the time to leave the planet grew suddenly imminent, a few people changed their minds. They realized that they were bound too strongly to some person or place and they decided to call it off and go home. That turned out to be lucky for them and unlucky for the eager replacements on the standby waiting list.

Everyone was gathered for the final full assembly when it happened. After this they would break up into groups for assignment to their

launch vehicles and the transfer to orbit would begin. When the men walked onto the stage, the speaker tried to politely usher them back off. She was smiling at them in a friendly way so it was a shock to everyone when they shot her in the head and her body dropped abruptly to the floor.

At the same time a dozen men around the perimeter of the audience discharged automatic weapons into the air. There were scattered screams and some of the children were crying, but on the whole there was silence. All eyes turned back to the stage where one of the men stepped forward to speak.

He spoke for several hours, quoting liberally from the scriptures of his theology. To his listeners it was a meandering diatribe, but his meaning soon became clear to them. They were degenerate subhumans and he wasn't going to allow them to pollute his god's celestial sphere. As it went on and on, they experienced the bizarre sense of growing boredom. Here they were trapped by armed men, and they found their attention wandering. They began to get restless, shuffling their feet and looking around. Children began to complain that they had to go to the bathroom.

Some of them spoke out, trying to point out the impracticality of the situation. Things couldn't go on like this. They shouted at the man that it was impossible. The men nearest the protesters opened fire and shot them, along with anyone unfortunate enough to be standing near them. Some died immediately and some were only wounded. Anyone who tried to help the wounded was shot.

Eventually, realizing that these men intended to kill them all anyway, they hatched a plot to overcome them. The crowd on one side rushed the gunmen, heedless of their casualties, and were able to overpower several of them and take their weapons. Then the men exploded,

killing or maiming several hundred more people. Their captors were fitted with explosives.

When things settled down after the explosions, people could see that the fallen gunmen had been replaced. Who knew how many more were outside the stadium, waiting to fill in for their fallen comrades? That's when despair set in. It was worst for the children. Looking to their parents and the other adults for guidance or salvation, all they saw was the hollow look of defeat. So in the stench of gunpowder and the shredded bodies of their murdered friends and family, they awaited their fate in docile numbness.

~

While they were torturing their victims, the kidnappers, who called themselves God's Purity Brigade, were making their demands known to the rest of the world. They insisted that governments everywhere forbid their synesthetic citizens from ever going into space. They also wanted them to keep synesthetes out of various specified occupations, and to generally restrict their activities. In addition they wanted them sterilized as soon as their synesthesia was discovered. But most immediately important, they mustn't be allowed to defile the celestial sphere. Any hope of a reasonable negotiation was dashed by their cruel and callous actions.

Over the next few hours they did nothing to change that impression. All their actions created a picture of fanaticism. As they rejected every attempt at moderation or compromise, people on the outside slowly lost hope for a peaceful resolution to the crisis.

Governments representing all the migrants appealed to the government of the country hosting the launch facility. They assured everyone that they were making their best efforts to resolve the situation. They

made public displays to that effect, including arresting, imprisoning and torturing people, but the consensus was that they were stalling. The country had until recently had a democratic government, but a revolution had replaced that with a theocracy. There was a wide-held suspicion that it was sympathetic to the kidnappers, so no one was very optimistic about getting their cooperation.

Apparently the terrorists only wanted to make sure they had everyone's attention, because they didn't continue the negotiations very long. By the time the victims' courageous attempt at liberty ended in explosions and bloody mayhem, the man on the stage was just about done talking. He shouted a few more insults, dramatically praised his god and triggered a portable thermonuclear device.

The world was stunned. Naturally they immediately lost the video feed in the explosion, but other cameras, some belonging to news organizations and private individuals, but others obviously set up in advance by the killers, gave them a good view of the grotesque pillar of smoke and fire. It was obvious that there would be no survivors. Ten thousand people were murdered in one second.

There was something the terrorists and their allies hadn't accounted for, though, and that was the radioactive plume of dust engulfing the capital city a couple of hours downwind from the blast site. Maybe they did factor in the most likely wind direction in their original planning, but when the time came and the wind didn't oblige they decided to go through with it anyway. There would still have been enough time for government officials to flee, leaving behind a city full of martyrs, but they were trapped by a mob of protesters demanding the release of the hostages. Even their helicopters were no help because somehow or other there were several portable rocket launchers

in the crowd. They had to remain in the city to suffer radiation poisoning along with everyone else.

The country became a pariah. Scathing criticisms rained down on it from all parts of the world. Even its most loyal allies put distance between them. No one wanted to be associated with such a heinous act. Everyone agreed that they had always known that no good would come of a theocratic revolution, that democracy and freedom were always best. At first nobody sent any aid or assistance. There was a righteous consensus that they had brought their troubles on themselves by letting such a thing happen in the first place. Thousands more would die for lack of anti-radiation drugs.

This phase didn't last long, though. The uprising that began in the capital city swept the country, meeting very little resistance even from the military. Within a few weeks things were so different there that outsiders began to come in again. That began a long and successful period of liberty and enlightenment in the region. The blast site was isolated and protected as a commemoration to the victims, and the country eventually regained its status as an important gateway to outer space.

~

Minder stopped reading and found that he was breathing fast, shallow breaths. He felt as if he had been struggling with something. This was a stronger reaction than he had ever had before to the story, and he wondered why. Even though he knew the outcome, he'd found himself hoping it wouldn't happen. Hoping they'd come to their senses and those people would be saved. Even through the dry prose of historical reporting, he found himself emotionally bound to them.

He was glad he chose text with no accompanying video. That would have been too much.

This must have to do with Elgin. He was having new feelings about a familiar story because Elgin mentioned it. Naturally he would invest it with new meaning if it meant something to him. Minder was glad, all things considered. It was a very important story and he was glad to be able to feel something commensurate with that.

But what of Elgin's reason for suggesting it? Could the Francesians really be as bad as God's Purity Brigade? Surely not. But then Minder remembered the ferocity of at least one of them. The woman. It didn't take much imagination to picture her in the story he'd just read. Mix in a few fellow fanatics and a charismatic leader and it wasn't out of the question.

Even their leader, who appeared to be more reasonable, had brushed him aside with contempt. And he'd called him a name while doing so, replacing his individuality with a derogatory cliché. That was different only in degree from the leader of the killers calling his victims filth. Their excuses were the same. For the Francesians, none of their saints had four arms. For the GPB, none of their prophets had synesthesia. A good enough excuse for rudeness in one case, for mass murder in the other.

Minder didn't think the Francesians would ever get that bad. He just couldn't equate their earnestness with the cruel brutality he'd been reading about. But the scientist in him couldn't call it impossible. And now he felt as if he was beginning to understand Elgin's actions. Imagine if something that horrendous were ever done in the name of his beloved Frances.

Minder sat in his dim rooms, feeling buffeted by emotions bigger than anything he supposed would ever happen to him.

10.

ARMFUL

Elgin went into the Commons to look up “armful.” The man said it with such contempt and it affected Minder so strongly that he wanted to find out more about it. There were plenty of references, so many that it was hard to choose, so he just browsed for a while. The general drift was that it was a fairly mild taunt, usually. It was largely restricted to adults, for obvious reasons, although children were known to use it as well. As in, “Yeah, and your father’s armful, too!” The retort might be, “Yeah, well yours is leggy!” But since most adults had four arms before they had children these days, that usage was almost forgotten.

What convinced Elgin that it was a generally harmless thing was the presence of limericks. He knew there could be hateful limericks but as a rule they were relatively benign, as were the ones he found in the Commons. For instance,

*There once was a man who was armful,
Whose wife thought it made him more charming,
He hugged her with two,
And squeezed her with two,
And now they have children in armfuls.*

Elgin chuckled. But if “armful” was this gentle as a rule, what had made it so hateful today? He reluctantly decided he had to look up the Francesians.

As soon as the first search results came in he was caught by the sight of his own name. He saw the headline, “Elgin Blasts Frankies.”

It just jumped right out at him, probably because it used his name. He knew immediately who the Frankies were. It didn't take a genius to see that it was a diminutive for Francesians. The tone of the little excerpt was clear, even in just a few words. He could tell the article was going to be very unsympathetic to them. Normally he gave such negativity a pass, but it was also about him and something that had happened only a few hours ago. He knew he had to read it.

He thought it might be all rumor and hearsay, and he was prepared for a wildly inaccurate recounting. He was surprised to find it was quite close to the truth, and equally surprised by the video. The perspective on that indicated it was taken from above, probably from one of the balconies overlooking the Square. That would explain the name of this entry in the Commons, "Eye on the Square."

Even though the facts were accurate, Elgin felt that the accompanying opinion was unjustified. It extrapolated itself completely out of touch with reality. He shook his head to think that even real video and audio could be turned so far away from what actually happened.

The description of events was straightforward and matched the video exactly. It was the analysis of the actions of the Francesians and the motives that were imputed to them that set his teeth on edge. His sense for when things were wrong was clamoring for his attention. He knew from talking to them that they were misguided, they didn't understand their saints, they had certain prejudices and they could be unpleasant people. But this writer was impugning their character far beyond what they deserved. It even misquoted what he said to them. The audio wasn't perfect. It was far away and he was speaking quietly. But he was quite sure he hadn't said, "Why don't you make sure your saints are dead before you start telling lies about them?"

Elgin looked around and found the section where he could com-

ment on the article. He was alarmed to see there were over a hundred already, and dismayed to see that most of them were competing to be even more abusive than the original. He composed his thoughts and began to make his reply. He kept it short and simple, concentrating on the most important points. He told them they shouldn't call the Francesians Frankies. He told them they weren't helping either him or Frances. And he told them they'd misquoted him. He said, "You should make sure your sources aren't available to contradict you."

He checked that his message wasn't flagged to be anonymous and posted it. Everyone would see immediately that the post came from him and there could be no confusion about whether he'd really said it. Once done he signed out right away since there was nothing more for him there. As a result he didn't see the reaction he caused.

The first thing was that everyone who thought they were championing Elgin by vilifying the Francesians stopped. Some continued with the mean posts, but they had their own reasons. Then a lot of people tried to talk to Elgin through the forum, but of course he wasn't there. Then his personal message queue began to fill up and he had to tell it to flush itself and refuse new messages.

As for the Commons entry, "Eye on the Square," it enjoyed a spike in readers, due entirely to rumors flying about Elgin's presence, then the numbers plummeted and never recovered their former levels. As long as it lasted it remained a focus for those who enjoyed gossip and innuendo and peevish criticism. Fortunately, Green Comet didn't have many of those.

That unfolded over several days, but right now Elgin was still trying to learn more. He kept digging, ignoring any further distractions, until he came up with something that looked as if it might be more infor-

mative. It had some symbols, including the two comets, that seemed to indicate fact-based reporting, maybe even an official version.

He opened the site holding his breath, but it was okay. There were no images of Frances, just some of the comet icon and a few of faces, whose captions revealed that they were important figures in the church. Elgin poked around and soon found a summary of its history.

About three hundred years after the incident, with Frances in indefinite hibernation and Elgin having followed her, the church had its modest beginnings. At first there was no theology involved, just a desire to honor the heroes who had saved them at such a terrible cost to themselves. As time went by the observances of memory became more elaborate and the rites more codified. The heroes made the transition to saints, symbols were adopted, rules were established and the truth was officially identified.

Rules and truth. That's probably it, thought Elgin. As soon as you claim to have the truth, nothing anyone else says matters. And when you start making rules, using the authority of your truth, you make everyone else rule breakers. It works very well for creating solidarity within the group, but it always leads to alienation of everyone outside it. Even if they hadn't turned it into theology, Elgin thought they probably would have set themselves apart somehow. He was sickened that they invoked Frances in the service of their antisocial instincts.

He stopped reading and stared at nothing for a while. When his awareness returned, he realized he was looking at a picture of their church. The text indicated that he could take a video tour of it. This wasn't the only place they met, but it was their main building. Their cathedral, so to speak. If he was going to understand what the Francesians thought of themselves, what they wanted others to think

of them, then this building was the most likely place to go. Elgin cautiously began the tour.

It started outside on a lovely stretch of corridor. The facade was elaborately beautiful, with columns and arches carved into the ice. He could see colored windows and statuary carved in bas-relief stretching up a good twenty meters. It projected a sense of gravity and permanence.

The point of view moved up a broad flight of steps and through a large pair of doors. Once inside, the light changed subtly. In addition to the colors that would be expected from the windows, had there been a sun shining through them, the light seemed a little brighter than usual. It was a good effect. It created an uplifting mood.

The overall impression was one of grandness. It was large and open, clean and bright, and it was occupied by happy looking people who all appeared to be moving with confidence and purpose. But towering over everything, driving everything else out of Elgin's mind, was an icon of Frances.

It was at least five meters tall, and it was looking straight into his eyes. He felt as if he'd been punched in the stomach. Her eyes, her expression, were full of love and caring, and most of all welcome. It looked so much like her that he was drawn in her direction, helpless in the grip of her attraction. But it was wrong. He knew it was wrong and his fascination was doused by nausea. He tore himself away and fled from there in blind haste.

Elgin sat in his darkened room, unaware of time passing. If not for the pain and the deep, aching loss, he would not have been aware of anything. He might as well have been hibernating. This misery was why he would have been hibernating if not for his duty to the comet. He sat in the dark, not even feeling the tears welling up and floating

away from his eyes. Even after all these centuries, his body hadn't forgotten how to cry.

11.

FLASHBALL

Elgin woke to the sound of someone in the kitchen. He closed his eyes and tried to go back to sleep. That's what he needed now, a few more hours of oblivion, not another day full of people he had to see and things he had to do. He gave it a good effort, but after a half hour of listening to Minder try not to wake him, he had to get up. Really had to.

When he came out of the bathroom, Minder was just putting breakfast on the table. "Did they hire you to cook for me, too?" Elgin asked testily.

"No! I mean, yes, I'm here to do for you, but I wasn't hired." Minder had a slight blush that didn't seem to know what it wanted to do. "I won this assignment!" he said, obviously flustered.

"We have a winner. Congratulations." Elgin bellied up to the table. "What do we have this morning," he said, surveying the spread.

"Would you like some coffee?"

"Does it have caffeine?"

"Your choice," said Minder, brandishing two pots.

"Amazing what they can do with algae these days," muttered Elgin. He picked up a warm biscuit and savored its aroma. No sense letting it go to waste, he thought. "Make it a half and half, black."

Minder filled his microgee cup and came over to join him. Once he was at the table Elgin couldn't see the lower half of his body. Couldn't see the arms where legs ought to be. "You don't have to hide those anymore, you know."

“Oh,” said Minder, glancing down. “I didn’t even think of it. You seemed to be okay with it, so I kind of forgot.”

“I’m used to it,” said Elgin. “Oh, it still surprises me once in a while, but it doesn’t bother me.” He chewed his biscuit. “What am I going to do when it starts to seem normal?”

Minder laughed. “I’m glad you’re in a good mood,” he began.

“When am I otherwise?”

“Hah! Anyway, I have an outing planned for this afternoon.”

“What is it?” Elgin sighed. “How long will it take?” He gave Minder the eye. “There’d better not be any of those,” he groped for words, “those people that we met yesterday. I swear, Minder, if one of them comes within arm’s reach of me, I’m not sure what I’ll do.”

“No guarantees, Elgin. This is a free comet. But we have tried to impress on them that you value your privacy and it would be rude to impose themselves on you.”

“Good. What did they say to that?”

“Something about how the lives of the saints aren’t private property.” Minder hastened to add, seeing Elgin’s fur start to bristle, “But they promised to honor your request, because of your special relationship to Frances.”

Elgin ground his teeth. “Fine,” he growled, “I suppose that will have to do.”

“There’s not much more we can do. It’s not as if we can lock them up or anything.”

“They’d probably like that anyway. Martyrs for the cause and all that.” Elgin shook it off. “Where are we going, then?”

Minder beamed. “It’s a flashball game,” he said.

“Flashball?” Elgin was immediately interested. “Who’s playing?”

“Your old team, the Harriers.”

“They’re still going?” Elgin sipped his coffee and picked up another biscuit while Minder held his breath. “What the heck, let’s go.” Elgin enjoyed his breakfast.

~

The flashball arena was a hollow sphere of water ice, a hundred meters across. There was a good crowd there already, but Elgin and Minder had no trouble finding a place close to the ice. Other than the buttresses anchoring it to the walls and the space taken by the players’ entrance, the whole surface was available for viewing, so no fan was likely to be turned away. The lack of seats and stairs and other structures, made redundant by microgravity, also freed up a lot of space.

A murmur went through the crowd when they arrived and his face was shown on the monitors, but no one approached them. Elgin’s preference for privacy was well known and almost universally respected, with only the occasional exception like yesterday’s.

Now another murmur, becoming a soft roar, swept around the flashball arena. The players were entering. Sixteen athletes representing each team plus four officials streamed through the entrance together, to a firm round of applause from the fans.

Everyone, players and officials, took a few laps just inside the curving, transparent boundary of the field. Some of the players were doing aerobatics, testing their moves, but most of them just flew, stretching their wings. Then the referees and team captains drifted to the center for their pregame meeting. After a brief lecture from the referees followed by the handshakes, they all seemed to be looking in Elgin’s direction. He glanced at Minder as they came his way, but Minder just shrugged.

The six of them stopped in front of Elgin, while the rest of the

players gathered in a loose group about five meters behind them, all looking through the ice at him. Elgin looked hard at Minder, but he just raised his palms so Elgin turned his eyes back to the apparent delegation.

One of the referees came forward a little, holding out the flashball. He raised his eyebrows and made an offering motion. A susurrations swept around the sphere as people saw what was happening, and it quickly turned to a buzz of encouragement. When Elgin realized that they wanted him to do a ceremonial toss-in, his first instinct was to refuse. The crowd moaned with disappointment.

Minder nudged him. "Come on, Elgin."

Elgin's face closed up. The officials, the players and the fans sagged.

"Come on, Elgin," pleaded Minder.

Then Elgin's face softened. With a wry smile he shook his head at himself, then turned and nodded at the referee. The crowd applauded gratefully.

Elgin made his way around to the players' entrance, flying slowly through the path that the people made for him. He responded graciously to their well-wishes, muttering his thank-yous.

He dipped through the entrance and fluttered to a stop. The referee handed him the ball and shook his hand, followed by the other officials, the captains and all thirty of the rest of them. He floated, hefting the familiar shape of the regulation twenty centimeter, three hundred gram flashball. Thousands of faces were pressed to the ice, watching with intense focus. He glanced back at Minder hovering near the portal as he prepared to launch the ball and start the game. He stopped when Minder shook his head vigorously.

"Say something," Minder mouthed.

Elgin rolled his eyes at him, but he was smiling. “Alright,” he mouthed back.

He looked at the players arrayed at a respectful distance. They were about evenly mixed, men and women, and clustered at random rather than segregated by team. He cleared his throat. “Good afternoon.” He paused for their response. “You might not know it, but I’m not much for speeches.” He grinned at Minder in their burst of laughter. Minder’s face flashed sheepish. “So I’ll keep this short. I know I hated long speeches when I played.”

“Some of you might be aware that I played for the Harriers, so I won’t pretend to be impartial.” The Falcons had to absorb some good natured gloating from their opposition as the Harriers rubbed it in. “But it doesn’t matter who you play for. The important thing is the memories you create this day, the joy of working as a team.” Much nodding as Elgin readied himself for the toss-in. “So, keep it clean and create some beauty for these people.” He launched the ball hard toward the center of the arena, and it flashed right through orange to bright yellow. As the players lunged after it, Elgin slipped back outside to watch the game.

“Nice speech, Elgin,” said Minder. “Nice throw, too. Looks like you’ve still got the arm.”

“Yeah,” muttered Elgin, “sore arm. I think I injured my rotator cuff.”

“Really? Are you okay? Do you want to go back?”

“No, I’m fine. I just need to remember how old I am.”

~

The first half was quite tentative, with neither team able to sustain any kind of attack. The truth was, these were two evenly matched teams,

and their defensive play was impeccable. By the end of the half each team had managed several minor formations and one major pattern. The Falcons held a slight lead because their major involved nine players in the pattern, the Harriers' only eight.

Halftime was about twenty minutes, usually, but it could be more if someone needed more time. The fans didn't mind. They had refreshments and there was always lots of visiting to do. Elgin chatted with his immediate neighbors and found out they were quite knowledgeable about the game, and not only the present day. They knew about his team, when he played with the Harriers many centuries ago. They even knew a few of his teammates, which gave him something to talk about.

"Yes. I remember Lewis and Rita. We called them Gassy and Dodger," Elgin said to the squat, burly man who'd mentioned them.

"Gassy? You mean ..."

After a second Elgin said, "No, no, not at all. We called him Gassy because he talked so much, mostly trying to chat up Rita. And that's why we called her Dodger."

"I see," laughed the man, along with everyone else around them. "Did he ever catch her?"

"Yes, as a matter of fact. They ended up together. They eventually got married." Elgin's eyes unfocused and his face relaxed as he remembered the faraway time.

The burly man, whose name was Al, said quietly, "I can tell you enjoyed your time with the Harriers."

"Definitely. One of the highlights of my life." He looked at the empty globe. Seeing the patterns of players flying, passing the glowing ball in choreographed plays. The satisfaction of completing a complex pattern in spite of the other team's attempts to disrupt it. The delighted sounds from the crowd worth as much as the points they

earned for a well executed play. He looked at the entrance. "I wonder what's taking them so long."

"I hope no one was injured," said burly Al.

"I don't think so," said Elgin. "There was only that one bad collision, and they both seemed fine afterwards."

"Yeah, you're right," Al agreed. "It scared the heck out of me, though." He shook his head. "I could never do what they do. What you did."

"You never played flashball?" Elgin asked, genuinely surprised.

"Oh, no. I played alright. We all played when we were kids." Al shook his head again. "I was just never any good at it." He laughed at himself and winked at Elgin. "I've got two left wings."

"I see," said Elgin. It was hard for him to imagine what it must be like, but he knew logically that there would be just as many ungifted athletes as gifted ones. "You never lost interest, though."

"Lose interest? In flashball?" Al looked around at the faces in their circle. "Hey, I'm clumsy, not crazy." He basked in a round of friendly laughter, while Elgin clapped him on the back. "But seriously, the things you real athletes do, they're a gift of beauty to the rest of us." People were nodding earnestly. "Right?" said Al, and everyone agreed.

"Well," Elgin said hesitantly, "thanks, but we were just playing, you know, just trying to get it right."

"You did that alright. Like the Elgin Fractal." A rush of agreement from the circle, faces in awe-filled smiles.

"The what?"

"The Elgin Fractal. Your play, when you were with the Harriers."

"Oh, that. We called that pattern the Flying Fractal, actually."

"Well, it's the Elgin Fractal now. Probably the most famous play in flashball history."

“Oh, for goodness sake,” sighed Elgin. “We came up with that play as a team, and all teams have their own patterns.”

“Sure, but there’s only one Elgin Fractal.” Al drew his listeners close and spoke with hushed fervor. “A sixteen player pattern. Hard enough using ordinary geometry, but with fractal geometry it goes to a whole new level.” He had their rapt attention. “Every player on the team handles the ball twice. The pattern starts large, steps down in repeating iterations as each player flies their segment before passing to the next. Then the ball is bounced off the ice and they work their way back up.” They were nodding. Everyone knew this, but they didn’t care. Al told it well, and they were actually here with Elgin himself. “This is a very difficult pattern in itself, but it has to be done while the other team tries to break it up.” Al was shaking his head again. “And Elgin’s Harriers did it while passing the ball so sharply that it was bright yellow the whole time.”

“Well, actually ...” began Elgin, but he was cut off by a stirring in the crowd. The teams were flying back into the sphere.

The players cruised slowly around the field. They all looked Elgin’s way as they passed, most of them nodding if he happened to meet their eyes. Where at the beginning of the game they had been full of energy, almost anxious to get underway, now they seemed quieter, almost serious. They fell to the center, where they formed their loose phalanxes to await the toss-in. The referees were spaced around the outside, the one with the ball just inside the entrance. The lights began to dim.

Elgin looked around. “What’s going on?” he asked Minder.

“I wanted to surprise you with this,” said Minder, bursting with satisfaction. “There’s been a small change to the rules, Elgin. The second half is played in darkness now.”

“But,” said Elgin “how do they ...” He looked at the others, who were smiling. Al winked at him. “Never mind,” he said. “Let’s see how this works.”

It seemed pitch black at first, but then their vision enhancements kicked in and they were able to see each other, even recognize their black shapes in the dark gray ambient lighting. Then they could pick up the glow of the ball as it moved slightly when the referee shifted position.

Just about the time everyone was beginning to feel comfortable with the dimness, the ball flared redly as the referee cocked his arm, then flashed yellow toward the players. It seemed to leave a trail of light behind it, to their sensitive eyes.

“Ah,” said Elgin, “I see.”

The second half was similar to the first in the careful play and strong defence, but there was a difference. It seemed more deliberate and determined. The players faces were more intense, with less emotion showing through. Gone were the grins of pleasure seen in the first half. Even the bioluminescence was more muted.

Scoring was minimal, with each side notching a few small, conservative formations and some minor patterns. They seemed to be able to anticipate each other’s moves and break things up before they really got started. As the points slowly accumulated the Falcons hung on to their slim lead, even added to it a little.

Elgin found the new rule interesting. Once his eyes adjusted completely he was able to see more details and could tell where all the flyers were and what they were doing. He couldn’t see more than the barest details of the expressions on their faces but the bioglow was almost as good, even for someone as new to it as he was. The moving light from the ball illuminated the players like a mobile campfire. The

whole thing, sitting in the dark surrounded by thousands of people, watching the play of firelight beyond the ice, was magical. It was a bit like being a child up past their bedtime and Elgin took pleasure in the nostalgia.

Al broke in. "What are they up to, Elgin?"

Elgin shrugged. "Is the game more defensive now?"

"Well, a little, but these guys are playing chess," Al said, pointing with his chin.

As soon as he said that, Elgin saw the game differently. The plays the teams were making changed from discrete events into parts of a developing pattern. Something started teasing around the edges of his brain, a vague itch that wouldn't hold still to be scratched.

"Elgin," said Al, nudging him gently. "What is it?"

"Hm?"

"You're thinking something," Al insisted. "Do you see something I don't see? Are they up to something?"

Elgin looked at him, but Al could tell his focus was somewhere else. "No," said Elgin. "At least, I'm not sure." His gaze fell back to the playing field where it took in the moves and countermoves, absorbing everything as a whole. His mouth moved slightly as he watched. Al closed his mouth and let him be.

Over the next few minutes Elgin thought he was beginning to see a pattern. Literally. He was increasingly sure that he could detect a method to the way the Harriers were playing the game. They were grudgingly ceding a few points here and there to the Falcons, but a certain persistent asymmetry was forming in the overall disposition of the players within the sphere.

The Harrier captain threw a long ball, then took off in a beeline for the other side. The throw was caught and flung on. One more

throw and the first quartet was nearly finished before the Falcons caught on.

Elgin wasn't fooled, though. He recognized the opening stanza of the Flying Fractal and began anticipating the players' moves. That's where he did get fooled. Centuries of familiarity meant that defending against it was in everybody's play book and it was rare for it to get beyond the second stanza, the third at the most. It had become a tradition of sorts to try it once in a while and it was almost ceremonial. Something teams did to please the fans, because they really liked to see it. They were getting excited now as they recognized the familiar opening movement.

Defending against it came down to adopting a one on one strategy, a change from the usually structured team play. With someone dogging everyone it was just a matter of time before a pass got picked off. The Falcons did that and the Harriers kept to their predictable ways until the second stanza was one throw from completion, then the dynamic arrangement of flyers changed unexpectedly, the wrong person caught the ball and the fractal went off in completely the wrong direction.

In the confusion the Harriers quickly completed three small stanzas before the Falcons adjusted. The crowd was busily adjusting, too. They were so used to what they expected to see that this flouting of tradition had them off balance. But they were thrilled, too, and watching intently. They might not be doing it the way they were supposed to, but the Harriers were five-eighths of the way through now. Much further than anyone in recent memory, and only three more quartets of players left to handle the ball.

Al glanced at Elgin to see how he was taking it. Doing this was almost a betrayal of the Elgin Fractal, but he saw a pleased little smirk on Elgin's face. Al grinned and went back to the game.

The Falcons adjusted well and were closing in again, but this time the Harriers deviated halfway through the sixth stanza and that bought them the time they needed to bring it all the way down to the last two throws. The first, a long blistering bright yellow bullet toward a point chosen by the captain for her final reception. She was on her way there, timing her arrival, when she noticed the Falcons captain heading for the same spot. She veered slightly and gave a few hard thrusts to catch the ball a little sooner, but her opponent did the same thing. As the crowd held its breath, the two captains bore down. It was hard to tell who would get there first, but they knew it would be close.

At the last instant, before what would certainly be a hard collision and the end of a hard-fought pattern, the captain pirouetted under the ball's flightpath and plucked it out of the hands of her opponent. The crowd gasped then drew in its breath again as she rolled into a throwing position and hurled the ball in a nearly white streak toward Elgin, who had his hand on the ice for a target.

All eyes were on the ball and no one was breathing when a flyer streaked into view, a Falcon who had anticipated this and was driving hard for the point of impending impact with the obvious intention of knocking it away to break up the play. The smile on Elgin's face grew as his eyes darted between the ball in front of him and the Falcon to his right.

The ball and the flyer arrived simultaneously, with the ball being knocked back into the field and the player sliding partway around the wall before catching air with his wings and soaring back toward Elgin. The play was so close that nobody was sure whether the ball had hit the wall to complete the pattern. All eyes turned to Elgin as the lights slowly came up.

"Ah," he said, glancing at Al who was looking speculative. "Hm,"

he said, looking at Minder who was trying to look bland. "Alright, then," he said, heading for the players' entrance. The crowd parted almost silently, the air charged with unspent emotions. Elgin saw a lot of different colors in their bioglow and, although a novice at reading it, he could tell they were still charged up by the thrilling finish to the game, and frustrated by its anticlimax.

He wasted no time getting inside, where they gave him the ball and fell back to await his decision. He looked at them and said, "Hello again. First, thank you all for a well-played game." He cocked his head at the Harrier's captain, saying, "And an interesting one," obviously referring to its unorthodox final pattern.

While everyone laughed politely he looked at the two captains floating near each other and winked at them. "Thank you for the beauty you gave us today. Everyone." He gestured to the players and the officials and led the house in a heartfelt round of applause. "Now it is my honor to decide whether that last pattern was completed or not, as a sober judge and impartial witness."

While the place rang with laughter, bursting from thousands of lungs in a gust of relief, Elgin waved the two captains over. With their three heads close together Elgin told them what he'd seen, and they both agreed with him immediately. He shook their hands, gripping each long and firmly and thanked them again.

As the laughter trickled away, Elgin held the flashball high, capturing their immediate attention. "I declare," he said loudly, "that the Flying Fractal formation attempted by the Harriers today," he continued, ignoring the few shouts of 'Elgin Fractal,' "was not only the most beautiful thing I've seen in far too long, it was also the first successfully completed Flying Fractal in just as long." He looked at Al, who nodded sharply in the wave of cheering that rose around him.

Elgin patted the air to quiet them a little. "So it's my honor and pleasure to present this game ball to the Harriers, a new legend for a legendary team!" Then everyone, including all the players and the referees, indulged themselves in a flood of thanks and congratulation.

~

Back at Elgin's rooms the two of them were preparing dinner. Elgin was quiet. He'd hardly said a word since leaving the game, so wrapped in thought that he didn't notice Minder stealing glances at him on the flight home. Now, though, he felt his gaze and looked at him, causing some flustered flickering. "What's up, Minder?"

Minder's mouth opened and closed twice, then he took a breath. "You haven't said much," he started, "since the game." He looked worried. "Are you mad at me?"

"Mad at you?"

"Yes. For making you go. And give a speech. And all those people." He reined himself in. "I mean, did I do the wrong thing?" He looked comically pathetic, knew it and hated it.

"No!" said Elgin. "Goodness no. I'm glad I went."

"Really?"

"Yes. And I'm glad I met those people." Elgin was animated by the memories he knew would stay with him. "In fact, Al and I have a date to go to the next Harriers game."

"Wow. So it's alright then."

"Yes, Minder, it's very alright." Elgin touched his arm. "I hope you weren't too worried."

"No, not really. I just wasn't sure, and you weren't talking."

"Sorry. It's just that everything that happened today, well, it got me thinking."

“About the days you played, and the Elgin Fractal?”

“Yes, but it’s not just that. And it’s Flying Fractal, or whatever name the team wants to give it. They didn’t do an Elgin Fractal today, they did something entirely their own.” Minder nodded sagely. Elgin rolled his eyes. “Anyway, it made me think about my life.”

“Good thoughts I hope.”

“Yes, and it’s thanks to you for getting me out of myself. I know I haven’t been the best of company.” A quick glance was enough to stop Minder from nodding some more. “I was so wrapped up in missing Frances that I forgot what I learned from her about people. She always had time for people, no matter what. It’s what we all love her for, and my selfish misery has kept me from honoring that.” Elgin was beaming. “Thank you for making me go to that game, and for making me get involved.”

“You’re welcome.”

“And it tasted good, too. Especially the second half.”

“That’s something, eh, with the lights?”

“Really something.” Elgin smacked his lips. “Let’s eat.”

12.

THE VISITOR — INTRODUCTION

The Visitor was first seen by comet spotters. There were thousands, maybe millions of people who watched the sky every night. It was a holdover from the disaster several centuries earlier when the planet had its close encounter with the comet. Sky watching began in earnest then and never let up since. Together with the official planetary observation system that kept a vigil on behalf of the people, the amateur astronomers mapped every moving spot of light in the system.

The Visitor didn't reveal itself in the normal way of comets and asteroids, by moving relative to the distant stars. It stood out because sometimes it was there and sometimes it wasn't. The spot would show up in one set of images and not in the next. It was as if the steady light of the stars and the slowly moving lights of asteroids and comets were joined by another kind that blinked on and off.

The blinks came in a cluster that appeared for a span of a few weeks, then there was a hiatus of a few years. By the time they came back, people were ready to relegate them to some unexplained anomaly. A cottage industry of speculation built up around them as astronomers tried to find a place for them in their cosmology. Nothing in their models could produce such a phenomenon. They hadn't been able to get enough data to even begin to determine their origin, so they couldn't say if the light was coming from the local system, from a distant galaxy or anywhere in between.

When the blinks were spotted again they only appeared for a few days, then they were gone again for over a year. This time though, they

managed to extract a little bit of useful data from them. The light source was moving very slightly against the distant stars, but it wasn't moving relative to the nearer stars around it. Astronomers knew that the closest stars were formed along with their own Sun and that they were all moving in the same general direction. This would seem to indicate that the source of the blinks was in the close stellar neighborhood.

That was another crucial point. It really was a source of light. They weren't seeing light that was being reflected by some object, it was being produced there. And this time they had enough data to confirm that the light itself was in a very narrow band of the spectrum, and that it was coherent. Finally, although this conclusion was more tentative, some observers were reporting that the intensity of the flashes was higher than it was in the first series. If this was true then the source was either getting stronger or it was getting closer.

13.

THE VISITOR STOPS BLINKING

Because comets are not permanent members of the local sky, but only come and stay for a short while before leaving again, they were sometimes historically called visitors. For that reason it was natural to call this strange newcomer a visitor. It was from away and it seemed to be coming toward them. Even though it was obviously not like any comet they had ever seen, its actions were similar enough that the name got stuck to it.

It continued to show itself in brief periods of blinking separated by years of nothing. As the data slowly built up they were able to detect a weak trend. On the whole, the time between clusters of blinks seemed to be decreasing slightly and the number of blinks per cluster, the duration of each blink and the duration of the clusters were increasing. Astronomers, cosmologists and physicists were at a loss. No object in their models of the universe acted this way. No alternative model of nature could produce such a phenomenon and still describe a realistic universe.

Finally they had to consider an explanation that had been growing among the non-scientific population from the beginning. It was an explanation that they reflexively rejected, but now that other, more rational ideas were plainly inadequate, they finally began to consider it. Given the coherent and monochromatic nature of the light, they had to ask whether its source might be artificial.

Once they allowed themselves to think that way, the ideas started to flow. The first thing they had to admit was, if the source of the light

was artificial, then there must be some agency behind it. And if there was somebody out there blinking laser light at them, then the most economical explanation had to be that it was intentional.

Certainly there could be other reasons. It's possible that they were pointing the laser at something else and it just happened to also be visible here. Or they were doing something else entirely and this was just an accidental side effect. But the fact that it continued to happen for years argued against that. How could points separated by light years of space — their calculations showed that the most likely source was an orange dwarf star six light years away — stay lined up like that? Much the same argument worked against accidental leakage.

The obvious conclusion, though arrived at reluctantly and with much controversy, seemed to be that someone was trying to communicate with them. Some intelligent beings living just six light years away were using a giant laser to try to talk to them. Did they know there were people living here? Maybe they had detected some of the electromagnetic energy released by their technological civilization. Maybe they were just guessing. No matter. The objective now was to decipher the message.

That was easier said than done. Years of work by scientists around the world yielded nothing. The light was monochromatic and the color never changed more than could be explained by random fluctuations in the density of interstellar dust. Any variation in intensity was explained the same way. The polarity of the light was constant. All that remained was the blinking, and other than the weak trend already identified, there was nothing there. If there was something encoded in the blinking itself then it would have to be a pretty simple message. There just weren't enough blinks to add up to much, no matter how you analyzed them.

The frustration continued even as they gathered more data. No matter how much they accumulated they could never make any sense of it. Then something completely unexpected happened. One day the light blinked on and never blinked off again. This started a whole new round of speculation. Maybe the source was slewing around. Coherent light makes a pretty narrow beam which would be very difficult to train on a target so far away. Maybe the blinks were caused by the beam striking them as it swung by, zeroing in, and now it was steady because they had finally locked on. If that was the case then maybe now there would be a proper message. But it wasn't to be. The light remained bland and uninformative.

That is, no more informative than before. There was one variable that continued to change. Just as the blinks had slowly increased before, now that it was no longer blinking there was a weak trend in the intensity. It varied minutely, increasing and decreasing in the same random way that the blinks had appeared and disappeared. And now there was also a barely detectable increase in overall intensity. A very slight upward trend in an otherwise haphazard scatter of data points.

This was going nowhere. It was more than two decades now, and they were no further ahead than they were when they first saw the Visitor. For all they could get from it, it might as well be a firefly out over a meadow. Worse than that. At least with a firefly they had some idea what it was up to. This thing was incomprehensible. How could something so obviously artificial display so little evidence of intent?

That's when they reached a consensus, almost without discussion, that they should try to communicate with it. They would build their own laser, which was easy enough since they were already using similar technology for light sail propulsion. They would match the frequency of the Visitor's light as closely as possible, to show that they under-

stood at least that much. Then they would shine it out into space. Only, their light would be full of information, such as sequences of prime numbers, to unambiguously let the Visitor know, if there was any intelligence there at all, that there was someone here.

It had absolutely no effect.

14.

THE VISITOR IS REVEALED

For a space-going species there was no question that they would go out there. They couldn't just sit and wait when they had the means to do something about it. They had people occupying almost every comet of any size in the system. There were crews in the outer fringes working at diverting comets that were calculated to pose a threat to their planet thousands of years in the future. There were three large comets occupied by people who were living on them for hundreds of years as they went through a complete orbit.

Red Comet, the first of its class, was about to re-enter the realm of the planets and would soon be close enough to home for people to return to their planet if they wanted to. In just over two hundred years its population had doubled to about two thousand, and it looked as if most of them were going to opt to stay with the comet for another orbit.

Orange Comet, which started with two thousand people and had already doubled that, was approaching aphelion and wasn't concerned with what they might do in hundreds of years. Unlike the people of Red Comet, who survived by adapting their comet, those living in Orange Comet were experimenting with adapting their bodies. Conserving energy was crucial to living successfully on a comet, so they had fur for warmth. To see in lower light they had slightly larger eyes, lenses a little closer to the retina, and a tapetum to reflect the light back through the photocells. They were always considering other changes.

Yellow Comet had a planned population of ten thousand. Red and Orange before it had established that large comets could support a few thousand at least. They both recommended starting with more people, because it was possible and because they could use the extra hands for the work involved. Red Comet had found itself working far too hard with only two hundred people available at a time and had to accelerate the hibernation cycle to have more awake. Orange doubled the initial numbers but still found they could have used more. With no shortage of eager migrants and the knowledge acquired by its predecessors, Yellow decided to take ten thousand.

Unfortunately God's Purity Brigade had other ideas, so that decision only meant that more people would die.

After a period of shock and mourning, the timetable for the next comet was moved up. The advance crew had already prepared it during its inbound phase and it was decided that it would be a waste of effort if they didn't use it. An intense campaign was able to prepare and assemble another ten thousand people with just enough time to catch it. The transfer vessels were available and the ships were waiting at the Lagrangian point.

There was some discussion about the name. Should they still call this expedition Yellow, or move on to the next color? Finally they agreed it would be best to honor Yellow Comet by leaving a hole in the sequence, and so Green Comet it would be.

Green Comet was well past its ascending node, on a retrograde, hyperbolic orbit, just outside the planets. Its orbit was at a fifty-four degree angle relative to the rest of the system, so its perihelion was south of the ecliptic and within a handful of astronomical units.

Elgin and Frances first met while working on Green Comet, during their first waking. Both had been among the eighty percent of the

population that began the voyage in hibernation, so they started out with the fur and vision adaptations already effected while they slept. They had some further enhancements to Orange Comet's vision modifications, with more rods near the center of vision and changes to the retinal light sensing compounds to make them more sensitive.

Frances was only in her early thirties when she was put on the planning committee, but that didn't surprise anyone who knew her. She had an apparently effortless ability to take in complex ideas and make decisions. She also had an easy way with people, who all seemed to love her. Elgin, one of her lead engineers though only in his late twenties himself, fell for her immediately. But that's a later story.

~

The people's substantial experience with space led naturally to the decision to mount an expedition to learn more about the Visitor. In less than five years they were on their way and in about twenty they were as far out as the Kuiper Belt, though considerably south of the ecliptic since the light was coming in at an angle to the plane of the planets.

During that time the light had evolved even more. The source, which they had been associating with an orange dwarf star, was now known to be drifting slowly relative to the star field. It could not be associated with any visible object in its present position, but tracking its trajectory back showed it intersected exactly with the star they had originally identified.

In addition, the intensity of the light was still increasing. There was a great deal of speculation about that, although the answer that immediately leapt to mind seemed too incredible to say out loud. Nevertheless, soon everyone was talking about it. The simplest explanation,

therefore the one which should be favored even by scientists, was that the source of the light had left the star and was moving in their direction. The star and its neighbors continued moving against the distant stars as they always had, but the light was on a new course, directly toward them.

On the envoy vessel there was naturally a great deal of discussion about the latest developments. The crew consisted not only of the usual navigators, engineers and technicians. This was a unique flight of exploration and discovery, so the roster included scientists and other observers who wouldn't normally be there. It also had quite a few journalists who had competed hard for the privilege. There were even a couple of rich, famous people who had bought their passage with money, reputation and favors. Such was the nature of the voyage though, that even they pitched in as part of the team, rather than being the *prima donnas* many predicted. The only flaw in their behavior was that they both resented not being the only famous person there.

Being on a ship heading out of their solar system and into deep space, they were naturally less astounded than most to learn that the light source was moving away from its star as well. They soon found themselves assuming that it was a vessel of exploration like their own, and they looked forward to learning more about it, even hoping to one day meet the beings who had built and launched it.

The next change in the light was more surprising than any that had come before it. They were only able to see it because they were so much closer to it, and even then it was maddeningly unclear. The spot of light, always assumed to be circular in cross section, was beginning to show hints of a crescent shape.

As with previous additions to the data, this one did as much to confuse as enlighten. What kind of light source was crescent shaped?

That was light reflecting from a sphere, such as one of their moons. Did that mean that they weren't looking at light coming directly from the source, but rather reflected from a sphere? To be a thin crescent like this would mean that the source of the light was further away still, and that an incredibly powerful laser was being shone on a sphere for some reason. And the angle would mean that the laser wasn't being pointed in their direction after all. But it would also mean that the light, after being reflected, somehow maintained its coherency. No one could come up with a way for that to happen, unless the sphere was specially engineered to make it so.

~

The ship ventured on, setting new distance records with every kilometer it traveled. It was all a routine by now for the crew, in spite of the novelty and the mystery. Everyone alternated between waking and hibernating, working with a mixture of familiar people and new faces each time they were on duty. They were approaching the heliopause and termination shock when the next two surprises came a matter of months apart. First the light started fluctuating in intensity again, then it finally resolved itself. It wasn't being reflected off a sphere. The crescent wasn't reflected light at all, it was light being blocked by something circular. The impression of a crescent wasn't formed so much by the light as by the darkness where the light was blocked.

Once they realized that, they began to concentrate on the area around the light instead of just the light itself. A couple of weeks of intense observation revealed a shadow that occulted background stars as it moved slowly across them. It looked as if a circle of black was between them and the light source, blocking all but a little bit on one

side. And now that little bit of light was changing its intensity with a periodicity similar to its blinking a few decades ago.

This new information had the ship buzzing, and it had just as much effect back home when their message got there seven hours later. This was even bigger than the strange light, bigger than realizing that it was artificial. This was seeing an actual object out there in interstellar space. No one, or hardly anyone anyway, questioned that this new object was also artificial. Something this intimately associated with that light was definitely of a kind with it. But why was it blinking again?

On the ship they began waking everybody. Hibernation was a good way to pass long periods of time, but everyone had made it clear that they wanted to be wakened if anything happened. Finding what they were looking for certainly qualified for that.

It quickly got boring again, though. Nothing else changed for long stretches of time. Just a patch of darkness with a bright laser light peeking around it. The only excitement was when their exhaustive measurements indicated that the dark blob was very slowly growing.

It wasn't long after that that the idea came to them, and once they had it they felt foolish for not thinking of it earlier. They had accepted that the light was artificial, assuming that someone must be trying to communicate with them. Now they had taken the black object to be made by the same people who were behind the light. They couldn't believe it took them so long to put the two together, but now it was obvious that the object blocking the light must be a light sail.

Once they realized it, everything fell into place. The blinking that first drew their attention to it was caused when the alignment of the beam wandered off true, then was corrected for. Eventually the beam got bigger than the sail. No matter how tight it was, the beam would spread slightly with distance. The wandering and course corrections

continued, accounting for the variations in intensity after the light became continuous.

The crescent effect must be caused by the beam being just slightly off center with the sail. The light was leaking around one side of it. From a distance it would still look like a point source, but once they got close enough they were able to see that it was asymmetrical.

They had been sending daily reports with collated data and commentary, but now they started streaming everything back to the planet in real time. This was what they came out here for. This was why they had spent over twenty years traveling so far from home. Now maybe they could get some of the answers people were looking for.

Every telescope on the ship was trained on the artifact, but they weren't getting much information. After discussion with home they decided that they would try to make contact again. They spent two days composing what would be the most important message ever sent, much of the time trying to decide what medium to send it in. In the end they opted for a broad spectrum radio signal carrying their greetings and welcome, along with a few simple mathematical progressions. They didn't expect the Visitor to understand the content of the message, but they were hoping they would get the gist and reply in kind. They waited a full day and got no response at all.

That settled it. Their telescopes had managed to reveal another shadow attached to the light sail as it occulted background stars. They naturally assumed it was a ship and, allowing for perspective, it appeared to be about one fiftieth as long as the sail was across. But they couldn't estimate its actual size or even how far away it was. They decided it was time to do some radar sounding.

They were disappointed when they got no echo, but they soon realized that the lack of information was, in this case, a form of

information. It showed that the thing coming toward them had to be enormous to be visible at such a distance. They did some calculations, as did the people back home. They factored in the bits of data they had, made some reasonable estimates for what was missing and came up with some numbers. They were all over the graph, but a good many of them formed a cluster and they agreed it was a good first approximation. It was astounding, almost unbelievable, but so was the fact that it was crossing interstellar space. If they were right then the sail was about a thousand kilometers across. That would make the vessel twenty kilometers long.

Once they had an estimate of its size, that gave them an indication of its distance. Some more guesses and logical assumptions put its speed at about five percent of the speed of light. The implications of that shocked them. Assuming that all their calculations were correct, the mysterious Visitor, an enigma for decades, was only a few months away. Even if they were wrong it was surely not more than a year or two.

They sprang into action. If they did nothing the two ships would hurtle past each other at a sizable fraction of the speed of light. They had to reverse thrust. Even at full power it looked as if they would overshoot, but they had to make the effort anyway.

Over the next few months, while their ship tried to burn off its speed, they continued to examine the approaching behemoth. As it slowly resolved itself in their telescopes, they thought they were able to detect a slow change in its speed as well. It was reducing. It was barely discernible, but over time it showed itself to be real. The conclusion they reached, along with the people back home, was that the Visitor was aiming to drop into their solar system.

Everyone was watching it unfold in the continuous stream of data

and images coming back from the ship. That meant there were many eyes to share the experience and many brains to try to figure it out. So when they had an anomaly, instead of it simply being dismissed as a glitch, there was a much more interesting explanation brought forward. There were a lot of people throughout the system who had experienced just about everything there was to experience in space. One thing they did a lot of was look at objects from a distance. Not quite the distances the envoys were subject to out by the heliopause, but still pretty good analogues. When they heard that the Visitor changed shape, that its outline now differed by one or two pixels on one side, they had an idea what it might be. They had often seen the same thing as two objects, one large and one small, merged or separated at the limits of their visibility. The small one they couldn't see at all and the large one just seemed to subtly change shape. They guessed that a smaller vessel had detached from the main one.

That piqued everyone's interest, but it turned out like all the previous times. While it looked as if they were finally going to learn something about the Visitor, there followed another period where they were given nothing new. All through the system people's attention turned back to everyday matters, and they only glanced occasionally at the feed being relayed to them.

Periodically the envoys tried the radar again, never expecting anything. They knew how far apart they were and they understood the inverse square rule. They only kept trying from an abundance of caution — they didn't want to miss anything — and because it was better than just waiting. Their attention to detail paid off for them. One day they got a little blip, then nothing for the rest of the day. The following day the blip was back and, after a bit of intermittence, it stayed.

They got plenty of information now. They had distance and speed. They could compute its course. They knew its size. The target on their radar screen wasn't the big vessel. This one was only about a hundred meters long, not much bigger than the envoys' own ship. This must be what they saw separating from the big ship before. This little ship must have been sent to make contact.

Abruptly, the data stream started to break up and there was a final, desperate voice message from the envoys. "They're attacking us. They're ..." And they were gone.

15.

ELGIN MEETS STANTON

The populating of Green Comet was done in such a rush that the assignment of hibernation rotation had to be done by lottery, only taking the time to make sure that no families were broken up. Even then some friendships suffered because they had to apply an arbitrary cutoff in deciding. One went down and the other stayed up, unless the one staying up opted to start the voyage in hibernation.

None of that concerned Elgin. He was on his own so whichever shift he drew was alright with him. There was no one among the ten thousand that he couldn't bear to be separated from because he wasn't that close to any of them.

He was here on his own because there wasn't anyone to come with him. His mother died when he was young. It was something sudden, some accident while she was skiing with his father. Elgin never heard much about it because his father wouldn't talk to him. He was an only child and they weren't close to their relatives. His friendships were good, but that was all. Most importantly, by his mid-twenties he hadn't met a woman who could have made him stay.

So Elgin started the adventure in hibernation. He drew the fifth rota, meaning he would be asleep for eighty years before he had his first twenty years of active duty. While he was sleeping, the first four shifts would secure and consolidate the habitat that was prepared by the advance crew, and begin the construction of further expansion. They made the comet habitable, well on the way to comfortable. It was nearly a self sustaining ecosystem.

By the time Elgin got up the majority of the big projects were done. The living areas were excavated and sealed off and were filling up with buildings. The corridors joining the cavities were finished and airtight. The plumbing was operational and just needed a little fine tuning. Air circulation and temperature control were almost completely automatic. The hydroponics were self sustaining, providing a continuous supply of food, supplemented by the meat lab where they were forever perfecting texture and mouth feel. And, to everyone's delight, the algal mats were healthy and spreading on the walls. Everyone loved the fruiting bodies that were engineered into the algal genome, the ice-berries that they could pluck and eat any time.

Iceberries weren't just a sweet snack. In addition to a good sugar content, they also had fat and protein and vitamins. They were the closest thing ever to a complete food. Nutritionists predicted that a person could live a normal life eating nothing but iceberries. Parents never worried whether their children were eating properly because they always had the ideal snack growing on the walls. In addition to all their other redeeming qualities, iceberries tasted good and had the most delicious aroma.

Everyone who started the trip in hibernation woke up with fur and enhanced eyesight. Elgin's cohort was the second to have wings. When they went to sleep they didn't know they were going to wake up with wings, but when the idea looked achievable everyone who was awake at the time agreed that it would be best. They would be making modifications to the bodies of people who had no say in it, but they knew that was how they would have wanted it if conditions were reversed. If they woke up to find that they could have had wings but didn't, they knew they would have been disappointed.

On the whole the ones who woke up with them were delighted.

After the surprise and shock they saw that it was a good and useful modification, especially after using them for a while. Elgin certainly had no problem with it, and most people agreed it was a good idea even though it was done without their consent. But not everyone.

A small but significant minority protested that it should not have been done without their permission. Only a handful felt strongly enough to demand a return to hibernation, but such was the common sense of justice and freedom on the comet that they decided no major changes would be made to anyone's body without their conscious approval from then on.

~

Elgin's first experience of waking from hibernation was nothing like waking from ordinary sleep. It took longer, it was very disorienting and at times it was decidedly unpleasant. First there was the grayness and the realization of being aware of it. No prelude. No consciousness of any kind of anything before, and then a gray world that felt as if it had always been there.

Soon there were flickers and flashes of bright light, always in his peripheral vision, never where he was looking. And that was a novel concept, that he could be looking in any particular direction. It immediately divided his vision into what he was looking at in front of him, another new idea, and other things that he couldn't see. While the bright white lights were at the periphery, the splashes and explosions of fractured color came in his central vision. They caught his attention and held it because they didn't seem random. He was sure the colored shapes had meaning. He thought he could see purpose and intention in their relationships and their movements.

Elgin was also experiencing smells, but they seemed to get in under

his cognitive awareness. His brain knew they were there and his body no doubt reacted to them, but they didn't bother his conscious mind with it. But with the skin there was no overlooking it. Sharp pricking sensations jabbing random parts of his body at unpredictable times. Wandering waves of itching. Tingling and numbness trading locations haphazardly.

As strange as these sensations were, the one that struck Elgin the funniest happened deep down at the bottoms of his ear canals. By this time he was conscious enough to locate it as part of him. The time of not knowing enough to separate his self from his sensations was over, so he was able to recognize it as sound and to tell that it was happening inside his ears. He still couldn't make it out, but there was something about it that was reassuring. The tone and cadence made him feel safe and well cared for. But it still sounded funny because, at least for the first few minutes, instead of appearing to come from an outside source, the sounds were tiny and all gathered down by his eardrums. Elgin drifted off to sleep wondering about the nature of reality as it's assembled by the brain. How our sensations become our perceptions.

He alternated between sleeping and waking for the next few days. Each time he woke up his senses were closer to normal, and each time he slept his dreams were less chaotic. He met the man who was looking after him, learned his name was Stanton, recognized his voice as the comforting noise from the first day. When he was able to organize the croaking and gargling in his throat into a serviceable voice, he asked Stanton if that was his first name or his last. He learned that everyone was using single names. They might choose their first name or their last, or they might make something up. They called their chosen name their comet name and it was their identification for all purposes.

Stanton, whose name was pronounced with a glottal stop, attended

to Elgin effectively and efficiently. He gave Elgin what he needed at each stage of his waking, both providing for his physical needs and answering his questions clearly and completely. He explained that each citizen of the comet was required to do this for at least one other, so that everyone got a sense of how important it was. But he added that he'd specifically requested to be Elgin's minder, as the job was called. He'd studied the dossiers of many people and learned that Elgin was an engineer, and a very good one. His record showed a level of understanding that normally only came after many more years of experience. Though only in his mid-twenties, Elgin had the competence, and had taken on the responsibilities that a good career engineer usually didn't have until his forties. Stanton explained that he was the lead engineer on the project to join the comets and that he wanted Elgin on his team.

"Me?" said Elgin. "Are you sure?"

"Sure enough to be your minder," said Stanton. "Sure enough to put you on the job." He smiled. It was friendly but a little hard, too. "Whether you stay will depend on you."

Elgin swallowed. "But there must be plenty of other engineers. Ones with experience."

"You mean older?"

"Yes, but I really mean experience with comets."

"I've got a few of those," Stanton said, nodding. "And they're good at their jobs, don't get the idea that they're not. But I need more than that. I need someone who can see beyond the plans. Someone who can imagine doing the job a different way if necessary." He smiled again, but this time it had a bit of a challenge in it. "Most of all I need someone who can look at my work and tell me when I've made a mistake."

"Oh," said Elgin, not quite sure if he wanted this challenge.

“I’ve checked, Elgin. Every place you’ve worked they’ve given you glowing reports.”

“Yeah, well ...”

“More importantly, there were a couple of controversies. And some resentment among other, older engineers.”

“Well ...”

“You disagreed with them, didn’t you?”

“Well, I just ...”

“You told people who have years more experience than you that they were wrong, didn’t you?”

“Yes, but ...”

“Never mind, Elgin. I checked. They were wrong.” Stanton had a wicked grin. “They were wrong and you knew that and you didn’t let a little thing like respect for your elders stop you from telling them.”

“No. I mean, I couldn’t.” Elgin shrugged helplessly. “It was wrong.”

“And that’s exactly why I need you.”

Elgin slid gently into sleep. He was doing a lot of that. These few days seemed to be spent either waking up or falling asleep, with much less time spent conscious than not. He could feel himself smiling as he faded out. This was wonderful. He was offered a job, not only doing what he enjoyed most, but doing what must be one of the most challenging engineering projects ever attempted. What interesting problems there must be in joining two huge comets. And he’d be working directly with the lead engineer. And he’d been chosen specifically, hand picked for the job. Elgin had plenty to feel good about and he allowed himself to thoroughly enjoy the feeling as he fell into soft slumber.

16.

ELGIN HAS VERTIGO

Elgin wasn't ready for the vertigo. Not that he hadn't been warned about it. Before entering hibernation at the beginning of the voyage, their orientation had made a point of it. Everyone was fully aware of the effects of waking from the long sleep, after the body's senses have been inactive for so long. Stanton had reminded him just yesterday, and Elgin had already experienced how odd sensations could be when they were first rediscovered. And he'd already suffered the effects of vertigo, the room spinning when he tried to lift his head.

Still he wasn't ready for the vertigo. Experts on the subject generally agreed with the hypothesis that the systems involved in perception didn't return to proper functioning smoothly or in a coordinated way. In the case of the sense of balance, the motion sensors in the inner ear might stutter to life and start sending signals to the brain before it knows what to do with them. But once the person relearns how to process it, they just get a little dizzy if they move their head too abruptly. The proprioceptive sense of balance was a different matter. It was more primitive, being concerned with the position and orientation of the body. When it came back to find itself in microgravity it reacted with a rush of panicky demands to the brain.

The third day was usually the worst, although it varied with each person. Elgin was right on average. He felt different as soon as he woke up, but it wasn't until Stanton came in the room that all hell broke loose. All he did was move his eyes a little to look at him and his universe spun itself to pieces. He had to close his eyes to shut out the

vortex, but his inner world was a wild gyre too. It was a good thing that wakers didn't eat anything for the first few days, or it would be even worse.

But that was only the surface of it. His proprioceptive sense had just awakened with a spike of power, and it became aware of its situation with the same sporadic confusion as the rest of his senses had. Until it found itself, it could only be sure of one thing. In the microgravity it was certain it was falling. It bombarded his brain with desperate messages, uncontrolled torrents of mortal danger.

Elgin still had one little pocket of rationality where his mind could find refuge. In there he knew that the danger wasn't real, that this was normal and expected. But he couldn't convince the rest of his brain of that. It was reacting to the amplitude of the warning from something with much more seniority than his cognitive self, and it did so with a matching level of terror. Stanton glanced at the readouts and administered a strong sedative. Elgin slid into sleep with relief.

After a few hours of thankfully dreamless sleep, Elgin woke to find Stanton still at his bedside. He felt as if he'd just been out for a minute, such was the power of the drug. He had a panicky moment when he felt some persistent effects of the vertigo, but he was able to quell it. His body must have acclimatized somewhat while he was out.

"How are you feeling?" asked Stanton.

Elgin's eyes naturally moved to his minder's face, causing a little swell of dizziness. He grabbed the bed with both hands, but it passed just about right away. "I think I'm okay," he said.

"Good. That hit you pretty hard, didn't it."

"Bloody right." They shared a wry chuckle. "The orientation couldn't prepare a person for that. Is it always that bad?"

"From what I've heard, and experienced," Stanton added, winking,

“this is about average. Maybe a little worse.” He saw the near disbelief on Elgin’s face. “Really,” he said. “Some people have to be kept sedated for days. Everyone eventually gets over it, though.”

Elgin was grateful for small blessings. He couldn’t imagine enduring several days of that raw fear. As it was, he wondered if he could face future hibernations, knowing what their wakings would bring.

“Don’t worry,” said Stanton. “According to Red and Orange comets, the effect is greatly reduced after the first time.”

“That’s a relief,” said Elgin. “I feel okay now, but that was just awful. I don’t think it would be easy to convince myself to go through that again.”

“Same here,” chuckled Stanton. “But you’re actually still going through it, technically,” he said, glancing down.

Elgin realized that he was still gripping the edges of the bed. He tried to let go but his hands wouldn’t obey him.

“You’re still getting a small dose of Equilibrium. Your body is just about as scared as it was before, but it shouldn’t be bothering you too much.”

Elgin checked and found that it wasn’t. “How long before I’m completely over it?”

“Usually by the end of the third day people are off the drugs, although some people still need something for the dizziness for another day or two.”

“So I’ll still be dizzy tomorrow?”

“Probably.” He saw Elgin wasn’t happy with that. “It will be mild, though. And once you’re up and moving around it goes away pretty quickly.”

“I’ll be able to get up tomorrow?”

“You’d better.” Stanton grinned at him. “I want to put you to work.”

“I look forward to that.” Elgin looked around the room, slowly and carefully, not moving his eyes or his head too abruptly, but most of the engineering details were obscured by either medical equipment or finishing details. It was interesting to see those details but what he really wanted was to see how the place was put together.

“I know what you mean,” said Stanton. “I remember how impatient I was when I woke up.” He laughed at the memory. “Once the vertigo settled down to a tolerable level, I just wanted to get going. To do what I came here for.”

“Exactly,” said Elgin, beginning to nod before he caught himself. But something confused him. “When did you first wake up? Which cohort are you in?” He was wondering how Stanton could be planning to work with him when he must be about due to go back into hibernation himself.

“Well,” said Stanton, “it’s not that clearly defined anymore.” He did a complete scan of the instruments reporting Elgin’s condition. Satisfied, he nodded and told the machine to lower the level of Equilibrium slightly. “It didn’t take long to figure out that we couldn’t just swap everybody in and out every twenty years. We needed to maintain some kind of continuity, so the planners set up a system to stagger things a bit.” Elgin’s knuckles didn’t get any whiter from clutching the bed, so he left the dose at the new setting. “I’m technically in the third cohort, but I started late. And I didn’t want to miss out on this joining project so I requested an extension, which was granted.”

Elgin was impressed by that. His new boss must have a lot of pull or he must be a very good engineer. He felt oddly proud, as if he belonged to something special. It was nice to join a team that played

in such a league, to work with a leader of such stature. There must be plenty of engineers coming up for their turn at waking and they would have to wait until after the joining, the most interesting engineering problem ever, because the planners chose to keep Stanton in charge. He looked at his minder, his face showing profound admiration, approaching awe.

Stanton caught the look. “Uh-oh,” he said. “I think it’s time to reduce the oxytocin.”

Gradually Elgin returned to normal, and found himself embarrassed by his display.

“Don’t worry about it,” said Stanton. “The oxytocin really helps people feel good about their situation, which improves their recovery.” He winked at Elgin. “I won’t take it seriously if you don’t.”

Elgin was blessed with good sense. He was able to laugh at himself. “It’s a deal,” he said, and they shared a good laugh. Not too good, though, since he wasn’t sure what might happen if he laughed too hard.

True to Stanton’s word, by the end of the day he was off the Equilibrium altogether. He felt much more comfortable in his body, and he even managed to make his hands let go of the bed. Now the only thing holding him down on it was the forest of tiny cilia in the sheet that hung onto him the way a gecko’s foot hangs onto a wall. That simple invention made sleeping in microgravity much more natural. They didn’t have to sleep in a bag or strap themselves onto the bed. The gecko sheets clung enough to hold them down but not so much that it was hard to roll over.

Now that his sense of balance was calmer he was able to take stock of the rest of his senses, and he found them to be functioning normally. At least they were normal enough that he couldn’t see anything too

far out of whack. The orientation had also said that the senses would recover in the first few days, but that some fine tuning might go on for a few weeks after that.

The only thing missing was synesthesia. He knew it would come last, after everything else was in place. Since it was a meta-sense or an epi-sense, it needed the others to be functioning before it could work properly. Already he was noticing little things as it began to get organized, but he knew that the full effect, the whole “common sense” of synesthesia would take another day or two to rebuild.

17.

ELGIN EATS AND GOES OUT

On day four, as promised, Elgin was able to get out of bed. He woke up feeling better. He had clarity in his senses and in his thinking, sharp enough that he could now see how dull they were the day before. He hadn't felt especially dim yesterday. Maybe a bit tired or confused, but close to normal he would have thought. But the new level of acuity today made him realize he thought wrongly. It also made him wonder if he was overestimating himself today, too.

Stanton came in as soon as Elgin woke up, and an amazing aroma wafted in with him. The coffee struck him first, but bacon was there the next instant. He detected some kind of baking item, muffins maybe, and rounding it all out was a mysterious smell that was new to him, but seemed so familiar that it made him feel nostalgic. He was struck speechless by the power of the combined aroma, but his stomach spoke for him. It growled so loudly that Stanton heard it clearly across the room.

"Well," he said, "it sounds like that's working." They were both grinning broadly. Elgin was up on his feet before he knew it. He didn't remember getting out of bed, and now he was moving toward the door, toward the source of those enticing vapors. He felt like a passenger in his own body. It was as if his stomach, still growling with anticipation, had taken over. He relaxed and enjoyed the ride.

Stanton turned and went out ahead of him, and Elgin got his first good look at his wings. Folded over his back, their tips came to just past his buttocks. They were covered with fur, like the rest of his body,

only it was a little darker. Now that he looked at it, Elgin could see that there was variation in the fur color everywhere. It was subtle, just enough to break up the monotony, but it made for a nice effect.

The only parts of Stanton's body that weren't furry were the face around his eyes, the palms of his hands and the soles of his feet. Elgin could just glimpse his soles as he picked up his feet while walking.

Entering the anteroom was like plunging into a pool of bright light and delightful smells. Elgin's eyes closed automatically and his nose flared, drawing in a large percentage of the air in the room. Water burst into his mouth and he opened his eyes and walked over to the table, swallowing. The next few minutes were lost in the ecstasy of eating, punctuated by moans and sighs and other prandial sounds. The bacon was excellent. It was crisp and just like the real thing, as far as he remembered. The coffee was perfect — dark and a little bitter. You had to know it was algae or you couldn't tell. The muffins, soft and warm with faux butter, were the vehicle of Elgin's introduction to iceberries. He would love them for the rest of his life.

Once the sensual rush was over, Elgin's brain kicked back in. He and Stanton had walked over to the table. Walked? In microgravity? Thinking back on it, he recognized the incongruity. Now that his gut was no longer in charge, he remembered that the walk was really a parody of walking. Something like a marionette, only with sticky feet. Each foot would hold him down on the floor while he moved the other forward, then peel off with a slight resistance when he picked it up. He flipped a foot up onto the other knee and peered at the sole. Other than being thicker and tougher and drier than he was used to, he couldn't see anything that would make them especially grippy.

"Setae," said Stanton, leaning back, sipping coffee.

"Setae? Like on the sheets?"

“Yes. And these chairs.”

Elgin looked down and realized he’d been sitting comfortably on a chair without wondering how. He experimentally peeled and restuck his buttocks a few times. Then he did the same with his feet on the ice floor. “Nice,” he said.

“Yes,” said Stanton. “It was the second cohort that came up with it. It came down to heat retention.” He held up a hand, its palm facing Elgin. “They realized that both the thin skin and the moisture here were causing too much heat loss, so they wanted to both thicken and dry the palms and soles.”

“But we need those for grip and traction.”

“Right. Exactly what they thought. So they needed something that would replicate that, even on ice.”

“So setae. Brilliant and elegant.”

“Right. We used to call them our gecko feet, but that’s faded and we don’t even think about it usually. Except when someone like you is experiencing it for the first time.”

Elgin experimented some more and made an odd discovery. “It feels new to me, but it doesn’t feel ... unusual or unnatural.”

“That’s right. And you didn’t really notice when you were walking for the first time either, did you?”

“No, but I put that down to being madly ravenous, and maybe there were still some drugs in my system.”

Stanton nodded. “Both true, but without the brain conditioning you would still have reacted. And you wouldn’t have walked quite so naturally, since you’ve never done it before.”

It was Elgin’s turn to nod. Everything about it was logical. But there was still a problem. “But altering the body and changing the brain. Those should only be done with each person’s consent.” He frowned,

sorting it out. “The second cohort decided for the third, and the third for the fourth. How did they get around that?”

“Yes, that was a problem. They knew it was a good modification. They knew people would be glad it was done, even if they weren’t asked. And they knew it was relatively minor. It doesn’t really change the appearance and it doesn’t really affect a person’s self image. So they snuck it in on a technicality.”

“A technicality?” Elgin raised his eyebrows.

“Yes. The waiver everyone signed for the modifications they would agree to undergo — fur and cryptic genitalia, for example — used language that didn’t limit it to just the examples. It seemed to allow for other procedures that would serve the same end.”

“A technicality.” Elgin’s smile could be called a smirk.

“Yes,” said Stanton, smiling back. “A good old technicality.”

Elgin experimented with a coffee cup, seeing how well it stuck to his palm and fingers. “Good choice, I think.”

“I thought so, too. It does fit the criteria and its benefits far outweigh the minor nature of the change.”

They sat silently for a while, picking and nibbling at the remains of breakfast. Elgin was studying the room, whose construction was more exposed than in the bedroom, when he noticed a full length mirror.

He was staring at it, so Stanton followed his gaze. “Oh, yes,” he said, “the mirror.” He rose. “I’ll bet you want to have a look at yourself.” Elgin got up and crossed the room with him to stand in front of the mirror.

The first glance took in everything. His whole body was covered with thick fur, brown with reddish highlights like his original hair. It was sleek, like an otter, and looked smooth and shiny. “I have a glossy coat,” he told Stanton, “I must be healthy.”

“As long as you don’t have a wet nose,” said his minder.

Elgin’s eyes flicked back to his face. His nose wasn’t wet. It was the same nose he had before. It, along with his cheekbones and most of his forehead, framed his eyes with bare, almost hairless skin, although he still had his eyebrows. He waggled them, eliciting a laugh from Stanton. Looking at his face, even though most of it was obscured now, he realized it was still recognizable as him. His eyes, a rich medium brown that seemed to glow, were almost the same. The pupils were a bit bigger than before and, looking close, he thought he could see a glimmer from their tapetums, but the eyes were still his. And his mouth, with the lips that were not quite thin and not quite symmetrical, hadn’t changed at all.

He glanced at Stanton standing behind him, comparing their two images. The other man was well built, to the point of burliness. He was about a half-head shorter with darker brown, almost black fur, which could only partially conceal a slight thickening in the torso. Elgin’s gaze swept on down the stout legs to the large feet planted squarely on the floor, then back up to where the legs joined at the top. His natural inclination to not look at another man’s genitals too closely was overcome by the realization that there was nothing there to look at. A spike of revulsion was followed by a flash of fear as his eyes snapped back to his own groin, which was similarly blank. At the same time his memory was trying to tell him that he was expecting this, but it’s one thing to hear about cryptic genitalia and quite another to not see your own where they ought to be.

“That’s a bit of a shocker, isn’t it?” said Stanton.

“No kidding,” Elgin replied, his heart still fluttering. He stared for a moment longer, then disengaged, telling himself that he could finish later in private. Right now he could see what must be the points of

his folded wings just peeking over his shoulders, so he turned to get a look at them.

Like Stanton's, Elgin's wings were a shade darker than his overall color. Folded, they were quite flat to the back, lying in contact with it rather than standing off. They didn't overlap, except at the tips. From the points at the top they converged until they met between the shoulder blades, then they ran straight down to the tail bone. At that point the left tip, if he had that right, it being backwards in the mirror, emerged and crossed over top of the right one.

They were completely covered by fur, but it was shorter than the body fur next to it, and not as thick. He guessed that was a design decision, probably to keep the weight down. They wouldn't be that heavy anyway, and easy to carry around in microgravity, but you wouldn't want any unnecessary inertia to overcome when flapping them. Thinking of which, Elgin became curious about their operation.

To his surprise, as soon as he thought of opening them, his wings opened. He looked the question at Stanton, who nodded. Apparently more brain conditioning, like the walking. Smiling, he stretched his wings all the way out, noting that the leading edge had a noticeable bend at the joint. The tips reached farther than his outstretched hands, and could be brought around to meet well above his head. He noticed that the fur on the undersides was even shorter and thinner. He could almost see skin in some places.

He gave a couple of experimental flaps and was surprised when his feet separated from the floor. He was heading for the ceiling, struggling with all six limbs, when Stanton caught him and deftly returned him to the floor.

"Well, that surprised me," said Elgin.

"They're more powerful than they look, aren't they?"

“Yes. And the setae obviously aren’t as strong as gravity.”

“Gravity’s the key. We don’t have to create any lift here, so it can all go into maneuvering.”

“Which raises a question. Why couldn’t I maneuver? Why wasn’t I able to catch myself and get back down?”

“Brain conditioning can only do so much. You need actual experience to get any good at it.”

“That makes sense. I felt like a newborn calf trying to get to its feet.”

“You looked more like a fledgling stork falling out of its nest.”

“Hey!” But the image was so apropos, and so funny, that he had to laugh.

“You’ll have it in no time,” said Stanton. He waved off Elgin’s doubting look. “I can tell by looking at you that you’re naturally athletic. You move like one. I don’t know how to describe it. Like a dancer or something.”

“I’m certainly no dancer. My aunt tried to teach me, but she gave up. She said, ‘It’s such a waste, you so graceful and so good looking.’” Elgin rolled his eyes at the memory. “She said, ‘Why can’t you relax and let go? You could be such a good dancer, but you don’t even try.’”

“Why didn’t you try?”

“I did try!”

“Not hard enough for her, apparently.”

“I tried hard. I learned all the steps and all the moves. I could do whatever dance she wanted and never step on her feet. Her complaint was that I wasn’t ‘expressive’ enough. ‘You dance like you’re building one of your projects,’ she said. ‘You do all the right steps, but there’s no life in it.’”

“She sounds like an interesting woman.”

“She was. She is. She was in the theater before she married my uncle.”

“Ah,” said Stanton.

“What?” said Elgin.

“Never mind. Why couldn’t you be expressive?”

“I tried to, but it didn’t feel right.” Elgin looked a little embarrassed. “It felt like showing off.”

“But dancing is partly showing off,” exclaimed Stanton.

“I know, and I just can’t do it.”

“Isn’t that ironic,” said Stanton, “if ironic is the word. I’m never sure.”

“What?”

“Well, I love dancing but I’m lousy at it. You’re good at it but you won’t do it. Is that ironic?”

“Sort of. It could be.” Elgin shrugged. “I don’t really know.”

“Yeah, me neither,” said Stanton. “So, are you done admiring yourself in the mirror?”

“I guess that’s enough,” Elgin said, striking a pose and giving himself a good last look. “For now. Why?”

“How do you feel about going out?”

“Going out? Where?”

“Not too far. I thought we could fly around a bit. Get you some exercise.”

“That sounds good to me. I feel like I could use it. I’ve been lying around doing nothing for ages.”

Stanton chuckled and led the way to the door. “I’ll clean up later,” he said as they passed the table.

~

In a relatively confined space like the anteroom, it was more natural to keep the wings folded and walk, or at most kick and glide. When they went through the door, though, they entered a wide open space. Stanton's wings automatically opened part way and began moving, correcting and maintaining his position and attitude. Elgin's wings also opened slightly, but not for the same reason. His arms came out too, and his feet spread and gripped the doorstep for balance. He froze in that position, staring across the corridor at the opposite wall. He was trying to quell a small rush of vertigo.

"Take your time," said Stanton. "We've got all day."

"It's alright. It's passing already."

"That's good. And about normal. It should be gone completely by the time we get back today."

Elgin was able to move his gaze, and he was rewarded by the impressive size of the corridor. Making sure to not move his eyes or turn his head too quickly, he took in its dimensions. It was at least ten meters to the ceiling and over fifteen to the far wall. He opened his senses and felt the shape, smiling with satisfaction when his innate sense of proportion told him that it was actually a bit over sixteen meters, making the cross section of the corridor fit the golden ratio.

Stanton was following Elgin's thoughts as they showed in his face, and he nodded with a tight smile. Here was evidence that his new employee really did have a natural eye for the work. That told him as much as all the files he'd read. Elgin was shuffling now, looking as if he wanted to get going, so Stanton said, "I think you should just push off with your legs, then we can get you stabilized once we're going."

Elgin was surprised by how quickly he caught on. Most of the flight was spent gliding, using partially opened wings to steer, with the occasional flap to keep the speed up. It wasn't long before he began

experimenting. He made slow, sweeping turns back and forth, and long undulating waves up and down. He opened his wings, grabbing lots of air to slow down, then gave a couple of sharp thrusts to get back up to speed. It wasn't perfect of course. A few times he ended up tumbling out of control and Stanton needed to intervene to stabilize him. And the one time he tried a roll, by the time he was on his back he was disoriented and flung out his wings to stop it.

Stanton tried to explain while he helped him right himself. "No one's quite sure, but the consensus is that our sense of up and down is pretty strongly ingrained from evolving in gravity, and even though we only have visual cues for that here, we still have the instinct for it."

"Okay."

"So, even though it shouldn't make any difference which way you're oriented, you still think one way is up and the other is down."

"That is definitely true."

"Until you get used to it, your brain won't process what you see as efficiently when you're upside down, so things won't look right."

"Yeah. That's what happened. I couldn't tell where I was any more."

"Exactly. You'll get used to it, though. All it takes is a bit of time. Surprisingly little time, when you think about it."

"Okay." Elgin gave a few flaps and set off again. Right side up. Stanton effortlessly matched his pace.

After another few hundred meters, Stanton gestured ahead and said, "We'll take the right fork up there."

"Okay," said Elgin. "Are we going somewhere in particular?"

"Yes. There's something I want to show you."

"Oh, yeah? What?"

"You'll see."

“Secret, eh?”

“I want you to get the full effect of it when you first see it. I don’t want to spoil it by talking about it too much.”

“Oh,” said Elgin, more curious than ever. “Is it something you built? Some engineering feat?”

“You’ll see.” He led Elgin around the corner and slowed down. They both drifted to a near stop while Elgin tried to take in what he was seeing. At first he couldn’t grasp the scale of it. He could see that it appeared to be a sphere made of ice, and he could tell that it was big, but for a few seconds he was not able to see how big. Finally the cues began to register. He could roughly estimate the size of the chamber containing the sphere by comparing it to the size of their corridor, and he could see the mouth of another corridor in one of the chamber’s walls. “Is that thing a hundred meters across?”

“Yes it is,” said Stanton, sounding pleased.

Elgin could see right through it and out the other side, so the ice was remarkably clear, but by the nature of the refraction he could tell that it wasn’t solid. “You built a big hollow sphere of ice? Why?”

“It wasn’t just me,” insisted Stanton. “There were a few of us working on it.”

“But it was your idea, right? And most of the engineering was your work?”

“Well, yes.” Stanton was getting uncomfortable. “But that’s not why I brought you here.” He moved toward the sphere. “Let me take you inside.” Elgin caught up and they cruised partway around the outside until they came to the entrance. Stanton stopped and bowed Elgin in, following close behind.

It was even more impressive inside. Looking straight across, you couldn’t see the far wall. The ice was too clear and the angle of

incidence too close to ninety degrees. Once your line of sight moved off the perpendicular though, there was a steady progression of increasingly distorted images, until they disappeared and were replaced by reflections.

“Stay here,” Stanton said as he headed across. “No. Right up against the wall. Good. Don’t move.” He turned and flew quickly to the opposite side, where he put his head close to that wall. Elgin heard something that sounded like whispering. “Elgin,” it said, “can you hear me?”

Elgin looked around but he couldn’t tell where it was coming from, although it sounded as if it was right there beside him. “Stanton?” he said.

“Yes. Can you understand me?”

“Yes. Can you hear me too?”

“Whisper instead. It works better.”

“Okay. Like this?”

“That’s it. So, what do you think?”

“It’s fantastic. You’ve built the largest ice whispering gallery ever made. I’ll bet people have a lot of fun here.”

“They do. Meet me in the middle.” He pushed away from his wall and Elgin followed suit. He was waiting at the center when the younger man arrived. “Okay,” he said, “tell me what you think.”

“Like I said, it’s fantastic.”

“No. As an engineer.”

“Oh.” Elgin felt trapped. He looked everywhere except into the senior engineer’s eyes.

“Don’t worry, Elgin. I know where the flaws are. You’re not going to hurt my feelings.” Stanton put a hand on his shoulder. “I need to know how good your special talent is, what you can see in something I’m

intimately familiar with.” He patted the shoulder. “This is a test, Elgin.”

“Okay,” said Elgin. He didn’t have to take any time to look at it. Anything he might have missed when he first saw it, he picked up when they entered. “There’s only one thing. The entrance.”

“Only one?”

“Right.”

“Are you sure?”

Elgin looked at him. “It’s not a question of being sure or not. Once I know, I just know.” He shrugged. “I’m sorry.”

Stanton nodded and clapped the shoulder. He was smiling. “Don’t be sorry. Tell me what’s wrong with the entrance.”

“It’s not very, uh, mathematical. I mean, I could do the math if I had to, but it hits me more physically at first.”

“Just give it to me however it is. We can do the math later.”

“Okay.” Elgin brought his hands up and used them to indicate the roundness of the sphere. “The walls flow smoothly. Their lines are all even, very well arranged. But there’s a kink at the entrance. There’s a knot in the lines there.”

“A knot?”

“Yes. The stress lines are very smooth and symmetrical everywhere else, but at the entrance the flow is disrupted.”

“The flow,” Stanton mused. “You know, I’ve always known there was something wrong with the entrance.”

“It’s nothing serious. It’s structurally fine.”

“I know. I wouldn’t let people use it otherwise. But that entrance has always bothered me, and now I know why. It doesn’t flow.” He grinned at Elgin.

“It’s not a problem. People can still use it.”

“Yes, they can. But it will niggle at me.” He frowned at the offending portal. “We’ve got to fix it,” he said, looking at his young companion. “What would you recommend?”

Elgin frowned at it, turned and looked at the opposite wall. “It’s not attached to anything, is it?”

“No. Floating free. Kept from wandering by jets of air.”

“It’s a nice effect.”

“That was the idea, to emphasize the ‘ballness’ of it.”

“I’m sorry,” said Elgin, “but I think it can only be fixed by anchoring it.”

Stanton nodded. “I kind of thought that. It’s too bad, but it’s probably for the best. It’s pretty high maintenance the way it is now.” He pointed by tipping his head, and Elgin noticed that the wing top on the same side joined in the motion. He found that fascinating, but his boss was talking. “We might as well anchor it right there and incorporate the doorway into it, eh?”

“Yes, but,” Elgin tipped his head at the other wall, and he tried moving his wing too, “we should replicate it over there. That way the lines can flow more symmetrically.”

“Well, the lines must flow.”

“Yes, and it’s probably prudent to have a second exit, too.”

“That’s a good point.” Stanton clapped his hands. “But tomorrow is soon enough for that. Right now I want to show you why I really brought you here.”

“You had an even more ulterior motive?”

“Yes, Elgin, I brought you here to exercise,” he said, sweeping his arm at the abundance of space. “There’s plenty of room for all the mistakes you want to make in here.”

“I can see that.” Elgin spread his wings and used them to rotate, taking it in. “Are there any particular exercises I should be doing?”

“Not at all. Just fly around. Try things out.”

And that’s what he did. A few powerful thrusts propelled him toward the far wall and he was able to turn before running into it, although awkwardly. He skimmed around the inside of the curve, fine tuning his directional controls, until he came to the opening. There he turned as hard as he could to head back to the center, where Stanton still waited, watching him. With some strong backthrusts, he came to a stop in front of his friend, with only a little adjustment necessary to find the correct position. “That can use some work,” he said.

“Not much, though,” said Stanton. “I told you you’re a natural, and I was right.”

“Like a dancer,” laughed Elgin, flapping away to enjoy some more of this experience. He tried everything he could think of. He saw how fast he could go. How quickly he could stop. How tight a turn could be. He tried the air in every quadrant of the sphere. At one point he cruised by Stanton on his back, ankles crossed, hands clasped behind his head. That earned him a grin and a smack with a wing.

It was after he executed his third Immelmann turn, doing it just about as well as he could without the help of gravity, that he began to feel the effects of all the strenuous activity. He was getting tired and sore in muscles he didn’t recall ever noticing before. He pulled up to Stanton, puffing a little.

“I was wondering how long you could keep it up.”

“That feels very strange. I’m tired where I’ve never been tired before.” He gently rotated his wings joints, wincing slightly.

“If it makes you feel any better, I’ve never seen anyone do so much or do it so well the first time.”

“Yeah, I’m a natural.” Elgin looked around. “This is a great place you built, Stanton. It’s just the sort of thing someone like me needs. Did you build it just for wakers?”

“No, it was built for something else. This is just a beneficial side effect.”

“Something else? What?”

“It’s an arena for a game we play. It’s a team sport and we have leagues and all, but everybody plays it sometime in their life, even if it’s just packs of kids in the corridors.”

“It sounds interesting. What’s it called?”

“It’s called flashball. There’s a game this evening, if you’re interested.”

“Sure, I’d love to.”

“Right, then, it’s a date. But now, let’s get back. I want to check you out. Let’s see how you held up to this.”

“I’m fine. I just got tuckered out, that’s all.” He shook his head vigorously, and smiled. “And you were right. The vertigo’s gone.”

“Good. But we have to check you out anyway. I plan on putting you to work tomorrow, and I want to be sure you’re up to it.”

“Work! I can hardly wait. But tell me more about this flashball.” They headed back engrossed in talk, Stanton illustrating it with broad arm gestures.

18.

ELGIN GOES TO WORK

True to his word, Stanton came the next day and took him to work. Elgin was up early, not having slept very well. In addition to some soreness, his anticipation and excitement kept waking him up throughout the night, and he finally got out of bed and went hunting for food. He found some leftover muffins and iceberry jam, and figured out how to make coffee. The last time he made coffee it was real, made from actual coffee beans, and there was gravity. This coffee maker worked on a different principle, not having gravity to do any of the work, but he got it. The only thing was, he didn't know how much to measure out and ended up making it too strong.

Stanton arrived as he was having his second cup, and when he tasted the coffee he said, "Whoa."

"I know," said Elgin. "I didn't know how much to put in."

"Never mind. I've never had a cup of coffee that was too strong."

"Me neither. I actually like it like this." Elgin sipped and then qualified that. "Maybe a little less strong for everyday use."

"Same here," said Stanton. "I only have two or three cups a day, but I like them to be worth it."

"I normally have four or five cups, unless I'm engrossed in work. Then I could drink a lot more and not know it."

"I know what you mean. If there's a cup by my hand I'll drink it." Stanton emptied his cup and took it over to rinse out. He held out his hand and Elgin tossed his cup over. He threw it high, naturally expecting it to travel in an arc. Stanton was accustomed to microgravity

and plucked it out of its straight trajectory. Then he surprised Elgin by tossing it back. He missed it, holding his hands too low, and it hit him in the chest. “That’s something you’re going to have to get used to, especially if you’re going to play flashball.”

“You would think I would have caught on after last night,” Elgin said. “I must have seen hundreds of passes and they all flew straight, other than the ones with spin on them.”

“It’s something else that needs experience. Catching and throwing are done automatically. You need to retrain your reflexes.”

Elgin tossed the cup back, right on target. “It’s easy if you’re thinking about it.”

“And soon enough you’ll be doing it without thinking about it.” Stanton rinsed the cups and put them away. “We all do it and we were all like you.”

“Of course.”

“In a funny way this might be easier than learning in gravity,” said Stanton. “There’s one less variable to think about.”

“Yeah, you’re right,” said Elgin. After a moment’s silence he said, “Well, weren’t you going to put me to work today?”

“I was. We should get going if you’re ready.”

“Ready and raring, boss.”

~

This time when they went out the door, Elgin’s wings automatically opened partway in preparation for flight, rather than in response to vertigo. He let his feet leave the doorstep and he hovered, waiting for Stanton to lead the way.

“Same way as last time,” said Stanton, “only we’ll take the left fork this time.” He took off and set course, tracking a few meters off the

right wall and about the same up from the floor. Elgin fell in alongside. “You’re flying well this morning,” he said.

“Thanks. I’m hardly sore at all, and it feels much more natural.”

“It is. I think it’s even better than it was at the end of yesterday’s practice.”

“Maybe there’s something to that old saying about sleeping on it.”

“There could be you know. I’ve heard that learning works better if you have a good sleep afterward.”

“It seems to have worked for me, although I wouldn’t say I had a good sleep.”

“Oh? Too much excitement yesterday? Or maybe it was too much flying. How are your muscles?”

“A bit stiff, thank you, but it wasn’t the pain. And it wasn’t the excitement of my big day, even though that flashball game was pretty good.”

“It’s an interesting game, isn’t it? Last night’s match wasn’t bad but you’ll see better.”

“It took me awhile to get what they were up to, especially since there were no goals, no obvious way to score points. But I got so I could see what they were trying to do.” Elgin chuckled. “I have no idea about the rules, though. When the referees blew their whistles I just had to shrug and move on.”

“Most of the rules are pretty obvious once you figure them out.” Stanton looked at him. “So, what disturbed your sleep then?”

“Anticipation. It’s always been this way when I’ve started something new. The night before my first day I’m lucky to get three hours sleep, in half hour chunks.”

“I know what you mean.”

They flew on for a while, thinking and taking in their surroundings.

There were quite a few people in the corridor this morning, most going in their direction and just a few in the other. Elgin smiled and nodded at yet another one and realized that most of them seemed to be greeting him. They weren't doing it so much with each other as far as he could see, just with him.

"Stanton," he said, "why are all these people looking at me? Have I got a sign on my back or something?"

Stanton laughed. "No. They can just tell that you're a new waker. They're welcoming you."

"How can they tell? Do I look different?"

"They can tell by the way you fly."

"Is it that bad?"

"No, but it's obviously not completely natural yet. You're still very deliberate about it." Stanton thought about it. "They can see that you still have to pay close attention, and that you have to consciously do your adjustments and corrections."

Elgin took a moment to observe the passersby, nodding and smiling at those who greeted him. He compared their flying to his. "I see it," he said. "You're right. They're flying without even thinking about it, and I'm still overcorrecting almost every time I do something."

"I wouldn't say it's that bad," Stanton reassured him. Then he pointed ahead at someone coming the other way. "Look at that guy." The man was moving at a moderate clip, but what surprised Elgin was that he was reading something, paying no apparent attention to his surroundings. He was making continual adjustments to his course and attitude with small movements of his nearly closed wings, all without needing to look where he was going. They watched him go by without even glancing at them, completely engrossed in what he was reading.

Stanton said, "It's all second nature to him now. He can do other things while he lets his cerebellum do the flying."

"But why doesn't he run into people? How can he tell where he's going?"

"He doesn't have to. All he needs to do is maintain a stable flight path, which he can do instinctively, and take in enough peripheral information to stay in his lane."

"There are lanes?" Elgin asked, looking for markers.

"Not officially. It's just a kind of common understanding that we all agree on." Stanton pointed out the obvious. "People going this way are on this side, and vice versa."

"Oh, right. I saw that but never thought about it."

"What's not so obvious is how we set ourselves up a certain distance from the wall and the floor."

"I wondered how you decided that. I thought it was probably just habit. It didn't occur to me that there might be more to it."

"And then we separate ourselves by speed." Stanton used his hand to indicate different levels. "Our lane is for regular travel at a moderate speed. Most people fly at this level." He pointed up. "If you want to travel faster, or you just need to pass someone, you take the upper level. It's logical for the person doing the passing to have the best view." He nodded toward the floor. "People who want to go slowly go down there."

"And that guy could tell if he was in the right place with his peripheral vision."

"Not just his vision. Your ears can tell how close to the wall you are by the way the sounds are echoing, too." Stanton fluffed up the fur on one arm. "And this is good for more than just keeping us warm."

"We can sense things with our fur?"

“Yes. An unforeseen secondary benefit.” Stanton tried to describe it with his hands. “The air,” he said, “acts differently up against the wall than it does when it’s more free. With fur, our skin can feel the difference.”

“That’s amazing,” said Elgin.

“It certainly is. So, once you get your cerebellum trained and you tune into your peripheral senses, you’ll be able to fly on automatic pilot, just like that guy.”

“That hardly seems credible right now, but I’ll take your word for it.”

“You’ll be playing flashball before long, I have no doubt.” He gestured ahead. “We go left here.”

It was a ‘tee’ intersection and the left fork was almost identical to the one they took twice the day before. It went on in unremarkable similarity for a while before Elgin started to notice things. The sounds changed, as did a vague sense of pressure differential. He asked Stanton, “Is there an opening up ahead?”

“You might say that.”

Just then it became visible far ahead. In addition to more subtle effects of sound and air pressure, the light was also brighter. It felt more active and busier. They emerged from the corridor into a vast space. There were people, maybe hundreds, everywhere and going in all directions. Elgin looked at his friend, grinning with the infectious excitement of the place. Then without realizing it he came to a complete stop, and Stanton had to pull him out of the flow of traffic. He looked his apology at them and the people just smiled and nodded. They knew what was going on.

He parked his friend in a safe place and stood by to wait. It looked as if Elgin was having what the psychologists called a synesthetic

storm. There was so much going on, so much stimulus to all his senses at once, that all of the associated synesthetic responses were activated at the same time. They were reinforcing each other in a kind of positive interference, producing a perfect wave of perceptions. It could happen to anyone in the right circumstances, and most people experienced it at least once. It was a benign effect that rarely had any dangerous side effects. For Elgin this was the perfect time and place for it to happen.

What he was seeing was not the light that was impinging on his eyes, and it was the same for his hearing and all his other senses. He was tasting the light and seeing the smells, while at the same time he could smell the breeze of people passing in the fur on his arm. But each of those sensations and episensations triggered another response, which led to another. The result was a very bright, very noisy, very everything else amalgam that was just short of painful. His brain wasn't able to present it to him as a comprehensible whole, so for now it just passed on everything as it was happening.

Gradually things began to come out of the storm. Flowing colors became people moving. A sense of a large, solid rock at his side resolved into Stanton. It got quieter and he was able to discern individual voices calling to each other. Finally the scene fell back together for him.

"Wow," he said. "Was that normal and expected too?"

"Normal in a sense, but not necessarily expected." Stanton's voice solidified reality.

"So you didn't know this was going to happen?"

"It was a possibility, but that's all."

Elgin thought about that while taking a good look at the huge chamber they were in. He found it impressive. He was pleased to see that both sides of the space, as well as the floor and ceiling were built

to the golden ratio. The long dimension looked to be about a hundred meters, with the height and width being just over sixty. That made the end walls squares.

What caught his eye now were the decorations. There were pillars, and halfway up the wall were friezes carved in bas-relief. He could make out some of the carvings and they seemed to depict events of significance from back home. Certain things from the history of their planet that were important to their lives here were engraved there. His eyes stopped at one on the far end wall, and he felt a tug when he recognized the destruction of Yellow Comet. It saddened him, but somehow it made him feel good, too.

He began to notice the use of color. Unlike the corridor where most of the colors were reflections of the people in it, or were created by glimmers from the lighting, the builders had incorporated colors by design here. They were displayed prominently in the friezes, the colors illuminating their scenes and characters with striking effect.

The other major use was in the columns that stood out from the walls, designed to look as if they were providing support. Elgin knew from his studies that they weren't. They were here strictly for show, as decoration, and it was done very effectively. The entrances, three on each long wall and one on each short wall, were framed by massive columns. Each wall had a different color, rich primary hues representing the four synesthesia comets.

Directly opposite them, on the other small wall, was rich, bright yellow, looking like the rising Sun at a distant horizon. The long wall on his left was orange. The one on his right, where most of the activity seemed to be focused, had carvings and columns that glowed as if they were made out of huge, perfect emeralds. Elgin spun around and looked at the ruby pillars that framed the entrance they had just passed

through. They were so beautiful that he could taste them. The sensation swept over his body, raising a wave of fur in its wake.

He flew close to one of them and looked deep into it. The color went right through it. The ice was flawless transparent red. Moving around the side he could see people coming and going in the entrance, their images warped by refraction and tinged deep red, but otherwise clear. He reached out and touched the ice, and its smooth coldness just multiplied its beauty.

Elgin turned to Stanton, who was quietly waiting. "This place is amazing," he said.

"Yes." said his friend. "You get used to it with time, but you never get really used to it, if you know what I mean."

"I think I do." Elgin took it all in, and found that it was just as powerful in the whole as in its parts. "What is this place, anyway?"

"We call it the Square." He held up his hand to forestall any objection Elgin might have. "I know it's not square. But we couldn't really call it the Oblong, could we?"

Elgin's first inclination was to object to the imprecise use of language. His engineer's mind didn't like it. A square and a rectangle were two distinct geometries. You might as well call a rhomboid a trapezoid. But still he approved of the name. It hearkened back to a time when village life centered around a square, where people came to get the news and do business. Green Comet was a village, really, and the Square was just what it needed.

He looked at the bustling activity. People were transiting the open space, heading for exits or the fronts of what must be places of work and business. Many of the — he didn't know what to call them so he thought of them as shops — had clusters of people at their fronts. Some appeared to be engaged in earnest conversations, but most

looked relaxed and happy, just enjoying the pleasures of company and gossip. Most of the activity was taking place within a few meters of the floor, with only a few people flying higher to get around a crowd or, as he saw once, to get down from an opening high on the wall.

“There’s so much I want to ask you,” he told Stanton.

“And I’ll tell all. But right now we might as well get to the shop.”

“That’s one of the things!” Elgin said, falling in. They were headed to the right. “Is that what these places are called?”

“That’s one word. We call our place a shop as in a workshop. Other places called shops are where people shop. They can also be called stores. Then there are offices, which we could also call our place if we wanted. Restaurants and theaters. Some of these entrances are for apartments. See those balconies?”

Elgin looked up. The balconies were like the place he’d seen the person coming down from. “It looks like everything happens here.”

“Pretty well. This is where everyone wants to be. Where everyone wants to work.” Stanton qualified it. “As a first approximation, anyway.” He responded to Elgin’s questioning expression. “Effay, everyone wants to be here, but there are always times when people want to do things quietly, away from the eyes of their friends and neighbors.”

Elgin nodded. He could understand that need, but, “Effay?”

“Oh, right,” said Stanton. “That’s a figure of speech that came into the language here. It’s short for ‘first approximation.’ I guess we found ourselves using that phrase a lot so we came up with an abbreviation.”

They were approaching the green side. Stanton appeared to be heading for the furthest of the three entrances. When they got there he stopped so Elgin could admire the emerald column as he had the ruby one. Even though everything was green instead of red, and it

evoked different feelings and flavors, he still found the sensation powerful and profound.

They carried on through and up the corridor about twenty meters, until they came to a doorway on the right. Stanton showed him in and they entered the shop together.

It was large and brightly lit. Like all the living spaces in the comet it had a high ceiling, over five meters. The room was square, about ten meters on each side. It was furnished, or littered if you were being honest, with utilitarian neglect. There were some cabinets and chairs and tables, but they had an air of being pushed aside and forgotten. There were only two areas that looked as if they saw regular use. One had a cooler, some cupboards, a sink and a coffee maker. The other dominated the center of the room. It was obviously their work table, and it appeared to be covered with work in progress. One of the high stools next to it was occupied by a lanky, bony man who looked like a bird perched there.

“Buzzard,” Stanton called.

The man didn’t respond, so Elgin asked, “Buzzard?”

Stanton chuckled. “His comet name is Bussard. And look at him.”

Elgin could see what he meant. With his long body and perched as he was, leaning over his work, he did bring a vulture to mind.

“Buzzard!” Stanton called more sharply.

The figure at the table started, straightening up and turning wide eyes on them. Elgin could tell that he saw them but it was obvious that he was barely registering it.

“Got something you need to finish there?” asked Stanton.

Bussard nodded, his eyes sliding back toward the table.

“Right, you finish up then. I’ll introduce you later.”

He swung back to his work, and Elgin thought that he probably

forgot they were there almost right away. He asked Stanton, “Is that what I’ll be doing?”

“Yes and no. You’ll be working with Buzzard. Technically he’ll be your boss,” he added. “You’ll take direction from him, but we really all work together as a team.” He indicated the whole shop. “We all do whatever needs to be done, but each to their own talents. Buzzard has the most incredible talent for detail I’ve ever seen, for instance.”

“He can certainly focus,” Elgin said.

“Yes. Sometimes I think he kills bugs by staring them to death.” Elgin could see a trace of a fond smile as Stanton was looking at Bussard. “As for you, my young friend, whatever you can bring remains to be seen. I have high hopes for you but we’ll see what happens when you start dealing with real problems.”

He took his new employee on a tour of the shop. He showed him a cabinet he could use for any personal things he might want to leave at work. There was a bathroom with a shower for those inevitable marathon projects. At the galley he said, “Don’t use Buzzard’s things,” pointing them out by the sink and in the cooler. He gave Elgin a look and there was no need to explain. Finally they came to a door. “This is my office,” he said. “If the door is open you can come in any time, but if it’s closed,” he emphasized, “then stay away from it unless the comet’s on fire.”

“Gotcha,” said Elgin. “If you don’t mind my asking,” he ventured, “what’s your talent?”

“I’m in charge,” said Stanton. “I make all the big decisions and I take all the credit.” He winked, softening it, but Elgin could tell there was a sardonic truth to it.

They heard signs of life over by the table and turned to see that Bussard had straightened up again. He appeared to be talking to him-

self. Elgin thought he heard him say, “Five times. That’s five times. Five.”

Stanton called out, “Buzzard. I see you’re done.”

The face that swivelled atop the long, curving neck was wearing a delighted smile. “That’s five, boss. All five. All good.”

“That’s good. Come on over here. I want you to meet your new partner.” As improbable as it seemed, looking at his long, gangly body, Bussard was a graceful flyer. He turned his upper body in their direction and gave a single half-flap of his wings. The rest of his body followed as if he was towing a banner. When he arrived it felt as if they had to wait awhile for all of him to get there. That unconscious comfort in his body and the open, happy look on his face immediately won Elgin over.

“Buzzard, you remember me telling you about Elgin. Well, here he is at last, eager to get to work.”

Bussard stuck out his hand. “Elgin. Knows when it’s right. When it’s wrong. Right or wrong.” His handshake was light but firm.

“Pleased to meet you, Bussard,” said Elgin.

“Buzzard. Boss calls me Buzzard. That’s my work name.”

“Okay, Buzzard. Stanton tells me that you’re good with details.”

“Good with details.” Buzzard nodded, preening a little.

“Did I hear right? Did you just do something for the fifth time?”

“Five times. All right. All five.”

Stanton interjected. “That’s Buzzard’s baseline. If it comes out right five times he gives it a conditional pass.”

“That’s right. Five times, conditional pass. Ten times if it’s important. If Boss, Stanton, Boss says it’s important.”

Elgin was impressed. “I admire your focus, Buzzard. I’m glad I’ll be working with you.”

“Glad I’ll be working with you too, Elgin. Knows if it’s right or wrong. Elgin.” He looked at Stanton. “Boss says Elgin is good, so we’ll see.”

Elgin and Stanton exchanged sheepish smiles. Elgin could see that working with Buzzard was going to be interesting, to say the least. But he had no doubt that he was a good engineer, or Stanton wouldn’t have him here.

“Okay, Buzzard, I’ve got some work to do. You show the new recruit around.” Stanton went to his office, but he left the door open.

Buzzard completed the tour that Stanton had begun. Elgin had already been around the outside and now he got a look at the work table, obviously the most important part of the room and definitely the most interesting. It was oblong, about five meters by three. The sides had drawers and shelves and slots, punctuated by kneeholes. The top, barely visible now under sheets of permapaper, had sections that could be tilted for drawing on, and the whole thing could be lighted from underneath.

Elgin learned where his tools would be. “Those are yours. You can use any of those,” said Buzzard. “These are mine. I use these. Only me.” He was standing protectively, as if he was shielding them. He had an anxious look on his face, but also apologetic, as if he knew he looked unreasonable.

“I understand,” said Elgin. He looked right into his new work-mate’s eyes, made real contact. “I understand.” He saw Buzzard relax, the look of simple delight returning to its accustomed place. “Say,” he said, “is that a Sharpright?”

Buzzard snatched it up and held it out for Elgin to see. “Sharpright,” he said. “Best pen for the job.”

Elgin recognized the company slogan, just as he remembered the

drafting pen, even though it was eighty years and more since he had seen either one. “May I?” he asked, holding out his hand. When Buzzard hesitated he said, “Never mind.”

Buzzard struggled for a moment, then gravely extended his pen. “It’s okay. Elgin understands.”

Elgin took the pen, hefted it, felt its mass and familiar contours. Handing it back he said, “That’s a good pen, Buzzard.”

“Best pen for the job,” said Buzzard, almost snatching it back. He examined it closely then, satisfied, clipped it securely to the desk at his workstation. His glance showed Elgin both challenge and apology. When he saw no censure or disappointment in Elgin’s face he continued staring for a long moment to be sure, then smiled. “It’s okay,” he said firmly. “Elgin understands.”

He finished by showing Elgin what they were working on. All the bits and pieces of different projects scattered over the desk top, waiting at various stages of completion for Buzzard’s penetrating attention. When they were done their circuit of the table he asked, “What’s wrong? What’s not right?” He was plainly struggling to get the right words. “Right and wrong. Elgin knows.” He trailed off, forcibly stopped himself, although his mouth kept moving.

“Well, it’s not quite that simple,” said Elgin, then hurried to add when Buzzard’s face fell, “but there was one thing that I noticed.” He flew across to the other side of the table and picked up a piece of paper half-covered in precise and very neat script. “I happened to look at it and it stood out.”

“What’s wrong? What?”

“There’s nothing really wrong with it,” said Elgin. “It’s just that it’s,” he searched for the right word while Buzzard watched him with a good imitation of his namesake, “incomplete.”

Buzzard's face lit up. "Yes. Incomplete. Not completed. Not done." He went on to explain how this was a first estimate on the problem of lateral shear forces in the contact area where the two comets would be joined. They didn't have all the data they needed yet because the surveys of the structure and properties of the materials in the contact zones weren't completed. "Incomplete," he said. "Effay."

It took Elgin a second, then he remembered. "Oh, right. First approximation."

"Effay," said Buzzard. "Effay." He nodded to himself for a while, then said, "Elgin knows. Right and wrong." It left Elgin with a sense of gratitude and relief, as if he'd passed a test.

"But it's only because that piece of paper happened to catch my eye," he told Buzzard. "If I hadn't looked at it then I wouldn't have known anything was wrong with it."

"Maybe. Could be. Maybe it caught your eye because it was wrong."

Elgin laughed. "I don't think so. It's not magic."

"How do you know?" asked Buzzard with a sly look.

"Come on, Buzzard. I promise you it's not magic. It's just the way my brain works."

"Then why that piece. Why not another piece? Why that one?"

"There were other ones," Elgin stressed. "Plenty of other pieces caught my eye. That was the only one that didn't look right."

Buzzard mulled it over, his eyes roving over the table. Elgin waited patiently while he sorted it all out. Finally he looked up, the delighted smile back in place. "It's good," he said. "All good. Elgin knows, but it's not magic. Not magic."

"Yeah," said Elgin. He looked around, ready to get on, but Buzzard stopped him.

“My brain’s not magic either,” he said. “Not magic. Just the way it works.”

“How do you know?” asked Elgin with a mischievous smile.

Buzzard peered at him, then started to laugh. Elgin laughed with him, realizing that he was relieved to find he had a sense of humor. Then he was embarrassed to have worried about it. Because Buzzard acted a little strangely and, yes, looked strange too, Elgin found himself ready to think he wouldn’t be normal in other ways. That galled him, and he chastised himself for it. He swore a silent oath that he would never allow himself to condescend to this man again.

“What’s wrong Elgin?” asked Buzzard. “Right and wrong Elgin.”

“Nothing’s wrong Buzzard. I was just realizing, thanks to you, that neither of us has a magic brain.”

“Not magic,” affirmed Buzzard. “Just the way they work. They work.”

“They sure do. Speaking of which, do you mind if I look at what you were working on when we came in?”

“Sure,” Buzzard said, flying back over the table to get it and turning back without stopping. He was handing the paper to Elgin almost before his feet made the turn on the other side, or so it seemed. “All five. All good. Nothing wrong.”

Elgin’s first glance confirmed that, but he wasn’t looking for errors. He was quite sure there wouldn’t be any. This was the first thing he’d seen Buzzard doing and he wanted to have a good look at it. He let himself into the dense patterns of perfect script and wandered there for a while, Buzzard waiting patiently.

Normally when Elgin saw good calculations or accurate drawings he felt it in his body as well as just knowing it. His joints aligned themselves and his innards nested comfortably with each other. The

immaculate detail and precision of Buzzard's work took him beyond that. The symmetries that he sensed in this piece of engineering reached deeper into his body than usual, almost down to the level of his cells. He felt the stress lines, no, the lines of energy flowing smoothly through him. It felt as if his insides were having a nice refreshing shower.

He surfaced and looked at Buzzard. "That was wonderful," he said. "Thank you."

"All good?"

"Definitely all good. Maybe the best all good I've ever seen."

Buzzard grinned his delighted grin. "Elgin knows," he affirmed. "All good."

"Yes," agreed Elgin, "and no magic required."

"No magic brains," said Buzzard, and they both had a good laugh at their new inside joke.

Beyond the open door to his office, Stanton listened to the easy laughter and smiled with gratification.

19.

ELGIN PLAYS FLASHBALL

Elgin's first day of work was very productive, even if it was pretty much more of the same thing. Buzzard was checking the work assigned by Stanton to the main crew of engineers, who worked in another office. "The pencil pool. Stanton calls them the pencil pool," said Buzzard. "Good engineers. Good engineers. No surprises."

Elgin could see that in the papers he was examining. The work was good, neat and complete, but uninteresting. There was nothing that could be called daring. "Pretty reliable then?"

"Very reliable. Very dependable. Predictable," Buzzard said, nodding. "Except one. One's not predictable."

"Oh?" said Elgin, looking at the papers. "Who?"

"Not here." Buzzard seesawed a hand, a dubious look on his face. "Nothing lately. Comes and goes."

"Unreliable?" Elgin was shocked. To him the goal of an engineer was to be accurate and consistent. The idea of being anything less left him indignant.

"Me too," said Buzzard. "Bad work. Bad engineer." He had a stern, disapproving look on his face. "But Stanton wants him. Says, 'I want him to surprise me. I know he's wrong most of the time, but once in a while he's surprisingly right.'"

Elgin said, "Ah, I see."

"You see? You get it? You see?"

"Yes, I think." Buzzard was looking at him sceptically, but also hopefully, as if Elgin might be able to make him see. He tried. "He's

got a whole crew that can churn things out for him. And he's got you to scrutinize their work." Buzzard nodded. That's exactly how things should be. "Everything will get done this way. That's covered. So he can afford to have one wild card."

Buzzard scowled, trying to get it, then shook his head emphatically. "Mistakes," he said. "Mistakes. Mistakes."

"But he's got you to catch those, and he's got the gamble that he'll get that one beautiful surprise."

Buzzard scowled some more. He tried hard, but just couldn't see past the bad work. He shrugged at Elgin, looking defeated, as if accepting that some things were forever beyond him.

"Don't feel bad, Buzzard."

"Don't feel bad. Stanton wants him. Boss Stanton."

"Yeah. He's the boss. He's got his reasons, right?"

"Elgin gets it. Elgin knows." Buzzard had to settle for pragmatism. "It's best. Best."

"If it will help, I'll check the guy's work and pass it straight to Stanton." He could at least remove the irritant.

"No. My job." Buzzard looked resigned but proud. "My responsibility."

"Okay." They went back to work. Elgin was scanning submissions and separating them into a good pile and a bad pile. Buzzard was checking papers too, but he was concentrating on the ones from Elgin. The bad pile he put aside for later and the good ones he subjected to his penetrating analysis. He muttered, "We'll see. Now we'll see."

It didn't take Elgin very long to work through what was there. The only thing that slowed him down was finding out that he could get tired if he did too many in a row. He discovered the problem when he

found himself looking at a paper and thinking it was blank. “Buzzard,” he said, “here’s a blank one.”

Buzzard glanced at it. “Not blank. It’s not blank,” he said and went back to work.

Surprised, Elgin looked again and found he was right. But when he tried to parse it, it went blank again. Some experimentation showed him that it wasn’t the paper, it was his mind. That’s when he realized that it was a symptom of fatigue. Now that he noticed it, he could feel something like a ghostly cramp in the area that he associated with his talent. He stuck the paper to the table, peeled off the stool and flew over to the galley.

He made some coffee, put a cup next to Buzzard, who grunted acknowledgement, and cruised around the room sipping at his. There wasn’t much to look at so he found himself covertly watching Buzzard, who was assessing his work. He realized that he was feeling a bit anxious about it. He had grown up with his talent, maturing in concert with it, and almost took it for granted. He never questioned its assertions, simply accepting them. But now, with Buzzard subjecting his work to an unprecedented level of scrutiny, he felt a bit insecure.

Finally Buzzard put the paper aside. “All done,” he said, and Elgin’s heart skipped. “All five.” Elgin held his breath. “All good.” Elgin sighed in relief. Buzzard looked at him and said, “Elgin knows.” Then he took the five papers he had examined five times apiece, papers that Elgin had already passed as good, and put them on the pile that would go to Stanton. To Elgin’s intense pleasure he then took the rest of Elgin’s good pile and added them directly to the Stanton pile. He was pronouncing that Elgin’s judgement was adequate. He grinned at Elgin. “Elgin knows.” he said.

That took care of that. As far as Buzzard was concerned, he had

carried out Stanton's instructions. Elgin's talent was the real thing and could be trusted. Now he could get back to his regular work.

When Buzzard started in on his pile of papers Elgin flew over and offered to help out by taking some. He didn't have much left himself and thought they could speed things up if they evened out the load. Buzzard turned him down. "My job," he said. "My responsibility."

Elgin went back to his little pile and was pleased to find that he could see them again. His talent, whatever it was, seemed to be rested enough. He had no further problems with what remained and soon had everything separated into two piles. He still put them down for Buzzard's attention. He didn't feel it was his place yet to put them straight onto Stanton's stacks.

He must have done something that communicated his restiveness right through the shell of concentration surrounding Buzzard, because the lanky body straightened up and he was treated to a deep scowl. Buzzard said, "You have to find something to do. Find something to do." He waved at the papers still covering the table. "Read those. Read them all." And as he descended back into his work he said, "Figure out what we're doing. What we're doing."

That was something Elgin could do gladly. He'd had a quick look at some of it earlier, but then they'd got into the submissions from the pencil pool. He smiled at the image of a pencil pool, complete with a sprightly sound track, as he browsed the scattered papers hoping for something to catch his eye.

He wasn't sure how much later it was when Buzzard's voice brought him back to the present. It was saying something about lunch and his stomach was growling its emphatic agreement, but he had no idea what time it was or how long he'd been lost in the fascinating plan taking shape here.

Bringing two comets together, one sixty kilometres in diameter and roughly spherical, the other forty and less so, and fusing them into one was a fantastic idea. The papers on this table were taking the idea and distilling it into numbers. They broke an awesome concept into manageable parts, showed how the parts would each be executed, and how the parts would work together.

Elgin's mind was right inside the contact zone when Buzzard spoke. He could see the materials of the two comets being processed into the structural elements that would bind them together, while they were slowly inched together, closing the resulting gap. It was a grand and beautiful symphony of the many smaller parts evolving in unison. Not only had he figured out what they were doing, as ordered, he was able to visualize it in realistic detail.

"Did you figure out what we're doing? What we're doing?" asked Buzzard, pulling him toward the door. "Time for lunch," he said. "Past time. Way past."

Elgin didn't say much. He just let himself be pulled along while he negotiated his way back to this reality.

~

The second day was completely different. Working together Elgin and Buzzard had made short work of it the first day, and there weren't enough new papers coming in to justify hanging around the shop. They left Stanton grumbling about paperwork and set off for the flashball arena.

Once there they flew around the outside of the big ball, Elgin gesticulating as he tried to explain. "The stress lines, you see? They're broken by the opening." He tried to indicate it with sweeping gestures.

Buzzard wasn't seeing any lines. All he saw was the big beautiful

ice stadium that was designed by his boss. “Stanton’s work,” he said. “Stanton.”

“I know,” said Elgin. “Stanton saw the lines. He said he wants me to fix it.”

“Yes. He told me. ‘Let Elgin fix the ball. See how he does.’” Buzzard didn’t look happy about it, but if that’s what his boss wanted then it would be done.

Even though he couldn’t see the lines or sense where they were broken, Buzzard could understand it. He could see how the form had to be smoothly transferred from the spherical shell of the ball to the struts that would anchor it to the walls. Once he saw that he was able to help Elgin visualize a plan.

They flew all around the ball, outside and in, taking measurements and trying to imagine what it would look like when it was done. Elgin was at the very center of the sphere, slowly turning, fixing the picture in his mind. While he was occupied, Buzzard entertained himself by pretending he was playing flashball. He swooped and soared in all parts of the space, pantomiming catching and throwing the ball. The graceful flow of his long, willowy body made it look more like art than sport. His usual intense concentration had him so focused that it was a few minutes before he was aware that Elgin was watching him. He stopped immediately, flustered.

“Don’t stop on my account. That was great.” Elgin was sorry to have embarrassed his friend. “Did you ever play flashball?”

“No. No good. Too gawky.” Buzzard’s mind seemed to go inwards to his memories. “You’re too gawky. You can’t play.”

“You’re not gawky at all. You’re very graceful. Who told you that?”

“Everybody. Kids. Other kids. ‘You can’t play with us.’” Buzzard looked really glum. “Father.”

“Well they were wrong, Buzzard. I don’t know. Maybe you were clumsy as a child or something, but you’re a natural flyer now.”

“Too late now. Too late.”

“I don’t know about that.” Elgin moved toward the exit and they headed out. “Stanton says I should play flashball. What do you think about that?”

“Stanton said it. What do you think?”

And Elgin knew. He knew Stanton was right. He had known the first time he heard it, but it was too personal for that. If it had been about anything else his instinct would have expressed itself, but it didn’t work that way when it was about him. Only by talking about it in this removed way could his senses do their usual thing. “I think I should look into it,” he said.

“You’re going to play flashball?”

“I’ll give it a try and see what happens.”

“But you’re still,” Buzzard looked at him, at the way he was flying, and finished gently, “learning. You’re just learning.”

Elgin laughed. “You mean I fly like a fish walks?”

“No,” said Buzzard. “Fish don’t walk. Most fish. Some fish walk. Not really walking.” Then he saw Elgin grinning at him. “Oh, I get it. Fly like a fish walks. Fish walks.” He got that delightful smile that Elgin would come to love and he let loose a satisfying laugh.

“So, how about it?” Elgin asked. “If a flying fish like me can do it, do you think you might give it a try?”

They’d left the ball and were entering the corridor for the flight back to the shop. Buzzard didn’t speak for a long time, then he finally said, “Talk to Stanton. I’ll ask Stanton about it. Ask Stanton.” He was quiet the rest of the way back.

When they got there Stanton’s door was closed. Buzzard looked

really disappointed and made two aimless circuits of the room before settling on his stool. He grabbed some papers and picked up his Sharpbright. He was just beginning to work on them when Elgin got to the table with coffees.

Leaving one for Buzzard, Elgin took the other around to his place. He checked some slots and opened a few doors and drawers before he found some blank permapaper. He spent the rest of the day working up the plans for the alterations to the ball. He barely registered it when Buzzard went into Stanton's office, and again when he came out. But there was no ignoring him for long. He was fitfully flying from place to place, and Elgin could feel him looking. He lifted his head and said, "How'd it go?"

Buzzard let it come bubbling out. "I'm going to try it. Try it out. 'Give it a try, Buzzard. You might like it.'" He swooped around the room with his trademark sinuosity. "Try it out."

"That's great. We'll go together. Maybe we can be on the same team."

"Go together. Same team." Buzzard caught and relayed an imaginary flashball. "Go tonight."

Elgin was just getting back into his work when he caught that. "Tonight?" he asked.

"Go tonight. After work." Buzzard grinned, sharing the excitement. "Stanton is setting it up. Old friend." He swung back into his game.

Tonight. That seemed a little sudden, but it didn't take Elgin long to get used to the idea. If you're going to do it you might as well do it, he thought. He watched his friend, smiling at his antics, then he went back to the plans.

It took him most of the rest of the day to put together a first draft. As he finished each part he handed it to Buzzard for his scrutiny.

Buzzard was surprised at first that he wouldn't want to give it straight to Stanton. "You're not in the pencil pool," he said.

"No, but I want it to be good and it's harder for me to tell when it's my own work. And I know you'll spot anything I miss."

So Buzzard took the papers and looked them over. "But only twice. Not five times. Twice." He put the papers in a neat stack and took the top one. "Not in the pencil pool."

They worked together this way, not saying much but cementing their young friendship. Each one was lucky enough to respect the other's ability, and to see it as an asset rather than a threat. Stanton, standing quietly in his doorway, was deeply gratified to see their natural interaction. Two young men who seemed so different superficially. One very much the ideal in his form; an athletic mesomorph, very close to the norm in most measures, slightly better where it mattered. The other very far from the norm; an ectomorph whose dimensions were far from average, who could easily be dismissed for his appearance and for his behavior. Looked at in one way they would seem to be incompatible, to have nothing in common. But when they were put together they hit it off right away. Stanton congratulated himself for his lucky hunch.

Just before the end of the day Elgin finished. He added the last paper to Buzzard's stack and launched himself for a little fly around the room to get the kinks out. He saw Buzzard straighten his stack unconsciously without breaking his concentration, while continuing to check the work. Elgin decided it would be a while and because he didn't want to hover he began to practice what he imagined would be flashball moves.

It was quite a while, or it seemed it anyway. Elgin tried to be casual, finding things to do while he waited, but he found himself glancing in

Buzzard's direction every minute or so. When his friend finally sat up and said, "Both done. All done," he was over there right away.

"How is it?" he asked.

"All done," said Buzzard. "All good."

"All good? Good enough?"

"All good. Effay."

"Ah, right," said Elgin. "Effay. So it's not perfect, but good enough for a first draft?"

"Good enough. Show the boss." Buzzard flew over to the galley. Over his shoulder he called, "Flashball practice pretty soon."

"Oh, right. Flashball." They had less than an hour. He scooped up the papers, noting that Buzzard had kept them in perfect order, and headed for Stanton's office. He found the door open but didn't feel that comfortable yet, so he stood in the entrance and rapped for attention.

"Come in. The door's open," called Stanton, and Elgin ventured inside.

"I've got the drawings for the flashball court," he said. Stanton was behind a desk, facing the door, so Elgin kicked and drifted over. It was a large office, a good ten meters square, and of course the ceiling was high. Looking around, Elgin noticed that it was quite bare. There were no pictures or other decorations on the walls, no furniture other than the desk on the floor. On the desk, besides papers and the tools and equipment he needed to do his job, Stanton had one object that wasn't strictly utilitarian. It looked like a pale yellow blown glass sphere. Elgin wondered if it was meant to represent the large ice sphere he was working on. That gave him a little chill of worry. If Stanton thought so highly of his creation that he honored it this way, maybe Elgin was being cavalier in wanting to alter it.

“How did it turn out?” Stanton asked, reaching to take the papers.

“Pretty well I think.” Elgin handed them over, then just hovered where he was since there wasn’t anywhere to sit.

“Did you get Buzzard to look at it?”

“Yes. Definitely.”

“Good. What did he have to say?”

““Good enough,”” said Elgin with a smile.

“Good enough for what?”

“Good enough considering it’s a first draft, I think.”

“Alright. I’ll look at these later, when I can do them justice.” He put the papers on his desk. “For now, why don’t you give me the gist of it? Paint me a picture.”

“Okay,” said Elgin, and he began to describe the changes that would be made. Currently it was a hollow sphere with a half meter thick shell of ice. It was one hundred meters in diameter and had one hole three meters across where the players could get in and out. The plan was to attach the sphere to the walls of the gallery with two hollow tubes of ice, one at the present entrance and another directly opposite. The joints between the ball and the struts would be curved, smoothly transitioning from one to the other.

As well as being anchors, the tubes would be the access points for the players. They would be twenty-five meters long and fifteen wide, larger than they needed to be for passage, but big enough that they wouldn’t clash with the size of the ball. The tubes were to have two lenticular shaped openings each, in their sides near the gallery walls. Their shape allowed the lines of stress to flow smoothly and they permitted access to the interior of the tube. From there the players would fly the length of the passage to a small door in the wall of

the ball. From the outside it looked as if the sphere curved into the tube, but inside it was obvious that it was continuous.

Elgin stopped sculpting the air with his hands to say, "With two entrances the teams could enter the ball from opposite sides."

"No," said Stanton. "It's a good idea but it would conflict with the ethos of the game."

"Oh?" said Elgin. That hadn't occurred to him. He was just thinking that having opposite entrances would be symbolic of the competition.

"Yes. This just kind of happened and now it's almost like a tradition. The teams always enter and exit together. It's a sort of a comradely good sport thing."

"Oh," said Elgin. "Okay. That'll save us having to make openings in one strut, anyway."

"No," said Stanton, "leave them in. It's good to have two exits, remember?"

"Right, of course." Elgin smiled wryly. "Man, sometimes you get so involved in the details that you forget what you're doing."

"Do tell."

"So the teams always enter and leave together. That's like," Elgin paused, "it's like they're really one team. Kind of."

"I never thought of it quite like that," said Stanton, "but I can see what you mean."

"I mean they're competing against each other during the game." Elgin demonstrated with his hands. "But it's kind of like they're competing together, too." He clasped them. "If you know what I mean."

"I do get the idea," said Stanton, "but I'll have to think about it." Stanton began ushering him toward the door. "I'll have a look at the

plans and I'll let you know what I think tomorrow." He pushed him through the opening. "Don't you have flashball practice?"

"Flashball practice!" He turned to go. "Wait. Where?"

"In the ball," his boss said, smirking. "There's usually an audience."

"An audience? Wait. An audience? At a practice?"

"Yes," said Stanton as he closed the door. "It's a very popular sport."

Elgin felt panicky. He was barely ready to try the game. He knew he still flew clumsily and he wasn't sure they would even want him on their team. They were probably just giving him a tryout as a favor to Stanton anyway. He was willing to go out and make a fool of himself because his boss thought it was a good idea, but in front of an audience?

The idea bothered him, but not enough to change his plans. It faded as he was flying back to the ball and he didn't think about it again until he entered the gallery and saw several hundred people milling about. That made him nervous again and he was very self-conscious as he went past them toward the entrance. But then Buzzard called his name and he saw him protruding from the opening, grinning and waving come on.

That helped a lot. Now he felt more like he belonged here and he flew the rest of the way with more of a sense of purpose. Buzzard kept encouraging him all the way into the ball, then turned and led him toward a knot of people about ten meters in. They turned as Elgin approached and stared openly at him.

"This is Elgin," Buzzard announced as they approached. "Elgin." He reached out and pulled him forward. "Told you about him. Said he was coming. Elgin." He turned toward one of them. "Rita," he said.

“Captain Rita. Coach Rita.” Then he indicated the man next to her. “Lewis. This is Lewis.” Buzzard gave Elgin a glance. “Lewis and Rita. Rita and Lewis.” Somehow Elgin understood that there was a connection between them. “Don’t know the rest yet. Don’t know.”

“There’s plenty of time for introductions later,” said Rita, offering her hand. “Nice to meet you, Elgin.” Lewis also came forward and shook his hand, and Elgin exchanged nods with the rest. “Stanton’s told me a bit about you,” said Rita. “I understand you’re a new waker?”

“Yes,” said Elgin. “Completely new.”

“Well, don’t worry,” she said, “we’ll take it easy on you at first. Before you know it you’ll almost be keeping up with the rest of us.”

“Thank you,” said Elgin, looking at the rest of the team doing drills in the middle of the ball. They weren’t even going at it hard and he couldn’t imagine keeping up with them, even almost.

“Okay,” she said, “welcome to the Harriers. Now let’s get to work.” She clapped her hands. “We’ve only got the ball for an hour so get out there and show me what you’ve got.”

Elgin was going to ask what he was supposed to do, but Buzzard grabbed him and dragged him out there. “Come on,” he said. “We just copy what they’re doing. Just copy.”

Elgin was the worst flyer there. That didn’t surprise him, but the degree of his badness did. He had thought he was beginning to get the hang of it, but being out here with people who really could fly disabused him of that conceit. Compared to him even Buzzard, gawky as he was supposed to be, looked good. He couldn’t keep up in the sprints, made a flapping mess of the turns, missed nearly every ball that was thrown to him and couldn’t hit a stationary target, much less a moving one.

He spent the entire hour trying to catch up. This was supposed to be taking it easy on him? He was tired well before it was over, out of breath soon after it started. But every time he messed up he set his jaw and threw himself back into it, except when he wasn't able to because he was laughing at himself. Captain Rita smiled. Stanton was right about this Elgin.

When it was finally over they all gathered around her for her appraisal. "That was pretty good," she said. "You're finally coming together as a team." Everyone was catching their breath so they just listened. Everyone except Elgin. He didn't know if he would ever catch his breath again. He was panting. If there were gravity he would be bent over with his hands on his knees. She said to him, "Elgin, I was particularly impressed by you today." He wasn't able to reply so he looked at her, dumbfounded. "You're obviously not as good as the rest of us," she said with a wink. That brought some laughter from his teammates and a rueful smile from him. "But I admired your effort and the way you stuck with it." There was a solid chorus of agreement to that. Elgin nodded and weakly waved a hand.

Rita then turned to Buzzard. "When I first saw you," she said, "I wasn't too sure why Stanton sent you over here." Buzzard was listening with his trademark focus. "Elgin, sure. He may be a new waker but he has a flyer's physique. But you're built all wrong. You can't make any of the tight turns that we need in this game." Buzzard's face was starting to fall. "But watching you work out, I see what Stanton must be thinking. You're so smooth. You flow as much as you fly. I'm already thinking about how we can use that." She looked at both of them and nodded to the rest of the team. "We have two new members, Buzzard and Elgin." There was a murmur of welcome and some applause.

As they were breaking up she fell in with the two of them. "So,"

she said, “what’s this I hear about you changing the ball?” While they flew out of there, Elgin and Buzzard tried to explain. Elgin had almost caught his breath by then, but Buzzard got too impatient and kept interrupting. He even got in on the hand waving, trying to explain the lines of stress.

20.

ELGIN FIXES THE BALL

Elgin worked full time on the ball after that. It was his first big project where he was in charge. Of course Stanton was still his boss, but he made it clear that he wouldn't interfere. He told Elgin that he would like occasional progress reports, but that he didn't want to hear about any problems. "This is your project, Elgin. Success or failure, you take full credit." Stanton gave him a wicked smile. "Try not to disappoint the players, or the fans."

That gave Elgin a chill. Up to that point it had been an engineering problem, to be solved with applied mathematics. Now, suddenly, it involved ten thousand people and their feelings about their beautiful flashball arena. He swallowed. Then he nodded. "You got it boss." He made a decision and a promise. "Three weeks. It'll be done in three weeks, with no more than two days of down time."

"Don't make any promises you can't keep."

Elgin sensed that Stanton was offering him some advice. "Right," he said. "Four weeks and four days."

"That's better. People will forgive you if you finish early, but they'll never forget if you finish late." Stanton was satisfied, and moved on to the next topic. "Now, you're going to need a couple of assistants. I can recommend some if you'd like."

"Yes please," Elgin said. So Stanton lined them up and made arrangements for them to come over. There was no problem. They simply put what they were doing on hold and came the same day. It was the same with the people who would be fabricating the parts and

those who would be assembling them. Even the job of ferrying the big tubes through the corridors had a strong surplus of applicants. Stanton's ball was such an iconic structure that anyone would feel fortunate to have the opportunity to work on it.

"A lot of people look up to you, don't they?" said Elgin.

Stanton looked at him. "What do you mean?"

"Well, look at it. One call from you and everybody is ready to drop everything to work with me." Elgin chuckled. "I'm pretty sure it's not my magnetic personality."

Stanton didn't speak, just stared. There was nothing unusual about this situation. When he needed people he called them, and they came. It just seemed perfectly natural to him. "What do you mean?"

"Oh, come on. What do you think would happen if I called them?"

"Let's give it a try," said Stanton. "You're going to need finishers to polish the welds and so on. You call them and we'll see what happens."

"Okay." They made the call and got the querulous, harried voice of someone who was obviously in the middle of something. Elgin explained that he needed some finishing work done and wondered whether they'd be interested. No, he didn't just pull the name out of a hat, he was following a recommendation. Whose recommendation? Elgin couldn't reveal that for the purpose of this experiment, so he simply assured her that it was a hearty endorsement of her abilities and hoped she'd overlook the lack of an answer to her question. She did, although he could tell that she knew he was being evasive. She finally asked what the job was.

"I'm doing some modifications to the flashball court and I need someone to finish the welds and so on."

"The ball? You're changing the ball?"

"Yes," said Elgin, "but it's okay. Stanton okayed it."

“You’re working on Stanton’s ball, eh?” She paused for only a second or two. “When do you need me?”

Elgin explained his planned schedule, with tentative days for the installation of the tubes, whose welds she would be finishing. “But you can come by any time, and I’ll be sure to call you in plenty of time when I need you.”

She made it clear that she would be coming by and said goodbye. Elgin looked at Stanton and said, “I don’t know if that was a promise or a warning.”

“It was both.”

“Should I be worried?”

“Not unless you do something wrong. She’s a perfectionist about her own work, which is good for your project, but it carries over to other people’s work.” Stanton grinned. “She worked for me when we first made the ball.” He shook his head at the memory. “It can be hard, but she’s the one you want.”

“I’ll take your word for it.”

“And with her on your team, you won’t need me looking over your shoulder.”

“Thanks, I think.”

“On the other hand, you won’t have to worry about the rest of your team either. They won’t want to make any mistakes and have her on their case.”

“That’s good.” Elgin thought about it. “I wonder why she doesn’t just take over and lead the project.”

“Two reasons. First, this is your project. You’re the one who’s going to be finding out about himself. Second, she’s a perfectionist. The job would never get done.”

“Oh, I see,” said Elgin. “So, did we prove anything?”

“Yes, she’s coming even though I didn’t call her. You hardly even mentioned my name.”

“That’s right, but she only got interested when she found out she’d be working on your ball.”

“But not that she’d be working for me. There’s a difference.”

“That’s true, but I wonder how it would have gone if it was something else. Something that had nothing at all to do with you.”

“Hm,” said Stanton. “I see your point. Knowing her, I think she might have just told you to ‘piss off.’” He nodded, smiling. “Yup. Probably in so many words.”

“So I was right. It’s you everyone respects.”

“I guess you’re right,” Stanton said in a subdued voice. He roused himself to say, “Get out of here. Get to work before you give me a swelled head.”

“I’m on my way,” said Elgin, leaving Stanton’s office. “I’ll give you a report every day.” He went out into the drafting room to wait for his assistants, and Stanton closed the door behind him.

~

When they arrived, Elgin briefed his new assistants on the project, showing them the plans and his projected time line. They kept glancing at Stanton’s door until he explained the situation to them. Once they realized that Stanton definitely would not be involved, they seemed to resign themselves to accepting Elgin’s supervision.

The man’s name was Van Allen and the woman’s name was Laika. They were both a little younger than Elgin, about their mid-twenties. They shared their stories on the way over to the ball, and Elgin was struck by how everyone’s path seemed to share some common steps even though they were all different. Of course they had all been rushed

along when the need arose to repopulate Yellow Comet, so decisions were somewhat hurried and farewells were left feeling incomplete. Maybe that was it. Whatever it was, it gave them a sense of shared history and made working together just a little easier.

Elgin left Laika and Van Allen — call me Van — studying the ball while he went to talk to the fabricators and assemblers. Now that things were underway he wanted everyone involved to know what his plans and expectations were. They met at the fabrication rooms, a series of large galleries whose temperatures and air pressures could be controlled as required. Only an hour or so was needed for that, and he left there with the fabricators and assemblers sorting things out between them. He left it up to them to make arrangements with the crew that would be ferrying the pieces, but he called the members of that crew and set a time and place where he could brief them.

Back at the ball he found Van Allen and Laika having an argument. Once he got them settled down he learned that Van Allen wanted to make some changes to Elgin's plans and Laika didn't agree. Elgin headed off another flare-up by asking Van to explain his idea. He had to tell Laika to let him talk, she was so vehemently opposed.

Van wasn't able to make it very clear, but it was obvious that he thought there was something wrong and he had an idea of how he would correct it. There wasn't much detail there but it was enough for Elgin to know it was wrong. He told him so.

"How do you know?" asked Van. "You've hardly even looked at my idea."

"Shut up, Van," said Laika, adding to Elgin, "He always does this."

"I do not!"

"Yes you do. You always want to change things, to put your mark on them."

“I do not!”

“Whoa, whoa!” said Elgin. Once he got them calmed down he said to Van, “I wrote these plans myself. They were checked by Buzzard and approved by Stanton. They’re good and we’re not changing them.”

Laika had a triumphant look on her face. “See?” she said.

Van looked as if he wanted to argue but the mention of Stanton, and probably also Buzzard, made him think better of it. “Okay,” he said with a hot glance at Laika.

“Good,” said Elgin. Then he confirmed his authority. “If either of you isn’t happy with this assignment I can get Stanton to recommend someone else.”

They both reacted strongly. “No!” they said, almost in unison, followed by alternating bursts. “We love this assignment.” “Don’t get anyone else.” “We always do this.” “We like to work together.”

“Okay then,” Elgin said. “If you’re sure.” He listened to their earnest assurances. “Good. I’m going to be relying on you to get this done right.” They promised, and he went on to tell them what he wanted and what he expected. They would work together and coordinate their activities, but Laika would be his liaison with the fabricators, Van with the assemblers. “I’ll want a brief report each morning and a more complete one each evening. Any problems that you can’t resolve between the two of you, bring them to me. Whatever you do, Stanton has told me he doesn’t want to hear about it. Is that clear?”

They told him it was. Elgin took them on their word and was about to leave when Van said, “Wait.”

“Yes?” said Elgin, wondering what part of his instructions he could have missed.

Van glanced at Laika, who was watching him through narrowed eyes. He said, “You’re a new waker, aren’t you?”

“Yes.” Elgin glanced back and forth, wondering what was going on.

“Well, have you heard about the Visitor yet?”

“Shut up,” said Laika. “He doesn’t want to listen to your gossip.”

“What gossip, I mean, what visitor?” asked Elgin.

Van smirked at Laika and told Elgin all about the mysterious Visitor, the blinking light in space and all the speculation about it.

“And no one knows what it is yet?”

“No, but everyone’s pretty sure it’s artificial, mostly because of the coherence of the light.”

“So they sent out a ship to meet it.”

“Yes,” said Van, his eyes bright. “I’d love to be on that ship,” he said. Laika was nodding, just as bright-eyed. “If I wasn’t here, I mean.”

Elgin left them to their excitement and headed back to the shop, his mind dancing with new energy. When he got there he found Buzzard deep in his work, so he couldn’t talk to him, but Stanton’s door was open. He flew straight in this time, no longer hesitant about it, and right across to the desk.

“Ah, Elgin,” Stanton said, looking up. “How was your first morning as a project leader?”

“It was fine. It was great, really.” Elgin gave a quick rundown, including a mention of the friction between his assistants. “It’s not a problem,” he said. “I handled it and they seem to be getting along okay.”

Stanton was laughing. “Van and Laika,” he said, shaking his head. “They’re as compatible as oil and vinegar, aren’t they?”

“This is normal?”

“Yes. They’re like that about everything. You think they’re fighting but that’s how they work together. Like oil and vinegar, their conflict seems to make them a perfect combination.”

“They said they like to work together.”

“One of the best teams I have.”

“Couldn’t you have warned me, though?”

“What, and miss the chance to test your managerial skills? No, it was the perfect opportunity and a safe situation at the same time.”

As if he hadn’t known it before, Elgin realized that this assignment was as much about testing his abilities as it was about modifying the ball. “Well, it worked out okay I guess.” He stored that one away and brought up the topic that was really prodding his curiosity. “Van said something else. What do you know about the Visitor?”

“The Visitor? Wow. I haven’t thought about that for ages.”

“An artificial light that seems to be coming from interstellar space? How can you not think about it?”

“Sure, it’s amazing, but there hasn’t been anything new for months now. We get small bits of information separated by long periods of nothing, and it’s been going on for decades.”

“I can see that, I guess.”

“It’s new for you though, isn’t it?”

“Yeah, that must be it,” said Elgin. “I guess I got decades of information compressed into a few minutes.”

“That would make it sound more exciting. Anyway, it’s all on record. You can look it up any time.”

“I’ll do that.”

“Meanwhile, if you have some time to spare, there’s something I want to show you.”

Elgin thought about it. “Sure. Things will take care of themselves for a while.”

“Good. I want to take you to the observation bubble. There’s something there you should see.”

“I’m going! I’m done! I’m going to the bubble too!” came a shout from the outer office. Obviously Buzzard overheard.

Stanton grinned. “Of course, Buzzard,” he called. “You’re coming. That was the plan.” He led Elgin out. “Whenever you’re ready, Buzzard.”

“I’m ready now. Done. All ready.” Buzzard straightened his papers one last time and came away from the table.

~

Once through the Square and into the corridors, they quickly got into territory Elgin had never seen before. He got the sense that they were going up. It wasn’t something he could tell from gravity, but by the convention of up and down in construction. He knew they were heading for the surface.

It didn’t take long. It couldn’t have been more than a few hundred meters, a kilometer at most up to the top level. Once there they were in smaller corridors finished only as much as required by utility. The lighting was lower too. Dimmer than the dull yellow-to-orange Elgin was accustomed to, the light was reddish. He could feel his pupils dilating.

It was obvious that these corridors were among the first ever made. They were probably dug when Green Comet was first inhabited, or even by the advance crew that prepared it before the general population arrived. They were built well. Elgin had no problem with the engineering. But they had a rough and ready feeling to them, and the surfaces had unattended scrapes and gouges in them. These corridors were made when there was no time for the niceties.

They didn’t prepare him for the observation bubble. The three of them arrived at a modest little door which Stanton opened, standing

back to allow Elgin to go through first. It was even darker on the other side of the door, so it took a moment for Elgin to see where he was.

He gasped and recoiled when he saw the stars. It looked as if he had just flown out onto the surface of the comet and his instinct was to get back through the door to safety. His way was blocked though, by Buzzard and Stanton following him out, so he calmed down. "The bubble," said Buzzard. "Observation bubble. Stanton's bubble."

Elgin looked at Stanton, who nodded. "So," he said, his voice quivering with his racing heart, "you took what you learned here and applied it to the ball?"

"That's right. It took a while to work out the techniques, like building up the shell with vapor deposition, but once we had them it was just a matter of scaling them up."

Elgin could see that this was a scaled down version of the big ice sphere he was working on. It was as if they were inside a transparent ball that was half embedded in the surface of the comet. Its diameter was only a fraction of the flashball court, though. It was only about fifteen meters across. As his eyes continued to adjust, he could see starlight reflecting off the back wall, enough to give him a good sense of its size. Finally he got up the courage to look outward again.

It was beautiful. Now that he was no longer scared to death he was able to appreciate that. The ice shell of the bubble was flawlessly clear, perfectly transmitting the frigid fire of the distant stars. Elgin felt a swelling in his solar plexus, a powerful yearning for what he was seeing. He took it all in, marvelling at the jewel-like glitter of star clusters, noting how the dark shadows of dust clouds helped to define the limbs of the galaxy. Stanton just let him look. Even Buzzard was quiet. They knew from their own experiences that he was best off trying to absorb it on his own.

Finally Elgin drew a deep breath, a huge sigh that returned him to his surroundings as well as replenishing his oxygen. He felt as if he'd been holding his breath. He pulled his eyes away and looked at his companions, who he could now make out in the starlight. "This is fantastic," he said. "Thank you for bringing me here."

"My pleasure," said Stanton.

"My pleasure," said Buzzard. "Pleasure."

"We didn't just bring you here to look at the stars, though," said Stanton. "Look over there to the right."

Elgin did as he was told, but he couldn't see anything. He persisted, though, opening his gaze and trying to relax and let whatever it was resolve itself. He was about to give up when he suddenly realized that there was something he wasn't seeing. There was a small spot on the star field that had no stars. He knew what it was right away. "The other comet," he said.

"That's right," said Stanton, very pleased.

"Elgin knows," said Buzzard. "Elgin knows."

"How far away is it?"

"About a hundred thousand clicks," said Stanton. "Right?" he asked Buzzard.

"Effay," said Buzzard. "Effay."

"We're closing at around three meters per second right now. Over the next few years we'll be gradually reducing that to zero."

"That's when we'll be joining them? In a few years?"

"Yes. Just a little less than three years."

Elgin was staring at the spot, trying to draw out some details, but the best he could do was a faint glow. It could just as easily be his mind filling it in as something actually visible. "Should I be able to see it?"

he asked. "I mean not just where it occludes the background stars, but light reflecting from it?"

"Good eye," said Stanton. "This far out, the Sun's not giving us much more light than any other star, so it's right on the edge of visibility. The sort of thing where it's better if you don't look directly at it."

"That's it exactly. It's frustrating. If I look right at it, it disappears."

"Here, watch this." Stanton pushed a button on a small device he had in his hand. After a few seconds a flashing light appeared in the tiny disk of the comet. It flashed a short pattern, then changed from white to red and flashed another pattern. It did the same thing for orange, yellow and green, then did white again, then stopped.

Buzzard laughed with joy and did two turns around the bubble before returning to Stanton's side. Stanton was grinning. Elgin said, "You've installed a light show over there?"

"There are people over there. We use the lights to monitor our progress."

"I should have known," said Elgin.

"I set this up in advance," said Stanton. "When they got my signal they turned on the lights."

"What about the patterns?" asked Elgin. "I got the colors for the four comets, but what did the patterns mean?"

"I don't know," said Stanton. "I left that up to them."

"Intervals," said Buzzard. "Time intervals. Times." They just looked at him and waited. "Times. Of the comets. Times of capture. Times of orbits. Periods."

Stanton and Elgin both nodded. "Did they tell you that?" asked the older man.

“No,” said Buzzard. “It was just there. Just there.” He wasn’t insulted by the question.

“Of course it was,” said Stanton. “Well, if everyone’s seen enough, we should get back.”

“Seen enough. Get back,” said Buzzard, heading for the door.

Elgin hesitated and Stanton waited. Buzzard stopped and turned. “I’m coming,” Elgin said. “I just want to take one last look.” It was, after all, probably the most splendid thing he had ever seen.

“Take your time,” said Stanton. “You can stay as long as you want. If we have to leave I’m sure you can find your way back.”

“No, I’m coming,” said Elgin, backing toward the door. There was something terribly compelling about the frosty glitter and the impossibly deep black.

Stanton took his arm and guided him through the door. “You can come back any time. It will always be there.”

When the door closed Elgin was struck by how dull and prosaic the hallway looked in the dim red lighting. Then he laughed at himself.

“What?” asked Stanton.

“Nothing, really. I just noticed how boring it is in here compared to out there.”

“So?”

“Well, boring? Living in a comet?”

Stanton laughed and Buzzard joined in. “Come to think of it,” he said, “I’ve become blasé about it too.”

“Me too,” said Buzzard. “Blasé.” They all laughed as they headed back down to the lower levels, where people were going about their business as if it were the most natural thing in the world.

~

Stanton and Buzzard went back to the shop and Elgin headed for the ball to check in on Van and Laika. He found them there with a third person. As he approached, Elgin could see that she was an older woman, about Stanton's age he guessed, very attractive but hard looking somehow. She was talking to his two assistants and when they spotted him coming they quickly pointed him out to her. She turned and Elgin could see that she was indeed very good looking, but her features were marred by a dour expression and her eyes were sharp and probing.

"Where have you been?" she asked.

"This is Galatea," said Laika.

"The finisher," added Van.

"We were trying to tell her ..."

"But she wanted to see you."

"Well," said Galatea, "where were you?"

Elgin could tell that it would be best to just get to the point and forget about the social preamble. "Stanton took me to the bubble. Buzzard came to."

"Ah, showing you the sights, eh? Maybe showing off, too?"

"More of the former I think."

"Yes. Stanton the humble. That's our Stanton." She got momentarily lost in her thoughts, but not for long. "So, he's letting you practice on this, eh?" She swung her chin to indicate the ball.

"Well, I don't know if it's ..."

"Using his ball rather than risk something vital."

"Well ..."

"And then he'll know if he can take off the training wheels, eh?"

Elgin stopped trying to respond. What she was saying was quite blunt, but it was uncomfortably close to what he was thinking himself.

He decided to let her carry on until she finished what she had to say, then to play it by ear from there.

She told him how it would be. She would be in personally on the two installation days to do the finishing on the joints between the tubes and the ball. In the meantime she would bring a crew in to refinish the shell. "It's a mess," she said. "A complete mess." They couldn't see anything wrong with it, but she was disgusted. "People have been touching it."

Elgin was about to point out that having people touch it was inevitable, even desirable, but he caught himself in time. Galatea went on for a short while longer before she announced that she had work to do and couldn't hang around listening to their idle chatter any more. They watched her fly to the entrance, shaking her head and muttering. She stopped there and closely examined some flaw before she went out and flew away.

Elgin imagined he could still feel her disapproval echoing out of the corridor as she went. He was glad that Stanton had warned him, but the actual experience was still breathtaking. "So that's Gal ..." he tried, forgetting the rest of her name.

"Galatea," Van and Laika harmonized.

"Galatea." Elgin couldn't think of anything else to say.

"She's okay once you get to know her," offered Laika.

"Yeah," said Van. "She's nice once you get past that. She was just nervous, meeting you for the first time."

"She was nervous?" Elgin had some difficulty imagining that Galatea could have been as nervous as he was. He filed it for later and got the first daily report from his assistants. Satisfied that all was well, he told them to come back in the morning, and set out for his last meeting of the day. It was quite a relief to meet the ferry crew.

There was no drama there. They were refreshingly laconic, to the point of phlegmatic. “Let us know when it’s ready,” they said, “and we’ll move it.”

On that happy note, Elgin called it a day.

21.

ELGIN MEETS FRANCES

It all went like clockwork. They had the first strut fabricated in ten days and installed two days later. Van and Laika fought and quibbled and worked together as a well coordinated team. The fabricators were proud and pleased with their work. The ferry crew moved it efficiently and with little fuss, accompanied by a large crowd of onlookers. It was like a parade and a picnic and a midway all at once.

Even Galatea was happy, so far as that word could be applied to her. She had the sphere polished to maximum clarity and she was able to buff-in the joint on the strut, even though it had a gap, “of at least five millimetres,” on one side.

The second strut took only a week to fabricate, since they learned what they needed to know on the first one. Another one day carnival got it moved on site, and this time the assemblers were able to point out to Galatea that there was no gap to speak of before they welded it on. She scowled and muttered and then subjected their welds to even closer scrutiny. They took her criticism quietly and left smiling as she set to polishing furiously. They knew the work was good and they knew that she was as satisfied as she ever would be.

By the time they were done, twenty days had passed and the ball had been available for use on all but two of them. It looked good. It was just as Elgin imagined it, the lines flowing smoothly. Everyone had good reason to be proud of their work.

The next day they had a ceremony for the re-opening of the ball. It lasted all afternoon and was followed in the evening by a flashball

game. After weeks of practice this would be Elgin's first official game against serious competition. It was not a memorable game for him.

Everyone was still better than him. He was behind at every turn. He couldn't keep up to the pace of the game and found himself futilely chasing what he couldn't catch. He couldn't compensate for it by anticipating what they would do because they were also ahead of him mentally. He found himself out of position whenever he tried to match the speed of the other players, and then they would play right through the opening. By halftime he was exhausted, frustrated and embarrassed.

During the break his teammates tried to encourage him, but he couldn't even look at them. He was letting them down and he couldn't bear it. Even Buzzard couldn't cajole him out of it. Finally, what he dreaded most, Captain Rita came over to talk to him. He was sure she was going to tell him to sit out the second half.

"You'd better pull me, coach," he said, hoping to at least make it easier for her. "I'm obviously out of my league here."

"Is that what you want?" she asked.

That set him back. He spoke hesitantly, unsure now. "Well, I'm sure not helping the team."

"That's not what I asked you," she said, not about to let him duck the question. "I want to know if you're ready to quit."

That was hard. This wasn't sympathy, but another test. Would he quit on his team to escape the pain of this situation? Resolve rose instinctively in him. She had exposed his true nature and he knew he had to pick up the burden and carry it, no matter how ineptly. "No, coach," he said, clamping his teeth to keep the quiver out of his voice. "I won't quit on you."

"That's what I wanted to hear," she said. "Now listen." She told

him what he was doing wrong, which wasn't easy for him. Still, it was more useful than what he already knew, which was what was going wrong. She also told him what he could do to improve. "You're not as good as the rest of the players. You can't compete at their level yet. I want you to figure out what you're capable of and play within it."

The second half was better than the first, but it still wasn't great. Elgin thought about what Rita told him and he tried to determine the limits of his ability. He decided to visualize the volume of space within which he could be effective. As he flew around the court he imagined a bubble that he knew he could defend. That helped him play a better positional game, instead of lunging about after the ball and other players.

His teammates saw the change and quickly adjusted. Now they knew that they could count on him controlling his area and were able to play and plan accordingly. Of course the opposing team also learned and adapted as well. Elgin still didn't have much of an effect on the course of the game or its outcome. He still wasn't much of an asset to his team, but at least now he wasn't so much of a liability. And by knowing what he could do and doing it exceedingly well, he took one option away from the other team. They soon learned that there was one path they couldn't take, one sphere of space that they couldn't play through.

The Harriers lost the game but not by as much as they could have. Afterwards, in the room, Elgin's fellow players congratulated him and clapped him on the back. It embarrassed him because he knew how little he contributed, but it made him feel as if he belonged. He was now really a Harrier. When Buzzard came over he could tell by his big, grinning face that he felt the same way. Both of them chattered excitedly as they flew with the teams for after-game refreshments at

a café in the Square. Members of the other team congratulated them, knowing they were both beginners, especially Elgin since everyone knew he was a new waker. “You’re a natural flyer,” they told him. “Stick with it. You’ll be glad you did.”

It took Elgin a few hours to get to sleep that night. The excitement, not only of the completion of the project, but probably more importantly the flashball game, kept his brain buzzing. When he finally did drop off it was into strange, vivid dreams. He was playing flashball, but he was out among the stars and the ball was ice, a hundred meters across.

~

Things got back to normal at work the next day. He and Buzzard got into their routine and their days became a series of tasks and events with only minor variations. By day they would check the work of the pencil pool and the evenings were usually taken up by flashball, either practice or games.

Stanton congratulated him again on his project. “It looks like you’re an engineer after all,” he said with a grin and a wink. It was one of the most beautiful things Elgin had ever heard. What Stanton said next was another. “Rita tells me you’ll make a fine flashball player too.”

“She said that?”

“Yes.”

“She said I’m a fine player?”

Stanton chuckled. “‘One day,’ she said. She told me that you’re slow and clumsy now, but one day you’ll be fine.”

“Oh.” Elgin felt silly, but it didn’t last. His captain’s vote of confidence buoyed him up. “All the credit goes to her,” he said. “She straightened me out and told me what to do.”

“That’s funny,” said Stanton. “She said the same thing. She said she gave you a pep talk but you’re the one who went out there and did it.”

Elgin began to protest, but cut it off. As humble as he felt about his abilities, it still felt churlish to argue with someone being so generous. “She’s a very good captain, isn’t she?”

“One of the best. Now you’d better get back to work.” Elgin turned for the door and Stanton turned to his desk. “Oh wait,” he said, “there was one more thing.” Elgin stopped and waited at the entrance. “I have a planning meeting this afternoon but I can’t make it. I’d like you to go in my place.”

“Me? I don’t know anything about that.”

“Then here’s your chance to learn. You won’t have to talk. I just need you to observe and tell me anything I need to know.”

“Okay boss.” Elgin headed for the table, where Buzzard was deep in his work.

“I’ll let you know when it’s time to go,” said Stanton from the doorway before he went back to work too.

Elgin wondered for a while what going to a planning meeting might entail, but he soon forgot about it as he became immersed in his work. At noon he and Buzzard went for lunch at the same café the teams had used after the game. They reminisced about it while they ate a passable soup and sandwich, then went back to work.

He was just handing some papers to Buzzard when Stanton popped his head into the room and told him to finish up and get ready to go. He had nothing to finish up so he went and freshened up, then presented himself in Stanton’s doorway. “Ready to go boss,” he said. “How do I get there?”

“It’s easy to find,” said Stanton. “It’s right on the Square. It’s on

this side, the green side, only it's closer to the red end where we came in the first time." He grinned. "Do you remember?"

Elgin laughed. "I think so," he joked. "So I use the other corridor? Like the one we use to get here only on the other side of the big central entrance?"

"That's right. And the planning meetings are held in a room about as far down that corridor as we are down here. It's really obvious once you're there, and there's always a sign set up on meeting days."

Stanton was right, it was easy to find. It didn't take long to get there, being no more than a few hundred meters all together. It seemed a bit longer because his mind was racing, but he got there in less than five minutes. Since he'd gone early so as not to be late, he was there in plenty of time.

There was only one other person there when he arrived. It was another young man, perhaps a few years older than Elgin. He didn't catch the name when they introduced themselves. His mind was pre-occupied with uncertainty and anticipation.

"So, you work with Stanton?" the young man asked, making polite conversation.

"Yes, and Buzzard," Elgin replied, his eyes trying to take in every detail of the room.

"And Stanton sent you here to observe?"

"Yes." Elgin remembered his manners and focused on his companion. "He said I could just watch," he said, "but I'm still nervous."

"I know what you mean. It wasn't that long ago that I was in your place." He shrugged. "I can't tell you not to be nervous. It doesn't work that way, does it?" Elgin shook his head. "But I can tell you that you don't need to be. We're all pretty easy-going and nothing serious happens here."

His host pointed out the place where Stanton usually stood, then told him, "If you just stick with me I'll introduce you to everybody as they arrive." There were six more people making up the planning board and Elgin managed to forget the names of most of them as soon as he heard them. Luckily he could find their names and anything else he needed to know on the network, so for now he could concentrate on them.

One person stood out so much that Elgin couldn't help but remember the name. Winston was the senior member of the board, being about twice Elgin's age. He had a commanding presence and an arresting appearance. It was possible to say he looked like a bullfrog without being insulting. He had a big head with a large, wide mouth. His eyes bulged and his voice was a deep, powerful croak. As he shook Elgin's hand it was obvious that he was assessing and categorizing.

"Let's get started, shall we?" said Winston.

"But we're not all here yet," said Elgin's guide.

"She'll get here when she gets here. We can't keep delaying these meetings to suit her schedule."

"But couldn't we wait just a minute? It's not that late."

"She knows when we start. She can learn to be on time."

"Come on, Winston. She's never very late."

Winston was about to reply when Elgin heard the most beautiful music. But it wasn't music playing. No real music could ever sound this good. It was someone speaking. It was a woman's voice and it was saying, "Thank you Nigel, but Winston's right. I should learn to be on time."

Elgin looked and it was as if a golden light had entered the room. She looked like the idea of woman, not just the reality. Her proportions, her parts, the way she carried herself created the impression that

she was representing that idea, not just coming into the room. Her fur was a rich golden brown. Her eyes were also golden. Even her tapetums reflected gold.

She spoke again and it was the rightest thing he had ever heard. “I’m sorry I’m late everyone,” she said, and it sounded to him like all the tones of a perfect symphony. It tasted like iceberries.

“This is Frances,” said his host, whose name he now remembered was Nigel. “Frances,” he called, “come and meet Stanton’s representative. This is Elgin.”

“I’m pleased to meet you Elgin,” she said, taking his hand. She looked directly into his eyes and he got the feeling that she really was pleased to meet him. He must have said something, but he wasn’t aware of it. She went and sat down next to Winston, and he appeared mollified when she put her hand on his arm and leaned in to apologize.

The meeting got underway and carried on for a couple of hours, but Elgin couldn’t say what they talked about. It was a good thing he wasn’t expected to contribute because his mind was empty. Stanton would have to read the minutes to find out what went on. Elgin was aware only of her golden light and the music, the rightness of her voice. When she stopped and someone else spoke, all he felt was a restless impatience for the return of beauty.

Eventually a slow transition took place. Instead of hearing music overwhelm her words when she spoke, he began to hear her voice accompanied by the music. Then he was able to hear her talking and the music became the background. The beauty was still there but now he was no longer lost in it. He could hear what she was saying. She was talking about the large, long distance corridors they were planning, mainly for transportation and future growth. “Our engineers could calculate what radius the corridors should curve on to match the

gravity of the comet. If we get it right then traffic, by going the right speed, could be effectively in orbit around the center of the comet and not need to continually correct its flight path.” It sounded reasonable to Elgin. In fact he thought it sounded brilliant. Most importantly it sounded right. The tones were pure and the music was sweet, but it screeched to a halt when someone else spoke.

It was Winston. He was saying, “This is a nice idea, but it’s quite fanciful, isn’t it? It’s more difficult, not to mention the added costs. No, I think we should go with straight corridors, as we’ve always done.” Elgin could picture him saying, “Harrumph!”

The change from beauty to ugliness jarred Elgin so much that he blurted, “She’s right!” In the oddly echoing silence that followed, he tried to shrink back into obscurity. Winston was staring, no, glaring at him, his large mouth open in shock. There was a quiet wave of tit-titering around the table. Worst, though, was seeing Frances smiling at him. He felt as if his face was swelling and he knew he was blushing copiously. He thought he must look a complete fool. He knew he was right. He knew she was right. But when would he ever learn to say it tactfully?

The man who’d helped him earlier, Nigel, suggested that they should present this idea to engineering for analysis. Once they had some numbers to work with they could discuss it at a future meeting. His idea was quickly adopted and they moved on with relief. Soon after that, the meeting concluded and Elgin rushed out of there. Frances looked as if she wanted to talk to him, so he fled before that could happen.

Elgin wished he could forget about it. He hoped he would never have to go back there, never have to face any of those people again, but that wasn’t up to him either. When Stanton listened to his report of the

meeting he said, “Is that all that happened?” and Elgin had to tell the whole story.

Stanton said, “So, after Frances got there you, what, you didn’t hear what anyone said for a while?”

Elgin was blushing again. “Yes,” he said.

Stanton nodded. “She is an attractive woman,” he said, “but I can’t say she’s ever done that to me.”

“But what she said about the curving corridors, that was right.” Elgin forgot about his personal discomfort. “I could tell that. She was right.”

“And you’re sure that’s not just because she’s so gorgeous?”

“No, I mean, yes, I’m sure. I can tell the difference.”

“I’ll take that into account when we get their request,” said Stanton, “but we’ll still have to treat it like any other.” He smiled. “And you can do the proposal.” His smile widened. “Right. You can start today. Take as long as you need. Then give it to Buzzard.”

Elgin liked that. He was looking forward to burying himself in work and forgetting this embarrassing day. But it wasn’t going to be that easy.

“And you can present it at the next planning meeting.”

Elgin sighed. Yet another test. But it was a month before that would happen. He had the plans for the curving corridors done in one day but he kept them back so he could make sure they were perfect. Even so, when he gave them to Buzzard a day later he was still nervous and uncertain. He was doing it for Frances and that made him want to do it perfectly, even if she did think he was a fool.

He hovered. When Buzzard glowered at him he flew over to the galley, but before he knew it he was hovering again. He stuck a cup of coffee to the table for Buzzard and ended up reading over his shoulder. That was when he was banished from the shop and told not to come

back until he was called. He left the room but he didn't go anywhere. He waited in the hallway, doing the microgravity equivalent of pacing.

Finally he was invited back in. Buzzard told him it was all done, all good and Stanton was looking it over. A few minutes later he was in the office getting Stanton's assessment. His boss told him that it was a viable plan but that he'd have to sell it right, especially to Winston. "Emphasize that it's not much more difficult to do it this way, and well worth the benefits. A smooth, continuous curve means no angled joints between straight sections. And people will appreciate the ease of use for years to come."

"That sounds good," said Elgin. "Couldn't you tell them?"

"No," said Stanton. "This is your baby."

~

He and Buzzard checked a lot of work that month, and they played a lot of flashball. The work became routine, repetitive and predictable, but never boring. The scale and novelty of it, the excitement of being involved in joining two huge comets made boredom an impossibility. Flashball also became more routine as they got more experience. It got so they knew what they had to do without being told. They inched their way toward the level of competence enjoyed effortlessly by the veterans on the team. Most gratifying to Rita was how Elgin's sphere steadily grew. She watched as he mastered one level and moved up to the next, always working within what he was capable of, but always pushing himself to improve.

He needed to have the same strength of character to take himself to the planning meeting. He imagined flying in there and seeing everyone looking at him. He repeatedly rehearsed the dismissive disdain Winston would show his presentation. But worst was the combination

of amusement, pity and disappointment he knew he would see in the face of Frances. To avoid being the center of attention he decided to arrive early again. Like last time, there was one other person there already, so he and Nigel made polite conversation while they waited. Unlike last time, Frances arrived a few minutes early.

She greeted them saying, "I didn't want to be scolded by Winston again." Everyone laughed, even Elgin, though he did it with some effort. She tried to engage with him but he wouldn't meet her eyes. Any distraction was sufficient excuse for him to avoid looking at her, and Winston's arrival was actually a relief.

He was the last one and Frances greeted him with, "At last. We were beginning to wonder if you remembered what time the meeting started."

That raised a round of laughter, but none of it was cruel. It was meant to include Winston, not to single him out. He tried to be aloof, even to look miffed. Once again Elgin expected him to say, "Har-rumph!" But he couldn't do it. That was a talent Frances had. She could make people feel special by her gentle, easy ways.

The meeting got underway and progressed smoothly. Once again Elgin was strictly an observer. Stanton hadn't given him any issues to raise and there weren't any reports to read. He just had to stand there listening and observing, waiting anxiously for the end of the meeting when he would give his presentation on the curved corridors. He was nervous and distracted, but this time he was able to follow what was going on even when she was speaking. At least this time he would be able to report to Stanton.

Finally everything was done and it was his turn. He took the lessons learned in flashball and made his presentation simple and clear. He knew he didn't have the persuasive powers of an orator so he con-

centrated on clearly conveying a few easily understood facts. Toward the end of his talk he had a visual presentation of how the curving corridors might be used. He had no talent in that area, but Buzzard “knew a guy” and it actually looked pretty good.

He followed Stanton’s advice and concentrated on the practical aspects of it and by the time he was done he had a sense that they were with him. Even Winston was nodding and he wasn’t wearing his harrumph face. They had a quick vote and decided to send it back to engineering for preliminary work. They would look at it again when a more comprehensive plan was ready.

Everyone came up to him afterward and congratulated him. They praised the directness and simplicity of his talk. “Even I could follow it for a change,” they laughed. They hoped that future submissions from engineering could be as clear and, “not so full of numbers.” Elgin was relieved and happy, so he was still smiling when Frances appeared in front of him. At least if you’re going to be stuck with an expression frozen on your face, he thought, a smile is not bad.

She touched his arm and thanked him. “It was just the way I imagined it,” she said. “How did you know what I was thinking?”

“Oh,” he said, “uh.” He wrestled the stupid smile off his face and forced himself to speak. “It’s not that hard,” he said. “Once you have the numbers it pretty well shows you what’s possible.”

“I think you’re being too modest,” she said. “There are a lot of ways to get that across but you picked the one that was in my mind.”

He was blushing again. “Well, I just kept in mind what you said when you first brought it up.” She was looking right in his eyes. Somehow he knew she really cared what he thought, and that she would know if he tried to gloss it over. “While I was working I kept your

description right there, to compare to the plan as I went along. I could tell when it was right or not.”

“Stanton has told me about that,” she said. “Your talent for knowing when things are right, I mean.”

“You’ve talked to Stanton?”

“Oh yes, we talk all the time. We’re friends.”

“I mean about me? You’ve talked to Stanton about me?”

She smiled and he felt as if his mother was stroking his hair. She told him, “Of course we talked about you. He was sending you here, so naturally I was curious,” Then she said something that changed his life. “And he’s proud of you, so he naturally wants to brag.”

“He brags about me?” Elgin had thought he was barely scraping by. That he was lucky to have passed the tests. Learning that Stanton was proud of him changed that.

“Yes he does. He says you’ll probably end up being as much use to him as Buzzard. And that’s saying a lot because I think Buzzard is like a son to him.”

That made Elgin feel good. He didn’t feel like the new guy any more. Now he felt like part of the team. “Almost as good as Buzzard,” he mused.

“He wasn’t really comparing you,” she said. “You have different talents that he combines to make you both better.” She searched his face to be sure she hadn’t inadvertently made things worse. She liked him and she also valued Stanton’s opinion of him. She hoped they could be friends.

Something changed though, and Elgin went back to feeling uncomfortable and awkward. He wanted to leave and he did as soon as he could manage it. As he hastily bustled out of there, he didn’t see

Frances' hurt and disappointment. He only wanted to stop wasting her time so she could get on with more important things.

22.

THEY BECOME FRIENDS

“You did what?” Stanton was shocked and incredulous.

“Well, I ...”

“You were talking to Frances, a very beautiful woman, and you ran away?”

“I didn’t ...”

“Why?”

“Well ...” Elgin didn’t know what to say. “Why what?”

“Why did you leave?”

Elgin shrugged with his wings, their points rising along with his shoulders. He didn’t know if he could put it into words, but surely Stanton must understand. Even in a classless society like Green Comet there were some things a person had to accept. A woman like Frances could go anywhere, be with anyone. An ordinary engineer shouldn’t even think about wasting her time.

“Wasting her time? Didn’t you tell me she came over to you?”

“Well, yes, but ...”

“Yes?”

“She was just being polite. Thanking me for drawing up the plans for her.”

“Plans which were exactly what she had in mind.”

Elgin jumped. “How did you know she said that?”

“She mentioned it when she called me.”

“She called you?”

“Yes,” said Stanton. “We talk all the time. We’re old friends.”

“She talked about me?” Elgin tensed up.

“She did. I think she really wanted to find out if there was any mental illness in your family,” Stanton said with a penetrating stare, “but she talked about how your plans seemed to come right out of her head.”

“I explained that to her.”

“I know. She said. She also said you’re nice.”

“Nice? She thinks I’m nice?” Elgin’s face mingled awe with disbelief.

“I don’t get it either,” Stanton said with rough humor. “Look, tell me again. What happens when you see her?”

So Elgin explained about the golden glow and the aura of clear light and the music. It was easy to do. He could have done it all day.

“Okay,” said Stanton, stopping him, “I get it. She is the most perfect woman you’ve ever met. So, how was it when she came up to talk to you?”

“It was weird,” said Elgin. “It was wonderful. I couldn’t believe it.” His eyes focused on the memory. “I could have spent hours talking to her.”

“Ah,” said Stanton, “so why didn’t you?”

“I told you,” said Elgin. “I had to get out of there so she could get back to more important things.”

“Right,” said Stanton. “Frances will be relieved to hear that. She was afraid it might have been something she did.”

“Oh, no!” Elgin cried.

“Oh, yes.”

“But that’s impossible. It could never be something she did.” Elgin couldn’t imagine a world where that would be so.

“How is she supposed to know that?” Stanton asked gently.

Elgin couldn't answer. This was completely new territory for him. His shoulders slumped, along with his wings. "What should I do?" he asked.

Stanton shook his head. "How is it," he mused, "that you can tell when things are right or wrong, but you can't hear what your own heart is telling you?"

"I don't know," said Elgin, his eyes on the floor.

Stanton took pity on him. "You'd better get back to work. We'll talk more when the request comes in for her corridors."

Elgin had almost a week where he could concentrate on work and flashball and not have to think about the hard stuff. Not that he could completely forget about it. Images and snippets kept coming to him at random. Things she said. Stanton's questions. Worst was his chagrin for making Frances think she did something wrong. That one made him wince every time.

When the request came in Stanton called him into the office so they could discuss it. It was comprehensive. Not only did it have the long curving corridors, it also had some local branches for existing and planned development. They weren't expected to build it all now but their plans would be open for later additions. They would be laying down the pattern for future expansion.

"She's really thought about this, hasn't she?" said Elgin.

"She has," said Stanton. "This is normal for her, though. She's a careful thinker. When she puts something forward you can be sure that she's looked at it very closely."

"She's described it really well, too," Elgin said. "I can see it all and I can already see how to get started on it."

"That's Frances," said Stanton with a smile. "If she would only come work for me I could get rid of half of you slackers."

“Hey!” said Elgin, but he took it just the way Stanton meant it.

“Okay,” Stanton said, “do you think you can do it from this?” When Elgin confirmed that, he added, “Carve off some parts for the pencil pool. You might as well get used to farming out your work.”

“Sure,” said Elgin. This was a new sensation for him: assigning work to Stanton’s pencil pool. He was already looking forward to the parts coming back for his inspection. He wondered how well it would survive the translation.

He soon discovered one of the frustrations of having other people do the work. It takes longer than if you do it yourself. He meted out what he thought was a reasonable portion, and kept the majority for himself. He was still finished his part before he got it all back. He gave it a couple of days and then he went to talk to Stanton.

“This is the first thing you learn when you delegate,” Stanton told him. “It’s never as good.”

“You’re used to this?”

“From the pencil pool, yes. It’s never a problem with Buzzard, or you for that matter. But once it gets the least bit anonymous you can’t rely on them.”

“But that’s ...” Elgin’s mouth opened and closed a few times. “I mean, it’s just,” he groped for the right word, “unprofessional.”

“I wouldn’t put it quite like that,” said Stanton. “They’re all professionals and the work they hand in is more than adequate.” He smiled dryly at Elgin. “The problem is that you have to get used to the fact that they might not care as much about your project as you do.”

“What do I do, then?”

“Find something to keep you occupied, and try not to worry. It will be here in time, even if it’s not as soon as it could be.” Stanton had to

smile at Elgin's expression. "I know you're frustrated, but you have to get used to it."

It did eventually all come in on time, and the work was good, if not inspired. Elgin checked it, touching up where required, and passed it on to Buzzard. Once Stanton okayed it they had what they needed for a presentation. Naturally, Stanton assigned it to Elgin. "We're going to keep doing this until you get it right," he said, and Elgin knew he wasn't talking about the presentation. He agreed with his boss, although not completely. He still didn't think he had a chance with a woman like Frances, but he knew he had to find a way to handle it better.

They discussed the presentation, then they got down to the important stuff. Elgin knew he would have to talk to Frances and he was looking for some advice. He said, "What should I do, boss?"

"I obviously can't tell you what to do," said Stanton, "but I'll give you this little bit of advice. Be natural. Let it take its own course. And keep it light."

"You mean just wing it and hope for the best?"

"Yes. And don't take it so seriously." Stanton punched Elgin's shoulder. "It's not as bad as you think it is. Just keep it light and let it happen."

Elgin knew it was good advice and he tried to take it to heart. For the next couple of days he practiced being relaxed and nonchalant, repeatedly reminding himself to keep it light.

~

When the day finally came he was surprisingly calm. He'd heard it was the same for people who knew they were about to die, but he didn't like the analogy. He stayed at the work table all day with Buzzard,

doing his job and keeping his mind occupied. He didn't worry any more about speaking in front of people. Now that he'd done it he found that it was like anything else. You just had to make sure you were properly prepared and then rely on the good will of your audience. He just needed to occupy his mind so it didn't obsess about what he'd be doing afterward. Talking to an audience of many didn't bother him, but he wasn't so sure about the audience of one.

The presentation went well again. His clear language and minimal use of numbers won them over, and Buzzard's guy made another excellent animation. Before he knew it he was done, it was approved and the meeting was breaking up. Now came the hard part.

Frances was picking up her things and saying her goodbyes. He moved toward her and waited for her to finish up, hoping to catch her eye. She noticed and came around the table toward him. "Keeping it light," he said to himself. "Keeping it light."

As she approached him her beauty seemed to illuminate her way. It radiated from her like light. It wasn't just in the way she looked, but also in how she wore it and carried it. It was like a tangible field that occupied the space around her and he couldn't believe how lucky he was to be enveloped in it.

He knew he was smiling but he had no idea what it looked like. Now he didn't know what to do with his hands, so he clasped them in front of him. He thought that looked silly so he clasped them behind his back. That was even sillier so he let them hang by his sides, only in microgravity your arms don't hang by your sides. So he ended up standing there with his elbows akimbo and probably a stupid grin on his face. "Keeping it light," he chanted.

What she saw as she approached him was a man who was unconsciously graceful. She could tell that he was a little nervous but that

just made her think he was sweet. She had seen her share of arrogance and vanity in men who had far less to be vain about than Elgin. His obviously real sense of humility was a welcome change. She knew he was a natural leader, even if he didn't. She could tell that he was used to responsibility, and she correctly guessed that people had always instinctively turned to him, expecting him to take charge.

It didn't hurt that he was good looking. Along with his graceful nature he had a trim, athletic build. It was covered by and enhanced by glossy brown fur with reddish highlights, and his eyes were a rich, glowing brown. Most importantly, his eyes weren't hiding anything. His face was open, showing his feelings. She didn't get the sense that there were any deeper, ulterior motives lurking there. She had lived long enough to know that she had an effect on men, and she had experience with the results of that. Elgin's honest character was a welcome change.

Elgin had no idea the assessment was going on, or how he was faring in it. He was just watching her get closer, and when she said, "Hello," it was as if she had struck a perfect chord. It caused him to horripilate. He was still distracted by the wave of goosebumps transiting his body when she said, "I'm glad you waited," and stuck out her hand.

He spasmodically grabbed it and said, "Me too." Then he forgot to let go. He felt as if his mind was operating at about a tenth of its normal speed.

Frances took his hand in both of hers and held it while she said, "I feel as if I'm meeting you properly at last." When she let go so did he.

Now Elgin noticed that he was at ease. His nervousness and apprehension were gone. He couldn't even remember what it felt like just

a moment ago. He smiled at her, a natural smile, and said, “Well, I’m happy to meet you.” Her face, already radiant, went to a new level, and Elgin swore to himself that he would move the heavens to keep it there as much as possible.

They fell into a comfortable chat, almost as if they had always been friends. They talked about their shared interest in the project. They discussed Stanton and Buzzard, who they agreed were both stalwart characters. They decided to go to the café in the Square, and the conversation continued. They talked for hours and neither one wanted it to end. Very soon they both knew it never would.

23.

SHIMMER'S IDEA

That was it. Elgin, in a mystery to him, found that he could be in her light listening to her music as much as he wanted. They had a date after work. She was going to come and watch him play flashball. And she wanted to come to the café after the game. If he hadn't heard the pure tones in her words telling him it was right, he might not have believed it.

At the café last night, in the hours of talk and laughter, he'd caught her looking at him in a way that made him feel both shy and sure. The look on her face made him think of a girl he played with at the beach one summer. She was searching for pretty shells and found the biggest, most perfect nautilus shell he'd ever seen. Her face glowed with the same delight, and he was amazed that Frances looked at him that way. Like she had just found something precious.

He couldn't account for it, but he wasn't bothering to figure it out. Some gifts you just have to accept without knowing what you did to deserve it. He knew Frances was a smart woman and she seemed to think this was a good idea, so that was good enough for him.

"Elgin?" It was Buzzard. "Elgin?"

Elgin came back to himself. "What?"

"I'm done. All done. All finished." Buzzard indicated the empty table in front of him. "Have you got more? I need more."

"Oh!" said Elgin, looking sheepishly at the big stack at his elbow. "Coming right up." He dug in and began supplying Buzzard again.

His friend was grinning at him. “Elgin’s got a girlfriend,” he teased. “Girlfriend.”

However Elgin might have wanted to reply to that, he couldn’t help grinning right back. He was able to say, “It’s not official or anything. We just went to the café.”

“I know. They were there,” said Buzzard. “Some of the team. Saw you there.”

“Oh,” said Elgin, blushing under his fur. Now the whole team would know. “But we were just talking,” he said.

“They said you were lovey-dovey. Lovey-dovey.”

Elgin was rescued when Stanton summoned him to the office. Buzzard’s great big grin followed him across the room, and when he went through the door he was greeted by another one. “Oh, for goodness sake,” he said, “does everybody know?”

“I can’t vouch for everybody,” said Stanton, “but I haven’t met anyone yet who doesn’t. The comet is a small town, Elgin. Word travels fast.”

“I guess I’ll just have to get used to big, sappy grins everywhere I go, then.”

“I guess so. But enough of that. Tell me how it went.”

Elgin recounted their evening, his voice betraying his amazement that he was talking about himself and not some other lucky guy. He obviously wanted to describe every little thing that Frances had said and done, but much of it sounded banal when put into words.

“That’s good,” said Stanton, mercifully stopping him, “that’s fine. I knew you two would be good for each other.” As Elgin was reacting to the implications of that statement, Stanton added, “But I was wondering how the presentation went. Do we have a project?”

Once again Elgin’s blush rose up under his fur, but then his boss

gave him a smile and a wink, so it was all right. “Yes,” he said, “the whole thing was approved. I can get started on it any time.”

Stanton shook his head. “I don’t think I’ll start you on anything new today. Maybe in a few days.”

“Why not? I can handle it.”

“Not for a while,” Stanton said with finality. “I’ve seen you at work this morning. I don’t think you’ll make much of a start on a new project if you’re staring off into space all the time.”

“I wasn’t,” Elgin started. “Okay, maybe I was. But I can do it. I just need to bear down.”

“I know you could do it. But I think you should have a day to enjoy your feelings, so just keep doing the routine stuff.”

Elgin thought that was a nice gesture. It was really thoughtful. “Thank you,” he said.

“You’re welcome.” Stanton clapped him on the shoulder. “I’m really happy for you, Elgin. And really happy for Frances, too.” He added, “She’s invited me to watch you play flashball. I hope that’s okay.”

Elgin was flattered and stimulated by the prospect of playing in front of his boss as well as Frances, but a bit anxious too. It made him realize that no one’s opinion mattered to him more. Tonight’s game was going to be special. “Of course it’s okay,” he said. “I’d like it if you came to every game.”

“Good. That’s settled.” Stanton had wanted to go watch him play, but hadn’t because he didn’t want to put extra pressure on him, and because he wanted Elgin to have a part of his life that was independent. He was glad he could go now. “Why don’t we all three go together, then Frances won’t be left alone when you go into the dressing room.”

“All four!” called Buzzard. “All four go together. All together.”

“Okay Buzzard,” Stanton called back, “all four.” To Elgin he said, “Man, does he have good ears.”

“That sounds good to me,” said Elgin. He went back to work then. The rest of the day was a bit of a blur, but he didn’t leave Buzzard without any work again. He always managed to come out of his daydreams in time and without needing to be prodded.

~

Elgin was improving as a flashball player. In the last few months he had become as good as many of the other players on the team, and better than some. Not that he would have believed it if someone tried to tell him that. As far as he was concerned, he was still the new guy relying on the competence of his teammates. Captain Rita had a different view. To her Elgin was a versatile, dependable player that she could put into almost any situation. So far he wasn’t one of her talented ones, but if he kept progressing the way he was he soon would be. And for now she knew she could rely on him to fulfill the responsibilities she did give him.

Elgin looked out through the ice, checking out the crowd. It was a pretty good one, as they all seemed to be lately. People were catching on that the Harriers were one of the best teams this season, and the Falcons, their competition tonight, were up there too. He scanned the crowd, looking for Frances and Stanton, and found them right away. It wasn’t hard. Her radiance caused the rest of them to fade into dull uniformity, and Stanton was caught in the glow. She beamed and waved and clapped her hands. Stanton nodded and gave a thumbs up. To Elgin it felt like an infusion of energy directly into his bloodstream.

This was Elgin’s best game to date. It was one of those jumps

where things come together to produce a quantum improvement. Plays that required focused effort last game were almost effortless now. Playing for Frances and Stanton gave him both inspiration and the energy to carry it out. Captain Rita saw the improvement and gave him some added responsibilities. This was what she had been waiting for.

His greatest asset for the game, other than his natural physical ability, was his exceptional geometric sense. It allowed him to have an instantaneous picture of the structure of the play at every moment, and an intuition for how it would change in the next few seconds. That was all the information he needed. His usual talent for knowing immediately whether something is right let him almost instantly choose and make the best play available to him. Add in quick, accurate passes and he was Rita's perfect choice for one of the pivot positions, which usually got extra attention from the defence.

She used Buzzard differently. He didn't have Elgin's quickness, either physically or mentally, so she kept him out on the periphery where things happened more slowly. That gave his brain time to process the details of the play, and it gave his long, supple body the time and space it needed to maneuver. He developed a technique that allowed him to use his extraordinary physique to throw the ball faster than anyone else in the game, which was perfect because his position made his passes necessarily very long.

That made him very effective in his position, but it also allowed him to score points for style. While most of the scoring was in the successful formation and execution of patterns, there was a discretionary component. Since much of the ethic of the game was directed toward the enjoyment of the audience, there was always a place for stylish execution. When Buzzard relayed a pass, if conditions permitted, he took a trademark curving swoop that let him use his whole body and

its long arm as a whip that drove the ball's speed up through yellow to a flash of white. He was a crowd favorite.

This was Buzzard's best game too. However he came to it, whether inspired by the presence of Stanton or by the performance of Elgin, his game also clicked up a notch. They made each other better, they made their teammates better and they made the team better. The Harriers won the game and they won it with style. The audience showed their appreciation for the beauty with a long round of applause. Members of both teams came up and congratulated Elgin and Buzzard as they made their way to the dressing room. Rita complimented them both personally as they flew out of the ball.

When they came out of the dressing room, Frances and Stanton were waiting near the lenticular opening in the strut. Stanton was smiling proudly at both of them, but mostly at Buzzard. He shook the young man's hand and gave him a hug, but Elgin was distracted by Frances throwing her arms around his neck. "That was exciting," she said, "and beautiful. I love the way the ball glows."

"It's speed related," said Elgin.

"The higher the speed, the brighter the glow, right?" When he nodded she asked, "But why does it get brighter after it leaves the hand? Shouldn't it be brightest right at release?"

"Yes. Most people don't think of that." But Frances would, of course. He hadn't known her long, but he already knew that she had an eye for the important point. "The ball has a timer. It delays peak brightness so it has that profile during its flight."

"Attack and decay," she mused. "Not an accurate representation, but more pleasing in its effect. I think it actually looks better this way than the real thing would."

“I think,” ventured Elgin, “that it recalls the flight of a ball thrown in gravity. The arc.”

She nodded enthusiastically. “That sounds right,” she said. “It’s certainly a good effect. Especially when Buzzard throws it. No one else gets it that bright. I thought I could hear a crack whenever it flashed white.”

“I get that too,” said Elgin. He was about to tell her of the experiments done with sensitive microphones that showed there was no sound, but then she was backing out of his arms.

“Buzzard!” she said, flying toward him. He and Stanton were looking at them, smiling indulgently at their cuddling. “That was amazing. How can you throw it so hard?” She threw her arms around his neck too, but only briefly before standing back to look in his face.

“Moment arm,” said Buzzard, his face showing intense emotions. “I have a long moment arm.” He was looking shy and nervous, but he also projected peace and happiness. Frances could have that effect on people. Elgin noticed it even affected his speech, making it smoother and less repetitive.

“Moment arm?” asked Frances, looking at Buzzard’s long arms, then at Stanton.

Stanton laughed. “It’s a physics thing,” he said. “Basically, the same amount of torque will apply more force the longer the moment arm.” They both laughed at the inadequacy of the explanation.

“Never mind,” she said. “I get the idea. I’ll look it up later.” She patted Buzzard on the arm and then hooked her arm through Elgin’s. “Let’s go to the café,” she said.

Elgin was right about the sappy grins. He and Frances weren’t even being excessive in their attentions to each other, or so it seemed to him, and everyone still had that look on their faces. On the way to the

Square and in the café, sappy grin after sappy grin. He finally just had to ignore it and have a wonderful time. That was easy in the company of Frances.

They didn't spend the whole time together. Other people wanted to talk to Frances too. Rita had a good, long talk with her. Elgin was standing with Stanton, watching them.

"What do you suppose they're talking about?" he asked.

"What do you think?" said Stanton. "Or who, more likely?"

"I don't know," said Elgin. The two women looked at him and he waved. They waved back and then put their heads together again. They must be happy, he thought. They were smiling.

"Who do you think they would have to talk about?" asked Stanton.

"I don't ..." Elgin began. Then he got it. "Me?"

"Who else?"

Elgin was dumbfounded. He had never once in his life imagined himself as the topic of conversation. Particularly among women. And now, here were the two most important women in his life apparently talking about him. He resisted the impulse to fly over and find out what they were saying. Instead he asked Stanton.

"I wouldn't know, but it doesn't look bad. Why don't you ask Frances later?"

He did that. More accurately, he started and stopped and stammered until Frances figured it out, and she told him. She said they were "comparing notes," and he couldn't get her to give him any more details. At least she confirmed that they were talking about him. So he knew that much, but he still didn't know what they said about him. In the end he decided to do the stoical thing and accept not knowing. His brave face melted her heart and she relented enough to tell him,

“It was friendly talk, Elgin. Neither of us had anything bad to say.”
Then she kissed him.

~

His mind was still full of the night before when he got to work the next morning. They spent some time chatting and drinking coffee, reliving flashball plays and rehashing discussions before getting down to work. It took him a few minutes of looking before he registered what was on the piece of permapaper in front of him. When he did put it together he still couldn't absorb its meaning. His sense of right was satisfied because the plan was good, but it conflicted with his sense of reason. What was being proposed was so bizarre that he even doubted himself momentarily.

He checked the attribution on the submission, which showed that it hadn't been assigned by Stanton. That was a relief, anyway. The author had put it in on their own initiative. It was Shimmer, the unreliable one that Stanton tolerated for his occasional insights. The outlandish nature of the plan began to make a little more sense.

Still, he went over it again. Then again. It still came out right in spite of how wrong it seemed it must be. Finally he passed it over to Buzzard with the comment, “This one is weird,” as he placed it on the good pile.

Buzzard nodded and carried on with the one he was doing. Elgin picked up another paper and tried to examine it, but he couldn't keep his mind off the last one so he wound up watching his partner, waiting for him to get to it. Buzzard felt himself being watched and it made him curious, so when he was done he picked up the latest addition instead of keeping to the normal rotation. It took him longer to see

what it was about, but when he did he was no less shocked than Elgin was. He looked up, his face a big question.

“Yes,” said Elgin, “it’s right. But I can’t believe it either.”

Buzzard frowned and bent over the paper. He worked hard at it, spending the rest of the morning sifting every detail of it. Finally he straightened his back and said, his voice uncertain, “All done. All ten.” He looked at Elgin and finished reluctantly, “All good.” Then he got up and took it into Stanton’s office.

When he came back out they waited. It was time for lunch but neither of them wanted to leave. They didn’t go back to work because if Shimmer’s paper was good enough for Stanton then a lot of their current work would be made irrelevant. So they waited, drinking coffee and fidgeting.

When Stanton’s door opened they drifted toward it. Stanton came out slowly, looking at the paper in his hand. It was plain that he was as confounded as they were. He said, “I can’t find anything wrong with it.” He looked around the office, then threw the paper down and said, “Come on. We need to think about this.” As they went out he said to Elgin, “Give Frances a call. We can use her insight.”

They met in the Square and Frances suggested they go to the bubble. Elgin had told her it was about the joining when he called and the observation bubble seemed like a good place to think about that.

The view was still amazing, heightened by the intense feeling of exposure, but their reason for being there kept their focus close to home. They explained it to Frances in detail. She listened without interrupting and when they were done she zeroed in on the question they all had. It was the question all the residents of Green Comet would have. “You want to crash the comets together?”

They all answered at once, then deferred to Stanton as chief

engineer talking to an influential member of the planning committee. “Not crashing, Frances. At one meter per second it will be more of a soft bump. That’s like a very slow walking speed.”

“I know,” she said, “but everyone’s first reaction will be crashing.”

That was true. It wasn’t an abstract problem. They lived in one of the comets and the idea of colliding with another one would make everyone very nervous. It was right for Frances to assume the worst because everyone else would. All three of them had the same reaction even though they could read the plans and rationally see how low the risk should be.

She looked at Elgin and asked, “Is it right?” He nodded. She asked Buzzard, “It’s good?” He nodded. “All good. All ten.” She looked at Stanton and he nodded too. “All right,” she said, “then it’s just a matter of convincing everyone else.”

Stanton said, “You really think we should do it?”

She smiled at him. “I trust your judgement. If any one of you told me it would work, I would believe you. With all three of you in agreement I’m ready to move on to the execution phase.”

“Oh, we’re nowhere near being ready for that,” cautioned Stanton. “We have a ton of calculations to do, and then a whole battery of simulations.”

“I know,” she said, laughing. “We won’t do a thing until we’re sure.” She said to Elgin, “When the time comes, do you think you could do another presentation with video?”

“Sure,” he said. “Buzzard knows a guy.”

“Good.” She turned to look outside. “Now show me. Tell me what it’s going to look like.”

24.

THE JOINING DEBATES

Buzzard's guy outdid himself. His simulation of the joining was his best piece of work yet. He was inspired by the grandiosity of the project and was glad Buzzard asked him to be involved in it. He found that his imagination was tested beyond anything he'd experienced before. He was stretched almost to the limit visualizing what was going to happen.

He had no shortage of material to work with, though. Buzzard applied his ample skill to analyzing every detail of it, and he supplied his guy with more numbers than he needed. He got Stanton to commission acoustic sampling of the contact zones, so he would be able to calculate the deformation of the surfaces. Every time new information came in he did it over, providing ever finer constraints on the video. The artist had been planning on a spectacular show with comet material blasting into space upon contact, but he was forbidden. They didn't want to alarm people, and Buzzard's numbers showed it simply wouldn't happen that way anyway.

Within a couple of weeks they had enough data for a first approximation. In two more weeks the video was ready. Frances arranged a special meeting of the planning committee for a viewing. Everyone went. Stanton and Buzzard accompanied Elgin, both to lend weight to his presentation and because they had a deep interest in the project. The only person who wasn't there was Buzzard's guy.

Frances introduced the topic as a new, more efficient way of joining the comets. She briefly outlined how much it would save in time and

resources, and then handed off to Elgin. He expanded on the efficiency and savings, something they wanted to emphasize. He described the current plan, pointing out the waste involved in stopping and starting the comet, and the potential danger to the people working between them. Then he said, "We propose to let the comets do the work," and told them Shimmer's plan.

He paused momentarily then, but no one seemed to want to say anything so he carried on with the details. It would take hours instead of months or years. It would save a great deal of energy and nitrogen since they wouldn't need to use the thrusters as much. It would be safer since nobody would have to work between the comets.

"Speaking of safe." It was the young man, Nigel. Winston also nodded his head and croaked.

"Our preliminary calculations show that there is a negligible danger to the settlement."

"Negligible? Does that mean that there is a danger?"

"Yes. There is approximately one chance in ten thousand that there will be a breach in the integrity of our walls resulting in a significant loss of air."

"One in ten thousand?"

"Yes. Effay," said Elgin.

"Thank you," said Nigel. "I think you've given us an honest assessment." He looked around the table and everyone nodded. "We should be able to reach a decision based on this and the written report."

"We know it looks alarming at first glance," said Elgin, "but we've subjected it to stringent analysis and we all feel that it's not only more efficient, but safer too."

Winston spoke up. He wasn't wearing his harrumph face, but he

had a carefully non-committal expression. "Do you all agree? Stanton?"

Stanton moved forward. "Yes, Winston. I can't find anything wrong with it, and I've tried, believe me." A chuckle went around the table. They all knew Stanton's reputation for exactitude. They wouldn't want anything less in their chief engineer.

"Thank you," said Winston. He glanced at his notes. "Bussard?"

Stanton, Elgin and Frances all said, "Buzzard," together and everyone laughed. Stanton said, "His chosen name is Bussard, but we all call him Buzzard." He held out his hand to beckon Buzzard forward. "I think he prefers it."

"Buzzard," said Buzzard. "Everyone calls me Buzzard now. I prefer it."

Winston, who might have been the only waking person on the comet who didn't know that, said, "I'm sorry Buzzard. Do you agree with the plan?"

"Agree," said Buzzard. "Good plan. All good. Better. Best plan."

Heads were nodding. People were used to Buzzard's manner of speaking and Winston caught on right away. "Thank you very much, Buzzard." He looked around before finishing. "I agree with Nigel. I think we have everything we need. Thank you, Elgin, for another excellent presentation. And Stanton, it's good to see you here again after so long. And I'm glad to have met you at last, Buzzard." He straightened his papers, ready to close the meeting, but was arrested by a clear, golden chime.

Frances said, "Just a moment, Winston. I think we still have a treat in store for us." She looked at Elgin. "Don't we?"

Elgin was growing accustomed to the effects of her presence and her voice, so he was able to respond right away. "Yes. Yes we do."

He addressed his whole audience. "We have a visual simulation of the joining." He started it, speaking over the introductory frames. "The whole thing, from the moment of contact, will take over three hours. We've compressed it down to three minutes here, so please don't think it's really going to look this way," He stopped speaking just as the two comets touched.

Even at this accelerated pace it wasn't terribly dramatic. At an apparent closing speed of sixty meters per second it was possible to see things happening that might not be visible at one meter per second. They could see the contact area growing as the two comets became embedded in each other. They could see a humped rumple line moving away from the point of contact on both comets. But the whole thing looked very controlled, even stately.

That was where the drama was. Not in terror but in the slow, steady precision with which these two huge, massive objects became one. Even three minutes is quite a long time. People were beginning to shuffle and look around toward the end, when things had slowed down so much that nothing seemed to be happening. Elgin let it run, driving home the sense that there was nothing to fear. When the speed indicator finally, agonizingly clicked down to zero he said, "That's it." The view panned back, showing both comets, and simulated orbiting around them. It looked remarkably mundane.

Frances suppressed a giggle and said, "All we need is another, smaller one stuck on the end, and two big pieces of coal for eyes." Everyone laughed. It did look like a snowman under construction. The spot showing where their settlement was, ninety degrees around their comet from the contact point, even looked a bit like the bottom button of his coat.

The meeting broke up in an atmosphere of good humor. Everyone

seemed relaxed and Elgin felt that they would probably get the approval to go ahead. So as the four of them were headed for the Square and the café, he was surprised when Frances told him they weren't there yet. "I think they were all convinced," she said, "but Winston takes his responsibility very seriously. I think he's going to recommend a debate followed by a general vote."

He did. They scheduled the first debate for the next week and the second for the week after. They made the paper available on the network, along with an abstract and notated illustrations. The video was there for viewing, both the short one and a full length one. At Frances' suggestion they began showing the video in the Square. There was one big screen for the long version. They wanted to be sure that everyone knew that the slow, boring one was the accurate one. It was surrounded by smaller screens showing different angles, and arrays of evolving data. There was another cluster of small screens dedicated to the three minute version.

The comments on the network were numerous, and at times very animated. There was so much interest that discussion forums sprang up spontaneously, but trying to judge the consensus from the comments and posts was futile. The balance was about even, but it might not match the actual vote later.

Both sides claimed that their way would be safer, but the con side had a much better angle on that. Letting the comets do the work might be safer for the people working there, but doing it manually was obviously safer for everyone. The pro camp had efficiency and saving precious resources and the assurances of their best engineers on its side. The other side had conservatism and fear.

The first debate didn't resolve the deadlock, although it did increase the participation in the discussions on the network. Elgin was

afraid that they would want him to argue the pro side, since he was the one doing all the presentations lately. He was relieved when that burden was lifted by Frances. She admitted that she had some experience with public speaking, and since she was interested in the project and strongly in favor of it, she felt she should defend it. She grilled the three of them mercilessly, familiarizing herself with every detail, positive and negative.

It was two weeks of intense political involvement by a large majority of the population. They knew it was important. They knew it had consequences, not only for themselves but for the eighty percent presently in hibernation. There was no question that their decision was a proxy for the sleepers. It was made clear to everyone before they ever got to the comet that whoever was awake would form a quorum at any given time. Everyone was aware that their vote carried the weight of five.

The second debate was more closely followed than the first. Both sides, Frances speaking for and Winston against, used the results of the first debate to refine their arguments. Winston was good. He knew just what buttons to touch, mostly around uncertainty. There could be no guarantee that it would work. They could destroy both comets and annihilate themselves. To save a little time and resources? This time he actually did say, “Harrumph!”

Frances didn’t quibble Winston’s points. She knew there was no guarantee, but she didn’t have to remind people of that. They all knew it. They were living in a comet, beyond the most distant of their Sun’s planets and getting farther every second. They had safety measures and redundancies built into everything, but they all knew how precarious their situation was and they weren’t going to demand guarantees. The people might be cautious and careful with their resources, but by

nature they were confident and daring. She would appeal to their sense of adventure.

Elgin watched her talking to the people that day and fell a little more in love. She wasn't trying to convince them to take her point of view, nor to vote for her. She didn't care, at that moment, talking to the people, whether she won the debate. All she cared about then was encouraging them to do the thing that would most gladden them. She knew. Just as Elgin knew when something was right, she knew what people felt, what they most wanted and needed. In this case, by voting to bring the comets together in a beautiful choreography of engineering, she knew that they would be doing what was most natural for them. She wanted to encourage them to do what would make them feel best about themselves, and Elgin fell a little more in love.

He already knew that the joining wouldn't significantly decrease their safety. He had seen the numbers and done the math. Still, the music in her words seemed to make it even more true. That's why he found himself resenting Winston, who always seemed to be resisting them.

"How can he do that?" he asked her after the debate. All the arguments had been made and now it depended on how the people chose to vote. "How can he not see?" He was angry with Winston for so effectively expressing the opposition to their plan. He didn't like that he did it so well, that he was such a threat. Elgin also had to admit that what Winston said sounded right. His talent for knowing when something was right could see that, and the ambiguity disturbed him. Mostly, though, he felt angry that Winston could oppose Frances when she was so obviously more right. How could he not see that?

"Winston is doing what's best for the comet," said Frances. "He always does."

“But he’s not,” insisted Elgin. “What you said is best for the comet. If he wins, the people are going to lose. They’re going to lose something grand.” He couldn’t find the right words and his shoulders slumped.

She came close and snaked her arms under his wings to wrap them around his waist. “Don’t worry,” she said. “They’re not going to vote for caution, they’re going to vote for daring and beautiful.”

“You’re sure?”

“As sure as I can be,” she said, grinning up at him, “and that’s pretty sure.”

He felt better about that, but he still couldn’t see Winston as anything but a misguided adversary. “How can he do that when he’s so obviously wrong?”

“But he’s not wrong, Elgin.” She squeezed him. “Not everyone has your talent, you know.” She snuggled in close. “The comet needed a debate. It needed to clarify its options. Winston did his duty by debating so well, whatever side you think he’s on.”

Elgin had to admit the logic of what she said, and his senses confirmed it. “I guess so,” he said. “You say it and I know it’s right.”

“That’s right,” she said, pressing firmly against him. “Now, there’s something I need you to do for me.” She led him toward the bedroom. “I seem to have an excess of energy after the debate. I’d like your advice on how to best use it.”

25.

THEY MOVE IN TOGETHER

They decided to move in together. Elgin's rooms wouldn't do, even though he was very comfortable there. Even with the medical equipment removed, it was still just two rooms. More than adequate for a single man, but too small for two. Frances had a slightly larger set of rooms which might have been all right, but she decided they should start fresh, rather than just move into her place.

They took their time looking. There was no hurry. And there was no need to snap up the first thing they saw, either. There was always more accommodation than needed in the comet. They had plenty of room, after all, and weren't afraid to use it. Frances thought it was an indicator of their general sense of optimism. Having more living space than they needed showed that there was an assumption, conscious or not, that they would need it in the future. Assuming that the population will grow, she told Elgin, is a good sign of optimism.

They didn't see anything they liked, although they saw plenty that would do. Elgin was willing to take almost anything that was big enough. He instinctively understood that they needed enough room that they wouldn't get in each other's way, but after that he figured they could make a home out of anything. Heck, he'd bunk down in an unused storage closet if he was sharing it with Fran. But she had more of a vision of what they needed, and he knew that her vision was better than his about such things.

She suggested that they live on the Square, in one of the apartments above the shops and offices. She thought it would be nice to sit out on

the balcony and watch people. “It’s the heart of the comet,” she said. “It’s where people come. Where things happen.”

“Okay,” said Elgin. He liked the Square. It was still sort of magical for him after that first time, and if it made Fran happy then it made him happy. So they spent a lot of time there during the week before the vote. They saw the people watching the videos and discussing them. They overheard arguments, some of them quite heated, although never physical. Comet people, except in rare cases, didn’t resort to violence over their opinions. They did allow themselves to have very energetic arguments, though, and they heard a few of those while they were apartment hunting.

There was nothing available that suited their needs. The Square was a popular place to live and people tended to hang on to it once they got a place there. Other than a few one roomers, the kind of thing that changed hands frequently, they couldn’t find anything. It looked as if they would have to settle for something else.

Then Elgin realized something. The end of the Square where the video screens were set up, the Yellow Comet end, didn’t have any apartments. Even though it had a full complement of shops and offices on the ground level, it had nothing above that. The other three sides were pretty well completely developed right up to the ceiling, but the wall at the yellow end was blank.

When he mentioned it to Fran she looked and said, “Of course.” Then she went quiet for a few minutes. Elgin let her think while he looked at the blank wall and wondered. It didn’t take long to figure out why the other sides, red, orange and green, would be occupied while yellow wasn’t. It was because of what happened to Yellow Comet. People, out of respect or because of superstition, were reluctant to live there. Elgin shrugged and resigned himself to not living in the Square.

Then Fran roused herself and said, “Come on,” grabbing his hand. She led him toward the yellow end, not telling him anything but smiling to herself. Elgin was happy to let himself be towed along.

When they got closer they began to notice details about the people watching the videos. The indistinct raised voices ringing around the Square could now be identified with individual people. One particularly robust-voiced man was gesticulating with his hands while pointing at the screens with one wing. The person he was shouting at probably couldn’t hear him because she was doing much the same thing, only her voice was higher pitched. Someone in their small audience caught sight of Elgin and Frances and shushed them, quieting them just as the couple arrived. Everyone turned to look at them and Elgin said to himself, “Uh-huh. There they are. Sappy grins.” They were still an item, still a phenomenon. Their love story was on its way to becoming a legend already.

“Hello,” said Frances. “I’m glad to see you’re discussing the joining.” She tipped her head toward the videos.

The combatants glowered at each other and one of their audience said, “Every day.” Then, with a laugh, “All day.”

Fran’s laugh was musical, and not only to Elgin. She had a laugh that could make people feel special for causing it. “I’m glad,” she said. “This is an important decision.”

“Oh, they’re not arguing about that,” said her informant. “They both think you’re right. You and Elgin.”

“And Stanton,” she said. “And don’t forget Buzzard.” They all agreed, nodding their heads. “I’m glad you agree with us, but what are you arguing about, then? If it’s all right to ask.”

The woman spoke for them, one woman to another. “He thinks the

rumple is wrong.” She pointed with a thumb. “He thinks it should be higher.”

The man jumped in to clarify and they almost got going again. Frances said, “You might be right. It is just a simulation, and based on preliminary data at that.” The man lifted his chin at the woman. “Of course,” Fran added, “it’s Buzzard’s data, and he’s pretty thorough.” There was a murmur of assent and the woman looked pleased with herself. “But we’ll find out who’s right when the time comes. That is, if the people vote for the new plan.”

“Oh, they will,” said the woman, to general agreement.

“I hope you’re right,” said Fran as she and Elgin carried on toward the yellow wall. She glanced back and saw the woman slip her arm through the man’s. That pleased her so much that she did the same thing to Elgin. There was a faint suggestion of a collective, “Awww,” behind them when she did. Elgin rolled his eyes and she punched him on the arm.

She took him up above the storefronts to the blank wall, then left to the corner where yellow met orange. There she turned them around and they checked out the view. Dominant was the green side, from where it joined yellow’s other corner, sweeping the length of the Square to where it met the red end. That was good since people tended to gravitate to the green side and this gave them a good view of that. Elgin’s attention was drawn down the green wall to the red, and inevitably to the pillars at the entrance where he entered the Square for the first time. His mind was flooded with memories, not as powerful as the first experience, but good reminders.

“So,” said Fran, “what do you think?”

“Nice view,” he said.

“No, silly. How would you like to live here?”

Elgin looked at the expanse of unmarked ice behind them. “Is there an apartment behind here, or are you thinking of pitching a tent?” He squeezed closer to her. “I’d love to live in a tent with you.”

She kissed him. “We definitely must go tenting soon.” She slapped the wall. “For now, though, how would you feel about building right here?”

He was startled. “Would that be okay? I mean, nobody lives here. Isn’t the yellow wall off limits?”

“Not exactly. It’s true that nobody’s living here yet, but I think that’s just hesitancy.”

“Nobody’s doing it so everyone thinks there must be a reason? So nobody does it?”

“Yes.” Fran moved back from the wall and struck a pose, with a hand to her cheek, that women had used since they were assessing their caves. Elgin, as wise men have always been, was quiet and attentive. She said, “We can have two bedrooms and two living rooms across the front, all sharing a big balcony. The bedrooms will be at opposite ends.” Elgin imagined it and it rang true. “In the back, two bathrooms with a large kitchen-dining-common area in between.”

It sounded great to Elgin, but, “Why two of everything? We could get by with one of each. At least for now.”

If she caught the implication of that last part she didn’t let it show. “Someone might stay over, so an extra bedroom. It will be nice to have a bathroom for company. And if one of us is entertaining in one living room, it will be nice to have the other one available.”

It was all very logical and, as usual, right. He was only thinking of it as a place for them to live, and she was already planning for guests. Further proof that she was smarter than him.

“So, let’s see,” she said. “If we make it twenty meters long and about twelve deep, how will that be?” She looked at Elgin.

“That gives about five meters for each room, less the walls. It depends how big you want the rooms.” He looked at the wall, but he was seeing what she’d described. “How high is it going to be?”

“We need it good and high,” she said. “At least five meters, like most other interiors.”

“The rooms are going to be nearly cubical,” he said. “Depending on where we put the interior walls.” He looked at it for a while, imagining being in it. “I think it will work.”

“Good,” she said. “And it’s an even divisor of the width of the wall, sixty meters. That will simplify future apartments.”

There she was again, thinking beyond the present problem. He just sighed and gave her a kiss.

~

At work the next day he was talking to Stanton about their house hunting. As engineers do, they were soon into the details. How would it be made? How would the rooms be divided? Could there be a more efficient layout? “Oh no,” said Elgin. “That’s her department. She knows what we need. My job is to make it happen.”

Stanton nodded. “You’re right. Besides, it was Fran’s idea, right?”

“That’s right. She just seems to know what she wants.”

“And you don’t care, as long as she’s happy and you’re together.”

“Exactly!” That made him think about them being together. And that made him think about how they seemed to be everybody’s favorite couple. “Stanton,” he said.

“What?”

“When is it going to wear off? I mean, we’ve been together for a while now, but people are still acting mushy.”

“I don’t know.”

“Is this normal? Do people always act this way? I’ve seen other couples. They look happy, but nobody’s looking at them the way people look at us.”

“I can’t really help you, Elgin. There’s always this reaction when a young couple falls in love, but you’re right, it tends to wear off. I’ve never seen it like this.”

“Well, I hope it wears off soon,” complained Elgin. “It’s getting so I don’t want to go out in public.”

“Oh, that’s not entirely true, is it?” When Elgin looked at him, he smiled. “You don’t care where you are when you’re with her, do you?”

“Well, no.”

“You don’t really care where you are or who’s there or what they’re doing, because you’re focused on her.”

“That’s true.”

“And she’s focused on you the same way.”

“She is?”

“Yes, you idiot. Everyone can see that.” Stanton shook his head, smiling indulgently. “Everyone can see it. When you two are there, that tends to stand out.”

Elgin thought about that. “But, isn’t it the same for other couples who’ve fallen in love?”

“Yes, but there’s something different about you guys. I can’t quite pin it down, but something seems special.” He shrugged, frustrated with his inability. “You seem to, I don’t know, glow or something when you’re together.”

“Oh,” said Elgin, because that rang a bell. “I do feel like I’m

glowing when I'm with her, but I thought it must be the same for everybody."

"It is," said Stanton, "but you guys have taken it beyond normal. It's not that it's different, it's just like you've taken the usual stuff and, well, refined it maybe." He shrugged again.

Elgin nodded, resigned but happy. It looked as if he'd have to put up with the sappy grins, but it was worth it. "What's it going to be like when we move in together?"

"I'm sure it will ratchet up another notch or two, but I don't think you or Fran will care too much."

~

With Stanton's help they got hold of the builders and began the arrangements. Elgin drew up the plans himself, not having much to do at work as they awaited the outcome of the vote. They had two meetings with the builders before the work began. In the first they told them what they wanted. Then they had to sleep on it and come to the second meeting with any new thoughts or changes. Once the work commenced they couldn't change their minds again.

The builders and fabricators started work on the day of the vote. Polling was open all day, so nobody had any trouble casting their ballot. The turnout was excellent, with nearly everyone voting. That meant there were almost two thousand votes cast, since everyone who understood how to do it was an eligible voter. There were no restrictions based on age or mental capacity. They believed that everyone who had a stake in the outcome should have the right to vote. The only exception was anyone who committed a crime that was proved to have harmed the comet. They lost their franchise for the duration of their sentence. There was no one in that position for this vote.

The people voted overwhelmingly, by a margin of four to one, in favor of Shimmer's plan. There was a festival atmosphere in the Square from the beginning, and once the results became obvious it turned into a celebration. Everyone, including Winston, stopped and congratulated Frances and Elgin, who spent most of the day in the Square with Buz-zard and Stanton. They were all energized and already thinking about tomorrow and getting back to work.

To add to the excitement, in the evening there was an announcement over the public address system. Accumulating data and calculations had led to the conclusion, with a high degree of probability, that the Visitor was artificial. Here was solid evidence of intelligence from another world, and it was coming to them. The celebration became a party that kept some people up all night.

26.

THE SWIMMING HOLE

The comet was buzzing the next day. Everyone was talking about the Visitor, even as they began preparations for the joining. It was the first thing Elgin and Buzzard talked about when they got to the shop. Buzzard said he always knew it wasn't a natural phenomenon. When Elgin asked him how he knew, he said it was the most likely explanation. After seeing all the data, it was the only thing that made sense.

"So," said Elgin, "what do you think they want?"

Buzzard looked away. "Don't know what they want." He started shuffling the papers on the desk, not looking up. "Don't know."

Something was worrying him about this. Elgin could see that and it worried him, too. Buzzard was normally eager to talk about such things, to speculate on the unknown with insufficient data. Elgin was tempted to press him on it, to get him to explain, but he decided against it. He didn't want to prolong his friend's distress. He said, "It's going to be great to get to work on the joining, eh?"

That brightened him right up and he began chattering, a happy smile on his face. He was invigorated by the prospect of so much work, by the anticipation of so much data to comb through. His enthusiasm was infectious and soon they were fully engaged, bouncing thoughts off each other and igniting an explosion of ideas. The first thing they realized was that they needed detailed knowledge of the composition of both comets, especially the sides that would meet.

They went to Stanton. He agreed and arranged for a complete acoustical profiling, using sonar and seismic imaging. To begin with

they set up a more thorough analysis of the areas already done for the video, but the plan was to widen the area of interest until the facing hemispheres of both comets were completely mapped.

It wasn't long before they had enough data to start putting the plan into action. The calculations showed, and were confirmed with each new iteration, that the comets would not be in danger, so they stopped planning to slow the contact speed to zero and began aiming for one meter per second instead. That was the moment when it sank in for Elgin. Everything changed from theoretical to practical when they committed themselves to what some people had taken to calling a "controlled collision."

~

They soon settled into a routine of working by day and getting together during their off hours. Elgin and Buzzard had flashball practice twice a week in addition to a couple of games. They both continued to improve, although Buzzard was beginning to level off. Elgin kept seeming to find new things to work on, while Buzzard continued to refine and perfect his specialty.

Elgin and Fran were able to move into their place after a month or so. During construction he'd got them a pair of vacuum suits and taken them outside the wall to observe. There wasn't much to see out there, other than snow, but it was fascinating to view the process. First they packed snow to the shape of the box they wanted to build, then they formed the two meter thick outer shell in layers of water ice. Interior dividers were made much the same way. One interesting technique was in the ceiling and all walls whose edges touched the Square. They were made to allow light from the Square into the interior of their rooms. The ceiling and most of the walls glowed.

They also spent a lot of time in Stanton's bubble, which was usually crowded. There was something about the sense of exposure that made it seem more real than watching the little comet get closer on a screen inside.

~

Now that the "controlled collision" had been affirmed, Frances had a lot of work to do, too. It wasn't just a matter of lining up the comets and getting the speed right. There were also many things to do in the comet to prepare for the impact. When the comets made contact they would experience changes to their velocities. Anything in their settlement that wasn't affixed was going to start moving relative to the comet. She had to make sure that there was nothing that was going to cause damage to the structure or danger to the inhabitants when that happened.

One troublesome area was the water reclamation facility. The sewage treatment and water purification plants both had large quantities of liquid water. One effect of that was that they had to be kept warmer than other areas. Add high humidity to the high temperature and this place was like the tropics of the comet. The problem was, all that water was going to slosh like crazy during the joining.

They could plan to shut down the treatment part for a few hours. They could reduce the water content and seal the vessels for the duration, then start it up again afterward. The hard part was the purification system. It consisted of long tubes of water that supported a thriving ecosystem based on algae. The whole thing worked together, with dirty water going in one end and clean water coming out the other. They couldn't drain it without breaking its working cycle, which might take a long time to get restarted and stabilized again.

Fran took Elgin there to have a look. The supervisor gave them a tour, explaining the function as they went. All the tubes were parallel and they were oriented very close to the main vector of the collision, so the surging water would be largely unimpeded. Elgin asked their guide one question. "Can the ends be sealed?" He got an affirmative answer, with tons of explanatory embellishment that he didn't hear. Eventually the supervisor realized that Elgin was no longer listening and looked, somewhat miffed, at Frances for an explanation.

"He's visualizing," she said, touching the man's arm and turning him away. "It's best to just pretend he's not here for a while," she said with a smile. He was somewhat mollified. When she said, "I think it's fascinating that these little creatures can do so much for us," he was completely won over.

"They're plants," he said. "They represent one of the major evolutionary transitions in the planet's history." He earnestly explained everything in depth and detail. It was obvious that he didn't get the opportunity very often, with algae and sewage treatment not being highly interesting to most people. He was disappointed when Elgin rejoined them, but Frances made that all right too.

"I think we can do it without disrupting your operation too much," Elgin said. "Since there won't be any inputs at the time, we can seal off both ends of each tube," he told them. "Then I think we should put some baffles in them, to dissipate the energy." He looked at the supervisor to see if that would be okay. Getting a nod, he finished up with, "We're going to have to buttress these stanchions, though. They're too light."

The man thought about it, then said, "That should all be okay, as long as it doesn't interfere with its function."

“That shouldn’t be a problem,” said Elgin. “You’ll have to put up with people getting in your hair for a while, though.”

There were a surprising number of things like that, once you started to think about it. Everything that was loose had to be considered a potential projectile. They had everyone on the lookout for things that might be overlooked and they set up a forum on the network where they could collect and discuss ideas. Fran also got the children involved. She began an initiative in the classrooms, a friendly competition to see who could identify the most potential problems and suggest the best solutions.

Fran liked children and she loved to do things with them. One day she said to Elgin, “I’m taking some kids swimming. Do you want to come?”

Of course he wanted to come, but swimming? His mind was struggling with the concept of whether a swimming pool would work in microgravity.

“Yes,” she said, “at the reservoir.”

He had heard that there was a reservoir and had put the information in the back of his mind. It was just a fact and before now he hadn’t thought about how it might be realized. “Yes,” he said. “For sure. Let’s go swimming.” Now his brain was churning, trying to anticipate what it should look like.

“Okay,” she said. “We’ll pick the kids up after lunch.”

“What do I need to take?” he asked.

“Nothing,” she said. “No bathing suit required, obviously, and the water just runs off this fur, so no towel either. You just give a little shake and you’re dry.” She gave a little shake to demonstrate and he liked it so much that he asked her to do it again. With one thing and another they passed the time before the outing quite pleasurably.

They picked up the kids at school. The children were raring to go. They swarmed all over Frances, laughing and chattering and saying her name, and they gave Elgin a curious glance too. Fran pointed at him and said, "This is Elgin. He's coming with us." Then she broke away to chat with the teacher, whom she seemed to know quite well. And Elgin smiled, realizing that she seemed to know many people well. That was her way. His adoring reverie was broken when he became aware of being in a crowd of children. They must have turned their attention to him when Fran left. He smiled and exchanged a few greetings, but couldn't think of anything to say.

One little girl took care of that. "Are you with Frances?" she asked.

"Yes," he said uncertainly.

She considered that, looking into his face while the other children looked back and forth between them. He could tell he was being judged and had no idea how he was doing. Finally she gave a little nod and said, "Okay," and the happy chattering started up again. Elgin was amused at how relieved he felt, and also left wondering how much of his acceptance was due to being with Fran. Then it occurred to him that he might have been judged on whether he was worthy of being with her.

This was getting too complicated so he concentrated on what the kids were saying. It was mostly a barrage of questions and he tried hard to answer them. "We've been together for a few months ... I'm an engineer ... No, the Square was built before my waking ... Yes, I worked on Stanton's ball ... Yes, I do play flashball ... Yes, Buzzard is a good friend of mine ... I like the way he plays, too ..."

Finally Fran came back and Elgin's swarm disappeared. She got

them moving and pointed in the right direction, then she fell in beside him. “How did it go?” she asked with a grin.

He laughed. “Fine, I think. It was a little scary there for a while, but I think I passed.”

She laughed too. “Kids can be pretty judgemental,” she said, “but they’re fair. And they really want to like you if you give them a chance.”

“That one little girl,” he said. “She was something else.” He looked at Fran. “You know,” he mused, “she reminded me a bit of you.”

She was pleased and he could tell she was blushing under her fur. “She’s come up with some interesting ideas,” she said. “She’s the one who pointed out that people are loose and might be a problem during the joining.”

“Oh,” he said. “And you’ve taken her under your wing.”

She liked that image. As they spread their wings and flew after a flock of excited children, she smiled at him, her face happy and relaxed. “Yes,” she said. “Under my wing.”

The school was just off the Square on the orange side and the swimming hole, as the kids were calling it, was out the red end, beyond Elgin’s old rooms. They attracted a lot of attention on their way through the Square. People looked up when they heard the commotion and most of them grinned at the antics of the children. Plenty of them nodded or waved at Frances and Elgin.

In the corridors Elgin was worried that their energetic, haphazard progress might cause traffic problems. The knot of little fliers seemed to be moving along of its own accord, while its members concentrated on talking and playing. To Elgin’s surprise, though, they were unconsciously keeping to their flying lane even while seeming to pay no thought to it at all. It reminded him of the commuter he’d seen on his first day out with Stanton.

They finally came to a narrow section of corridor. The width smoothly decreased until it was half of normal. They seemed to suddenly pick up a tailwind and Elgin found himself automatically trying to slow down. No one else did, though. Fran sped ahead of him, seemingly unconcerned, and the kids were laughing and whooping as they were swept into a thickening fog. Of course! He made a few hard flaps and caught up to them before they disappeared in the mist.

Here was a classic example of the Venturi effect. As the moving air, normally circulating so slowly that he didn't notice it, was forced through a narrowing channel, its speed had to increase. Higher speed creates lower air pressure and that causes water vapor to precipitate out, hence the fog. Now he was working hard to keep at least one of his companions in sight. They were flying blind, but they seemed to know where they were going, and he didn't want to run into the walls at this speed.

Finally they burst into a large gallery, and he fluttered to a stop in disappearing clouds of fog. The children were giddy with excitement, but Elgin's attention was focused on what looked like a small flashball court in the center of the cavernous space. But it wasn't a ball of ice. For one thing the refractions were different, and for another the surface was active with subtle wobbling. He was looking at a globule of water about forty meters in diameter.

"Wow," he said.

Fran looked pleased with herself. "Isn't it nice?"

"Yes," he said, sniffing the air. He took a great draught. "And humid too."

"I knew you'd like it."

"I do! I love it." A large cavern, about three times the diameter of the ball of water, filled with the happy echoes of children at play.

Everything was water, from the spherical pool in the center to the far walls of ice. The space between was filled with so much water vapor that the least thing would provoke it to condense out. He could see tiny droplets forming on their fur. He saw jets of mist forming spontaneously. He thought they might be caused by bursts of air, assuming that's how the "swimming pool" was kept in position. He even thought he saw tiny tracks forming randomly, as in a cloud chamber. Cosmic Rays? Probably.

The children, who had exploded out and filled the gallery with their energy as soon as they blew through the door, were drifting in and gathering by the water. They mingled, waiting, throwing many glances at the adults. Frances flew over, counting them as she went.

"Okay," she said, "you all know the rules."

They nodded seriously.

"Does everyone have a buddy?" She watched them pair off. "Good. You keep track of each other." More serious nods. "And remember," she began, "It's not fun ..."

"... unless everyone's having fun," they finished.

Fran was about to let them go in when she saw a contemplative look on the girl, Maria. "Maria," she said quietly. When the girl looked she asked, "Is something bothering you?"

"No," Maria said, "it's nothing. I was just thinking about the water." She glanced at its gently shaking surface a few meters away.

"The water? What about it?"

"Well," she said, "it's going to be loose, too. At the joining, I mean."

Everyone looked at it. Fran and Maria shared a glance and both of them looked at Elgin. He said, "No one else has ever brought that up." Then he went quiet and the kids looked at Frances.

"It's okay," she said, "he's an engineer." The children nodded,

understanding looks on their faces. “He’s visualizing what will happen.” She indicated the water. “You can go swimming now if you want. You can find out later.”

A few of them would have gone right then, but most of them made no move. When Maria indicated she was waiting, they all waited. It didn’t take long.

“No,” said Elgin, “it won’t hurt anything. We can just let it be.” He looked at Maria and Fran. “But I do think we should set up a bunch of cameras in here.”

“Oh, yes!” said Maria. “Can we?” She looked at Fran who looked at Elgin.

“Sure we can,” he said. “No problem.”

Maria wanted to say something, but seemed reluctant. Fran encouraged her and she finally said, “Could I do it? I mean, can I help with the cameras?” Her normal air of assurance had been replaced by uncertainty. “And the videos. Can I see the videos afterward?”

With both of them looking at him, Elgin only had one option. “Of course you can, Maria,” he said. “If you’re interested in that kind of thing then we certainly want to encourage it.” He made eye contact with Fran and asked her a silent question. When she nodded he added, “We can make it a school project if you like. Your whole class can help.”

She liked that and so did the other kids, so they said they would firm it up with their teacher later. “So, about a month before contact,” he told Maria, “if you remember that long and still want to do it,” there was a loud round of affirmation from them all, “then you get hold of Frances and we’ll set it up.” Everyone seemed satisfied and their attention turned immediately back to the water.

Fran clapped her hands. "All right," she said, "does everyone still want to go swimming?" They did and she said, "Go!"

They stood back and watched their charges dive in. One or two of them eased their way into the water, but most of them took a couple of flaps and plunged in head first, tucking their wings firmly onto their backs. Once the splashes had drifted away they were able to see clearly into the water, though the now-pitching surface continually broke up the images of the swimmers. Elgin could see that they didn't use their wings in there. He guessed that they were too lightly built and not stiff enough to be effective in water.

Kids were popping their heads out of the water at random points on the sphere to catch a breath of air. Occasionally one would fully emerge, turn sharply with a quick flap, and plunge back in. A few of them were practicing diving. They would gather about ten meters from the water and then, one by one, fly hard at it and "dive" in. Then Maria popped out a few meters to their right, sticking out of the sphere almost at right angles to them, her legs still under water. "Are you guys coming in?" she asked, shaking the water off her wings. Elgin was caught by the sight of her wings. Soaking wet, with the fur plastered to their skin, they became translucent. He could see the shadows of their bones, and their resemblance to big, long-fingered hands was striking. He knew the body was induced to grow modified hands for wings, but seeing it this plainly was far more effective than simple knowledge.

"Yes, we're coming," said Fran. Then, tipping her head at Elgin, "It's his first time," she said, smiling.

"Oh," said Maria, her face understanding. She was about to say more when someone grabbed her by the feet and pulled her back into the water. She only had time for a little squeak before snatching a quick

breath. They could see her chasing someone toward the other side, their images bouncing and breaking up.

“Come on,” said Fran, and she glided head first through the surface.

Elgin took it a little more slowly. First he got close and stuck his hand in to test the temperature. It seemed all right so he took a breath and stuck his head in, which looked funny from both sides. Opening his eyes, he was now able to see everything distortion free. The kids looked as if they were playing in the open air. They were flying or hovering just the same, only it was much slower and instead of using their wings they were using their arms and legs. And of course they had to keep going to the surface for air.

He spotted Maria, who was leading a small formation in some kind of synchronized exercise. They were forming patterns and making turns and looping through the surface to breathe, all in graceful unison. It was like synchronized swimming, but without the distraction of gravity. It looked effortless in its slow, stately beauty.

He looked around for Fran and found her swimming just below the surface. She was doing the breast stroke, gliding serenely around the pool, popping her head out for a breath every few strokes. She looked as if she was doing laps, completely unconcerned about anything else, but Elgin could see that she was in a perfect position to watch the children.

He yanked his head out and caught his breath, then he went in. It was a lot like floating in the air, except for the heavy resistance and the fact that he couldn't breathe. Some of the kids saw him and came over to swim circles around him. He grinned back at them and headed for the other side. He underestimated how far forty meters was under water and by the time he got there he was badly out of breath. He

swam straight out of the water, fully emerging into the air, gasping hugely. The kids came out too, fluttering around him, quite concerned. When he noticed that, he hammed up his panting and their worry dissipated into laughter.

When he went back in he decided to stay close to the surface. Deeper dives could wait for later, after he was more used to it. For now he emulated Frances, doing a slow breast stroke in an orbit approximately at right angles to hers. It didn't take long to see why she did it. In less than one circuit he'd found the rhythm and was able to keep it up almost automatically, freeing his attention for watching over the kids. That left most of his mind unoccupied.

It occurred to him that he didn't experience any undue water pressure when he swam through the center of the pool. He was "under" as much as twenty meters of water but he didn't feel so much as a twinge in his ears. It was logical, of course, that water held together by its own self-cohesion wouldn't act the same as water compressed by gravity. If he had thought about it he certainly wouldn't have expected to find any significant pressure gradient, but he hadn't thought about it.

He looked around to find Fran and had to look back to see her because of where they were on their orbits. She had stopped swimming and was looking his way, and with good reason. He found that he was being followed by a line of children stretched out behind him, all doing the breast stroke in unison with him. He bobbed out for a breath and so did they. He went back under and so did they. He was looking back past his left shoulder and so did they. He burst out laughing and that's not something you can do in water, so he broke into the air, spluttering and coughing and laughing. So did they.

Fran and the rest of the kids came over and everyone was having

a good laugh. She checked to see that he was all right with it and saw that he was genuinely amused and not offended at all. She fell a little more in love.

“Okay,” she said, “everybody back in the pool for one last swim, then we’ll go.” As they bolted she added, “Be careful and watch your buddy.” Those who looked back after diving in, and that was most of them, saw Frances hug Elgin and give him a big kiss.

27.

THEY GO TO THE DOCTOR

“Rannie?”

She looked up with a surprised smile. “Yes?”

“May I call you Rannie?” They were on their new balcony, having breakfast and watching the Square wake up. Elgin was enjoying a piece of toast with iceberry jam, idly wondering how yeast would rise in microgravity. “I’d like to call you that, if you don’t mind. It sounds right.”

“Of course you can,” said Fran. “I’d like it too.”

It came out the night before, as they snuggled and talked far past midnight. Their bedroom was the one against the orange wall, farthest from the hallway entrance at the opposite end of their rooms. Their ceiling was colored by the night lighting of the Square, when everything was turned off except the lights in the columns and friezes. The four colors were somewhat blended but were visible individually as well, so their ceiling was dominated by the proximity of orange and yellow, with green and red playing lesser roles.

They were telling each other as much as they could about their previous lives, hungry to know, but with a sweet regret that so much of their time had been spent apart. Fran talked about a niece that she was very fond of, a sweet, bright little girl. “I think Maria was probably like her when she was younger,” she said. Her niece was a good talker, but she had trouble with Fran’s name and always called her “Rannie.” It became a pet name amongst family.

Her niece was one of the people she lost in the Yellow Comet

incident, so remembering her was painful. But she was no different from most of the people on Green Comet. Pretty well everyone had lost somebody in that tragedy. Everybody had to deal with it, and she knew that avoiding the memory was not the way. She wouldn't ask Elgin to not remind her. Instead, she was glad to have her memories stirred in such a beautiful way. Each time he used that name her niece would be commemorated with love. "Yes," she told him again, "I would love it if you did."

"Thanks," he said. "I didn't want to intrude on something special, but it just feels right."

She came over and snuggled under his arm. "It is right," she said. "It's perfect." They watched the Square for a while, until he finished his piece of toast and had to prepare another. He tried to free his arm but she said, "No you don't. I like that right where it is." She buttered a piece of toast and spread some jam on it. "Here you go," she said, burrowing back in. "Didn't anyone ever tell you that when you put your arm around a girl, it's hers until she says so?"

"No," he said, biting his toast, "but it sounds okay to me." He chewed for a moment. "Except maybe flashball. This might be a little awkward playing flashball."

Her laugh rang out across the Square, stopping people and turning heads. When they saw who it was, they smiled and waved and went on with their business.

While they had their breakfast and talked, the lighting in the Square had been coming up. The daytime lighting increased its intensity while the columns and friezes darkened. It took about a half hour to make the transition from night to day. When it was done, the Square looked as if it was lighted by the Sun on a day with a high, thin overcast. The

indirect lighting, though it was distinctly yellow and dim, looked bright and white to their enhanced eyes.

“Rannie?” said Elgin, softly.

“Mm-hm?” she murmured.

“What do you think of the Visitor?”

“The Visitor?” He could feel her tense subtly. “What about it?”

“Well, now that we know it’s artificial, what do you think they want?”

“I don’t know, Elgin.” she said. He sensed some evasiveness. It was like Buzzard’s rejection of the question, only much better disguised.

“Please, Fran,” he said gently. “I can tell. Both you and Buzzard are concerned, but you’re both hiding it.”

She sat up, out from under his arm, and turned to look at him. He was moved again by her golden beauty, nearly hypnotized by the shifting light reflected by her tapetums. She put her palm on his chest. “We don’t know anything for sure,” she said, her expression both minimal and profound. “We’ve just shared some doubts.”

“Doubts?”

“Yes,” she said. She looked out over the Square, and Elgin saw a brief flicker of sadness cross her face. “It’s more of a feeling than anything else,” she said quietly. “We just wonder why they haven’t tried to communicate with us.” She turned her face back to Elgin. “We decided pretty early on that the Visitor is artificial and we can’t think of any good reason why they wouldn’t talk to us.”

He checked and double-checked, but his initial sense that it sounded right stood up to scrutiny. The bad feeling that he got from Buzzard was now confirmed and multiplied by Fran. He asked, “What have you done about it? Have you warned anybody?”

“What would we tell them? That we have a bad feeling?”

“But it’s right. You say it and I know it.”

“I don’t think that would qualify as proof, Elgin.” She turned and snuggled back under his arm. “Would you like another piece of toast?”

“But we can’t just leave it like this. There must be something we can do.”

“The envoys will probably meet up with it soon. Maybe we’ll find out more then.” She held up a piece of toast. “Jam?”

He knew she was right. There was nothing they could do now that would help. There were plenty of people warning of the danger and predicting doom. If they said anything now when they had no proof, they’d be just another pack of crackpots. She was right. The best thing would be to wait and see. “Yes, please,” he said, “lots of jam.”

~

After a few moments where the crunch of toast was the only thing breaking their silence, she said, “There are no iceberries growing in the Square, are there?”

He looked around and didn’t see the distinctive texture and sheen of an iceberry patch on any of the walls. “It doesn’t look like it, why?”

“I think we should grow some,” she said, gesturing at the facade of their apartment. “Right here on the front. There’s quite a bit of blank wall there.”

“Is that allowed? I mean, isn’t there a reason for it?”

“I don’t know,” she said. “I’ll have to look it up, I guess. But if it’s okay, do you want to?”

“Sure,” he said, popping in another bite. “I love iceberries.”

“Good. Me too. I’d love to come out here in the morning and have a couple of fresh berries for breakfast.” She stared at the wall, thinking. “Is it hard to grow them, do you think?”

“I don’t know, but I doubt it. They seem to grow just about anywhere and I never see anyone tending them.”

“That’s right,” she said. “About the only people you see around them are the kids grabbing a quick snack.” They shared a chuckle over that image. “Why shouldn’t they be able to do it in the Square?”

“Are you thinking we might have kids up here picking berries off our wall?”

“I hope so,” she said, smiling up into his face.

“Me too,” he said, leaning forward for a kiss. “I like kids. I’d like it if we had some around here all the time.” He looked deep into her eyes so she’d know what he meant, and was surprised and confused by her complicated expression.

She was looking down now, and her voice was low. “You’d like to have children, wouldn’t you?”

“Of course,” he said. “The more of you there is in the world, the better.” He tried to see what she was thinking but she wouldn’t look at him.

“I’d like it, too,” she said, looking out at the now-bustling Square, “and I had an idea you wanted to.” Finally she faced him. “I thought it might come up so I made an appointment.”

“What kind of appointment?” He was intensely interested now. Anyone else might have wilted under his focus.

“With the Doctor,” she said. “I’ve already been once and now I think we should go together.” She had on her business face. “We’ll need to have some tests done if we’re going to make a child.”

It sounded right to him and he also knew it was right. The comet couldn’t afford any problems it could avoid, so anyone planning children got tested to rule out anything foreseeable. Naturally, any child born with congenital difficulties was accepted and raised and sup-

ported to the best of their ability, but in their situation, with highly constrained resources, it was prudent to avoid the necessity.

“You’re right,” he said, taking his last bite and dusting off his fingers. “When’s the appointment?”

“This morning,” she said, getting up and picking up dishes to take inside.

He picked up the rest of the dishes and followed her. “This morning?” He hurried to catch up. “How did you know?” She had an appointment scheduled for this morning? Before they talked? Before he even thought about it? Then he laughed at himself. Of course she knew before he did. She always did. “Never mind,” he said, taking the dishes from her and putting them in the sink bladder. He sealed it up and turned on the water, sliding his hands into gloves to scrub the dishes. “When do we have to be there?”

She was waiting to dry, standing beside him at the sink. “In an hour or so,” she said. “But the Doctor said there’s no deadline. He’s cleared his schedule for the rest of the day, so he says we can come whenever we want and stay until whenever.”

“Boy, you must have some pull,” he said, removing his hands and cycling out the soapy water, then in the rinse water. Back into the gloves for a quick swizzle, then let the bladder squeeze out the water. He unsealed it and she began to dry.

“The Doctor is a friend,” she said modestly. “We’re always happy to make time for each other.”

“I look forward to meeting him.” He put away the dishes as she passed them to him.

~

The Doctor’s office was just off the Square, a few meters down one of

the corridors on the orange side. They could have just flown down from their balcony directly to the portal, but they chose to go out via their hallway. Fran said, “We should use it once in a while, even if only for practice.”

“Yeah,” said Elgin, “otherwise we might as well not have a door at all.” He opened it for her, ceremoniously ushering her out. The hallway was still pristine, with the sharp, clear lines of fresh icework. It was likely to stay that way for now, since their’s was still the only apartment that used it. It wouldn’t be long, though. Work was already underway on another apartment on their floor, and the ones above were in the works.

They took the elevator down to the ground floor. That is, they dropped through a hole into the corridor below. There were some people about, mostly just arriving for their day’s work or making an early visit to one of the enterprises on this corridor. They exchanged greetings in passing, with a few words of a more personal nature for the new neighbors they were getting to know. It made them glad they came out this way and they resolved that they’d do it again.

They took their time, coasting out through the yellow pillars and angling across the Square, stopping to chat at the slightest excuse. Just outside the orange pillars, they stopped and looked back at the yellow wall and their new apartment. Fran was quiet as they stood there. Elgin could imagine iceberry patches with children foraging in them. He could picture the whole wall, from the top of the shops up to the ceiling, occupied by rooms. Already on their floor, on the other side of the yellow columns, he could see faint shadows of activity as another apartment was being prepared behind the ice. His mind was full of the potential of the future and he smiled as he felt Fran’s hand take his.

The Doctor met them personally and led them into his office. It was arranged traditionally, with two chairs facing a desk and his chair behind it. He seated them after a brief introduction and a quick, familiar hug from Fran, then he went around and sat down. He had a few pieces of permapaper in front of him and he studied them, a slight doctorly frown between his brows. It was the space above the brows that caught Elgin's attention. The Doctor seemed to have an unusually high forehead, and above that the fur looked really thin. It was the first sign of baldness, or hair loss of any kind, that Elgin had seen since waking up on the comet. He was surprised. You never saw this with other fur bearing animals.

The Doctor looked up and caught him staring. Elgin was embarrassed but the Doctor wasn't. He said, "It looks strange, doesn't it?"

"I'm sorry," said Elgin, "I didn't mean to be rude."

"Don't apologize. It's unusual and I'd be worried if you weren't curious about it." He leaned forward and tipped his head down, ruffling the thinning fur with his fingers. "It runs in my family. The men on both sides have always tended to go bald young. Even the women are prone to thin hair."

"Thank you, um ..." Elgin realized he wasn't sure of the man's name.

"Doctor," said the Doctor. "It's my comet name. You can call me Doctor and refer to me as the Doctor."

"Okay, Doctor." Elgin thought about it. "But you're not the only doctor here, are you?"

"No. There are about a dozen of us awake at any time."

"Isn't that confusing? Aren't the others also referred to as the doctor?"

"Yes," said the Doctor, laughing heartily. "Some of them are mad

at me, but I think they're secretly annoyed because they didn't think of it first. They thought they were being clever by choosing names like Galen and Hippocrates." Fran joined in the laughter and so did Elgin, which obviously pleased the Doctor, but his expression was complicated by regret.

Fran saw it and guessed correctly that the news wouldn't be good. "I think we should let Elgin know, don't you?" she said.

The Doctor looked glumly at his papers. "Of course," he said. He wrestled for the words, glancing sadly at them. Why, he wondered, do things happen this way? If anyone should be having children, it should be these two. Not only because they were obviously such good stock, but also because it would be the perfect expression of their legendary love. But he was a doctor, and he had learned long ago that things happened to people not because they deserved them, nor because they didn't. Things happened because they happened and the people they happened to were just in the way at the time. He had also learned that the best words at a time like this were the plain, honest ones.

"Elgin," he said, "Fran came to me last week for some genetic tests." Elgin glanced at her and back to him. "She wanted me to confirm something for her. Although I think she was hoping I could somehow refute it." He looked at Fran, so beautiful and strong, but with a fragile hope hanging on, like a child's hope that the words of someone with authority could make it so. He forged ahead, reminding himself that he wasn't personally killing that hope. "Nothing's changed, Fran. Your imprinted genes are still there. Any child of yours would be at great risk."

She bowed her head, looking very small in her chair. Elgin had lost the thread when imprinted genes were mentioned, but he hadn't

missed the meaning. He said to the Doctor, "Do you mean she can't have children?"

"No," said the Doctor. "You can have children if you want, but because of Fran's genetic condition it would be dangerous."

"Dangerous for her?"

"No, for the baby." The Doctor used plain language for him. "She would pass on the genes and they could make the baby very sick."

"But why don't they make her sick?"

"They don't make me sick because they have a backup," said Fran in a small voice. Her eyes flicked up to meet his, then back down. "Our genes come in pairs, so if one is damaged the other can take over."

"Then that's okay," he said. "Your backups are working and so would the baby's."

"But with imprinted genes there is no backup," she said.

Elgin didn't reply. He could hear it. He had heard it in the Doctor's voice as well, but he'd been trying to ignore it. What they were saying was right. They shouldn't have any children.

"I'm sorry Elgin," the Doctor said. "More sorry than you think. Any child of yours, of the two of you, would have been something to look forward to."

Elgin's desperation scrambled for another angle. His beloved was crumpled in her chair, radiating pain. "But, what about genetic therapy, like during hibernation? I mean, if we can grow wings and fur, why can't we fix her genes?"

The Doctor shook his head. "Those things are simple compared to this. They're just manipulating existing functions. Things like imprinted genes and," he patted his head with a wry smile, "baldness are still beyond us."

Elgin subsided. He had the feeling he was only bringing up things

that they'd both gone through already anyway. He accepted it and prepared to carry on in this new direction. He reached over and picked up Fran's hand from her lap. She allowed him to take it, but it was lifeless in his grip. "It's okay, Fran," he said, squeezing. "It doesn't matter."

Without lifting her head, she murmured, "But you want children. I know you do." She looked up. "You still can. There are plenty of women who would have your child." Her voice clotted. "Who could have your child." Her head fell again.

"There are plenty of women," he said, "but there's only one of you." He felt her hand grip his. "All I want is you. All those women can have other people's babies." He waited until she raised her eyes, looking at him from under her brows. "I want you, Rannie, if you still want me."

She squeezed his hand hard and launched herself out of the chair. She nearly knocked the wind out of him, then just about hugged his head off as she sobbed into his neck. He wrapped his arms around her and held on. Over her shoulder, past the top of her wing, he could see the Doctor smiling a huge, gratified smile. It looked as if something was glittering in his eyes, too.

28.

THE LOTTERY

Elgin was subdued after that. He was disappointed that they wouldn't be having children. It had seemed like the natural course for their love to take, to bring children into the world to share it. Now it was gone. He would never have a son or daughter to teach and to learn from.

Frances wasn't subdued. She was a little sad to have her diagnosis confirmed, but it wasn't a surprise to her so it wasn't as strong. The truth was, she was elated. Before the meeting with the Doctor she wasn't sure how Elgin would react to the news, so now she was relieved and emotionally buoyant.

The combination of their moods was confusing for people who saw them together. They still glowed, but now it was unbalanced somehow. The legend was asymmetrical.

Elgin wasn't subdued for long. After a few days he got used to the new situation. He could see that Frances accepted it and most of his concern was for her pain anyway. He saw how happy she was and he realized how glad that made him feel. Soon his spirits lifted and his mood brightened, and once again their love was whole and symmetrical. The legend was back to normal and everyone could relax.

Relaxing and getting back to normal on Green Comet meant preparing for the joining. It meant making preparations for a controlled collision between a sixty kilometer comet and a forty kilometer one. Everything that could be bolted down was. Every structure, every component, every joint was inspected and tested, then reinforced or replaced as necessary.

Frances and Elgin found themselves in the role of representatives. They were available for questions and explanations. They would come around and have a look if anyone had a concern about something or if they just wanted to be assured that their preparations were adequate. They spent a lot of time at schools, educating the children and their teachers. The kids loved to show them their projects. They sought and cherished Fran's approval, of course, but they also looked to Elgin's expertise, his assurance that it was right. They knew instinctively what everyone else learned by experience. Elgin knew.

He was honest. If their project was a worthwhile contribution to the joining, he told them. There was no exaggerated praise, no gold stars. He just nodded and told them it was right and they enjoyed their shared pride of accomplishment. If it wasn't right, he let them know with the same quiet clarity. He told them what was wrong and what they could do to make it right, and they went back to work.

Elgin and Frances were busy, but they still had time for other things. There was flashball, of course. She didn't attend all of his practices, nor did she go to the café every time, but she was there for every game. She knew it was important to him and she wanted to be there to show support, but after a while she found herself anticipating and enjoying the game itself. It was beautiful on the surface of it, and once she got a feel for the game and a better grasp of the rules, she began to see its complexity and deeper beauty.

There was their new apartment as well. They had plenty of company over, from the housewarming on. Every one of their new neighbors was invited over, even before their rooms were finished sometimes. Most of them took away some design or decoration ideas to use in their own apartments, and some did new things that had Fran standing back with her hand on her cheek.

One of their favorite things was going to Stanton's bubble to check on the progress of the joining. Each time, the small comet was a little closer and easier to see. The jets of steam, from very large maneuvering rockets on its surface, were more visible. It was so interesting and such a popular pastime that soon the bubble was crowded to overflowing. They had to establish an honor system so people would remember to limit their time in there, trying to ensure that everyone who wanted it was given the chance. And that was pretty well everyone.

It occurred to Frances that this could be a problem. "You know," she said to Elgin, "it's going to be even worse when the time comes."

"How so?"

"Look how crowded it is now," she said. "And there's a line up waiting to get in. Imagine what it's going to be like at the moment of contact when everyone is going to want to be here."

"Wow," he said, "you're right."

"We need to do something."

"Like what?"

She thought about it, her gaze unfocused on a rocket plume that had been running for hours. She realized that was a relatively short time, since the first corrective thrusts had been much longer, some lasting weeks in the earliest phases of the project. This current one would qualify as fine tuning when dealing with so much mass and momentum. This ten kilometer long plume of nitrogen gas was the equivalent of a short puff from a maneuvering thruster on one of their small craft. Just as she was thinking that, it stopped. Running as long as it had, it happened to stop just when she was looking at it. "Aha," she said.

"Aha what?" asked Elgin.

"Chance," said Frances. "We have to run a lottery."

“A lottery?”

“Yes. For the privilege of watching the joining from in the bubble.”

“Ah, yes. That’s the best way.”

She looked around, envisioning what it would be like on the day. “Can you calculate how many people could be in here, where everyone can have a good view?”

“I’ll give it a shot.” He scanned the volume surrounding them. “Meanwhile, why don’t you estimate how many are in here now? That will give us something to check against what I get.” He knew the dimensions of the bubble, so he had its volume. Divide that in half since it was half embedded in the ground and you got over eight hundred cubic meters. Now, how much to give each one? He looked around and noticed how people naturally arranged themselves. They weren’t packed in. They gave themselves room to move and they instinctively arranged their positioning so everyone had a good sight-line. So, he estimated four cubic meters per person and came up with a number. By then Frances was just finishing her count. “What did you get?” he asked.

She shrugged her wings. “It was hard to count. They keep moving around. But I get a rough estimate of about two hundred.”

“Good,” he said. “Excellent. I came up with two-twenty.”

“That’s roughly ten percent of the waking population, so if everyone participates it will be about one chance in ten.” She nodded. “That’s a nice number. Easy to grasp and not too small either.”

“A nice round number,” agreed Elgin. So they did it. They got it all worked out and ready to go, then shelved it until the week before the event, when excitement would be running high. They didn’t announce it beforehand, but they didn’t try to keep it secret either. Not that they could have if they’d wanted to. Green Comet was a village and secrets

don't usually last long in villages. As a result, the people had two things to anticipate for the next two years.

~

When the time finally came, every waking person on the comet entered the draw. Children who were too young to know what was going on were entered by their parents. Curmudgeons who would normally scoff at the foolishness entered anyway. Even those who might otherwise have given it a pass found themselves getting involved. The excitement about the lottery was almost as great as that for the joining itself.

The draw took place exactly one week to the minute before that happened. Fran got lucky but Elgin didn't. He was genuinely happy for her and quite content to watch on the big screen in the Square with Stanton and Buzzard, who had also lost. But his disappointment was obvious, that they would be spending such an historic moment apart.

They were talking about it in their apartment. Elgin had just explained his feelings, saying, "I'm glad one of us won. That's almost as good as both of us winning."

"But what if it was you instead?" asked Fran.

"What do you mean?"

"I mean, if you won and I didn't, would you still be happy?"

No, he wouldn't.

"So, what would you do if you had a ticket and I didn't?"

"I don't know," said Elgin. But as he thought about it he realized he wouldn't want to go alone. He would have to find a way to get her a ticket, or ...

Their doorbell rang. "Who could that be?" said Fran as she went to answer it.

Elgin came along. "You're not expecting anyone?"

“No,” she said, opening the door. There was a woman standing there. They knew her by sight, of course, but not personally. “Yes?” said Fran with a welcoming smile.

“Hello,” said the woman nervously. “I hope I’m not disturbing you.”

“Not at all,” said Fran, stepping back to invite her in.

She entered, smiling a little stiffly. When she reached the entrance to the first living room she stopped and gasped. The colors didn’t show in the daytime, but the ceiling still glowed. And the view was impressive. “Oh,” she said, “I love what you’ve done with this room,” and she and Fran were off. Elgin waited patiently.

Finally the small talk ran its course and the woman got around to the point of her visit. “I heard,” she said, “that only one of you won the lottery.”

“Yes, that’s right,” said Fran. “I won and Elgin didn’t.”

“Well, that’s why I came over.” She produced her lottery ticket. “My ticket is a winner,” she said, “but my husband didn’t win either and I don’t really feel like going without him.”

Fran said, “I understand that.” She looked at Elgin, who nodded.

“So,” said their guest, “we talked it over and decided that the best thing would be to give my ticket to you so you two can go together.”

Fran and Elgin were surprised and pleased. “That’s really kind of you,” said Elgin, “but why should you miss out on it? We could just as easily give you ours so you and your husband could go together.”

She looked at him as if he were crazy. “What would be the point of that? No, it has to be you two.”

Fran stopped Elgin from replying and said, “I can’t tell you how much we appreciate the gesture, but it’s too late. I already gave away my ticket.”

The woman stared, speechless for a moment, then bid them a hasty goodbye and left.

“You gave it away?” asked Elgin. “Already? When did you have time to give it away?”

“I haven’t actually given it away yet,” said Fran, “but I’m planning to.”

“You were planning to give it away?” Elgin couldn’t help but smile. “Just because we couldn’t go together?”

“Yes, of course,” said Fran. “Otherwise, as the lady said, ‘What would be the point of that?’” They chuckled, then Fran said, “In truth, I didn’t have a definite plan until she came. I just knew I wasn’t going alone.”

He held his arms out. “Come here.” While they cuddled, he asked, “Who were you going to give it to?”

“I’m thinking Maria,” she said.

“Perfect.” He gave her a squeeze.

~

The woman with the winning ticket hadn’t just given up and gone home. She wasn’t defeated, merely delayed. Since one ticket wouldn’t be enough, now she set about arranging for two. She contacted all the other winners and invited them to enter another lottery. This one would have two winners who would have the privilege of giving their passes to Frances and Elgin. More than two hundred people pledged their tickets for the draw and the winners were heartily congratulated by their envious co-conspirators. This time it was a delegation of three that visited the apartment.

“Hello,” said Frances, showing them in. The woman introduced

her companions before showing them the view and giving them a mini-tour. "It's nice to meet you," said Fran and Elgin.

She wasted no time getting to the point. "These are the winners of the second lottery," she said. "They won the right to give you their tickets." The two held them out with triumphant gestures.

"What?" said Fran, glancing at Elgin who raised his eyebrows. "The winners lose their passes?"

"Yes," chorused the three, laughing at their harmony. One of the winners was another woman, the other a man. They looked at each other, grinning gleefully. The original woman said, "Yes. There were over two hundred entries, and these two won." They swelled with pride and happiness. "You must take them," she concluded, while the others thrust them out again.

Fran and Elgin looked at each other and shrugged their shoulders. "All right," said Fran, "if you're sure." They all vigorously assured her and the tickets changed hands. It was a very happy moment, except the woman had a slightly bitter-sweet expression. Fran subtly took her aside for a talk while Elgin entertained their other guests. Rejoining them, the woman's face was practically beatific. When the trio left they were all very pleased with themselves.

"What did you say to her?" asked Elgin. "And why did she have that look on her face?"

"She was sad," said Fran. "Of course she was happy about arranging all this, but she was sad that she wasn't able to give away her own ticket, which is what she wanted to do."

"So, what did you say to make her feel better?"

Fran smiled, congratulating herself. "I just told her about a little girl who has a winning ticket, but whose father, a single dad trying his very best in a tough situation, doesn't." Elgin was grimacing at the melodra-

ma, and she grinned. “She couldn’t wait to get out of here so she could go give them her pass.”

“Maria?”

She nodded.

“And does she really have a single dad?”

“Yes,” said Fran, losing her smile. “And it really is sad.”

Elgin nodded. “I guess you’re not so bad then. But really, you have to admit it was a little over the top.”

“Oh yes. More than a little.” She struck a pose. “And I’d do it all again,” she said, her chin up defiantly, her mouth struggling with a mischievous grin.

He laughed and so did she. Then he said, “I always knew you were the smartest woman in the universe.”

“Thank you,” she said demurely.

“I just have one question.”

“Yes?”

“If neither of us had won, would you still have found a way to get tickets for Maria and her father?”

“Most likely.”

“That’s what I thought.” He added, “And if we both had won, we would have given our tickets to them wouldn’t we?”

“Possibly,” she said.

“Possibly?”

She squirmed slightly. “Okay,” she said, “I might have brought it up.” Those brown eyes kept looking at her. “All right,” she admitted, “I probably would have asked you.”

He couldn’t keep the stern stare going for long. “And you know I would have said yes,” he said, scooping her into his arms. Looking

down into her eyes, he told her, “Because you’re smarter than you need to be.”

“Oh, I don’t know,” she murmured. “I think I’m going to have to be pretty smart to keep a good man like you.”

~

In the final few days, the comet became a pretty quiet place. All unnecessary activity was curtailed to minimize the variables that needed to be watched. Everything was battened down and shipshape, ready for the joining. Maria and her classmates had helped Elgin set up the cameras at the swimming hole and now everyone was waiting. Everyone except Buzzard, that is. Buzzard kept gathering data and doing calculations until the last day.

The official plan prioritized the contact zones of both comets and those areas were exhaustively analyzed so they could predict what would happen. After that they did a thorough job on the facing hemispheres. Even though they had determined that no significant effects would propagate that far, they still did the work because that’s how far their settlement was from the point of impact. But Buzzard didn’t stop there. He analyzed the full surfaces and the complete volumes of both comets. Stanton knew it wasn’t required, but he didn’t interfere. It wasn’t hurting anything and if it made Buzzard happy, then let him do it.

On the last day Buzzard handed a piece of permapaper to Elgin. It was one concise block of calculations. Elgin could see that it was a distillation of everything into a one page summary, and he could see that it was right. It was solid and compact and perfect, like a diamond shaped by a master cutter. Its music was composed of pure tones in perfect harmony, and that’s what he told Buzzard.

“Are you sure?” asked Buzzard. “All done? Is it all done?” He was looking at Elgin with an oddly penetrating eye. With his crazy grin barely in check he asked, “All done? All good?”

Somewhat unsettled, Elgin looked at it again, this time stepping through it more deliberately. It still looked good. He could see nothing wrong with it. His instinct was functioning normally and he confirmed that it was right.

Buzzard thanked him and took back the paper, his face wrapped in a sly, happy grin that would not go away.

29.

THE JOINING

Stanton's bubble was a lively place on the day. Exactly two hundred twenty people were in there waiting for contact, and they were in a festive mood. Elgin and Frances were with Maria and her father, Tomas, who was saying, "I know I've said it before, but I'm going to say it again. Thank you for everything you've done for Maria." He looked at his daughter, who was there at the same level as the adults. Microgravity has unexpected advantages. "You've done so much for her." Tomas was including both of them, but he was obviously talking to Frances. "And your kindness to her is a kindness to me."

Elgin nodded, accepting it for what it was. He didn't feel he'd done much, but that didn't mean it wasn't important to Tomas. Fran spoke for both of them, saying, "We're happy to do it, Tomas." She looked at Maria, who was on the verge of rolling her eyes at this adult stuff. "Maria makes it easy to do. You've raised a wonderful daughter." Now the eyes did roll. Fran laughed and so did Tomas.

"What's going on?" Their communicators piped up. It was the lottery woman and the two winners, who were connected to them for the event. Along with her husband, they were in the Square watching it on the big screens, and they had a private connection with the four people they'd sent to the bubble. "What's so funny?"

"Nothing," said Fran. "Maria's just telling us to stop acting like grownups."

Tomas interjected. "Thank you again for the ticket. It means a lot to be here with Maria like this."

“Never you mind that,” said the woman gruffly. “It meant a lot to me to see my ticket get used. Used well. Oh, you know what I mean.”

“And me too,” said Maria. “I mean, I’m glad my daddy’s here too. Thank you.”

“And of course,” added Fran, meaning to thank the other two for their tickets, “oh ...”

“What?”

“Oh, I’m sorry,” said Fran. “There’s someone outside the bubble in a pressure suit.”

“Who?”

“I don’t know, but they seem to be looking in here.”

“What are they looking for?”

“I don’t know. They ...”

“Buzzard!” cried Maria. “It’s Buzzard!” Others took up the call, especially the other children in the bubble. They were waving and laughing and calling his name, and they all rushed over to the curving shell closest to the figure outside. Even in a pressure suit, Buzzard was recognizable by the way he moved, by the way he flew. These kids, who watched him play flashball, who idolized him for his unique style, were now inside the sphere while he was outside. He waved and did some swoops for them, provoking cheering and more excited laughter.

Elgin got over his surprise. He realized that Buzzard must be looking for them, so he started waving both wings over his head until he caught his attention. When he spotted them, Buzzard reached up and tapped his ear, indicating he wanted to talk. Elgin found the right frequency and said, “What’s up? What are you doing?”

“Taking some pictures,” said Buzzard. “Pictures. I’m going to take some pictures.” He held up a bulky camera.

“But, you didn’t have to go outside to do that.” Not only were there

plenty of cameras already deployed for the event, fixed at many strategic locations and flying in the space around the contact point, Buzzard could have easily requisitioned more and put them wherever he wanted.

“Gotta take these myself. Out here. Myself.”

“Then, why didn’t you get a little excursion pod? You could go out there and be safer and more comfortable. You could take all the pictures you want.”

“Too crowded. Too cramped. Not enough room to move around.” Buzzard did a couple of swoops and the kids cheered.

Elgin understood. He hated to see his friend taking more risk than he had to, but he knew why he had to do it that way. “Okay,” he said, “I get it. But you just be careful, alright?”

“Careful. Be careful. I’ll be careful.” Buzzard waved and turned around, then began moving directly away from the comet. He rapidly shrank in apparent size, then disappeared.

Elgin and the others watched in silence as he went, but Maria broke it when she came back from the crowd of kids. “That was so cool,” she said. “Buzzard is so cool.”

“Yes he is,” said Fran. “We all think so, anyway.”

“Everybody thinks so,” Maria insisted.

Elgin couldn’t help himself. He got on the radio and called Buzzard again. “Buzzard? Sorry to bother you, but could you call once in a while to let us know you’re okay?”

“Okay,” came Buzzard’s voice, just as loud and clear as it was when they could see him. “I’ll call. Call some more. Already calling Stanton. Already.”

“Oh, okay. If you’re already calling, then don’t bother.”

“I’ll call you too. Call Stanton. Call you. Same time.”

“Right, okay,” said Elgin. “We’ll wait for your call, then.” He looked at his companions and shrugged. He didn’t need to relay what had been said because they all, the four here and the four in the Square, were sharing their communications. So Elgin shrugged and grinned, shaking his head. “That Buzzard, eh?”

“I wonder why he needed to go out personally like that,” Fran said. “Maybe Stanton knows.” She called him, but he didn’t know either.

“I know it’s something special,” he said. “Buzzard couldn’t stop grinning while he was telling me. But he wouldn’t tell me what it was.”

“Oh well,” said Fran, “it was worth a try.” She added, “Say, are you with anyone?”

“No,” said Stanton. “I never thought about it. I just assumed I’d be with you guys. And Buzzard, of course. So here I am on my own.”

“Would you like some company?”

“Sure, I guess, although there’s no shortage of people here.”

She could hear the smile in his voice. “You know what I mean,” she said. “Hold on a minute.” She called the lottery woman and her party. They said they’d be glad to have Stanton join them, so she filled him in on their story. “They’d be honored to be in the company of the man who’s responsible for this whole thing.”

“Okay,” said Stanton. “How do I find them?”

“They know what you look like. Just fly up above everybody and they’ll spot you.”

After a brief pause, Stanton said, “I’m up here but there’s a lot of bodies down there.”

“They say they’re toward the red end, closer to the orange side.”

“Ah, there they are. They’re waving.”

“Good. We’re sharing a comm frequency so we’ll all be able to talk when you get there.” When she looked at Elgin, he was smiling one of

his proud smiles at her. Tomas' eyes were shining and Maria looked as if she had just learned something important. "What?" she asked.

"Oh, nothing," said Elgin, sharing a look with Maria and her dad. "Anyone would have done that, right?" They agreed equally facetiously. He gave Fran a wink, then he checked the monitors at the back of the bubble. It was less than a half hour to contact.

~

There was a countdown of course. Some people started at one minute, others at thirty seconds, but the majority came in at ten seconds. They all shouted "zero" in unison, then there was a collective holding of breath. All through the Square and the bubble, people were poised in poses of anticipation, their faces showing excitement, anxiety and even fear. Even though they knew rationally that there was insignificant danger, for some there was that grain of doubt. They could be wrong. This might be a horrible mistake, and the coming moments could hold destruction and death.

Reality was anticlimactic. Nothing seemed to happen for the first few moments. The monitors showed the two comets sinking into each other. Clocks ticked off the time. Dials tallied up the distance. But there was a lack of any physical sensations. Long after they had all begun to breathe again and conversation had recommenced, there was still nothing to see or hear.

Finally the monitors showed the snow beginning to rumple up visibly ahead of the growing circle of contact, provoking a relieved roar of chatter. Then, for those who were paying attention, there was an almost undetectable motion. It was so small that most people didn't notice it, simply compensating for it automatically, but those who were expecting it or who were more attuned to the subtleties detected a

slight tendency to drift forward. Their comet was slowing down due to the collision but their bodies continued moving at the same speed. The result was an apparent motion relative to the comet of well under a meter a second. It was very easy to miss by unconsciously adjusting with small wing flaps.

The noises started with a distant thump. It was quiet, to the point of being subliminal, and more felt than heard. It was followed by more, with a trend toward increasing intensity as the comets plowed more deeply into each other. The compression between them wasn't smooth, rather building and releasing in a series of seismic events. It happened more frequently as the collision progressed, until the noise became a steady roar and people made sure their hearing protection was in place.

Elgin didn't know when it started, but everyone was looking at the monitors now, especially one showing the back end of the small comet. The area was illuminated by some strong floodlights and they could see the surface clearly. Something appeared to have lifted off of it and was rising away. Elgin instinctively glanced up but he couldn't see anything with the bulge of the comet in the way. "Floodlights? There?" muttered Elgin. "When did that happen?"

He was talking to himself but Stanton responded. "That's what I'd like to know," he said.

"You didn't know about them?"

"No," said Stanton. "I knew he was up to something, but he wouldn't tell me. And he must have sworn everyone who helped him to secrecy."

"You asked around?"

"I sure did. I wanted to know what he was grinning about."

"He grinned at me, too," said Elgin. "When he showed me his

summary page, he couldn't stop grinning. It made me feel as if there was something I missed, but it was all right."

"Same here," said Stanton. "I don't have your talent, but it all looked fine to me, too."

There was an awed gasp from the people watching the monitors. When Elgin looked it took a moment to see what he was looking at, and then he couldn't believe it. The material that had been rising off the surface before was coalescing into a definite shape, and it was fantastic. Instead of just a cloud of snow puffing off the comet, it now appeared to be forming into a toroidal object. In a few more seconds it clicked over from an impression to a certainty. The image that popped into Elgin's mind was of a smoke ring. There was a smoke ring rising off the back end of the small comet where someone, most likely Buzzard, had arranged for floodlights. And now he was out there in a pressure suit taking pictures with a hand held camera.

"That bugger," said Stanton. "He knew this was going to happen. That's why he was grinning. He knew and we didn't."

As one, Elgin and Stanton recalled Buzzard's paper. Now that they knew what to look for, it was right there. The interaction between the faster shockwave going through the center of the comet and the slower one going around the outside was almost certain to blow off material, and there was a chance it could form this ring.

"That bugger," said Stanton again, and you could hear the pride in his voice.

The ring continued to rise away, and it seemed to continue to get more clearly defined as it rose. They could see its rotation, although it was slow. It was curling in on itself, the constant motion keeping it wrapped together.

Then Buzzard called. "Switch to my camera," he said. "One of the monitors. Switch one to my camera."

"I've got it," said Elgin. The monitors in both places were showing the same things, so changing one would change them both. He chose one that wasn't showing much and switched it over to Buzzard's feed, provoking another gasp and a swell of excited conversation.

Buzzard must not have flown all the way around the back end of the small comet, because his point of view showed the smoke ring just becoming visible past its limb. He must have been only about twenty kilometers out because they could see a lot of the small comet and one edge of the smoke ring, which was slowly coming more into view. "See it? Do you see it? Can you see it?" said Buzzard, his voice clotted with suppressed chortling.

"We can see it, Buzzard. You're coming through fine," said Elgin.

"It looks great in the Square, too," said Stanton. "Congratulations Buzzard."

There was another commotion as people spotted more material lifting off the surface and Buzzard, who must have been monitoring it in his suit, opened his comms again. "There'll be more. More smoke rings," he said before laughter took over his voice. He tried to speak several times, but couldn't, so he switched off.

But the second one wasn't a ring. It was just a disorganized puff of snow, as were the next few. And the first one wasn't a perfect ring after all. It wasn't exactly circular and it was thicker on the near side than it was on the far side, where it thinned to near invisibility. It still looked good, though, as it emerged from behind the comet. And over the next hour several more rings did form, though none of them was as big as the first one and most of them were even less well formed. But there was one that was nearly perfect. Toward the end, as the puffs were

getting weaker and farther apart, one clear, circular one rose up and sailed away. The people all cheered and applauded and Buzzard's immortality was assured.

The roar of the joining had reached a peak and was diminishing. Buzzard's camera had recorded his last smoke ring coming out from behind the comet. Elgin said, "I think that's it, Buzzard. You can come back in now."

While Buzzard made his way back, the roar continued lessening until it became discrete noises again, and those got quieter and farther apart. They did get to see the rumple line spreading out on the small comet, but not on their own. It never did reach their horizon. There wasn't much more to see from the bubble, so people started making motions to leave. They might as well spend the rest of the day with everyone else in the Square. But as they began to move toward the door, the children protested that they didn't want to go yet. Even though they had been cooped up in there for hours, the kids didn't want to leave until Buzzard got back.

When he appeared they cheered and rushed over to the outer wall again. Once he was visible it only took another few minutes to get there. He flew right up to the bubble, holding his camera over his head like a trophy while the children laughed and applauded. He did a few swoops for them and then headed off for the entrance. Then the kids were ready to leave, and they poured out into the hallway, talking loudly and practicing Buzzard swoops.

~

Flying back to the Square, Elgin was quiet. Fran flew silently beside him for a while, but eventually she asked him, "What's up?"

His eyes came back to focus. He didn't realize it, but he'd been

flying automatically, just like the man in the corridor on the first day Stanton took him out. “Nothing,” he said. “I was pretty worried there about Buzzard. It surprised me.”

“Me too,” said Fran. “My heart was in my mouth.” She touched her lips, remembering.

“Yeah. If he’d said something, there’d have been time to get used to it.” Elgin shook his head in wonderment. “How did he manage to keep it secret? Something that spectacular.”

“Are you talking about his excursion now, or his smoke rings?”

Elgin flew silently for a few tens of meters. When he spoke it was in confessional tones. “I think you’ve hit the nail on the head, Fran. It’s really the smoke rings that are bothering me.”

“How so?” she asked. “You’re not envious, are you?”

“Oh, no! I’m proud of Buzzard. Nearly as proud as Stanton.”

“That’s pretty proud,” she said with a grin.

“It is,” he said, “but it’s true.” His smile faded and he said, “No, I’m ashamed to admit that it bothers me that I couldn’t see the smoke rings coming.”

“But you’re not the only one. Not even Stanton saw it.”

“I know, but nobody else has my talent. I should have been able to see it coming.” He looked at her, astounded. “He showed me his work, and I still didn’t see it.”

She flipped around and coasted backwards so she could look right at him. “But you knew that it was right, didn’t you?”

“Yeah, but ...”

“You knew,” she insisted. “That has always been your talent.”

That brought Elgin up short. He stopped flying and hung there, a stunned look on his face being gradually replaced by revelation and relief. Fran had drifted on when he stopped, but she quickly fluttered

back to him. He hugged her, then held her at arms' length, beaming. "You are definitely the smartest woman in the universe," he said.

"That, of course, is highly unlikely," she replied, "not least because you haven't met all the women in the universe."

"I don't have to meet all the women. I already know that you're the smartest, so I don't need to waste any more time looking."

She was blushing and smiling happily. "That's irrational," she said, "but I'll let it go for now if you tell me what I said that was so clever."

"You reminded me what my talent is," he said enthusiastically. "It's for knowing when something is right." He clapped his hands sharply. "And that's it."

"Yes?"

"Well, I was falling into the trap of thinking that it meant more than it does." He brushed it away. "Knowing when something is right doesn't mean always being right. It doesn't mean knowing what's right and wrong." He grabbed her by the shoulders. "And it doesn't mean knowing what's going to happen." If there'd been gravity, he'd have danced for joy.

"Speaking of being clever," she said, "You're pretty smart yourself."

"Only because of you," he said. "Thanks to you, I've got my feet back on the ground." They both glanced down, then laughed. "Thanks to you, I know my talent is still okay. I can still be useful to the comet."

"There's a lot more to you than your talent," she said sternly.

"I know," he said, starting up again. They flew down the corridor holding hands. "There must be something, to keep you hanging around. I just hope I don't lose that."

"You're about as likely to lose that as you are to lose your talent," she said, squeezing his hand. "It's as much a part of you as your blood and your bones."

He squeezed back. "You say it and I know it's right."

~

When they got to the Square it was roaring with conversation. It was tempting to put their hearing protection back on, but it wasn't that bad. They soared up to a good vantage point and looked for Stanton's group in the red-orange corner. They must have been waiting for them because they started waving right away, so Fran and Elgin flew down to join them.

"What took you so long?" said Stanton.

"Yeah," said Maria. "We've been waiting for ages."

"We had a bit of a revelation," said Fran. When Maria looked at her quizzically she added, "Elgin was afraid he might have lost his talent." She looked at him to make sure he didn't mind, then went on. "It turned out that he hadn't lost it, only forgotten exactly what it is. Now he remembers and it's okay again."

Maria nodded but it was plain that she didn't completely get it. If she was going to pursue it further, it was interrupted by a rapid series of bangs that stopped conversation throughout the Square. A short silence was followed by a spate of nervous laughter, then the talking quickly built up to a roar again. "How much longer is it going to do that?" she asked.

Elgin was going to answer, but Stanton beat him to it, explaining that they could estimate how long it would go on, but that they couldn't say for sure when it would stop. "We estimated that the whole thing would take three hours," he said, "which means that it should be over about now." Maria nodded. "But we can't say whether or not this was the last loud one. It could be, or there could be more."

“So it’s kind of like the stuff about probabilities that we’re learning in school,” she said. “Effay, probably three hours?”

“Yes, that’s right,” said Stanton. “As a first approximation it will last three hours, but there is an uncertainty that keeps us from setting a definite time.”

Tomas interjected. “It’s really two different things, isn’t it?” He was slightly abashed when everyone looked at him. “I might have misunderstood,” he ventured, “but I thought the three hours was for the comets to come to rest. Then it said that there could be settling in and so on for an indefinite period.” He looked at Stanton for enlightenment.

“No,” said Stanton, “you’ve understood perfectly. In fact, I thank you for reminding me. The three hour collision time and the indeterminate period of seismic activity should be looked at as two separate things.” Maria was looking proudly at her father, and smiled happily when Stanton told him, “This is the kind of trap that we have to work hard to avoid in our job.”

Stanton cocked his head, gazing into the distance. “Excuse me,” he said, “it’s a status report.” He turned away from the group to be polite.

Just at that moment a cheer went up from all the children in the Square. Buzzard had entered and swooped up high, and was turning around scanning the crowd. He was obviously looking for them but he was distracted when all the kids, including Maria, went flying up to join him. They surrounded him in a loud, happy ball that gave brief glimpses of his delighted grin. Finally he flew out of the mob and led them off around the upper reaches of the Square. They quickly formed a single file, following Buzzard and mimicking his every move.

“Hey,” said Elgin, “that’s what they did with me at the swimming hole.”

Stanton said, "They look like a flock of little ducklings following their mother."

Then, as they were traversing the far, yellow end, Buzzard pulled up and the flock gathered around him. They huddled there for a while, looking at the yellow column closest to Fran and Elgin's rooms, then Maria peeled away and came flying back to them at full speed. She was excited and stammering when she got there.

"Whoa," said her father. "Take a breath and rein that horse in."

Maria visibly got a grip on herself, then reported succinctly, "The column is cracked." She looked at Fran. "The one by your apartment. It's got a crack right through it."

They all followed her back over, and every kid there wanted to be the one to point it out to them. They had to get quite close before it was obvious as a crack. From a distance it was easy to dismiss it as a trick of the light, but up close it was definitely a crack. That's all it was, though, just a crack. There was no displacement in the pillar itself, which still looked straight and true.

Everyone ran their hand over it, but they couldn't feel any discontinuity. Stanton, ever the engineer, soundly smacked the ice on both sides of the crack, but it was solid.

The lottery woman said, "Can you fix it?"

Stanton looked at it, tipping his head one way then the other. "I suppose we could," he said. "We could inject water into the crack and make it less obvious."

"Less obvious?" she said. "Can't you fix it like it never happened?"

"No," he said. "These columns are grown in a continuous process. No matter how well we hide the crack, it will never be the same."

"Oh," she said. "Does that mean replacing the whole thing?"

"I'm afraid so," he said.

There was a lull while they contemplated the size of that task. Then Fran cleared her throat. "There is another option," she said. Having their full attention, she said, "We could just leave it."

That raised a small wave of surprised comments. The lottery woman summed it up with, "Wouldn't that be dangerous?"

Fran looked at Stanton who said, "No, not at all."

She was incredulous. "But it's cracked!" she said.

"Yes," he said, "but it's still sound." He smacked it again. "Any repairs would be purely cosmetic." He could see that she wasn't convinced by the way she was doubtfully eyeing the length of the massive pillar. "Look," he said, "it's not as if it's holding anything up." He raised his eyebrows, smiling.

"Oh!" said the woman, remembering. "Of course." Even as she was floating in the air she still instinctively assumed there was gravity, especially when looking at this kind of sturdy architecture. She still had a question, though. Looking at Fran, she asked, "Why would you want to leave it cracked anyway?"

Fran hadn't got that far yet. All she had was a feeling that it would be a good idea. She quickly asked herself the question and came up with a couple of answers. "For one thing," she said, "it would be a reminder of the amazing thing we did today."

That was greeted by general, if unenthusiastic assent, but it wouldn't be enough to convince any doubters. The woman asked, "Is there anything else?"

"Yes," said Fran. "Because this is the yellow end, it can be kind of symbolic."

"Symbolic of what?"

"That would be up to each person," said Fran. "Most of us lost someone to Yellow Comet, or know someone who did. And we all have

feelings about it.” She swept her hand, taking in everything. “This is Yellow Comet, when you come down to it. I think this crack could be a reminder for people.”

“A tribute to the people of Yellow Comet. Okay, I see it. But what makes leaving it damaged a better tribute than repairing it?”

“Either would be a good tribute,” said Fran. “In many ways, repairing it might be the better one. I just have this feeling that a visible crack might be more poignant. A reminder of the fragility of everything, that nothing is perfect. And it could serve as a sort of touchstone if it’s right here, visible and accessible.”

This time the general assent was more pronounced. Heads were nodding among the adults, while most of the children were simply waiting for whatever the decision would be. Stanton spoke it for everyone, his voice a little husky with his personal Yellow Comet memories. “I think it’s a great idea,” he said. “It will be nice to have someplace to come to remember.” It was clear he was struggling with his emotions and it proved to be contagious. The adults were quiet for a few moments, a few brushing away tears, while the children looked on, mystified.

Stanton cocked his head again. “Go ahead,” he said, but everyone knew he was talking to someone else. “Okay. Good.” He was nodding. “Where?” he said, a small frown starting. “Are you sure it’s in the gallery? Okay, keep a crew on that until you track it down.” His expression cleared. “Good job. Let me know,” he said, ending the call. He looked around at his companions, his mind still elsewhere.

“What is it, Stanton?” asked Fran. “Is everything all right?”

“Yes,” said Stanton, coming back. “Yes, everything’s okay.” He looked at Elgin. “That was the head of the damage patrol. He says your struts held up fine.”

“My struts? On the flashball court?”

“Yes. They haven’t found any serious damage anywhere. Only a few slow leaks that they’re patching now. Except there’s one in the flashball gallery that they’re having trouble isolating.”

Everyone thought about it, then Elgin said, “That gallery doesn’t have a contiguous ice seal, does it?”

“No,” said Stanton. “Parts of it are just packed snow.”

Elgin nodded. “Maybe a rift developed behind the surface. That could cause a diffuse leak that would be hard to pinpoint.”

“Right you are,” said Stanton, turning away to make a call.

People were looking at Elgin, some with worried faces. He quickly said, “There’s no danger. They’ll seal off the gallery and fix the leak.”

Maria spoke up. “Elgin?”

“Yes?”

“Do you think we could look at the video of the swimming hole now?” The kids close enough to overhear said, “Yeah!” and that attracted the others, who crowded around.

Elgin said, “Right. Everyone’s here now, hey? I think this is a good time to do it.” The children cheered and Elgin selected one of the smaller monitors and called up the swimming hole recordings. “I think we should run it at high speed,” he said. “It’s too close to bed time to watch it in real time.” Even sped up sixty times it was slow for the children. It took a while to even be able to see that the sphere of water was moving, but once it did it was worth the wait.

There’s something intrinsically funny about a big blob of water wobbling and splashing about. The kids were laughing anyway. And each time a big slosh was impending, they held their breath with anticipation and released it explosively, laughing at the antics of all that

water. There was a sense of satisfaction and disappointment as the action wound down.

“Play it again.” Elgin wasn’t surprised to hear that, but he was surprised that it came from behind him and not from the kids. “Yeah, and put it on the big screen,” came another voice. He turned around and found that a lot of the people were looking his way. More voices called out for a rerun and someone started chanting, “Swimming hole,” which caught on right away.

“Okay, okay,” said Elgin, putting his hands up in surrender. He switched the feed to the big screen, the view from behind, where they could see the sphere move away and into the far wall. He put the other angles on some smaller screens. There was a round of applause and soon everyone in the Square was watching. Next to Buzzard’s smoke rings, this was the big hit of the whole affair. When it ran down and the crowd demanded he start it over, Elgin complied, sharing a look with Maria. She looked proud and happy.

Fran slid her hand into his. “I don’t know about the rest of you,” she said, “but it’s been a long day for me.”

Tomas agreed. “What a day it has been, too. Thank you again everyone.” He held out his hand for Maria. “Good night all. See you in the morning.”

30.

ANNIHILATION

Elgin awoke to beeping. While he was trying to figure it out, Fran bolted out of bed and shot through the door into the kitchen. He tore after her and found her at their terminal. “What is it?” he asked, wondering if he should be worried.

“It’s the planning committee alert system,” she said. “There’s a message from Winston.”

Elgin didn’t ask what it said. He knew she’d tell him when she’d read it. It wasn’t easy waiting, though. His mind filled with questions, mostly about the joining. Could they have overlooked something? Was there a disaster unfolding as a result of crashing the comets together? Would they pay a horrible price for their hubris? Their arrogance?

“Winston has called an emergency meeting,” she said. “He wants everyone there immediately.”

“What’s it about?”

“He doesn’t say. He wants everyone together first.” She sent a return message saying they’d be right there. “Come on,” she said.

Elgin headed for the bathroom. “Wait up,” he said, “I’ve got to go pee.”

“It’s a good thing we’ve got two bathrooms,” she said.

~

They left by the balcony, diving off and flying straight to the exit they wanted. There was no one around. It felt strange crossing an empty Square. They felt almost furtive going up the corridor to the meeting

room. Entering, they found Winston seated grimly at the table, with Nigel “pacing” before it. They were the only ones there so far.

“What’s going on?” asked Fran. She got a shrug and a head shake from Nigel, so she turned to the seated man. “Winston?”

He looked up and his face shocked her. She had never seen him like this. He looked shaken, frightened and uncertain. He croaked weakly, “I can’t tell you until everyone is here.” His voice made her shiver and she went to Elgin for comfort.

The scene was repeated with each new arrival, until Frances saw how hard it was on Winston and stepped in to deflect people away from him, earning herself a look of gratitude. Not only committee members were coming. It looked as if Winston had invited the heads of all departments, too. Stanton was among the first to get there and he came over to Fran and Elgin, looking for answers. He already knew it wasn’t a problem with the comet. At least, nothing to do with the joining. He’d stayed up half the night getting reports from the damage patrols, and the comet was in good shape. They’d even sealed the leak in the flashball gallery. So he was as much in the dark as everyone else.

The room was crowded when Winston stirred, cutting off a buzz of conversation like a cleaver. They looked at him, their senses open, amplified by apprehension. “Please sit down,” he said, and the committee members took their usual places at the table, Fran leaving Elgin and Stanton standing together. One of the department heads, not used to the procedure and no doubt fueled by anxiety, started talking, his nervous chatter escalating as he demanded answers. Winston didn’t raise his voice, merely said, “Be quiet, please,” and the questions stopped, leaving a chill in the air.

He stared at the table for many long moments, but they remained quiet. Finally, when she could see worry threatening to become fear

and panic in many of the faces in the room, Fran gently laid her hand on Winston's arm. He looked into her eyes and was bolstered by the calm compassion there. He nodded and cleared his throat, straightening himself in his chair. He looked around at his audience, and said, "About an hour ago we received a radio message. It's from the envoy, sent by their high power omnidirectional transmitter." There were some gasps, but mostly only silence. Everyone knew the envoy, on its way to meet the Visitor, communicated with a directional antenna pointed home. They also knew that most space vehicles and occupied comets had similar setups, with an emergency backup, high powered and omnidirectional. "I think it's best if we just listen to it."

He played a clip, about a minute long, of normal reporting by the envoy. It was describing what they could see of the Visitor, then the quality of the transmission changed, becoming more powerful and rougher. After the final statement, "They're attacking us!" Winston let everyone absorb it in silence.

Someone spoke aloud what they were all hoping. "Are there any more messages?"

He responded in the deepest croak anyone had ever heard him make. "No," he said. "That is the last thing ever heard from them."

"Then, what's going on? What are they doing about it?"

"In the last hour there has been some confused radio traffic, but no one has said anything official yet."

"Then let's call them. Let's find out what's going on," said someone else.

Winston shook his head. "It would be most of a day before we got a reply. There's no point." His face went stony. "I've ordered radio silence." He rode out the gust of shocked protest. "At least temporarily," he said. "Until we know more." He quashed further protest with

a flat statement. "It is my right to do so. It is the responsibility of this chair." He made sure to include everyone as he swept them with a hard stare. "The Visitor attacked and killed the envoy without provocation. Until we know more, we will do nothing to give ourselves away."

~

That was a good decision. The next few months proved that. Winston held firm in spite of the impassioned wheedling of people who desperately wanted to call home. As time passed and nothing further seemed to be happening, some even tried to convince themselves that it was a mistake, or possibly a hoax. If the self-deception threatened to get out of hand, or if he tired of the clamor, Winston would just play the message again, on the public address system if necessary.

Eventually he was vindicated, much to his dismay. By then the people who wanted to use the radio were trying logical arguments. They would point out that they were separated from the Visitor by at least forty-five degrees relative to home. And Green Comet was well above the ecliptic outbound, while the Visitor was inbound, slightly below the plane of the planets. Surely a tight radio beam into the inner system wouldn't give them away. Fortunately for Green Comet, Winston held firm.

After many months of random radio traffic full of speculation and devoid of any new information, the inimical nature of the Visitor began to be confirmed. Astronomers continued to report flashes of light similar to the ones that revealed the Visitor in the first place. But now they were joined by others, smaller but more numerous. They surmised that these were indicators of more smaller craft, such as the one that had been observed to separate from the main vessel before attacking the envoy. They calculated that they would be plunging into

the inner system at nearly double the speed of the big one, traveling much faster than anything that could be put up against them.

These modules had their own offspring that could be deployed and accelerated on independent vectors. The strategy seemed to be to go to the sources of any radio transmissions, the more numerous or powerful ones first, and destroy them. There was no attempt at communication, and there was only one response to any challenge or plea: destruction. The result of any attempt to talk to them was certain death, so radios began to go silent for stealth as well as from obliteration. The result of any attempt to fight was futility. None of their ships could match the speed of the attackers, and anyway, they were built for exploration, not combat.

The defenders had only one brief rally. Their ships couldn't do much against the enemy's speed and power, but even those cold, silent killers couldn't outrun a particle beam. They managed to destroy some of them, but it made no difference in the end. It was a simple matter to find the sources of those beams and systematically erase them. There didn't seem to be any concern for the losses incurred to do it, either.

There followed months of chaotic, terrible radio traffic as the Visitor spread through the system killing everyone it discovered. It was always the same ending no matter how it started. Whether the people stood up to them or not, whether they begged for their lives or not, whether they tried to reason with the implacable killing machines or tried to hide from them, the end was death and another silent radio source. In most cases there was a final panicked distress call, a death cry expanding pitifully in the lonely vacuum before being abruptly cut off.

The destruction of their planet was painful to the point of disbelief. The people put up a good fight. They destroyed an appreciable

number of the marauders before succumbing. Perhaps most importantly, they compiled information about the Visitor. They took all reports from anyone who encountered the ships and rebroadcast everything they learned, hoping that something would help someone survive. Green Comet learned a lot that way. Every sacrificial broadcast, each a heroic act given the certain outcome, added a little more information that Green Comet could use in its own survival.

Even though they were far from the horror in the inner system, with no reason for the Visitor to come after them, events conspired to put them in the invader's sights. Red Comet was on the inbound leg of its orbit, inside its descending node, well within the inner system. Even though it tried to go quiet and hide from the deadly onslaught, it was discovered and destroyed. Worse, the Visitor now knew that people were living on comets, and it was easy enough to follow their trails.

The final assault on the planet displayed the callousness of the Visitor in its ultimate form. Once all significant resistance was eliminated, there were no more explosives or energy beams. There was no landing of troops to mop up. Instead, the atmosphere was drenched with poison, and when it dissipated it was drenched again. It was less like a weapon of war and more like a pesticide. The Visitor was not defeating its enemy in a war so much as eradicating vermin. The planet was being sterilized.

Finally there was silence. No more cries of fear and outrage came out of the inner system. All the heroism and tragedy that had emanated from their lost home went quiet. The many months of futile struggle against a silent, enigmatic killer were over, and still the people wanted to understand. They wanted to know why. Why had the Visitor come across interstellar space to destroy them? And why had it never talked to them, never answered their increasingly desperate entreaties?

31.

COMMUNICATION

Green Comet was a dark place, and cold. They hadn't touched the environmental controls. No one had turned down the lights. It was just colder and darker. It was a quieter place, too. There were no voices calling out across the Square. No children shouting and laughing. When people spoke it was quietly, and no longer than absolutely necessary. The cold and darkness in Green Comet were coming from inside the people.

There was one suicide during the extermination of their species. It happened before the poisoning of the planet, while it was still possible to hope. Someone abandoned hope before it was gone and escaped into death. There were a few more suicides after the planet was sterilized and then a small wave of them as the horrible reality sank in. It began to look as if it would become a trend. People who might have been merely morbidly depressed were seeing other people kill themselves, and deciding that it must be a viable option.

Frances and Winston saw the developing trend and moved to cut it off before it turned into a self-supporting system. They spoke on the public address system. They spoke at the funerals of the suicides. They eulogized their martyred planet and included the suicides among the victims of the Visitor. They tried to turn minds away from the horror, away from the past and onto the future. That was all they had now, and their only option was to go on, to survive. They needed to be strong to defy the brutal intentions of their heartless destroyer.

The suicides stopped at thirty-one. Given the circumstances, thirty-

one out of two thousand was probably not bad. They didn't have any precedents to compare it to because there had never been a comparable situation. There was the Great Comet Disaster with its destruction and loss of life, but there was no intent or agency behind it, so it was different. There was the Yellow Comet case where the agency and intent were clear, but it was localized and, from this perspective, small. The loss of one's entire species and its planet of origin to a silent and implacable enemy was unprecedented. The only possible comparison would be Orange Comet, if they ever felt safe enough to try to contact them.

~

"I think it's safe," said Frances. "We should be able to send a message to Orange Comet without being detected."

"You think?" said Winston. "We need more assurance than thinking it should be okay." Some of the heads around the table were nodding. The horror was so fresh, their isolation and vulnerability so real that they were inclined to reject anything that might attract the attentions of the Visitor. "You'll need to make a good case for it before we break radio silence."

So Fran explained about the relative positions of Green Comet, Orange Comet and the inner system. "We form a triangle," she said. "If we send a tight beam to Orange Comet, it will be angled away from the inner system, where they all are, and even farther away from the main vessel still approaching."

"How do we know they're all in the inner system? How do we know they only came from one direction? How do we know anything?"

"We can't know anything for sure, of course," said Frances. "For all

we know there might be many Visitors approaching from all directions at once. They might have already discovered and destroyed Orange Comet and they're just waiting for us to give away our position so they can destroy us." She smiled at Winston who, to his credit, laughed. It was brief and weak, but it still showed that he saw her point. She went on. "But we only ever saw the flashes coming from one direction, so I think it's safe to say that there is only one Visitor."

"Okay," he said. "We can agree that one Visitor came from one direction, so the chances are that Orange Comet is still safe." The people around the table gave tacit assent to that. "But those smaller modules that it deployed ... they were moving fast and there were a lot of them. Who's to say that one of them didn't go straight through the system? It could be within the target area of a signal we send, couldn't it?"

"Yes, it could," she said. "We tried to piece together what happened from the information we were able to gather, and we think we can account for the movements of most of the Visitor's modules. That's including the few that were destroyed." She shook her head. "But there are uncertainties. It was a chaotic time and we had to make some educated guesses. You are right to assume a finite probability that one or more modules left the inner system."

"Probabilities," said Winston. "It's always probabilities, isn't it?" He made a disgusted face. "Just once I'd like to work with some certainties."

"Be careful what you ask for," said Fran. "Certainties are so often terrible."

"Yes, you're right," said Winston with a shudder. "They usually are." He smiled wryly at her. "I guess I'll stick with probabilities. They're probably the less evil of the options."

Frances started a video. "I got Buzzard's guy to make this for me.

It's based on Buzzard's math and a lot of estimates, so you'll have your fill of probabilities." It began by showing their position. Green Comet, shown in green, was beyond the termination shock, where the wind from their Sun was slowed down below supersonic speed, but not as far as the heliopause, where it's overcome completely by the interstellar wind. The ecliptic, where all the planets orbited, was shown, as was the orbit of their comet at an angle of fifty-four degrees to it. They were shown above the ecliptic, as it was customary to display north as up, but not too far since they were still so close to perihelion. They were twice as far out as the outer edge of the Kuiper Belt, but only a small fraction as far as the Oort Cloud, which was shown in an inset.

The view backed up and rotated left to show the Visitor, displayed in a menacing black, at the inner edge of the Kuiper Belt. It was a few degrees below the ecliptic and inbound on a radial about forty degrees away from them. Red Comet could be seen, just within the inner system, inbound fatally close to the Visitor's course.

The view backed up again and rotated right until it included Orange Comet, shown in orange. It was even higher above the ecliptic, even though the plane of its orbit was at a lower angle than Green's, because it was much further along. This illustration showed how much separation there was among all the objects. It showed Orange Comet almost opposite the Visitor, and it showed how unlikely it was that any of the Visitor's modules would have happened into that vicinity.

Fran put in a line showing the maximum spread there would be in a tight radio beam sent to Orange Comet, and it looked as if it would be completely safe. "But you can see why they wouldn't want to try to contact us," she said. "They could probably make a logical case for it being safe, but some of the variables would be too uncertain." She showed a beam coming their way from Orange and, even though it

missed the Visitor by a wide margin, it was generally toward danger rather than away from it. “With Red Comet being destroyed and us being closer in than them, I don’t blame them for being cautious.”

“But then,” said Winston, “if we do call them, how do we know they’d receive it, and how do we know they’d reply?”

“I’ve been working on that,” said Fran. “We will rely on the likelihood that they will have some antennas pointed our way, so when we squirt a signal at them they’ll be sure to receive it. Then, even though it will be white noise like some random pulsar beam, there will be enough of a pattern in it to trigger their apophenia.”

“Apophenia?”

“That’s our tendency to find patterns or correlations in random data,” said Fran. “It’s in our nature and I don’t think it’s in the nature of the Visitor.”

“Apophenia, hey?” said Winston. “I like that one. I’m going to file it away for future reference.” He gave her a look. “How do you come up with a word like that?”

“I didn’t. At least not by myself. I learned it from a statistician. In statistics it’s called a type one error.”

“I like apophenia better,” said Winston. “Please go on.”

“Okay, so Orange Comet will receive our transmission, they’ll deduce that it’s artificial and they’ll decode the first part that describes how to read the rest of it.”

“The message will be in two parts?”

“Yes. One part will be a kind of manual for reading the other, main part.”

“If it’s so easy to decode, won’t the Visitor be able to do it too?”

“Yes,” said Fran. “If one of them is in the area, and it happens to

intercept the transmission, and it decides that the white noise is a message, it might be able to decode it and then we'll be sunk."

"Hm," said Winston. "You say you were talking to a statistician. Did they happen to calculate the probability of all that?"

"Yes, as a matter of fact. With lots of assumptions and big error bars, though." She consulted her notes. "About as likely as me growing another set of arms, apparently."

"Not very likely, is it?" A chuckle went around the table. "So, tell us more about this message you want to send to Orange Comet."

Fran told them, and Elgin watched her talking. He was grateful that she had this project to be passionate about. She was glowing again, full of energy and enthusiasm, and it was a relief after the first dark days. Fran's talent for feeling what people feel and knowing what they need was a pathological trait during the time of destruction and despair. Elgin suffered terribly seeing her in such pain, and nothing he did or said seemed to make any difference. While she was present at flashball games, which they continued playing out of need more than desire, or at the café, her mind was elsewhere. He could tell by the focus of her golden eyes. If it was distant then she was thinking about what the victims were suffering. If it was interior then she was suffering their last moments in her imagination.

It seemed hopeless but he kept trying. He kept taking her out among people and he kept making her talk to him. Then one day when he was listening to her describe how the people of Red Comet must have felt as they tried to hide, he happened to say, "I wonder how the people of Orange Comet feel." She gasped and looked at him with wide eyes. He saw her focus come back from her dark horizons and he felt a little leap of hope. When she threw her arms around his neck

and covered his face in kisses, he knew it was going to be all right again. Then she said the magic words.

She said, “Come on. We’ve got work to do.”

And work they did. They had a good run of sixteen hour days, at it from the time they got up until they fell asleep talking in their bed. And they weren’t the only ones. Fran enlisted everyone she could think of, and some who just happened to ask her what she was up to. The objective was to talk to Orange Comet. The challenge was to do it safely, without endangering either themselves or their sister comet. As far as they knew, these two comets contained the only surviving populations of their species, and it would be better to never hear from them again than to do anything that would threaten their survival.

So Fran taught herself about radio waves, how they propagated, how they could be focused and how a focused beam would disperse with distance. She got people working on the technology and the methods they would use, and what the message would say. And she began the development of the Rosetta Protocol, which would tie it all together.

“Yes,” said Winston, “you’ve mentioned the Rosetta Protocol before. Would you care to explain it?”

“I’d be glad to,” said Fran. “First, though, I’d like to emphasize that I didn’t create the protocol. I found people who are much better than I am at algorithms and so on, and they developed it.” She looked around the table to be sure everyone understood that. “Okay. The Rosetta Protocol is a two part system. One part is a method of encoding and encryption. This makes the signal look like random white noise and, after it’s made coherent, keeps it secure. If the Visitor detects the signal and decides it is a signal and not just a burst of noise, then figures out how to make it look like a signal, they will still have to break the

quantum encryption. My developers tell me that the odds against that are too high to even try to put a number to.”

“Okay, that’s reassuring,” said Winston. “And the second part?”

“That’s got more to do with the content,” said Fran. “Green Comet and Orange Comet have been evolving independently since before we even got out here. Orange was out here for quite awhile already before that.” Her face got serious. “Until now we have had the common language of home between us, but that’s gone now.” She paused for one of those moments that descended on them far too often still, then she shook her head and went on. “Now our languages will diverge with time until one day we won’t even understand each other.”

“I’ve heard people say that already,” said Nigel. “After eighty years in hibernation they felt as if they were waking up in a different country.”

“That’s right,” said Fran. “Thank you, Nigel. The linguists I’ve been talking to would like that example.” She picked up the thread. “So, we’re going to need to keep up with the changes in each other’s language. The Rosetta Protocol will help with that. It will explain things in each language not known to be in the other. It will repeat everything in the common pre-diaspora language of home. And it will include current lexicons, defined in pre-diaspora. Any new words that have popped up on one comet or the other.”

“Like ‘effay?’” asked Elgin.

“Yes, exactly like ‘effay.’ It’s very unlikely that Orange Comet is using ‘effay’ for ‘first approximation’ as well. That would be too much of a coincidence. So we would have to use ‘first approximation’ in any message, but then we would also have a definition of ‘effay.’ As in, ‘Effay, infinity and the infinitesimal are equally distant.’”

“So,” said Winston, “the Rosetta Protocol would take care of encoding and encryption while also keeping our languages comparable.”

“Yes.”

“I think you’ve explained it very well.” Winston prepared to move on to the vote.

“There’s one more thing,” said Fran.

“Go ahead.”

“Even with all the safety and security built in, Orange Comet might not want to reply to us. They might consider even a tiny risk to be too much, considering the possible repercussions.”

“I think we all understand that,” said Winston, and there was a general sound of agreement. “What do you propose?”

“Well, this isn’t my proposal and, as much as I understand it, it might as well be magic,” she cautioned. They acknowledged that and she continued. “My communications experts say there is a new technology where they can use quantum states to code a message into a single atom.”

“A single atom? How much of a message can you get in an atom?” Winston didn’t even question the quantum part. He agreed with Frances that it was like magic.

“They say they can get about a thousand characters worth of data into one gold atom.” She looked at Elgin and Stanton and Buzzard, the closest thing she had to science experts in the room. They nodded, and Buzzard said, “A thousand bytes. A kilobyte. Thousand.”

“A thousand letters wouldn’t make much of a message.”

“No, but it would be enough to give their position and velocity, which would mean we could keep track of each other.” That made their faces more attentive. “And there would still be room for some

other information, like when to expect their next message. But the important thing would be making sure we don't lose touch."

Stanton spoke up. "This quantum stuff is over my head, but I can sort of see how it works. They told me that a thousand characters is the minimum and that they could increase it with some practice."

"How high?" asked Winston. "Did they give a maximum?"

"I'm not sure," said Stanton. "I think they tried to tell me, but I got lost when they started talking about superposition." Everybody was grinning and nodding their heads. "Anyway, the important thing is that it makes a viable way of sending messages, even if they're short."

"Yes, I can see that." Winston turned to Frances. "Can you give a brief explanation of how it would work and what makes it safer?"

She had another video, a simpler one. "They would build a particle accelerator and use it to shoot a few billion encoded gold atoms in our direction. They would be identical, all with the same message. We would only have to catch one to receive it."

"Billions?" Winston balked at the idea of wasting all that gold.

"Yes," said Fran. "Space is big and even gold atoms are small. Even billions wouldn't make a piece of gold big enough to see without a microscope." She consulted her notes again. "They would accelerate them to nearly the speed of light, so they would be like cosmic rays. As far as safety is concerned, a random spate of cosmic rays is even less remarkable than a burst of electromagnetic white noise."

"Did anyone calculate the chance of being caught?"

"Yes," said Fran. "Well, more of an estimate than a calculation. They gave the odds against discovery as 'infinity minus one.'" That got a good laugh.

"Final question," said Winston. "And I think I know the answer,

but the question must be asked. If it's so safe, why don't we use it instead of radio to call them in the first place?"

"If they didn't know what to look for, they would be as unlikely to detect it as the Visitor would. It's only good if we're both aware of it ahead of time."

Winston nodded at the confirmation. "So, unless there's more," she shook her head, "I think I can recap, then we can put it to a vote. Do we want to send a radio message to Orange Comet, compressed, encoded and encrypted by the Rosetta Protocol, advising them to respond by the cosmic ray method if they don't feel safe using radio?" Fran nodded at the wording and they voted by a show of hands. It was unanimously in favor. Everyone was dying to talk to the only others like themselves in the universe.

~

Green Comet was a brighter place after that. When they announced that they were going to try to contact Orange Comet, people started talking again. There were lively debates when people met in the Square. Some of them were frightened and just wanted to keep their heads down, but they were reassured by the majority who wanted to reconnect and keep in touch. The air once again felt warm and it carried the sounds of children, who immediately responded to the lifting of the mood.

Fran was brighter too. As much as she was cheered up by the challenge of the task before, now she was luminous. It was as if the energy of Green Comet all ran through her, making her fluoresce brilliantly. Her aura once again shone with its characteristic clear light, and her radiance fed back and illuminated the rooms and corridors of the comet.

They opened up the message to public input. This wasn't just an official missive from one comet to another, it was also about people reaching out across the cold vacuum with the warmth of touch. This was about declaring that the Visitor had failed, that they were still here, still together. This was telling the universe that the people would go on.

ORANGE REPLIES

“Why did you say that you don’t think the Visitor has apophenia?” They were on their balcony enjoying breakfast while the Square woke up. Elgin was looking at the crack in the pillar next to their apartment. The lighting within the ice showed it up nicely, and he was thinking about how things had changed since the crack was their biggest problem.

“I’m not sure yet,” said Fran “It’s still just a feeling, really.” She savored a sip of iceberry juice. “When I was researching the Visitor for last week’s meeting, I learned quite a lot about it.” She paused, looking at something, or more probably nothing, on the other side of the Square. It didn’t worry Elgin, though. Her eyes didn’t look the way they had before, in her dark time. Soon enough she came back, glancing at him, a little amused at herself. “I read a lot of descriptions, and heard some, and saw quite a bit of video, too.” She frowned. “I can’t explain it yet, but I seem to have formed the impression that the Visitor is different from us.” Now she laughed at herself. “What an insight, eh?” Elgin chuckled along with her. “Obviously I’m not ready to put it into words,” she said.

“Oh, no,” said Elgin, “you’re doing fine.” She slapped his shoulder and he ducked, grinning. “But you have this feeling and I know enough to know that it will come to something eventually. We just have to wait until it’s ready.” He took a bite of toast and crunched it up. “So,” he said, “your message should be about halfway to Orange

Comet now.” They sent it last night just before bed, and Orange would receive it, if they were listening, by the end of the working day.

“Yes. I can’t wait.” But she was going to have to wait, of course. Even if they replied right away, which they wouldn’t, it would be tomorrow before it arrived. But it would take some time before they were ready to reply. If they decided to use radio then they would have to study the Rosetta Protocol and spend some time composing the message. More likely they would use the cosmic ray method and that meant having to build a particle accelerator first. Stanton estimated that would take about a month if they were starting from scratch, so that’s how long Frances was prepared to wait before she started to worry.

“Me neither,” said Elgin. “Meanwhile, I think it’s time to get back to work on the joining.” It had been months since anything substantial was done about that. Other than critical safety inspections and basic structural analyses, virtually nothing had been accomplished since the Visitor revealed its intentions.

“Oh yes,” said Fran. “It will be good to do something normal for a change.” They shared a laugh at the idea of joining two comets being normal. “What are you planning to do?”

“I’ve already been studying the sensor data, getting an idea of what it looks like.” He smiled proudly. “You know, the real thing is a lot like the simulations. Buzzard’s work in particular is very close.”

“I think we have his smoke ring to thank for that. He analyzed the data to within a micrometer of its life.”

“Yeah!” said Elgin. “Wasn’t that amazing?”

“Well, he’s an amazing young man. Stanton is so proud of him.”

“Yeah.” They enjoyed the moment. “Anyway, we need to start thinking about some construction projects. We’ll need a corridor link-

ing the two comets first, I think. And we need to begin a proper survey of resources.”

“You mean with all the analysis we did for the joining, we still don’t know that?”

“No. That was all structural. Now we need to identify specific resources and map locations and quantities.”

She seemed distracted, but she asked, “That’s going to be about a thirty kilometer corridor, isn’t it?”

“Yes,” he said. “It gives us an excellent chance to engineer that curve you were talking about.”

“Oh?”

“Yes, you remember.” He studied her, puzzled.

“Oh, right,” she said, “the underground orbit.”

“That’s right.” She was lost in her thoughts. “Rannie?”

She surfaced. “I’m sorry,” she said. “Did I miss something?”

“No,” he said, “but something is obviously on your mind.”

“It’s nothing,” she said.

“It is so. When I talked about inventorying the small comet, you went somewhere in your head. Is there something I need to know?”

“No,” she said. “I mean, I don’t think so. Oh, I don’t know.” He could see her concentrating on it, digging for whatever answer was there, whatever explanation she could give him, so he waited patiently. Finally she told him, “It’s not clear yet. I can’t tell you exactly what it is or justify why I feel it, but it feels as if there’s no point thinking about the little comet.”

That chilled him. After the effort they went to and the sense of accomplishment they achieved, what could be so dire that it would become irrelevant? But, “You say it,” he said, “and I know it’s right.”

The time for the message to reach Orange Comet came and went and there was nothing to do then but wait and hope there'd be a reply. They had some antennas pointed that way just in case they decided to use radio, and they got something at about the right time. Given the time for the signal to get there at the speed of light, and the time for one to come back, plus a little more to decipher the message and compose a reply, the short burst of static could have been real. But it could just as easily be only another bit of static like they picked up all the time.

It was Buzzard who figured it out. In the same way he figured out what the light signals from the small comet meant that day they showed Elgin the bubble, so he figured out the response from Orange Comet. It happened at work when Elgin told him how long the message was.

"One point seven-nine seconds," Elgin told Fran. "Pretty random, right? But when I told Buzzard he laughed and said it was a response from Orange Comet." He was grinning and shaking his head.

"They sent a message already?" asked Fran.

"No, it's not a message in that sense. There's no pattern in it at all. It's a completely random bit of static."

"But Buzzard thinks the length of it is significant. Why?"

"It's not even the length itself, really. It's just the number. He told me what it was and I looked it up." Elgin digressed. "Not that I needed to, of course. That's not the sort of thing Buzzard makes a mistake about."

"No," said Fran. "It's hard to tap your foot in microgravity, but it is possible to look as if you want to."

"Oh," said Elgin. "I bet you're wishing I'd get to the point."

“Yes,” said Fran.

“Okay, well, one point seven-nine seconds is significant because, according to Buzzard, one point seven-nine Angstroms happens to be the atomic radius of gold.”

“Of gold?” she asked, astounded by the improbability of such a connection while also impressed by its beautiful symmetry. “Gold?” She clapped her hands and laughed for joy. “It is a message!” she said. “Orange Comet is okay and they will be sending us more by the cosmic ray method.”

“That’s what Buzzard thought, too.”

“This is wonderful news. Now all we have to do is wait.”

~

Knowing that they would be getting a reply took the stress and worry out of it, but it also led to impatience. It was going to be a long month so they decided the best way to wait was to work. Elgin and Buzzard started on designing the new corridor, the “orbital” as they took to calling it, including how it would join the small comet and what it would join to on the other side. Stanton began laying the groundwork for a complete survey of resources in the small comet. And Fran, as always, was busy with the planning committee.

The month went quickly at that. The work and the puzzles that needed solving engaged their minds so well that when the message did arrive, although it wasn’t a surprise, it caught them doing something else. That didn’t stop them from dropping everything and running to the meeting room, though, so there was a good crowd there.

Winston was seated at the table, flanked by Frances and Nigel, a single sheet of permapaper in front of him. Elgin took up his accustomed position, standing with Stanton and Buzzard against the

wall opposite the front of the table. He looked at Fran to see if she knew anything, but she shook her head with a tiny shrug. The conversation in the room went in waves, building to a roar and then suddenly dropping to near silence before building up again. It was roaring when Winston picked up the paper and before he had it completely off the table, silence descended with a bang. This was reminiscent of last time Winston had an important message to read. Last time they didn't know what to anticipate and they got bad news. This time they were expecting good news, but underneath was a thick layer of apprehension.

Winston tapped the table with the paper. "This morning," he said, "we received a reply from Orange Comet." He waited while relief washed around the room. "They sent it using the cosmic ray method and we deciphered it using the Rosetta Protocol, as explained by Frances." He paused as she was given a round of applause. "We captured exactly one thousand, six hundred sixty-seven gold atoms and the first two we examined were identical." An appreciative cheer went up. "The first thing we discovered was that they have already increased the character limit to two thousand." The cheer became thunderous. In the grand picture it was a fairly minor thing. They knew there was room for improvement in the message size, and that it would come inevitably and soon, but this confirmation seemed to be a sign that there was good news left in the world. Winston let the released tension run out. There was no hurry.

Finally someone called out, "So, what does it say?" and everyone focused on Winston. He held up the paper and began to read. "Greetings Green," it started, and it continued in the same terse, economical style. It consisted mostly of facts, beginning with their position, orbital specifics and velocity. There followed information

about their population, frozen and animate, including how many children had been born on the comet. There was even a note of the suicides they'd had. Eleven. It was short and the language was dry, but somehow it conveyed the spirit of Orange Comet. They felt closer to their sister comet now than they ever had. It made the final twenty-seven characters more strange. They didn't fit the style of the rest of the message, or the content. Winston read it in a puzzled tone. It said, "Visitor von Neumann machine."

After a confused silence, everyone talked at once. Everyone, Elgin noticed, except Frances. From the moment Winston finished reading the message until the meeting broke up, she didn't say another word. She met his eyes and he could see an understanding in hers. When she glanced at Buzzard next to him, he saw a tacit realization pass between them. He was excited and curious to find out what they knew, but a little scared too. They had that satisfied, almost triumphant air of discovery, but he detected an underlay of unease.

~

As they crossed the Square after the meeting, they heard Winston reading the message over the public address system. He did include the last phrase. They'd wondered if he would. When they left the meeting room he was still debating with himself whether he would or not. They were proud of him for leaving it in. He chose to trust the people to deal with the anomaly rather than holding it back to save them from the dissonance.

Stanton and Buzzard were coming back to the apartment with them. They needed to talk. It was obvious that Fran and Buzzard were holding it in, waiting until they got somewhere less public, so the four of them made a beeline for the balcony, then went straight into one

of the front rooms. Immediately, Fran and Buzzard started talking, but it wasn't in complete sentences. Elgin and Stanton heard fragments and obscure references to things that the other two seemed to have discussed before, but it wasn't making a full picture for them yet. They could have interrupted, asked questions, demanded to be included, but they were smarter than that. They knew that a few minutes of patience would be rewarded, and it was.

They stopped talking, looked each other in the eyes and nodded. Then Fran turned and said, "I'm afraid we have to separate the comets."

33.

THEY NEED A DEBATE

Elgin and Stanton looked at each other, speechless, then back at Fran and Buzzard. They didn't speak either, so Elgin finally said, "Just to make sure we heard you right, did you just say that we have to separate the comets?"

"Yes," said Fran while Buzzard nodded.

Elgin didn't want to admit it, but he heard the music in her words. He couldn't believe that he could tell if something was right from so little information, so he found himself questioning it again. "Are you sure?" he asked. "I mean, of course you're sure, but how can you be sure?"

So Fran explained while Buzzard provided supporting comments. They were speculating about the Visitor since before Elgin's waking. Even then, before anyone knew what it was, they were sure it was artificial. Then, after that was established, they became convinced that it was sinister, mostly because it wouldn't talk to them. She reminded Elgin that they had talked about that.

"Yes," he said, "and I knew you were right then, too."

She smiled at him. "And then I did all that research before we sent the message to Orange Comet, and I began to have troubling feelings about it." She explained how she and Buzzard analyzed the data and tried to form an idea of what the Visitor was and what it wanted. "We couldn't come up with anything. We couldn't understand why its actions didn't tell us anything about its character." Then, when Orange Comet gave them the idea that it was a von Neumann machine, they

realized that it had no character to discover. At least, not the kind of character they were looking for.

Elgin glanced at Stanton, who appeared to be happy to let him continue, so he said, “You mean it’s a machine and it doesn’t act like us?”

“Exactly.”

“Okay, we can see that. But how does that lead to dismantling the comets?”

She looked at Buzzard, gathering her thoughts, then she nodded. “Once upon a time,” she began, receiving an appreciative chuckle, “some people sent out a von Neumann machine to explore a neighboring star system.” The spacecraft would have been small and it probably would have been alone, although they might have sent two for redundancy. This robot would have taken decades to get there and would have been programmed to follow specific procedures upon its arrival.

Stanton said, “It was supposed to explore, look for signs of life, secure resources and replicate itself.” He shrugged when Elgin raised his eyebrows at him. “One of my engineering profs was a space buff.”

“Your professor was right,” said Fran. “So that’s how we think the Visitor started out.” But something must have gone wrong. Maybe there was an error in the programming that didn’t show up until much later. Or maybe a cosmic ray zipped through it, knocking out some crucial bits. It’s even possible that its creators intended it to be this way. “Although I doubt that,” said Fran. “It doesn’t make any sense outside of one narrow, insane point of view.” They could keep it as one of the possibilities, though one with a low probability. The important thing was that it went badly and the machine’s goals got magnified beyond reason.

“Your hypothesis, then,” said Elgin, “is that the machine went rogue and its mission of exploration has turned into an obsession, with its original goals perverted into conquest and destruction.”

“Yes, although I wouldn’t call it conquest. We don’t believe it thinks that way.” Her face suddenly showed horror followed by deep pathos.

“What is it?” asked Elgin.

She swallowed and said in a whisper, “We think it’s still just securing resources, as in its original programming. It needs to eliminate any threat to those resources.”

That horrified Elgin, too. “Do you mean we’re nothing more than pests to it? No different from the pests that eat our crops?”

“That’s right. It might see us as an infestation. Or we might be an infection, like a mold on our crops. Or it could see us as nothing more than simple corrosion, eating into its resources.”

They stood in silence, contemplating the ultimate in unintended consequences. It’s one thing to be killed by someone who means you harm, but it’s quite another when they don’t care about you at all. They couldn’t think of the Visitor as an enemy now, because they were irrelevant to it except as a threat to its mission. Stanton, his voice low, nearly a growl, said, “I’d like to get hold of those programmers. Just for a few minutes.”

Elgin brought them back to the moment. “That explains things pretty well. It makes a kind of sense now. But you still haven’t shown why we need to separate the comets.”

“Well,” said Fran, “when it finds us it’s going to be able to see that we’ve stuck them together. Then it will destroy us.”

Music again. Elgin knew she was right, but there might be hope yet. “But,” he objected hopefully, “that assumes it will find us. That it will

even look for us. We're pretty far out here and it's got all the resources of the inner system. Why would it even bother with us?"

Fran and Buzzard nodded. These were the very questions they asked in their speculations. "This is where my feeling comes in. As yet we don't have a convincing argument to support it, but my feeling, from all we know about the Visitor, is that we are still close enough and our existence important enough that it has to search for us."

She was right. He knew she was, even though they didn't have definite proof to support her instinct. Stanton was looking at him, watching his face, and he nodded, his shoulders slumping. He could see that Elgin knew and, proof or no proof, he knew it was time to start preparing to separate the comets. "You say it," said Elgin, "and I know it's right." He said to Stanton, "If it's already on its way then we'd better get started."

"Wait," said Fran. "We can't just do it." They stopped. "We're going to have to debate it and put it up for a vote. And that means we're going to have to come up with some very convincing evidence to support our arguments." When she saw the protest forming on Elgin's face she said, "Not everyone finds my words musical, you know."

Elgin couldn't believe that. Rationally he knew that it must be true, but he had to work hard to see it. Knowing when she was right was so natural that he automatically assumed everyone knew it. But he was a scientist. He had learned to resist assumptions. "Understood," he said.

~

It wasn't going to be as easy as just announcing that there would be a debate. They would have to make a case for it. That meant going back and doing more research. They had to look at everything with fresh eyes, trying to find those things that contributed to Fran's feeling, and

then finding even more evidence to justify her intuition and to convince everyone else. It was going to be difficult to make this case. Not only was there a powerful community pride in their achievement, there was also their innate conservatism. Roughly one-fifth of their resources could be in the small comet and that was all they had, possibly for thousands of years. Someone's feeling, even Fran's, was not enough reason to throw it away.

Probably pride would be an equally strong deterrent, maybe even more so. Here was the greatest engineering feat of all time. If they took it apart they would never get to show anyone. On a deeper and even more powerful level, it was also a symbol of their collective effort. This was something they had accomplished together. It was an expression of their unity, of their community. This could be stronger than fear of destruction by a distant threat. It would certainly be more powerful than the logic or rationality they might bring to any argument.

They were going to have to put together a strong case if they wanted to have a debate, but that was going to be easy compared to the work they needed to do if they wanted to win the debate. They needed to show the callous cruelty of the Visitor, certainly. They needed to show how assiduous it was in discovering and exterminating people, how it followed the slightest clue to its victims. But more important than that, they would have to show that it would come after them, even way out here.

The four of them worked hard that evening. They spent a lot of time at the terminal, reviewing as much material as they could that exhibited the behavior of the Visitor. As their knowledge of it built up, Elgin and Stanton began to see what Frances meant, independent of their faith in her judgement. Once you come at it with that idea, they thought, the conclusion becomes inevitable. In its programmed need

to secure resources, the Visitor would be strongly compelled to follow their trail.

“This shouldn’t be that hard,” said Elgin. “It’s all right here. All we need to do is show it to the people and they’ll see it too.”

Fran smiled at him again. “I hope you’re right,” she said, but it was obvious she wasn’t so sure. “At any rate, I think we’ve got enough to take to the planning committee. I think they’ll agree we need a debate.”

With the work done they retired to the balcony, where they had tea and biscuits while they contemplated the future. Fran said, “This will all have to go,” indicating the Square.

“What do you mean?” said Stanton, surprised.

“This will all have to be broken up.”

“I thought we were just going to separate the comets.” Stanton was experiencing the shock that would affect everybody. They were going to have to make sure that everyone understood all the implications.

“It’s more than that,” said Fran. “We’re going to have to make the comet look dead. In fact, it’s going to have to look as if it has never been alive.” She looked stern. “We have to break up all our structures. No right angles can remain. We have to open it up and let the heat out. Most of us have to be in hibernation, as well hidden as possible. The only way this will work is if the Visitor has no reason to be suspicious.”

They knew she was right. If they were going to do this, they were going to have to go all the way. Simply breaking off the small comet and trying to lie low wasn’t going to be enough. The people of Red Comet had tried to hide from the Visitor and now they were dead along with everyone else. “You’re right,” said Stanton. “We’ll need to put at least as much effort into this project as we did with the joining.”

They quietly sat with their thoughts, while the Square went from

the light traffic of late evening to the peace of night. They were aware that they were the only ones who knew what was about to happen to it.

~

Winston barked a surprised laugh when he heard it. "You must be joking," he said. "After all we did to join them?" He scowled. "This isn't something to joke about. We need those resources."

"It's no joke," said Fran. "I wish it were." She indicated the other three, who wore equally dour expressions. "We tried to see a way around it, but the evidence has convinced us that we need to have this debate so the people can see it and make a decision."

Winston knew and trusted Fran's intuition. He was also aware of Elgin's reputation and he had unqualified respect for Stanton. What Buzzard did and how he did it was beyond him, but he knew he had predicted the smoke rings when no one else even thought to look for them. The fact that these four were bringing this forward made him think there might be something to it. But the resources. All that work. He wanted to veto their proposal out of hand, but that was not the way things were done. He took the responsibilities of his position seriously, so he told her to make her case. Then the committee would vote on the debate proposal.

Fran did most of the talking, while the other three chimed in with bits of extra information. They played some audio and video recordings to illustrate the danger of being discovered, and they played snippets of the data and descriptions compiled and transmitted while the Visitor systematically cleansed the system of people.

Fran said, "We believe that the Visitor will certainly come after us, and when it does it will find us. We won't be hard to find. When it

does find us it will see two comets stuck together in a most improbable way, and it will know we're here and it will annihilate us."

"How certain is all this?" asked Winston. "Surely it's nothing more than a hunch based on a feeling."

"You're right," said Fran. "It's not absolutely certain. So far, it's only our feeling based on observation." Winston nodded and she continued. "That is, it is only our belief that it will certainly pursue us. That is not certain at all. However, if it does come after us then it will find us and it will destroy us." Winston nodded more reluctantly. "It's the seriousness of the consequences that we feel makes a debate mandatory."

Winston checked with Fran to see if there was any more that they wanted to say. When there wasn't, he said, "We can vote on this right now, because of the implications. If separation is necessary, then it's urgent." He cleared his throat and said, "By a show of hands, those in favor of a debate on this matter, raise your hand." Then he repeated it for those against. This vote wasn't unanimous. It barely passed. Both Winston and Nigel voted against.

34.

THE FIRST DEBATE

A soft chime sounded through Green Comet, and the people cocked an ear for the message. There was none, only a few seconds of silence followed by another chime. When the third chime came people put down what they were doing and gave the public address system their full attention. Three chimes indicated the most serious of messages.

The sound of Winston's voice confirmed it. The chair of the planning committee wouldn't be reading an ordinary announcement. The mike went live and Winston cleared his throat before saying, "People of Green Comet, this is Winston, representing the planning committee, with an important announcement." He paused, then continued, "A proposal for a debate has been brought to the committee for consideration and a simple majority has voted to approve it. Therefore, one week from today the first of two debates will be held in the Square." When he paused this time the peoples' minds filled the gap with questions. What debate could be this serious? Who brought it forward and who would be arguing?

Winston didn't leave them guessing for too long. "The question to be debated is whether we should separate the comets." It makes a very funny sound when that many people gasp in an enclosed space. "You can find more details on your terminals. Thank you for your attention." The mike went dead.

Green Comet filled with the roar of excited conversation as people pounced on the nearest terminal to find out what it was about. There was a brief description of the premise on which the proposal was put

forward and the names of the debaters were there. Arguing for would be Frances and opposing her would be Winston himself again.

~

During the week leading up to the debate the four of them spent many hours together, gathering information and helping Fran prepare. She was planning to present her case in the form of a narrative, from the time the flashes were first seen, to first contact, to methodical annihilation. She wanted to emphasize the inevitability of the final outcome, and the plodding, mechanical thoroughness of the Visitor. She thought it was important to make people realize that they didn't matter to it. It didn't care about them beyond their threat to its resources, and it cared about its resources a great deal.

She was going to use real material, audio and video transmissions from the people under attack, to punctuate her speech. She would have diagrams showing the positions of all the major objects and populations in the system, and demonstrating how close they still really were to the inner system. Toward the end of her presentation she hoped to be able to show a simulation by Buzzard's guy, demonstrating how easy it would be to find their trail and track them down.

Fran was very busy assimilating the information and practicing speaking. Being Fran, though, she also spent a lot of time talking to people. She wasn't trying to convince anyone or to get them on her side. That's what the debate was for. She was talking to people to find out what they thought and how they felt, and to get a feel for what they needed. Knowing would allow her to debate more effectively, but to her it was more important that she would be able to know how to speak to the people's needs. She wanted them to understand the threat, to fear

the Visitor, but at the same time she wanted to show them how they could fight the threat and overcome the fear.

~

Fran was nervous but it was all right. She had done this before and she found that a little nervousness could be helpful. It gave her more energy and helped her be more alert. She was standing with Winston on a small dais before a pair of green pillars. In front of them stood almost the entire waking population of Green Comet, save for the few who absolutely could not leave their work, and even fewer who couldn't be bothered. At the back of the crowd she could see Buzzard and Stanton, and they nodded and showed their support. On the edge of the audience, on the yellow side to her right, stood Elgin, his solid presence a buttress and his steady gaze a rock.

As the proponent in the debate, she would go first. She shook hands with Winston, leaning in to say something to him. He nodded and smiled, then patted her on the shoulder before withdrawing far to one side. As she turned to address the listeners a large screen behind her filled with their best image of one of the Visitor's modules. It looked efficient and deadly. There was no concession to style or artistry and certainly no attempt at beauty. All its lines were utilitarian with no obvious structures looking as if they could house living beings. It embodied the cold, uncaring logic of a machine.

"Hello Green Comet," she said, smiling. A murmur of response went through them and she said, "Thank you." She didn't waste time sidling up to it, choosing to plunge straight in instead. "We have to separate the comets," she said, "and I'm going to tell you why." Then she told her story, accompanied by the sights and sounds of their species' demise at the hands of the Visitor. She showed and described

the inevitable result of being discovered by it, and tried to show the high probability that it would come looking for them. “We can’t say with certainty that it will pursue us, but we believe the probability is high, and the result would certainly be terrible.”

“But that doesn’t have to happen,” she insisted, deeply affected by the fear and uncertainty in their faces. “We have the power to control our fate.” And she outlined a plan to remove the small comet and make Green Comet look dead. With careful preparation and a few tricks thrown in, she assured them that the probability of survival was high. “By our will and our willingness, we will defy the Visitor and ensure the survival of our people,” she said. “Only by not confronting the Visitor can we defeat it.”

~

Winston stepped forward as Frances moved away from center stage. He stopped to congratulate her on a fine speech and this time it was she who patted his shoulder in encouragement. He could see that the audience was quite worried. They obviously thought she had made sense and they didn’t know how much of it they should believe. Well, he would reassure them. “We don’t need to separate the comets,” he said, “and I’m going to tell you why.”

Yes, the consequences were dire when the Visitor found people. But they had no evidence that it was even looking for them, much less that it could ever find them. Winston saw them relax as he spoke. Their tense bodies loosened up and their faces smoothed out. His grave, substantial presence gave them confidence and his deep, measured speech made them feel calm. “And we need both comets,” he told them. “We need the resources, all the resources, if we are to survive.” It was time to use a little anxiety in his argument, now that he had

dissipated Frances'. "It's obvious we can never go home," he said. "We have to stay out here among the comets or we have to make our way to another star. Either way we're going to be out here for a long time." He let that reverberate, then said, "We can't afford to throw anything away based on mere speculation."

The image Winston chose as his backdrop was of the joined comets, showing Buzzard's smoke rings sailing majestically away. It was the only image he showed because he wanted to emphasize the security of permanence, while he talked of not only the value of their precious resources, but also the grandeur of their achievements. His goal was to plant in the people's minds how much they would be losing if they chose to listen to Frances. "The Visitor has already taken away so much," he concluded. "We mustn't allow our fear to finish the job for it."

~

The people had about the same distribution as the planning committee, it seemed. Roughly half of the committee approved the debate and the other half opposed, and approximately the same percentages seemed to fall out after the first round of debate. The comet was alive with discussions during the week between debates, and many of them were vigorous and loud. There was so much to lose either way that the intensity of emotions began to lead to violence. They were powerless to do anything to the Visitor, and they began to take out their frustrations on each other.

Frances and Winston got together and tried to calm people down. They spoke on the public address system. They went to the schools to show the children that, though they opposed each other on the dais, they were working together for the good of the comet. And they

roamed the Square, where most of the discussions were taking place, and showed by example that they could disagree and still be reasonable. “Reason and compassion,” they told the people of Green Comet, “are what make us better than the Visitor, and better than it thinks we are.”

ELGIN'S FRACTAL

Elgin couldn't believe it. Only half of the people seemed to agree with Frances. After everything she showed them, half of them still couldn't see that she was right. He thought she had them for a while as she was speaking. He could see it in their faces. But then Winston took his turn and they seemed to forget. All their work, all of Fran's work, undone by a few words from Winston. "How could he do that?" he said.

"Who?" asked Fran. They were having breakfast on the balcony.

"Winston," he said. "Surely he must know you're right. How could he say what he did?"

"That's the essence of debating," she said. "Even if he did agree with us, it's his duty to debate his side to the best of his ability."

"Are you saying he doesn't agree with us?" Elgin couldn't imagine how an intelligent man like Winston could be so wrong and so sure of himself.

"Yes, I am. I think Winston truly believes what he said."

Elgin had to accept that because it had the music in it. The music, he was grudgingly having to accept, that no one else could hear. Well, he could hear it and he knew she was right. But this wasn't just a case of who was right and who was wrong. This was about the survival of Green Comet. If they couldn't convince enough people, then they were all going to die. There could be no satisfaction in everyone knowing they were right then. He got up and stepped to the edge of the balcony.

"Where are you going?" asked Fran.

“I’m going to talk to him.”

“Who, Winston?”

“Yes. I’ve got to show him that you’re right.” He jumped.

“Okay,” she called after him, “but remember, he’s doing what he thinks is best for the comet.”

Elgin thought about that on his way to the meeting room, where he hoped to catch Winston getting to work. “Doing what he thinks is best for the comet?” Of course, he knew it was true. He didn’t even need Fran to tell him so. Everyone knew that Winston devoted himself to the comet with a sense of honor. Obviously he was doing what he thought was best. Therefore, Elgin concluded, he simply didn’t understand that he was wrong. Because he was certainly wrong. All the facts pointed to it. Fran’s intuition confirmed it and his own senses told him she was right. So his job this morning would be to convince Winston and show him a better way to serve the comet.

He did catch him at the meeting room. They arrived almost simultaneously, before anyone else was there. After the pleasantries, Elgin said, “Fran and I were talking over breakfast about debates, and how people can sometimes end up arguing for something they don’t really believe.”

“That’s right,” said Winston, working with the coffee maker. “In the tradition of debating, one argues whatever position they’re given, whether they agree with it or not.”

“So,” asked Elgin, “is that what you’re doing?” Winston looked up quizzically so Elgin added, “I mean, you know that Fran’s right but you’re arguing against her from duty and honor?”

“By no means,” said Winston. “I took the con side because I believe it to be the right side.”

So Elgin had to go to work to convince him otherwise. He began

by simply telling him the facts, thinking that any reasonable man would see the light if he was only shown it. When that didn't work he became more insistent. He didn't intend to intimidate Winston, he was merely extremely earnest, but this was probably the first appearance of his famous face. The heavy brow and bulky jaw, though he was unaware of them, must have had an effect. He thought he saw the man's eyes flinch. But in the end, when Nigel showed up and the conversation was over, he had to leave not knowing if he'd had an effect. And wondering about the hostile look on Nigel's face.

~

The discussions and arguments continued through the week, although people were more reasonable than before. Voices were still raised but there was no more physical violence. Stanton always made sure that people knew he supported Frances. He didn't have much of a way with words, preferring to stick to the bare facts, and when pressed he could only say that Frances had a way of knowing things. And when Elgin said she was right, given his reputation for being able to tell, that was enough for Stanton.

Buzzard tried to convince people too, but with his way of talking the only thing he could communicate was enthusiasm. Telling people, "Elgin knows. Frances is right. Elgin knows Frances is right. It's not magic," didn't convince many.

There was no need for Elgin to say anything. Everyone knew what he thought. Still, he said it anyway, to anyone who asked and many more who hadn't. It was unclear if his fervor was more about the fate of the comet or about his loyalty to Frances, but the result was very intense for anyone who became the focus of his attention. People started avoiding him. He didn't notice that, though. He was only

interested in the people he did meet, and whether they knew what they needed to know.

Frances appreciated the support and she made sure to let them know it. With two days left until the second debate, the four of them enjoyed a few minutes of relaxation after yet another busy day of preparation. She personally served the tea and biscuits even though they were within the reach of everyone, and she thanked them for their support. They objected and waved her away of course, but you could see that it meant a lot to them.

After Buzzard and Stanton left, she said to Elgin, “You really don’t know how much I rely on you, do you?”

“I’m just trying to help,” he said.

“You do help,” she said, “but it’s more than that.”

“Well,” he said hesitantly, “I can tell I do something for you. You seem to be happy when I’m around. But I don’t know what it is.”

She thought about it. “I really do rely on you,” she said. “Do you know why I tell you my ideas?”

“As a sounding board, I guess. For practice.”

“Yes. And because you know which ones are right.”

That made him think. He was used to her being right. He was accustomed to the harmonious music when she spoke. Now she was saying that he not only knew when she was right, but he helped her get there? “No I don’t,” he said.

“Yes you do!” she insisted. “I can tell by your reaction which ideas will go somewhere.”

He knew when she was right and he could tell that she was right now. “I really help you pick the right ones?” he asked. “I didn’t know that.”

He was so cute she had to laugh. That made him smile and that made her hug him.

~

On the night before the second debate there was a flashball match. The Harriers had been practicing a new pattern suggested by Elgin. The lengths of the passes and the angles between them changed by fractal amounts, so this was the play that would come to be known as Elgin's Fractal. It took a lot of practice because their brains were used to working in whole numbers. They were hoping their opponents, the Falcons, would be thrown off too, at least long enough to score a few points.

They weren't disappointed. The teams were evenly matched and they played a good, close game, highlighted by excellent defensive play. Near the end of the game, on what they thought might be their last clear possession of the ball, Elgin started the new pattern with a long pass. As the passes decreased in length, hit bottom and increased again, it was just unusual enough that the Falcon defenders were always a little behind the ball. It ended with Buzzard of course, with the last, long throw aimed at the shell of the sphere. Using his long body like a whip, he flung the flashball as hard as he could. It seared up through yellow to white, and half the people swore they heard a crack when it flashed.

The audience knew they'd seen something special and they burst into wild applause and cheering. All the members of the Falcons and all the officials acknowledged it with thumbs up and clapping hands as well. Buzzard caught Elgin's eye and they nodded at each other before Elgin flew out of the ball and headed for the exit. He flew over Stanton and Galatea, who had watched the game together, and they traded

nods too. Other members of the audience saw him leaving, but they were hushed when they saw his face.

The players and officials left the ball and congregated between it and the audience, where they were joined by members of other flash-ball teams and off-duty officials. There was discussion of the novel pattern the Harriers had just executed and they worked toward a consensus on how many points it was worth. They were aware that their ad-hoc decision would set a precedent, so they were careful to get it right. It became obvious that there was unanimity for giving them the maximum, but someone suggested that it was worthy of more. When they announced that they would award four points, one more than any pattern had earned before, the audience received the decision warmly. Everyone felt it was perfect.

A commotion started at the back of the crowd. Out of the hubbub could be heard snatches of single voices saying, “What’s that?” and, “It’s Elgin.” The voices rose with alarm and someone said, “What’s he doing?” People fell back from the entrance, crowding into each other, and it was soon obvious why. A large, metal, man-shaped mechanism entered the gallery.

Its dimensions were about triple those of a man. That is, its overall length was three times Elgin’s, who could be seen embedded in the center of it. Its arms and legs were three times the length of his, too. He wasn’t so much inside it as wearing it. Its movements replicated his. It was a power-assisted mechanical extension of his body. Machines like this were used to perform some of the large tasks involved in the care and maintenance of the comet. It was unclear why Elgin had brought it here. Some strange celebration of the flashball game perhaps?

When he turned it to walk along the wall, its setae feet clinging with

solid confidence, they could see that one of its hands gripped the handle of a large, massive hammer. When he reached one of his struts, he stepped onto it and walked its length to the ball, and rising concern swelled the volume of the crowd's voice. They unconsciously pressed forward, but were held back by the flashball players and officials between them and Elgin.

The metal man, in a stick-man caricature, stepped off the strut and onto the ball, where it turned around and planted its feet. The crowd calmed, but erupted again when it raised its hammer high above its head. Elgin, his face barely recognizable, looked at Stanton and Galatea. They both nodded, her face almost the mirror of Elgin's, and he brought the hammer down with destructive force on her highly polished joint.

The crowd noise was mostly a moan, but it contained shrieks and cries of protest and anger. Some of them lunged forward to try to stop him, but the players deftly cut them off. Elgin hitched his machine to the left and brought the hammer down again. And again. In about ten minutes he made sixteen strikes and worked his way around and back to where he started. Then he walked around it, inspecting his work and tapping here and there to complete the separation. Satisfied, he turned and walked over the dome of the ball to the strut on the other side, where he spent another ten minutes destroying his work there.

As he walked the machine back up to the top of the dome, he noted with satisfaction that Buzzard was gone, as they had planned. He saw Stanton flying toward him as he stopped, and when he extricated himself they exchanged a few words. Then he flew over to join Frances and Galatea while Stanton climbed into the metal man. A deep-throated roar built up as people realized what was about to happen, and there was a more emphatic surge forward to try to stop it. Once

again the skill, training and determination of the players and officials prevailed.

Stanton shuffled the machine's feet, adjusting his position until it felt right. He looked over at his friends, ensuring the rightness of what he was about to do. He hung onto Frances' golden eyes for a long moment, and found there the conviction he was seeking. The crowd was practically sobbing as he slowly raised the hammer, but when he brought it down and cracks shot out from the point of impact, the reaction was more a sigh of resignation and acceptance.

He pounded on his creation for about ten minutes, breaking out a big chunk and leaving a five meter hole in the shell. When he got out of the machine, Galatea was there for her turn. She didn't work on a single spot, rather she roamed over the surface doing as much damage as she could to her polishing job before her time was up. She was followed by Van Allen and Laika and everyone else who'd worked on it, then the players and officials, and finally anyone who wanted to. It went on throughout the night and continued for days, pausing only to replenish the machine's energy packs.

After two hours of it, Buzzard came back and let them know that his mission was successful. Stanton patted him on the back and, while everyone congratulated him, Frances gave him a hug. Her eyes showed how she felt his pain, but he brushed it all off, insisting that it wasn't important.

They all looked at each other, the hammering continuing in the background. They knew that the night was getting on and tomorrow, with its critical debate, would come all too soon, but this felt like an important moment. No one was in a hurry to call this a day, but Elgin wanted Fran to get some rest. He said, "So, now it's down to you and Winston, eh?"

Her eyes widened with realization. “Oh,” she said, “I forgot to tell you. Winston won’t be there.”

“He won’t?” Elgin’s flash of hope was quenched by wondering why. “What’s wrong?” he asked. “Is he sick?”

“No,” she said. “I just found out today and there wasn’t really a good time to tell you. He took early hibernation.”

“Early hibernation?” said Elgin, surprised. “But why? He didn’t say anything when I talked to him the other day. He seemed fine.”

“He told Nigel of his decision a couple of days later,” said Fran. “He told him that he was feeling tired and needed some rest.”

“Why didn’t he tell me if he was planning on going down?” said Elgin crossly. “I wouldn’t have wasted time talking to him if I’d known. I would have been talking to other people.”

“I don’t think he knew until after he’d talked to you,” said Fran delicately.

“Oh,” said Elgin. “That’s all right then.” He put that problem away and looked to the future. “So, who’s taking his place?”

Fran was envious of his ability to do that. The issue was no longer relevant, so any questions about it simply left his mind. She was more the type to get to the bottom of things, and sometimes she wished she could just drop it and walk away. “Nigel has taken over Winston’s debating duties,” she said.

He didn’t know what to think about that. Winston was good, so having him out of the picture might help their cause. But he had no idea what sort of debater Nigel would be. “Maybe I should go talk to him,” he said.

“No, no,” said Fran hastily. “I think we should go home and rest up for tomorrow.” They said goodnight to everyone and went back to their

apartment, where he lovingly brushed her golden fur until she fell asleep.

36.

NIGEL'S DEBATE

Effay, everyone was standing. That is, they were all upright with their feet stuck to the floor. It was nearly effortless, as they were crowded together supporting each other. As Frances looked out over her audience, she saw an interesting phenomenon. There were waves washing back and forth through it. The people reminded her of sea grass on the ocean floor, swaying in the currents. She guessed it must be an instinct to keep one's immediate neighbors roughly equidistant. As they automatically adjusted for changes in proximity, waves of motion went through them. The patterns of waves cycled between chaotic and coherent, at times random, at others orderly.

On Fran's right, though, with the yellow columns rising in the distance behind him, was Elgin. He stood at the edge of the crowd, feet planted, hands clasped behind his back, his dark eyes locked on her. The waves that came to him bounced off as if he were a rock, reflecting back into themselves. He anchored her.

At the back of the crowd, in the middle, were Stanton and Buzzard. Stanton, much like Elgin, was steady, not about to be swept up in such tomfoolery. Buzzard, on the other hand, was thoroughly into it. He had to stand an arm's length from Stanton because he was participating in the waves with such enthusiasm. He was like the tallest blade of sea grass, accentuating the motions of the others. He could obviously see the patterns developing in the waves. He could anticipate their actions and, when they arrived at his position, he could sway extravagantly

in unison with them. With orange pillars behind him, his great big delighted grin was a beautiful thing to see.

This was why she loved Buzzard so much. What he felt always came out in his actions, and he usually felt something on the happy side. And more importantly, given her gift for profound empathy, the feelings he expressed were always the same as what she sensed. With her tendency to feel what she was seeing, it was a relief to have no conflict between those things.

Even Elgin, the best man she had ever known, wasn't entirely honest about what he was feeling. Not that she faulted that. It was just the normal social masking that people do to reduce the stress of constant close contact. In more important matters, she knew his feelings. With her mirror-touch emotions, she knew that he loved her with the same certainty that he knew it. The straightforward focus of his love for her was the same as his loyalty to his friends, his dedication to his work and his rock-like duty to the comet. Elgin was the bedrock that would never shift under her feet.

Frances' synesthetic talent gave her the gift of insight. That could result in satisfaction and joy, and just as likely in disappointment or pain. She accepted the bad with the good because she knew her responsibility to her gift. This burden made it all the better to find Elgin, a man who was better than he thought he was. And it made the lightness of Buzzard's spirit a welcome relief.

~

Looking at the people in front of her, their eyes so full of hope and dread, their attention focused so intently on her that they were unaware that they were swaying like sea grass, she was glad she had at least some respite from the responsibility. It gave her the strength to do what

she needed to do now. Even though she desperately wanted to assuage their dread, to soothe the fear, she knew she couldn't. Drawing on the strength and support of her friends, she took a breath and plunged in.

With distant echoes of destruction still coming from the flashball gallery, she quietly told the people that more destruction was their only hope for survival. They had to overcome their conservative instinct and throw away a large percentage of their resources. It was as if, she told them, they had a life threatening disease and their only hope was amputation. "Far better," she said, "to lose a leg than one's life. Far better that we should lose the little comet, and survive as a people."

She showed some of the same videos as last week, and played some of the same audio recordings. Here she became icy cold and hard as frozen nitrogen. She spoke softly, but the weight of her presence commanded them to listen. Then she was quiet during the last desperate seconds of lost voices telling them to run, to hide, to disappear. And she left them with the terrible, banging silence that followed.

After a few seconds she began the final video. Buzzard's guy hadn't managed to get it done in time last week, partly because of the last minute addition she asked him to make. They had forgotten about the fate of the second comet that was in the inner system along with Red Comet. It was small, with only a few adventurers on it, and it was just one of so many tragedies. But she finally realized that it illustrated their predicament better than anything else she had.

In the original, Buzzard's guy had illuminated the trail their comet left as it went through the inner system. It was emphasized, both to make it show up in the video and to make people aware of their vulnerability. All the other important features were also highlighted. There was the planet, some minor moons, some asteroids, Red Comet and the Visitor and its modules.

In the new version they included the other comet. Before, it was just another disaster. Then Fran realized that the Visitor must have specifically searched for it. The Visitor, after finding Red Comet, must have looked for fresh trails and found the one left by this poor little comet. This version of the video showed that trail as well as Green Comet's. The implication was glaringly obvious.

"The Visitor found Red Comet and that led it to the other comet. In exactly the same way, our trail will lead it to us." The audience was with her. She just needed to wrap it up now. "It knows we're here. It has already shown that it destroys the comets it finds. To save our lives, you must vote to separate the comets. Unless you believe that the Visitor will decide that it's too much trouble to pursue us, you must vote to do the only thing that will save us."

She flew past Nigel as the audience thanked her with a polite round of applause. The waves had died down and they were more or less still now. Their nervousness from before was gone and now they were all concentrating seriously on the debate. Nigel congratulated Frances as they passed, then proceeded to the middle of the dais to do his duty.

~

Elgin thought he loved Frances, but his love for her broadened and deepened when he saw the way she talked to the people. She wasn't just trying to win them over, to make them see the truth of what she knew. And it wasn't just her loving concern for their welfare that made her speak so well. What he saw was her compassion for them. She felt their fear and confusion as if it were her own. She spoke not as someone with a message to impart, but as she would want to be spoken to. They could sense that. It was her compassion that would win them

over. Elgin thought Frances was something special before. Now he knew that she really was the best woman in the universe.

And now it was Nigel's turn. It was time to find out if Winston's early hibernation would help their cause. To Elgin's dismay, it was very quickly evident that Nigel was an even more effective speaker than Winston was. He began with, "Listen," and everyone became very aware of the distant sounds of destruction. "They're so sure they know what's best for you," he said, "that they're smashing your beautiful flashball court."

He went on in that way, pointing out what they would lose, what listening to Frances would cost them. In a few minutes he had undone all the progress Frances made. Elgin scowled as Nigel enumerated the things they were being asked to sacrifice. "This Square," he said, "with these beautiful columns and friezes." He let them look around for a while. "This will all have to be smashed to pieces." Elgin was glowering.

Now Nigel indicated the big screen behind him, which was blank. "I wanted to use the same image as Winston," he said. "The smoke rings. Do you remember?" They did. "But I couldn't. It's gone. I couldn't find even one image of the smoke rings anywhere." People turned around to look at Buzzard, who fidgeted self-consciously. "As if it weren't bad enough that Winston was bullied into early hibernation," people turned to look at Elgin, "they also had to take away the picture that he used."

Nigel methodically went through what had been done, artfully allowing his audience to associate the badness with one or more of his opposition. The only exception was Frances. He instinctively knew that attacking her would not help his cause. So what he did was create the impression that she wasn't like the rest of them. That maybe she

didn't really believe what they were making her say. That was so inflammatory that Elgin was set to jump up on the stage and put it right. But Fran caught his eye and gave a tiny shake of her head, so he stayed where he was, fulminating while Nigel wrapped up and the debate drew to a close.

Fran congratulated Nigel on his effective presentation. They shook hands at center stage, extending it until they were simply holding hands while they talked. They were both smiling and it was obvious that they were old friends, bearing no animosity even though they opposed each other in this critical matter. This show of reasonable behavior would, they hoped, set the tone for the people as they carried the debate through the next week. One week from today they would vote, and Green Comet's fate would be set.

Leaving Nigel, she made eye contact with Elgin as she descended from the stage into the audience. Some had left already, but most stayed. There was a feeling in the air that they weren't quite done yet, and they wanted to talk, and to listen some more. As she was being surrounded, Elgin appeared and took up a protective position just behind her shoulder.

~

The four of them had tea on the balcony a few hours later, and they tried to draw conclusions from the day. "That Nigel," said Stanton, "is a pretty good speaker."

Elgin growled, but Fran put her hand on his arm and said, "Yes, he is. I thought he discharged his duty very well."

"That was a bit hard to take, though," said Stanton. "Being singled out like that, I mean." He looked at Buzzard.

Fran said, "I think he realized that was his only option. If he had

tried to argue that the Visitor probably wouldn't bother, he would have been fighting uphill."

"Was it wrong?" asked Buzzard. "Bad? Destroying the pictures. Was it wrong?"

"No!" said Fran and Stanton together. Fran continued, "You did the right thing, Buzzard. We know how hard it was for you. But it was for the best."

"That's good," said Buzzard. "All good, then. All done." He was happy again. When he heard that Stanton and Elgin were going to destroy their work, he thought about what he could do. In many ways, predicting the smoke rings was one of his greatest accomplishments, so he chose to remove all record of it. Stanton and Elgin were sacrificing, so he wanted to sacrifice too. He could tell Stanton was proud and he saw respect in Elgin's eyes. But Nigel had made it sound selfish and wrong, so he needed to hear Frances tell him it was right. Now it was all right again.

"He's worse than Winston was," said Elgin. When Fran looked at him he said, "No, I don't want to give him the benefit of the doubt." He was scowling now, looking like a defiant child. "I know he's supposed to do his best, just like Winston did. But at least Winston stuck to the facts." He crossed his arms, tucking in his chin. "Nigel used tricks. And he made it personal." Fran could see that his righteous indignation was beginning to falter. She could tell that his dudgeon would give way to reason eventually. "It's just not right," he finished lamely.

Stanton was quiet, calmly sipping his tea while he appeared to follow the conversation, but Fran could see that he wasn't entirely present. He must be thinking about destruction, she thought. He initiated the smashing of his ball with grim dedication, and she knew

he would plan and execute the ruination of everything else in Green Comet, but she sensed that his feelings were conflicted. He was a builder, a maker, not a destroyer. She knew he didn't have the surety of her knowledge or the clarity of Elgin's talent. He was with them purely based on faith. He trusted her judgement and Elgin's ability, so he was ready to act against all his instincts. And he was doing it quietly and efficiently, not showing the slightest ruffle of reluctance. She took him some more tea, and when he looked up to thank her, he saw that she knew. A knot uncoiled softly under his heart and he was sure again.

After their guests left, Fran and Elgin stayed up for a while. They had to clean the tea service and do a little tidying up, so they had a chance to talk, just the two of them, for the first time in hours. Fran knew that Elgin was having a problem with the apparent animosity coming out of the debates, but she also knew it wouldn't be resolved by talking about it today. It was an assault on his loyalty and his strong feelings about the safety of Green Comet. She knew he wouldn't do anything rash, but a full reconciliation would proceed at its own pace, over a much longer time.

As for Winston's early hibernation, and that of two or three other people that Elgin had talked to, she could see that he had an inkling that he might have had something to do with it, but he was rejecting the idea. It would take a lot of thought before he could consider the possibility that his passionate promotion of Fran's plan could have been misinterpreted so badly by the people he was talking to. He wasn't yet aware of the new thing his face was doing, so he had no idea what people were seeing when he talked to them.

There was something she could talk about, though, and the buzzing energy in her body demanded some kind of outlet. This mysterious energy was new to her. It only started to happen when she started

doing the debates, and she found it stimulating. She felt buoyed up and optimistic. “I think we did really well today. I could feel it coming from the people.”

“I did too, when you were talking, but it went away when he talked.”

“Not completely,” she said. “He just dampened it down a bit. It was still there.” She nodded. “I think we did all right.”

Elgin said, “Not so much we. It was you. All I did was stand there.”

Fran’s pupils dilated and her eyes glowed with a rush of love. She said, “By just standing there, you did more than everyone else combined.”

“If I did,” he said, “it was easy because I believe in you.”

“If you didn’t believe in me,” she said, “I couldn’t do it. Knowing that someone as good as you believes in me,” her voice filled up her throat, “it lets me believe in myself.”

He wrapped his arms around her, letting her feel small and safe. “I believe in you,” he said, inhaling the smell of her hair. “I know you’re right. I just want to help.”

She took his hand, still tingling with the energy of the day. Leading him toward the bedroom, she said, “Come on. There’s something else you can help me with.”

SEPARATION

Fran was right to be optimistic, though just barely. The people voted for her plan by a simple majority of fifty-three percent. The ratio was higher amongst the children, at over sixty percent. People speculated whether it was simple devotion to Frances, or if children might fear for their lives more than they love their possessions.

Elgin asked them that very question when he and Fran visited the school to explain things to the children. By the time they got there, a few days after the vote, a much higher majority of them were agreed that this was the best course of action. "Why?" he asked them. "Was it Frances?"

The children answered the way a group of children does, tossing it around from one to the next, looking at each other, coming to a consensus. Finally one of the natural leaders took it and tried to summarize it. He said, "We figured it was better to do something."

While the others said, "Yeah," and made other sounds of agreement, Elgin said, "That was it? It felt better to do something rather than nothing?"

"Yes," said the boy, and they all looked at Elgin as if it was obvious.

"Okay," said Elgin. "Thank you for answering that. Now, do you know why Fran and I are here today?"

"You're going to explain why we have to destroy the school?"

That was a bit unadorned for Elgin, but he said, "Yes." He looked them over, then said, "I think you know already, don't you?" They nodded so he asked, "Do you have any questions, then?"

The spokesperson said, "Yes. Do we get to help?"

They held their breath until Elgin said, "Of course." Then there was a flurry of little voices who all wanted to be the first to use Elgin's mechanical man.

Fran laughed and Elgin couldn't help but smile. "Well," he said, "I'll talk to some people. We'll have to see if it's all right," he added over their cheering. "But if there are no objections, then all we have to do is find the time."

"I can't wait to smash my desk," said one child.

"Me too!" said another.

Elgin had to interrupt. "We won't be using it here," he said. To their quizzical faces he explained, "There's not enough room in here. You know how big that thing is. Can you imagine swinging its hammer in here?" Trying to imagine it put them in fits of laughter. "No, we'll have to do it someplace where it's more open. Like the corridors or the Square."

That was all right with them. "I'm going to smash the columns," one said, and it began a competition for the most spectacular smash.

"Besides," said Elgin, "in an open space like that, you can walk around." More laughter as they imitated the big stick man walking. "Slower," said Elgin. "Its movements have to be slower because of inertia."

A little more play acting, then the spokesperson asked, "Are we really going to smash everything?"

"Effay," said Elgin. "Some stuff we're going to hide, like valuable equipment and resources. But we can't hide everything, so we have to try to make it look natural." He noted their concerned expressions. "Don't worry," he said, "we'll rebuild it when we get up again."

"Can we help to rebuild it?"

“Do you want to?”

“Yeah!” they shouted in unison.

“Then you can help me rebuild it,” said Elgin. “I’m an engineer, so I’ll be involved for sure.”

“You’re an engineer?”

“Yes. I work with Stanton and Buzzard.”

“You work with Buzzard?” The children were impressed. “Buzzard the flashball player?”

Elgin and Fran smiled at each other. “Yes I do. And I play flashball with him too. We’re both on the Harriers.”

“You’re on Buzzard’s team?” They had liked Elgin well enough before. Now they were in awe of him.

“You like Buzzard a lot, don’t you?”

“Yeah!”

“Well, maybe I could get him to come along. That is, if I can get hold of the ‘smasher.’” They cheered excitedly.

~

The children got their wishes. Both of them. Elgin was able to get the smasher — everyone was calling it that now — for a full week for the exclusive use of school children. In part, it was a kind of reward for the good job they’d done breaking up their school rooms. They followed instructions perfectly. They left no right angle intact, nothing that looked the least bit artificial. They’d been told that the Visitor used radar with a frequency of forty gigahertz, which gave it a wavelength of about three-quarters of a centimeter. They were intent on breaking everything down smaller than that, until they were told that it might make the Visitor suspicious. They did a good job and they

were thrilled to be allowed to use the smasher. Even more exciting than that was the fact that it would be Buzzard teaching them.

Elgin and Frances watched from their balcony as, bright and early on the first day, Buzzard walked the smasher into the Square to the wild cheering of a big pack of children. He demonstrated for them for a while, walking and moving his arms so they could get a good idea of what he was doing. Somehow, even in a rigid, arthropodic machine, he still managed to move with a hint of his characteristic fluidity. Fran pointed it out and they both had to shrug. It wasn't something you could explain. It was just Buzzard.

The real fun began when the children took their turns. The order was established by a lottery, so they all knew when their turn was and there was no jostling for position. It started with each one getting a five minute familiarization session. That would be enough to learn how to move in it, but that's all. It would leave enough time for two more stints, so they could do something effective in their allotted time and not feel as though they wasted it all learning. It also took advantage of the brain's ability to integrate a new skill between practicing it.

Watching the antics of a big machine, the two watchers couldn't help thinking about that other one, the von Neumann machine that they were calling the Visitor. This machine, the smasher, had no independent volition. It required an operator before it could do anything. That led Elgin to wonder if there was any sentient intelligence motivating the Visitor.

"I don't think so," said Fran. "I could be wrong, of course. It might be controlled by organic beings." She shook her head. "It doesn't feel like it, though."

"What you say sounds right to me," said Elgin.

"It never once tried to communicate with us," said Fran. "And

those images. It doesn't look as if there's any provision for life support there."

That was true. The pictures showed machines of stark, utilitarian efficiency, with no concession to the frailty of organic beings. The smasher, on the other hand, was obviously built to work around its operator. It was nothing like the Visitor, and Elgin had to admit again that they weren't going to find any comforting familiarity in the truly alien invader. That made him feel cold and isolated. And exposed. A chill penetrated to the center of him and he felt vulnerable for the first time. "Rannie?" he said. "Do you think we'll make it?"

"I don't know," she said. "Can't you tell?"

"No."

They watched Buzzard and the children, marvelling at his way with them. Each one took their turn in an orderly fashion, paid attention and learned what he was showing them, and finished grinning happily. Stanton, who'd accompanied Buzzard as an extra set of eyes, didn't have to do anything. They didn't know it, but he was doing more than they realized by just being there. If it had been Buzzard alone then the fun and giddiness might have spun out of control, but Stanton's presence kept a governor on it. It wasn't just that the children felt constrained under his eye, it was about Buzzard too. They felt that he was more like them than he was like a grownup, and they sensed that Stanton was his grownup. They kept themselves under control because they didn't want to get Buzzard in trouble.

Fran and Elgin saw Maria climbing into the smasher and they sat up to pay attention. She made some experimental movements, then she turned and walked across the floor and up the orange wall, Buzzard flying along beside her. She started across the ceiling, then stopped partway. Buzzard stopped too, ready for whatever she might choose to

do next. So when she extended one of the machine's arms and opened its hand, he got it right away and climbed into it. With him standing on her palm, she walked the rest of the way across the ceiling, down the green wall and back to her starting point. There she allowed Buzzard to disembark, turned to face her spectators and made a low, sweeping bow to a warm round of applause.

Elgin looked at Fran and saw that she was smiling happily. Two people she cared for, that she had a special protective feeling for, had just shared a memorable moment. She was greatly enjoying it and that made Elgin feel good. "Sometimes," he said, "something happens that just makes you glad to be alive."

"Yes," she said, blinking away tears. "Now I really hope the Visitor is rational."

"Oh?"

"Yes. If it's rational then it won't pursue us beyond reason." Her voice grew distant. "If it's rational then all it wants to do is claim the resources in the system, and it won't go out of its way out here, where resources are poor and thinly distributed."

"I see what you mean," said Elgin. "Here's hoping that whoever created the Visitor programmed its artificial intelligence to be rational." He added, "Even if they couldn't prevent it from going insane."

~

The people who voted against Fran's plan were given the option of going down first. It seemed only reasonable that the ones who voted in favor should be prepared to do the majority of the work, and to be last in line for hibernation. That was somewhat how it went, but a large percentage felt the pull of duty in spite of having voted against it. As the numbers dwindled, as living areas were closed and broken up,

they found that they had to run a lottery for the privilege of staying up and doing the work.

Those who were going down were celebrated with ceremonies. People needed to say good-bye. No one was sure they'd ever see each other again.

There was a lot of work to do. Not only did they have to break down any structures that would show up on the radar of the Visitor, they had to hide valuable equipment and resources as well as make preparations for the encounter. To hide things they devised a method of arranging the ice around them in such a way that radar was refracted and couldn't return a useful signal. Such areas existed naturally in the comet so they just had to improve on what was already there. This technique was used to obscure the Hibernarium, to hide the things they couldn't replace and to protect the living area of the small crew that would stay awake to keep watch.

To prepare for the encounter they needed to set up a system of observation and surveillance so they could monitor what was happening. They needed to watch the little comet, which they were offering as a sacrificial decoy. They needed to be able to see the Scout, as they were now calling their expected visitor, and observe its actions. To do this they grew thin fibers that terminated in receptors, optical or radar, on the side of their comet that would face the Scout during the encounter. The fibers were too thin to show up on radar, and the receptors, though there were millions of them, were small and randomly distributed. If they were detected they would appear natural and completely unremarkable.

Finally there was the particle accelerator. It was like the one they used for communication, but it was bigger and could spew enough gold with enough energy to destroy the Scout, even at the ten million

kilometers that they estimated would separate the comets at the time. They hoped they wouldn't need to use it, but it would be there if things got desperate. Since the destruction of its Scout would undoubtedly draw a reaction from the Visitor, it was only for the direst emergency.

~

Based on exhaustive analysis of everything they knew about the Visitor and the invasion, they estimated that the Scout would reach their position in twenty-three years, plus or minus twenty percent. Their result was subjected to deep analysis by Buzzard — ten times, all good — after being passed by Elgin. The planning committee, with its new chair, Nigel, on the recommendation of Frances, set the deadline for the completion of their preparations at eighteen years, four months and three weeks after the discovery of the second comet in the inner system. She thought that would have triggered a search for them, so it was her starting point. For the sake of prudence she chose the lower end of the error bar on the estimate.

~

They decided that the best way to separate the comets would be with an explosion. They would blow it off on the little comet's side of the compression zone, so at least they could keep some of its material. Once separated, rockets would drive the little comet toward the Sun, to close its orbit and allow it to return to the inner system one day. Rockets on the big comet would drive it away from the Sun, making its orbit increasingly hyperbolic and ensuring that it would never go back. They would turn off the rockets on Green Comet a few years before the expected arrival of the Scout to allow their ejected material to

dissipate enough to not incriminate them. They would continue using the rockets on the little comet long enough to mask the ejecta of Green Comet, and long enough to attract the attention of the Scout.

The separation scar on Green Comet was disguised to look like an ancient impact scar. When they turned off propulsion and initiated rotation in the comet, they put the scar on the side away from where the Scout would be. It had a basic rotation of about twenty hours and an additional radical precession that looked as if it was caused by the impact. The precession would go through one complete cycle in about a week. The axis of the main rotation was always in direct line of sight with the little comet, so they were able to situate the particle accelerator there and have continuous visual contact with their potential target. All these arrangements meant that the Hibernarium and living quarters would never point directly at the Scout at any stage of the comet's rotation. This would decrease the likelihood of discovery as well as minimize possible damage from the ionizing radiation of the Scout's powerful radar.

~

Elgin had his dream again. He was outside in the vacuum, and he was really big. It was something like being in the smasher, only much bigger and more agile. Once again he was playing flashball, just as in the first dream. It was different this time, though. The dream was longer and more detailed, and he felt much more familiar with his surroundings.

He took the comets in his hands and snapped them apart. They separated cleanly. He looked around, but there was no one to pass it to. In particular, there was no Buzzard to take it and make the flashing, cracking, game-winning throw. So he reared back and flung the little comet with all his might in the direction of the distant Sun. It flared

to bright yellow, but it never flashed white, and in the distance, almost too far to see, something dark and shadowy caught it.

He awoke with his heart pounding. He must have cried out or thrashed around because Fran was awake and holding onto him.

“Did you have a nightmare?” she asked.

“No,” he said. “Not exactly.” The images of his dream were still vivid and partially obscuring the bedroom. The wall was frosted with stars, one of them brighter than the others. A dark form moved, occluding the Sun.

“Do you want to tell me about it?”

He shook off the images, returning to her warmth, to her proximity and her aroma. “Yes, okay,” he said. He described his dream while she listened, quiet and attentive as he groped for every detail. He thought if she knew enough she’d be able to figure it out.

“You were completely alone?”

“Yes. It felt as if there should be someone there. Someone to pass it to, you know? But there wasn’t.” He felt a chill. “Except for the thing that caught it. I’m guessing that was the Scout.”

“And this time you threw the little comet. Last time you were playing flashball with a ball of ice.”

“That’s right.” The dreams, though similar, were quite different when you looked at them. “So,” he said, “do you think the first one was a premonition?”

She smiled at him, her pragmatic engineer, looking for a magical answer. He caught the look and blushed ferociously, but still waited for an answer. “Okay,” she said, “I think it’s your talent as usual. I think it was the synergistic integration of your synesthetic senses, and that allowed your brain to take the data available to it and perform its normal assessment and analysis. It didn’t have much data so the answer

was accordingly vague and suggestive — a dream. But I think you knew even then that you were going to have to take charge and do something hard for the comet one day.”

He nodded. “I see,” he said. “So, is that like a premonition?”

She laughed and pushed his chest, but she said, “Yes, I guess it is.” She considered it some more. “Alternatively,” she said, “your dreams are re-using their themes and it’s coincidental.”

“Coincidental?” He sounded disappointed.

“Sure,” she said. “The image was perfectly plausible for the first dream, and more so for this one.”

“You’re right,” he said, sighing.

She laughed.

~

When the little comet was loose, they applied thrust tangential to the big one, to move away without blowing off a lot of loose material. Once clear, they would change the vector. The separation marked the beginning of the most difficult and the least popular project of the entire plan. It was time to move the bodies of the suicide victims from the Hibernarium to the little comet.

They reasoned, quite coldly, that the Visitor would be more convinced by their deception if it found evidence of deceased people. The plan was to make the separation scar look like the result of an explosion on the little comet. They would release a few pieces of metallic debris around the comet, and arrange the thirty-one bodies to suggest the aftermath of a catastrophe. It was one piece in many to lead the Visitor to believe that it had found what it was looking for.

Naturally Elgin took charge. He knew that no one would want to do it and, to avoid the need for any coercion, he took on the responsibility.

There was also the fact that it was part of Fran's plan and he, as her greatest supporter, felt that he should show that support by graphic examples. He had smashed his own work when he destroyed the struts on Stanton's ball, and now he would take on this unpalatable assignment.

The friends and relatives of the dead all agreed, some after gentle encouragement by Frances, to release the bodies for the purpose. In an odd way, their sense of loss and futility after the suicides was partly assuaged by the thought that their loved ones could now make their deaths at least a little more meaningful. No longer just the tragic result of despair, their sacrifice could now possibly save Green Comet.

They didn't just pull the bodies out of the Hibernarium and haul them over to the little comet. They had a public ceremony for the victims, where they celebrated their lives, mourned their deaths and honored their sacrifice. Each one had a private ceremony for their loved ones, and the bodies were transported, one by one, through the public areas of Green Comet on their way to their final resting place. Their names would be remembered and their families would have a good legacy to carry on with.

These rites and ceremonies and gestures of solidarity were good for everyone, whether they were close to the victims or not. They were also good for the people involved in the transportation detail. These were dead bodies after all. They had killed themselves, and that was a constant reminder of the reason behind it all. Elgin tried to not let it show, and he was mostly successful in that. His discomfort was never obvious to the families, nor to the people working with him. The job proceeded smoothly. But there was no hiding it from Fran. She could see that it was bothering him.

"How's everyone holding up?" she asked.

He looked at her, then said, "Oh, you mean my crew?"

"Yes," she said. "This must be hard on them."

"Oh, they're fine," he said. "No one's complaining."

"No, they wouldn't, would they?"

His senses were alerted now. He knew she was telling him something. "Do you think I should talk to them?"

"Or get them to talk to you, and to each other," Fran said. "No one has ever done this. Your crew is unique. The only people who will ever understand what you've gone through is each other."

"That's right," he said, his mind already with them. "That's right."

~

Shutting down the comet proceeded steadily and methodically. As the volume of living area decreased, the number of waking occupants went down in step with it. There was no panic because they had eighteen years, so the mood was one of discipline and determination instead. Everyone knew when they were scheduled to go down, so they tried to contribute as much as they could in the time they had.

The Hibernarium was overflowing. It was built to hold eight thousand sleepers and they were pushing that up to ten thousand. Rather than try to build two thousand more cells, they decided to store the extra people on an ad hoc basis. The regular sleepers were in individual cells, arranged in a series of honeycomb-like structures. They were infused with molecular scale robots that moved through the body doing inspections and repairs. The little machines were transported around the circulatory system in liquid nitrogen, with the bodies connected to the supporting honeycomb by tubes and wires.

The additional sleepers were simply stuck on setae covered walls, the whole purpose being to keep them safe and out of the way. They

didn't have any molecular machines patrolling inside them, and they weren't connected to anything by tubes or wires. They were stored "dry." But they were each sealed in their own impermeable membrane to prevent dessication. The plan was to move them into the cells as they were vacated by wakers when the crisis was over. A few empty cells were set aside for contingencies.

~

Maria and Buzzard spent a lot of time together. Since she carried him in the hand of the smasher, they'd become fast friends. The difference in their ages, he being about twice her age, meant nothing to them. They hung out and did things that two adolescents would do. They might be seen together anywhere in the remaining habitable areas of the comet, laughing over something or deep in conversation, sharing unknown profound thoughts. Everyone could see the bond forming between them and they thought it was good, including Tomas, Maria's father. He knew Buzzard and he knew his daughter, and he knew there was no danger. If anyone had been in danger, knowing how strong and capable Maria was, he thought it would be Buzzard. But this was not a dangerous liaison, just a growing friendship.

When the time came to release the little comet, that young friendship was tested severely. They had been continuing to work on both comets as if they were still one, with much commuting back and forth. Eventually, though, the comets got far enough apart to make that impracticable. Not only were the commutes getting too long, the time was getting shorter and the chance of exposing themselves greater. So the little comet was set free to begin its independent existence, with a crew of thirty people to maintain its systems and ensure that it met its objective.

Prominent among that crew was Buzzard. Maria didn't want him to go, and then she wanted to go with him. She knew right away that convincing him to change his mind was impossible. He would have thought about it in his way and then his decision would be immutable. She also knew she wouldn't be allowed to go with him since she was still a child. Her impulse was to resent him for it and to wonder if he was no longer her friend. But she knew he was, and in the end she was proud. When they saw him off for the last time she was smiling and in tears, on one side of her Tomas, his face sad for her, and on the other Stanton, his face sad for Buzzard.

~

The years progressed in their unstoppable way. The comets got farther apart, the little one's orbit closing and the big one's opening. At first there was regular communication by radio, the disk of the little comet being large enough that they didn't worry about radiation leaking around it and heading toward the inner system. That stopped soon, probably sooner than necessary given their excess of caution, and only the little comet continued to use radio, and only in squirts of white noise. The big comet went completely quiet, indulging only in rare, brief cosmic ray messages.

Their work progressed, the animate population of Green Comet decreasing steadily. They got down to one hundred fifty people with five years left, and they maintained that number for most of the rest of the time. For almost five years the total waking population of both comets was one hundred eighty, and they were all engaged in the same activity. The majority of the work was done and they were in maintenance mode, tending to and refining their arrangements.

Finally the lower limit on their estimate arrived and they had to act

as if the Scout could show up any day. Really, they had to act as if it was already within view, and they had to curtail their activities with the assumption that anything they did could be observed. In practice, they ran the ferry back from the small comet, and on the big comet they began processing the last wave of hibernators.

Maria and her father were among the last to go down, with the special dispensation given to those who had someone coming back from the little comet. She was certainly not a child any longer. As they all had, she had aged and matured considerably during this time. She was thirty years old now, older than Buzzard was when he left. He would be in his forties, still considerably older than her, but no longer an adult to her child. She was filled with anticipation and fear as she waited for the ferry to dock and Buzzard to disembark. Would he be the same? Would they be the same? Would they still be friends?

It was a painful disappointment when she didn't see his great big happy face. She unconsciously reached out and squeezed Fran's hand, where they stood waiting with Stanton and Elgin and Tomas. While other people had their joyful reunions, Maria and her friends waited with growing confusion and dread. If she hadn't been so intent on that she might have noticed a few other people in the same state. She didn't and neither did Stanton, who was also focused on Buzzard, nor did her father who was focused on her. Fran did, and because of that so did Elgin. It looked as if Buzzard was one of a small group that wasn't returning.

Finally the ferry pilot broke away from those welcoming her and came over to Maria's group. She first directly addressed her and Stanton, saying, "Buzzard and a few others stayed behind." She waited for their startled response to die down, then added, "Maria, he said to tell you to wait just a little longer."

“Does that mean they’re coming on another ferry?” Hope made her voice quiver.

“No,” said the pilot. “There won’t be another ferry, I’m sorry.” She politely endured another burst of questions. “I’m sorry. They wouldn’t tell us what they were up to. We tried, but they just wouldn’t say.” She turned to Stanton. “He said to tell you to watch and that he hoped to make you proud.”

“Watch what?” asked Stanton. “Proud of what?”

The pilot shrugged helplessly and turned back to Maria. “He said to tell you to go down and he’d see you later.” She shook her head and shrugged again, wings and all. The look on her face said that she didn’t see how Buzzard could be so optimistic. As far as she was concerned, the five they’d left behind were on a suicide mission and this was all false cheer. She turned to Elgin. “He had an odd message for you. I have no idea what he meant by it, so I’ll just give it verbatim.” Elgin nodded. “He said, ‘All done. All good. No magic.’” She peered into his face to see if it meant anything to him, but she didn’t see anything. Finally she said, “Well, I have some other people to talk to, then it’s off to the Hibernarium for me.” They all thanked her and she headed off in the direction of some other people looking lost and confused.

Everyone instinctively looked at Frances, knowing that if any sense could be made of it, it would come from her. She took Maria’s hand, still clutching hers, and pressed it to her sternum. Looking at Maria and Stanton, she said, “Buzzard obviously put a lot of thought into this. I think the best thing we can do is take his word and hope for the best.” They nodded and looked somewhat surer, but by no means confident.

~

Maria was obviously hurt. Why didn't he tell her? What was he doing that he couldn't even tell her? She caught herself before letting that go too far. She knew from what the pilot said that the five people who stayed behind on the little comet must have a plan. She knew Buzzard well enough to know that if there was a plan then it would have been subjected to his merciless analysis. When he told Elgin, "All good. No magic," it meant he thought the plan would work. As far as he was concerned, he'd told them all they needed to know. She smiled a painful smile and sent her love and support across ten million kilometers of lethal vacuum. "This had better work," she whispered. "You had better come back to me, because you're going to have some explaining to do."

Maria was among the first of the last to go down. Frances was there as she closed her eyes. She didn't promise that it would be okay, or that Buzzard would come back, or even that she would wake up again. Fran didn't know and Maria was sophisticated enough that false assurances would be worse than nothing. Fran was just there to support her and to cry with her. For Maria, with her friend on one side and her father on the other, it was enough.

Finally the day came when the last hibernator was tucked into the Center by Elgin and the Doctor, two of the five. The rest of the crew consisted of Frances, Stanton and Nigel. Frances because it was her plan, Nigel because he was chair of the planning committee, Stanton because he was chief engineer and the Doctor because they needed a doctor. Elgin, of course, was there because Frances was.

38.

THE SCOUT ARRIVES

The observation post was an irregularly shaped cavity right at the end of a corridor. Green Comet's habitable area was extending in that direction and the cavern was about to be modified and incorporated when the Visitor put such plans on hold. Now it would be the comet's only habitable area for the next few years.

It was seven kilometers from the Center, where everyone was sleeping, connected by a series of natural fractures in the body of the comet. On the scale of the comet, the fractures were trivial and shouldn't catch the Scout's attention. They were part of a network of faults in that area, only one of a number of such networks in the comet. Trivial on that scale, it still provided unimpeded passage for small things like people. Of course, it wasn't pressurized so they would have needed pressure suits if they wanted to use it, but with the corridors gone it was their only way of getting around.

Like the Hibernarium, the observation post was protected by an arrangement of broken ice that would refract the Scout's radar. It was a random looking jumble that nevertheless produced a very specific result. The Scout would not be able to resolve any definite images of the space behind the shield. No matter how many times its radar passed by, it wouldn't be able to collect enough data to see what was there. It would find the same thing at the Center and several other unrelated places throughout the comet. Overall, though, it would be able to see over ninety-nine percent of the comet, so it would be encouraged to believe its investigation was sufficiently thorough.

Their enclosure, which was only a small fraction of the size of the cavern it was built in, was constructed to mimic the shape of the larger cavity. They hoped that by blending in with the natural form they would stand out that much less. They didn't exactly replicate its shape on a smaller scale, rather they used the suggestions of similarity that are often found on different scales in natural formations. As Stanton put it, they just, "slid things over a few degrees here and there."

It contained quite a large volume for their living area. There was no need to skimp, given what was available, and they were planning to spend a long time there, so the more the better. If the Scout arrived on estimate they would be there for over four years, and given the error bars and uncertainties it could be as long as ten. In practice, if the Scout didn't show up at all they didn't know how long they would go on just to be sure. They needed plenty of room to protect their mental health during the long confinement. The Doctor said, "We need room to stretch our wings, in every sense."

The main part of the observation post was relatively small and, to everyone's amusement, they spent most of their time there. It was the operations room, containing most of their monitoring equipment, and it was natural for them to be there. It was roughly rectangular, although the top was highly irregular for camouflage. It was about five meters wide and eight long, with the equipment collected at one end.

The rest of the space was taken up by the other room. That's what they called it. There was the ops room and the other room. Its minimum dimension was ten meters, but in reality it was much bigger where the ceiling angled upward. They had enough room in there that they could play catch with a flashball when they needed the exercise. It housed all the activities that weren't strictly operational, such as

eating and sleeping, although they ended up snacking and napping in the ops room much of the time.

~

To conserve resources and preserve their sanity, they weren't going to spend all of the time awake. There were to be three people in light hibernation at all times, with two awake and on duty. Each person would be awake for two months and asleep for three, on a repeating cycle. They would spend one month with each of two partners, overlapping their shifts. The schedule was left to an algorithm to draw up, reasoning that any combinations it could come up with would work at least as well as whatever they might try to arrange themselves. It wasn't entirely random, though. Stanton altered one variable to ensure that Elgin would overlap with Frances. No one objected to that. None of them would have it any other way. As for everyone else, they were all happy with whatever they got. The first shift went to Elgin and Stanton. After one month, Frances would come up and Stanton would go down. Next up was the Doctor, and finally Nigel.

Elgin would come to think of those months spent with Fran as his golden age. He thought he'd already entered it when they met and she, inexplicably, stuck with him. Anyone looking at them would have concluded the same thing. It was very special, but these months spent alone together were so much more. They provided the opportunity to experience a lifetime of intimacy in a few focused days. Elgin would look back on them with gratitude and regret.

Right now, though, he was on shift with Stanton again, just beginning their seventh stint. The brief precautionary overlap with Nigel was done, Elgin was declared officially awake and fit for duty, and Nigel was beginning his three months of down time. They were a week

into their shift and they were doing their daily calculation and plotting of Stanton's bubble.

"I can't believe we almost forgot it," Stanton mused for the umpteenth time.

"Me, neither," said Elgin. "I guess everybody thought everybody else was taking care of it." He started the program and they watched as it constructed the diverging paths being followed by Green Comet and Stanton's bubble.

They were never in any real danger of forgetting the bubble. It just slipped everyone's mind for a while. They remembered and were about to smash it when Frances suggested waiting. Then, over the years, people visited the bubble to think, often just before going down to the Center. Most of them left mementos in the bubble. When it was time to finally deal with it, Fran convinced them to remove it intact, to send on its own, independent exploration of the galaxy.

"Do you think anyone will ever find it?" asked Stanton.

This wasn't the first time the question was asked, by Stanton or anyone. Probably everyone on Green Comet had wondered about that. It was the kind of wistful exercise of the imagination that came naturally to them, given not only their nature but their unique circumstances. Buried under the lightness of speculation was a darker, morbid motivation. It was possible that they would not survive this, and Stanton's bubble might be the only enduring evidence of their existence. That little ice sphere and its eclectic contents could end up being the only thing left to tell the universe that they were here. With his mind full of those thoughts yet again, Elgin said, "Probably not."

Stanton nodded. "Yeah," he said, "but it's nice to think about."

Elgin had a new thought. "The odds of happening upon it might

be close to zero,” he said, “but we know where it is. Maybe after this is all over we could mount an expedition to recover it.”

Stanton looked up with a flash of hope, then he laughed at himself. “I doubt that will be a priority,” he said. “If we get through this we’re going to have a lot of other work to do. More important work.” He shook his head. “Retrieving the bubble wouldn’t be a priority if I was in charge.”

“Well,” said Elgin with a grin, “you won’t always be in charge. Maybe you’ll wake up after an eighty year nap and your bubble will be back.”

Stanton snorted, but Elgin could see the idea pleased him.

They were interrupted by a quiet but insistent beeping. “Radar,” said Elgin, pouncing on the monitor. “Thirty-nine gigahertz. It’s the little comet.” It was beginning.

~

The plan was for the little comet to probe the Scout with radar when it was within a few light seconds. That was assuming that they would detect its arrival ahead of time. If it surprised them, then the radar would come on immediately. Not that they thought it would do them any good. They knew that anyone who’d used radar on the Visitor before was quickly destroyed. The purpose of this probing was to hit the Scout with a powerful beam, knowing that some of it would reflect to Green Comet. This would both alert them and provide them with some data. This was supposed to happen automatically, but now they assumed it was being controlled by Buzzard and his crew.

The radar signal lasted for approximately seven seconds, and before it ended their telescope picked up a flash on the little comet. “One

second,” said Elgin. “It took the Scout one second to target the radar source.”

“That’s assuming a distance of three light seconds,” said Stanton. He consulted the radar data, doing a quick mental calculation. “That’s about right. They’re right on the plan.”

“Look at this,” said Elgin. There was more information, received by their cosmic ray antenna. “It’s a bunch of data about the Scout. Position and momentum and so on.” But before they could absorb that, there was more radar. In the next two to three minutes they received sixteen radar signals in total, then it all stopped.

That’s when Elgin pushed himself away from the console. “Time to wake everybody up,” he said, flying into the other room. He left Stanton scanning their instruments intently, and he knew his mentor and friend was filled with both hope and fear for Buzzard. Elgin couldn’t see much cause for hope. It looked as though whatever defences the little comet had were spent, and now the end was just a matter of time.

It was hard to piece together, especially accounting for the extra three second delay with the reflected radar. As a working hypothesis, he imagined the radar was first, then it would be destroyed by the Scout, followed by the cosmic ray message. Repeated for a total of sixteen times, the net result was a lot of data for Green Comet, but Elgin couldn’t see how it helped the little comet at all. He was churning through that line of thought repeatedly as he set the controls to begin the process of waking the rest of the crew. Realizing he was distracted, he went over the procedure until he was sure he had it right, then he went over it again. All the controls were properly set, all the gauges were in their nominal ranges and all the indicators were green. He went over it one more time, and then headed back to the ops room.

There was an hour until the next time the automated re-animation procedure would require intervention again.

“Look at this! Look at this!” said Stanton as he came in. It was a simulation of the event, using the available data, including imaging of the Scout after their optical telescope found it. It added a whole new angle to Elgin’s hypothesis, because there were also flashes on the Scout. Little comet was fighting back. They cheered and celebrated their friend’s little victory.

“So,” said Elgin, “first there’s the radar from the comet, then the Scout kills the radar, then something from the comet, maybe a laser, shoots the Scout’s weapon, and finally there’s the cosmic ray message.”

“Yes,” said Stanton, “only I think the laser self-destructs when it fires, and sends the message at the same time.”

“Oh, yeah. I remember hearing that the power of a laser is limited by not wanting it to destroy itself.”

“That’s right. So Buzzard has pushed it beyond the limit, probably knowing that the Scout would destroy it right away anyway.”

“And he used the pulse of power to block any possibility of the Scout detecting the cosmic ray message.” They watched the simulation in silence. It was improving with each repetition, as the computer ran more thorough analyses on the data. Elgin added, “Although, with that explosion, I don’t think it would matter if the Scout intercepted the message. It probably wouldn’t realize it.”

“No,” said Stanton. “It would just look like debris from the explosion.” He pointed at the screen. “And look here. It shoots at the laser, even though it has already blown up.”

“You’re right,” said Elgin, pondering. “Hm. I think that says something about the Visitor, or at least the Scout. We’ll have to remember to point that out to Fran when she wakes up.”

“Right,” said Stanton. “And the fact that it reacted the same way every time. Each time it shot a radar it lost the weapon to return fire, but it never altered its behavior.”

“Sixteen radars and sixteen lasers.”

“Actually, that’s the funny thing,” said Stanton. “Only fifteen lasers.”

~

Nothing happened for a long time. The computer continued to refine its analysis, but with a lack of new data it wasn’t able to show them anything different. The Scout continued to get closer to the little comet, but there was no more activity between them. They could tell that the Scout was probing the comet with its radar though, because they were getting the reflections. They studied them intently, hoping they might pick up some indication of the people there. At the same time they were hoping the Scout wouldn’t, an impossible conflict of desires.

A chime sounded from the other room. Elgin tore himself away, saying, “I’ve got to go stir the soup,” meaning it was time to go attend to the wakers. He flew out of the room.

The sleepers were almost up to temperature now. It was time to change the mixture of chemicals, to allow the metabolism to find its own equilibrium and to let the brain become active again. He entered the new settings and then checked the readouts to ensure that the automatic system did the right things. He had to monitor them for fifteen minutes to make sure they stabilized before he could leave them again. He spent the time watching Frances, pleased to see the color and vitality return to her skin and fur. With a mixture of chemicals keeping their re-activated brains in a somnolent state, Elgin left them to continue their recovery and went back to the ops room.

At that moment Stanton cried, “No!” Elgin hurried back in and found Stanton with his hands covering his head, and he saw a scene of chaos on the monitor. Where the little comet had been, there was a cloud of snow and, as they watched, the comet came out of the cloud in two halves. It was obvious that the Scout had attacked with a vengeance.

Stanton covered his face and Elgin heard his soft, “Aw, Buzzard.”

39.

THEY LOSE BUZZARD

The wakers were sitting around the table in the other room. They weren't doing much yet. There was no talking. They weren't even looking at each other, or anything else in the room either. Their eyes were open and the visual signals were getting to their brains, but it didn't have much to do with what they were seeing in there. The dislocation and disorientation weren't nearly as bad as they were after full hibernation, but they were still there.

Elgin was sitting with them, waiting for them to become lucid. It only took three or four hours rather than three or four days, but it was still inevitable and couldn't be hurried.

Stanton was in the ops room monitoring the activities of the Scout, and poring over the data, looking for anything that might give them hope that their friends had survived. He wasn't finding it. Instead, he was witness to the Scout's systematic destruction of the little comet. It was blasting big chunks of it into smaller chunks, then blasting those into smaller chunks again. Watching it, Stanton thought it looked obsessive, or even insane. Long after it was obvious that nothing living could have survived, it continued pulverizing the remains of the little comet. He smiled a small, painful smile. "I don't know what you did, Buzzard," he whispered proudly, "but you really seem to have pissed it off."

Back at the table the wakers were sitting, each with a cup of ice-berry tea between their hands. Nigel's mouth was open, making him look a bit stunned, and that pleased Elgin. Argue against Frances

would he? Making it personal, too. Well, just wait until you wake up. Then you'll see how wrong you were. But then Elgin remembered what it had cost to prove that Fran was right. His mean joy died and he reached out and gently lifted Nigel's chin.

Nigel swallowed and focused on Elgin, who could see awareness in his eyes for a second or two before it went away again. That was an indicator that he would be coming out of it soon and indeed, over the next few minutes his eyes oscillated between a vacant stare and intelligent focus. At last, during the occupied moments, his throat and jaw began working as he tried to speak. Elgin reached across the table and patted his hands wrapped around the cup. Nigel, after a pause, looked down and, after another pause, slowly lifted the cup to his face. He took a small sniff and his expression intensified. A large drink stayed in his mouth until his throat remembered what to do with it, then Elgin saw the jolt as his body welcomed the warm liquid. As he thirstily attacked the rest of the tea, Elgin glanced to his right where Fran was beginning to stir.

The first thing he saw was her shining golden eyes locked on his, the light of awareness in them, along with what he could only interpret as knowing. All that in a second and, as she cycled away, potent sadness.

Across the table, Nigel was awake for sure. His concentration still wandered, but it remained in this world, and he had pulled himself together enough to croak, "What?"

Elgin looked at him and said, slowly and clearly, "It's happening." He waited until that registered, then he pointed to his left. "Watch the Doctor." When he was sure that was understood, he turned back to Fran. He looked directly into her eyes, so each time she surfaced she

would see him right there. He reached out so his hand was touching hers, and watched her rejoin the world.

In his mind's eye, Stanton could see the bodies floating amongst the debris. His mind's eye shied away from anything that looked like Buzzard's body. All the while the Scout was motionless in an expanding field of rubble. Since it fired its last shot it hadn't done anything, as far as Stanton could see. He wondered what it could be doing. Was it scanning the remains of the comet, looking for signs of life? Surely that couldn't take long. He couldn't say why, but he got the impression that it was waiting. What would it be waiting for? Reinforcements? No, definitely not. He shook his head and scowled at the image on the monitor. "What are you up to?" he growled.

At the table, Frances was working up to talking. She'd had some tea, with a sensuous shiver of appreciation, and now she was forming the question that Elgin anticipated and dreaded. Finally, her eyes on his, she whispered, "Buzzard?"

Elgin looked down, and when he looked back up he could tell that she knew. He took her hands in his and told her, "The little comet has been destroyed. No one could have survived."

She lowered her head and cried softly for their friend. When she looked up again she asked, "Stanton?"

He nodded, then shook his head. "He's taking it pretty hard."

Her face showed how deeply her enhanced sympathy was cutting her. His face showed how much her pain was hurting him. She asked, "The Scout?"

"It's not doing anything."

She took only a moment before she said, "Calling home." Another moment, then, "How far out?"

"About twelve light hours," said Elgin.

“Tomorrow then,” she said, and closed her eyes.

~

The next day everyone was fully awake and completely caught up. Fran isolated the salient points. “It reacted the same way every time?” she asked when she heard about the radar. And about the lasers, “Are you sure there were only fifteen? You couldn’t have missed any?”

“No,” said Stanton. “All the lasers and all the radars were on this side of the little comet. Or at least visible from here.”

“Buzzard must have planned it that way,” mused Fran. “Then later, you said you thought it looked like it might be a little insane.”

“Yes,” said Stanton. “Kind of obsessive.” He thought about it. “It was as if it was doing it because it had to, rather than as a rational strategy.” He added, “And Buzzard definitely planned it. There’s no doubt in my mind about that.”

“Yes,” agreed Fran. “I think we should be looking at this with the assumption that Buzzard planned everything.” She smiled. “We should be looking for details in the details.”

Stanton laughed, then his face collapsed in grief. Fran went directly to him and wrapped him in a hug, holding him tightly while he sobbed. After only a moment he broke away, collecting himself and giving her a nod of thanks. He looked at Elgin, who nodded back at him.

The moment was broken by a quiet beeping from the console. “Radio,” said Nigel, who was on watch.

“Radio?” said the Doctor, who normally listened much more than he spoke. “They’re trying to talk to us?”

“No,” said Nigel. “It’s much too attenuated. I think it’s coming from the inner system.”

“That will be instructions,” said Fran. “It’s about twenty-four hours since the Scout did anything, right?”

“Right,” said Elgin, “and we’re about twelve hours out. I guess, after it was finished with the little comet, it must have needed to call in before it could do anything else.”

“Don’t lose that recording, Nigel,” said Fran. “We’re going to want to study it.”

“Right,” he said. “This will more than double our sample of its language already. I will back up the backups.”

“Good,” said Fran. “Now, here’s hoping this message is telling the Scout to pack up and go home.”

Everyone chimed in on that. There were a few imaginative, humorous guesses at what was said, as they tried to loosen the tension. Fran saw, though, that Stanton was only half-heartedly involved. The way he was glowering at the monitor, she got the impression that he’d just as soon the Scout stayed. She knew he had unfinished business there.

After ten minutes the incoming message stopped. It wouldn’t be as much information to study as they might have thought, since the data rate was relatively low, but it was enough for the Scout. Almost as soon as it ended, alarms started up along with flashing lights. “Radar,” said Nigel. “Forty gigahertz. And strong.”

The Doctor said, “The alarms indicate dangerous levels of ionizing radiation. Thank goodness we have the shielding.”

“And the inverse square law,” said Elgin.

Nigel turned off the audible alarms, but left the lights flashing. For synesthetes the lights were still pretty noisy, but they were going to have to put up with it because they needed the information. The lights were arrayed in a way that showed them which part of the comet was being struck by the radar beam, so they could observe the Scout’s

search pattern. When it passed their location, the Doctor shook his head and tut-tutted, no doubt imagining what the radiation was doing to their insides.

They were able to tell that the Scout didn't move during the probe, by the fact that the radar source didn't move. In addition, they had a kind of radar image of it. The part of the beam that reflected off the comet was naturally scattered, but some of it went back to the Scout. Part of that hit its receivers, but the rest was again scattered, some of it in the direction of Green Comet. The part of that which struck their receivers was a very tiny portion of the original beam, at times only single photons, but over time it built up a crude picture.

Even the most bizarre situations, if nothing changes for a long time, become repetitive. Oddly, even in dire circumstances, the mind can begin to wander. Seeing this, Fran said, "I'm going to get some ice-berry juice. Does anyone want any?" They all did, so she went into the other room to get it.

She was barely gone when they heard her shriek. Elgin tore in there and found her curled up, her mouth open in a silent scream of pain.

40.

LOSING FRAN

Fran was still moving when Elgin got to her. She was drifting with the momentum she had when it happened, whatever made her cry out. Elgin's engineer brain automatically calculated that position while he hurried to catch her before she ran into the far wall. When he grabbed her she flinched so badly that he let her go again. He was using the gentle area of a wing to stop her when he shouted, "Doctor!"

But the Doctor was already there, and he had his bag. He took one look at her face, her panicked eyes pleading, and he asked, "Pain?" She nodded rigidly and he quickly applied a syringe of strong analgesic. Within seconds she relaxed with a sob of gratitude, but her remaining tension and her facial expression told him it was still bad. He gave her another dose and added a tranquilizer for good measure. "Better?" he asked her.

She was panting to catch up after holding her breath. She managed to say, "Yes. There's still pain, but I can stand it." She looked at Elgin with a smile. "Nice catch," she said. "All those years of flashball paid off."

Elgin laughed, relieved, but he was by no means reassured. He looked at the Doctor. "What's going on?"

The Doctor shook his head, his bald patch catching the lights. "I don't know yet." To Fran he said, "Where does it hurt?"

"Everywhere," she said. "It hurts everywhere."

"Panalgia," said the Doctor. "Hmm." He examined her fur and what he could see of her skin, finding several reddish areas, but nothing

significant. He looked around the room and saw nothing out of order. "What happened? Can you remember?"

"I was going for the juice and next thing I knew I was like this." She looked at the spot where it happened. "All I can think of is it felt as if I'd been struck by lightning."

"Lightning?" Elgin looked around, baffled. He saw Stanton doing the same thing, and they shrugged at each other.

The Doctor asked, "Is there anything in here that could do that? If it malfunctioned, say."

Elgin and Stanton shook their heads. From the ops room, Nigel said, "There are no failures on the board. Everything is nominal." But he added, "The Scout's radar was in the general area. I'll check and see exactly where it was at the time."

"The radar?" said the Doctor. Looking at Elgin and Stanton he asked, "Is that possible?"

They shook their heads. Stanton said, "Even if the full beam got through the shielding, she wouldn't even have felt it." He glanced at Elgin for confirmation, but he was no longer listening. He was obviously occupied with his thoughts, and Stanton left him to it.

"Yes," called Nigel. "At that time, by my estimate, the beam could have been right here. But the instruments didn't record anything unusual."

Elgin cursed loudly, but when the Doctor asked him what it was he ignored the question and went rummaging in the supplies cupboard. He came out with a handful of sensors which he began to set up near where Fran was injured. "Nigel," he called, "have you figured out the Scout's search pattern yet?"

"Sort of," said Nigel. "If it sticks to a pattern, then I think it's done sweeping back and forth and it's now going up and down."

“Can you tell when it will be here again?”

“About a half hour, from the looks of it.”

“Okay, thanks.” Elgin moved away from the danger area, rejoining Fran and the Doctor.

“How are you doing?” he asked her.

“Fine,” she lied.

The Doctor was placing a small disk on her head. When he was satisfied with its position he switched it on.

“Oh!” she said.

“You can feel that?”

“Yes. It feels wonderful.” She was more relaxed than she had been since the accident.

“It’s deep magnetic stimulation,” said the Doctor, making small adjustments. “I’m going to fine tune it. Let me know when it gets worse or better.”

She complied, saying yes and no with the changes in her comfort, until he narrowed it down to the best spot. He then adjusted the size of the area being affected by the focused magnetic field, until he had the optimum coverage. When he had it just right he pulled out another disk. “Three more,” he said. By the time he had the four of them set up, she was nearly in complete comfort, yet there was minimal numbness and no impairment of cognition.

“I almost feel better than I did before the accident,” she joked.

“Yes,” said the Doctor. “It’s an excellent technology. There’s none of the crudity of chemicals, which affect all parts of the body, whether they’re involved or not.”

“It’s encouraging my brain to do what it does anyway, right?”

“That’s right.” The Doctor’s cautious nature came out. “That doesn’t mean it’s perfect, though. The brain can become inured to the

stimulus and begin reacting more weakly. We might have to move things around if that happens, to allow it to rest. You might experience more discomfort at those times.”

She smiled at him. “That’s a fair trade, Doctor.”

He smiled back at her, moved by her concern for his feelings, even at a time like this. His professional doctor’s face hid that and prevented the pricking of tears he knew was close. He reached to adjust the disks. “I’m going to put you to sleep now. You need some rest.”

When she was out, Elgin questioned the Doctor in earnest. “Have you figured out what it is yet?”

The Doctor was looking at Fran, deep in thought. Finally he sighed and faced Elgin. He spoke in a low voice. “It is a lot like a lightning strike, only without the burns showing where it entered and exited the body.”

Elgin jumped on the hope. “So maybe it’s not so bad?”

The Doctor shook his head somberly. “I’m afraid it’s worse than it looks. The amount of pain she has indicates that she has extensive internal injuries.”

“How extensive?” Elgin demanded. “How bad?”

“I can’t say with certainty.” Now the Doctor was frowning, almost scowling. “I don’t have access to my instruments. All I can do is make an educated guess.”

“Just give me what you can.”

“Okay. I’m sure she’s been burned inside. Where and how badly, I can only guess.” He saw Elgin’s jaw tightening. “There must be vital organs involved. In addition to a slight odor of singed hair, I can detect burned flesh on her breath.” Elgin closed his eyes. “Only time will tell how bad it really is. We have to wait and see if she improves or gets worse.”

“Wait? All we can do is wait?” Elgin looked around, exasperated. “Isn’t there any kind of treatment?”

“Rest,” said the Doctor. “Possibly an induced coma or light hibernation. But if it’s too severe, full hibernation is the only thing that will do it.”

Elgin’s shoulders sagged. He looked at Fran sleeping peacefully on the bed. She looked defenseless and he felt helpless to protect her. He picked up a handful of sensors and flew to some selected locations in the rooms, where his calculations showed there might be some radar hot spots. Nothing in the original plans, or the models they had run, or in Elgin’s latest calculations showed the slightest hint of anything near Fran’s injury site.

He headed back toward the ops room, dropping down out of one of the highest peaks in the other room and drifting to a stop behind Nigel. “Any change?” he asked.

“No,” said Nigel. “The Scout hasn’t moved and it hasn’t deviated from its search pattern.” He gestured at the indicator lights. “It’s closing in on us now.”

Elgin leaned forward. “How long?”

“It looks like just a few minutes now,” said Nigel. “Ten at the most.”

Elgin thanked him and flew back into the other room, giving the danger zone a wide berth, and went to rejoin the Doctor at Fran’s bedside. They stood together in silence, both saddened and frustrated for their own reasons, both feeling the heavy onus of her well-being.

From the ops room, Nigel turned and called, “It should be right on top of us.”

There was a bright flash and a loud plural pop. Elgin spun around and glimpsed the sensors cartwheeling away. Fortunately none of them hit anyone, although they didn’t look as if they would have done much

damage if they had. He scanned quickly to see that everyone was okay, and other than Nigel, who was blinking furiously and shaking his head, they all seemed fine. “Are you okay, Nigel?” he asked as he set off after the sensors.

“Yes, I’m fine,” said Nigel, squinting. “I’ve just got these spots in front of my eyes.” He opened his eyes wide, obviously trying to see. “Have you ever accidentally looked at a welding arc?”

“Yes,” Elgin chuckled. “Do you need someone to take over for a while?” He noticed Stanton lift his head, alert in case.

“No, no,” Nigel said. “I can see well enough if I look around the spots.”

Elgin plucked a sensor out of the air. It was hot in his hand, but not hot enough to burn. He spotted another one spinning up into the convoluted ceiling, running it down and grabbing it as it rattled amongst the jutting points. He couldn’t see the third one and didn’t want to waste any time looking for it, so he went back down to examine the two he had.

Stanton and the Doctor converged on him as he went into the ops room, where they all gathered near Nigel. Looking at the first one showed that its power supply had exploded. He might be able to extract some data from it, but not now. The burns on its casing told him all he needed to know. He handed it to the Doctor and looked at the other one, which was the same. He gave that one to Stanton.

The Doctor said, “Hm,” and tut-tutted several times, before handing the sensor back, his face grave. Stanton did much the same, without the tut-tutting, and Elgin could see it in his face too. He took the sensors, his jaw bulging as he ground his teeth, and stared at their ruptures and burns. This is what had happened inside Fran. What he had allowed to happen. There was no magic here. This was harmonics

and positive interference between radar beams that were refracted in known ways. If he ran the calculation back, he would see how it happened. It would be obvious, and it should have been obvious when they were designing the shield. He squeezed the sensors in his fist, his teeth bared in a snarl, then spun and threw them across the room. As they bounced and clattered around, he went to a console and got to work.

Within fifteen minutes he had a good first approximation. When Stanton brought him the data from the sensors, including what could be salvaged from the three damaged ones, he was able to refine it enough to install some Faraday shielding. The next pass of the Scout's radar, now at a diagonal, resulted in no fireworks, which gave Elgin some gratification. It also drove home the knowledge that it would have been a trivial matter to prevent it in the first place. It confirmed the fact that Fran was hurt because of his negligence.

~

The next pass was also okay, and it was beginning to get repetitious. Elgin spoke for all of them when he said, "Just how much information does it need?"

Nigel, who was still at the main console, said, "If it is following a pattern, and if it continues it to completion, I estimate that it will make a total of at least a dozen passes."

Elgin made a disgusted sound and flew over to Fran's bed, where the Doctor was preparing to wake her. "Do you think she'll be any better?" he asked.

The Doctor, relying on the few functions his instruments could measure, and his feeling that her fur had slightly less luster than before, was noncommittal. "We'll see," he said.

Fran's breathing changed and her eyes slowly opened. She saw Elgin and smiled, but then a vertical crease appeared between her eyebrows. Her body squirmed with discomfort and her eyes left Elgin and locked on the Doctor.

"Is the pain back?" he asked.

"Yes," she said, "but it's different now."

"How?" he asked, adjusting the disks.

"It's less intense. More generalized. Less searing. More deep."

"Mm-hm," he said. "Is this helping?"

"Yes," she said. "It's not as good as before, but it's bearable."

"All right," he said. "I think we can handle this."

Fran looked at Elgin, saddened by his worry and guilt. "Can you do something for me?" she asked.

"Of course," he said, alert and ready.

"It's about the Scout. Can you estimate how much energy it can carry?" He nodded sharply. "Then calculate how much it's used so far."

"Will do," said Elgin, heading for a console, eager to begin.

The Doctor smiled at Fran as he adjusted her disks. She smiled back, but they said nothing about it. "How's that?" he asked, with a final tweak.

"It's good, Doctor," she said, sitting up. "It's not as good as before, but I'm not complaining."

"What do you think you're doing?" he asked.

"I'm getting up," she said, gently removing his restraining hand. "I'm going to the bathroom while I still can." She saw his reaction. "I don't need my talent to see that you think it's getting worse." She shook her head to stop his protest. "I won't be able to do this later, so I want to do it now. I want to go pee. I want to brush my hair." She

put her hand up and felt the disks, which made her laugh. "And I want to see what I look like with these on my head."

His hand changed from restraining to assisting. He helped her up and accompanied her to the bathroom. When the door was closed he turned and waited. All three of his crewmates were looking at him, but he could only shake his head, and they looked away.

~

The Scout did do twelve passes. Its radar beam painted parallel tracks back and forth across the disk of Green Comet, vertically, horizontally and diagonally, twelve in all before it stopped. It seemed to be quieter in the observation post and it took Elgin a moment to realize that the radar warning lights were no longer flashing. Stanton, at the main console, noticed it too, and leaned forward. Elgin asked him, "What's it doing?"

"Nothing," said Stanton. "It's just sitting there."

Elgin left Fran's side and glided over. He knew that Stanton wouldn't have missed anything, but he still had to look for himself. The Doctor checked Fran's signs and then followed Elgin. Even Nigel, who was sleeping, sat up and rubbed his face, aroused by the change. "What's happening?" he asked as he peeled himself out of bed.

Stanton said, "The radar's stopped."

Nigel, glancing at Fran on the way by, asked hopefully, "Is it leaving?"

"No," said Stanton and Elgin together. Stanton finished, "There's no other change. The radar just stopped."

The Doctor spoke the question the others wouldn't. "What's it going to do now?" They couldn't know, but they needed to know.

They needed to get Fran to the Center, to get her into hibernation before she deteriorated too much more. No one answered him.

Then behind them Fran cleared her throat and they all spun around. Her voice was husky but clear. "It's calling in for instructions."

The Doctor immediately rushed over. "How are you feeling?" he said, checking her disks. Elgin was right behind him. Nigel looked as if he wanted to go too, but he stayed with Stanton, watching the Scout.

"I'm fine, Doctor," Fran said, waving his hands away from her head. "The Scout can't make decisions on its own, so it has to get new instructions when it completes a task."

Stanton said, "It was making decisions when it blew Buzzard's comet to smithereens."

"Yes, it was," said Fran, "but within the parameters of its assignment. I think the Scouts are about as intelligent as individual ants." She smiled a fierce little smile. "Besides, Buzzard was in charge at that point." There were chuckles and assenting mutters. She looked up at Elgin and asked, "Has your analysis refined itself yet?"

Elgin nodded. "It's as good as it's going to get. I've factored in everything we know about the Visitor, made all the assumptions about how far the Scout would have had to travel and whether it would have started with a full charge. Calculating the energy it's expended since it got here was easy in comparison." He reined in the chatter and got to the point. "Within a range of plus or minus seven percent, I estimate it has used approximately all of its energy."

Everyone was enthusiastic. The Doctor especially, since it might mean he could move his patient soon. Fran was more practical. She said, "Is that seven percent enough to get here and destroy us?"

"I'm afraid so," said Elgin.

Everyone sagged. Fran said, "Then we wait." She looked her thanks

to Elgin, then closed her eyes. "I'm going to get some sleep. Wake me if anything happens."

The Doctor asked, "Would you like some help sleeping?"

Fran cracked an eye at him, thinking, then said, "Yes, please."

He adjusted her disks and they watched her relax and slip under with a sigh. The Doctor felt Elgin's eyes on him and took longer than he had to making adjustments. There was nothing he could tell him. Nothing good, anyway. Finally he could delay no longer, so he turned to face him. "There's not much I can tell you, Elgin," he said. "She's not getting any better. In fact, it's worse every time. At this rate ..." He trailed off, lost in his thoughts, and Elgin turned to go back to the operations room.

Wait! More waiting! Elgin's frown was deepening as he grew more frustrated. It seemed they did nothing but wait, and now they had to wait some more. His Fran was getting sicker by the minute and all he could do about it was sit and watch. He slapped his console to life and went back into his calculations, in the slim hope that he'd see something new, but the sight of it just made him feel sick. He still got the sense of rightness from it, so he knew there was no mistake, but looking at the numbers gave him the sensation of fullness. It was as if his stomach was full to bursting and another bite would make him vomit. Maybe Buzzard could find something, but Buzzard was gone.

So they waited. The Scout did nothing. There were no flashing lights on the board. Nothing changed for so long that Stanton let loose with a huge, jaw-cracking yawn, which caught on and made the rounds.

Wiping the tears out of his eyes and suppressing his yawn reflex, the Doctor suggested that they should get some sleep. "There's

nothing happening right now,” he said, “and we might need to be sharp later.”

Stanton agreed. “Come on, Elgin,” he said, “you and I have been up the longest.”

Elgin resisted. He felt he needed to be awake in case anything happened. He needed to watch over Fran. But together they convinced him that it was for the best. The Doctor said, “Fran’s asleep now anyway.” He patted Elgin on the shoulder, guiding him toward the sleeping area. “If anything happens we’ll wake you up right away. And if I’m going to wake Fran, I’ll wake you first so you can be there.”

Elgin acquiesced and allowed Stanton to lead the way. In only a few minutes Stanton drifted off, his breathing settling into a soft, comfortable snore. Elgin wasn’t so lucky. He ended up lying there for several hours, feeling increasingly fatigued but never sleepy. His mind churned the same things over and over, but it couldn’t find any satisfaction.

~

Elgin awoke to Stanton gently shaking him. “Shift change,” Stanton said. He waited a moment, watching Elgin’s eyes, which were bleary and unfocused. When the bloodshot orbs finally pointed at him he said, “Time for Nigel and the Doctor to get some sleep.”

“Coming,” said Elgin, his voice ragged. The last thing he remembered was lying there unable to sleep, sure he wouldn’t. Now it seemed he did drop off, although it felt as if it couldn’t have been for more than a few minutes. “Fran?”

“Still asleep.”

“Okay.” Elgin dragged himself to the bathroom before joining the

other three at the table. He looked at Nigel, concerned that no one was watching the Scout.

“Don’t worry,” said Nigel. “I’ve got it alarmed to the hilt. If anything happens it will be detected sooner than I could see it anyway.”

Elgin didn’t know what he thought of that. It was logical, but it still seemed irresponsible. But Stanton didn’t look worried so he accepted it. Turning to the Doctor he said, “Fran?”

“She’s still sleeping,” said the Doctor, taking a sip of his juice.

“Yes,” said Elgin, noticing the juice and coffee in front of him, “but how is she?”

“It’s harder to tell when she’s asleep,” the Doctor replied. When he saw Elgin’s impatient frown he added, “I’m afraid she’s still getting worse.”

Elgin expected that, but it didn’t make it any better. He looked away from the Doctor without speaking. Looking at his console, he felt the germ of a dangerous idea squirming at the bottom of his mind.

The Doctor planted his hands on the table and pushed off. “Well,” he said, “we’d better get some sleep, Nigel. It’s not getting any earlier.” To Elgin he said, “We’ll wake Fran after I get up again.” He chuckled softly. “I’m under orders, you might say.” Elgin partly turned his head and nodded absently. The Doctor hesitated, then shrugged and went to bed.

The next eight hours were probably the most silent stretch of time in the last twenty-odd years. Neither Stanton nor Elgin was naturally loquacious in the first place, and now they both had a perfect excuse for silent brooding. Stanton had lost Buzzard, his protege. Really, like a son. And now it looked as if Elgin was losing Frances, his beloved and the best woman in the universe. So they sat, guarding their posts and fulminating, continually beset by treacherous thoughts of how it

might have been different. In this fertile ground, the worm grew in Elgin's mind.

When Nigel and the Doctor got up they were nervous and unsure. They kept looking at each other, and Nigel made a thorough check of everything, before they realized that the pall was radiating from Stanton and Elgin. Their greetings were met with wordless replies, a sigh or, at most, a grunt. The only thing that roused them was when the Doctor announced that he was going to wake Fran. Elgin rotated his chair and fixed him with a stare.

Fran looked small and weak. The word that came to Elgin was "crumpled." As he approached he could see that there was no vibrancy in her body. None of that energy that used to radiate from her. If Elgin was hoping that would improve when she woke up, he would be disappointed. When she opened her eyes and looked at him beside her, they were dull. They were still golden, but with a patina over their shine. Even the tapetums had lost their glow, and the light reflected by them now was more copper than gold. The brightest thing in her expression had become the pain.

Elgin watched the Doctor administer another dose of analgesic and tranquilizer, and saw some of the pain leave her face. He crouched close and asked, "How are you feeling?"

She gave a weak, wry laugh. "Oh," she said, "you know, I'll get by." Her gaze sharpened. "Any change?"

"No," he said, biting off and swallowing his anger. "The Scout is still sitting there doing nothing."

"Okay," she said, gingerly adjusting her position. He could see her looking for comfort, and the resignation when she realized she wouldn't find it. The Doctor came around and began experimenting

with the settings on the disks. "Thank you, Doctor, but I can't feel any changes." She asked, "Is there about eight hours left?"

"Yes," said Elgin. "If it is waiting for a reply. And if anything is going to happen when it gets it. And so on."

She put a hand on his arm. "Don't be so pessimistic," she said. "Keep your hopes up."

Elgin couldn't speak around the hard, painful lump in his throat. He just nodded, chastened by the fact that she was comforting him, when he should be making it easier for her. Looking in her eyes he saw that, even now in this extreme condition, she knew what he was feeling. That provoked a welter of emotions, the strongest of which was a cold, sharp anger that such a woman should suffer like this.

The Doctor leaned in, so Elgin backed away and returned to his console, where he appeared to busy himself. The Doctor started removing Fran's disks, checking her reaction as he did. "You can't feel any difference?" he asked.

"Nothing to speak of, Doctor."

"We must have exhausted those neurons," mused the Doctor. "I've never seen it before, but I've never seen injuries like this either." He fussed with the disks, resetting the dials, checking their charge, absently polishing them. "I think we'll leave them off for a few hours, to see if your brain can rejuvenate itself. How's the pain? Do you need another shot?"

She shook her head. "I'm fine for now," she said. "Besides, I don't want to be too drugged. I want to be all present and accounted for when the time comes, you know?"

He nodded grimly. "The best thing would be to have you in an induced coma, or even light hibernation, but I understand why you don't want to do that."

She reached out and squeezed his hand. “Thank you, Doctor. As for the pain, it’s not as sharp as before anyway. It’s still strong, but it’s more like a deep ache.”

Elgin did what he could. He went back over all the numbers, looking for an angle he hadn’t already seen. All he found were subtle variations on the answers he got before. Yes, the Scout had used up its energy, plus or minus. Yes, it was waiting for instructions, most likely. Yes, it would be another eight hours, probably. He slapped the display off, disgusted.

“Can’t you tell, though?” It was Nigel.

“What?” said Elgin, interrupting his train of thought.

“I thought you could tell. Like, what to do, or what was going to happen,” said Nigel. “I thought that was your talent.”

“No,” said Elgin, “that was never it.” He sighed heavily, and added, “Right now I wish it was.” How nice it would be to know exactly what to do, exactly what was going to happen. “No,” he said, “I can tell when things are right. Like these calculations.” He pointed at his console. “Or when people talk. But I can’t necessarily see what’s been left out of what they say, or what all the implications are. Only whether what they say is right.” He shrugged, unsure if he was making himself clear.

“I think I see,” said Nigel. “I guess I was just indulging in wishful thinking.” He smiled. “It would be nice to have our very own soothsayer, eh?”

But Elgin was turning away, already disengaging from the conversation. Fran was squirming, the pain passing the threshold of what she could bear. As the Doctor applied more drugs, Fran vomited violently, her weak, frail body convulsing helplessly.

That was it for Elgin. He couldn’t stand it any more. He could

endure anything for Green Comet and for Frances, but he could no longer endure what she was going through. He turned back to his console and angrily took the lock off the particle accelerator, punching in the sequence of commands that would prepare the capacitors for charging. They were shouting at him to stop. He heard the voices of Nigel and the Doctor, but they faded as his head filled with the noise of his rage. The Doctor, when he put his hand on Elgin's arm, was surprised by the violence of the blow that knocked him away.

Stanton's voice was not part of the protest. He was watching silently, making no interference at all, tacitly in favor of destroying the accursed Scout. Like Elgin, he was rationalizing that it could be blown to bits before it knew what hit it. It would have no chance to send a message to the Visitor and therefore there would be no reason to send another scout after them.

Disjointed pieces of such logic appeared in flashes within the roaring that dominated Elgin's mind. They submerged the reasonable protests that tried to assert themselves there as he reached to engage the final routine that would flood the system with power. But then, under the roaring gale, he heard a tiny golden bell.

"No, Elgin," she said weakly, "you know you mustn't."

His hand hovered over the console, his face contorted in conflict, but he knew she was right. He could hear it. He let loose a sobbing cry of frustration and hurled himself away from the console, blundering blindly away toward the farthest corner. He couldn't look at her as he went by.

As the commotion died down, Stanton drifted over to Elgin's console, staring at the key that would rain retribution on the Scout. It would be so easy. As he savored the possibility, he felt the eyes of his crewmates on him, but only one pair made him turn around. Fran was

lying on her back on the bed, her eyelids half closed, her gaze boring into him. Her eyes, though clouded with pain, showed the strength of her spirit as she, by the force of will alone, tried to make him do the right thing.

Stanton was shamed. Disgusted at his weakness, he quickly disengaged the system and re-locked it. Turning around he caught her look of gratitude before she turned to see Elgin coming back.

Nothing was so bad that it could keep him from her side for long. Approaching, he noticed the dim remnants of her aura in ragged patches on her dull, matted fur. Quietly he came close and gently cradled her frail body in his arms. With her head resting against his chest, she didn't need to see his face to know he was weeping.

"I know," she whispered, "I know."

41.

FRAN GOES TO SLEEP

“Message coming in!” Elgin awoke with a jerk, momentarily confused. He’d decided he would stay with Fran for whatever time remained to them. He’d be there where she could see him whenever she opened her eyes. There to hear anything she wanted to say. He had watched her drift in and out of consciousness. Felt her body tremble and shudder. Listened to her breath get shallower and more labored. And he must have fallen asleep.

Nigel and the Doctor were leaving the table and rushing over to Stanton at the main console. Elgin strained in that direction, while trying to not disturb Fran, but she was already awake. “Go on,” she said, giving him a weak push. “Find out what’s going on.”

“Are you sure?” he said, anxious to go but bound to stay.

She just nodded and gave him another push. Her grin was just as weak, but to Elgin it had the beauty of an endangered species.

He pulled gently away and flew over to join everyone at the console. They were gathered in a tight knot, peering intently at the displays, which still showed the Scout in its familiar position. He could hear a shrill screech, faint but certain, which stopped abruptly as he arrived.

“Message over,” said Stanton. He checked his instruments. “It lasted about thirty seconds.”

“I wonder what it said,” said the Doctor.

“Hopefully, ‘Come home.’” said Nigel.

As everyone murmured their agreement, Stanton stood up and

offered the chair to Nigel. "I think you're the closest we have to an expert on this."

Nigel slid in and did a quick scan of the instruments. They gave no indication that the Scout was reacting to the message yet, so he decided to do a preliminary analysis of the message itself. Their studies of previous communications amongst the invaders revealed that the Visitor used digital encoding on a binary base, but strictly classical. They had found no deliberate use of quantum effects either in the transmission of the information or in the encoding of it. That hadn't helped them understand it, though. While they could deconstruct the transmissions, isolating and identifying the parts of them right down to the basic elements, they still couldn't parse their meaning. Nigel stared at the unpacked message on his display without enlightenment.

"Anything?" asked Stanton.

Nigel shook his head. "It's completely opaque. I don't even know what I'm looking at." He pointed at the display. "Are these like letters, or parts of letters, or are they whole words? Do they even use words? Is it even a language, or are these simple machine instructions?"

"What about side by side?" asked Stanton.

"We've already done side by side analyses. It didn't help."

"But this is a different case," Stanton pointed out. "These two messages are related. They refer to the same situation, so maybe there will be some elements in them that are comparable."

Nigel looked at Stanton with a wide eyed grin, then called up the first message. He plunged in and was so engrossed that he didn't react when a quiet alarm announced that the Scout was moving.

Stanton leaned forward to better see the numbers, a set of coordinates giving the Scout's position relative to the remains of the little

comet. Normally they went constantly through random fluctuations while maintaining the same position overall, but now the average was also moving.

“Is it moving?” asked the Doctor.

“It looks like it,” said Stanton, “maybe. The numbers are moving anyway, but it’s hard to tell for sure yet.”

The Doctor was no longer listening. He went directly to the storage locker and hauled out a pressure suit which he began to prepare for Fran.

“What are you doing?” asked Elgin.

“I’m preparing to transport Frances to the Hibernarium,” said the Doctor, laying the suit out beside her. Fran began to rouse herself.

“But we’re not even sure it’s moving yet.”

Stanton interjected. “It’s definitely moving now. Can’t say where yet, though.”

The Doctor continued his preparations, his face tight with determination. Elgin said, “But we don’t know which way it’s going to go. We don’t know.”

The Doctor stopped. He said, “If it’s going back then that’s what we’ve been waiting for. If it’s coming here then we have to destroy it. Either way, it’s time.” He went back to work.

Elgin thought about that, then he hurried over to the locker and pulled out two more suits.

Getting Fran into the suit was awkward and painful, but she gamely persisted. Elgin and the Doctor were torn between avoiding hurting her and getting it done. At the end, when the suit was snugging down on her body but before the head was closed and sealed, Fran called Nigel’s name.

He surfaced from his study of the Visitor's language and turned to face her. "Yes, Fran?"

Her voice wasn't very strong but her message was. She told him, "Analyze, analyze, analyze."

He nodded somberly and said, "I will. Rest assured, Frances."

She smiled back at him. "I will," she said. She glanced at Elgin. "Close this suit up. I really need that rest."

~

Their way was marked by daubs of reflective paint shining in their lights. The crack in the comet's body was small on that scale, but it dwarfed them as they flew along it, Elgin and the Doctor flanking Fran as if guarding a precious treasure. Without the markings they would have been hopelessly lost almost immediately among the many branches and blind alleys.

After the first kilometer the Doctor said, "I'm going to go on ahead and prepare the room. Will you be all right?"

"Yes, sure," said Elgin, adjusting his grip.

"Go ahead, Doctor," said Fran. "We'll be fine."

After the Doctor disappeared around a bend, they were alone in the huge, dark space. They didn't speak for a few kilometers, puffing and gliding from one bright patch of paint to another. They were lost in their thoughts, bemused by sudden glitters as their lights struck fractured planes of ice. Elgin wanted to speak. He wanted to tell her every thought in his head, and to hear the music of her voice while he still could, but he was tongue-tied by the fear of seeming inane. Finally she spoke, her voice now a dry whisper. She spoke his name, in a tentative question. "Elgin?"

"Yes, Rannie? I'm listening."

He could hardly hear her, as if she spoke reluctantly. “I’m scared,” she said.

He gently pulled her closer, almost losing his own voice. When he spoke, it wasn’t to reassure her. Instead he said, “I am too.”

The silence returned, but it was no longer uncomfortable. Each of them knew now that more words were not necessary. They knew and understood the depths of their shared burden and they flew on through this strange place, happy to be here together.

~

By the time they arrived, the Doctor had the lights on and the air up to pressure, but it was still too cold to take off their suits. It wouldn’t take too much longer to warm up, the room being small and well insulated, so Elgin parked Fran and began helping the Doctor set up.

“Be careful,” said the Doctor, sliding the tray out in Fran’s cocoon-to-be. “It’s easy to forget how cold these things are.”

“Right,” said Elgin, “thanks.” His hand was resting on the machine that would put Fran into hibernation and he could already begin to feel the cold stored in its mass. He would be all right as long as he didn’t forget and leave it in one place for too long.

“According to the instruments, we should be able to take her suit off in about an hour. A little less than that to open our helmets,” said the Doctor. “Non-insulated surfaces will still be dangerous because they will still be so cold, but we’ll be okay if we’re careful.”

“The sooner the better,” said Elgin, looking at Fran. Her eyes were closed and he had to stop himself from going over to see if she was still alive. “What about Fran, though. Won’t it be too cold for her to lie on this?”

“The tray is insulated, and anything we’ll be attaching to her is light

enough that it will be warm by then.” The Doctor indicated the row of two dozen tubes and wires and sensors that would be connected to her while she slept. “We just have to make sure that we don’t let her touch anything massive, and that we stay clear as well.”

Elgin looked around, making a mental list of the danger spots, and when the time came it went fine. The hardest part was getting the suit off her. She was nearly sobbing with pain and frustration, with relief so near and yet unattainable, but seeing the anguish in Elgin’s face made her bite her lip.

In a few minutes she was out of the suit and on the tray, the Doctor methodically attaching all her leads. Whenever he wasn’t in the way, Elgin was close, looking in her eyes. “I’ll see you when you get up,” he said.

“Yes,” she said, her eyes drooping.

He leaned in and kissed her on the lips. “Pleasant dreams.”

She smiled, then her eyes sharpened once more. “Help him,” she whispered.

“Help who?” asked Elgin.

“Help,” she said, her lids falling shut. “Help Sta ...” She was gone.

Elgin looked at the Doctor, who was double checking everything before closing the cell and starting the cycle. “Was she saying Stanton? Does she want me to help Stanton?”

“I think so,” said the Doctor.

“But ...” said Elgin.

“Shh,” said the Doctor, standing back and staring, ensuring that all was ready. Then he pulled Elgin forward and together they slid in the tray and closed and sealed the door.

42.

ELGIN GOES TO SLEEP

On the way back Elgin kept looking back, and when they got to the first bend, where he would lose sight of the Hibernarium, he stopped. The Doctor stopped with him and turned to look as well.

“Will she be all right?” asked Elgin.

“She’ll be as all right as she can be,” said the Doctor.

“But, will she ...” Elgin said. “When she wakes up, will she be better again?”

“I don’t know,” said the Doctor. “There’s no way of knowing yet.”

“But it will be working on her, right? It’ll repair the damage?”

“It’s her best chance,” the Doctor assured him. “One thing’s for sure. She’s better off now than she has been for the last day and a half.”

“Yes,” said Elgin, grimacing. “Yes.”

The Doctor took his arm and pulled him on. “Come on,” he said. “I’ll check in on her tomorrow. Maybe I’ll learn something then.”

~

Back in the observation post Stanton caught on right away and called Elgin on it. “She asked you to take care of me, didn’t she?”

Elgin tried to look innocent, but the Doctor laughed and blew it for him. So he said, “Yes. It was the last thing she said before she went down.”

Stanton was shaking his head but he was smiling. “You don’t have to do anything special, Elgin.” He came over and hugged his friend. “Just knowing I have friends like you and Frances is all I need.” He

broke the hug and spoke more somberly. “We’ve both lost someone,” he said. “But that means we both have someone who knows how we feel.”

Elgin matched his gaze and nodded. “Yes,” he said.

~

The Doctor went back to the Hibernarium the next day and when he returned it was with good news. The equipment reported that her injuries, though severe, could be repaired. Nothing inside her was utterly destroyed, and when she came out of hibernation in eighty years there should be no lingering effects.

Even Nigel looked up from his work and applauded that, but he put his head right back down again. He was taking Fran’s admonishment to heart and was subjecting everything to do with the Scout’s visit to exhaustive analysis. Every bit of the messages, every pixel of radar, every action of the Scout was laid open and mercilessly probed. It would end up dominating his life for years and would turn out to be fortunate for two crucial reasons.

Because of Nigel’s preoccupation, Elgin and the Doctor got the news from Stanton when they got back from the Hibernarium. The Scout was definitely not coming back. Its trajectory showed that it was heading back to the inner system by a long, low energy course. It would be impossible now for it to change that and come out to their orbit. There had been no further messages and there appeared to be no reason why they couldn’t begin waking people up and start rebuilding. They would just take care that no indication of their activities was allowed to show beyond the surface of the comet. Just because the Scout was leaving didn’t mean that it wasn’t still watching them.

“I guess we could wake up the first four any time,” said Elgin.

“Three,” said Stanton. When they stared at him he explained. “Nigel’s got a job,” he said.

“But we need to wake the people up,” said Elgin. “We need all the help we can get. We’re already down one.” His throat tightened up and stopped him.

“I know,” said Stanton. “It’s going to slow us down, but it won’t make that much difference in the long run.”

Elgin glared at Nigel’s back, but he saw the sense in what Stanton said. “I suppose,” he agreed.

“Right,” said Stanton. “And he is under orders from Fran, after all. She must have had some reason for it.”

That settled it for Elgin. If Fran saw a need for it then it was the best thing to do. Nigel could get out of waking people up and concentrate on his analysis, as ordered by Fran. That was settled but now there was another feeling. Was it jealousy? Was he feeling jealous over Fran giving Nigel a special assignment? Surely not. It confused him and he pushed it away to deal with later.

“We can work it with three,” said the Doctor. “The routine will be the same as with five or four, but it will just take a couple of days longer.” Each of them would be minder for one waker at a time. They had considered trying to speed it up by increasing their workload, but they decided it was too important to try to rush it. Each waker would have the concentrated attention of one minder for the critical first two days. After that, if the first waker was adjusting well enough to get through the last two days largely unsupervised, they could begin another one. The wakers themselves should be fit enough to be minders by day five or six, so the numbers would increase rapidly.

“Okay?” said the Doctor, who was naturally in charge of this phase

of the plan. When they nodded he said, “Okay, let’s put our suits on and go to work.”

~

The first three they brought up were technicians who knew the Hibernarium equipment. It was essential to their goals to have it working in peak condition, so they woke the people who could ensure that. Then they settled into a routine of re-animating the comet. Within two weeks there were enough people to form the first work crew. Stanton and Elgin took charge of that and began reconstructing their living space, which filled up as quickly as they could produce it. After six weeks there were over a hundred wakers, mostly engineers, builders and fabricators, and Green Comet came alive.

Their first major project was to carve out and seal the new Square, a cavity two hundred meters square by one hundred twenty-five high. This would be their communal space, the center of their society, and for now it would be their center of operations.

They got water and sewer going and started up food production. With the basics roughed in they took a few weeks to polish it up and to give the infrastructure time to settle into smooth running. Now things were ready for another batch of wakers, a more general mix of talents, as well as the families of the work crew.

~

The four of them got together often. It was surprising that they weren’t sick of each other’s company, but they were the only ones who understood what they’d been through. The only ones who could have a conversation about it that meant anything. So they had lunches and

dinners and evenings at the café, as they were calling the fabric partition on one side of the Square.

Nigel was sometimes absent, even when he was there. They didn't bother asking him how the analysis was going any more, because the answers were always so indefinite and full of qualifications. Eventually, though, he told them that he thought he had made a breakthrough on the Visitor's language.

"Oh," said the Doctor, "so it turns out it's a real language?"

"Yes," said Nigel. "It's a strange language, compared to the ones we're used to." His gaze went inward again. "I wonder if it's the language of the ones who first built the machine, or has the Visitor evolved its own language?"

"Anyway, Nigel," said the Doctor with a kindly smile, "your breakthrough?"

"Oh, right," said Nigel sheepishly, blushing as they chuckled at him. "I've been comparing the last two messages, as Stanton suggested, and I've been able to wrinkle out some simple instructions. I found the one that ordered the Scout home, complete with vectors that match the Scout's actions, for instance."

"That does sound like a breakthrough," said the Doctor.

"Yes. It opened up a lot after that," Nigel said enthusiastically. "And it led to discovering something in the penultimate message that alarmed me." He frowned at his thoughts, then continued. "If I'm interpreting it correctly, the Visitor told the Scout to release another, smaller craft."

It alarmed all of them. Although there could be many reasons for it, the obvious one seemed to be that the new machine would be sent to explore Green Comet. Stanton asked the salient question. "Is there any other evidence for this little vessel?"

“Possibly,” said Nigel. “In the reflected radar data there are some anomalous points.” He shrugged his wings. “It’s just a couple of pixels and it might be noise, but it appears twice and the positions are consistent with a trajectory to Green Comet.”

“Is that all you could tell about it?” asked Stanton.

“It’s possible to estimate its size, or at least put limits on it. It can’t be any larger than ten meters, at the very most.” He gave them the most shocking news then. “The thing is,” he said, “if my calculations are correct, it will be here by now.”

“What?” said Stanton. “There’s an alien spacecraft here, on the comet?”

“If it was meant to land, yes. Or it’s in orbit. Or it was just a flyby, though I doubt that.”

Stanton was agitated. “What are you doing about it? Who have you told?”

“I haven’t told anyone yet,” said Nigel. “I wanted to tell you guys first, in case I was crazy.”

“You’re not crazy, Nigel,” said the Doctor. “So, what’s your plan?”

“I’m going to advise the planning committee.” He laughed. “That is, the rest of the committee.” He, Stanton and Elgin already formed half of it. “I’m going to requisition a suit and go out and search for it.”

“You and who else?” demanded the Doctor. “Because you’re not doing it alone.” He gave Nigel his best admonishing stare. His concern went well beyond his doctor’s duty, into deep friendship.

“I hadn’t thought that far,” said Nigel. “I’ll let the committee settle the details. All I know for sure is that I’m going out there to find the ...” he searched for the word, “the Visitor’s spy.”

That’s what they called it then. It was the Spy. And Nigel would spend the next fourteen years looking for it. But on this night, in

addition to the news about the Spy, there was something he wanted to say to Elgin. It was nothing specific, but he got a feeling, the more he studied all the data from the Scout incident, that there was something there. When he looked at the way the Scout destroyed the little comet, and the way Buzzard fought back, he just knew that something was happening there that he couldn't see. He wanted to tell Elgin, to get him interested so he'd take a look, but Elgin wasn't interested in much these days, and Nigel was easily distracted, so the moment passed and nothing happened.

~

Although Elgin wasn't interested in much, it didn't affect his work. That was still ensured by his sense of duty to the comet, and by the knowledge of the effort and sacrifice that had brought it this far. He would never allow his personal pain to endanger that. On the other hand, without Frances to share it with him, life wasn't very interesting and he couldn't maintain the same level of attention to the non-work parts of it.

His dedication to the rebuilding effort was absolute, but after four years everything was making the transition from preparation to normal operation, and he felt his drive beginning to lose momentum. He talked to his friends and they assured him that he had done enough for the comet, and he should feel free to join Fran. With their support, and the Doctor's supervision, Elgin went to the Hibernarium and went down for the big sleep. He and Fran were the same age now, fifty-three years old.

43.

THEY WAKE UP TOGETHER

When Elgin woke up seventy-six years later, Green Comet was back to normal. It was once again a bustle of activity and color. They were in regular contact with Orange Comet, though still carefully, and the Visitor was fading into an ugly memory.

The best thing about waking up, though, was Frances. In the jumbled early part of the process he could sense her nearness, and when he could finally turn his head he saw her in the bed next to his. She was looking at him, her golden eyes shining with health and love. They stared at each other, unable to move or speak. When their eyes fell shut, their faces continued to glow with happiness long after.

Stanton and the Doctor were their minders, which was odd because they were both still up when Elgin went down. When Elgin emitted a gargly mumble to that effect, they gave him the obvious answers.

“In my case,” said the Doctor, “I wanted to be here to check on my patient when she woke up.” He smiled a proud doctor smile at her. “And she’s doing fine. Just fine.”

“And I wanted to personally take care of my best engineer,” said Stanton, smiling equally proudly.

Fran mumbled something like, “Nigel?”

“He’s up too,” said the Doctor, “but he’s waiting until you’re ready.”

When it was time to leave the room, the five of them were there. Stanton stopped them before they went out. “Hold on a second,” he said. “You need to be prepared for this.”

Fran and Elgin looked at the grins on the three of them. “For what?” asked Fran.

“Well,” said Stanton. “there might be a few people out there, waiting for you to come out.”

“Waiting for us?” She shared a look with Elgin, who was equally mystified. “Why?”

Stanton was actually blushing. “It seems we’re kind of celebrities,” he said. “Especially you,” he added, looking at Fran.

“Me?”

“Yes,” said Stanton. “People remembered it was your idea, and you fought to convince them. Then you almost died.” He shrugged at her frown. “It’s taken on a life of its own.”

“Oh, for goodness sake,” she said, taking Elgin’s hand. “Come on. I’d like to see the café.” She led the way out.

There were more than a few people out there. There were over a thousand. Everyone who could get away from their duties wanted to be on hand when the Five were re-united for the first time. There were shouts when they were spotted, which turned into cheering and fervent applause. At its focus, Fran felt its full force and instinctively drew back under Elgin’s arm. His wing cupped her back in what would become the classic pose.

Elgin was frowning but it was nowhere near the infamous face. It was simply a look of concentration as he tried to see what was going on. He was startled and his protective instinct was engaged when Fran came under his wing, but the situation was so obviously joyous that he relaxed right away. He felt her body relax too, and when she looked up at him he could see that she was unconcerned.

The crowd meant them only love and respect, but even that can be a problem when there’s too much of it. They were rapidly pressing

closer. There was jostling to be in front and there was pressure from behind, and the upshot was a danger of crushing the objects of their affection. Stanton and the Doctor, still in the protective mode of minders, pushed back. Fran could feel Elgin stirring, ready to defend her, and she didn't want to see what would happen then.

She gently disengaged from Elgin and rose up to where everyone could see her, then she began to speak. There was so much noise and commotion and she was speaking so quietly that no one could hear her, but she kept talking. Within seconds the crowd quieted, with a few angry shouts at those who weren't paying attention, and stood still to hear her.

"Thank you for being here," she was saying. "Your support has always been important to us." She got the other four to rise up too. "Whatever we did, we were only able to do because of you." She bowed her head at the protests. "If you could do one more thing for us," she got cries of affirmation, "we'd really like to go to the café for a nice cup of coffee." She smiled an inclusive smile. "We just got up," she said, knowing that they all knew what that felt like.

The laughter of recognition rippled through them and, somewhat abashed, they fell back and opened a path. Some of them followed their heroes, but others fell away, denying themselves to give the Five space and freedom. By the time they got to the café, their entourage was down to a few dozen, and all but a few were thoughtful enough to stay outside.

Once around their table, cups of coffee wafting their aroma about, Fran said, "Is it always like this? How do you get any work done?"

"No," said the Doctor. "We all got some notice when we got up, but nothing like this." He glanced at their hangers-on, the ones who followed them in, and saw that they were staring at Frances and Elgin.

Mostly at Fran. "I think it's partly because the five of us are all together for once, but mostly it's because of you."

"Us?" Fran was incredulous and Elgin was beginning to frown again.

"Yes," said the Doctor. "You two are a legendary couple. Everyone knows your story, so they love you as a pair." With an apologetic glance at Elgin, he added, "But it's mostly you, Fran."

"Me?" The beginnings of outrage formed on her face. The unfairness of singling her out and diminishing the others was more than she could tolerate. But the frown had left Elgin's face. Admiration for Fran made sense to him. When she looked to him to affirm her opinion, she saw him nodding. "Don't you dare!" she said.

Elgin stopped nodding, but he said, "They do have a point, you know." When her eyes widened he hastily added, "You were the driving force behind it all." Her eyes narrowed. "Really!" he insisted, looking to the others for support. "You always knew the right thing to do. You never let us waver." Her lips compressed. "And you almost died!" he finished desperately.

She rolled her eyes. "And I guess I'll never live it down," she muttered. She turned to Nigel, who was sitting quietly, as if a guest there. "Speaking of heroes," she said, "tell me about this Spy of yours."

Nigel explained how he followed her suggestion and analyzed the data. How that led to discovering the Spy and how he and an ever-changing crew flew over the surface in pressure suits looking for it.

"You didn't have the same people the whole time?" she asked.

"No," he said. "They'd join me for a while then, when nothing happened for a couple of years, they'd move on."

"But you stuck with it."

"I didn't have any choice. It was my responsibility." He told how he

found the Spy after twelve years, but learned that it had six empty bays that must have housed even smaller machines.

“We threw some Faraday netting over the Spy, so it couldn’t send a message to the Scout, then we began searching for the ‘crabs,’ as we ended up calling them.” It turned out that the crabs hadn’t stayed on the surface, but were burrowing into the body of the comet. “Within a couple of years they started popping up and coming back to the Spy. We’re not sure, but we think they might have come across some of our technology down there.”

“You were just in time,” said Fran. “Two more years and they would have brought that information back to the Spy and our secret would have been out.”

“We got lucky,” said Nigel, nodding.

“Right,” she said. “Fourteen years of ‘luck.’”

He blushed, pleased. “So, we captured the crabs and they’re all accounted for. We don’t think there were any more spies, and we’re pretty sure there wasn’t a message sent.”

“Can it be, after all this time, that we can finally stop thinking of the Visitor every second?” The look of relief and satisfaction on Fran’s face made all of their effort and deprivation worthwhile. The Five savored this moment of success and completion. They raised their cups and made a silent toast to victory.

Everyone in the café felt it. They knew that they had witnessed an historic moment. They were there when Green Comet went from looking back to looking forward.

~

Elgin and Fran moved back into their apartment in the yellow side of the Square, just above the ground floor shops, up against the orange

side. It was just like the original, built to the exact specifications during reconstruction and held for their return. They were already a legend for their love story before the Scout incident, and now they were beyond legendary. They were two of the Five, who faced the Visitor and won. They were the heroes of Green Comet, and literally a living myth. In their absence the apartment was a sort of shrine, and now that they were back it was even better. It was the first place anyone looked when they entered the Square, such was the power of the most important two of the Five. Especially Fran.

Fran was frowning. She was practically fuming. “Most important,” she muttered. “No one was ‘most important.’”

Elgin disagreed, even if he wasn’t going to say so. He certainly knew that he wasn’t most important, but he couldn’t say the same about Fran. He knew, more than anyone, how much she had given to the comet, and what it cost her. He knew that everything came from what she did and that the rest of them were really interchangeable and replaceable. But he wasn’t going to argue with her. And anyway, she had a point.

“Look what Nigel did,” she said. “Fourteen years in a pressure suit. And it saved us all.”

“Right,” said Elgin.

“And there was another Five on the little comet,” she added. “Where would we be without them?”

“Probably dead and gone,” said Elgin.

“That’s right,” she said.

Elgin didn’t know how it could happen, but he fell even further in love with her at that moment. He looked at her standing there, her fists on her hips and a scowl on her face, and he thought she was the most

beautiful thing he'd ever seen. "There's no explaining it," he said. "Nigel did so much, and Buzzard too."

She sighed, letting her shoulders drop and her fists open. "I guess there's nothing we can do about it. Once people get an idea in their heads, there's no room for facts."

"Yes," said Elgin, eyes mischievous. "You'll just have to get used to being most important."

She turned on him, shocked, but when she saw his face she had to laugh. She said, "Doesn't it bother you, all this hero stuff?"

"Sure," he said, "but it's not so bad because I'm not as important as you."

"Stop that!" she said, laughing. More seriously, she went on. "Speaking of Nigel and Buzzard, Nigel says he asked you to look at his data from the Scout and the destruction of the little comet."

"Yes," said Elgin, looking away. He'd never got around to it.

"He asked me to have a word," she said. "Do you think you could have a look at it?"

Elgin felt a stab of cold, realizing he'd been shirking. "Of course," he said, "first thing tomorrow."

~

Elgin did go over Nigel's work, and it looked right. Each piece of permapaper he picked up looked straight and true at first glance, and remained so when he read it. Nigel's math was only intermediate, but it was solid. It was good enough to show that the Scout's apparent insanity when it destroyed the little comet, and went on destroying it long after it was necessary, must have been deliberately provoked. It was obvious that Buzzard must have studied the Visitor at his trademark exhaustive depth, and calculated how to provoke the Scout into

expending the maximum possible energy. Nigel's work showed how Buzzard had saved their lives.

Elgin could see all that, but he couldn't find anything that would tell them more. It couldn't save Buzzard because he was gone. Nothing could have survived that. The Scout was also gone and it wouldn't be coming back, so this data wouldn't be useful there. To Elgin it looked like a good analysis that helped them understand what happened, but he couldn't see any point in belaboring it.

The only reason he stuck with it was because Nigel and Fran thought he should. He respected Nigel's work, especially since he discovered and captured the Spy. That showed insight and dedication. And he'd learned that when Fran had a hunch it was inevitably a good idea to follow it. So he kept coming back to it and going over it, again and again. Eventually he started to get the same feeling as Nigel and Fran. He couldn't define it or explain it, but it began to feel as if there was something there under the numbers. It was as if Buzzard was there trying to tell him something.

It seemed like a promising sign, but it turned into the biggest frustration. Now, not only was he unable to see anything there, he had this powerful feeling that he should. It bothered him. It nagged and taunted and wore away at him, until he was wearing an almost permanent frown and carrying his temper behind an extremely thin barrier. The people around him were careful to not set him off, but he didn't notice that. He began to miss things. Events and situations that weren't directly related to his problem went right by him. He didn't notice people or their feelings, even, to his subsequent horror, Fran's.

It finally came to him in a dream. Once again he was outside playing flashball, and again the dark, frightening thing was there. The difference was that this time he didn't have the ball. He had the sense

that he'd made his throw and the resolution of the game was out of his hands. And there in the distance, dangerously close to the dark force, the ball shone all the way up to a white, cracking flash. And Elgin had it.

"Fractal!" he shouted as he snapped out of his dream.

Fran woke up. "What?" she said fuzzily.

"It's the fractal! Flashball! Buzzard!" he babbled excitedly. He launched himself at their terminal where he called up everything on the defence of the little comet and the diagram of the Harriers' flash-ball fractal pattern.

"There, see?" he said as Fran joined him.

She didn't, but she knew he did and that was all she needed. "Does this mean that you've finally figured it out?" she asked.

"Yes," he said, devouring the data on the screen. "And if I'm right," he paused, unable to believe what he was about to say, "if I'm right, then Buzzard might be alive."

Her mouth dropped open, then her eyes flashed and she grinned. She had no doubt he was right. She could tell. She'd seen it often enough. "Work it out," she said. "I'll call Stanton."

"Wait," he said. "Don't you think it's premature?"

"No," she said. "He deserves to know. Anyway, I won't mention the part about him being alive yet."

"Possibly being alive."

"Right. I'll just tell Stanton that you've figured something out about Buzzard's plan, and that he should come over." She gave him a shove. "Get to work. Prove it."

~

"It felt like I was looking at Buzzard's calculations," he told Stanton. He'd confirmed his inspiration before his boss arrived and was working on the dangerous assumption that Buzzard was alive. "And they were right. I felt everything line up in my body and there was an actual clunk as it fell into place."

"Okay, okay," said Stanton cautiously. "Slow down and explain it to me. Maybe I'll be able to feel this clunk too."

"Right," said Elgin, getting a grip. He organized his thoughts, then asked, "Do you remember Buzzard's message when we learned he was staying with the little comet?"

"All good, no magic?" said Stanton, remembering the pain.

"That's right," said Elgin. "I should have seen it then. It's what he used to say when he had things figured out."

"What did he have figured out?" asked Stanton patiently.

"It was the fractal," said Elgin. "The one we used in that last flash-ball game." Elgin realized there were too many details, so he boiled it down. "The defence Buzzard used against the Scout wasn't random or ad hoc. The sixteen lasers and radars were the same as the number of players on flashball teams."

"But there were only fifteen lasers," said Stanton.

"Yes," said Elgin. "There should have been one more at the end. The fifteen lasers matched the pattern of the first fifteen throws in the fractal, but the final throw, Buzzard's throw in the game, was missing."

"So?"

"So, I realized that he'd done the last throw first. The sixteenth laser was Buzzard and his crew leaving before the Scout ever got there, and all the rest of it was automatic."

"So they could still be alive?" Stanton extrapolated hesitantly.

“Yes,” said Elgin, bursting with glee. “And because we know how the last throw went, we can calculate Buzzard’s trajectory.”

~

They did calculate it, together and independently. They checked each other’s work and eventually decided on the most probable trajectory, with a two degree margin for error. Elgin chastised himself for that. If he had done this earlier then a two degree error wouldn’t have built up to such a large volume of space. Stanton rejected his self recrimination, reminding him that Buzzard, to protect Green Comet, had deliberately made it obscure. “And,” said Stanton, “he also made sure that you could do it. He entrusted their safety to you, personally.”

“And I let them down,” said Elgin. “My inattention sentenced them to an extra eighty years out there.”

“Elgin, they’re frozen solid. They’re not going to notice.”

“But with the error bar, the longer it takes the more likely they are to get lost.”

“Then I guess that’s why Buzzard made their course almost parallel to ours, to make it easier.”

“Yes,” said Elgin. “Not only that, did you see this?” He showed Stanton two pieces of permapaper.

“Yes,” said Stanton. “That’s Buzzard’s course and the other one is ours, after we correct it to follow Orange Comet.” Stanton smiled and shook his head.

“Not only did he match our course, he matched what it would be,” said Elgin. “He thinks so far ahead, I feel like a blind mole groping my way.” He grinned fiercely. “The Scout never had a chance.”

Stanton matched his grin. “That bugger,” he said.

Explaining it to Fran later, Elgin was still excited. "It will take a hundred sixty years to bring them back," he said. "I was all for going myself, but Stanton said we should let someone else be the heroes this time."

"Stanton's right," said Fran.

"We're going to get volunteers. Then there's the planning. This is going to be a significant job."

"We'll do it," said Fran. "If it can be done, we'll do it."

"We haven't even officially announced it and there are already over a hundred volunteers," said Elgin. "Including Tomas. He wants to bring Buzzard back for Maria."

"Tomas should go," said Fran. "And so should Maria. She's not the kind of woman who needs things done for her. She needs to do them herself."

Elgin finally noticed that Fran, while interested, was not as animated as she normally would be. Now that he noticed, he could see that she was duller than normal in other ways. Her fur and her eyes. Even her expression and the way she held her body. How could he have not seen?

She saw his realization and stopped trying to pretend. Sadness settled on her like a fog. She said, "I have to tell you something."

She began to notice that something was wrong a few weeks earlier. The Doctor couldn't say what it was, only that she seemed to be aging at an accelerated pace. Between them they decided that the best thing would be hibernation. Maybe it would fix the problem, whatever it was. At least it would stop things getting any worse.

Elgin was devastated. Not only was he losing her again, but he hadn't even seen it happening. All he could say was, "I'm sorry."

"I know you are," she said, coming over and putting her arms around him. "I tried to hide it from you so you wouldn't be distracted from the Buzzard problem. Now that you've solved it, I don't have to hide it any more."

They did the only thing they could do. After the volunteers were chosen and the plan was worked out to everyone's satisfaction, Fran personally saw the rescuers off. Then she went down to the Center.

Elgin was alone again.

44.

FRAN GOES DOWN FOR GOOD

“You don’t have to do this, you know.” Stanton was standing with Elgin, looking at the waste treatment plant.

“I do,” said Elgin. “It’s the twenty percent rule.” He was talking about the rule that obliged people to spend twenty percent of their waking time working at the less popular jobs. It could be a little during each waking or all in one whack, but by the time they were up for a hundred years they must have spent twenty of them doing the work that otherwise might not get done. For the other eighty percent everyone was entitled to do the work they wanted.

“I know,” said Stanton, “but you don’t have to. You have earned the right to take a pass.”

“No one has that right.”

“Not as a rule, no. But you’ve earned the right to special dispensation. Hundreds of volunteers would fight for the honor of doing your twenty percent for you.” Stanton turned to face Elgin for emphasis. “Besides,” he said, “don’t you think facing down the Scout qualifies? You’ve got over twenty years right there.”

“No,” said Elgin. “That doesn’t qualify because I wanted to do it.”

Stanton nodded because he agreed. He wasn’t going to use those years against his twenty percent either. As a last stab he said, “Couldn’t you at least rest on your laurels? People hold you in high esteem. They wouldn’t mind if you didn’t do this.”

“That’s all the more reason to do it,” said Elgin. “If they’re looking

up to me then I need to set a good example.” He thought of Frances and added, “Especially for the children.”

Stanton clasped his shoulder. “That’s what I thought you’d say.” He tried one last argument. “You don’t have to do it now, though. You’re nowhere near eighty years yet.”

“I know,” said Elgin, “but I don’t believe in leaving it until the last minute.” With that he rubbed his hands together and went to work.

~

Elgin worked in waste reclamation for the remaining seventeen years of his waking. It wasn’t all he did. He also played flashball and went to the café. He would drop into the shop to visit with Stanton and his current engineers. He visited the Doctor a few times, but that always turned into yet another confirmation that they had no idea what was wrong with Fran, so he stopped going. He would have gone to the planning room but Nigel wasn’t there. He had got off the cycle the rest of them were on, so while the three of them had large overlaps in their wakings, Nigel’s was only a couple of years, and they didn’t see much of him.

It came down mostly to work and flashball for Elgin, and even flashball was incomplete with the absence of Buzzard. Elgin still played well enough. He was still one of Captain Rita’s most reliable players, but it was all technique and efficiency. Rita didn’t see any of the flair and exuberance that he used to show. She missed the sheer pleasure he radiated with the love of the game. Now, even though she knew she could put him in any situation, it was nothing more than the execution of his responsibility to him.

After a game she went to sit with him in the locker room. He’d been smiling and joking with the other players, but she could see that it was

all on the surface. Looking past that Rita could see that he was dull and flat and gray. This wasn't the Elgin she knew, bright, energized, a magnet for the eyes. Even his aura was gray.

It was obvious to her that half of him was missing. It wasn't as if he was living so much as merely attending, existing in a shadow of his real life. Rita wanted to wrap him up in her arms and hold his dear head to her breast. She didn't, though. She patted him on the arm and said, "Good game."

He said, "Yes, I thought we played well."

"How are you doing?" she said. "How are you holding up?"

"I'm fine, Rita," he said. "Thanks for asking." His smile was genuine, but its dullness only made her feel worse.

"You know you can come to me any time, don't you?" she said. "If there's anything you need, anything at all."

He knew she was looking out for him. He could tell how much she wanted to ease his pain, and it hurt him even more that he couldn't help her do that. He knew he was broadcasting his misery and making other people unhappy, so he looked forward to his seventeen years being up and letting him escape into hibernation. "Thanks Rita," he said, "I know."

~

By the time the seventeen years was up, Elgin transformed waste treatment. Though he started out as a novice apprentice, within a few years he had responsibility for the whole thing. He made a few changes and increased the overall efficiency of the system by almost twenty percent and, with the help of his little friends the bacteria, turned it into a net producer of electricity. He also had some success in reducing odors. It was already very good. In an enclosed environment it has to be.

But his improvements meant that catching a whiff of it was rare and an indication that he'd better have a look at it. If it smelled it needed tweaking.

The most important change wasn't in the operation of the system, though. Because of his example, working in waste reclamation became a desirable job. People no longer did it grudgingly to pay off their twenty percent. Now they were lining up for the privilege. Working with him during his tenure became a premium status symbol, and working there after he was gone was almost as good.

At last it was over and he could go join Fran at the Center. As he drifted off he thought about the fact that now he was seventy-three years old, and she was fifty-six.

~

When Elgin woke up eighty years later, Fran was there looking healthy and happy, but no one was as optimistic as last time. They were right to be cautious. Although she seemed to be alright for the first year, signs of deterioration began to appear.

Eighteen months in she was getting ill and had to start thinking seriously about preparing for hibernation. She had several long talks with the Doctor, which seemed to make her simultaneously sad, hopeful and philosophical. On their last evening together in their apartment, in the dim lighting of the middle of the night, she and Elgin were talking about the future.

"We're like microbes," she said. "Like bacteria. As long as we grow and divide, the Visitor will never be able to kill us."

"That's how it sees us, isn't it? Like an infection."

"Yes, and so it should." Fran's mouth was a firm line as she nodded.

“It might feel safe now, but it doesn’t know what it has unleashed on the galaxy. It’s a race now. Who can spread faster? Us or the Visitor.”

In the morning she awoke to find that she had been incontinent in her sleep. It only confirmed that she had to go down as soon as possible, but it also hurt her deeply. Weren’t things bad enough without this indignity? Wasn’t it enough that she would be separated from Elgin again, without disgusting him too?

Her crying woke him and he immediately took her in his arms to comfort her. When she apologized he told her, “It’s you, Rannie. It’s all you. I can’t get too much of you.”

That made her cry more, but it was tears of relief and love. It was cleansing and healing and it eased the pain. He took her face in his hands and kissed away the tears. He could feel the bones beneath her skin. Her neck was so thin.

He carried her to the bathroom where she could have a shower, and he cleaned up the bed. He knew what this meant. Yet again he would rationalize losing her with the knowledge that she would at least be alive.

After her shower she said, “I wasn’t crying only about making a mess.”

“I know,” he said.

“I have to go down today.”

He nodded, his face sagging as if there were gravity.

“I’ve made arrangements with the Doctor to make it indefinite.” His eyes were so wounded that it broke her heart. “It’s getting worse every time.”

“I know,” he said.

“I don’t want to be brought up unless there’s a cure.” It was out

there now. The stark reality was between them. She waited for him to speak.

He dragged his voice up out of his stiff throat, weak and shaking. “You say it,” he mumbled, “and I know it’s right.” Then he reached out and drew her precious body into his arms.

~

He stayed up for another four years, but he couldn’t think of any reason why. Eventually the futility of it overcame his sense of duty to the comet and he took himself to the Center. He left instructions that they could wake him if they were bringing her up, but not otherwise. He was seventy-eight to her fifty-seven.

~

They didn’t exactly follow his instructions. When the rescue team found Buzzard and brought him home, his friends woke Elgin a week before they got back. Stanton was his minder.

“Fran is still at the Center,” he said repeatedly as Elgin came up through the levels. He didn’t want any false hopes. When Elgin showed signs of focused awareness, Stanton told him, “We brought you up because we found Buzzard. He’ll be here in a few days.”

“Buzzard?”

“Yes. They found him right where you said.”

“Is he all right?”

“As far as they can tell,” said Stanton cautiously. “The equipment is functioning properly and the readouts look good.” He chuckled. “The Doctor is on pins and needles. I had to talk him out of flying out to meet them.”

The Doctor’s name reminded Elgin. “Fran? Is there any news?”

Stanton shook his head. "There's still no cure. They don't even know what's wrong yet."

Elgin nodded morosely, but soon brightened. "Buzzard, eh? It's going to be great to see him. He must have a tale to tell."

He did, especially to Elgin. But first he needed to be brought home and re-awakened. Elgin wanted to be there but he was outranked by Stanton, who would be his minder. "I was just practicing on you," he told Elgin. But they were both preempted by the Doctor, who took the returnees to the Center and ran an exhaustive series of tests on them, and on the equipment that had sustained them unattended for so long. Everyone was impatient to see them, but they all understood that an excess of caution was wisest.

As it turned out, they had nothing to worry about. The five were in fine shape, just as if they'd had a normal hibernation at home, instead of in a tiny vessel alone in the void. Elgin was glad they woke him, even though each hour he was up and she wasn't made him feel as if he was growing away from her.

When they finally had time to get together, they convened in Fran and Elgin's apartment. Even though it was empty most of the time, and then only ever occupied by Elgin for short periods, it was still thought of as theirs, not just his. The four of them, Elgin, Stanton, Buzzard and the Doctor, were together alone at last. All the celebrations and the recognition were fine, but they were looking forward to sharing a pot of iceberry tea. Here they would be talking to people who knew what they meant.

The most surprising thing was Buzzard's speech pattern. He was speaking more slowly and in longer sentences. He still occasionally said things two or more times, but it was no longer the rule. "I knew you would get it," he told Elgin.

“It took me long enough,” said Elgin, still annoyed at his thickness. “I should have got it right away.”

“You had other things on your mind.” Buzzard knew all about the heart breaking saga of Frances. “The important thing is you got it, as I knew you would.” To him the delay was trivial, especially compared to the loss of Frances. He would be having some long talks with the Doctor, trying to understand the situation, but now was the time for telling stories.

“The water ice rockets got us up to three gees,” said Buzzard. “With nitrogen steam.” It was obvious he’d been looking forward to telling this, particularly to Elgin. “Then we used a laser sail. A light sail. But only while the comet blocked the Scout. It couldn’t see us.” Their minds were all out there with Buzzard and his crew. “Then it was just maneuvering rockets.”

That was just the beginning. The stories went on far into the night.

“What I want to know,” said Stanton, “is how you got the Scout to keep destroying the comet. It went on far longer than necessary.”

“Radio transmitters,” said Buzzard. “We buried a bunch of radio transmitters.”

“I thought it was something like that. Is that all it took?”

“No. We conditioned the Scout first by associating a weak radio signal with our weapons.” Buzzard grinned. “We hoped it would react to the fake signals.”

“It did,” laughed Stanton. “You should have seen it.” His smile faded as he remembered how it made him feel.

The apartment’s ceiling went through its changes over their heads as the lighting in the Square went through evening to deepest night. They didn’t notice, though, so engaged were they in each other’s

experiences. This was the best thing that happened to Elgin since he lost Fran.

In all, he stayed up for two years. It was good to work with Buzzard and Stanton again, and better than good to play flashball with Buzzard. It couldn't last, though. He felt himself getting further away from her and decided to go back down. Now he was eighty and she was still fifty-seven.

~

They woke Elgin again several centuries later when they had to decide whether to pick up a small comet. Orange Comet spotted it as they went by it far ahead of them. They would pass it at a considerable distance and it was only five kilometers in diameter, so the choice wasn't obvious. They thought Elgin's talent was just what they needed.

Elgin swallowed his resentment and looked at their numbers, and the answer was as plain as could be to him. He told them to send out a crew to divert the comet onto their course and pick it up. They needed the resources and the benefits here would far outweigh the costs.

Then he went directly back to the Center, leaving them with the distinct impression that he didn't consider this sufficient reason to disturb him, and that he would appreciate more discretion in the future.

He was still eighty to her fifty-seven.

~

They woke him again another several centuries later to honor the returning comet catchers. They had no good reason for doing so, other than their feeling that he would want to be there. He didn't, but he put on a good face for the sake of the returning heroes, then went straight

back to the Hibernarium. This time they would leave him alone for fifteen hundred years.

Now he was almost eighty-one and she was still fifty-seven.

45.

ELGIN GOES TO THE BUBBLE

This time when Elgin woke up it was to find Minder, a young man with lights in his face and four arms. Minder had won a competition to be the lucky one who would take care of Elgin, and he was doing a fine job, whether he believed it or not. He'd taken Elgin to the Square and to a flashball game, and even though Elgin started out miserable and grumpy, he seemed to be feeling better.

Minder had another excursion planned for today and he couldn't wait to spring the surprise. They would be heading out right after breakfast, which was Elgin's favorite, coffee and iceberry muffins. Of course, Elgin could tell that something was up.

"Okay Minder," he said, "what's up?"

"What do you mean?" asked Minder, his face flickering through the rainbow.

Elgin's laughter wasn't cruel, but it made Minder blush even more. "I can tell when you're planning something," he said, finishing his coffee, "so let's do the dishes and you can tell me all about it."

Minder glumly began clearing the table. "I wanted it to be a surprise," he said.

Elgin took pity on him. "Okay," he said, heading for the sink. "I won't press you for it. Let's keep it a surprise."

When they went out they didn't go to the Square, taking another turn before they got there instead. The corridors they took got progressively smaller and less finished looking, and Elgin could tell that they were heading upward toward the surface. It seemed familiar to

him and when they came to a small door set into the final, dead end tunnel, he was pretty sure he knew where they were going.

When Minder opened the door and ushered him through, he came out into the dark splendor of space, the galaxy glittering and shimmering before him. Elgin grinned. He was in Stanton's bubble, or at least a reconstruction of it.

"Well, you took your time," said a familiar voice from the back of the bubble.

Elgin turned. His enhanced eyes were already adapted to the low light and he could easily make out two people back there. The one who spoke was Stanton, and he came forward and embraced Elgin. He was squeezing hard so Elgin squeezed hard back, while looking past Stanton at his companion. "Galatea?" he asked, uncertain.

She came and took over the hug. "Move over Stanton," she said. "You always were such a hog."

When they broke the clinch and stood back to look at each other, all Elgin could think to say was, "Stanton?" Galatea had pronounced it differently. The glottal stop was gone and the second "t" was clearly enunciated.

Stanton rolled his eyes and Galatea laughed. They were acting just like a couple. She said, "That's how they pronounce it now. In all the legends and stories of the Five, that's how it is." Stanton was nodding wearily, and she grinned. "We just got tired of correcting them and decided to join them." She laughed again.

Elgin waited until he saw Stanton smile, then joined in the laughter. Stanton did too, and even Minder came in. It became one of those laughing bouts that went way beyond its initial trigger, and they didn't stop until they had tears in their eyes and the laughter trailed off into weak giggles.

Elgin wiped his eyes. “We must have needed that,” he said. “I know I did.” Stanton and Galatea were nodding and wiping their eyes too, and he noticed that they were glancing at Minder. “Oh, sorry,” he said. “This is Minder, my, uh, minder. Minder, this is Stanton and Galatea.”

Galatea, after the pleasantries, said, “Why do you still have a minder? You shouldn’t need one by now.”

Stanton frowned at her and apologized to them. “You know what she’s like, Elgin,” he said, shrugging.

“Yes I do,” said Elgin, “and it’s good to see it again.” To her he said, “You’re right, I don’t really need a minder any more. Not that I’m complaining, but I don’t know why he’s still here.” He looked at Minder, who blushed.

“Oh,” said Galatea, “I’ve never seen this up close.” She leaned in for a good look at Minder’s cheeks. “You don’t mind, do you?” He obliged her with a refulgent display. Stanton joined in the inspection.

“I’m getting used to it,” said Elgin. “He does it all the time.” He smirked indulgently at Minder’s discomfort. “How about the second arms? Aren’t they something?”

The attention made Minder uncomfortable, but he endured it and even gave Galatea and Stanton thoughtful answers to their questions. Stanton was like Elgin, able to see the utility and practicality of the alterations, but not likely to opt for them himself. Galatea, on the other hand, was intrigued by the second set of arms. “I could hang onto you twice as hard,” she said to Stanton with a salacious wink. “But seriously, it would be great for finishing work.”

Minder said, “The second hands aren’t as dexterous as the first ones.” He held a pair up for comparison, to illustrate the difference between them. “Second hands are strong but they’re nowhere near first hands for fine motor control.”

“I can see that,” said Galatea, taking a close look at the two hands.

“They’d be good for heavy work,” said Minder. “For roughing it in, maybe. But you’d want to use the first hands for finishing.”

“I get you,” she said. “And they’re closer to the eyes, too.”

“That’s right. If you were finishing this bubble, for instance, you’d naturally use your first hands for the close work.”

“Speaking of which,” said Elgin, “is that how you guys got together?” He gestured to indicate the bubble. “While making this replica of Stanton’s bubble?”

“No,” said Galatea. “For one thing, this is no replica. This is the original bubble.”

“Really?”

“Yes. The people were so impressed by you heroes that they held a lottery for the privilege of going on a two hundred year rescue mission for a big ball of ice.” Stanton had turned away and was looking into the depths of space, obviously uncomfortable, but unable to hide his pleasure.

Minder spoke up. “I read up on this, knowing we were coming here.” He spoke directly to Galatea. “Wasn’t it you who organized the lottery?”

Now it was her turn to be embarrassed, but she recovered quickly. “Stanton was playing hard to get,” she said. “I had to be quite industrious to bring him around.”

“So, you guys have been together for a long time,” said Elgin.

“Not as long as it could have been,” said Galatea.

“And most of it in hibernation, like you,” said Stanton.

“And you just happen to be up now, when I am?”

“No,” said Stanton. “When we heard you were going down for good, or at least indefinitely, we realized that we couldn’t leave it at

that.” He looked at Galatea. “At least I couldn’t, and Gay was willing to humor me.” She came over and slipped her arm through his. Stanton smiled, obviously in love. “So we went down too, with a request to be brought up if you were.”

Elgin was touched. He looked at Minder, who was smiling happily. “Did you have something to do with this?” He was wondering how it got past him.

“Yes,” said Minder, blushing and looking down.

“Thank you,” said Elgin. “Thank you all.” He turned to include Stanton and Galatea. “You’ve made me feel so good. If only ...” He stopped himself. There was no point in spoiling things with impotent wishes.

Galatea came over and put her arms around him, then added her wings. “Poor Elgin,” she murmured. “Poor boy.” Stanton came and joined the hug, looking over top with an invitation to Minder. They stayed like that, quietly sheltering Elgin until he stopped shaking.

~

Elgin was out at the front of the bubble, looking at the galaxy, lost in his thoughts. He knew that over the horizon there was another little comet, but it wasn’t visible, hidden by the bulge of Green Comet. He smiled when he remembered Buzzard swooping in his pressure suit right outside this shell of ice. His smile remained, but it filled with pain when he thought of the times he’d spent here with Frances.

Minder was near the back of the bubble with Stanton and Galatea, looking at Elgin’s back, trying to assess what just happened.

“You look surprised,” said Stanton.

Minder nodded. “I am,” he said. “I mean, I knew he missed her, but I had no idea it would still be so strong after all this time.”

“Time heals all wounds, eh?”

“Yes.” Minder shook his head. “I guess that’s not always true.”

“No,” said Stanton. “This would be the exception that proves the rule.” They stood in silence for a moment, then he said, “You know the legend, don’t you?”

“Yes,” said Minder. “Everyone knows the legend. Theirs was a love of mythical proportions.”

“Is,” said Stanton. “It is a love of mythical proportions. That’s why it’s so painful to him. Because it’s still there but she isn’t.”

Minder’s face flared. “Oh, no,” he said. “I’ve been thinking of it as historical, while for him it’s still fresh and current.”

Stanton patted his shoulder. “Don’t blame yourself,” he said kindly. “It’s perfectly natural to think that way.” He sighed. “The real problem is that the legends are untrue.”

“What?” said Minder. “How can they be untrue? We have an unbroken record of the history of Green Comet. If it wasn’t true it would be revealed by the facts.”

“Oh,” said Stanton, “there aren’t any lies in there. The legends are based on actual events. The problem is they don’t show things the way they really were.” He glanced at Galatea and she nodded her encouragement. “I’ve seen the legends,” he said, “and they make fine stories. But none of them gives an adequate description of what their love affair really looks like.” He was looking at Elgin, but he was seeing Green Comet as it was more than fifteen centuries before. “The legends use fancy language to try to show it, but they don’t capture what it was really like. What it looked like and what it felt like.”

“What it felt like?” said Minder. “No one can know what it felt like except them.”

“I mean what it felt like to us,” said Stanton. “Everyone on the

comet could feel it. When you looked at them, they glowed. Their love radiated out of them and made us all feel good.”

Minder said slowly, “You’re right. The legends are all about them. Setting them apart from other people.”

“That’s right,” said Stanton. “And that goes both ways. They made Green Comet feel good, and the feedback made them feel more special. Not because they were apart from the rest of us, but because they were part of us.”

“We still think they’re special,” said Minder. “Everyone still looks up to Elgin.”

“Sadly, that just makes it worse.” He noted Minder’s disbelief and went on. “All it does is remind him of how it used to be. The respect and admiration, even the reverence, it only reminds him of the vastly more powerful feelings he had when the two of them were together.”

Minder’s face showed a blossoming understanding. He’d had an intellectual grasp on what the loss of separation must be like. Now he could feel it. All the trite homilies about no longer being whole gave way to the sense of amputation and the raw pain of the resulting wound that will not heal. He shivered. Now he had renewed respect for Elgin’s strength and courage. He couldn’t imagine how petty everything must appear to him.

~

There was a long silence. Elgin continued looking at the stars, a dark silhouette on the unchanging glow of the galaxy. The three of them watched him there, waiting for the right moment. Waiting for him to be ready. Finally they saw his shoulders rise and fall in a sigh, and Galatea said, “Come on.”

They joined him at the shell of the bubble, exchanging murmurs

of greeting and consolation, and looked out on the stars together. “It kind of makes you feel small, doesn’t it?” said Galatea, pointing with her chin at the vast display of light.

“And insignificant,” said Minder.

“Insignificant?” Galatea shook her head. “We might be small, but we’re not insignificant.”

“You’re right.” They were surprised by the sound of Elgin’s voice, and by the strength of it. “That sounds right.” He paused, then told them, “Fran said we’re like bacteria. And she meant it as a compliment.”

“Bacteria are small,” said Stanton.

“And they’re not insignificant,” said Galatea.

“I think I get it,” said Minder. “It’s like Green Comet and Orange Comet are bacterial cells. We’re going to divide and spread through the galaxy.”

“That’s right,” said Elgin. “That’s exactly what she meant.”

After they thought about that, Stanton said, “Elgin, we’re having a little get-together the day after tomorrow. We’re hoping you’ll be there.”

“Sure,” said Elgin. “We wouldn’t miss it.”

46.

THE GET-TOGETHER

The get-together was in a room off the Square, so they were flying there after breakfast two days later. Elgin wasn't saying anything and Minder was afraid to. He was castigating himself for being such a fool yesterday. He should have known better. He should have seen it coming. In hindsight it was obvious that Elgin wasn't ready to go on a talk show. But they'd been so convincing. They had assured him that they'd be gentle with Elgin, and it would be nothing more than a chance for the people to see him. Who knew the host would say something so stupid?

Minder was afraid to say anything, but he had to. They'd said almost nothing over breakfast, and now the silence seemed to be spreading. If they arrived at the get-together like this, it would cast a pall over everything, so he had to do something. "Elgin?" he said, cringing at the sound of his voice.

"Mm-hm?" said Elgin, looking straight ahead, concentrating on his flying.

"Are you all right?" Minder asked lamely.

"Mm-hm." Elgin wasn't helping at all.

Minder had to do this himself, so he went straight to the point. "I'm sorry, Elgin. I should have known better. I'm sure she didn't mean any harm." It embarrassed him to sound so pathetic.

They flew in silence for a few tens of meters, then Elgin stopped and turned to face Minder, who was able to stop within a meter or two. Elgin was frowning, but it was just for concentration, nothing like the

dreaded legendary face. It looked several times as if he was going to speak, but he said nothing for a long time. Unlike the talk show host, Minder was able to wait quietly through the silence. Not comfortably, but quietly. He knew Elgin would speak eventually, and finally he did. He said, “She said I could have any woman on the comet.” He was shaking his head. He still couldn’t believe it.

Minder blushed. He was disappointed in himself, but he also found himself feeling angry toward her, even though he knew she meant well. In her own mind she thought she was flattering her guest, a technique that had always worked before. This time, though, it earned her several minutes of stony silence. Elgin growled, “I don’t want any woman. I have Frances.” Then he clamped his jaw and glowered at her.

She compounded the problem by saying, “But she’s ...” stopping just in time. She made the same mistake Minder made. She was thinking that it was history, and Frances was a legend, rather than an ordinary living person. She dug herself a deep hole before she stopped digging, but her instincts finally came through. She was able to see past what she thought she knew, to see Elgin as a man in love with his woman, Frances. She got hold of herself and showed clips from his life, watching his face for the right reaction, keeping things going until she hit on the secret. Ask him about her.

It worked. He was happy to talk about her, as long as she stuck to the real Frances. He had no time for the blatantly foolish legends, and when she mentioned the Francesians she almost lost him again. But when she asked about how they met or about the things they did together, he was relaxed and talkative. She managed to salvage a pretty good show, and she knew instinctively that it would be one of her best, certainly the most memorable. Most importantly, when they signed off

Elgin wasn't frowning. He wasn't exactly smiling, but at least he wasn't scowling at her.

He had the same expression now, in the corridor, for which Minder was grateful. "I'm sure she meant well, Elgin," he said. "She talked to me after the show, and she apologized. I believe she really only wanted to give the people a chance to see you." Elgin nodded but still didn't say anything. "I'm really sorry," Minder said again.

Elgin finally spoke, but it was apparent his mind was on a different track. He said, "I need more practice, don't I?"

"What?" said Minder.

"Talking to people," said Elgin. "Having an ordinary conversation." He shrugged everything. "It seems like every time I talk to someone I don't know, I end up spoiling it."

"Spoiling it?"

"Yes. First the Francesians, then again yesterday." Elgin pursed his lips. "I need to learn how to talk to people."

"That wasn't your fault!" said Minder. "They should have known better."

"No," said Elgin. "I can't expect everyone to 'know better.' They can only be expected to know what they know." He nodded to himself. "I'm the one who should know better. I'm the one who knows, so it's up to me to do the right thing."

"But," protested Minder, "it's about Frances. They should give a thought to your feelings."

"Frances is a myth to them." Elgin's voice stumbled at that realization, but he carried on. "As am I. Our story has become nothing more than a legend. They don't think of us as real people."

"Well, they should!" insisted Minder hotly.

"Yes they should," agreed Elgin, "but until they do, I'm going to

have to make allowances. Especially when it's about Frances." His gaze turned inward. "Especially then."

"But why should it be your burden?" Minder asked softly. "Haven't you done enough? Haven't you given enough? Let them do it for a change."

"This is what Fran would have told me. When people hold you up above them, it's an honor. But you pay for that with responsibility that you can never drop. It is always up to you." Elgin took a breath and set his shoulders. "I shouldn't have forgotten that," he said.

There was nothing for Minder to say to that, so when Elgin flapped his wings and got moving again, he just fell in beside him. They flew in companionable silence, the walls of the corridor sliding smoothly by. Soon the sounds ahead and subtle changes in air pressure told them they were nearing the Square, and right on cue the entrance rose up beyond the curve of the floor. In a few moments they broke into the light and color and vibrant life of Green Comet's commons.

Elgin stopped a few meters in from the green columns, looking at the natural focus of the Square. The statues of him and Frances and Nigel still stood there, the orange columns of the opposite side making an impressive backdrop. Elgin shrugged and asked Minder, "Where to?"

Minder swallowed and turned to their right. He raised his arm and pointed to a balcony above the shops on the yellow side, right over against the orange wall. He looked apprehensively at Elgin's face, which showed surprise and a rapid series of emotions. To his relief there was no anger or rejection. "Is it all right?" he asked.

Elgin found his voice and, giving Minder a reassuring glance, said, "Yes. Sure. It's fine." He pushed off in that direction. "Come on," he said. "Let's not keep them waiting."

Elgin wasn't as calm as he looked. The prospect of going into his old apartment, the home he shared with Frances, hit him harder than he might have thought it would. Being invited to a get-together there by someone else felt strange. If he let himself, he knew he could wind up in a jealous, territorial outrage. The very idea that an outsider felt entitled to invite him there was inflammatory.

He asked himself what Frances would do, and the answer was immediate and obvious. She would laugh at the irony and take great delight in the company of friends. That made Elgin smile at himself and his mood changed instantly to one of anticipation.

As they approached, an iceberry patch resolved itself in his vision. It was on the wall to the right of their balcony, right where he and Frances had originally started it. Of course, this wasn't the same iceberry patch. That one was destroyed when Green Comet went into black mode to hide from the Scout. Now, in the name of accuracy, it was back where it used to be in this faithful replica of his old life. He altered their trajectory to take them to the iceberries rather than directly to the apartment.

When they got there he picked a big, plump one and popped it in his mouth. After savoring the mouth-watering burst of flavor, he said to Minder, "They're always best right off the wall, aren't they?" He looked at the small patch and the expanse of empty wall around it. "There's a lot of wasted space here, isn't there? Why such a small patch?"

"People wanted it to be like it was," said Minder.

Elgin was going to point out the foolishness of that when there was a buzz and a flash of color, and he found himself looking at a hummingbird. Speechless with surprise, he watched it plunge its beak into an iceberry and begin feeding. He glanced at Minder, who smiled and

nodded, then went back to watching the bird. It took a good long drink from the berry, then went on to another. Two seemed to be enough because it backed off, shot its tongue a couple of times, gave them a look and buzzed off. Elgin realized that the bird hadn't been flapping its wings while feeding. It seemed happily adapted to floating with its wings tucked away.

He asked Minder, "When did that happen?"

"Just a few months ago, actually," said Minder. "We decided to try a couple of breeding pairs to see if it would work."

"That must have been strange. How long did it take them to get used to microgravity?"

"Almost right away. The theory is that they have such a strong positional sense that the lack of gravity turns out to be secondary." He leaned in to examine the punctured, collapsed iceberries. "The big surprise was how they took to these. We started by putting out nectar for them, but they seem to prefer the berries."

"That is surprising. I'd have thought they'd need concentrated sugars. Iceberries are sweet, but not that sweet."

"That's exactly what everyone thought, but they seem to be able to adapt their metabolism."

"So, we're not the only ones who can adapt," said Elgin. He looked across the Square in the direction the hummingbird had flown, his gaze falling on the people there. His breath caught as he had a sharp vision of just how much they had adapted. From the warmth, security and especially the sense of belonging back on the planet, to this. He gasped at the vertigo when he visualized the isolation and enormous improbability of their situation. Then he thought of the hummingbird calmly feeding on an iceberry, and the look it gave them before it flew away. He chuckled and decided he would take it as a good sign.

He looked at the bare wall and nodded. He would see to it that the iceberry patch grew. "Come on," he said to Minder. "Let's go inside."

~

They went in by the balcony, as he often used to, and they could see that there were people in the right-hand living room. Stanton met them at the entrance, with Galatea, and Elgin caught a quick flash of concern on his face before it was erased by a welcoming smile. Past him Elgin could see the Doctor, his bald head shining softly in the glow from the ceiling. There was another couple, and it took a moment of staring before he recognized Buzzard. Then it was a simple matter to deduce that his companion must be Maria. But what was wrong with Buzzard?

A movement in his peripheral vision brought his head around and there was Nigel. He couldn't stop a flash of disappointment at the presence of Fran's greatest adversary, but he tried to keep it down. He caught a glance between Minder and the Doctor, wondered about it, then packed it away for later.

He turned back to Buzzard and Maria, puzzled. He moved forward and Maria's eyes sharpened, but Buzzard wouldn't look up. Elgin glanced at Stanton and the Doctor, looking for some indication, but they both reacted with discomfort. Minder was obviously trying to keep his expression neutral, and failing as usual. Nigel looked as if he didn't see anything.

"Buzzard?" he said, moving forward again. Simultaneously, Stanton moved to intercept him, Buzzard turned his face into the shelter of Maria's body, and she raised a palm to stop Elgin, her movements gentle but her eyes fiercely protective. For some reason it evoked a memory of the time Maria carried Buzzard in the hand of the smasher

that day in the Square. Elgin stopped, his face perplexed. He looked the question at everyone, and Stanton tried to answer it.

“Buzzard is having a little trouble these days,” he said, looking at his friend sheltering under the protective wing of Maria. “He over-extended himself and is having a kind of mental exhaustion. He can’t take too much stimulation or he gets anxious.”

Maria nodded and the Doctor confirmed it. “Stanton is right,” he said. “Buzzard needs a good long spell of rest and recuperation.”

Elgin asked the obvious. “Then what’s he doing here? And should we be talking about him as if he weren’t?”

“Ah,” said the Doctor. “Normally that would be rude, but in his condition, with his inability to interact directly, talking about him like this is a good way of including him.” He nodded assertively. “And he insisted on being here, just like the rest of us.”

“Insisted on being here?” repeated Elgin. “At this get-together?”

“Yes,” said the Doctor. “We all wanted to be here for this.”

Elgin looked at them all. Stanton nodded and Galatea winked at him. Maria smiled and Buzzard was peeking out from under her wing, though not making eye contact. Nigel nodded while looking in the direction of the Doctor, who looked deeply satisfied. “All right,” said Elgin to the Doctor, “what’s going on here?”

The Doctor, smiling broadly, started to speak, stopped, tried again and paused. After a murmur of laughter, he said, “After working for this for so long, there’s too much to say all at once.” Everyone made noises of agreement.

“Just start talking, Doctor,” said Elgin. “I’m sure it will sort itself out.”

“Okay,” said the Doctor, “I guess the best place to start is why we all wanted to be here for this.” He looked around and got general

agreement. They seemed to have decided that he could do the talking. "Very well," he said. "Elgin, you remember saying that you didn't want to be brought out of hibernation without a good reason, don't you?"

"Yes," said Elgin, his skin prickling. "And I remember being brought up for supposedly good reasons, too."

"Yes," said the Doctor. "Sorry about that."

"It's not your fault. It wasn't you."

"No. If they had asked me I'd have told them to leave you alone." Everyone voiced their agreement. "Unfortunately, I was asleep at the time."

"Never mind," said Elgin. "What's done is done. I assume you have a good reason this time." He swallowed and finished tentatively, "It must be about Frances." He looked frightened.

The Doctor hurried to reassure him. "She's okay, Elgin. Nothing has happened to her. She's still safe at the Center." When Elgin relaxed, he continued. "The thing is, we think we've figured out the problem." With a gleeful chortle in his voice, he said what he'd waited centuries to say. "We think we're going to be able to bring her up at last."

Elgin had nothing to say. His mind went blank for a moment, then filled with swirling fragments of thought. The Doctor waited, not pressing him for a response. Finally Elgin settled his brain down enough to speak, but what do you say about something you've hoped for so long? When it's been unattainable for so long that you've unconsciously begun to believe that it could never happen. How do you start to believe again? "Really?" was all he could say.

"Yes," said the Doctor. "We think we finally know what the problem is, and how to fix it. We have Buzzard to thank for that."

Elgin looked at Buzzard, who was now completely out from under

Maria's wing, though still looking nervous and fragile. He met Elgin's eyes, but couldn't hold them, looking down and away. Maria spoke for him. "Buzzard decided to study the problem," she said, "many centuries ago." She shook her head. "I couldn't tell you how long he's been doing it."

"But he's an engineer," said Elgin, "not a geneticist."

"I know," said Maria. "That's what I said when he wasted waking after waking. When the wakings got shorter and farther apart. When he got so deep into it that he began to lose the ability to function in the real world." She was looking at Buzzard, her eyes furious and glowing with love. "But he told me he had to do it. And he told me he would understand if I wanted to leave." Tears floated away from her eyes. "As if I could do that."

Buzzard struggled to speak. In a slow, tired variation on the repetitive way he spoke when Elgin first met him, he said, "Okay. Was okay. Not crazy." Then he buried his face in Maria's fur.

Elgin was almost overcome by their generosity. "I know you're not crazy, Buzzard," he said.

His voice muffled by Maria's fur, Buzzard struggled to say, "All done. Ten times. All good."

Elgin, his voice catching, said, "No magic?"

With a tired version of his delighted smile, Buzzard said, "No magic."

The room relaxed with a general sigh. Maria looked at Elgin over Buzzard's head, her smile acknowledging his gratitude. She lifted a hand, opening her embrace, inviting him to enter it. He flew across and joined in her protective hug, feeling Buzzard's body tense, then go quiet again. "Thank you, Buzzard," he said softly, gratified by the murmured response.

So close to Maria's face, he whispered to her, "Thank you, too." They stayed that way, mingling their breath, their warmth and their auras, until the moment was right for Elgin to gently break away. He said to her, "What else do you do? For work, I mean. When you're not taking care of Buzzard."

She grinned at him. "I operate smashers," she said.

Buzzard said, "Huh," which was his present version of the peals of laughter they were all used to. That allowed everyone to laugh, discharging some of the tension.

Elgin turned back to the Doctor, on the left side of the room, opposite Maria and Buzzard. "I want to know everything," he said, "but first I want to know why all this was kept from me."

"Of course," said the Doctor, nodding his glowing dome. "We kept it from you for two reasons. The first was a request from Fran."

That surprised Elgin. "She wanted you to keep it from me?"

"Yes. She made me promise that you wouldn't find out until there was at least a glimmer of hope."

"But why?" Elgin couldn't understand his Fran conspiring to deceive him.

"She was afraid," said the Doctor. "She thought that she might end up as some grisly, undead thing stalking your mind. Better, she thought, to just be quietly asleep."

Elgin reflexively rejected the idea. He knew she could never become that to him. But then he thought back to the misery and darkness he'd endured anyway, and he bowed once again to her greater wisdom. She knew him better than he knew himself, and she could foresee what was still unclear to him in hindsight. He nodded and said, "Okay. And the other reason?"

"The other reason," said the Doctor, "had to do with you." He

glanced at the others for moral support before saying it, then, "We had to be sure of your mental state."

"My mental state?" Elgin was shocked. They were talking about his mental state behind his back? Everyone was embarrassed when he looked at them. "There's nothing wrong with my mental state."

"We know," said the Doctor. "We know that now." He waited until Elgin caught his eye, then stated their case clearly. "Just as much as we're trying to return Frances to you, we also want to ensure that we return you to her. Healthy and whole."

Elgin was glaring at him, and he swung it around the room. All he saw, though, was concern and love, and he knew they were right. What would be the point of bringing her back to him if he was too messed up to be any good to her? He nodded. They were right again.

"You see," said the Doctor, "if we'd found you were unwell, then we could simply have delayed bringing her up while we treated you."

"Of course," said Elgin. "It's just the idea of it all happening without me knowing about it."

"I understand," said the Doctor, "and I apologize. But we couldn't very well tell you, could we?"

"No, of course not." There was a contemplative silence, then Elgin said, "How did you manage it, anyway? I can usually tell when something rings true or not, and nothing jumped out at me."

"Ah," said the Doctor, indicating Minder, "your minder is responsible for that."

Elgin looked at Minder, who blushed. "Minder?" he said incredulously. "But how? He couldn't keep a secret if he was the only person on the comet." Minder blushed harder.

"Well," said the Doctor, "you might have noticed that he blushes a bit."

“Yes. It caught my attention.”

“So, what better camouflage?”

The realization hit like a smack in the mouth. Elgin remembered all the times he thought Minder was over-reacting to something and realized that many of them could have been alerting him that something was up. He didn’t notice because he assumed it was just Minder blushing again for no reason. What better camouflage indeed. He grinned at Minder, who surprised everyone by blushing even harder. “You bugger,” he said. The resulting blush got murmurs of appreciation and a smattering of applause.

“You guys!” pleaded Minder, but he was smiling.

~

When they entered the apartment Minder stopped just inside, staying near the window with Stanton and Galatea. Now that Elgin was looking that way, Stanton caught his attention and indicated a display screen on the left wall, over the Doctor’s head. When everyone was looking he started a video, eliciting a gasp of recognition from everyone except Nigel. Showing on the screen was the familiar monochromatic record of the joining of the comets. The original joining, from before the Visitor. But this was a very specific angle. It could only have been taken by someone who was outside, far from Green Comet, where they could see around the curve of the little comet. This could only be Buzzard’s video of his smoke rings, all copies of which he had destroyed during the debates.

“What is this,” asked Elgin, “a recreation?”

“No,” said Stanton. “This is an original copy.”

“But, I thought Buzzard destroyed them all,” said Elgin. “During the debates, when we were making sacrifices.”

“You and everyone else,” said Stanton. “That was the idea.”

“You mean you and Buzzard held a copy back?”

“No. Absolutely not. Buzzard believed he destroyed them all.” Stanton grinned a wicked grin. “Buzzard’s a bright boy. He’s smarter than anyone I know. But this old fox is pretty sly too.”

“Huh,” said Buzzard. “Huh-huh.” His face, the eyes swinging between the screen and Stanton, was almost animated. Those who knew him could see his old grin underneath there.

“You people are full of surprises,” said Elgin. “Is there anything else?” He looked pointedly at the Doctor, who seemed to be the most like a host of the party.

“Well,” said the Doctor, “now that we’ve ascertained that you’re fit for duty, we might as well talk about bringing Fran up.”

That shocked Elgin, even though he now knew that was why they were here. Even though he thought he was ready for it, as ready as waiting fifteen hundred years could make him, the sudden immediacy shocked him. He found himself looking for some way to delay it. In truth, he was surprised to find that he was afraid of it.

“What is it, Elgin?” asked the Doctor gently.

“Well,” said Elgin, “it’s been so long.” His eyes were vulnerable and frightened. He swallowed and said quietly, “I’m so old.” He was afraid that they might have grown apart, especially as he kept aging while she didn’t. “What would she want with an old man like me?”

“You’re worried that you’re too old for her,” said the Doctor.

“Yes,” said Elgin. “She stayed young while I kept getting older. People will think she’s with her grandfather.”

The Doctor chuckled. “I think that’s a little extreme.”

“Yeah, well, what about our life expectancy?” said Elgin. “When I’m gone she’ll have years of being alone, and I know what that’s like.”

“Elgin,” said the Doctor, shaking his head, “have you looked in a mirror lately?”

“Sure. Why?”

“Haven’t you noticed that you look about forty?” The Doctor indicated their companions. “Haven’t you noticed that we all do?” He corrected himself. “Except Minder, of course.”

Elgin looked, taking care to really notice, and it was true. They all, with the exception of Minder, looked about the same age. As the Doctor said, they all appeared to be about forty years old.

“And it’s not just appearance,” said the Doctor. “All our organs, all our systems are close to the same physiological age. Hibernation and its maintenance and repair activities seem to keep us there. So, when we wake up Fran, you’ll be the same age.”

“Oh,” said Elgin. He looked at his hands, turning them over and back. They looked the same as ever, but only now did he realize the significance of that. He laughed at himself. “There’s something else I missed,” he said.

“You’re not the only one,” said the Doctor. “It took a long time before it dawned on me, too. Or anybody.” He nodded while everybody voiced their agreement. “I really don’t have enough data to make a proper estimate, but working with what I do have, and keeping in mind everything we don’t know, I think we should be good for at least another hundred years.” He frowned. “Effay,” he added. “If nothing unexpected happens.” He turned up his palms. “It’s nothing more than a guess, really.”

Everyone laughed, assuring the Doctor that they wouldn’t hold him to it. “We got it,” said Nigel, properly joining the conversation for the first time. “We should live another hundred years, give or take, but

it could be a thousand, for all we know, or we could start dropping tomorrow. Does that about cover it?”

“Yes,” said the Doctor, pleased that they understood. “But the likelihood of a thousand years, or of tomorrow, is relatively low. Splitting the difference at a hundred seems logical since that is closest to our normal range. It’s still just a guess, though.”

“It’s good enough for me, Doctor,” said Nigel. “I’m grateful for anything, really.”

“Mm-hm,” said the Doctor.

“Mostly I’m grateful that I lasted long enough to find the Spy.” Nigel gave a deep sigh. “Long enough to fulfill my promise to Frances.” He looked at Elgin, though not quite.

Elgin moved his head, trying to meet Nigel’s eyes, but when he finally did there was still no connection. He realized that here was something else he’d missed. Nigel was blind.

The silence told Nigel that Elgin had noticed. “Yes, Elgin,” he said, “I’m totally blind.”

Elgin stared mutely. He couldn’t think of anything to say, and his curiosity made him want to minutely examine Nigel’s eyes, to find something that his engineer’s brain could figure out. Finally his innate comet politeness made him speak. “I’m sorry,” he said. “What happened?”

“It was those fourteen years outside in a pressure suit,” said Nigel. He glanced at the Doctor, his sightless eyes including him. “The Doctor warned me,” he said. “He tried to get me to come in. To go to the Center and get fixed up. But I had a job to do. No one else knew as much as I did. No one else would have cared as much.”

“Fixed up?” asked Elgin.

The Doctor jumped in. He knew Nigel didn’t really want to go into

the details, so he did it for him. "Cancers," he said. "All those years of constant exposure to cosmic radiation did a lot of genetic damage." The Doctor shook his head. "I tried to warn him, but he kept brushing me off."

Nigel had turned his blank gaze down, obviously not comfortable with the exposure. Elgin said, "I understand, Doctor. Nigel had a job to do. A job for Frances. He couldn't concern himself with the possibility of getting sick sometime in the future."

"It was more than a possibility!" said the Doctor.

Nigel stepped back into the conversation. "It's not as bad as it looks, Elgin. It's the last thing to clear up, then I'll be fine."

"Why didn't you stay in hibernation? Why would you come up when you were still sick?" asked Elgin.

"The same reason as everyone else," said Nigel. "I had a request in to be brought up if there was to be an attempt to revive Frances." He raised his chin. "Whatever condition I was in."

Elgin could hear the music and it was good. He could finally see Nigel for what he really was. Not a fool or a villain for opposing Frances. He was obviously a good man whose dedication to the comet was at least as great as his own. As was his dedication to Frances. He said, "I understand, Nigel. Some things just have to be done, whether for the comet or for Frances."

Nigel nodded. "I knew you'd get it," he said. "We're more alike than you know." Again he looked at Elgin, his blind eyes not quite making contact. "I'm in love with Fran too, you know."

Elgin felt a little rush of jealousy, which he tried to quell. "I know," he said. "Everyone's in love with Fran."

"I don't just mean that," said Nigel. "I mean head over heels, forgetting to eat, flying into things in love." He paused but Elgin didn't

reply. "I was just like you," he said. "About a year before you got up, I was smitten too."

This time Elgin did speak. "Well, then," he said, "why didn't you do something about it?"

"I did," insisted Nigel. "I tried talking to her, but I kept ending up either tongue-tied or prattling. I got on the planning committee so I could be around her, but I could never bring myself to take advantage of it." He shrugged helplessly. "I wanted her, but I could never imagine that she could want me."

This was ringing bells for Elgin. He'd had all the same symptoms. The difference was that Fran had acted to overcome them, otherwise he probably would have ended up like Nigel. He was right, they were a lot alike.

"Well," said Nigel, "eventually I missed the moment. After a couple of months of dithering I just gave up. I knew I wasn't going to be able to do it, so I decided to save myself the stress." He laughed at his younger self, but not derisively. He had more of a kindly sympathy for him. "After that I tried to find ways to make myself more useful to her. To stay close, you know?"

"Yes," said Elgin, "I do. I most certainly know that."

"Then when you came along," continued Nigel, "and I saw the two of you together, I saw what could have been."

"Is that when you began to oppose her?" asked Elgin.

Nigel gasped in surprise, his mouth open but unable to speak. Sounds of protest came from the others. Elgin heard the voices of Stanton and the Doctor saying "No!" and, "It was never like that." Nigel spoke at last. "I was never opposed to her, Elgin."

"But the debates," said Elgin. "The things you said."

"Those were things that needed to be said," Nigel told him.

“I knew it and so did Fran. In fact, she asked me to fight hard. She said the comet needed it. She said we needed to make that decision in the face of the clearest of options.” Nigel’s gaze was now obviously in the deep past. “She knew,” he finished quietly, “that Green Comet would be better off if we went with our eyes wide open.”

Once again Elgin heard it. He knew Frances would have said exactly those things, for exactly those reasons. The music was harmonious. His respect for Nigel deepened and he felt ashamed of his earlier suspicion. The man had acted with honor and an honest sense of duty. Now, at last, he could see clearly. “I see now,” he said, “why Fran had so much respect for you.”

Pleasure blossomed on Nigel’s face. “That makes it worthwhile,” he said. “Fran’s respect means more to me than anything.”

Elgin looked at him, moved by empathy. He couldn’t imagine loving Fran that much and conceding her to someone else. “Do you ever wonder,” he asked, “what might have been?”

“Sometimes,” admitted Nigel, “but it never lasts long.” He smiled at Elgin. “As soon as I saw you two together, I knew it was right.”

“But it could have been you,” said Elgin.

“No it couldn’t. The difference between what I felt and what you guys had was immediately obvious. When you were together, you glowed. There’s no comparison.”

“I don’t know,” said Elgin. “If it was me, I don’t think I could be so generous.”

“Are you sure? If you saw that it was so right? If you saw Fran so happy, do you really think you would deny her that?”

Elgin thought about it and knew it was true. Nigel was right. They were more alike than he realized.

The Doctor broke the silence. “Why don’t we see if we can let Fran speak for herself?” he asked. “I think it’s high time we finish the talking and start the doing.”

They all agreed and Elgin said, “I’m ready. Let’s go.” He made as if to turn for the door.

“Hold on,” the Doctor said, laughing. “Just a minute. We still have to finish with the talking.” When Elgin turned back and tucked in his wings, he said, “There are some details you should think about.”

“Okay Doctor,” said Elgin, taking a listening pose.

“Right. So, you’re well aware of Frances’ imprinted genes.”

“Yes. They’re the reason she keeps getting sick.”

“That’s right,” said the Doctor. “At least, that’s what we thought.” When Elgin’s gaze sharpened, he added, “It turns out that we had those repaired properly the first time.”

“What went wrong, then?”

“We couldn’t figure that out.” The Doctor scratched his smooth head. “So we did the obvious. We repaired and activated the dormant side of the gene pair, just in case.”

“Don’t tell me. That didn’t work either.”

“No.” The Doctor spread his hands, reliving the frustration. “We were out of ideas. When Buzzard offered to do one of his deep analyses, we were glad of the help.”

When everyone looked at Buzzard he ducked his head to escape the intensity, but he raised a hand in acknowledgement. The Doctor said, “Buzzard’s work quickly showed that all our initial attempts were successful. Fran should have been able to live a normal life.” He shrugged expressively. “She should have been better than before, since

we managed to repair her imprinted genes.” He cocked an eyebrow. “That’s a real breakthrough, by the way.”

“But it didn’t help,” anticipated Elgin.

“No!” He raised his fists in front of him, as if to attack an unseen enemy. Lowering them to his lap, he said, “You have no idea how frustrating it was.”

“Well,” said Elgin, “I have some idea. But I take your meaning.”

“Of course,” said the Doctor, mildly abashed. No one could have a better sense of the frustration than Elgin. “Anyway, to shorten a long story, Buzzard finally figured out that the problem was in the telomeres.”

“Telomeres?”

“Yes. I won’t go all technical on you. Telomeres are little things that keep the ends of chromosomes tidy.” The Doctor saw incomplete understanding in Elgin’s face. “Like a rope, say. It needs some way of securing its ends so it doesn’t unravel.” That was better. “So, when Buzzard figured that out, we were on our way.”

Elgin said, “So, the telomeres were unraveling?”

“No,” said the Doctor. “That’s the thing. They were holding together just fine. That’s why we didn’t know there was anything wrong with them.”

“What was it, then?”

“When Buzzard analyzed it he didn’t stop there,” said the Doctor with a smile. “He took a good look at the telomeres and discovered that they weren’t working properly, even though they seemed fine by outward appearances.”

“Okay. Then you fixed them?”

“Hah!” said the Doctor, rolling his eyes. “If only it could have been that easy. No, we had to find a way of making them work without

unraveling.” He took a breath. “Anyway, that was long and difficult, especially for Buzzard.” He shook his head. “Can you imagine the variables?”

“No,” said Elgin.

“Me neither. But the upshot is that Fran’s telomeres will work and will never unravel. We hope, anyway.”

“You hope?”

“Oh, the odds are really good. It’s just that I can never promise a probability of one on something like this. It wouldn’t be honest.” He added in a reassuring tone, “But it looks very good.”

“I understand, Doctor,” said Elgin. “Thank you.”

“You’re welcome, but thank Buzzard mostly. We put a lot of effort into it but without his insights we’d have got nowhere.” He paused while Buzzard was showered with congratulations. “And you can thank millions of little machines as well, for many years of untiring, meticulous work.”

“You mean the nano tools?”

“Yes,” said the Doctor. “They look for blockages and whatnot. Scan and repair genes. Destroy cancerous cells.”

“I know,” said Elgin. “I mean, I’ve never worked with them, but I know about them.”

“Very good,” said the Doctor. “They move in liquid nitrogen, which is why we need to keep the sleepers a little warm, and they’re powered by induction.”

“I know most of this, Doctor.”

“Of course you do, but please indulge me.” When Elgin nodded, he continued. “These little machines can send and receive signals, and they combine to form a network. Each one has a tiny bit of memory and a tiny bit of processing power, but together they form a quite

powerful computer. The result is a machine that can analyze in the whole and act in the particular.”

“Okay,” said Elgin. “All things we learn during orientation.”

“Ah,” said the Doctor, “but something they don’t teach you in orientation is that all these features combine to create the conditions for complexity. There’s the large number of components, the high degree of connectivity, the, uh ...” He looked at Stanton, asking, “You know. Where the system gets energy from an external source.”

“Thermodynamic openness,” said Stanton.

“Right,” said the Doctor. “I always forget that one. Anyway, all these things go together and, under the right conditions, give rise to an emergent system. A novel entity that didn’t exist before and couldn’t be reliably predicted, but which is maintained as long as the conditions are met.”

“I know a bit about that,” said Elgin. “You end up with something called a complex, adaptive system.”

“That’s right,” said the Doctor. “Essentially you get a whole which is more than the sum of its parts.”

“Okay,” said Elgin, “so the nano tools work together to form this new entity. How does this affect Fran?”

“It has everything to do with Fran because it was her hunch that made us look at it and run the experiments.”

“Experiments?” said Elgin. “You experimented on Fran?”

“Not on her, as such. Rather, we experimented on the system, as suggested by her, to see if there might be something there we were overlooking.” The Doctor looked pleased with himself. “There was,” he said. “Or rather, there might be. If this turns out to be real, then the nano tools might be good for more than repair work.”

“Like what?” asked Elgin, content to let the Doctor indulge himself.

“Fran thought there might be something going on there, so she got us to build a detector to look for patterns. It took a long time and at first it didn’t look as if anything was happening. Eventually, though, when we looked on long enough time scales, something began to emerge.”

Elgin’s mind was jumping ahead, but he refused to allow it. “What?” he asked quietly.

The Doctor was so excited that he rubbed his hands vigorously. “Fran’s hunch was that there might be a form of consciousness down there.”

“This emergent machine might be conscious?”

“Kind of,” said the Doctor, “but more than that. Fran thought that because the nano tools crudely replicate the structure of the brain, and because they have similar connectivity to the actual neurons, then maybe the person has a form of consciousness. Or maybe a consciousness emerges that is similar to the person.” The Doctor shrugged again. “It’s really hard to say.”

“Are you saying that Fran might be conscious down there?”

“Well, yes, maybe.”

“You’ve got to send me down,” said Elgin. “You’ve got to send me down now.” When no one moved, he shouted, “She’s all alone!”

The Doctor raised his hands, saying, “No, no, no. It’s not like that.”

“What do you mean?” demanded Elgin, unplacated. “How do you know? She’s been alone for over fifteen hundred years!”

“Just wait, Elgin,” said the Doctor. “Hear me out.” When Elgin subsided, he said, “If what the detector found is really a sign of consciousness, and that’s still a big question, and if it’s her and not some other phenomenon, then it must be operating at an extremely slow rate.”

“Slow? What does that mean?”

The Doctor frowned, then said, “I won’t bother trying to lay out the whole thing. Suffice it to say that before she went down Fran arranged a little test. We were to begin a simple pattern and she was to reply by completing it.”

“Did it work?”

“Yes, it ...”

“Then it’s her. What else could it be?”

“I agree,” said the Doctor, “but please let me finish. At first we thought the experiment was a failure because we got no reply. We didn’t give up, though. We kept collecting and analyzing data and finally, after a long time, we began to see a pattern.”

“What do you mean by a long time?” asked Elgin.

“Years,” said the Doctor. “Eventually we calculated the ratio to be approximately twenty years to one minute.”

“Twenty years?” Elgin was already calculating how many minutes that would be for Fran, but he was also intrigued by the philosophical question. “How can something operating that slowly hang together?”

“That’s the question, isn’t it?” said the Doctor. “That and whether it’s really her, and we won’t know that for twenty years either.”

Stanton cleared his throat. “It’s not necessarily impossible that something could work that slowly. Our brains don’t calculate as quickly as computers do, by the same kind of ratio, and we don’t have a problem with that.”

“That’s true,” said the Doctor. “We can’t dismiss it simply because of the time factor.”

“But calculations aren’t consciousness,” said Elgin, tempering his hopes.

“That’s also true,” said the Doctor, bringing them back to nowhere.

Everyone was quiet, thinking about the possibilities, then he said briskly, “There’s only one way to find out, and that’s not going to happen today. So meanwhile, let’s have some tea and tell some stories.”

No one had an argument with that.

47.

ELGIN GOES TO SLEEP

“Do you remember when I told you about Fran’s telomeres?” the Doctor asked Elgin. They were having a final meeting in his office before Elgin went down.

“Sure,” said Elgin. “I’m practically an expert now.” He was nervous. This was going to be the biggest thing he’d ever done, and he didn’t know what to expect.

“Of course,” said the Doctor, “but there was one thing I said that I think didn’t really register.” Elgin became alert and apprehensive. “When I said her telomeres would never go away, I didn’t just mean that they would be working again.”

“What, then?”

“We think they might be working better than ever. Normally our telomeres get, well, used up during our life.” He was demonstrating with his hands, plucking off telomeres one by one. “Fran’s weren’t, which was why we couldn’t see what was wrong.”

“But you fixed that, right?”

“Yes. At least we think so. Now, if all goes well, her telomeres should work again.” The Doctor raised a finger. “But now they won’t wear out. They won’t get used up.”

“That’s good though, isn’t it?”

“Yes. It’s very good because the loss of our telomeres is implicated in cell death, which leads to aging and our own death.”

Elgin became very still, even holding his breath. Very quietly he said, “Do you mean Fran might live forever?”

The Doctor raised an admonishing hand. "I can't say that," he said. "There are too many contingencies. Too many unknowns."

"But it's a possibility," said Elgin.

"Yes, it's a possibility. But we'll have to wait and see, as with everything else." He listed a few. "Is Fran conscious down there? Is anything conscious there? Will Buzzard's modifications work? Will Fran be able to stay up this time?" He turned his palms up. "The least of it is whether she'll live forever."

"I suppose you're right," said Elgin. "One step at a time."

"That's right," said the Doctor. He became more somber and Elgin could tell that something serious was coming. "We also have to consider the worst possibilities. You have to be ready for them. Not that you can't have hope and optimism, only that you should be prepared to deal with the opposite."

"Okay."

"The longevity question won't be answered for a long time. We'll have to monitor her over one or two wakings to see if she ages normally." The Doctor smiled a cautious smile. "You know, if this works for her, there's no reason why we can't do it for everyone." He caught himself. "With their permission, of course." The comet had learned its lesson about making modifications without asking.

"It's not something I need to worry about now, though."

"No," said the Doctor. "And the same with whether she'll be okay when she gets up. We'll only know that later as well." He looked Elgin in the eye and said, "Your more immediate concern is what you're going to find when you get down there."

"Or whether I'll find anything," said Elgin. "It might be like any other hibernation. I'll go to sleep and next thing I know I'm waking up."

“Quite right,” said the Doctor, “But our detector does show something, and it’s reasonable to assume it will show something in your case as well. It seems to imply that you’ll have some form of awareness.” He finished quietly, “We just don’t know what it will be like. No one has ever reported anything like it. We have to be ready for anything, including the possibility that it’s causing her harm.”

“What kind of harm?”

“I don’t know, but there’s a chance that such a situation could drive a person insane.”

Elgin sat quietly for a long time, then said, “If it could do that to her, it could do it to me. What use will I be to her then?”

“That’s true,” said the Doctor, “but she’s been there for a subjective seventy-five minutes, if our estimates are correct. You’ll only be there for a minute.”

Elgin stared at the desktop between them, not speaking and not moving while the Doctor waited patiently. At last he drew a deep breath and looked up. “If it’s that bad then I can’t leave her there alone for another minute,” he said. “Let’s get going.”

~

Elgin’s senses fell away as he sank into deep sleep, but his sense of mission persisted. He felt as if he was on his way to rescue Frances, to lift her out of this limbo and bring her back up to the light and life of Green Comet. As darkness closed in on his awareness, he thought of her and all he’d learned, both at the get-together, and later in the Doctor’s office.

Could she really be conscious down there? What if she’s not? It might just be random noise and they’ve seen what they wanted to see. Worse, what if she is there, but she’s been deranged? That frightened

Elgin as nothing before. Even their brush with the Scout was mere mild apprehension compared to that. As the light in his mind dwindled to a dot, he bravely faced that possibility. “Well, Elgin,” he said, “if she’s in trouble then she needs your help, that’s all.” The familiar flavor of steel infused him, and he descended in calm resolve.

He sank into darkness, on the practiced approach to oblivion. There was a moment of blankness, or was it eons? He only realized it had been blank when he became aware of the gray light. His heart fell and he tasted the bitterness of disappointment. They had failed and were bringing him up again. Damn them!

“Damn you!” he roared.

Out of the fading echoes he heard a tiny golden sound. The most beautiful chord in the universe. He was washed in colors and tastes so familiar, so sharp that they hurt. In flutters of rose he heard her say, “Elgin? Elgin, are you there?”

The gray light began to resolve. Was that her face?

“Rannie?”

BOOK II
PARASITE PUPPETEERS

For Kevin

1.

THEY WAKE UP

“I see the gray light,” said Elgin.

“Me too,” said Frances. “See you up there.”

He lost contact with her in the gray, as they each made their own ascent. The comet was waking them up again, so it must be time. As he navigated the confusion of returning perceptions, he was able to maintain the thread of his consciousness. After thousands of years and many hibernation cycles, he’d got the hang of it.

The discovery of consciousness in deep hibernation was a big help there. After Frances discovered it, Elgin found that practice brought him slowly closer to continuous awareness. Now there was just a blink of blankness when he made the transition each way between the two different time scales. In hibernation, while his mind was sharing the nano tool computer with Fran, they experienced time at the rate of one minute for each twenty years of comet time. This time they’d spent a nice three hours together.

~

The first time, those many centuries ago when he was going down to see if she was there, they’d only had a minute. He didn’t want to waste any of it but he knew it was best if she heard it from him, so he told her she was a saint.

“A saint?” she asked.

“Yes,” he said. “I don’t want to use our whole minute on it, but I wanted you to be prepared.”

“We’ve only got a minute?”

“Yes. There’s a difference in the times,” he said. “It’s a lot slower down here. I’ll explain it all when we’re up there.”

“Okay,” she said. She looked in his brown eyes. “What’s this about saints?” she asked.

He sighed. “It’s the Francesians,” he said. “I’ve just met them myself. They’ve named their theology after you and made you their saint.”

She hesitated. “Francesians?” she asked. “What does that mean?”

“It’s not bad,” he said. “They’re a small sect.” He pulled a face. “I’m a saint, too.”

“You too? Who else? And how do you feel about it?”

“Nobody else that I know of.” He frowned. “I’m afraid I told them off.”

“Really? Should I ask?” She was suppressing a grin.

“Well ...” he said reluctantly. She was looking at him so he had to finish. “I guess I told them to wait until we were dead so we couldn’t contradict them.”

Her laughter was still ringing when the gray light came.

2.

TEA AND BISCUITS

When they got up there was so much to do, so much to talk about. First on everyone's list was telling Frances that Buzzard had figured out the problem and that she should be all right this time. Naturally the Doctor had to qualify that. He agreed that she was probably cured and that she could probably count on having a completely normal waking this time. But he was compelled to add that they couldn't be sure until she actually managed it. What they didn't talk about was that everyone would harbor a grain of doubt and uncertainty for many years, and even many wakings, because there had been so many disappointments in the past.

Fran didn't let that stop her enjoyment of being up and among her friends once again, and Elgin didn't let his anxiety cloud the moment either. If this didn't work out and she was taken from them again, then they would deal with it as they had done before. Meanwhile, they both tacitly agreed that they would act as if she was back to normal. They would move back into their apartment, on the yellow wall, next to the orange, and get back to living their lives.

~

They were right to be optimistic. They had a full twenty year waking of good health, and were able to get a lot of good work done. They had plenty of work to do because they and their companion, Orange Comet, both decided to reduce their waking populations to conserve resources for the crossing. Since they calculated that it would take

seven thousand years to enter the Oort Cloud of the neighboring star, they had to be practical. The reduced population of only two hundred active wakers meant that there was plenty of work to go around.

On Green Comet, with its population of ten thousand, the new regime meant that each person would be awake for twenty years out of each thousand now, rather than out of each hundred. Orange Comet's population was only four thousand, so they were up for twenty years out of each four hundred. Never the ones to miss an opportunity, they would be able to see whether the people of Orange Comet would age and die any sooner than the people of Green Comet. Both populations had the benefit of the nano tools working on their bodies in the hibernariums, but this would show whether Green's extra time down, or Orange's extra time up made any difference. Naturally, once Fran's telomere procedure proved out, the potential for indefinite longevity added another angle to the experiment.

~

Once they got settled in and they'd had a nice visit, the six were sitting on the balcony overlooking the Square, eating biscuits and drinking iceberry tea. Fran said, "I like that it's square now. It seems more natural."

"I know what you mean," said Galatea. "It never seemed right before when it was shaped like a shoebox."

They made comfortable noises of agreement while they enjoyed the grand proportions of it. No one spoke while they sipped and nibbled. Everyone appreciated how special the moment was, to be together again here after everything. The original Five. The hand that held off annihilation. Plus one more, Galatea, who had finally got Stanton to see that her gruff ways were signs of love.

But not everyone was there. “I just wish Buzzard and Maria could be here,” murmured Fran. “Then it would be perfect.”

No one jumped in to explain. She knew what it had cost Buzzard to help her, and she didn’t need to hear it again. He needed a good long hibernation to repair the damage he’d done with his obsessive pursuit of her cure, and Maria wasn’t going to let him do it alone.

Fran said, “They’re probably together right now, having a nice talk.” She looked at the Doctor. “You set them up, right?”

“Yes,” he said, “but it’s too early to tell if it’s working.”

“I suppose,” said Fran, “but I don’t see any reason why not.” She looked at the Doctor, whose bald head reflected the Square’s sky-lighting as he nodded his agreement. “It’s the same setup as Elgin and I had, right?”

“That’s right,” said the Doctor. “It should work, and if I had to guess right now, I’d say it probably is.” He shrugged, smiling at himself. “But, you know,” he said, “it’s just probabilities.”

They laughed along with him. They knew his cautious, sceptical nature. “We know, Doctor,” said Nigel, his laughing eyes bright and clear. “Certainties are hard to come by in your business.” He blinked theatrically, focusing on the people and things around him, making his regained vision obvious. “How many times did I hear you say that I would probably get my sight back, but that there were no guarantees?”

“Well, it was true,” insisted the Doctor. “The probability was high, but it did not equal one.” He couldn’t help grinning back at everyone. They knew him well, but so did he. His fastidiousness in this area was easy to make fun of, but they all knew it would never change. It was part of his nature to treat his patients and their conditions with clear-eyed honesty, and they wouldn’t want it any other way.

“Anyway, Doctor,” said Fran, “how long do you think it will be before Buzzard can get up?”

“Well,” he said, pausing for effect, “that’s hard to say.” After the laughter and groans, he said, “Buzzard’s wakings were getting shorter and his sleeps were getting longer while he worked on your telomere problem. What he needs now is a good long spell in the Hibernarium.” He looked out over the Square and thought for a moment, then nodded. “He might as well stay there until next time we get up.”

“A thousand years?” asked Fran, surprised.

“He probably doesn’t need a thousand years,” said the Doctor, “but he needs more than ten or twenty. So, since I’m sure we all want to be there when he wakes up,” they all agreed emphatically, “he might as well stay down.”

Stanton spoke up. “I’ll miss the bugger,” he said, contemplating a full waking without him, “but it’s for the best.” Galatea patted his arm while he cleared a sudden huskiness out of his voice. “Better to have him healthy,” he said. “And it’s not as if we’re going to notice the time passing once we’re in hibernation.”

“Not much time, anyway,” said Fran, thinking of the slow consciousness they could now expect down there. “Say, Doctor,” she said, “would it be possible for more than two people to share?”

The Doctor looked at her in open-mouthed shock. “Oh, for goodness sake,” he said, but he was thinking about it.

3.

ONE CHORE AT A TIME

They put in their twenty years, and it was good. It would have been better with Buzzard and Maria, but it wasn't so bad when they knew they were going to see them again.

There was a lot to do. They had to re-engineer their systems to serve one tenth of the population. They closed off some areas and settled inward, making their village smaller, preparing for the long crossing. Orange Comet was doing the same, and they contacted each other at least once a day, exchanging messages with a twenty-four hour lag. The frustration over the lag no doubt contributed to the discovery of a way to communicate instantaneously.

Once they realized it they knew they should have seen it right away. Back when they used the cosmic ray method to talk with each other without being discovered by the Visitor, all the gold atoms they used were bound by quantum entanglement. Anything that happened to one of them would be instantly observed by the rest. At the time, the recipient only needed to retrieve one atom to have the whole message, so they didn't bother with the others. Now, using the Rosetta Protocol, they sent a cosmic ray message to Orange Comet, holding back some of the gold atoms in confinement on Green. When Orange deciphered the message, they collected as many of the atoms as they could find and put them in confinement on their comet. Now they found that they could send messages back and forth simply by changing the state of their own atoms. The other comet would see their atoms change immediately and a conversation could ensue.

That was the theory anyway. In practice there were a lot of technical puzzles that they had to solve. Their first detectors were too simple to support a complex data stream, and their input methods weren't much better. They managed a data rate at the beginning that would barely have accommodated a proficient Morse code operator. It was better than waiting, though, and large, complex messages could still be sent by radio. Eventually, within their first waking, they improved it to the point where they could maintain a continuous connection with real-time audio and video.

They kept in close contact down the years. It was surprising what a difference it made, having a companion on the long, slow crossing. It was a comfort to know that they weren't alone out there in the cold void between the stars. They had someone they could talk to, share experiences with. In a way it gave them a village twice the size. That wasn't only good for psychological purposes, either. It also gave them twice the mental resources for solving problems, as well as two distinct ways of looking at them. It was the cometary equivalent of two heads being better than one.

~

The six of them worked out their twenty year stint, then went down for nine hundred eighty years of hibernation. The comet carried on, a small village with continually changing inhabitants creeping slowly across interstellar space. When they got up again, Buzzard and Maria were there. Buzzard was well. The rest and rehabilitation had done him good, and he was his old self again. That is, he was the happy, smiling Buzzard of old, his face often illuminated by delight. But he had also regained the confidence and maturity he had after defeating the Visitor's scout. Maria wore an expression of beatific satisfaction.

From then on the eight of them stayed on the same schedule, sleeping and waking together. Their arrangement wasn't unique. It was replicated by other groups that didn't want to be broken up, whether families or other circles of friends like themselves. It was common enough that the planning committee looked into it to make sure that it wouldn't cause any problems. They took it up on one of the rare occasions when Winston agreed to chair the planning committee. They might have wanted him to take the job on every waking, but he insisted that he needed to do other things. He wanted to avoid the danger of an assumption that the chair belonged to him. That kind of thinking would lead to trouble, as might any permanent cliques of wakers if they became too large.

To avoid that, the planning committee instituted procedures that would ensure continual mixing of the population. Small groups of friends or relatives, not much bigger than the eight, were fine to keep together, but at all times the great majority of the wakers would be heterogeneous. There were still problems when two or more cliques were up at the same time, and tribal impulses could lead to vindictiveness and conflict, but there was always a large majority of disinterested citizens to quell it.

It was that kind of fine tuning that kept things fresh, or at least as fresh as they could be in those circumstances. When your community exists essentially the same for thousands of years, it's easy for things to get stale. It was mitigated by the fact that no one had to put up with it for more than twenty years at a time, as well as the constant turnover of citizenry. They needed more, though, and one thing that helped a great deal was the ongoing search for comets that they could capture to add to their resources.

When they picked up their second one, there was some debate

about how they would attach it. Should they add it to the one that was already there? Maybe they should stick it on the opposite side of the big comet. They finally decided to put it sixty degrees away from the first one, resulting in a configuration similar to a water molecule, with one big oxygen atom and two smaller hydrogen atoms. Given the primordial nature of water, as well as its ubiquity in their lives and in the very substance of their comet, they found deep satisfaction in their choice.

This was how they crossed interstellar space. Not with rockets blasting, but quietly, one chore at a time. And this was what Elgin and Frances expected to find when they came up after their three hour visit. They expected to find the people quietly preparing for their next chore, only this was a big one. This would be the biggest thing to happen on Green Comet since they defeated the Scout and left their own star. Elgin and Frances had opted out of the waking rotation for a few cycles, choosing to stay in hibernation for thirty-six hundred years. Now the big moment was here, and they were being brought up to take part in it.

They were expecting to wake into an atmosphere of purpose and anticipation. That's why they found it so confusing.

4.

VACUUM

Waking from hibernation was easier than it used to be. For one thing, it was two days now instead of four. Their techniques were refined and their technologies improved such that, by the end of the second day, most people were up and about. In addition to that, people tended to be less confused and disoriented because of their nearly continuous consciousness, thanks to the nano tools.

So, in spite of the explosions of color in the gray light, and the tiny sounds gathering down by his eardrums, Elgin was able to maintain a coherent awareness throughout. That made it more perplexing when he realized that something was missing, and even more alarming when he realized there was no minder. He was being tended entirely by machines.

The process of re-animating still involved cycling in and out of sleep, and he found he could perceive a little more each time he woke up. He gradually became aware that he was sharing the recovery room not only with Fran, but with three other people as well. Through their disjointed senses, and by their various croakings and garglings, they were able to establish that they were five. It was the original five. The Hand. For some reason they were being brought up together. And yet there was no one here.

~

Elgin could see in his peripheral vision that something was moving. It wasn't Frances, in the bed next to him. She was lying still, and

he could somehow tell that her attention was focused in the same direction as his. He relaxed his vision and allowed it to get a general image of his whole field of view, and he was able to locate the motion beyond the foot of her bed and across the floor on the other side of the room. It was Stanton's bed and he was definitely moving.

Although waking was easier than it used to be, there were still problems. The most persistent and most serious was vertigo. About the end of the first day of recovery and well into the second, at the time that they were regaining full mobility, vertigo took over. It wasn't as bad as it used to be. It wasn't terrifying and it wasn't completely debilitating, but it still made things extremely difficult. That's why it took over ten minutes for Elgin to turn his eyes and his head, one millimeter at a time, in Stanton's direction.

He wasn't moving randomly or aimlessly. Stanton had one leg out of bed, its foot reaching and groping for the floor. He was lying flat on his back, with his head on his pillow and his eyes squeezed shut. The only thing moving was the leg, with its questing foot.

Finally it reached the floor, and once it got a good, solid grip the other leg started moving. In another half hour Stanton had both feet stuck firmly to the floor, and after a brief rest, he began pulling his body out of bed. That was a painful process to watch, as he repeatedly suffered violent vertigo.

All his progress was nearly undone when one of the minder robots appeared and tried to put him back into bed. He struggled mightily, pushing at it with his arms and legs, growling inarticulately, until it stopped. After a few minutes of rigid immobility, his eyes screwed fiercely shut, Stanton resumed his struggle.

Elgin realized he must have dozed off when, apparently from one moment to the next, Stanton moved from the bed to the middle of the

floor. He gave himself a nasty bout of vertigo when he automatically turned his head to look. When he was able to open his eyes again, he could see that Stanton had his shut. He had his hands stretched out in front of him, reaching blindly, while his feet slowly, methodically, unstuck and moved forward in tiny steps.

At last Elgin saw what he was up to. He was headed for the doorway and the control and display panel beside it. At this rate he should be there within an hour, even though he had to fend off his minder every time he stopped to rest.

It was easier for Elgin to keep his eyes open than it was for Stanton, because he wasn't moving. Every time Stanton opened his eyes to navigate, he swayed dizzily and had to stop, arms thrown out, until he regained his balance. Elgin saw his chance to help, and when Stanton looked as if he was going to have to take another look, he said, "Right, ten," to let him know that he needed to turn right ten degrees. At least he meant to say, "Right, ten," but it came out so garbled that even he couldn't understand it.

He kept saying it, forcing his throat and tongue to obey him. Each time it got a little better, and finally Stanton closed one fist, thumb erect, and slowly rotated his body ten degrees to the right. Then he resumed his slow, tiny steps in the right direction. Elgin continued to provide guidance, and when Stanton got close to the door he said, "Two meters," repeating it until it sounded almost like he intended.

At last Stanton reached the wall. By the sense of touch he located the panel and got his hands on either side of it. Then he stood there, feet spread and planted on the floor, hands gripping the wall, while he breathed calmly and prepared himself. When he was ready, he opened his eyes and tried to read the panel. It took about ten minutes before he could settle down his vision enough to see it, then settle down his

brain enough to understand. He tried several times to say it clearly enough, but they finally heard him say, “Vacuum.”

“Oh,” Elgin heard from behind him. It was Frances, and he barely caught himself before he turned to look at her. He didn’t need to see her to understand her, though. Somehow she managed to get sentences of meaning into that one syllable. And he heard the music in it, so he knew she was right. The fact that there was vacuum outside their door meant that the situation they were being awakened into was going to be bad.

Stanton stayed locked in position until he was ready to move again, then he called, “Minder.” The little robot that he had been fending off as it hovered around him moved tentatively closer, but didn’t try to touch him. He held out one arm and said, “Bed,” and his minder gently pulled him back across the room and tucked him in. He let out a great sigh and fell into a deep sleep.

Elgin had been able to turn his head almost as fast as Stanton was pulled across the room, and by the time his friend dropped off, he’d turned it the rest of the way to look at Frances. She took a while to bring her face around from watching Stanton, and when he saw her expression he knew she was worried. Given the consistent accuracy of her intuition, he was worried too.

~

As the rest of their second day passed, so did their vertigo. Their voices rapidly improved too, so even before they were able to get out of bed, they were able to talk almost normally. The fact that they all had the same questions and none of them had the answers didn’t stop them. The Doctor summed it up when he said, “The lack of people and the presence of vacuum doesn’t look good, but there’s nothing we can do

about it now.” They murmured their agreement, and he concluded, “What I want to know is why we were wakened. Why the five of us?”

That was a good question. Why them? And was it only them? Could there be other rooms with other people waking up? If so, why weren’t they being told that? The more they thought about it, the more they were sure that it was only them. Only the five of them had been brought up, and apparently there was no one else here who could talk to them. Only machines, and they had no conversational skills.

“The Five,” said Fran. Into the attentive silence she added, “One hand against annihilation.” She let them think about that, then explained. “The last time we were together like this was when we faced down the Scout. Now, I think Green Comet is in danger again, and someone, or something, has chosen us to deal with it.”

That rang a bell with Elgin. Why else would the five of them be brought out of hibernation in this odd way? His sense of right told him that she probably had it right. But there was something that wasn’t right, and he told her, “But we’re not just five anymore, are we?”

“No,” she said, “we’re not. But whoever, or whatever, made the decision still thinks of us that way.”

“Then we need to bring them up, too,” said Elgin. “Buzzard and Maria and Galatea.”

She was thinking about it, and it looked as if she was going to agree with him, but the Doctor butted in. “No,” he said firmly. They all looked at him, and he went on to explain. “I mean yes, we should wake them up. They belong here with us.” He was adamant, though. “But not until we know what’s going on.”

They all agreed with that. They wanted their friends with them, but they needed to know what would be in store for them first. They needed to know if there would be a point to it.

5.

THEY EXPLORE

As soon as they were able, they got up and found out what the rest of their room could tell them. If the main door had vacuum on the other side, were there any other exits, for instance. Stanton was up first. Rather than taking it out of him, his excursion seemed to help. He was followed by Nigel, then Fran and Elgin together and finally the Doctor.

Stanton concentrated on the equipment in the room, especially the terminal, so it was Nigel who found the second exit. He followed one of the little robots into the alcove where they stayed when not in use, and found a small door at the back of it. With his unparalleled experience at surface excursions, gained during fourteen years of searching for the Scout's spy, he quickly scanned the control panel to see what was on the other side.

"It's an airlock," he told the others back in the room. "Rather, not a real airlock like you'd find at the surface." He used his hands to try to show them. "I think someone has set up an ad hoc one, using a room on the other side of that door."

"But," said the Doctor, "why would anyone make an airlock in the middle of the comet?"

"I don't know why," said Nigel, "but it might mean that these rooms are the only part of Green Comet that's not a vacuum."

"Then where ..." began the Doctor, but he never finished. It was obvious to everyone by now that there was no one out there.

They were all thinking that, but none of them wanted to say it. Elgin looked at Fran and saw sadness in her face. If he wasn't sure

before, he was now. They had to assume something terrible had happened and, somehow, the two hundred wakers were no longer there.

It was Fran who spoke first. She said, "There's nothing more we can learn here, I think." She looked at Stanton. "Unless you've found anything?"

He'd been on the terminal, running systems analyses and trying to learn about the comet with remote sensors. He shook his head. "Nobody is answering my calls anywhere. All the systems I've checked are either shut down or they're not functioning for some other, unknown reason." He kept his eyes on the display in front of him. "I haven't found any air anywhere, and all the temperature readings are cold. Outer space cold. It's as if someone turned everything off and flushed it out." He pointed at one red light on his readout and said in an unbelieving tone, "The main hatch, the big one, is hanging wide open." He shook his head. "It's never open."

No one could think of anything to say. Elgin looked at Frances, and she turned her face toward him, but she didn't meet his eyes. She was looking in his direction, but she was focused over his left shoulder, past his wing top. Elgin glanced over his shoulder, but there was nothing there to hold her attention. When he looked back, she was back, and he could see that she'd thought of something. She looked at Stanton.

"Have you checked to see if the radio's working? Or the cosmic rays?" As he turned to his terminal she said, "We need to get hold of Orange. Maybe they know what happened."

Stanton said, "I've got the radio." He concentrated on his readouts, then said, "I'm going to need to work on it. It's drifted and I'm going to need to recalibrate it. Get it aimed right again."

"That's promising," said Fran. "What about the cosmic rays?"

Stanton shook his head again. "I can't do that from here. You have to be right there."

"Can you tell if it's still okay?"

"Well," he said, "I can tell it's powered down, but that's all." He looked at her. "It should be okay, though. The gold atoms should still be entangled. It's just a matter of getting the equipment running again, but I have to be there for that."

"Okay," she said, "concentrate on getting the radio working. Meanwhile," she turned to Nigel, "we should find out what's beyond that door."

"I can tell you quite a bit already," said Nigel. "It's got normal air pressure, the usual percentages of oxygen and nitrogen, and no toxic components." He frowned. "At least, none that are known to the detectors." He shook his head and shrugged. "I guess there's nothing we can do about unknown ones anyway."

"No," said Fran. "This whole thing is one big unknown. Every time we do something, we'll be taking a chance."

"Right," said Nigel. "So, as far as I could tell, the air out there is the same as the air in here. And the temperature is normal, too."

Fran looked at Elgin and the Doctor. Stanton's head was still bent over his terminal. "What do you think?" she asked. "Should we open it?"

"Yes," said Elgin. "Definitely."

"It might be risky," said the Doctor, "but we've got to find out what's going on here." He looked around the room. "I don't think we were wakened to stay in here."

"Me neither," said Fran. "Nigel, will you do the honors?"

Nigel took one last look at the panel, just to be sure, then put his hand on the control. "Here goes," he said, and pressed. The door

swung smoothly inward and lights came on in the room beyond. He surreptitiously released the breath he was holding and stepped through.

The others followed, then they stood and looked around. The room was small. On their left was another door, and against the wall on their right was a large storage cabinet. Nigel went to the door and studied its panel. "Vacuum," he said, confirming their suspicions. They really did seem to be in a small bubble of air and warmth, surrounded by cold and vacuum.

The only other thing to look at in the room was the cabinet. Elgin went over and opened it, swinging the doors wide and stepping back so they could all see clearly. Hanging there, as much as anything can hang in microgravity, were five pressure suits. That made sense. There were five of them and this was an airlock after all. But their eyes were drawn to the bags covering the hands and feet of the suits. None of them had seen anything like that before. Elgin stepped closer and examined the black and yellow tape applied liberally to hold the bags on. He reached for it.

"Don't," said Nigel. "That's emergency repair tape."

Elgin leaned in and closely examined the suits, but he couldn't see any damage that would justify the tape. "There's nothing wrong with them," he said. "Why would someone tape bags over the hands and feet?" He looked at Fran.

They all looked at her, instinctively expecting that the answer would come from her, if there was one. She turned her palms up. "I don't know," she said, "but we have to assume there's a good reason." They all nodded and she added, "Someone went to the trouble of setting this up." She stared at the suits, thinking. "But they did it in a hurry."

She pointed. "They used much more tape than they had to, if they'd taken their time."

Elgin said, "You're right." He pulled the hand of one of the suits closer to his face. "This is quite sloppy. They've just made up for it with more wraps."

"It's not just that, though, now that I think of it." She gestured to indicate not just the airlock and the pressure suits, but their recovery room. "Everything seems hasty. They brought us out of hibernation, or maybe arranged for the robots to do it. They prepared these two rooms, but nothing else." She put her fists on her hips. "And no explanation. No message, other than those bags."

"And the vacuum," said the Doctor. "Maybe they didn't intend it, but I think the vacuum is a message, too."

"That's right," said Fran. They all looked at the outer airlock door, which looked mundane, but which seemed to be bulging with secrets. She turned and led the way back into the recovery room, where they closed the door and congregated around Stanton at his terminal.

When he looked up, Fran asked, "Have you learned anything?"

He shook his head. "Just more of the same." He gestured at rows of red lights on his display. "As far as I can tell, every door in Green Comet is open."

"Every one?"

"Well, I haven't checked them all yet," he said, "but so far, yes. It looks as if someone has deliberately opened Green Comet up. Like they wanted to be sure it would flush out completely."

"So the vacuum is definitely not an accident," she said pensively, her eyes unfocusing. They knew the signs and they waited. Soon enough she was back. "Whoever set this up," she said, "was in a terrible hurry." They nodded. "They were afraid of something, or

something was happening too fast for them to do it properly.” She looked around the room, stopping at the door to the airlock, which she stared at. Finally she stirred. “We have to go out there,” she said. “Whoever set this up wanted us to put on those suits and go out there.” She nodded sharply. “We need to explore.”

6.

NOBODY THERE

“Let me go first.” Nigel moved toward the airlock.

“Of course Nigel,” said Fran, moving to follow him.

“No,” said Nigel, “I mean let me go out there alone.” He had stopped and turned to face her. “I have the most experience in a pressure suit. If there’s something out there, I have the best chance.” They all objected, arguing that they should all go together, to support each other, but Nigel insisted. “There’s probably nothing out there. I doubt if anything will happen. But if it does, then it’s better to lose only one of us. Better for us, and better for Green Comet.”

Fran was nodding. They all were. “You’re right,” she said. “You go first. We’ll wait in the airlock in our suits, ready to come to your rescue.”

“But,” said Nigel, “if something gets me when I open the outer airlock door, then it will get all of you too. You should stay in the recovery room.”

“If that happened, then we’d be trapped in here with no access to our suits,” said Fran. “No, it’s better to face that tiny risk and be able to help you if necessary.”

It didn’t take him long to see that she was right. “Okay,” he said, “we’ll all suit up together, then I’ll go out and do some reconnaissance.”

Twenty minutes later Stanton was closing the airlock door behind him, and standing by in his suit with the other three. That is, they would have been standing if not for the bags on their feet. With the

setae in their boots and gloves made ineffective, they were at the mercy of whatever momentum they picked up, so they drifted around bumping into things until they found something they could hang onto.

“This is going to take some getting used to,” said Elgin.

“Yes,” said Fran. “And it really drives home the point. There must be a very good reason for these bags.”

Nigel spoke from the other side of the door. “There’d better be.” They heard him grunt and mutter. “I had no idea how much I relied on the grips in the gloves and boots. I’m all over the place out here.” More faint sounds of struggle. “I’m going to have to relearn everything, before I run out of propellant.” Finally, “Ah. Something to hold onto.”

Fran said, “What is it, Nigel? What’s out there?”

“It looks like some equipment was set up just outside the door,” said Nigel. “It looks like lights. No, not ordinary lights. These are ultra-violet lights.” They listened to his breathing for a few seconds, then, “It looks like a makeshift decontamination station.”

Fran looked at the bags on her hands. “Interesting,” she said. “Is there anything else?”

“No,” said Nigel, “not that I can see.” They heard him moving. “I’m going to go up the corridor.”

“Is there just the one?” asked Fran.

“Yes,” said Nigel. “It looks like we’re at the end of a long corridor.” They listened to his breath, then, “Man, it’s dark in here.”

“Darker than outside,” asked Fran, “when you were hunting the Spy?”

“Well, that was pretty dark, too,” said Nigel, “but at least there was starlight out there. In here, there are the walls to reflect my lights, but it still seems darker.”

Fran shivered. "Can you see anything at all?"

"Just the corridor," said Nigel. "There are no doorways on either side, just blank walls. Oh, and the occasional snowdrift."

Stanton spoke up. "How far do you think you've gone, Nigel?"

"About a hundred meters. I'm trying to keep my speed down."

"Okay," said Stanton. "That confirms our location, I think. Or it will if the corridor goes on like this. The Hibernarium is at the end of a kilometer long corridor. The only one that long on the comet with no side openings."

"A kilometer?" said Nigel. "Okay, I'm going to push up my speed. I have a feeling we're not going to find anything in here."

"Be careful though, Nigel," said Fran.

"Don't worry, Fran. I have a lot of experience with making haste carefully." They could hear the smile in his voice, then they just heard him breathing rhythmically for a couple of minutes before it changed, presumably as he stopped. "I'm coming out into a major corridor now," he said. After a moment he added, "There's nothing out here, either."

"Okay," said Stanton, "If you went to the left, you'd come to the Square in about five kilometers."

"Alright," said Nigel.

"Wait," said Fran. "We're coming now."

"But I haven't found anything yet," said Nigel.

"No," said Fran, "but you're getting too far away." Her voice sounded normal, but they still heard the concern in it. "Wait for us there. We should stick together from here on."

Nigel was in exploring mode and wanted to keep going, but he could see the wisdom in what she said. "Okay," he said. "I'll just look around here while I wait."

“Good,” said Fran. “We should only be a few minutes.” The air was already out of the airlock, so all they had to do was open the door and go.

~

They had a quick look at the UV lights and decided that Nigel was right. Someone had set up a makeshift decontamination station right outside their door. Once again Fran looked at the bags on her hands, and she was beginning to form an idea.

Even with four sets of lights, they could still see what Nigel meant about the darkness. It seemed to push in wherever their surroundings weren’t directly illuminated. When they turned to fly down the corridor, it felt as if it was closing in behind them. No one said anything about it. They just flew quietly for the two or three minutes it took to come to the junction. When they emerged, they saw Nigel approaching from their right.

“I thought I’d have a look while I waited,” he said. “I found a side corridor with some rooms off of it.” He shook his head. “There was nothing, other than bits of snow. And all the doors were open.” He emphasized, “Not just the outer doors. Every door I saw was open. Even cabinet doors.”

They pondered that for a moment, then Stanton said, “That makes a kind of sense. We saw that the doors were open, along with the main hatch, as if they were trying to flush the place out. If that’s true then it would make sense to open inner doors, too. And even cabinet doors.”

“The question is,” said the Doctor, “what were they so desperate to flush out?”

“Poison?” suggested Stanton. “Maybe they had some kind of toxic gas leak.”

“An infestation, or an invasion?” They turned to stare at Nigel and he gamely explained. “Maybe when we caught the Spy and the crabs, they weren’t the only ones.” They looked sceptical. “Maybe there was another form factor that we didn’t find and it’s been replicating for all these centuries.”

They all protested its likelihood, except Fran, who said, “It’s a possibility and until we know, we’d better keep it as one.”

“She’s right,” said Elgin, and that settled it. So, as they turned left and headed in the direction of the Square, they kept an eye out for malevolent mechanoids.

In this larger corridor the darkness didn’t seem to press in so much. Even though their lights tended more to get lost in the larger space, the effect wasn’t so oppressive. Their apprehension gave way to simple alertness in the ten minutes it took to fly to the fork, where they could go left for the Square or right for the flashball gallery.

“Which way?” said Fran.

“Square,” they all replied together. Then Stanton added, “We need to have a look at the Square, but then I think we really need to go and find out why the main hatch is open.”

“Yes, we should,” said Fran, so they went left, heading for the Square. They flew in silence, each with their own thoughts. They felt intuitively that if they were going to find anything, any evidence, any people, it would be there. Imagining what that might be stifled the urge for conversation. Would there be anything there? Some grisly scene? Bodies of their dead fellow citizens?

The reality was both a relief and a disappointment. They didn’t find what they feared, but then they didn’t find anything at all. The statues in the center of the vast space caught their breath as, just for a moment, they looked as if they might be real people. With the distance

and their lights' dancing shadows, they looked as if they were moving. The five of them froze, then laughed nervously at themselves as their hearts knocked and fluttered.

Even though their lights did more to emphasize the darkness than to illuminate it, it didn't take long to convince themselves that there was nothing of interest in the Square. Of course, they couldn't be sure that all of the shops and apartments were also empty, but they had the sense that they most likely were. They had seen enough here, and now it was time to head up to the surface and check out the hatch.

~

They flew more or less five abreast as long as they were in the larger corridors, but as they ascended and the passages got smaller, they felt more comfortable dropping down to pairs. By unspoken consensus, Nigel went alone in front, with Fran and Elgin next and Stanton and the Doctor bringing up the rear. This time they felt no hesitation about talking.

"Has anyone come up with a plausible explanation yet?" asked Fran.

No one had, but Nigel had an observation. "I feel as if there's no one here," he said, then laughed at himself. "Talk about stating the obvious, eh? As if anyone could survive in this cold and vacuum." He tried to think of how he could make himself clear. "I mean," he said, "it's like those years I spent searching for the Spy. Most of the time I felt nothing, but during the last few weeks everything was different. I had a feeling that something was there." He flew silently for a few seconds, then finished with, "This feels more like those years of nothing."

They didn't argue with him because, when they looked at it, they

knew that they felt the same way. Their quest subtly changed then. No longer was there any pretense of searching. Now it was strictly about figuring out what happened.

When they got to the loading bay they weren't surprised, therefore, to find it deserted. Both airlock doors, the one from the corridor and the one into the bay, were open. The main hatch, as reported by the instruments, was wide open, giving them a great view of the galaxy. Nigel flew over to the opening, but the rest of them hung back. There was something about that much exposure, that lack of containment, that felt dangerous.

It didn't seem to bother Nigel, though. He flew right across the cavernous bay and out the hatch, where he stopped and looked in all directions. "Nothing," he said, still turning slowly. "But I can see the bubble from here." A kilometer away he could see a dome of ice bulging above the surface. It was the top half of a hollow sphere of ice, half embedded in the comet. The observation bubble, designed and built by Stanton. "I'm going to go have a look," he said, disappearing beyond the edge of the opening.

"Wait up," said Stanton. "I'm coming with you."

Nigel's head popped back into the opening. "Okay," he said.

"Me too," said Fran. "Come on Elgin. Doctor. Let's stick together." The three of them trailed after Stanton, the Doctor last. When they got there the Doctor couldn't bring himself to go outside. He could get halfway out, but only by hanging onto the edge.

"I'm sorry," he said. "I seem to be stuck here." He didn't want to look at them. "You guys go ahead."

Nigel came over and wrapped his arms around him. "Let go, Doctor," he said. "I've got you." When the Doctor managed to make himself let go, Nigel put him into a prone position, stretched out and

facing down, then pulled him out over the ground. “Fly like this,” he said, “close to the ground.” He let go then, and the Doctor instinctively spread his hands and feet. “That’s good,” he said, “now fly forward. Just a little flap.” The Doctor, his wings bound snugly by the pressure suit, imagined giving a little flap and the suit’s thrusters pushed him forward. Nigel kept his voice calm. “That’s right, puff and glide,” he said. “You’re doing great. Just don’t look up and you won’t fall off the comet.”

“That’s what it is!” said the Doctor. “I feel like I’m going to fall, but up into the sky.” He gave another puff and they all began moving in the direction of Stanton’s bubble.

“I know,” said Nigel. “It was the same for me when I started searching for the Spy. I had to force myself to come out here. Luckily I had someone show me this trick, and I used to try to fool myself that I was still inside. That there was a roof over my back.”

The Doctor said, “Yes, that does help.” He was able to draw in his hands and feet and assume a more graceful flying pose. “You got over it, though, didn’t you? You seem fine now.”

“No,” said Nigel, “I never got over it. Not completely.” He stayed close to the Doctor, within reach, to help him feel safe. “I still get a strong pang of panic every time.”

“Really?” said the Doctor. “You felt this fear every time you went out?” After a moment he said, “If you can do this for fourteen years, then surely I can do it for fifteen minutes.”

Nigel smiled and said, “That’s the spirit, Doc.”

Fran, Elgin and Stanton weren’t having any such problems. They were flying along upright, taking in the view. Most spectacular was the galaxy, of course, with its bright, dense center to their left and up. It was beautiful. The frozen fire against the impossible black, and the

dark shrouds of dust accentuating the brilliance of billions of stars. That was spectacular, but more interesting was the glinting dome of Stanton's bubble.

Their eyes were repeatedly drawn down from the spectacle of the sky to the more mundane appearance of a fifteen meter ball of ice. The view was something, but it was far away. The bubble was right here and more important. It might tell them something about their situation, while the stars would be unchanged for millennia.

It wasn't to be, though. When they got there the bubble was empty. There was nothing there to tell them anything. Nothing and no one. No bodies. Using their lights they could see that the small door at the back of the sphere was open.

"This doesn't tell us much, does it?" said Fran. "Does anything stand out for you, Nigel?"

He drew on his deep experience, looking around, opening his senses to anything out of place. In the end he said, "No. I don't see anything."

"Mm-hm," said Fran, not surprised. "Anyone else?"

They all said no.

"I thought so," said Fran. She hovered there, looking into the empty bubble, then she turned around, scanning the whole horizon. There was nothing to see other than the big hatch, wide open and lying on the ground. "I don't think we're going to find anything here," she said. "We should go back and start a systematic search."

They headed back to the opening, no further ahead than they were before they began.

7.

LAIKA

On the way back to the Square, Stanton said, “This sure isn’t what I expected to find when I woke up this time.”

That earned him an appreciative, though muted, chuckle from his companions. “I know what you mean,” said Fran. “Elgin and I thought it was time.” She looked at him and he nodded. “When we saw the gray light, we just assumed the three hours was up.”

“Me too,” said Stanton, while Nigel and the Doctor made noises of agreement. “But in hindsight it seems shorter.”

“It was almost exactly two hours,” said Nigel. When no one spoke he said, “I got really good at estimating time when I was looking for the Spy. These suits have a limited capacity, both for propellant and for life support.”

“Of course,” said the Doctor. “You would have had to be constantly aware of that. You wouldn’t want to be caught running out of air on the far side of the comet.”

“That’s right,” said Nigel. “Of course we have the gauges and alarms, but you tend to develop your own sense of it. Right now, for instance, we have about ten hours left.” He caught the Doctor’s eye and winked at him. “It would be more,” he said, “but you used up a little more propellant than you needed to out there.”

The Doctor laughed at himself. “Not just propellant,” he said. “I think I was hyperventilating, too.”

That evoked another round of chuckles, then Stanton said, “Two

hours, eh? That means we were only down for twenty-four hundred years. Nowhere near time yet.”

“No,” said Fran as they arrived at the Square. “Not something we even remotely need to think about now.” They pulled up just inside the Square, flanked by two massive red columns. They all looked at the statues again, then their lights swung over and went questing for the far, yellow end. They gathered just above the shops, over to the left against the orange wall, at an apartment they all knew well. Fran cleared her throat and said, “When this is over, I want to sit on that balcony and have tea and biscuits.”

After a moment of silent agreement she said briskly, “We should split up. I think we’ve established that there’s nothing here, so we can take a chance and speed things up.”

“Agreed,” said Stanton and Nigel together, and Elgin said, “Yes, that sounds right.”

“Okay,” said Fran, “Nigel and I will go to the planning room. Stanton, you and Elgin check out engineering. And Doctor, see what you can find at the hospital.”

That sounded reasonable to everyone. Three important areas, and each suited to their expertise. They were moving off in their separate directions when Nigel said, “Set your radios to local. It can be really confusing to hear people talking about things you can’t see.”

When they got about a hundred meters apart, before Elgin and Stanton reached their exit, their conversations became local. Elgin said, “Are you worried about what we’re going to find?”

Stanton didn’t hear him properly, his mind already at the shop. “Pardon?” he said.

“I can’t stop thinking about what we’re going to find,” said Elgin. “This isn’t like the other places we searched. This is personal.”

He partially turned toward Stanton, flying crab-wise, and said, "How about you?"

Stanton said, "I know what you mean. I'm not worried, really, just anxious to see."

Elgin nodded and they were quiet the rest of the way. They flew between two green columns, down a corridor to the doorway of their shop. They glanced at each other and Stanton went first through the open door. Stanton's office door was also open, as was every single compartment in the huge drafting table, and every drawer and cabinet in the place. There was no other sign of whoever it was who opened them all, though. There were no more clues to the mystery of the deserted comet.

As they crossed the room and went into Stanton's office, he said, "This is spooky alright." He snorted and added, "Imagine what it must be like for the Doctor. He's got the hospital."

"Yeah," said Elgin, realizing. "And he's alone, too."

"We'll go help him when we're done here," said Stanton as he searched his office. "And I think we're about done. Let's go."

"Sure thing," said Elgin, turning to leave. "If you don't mind my asking though, what were you looking for?" When Stanton didn't answer right away, he said, "You didn't just have a quick look. I thought you were looking for something specific."

Stanton said, "You're right, I was. Do you remember that little glass ball I had on my desk?"

"Sure," said Elgin. "The pale yellow one. I always wondered about that."

"It was my personal memorial to Yellow Comet," said Stanton. "Something I could look at when I was remembering them."

"Oh," said Elgin. "Anyone in particular?"

“Yes, but I’d rather not talk about it.” He said it quietly, but so firmly that Elgin complied with no more questions. “Anyway,” Stanton finished, “it looks like it’s not here.”

“It must have got sucked right out when the place was evacuated,” said Elgin.

Whatever Stanton was going to say was cut off by the Doctor’s voice, shaking with emotion as he said, “Everyone, come to the hospital.”

“We’re on our way Doctor,” came Fran’s voice immediately. “What is it?”

“Just come,” said the Doctor, then he switched his radio back to local.

Elgin and Stanton rushed out of their shop and down the corridor to the Square, where they saw Fran and Nigel angling across it from their left. They were heading for the opening in the orange side, opposite green and closest to yellow, that led to the Doctor’s office and the hospital. Their paths converged and met about halfway across. Fran said, “Did you two find anything?”

“No,” said Elgin. “Do you have any idea what’s going on?”

“No,” said Fran. They merged and flew on together. “It must be something, though. Something serious.” Her voice got smaller. “Did you hear him? The way he sounded?”

“Yes,” he said. “Not like you do, but I still heard it.”

They hurried on, between the orange columns, up the corridor past the Doctor’s office, where they glanced as they went by, all the way to the hospital. By now they were close enough to talk to the Doctor locally. “We’re in the hospital,” she said. “Where are you?”

“In the isolation ward,” came the grim reply.

They quickly located that and flew down hallways to the inner

recesses of the building. When they found him, the Doctor turned and held his arms up, getting them to stop. Then he waved them forward slowly and turned to show them something behind a thick pane of glass. When their lights filled the room beyond they saw a glass case, and inside that, a person in a pressure suit.

The suit had bags covering its hands and feet, just like theirs, but other than that they couldn't tell anything about it. They could see through its faceplate that there was someone in the suit, but they couldn't recognize them. They couldn't have, the face was so swollen, the features so distorted. Fran asked the Doctor, "Do you have any idea who this is?"

"No," he said, "there's no indication. But look at this." He pointed at something stuck to the wall beside the window. A small device.

"That's a recorder," said Nigel. "We used them a lot outside. They have a radio receiver."

"Do you think," Fran hesitated momentarily, then, "whoever that is left us a message?" No one had said it out loud yet, but they all knew that the occupant of the suit was dead.

"That sounds right," said Elgin. "But why here, and what are they doing in that glass case?"

"That case is for containment of hazardous materials," said the Doctor. "See the armholes?"

They could. There were holes where an operator could push their hands into gloves to manipulate things inside the case. "Hazardous materials?" said Stanton. "Someone put this body into a hazardous materials container?"

"That's what it looks like," said the Doctor.

They stood looking at the body, wondering about that, then Fran said, "Well, if they left us a message then we'd better listen to it."

They agreed and Nigel went to operate it. It was a bit awkward with the bags on his hands, but they were pliable enough to allow him to push the buttons, which were a little large anyway for use in a pressure suit. "There's still some charge in it," he said. "It looks as if it's run right to the end."

"How much can it hold?" asked Stanton.

"Ten hours," said Nigel. "I used to use it as a reminder to start thinking about going in." He ran it back a little and played it, but it was silent. He ran it back a little more. Still silent.

"I think you might as well start it at the beginning, Nigel," said Fran.

"Okay," he said, and made it so. They all jumped at the burst of loud, labored breathing, and he turned down the gain on the output. It was quieter, but it was still uncomfortable to listen to. The occupant of the suit was panting, as if they had just finished running flat out. It wasn't just the sound of exhaustion, though. There was panic in it, and fear, and an edge of sadness in the gasping.

The breathing slowed, until it was under control. "I don't know how long I've got," they heard. The voice was strained, as if the speaker was struggling to force it out. "I'm dying!" They lost her again for a minute or two, but she fought back until she could say, "This is Laika. I'm dying and there's so much I need to tell you."

"Laika!" Elgin, Fran and Stanton all reacted together. Fran said, "Then Van must be ..."

"Van wouldn't let me in," said Laika. "He wouldn't let me in!" She sobbed loudly, but choked it back. "I'm sorry," she said. "I held it together for so long. I didn't cry. I didn't cry once while I was ..."

They waited while she cried now, in long, wracking sobs. Elgin

looked at Fran and saw her empathic sadness overcoming her. He went to her and put an arm around her. "I know," he said.

She was blinking and shaking her head, trying to get the tears out of her eyes. "Take my advice," she said, "and never cry in one of these suits." With her hand ineffectually trying to help through the faceplate, she blotted her face on the absorbant pads at the sides of her helmet. Elgin gave her a squeeze.

Laika came back again. "I've got to do this," she said. "I didn't get this far to fall apart now." Her voice became hard and fierce, almost angry. "This is too important to waste on self indulgence." She took a couple of sharp breaths. "Okay. I was outside inspecting our external structures. The seal around the hatch and so on." She sounded as if she was speaking through a clenched jaw. "I was alone. It was a simple job and I was done in about six hours." She paused.

Nigel said, "That sounds about right."

When she spoke again, Laika was quieter. "When I tried to come back in, I couldn't get out of the airlock. The inside door wouldn't open." She took several deep breaths. "Van had locked it and he wouldn't let me in." Her voice broke and they lost her again for a while.

"Could he do that?" Fran asked Nigel.

"Yes," he said. "It's possible to lock the inner door so it can't be opened from the outside."

Laika was back. "I knew he was there. I heard his voice. But at first he didn't make any sense." She swallowed, then continued, her voice shaking. "He just kept saying over and over that he loved me," she said. "I love you. I love you." She faded into a whisper, then was silent for a short while. "Finally he had a moment of clarity and he told me what happened."

It started about two hours after she went out, as far as she could figure it out. It must have been at the hospital, because the doctors were among the earliest deaths. Maybe one of them was the first to get sick, or maybe someone felt ill and went to get help. The first person died within three hours, and everyone they'd been near was already very sick. The pathogen was obviously airborne and incredibly virulent.

"Van saw what was happening, and he felt himself catching it," said Laika. "He knew I'd be coming back in soon and he rushed up to the hatch to lock me out." Her voice was choked off by tears again, and they had to endure some minutes of her pain.

Elgin said, "Is that possible, Doctor? Could something spread that fast? And kill that fast?"

"Theoretically, I suppose," said the Doctor. "I can't say much without examining a patient and putting some samples under a microscope, but in a small, closed environment like this, yes, it's just possible that just the right mutation could do this."

Laika had herself under control again. "By the time I got there," she said, "he was ..." She swallowed hard a few times. "He was near the end. One minute he knew what was happening and the next he had no idea. He would know who I was and then he acted as if he was afraid of me."

That made them wonder what was in store for them. Would they witness a similar deterioration in Laika? Would she be able to finish her story before they lost her? Fran hugged herself and squeezed more tightly under Elgin's arm.

"I could have gone out and found another way in," said Laika, "but I didn't want to leave Van. I stayed there in the airlock, talking to him through the door. I tried to convince him to let me in. I promised I

would keep my suit on.” She expelled an exasperated breath through her nose. “He locked me out to protect me, but by then he didn’t trust me.” She sighed. “This sickness does something to your mind. I can feel it myself.” They were left for a moment to wonder what she was feeling. “Why didn’t Van just call me on the radio? Why did he wait for me to come in? Now that I can feel it, it makes perfect sense to me.”

They all looked at the Doctor, who nodded grimly, his expression stony behind his faceplate.

Laika laughed. “Why didn’t I leave you a message at the Hibernarium? Why didn’t I leave you some better clues?” She laughed again, sardonic and bitter. “First, I had a lot of work to do, so it could wait. Things kept coming up that were more important, so I put it off. Eventually, it began to feel as if I shouldn’t tell you. As if that would jeopardize things somehow.” One more laugh. “Fortunately I had a lucid moment, and I set up this recorder.”

Elgin glanced at Fran and saw a small smile trying to push up through the grief. She looked at him and he saw some relief in her eyes. He felt his own face relax.

“Van let me in at last.” Laika’s voice sounded tired. “He made me promise to keep my suit on. Made me swear it out loud.” She told them the whole story then. How after she went out, people began getting sick. How they died within hours of showing symptoms. All of them. Van told her of the panic and desperation that swept the comet along with the sickness. “Then he got sick,” she said. “It took a while to notice, and a little longer to admit it, but then he went straight up and locked me out.” Sadly and proudly she said, “He thought it was the only way to save me, and the comet itself.

“I was able to hold him as he died,” said Laika quietly. “I held him and I promised that I would do whatever it took to protect the comet.”

And she did. When her lover died, she put his body in the loading bay, and flew down into the comet to look for more. “I found every one,” she said. “I checked the census and made sure that I didn’t miss anyone.” Her voice got even quieter. “A few of them were still alive and I left them for later. I tried to comfort them, but I couldn’t. I felt like I had to hurry, so most of them I left to die alone.” She had to stop talking again.

When she was able to continue, she said, “The worst was the children. It was so sad. I found some clinging to their parents’ bodies. Others were hiding under their beds or in closets.” She took a deep, ragged breath and released it in a long sigh.

In an exhausted monotone, she quickly finished her story. When she had all the bodies in the loading bay, she sealed herself in the airlock and opened the big hatch, letting the outrushing air carry them away. “I talked to them first,” she said. “I told them we’d never forget them and that we’d survive and carry on in their memory.”

That all took a few days, which meant she had to have somewhere that she could take off her pressure suit and replenish its consumables. “I used some rooms that were sealed off from the rest of the comet. Down by the Hibernarium, where you woke up.” She set up the ad hoc UV decontamination station and got into the routine of sleeping there, and going out every day to do her grisly duty. “Everything was going fine,” she said. “I cleared all the bodies out and started an orderly shutdown of the comet’s systems.” She directly addressed Stanton. “I hope I did all right,” she told him.

“Yes,” he said. He cleared his throat. “Yes, you did.”

“Then I started to feel sick. At first I thought it was just exhaustion. That I was working myself too hard. Or maybe I was having a reaction to the stress.” They heard her sardonic laugh again. “No such luck.

I'd been infected." Her breathing quickened and her speech became hurried and clipped. "I knew I didn't have much time. I thoroughly disinfected your rooms and then I ran all over the place making sure everything was okay. I cursed my foolishness when I figured out how I infected myself."

It was the setae on the boots and the gloves of her pressure suit. By chance, some bacteria got in amongst them and were protected from the UV radiation. "That's when I put the bags on," she said. "And on your suits." Her voice became earnest, almost cross. "Don't take them off!" she said. "Don't you dare."

Fran looked at the bags on her hands again. "Don't worry Laika," she said, "we won't."

"When I'd done everything I could think of, I came here. I set up the recorder and put it outside this room, so I couldn't get at it in case I got paranoid like the others." She was business-like now, simply relating the facts. She said to the Doctor, "I thought it would be good if you had a specimen to work with. Our doctors died before they could do anything."

The Doctor, impressed by her resourcefulness and moved by her courage, said, "It is good. You did the right thing."

"I brought you five up because you saved us once before." They could hear her smiling at the thought. "If I'd been thinking, I probably could have picked a more logical mix of people, but by then I was running on panic and instinct." Her voice was getting weaker and her breathing shallower. "I think I'm going now," she whispered. "I can't see any more and I can't really tell if I'm talking out loud." With a burst of urgency she said, "When you're done with me. With my body. Send me outside. Send me out with Van. Please. Please." She faded

away and they could hear nothing but her labored breathing getting weaker and weaker.

They could have turned the machine off. It was obvious that she had said all she could. They wouldn't, though. They stood and listened while she died, knowing it was their duty to her. She had been alone then, and the least they could do was show their respect now, and honor her bravery.

8.

THE STATUES

“Well, we did it again,” said the Doctor, running his hand back over his head as if in amazement.

“Checking to see if your hair’s growing back, Doc?” asked Galatea.

Eight voices laughed, including the Doctor’s, even though he was blushing. He put his hand on his head again, miming a search for his missing hair, and gave everyone permission to laugh some more. He winked at Galatea.

He was right, though. They had done it again. After listening to Laika’s recording, the first thing they did was bring up the other three: Galatea, Buzzard and Maria. Then, on the Doctor’s instructions, they brought up two of their best microbiologists and two more people to work as lab technicians. He did the preliminary work, taking samples from Laika’s body and culturing them, preparing everything for the experts. He was sure it was a normally harmless bacterium turned pathogenic by a fluke combination of mutations, but it would be up to them to find the exact problem and decide what to do about it.

Until they did, no one else would be brought up. Until they identified the problem and prescribed a solution, no one else would be put in danger. So, while the four scientists worked in the lab, the eight of them worked slowly and methodically, disinfecting one room at a time. They knew from experience that the microbe was susceptible to UV radiation. It’s what they used to decontaminate their pressure suits and, except for the setae problem that had killed Laika, it was more than adequately effective.

They closed the big hatch, which gave everyone an irrational sense of relief. It didn't pose any danger to them, being open, and it wasn't accomplishing anything by being shut. It wasn't as if there was anything out there that might get in through the open hatch. And it wasn't needed to keep anything in, either. They were pressurizing each room as they cleaned it, gradually growing their living space, but they weren't going to put air anywhere else until the problem was solved. Still, closing the hatch made everyone feel better.

~

The Doctor looked down from the balcony at a small knot of people clustered in front of a display screen on the orange wall. "That was a good idea," he said, referring to the permanent public link with their sister comet. "It's done wonders for morale."

"Yes," said Fran. "I don't know why we didn't think of it before. We've had the capability for a long time now."

"I think it was just how we thought of it," said Nigel. "As a communication device, like radio. Something that takes place in its own room, in the background." He tipped his head at the small crowd. "It took something extraordinary to let us see it as a more social connection."

They were quiet, contemplating their new future and what it took to make it possible. When Green Comet was finally disinfected and once again fit for habitation, the people would have this open connection with Orange Comet's square. Effectively, they would become one village. They could only imagine what would come of it.

The job of disinfecting the comet was proceeding at a satisfactory pace. Once the microbiologists identified the genetic mutations in the pathogen, it was a straightforward matter of devising a way to kill any

spores that survived the evacuation. Then they had to suggest a plan for preparing their immune systems for the emergence of any similar organisms, and a way to test the comet's microbiome for signs of future mutations.

The eradication of the pathogen was accomplished with a specially engineered bacteriophage. Their artificial virus would infect the bacterial cell, altering its DNA to cause it to become bioluminescent. Then it would multiply inside it before killing it as they burst out looking for more.

The bioluminescence made it easy to find the spots that needed cleaning. First, they would pressurize the room and release the phage to do its work. Next, they would treat it with UV. Then the cleanup crew, in pressure suits complete with bags, just in case, could go in and remove the glowing remains. After that they considered the space fit for habitation. By now, the Square and all the shops and apartments on it were done and they were working their way outward. They were already up to a population of one hundred, and the eight were beginning to think about going back down.

"Those biologists you picked worked out well, didn't they, Doctor?" said Elgin. "It didn't take them long to figure it out."

"They sure did," said the Doctor, "but all I did was pick the ones with the best credentials." His attention was caught by a group of people coming into the Square through the red end, laughing and jostling. He assumed it was a cleanup crew coming off shift. "I loved your idea of bringing up people who were due for their twenty percent for the cleanup crew. It was brilliant."

"Thanks," said Elgin, grinning. "I know how good it feels to have that obligation done." He was referring to the rule that everyone must spend twenty percent of their time working at undesirable jobs. "I just

helped them get around to it, that's all." He had interviewed them as they awoke. "Most of them were glad to do it. Wished they'd got around to it sooner, they said. Those who weren't, I made crew bosses, reporting to me."

"How did that turn out?" asked Stanton with a smirk.

"Not so bad," laughed Elgin. "Some of them even came around, eventually. When they saw how serious it was, well, they got serious about it themselves."

"What about the rest of them?"

"There were only two or three who never got it. I demoted them and put someone who did in charge." He shook his head. "One of them had the gall to complain about it. He said, 'This isn't what I signed up for.'" Eight heads were shaking now.

Down at the other end of the Square, the cleanup crew looked up at the apartment, as people did when they came in. Seeing the balcony was occupied, they stopped horsing around and proceeded to their destination in an orderly fashion.

"That's too bad," said Fran when she noticed it. "It was nice to see a little exuberance at last. It's been quite a grind."

"Yes," said Nigel. "They need a chance to unwind."

Elgin was watching the crew, his head minutely nodding. "You're right," he said. "I'll find a way to let them know it's okay." He smiled. "Maybe we need a little flashball. How about an informal game here in the Square?"

"That's a great idea!" said Fran.

"It wouldn't be like a real game," said Elgin. "No shell to keep the ball in, for one thing." He looked around the Square, sizing up likely playing areas. "It could be a pickup game, always going, with people joining and dropping out all the time."

Fran saw him looking for a place to set it up and said, "How about right here? In this corner." He eyed the area and her speculatively. "Sure," she said. "It's about sixty meters from the corner to the first corridors. I'm sure they could work with that."

He was nodding his head now. "Okay," he said. "It will be a little like using your galoshes for goalposts, but that's what we want anyway. Just a bit of informal fun."

"That's right," she said. "And we'll have the best seats in the house, too."

He laughed at her. They all did. "Just coincidentally, of course," he said.

"Of course," she assured them all, her face radiating patently false sincerity.

They all enjoyed the moment, then Maria said, "Buzzard has something he wants to talk about." That made them realize how quiet he had been. Normally he would have joined the chatter, especially when it got onto flashball, so their curiosity was aroused. They focused on Buzzard.

He was having trouble getting started, opening and closing his mouth, his eyes darting around. He looked into Maria's dark eyes for guidance.

She took his hand and said softly, "You were exploring."

That steadied him and gave him a starting point. "I was exploring," he said. "I went out to the reservoir. The Swimming Hole. I heard it plugged the corridor. The water. Plugged the corridor." During the evacuation, when the air was rushing out of the comet, the forty meter blob of water drifted to the opening and, while it froze, extruded into the corridor. "It was interesting," said Buzzard. "I guess the water was

being pushed from behind while it froze. Very interesting fracture pattern. Fracture planes.”

Maria squeezed his hand, bringing him back to the point of his story.

“Right, sorry,” he said sheepishly. “I found something else.” His voice was quiet. “I found a hummingbird nest. You know how we made protrusions for them to build nests?” They all said they did. “Well, I found one, and the nest was still there. It must have been built really well, to stay in all that wind.”

Maria squeezed his hand again.

With his face serious, Buzzard said, “There was a bird in it. A hummingbird. Still in the nest.” He swallowed. “It was frozen solid. Its feet were hanging on tight. It had ...” He paused, swallowing again. “It had two chicks under it. It was protecting its babies.”

“Aw, Buzzard,” said Fran, saying out loud what they all felt.

“It was so brave,” he said. “It reminded me of Laika.”

“Yes,” said Fran, “Laika. She was brave.” She got up and made the rounds with tea and biscuits. “As the Doctor said, it looks like our job is done here. We should be thinking of getting back to the Hibernarium.” She turned and looked at the Square, particularly at its center, where four statues were grouped. The original three of her and Elgin and Nigel had been joined by one of Buzzard, his fluid form captured so well that it looked as if it was about to swoop away. “But there’s one more thing I need to do before I go down.” She pointed. “We need another statue.”

“That’s right,” said Elgin. “Laika.”

9.

THE ASSEMBLY

Elgin and Frances jumped off their balcony and glided out across the Square. A buzz swept through the assembled citizens as the two soared over their heads. Everyone could see the clock, so they all knew how much time was left, but their arrival made it official.

They landed in the center of the Square, at the statues, where they were meeting the rest of the eight. They could have met anywhere because the view would be equally good from any position, but the people wanted them there, in their midst. In addition to the eight, this place of honor was also reserved for others instrumental in the planning and execution of this event. Among them was Winston, once again head of the planning committee.

When Elgin and Frances landed, Winston was there to welcome them, both with words and warm embraces. Such was the mood of this place at this time that even the normally reserved Winston was moved to express it. Elgin felt a little awkward, not because of the open display, but because of his memory of what he did to Winston those many centuries ago when they were trying to deal with the arrival of the Visitor.

Frances had a plan then that required a radical sacrifice, and Winston was opposed to it. Elgin's efforts on Fran's behalf, he now realized, might have been a little intense. He'd been told his face did something. Something scary. Winston was only one of several people he frightened into early hibernation, and once he realized it he always felt uncomfortable around him.

With his large, wide mouth smiling, Winston clasped Elgin's hand and said, "I can tell by the look on your face that you're still worried about my early hibernation."

Elgin, speechless, glanced at Fran, then down at his feet.

"Well, don't worry about it," said Winston. "It all worked out for the best." He could see it wasn't helping much, so he added, "Besides, it was just as much about me as you." He was encouraged when Elgin looked up, curious. "Yes. I think I knew instinctively that Frances was right, but my rational mind knew just as strongly that she was wrong. I believe I was running away from that conflict as much as anything."

Elgin's expression cleared a little, and he nodded. "Thanks, Winston," he said. "That helps a lot, but I still feel bad." He shook his head. "What bothers me is that I didn't know what was happening. That I could cause such trouble without even realizing it."

"Well," said Winston, "that's between you and your conscience. I can't do anything about that, but I just want you to know that I don't blame you at all."

Elgin nodded again, accepting that, and took Winston's hand again. "Thank you," he said, "that really does help." Winston smiled and Fran slipped her arm through Elgin's, a look of quiet satisfaction on her face. She was glad to see that resolving itself at last.

They found themselves looking at the statues. Elgin's grimace on seeing his was habitual by now, and no longer held much emotion. When he looked at Fran he saw that she was looking at her statue with a small, quizzical frown. She saw him looking and asked, "Does it really look like me?"

"No," he said. "Well, yes, but it's wrong." He looked around for help.

Winston's chuckle rumbled up out of his chest. "Elgin's right," he said. "It does look like you but it's wrong for the situation."

"That's right!" said Elgin. "You're supposed to be debating here and you didn't look like that during the debates."

"Really?" said Fran.

Winston chuckled again. "That doesn't look like the woman that I was debating against. This is much too soft and kindly for that."

Fran was shocked. "Was I mean to you?"

"No!" said Winston. "You were just determined. You knew you were right and you had to save us."

"That's right," said Elgin. "Determined is a good word. You were resolved and energized. Your face was hard like ice and full of fire at the same time."

"Why didn't they show that in my statue, then?"

"I don't know," said Elgin. "Maybe they didn't want to frighten the children."

Fran punched his shoulder and Winston laughed.

Elgin looked at Nigel's statue next, standing a ways off from theirs and looking at them. At Fran, he reminded himself. Nigel's statue was looking at Fran's statue with devotion and duty, which Elgin had finally realized was exactly right. He nodded, and he felt Fran squeeze his arm.

Together they turned to look at Buzzard's statue, on the other side of theirs, and broke into wide smiles. They heard Winston's rumble behind them, and knew he was looking too. You couldn't help it. When you looked at Buzzard's statue, you just felt happier. Its face, with its delighted grin, was turned up. Its wings were just beginning to open and it looked as if it was about to swoop away. It was Buzzard, alright.

Finally, set back a few meters behind the others, was Laika's statue. It had its feet planted firmly on the ground and a plain, no-nonsense expression on its face. There had been some discussion, with an actual debate, about whether she should be wearing a pressure suit. In the end they decided against it. Something they did agree on, as suggested by Buzzard, was the hummingbird sitting on her shoulder.

Elgin and Frances stood there with Winston, the muted roar of the waiting crowd surrounding them as they thought about the past, and about the near future.

10.

GOOD-BYE ORANGE

After Laika saved Green Comet, and they got the ball rolling on her statue, the eight went back down to finish their big sleep. While they were sleeping, both before and after Laika, the paths of the two comets were diverging. They had decided that it would be more efficient, and would increase their chances, if they headed for two different stars.

They chose the two closest neighbors to their old home star, one of which was more or less in the direction they were already headed, while the other was about ninety degrees over. Their reasoning was that the Visitor, once finished with their star, would set out for another. They didn't know which one it would be, but logic suggested it would be the nearest one, all else being equal. The Visitor might include other criteria in its decision, such as the star's type or its proximity to other stars, but their choices were limited. This is where they were and these were the stars within reach.

They had to make assumptions about the intentions of the Visitor's creators, and about how those intentions were being carried out by the deranged creation now. They couldn't be sure how accurate the assumptions were, but they could be sure of one thing. Judging by the Visitor's size, their star wasn't the first to be visited, and it wouldn't be the last.

~

It felt as if they were losing them. They could feel Orange Comet getting farther away, inexorably, every day. So it was surprising what

little effect it had on their relationship. They still had the same open, real-time communication through the displays in their squares, where people could go to talk face to face whenever they wanted. But where once they could have crossed the space between them in twenty years or less, now they knew that would soon be impracticable.

That was why they gave everyone the chance before it was too late. Over the course of one hibernation cycle, everyone on Green Comet was given the choice, during their waking, of emigrating to Orange. They set a limit of three thousand, which would have equalized their populations at seven thousand, but in the end only two thousand went. They had many reasons for wanting to go, but the most popular was to be with someone they'd met through the cosmic ray connection. Some of the emigrants were Francesians, who went for their own reasons, but they were made just as welcome as everyone else.

Now their paths were diverging and the distance between them was growing. Any bonds formed through the window, as they came to call it, would be forever virtual. The connection between the comets was unchanged, but forever changed.

The window grew over the years. What began as a screen not much more than two meters across was now sixty meters wide and five meters high. It filled the space between the two sets of orange columns, from just above the shops up to the friezes that ran along the wall at the tops of the columns. It made for a very large window onto Orange's square, which was replicated on their side. The two squares became one big space, in all but one way. You couldn't actually cross over, though the illusion was strong.

The displays were made of tiny, micrometer-sized machines. They self-assembled, moving into position and linking together to form a continuous surface. They made a functioning display at every stage of

construction, just growing in area slowly over time. It was a very high fidelity image, close enough to the real thing that two people conversing through the window could momentarily forget. What really helped make that so was that they could both look directly into each other's eyes, just as they would in person.

The micro tools, which projected light to make an image, could also receive light. Every one was both a tiny projector and a tiny camera. By making the black pupils of the eyes of each person's image into cameras, it was easy to produce the illusion of talking to someone eye to eye.

~

Green Comet arrived at its destination first. Decades of running a large thruster altered their trajectory and brought them to a stop at the boundary of the Oort Clouds of their old star and the new one. Relative to the rest of the galaxy they were still moving, as were the two stars. Relative to those stars they were fixed at a position on a direct line halfway between them. Orange had a few thousand years of travelling to do before it could set up in a similar position on the way to its star.

Once established, Green began the next phase, which was to collect comets. They got very good at detecting them, especially after they retrieved the first one and could set up a very long baseline telescope array. It helped that they were searching more or less in the direction of the galaxy's dense center, and they had a bright background against which they could see their targets moving. As they mapped them they found that the comets weren't randomly distributed. They detected faint ribbons of slightly higher density separated by volumes of slightly emptier space. It made predicting where they'd find them a little easier.

They gradually accumulated comets, mostly in the one kilometer range. Really large comets, on the scale of Green and Orange, didn't seem to grow out here. The majority were small, oddly shaped things, but there were enough of the ones they wanted that they could pick up one or two per century. Their collection of comets grew and someone dubbed it Cloud City. The name stuck.

~

They continued to watch their old star all this time. There was always at least one telescope trained on it, and plenty of people ready to work on the instrument and the data it collected. They watched as their star dimmed, losing about one percent of its brightness as it was obscured by a build-up of dust. They attributed that to the Visitor as it plundered the system, raising a cloud of dust while it cracked moons and ground up asteroids.

"It makes you wonder what's going on there, doesn't it?" said Stanton as he and Elgin worked a shift on the telescope.

"It sure does," said Elgin. "I wouldn't mind going over there and having a look."

Stanton laughed. "Just pop over for a quick look, eh?"

Elgin laughed too, but said, "I'm serious though. Once we're in a position to spare the time and resources, I think we should send a mission over. Even if it's just robots."

"Careful," said Stanton. "We know what happens when someone sends a robot out like that."

They certainly did know. Their planet, their entire species, save those on the two comets, were destroyed by one. It was ravaging their old home so severely that it was raising enough dust to dim their star. Elgin examined his feelings about that and was surprised to find that

they were less intense than before. There was still powerful regret and anger, but they were becoming removed, as if they were about something historical that happened to someone else. He asked Stanton, “Do you still feel the same about it?”

“About what?” asked Stanton. “The mindless machine that destroyed our world and drove us away from our star?” He was being facetious, but there was a hard edge to it.

“Well, yes,” said Elgin.

“Put it this way,” said Stanton. “If I had my hands on the engineers who built that machine, I probably wouldn’t kill them now.”

“Probably?” said Elgin.

“Yes, but no promises,” said Stanton. “I probably would have killed them before, but probably not now. So no, I guess I don’t feel the same about it.”

That was a different way of looking at it, but essentially the same feeling. “Me neither,” said Elgin, but he was still puzzled. “How can that happen, though? It’s still just as bad.”

“I know what you mean,” said Stanton. “It’s probably a self-defence mechanism. If we carried all our feelings around forever at their full intensity ...” He shrugged. “I don’t think we’d last long.”

“No, I guess you’re right. That would be like a kind of insanity.” Elgin frowned. “But my feelings for Fran are just as strong as when we first met. Stronger, even.”

Stanton winked at him. “The Visitor happened a long time ago. Fran is still happening.”

“That’s right,” said Elgin, struck again by how lucky he was.

~

Green Comet separated from Orange Comet, crossed interstellar space, parked itself between their old star and the new one and began collecting comets, building Cloud City. All the while, telescopes were trained on their old home, keeping tabs as best they could on the Visitor. That's why they were so quick to detect the subtle changes, and hence prepared for the less subtle one.

Their telescopes were programmed to respond to the appearance of laser light, so when they spotted a well-known frequency of coherent photons, they sounded the alarm. This was the signal they were waiting for. The Visitor was on the move, and since the light was coming their way, so was it. Given what they knew about the power of the laser, and the Visitor's light sail technology, it would be upon them in mere decades.

11.

PREPARING THE MESSAGE

The majority of the people in the Square had four arms, and most of them had bioluminescent blushes. The bioglow was more prevalent than the altered limbs, even though they both were nearly universal when people first made the changes. A sizeable minority ended up changing back and replacing their second arms with legs, while a much smaller minority reversed the bioluminescence. Even though lower arms were much more useful and practical than legs, some people just couldn't get used to them. When asked, they often rationalized their choice by saying, "What if we find a planet? I'll need legs then." They were just rationalizing the choice already made by their emotions, though. The truth was, they never felt comfortable with their new profile.

The resulting diversity meant that Elgin and Frances and the rest of the eight didn't stand out as unusual. None of them had second arms or lights in their faces, but that wasn't something that turned heads. Maybe it went against probability, that of eight people none had either enhancement, but it wasn't strange enough to be remarkable.

Galatea still thought about doing the arms. They would be useful in her work, finishing and polishing their iceworks, but mostly she liked to tease Stanton about being able to hold onto him twice as hard. It worked every time. Buzzard and Maria sometimes talked about having the bioglow done, to better share their feelings with each other, but they never got around to it. They didn't want to be the only ones. The Doctor and Nigel had no good reason for it, and the Doctor, with all

the skin exposed by his bald head, especially didn't need his blush illuminated.

~

It was noisy in the Square, with so many people sharing the anticipation. Fortunately there was enough space in there to accommodate the sound pressure, and if they had been spread out evenly, it wouldn't have seemed loud at all. But they were all down on the floor, crowded together for the show, and eight thousand people can be a noisy crowd. Normal conversation can create quite a buzz, and voices raised by excitement can create a din.

The eight, ten now with Winston and another old acquaintance, Minder, had to form a circle and put their heads together to hold a conversation without shouting. Minder, who was Elgin's minder for what might have been his most crucial waking, had kept both the bioluminescence and the lower arms. Elgin made a point of greeting him and catching up, both of them wondering how they could have bumped into each other so rarely in several millennia. Then Galatea horned in, wanting to talk about second hands, and Buzzard and Maria got close so they could have a look at Minder's bioglow. With all the attention, he was able to demonstrate it repeatedly.

A soft gong chimed and the roar of conversation stopped abruptly as people turned to look at the display screens and the timer above them. The public address system said, "Ten minutes to transmission. Ten minutes." The gong sounded again.

The circle of friends looked at each other, their faces showing anticipation and apprehension, then they all turned to look at Buzzard. He reacted with a nervous grin, drifting closer to Maria, who slipped her arm through his and held his hand. He was in charge of the team

tasked with aiming and synchronizing the transmitters, and they all wanted to be reassured yet again that everything was ready.

Frances smiled at him and spoke for everybody. "Are you having any last minute thoughts?"

"About three per second," he joked, smiling back at her, "but they're all things we already took care of." He looked around the circle. "Don't worry," he said. "It's all done. All ten. All good."

They were reassured. That was the formula, the method that Buzzard used to verify the correctness of things. He analyzed the plans and the numbers to a depth of detail the rest of them could only imagine, going through the most important things ten times before declaring them done. This was after they were passed under Elgin's eye to see if they looked right. It simply wasn't possible to test them any more rigorously.

~

Buzzard's crew had a complicated job. Each of the thirty-one comets they collected was a part of the system they'd be using to send their message. They all had to be synchronized so everything arrived at the same place at the same time. That's where the thirty-one telescopes came in. With the comets all arrayed within a one degree radius of the center line of the Visitor's flight path, they had what was effectively a single telescope with an enormous aperture. It was good enough that, even with only starlight, they could image the Visitor for display in the Square. Not a perfect image, but good enough, especially considering that it was still about two hundred million kilometers away.

In addition, there was also Green Comet itself, with its instruments, waiting two million kilometers off to the side. With thirty-two of everything, spread out the way they were, and the target of their message

moving at a tenth of the speed of light, this was a very complicated calculation. Fortunately they didn't have to worry about the timing. With every comet holding its share of their entangled gold atoms, all vibrating to exactly the same beat, they had the best clock ever seen. It was as if all the comets were parts of the same machine.

It looked very complex, but Buzzard was able to be confident because their data were good and their equipment was precise. "In the end," he said, "it all came down to simple numbers, and it was just a matter of working them out."

They all nodded sagely, and Stanton said, "Uh-huh."

"Well, it did," insisted Buzzard. "It might have been complicated, but at its heart it was simple." They were smiling at him, obviously not about to take his word for that. "Really," he said. "Anyone could have done it. Anyone. Simple."

Fran finally took pity on him, changing the subject. "When did you guys start calling the comets Cloud City?"

"I don't know," said Buzzard, relieved. "I know where I first heard it, but he doesn't remember where he heard it. And no one's taking credit for inventing it."

"That's too bad," said Fran, "because it's perfect."

"Well," said Elgin, "maybe it's good that way."

"How so?" asked Fran.

Elgin couldn't answer right away. He had a sense that it was right, but he hadn't thought about how to justify it. He shrugged.

"Maybe some things should just be a mystery," ventured Minder, who blushed prodigiously when all eyes turned to him.

Elgin nodded. "I think that's what I meant. It sounds right."

Fran agreed. "It does," she said.

Further discussion was cut off by the gong sounding again. The voice said, "One minute to transmission. One minute."

The din got quieter, but there was still a buzz of tense conversation. Everyone turned to look at the clock and the display screens, a big one showing a blurry image of the Visitor, and thirty-one smaller ones for the comets of Cloud City. Some people were already counting down, and they could hear them on the other side of the window, in Orange's square, doing the same thing.

From the Orange side they could see Green's square through the sixty meter window, and the circle of friends gathered among the statues at its center. They all knew Fran, perhaps more than some cared to, thanks to the Francesians, and everyone knew about the Five, although they couldn't all name them. Only the most enthusiastic aficionados could name the full eight, and virtually no one knew who Winston and Minder were.

It wasn't possible for all six thousand of them to see through the window, so they had the same displays on the wall above it, and a clock keeping perfect time with Green's. As the clock counted down the seconds, the people of Orange kept time with it and with the people chanting on the Green side. More of them came in at thirty seconds, and beginning at ten they were all shouting the numbers in unison, strong echoes filling their squares.

When the clock struck zero, the only visible change was the appearance of thirty-two green lights indicating that all of the transmitters had worked as they should. A lot of nervous laughter broke their expectant silence.

12.

SENDING THE MESSAGE

The Visitor was still ten light minutes away, or more accurately, eleven light minutes. At one tenth of the speed of light, it would cover that eighteen million kilometers in the ten minutes it took their message to get there. It was that kind of thing that complicated Buzzard's calculations. He and his team had to ensure that the Visitor, moving at one tenth light speed, and their message, at almost the speed of light, arrived at the same place at the same time. Even at one thousandth of a second, the Visitor would cover thirty kilometers in the duration of the message.

They had confirmation that the message was successfully sent. All thirty-one parts from Cloud City and the one from Green Comet reported that they functioned exactly as planned, accurate to fourteen decimal places. That should keep the results well within the margins they allowed themselves, but they wouldn't know for sure for another twenty minutes. It would be ten minutes before the Visitor got the message, and another ten before they would learn of any reaction.

~

Everyone was up for this. All eight thousand people on Green Comet and all six thousand on Orange were out of hibernation and gathered in their squares to witness their first response to the Visitor. All they could do before, when the Visitor was destroying their world and killing their people, was hide and hope it wouldn't find them. They had to stifle their grief and rage because it was the only way they could

survive, and by then survival was the greatest victory they could expect.

Not now. Not any more. This stupid, insane machine couldn't be allowed to destroy any more worlds. They were done hiding. Green and Orange comets were going to put a stop to it, one way or another. They had a message for the Visitor: its explorations must stop. They had intercepted enough of its communications to analyze and decipher its language. They knew now that it was a real language and not just information passing from one machine to another. It was crude, showing no sophistication at all. Its vocabulary was small. If the immediate needs of the Visitor's mission weren't involved, there probably wasn't a word for it. Even so, it exposed the self-centered and blindly entitled nature of its thinking.

The linguists were able to find their way back to its roots, when it was simple communication of information. They could almost deduce the instructions given to the small robot when it was sent out to explore the stars. They could see how the instructions grew and evolved, as the Visitor grew into a twenty kilometer long behemoth lumbering from star to star, its original mission mutated into an eternal cycle of discovery and destruction. Now they were going to make this stand, directly between the Visitor and its next victim. They were going to tell it, in its own language, that it had to stop.

Once again the gong sounded in both squares, and their perfectly synchronized public address systems said, "One minute to contact. One minute."

There was another countdown, but it wasn't as enthusiastic as the first one. Elgin could hear more children's voices this time, as they carried on at full volume while many of the adults weren't participating. He and his friends among the statues simply watched the clock,

none of them besides Buzzard counting, and even he only came in at ten and not very loudly at that.

When the clock hit zero and flipped over to begin the final ten minutes, Elgin found himself staring at the displays of the comets. Each one had a name under it. Thirty-one names for the thirty-one people who surrendered to despair when the Visitor destroyed their home. The thirty-one suicides. Elgin felt their despair, and he once again felt the anger toward the Visitor, who caused it. And the morbid pride when their bodies served in their bid for survival. But he was feeling something else, too. Was that guilt? Why would he feel guilty?

Fran saw the question in his face. "What's up?" she asked.

He pointed with his chin. "It's those names," he said. "The people who died."

"Yes," she said, nodding. "It always makes me feel sad to think of them." She sighed. "If only we could have done more to help them."

"That's it," said Elgin. "I feel bad that they killed themselves and I didn't do anything to stop it."

"But we did," said Fran. "As soon as we saw what was happening, we set out to stop it." She looked at Winston, who campaigned with her to stop the wave of suicides.

"That's right," said Winston. "We did all we could."

"I know we did," said Elgin, "but I still feel bad. I feel," he shrugged, "guilty."

"Oh, no," said Fran. "You have nothing to feel guilty about." She looked around for confirmation.

The Doctor cleared his throat. "If I may," he said. With their permission he continued. "There's something called suicide guilt. People who were close to a suicide victim often end up blaming themselves for not preventing it, even when there was nothing they could have done."

“But I wasn’t particularly close to any of them,” said Elgin.

“You did get close to their families though, when you were transporting their bodies.” He turned up his palms. “I know it doesn’t make any sense, but that’s the way the mind works.”

Elgin nodded because it sounded right, but he still felt guilty. “I wish I could have done more. If I could have just talked to them.”

Winston chortled. “That might have worked,” he said with a wink. “You are a very persuasive speaker.”

Elgin blushed, reminded of his lack of subtlety. “Okay, maybe I couldn’t have done anything.” He shrugged everything, shoulders and wings. “It’s just such a waste.”

Fran put her hand on his arm and said, “If we feel this bad, imagine what it’s like for the people who were close to them.” She gestured at the comets and the names high on the wall. “That’s why we’re honoring their dead. To help the ones they left behind.”

They all nodded and murmured their agreement. As they looked at the names, they thought about the tragedy of lives cut short. These thirty-one names stood in for the unthinkable calamity of losing their whole world and all its people. And now, through these names, they were going to send a message to their killer. The Visitor would find out that it hadn’t got them all and, if it was capable of such emotions, it was going to wish it had.

~

One millisecond is not a very long message, but it contained all the intentions, all the feelings of the fourteen thousand people on both comets. They were speaking for the thirty-one, and for the billions who died on their planet. They were speaking for all the worlds destroyed by the Visitor before theirs, and all those that would come after. This

millisecond message might be the most important they'd ever sent. It was certainly the most important the Visitor would ever receive.

The speakers on both comets went live and the voice said, "One minute to confirmation. One minute."

This countdown was as good as the first one, with most of them starting right away. It got very loud at thirty seconds and deafening at ten. Everyone was staring at the image of the Visitor as they counted down. Everyone except Elgin. He was looking at Frances. She wasn't counting. She was looking at the Visitor, a hard little smile on her lips. Her aura of clear light was hard as diamond when she said, "Welcome to Cloud City."

An instant after the clock reached zero, the image of the Visitor changed subtly. It was blurry before, but the lines were true. Now its outline seemed to fracture, and the image began to just perceptibly expand. A cheer went up which quickly grew to a lusty roar. All their pent up grief and rage poured out in a long howl of vengeance achieved.

~

The message was carried on thirty-two beams of iron molecules, spun up in particle accelerators to nearly the speed of light. They slashed through the twenty kilometer length of the Visitor, and through the dozens of attack modules encrusted on it like barnacles. Billions of trillions of iron particles transferred their relativistic energies into its structure in an instant.

It wasn't as satisfying as it could have been. It wasn't blasted to smithereens in a great, wrenching fireball, with torn fragments hurtling off in all directions, as they would have preferred. They had to be

satisfied with the subtle changes in the shape of its image on the screen, and the knowledge that they had fatally crippled it.

Analysis of the data showed that there were at least a dozen explosions immediately after the particle beams struck the Visitor. Nothing big enough to blow it apart, but enough to blow it open. They deduced that it must have been carrying volatiles, either as fuel or for some other reason. In the expanding cloud of debris they detected gases, including oxygen, hydrogen and methane. Their spectroscopes also found minerals, like iron and aluminum, as if it was carrying valuable ores.

The debris field was expanding, but slowly in relation to the thirty thousand kilometers per second of its forward momentum. In the one hundred minutes it took the remains of the Visitor to pass the uninhabited comets, the lighter, more rapidly expanding parts were far enough out to collide with them, while the more massive parts passed harmlessly between them. A few of the smaller comets were utterly destroyed by the huge energies in the material that struck them, but most of them survived and a lot of salvage was collected that day. Green Comet itself was safely outside the long, narrow cone of danger.

Even with the enormous difference in the masses of the Visitor and the particle beams, they were still carrying enough energy to very, very slightly retard its momentum. The one thousand kilometer wide light sail, on the other hand, was not slowed down. The laser beam was still pushing on it, causing an asymmetry in forces that resulted in the beginning of a long, slow tumble that the Visitor was helpless to correct. By the time it went by the comets, one hundred minutes after it received the message, it had already rotated about one degree.

~

With the Visitor and its spreading debris field safely by, and no sign that it would ever recover, it was time to move on to the final matter. They had another message to send, only this one would use radio and would convey meaning rather than destruction. The meaning would be simple, to ensure no misunderstanding.

They had a series of official debates to decide the wording of it. There were eloquent and impassioned arguments, and in the end the majority agreed that something short and clear would be best. They couldn't be sure that there was anything there to receive the message. As far as they knew, the Visitor they just destroyed was it, and all that remained back at their old star was an automated laser to provide its propulsion. They might be sending their message in vain, and it would sail on through empty space forever, never heard by anyone. But they still had to send it.

It wasn't going to be a message of entreaty. They knew that the Visitor didn't respond to anything like that. There would be no accusations, no justifications, no reasons of any kind. They even resisted the urge to be clever, with wit and sarcasm, because they were sure the Visitor wouldn't even know they were being witty or sarcastic. They were pretty sure there were no extra layers of meaning in its language.

The message was boiled down to ten words, aimed with a focussed beam as accurately as possible at the source of the laser beam. It said, "We have destroyed your vessel. Do not send any more."

Then it was a matter of waiting six years, three for the message to get there, and three more for any reply to come back. In the meantime they had a free power supply in the laser light, which they knew would stay on at least until its source found out it was no longer needed.

~

The tension in the squares relaxed with a communal sigh. Frances looked at Elgin and they nodded at each other, smiling small, satisfied smiles.

13.

UMBRA AND PENUMBRA

“That’s something I’ve never seen before,” said Elgin.

“Me neither,” said Fran. They both looked at Stanton, who shrugged and shook his head, muffin in one hand and coffee in the other. Fran took a bite of her own muffin, savoring the burst of iceberry jam.

Stanton swallowed and said, “We never would have seen it if you hadn’t had the idea of masking the Sun.” He gestured at the monitor displaying the telescopes’ image. Where the Sun would have been, there was a black circle eliminating its overpowering glare. With that gone they were able to see the much feebler glow of the dust that filled their old planetary system.

“I didn’t actually have the idea,” said Fran. “I just asked if there was a way we could see the dust better.”

“That’s right,” said Elgin. “Technically you had the idea, Stanton.”

“No,” said Stanton. “All I did was come up with a way to make Fran’s idea work.” He popped the last of his muffin in his mouth, as if to show there was no more to say on the subject.

Fran laughed. “Anyway,” she said, “it works like a charm. This is just what I was hoping to see.” She corrected herself. “Not that I was expecting to see this.”

~

They used the telescopes every day. It was part of the routine that developed during the crossing, to observe the star that once was their Sun. The changes were incremental, to the point that their obser-

ventions tended to become perfunctory. When it always looked the same as the previous day, it was hard to find something new to say.

Then one day it changed. Where the day before they were looking at a star, suddenly this day they were looking at their Sun. They all felt it. They all saw it immediately, once it was pointed out to them, although no one could give an entirely satisfactory explanation for the change. A few months earlier the image of the star on their monitor had gone from being a single point to having some width. Over the following days it slowly resolved itself into a disk, but it was still just a star. Sometime between then and now though, it became their Sun.

As they got closer the image got better. Beginning with the big gas giants, they were able to pick out the planets in their carefully calculated orbits. It was looking more like home all the time, except for the dust. That was when Fran got the idea that she'd like to have a better look at the dust. Each step led inevitably to the next, and here they were looking at something remarkable.

The planets were casting shadows in the dust. Elgin wasn't the only one to have never seen that. No one had.

At this distance they couldn't really see the shadows themselves. It was more of a statistical decrease in illumination at those areas of the dust field, which the computer could enhance for them. It could match up the anomalies with the known positions of the planets, and show them what it would look like if they could see it.

"It's beautiful," said Fran quietly.

They didn't answer, only thought of what happened to create this beauty.

~

When Elgin's mind came back to the present, he found himself looking

toward the front of the Ball, as if he could see through the ice and the light sail to their old world. He couldn't, of course. He couldn't even see the ice at the front of their vessel, so artfully was its interior laid out and decorated.

The Ball was a sphere of ice, two hundred meters in diameter, with a shell two meters thick. Its light sail, which could be let out to a size of ten kilometers, was attached by six cables, independently adjustable for steering and control. There was minimal structural ice inside the Ball, most of that being accomplished with fabric.

Since the sail was directly in front of the Ball, pulling them along like a team of horses, that meant that the back of their vessel was continuously bathed in laser light. Rather than being a problem, they made it part of their plan. With refraction and modulation they could get light to any part of the Ball, in whatever color and intensity required. Using light ducts and louvres they could turn night into day anywhere in the vessel, and by storing the surplus they built up a large reservoir of ready energy. The two hundred ten people on this mission, thirty-five out of hibernation at all times, were comfortable and well taken care of.

The front, if a sphere can be said to have a front, was where they put the flashball court. Thirty-five people could make two full teams, with three left over for referees, but there were usually half that number or fewer involved in their games. With their schedule, someone had to be on duty and there was always someone sleeping. It didn't matter, though. Flashball was beautiful no matter how few were playing it. Two people playing catch was something worth watching. Even one person, if sufficiently skilled, could bounce the ball off the wall and create an entertaining routine.

The flashball court served double duty. In addition to providing

entertainment and a physical outlet, it also served as something of a bulkhead. It was positioned at the front to give that little extra margin of safety should they run into anything. If they collided with anything massive enough to breach their two meter thick outer shell, the flash-ball court could be sealed off to maintain their atmosphere. In reality, if anything struck them with enough energy to put a hole through two meters of tough ice, they were probably finished anyway. But they had to put it somewhere, so the ball within a ball might as well be put to some use, however improbable.

It wasn't entirely accurate to call their hull ice, even though it was frozen water. Technically ice is crystalline, and the way the Ball was made, the temperature and the procedure, no crystals were allowed to form. It was more proper to call it amorphous solid water. Being an amorphous solid, it was really a glass. The Ball was a sphere of water glass.

Travelling between the stars in a two hundred meter glass ball, looking at the shadows of planets cast in the dust raised by an insane machine consuming their onetime solar system. And none of them felt it was too strange to be true.

14.

WHISPERING GALLERY

Stanton's bubble, poking half above the surface of the comet, was an excellent vantage point for watching the construction of the Ball. Hovering in the bubble, Elgin and Frances, along with Stanton himself, could see it sitting on the surface like a gigantic crystal ball. It was connected to the comet by the big hatch, allowing workers easy access. They could evacuate it when they needed to work in a vacuum, or pressurize it and work in comfort. Normally it was bustling with activity but now, late at night with just the standby lighting coming from the cargo bay, it looked silent and portentous.

"Read your fortune sir?" said Fran, her golden eyes staring deep into Stanton's dark brown ones.

The men laughed and Stanton said, "Not unless it includes a long journey across interstellar space in a big transparent ball."

She gave them her best offended seer look and said, "You mock what you don't understand. Typical of the small-minded." She tossed her head. "You will see things on this journey to the stars that no one has seen before. I wonder if you'll laugh then." She cocked an eyebrow.

"Actually," said Stanton, "since we'll be getting closer to one particular star, this would better be called a journey from the stars, rather than to them. But even that's not right."

Fran maintained her haughty stance, chin raised defiantly, but she couldn't think of a rejoinder. It ended with all of them laughing.

They came up to have this look at the Ball as its construction neared completion. They'd just been inside it doing an inspection of

the interior, then they popped down into the corridors and came over here for this view. At about a kilometer, they could see the Ball's whole two hundred meter diameter in one glance. At the top, which would be the front in flight, was the ball within a ball. The repetition of lines, the arcs and curves of different sizes, made for very satisfying complexity and symmetry.

At the bottom, or the back, the transparency of the sphere was broken by a cluster of walls and cubicles. This would be the business end of their vessel. Here would be their control systems, most of their equipment, processing for life support, and a hibernarium for one hundred seventy-five people. They took to calling that end of things the housekeeping end.

The large volume of space in between would be used for various activities, and would sort itself out as things evolved over time. This was where they would use fabric for easily movable dividers, changing the layout as they learned what worked best.

Around the equator of the sphere were the six big winches that would control the hawsers attached to their light sail. Since the Ball wouldn't be rotating it wouldn't have an axis or an equator in that technical sense, but with the way it was arranged, and with the circle of winches around it, it was natural to think of it that way.

~

They were in Stanton's bubble, a fifteen meter sphere that he made as a proof of concept. After that he made Green Comet's flashball court, a hundred meter sphere that came to be called Stanton's ball. When they destroyed the flashball court to hide from the Visitor, and then rebuilt it, it was still called Stanton's ball, although some wags called it Stanton's second ball. Now there was this two hundred meter

sphere, also built by Stanton. They couldn't just call it Stanton's ball because that name was taken. They couldn't call it Stanton's third ball because that sounded silly. They settled on Stanton's big ball, and it would have been called that except that it made Stanton very grumpy each time he heard it. That made everyone so uncomfortable that the name quickly became the Ball, and that settled it for good.

"What's left to do?" asked Fran.

Stanton and Elgin started together, talking over each other, then stopped together. Elgin quickly deferred to Stanton, as chief engineer. "Not much," said Stanton. "All major construction is complete. All critical systems are installed. What's left is finishing up the interior and checking that everything's working."

"So the test crew can board it next month on schedule?"

"Should be no problem. Calibration and stress testing under real conditions." Stanton wore a knowing smile. "This is the part where we break it, while we can still fix it."

"I understand," said Fran, "why we have to test its breaking point. Better here than three light years away." Stanton and Elgin nodded. "Does it really have to take a year, though? That seems a long time, when we could be well on our way earlier."

Stanton shook his head. "I'd rather have a hundred twenty years," he said, "the full duration of the mission, but someone," he looked at her, "campaigns against that." She blushed, looking innocent. He winked at her. "A year is my final offer."

She smiled. "It was worth a try." She looked at Elgin, who would have set out tomorrow if she wanted to. "I guess we'll just have to wait."

~

They were headed back down into the comet, ready to call it a night, when Fran asked them, “Has anyone else noticed that we’re getting older?”

Elgin looked at Stanton, who looked just as perplexed as he was. To Fran he said, “Of course we are. We get twenty years older every time we’re out of hibernation.”

“I know,” she said, “and then when we go back down it gets reversed and we’re rejuvenated.”

“That’s right,” said Stanton, “so we’re perpetually about forty years old, physiologically.”

“That’s the thing,” said Fran. “I don’t think we’re staying at the same age any more.”

They self-consciously peered at each other, trying to see what she meant. Elgin and Stanton shrugged. They thought they looked the same as they ever had. They looked at her, questions in their faces.

“I know,” she said. “It’s hard to see. It’s been so gradual that we didn’t notice anything.”

“So how did you get onto it?” asked Elgin. “Am I looking old? You certainly don’t.”

“As I said, it’s not obvious.” She thought for a moment while they flew automatically. “I suppose it began when I overheard someone in the Square. They were apologizing for some mix-up and said, ‘I must be getting forgetful in my old age.’”

“People say that all the time,” said Elgin. “It doesn’t mean anything.”

“I know,” said Fran, “but it must have struck a chord because it got me thinking. And once I started thinking that way, I started seeing more and more signs.” She laughed at herself. “That’s when I started to worry that I was working with a self-fulfilling idea.”

“Yeah,” said Stanton, “I know what you mean.”

“So, instead of continuing my solitary investigation, staring at people’s crow’s-feet and so on, I decided to enlist some help. I called on the Doctor.”

“Good choice,” said Elgin.

“Yes,” said Fran, “always. And when I told him what I was thinking, he admitted that he was just beginning to notice the same thing.”

“Really? The Doctor?”

“Yes, but it was still just a suspicion to him, too. So he began looking at it seriously, doing extra tests on his patients as they came in.”

“Hey!” said Stanton. “So that’s what that was about.” He looked at them. “He did a couple of extra tests at my last checkup. I didn’t think anything about it at the time.”

“He’s been doing it with everyone,” said Fran.

“So what did he find?” asked Elgin.

“Just what we suspected,” said Fran. “We are getting older. Our physiological age now seems to be about fifty years, instead of forty.”

They were quiet then, as they came out into one of the large, arterial corridors. It was one of the orbitals, the main routes that connected distant parts in the comet. They were curved, always disappearing downward ahead. The curve had a constant radius from the center of the comet, and anyone travelling at the right speed would naturally follow the curve, orbiting the center. Hence the name.

For Elgin they always brought back the memory of when he first met Frances. He was at a planning committee meeting, standing in for Stanton, who’d sent him there, when she proposed the idea of the orbitals. The idea was about to get brushed off when Elgin blurted that she was right. His sense of rightness was certain of it, so he had to

speak up, embarrassing himself and apparently endearing him to her. He still thought of that as the luckiest day of his life.

Now, thinking about that and about what he'd just learned about everyone getting older, he was in a quiet state of mind, open to quiet perceptions. In the dim lighting of the middle of the night, with no one around, no sounds, the air itself still and smooth, he heard the sound of a distant voice. It was faint, almost below the threshold of hearing, but it was clear and pure.

They looked at each other, delighted and excited. This was the mysterious singer. Legendary already, seldom heard, almost mythical, the singer could sometimes be heard in the stillest part of the night, a voice carrying for kilometers down the long, curved corridors. In the calm air, with the hard, smooth surfaces, sounds would carry as over a calm lake. Only they would carry even better than that. Over a lake there was the whole sky to attenuate the sound, while down the orbitals there were only the branching corridors to bleed it off.

"Have you ever seen her?" asked Fran in a low voice.

"No," said Stanton, "and this is the first time I've heard it." He looked at Fran. "How do you know it's a her?"

She shrugged. "I don't, but everyone thinks it is."

They listened for a while. It was so distant, so quiet that they couldn't make out any words, but the tone seemed to carry the meaning. It sounded melancholy, but supported by a foundation of hopefulness. It did sound like a woman, but it could be a boy, or even a man with a good falsetto.

They drifted slowly toward one of the sides of the tunnel, as their ears instinctively sought the clearest sound. It carried most effectively closer to the surface. This reminded Elgin of the first time he was ever in the flashball court, when Stanton showed him its whispering gallery

effect. This was the same thing, only on a much bigger scale. The mysterious singer was using the largest whispering gallery ever made. Elgin wondered how far away she was, and naturally went on to wonder how far it could go. If they continued one of these orbital corridors all the way around Green Comet, could the singer be heard on the opposite side? Could they sing a note and most of a minute later hear themselves when it completed the circle?

Elgin was doing mental calculations of how much sound pressure you'd have to start with, and how much you might lose to branching corridors, trying to estimate if a person could sing with enough power to be heard all around the comet, when the singing stopped. They waited, not talking, hardly breathing, but it didn't start up again. After waiting another minute they moved on, heading for the Square and home and bed. Their minds were full of the singer, and the nearly-completed Ball, and getting older.

15.

ANOTHER SHADOW

Fran found Elgin staring at nothing. He was next to Buzzard, who was already at the telescope, but his mind was obviously somewhere else. As she approached he looked up and smiled at her, but she could see that he was still far away. Glancing at Buzzard's back and a corner of the telescope monitor, she saw no hints there, so she asked, "What's up?"

He was about to say, then his eyes moved away, a look of conflict in them. She felt a chill. "Should I be worried?" she asked.

That snapped him out of it. "Oh, no," he said. He could bear almost anything, but not needlessly worrying her. "It's nothing serious."

She relaxed. Now it was just a matter of curiosity rather than possible trouble. Her curiosity was piqued, but there was no urgency. She could find out what was on his mind in good time. They would have a few minutes before the rest of the eight got here, and more time than they knew what to do with anyway. They were only about a quarter of the way into the mission, and nobody was going anywhere.

Elgin wasn't going to wait, though. He started trying to explain. "Do you ever have moments when you suddenly remember where we are?"

"Where we are?" repeated Fran.

"Yes," he said. "Being here. Doing this." He swept his arms, indicating everything.

"Well," she said, "I'm pretty aware of where we are most of the time."

His shoulders slumped and he looked around for inspiration. “Okay,” he said, “Buzzard and I were just playing flashball, and now we’re going to take one last look at some shadows in the dust of our one-time solar system, then we’re going to reel in our light sail, flip the Ball over and catch a laser beam that Orange Comet began transmitting over four years ago.” He turned up his palms and raised his eyebrows.

“I think I get it,” she said. “When you think about it, this is a bizarre situation.”

“That’s right,” he said, “but even that’s not all of it.” He looked in her eyes and put his hand over his solar plexus. “When Buzzard turned on the monitor and I saw those shadows, I suddenly felt the Ball and everything disappear, and I was alone out here. It felt really cold.”

Fran reached out and hugged him, trying to warm him up. “Yes,” she said, “I do have those moments. I know exactly what you mean.” She squeezed him hard. “I always come looking for a hug.”

Elgin thought that was a good idea, and he squeezed back. “I know exactly what I’m going to do next time,” he said.

“You guys!” It was Buzzard at the telescope. “You guys!” he said again.

“What is it Buzzard?” said Fran as they hurried over.

Buzzard didn’t say. He just moved aside to let them see the monitor, then looked expectantly at Elgin.

Elgin saw it right away. It was immediately apparent that something was wrong with the image, but he couldn’t yet see what it was. “What’s wrong with it, Buzzard?”

Buzzard nodded sharply. He knew Elgin would see it. “Too many shadows,” he said. “Too many.”

That was it. As soon as he heard it, he knew it. He got close to the display. "Which one is it?"

Buzzard pointed, his long finger indicating an extra shadow out at the orbits of the gas giants.

"Ah," said Elgin, "but why didn't we see it before?" They bent over the monitor, heads together, and began the rapid exchange they always used when starting on a new problem. Fran smiled, watching them together. As the others arrived she explained what was going on. Every one of them went for a look, then came back to wait with Fran. Everyone except Stanton, who added his head to theirs in front of the monitor.

~

It didn't take them long. The first thing they did was run the record back to see when the shadow showed up. In its faint beginnings it was easily dismissed as an anomaly, but it grew until the computer had to include it in its simulation. They could see that it was definitely something that was orbiting the Sun, in the same region and at the same rate as the gas giants. And they could see that it went from casting no shadow at all, to making an increasingly large one. The three of them spun a small cyclone of discussion, then stopped, nodding their agreement. They elected Buzzard, as the discoverer, to explain.

"It's a disk," he said, "making the shadow. A disk."

There was some surprised talk when they heard that. It wasn't what they were expecting. "So it's artificial then," said Fran.

"No doubt," said Buzzard. "Definitely artificial." He demonstrated with his hands. "Things this size, nature makes into spheres, not disks."

"How big is it?" asked Maria, who'd just arrived.

“Hard to say,” said Buzzard. “We need more information. More data.” He shrugged. “As a first approximation, effay, five thousand kilometers in diameter.” He glanced at Elgin, who nodded.

“Five thousand!” exclaimed Maria. “That’s the size of a large moon.”

“The largest,” said Buzzard, “but this is only a thin disk. Not nearly as massive as a moon would be.”

Fran said, “The only other large disk we’ve seen like this was the Visitor’s light sail, but it was only a thousand kilometers.”

Elgin laughed. When she looked at him he said, “Only.”

She laughed too. “I know,” she said, “but this is twenty-five times the size.” She looked at Stanton. “You don’t suppose this is another light sail, do you?”

“That would be the most logical assumption.” He glanced at the telescope display. “We’ve never seen anything else like it, besides the Visitor’s sail.”

That left them silent, thinking about what could need such a large sail. The obvious answer was something twenty-five times the size of the Visitor itself, but their minds resisted contemplating that. At twenty kilometers, the Visitor was already too big to reasonably be a spacecraft.

“Well,” said Fran, “there will be plenty of time to think about this. We’d better get on with the maneuver.”

~

The laser at Green Comet had been pushing them, not directly toward their destination, but at an angle in the direction of Orange Comet, which sat about ninety degrees to the side. Now, once they flipped over, they’d pick up a beam from Orange that would both slow them

down and push them onto the right course. They needed to travel at high speed as much as they could, to shorten the duration of the mission, but they needed to slow down enough that their old Sun could slingshot them back toward their starting point. Once they swung around the star they could catch Orange's beam again, and with an angled sail, build their velocity for the return leg. Then they would flip over again and brake on the laser from Green, ultimately, one hundred twenty years later, being back where they started.

It was simple in principle. The theory was clear and unambiguous. The calculations, though big and complex, resulted in definite answers. There was no reason why it shouldn't work, and they weren't bothered by the fact that no one had ever done anything like it before.

16.

THE TONSURE

Frances and Elgin were headed for the Square. They and Stanton were flying down from the hatch, where they did a final pre-departure inspection. That went as they expected, with all systems checking out well within their optimal ranges. The one year shakedown flight went fine, with only a few, mostly minor, glitches. That didn't stop Stanton from giving Fran some significant looks, as his instinct for caution was borne out. She graciously acknowledged that he was right, although she did point out that all the faults were found in the first few months and the rest of the year was smooth sailing. Elgin just smiled and shook his head.

They stopped where a year before they heard the singer, just on the off-chance. They waited, breathing softly, letting the air get calm and quiet, but they heard nothing. They weren't surprised. It was the wrong time of day for one thing. The comet was alive with activity which put a tension and some inevitable disruption into the atmosphere. If you listened closely you could hear faint echoes of the sounds of the busy Square. The singer's notes would never carry far in those conditions. And besides, they were sure she wouldn't be singing in the middle of the day, with so many people about. She only ever did it late at night when the chance of discovery was low. They shared a sheepish look, aware of their folly, but not deterred. They felt lucky to have heard it once, and looked forward to hearing it again, so they went quiet and listened every time they went by this spot.

They were about to move on when they were passed by a group of

Francesians on their way to the Square for the ceremony. The entire group, as one, turned to face their saints as they flew by. They ignored Stanton but made signs of obeisance and ritual adoration toward Elgin and Frances. Elgin knew that it was all meant for Fran and that what came his way was only because he happened to be with her. He was pretty sure that they regretted having made him a saint. He knew they only did it because he was so close to their main saint, and they must feel chagrin given that everyone knew how he felt about them. They tried to claim her for their own at a time when he wasn't sure if he would ever get her back, and they felt the edge of his anger.

As the Francesians turned and flew on, Elgin realized that there was something wrong with them. He looked at his companions and saw immediately that they'd noticed too. Fran looked sad and disappointed, and Stanton looked outraged.

"What is it?" he said. "Something's wrong. What is it?"

Fran wasn't going to speak. He could see that. So he looked at Stanton, whose mouth was compressed into a thin line. "Stanton?" he said.

"Those," Stanton struggled to find an appropriate word, "people," he said finally, "are mocking Fran."

"No they're not, Stanton," she said softly. She put her hand on his arm. "They don't mean to mock me." Elgin was looking at her, his face a big question, so she said, "They don't mean any harm, Elgin."

"Then what?" he said. "I know there was something wrong, but I don't know what."

She said, "They have a kind of a tonsure."

"Tonsure?"

"Yes," she said. "It's an idiosyncratic way of cutting the hair. Usually used to indicate membership in an exclusive group."

“Well,” said Elgin, “they’re all Francesians and they all cut their hair the same. Is that it?”

“Not quite,” growled Stanton.

Elgin looked at him and back at her, still lost, so Fran raised a hand to her head and used a finger to trace the hairline above her brow. “Oh!” said Elgin as it all came clear to him.

“Yeah,” muttered Stanton, “they’ve all shaved their hair to mimic hers.” He looked like he wanted to spit.

Now that he saw it, Elgin didn’t know how he could have missed it. Fran had a slight widow’s peak. Two curves meeting in a shallow point above the middle of her forehead. The Francesians had all been barbered to match it as closely as possible. With that realization, Elgin’s brow began to cloud.

Fran saw that and said, “No, please. Don’t let it spoil our day.” She looked at Stanton. “Both of you, please. Let’s not make it worse.”

The men looked at each other. They knew she was right. Getting angry would do no good. If they did anything to the Francesians, it would just give them the persecution they needed to affirm their actions. So, as hard as it was, they reined in their outrage and nodded their agreement.

“Good,” she said. “Thank you.” She smiled hopefully. “Maybe if we ignore it, they’ll get tired of it. It’s really pretty silly, isn’t it? How long could they possibly do it?”

“Right,” said Stanton. “Maybe the fad will be over by the time we get back.”

“Yeah,” said Elgin. “It’s silly, as Fran says. Maybe it will blow over.”

On that hopeful note they resumed their flight to the Square. Outwardly they projected a hopeful air, but inwardly they knew it wouldn’t be that simple.

A flash of color went by and Elgin watched a hummingbird fly for a patch of iceberries on the yellow wall. He was on a dais, along with Fran and Stanton and others, in front of the green wall, a pair of clear, green ice pillars rising behind them. They were being honored before embarking on their mission, and speeches were being made. One hundred seventy-five of their crew were already in hibernation on the Ball, and most of the thirty-five who would begin on active duty were there making final preparations. They didn't have much to do other than go through the checklists for the umpteenth time, but it had to be done, as did this ceremony.

Elgin was glad of the distraction. The bird was so far away now that he only caught glimpses of it as it moved from one berry to the next. But it allowed him to take his eyes away from the crowd, where the Francesians were gathered right down in front of the dais. Now that he knew about them, their tonsures stood out like cartoon caricatures, and he was in danger of forgetting Fran's admonition to overlook them. So he stared into the distance, ignoring them and letting the speeches wash over him unheard.

Not that he didn't appreciate the ceremony. He knew the honor for what it was, and he was aware of the need for it. The purpose it served, to mark the occasion and highlight the importance of what they were doing, was not lost on him. He couldn't help it if speeches made him drowsy and prompted his mind to wander.

He did manage to pay attention to a couple of them, though. He always hung on every word Fran said, and the fact that Stanton was speaking at all made that interesting. He hated doing it and welcomed any excuse to avoid it, but he wasn't getting out of this one, so Stanton

was standing on the dais giving the people his final report before departure. Not a rousing speech, but a cold, dry report.

“As you know,” he said, “we’ve spent the last year stress-testing everything.” They all nodded. Anyone could have made this speech. Or they could have got the information from the comet’s database any time, but hearing it from Stanton himself made it seem more official. “Other than a few glitches and some cases of finding better ways to do things, it all checked out pretty well as expected.” They nodded again.

With the Ball tethered to Green Comet by ten kilometer long cables, they repeatedly tested the deployment and retrieval of the sail. “The puffs of nitrogen gas inflated the sail just the way we wanted, and then it stiffened when the light hit it, giving us a nice flat surface.” Nodding. “We did the flipping maneuver so many times, I think I could do it in hibernation.” Laughter and nodding. “I’m ready to sign off on it.” They gave him a nice round of applause as he made way for Fran.

The audience was relaxed and happy. Standing in the Square, stuck to the floor by the setae on their feet, their bodies were free to sway in the microgravity. Fran could see some small waves and ripples run through them, but nothing like that time long ago when they were swept by large waves. That was a critical time, though, dangerous and uncertain, when the people had to decide something that could mean annihilation or survival. They were concentrating so hard on her that they forgot their bodies, which were left free to sway like sea grass.

This ceremony was nothing like that. While the mission was certainly important and potentially dangerous, it wasn’t going to mean the life or death of Green Comet. The people didn’t have to make a big, distasteful decision. All they had to do was wish the two hundred ten crew members well, and see them off on their journey. And they were

here today to listen to speeches and say a personal farewell to the five, and by extension the eight, who would be part of the first thirty-five crew members.

They'd heard Winston, a good speaker. They'd listened to Stanton, not such a good speaker, but their chief engineer and the one to give them the facts. Now they were going to hear Frances, who was able to tell them how they felt about it. She wouldn't tell them how they should feel, rather she would express the feelings that were forming inside them, but which they hadn't yet recognized.

"We don't have to do this," she was telling them. "We could just stay home and save all the time and resources." They had uncertain looks on their faces, as if they were afraid she was going to take it away from them. "But we're not doing this because we have to, are we?" They shook their heads, some murmuring, "No." She smiled. "No," she said. Her smile became a daring grin, which she encouraged them to share with her. "We're doing this because we want to." Their backs straightened and their faces began to reflect her grin. "We're doing this because we can." Her energy ignited their enthusiasm. They swayed forward, cries of "Yes!" rising among them. "We're doing this," she finished, riding a surge of affirmation, "because we're Green Comet, and this is what we do!"

Amid a torrent of cheering and applause, they descended from the dais to join the people. They were surrounded by an excited mob who wanted to be close to the source of their inspiration, to touch them, both taking and giving vital energy. This good feeling would carry them well into the mission.

17.

CHANGE OF PLANS

“We have one hundred percent coverage.” Elgin could hear cheering in the background on both comets, Orange and Green. The same cheer that erupted in the Ball moments before. “We’re going to hitch over and get centered on the beam as soon as we confirm that all systems made it through the maneuver okay.”

“Congratulations,” said Winston who, like the eight, arranged to be out of hibernation for the critical phases of the mission. “Well done everyone,” he said, including the people on Orange Comet who were tending the laser.

“We just point this thing where we’re told,” said their representative. “I think the honor should go to whoever is doing the calculations.” She got affirmative noises from behind her. “They’re down to such a fine detail that we have to interpolate the last few decimal places.”

“That would be Buzzard,” said Elgin, tipping his head in Buzzard’s direction.

She began some polite applause on Orange, which spread to Green and back to the Ball. Buzzard was embarrassed but he couldn’t stop grinning. “It’s only numbers,” he protested. “Once you’ve got the numbers it pretty well works itself out.” He put his arm around Maria, who had squeezed in close, smiling and shaking her head at the same time. “Numbers.”

The maneuver had been as successful as they could have hoped. Intercepting a beam of light projected four years earlier, as their own

trajectory crossed it at an angle, was not a trivial problem. It was made possible by their ability to predict the Ball's position with great accuracy, and they could do that because they shared the most accurate clock in the galaxy, as far as they knew. With their entangled gold atoms all vibrating to the same beat, all the other calculations of time and position followed.

The Ball emitted an electromagnetic pulse every minute. They all knew exactly when that was, so the time it took for the pulse to reach the comets gave a good known position for that time. As the pulses and positions piled up, the Ball's trajectory became increasingly precise, and its predicted position easier to calculate. As Buzzard said, by then it was just numbers.

Orange's laser was tracking the Ball's course about four years in the future. That sounds tricky, and it is, but now that the Ball was on the beam it was a lot easier. They could actively work to stay on it with small adjustments of their sail. If they began to drift off course, they'd just angle the sail and let the laser pull them back on. They were going to have to make more use of that strategy than they planned on, now. The original plan was to swing around the Sun close to the orbit of their old planet, to check up on it. Now they needed to change that.

Elgin told them about the extra shadow. "The only thing we can think of is it must be a light sail," he said.

"But five thousand kilometers?" said Winston. "How big must the vessel be to need such a big sail?"

"About a hundred kilometers, according to Buzzard." Elgin let them digest that, then told them, "We were stunned, too. That's why we waited until the maneuver was done, then took another look to be sure before telling you."

Winston found his voice first. "But what ..." He hesitated before

finishing. "Whatever this is, what is it for?" His wide mouth opened and closed. "Is it going to follow the Visitor?" He looked alarmed. "Have we got enough firepower to destroy something so large?"

"That's what we want to figure out," said Elgin. "We want to change course so we'll swing around the Sun out by it, instead of in by our planet."

The woman on Orange Comet said, "But everything's programmed. And it's all four years in advance." She shrugged, palms up.

"That's okay," said Elgin. "Buzzard says we can do it, especially since we're on the beam already. If you begin the changes now, we can make the adjustments four years down the road." He looked at Buzzard, who nodded, and back at the woman, who was still looking doubtful. "Let Buzzard talk to your people. If they don't like it, fine, but we think they will." This wasn't Green Comet where everyone knew Buzzard. They knew there was something special about him, of course, but they didn't have the direct experience that made him a legend on his own comet. Elgin smiled at her. "He says it's only numbers," he said. That made her smile back, recalling who'd given them the numbers for their recent success.

"Of course," she said. "It's certainly worth looking into, at least." She glanced sideways. "We have a bit of a number wizard here, too. I'll have him talk to Buzzard."

"Good," said Elgin. "They can get the ball rolling on that, and ..."

He was cut off by groans in all three places. "What?" he said, oblivious.

They laughed, thinking he was kidding, before Winston saw that he wasn't. He said, "Get the ball rolling? The Ball?" waggling his eyebrows.

Elgin got it and blushed sheepishly. "Okay," he said, "they can, uh,

get started on that, while we finish up the fine tuning on the maneuver.” He acknowledged the good-natured laughter.

~

Buzzard spent much of the next three days with Orange’s numbers whiz. “He’s pretty smart,” he told them. “Pretty smart. His name is Archie.”

“Archie?” said Stanton. “Is that short for something?”

“I don’t know,” said Buzzard. “Should I ask him?”

“No, never mind. It just seems like a name that would be short for something, that’s all.”

“It does,” said Buzzard, “now that I think of it.” He nodded. “I will ask him. What it’s short for.”

“All right,” said Stanton, smiling. “Meanwhile, have you convinced him to help us change course?”

“Yes,” said Buzzard. “He got that right away. He can see that it’s just numbers, too.”

“Oh. So what have you been talking about?”

“The project. We’re working out the best way to do it.” He looked as if he had more to say.

“What else, Buzzard?”

“Well,” said Buzzard, obviously looking for a way to say it, “he sees things, too.” He shook his head. That was wrong. “Ratios. Relationships. The way things fit together.” He frowned with growing frustration. Every time he thought he had the beginning of an explanation, it turned out to be wrong.

Fran broke in, to everyone’s relief. “It’s the special way you see things, isn’t it,” she said. When he nodded she added, “Archie understands. He knows what you mean.”

“That’s right,” said Buzzard, encouraged. “I can just say things and he gets it. I don’t have to try to explain.” The look on his face made them wonder how exasperating it must be to try to talk to them sometimes. Relief and pleasure radiated from him, but no one took offense. No one was envious of Archie, or jealous of Buzzard’s pleasure. Not even Maria. She squeezed his arm and kissed his furry cheek, a happy smile illuminating her face.

Elgin was glad to see his friend so happy. It was something like their own relationship, where Buzzard had been moved to say, “Elgin knows,” when he was understood. This was different. It was a matter of getting it, rather than understanding it. This was before understanding, or underneath it, and Elgin was glad that Buzzard’s peculiar mind had found a companion. “So,” he said, “when are you going to have something for me to look at?”

“Tomorrow,” said Buzzard. “We’ll have a rough draft tomorrow. You can look at it and see if it’s right. Then we’ll go over it. Ten times.” He grinned. “Archie does it ten times, too.” He looked at Stanton. “Then we’ll give it to you.”

“Sounds good, Buzzard,” said Stanton. “Take your time. There’s no rush.”

“We’ll take our time,” said Buzzard. “We’ll make sure. We have to get it right. Get it right.”

~

It looked fine to Elgin. His first glance told him it was right, but he hung onto it so he could have a good look. Not only was it beautiful in its symmetry and exquisite detail, but this was the first time he’d seen anything by Archie. He was used to Buzzard’s work, and the solid, comfortable feeling of rightness he got from it. Now he had a chance

to compare it with this new person who, in Buzzard's own words, was "pretty smart."

Much of the paper was indistinguishable, with their two styles subsumed into one, but parts of it were pure Buzzard and other parts were something else. The two styles, Buzzard's and Archie's, were remarkably similar. They both had the beautiful simplicity of something that's been whittled down to the essentials, but with an intriguing complexity. In spite of that, Elgin found that he was able to tell them apart. He would have found it difficult to explain the difference, but he could see it. And he had to agree with Buzzard. Archie did good work.

When Elgin surfaced he had a satisfied smile. As always, he felt good after immersing himself in Buzzard's work, and today there was the added pleasure of discovering a new hand. He handed the permapaper to Buzzard, saying, "You're right about your new friend. He's good."

Buzzard grinned. "Is it all good?" he said. "All good?"

"All good," said Elgin. "More than all good."

"Good," said Buzzard, nodding his head. "Now Archie and I can do our final checks, and then give it to Stanton."

"Ten times?" asked Elgin.

"Ten times," said Buzzard. "Ten each. Ten for me and ten for Archie. Twenty times."

"Right," said Elgin. "Speaking of Archie, did you find out what it's short for?"

"Oh yeah, that's right. I did." Buzzard smiled. "Guess."

"Oh," said Elgin, "okay. Uh. Archibald?"

Buzzard laughed. "No."

"Archer?"

Buzzard shook his head.

Elgin frowned. "This is hard. There aren't very many."

"It's one you know," said Buzzard as a clue.

"One I know," mused Elgin. "One I know."

"Think history," said Buzzard. "Ancient history."

"Ancient history?" The frown deepened. Elgin shrugged and said, "Archaean?"

Buzzard burst into peals of laughter. "Not quite that ancient," he said.

"I give up," Elgin said. "Take pity on me."

"Are you sure?" asked Buzzard. "Because you're going to kick yourself."

"Yes, I'm sure. What is it?"

"It's Archimedes."

Elgin clapped his hand to his forehead. "Of course," he said. "A great mathematician. What else?"

"Yeah," said Buzzard. "He made me guess, too."

"I suppose you got it right away."

"No," said Buzzard. "I guessed Archibald first, too. But after that it was obvious."

"Obvious to you, maybe."

"Obvious to me," agreed Buzzard. He smirked at Elgin. "Archaean?"

"Well, you said ancient history."

They shared a companionable laugh, and went on to speculate about what they might find on their new route through their old solar system.

~

When they left their home thousands of years earlier, the comets were

on orbits that were climbing up above the ecliptic, the plane on which all the planets orbited the Sun. Now the Ball was approaching the system from above and would end up cutting through it at an angle of about thirty degrees, out around where the mysterious disk was orbiting. Their trajectory would keep them within good telescope range of it for several months, time enough to learn what they needed to know.

18.

DON'T SHOOT

“So, what about this aging thing?” asked Stanton, who was getting some shots of silver in his pelt. He didn’t mind seeing them amongst the dark brown fur, and Galatea said it made him look distinguished, but they were a reminder that their bodies were aging again. After Buzzard solved Fran’s telomere problem, and they were able to apply the technique to everyone, they all settled on an apparent physiological age of about forty. Lately though, the aging seemed to be setting in again and most people were now presenting at roughly the age of fifty.

“We’re making progress,” said Buzzard, who was in charge of it by default. After his previous success it seemed only natural. “We think we have the hypothalamus issue solved. Or at least well on the way.”

“Hypothalamus?” asked Galatea.

“Yes,” said Buzzard. “It’s part of the brain.”

“I know,” said Galatea, “but what’s it got to do with aging?”

“Oh,” said Buzzard, looking at the Doctor. Buzzard knew what the hypothalamus did, down to the finest detail, but he knew from experience that he was no good at explaining things in a way that was helpful to most people.

The Doctor stepped in. “It’s part of our regulatory system,” he said. “It produces hormones that are stored in the pituitary gland until needed. Buzzard has figured out how that affects aging.”

“Not just me,” said Buzzard. “Not just me.” He looked at Maria and she gave him a nod of approval.

“I’m glad to hear that,” said Fran. Buzzard had worked himself

almost to death saving her life, and she felt responsible for that. “I hope you’re taking care of yourself.”

“Yes I am,” he said. “Taking care of myself.” He looked at Maria again. “I don’t get too focused on one thing, and I don’t do it for too long at a time. I’m not allowed to.”

Maria nodded again, her expression stern. “I make sure of that,” she said. Everyone chuckled. They all knew her position on that. “Last time,” she said to Fran, “when it was you, I couldn’t do anything. In truth, I don’t think I really wanted to stop him. Not deep down.” They all understood that. Love for Fran went without saying. “But it was hard. Too hard. I wasn’t sure I was ever going to get him back.” She looked at him, her eyes brimming, and he looked back with a shy smile. She drew a sharp breath. “It’s not going to happen again,” she promised.

“No,” said Fran. “We can’t let that happen.” Looking at Buzzard she said, “So, how do you do it, then?”

“It’s not just me,” he said. “We’re a team. We divide up the work.” He grinned. “Archie too, now.”

“Archie?” said Fran. That made her wonder. “Is it happening over on Orange, too?”

“Yes,” said Buzzard. “They didn’t notice until I mentioned it. When I asked Archie if he wanted to help.”

“It’s about the same stage, then?”

“Yes. Almost identical.”

“I see,” she said. After a moment she said, “Archie is a lot like you, isn’t he?”

“Yes. Almost identical,” he joked.

She laughed, then turned serious again. “That means that he might be susceptible to the same over-focus that got you, right?”

“That’s right,” said Buzzard. “I thought of that, and I told him.” He frowned. “He knows, but he doesn’t really know.” He looked at Maria again. “Archie doesn’t have anyone like Maria to help him, so I try to do it.” He made a reaching, grasping motion. “It’s not easy, but I was able to get some people over there to keep an eye on him.” He shrugged and let his hands fall loose. “I think he’s going to be okay.”

In the silence they all looked at the telescope monitor. It was showing the object attached to the big sail. The vessel. Buzzard was right about the size. It was about a hundred kilometers long. Other than having a thinner profile, it looked just as they might have expected. It looked like a bigger version of the Visitor. Another section of the screen was showing the entire disk of the sail, with the vessel attached to it like an undersized stone on a ring. A third section showed a small moon, no more than five hundred kilometers in diameter, showing scars of construction. As they moved along and their angle of view changed, they were able to deduce that this must be the source of the giant laser. It was probably what was pushing the Visitor before they destroyed it, and it looked as if it would be used to push this other thing.

The business end of the moon was pointed in the direction of the big sail, about a million kilometers away. It was hard to tell where the sail was pointed because it wasn’t perpendicular to the vessel, rather curving back aft.

“Light pressure,” said Buzzard. “Light pressure will straighten it up.”

“That’s right,” said Elgin. “It will be under tension in operating mode. To see where it’s pointed we should look at ... the vessel.” He realized they didn’t have a name for it yet.

They still thought of it as the Visitor, because they’d been using the

name for so long, but the Visitor was destroyed. Although the entire mechanical menace could be referred to generally as the Visitor, it didn't feel right to call this particular part that any more. To them the real Visitor would always be the one that destroyed their world and killed their people. The one that they thought was the ultimate source of their troubles, before they learned of this even bigger one. Now it seemed the first Visitor was a mere derivative of this one.

"How about Visitor Prime?" suggested Frances.

Everyone nodded. "That sounds right," said Elgin.

"I like it," said Stanton.

"Yes, it's good," said Nigel, "unless there's another even bigger one coming."

"Or what if this is just one, and there are more that went to other stars?" said Galatea.

"If that's the case," said Fran, "either of those things, then we have a lot more work cut out for us." The prospect might have been horrifying, but their reaction was not to despair. As always, it was to reassess and prepare.

Everyone nodded again, determination settling on their faces. "Visitor Prime it is then," said Stanton, and they all agreed. Naturally they abbreviated it almost immediately to Vee Prime, and that they shortened even further to V'. And although it became normal practice to use V' in notation, in speech it came right down to Prime.

"What do you think it's going to do?" asked Galatea.

"It's hard to say," said Stanton. "The only precedent we have is the Visitor, and it must know we've destroyed that."

"That's right," said Nigel. "Would it follow if it didn't have the Visitor to prepare the way?"

"Maybe for revenge?" ventured Galatea.

“I don’t know if it would have feelings like revenge,” said Fran. “No part of the Visitor has ever demonstrated anything like an emotion.”

“That’s just it,” said Galatea. “We don’t know. It could be preparing to head out to the next star, just as planned, and we’d have no way of knowing.”

“Or it might have decided to go to Orange’s star, since ours was cut off,” said Nigel. “Even without the Visitor, the Prime could carry on as before.” He pointed at the monitor. “It’s got modules and scouts on it, just like the Visitor. There’s no reason why it couldn’t.” Nigel had spent fourteen years searching for one of the Visitor’s surveillance units. He had a good idea of its persistence.

There was a pause, then the Doctor spoke up. “Maybe it’s going to go back home,” he suggested. He got no answer but a few amused smiles. “Really,” he said. “Maybe after we told it, in its own language, that we destroyed the Visitor,” he shrugged, “well, maybe it will just go home.” He didn’t sound very convinced himself.

“That would be nice,” said Stanton. “That would be very nice.” He didn’t look convinced either.

“So,” said Fran, “here are the options.” She winked at the Doctor. “It might go home.” He nodded at the unlikeliness of it. “It might carry on to Green’s star. It might go to Orange’s star. It might go to some other star altogether.” She was holding up four fingers. “Or it might just stay here.” She dropped her hand. “Does that sound about right?”

Elgin said, “Yes it does.”

“Does any of them sound more right?” asked Fran.

“Not really,” said Elgin, “although some other random star sounds the least likely.”

“I agree,” said Fran, “so let’s narrow it down to four possibilities.”

“Actually,” said Nigel, “if it’s going to carry on, I don’t think it would deviate from the original plan. I don’t think it would have that kind of flexibility.”

Fran looked at Elgin, who nodded. “Okay, three,” she said. “Green, home or here.”

That was better. Now they had a small number of real situations to prepare for. Green Comet could continue to accumulate comets and fit them with particle accelerators, to use if the Prime should decide to come their way. Of course, Orange Comet would do the same, just in case. If it went home, they wouldn’t need to do anything. And if it stayed here, that left them with something interesting to think about. Would they try to devise a plan to destroy it, or would they leave it alone? There was the matter of revenge, and then there were all the resources it had packed into a dense package. Attacking it would be risky. It had all those modules and scouts and a history of deadly efficiency. But the rewards could be great.

~

It shouldn’t have seen them. They were small and space is big. They were never going to come within ten million kilometers of the Prime, and Buzzard had calculated the odds of chance discovery to be negligible. They were practically transparent, after all.

Buzzard was looking at the Prime, trying to figure out where it was pointing. It wasn’t that they thought there would be any significance to that. Most likely it was just in a parking orbit around the Sun and its attitude was random. He had his curiosity tweaked though, when Elgin mentioned it, and his instinct was to figure it out. He collected a series of images taken as the Ball swung through perihelion, giving him different angles on it. From there it was a straightforward procedure to

plot the vessel's absolute position in space. It was angled to be pointing slightly below the plane of the ecliptic. An angle that rang a bell with Buzzard. "You guys," he said. "You guys."

When he had their attention he told them, "The Prime is pointing at the last star."

"The last star?" asked Fran.

"Yes," said Buzzard. "The last one it came from. Before it came here. The last one."

"It's pointed back where it came from?" she asked.

"No," he said. "Pointing at it. At it." He looked at Stanton for help. "They moved," he said.

Stanton got it. "All the stars have moved since then," he explained to Fran. "The stars are always moving. The Prime is pointing at where that star is now. Right, Buzzard?"

"That's right," said Buzzard. He grinned his delighted grin. "Maybe the Doctor is right," he said. "Maybe it's going to go home. When it's finished here."

That prospect was so tempting that they immediately distrusted it. If it were true it would be the best of all possibilities, so they resisted it. It was too specific to be an accident, but they knew there could be many other reasons for the Prime's angle.

"That would be nice," said Stanton, "but what are the odds?" He was obviously sceptical. "It's completely against what we know of its pattern."

"Yes," said Buzzard, deflating. "You're probably right."

"But," said Maria, jumping to the defense of Buzzard's optimism, "maybe it has changed its pattern. Maybe we changed its pattern when we destroyed the Visitor."

“That’s right,” said the Doctor, ever hopeful. “And we sent that message, in its own language. Who knows what that might have done?”

Stanton nodded, but he wasn’t convinced. “There could be a thousand reasons why it’s pointed that way. Maybe it’s something it always does. Going home?” He shook his head. “I’ll believe it when I see it.”

That’s when Buzzard saw the scout. He was studying the Prime very closely, absorbing every detail as he worked out the simple matter of where it was pointing. His brain took in all the information, sorting and arranging it automatically, so when something changed he was immediately aware of it. It wasn’t much of a change, but it was enough for Buzzard. He zeroed in on it and increased the magnification, filling the screen with the bulk of the Prime’s body. It was mostly a blur of shadows and reflections in the distant light of the Sun, but one of the reflections was moving. Some measurements and quick calculations gave Buzzard its approximate size relative to the Prime. It was tiny by comparison. Thirty meters isn’t much next to a hundred kilometers, but it was enough to tell him that it was a vessel in the scout class. A little more observation and calculation and he was able to guess the direction of the movement.

“You guys,” he said. “You guys.”

Fran’s fur stood up at the way he sounded. “What is it, Buzzard?” she said quietly.

He indicated the monitor and said just as quietly, “I think we’re being followed.”

That started a couple of hours of intense activity as they worked to confirm or negate his conclusion. Stanton said, “Buzzard, you keep an eye out for more. If you see anything else moving, let us know.” Meanwhile they analyzed the thing he had found, confirming that it

was moving, separate from the Prime. They worked out its size, which was thirty meters as he'd said, and they plotted its trajectory. It was on a course to intercept them.

"About a week," said Nigel. "At this rate, with the way it's accelerating, it should be within range in about a week."

"Within range?" asked Fran.

"Yes," said Nigel. "From what we know of its destructive capabilities, it will be about a week before it's close enough to destroy us."

Fran's vision went inward and silence settled on the eight of them, six of whom were remembering their most dangerous encounter with a scout, when it completely destroyed a large comet. At that time they thought they'd lost Buzzard and they very nearly did lose Fran. They had no doubt of the outcome if this scout caught up to them.

Stanton broke the silence. "Is anything else moving, Buzzard?"

"No," he said. "That's all. Just this one."

That was a relief, anyway. At least they would only have to deal with one deadly, murderous machine.

~

They weren't completely helpless. They had a rail gun that could accelerate iron pellets up to speeds of thousands of meters per second. They had calculated that a thousand half-centimeter balls of iron packing that much energy could disable a thirty meter scout, or even one of the hundred meter modules. They started preparing that right away, even though the scout wouldn't be in range for a week. At that point they didn't think they could be too prepared.

Even if they could only see this one vessel after them at the time, they couldn't be sure that others weren't closing in as well. Buzzard spotted this one because he was concentrating on the right place at the

right time. Anything approaching from any other random direction might as well be invisible until it was much closer. All they could do was set up their telescopes to cover the whole sphere of space around them, and program them to pick out anything that moved against it. They kept one of the six main telescopes trained on their pursuer, along with their smaller spotter 'scope.

A week's worth of data was going to make aiming the rail gun easy. After the scout got up to speed and settled on course, it became fixed in their field of view. It was moving against the background of stars, but relative to the Ball the only thing that was changing was the distance between them. As the data piled up, Buzzard was able to work the numbers down to the point where their accuracy exceeded the gun's ability. After that it was just a matter of waiting until their target was close enough for an assured kill. At least, as assured as they could be under the circumstances.

When the time came, the eight were there along with the rest of the thirty-five waking crew members. They decided that the Ball could run itself for a while, and they could all be there for this important confrontation. They considered waking up the other one hundred seventy-five hibernating crew members, but decided against it for logistical reasons. The greater number wouldn't help, and might hinder their actions.

~

There wasn't as much action as they thought there might be. The scout closed in on them for a week, locked in the center of their viewer, imperceptibly growing larger. They'd watch it intently, wondering if it was ever going to change, then it would suddenly seem bigger, closer,

more dangerous, in one quick jump. Look away and there it would be when you looked back.

They continued to watch the whole sky, anticipating that other vessels would join the pursuit. They shouldn't have been discovered at all, but now that they were they saw no reason why more of them wouldn't join the attack. They had showed no hesitation before, when they were expunging the system of life, so why wouldn't they swarm in now? But nothing showed up. The sky remained empty, except for this one dogged pursuer. They didn't stop looking, though.

With about two days left, the scout began to scan them with radar. It was forty gigahertz, the same as before, but the power was much lower. They were in no danger of being harmed by it, but it still awoke uncomfortable memories, especially for Elgin and Fran. But this time it wasn't raking them with ionizing beams. More like polite little pulses.

If there was any hope before, there was little doubt now. It knew they were there. This was no coincidence, with the scout just happening to be going the same way they were. And after the radar it was unlikely they'd be mistaken for a natural object. There was no possibility of being quiet and having it go away. That being so, they turned on their own radar. There was no sense pretending any more, so they might as well gather as much data as they could. Whimsically, they matched the power and duration of its pulses, the difference being that their radar was at thirty-nine gigahertz, rather than forty.

Finally the distance between them was small enough that they could be quite sure of a successful shot. Unfortunately, they knew that they were almost in range of the scout's energy weapons, too. They couldn't delay any longer.

Stanton gave the order to charge up the rail gun and get the iron

pellets spinning up to their launch speed. While that was ramping up he asked Buzzard, "All set?"

At the monitor, his long-fingered hands hovering over the controls, Buzzard said, "All set."

"On target?" asked Stanton.

"Locked on," said Buzzard. "Locked on to seven nines."

"Good," said Stanton. One part in ten million should be good enough. "Let me know if there's any change."

"No change," said Buzzard. "The numbers haven't moved."

Stanton nodded. "Mm-hm. Is the gun charged up?"

"Just reaching full charge," said Buzzard. "Still oscillating." They unconsciously leaned in toward him. "Stabilizing." He nodded. "Ready to go. Ready."

"Thank you," said Stanton. "Prepare to fire."

"Ready to fire," said Buzzard. "Ready."

They held their breath, leaning in even more. This would be a historic moment in their confrontation with the Visitor. One time they had hidden to escape. Once they had ambushed it. Now they were about to engage in direct, open action. They didn't know if their weapon would be adequate or, if it was, what the repercussions would be. Would their brave gesture bring down a storm of destruction on them? Was this an act of futility? They couldn't know, but they did know that they had to do it. The alternative was to wait until the scout got close enough to destroy them.

Stanton drew a sharp breath, about to give the order, when Buzzard said, "Wait! No! Wait! No, wait!"

Stanton let out his breath, along with everyone else. "What is it, Buzzard?" he said patiently.

"It's changing," he said. "It's moving. The numbers are changing."

They're moving." His hands were still over the controls, but the fingers were curled up.

Stanton didn't know what to make of that. "What's going on?" he said. The numbers hadn't changed for days.

"It's changing," said Buzzard, extending one long finger to point at the numbers.

In the silence they heard the high-pitched hum of the rail gun transmitted through the shell of the Ball. "Well," said Stanton, "is it taking evasive action?" That would be disastrous. They couldn't get a clean shot if they had to constantly change their aim.

"I don't know," said Buzzard, leaning in to peer at the changing display. "No!" he said, suddenly seeing it. "No. It's breaking off."

"Breaking off?"

"Yes," said Buzzard, seeing it clearly now. "It's breaking off. Turning away. It's not after us any more."

He was right. As they watched, it peeled off, turning back to its master. It was no longer chasing them, and there was nothing else out there that posed a threat. They slowly accepted the fact that they might be safe.

19.

GOING HOME

“It broke off?” Winston was astounded, his wide mouth agape.

“Yes,” said Stanton. “We were about to shoot it full of holes when it turned around and went back.” He could hear excited talk behind Winston, as well as in the background on Orange Comet. “We don’t know why,” he said. “We have no idea what it means.”

Winston closed his mouth. Along with everyone else on the comets, he’d been glued to the window, holding his breath while the Ball prepared to fire on the scout. They’d seen it all, including the feed from the Ball’s telescopes, so they knew what Stanton and the rest of the thirty-five knew. It was so out of character though, with everything they knew about the Visitor, that they thought they must have missed something. There must be something that the people on the Ball had seen that could explain it.

“Are you sure there’s nothing?” His eyes widened. “Are you sure there’s no other vessel coming?” Maybe the scout was called off because there was a big module nearby, with more firepower.

“Not that we can see,” said Stanton. “You’ve got the feeds from our whole-sky observations. There’s nothing there.”

Winston nodded. As strange as it felt, he had to admit that the most plausible conclusion, given the information they had, was that the scout had been called off. He would accept that conclusion, but he wouldn’t really believe it. He wouldn’t be able to relax until the Ball was well clear of the system and on its way home. The Visitor, the Prime, knew exactly where they were, as well as their trajectory.

It could get them any time it wanted. He said, "I hope this is what it looks like. Good luck and hurry home. Our thoughts are with you."

"Thanks," said Stanton. "We all appreciate that. See you in sixty years."

~

It didn't come after them. They didn't know why, and they couldn't be sure it wouldn't, so they didn't let their guard down. While they still felt as if they were within its domain, they kept their telescopes on a whole-sky watch. Once beyond, they trained them all behind them. Not once did they see anything threatening, or even suspicious. There was the Prime, which never moved. There was the laser moon, which showed some activity, as would be expected with the amount of construction going on there. And they picked up the occasional smaller vessel moving about; scouts until they were too far away to see anything that small, and modules for awhile longer. At no time did any of them seem to care about the Ball.

By unspoken consensus they stayed in alert mode, although with declining urgency, until they picked up the laser beam from Orange Comet. Once they were in the hundred kilometer wide beam they felt as if that part of the mission was over. Now that they were truly back in interstellar space, safely away from the Prime and all its minions, they turned their attention forward to the return home.

Over the next four years the laser beam would be gradually narrowed down to ten kilometers, to give them its full power. Then, with angled sail, they would change their trajectory while building up their speed. Their course would curve until they were headed straight for Green Comet. Then it was clear sailing until it was time to flip over again, catching Green's laser which they would use for braking.

All that would take two more waking cycles for each crew member, and they'd be back where they started. Mission accomplished. Now they knew what was going on in their old solar system, and that's what they set out to find. As with most answers though, it presented them with more questions. The Prime was obviously preparing for something, but what?

There was more work ahead of them, no question.

20.

SMARTER DOWN HERE

“I feel smarter down here.” Elgin was sharing hibernation with Frances.

“How so?” she asked. Her face brightened and clarified while she was speaking, then began to slowly fade.

That fascinated Elgin. He almost understood how his brain, or the nanotool replica of it, created this reality for him. And how it needed specific input before it could show him specific images. If Fran didn’t speak for a while, her face faded into the background of rose and gold that he knew was her presence. The rest of their surroundings was mostly featureless white light, with hints of color and shape depending on what they were talking about.

It was just the two of them this time. Although the Doctor had worked out how to allow for three or more people to share hibernation, as requested by Fran, they saved that for longer sleeps. Short ones like this were more trouble than it was worth. With only about three minutes of subjective time, it was better to stick with two and save the confusion.

“Elgin?”

“Hm?” he said. “Oh, right.” He wondered if she could see him blush. “Yes. I feel smarter down here. I can see things and understand things that I just don’t get up there.”

“What kind of things?”

“Oh, well, take your imprinted genes, for example. No matter how carefully and patiently the Doctor explained it, the best I ever had was

a vague understanding.” He imagined his hand indicating their milieu in a sweeping gesture. “Down here I can almost see what he was trying to say.”

“I see,” she said, her face blossoming. “Do you like it?”

“Yes,” he said. “I love it.” He grinned at her, again wondering what she actually saw. “To understand the things that you guys sometimes talk about? Yes, I like it.”

“If you like it,” she said, “we could spend more time down here.” She spoke directly to the heart of it. “We could spend all our time down here, if you want.” Her face came completely into focus, showing its full depth of compassion.

It was tempting, but not that tempting. “That would be nice,” he said, “especially if I could spend the time with you.” He gazed at her face as it melted into the background. “But I’d rather be really with you, even if it means having a dimmer bulb.”

She couldn’t help but laugh, but she insisted, “You don’t have a dim bulb, Elgin.”

“Well, apparently it’s not as bright as it could be, if it can be brighter down here.”

“But what does it take to get that little bit of extra brightness?” asked Fran. “If it takes twenty years of real time for one minute here, is that really brighter?”

“I don’t know about that,” he said. “I don’t know how you’d measure that, or even if you could. All I know is I feel smarter.”

Fran smiled. “I’m glad you do. And I’m glad you like it. And I’m even more glad that you’d rather be really together up there.” A thoughtful frown drew her brows down. “I wonder if you were to think of something down here, whether you could remember it up there.”

“I wonder,” he said.

“Let’s try it,” she said. “Think of something that you understand here, but not there.”

“Like what?”

She laughed again. “How would I know?”

“Right,” he said, “Of course.” Now it was his turn to frown. “Oh, I know. The aging thing.”

“The aging thing?” she said. “You’ve got that figured out?”

“Not figured out,” he said, “but I think I know what a part of it is. If I could tell Buzzard, then he could figure it out.”

“Tell me,” she said, “then we can check it when we go up.”

“Okay,” he said, taking a moment to marshal his thoughts. “Okay. I’ve noticed that when our electronic and photonic equipment malfunctions ...”

This time when Fran’s face faded, it faded into the gray light. Their three minutes were over. It was time to go up.

21.

STANTON'S PAIR

“Well?” said Fran.

“Well what?” said Elgin.

They were working out on the proprioceptive re-integration apparatus, commonly called the “bike,” even though it didn’t have pedals as such. It was an isometric machine, where you would push with your feet while pulling with your hands, alternating from side to side. It felt a little like pedalling a bike, and it was a lot easier to say. Since Stanton’s discovery during the Laika incident, they included exercise in the post hibernation recovery routine. The common wisdom was that it re-introduced the parts of the body to each other, helping them to re-integrate. The result was that the recovery process was down to not much more than a day, which was much better than the four days it took when Elgin first woke up in this room.

“Can you remember?” Fran asked. She was working up a light sweat, and her breathing was accelerated.

“Remember?” Elgin was concentrating on the exercise. Left-right. Left-right.

“Yes,” said Fran. “In hibernation you said you had figured out part of the aging thing.”

“Oh, yeah,” said Elgin, slowing down. It looked as if he might stop all together, but when he saw Fran continuing to work, he ramped it back up. He asked, “Can you remember what I was talking about?”

“You didn’t manage to say much before we were brought up,” she said, “but you were starting to say something about our electronic

equipment malfunctioning.” She pedalled a couple of beats. “And photonic equipment.”

“Oh,” said Elgin. “I remember saying that.” He frowned so hard you might call it a scowl. He shook his head and blew an exasperated breath. “It’s not coming to me. See?” he said. “Dim bulb.”

“Stop saying that,” said Fran. She wasn’t going to give up on it. “When you were talking about it, I got the impression that it was something you observed up here. Not down there where you feel smarter.”

“Oh,” said Elgin. “Well, there is something I’ve noticed when we have an equipment failure, but I don’t see how it could have anything to do with aging.”

“Try me.”

“Okay. Quite often it’s a faulty power supply.” He looked at her and shrugged.

“Power supply,” said Fran, also shrugging. “It doesn’t mean anything to me either, but I still think you should run it by Buzzard.”

~

“Power supply?” Buzzard looked at Stanton, then back at Elgin and Frances.

“Yes,” said Fran. “While we were in hibernation, Elgin said he figured out part of the aging thing, but we were brought up before he could tell me.”

“I feel smarter down there,” said Elgin.

“But it had something to do with power supplies?” asked Stanton.

“Yes,” said Elgin. “Like when we get an equipment failure, it’s often a dodgy power supply.” He looked at Buzzard. “I don’t know what it means any more, but Fran thought I should run it by you anyway.”

“Power supply,” said Buzzard, gazing into space. He shook his head. “Nothing’s coming to me yet. I’ll keep thinking about it.” He looked at Elgin. “You feel smarter down there?”

“Yes,” said Elgin.

“That’s funny,” said Buzzard. “I feel less smart.” They looked at Fran and Stanton.

“I feel the same,” said Stanton.

“Me too,” said Fran.

They all turned to look into space. They were in Stanton’s bubble, a fifteen meter ice sphere half buried in the surface of the comet. Outside was one of a pair of two-hundred-meter spheres, and they were here to have a look at it as it neared completion.

It was sitting on the big hatch a kilometer away from them. The other half of the pair was about sixty kilometers away, on the surface of another comet. Technically, that comet was part of Green Comet now, like the two little comets that were already attached. This new addition was big, though. Closer in size to Green Comet itself. And it wasn’t stuck on like the others. Instead, it was standing off one kilometer, joined by a transparent ice tube. The greater Green Comet was now a dimer; two molecules joined to make one larger object.

The original Ball was sitting there, looking beautiful and grand and portentous as it had before. It looked the same, but they knew it was changed to incorporate the necessary improvements and modifications that its first trip made apparent. The second ball, on a similar hatch sixty kilometers away, was built from the ground up to incorporate the changes. They were functionally identical but, as the engineer in charge told Stanton as she briefed him on the changes, you always prefer to have it built in. Stanton, one engineer to another, knew what she meant.

“Has everyone seen enough here?” asked Stanton. “Let’s go look at the other one.”

~

Down into the comet they went, through smaller passageways that led to larger ones, past the Square via one of the orbitals, and finally into the corridor that took them outside. The first kilometer was still within the comet, so it was just like any other large corridor. Once they went past the bulkhead, though, with its recessed emergency pressure door, they came out into space. Ahead they could see the massive bulge of the other comet, but in between, through the nearly perfect clarity of the ice, was a vertiginous gap.

Fran hesitated slightly, but kept moving. She’d done this before and was comfortable with it, at least intellectually. Underneath, a more conservative part of her wasn’t yet ready to accept that it was safe, but she stifled its protests and dragged it out there. After less than a minute, when they were halfway across, she stopped.

Elgin, who had been covertly watching her since she hesitated, stopped immediately. Stanton and Buzzard flew on for a few meters and had to come back. “What’s up?” asked Elgin solicitously.

“Nothing,” she said. “I just wanted to have a look.” She turned slowly, taking it in. Their view was dominated by the comets, which blocked most of it, but in between was spectacular. Aside from venturing outside in a pressure suit, this was the most exposure they could get to the vacuum. Although they could get more total sky in Stanton’s bubble, they were still immersed in the body of the comet. Here, even though the comets loomed on both sides, it still felt more like being outside.

Looking at the comets, Fran could tell by the way they curved away

from her that the new one was smaller than the original. "Have they figured out what they're going to do about that?" she asked Stanton.

"The difference in sizes, you mean?" he said. He shook his head. "Everyone has something to say about it. I think the consensus is that they should be the same size."

"For balance and symmetry," she said.

"Yes," he said, "but there are good arguments against it, too. Like the effort required and the potential danger."

"But we've never worried about effort and danger, have we?"

"No," he laughed. "Not if you've had anything to do with it."

They all chuckled at her, then Buzzard said, "I hope we decide to build it up to the same size."

"So it looks right?" asked Elgin.

"Yes," said Buzzard. "If it's going to be a dimer, then the two molecules should be identical. The same. Water molecules are the same." He looked at the horizon of the smaller comet, nodding his head. Then he grinned. "Besides," he said, "it would mean a lot of work for Maria, operating her smasher."

They all laughed, picturing her striding about the surface of the comet in her five meter tall exoskeleton. She loved operating smashers, and that made Buzzard love them too.

"They could start by taking the two hydrogen atoms and spreading them out," said Stanton.

Like Green Comet, the new one had two smaller comets attached, representing the two hydrogen atoms in a water molecule.

Buzzard said, "Yes, that's just about right. That's just about the right amount of material."

They were quiet for a while, thinking about that. Stanton was thinking about the engineering problems, visualizing how he would

go about solving them. He was almost sorry he wouldn't be there for that, but he had something else to do. Green Comet's engineering challenges would be in someone else's hands for now. He turned and looked back down the tube, to the opening into their comet. He was surprised by the sudden sense of loss and leaving. And he was left wondering how things would be when they got back. Would he still be Green Comet's chief engineer? He turned away, shaking off those thoughts and feelings. He had another mission now. He could deal with this stuff later. "Come on," he said. "Let's go have a look at Ball Two."

The four of them got going again, flying across the gap between two huge comets. That image made Fran wonder about another member of their crew. She asked, "Does anyone know if the Doctor has been out here yet?"

"No," said Elgin. "Nigel has been working with him and he's getting more comfortable going out on the surface in a pressure suit, but he just can't get him to come out here."

"Why not?" asked Stanton. "This isn't as bad as being on the surface." He waved at the structure around them. "It's completely enclosed and protected. He wouldn't even need a suit."

"I don't think it's that," said Elgin. "According to Nigel, the Doctor doesn't like the feeling of vulnerability and fragility."

"Fragility?"

"Yes. Two massive things and a tiny piece of glass holding them apart." Elgin brought his hands up to demonstrate. "Nigel says he feels like the least little thing could snap this tube."

"Snap this tube?" said Stanton. "That's not going to happen."

"I know," said Elgin.

"This tube is stronger than the comets."

“I know.”

“This tube, and all the built systems it’s connected to, have more structural integrity than the comet material that they’re embedded in.”

“I know,” said Elgin. “The corridors branch into it like roots. There’s no rational reason for his fear.” He shrugged, spreading his hands.

While they contemplated this irrationality, Fran said, “Maybe Nigel should get him to try coming out here in a suit.”

No one said anything for a minute, then Stanton shook his head and said, “You always come up with the answer that no one else would.”

Elgin was smiling proudly. “And the one that’s right.”

Buzzard laughed. “Wearing a spacesuit indoors,” he said as they entered the comet.

The first kilometer was identical to the other side. It was a stretch of new corridor that ran seamlessly from deep inside one comet to equally deep within the other. It was different from there on, though. They started out in a section of orbital, but in a few kilometers that ran out and they were in utilitarian tunnels the rest of the way.

They came to the square, but couldn’t go in because it was still under construction. They stopped where a section of their corridor’s wall allowed them a view, and watched the people working. The square was roughed in and most of it was sealed off by ice, but that was it. The workers were in suits, obviously still working in a vacuum. There were no openings, no columns, no finishing touches of any kind.

Fran asked Stanton, “How long before it’s usable?”

“At least a month,” he said. “They have to finish sealing it, then there’s the pressure test. And they’ll have to make at least one entrance

and connect it to a functioning passageway.” He looked at her. “We’ll be gone before it’s done.”

They carried on down the corridor, which went for a few kilometers without any more branches or exits, and then simply stopped dead. Here there was a connecting passageway that headed upward, the only reason the main corridor had been pushed this far, and up they went. This small passage also had no branches and only one destination. In minutes they came to its end, where there was a small door. Buzzard opened it and they came out into another bubble. There waiting for them were Galatea and Maria.

“You took your time,” said Galatea, while Maria greeted Buzzard with a quick hug and a kiss.

“We did a bit of sightseeing,” said Stanton. “The tube and the new square.” His eyes were drawn outside, where the second ball was sitting on the surface a kilometer away. It looked just like the Ball, a two hundred meter sphere made of ice. More accurately, it had a shell of water glass. No crystals were allowed to form during its construction, so it couldn’t properly be called ice. But it was water, and it looked like ice, so everyone still thought of it as ice.

It was laid out the same as the Ball, with the clutter of construction in the bottom end and the flashball court at the top. Stanton swung his head a hundred eighty degrees, to compare this ball to the original, but at sixty kilometers even a two hundred meter object is too small to make out details. They could only see it at all because of the lights. “How long have you been waiting?” he asked.

“Not long,” said Maria before Galatea could tease him. “About ten or fifteen minutes.” She looked at the ball. “We were talking about the procedure,” she said. Taking Buzzard’s arm, she asked him, “Could

you go through it one more time please? As long as we're looking at it?"

"Sure," he said, "okay." He glanced at Stanton. "Right. Well, you can see one of the two nitrogen rockets." She nodded. "There's another one. Two." She squeezed his arm. "Okay. Those will run at first. For a few days. To get us going." And so it went, with the rockets which were discarded after a few days, then the ion drive, which would run for months. After that it would be just the light sail until they got there.

It would be the same as last time. They would angle toward Orange Comet, then flip over and catch its beam. That would push them back toward their destination while slowing them down enough for the star's gravity to sling them back toward home. The difference was that this time there would be two balls travelling together, and one of them would be staying there.

Ball Two, as they were provisionally calling it, would be carrying a complement of eight hundred people. Its mission was to establish itself in the outer reaches of the star's system, where they were sure they would find a plentiful supply of small orbiting bodies. Ensured of adequate resources, they would set up the laser they were carrying, and provide the Ball with a good source of energy for the return trip. They would be setting up the first true interstellar transport system.

As Buzzard was finishing his story, the door at the back of the bubble opened and out came Nigel and the Doctor, who was wearing a pressure suit. "Hello everyone," he said, smiling through his open faceplate.

They all greeted him and congratulated him on his accomplishment. He turned to Frances and said, "Nigel tells me I have you to thank. That this was your idea."

She nodded graciously and said, “I might have thought of it Doctor, but you did it.”

Over a chorus of affirmation, the Doctor said, “It was still your idea. Thank you. Without you I would never have seen that amazing view.” He chuckled nervously. “Scary as hell, but amazing.”

They all laughed with him and their eyes strayed back to Ball Two. As everyone quietly contemplated their coming voyage, Fran said, “Pretty soon we’ll get to see what we saved from the Visitor.”

22.

PHAROS

“This is more like it,” said Elgin, lacing his fingers behind his head and leaning back in his chair. He lifted his feet and crossed his ankles, which is easy to do in microgravity.

“What is?” asked Stanton. They were in the Ball’s control center, or rather, almost in it. They were close enough that if anything happened, they’d be right there. But they were out where they had a good view of the flashball game that was underway up front, and where they could see the window. There was something satisfying about the window, with its prominent views of the squares in Green and Orange Comets, and of the interior of Ball Two.

Elgin relaxed and his body fell back to its normal attitude. It took some effort to strike that “relaxed” pose he’d been in, but it felt good to stretch out once in a while. He pointed in the general direction of Ball Two, sixty kilometers away on their starboard beam. “It’s good to be travelling as a pair again. I have to admit, I was never completely comfortable being alone on that last trip.”

“Ah, right,” said Stanton. “I know what you mean. It’s better to have company.”

About sixty meters away, the flashball streaked across most of the width of the court, with a sharp flash of white in mid-flight. They gave a little cheer. “Good one, Buzzard,” said Elgin. Even at this distance they could recognize his unique style and physique. But even if they couldn’t, they’d have known by the white flash. Buzzard wasn’t the

only one who could make the ball do that, but he was the only one here on the Ball.

Stanton said, "Has he got back to you about the mitochondria yet?"

"No," said Elgin, "not really." The hibernation between launch and flip was long enough for him to remember what he meant by power supplies, and to tell Fran. When they came up for the flip maneuver, Fran was able to tell Buzzard, but he wasn't able to make anything of it yet. "He says the mitochondrial DNA is fine. He hasn't been able to find anything wrong with it."

"That's what he told me too," said Stanton. "I just wondered if he might have told you any more."

"Did he tell you what he's planning next?"

"I don't think so. What did he tell you?"

Elgin hesitated. "Maybe I shouldn't tell you. If he hasn't told you, maybe he's got his reasons."

Stanton gave him a look.

"It's a bit off the wall," said Elgin. "He might not want to tell you until something comes of it."

Stanton kept looking, and Elgin began to get nervous.

"Okay," said Elgin, "it's not as if he actually asked me to not tell you."

Stanton nodded, encouraging him to go on.

Elgin said, "He figured if I was thinking of the mitochondria as a power supply, then maybe he should too. So, what's the first thing you do when you suspect the power supply?"

"You check the voltages," said Stanton.

"That's right. So Buzzard is trying to figure out how to do that test inside a cell."

Stanton raised his eyebrows. "I'm no biologist," he said, "but I don't think you can just look at a dial."

Elgin laughed. "Buzzard's working with the Doctor. They're talking about attaching bits of RNA to nanotools." He noted Stanton's quiz-zical look. "I know," he said, "but they seem to think it might work."

Stanton nodded. "They probably know what they're doing."

"If anybody does, it would be them."

The window chimed, drawing their attention. "Ball One, this is Pharos, over," it said.

Elgin and Stanton looked at each other. "Pharos?" they said simultaneously as they went over. They could see that it was just Sun Ra of Ball Two. "Hey Sun," said Elgin. "What's up?"

"Hi Elgin. Stanton," said Sun Ra, beaming widely. He was bursting with happiness and excitement. "So, what do you think?"

"Think of what?" asked Elgin.

"Pharos," said Sun Ra. "Our new name. What do you think of it?"

"New name? You've renamed Ball Two to ... Pharos, is it?"

"Pharos," said Stanton. "That's right. The lighthouse." He nodded at Sun Ra. "It's an excellent name. I like it. Congratulations."

"Thank you," said Sun Ra. "We wanted you guys to be the first to know."

Elgin caught up. "Ah. The lighthouse Pharos. Of course," he said. "I like it too. It's very appropriate."

"We thought so," said Sun Ra. "We had a debate and a vote, but it was obvious anyway. Oh, and Pharos is the name of the island."

"The island?"

"That the lighthouse stood on," said Sun Ra. "It was called Pharos, not just the lighthouse."

"Really?" said Stanton. "I didn't know that."

There was a brief round of nodding, then Elgin asked, "What brought this on, anyway? Why did you suddenly decide to change your name?"

"Oh, it wasn't sudden," said Sun Ra. "We decided years ago, well before the flip, but we thought it would be best if we made it official after. To be more symbolic."

"Symbolic?"

"Yes. Symbolic of the change from our old lives to our new ones." He smiled at them, possibly a little abashed at sounding so grand. "You know," he said. "Before, we were going away from Green Comet, but now we're approaching our new world. Our new lives." He might have been embarrassed to say it, but you could tell he was proud, too.

"I see," said Elgin, looking at Stanton. They realized that this hadn't occurred to them. While they knew that the people on Ball Two, Pharos, would be setting up a laser installation at the new star, they hadn't thought of it as permanent. They knew it was, of course, but some part of them continued to assume that it wasn't. That Pharos was on a mission just like the Ball, and would be returning just like them. That was when it dawned on them that they were entering a new era. They would be dividing up now, and spreading out. "I see."

When they called Green Comet to tell them, they got Winston. When he heard, he said, "Ah, the lighthouse. Good choice."

Elgin, Stanton and Sun Ra all began at once. They laughed and let Sun Ra do the honors. "It's actually the island," he said.

"Oh, right," croaked Winston. "I remember now. Pharos was the island that the lighthouse was on." He nodded. "It's still a good choice, though."

"We think so," smiled Sun Ra. "The more we get used to it, the more we like it."

They got much the same reaction when they called Orange Comet, although the first person they talked to there had never heard of Pharos. They got someone who had, and this time Elgin and Stanton let Sun Ra explain the island thing by himself.

Just then Buzzard arrived from the flashball court, energized from his physical exertions. His reaction was, "The island. With the light-house. That's good. You're kind of like that. Kind of like an island with a light on it. That's really good."

Elgin and Stanton looked at each other. Of course he'd know that. If Sun Ra was disappointed that he didn't get to explain again, he didn't let it show. He thanked them for their kind words, unable to suppress a happy grin, then signed off and left the window.

Fran came rushing up, asking, "Is he still here?"

"No," said Elgin. "He just left."

"Sun Ra," she called, hurrying over to the window. She put her face up close and looked both ways. "Sun Ra?" She spotted him and called out again, finally getting his attention. "Ah, good," she said as he turned and came back. "I'm glad I caught you."

"Hi, Fran," he said as he reappeared in the window. "What's up?"

"I just heard," she said, "and I wanted to congratulate you."

"Thank you," he said.

"All of you. Your whole community. This is a big day for you."

"Yes," he said, looking thoughtful. "You know, I knew it was something special, but until now, until you said it, I didn't realize how special." He grinned at her. "Thank you again."

"You're welcome," she said. "We're going to be saying all this again when we send an official note, of course, but I wanted to say something personally." She changed slightly, in her voice and her posture, and they knew she was speaking for everyone now. She said, "Congrat-

ulations on your new name, Pharos. You will always be a beacon in our minds.”

Sun Ra had changed too, almost giving the impression of standing at attention. He smiled at the beacon reference, aware of how apropos it was. He said, “Thank you, Fran. You always know what to say.” Still smiling, he nodded. “I have a feeling this is going to be more official than all the official notes we might get.”

“I don’t know about that,” she said. “I just wanted to mark the day.”

“Well,” he said, winking at her, “consider it marked.”

She laughed and they observed the formalities before he left the window again. When she turned around she saw Elgin looking at her adoringly, Stanton nodding sagely and Buzzard wearing a big delighted grin. “What?” she said. “I just wanted to let them know how I felt.”

“Right,” said Stanton, “and somehow you managed to say what we all felt. Saying the perfect thing in a handful of words.”

“Piffle,” she said. “I just said what anyone would have said.”

“Piffle?”

“Yes,” she said, blushing. “Now, what were you talking about before all this?”

Stanton remembered. “Elgin and I were talking about the aging thing.”

“That’s right,” said Elgin. “About what Buzzard and the Doctor were doing with nanotools.”

“And RNA,” added Stanton.

Fran turned to Buzzard. “Nanotools and RNA?” she asked.

“Yes,” he said. He was winding down from the exercise and stimulation. “We need to communicate with the mitochondrial DNA, and the Doctor thinks the RNA will do that.”

“Do you think there’s something wrong with the DNA?”

“No,” he said. “There’s nothing wrong with it. It seems completely normal. We just need to measure its energy production.”

“And you can use RNA for that?”

“The Doctor says that DNA uses RNA to do what it does. He’s right. I looked it up.”

“So you’re thinking you can use the RNA on the nanotools to measure what’s going on.”

“That’s right,” said Buzzard. He shrugged. “That’s the theory anyway.”

“You don’t sound hopeful.”

“No, no,” he said, “we’ll get there, eventually. It’s just not as straightforward as the circadian clock and the suprachiasmatic nucleus in the hypothalamus.”

“I’m glad that’s straightforward to you,” said Fran. They all laughed.

23.

EPIPHENOMENA

Her eyes were always the first to appear and the last to go. “Elgin?”

He saw her face appear, eyes first. “Yes, Rannie?”

She smiled. “I love it when you call me that.”

“And I love it that you let me.” He watched her face blend into the indistinct background. When only her golden eyes remained, he said, “Was there something?”

“Oh, yes,” she said, her face blooming back. “Do you have any thoughts on the mitochondria thing?”

“Yes,” he said. “Since Buzzard says the DNA is okay, it must be something else. Something that interprets what the DNA is saying, and puts it into effect.”

“Do you mean like RNA and enzymes?”

“No. Well, I mean yes. But not so specific.”

“But what else is there?”

“I don’t know,” he said, “but I know there’s something. Some layer between the hereditary code and the physical results.”

She frowned. “Biology was never my strong suit, but I’m pretty sure there’s no other structure in there.”

“I know,” he said, “but there’s something there. Something mediating between the genome and the individual organism.” He was frowning now, too. “It’s not the genome ...”

Her eyes shone, flashing gold. “The epigenome!” she said. “The epigenome. It’s how the genome is expressed in each individual.”

“That’s right!” he said, as it clicked into place. He didn’t know the

term or exactly how it was supposed to work, but as soon as she said it, he knew it was right.

“That’s what we can tell Buzzard, then,” she said.

“And I should be able to remember that myself,” he said. “Epigemonome. Easy.” After some thought he added, “I probably won’t be able to explain it, but I should be able to remember it.”

She smiled at him. “If there’s a problem, I’ll be there to help, Mister Dim Bulb.”

He was laughing as the gray light came.

24.

SPLIT BEAMS

“Elgin, come look at this.” Fran was at the telescope monitor, looking at their destination.

Elgin left the window, where he’d been having a look at the Square back on Green Comet. “What is it?” he asked, peering at the image. “What’s wrong with it?” he said when he saw it. “Is it out of focus?”

“No,” she said, “that’s as good as I can get it.”

His impulse was to try to adjust the image, but he didn’t. He knew it must be as good as it could be. Fran spent a lot of time on the telescopes and it was unlikely that he could improve on her results. Still, it was tempting to reach out and tweak it.

What he saw was a fuzzy dot. She was looking at one of the planets orbiting their destination star. It was the second one they’d found, a second gas giant nearly as massive as the first. Once they found the first one they knew it would be simple to find the rest. With their innate sense of gravitation, bred into them by having at least two comets in their sky for the last hundred thousand years, imagining the orbits of these planets was instinctual.

From the way these two were moving, and the way the star was being pulled around, they knew there was at least one more gas giant on an orbit farther out. That was in addition to the expected population of smaller bodies. Inside the orbit of the first and largest giant there were more potential orbits, but they might or might not be occupied, depending on the history of this system.

It would take time and a lot of observation to figure that out,

and they would. They had the advantage of getting closer to what they were observing with every passing day. They knew that they would eventually have the system completely mapped, at least for the major planets, and surely for many of the minor bodies too. But that would all come later. For now there was this fuzzy dot, and the fuzzy bright spots on either side of it.

“Is that a glitch?” asked Elgin.

“No,” said Fran. “I’ve run a complete diagnostic on the whole telescope system. Everything is well within tolerances.”

Elgin leaned in closer. The fuzzy dot looked fine. It was just what it should be at this distance. But the indistinct patterns bracketing it were all wrong. “They can’t be moons,” he said. “They’re as big as the planet.”

“No, they’re definitely not moons. Not unless moons grow.”

“Grow?”

“Yes. Those patches are bigger than they were yesterday, when I first spotted them.”

Now Elgin was really intrigued. As he stared at the image he realized something else. The patches were on opposite sides of the planet, but not directly opposite. “These can’t be moons anyway. Well, not unless we caught them at a special moment in their really weird orbits.” He pointed. “If they were real moons, they’d have the center of the planet between them. These are off-center.”

“I thought there was something wrong with it,” said Fran. “It seemed unbalanced somehow. I was putting it down to the distance and the quality of the image.”

“It’s definitely off-center,” said Elgin.

They were quiet, looking at the image, thinking about its mystery. In an amused tone, Fran said, “They look kind of like wings.”

Elgin squinted, looking through his lashes. “They do,” he said, chuckling. “Maybe we’ve discovered a giant pixie that lives in outer space.”

Fran laughed out loud. “Oh my,” she said. “I hope it doesn’t eat spaceships.”

~

They were up for the divergence. The Ball and Pharos were planning to go to different parts of the system. Pharos was heading for the outer system, to establish itself among the small bodies they knew would be out there. They would decide on their destination as they gathered more information. It might be the small rocky and icy planetesimals that they knew would be out beyond the big gas giants. Or, if they found one or more smaller giants out there, they might have a good collection of resources in their trojan areas. Either way, Pharos would set up shop and prepare their transport laser.

The Ball would be angling in toward the inner system. There was room inside the big giant for a few more orbits, and they intended to go in there and see if those orbits were populated. If they were, then they might find something analogous to their own planet. If there was a wet, rocky planet in there where it was warm enough to have liquid water on the surface, then they had to see it. If there wasn’t, if everything in there was disrupted by the gravity of the giants, and was either thrown into the star or ejected from the system, then they would want to know that too.

“Do you think we’ll find anything?” asked Elgin.

“In the inner system, you mean?” said Fran.

“Yes.”

“I think it’s likely,” she said, “that there will be one or more planets

in there. But I suspect you want to speculate on the existence of life, right?”

He nodded. “Yes. It might be interesting to find more planets, but without life that’s all it would be.”

“I know what you mean,” she said. “We’re on this mission to see what we saved when we destroyed the Visitor. It would be less satisfying if it was nothing but a bunch of lifeless planets.”

“That’s it exactly,” he said. “It’s satisfying to know that the Visitor won’t destroy this system, or any system ever again. That alone makes it worth the effort.” He glanced at the telescope display, then raised his eyes to the front of the Ball, as if he could see the star and its planets. “But if there’s life there ... if we saved a living system, it would mean so much more.”

They were interrupted by a call. “Ball, this is Pharos, over.” It was Sun Ra again.

“Hello Sun,” said Fran.

“Hello Fran. Elgin.” He was calm and friendly, but his expression was serious.

Fran picked up on it right away. “What’s wrong, Sun?”

He glanced over his shoulder, where there seemed to be an unusual amount of activity in the background. “We’ve had an incident,” he said.

“Oh no!” she said. “What is it? Is everyone all right?”

“Everyone’s okay,” he said, raising placating hands. “It’s nothing like that. It’s just ...” He paused, looking embarrassed. “Well, we seem to have fallen off the beam.”

“Fallen off the beam?” Fran and Elgin looked at each other, then back at Sun Ra.

He looked mortified. “I know,” he said. “We can’t believe it either.”

Fran bit down all the obvious questions. This wasn't the time to satisfy her curiosity, or to look for where to lay the blame. She said, "How can we help?"

His face relaxed with gratitude. "We need some help calculating the thrust vectors we need to get back on the beam."

"Shouldn't that be straightforward? I mean, you have your trajectory, and you know where the beam is." She saw his face fall. "Of course we'll help you," she said. "I'm just wondering."

"I know," said Sun Ra. "It should be straightforward, but there are complications and we need someone who can do it quickly." He frowned and looked away, distracted for a moment by the bustle around him. He looked back. "We can do the calculations ourselves, but we're drifting farther away from the beam all the time, and we'd rather get it done as soon as possible." He looked hopeful. "We were thinking of Buzzard, and maybe Archie."

"Of course," said Fran. "Send us a dump of all the data and we'll get started on it right way."

"Right," he said, beginning to send data that was obviously already assembled. "And you'll give it to Buzzard?"

"We'll tell him about it," said Fran. "Whether he does it or not will be up to him." She saw alarm in his face and added, "Don't worry. He's never let anyone down yet. It's just that he and Archie are pretty busy with the aging thing."

"Oh yeah," he said. "How's that going?"

"Pretty well, I think. They were able to measure the energy output of the mitochondria, and they found that it's a little erratic. They compared it to some reference cells that have been in cold storage all along."

"Will they be able to repair that?"

“They should be able to. They’re studying the epigenome now, to see if there’s any correlation.” She smiled at Elgin.

“Well,” said Sun Ra, “if anyone can do it, they can.”

“That’s right,” said Fran. “Now, why don’t you tell me what happened? The sooner you do, the sooner we can get started.”

“Okay,” said Sun Ra. “We didn’t notice anything until it was too late. The first thing we saw was when someone looked at the sail. It was too dim.”

“So you were already slipping off the beam.”

“That’s right. So naturally we immediately started trying to tack back onto it, but the sail wasn’t responding properly.”

“How so?” asked Fran.

“It wasn’t taking the shape or the angle we were telling it to.” Sun Ra shook his head. “That’s when we became aware that it was the wrong shape anyway. It was wrong before we even did anything.”

“But how can that be? Wouldn’t your instruments have told you that?”

“That’s the thing,” he said. “Our instruments didn’t tell us anything. They were reporting that everything was optimal the whole time.”

“Your instruments are defective?” Fran glanced at Elgin, who immediately began a full diagnostic of their own instruments.

“Yes, and once we realized that, we did a full series of visual measurements on the sail. It turns out that one of the cables has stopped functioning.”

“And the instruments didn’t report that either.”

“No! We had no idea until it was too late.”

“Have you run the diagnostics?”

“Yes, and that’s what makes it so hard. They’ve found nothing.”

This time when she looked at Elgin, he rolled his eyes and got on the public address system. He said, “Stanton to the control center. Stanton. To the control center, please.”

The Ball changed. All the sounds of activity stopped. All the little noises that they’d been hearing, the shouts in the flashball court, talking and laughter elsewhere, all stopped. The Ball was as silent as it could be, with only the background sound of its functioning machinery still there.

Then the people began to show up. Elgin might have called only Stanton, but everyone came. Every member of the waking thirty-five crew who could leave their post was arriving at the control center. You don’t summon your chief engineer unless something is going on, and they all wanted to find out what that was.

When Stanton got there, Galatea was with him. Buzzard and Maria had preceded them, and Nigel and the Doctor came in with the stragglers. Stanton joined Elgin, who filled him in on what had happened so far, while Fran waved Buzzard over to talk to Sun Ra.

Buzzard riffled through the data sent by Sun Ra, while listening to him recount the sequence of events again. Before long he was nodding, and by the time Sun Ra’s story was done, Buzzard had a preliminary recommendation for a thrust vector.

“I’ll be able to be more specific once I’ve had time to go over the numbers, but this will get you going in the right direction,” he said, nodding reassuringly. “We’ll get Orange Comet to widen its beam, and by the time that gets here, you should be sliding right into it.”

Stanton came over, glancing at the crowd of spectators on the way. He joined Fran and Buzzard so he could talk to Sun Ra. “Hello,” he said. “I hear you’ve had a bit of trouble.”

“Yes, a bit,” said Sun Ra, who was now completely relaxed. With

Stanton there, he had pretty well everyone he'd have put on a list of the people he'd most want in a crisis. He scanned the faces behind Stanton and saw Nigel and the Doctor. They were all there. The Five, who'd saved them from the Visitor. One hand against annihilation. Plus Buzzard. Compared to what they faced before, this was nothing. He smiled. "I'm sure it's nothing to worry about."

Stanton frowned. "Of course it's something to worry about," he said. "If we can't get you back on that beam, then I don't know what we'll do." He looked around the Ball. "Then there's the matter of your equipment failure," he said, looking him in the eye. "We have the same equipment. Of course it's a problem."

Sun Ra's face fell. "I'm sorry," he said. "I didn't mean ..."

Stanton waved him off. "Never mind that," he said. "We're going to need as much data as possible. We need to find and isolate the problem. We'll need a complete dump of all your systems." He caught himself and softened it. "We're going to get through this," he said. "We'll do it together. You and us. Green and Orange. We'll find the problem and, if it's possible, we'll fix it."

Fran and Buzzard had drifted away while Stanton talked to Sun Ra. When they joined Elgin, Buzzard said, "It's good to keep their spirits up, but it won't be that simple. It's not a sure thing. Not a sure thing."

25.

SPACE IS BIG

“What was that?” said Buzzard.

“What?” said Archie. “I didn’t see anything.”

They were at the window, with a model of the problem between them. The model wasn’t only of the defective cable on Pharos’ sail. It included the sensor system and the diagnostic system. It had lines and symbols showing where those systems went and how they interacted, with the cable, with each other, and with the rest of the vessel’s systems. It was fully annotated and color coded. They could explode the view on any part of it or make it transparent if they wanted. They were using all the aids to make it as simple as possible, but it was still complicated. You might even call it a rat’s nest, and Buzzard thought he saw a rat.

“Not in the cable,” he said. “In the numbers.”

Alongside the model was a block of numbers representing the readouts as they ran the model through the recording of the real system. It wasn’t the first time through. They’d run the simulation many times, trying to see where things had gone wrong. It was a difficult exercise, and it wasn’t made any easier by the knowledge that the recording contained false data. It continued to report no faults when that was obviously not true. The failure was proof of that.

Buzzard ran things back to where he saw the problem, then let it go again. He nodded when he saw it, then marked off a block of time. “See?” he said to Archie.

Archie shook his head, puzzled, then his eyes snapped wide. “I see it,” he said. “I see it.”

Archie and Buzzard were just about as different as you could imagine. Buzzard’s long, sinuous body and his open, expressive face continuously showed everyone what he was feeling. Even staying in one place, he always seemed to be moving somehow, or at least about to. He was open and friendly and usually smiling. Children instinctively loved him, and they weren’t the only ones.

Archie was small and compact. He kept his body and his face under control. His expressions, face and body, were contained, almost taut. He rarely smiled, or showed much of any emotion on his face. People didn’t take to him. Not that they were antagonistic or put off. They would tell you that he was a fine person and not bad company. They just had no inclination to seek out his company.

As different as they were, Archie and Buzzard were alike in one way, at least. They both had a gift for recognizing and remembering patterns, and that’s what they had here. Buzzard took the numbers in the block of time he was showing Archie and did a search on them. Sure enough, they got a hit right away. As the search ran, they got hit after hit. It turned out the sequence was repeating once per day. Buzzard expanded the search to take in a full day of data, and once again got a series of perfect hits. It’s no wonder the people on Pharos didn’t notice anything was wrong. They kept getting the same good data on a slow loop.

“Why didn’t anyone notice this?” asked Archie.

“It’s pretty hard to see,” said Buzzard.

“But we saw it.”

Buzzard cocked an eyebrow at him.

“Okay, you saw it,” said Archie. “But once you pointed it out, I saw it right away.”

“Of course you did, because you’re like me.” Buzzard gestured at the numbers. “Most people wouldn’t see it, or at least not for a long time.”

“I guess you’re right,” said Archie. “Not everyone is like us.”

“That’s right,” said Buzzard. “And besides, they wouldn’t have been looking at these numbers anyway. They’d have checked the readouts and the indicators, and this pattern might not show up there at all.”

“Why not?” The brows on Archie’s smooth face drew slightly closer together.

“An indicator might not change all day,” said Buzzard. “It could be green the whole time, while the actual numbers go through the whole cycle.”

Archie’s brow cleared. “Of course,” he said. “There’d be nothing to look for because there wouldn’t be a pattern at all.”

“That’s right,” said Buzzard, beginning to go through the numbers in detail. “That’s right.”

Archie joined him and together, on opposite sides of the window, these two very different men began to take apart the numbers.

~

“It’s right in here,” said Buzzard, indicating the model. He and Archie were showing everyone what they’d found.

From his side of the window, Archie said, “The sensor system went into a one day loop at this point, and began showing the same thing every day.”

Winston was at Green Comet’s window. “But why?” he said. “Have

you figured out what made it go into this loop?” He was deeply concerned. “Is it going to happen again? Maybe to the Ball?”

“We don’t know,” said Buzzard, “but we can’t see any reason why it shouldn’t.” Seeing the alarm in Winston’s face, he quickly added, “We don’t think it will. We think the combination of circumstances was so ... rare ... unique?” He was stalled, trying to find the exact word. He looked at Archie for help.

“It was a fluke,” said his diminutive friend. “The chance of the same thing happening again in the same way is so small that it might as well be zero. At least on time scales that are relevant to ephemeral beings like us.”

Winston nodded absently, then looked at Buzzard, who said, “Of course we’ll want to supplement the sensor data with visual measurements, at least until the programmers isolate the piece of code that caused the problem.” Winston began to look happier. “We don’t expect another problem,” said Buzzard, “but it’s better to be safe than to be sorry. Sorry.”

Winston nodded firmly at that. “Of course,” he said. “An abundance of caution at all times.” Looking back and forth between the two, facing him from their separate sections of the window, he asked, “Did you find what caused it?”

“No,” said Buzzard, while Archie said “Yes,” at the same time. Everyone laughed, although Archie’s only showed as a slight creasing of his cheeks on either side of his mouth. He deferred to Buzzard, who said, “We think we know what happened, what made it start looping, but only what triggered it. We don’t know what flaw in the code caused it.” He looked at Archie, who nodded economically.

“I see,” said Winston. “Can you tell us what triggered it, then?”

“Yes, we think so,” said Buzzard, and between them and their

model, they explained how they thought the sensors were reporting a fault in the cable just as a daily diagnostic was beginning. “And, by a big fluke, as Archie says, the system got confused and began sending the previous day’s sensor data instead of the fault report.”

“That sounds highly unlikely,” said Winston.

“It is,” said Buzzard. “It was. Unlikely. Highly. Highly unlikely.”

Archie rescued him. “We tried to calculate the likelihood with the data we have,” he said. “It’s so small it gets lost in the rounding and estimations.” He tried an analogy. “It’s as if you were calculating the weight and balance of the Ball, and one of its dust motes moved.” Seeing the usual blank faces, he shrugged.

Buzzard took over again. “What Archie’s saying is that the chance of it happening again is really small. Really small.”

Winston said, “Ah.” Then, “Do you mean it’s unlikely to ever happen again?”

“Highly unlikely.”

“So, there’s no point in tracking down the flaw?”

“No!” said Buzzard. “I mean yes. I mean we definitely need to correct the code. We can’t leave a known error in there.” He looked horrified at the prospect. “But we don’t think we need to worry about starting up the system again before it’s fixed.”

“Oh,” said Winston, “so Pharos could use it while we try to fix it.”

“Yes,” said Buzzard. “A simple reboot should do it, according to our model.”

Winston looked at the people around him, those with him on Green Comet, and those in the window, and said, “Is there any objection to that?” When there was none, he looked at Sun Ra in the window. “It’s up to the people on Pharos, Sun Ra. You’re the ones who live there.”

Sun Ra said, “I think we’re ready. If Buzzard and Archie say it’s

okay, then we're ready." He looked behind him and was supported by a loud affirmation.

"Alright then," said Winston. "You work it out with Buzzard and Archie, and good luck. You have our best wishes."

"Thank you, Winston," said Sun Ra. "Your support means a lot to us."

Winston nodded briskly and gave a mild, "Harrumph." He said, "Of course. Of course. Meanwhile, we'll get to work on tracking down that error in the software. I have an idea about that." Then he said, "Good day," and turned and flew away from the window.

~

"And now," said Fran, "at last, we can get back to the wings." She began setting up the telescopes to look at their mysterious planet.

Pharos was up and running, with all their systems functioning normally. They'd repaired the faulty cable with its compromised sensor. Their thrust vector was calculated, taking into account the shape and attitude of the sail when it pushed them off the beam. Now it was just a matter of waiting and hoping that they would hit the expanded beam in four years, and they could get on with their flight. And by then the faulty software code should have been found and fixed. Winston's idea had been to have a contest, dividing up the code and parcelling it out to the contestants for deep analysis. There was no shortage of eager participants.

So here they were, the eight of them gathered for a post-crisis analysis, and when that was done Fran fired up the telescopes. The image was getting better and, as the planet orbited its star, the wings had got bigger. She fine-tuned the focus.

Buzzard flew closer. "Those aren't wings," he said. "They're rings."

Once he said it, it was obvious to everyone, but it wasn't the obvious first thought. Their old solar system had an example of a planet with rings, but it was only one and it was small and unremarkable. Their lesser gas giant had a small collection of faint rings, most likely due to one of its moons breaking up under gravitational stress. They understood the mechanism and they were aware that it would likely be repeated in other star systems, but they wouldn't have expected something this impressive.

"Buzzard's right," said Elgin, "those are definitely rings."

"Yes," said Fran, "but look at the size of them."

They all looked at them in silent awe. Even at this low resolution, they could already see that the diameter of the rings would be many multiples of the diameter of the planet. And over the next four years, while they waited to see if Pharos would find its way back onto its laser beam, they learned much more. The closer they got, and the further the planet went around its star, the more they could see. Fortunately, the planet and its rings were rotating on a tilted axis, and that gave them a changing perspective on them as they moved.

The diameter of the rings kept increasing as they built up their observational database, and they were sure that would continue as they got closer. In addition, they began to see evidence of possible gaps in the rings. Empty spaces between concentric rings of material. They hypothesized that they showed either a sharp break in the orbital distance of materials of differing density, or that a moon was sweeping the lane clear.

"I wonder what they're made of," said Fran, looking at her ringed planet as they stood watch.

"Could be anything, I guess," said Elgin. He was alternately watching the clock and the numbers showing the estimated positions of the

Ball, Pharos and its light beam. He also had a visual display, which showed Pharos methodically approaching the beam, looking just the way they planned it. Not that anyone believed it would be that easy. They knew it was just their best estimate. Even the time when their sail was expected to make first contact with the beam was spread out over a one day window, and they were into that window now.

“I really wonder,” said Fran, “because, depending on what they’re made of, these rings might be interesting for Pharos.”

That brought Elgin’s head around. “You mean as a place to go?”

“Yes,” said Fran. “It’s all laid out there, maybe even separated into different materials. And then a planet that size is bound to have a lot of moons, too. Plenty of resources.”

“You’re right,” he said. He glanced nervously at his display, then asked, “Have you tried the spectrometer?”

“Yes,” she said, “a few times.” She shrugged. “It shows almost all water.”

“Almost?”

“Over ninety-nine percent. But I still don’t know what the rest is.”

“Water’s good. They can always use water.”

“Yes. And there might be enough other good stuff there, too.”

“You’re right. I think we should run it by them.” He glanced at his display again. “After.”

“Of course after,” she said. After a moment she added, “It’s not any good, is it?”

“No, it’s good,” he said. “It’s fine. We should tell Pharos.”

“But it’s not right, is it?”

He admitted it. “The rings aren’t as right as the trojan points. Sorry,” he said.

“Don’t be sorry. I’m glad I’ve got you to filter out my bad ideas.”

“It’s not a bad idea,” he said. “Just not as good.”

“That’s what I meant,” she said with a smirk.

He laughed at her, then went back to his display.

She watched him for a few seconds, then asked, “Are you worried?”

He looked up. “No,” he said. “Not worried, really.” He glanced at the display. “The numbers are good. The plan is good. It feels right.” Looking at her again, he said, “But even Buzzard says it’s not a sure thing.”

The first half of the day wasn’t so bad. The window for making contact with the beam was a whole day, and no one expected it to happen right away. But at the halfway point that changed. Now half the time was gone and what was left was running out. No one said anything to that effect, of course. Everyone kept a confident smile on their face. Everyone encouraging Pharos and Pharos reassuring everyone else.

“There’s still plenty of time left,” said Sun Ra, smiling. “We’re not worried.”

“Of course not.” Elgin and Winston and everyone else on the Ball and both comets smiled back, nodding their heads. Everyone, that is, as a first approximation. Effay, they were all wearing a brave face, but in reality not everyone was. Buzzard, for one, was incapable of projecting a false emotion. And Archie seldom expressed any emotion, and certainly wouldn’t simulate one. They, and a few others, wore neutral expressions at best.

This all made it hard for Fran, and her finely-tuned sense of empathy. She was accustomed to dealing with the dissonance between what people were feeling and what they were showing. That was her normal. Here it was the buildup of the underlying anxieties that wore on her. There was the natural fear of the people on Pharos, who might

be lost forever if this didn't work. There was the sense of responsibility in everyone who worked on solving the problem. And, possibly worst, was the helpless impotence as they watched and waited.

They had contingency plans in case of failure. With the resources they had available, they thought it might be possible to mount a rescue expedition and save some of the people on Pharos. But given the lack of an adequate fleet of lifeboats, and the rapidly widening gap between the two balls, they could only save the wakers at best. Everyone currently in hibernation would be lost.

As the day wore on she could expect it to get worse. Their anxiety would increase as the time dwindled. The false hope would get more brittle and fragile as their real hopes faded. Already the most pessimistic among them were anticipating the bitter taste of failure and loss. They were almost disappointed.

"There it is!" shouted Sun Ra. "It's getting brighter! The sail is getting brighter!"

Silence filled both balls and both comets as everyone held their breath. They knew Sun Ra was reporting what his readouts were showing, because no one could have seen any change visually yet. A few years ago, when they had more trust in their instruments, this might have been enough. Now they just waited in suspicious silence.

"It's increasing," said Sun Ra, excited but cautious.

There was a stirring on Pharos, then someone cried, "I see it! I see it!" Soon everyone there was shouting and cheering, and it quickly spread to the other places. People were shaking hands and hugging and clapping each other on the back, celebrating success. Really, celebrating a symbolic return from the dead.

"I'm releasing the rocket," said Sun Ra, launching a small rocket that would fly a hundred kilometers ahead before exploding. Its load of

ice crystals would illuminate the laser beam, making it easier to get centered on it.

“Congratulations, Sun Ra,” said Fran.

He spun around to face them, his face shining with happy excitement. “Thank you,” he said. “Thank you all.”

She pointed with her head. “Meet me at the window,” she said.

He said, “Okay,” and headed off to his right. Fran also went to her right, still amused at how they could apparently go in opposite directions and end up in the same place.

She found a quiet spot on her window, which was practically filled up with people from everywhere, and made contact with Sun Ra. Like her, he barely had room for his head and shoulders, but it was clear that he didn’t mind the crowding and jostling. He was grinning as he was bumped and squeezed. “What’s up?” he said.

“Are you aware of the planet with the rings?” she asked.

“You mean with the wings?” he said.

“Yes,” she said with only a small blush.

“Yes,” he said. “It’s beautiful.”

“Yes it is,” she said, “but we were wondering whether it might interest you as a destination.”

“Oh,” he said. “Instead of the trojans. We hadn’t even thought of that.”

So she told him about the rings of mostly water, and the many moons. More moons every time they looked, it seemed like. And he listened, the noise around them fading as she talked.

26.

CLOSER TO THE FIRE

“It’s probably best that they chose the trojans,” said Stanton. “They’ve got lots of resources out there.”

“I know,” said Fran.

“They’ve already found that one planetesimal,” said Buzzard. “It’s almost three hundred kilometers in diameter.”

“I know,” said Fran.

“It’s stratified and everything,” said Buzzard. “It’s got a core and a crust.” Looking hopeful, he said, “It’s spherical.”

Fran laughed. “I know, you guys. I’m glad they chose the trojans. Really.” She looked wistful. “It’s just that the ringed planet is so beautiful.”

“It sure is,” said Maria. “I’d have chosen the rings over the trojans for that reason alone.” She casually flipped a hand. “I’m sure there’d be enough resources there, with all those moons.” They’d found forty, and still counting.

Buzzard said, “And I’d go with you.” He grinned. “I bet most of those moons are spherical. With crusts. And cores.”

They all laughed. They knew when Buzzard was making fun of himself. Their eyes drifted back to the telescope display. It was showing a blurry blob that they knew was another planetesimal, though that diminutive name almost didn’t apply here. This object was a thousand kilometers in diameter. It was certainly stratified, with a crust and a core. And it was probably covered with ice. Talk about resources.

They were looking for a planet. Their sense of gravity told them

that there should be a planet there. Between the gas giants and the star, there was room for five stable orbits. With the four giants already discovered, this system could potentially have nine planets in total. They'd found three of the inner five already. The middle three. They hadn't spotted the one closest to the star yet, and concluded that it was either missing or very small. But they had found something on the fifth orbit out, closest to the massive inner giant. The problem was, it was too small. They knew instinctively that the planet on this orbit should be much more massive.

They all looked at Buzzard, who unconsciously drifted closer to Maria. "What?" he said.

Fran saw what was happening and laughed. "That's what you get for being so smart," she teased.

Buzzard knew he was smart, but he still didn't know why they were looking at him. "What?" he said again.

"Okay," said Fran, "we all know that little planet should be bigger. Naturally, we expect you to be able to tell us why it isn't."

Buzzard had already run through a few possible reasons in his mind. He didn't do it deliberately. It just happened automatically as soon as something like this came up. It didn't occur to him that it might not have happened in their minds the same way. He hadn't said anything because he didn't want to state the obvious.

"Well," he said, "I can think of a few. A few." They looked at him expectantly, so he said, "First, it's possible that an object of the correct size did form on this orbit, but it was ejected for some reason. Then, later, this little one was captured."

Maria nodded.

Fran said, "That sounds reasonable."

"Second," said Buzzard, "maybe this zone was impoverished of

material for some reason, so there was only enough to make this little thing.”

Everyone looked sceptical, but Galatea said, “Could happen.”

“Third, maybe it only had long enough to get this big, and then all the rest of the material was taken away somehow.”

This time even Galatea looked doubtful.

“Okay,” said Buzzard, “I don’t think that’s very likely either. The first one, maybe. The other two, not really.”

“So,” said Fran, “what do you really think?”

“I think something of the correct size did try to form here, but it was disrupted by the gravity of the giants, especially the biggest one in the next orbit out.”

That clicked with everyone. It satisfied their sense of gravity. Fran said, “They stirred things up so much that it could never settle down into a planet.”

“That’s right,” said Buzzard. “So I think this is only part of it. Maybe the biggest part. I think we should be looking for a ring of rubble.”

They did, and they found plenty of it in a wide ring all the way around the star. They didn’t find anything else as big as that first one, although there were a handful that were big enough to stand out. Mostly though, it was just unremarkable rubble. For every one with a diameter in the hundreds of kilometers, there were thousands well under one kilometer. They still carefully mapped them, paying special attention to the orbits of the larger ones. They wouldn’t miss the chance to catalog such a bounty of resources, especially broken up and laid out for them like this.

They also found the missing planet on the orbit closest to the star. At well under fifty million kilometers at perihelion, and only the size of

a large moon, this little planet was only of academic interest. It was a sterile little rock, blasted bare by the fierce radiation from its star.

The other three were more interesting. There were two quite large ones on the next orbits out. They were almost identical in mass, but radically different in appearance. The first one was still too close to the star. It was shrouded in toxic clouds and radiating like a beacon in the infrared. Nothing there to interest comet people. The next one was far more intriguing. It was cooler, and the spectroscope showed the presence of water and oxygen.

The last planet, between the wet one and the rubble ring, looked promising, but it turned out to be disappointing. If it had been a little more massive, and had a magnetic field, it might have held onto its atmosphere. As it was, it was cold and much too dry to be fertile.

So they concentrated their attentions on the wet one. The second planet in from the big giant. Third, if you counted the failed one that now orbited in pieces. During this ballistic part of their flight, with their sail folded and their trajectory controlled by gravity alone, they spent the bulk of their time studying the system. Once they discovered it, most of that time went to the wet, rocky planet on the third orbit out from the star. It reminded them of their own world, which they'd abandoned to the Visitor. The closer they got, the more inviting it looked. A pale blue beacon of water and air. It filled them with nostalgic longing for home, and also with a fierce joy that they had at least been able to save this place from mindless destruction.

"Do you think," mused Fran, gazing at the telescope display, "we could ever live there?"

"Oh yes," said Maria. "With all that water. And the oxygen must mean that there's life."

“That’s right,” said Buzzard. “If it wasn’t continuously replenished, there wouldn’t be so much oxygen in the atmosphere.”

“It doesn’t necessarily have to be life,” cautioned Stanton.

“Oh, shut up, you,” said Galatea.

The Doctor, ever the pragmatist, said, “We’d need to bulk up. With all that gravity, we’re too frail now to even stand up.” He nodded. “And we’d have to lose these wings.”

The engineer in Stanton asserted itself. “It would be a one way trip down. We don’t have the infrastructure to get back up again.”

“I thought I told you to shut up,” said Galatea.

He scowled at her, and Fran laughed. “So,” she said, “if anyone wants to go there, and come back to tell about it, we’ll have to build the infrastructure.”

“Right,” said Stanton.

“And,” she said to the Doctor, “they’d need to build themselves up first.”

“Yes,” he said. “A lot.”

“Not impossible then,” she said. “It should be easy for us.”

Stanton and the Doctor looked at each other and shrugged.

Now it was Elgin who laughed. He didn’t have to say anything. Galatea smirked and winked at him, and he said to Fran, “If you want to go down there, we can come back after this mission and I’ll go down with you.” He threw himself horizontal and began trying to simulate push-ups. Flipping over and working on sit-ups, he said, “I’ve just got to bulk up a little first.”

Fran and Galatea laughed, along with Buzzard and Maria. It didn’t take long for Stanton and the Doctor to join them.

~

Over the next year, as they approached the star and swung through perihelion, they had plenty of time to observe. Naturally, they spent most of their time looking at the wet world, the third one out from the star. They soon discovered that it had a moon orbiting it, an object of considerable size. It was large compared to its parent body, in the same size range as the little, blasted planet closest to the star.

“You know,” said Nigel, “we might not have to go down to the planet itself. We could observe it from its moon.”

Fran nodded. “It would make a good observation platform. Especially since it’s tidally locked.” She shook her head. “But it’s so dry. And no atmosphere.”

“Ah,” said Nigel, “but look at the poles. The spectroscope shows hydrogen there, most likely in water.”

“You think there’s ice at the poles?”

“Yes I do,” he said. “In cracks and fissures.” He shrugged. “It wouldn’t be much on planetary scales, but I’d bet we could find enough to support an expedition.”

Fran liked that. It was an eminently practical idea. They could observe the planet for as long as they wanted, but without the inconvenience of having to land on it. It would avoid the problem of all that gravity, and the difficulties it would impose. But she shook her head again. “That’s a good idea, Nigel,” she said, “but we wouldn’t be able to feel the planet’s wet atmosphere on our faces. Or smell the life in the damp soil.”

Nigel had no answer for that. All he could do was stop and share the sharp pain of nostalgia with everyone. He knew that their best bet was to stay in space. That they could easily find all the resources they needed, and they could get them with a minimal expenditure of energy. Whatever advantages a planet might offer, they were offset by the huge

amounts of energy they'd spend getting down and up. Because, what would be the point of going down there if they couldn't get off the planet again? They lived in space now, as a species, and any visits to planets would be just visits. To make it even more difficult, this planet was a little larger than their own world, with even more gravity. Even if they built their bodies up to their original strength, they would still be too lightly built for this world. They had the means and the technology to alter their bodies and make them suitable for this planet, but it would take more than a little nostalgia to drive them to those lengths.

~

They were coming down from above the ecliptic, in a long parabolic orbit. They would pass through it at a shallow angle, at a point slightly outside the third planet's orbit. This would allow them to spend many months within good viewing range of it, and they made good use of their time.

Their descending node was almost on the opposite side of the star, but the ascending node brought them within ten million kilometers of the planet. It was a brief encounter, especially since their orbit was retrograde to the system. The rapid relative motion complicated their observations, but with diligence and automation, they made the most of it.

"What's it like?" Sun Ra was taking a break from their hectic schedule, setting up the laser.

"You're seeing what we're seeing," said Fran.

"I know," said Sun Ra. "But you're right there. You can look outside and see the planet. And the star must be huge."

"Yes it is," said Fran. "And hot. We had to let the sail out part way to shade us, and that complicates the telescope alignment."

“I’ll bet. But I guess it’s better than melting.”

She laughed. “There’s not much chance of that. It’s the glare more than anything else. It gets a little hotter in here, but we can easily dump the excess heat.”

“Still,” he said, “that’s something to think about for next time. There should be something besides the sail to use for shading.”

“What next time?”

He looked at her, astonished, and was about to protest when she grinned at him. “You had me there,” he said. “I couldn’t believe what I was hearing.”

“Don’t worry,” she said, “there will definitely be a next time. Probably not here for us, though.”

He couldn’t hide a brief look of disappointment, but he was well aware of the practicalities. This was just one example of the isolation his people knew would come from their decision to take this mission. They were well aware before they enrolled that it would mean being apart from everyone else. At least for the first few decades, possibly centuries, Pharos would be a source of laser power for other peoples’ travel. And, at least until they built up their installation into some place worth visiting, those people would always be going somewhere else. But he found that even having Fran in the same system felt kind of like a visit, and it made him sad to think she wouldn’t be coming back.

Ever the optimist though, he said, “Never is a long time, Fran. You’ll probably be back some day.”

“You’re right,” she said. “We shouldn’t really say never, should we?”

“No,” he said. “You’ll be back. We’ll keep the light on for you.”

She loved that image. “Thank you,” she said. “But with the window,

what's the difference if we're a couple of billion kilometers apart, or one of us is on Orange Comet?"

He frowned. There was no practical difference that he could think of. "It's just different," he said.

She nodded. "I know what you mean. It is different." She looked straight at Sun Ra. "But I don't expect that's what you really wanted to talk about. And I doubt you care about the star's glare, either." She brought up their best image of the planet. "I think this is what you want to talk about."

"Yes," he said, looking at the image on his own monitor. "What's it like?"

Now it was her turn to frown. "Honestly," she said, "we think there's something wrong with it."

"What?" he said.

"A lot of things. The oxygen content of the atmosphere is too low. The carbon dioxide is too high. The vegetation is wrong, too. It's thin and patchy." She turned her palms up. "Even the weather patterns don't look right."

"Maybe that's normal for this planet," said Sun Ra.

"We don't think so," she said. "Not with the amount of water it has. And the amount of insolation. It has everything it needs to be lush and fertile."

"What do you think is going on, then?"

"We've been trying to figure that out," said Fran. "Oh, and there's all the iridium."

"Iridium?"

"Yes. It's everywhere we look. Even in the atmosphere."

"In the atmosphere?" Sun Ra shook his head. "Iridium is never in the atmosphere. It's too heavy."

“I know,” she said. “We think it’s being blown up in the big dust storms. And that’s something else. There’s far too much desert down there.”

Sun Ra was quiet, then he said, “You’re right. There is something wrong with that planet.” He brightened. “Hey! Maybe it’s the iridium. Maybe it’s too toxic.”

“You could be right,” she said, “but what’s it doing there?”

“What do you mean?”

“What’s it doing on the surface? Wouldn’t it have settled into the interior during the planet’s formation?”

“Yes it would,” said a new voice, and they turned to see the others arriving. They’d been in the flashball court, throwing the ball around, and they were brimming with energy. Stanton continued, “The heavier elements do tend to settle during planet formation. Sometimes they’re brought up to the surface by tectonic activity, but only locally, never spread out evenly over the surface.” Tipping his head at Buzzard, he said, “Buzzard knows what happened.”

Looking abashed, as always when singled out, Buzzard said, “Comets. Or other bolides. Comets or bolides.”

“Of course,” said Fran.

“Yes,” said Stanton. “It’s right. It’s so right that Elgin missed the ball when Buzzard said it.”

They all looked at him and Elgin chuckled self-consciously. “It’s true,” he said. “It clicked, and I paused momentarily. The ball went right by me.”

Fran nodded. “That’s pretty right,” she said, smiling at Elgin. Frowning, she said, “It could be something else, though.”

The good-natured ribbing of Elgin stopped. The Doctor, a patina

of sweat shining on his bald head, said, “What kind of something else?”

“There was something else coming this way at a high velocity,” she said. “Something that probably had a large amount of refined iridium on it.”

Buzzard said, “The Visitor!”

Fran saw Elgin’s reaction and knew it was a viable idea. Her eyes turned to the unhealthy planet on her monitor, sadness welling like tears.

Elgin glided over. He nodded at Sun Ra in the monitor, putting his hand on Fran’s back as he leaned in to look at the damaged planet. “Do you think this was caused by the Visitor?”

She nodded.

“But what are the odds of that? To hit something this small from that far away. Isn’t it more likely that it was a comet?”

She looked at him. “What are the odds that a comet would have hit this planet just before we got here?” She pointed at it. “It’s just recovering. It must have happened about the time the dead Visitor was going by here.”

They looked at each other. The odds seemed small in either case. Too small for them to calculate. They looked at Buzzard.

He jumped. “The odds?” He could easily calculate the odds of the Visitor striking this planet. They had known speeds and positions. But a comet? They had no idea of their frequency here. “We had a comet shower in our system, but comets seem to be rare here. I need more information.”

Fortunately, they had plenty. The moon was covered in impact craters to analyze. It was harder to enumerate craters on the planet, since they tended to weather away, but their search did turn up one

recent one. It was a big one, mostly under water, near the equator. Seeing it made the impact and ensuing destruction more real.

“Comets are rare here,” said Buzzard when he had enough data. “They had a lot early on, but right now there are almost none. Effay, zero.” He gestured outside. “We really haven’t seen any since we got here. Well, none big enough to do this. We’ve seen a few small, short period ones, but this was a big one.”

“So, what are the odds?” said Stanton.

“Right. The odds,” said Buzzard. He shrugged, palms up. “They’re the same.”

“The same?” They were shocked. What were the odds of that?

“Well,” said Buzzard, “within a couple of orders of magnitude. But that’s within the estimation error.” He shrugged again, unhappy with his inability to be more precise.

“So, we’re back where we started,” said Stanton. Then, seeing Buzzard’s reaction, he said, “Never mind, Buzzard. It’s all you had to work with.”

“Thanks,” said Buzzard. Then he brightened. There was something he could be sure about. “This couldn’t have been the whole Visitor, though. At a tenth of the speed of light, that much energy would have done much more damage.”

“So,” said Fran, “it was breaking up. A spreading debris field. That would increase the likelihood of an impact.”

“If this was the Visitor,” said Elgin. “You’re getting a little circular there.”

“Okay,” said Fran, “I admit it. But if I’m right, it means one thing for sure.”

“What’s that?”

“It looks as if we didn’t save this system after all.”

“Not necessarily,” said Elgin. “Comets might be rare here, but there are still the other bolides.”

“Yes,” said Buzzard. “That belt of rubble that we saw on the way in would be a good source for those.”

“There you go,” said Elgin.

But Buzzard shook his head. “I already factored those in. Factored in.”

“Oh,” said Elgin. “But that doesn’t mean it was the Visitor. The odds are still even.”

“Yes,” said Fran. “I guess we’ll never know.”

27.

LUCID DREAMS

“It’s funny,” said Elgin.

“Funny?” said Fran.

“Yes,” he said. “It’s funny down here. Funny that it seems so real. But unreal, too.”

“I know what you mean,” she said. “I do feel like me. I feel as if I think like me.”

“That’s right,” he said.

“But I have no body, and neither do you.” She looked around. “There’s nothing here. Just some light and color, and your face. Some of the time, anyway.”

He laughed. “Here I am,” he said. “That’s funny, too. I don’t have a body, but I don’t feel as if anything is missing, you know?”

“I do. And I don’t really miss the other senses, either.” She modified that. “I wouldn’t mind hugging you and burying my nose in your fur, but vision and hearing and the sense of being seem to be enough.”

“It’s kind of like a dream,” he said, “only more coherent.”

“Like lucid dreaming?”

“Yes! Where you’re dreaming, but you’re awake in it.”

“That’s right,” she said. He could see her concentrating as her face slowly faded. “Not quite, though,” she said, catching her eyes just in time. “You can control lucid dreams. If this was a lucid dream, I’d have my nose in your neck fur right now.”

Elgin could almost feel it, and he was about to tell her so when the light turned gray. It felt early.

28.

JUST VISITING

“I thought it felt early,” said Elgin.

“Me too,” said Fran.

“Minder,” he called. When the little robot came over, they gave it their bikes. It was time to leave the recovery room.

“I wonder what it will be like this time,” said Fran as they passed through the anteroom.

“What,” said Elgin, “Green Comet?”

“Sure,” she said, “the comet. But I was thinking of the apartment.”

“I expect it will be fine,” he said. “They always keep it up for us.”

“I know.” She was quiet as they flew down the orbital, heading for the Square. Finally she said, “Didn’t you feel it last time?”

“Feel what?”

“I don’t know how to describe it. It was just a feeling, like ... Okay, last time we were there, I felt like a guest. Like we were in a hotel instead of our own apartment.”

Elgin’s confirming click surprised him. Until now it hadn’t occurred to him, but once she said it he knew it was right. Now that he thought about it, he remembered feeling just the way she described it. Like a guest in a hotel. “I thought it was me,” he said. “I thought I was just feeling the normal dislocation from hibernation, and from being away.”

“I think that’s what it is, partly. But I think there’s more to it than that.” She shook her head. “Let’s wait and see.”

They flew on, the floor of their curving corridor rolling continu-

ously up in front of them. Soon they came to an intersection, and they went left for the Square. The right fork would have taken them to the flashball court, but that wasn't their destination today. This morning they'd be meeting the rest of the eight at the apartment for some brainstorming, before going on to a planning meeting.

~

Their crewmates on the Ball woke them up early because something happened, and by now it was practically standard operating procedure to wake up the five of them. It turned out that the Prime was moving, and no one wanted to be the one explaining why they hadn't brought them up when that was happening.

Fran, of course, wanted to change course immediately and go after it. "Come on," she said. "It's getting away." Elgin was ready to go. So was Maria. And that meant Buzzard would be there.

Stanton, equally predictably, insisted that they needed to stop at Green Comet for a refit. "We've been out a long time," he said. "The old Ball needs work."

In the end, more cautious heads prevailed and they continued as planned. They would stop and give the Ball a good going over. The Five went back down, with instructions to leave them in hibernation until the Ball and its new companion were ready to go.

~

They were ready now, and so were Elgin and Frances. It occurred to Elgin that no sooner were they back from their last mission than they were preparing for the next one. He was thinking about that as they came out of the corridor and into the Square. They stopped, drifting

to the side to get out of traffic. Looking at Fran, he could see that she was thinking too.

“You see it too, don’t you?” she said.

“Yes,” he said.

Other than a few minor things, it still looked the same. Each of the two hundred meter walls was pierced by two entrances, flanked by ice columns in the color of their side. Opposite was the orange wall. Far to the left, red. Closer on the right, yellow. Behind them was green. On the orange wall was a huge window, showing the square of Orange Comet.

In the center of the local square, a little over a hundred meters away, was a grouping of five statues commemorating the heroes of Green Comet. About two hundred meters away, low on the yellow wall, in the corner where it met orange, was their apartment. It looked very much the same, but it seemed unfamiliar.

Elgin said, “Is it just us, or is it really that different?”

Fran said, “I’m sure it has a lot to do with us. We have been away a lot, and we haven’t spent much time here in between.” She looked around, studied the people, who took no notice of them. “But I think it’s Green Comet, too.”

Elgin nodded, opening his wings. “Let’s go,” he said. “At least our apartment should be ...” He didn’t finish, remembering that last time it was almost like a hotel. “At least it will be our apartment,” he said. “We’ve got friends coming over. It’ll be like old times.”

Fran didn’t say anything. Just opened her wings and followed him.

They were gratified to see that the iceberry patch was still there. It looked healthy from a distance, and as they got closer it looked even better. They kept their eyes and ears open, hoping to catch a hummingbird feeding, but they had no such luck. Without a word they

stopped and picked a couple of berries, and lost themselves in the rush of smell and flavor. Elgin saw the fur stand up on Fran's arms, and she gave a small shiver, floating there with her eyes closed. He smiled, glad that she was able to enjoy such a simple pleasure.

Feeling good, they flew over to their balcony, only to see someone in one of the front rooms. Maybe one of their guests had arrived early and was waiting for them. As they went in through the window, Fran said, "Hello."

The man, who they didn't recognize, glanced at them and went back to tidying up. "We're not open today," he said. "I'm sorry. You'll have to come back later."

"Not open?" said Fran.

"No," he said. "We're closed until further notice. The owners will be using it."

"The owners?" said Fran. "You mean Elgin and Frances?"

"Yes, Elgin and Frances," he said, spinning around. "Who do you ...?" He stopped, mouth open and eyes widening, and stared at them. He seemed to be frozen, so to help him out Elgin stepped in behind Fran's shoulder, cupping her back with his wing. The man's eyes darted to the window, where he could see their statues in that exact pose in the middle of the Square. When he looked back his eyes were wider than ever. "It's you," he whispered.

They smiled and nodded.

"But you're ... I mean, it's not ..."

Fran guessed. "We're early?"

"Yes!" he said. "The director said ..."

"The director?"

"Yes! Of the museum. According to him, you're not supposed to be here for another two hours."

“Museum?” said Fran and Elgin together.

“Yes!” He was getting more agitated, not less, and finally he blurted, “Sorry!” and bolted out the window. He flew in a beeline, and in less than ten seconds he was across the Square and out the red end.

They looked at each other. “Museum?” they said again.

~

“Museum?” said several voices.

“That’s what he said,” said Elgin, “then he jumped out the window and flew away.”

Out of the buzz and rumble of voices rose Galatea’s laugh. Practically a cackle, really. “A museum, eh?” She looked around. “So what are we, then? A diorama?” She threw her head back and laughed at her own joke.

Everyone looked around, and she was right. They did look like a diorama. No one else was laughing, though. They were looking at Fran and Elgin to see what they felt. It was their home, after all.

Elgin and Fran looked at each other and grinned. That freed Buzzard, who’d had to cover his mouth with both hands to stifle his giggles, and that allowed them all to let loose. “Maybe we should make a placard,” said Fran, and that launched a round of hilarious suggestions for what it should say.

They were under full sail when Nigel spotted someone approaching the balcony. They shushed themselves, feeling vaguely guilty, like boisterous children caught by an adult. Fran and Elgin flew out there.

“Hello,” said Fran. “Can we help you?”

The man was obviously finding it difficult, but he firmly overcame it and said, “I’m here to apologize.”

“For what?” Fran glanced at Elgin, and back into the apartment, where everyone was trying to look serious.

“For the misunderstanding earlier.”

“Oh that,” she said. “We’d already forgotten about that.” She gestured inside. “We’re just having a nice visit with our friends. Would you like to join us? There’s iceberry tea.”

“No,” he said, putting up his hands. “I don’t want to intrude.”

“It would be no intrusion,” she said.

He hesitated, then, “No. I just wanted to apologize for the mix-up.” He frowned. “We’ll have to make some changes. We can’t have you coming home and finding people in your apartment.”

She smiled. “It wasn’t that bad. Really. It doesn’t bother us.”

“It’s kind of you to say that, but it bothers me.”

Elgin cleared his throat. “If you don’t mind, the simplest thing might be to get everything done the day before.”

The museum director thought about that. “That would cost us a whole day of use,” he said, “but you’re right.” He nodded. “It’s the right thing to do. Besides, how often does it happen?”

“Right,” said Elgin.

The director seemed happy. Resolving the situation gave him renewed energy. “All right, then. I’m glad that’s taken care of. And I’m glad to have met you at last.” He turned to go.

“It’s a pleasure to meet you too,” said Fran, stopping him. “I have one question before you go. How long has our apartment been a museum?”

“For about a hundred years,” he said. “We got the idea when you were on this last mission.”

“A hundred years,” she repeated, looking at Elgin. It didn’t seem like a hundred years to them.

“Yes,” said their visitor. “Everyone is still interested in you.” He glanced inside. “All of you, of course, but especially you two. But you’re never here. You’re away so much that you’ve become more of a legend than real people. So we thought if people could visit your apartment, they might get a better sense of you.”

“I see,” said Fran, her eyes on the apartment, her mind elsewhere.

The director’s eyes widened. “I hope it’s all right,” he said. “I hope we haven’t overstepped.”

“No,” said Fran. “Not at all. It was just a bit of a surprise, that’s all.”

“Good,” he said. “And next time there’ll be no confusion. We’ll get everything done the day before.” He nodded briskly. “Good,” he said, turning to go. “Until next time, then.”

“Next time,” said Fran, and they watched him fly away by the same route as the first man, only a bit slower.

~

“Who was that?” said Galatea.

“That was the museum director,” said Fran.

“What did he want?”

“He was apologizing for earlier.”

“I should hope so.” Galatea looked disgusted.

“He said he hoped they hadn’t overstepped, and that it wouldn’t happen next time.”

“Next time? You’re letting them do it again?” Stanton cleared his throat, but Galatea waved him off. “There wouldn’t be a next time if it was me.”

“I know,” laughed Fran, “but since we’re away so much, how bad can it be?”

“People poking around your apartment? Maybe it wouldn’t bother you, but I wouldn’t be able to put up with it.”

“You mean,” said Nigel, winking at Stanton, “your place hasn’t been turned into a museum yet?”

Galatea stopped. “It better not be,” she said, with a less positive emphasis.

Nigel said, “How would you know?”

She didn’t answer, her gaze turning inward. She didn’t have any more to say about it, but they knew her apartment was in for an exhaustive inspection. For the museum’s sake, they hoped she didn’t find one smudged fingerprint out of place.

Fran’s expression was half gratitude and half admonishment, but Nigel just grinned at her. She smiled and shook her head. “Let’s talk about something else,” she said. “Did I hear that Orange’s ball is ready to go?”

“Yes,” said Stanton. “They’re leaving tomorrow.” He stopped and looked at Buzzard and Nigel.

Buzzard said, “Yes, tomorrow. Tomorrow our time and their time.”

Nigel said, “They’re synchronizing to our clock when they depart.”

“Just the ball, or all of Orange Comet?” said Stanton.

“Both,” said Nigel. “And the ball they’ve sent to explore the solar system they were protecting. Actually, two balls. They’re going to set up a lighthouse too, just like we did. They’re calling theirs Scintilla.”

“That’s good,” said Stanton. “We should all be on the same time.”

“Or it could get confusing,” said Fran. “That’s two comets and five balls now.” She stopped. “Well, three balls and two lighthouses.”

“And sure to be more by the time we get back,” said the Doctor.

“When we get back,” mused Fran, remembering the museum director’s “Next time.”

“If we get back,” said Stanton. They all looked at him. It was something everyone had thought about, but he was the first to say it. “Don’t look at me,” he said. “You all know it’s true. Chances are this is going to be a one way trip.” He looked at Galatea, but she had no pithy response. Even she wasn’t going to criticize him for pointing it out this time.

“It’s true,” said Fran. “Chances are. But not necessarily.”

The Doctor said, “You never know until you try.”

Everyone turned. Galatea found her voice first. “You, Doc? What’s the matter, are you running from the law or something?”

The Doctor nodded at her. “Or something,” he said.

Her next question was cut off when they noticed some movement outside. A small group of people was hovering indecisively just beyond the balcony, peering in at them. It was easy to tell who they were by their tonsures, their hairlines carefully trimmed to emulate Fran’s widow’s peak. Only now they weren’t like hers except in the worst kind of caricature. Time and obsession had driven their tribute to outlandish lengths, with the shaved arcs on either side of the peak extending almost back to the crowns of their heads.

Fran looked away, shocked, and Elgin roused himself to go out there, his face beginning to form its legendary mask. The Doctor stopped him, his hand on his arm. “Let me,” he said.

Elgin looked at Fran and she said, “Thank you, Doctor.” She drew Elgin close to her and they watched the Doctor go out to meet the intruders.

They couldn’t hear what was being said, but they could see the body language and facial expressions. The Doctor made pleasant enquiries. The Francesians’ spokesperson was peremptory and dismissive, pointing at the apartment. The Doctor continued to be polite

while they got more agitated and aggressive. Finally the Doctor passed his hand slowly over his bald head and said something, while looking pointedly at their tonsures. Their faces were perfect expressions of shocked silence, then they turned and flew away, radiating wounded dignity.

The Doctor was smiling when he came back in, but it was a sad smile.

“What did they want?” said Galatea.

The Doctor looked at her, then at Fran and Elgin. He said, “They wanted to know how long it would be before they could visit their shrine.”

Elgin frowned, trying to figure out what that had to do with them. Why would the Francesians need their permission to visit a shrine? It was only when he saw Fran nodding that he got it. “They’re using our apartment as a shrine?”

“Yes,” said the Doctor. “They told me that they’re in some kind of dispute with the museum society over the rightful claim to it.”

“Rightful claim?” Now it was Stanton’s turn to frown. “Who do they think they are?”

“The only True Believers, according to them,” said the Doctor. “At least that’s what they said when they demanded that we clear out.” He looked at Fran. “Except you. They said you could stay.”

No one said anything to that. They sat silently, contemplating this latest twist in their timeline.

Finally Galatea asked, “What did you say to make them leave in a huff?”

The Doctor laughed and put his hand on his head. “I told them it looked as if they were trying to emulate me.”

They all laughed in a relieved burst, enjoying the slap at the

Francesians' hubris and pretension. "I hope," said Fran, "that makes them reconsider their awful hairdos. It looks fine on the Doctor, but on them it just looks silly."

The laughter didn't last long, their mood thoroughly smothered by events. They finished their iceberry tea, then Fran and Elgin saw their guests out to the balcony. They'd been planning to sit out there and watch the Square for a while before the meeting, but no one wanted to do that now. They said their good-byes and flew out across the Square, heading back to their own apartments, wondering how familiar they'd seem now.

Maria hugged Fran before leaving, Buzzard and Elgin hanging there awkwardly. She knew how hard this must be for her. As she and Buzzard left, Maria said, "See you at the planning meeting?"

"Yes, the meeting," said Fran. "See you there." They watched their friends fly away, then turned to go back in. Rather than the familiar welcome feeling, now they found themselves looking forward to going out again.

~

The meeting went as expected. Preparations on the Ball were nearly complete, and they'd be ready to leave within the next month. Throughout the proceedings, the eight kept looking at each other. You could tell that they all felt a little out of place here, as if the meeting could have gone on just as well without them. They couldn't wait for it to be over.

When it ended Winston asked them to stay so he could talk to them. Having nothing better to do, they stuck around.

Winston made small talk, asking them how they were, how did they

feel about their impending departure, until Stanton said, “What did you really want to talk about, Winston?”

He was momentarily nonplussed, but he quickly recovered. Clearing his throat, he said, “Do you guys feel different?”

That surprised them. It didn’t occur to them that someone who’d stayed on Green Comet might be feeling what they were feeling. “Yes we do,” said Fran, “but we assumed it was just us. We thought we felt like strangers because we were away so much. Do you feel different too?”

Winston nodded, his wide mouth turned down. Then he shook his head. “Certainly not to the extent that you must.” He looked at them all. “I can only imagine what it must be like for you, but I can imagine it. I get enough of the feeling to get a sense of it, but that’s all.” Speaking directly to Fran he said, “Maybe I’m beginning to feel like an anachronism, but at least I’m right here. I’m still a part of Green Comet.”

Fran nodded. “Meanwhile we’re so much not part of it that they’ve turned our apartment into a museum.”

Winston opened his mouth, but he was cut off by Galatea. “Yeah,” she said, “when did that happen? How did you let it happen?”

“Gay!” said Stanton. To Winston he said, “I’m sorry. She can be a little blunt sometimes.”

“It’s alright,” said Winston. Looking embarrassed, he said, “I did let it happen.” The admission and his appearance made them very uncomfortable. They weren’t sure they wanted to hear more, but he carried on. “Not that I didn’t try. I argued hard for protecting your privacy.” He couldn’t look at them. “I was overruled. Outvoted. They decided it wasn’t an efficient use of resources to just leave your

apartment empty and unused.” Looking as if he’d been asked to swallow something bitter, he croaked, “Efficient!”

They wanted him to stop. He was spoiling their memory of Winston as a powerful man, revered for his wisdom. Fran reached out to touch his arm. “We know, Winston,” she said. “We understand.” She patted his arm. “You tried.”

“That’s just it,” he muttered. “I did try, but it wasn’t good enough. There was a time when the people listened to me, but now it feels as if they’re just humoring me.”

That wounded Fran. His pain was her pain. She didn’t have much to offer for it, but she said, “Have you considered coming with us? We might be increasingly irrelevant, but at least we don’t have our noses rubbed in it every day.”

He shook his head, sadly at first, then more certainly. “No,” he said. “Not that I haven’t thought about it. The idea is quite appealing right now. But I’ve got to stay. My duty is to Green Comet and I have to be here to try to maintain a connection between us originals and the growing new population.”

“It is growing, isn’t it?” said Fran.

“Yes,” said Winston. “There was a little bump after we took care of the Visitor, but it really started to take off when we started to add comets. Especially the third one.”

“All that extra space and resources.”

“Yes. And then Pharos took away eight hundred people, and that created a vacuum that had to be filled.”

They all nodded, thinking about all the changes, and more to come while they were away yet again. It was probably best that Winston would be here to help Green Comet remember its past. The Doctor wondered briefly whether he should stay behind too, but only briefly.

He knew he would regret that choice. He belonged with the eight. With Fran. Out there on the edge of the unknown. He'd be miserable if he stayed behind, but there was one thing going on here that he wouldn't mind seeing more of. The children. "Children," he said. "It must be nice to see so many children running around again."

Winston's big mouth split into a wide smile. "Yes!" he said. "They make it all worthwhile."

~

In their bedroom, the one furthest from the door, in the corner against the orange wall, Fran and Elgin were talking about the day. Looking at the four colors of the Square's nightlights glowing in their ceiling, Elgin said, "So it's not just us."

"Apparently not," said Fran. "I don't know whether to be relieved or disappointed."

"I know what you mean," said Elgin. "I wouldn't want to be the only ones, but it means Green Comet is changing."

"Yes, changing. We can only hope for the better."

"Or at least not for the worse."

They were quiet, their eyes on the colors and their minds far away. There was no avoiding the knowledge now, that they were sleeping in a museum. And a shrine too, it seemed. The Francesians, with their funny hairdos, performing who knows what kind of rituals in here. Did they stay in the front rooms, or did they come right in here, into their private refuge?

Fran blew a frustrated breath. "Let's not think about that," she said. "Let's talk about the mission. Chasing the Prime. We might be relics here, but there's still plenty to do out there."

“Right,” said Elgin, “and maybe while we relics are away, Green Comet will get back to normal.”

“Normal,” said Fran. “Right.” They laughed.

29.

DEPARTURE

They had a good view of the third comet from the Ball. As they pulled away from Green Comet they had a good look at it, attached to the original at a right angle to the second one. Green Comet was now a trimer, forming an isosceles triangle.

The third comet wasn't as big as the other two yet. They were still building it up, adding smaller comets as they got them. It was a practical decision. There just weren't that many big comets out there, and they didn't want to wait for one to come along. As the chief engineer told Stanton, "There are a lot more small comets than there are big ones, so we might as well use what we can get."

"There's no arguing with a power law, is there?" said Stanton.

"No, you're right about that. And it's actually better in a way, too."

"How so?"

"There's a lot more surface area on several small comets than there is on one larger one. A lot more area to be struck by cosmic rays."

"Ah," said Stanton, "so more cyanide compounds."

"Yes," said the chief engineer. "We get easy access to the carbon and nitrogen, and we get some free energy too."

They could see all that as they slowly pulled away. The third comet was already connected by a tube of ice, and they could see a couple of small comets on it. Stanton told them that once their surfaces had been processed, the rest of the material would be arranged to build up the spherical shape they needed. "They're still using our original method

of driving the comets together, but they've got the closing speed way down," he said. "They can hardly feel it inside."

"I guess they wouldn't want to break that tube, would they," said the Doctor.

"Doctor," said Stanton, the very expression of patience, "the tube is the last thing that would break."

"I know," said the Doctor. "You keep telling me that, but it looks so thin compared to the comets." He turned his palms up.

"I know," said Stanton. "They do have to be careful, though. If they hit too hard it could shift the comet, and then it would be skewed. Fixing that would be a headache."

"That almost happened with the second comet," said Maria. "I was talking to the smasher operators. They said that after they spread out the first two hydrogen atoms, and they were adding two more, they drove the first one in too hard." She grinned. "They told me it scared the hell out of everybody."

"You can see why it would," said the Doctor, looking at three huge comets joined by spindly looking tiny tubes. Against the enormous emptiness of space surrounding them, he thought their fragility was obvious.

"Yes," said Maria. "So, after that they were more careful."

Fran spoke up. "Why don't they assemble the comet first, before attaching it?"

After the nodding of heads and the wry smiles, Elgin said, "Right again."

"That's a good idea, Fran," said Stanton. "It wouldn't have to slow them down, either. They could do most of the interior construction during assembly, then connect up the tube last." He nodded absently,

his eyes on Green Comet. “Right,” he said, “I’m going to call their chief.”

Their speed was slowly increasing under the thrust of their nitrogen rockets. Before too long they could see themselves pulling away, their home visibly getting smaller behind them. “Home,” thought Elgin. “If that’s my home, then why don’t I feel it more?”

Fran pulled in next to him, slipping her arm around his waist, under his wings. “Are you feeling what I’m feeling?” she said.

“Probably,” he said. “Only more like not feeling.”

“Yes,” she said. “More like.”

~

The first sixty years or so of this mission would be spent rendezvousing with Orange Comet’s ball and catching the Prime’s laser beam. They’d be hitching a ride on that beam, using the Prime’s own source of motive power to chase it down.

Shortly after departure they got a message from Orange’s ball, with an official announcement. Their ball now had a new name: Tainui.

“Tainui?” said Fran, looking at Elgin. He shrugged. So did Stanton and most of the others, but not all of them.

“The canoe,” said Buzzard.

“That’s right,” said Orange. “From when our ancestors were exploring the great ocean in canoes.”

“That’s perfect,” said Buzzard. “That’s kind of like what we’re doing now.”

“That’s what we thought,” said Orange. “Maybe it’s time you gave your old ball a real name, too.”

Buzzard looked at Stanton. They all did. He was startled, but

recovered quickly and said, “It’s got a real name. It’s served us well with this name and we’re not going to change it now.”

Everyone agreed with that. It was the Ball, and they were used to it. Besides, rational as they were, there was still the chance that it might be bad luck to change its name. They’d been lucky so far and they didn’t want to risk changing that, especially while in flight. “We really love your name though,” said Fran. “Tainui.”

~

The first part of this mission would be a straight run for the Prime’s beam. It should be easy to hit it, since it was five thousand kilometers across. They’d be approaching it at an angle so they’d have to angle their sail as they got close, to curve their trajectory. They wanted to be almost parallel to the beam when they entered it, so the curve would be almost asymptotic. They couldn’t run the risk of blowing right through, because there’d be no way of getting back.

Tainui’s angle was less than the Ball’s, which was good because they were starting from further away. Needing to curve less, they could use more of their beam’s power for straightaway speed. It wouldn’t get them all the way, but it would lessen the distance they’d be behind when they got there. Once they were both on the beam they’d have plenty of light for maneuvering themselves into a closer formation.

As yet they weren’t sure where they wanted to be on the Prime’s beam. Should they go to the center of it? Why? Maybe they’d want to be close to an edge. If so, which one? Did they want to be down close to the Prime, or up as far away as possible? There was no way to know now, so they left it for later.

~

They slid smoothly onto the beam right on schedule, the beam from Green Comet switching off within the hour. Even at the very shallow angle of insertion, they passed a quarter of the way through the Prime's beam before straightening out. Now it was just a matter of catching up. Since their sail to mass ratio was better than the Prime's, all they needed was time.

Tainui joined them less than a year later, but tens of millions of kilometers behind. They maintained full sail while the Ball ran under reduced sail. They were both gaining on the Prime, but Tainui was gaining on both of them. They were hoping to be flying in close formation before the Prime had to do any maneuvering.

They knew which star the Prime was headed for. They'd known that for thousands of years, ever since they identified it as the origin point of the Visitor. Given that information, and the Prime's velocity, they thought they had a pretty good idea of when it would be doing its flip maneuver to catch a braking laser from its destination. That's why they were surprised when it happened early. They weren't on the beam two years when it shut off.

"Oh!" said Fran.

"I see," said Elgin.

"That was close," said Buzzard.

It was close. Against all the vastness of space and time, two years isn't much. If they had started their mission two years later, they'd have missed the beam altogether and there'd be nothing to stop them from sailing right out of the galaxy. In about two hundred thousand years.

According to their calculations this wasn't supposed to happen for another ten years, at least. "What's it up to?" said Stanton. He was glaring suspiciously at the image of the Prime on their monitor.

Buzzard was looking at it too, and he was the first to notice. "It's turning," he said.

"Turning?" said Stanton. "It's flipping?"

"It might be," said Buzzard. "Probably. It looks like it."

"Right," said Stanton. "Reel in the sail. We need to prepare to flip as well."

Buzzard started the routine to retract the sail, which would take about two hours. Then he initiated an alert, so people could begin preparing for the flip maneuver. Meanwhile he kept his eyes on the Prime, his brain running continuous calculations. Finally he had something. "It's not going to hit us," he said.

"Hit us?" said Stanton.

"Yes," said Buzzard. "I mean no. I mean it won't hit us. The sail. When it swings around."

"Oh, right," said Stanton. After a moment's thought he said, "But we're going to run into it when it slows down."

Buzzard nodded, shrugging. "Better the sail than the armature," he said.

"That's right," said Elgin. "That ring must be tough and rigid. And no matter how light it is, it's still massive enough to damage our little ball. But if the sail material is anything like ours, we'll probably go right through it."

"Okay," said Stanton. He glanced aft. "Tainui is going to have to go through it for sure though, isn't it?"

"No way around that, I don't think," said Elgin.

Stanton nodded sharply. "Buzzard," he said, "is there any way we can duck through ahead of the sail?"

While Buzzard went back to the numbers, Elgin asked Stanton, "Why?"

“To give us the best chance,” said Stanton. “It probably won’t hurt us to go through the sail, but if it is a problem then at least one ball will be all right.”

Elgin sensed the rightness of it. “That’s why we have two balls anyway. Redundancy as much as anything else.”

Buzzard had an answer. “We can do it,” he said. “We can duck through.”

“Good,” said Stanton. “What will it take?”

“At the rate the Prime is turning, and given that its sail is folding down, we need to be through in twelve hours or less.” Buzzard was using his hands to show the sail folding and turning. “My estimate for the Prime’s flip maneuver is about a day, and the sail is folding faster than that.”

“Ball, this is Tainui, over.” It was Archie on Tainui.

“Tainui, this is the Ball. Go ahead,” said Buzzard.

“Hi Buzzard,” said Archie. “Are you going to jump through ahead of the sail?”

“Yes. We were just discussing it.”

“Full ion drive and three excursion pods?”

“Yes, but I was going to suggest all six pods at half power.”

“Right. Better distribution.”

“And less stress.” Their conversation drilled down to ever finer details, using ever more terse language, until Stanton interrupted.

“So,” he said, “you’re recommending that we use the ion drive at full power, supplemented by the pods at half power?”

“Yes,” they said together.

“Thank you,” said Stanton, turning to make it so.

Buzzard and Archie went back to their deep analysis as the Ball came alive with sound and motion.

It worked. They were never in danger, but it was so slow that it was exciting. For twelve hours they crept ahead while the sail swung after them like a gigantic flyswatter.

Once through they prepared their own sail for deployment, reasoning that there would soon be a braking laser coming from their destination. There was, and it appeared just before the Prime completed its rotation. It was just approaching its final attitude when its sail suddenly lit up and began rising toward the vertical.

Archie and Buzzard noticed at the same time.

“It’s early,” said Buzzard.

“It’s not square,” said Archie.

“Early?” said Stanton.

“Yes,” said Buzzard. “It should have continued rotating for another half hour before it stopped.”

“It stopped early,” said Archie. “It’s not square. The sail is still at an angle to the beam.”

“What’s it up to?” said Stanton, but neither of them offered an explanation, so he said, “Whatever it’s doing, we’d better match its angle.”

“But what if it’s wrong?” said Galatea. “What if it made a mistake? Won’t that just pull us off the beam?”

“We’ll have plenty of time to see that happening,” said Stanton. “Plenty of time to correct.”

“I suppose,” she said.

Once the sail was set and everything was squared away, Stanton called the eight together. “We’ve got one more thing to do before Tainui gets here,” he said.

“What’s that?” said Fran.

“The sail. The Prime’s sail, that is,” he said. “We don’t think Tainui’s going to have much trouble tearing through it, right?”

“Right,” said Fran.

“But, as long as we have the time, why don’t we make sure?” They waited for him to finish. “Why don’t we go back to the sail and make an opening for Tainui to pass through, without tearing?”

“What,” said Galatea, “cut a big circle out of it?”

“I was thinking of a big square.”

“Circle. Square. How is that better than just letting it tear? It still leaves a big hole.”

“Not if we do it right,” said Stanton. “If I’m right, we can open it up to let them through, and then seal it up again.”

“What’s the point of that?” said Galatea.

But Fran got it. “Better to have the sail intact, right Stanton? A hole that big could change the Prime’s flight characteristics.”

“That’s right, Fran,” he said. “We’re flying with the Prime now, so we might as well not make it any harder.”

“Right,” said Fran. “And we still don’t know why it tolerates us. Why its scout didn’t destroy us before, and why it seems to be ignoring us now.”

Buzzard said, “We’re kind of like pilot fish. On a shark. Like pilot fish on a shark.”

“Exactly,” said Fran. “The shark could kill them and eat them at any time, but it puts up with them.”

“And,” said Stanton, “it wouldn’t hesitate to eat them if they gave it a reason. So we should be good little pilot fish and not bother the shark too much.”

Buzzard laughed. “A hundred kilometer space shark,” he said.

Chuckling, Stanton said, “Okay, Buzzard, you and Archie work out where Tainui will hit the sail. Remember that it’s sliding sideways because it’s at an angle.” Buzzard turned to talk to Archie, his mind already turned inward, probing the problem. “The rest of us can make preparations.” Stanton looked at Nigel. “You and the Doctor go and prepare an excursion pod. The rest of us can prepare ourselves.” He looked toward the housekeeping end of the Ball. “There’s something I have to pick up before we go.”

The eight of them got themselves ready for the first ever excursion flight from a ball while on a mission.

~

Stanton handed Galatea a pair of shears. “I thought I recognized this material,” he said. “It’s what we used to use before the microtools we use now.”

“So now we can snip a big square out of it?” she said.

“No,” he said. “We’re going to make a big cross.” He called Nigel, standing off to the side in the pod. “Tell Tainui to turn on their marker laser.”

“Right away,” said Nigel, and immediately a faint red cross appeared on the brilliant white sail.

“I don’t see how it can reflect all the light on this side, and let it through from the other,” said Galatea.

“That’s just the nature of this material,” said Stanton, punching a hole in it with his shears. “It’s too hard to explain right now.” Once he started the cut he was able to continue it by just pushing the shears. He and Galatea ran cuts about three meters along each of the four arms of the cross, then stopped.

Buzzard and Maria, Fran and Elgin took the four points of material and pushed them through to the dark side, where they hovered.

“Don’t look at Tainui’s laser,” said Stanton. “It has to be pretty bright to show up here.”

“That’s only about the fourth time you’ve told us,” said Galatea.

“Can’t be too careful,” said Stanton.

“No, you can’t,” said the Doctor from the pod. “You listen to Stanton.”

Galatea rolled her eyes and everyone, except Stanton, said in unison, “Yes Doctor.”

“That’s better,” said the Doctor, and you could hear Nigel laughing in the background.

Stanton and Galatea put their shears back to work and pushed their cuts out to the ends of the faint red lines, while the other four pulled their points away. When the last two cuts were one hundred fifty meters long, and the material was pulled back out of the way, they had the big square Stanton was talking about.

“Okay, Nigel,” said Stanton, “tell them to turn off the laser.”

“Done,” said Nigel.

“How long?” said Stanton.

“Just under ten minutes.”

“Good. Nothing to do but wait, then.”

Elgin took the time to have a good look around. It was easy to pick out the other five people, even though most of them were well over two hundred meters away. They all had small red lights flashing at the top of their backpacks. Turning, he could also see Tainui, or at least its flashing lights. There were six of them, one on the end of each cable stanchion. He knew their sail was down and they were coming back end first.

Looking at the Prime's sail from this side was disorienting. As Galatea pointed out earlier, while the light striking the other side was reflected, all the light on this side was transmitted. That meant that you couldn't see this side of the sail. The only way to tell it was there was by the blackness. Through the hole they'd made he could see a field of stars, and on Tainui's side was a vast hemisphere of them, but between was a five thousand kilometer disk of nothing.

He looked across the hole and saw the tiny red light he knew was Frances. To his left was Maria and opposite her was Buzzard. Stanton and Galatea had ended up at opposite corners of the square. Motion caught his eye to the right, and he could see a bright green light waving back and forth. Elgin smiled. Buzzard must have planned this.

He had, with Archie, who was at the wall on Buzzard's side of Tainui holding a flashing orange light. They knew exactly where to look when they came within visual range. Buzzard could see Archie, surprisingly close, as Tainui swept by at twenty meters per second. He had an orange light in one hand, with the other raised to shoulder height in what, for him, was an exuberant wave. Buzzard, of course, was waving exuberantly. His green light was describing wide arcs. He let go of his point so he could wave with his other hand, too. He even did a couple of his trademark swoops.

Tainui swept through the hole with meters to spare on all sides, then immediately began to inflate its sail. They knew that its ion drive was on, too. They expected to match the Prime's velocity within a day, and then they'd work their way back close to the Ball.

Buzzard was whooping excitedly, and the others were adding their own exclamations of pride and accomplishment. They knew that both balls would be celebrating loudly as well. All that was left to do out here was to close and seal the hole.

It took longer to close than it did to open. All they had to do was guide the edges as they brought them together, allowing them to re-establish their molecular bonds, but it was slow, meticulous work. Stanton and Galatea were continually flying back and forth between their cuts, making sure the edges were meeting cleanly. When the opening was down to a few meters they ducked back through and finished up where they started. They waited while Galatea fussed over it, dissatisfied with the slight imperfection in the seal. In spite of all their care, the edges must not have been lined up quite right, and that made for an unsightly lump where they all met. No amount of smoothing was going to make it quite right, and Stanton finally had to drag her away.

“Come on, Gay,” he said. “That’s as good as it’s going to get.”

She knew he was right so she allowed herself to be pulled away, but she couldn’t stop herself from looking back, long after she could no longer see the imperfection.

30.

CUTTING THE CORNER

“It’s cutting the corner!” Buzzard and Archie looked at each other and nodded. They finally had enough observational data to figure out what the Prime was doing. It was using its angled sail to curve its trajectory away from the original destination and toward another star.

“What’s up?” asked Elgin, alerted by their outburst.

“It’s cutting the corner,” said Buzzard. “To the next star. It’s going to another star.”

Elgin got it right away. “So it didn’t come from this star,” he said, tipping his head toward the braking laser. “It came from another one first.”

“That’s right,” said Buzzard. “At least one.”

Elgin’s eyes widened. “You think there could be more?”

“Could be,” said Buzzard. “Can’t tell yet.”

“I guess there is no way to tell, is there?”

Buzzard nodded. “We’d have to know how fast it grew. How many solar systems does it take to get this big?”

Elgin was nodding too. “Not to mention the Visitor. I don’t imagine it was twenty kilometers long when the Makers sent it.”

“No. And there’s all the modules and scouts it had.”

“You’re right. Would the Makers have armed a von Neumann machine with so many weapons? Why would they do that?”

Buzzard thought about that, then said, “They must have given the original machine some kind of weapons. I mean, it couldn’t have invented those itself, could it?”

That was right. Elgin knew it, but he had trouble understanding why the Makers would put weapons on a von Neumann machine. The modules and scouts and smaller units made sense. They were undoubtedly extrapolations of smaller, specialized vehicles that came with the original. The Visitor had simply followed that blueprint as it grew and evolved. But the weapons? If it was a robot spacecraft, with no living beings to protect, why the weapons?

Buzzard opened his mouth, then closed it again.

“What?” said Elgin.

“I don’t know,” said Buzzard. “I thought of something, but I’m not sure. Not sure.”

“Run it by me,” said Elgin.

“Okay,” said Buzzard. “What if they weren’t weapons in the beginning?”

“Go ahead.”

“What if they were tools? For prospecting and mining, say. Von Neumann machines are supposed to replicate themselves and so on, right? So they would need tools to do that.”

Buzzard might not have been sure, but Elgin was. His sense of right lit it up like floodlights, and he could see it clearly. The Visitor’s weapons were as much an extrapolation of its original design as the modules and scouts were. His elation was short-lived, though, as he remembered the result of that.

Buzzard absorbed his somber mood immediately, quenching the joy of solving the puzzle.

“Why the long faces?” Fran arrived with coffee, a welcome interruption.

“We just figured something out,” said Elgin, taking a cup. He held it to his nose and inhaled some of the vapor.

Buzzard did the same thing. “Mm,” he said. “We figured out why the Visitor had weapons. Why its modules had weapons. And its scouts.”

“Oh?” said Fran, taking a sip. “I admit that’s always bothered me, too. Why would it need weapons in the first place?”

“Exactly,” said Buzzard, “so we figured they started out as tools. The weapons.”

Fran looked at Elgin, who nodded. “That makes sense,” she said. “The robot couldn’t invent anything new, but it was able to extrapolate from what it already had.” She took another sip. “Small auxiliary craft become modules and scouts, and tools become weapons.” Now it was her turn to look somber.

They all sat, sipping their coffee and looking at nothing, until Archie spoke. They’d almost forgotten he was there. He said, “I think I’ve figured out the Prime’s plan.”

He got their attention with that. “Tell us,” said Fran.

“Certainly,” he said. “We’re all agreed that it’s diverting from its original course to head toward another star, right?”

They all agreed with him.

“Good. So, I think I’ve figured out the criteria it used when it was going the other way in the first place.” He didn’t wait to be asked to continue. “I think that each time it was finished with one star, it always went to the next star that was closest at the time.”

“It was that simple?” said Fran.

“Yes,” said Archie. “I ran our star charts back to that time, and I could see where our star and this star and the next one were then.”

“Of course,” said Fran. “And it worked out that it always went to whatever star was closest at the time.” She nodded. “That explains why the Visitor chose the star we were protecting.”

“That’s right,” said Archie. “I’ve been able to extrapolate the Prime’s path to four more stars after this next one.”

“That many,” said Fran.

“If it’s going that far,” said Archie. “Or it could be more, too.”

“And we can plot them just by whatever is the next closest star.”

“No,” said Archie. “It’s not the next closest star going this way. It’s what was the next closest star going the other way. At the time.”

“Oh, right,” said Fran. “Of course.”

“It’s easier when you’re looking at the charts,” said Archie.

“I hope so,” she said. “I’m having trouble with the thousands-of-years-ago-from-the-opposite-direction part.”

Archie’s smile put a little dimple in his cheek. “I’ll send over the model I’m using, if you like. It shows it pretty well.”

“Oh, please do,” said Fran, moving over to the monitor.

While she and Archie conferred over the colorful images, Elgin and Buzzard went back to talking about the Prime. Elgin said first, “I wonder why there aren’t as many modules on the Prime as there were on the Visitor.”

“Maybe it didn’t need them,” said Buzzard. “Maybe because the Visitor was going first, it needed to carry more ‘tools’ than the Prime. To prepare the way.”

Elgin nodded. “And the Prime came in later and scooped up the loot.”

“Yes,” said Buzzard. “And it has a few modules and scouts, and probably some weapons. Modules and scouts and weapons. It has them because it’s based on the original von Neumann machine.”

“And that started out with the tools and ancillary craft.”

“Right.”

They were quiet for a while, watching Fran poring over Archie’s

model. Finally Elgin said, "Do you think we could use them? The Prime's modules and scouts."

Buzzard looked at him, eyes wide. "You mean take them and fly them around?"

"Yes."

You could tell Buzzard was interested, but he said, "We're supposed to be good little pilot fish. Stanton said."

"I know," said Elgin, "but what do you think? Do you think we could?"

"Hypothetically?"

"Yes. Just hypothetically."

Buzzard grinned. "Well, hypothetically," he said, "yes I do."

"You do?" said Elgin. He narrowed his eyes. "Have you already been thinking about this?"

Buzzard laughed. "Yes," he said. "With Maria." He lowered his voice. "She wants to try it."

"She wants to fly a scout?"

"Yes. Or a module, even. She says she wants to try one on for size. Try one on for size."

Now Elgin laughed. That certainly sounded like Maria. "But how?" he said. "I doubt if they're built for it. There wouldn't be any place for a person to be."

"Maria thinks she could wear it, like a smasher."

"Ah," said Elgin. "Of course. We build her a life support unit, and then hook it up to the vessel."

"It would have controls like our pressure suits. She'd be able to maneuver instinctively."

"Right," said Elgin as the idea blossomed in his mind. He began

to think about the engineering problems and the two of them were off and running. When Fran turned around, they were lost to the world.

~

“No, I don’t think so,” said Stanton.

Buzzard nodded and looked at Maria. “Sorry,” he said. “It’s not a good idea after all.”

That wasn’t good enough for Maria. She looked at Stanton and said, “Why not?”

Stanton raised his eyebrows. “The mission,” he said. “We don’t want to risk the mission.”

“What mission?” said Maria, raising her chin.

Stanton looked around. “This mission. The one we’re on.”

“But what is it? What is this mission we’re on?”

Stanton hesitated, all their eyes on him. He looked uncomfortable and Buzzard had to jump in. “This mission,” he said. “The mission, Maria. The mission.”

Maria relented. “Okay,” she said. “The mission. We’re on this mission to discover, right?”

They all agreed with her. Even Stanton nodded.

“We want to discover what the Prime is up to. Where it’s going. Why it changed its behavior. All that stuff.”

They all nodded, encouraging her to go on.

“Well, we’re right here,” she said, pointing at the Prime, whose sail lit up half of their celestial sphere. “It’s right there. We should be exploring.”

Everyone looked at Stanton, but while he was considering his response, Fran said, “I agree with Maria.” When they all looked at her she said, “We can’t pass up this opportunity.”

“But,” said Stanton, “what if we trigger a response? What if it decides to destroy us?”

“We’ll be careful,” said Fran, nodding at Maria. “We’ll take it in small steps.”

“Small steps?” said Stanton. “I don’t think stealing a module is a small step.”

“No, of course not,” said Fran. “We’d have to work up to it.” She glanced outside. “Okay. So far we’ve proved that just hanging around doesn’t make it want to destroy us. And neither does cutting a big hole in its sail.”

They all agreed with that. Stanton said, “So, what are you thinking would be the next small step?” When Maria and Buzzard grinned he said, “Not that I’m agreeing,” and they stifled their grins as best they could.

“Now that it’s come up,” said Fran, “there is a practical matter that’s been on my mind.”

“Go ahead.”

“It’s all this maneuvering we’re going to have to do. I was talking to Archie and it looks like we have a few stars ahead of us. That means a lot of maneuvers for the Prime, and a lot of jockeying by us to keep up.”

“Okay,” said Stanton.

“Right,” said Fran. “Wouldn’t it be more efficient if we just attached ourselves to it somehow?”

“Attached?” Stanton was obviously not expecting that. “You want us to attach ourselves to the Prime?”

“Yes,” said Fran, while Maria nodded vigorously. “It would be so much more efficient because we wouldn’t have to be flipping all the time.”

Stanton smiled in recognition. “I should have known,” he said. “If there’s ever a choice between caution and recklessness —”

“Adventure,” said Fran.

“Between caution and adventure,” corrected Stanton, “then we always know which you will choose.” He looked back and forth between Fran and Maria. “And now you’re training recruits.”

“That’s not fair!” said Fran, but then she noticed that he was smiling.

Stanton sighed, shaking his head. “This is what you call a small step?”

“Yes,” she said. “The next logical step.”

He nodded, resigned. “All right,” he said. When he saw Buzzard’s grin breaking out he added, “But it’s not up to me. We have to take a vote.” He couldn’t help but laugh at the sight of Buzzard struggling to nod seriously.

When they announced their proposal to the crews of the two balls, it was immediately apparent what the result of the vote would be. When it was held it was so overwhelmingly in favor that, at least this time, no one doubted that it fairly represented the people currently in hibernation, too.

~

“I don’t think we’re going to be able to do anything from here,” said Stanton.

They were standing on one of the Prime’s fourteen scouts, attached along with fourteen modules on its upper side. There was no obvious way to get into the scout and there didn’t appear to be any way to get at its belly, where it connected to its massive host.

“I think you’re right,” said Elgin. “It obviously hasn’t been designed to carry passengers.”

“And the connections are hidden,” said Maria. “They must be completely automatic, since nothing could get at them to do anything.”

“Unless they did it from the inside,” said Buzzard. “From the inside. Service robots could work from inside.”

They looked around, their lights sweeping the Prime’s surface, where they could see it between the attached vessels. It was uneven and discontinuous, and it looked as if there would be many ways to get under it. It also looked dark and disorganized, as if the openings were there by happenstance rather than by design.

“I’m going to have a look,” said Maria, jumping off the scout and flying down to the surface.

“I’m coming with you,” said Buzzard.

“Not so fast,” said Stanton, going after them, followed by Elgin, Frances and Galatea. “Don’t get out of our sight.”

As a group they flew all the way around the thirty meter scout, looking for anything that would let them get under it. There were plenty of gaps in the Prime’s surface, but none of them went anywhere, petering out in a tangle of structural members.

“I guess you can’t get there from here,” said Galatea.

Everyone laughed at the old joke, then Stanton said, “We should call it a day. This is going to take some thought.”

On their way to the pod for the eighty kilometer flight back to the balls, Fran said, “Maybe we need to do this from the inside. I mean really the inside.”

Elgin said, “Do you think there’s a way in somewhere?”

“I’m sure there is,” she said. “For service robots, as Buzzard said. But I’m thinking of something else.”

“What?” They were all watching her closely.

“Well,” she said, glancing at Stanton, “the Prime must control them somehow, right?”

“Now hold on,” said Stanton. “You’re not suggesting that we hack into its control system.”

“No, no,” she said. As he relaxed she added, “Not right away.”

“Oh,” he said, “more small steps?”

“Exactly,” she said.

“Okay, what small step are you planning now?”

She looked up at the sail, which was a foreshortened black disk from their position near the front of the Prime. “Energy,” she said. “Now that we’re no longer in the beam, we need a new energy source.”

Nobody spoke while they entered the pod. The airlock could hold a maximum of four, so it took two cycles. Once inside, though, with Nigel and the Doctor, they started right up again.

Stanton said, “This is your next small step? Tapping into the Prime’s energy grid?”

“Yes,” said Fran. “We wouldn’t need much, compared to something the size of the Prime. I bet it would hardly notice us.”

“Oh,” said Stanton, “you’re willing to bet on it. How much?”

“I know it seems like a lot to risk, and it is. But the actual risk is low.” She looked around the compartment. “It’s been ignoring us so far. I don’t think we’re as much as a gnat to it.”

“Yes!” said Elgin. “That’s right. That feels right.”

Stanton glowered at him. “And what makes you think it won’t swat the gnat if it bites? Because we’re going to have to bite it if we’re going to open it up and tap into its energy grid.”

“Not if we’re careful,” Nigel said. “I doubt if it has sensors on its whole surface. We should have no problem getting in.”

“That’s right,” said Maria. “We’ll be like a stealthy parasite. It won’t even know it’s happening.”

Elgin stared at her. “That’s right. That is perfectly right. Like the gnat, only even more right.” He looked at Stanton. “We’ll be like tiny parasites. It won’t even feel us.”

They argued all the way back to the balls, which took about an hour. By the time they got there, everyone except Stanton was in favor of it. He agreed that it should go to another vote, and again it was almost unanimous. They immediately got to work planning, while crews explored the Prime’s skin close to the balls, looking for the best place to open it up.

31.

FEELING DIFFERENT

“Do you feel different?” said Elgin, as he watched her golden eyes disappear into the white light.

“Different?” Her eyes came back, quizzical.

“Yes,” he said. “I mean, everything is changing so much. Our lives are nothing like they were before, when we first met. Not to mention our lives before that.”

“I see,” she said. “Yes, our lives are very different from what they used to be.”

“It’s not just that,” he said. “Lately, people don’t treat us the way they used to. It’s like our old selves are historical figures, and we’re these strange relatives who show up once in a while.” He imagined spreading his hands. “They’ve turned our apartment into a museum.”

“People are definitely treating us differently,” she said.

He gave an exasperated sigh. “I feel different. I feel like a different person. When I think of the old Elgin, it’s like he’s a historical figure to me, too.”

“Oh,” said Fran. “Now I see what you mean. That kind of different.” Nearly her whole face was showing, a tiny frown of concentration between her brows. “Yes, I do feel different in that way. Especially now that you point it out.”

“Sorry. It’s just been on my mind lately, and I was wondering if I was the only one.”

“No, you’re not the only one. I expect if we asked around that everyone would feel that way.”

“You’re probably right. I guess this must be the price we pay for living a long time.”

“Not the only price, I don’t think.” She paused, both of their faces dwindling. “I think we’re going to see increasing alienation between ...” She stopped again. “I want to say generations, but that’s not quite right, is it?”

“No. We don’t really have generations any more.”

“No, we don’t. I guess we’ll have to find a new language for all this.” She felt like shrugging, but had nothing to shrug with. “I’m trying to imagine what it must be like for a young person today to try to relate to someone who was born over seven thousand years ago. On a planet.”

“Yes,” said Elgin. “It’s no wonder they treat us like relics.”

She laughed. “Hey, you old relic. What are you doing out of the museum?”

“I made a break for it. Do you want to run away with me?”

“Any time,” she said, as the light went gray. “Anywhere.”

32.

GOING HOME

“We’re pretty sure it’s going home.” Stanton was at the window, talking to Winston on Green Comet.

“Back where the Visitor came from,” said Winston. “That makes a kind of sense. It does more to explain the Prime’s behavior than anything else I can think of.”

“Like why it didn’t destroy us when we explored our old star?”

“Maybe not that,” said Winston. “Or why it tolerates you now. But taking off in that direction instead of following the Visitor when, presumably, its whole purpose had been to follow.”

“I wonder if it took it as new instructions when we sent that message after destroying the Visitor.”

“We’ve destroyed your vessel. Don’t send any more,” quoted Winston. “That could be it. Instructions in its own language. But incomplete instructions.”

“Incomplete?”

“Yes. We told it what not to do, but not what to do.”

“That’s right,” said Stanton.

“And without the Visitor to tell it what to do, it had to make its own instructions.”

“Without the Visitor to tell it what to do,” mused Stanton. “I wonder if that explains things.”

“What things?”

“Everything,” said Stanton. “Like why it tolerates us.” He nodded

decisively. "I think that's it. It was the Visitor that was crazy. The Prime just hauled the loot."

"And now, without the Visitor to lead it on, it's hauling it to the only other place it can think of." Winston was nodding too.

Stanton was distracted by something behind Winston. There was something about the Square on Green Comet that wasn't quite right, but he couldn't identify the problem. It looked normal, with people flying to and fro, alone or in groups. They were all going about their business, and not paying Winston or him any mind. They weren't doing anything to make him to take any notice, so what was it?

"Stanton." Winston was trying to get his attention. "Hey, Stanton."

"Hm?" said Stanton. "Oh, right. The only place it could think of."

Winston laughed, a pleasant rumble. "You didn't hear a thing I said, did you?" When Stanton focused on him he said, "I was wondering about the size of the lasers. The ones driving the Prime. Wouldn't they have got bigger as it got bigger?" When Stanton nodded he finished, "So won't they be getting smaller as you go back? It won't be too long before they're too small, will it?"

Stanton nodded. "We've thought of that," he said. "By our calculations, well, guesses really, the lasers are bigger than they should be. The Prime must have sent instructions to build them up."

"Oh," said Winston, eyebrows high. "After all these thousands of years, that old equipment is still working that well. But, if the Prime sent instructions, wouldn't you have heard it?"

"It must have done it while we were still catching up. We did catch some pulses of radio energy, but it must have used its big directional antenna, pointed away from us."

"Okay," said Winston, "that makes sense."

"And then Archie pointed out that its sail has been getting brighter."

Stanton shook his head. "I don't know how he saw that. It certainly isn't obvious."

"Can't you just use a light meter and measure how bright it is?"

"It's not that easy. We're down here at one edge of it, and at such a shallow angle to it. And its other edge is five thousand kilometers away."

"I see," said Winston. "How did Archie do it then?"

"He said he looked at the edge of the sail and noticed that some of it wasn't lighted up. Then, over time, the part that wasn't bright got smaller. He deduced that the laser must be getting bigger."

"Logical as ever, isn't he?"

"Yes, it seems simple and logical after the fact, but it couldn't have been that easy. For one thing, the part of the sail that isn't reflecting laser is reflecting stars, and it looks just like the star field beyond it."

"Ah," said Winston, "I see the problem."

"Yes," said Stanton. "He did it, though. He compared what he could see with what the star charts said should be there, and determined what was sail and what wasn't. He says it was a simple calculation after that."

"Right," said Winston. "Simple."

Stanton smiled. "He was able to estimate the growth rate of the laser, and that's what we're using for our projections."

"How does it look?" said Winston. "Does it look as if the lasers will grow quickly enough?"

"It's too close to call," said Stanton. "If this current laser, and all future lasers, can grow at the rate this one seems to be ..." He shrugged, palms up.

"So, you don't know." Winston looked worried.

"No," said Stanton. "We have to wait and see."

“How’s Winston?” said Fran.

“Worried,” said Stanton.

“About what?”

“About everything. He’s worried that the lasers won’t grow fast enough. He’s worried that we’ve tapped into the Prime’s control systems.” Stanton gestured at the eight of them, in the cabin of a pod flying up to the front of the Prime. “He’s worried about Maria taking a scout for a spin.”

“That’s understandable,” said Fran. “His friends are doing dangerous things, and he’s too far away to help.”

“I know,” said Stanton quietly.

“What is it?” said Fran. “Something’s on your mind.”

Stanton looked at her. “It’s probably nothing.”

“Try me.”

“But it’s just something vague. I can’t put my finger on it. I can’t begin to say what it is.”

“Try to tell me what was happening when you first felt it. Maybe it will trigger something.”

“Okay,” he said. “I was talking to Winston and something seemed odd about the Square.”

“Something like what?”

“That’s just it. There wasn’t anything. It looked the same as ever. People were just flying by, going about their business.”

“Just flying by?”

“Yes.”

“Not paying any attention to you and Winston?”

“That’s right.”

She raised her eyebrows at him, willing him to get it.

And he did. “Oh,” he said. “That’s what it was. They weren’t paying any attention to us.”

“Right,” she said. “Where were the crowds of interested on-lookers?”

They looked at each other, all eight of them, while it sank in. It was the Doctor who said it. “I guess we’re not that interesting any more.”

Buzzard’s face showed shock and hurt. “How can they not be interested? After everything we’ve done. What Fran did. She almost died.” He looked at Maria. “How can they not be interested?”

Maria smiled gently at him. “Not interested, eh?” She grinned wickedly. “So, let’s show them something interesting,” she said, closing her helmet.

He grinned right back at her. “Yeah,” he said as he closed his own helmet, “let’s show them.”

It wasn’t just a figure of speech. Today’s experiment was being recorded and would be shown in the window in Green Comet’s square, and simultaneously on Orange Comet, as well as Scintilla and Pharos, the lighthouses. Everyone should be interested because this would be the first time they overrode the Prime’s control systems to do something this drastic. Although they had tapped into its power grid, and they were exploring its command and control circuitry, this was the first time they would usurp the Prime’s authority and force it to undock one of its scouts.

Six of them exited the pod, in two cycles of the airlock, leaving Nigel and the Doctor on board. The pod was standing on one of the modules, stuck on by its gecko feet, affording them an excellent view of the scout that Maria would be flying. They could just make out the modifications integrated into the top of the scout, where she would

link into it. It was still a rough prototype. Later, after modifications and more test flights, they planned to build a pressurized chamber for a small crew, but those were just plans. For now, there was rigging where she could secure herself, and a link that adapted her pressure suit controls to the thirty meter vessel.

They watched as she climbed into the rigging, assisted by Buzzard. They saw him securely strap her in and check that her data link was solid. Then he backed away, right off the top of the scout and halfway back to them, clearing the way for her to separate and move away from the Prime. She looked small on the massive bulk of the scout, perched on its back, directly above its center of gravity.

“We’re all clear here, Maria,” said Stanton. “Whenever you’re ready.”

“I’m ready,” she said. There were a few seconds of anticipation, then the scout’s docking clamps opened with a surprising jolt that everyone except Buzzard felt through their feet. The vessel moved just slightly when it was released and now, instead of looking like a part of the Prime, it looked loose and free. Something about that made it look suddenly menacing.

“Oh,” said Fran, memories sparking fear and revulsion.

Elgin moved in close to her. “It looks scary, doesn’t it?”

“Yes,” she said. “I hope ...”

“Engaging separation thrusters,” said Maria, and the scout lifted away slowly. That made it look worse. Everyone was now having to deal with ugly memories of vessels like this destroying their world, and almost killing them. Then Maria laughed. “This is just like a smasher,” she said, “only better.”

It was just what they needed. Just like that, things went from grief and menace to Maria having fun. When the scout was well clear of

everything she said, “Engaging lateral thrusters,” and began drifting away, out into open space. Buzzard followed, like an escort, reminding everyone of the day he’d taught her how to use a smasher, when she was still a child.

At three hundred meters she stopped. Once stationary she began experimenting with basic maneuvers. Imagining that her wings were sculling in opposite directions, she rotated completely around her vertical axis. “The yaw is satisfactory,” she said. “Now the roll.” She rotated smoothly around her longitudinal axis. “Excellent. Now pitch.” Once around the lateral axis. “Beautiful,” she said. “It’s very responsive. It takes a while to get used to the inertia, but I feel almost natural already.” She began a complicated move that combined pitch, yaw and roll, and left her facing directly away from the Prime. She gave a satisfied laugh, acknowledging a discrete round of applause. Then, in a voice tense with excitement, she said, “Now for some target practice.”

With soft pulses of radar she detected the target, a three meter sphere that they’d sent out there ten kilometers. “I have the target,” she said. “Now to check out the aiming system.” One second later she said, “Locked on.” Then, “Firing.”

Ten kilometers away the target exploded in a burst of fireworks. Maria and Buzzard whooped almost simultaneously. He said, “Beautiful shot!”

She said, “Beautiful fireworks, Buzzard. Thanks for setting it up.”

“You’re welcome,” he said. “Now shoot the next one.”

“I’m on it,” she said. This one was a hundred kilometers away, and still only three meters wide. “Got it on radar. Aiming. Locked on. Firing.”

There was another burst of fireworks, only bigger and more spectacular. They both whooped again, and Buzzard did a couple of

celebratory swoops. The four on the module and the two in the pod joined in the cheering, along with everyone in both balls, and undoubtedly everybody back home, too. Meanwhile, the Prime seemed to take no notice.

~

“You don’t have to gloat,” said Stanton. “I admit you were right. The Prime didn’t seem to mind.” He looked out through the Ball’s ice shell at the huge glowing sail. “But we didn’t know that for sure.”

“No we didn’t,” said Fran. “And we weren’t gloating, Stanton. We might tease you from time to time about it, but we wouldn’t want to be without your cautious counsel.” Everyone murmured their agreement. “This isn’t about gloating. It’s about celebrating.”

The excitement was over. The congratulations from the comets and the lighthouses were done. Now it was just the eight of them winding down in the quiet of the evening shift. Buzzard, who was sitting close to Maria, said, “Celebrating. We’re celebrating.” He turned to Maria. “So,” he said, “how does it feel to be famous?”

“Shut up,” she said, blushing. But you could see that she wasn’t entirely displeased.

“No,” he said. “You’re famous now. Did you see those kids in the Square? They were practicing that three vector turn you did.”

She rolled her eyes. “I never should have done that. There was a much easier way to make that turn.”

“I know,” said Buzzard. “A ninety degree yaw to the left. But what fun is that?” He smiled a big, proud smile. “They’re going to be calling that the Maria Turn.”

“No,” said Nigel. “The Maria Spin.”

“Not quite,” said the Doctor. “It will be the Maria Maneuver. You really need the alliteration.”

Everyone agreed immediately that it had to be the Maria Maneuver. It was obvious when something was right, even if you weren’t Elgin. They were all trying out its variations and permutations when Maria said, “All right. That’s enough now. I’m sure it’s not as big a deal as that. Besides, half of those kids were doing Buzzard swoops, anyway.”

“That’s right,” said Elgin. He struck a prophet’s pose and proclaimed, “The legend of Buzzard and Maria is born. The wedding of The Swoop and The Maneuver.”

In the gales of laughter, Maria covered her face with her hands. Buzzard put his arm around her, but he couldn’t keep the great big grin off his face.

Galatea, in her own style of humor, said, “Oh, great. Another legend. That’s all we need.”

They were interrupted by the radio. “Ball, this is Tainui, over.”

Stanton got it. “Tainui, this is the Ball. Go ahead, Archie.”

“Hi, Stanton. Oh, good. I see you’re all there. Here, I have something to show you.”

An image of a star field came up on their monitor. It looked quite ordinary, with a small, reddish star near the center. “What are we looking at, Archie?” said Stanton.

“That red star is a red dwarf,” said Archie. “It’s the next star but one on our projected route.”

“Okay,” said Stanton. “The next one after the one we’re headed for now. What about it?”

“I detected radio waves coming from it.”

“Radio waves. Don’t red dwarfs often emit radio waves?”

“Yes,” said Archie, “but these radio waves aren’t natural.”

“Well then,” said Stanton, “the Prime must be talking to the laser installation there. Telling it to prepare.”

“No,” said Archie. “This isn’t a signal coming from a laser installation. This isn’t a message being sent to the Prime at all. It’s not even in the same language. And it’s not being directed this way.”

“Then what is it?”

“I can’t say for certain what it is,” said Archie. “All I can say so far is that it appears to be incidental leakage.”

“Incidental leakage? Do you mean someone is using radio technology there and we’re picking up stray energy from it?”

“That is the most plausible explanation,” said Archie.

“I see,” said Stanton, looking around a circle of rapt faces. “You keep on that, Archie. Work with Buzzard. See if you can figure out that language.” He looked at the tiny red star on the monitor. “Unless this is a big coincidence, I think this is the Prime’s home.”

33.

SHAPES

“Do you see shapes?” said Buzzard.

“Shapes?” said Archie.

They were working on the Makers’ language. They’d discovered that, in addition to the weak, scattered and random voice broadcasts, there was a periodic transmission that was stronger and not random at all. It hadn’t taken them long to realize that it was probably coming from a rotating body, most likely a planet. They hadn’t yet figured out why someone was transmitting up into space, though. They were better with numbers than they were with motives.

“Yes,” said Buzzard, “shapes. When you’re doing numbers.”

“No,” said Archie. “Shapes? What do you mean?”

“For numbers. Each number has a shape.” Buzzard was using his hands. “When I put the shapes together they make another shape, and I know what the number is.”

Archie’s eyes lit up. “Ah. I get it,” he said. “No, I don’t see shapes.”

“Well, how do you do it, then? You’re just as fast as I am. There’s no way you’re calculating it that fast.”

“No,” said Archie, “I’m not calculating it.” He looked at the monitor, which was showing the progress of the Ball’s computer as it worked on their latest input. The Makers’ language was proving to be a tough problem. “I see color,” he said. “And light. And texture. It’s hard to describe, but like you, I just know.”

The monitor beeped. The analysis was done and the results were there, but it was the same as before. The computer hadn’t been able

to parse the language in the voice broadcasts. They were disappointed but not surprised. The signal was weak and sporadic and full of noise. There wasn't enough information yet for the computer to work with, not enough for them to devise an effective algorithm for it. And it wasn't the kind of analysis that was amenable to their talent with numbers, so their shapes and colors and textures weren't doing them any good.

It didn't help that the Makers' language sounded, as Stanton put it, "... like a coffee maker on the home stretch." The snatches of it that they'd captured so far seemed to consist of a bubbling, gurgling, fluttering sound running over top of a low growling noise.

Buzzard said, "Even if we do figure this out, we're never going to be able to talk to these people. I don't think our throats are capable of making those sounds."

Archie smiled in agreement, but he said, "When we figure it out."

Buzzard nodded. They would figure it out. It might take some time, but they would have this language down cold well before they needed it. They would keep collecting data and extracting the information out of it and subjecting it to deep analysis until it gave up its secrets. But they had done what they could with it for today. Now it was time to move on to the mystery of that periodic signal.

There was no voice in the signal. No burbling coffee pot to tantalize them with the promise of meaning. If it did contain any information, then it was encoded into the transmission itself. So far they had worked out that the signal was binary, with discrete pulses coming in a stream. In the brief periods when it swept across their location, they could see that it was unlike the analogue signal that carried the alien voices. This one was digital.

Then it abruptly stopped. After a week of appearing a couple of

times a day with clock-like predictability, one day it didn't show up. They kept looking for it, hoping it would come back. When it didn't, they were prepared to consign it to that class of phenomena that will never be explained. But after it was absent for a week, it showed up again, exhibiting the same characteristics as before.

Buzzard and Archie looked at each other, then at nothing at all while their brains went to work. Soon they looked at each other again, and this time you could tell they knew.

"It's orbiting something else," said Archie.

"The star?" said Buzzard, shaking his head.

"No," said Archie. "Too close."

"Right," said Buzzard, "then it must be ..."

They finished together. "... a moon orbiting another planet."

~

"No, we don't have the language figured out yet," said Stanton. "We don't have enough clean samples, and we don't have anything to compare them to, anyway."

Winston said, "No, I suppose not. I just thought that with both Buzzard and Archie working on it, it wouldn't matter. I guess I've come to expect miracles from those two."

"We have no doubt that they'll get it eventually," said Stanton. "They said themselves that it's just a matter of time. But right now they're more interested in the other problem."

"The other signal?" said Winston.

"Yes. The one that seems to be coming from the surface of a revolving body, straight up into space."

"Why would anyone do that?" said Winston.

“Nobody knows,” said Stanton. “Maybe when we figure that out, we’ll know what it’s all about.”

“Maybe,” said Winston, unconvinced.

Stanton looked over Winston’s shoulder into the Square. “What are they up to?” he said, pointing with his chin.

Winston turned to look. It was a lone Francesian making his way across the Square, with his funny hair and his self-conscious posture. The odd part was the line of children following him, perfectly mimicking his pious attitude. He was pretending to not notice.

Winston turned back, chuckling softly. “I shouldn’t laugh,” he said, “but those kids are funny.”

“They like to do that, don’t they?” said Stanton. “I remember a bunch of kids following Buzzard around the Square after we joined the comets.”

Winston glanced over his shoulder and back, nodding. “I remember that too,” he said. “The first time we joined comets. Before the Visitor arrived.”

“Yes,” said Stanton, and they both nodded for a while.

After a long silence, Winston said, “That’s a long time ago.”

Stanton pulled himself back to the present. “A lot of changes,” he said. “But at least some things never change. Kids are still kids, aren’t they?”

“Yes,” said Winston, slowly.

“What?” said Stanton. “Don’t tell me that’s changing too.”

Winston looked serious, his wide mouth a straight line. “I think it is,” he said. “I think they’re getting smarter.”

“Smarter? Do you mean they’re born smarter?”

“Not exactly,” said Winston. “And it’s nothing you can measure easily, either. They don’t really do better on the standard cognitive tests

than they always did. But you can tell. When you're with them. You can tell they're making an effort to ..." He shrugged. "It's like they have to slow down to talk to you."

"Slow down? Kids have always had to slow down to talk to adults." Stanton grinned. "Especially old ones like us."

Winston nodded. "True," he said, "but this is different. This isn't just a matter of hyperactive kids and stodgy adults. When you talk to them you can see them making a mental shift, like they need a different language to talk to you."

"Oh," said Stanton, looking at the children, who had followed the Francesian until he went out the red end of the Square. Now, with nothing to do, they appeared to be watching him and Winston. Could he see something in their eyes? Were they looking at him now with an alien intelligence? He shook his head. "They look like ordinary kids to me. I mean, look at the way they were following that guy. They were playing, like kids always have."

"You're right," said Winston. "Although there was more to that than meets the eye."

"Really? How?"

"This cohort of children is too smart for the Francesians. Too smart to buy what they're selling. They're not joining the cult and the numbers are stagnating." Winston glanced at the exit, where they'd last seen the lone Francesian. "That probably explains their latest campaign."

"Campaign? The Francesians are having campaigns?"

"Yes," said Winston. "Awareness raising. Recruitment drives. It's taken on a life of its own."

Stanton was shaking his head. "I don't know whether to laugh or cry," he said.

“I know what you mean,” said Winston. “This might help you decide. This campaign is about having more say in the education of the children.”

“Education?” said Stanton. “What could they possibly contribute to education?”

“They’ve avoided being specific. They just say that they want their beliefs to have equal time with the scientific belief system that the children are being taught now.”

“Beliefs?” barked Stanton. “Equal time?” He was at a loss for words.

“Yes,” said Winston. “According to them, science is just an elaborate system of beliefs. No more real than theirs.”

“Well,” said Stanton, “have they subjected their beliefs to experimental testing? How about peer review?”

Winston raised placating hands. “Don’t worry,” he said. “We’re not going to let them change our education system. It’s just a sign of their desperation.” He chuckled. “Besides, even if they got their way, these kids wouldn’t fall for it. They’re too smart for that.”

“That’s good,” said Stanton, watching the kids drift off as something else caught their attention. “It’s good to see that you’re not falling completely to pieces while we’re gone.”

Winston sighed copiously. “It’s not easy,” he said, “to always know what to do in the absence of the heroes of Green Comet.” He lifted his chin. “We’ll have to blunder on, I guess.”

Stanton smiled. “Okay, enough of that,” he said. “Now, what else was there? Oh yes, the singer. Is she still there?”

“Yes,” said Winston. “She’s still around. Still singing. And still a mystery.”

“No one’s figured it out yet? You’d think someone would have by now.”

“Yes you would, but I think most people would just as soon not know.”

“You can count me among those,” said Stanton.

“Me too,” said Winston.

“Although, I must admit the puzzle is attractive. The engineer in me wants to solve it.”

“You’re not alone,” said Winston. “Quite a few people are working on it. They have an organization where they pool information and speculation. They seem to be narrowing it down, comparing incidents of singing with who’s out of hibernation, and so on. They say it’s just a matter of time.”

“I see,” said Stanton quietly. He’d always known that the Singer couldn’t remain anonymous forever. That was obvious to anyone who understood probabilities. But he still found the prospect of her discovery disappointing.

So did Winston, so he changed the subject. “So, just a few more big sleeps and you’ll be meeting the Makers.”

Stanton perked up. “Yes,” he said. “Who’d have thought it would ever happen?”

“Especially after all these years,” said Winston. “Well, millennia, really.”

Stanton nodded. “Thousands of years. I wonder ...”

“You wonder what?”

“Well, I wonder how someone can be technologically advanced enough to send a von Neumann machine to another star, and then do nothing for thousands of years.”

“That’s right,” said Winston. “They’re obviously still there. And they’re advanced enough to have radio technology.”

“But no more advanced than they were back then?” said Stanton. “How do you come that far only to stall?”

“Maybe they’re satisfied with what they have,” said Winston. “Or maybe they gave up after launching the Visitor. Maybe they lost touch with it and just lost interest.”

Stanton nodded. “Maybe. I guess we’ll have to ask them.”

“I guess so,” said Winston. “Now that you mention it, what will you do when you get there? What will you say to them?”

Stanton laughed at him. “I’m sure Fran will think of something.”

Winston laughed right back. “I’m sure she will. Some small step, no doubt.”

~

“I also get the sense of touch,” said Buzzard. “I can feel the shape of the numbers, as well as see it.”

“That’s almost like texture,” said Archie. “You can feel your shapes, and I can feel the texture of my light and color.”

“Almost the same,” said Buzzard, “but not the same.”

“No,” said Archie, “not the same. But equal.”

“That’s right,” said Buzzard. “They feel equal to me.”

The monitor beeped. The computer had finished another run, and this time it had something. The digital signal, the periodic one coming from the rotating body in orbit around another, larger body, wasn’t encoded with the language they were hearing in the analogue signals. This binary signal was terse and economical and appeared to be mostly numbers. It looked just like the ordinary telemetry of routine status reports between distant points. Immediately they knew that someone

on the rotating body was communicating with something in a geosynchronous orbit around it.

34.

TOO MANY AURAS

“I’ve been talking to my colleagues on Green Comet,” said the Doctor. “When you told me what Winston said about the children there, I got curious.”

“So what do they say?” said Stanton. “Are the kids there getting smarter, or is Winston imagining things?”

“He’s not imagining it, but they’re not really smarter, per se. Depending on your definition of smart.”

“You’re going to have to explain that.”

“Of course,” said the Doctor. “They don’t score significantly better on the standard tests, as Winston told you. They’re not any quicker at understanding things, either. But they seem to understand more deeply than you’d expect, especially for someone their age.”

“More deeply?” said Fran, her interest piqued.

“Yes,” said the Doctor. “They see the nuances that one wouldn’t expect them to see until they’re much older. They seem to be immediately aware of the essence of complex situations. Something that most adults would have to think about.”

“So,” said Fran, “they’re not that much smarter than they were in earlier ...” She still needed a new word for generation.

The Doctor said, “I find ‘cohort’ works pretty well there.”

“Thank you, Doctor,” she said. “So this cohort might not be smarter, but they seem to understand more fully than expected.”

“That’s a good summary,” said the Doctor. “And they’re still just

kids, too. They might perceive nuance beyond their years, but they still have childish ideas and emotions.”

“That’s interesting,” said Fran, trying to picture it.

Elgin asked, “What’s causing it? If it was just one or two of them, we could put it down to chance. Does anyone know why an entire cohort is like this?”

“No one knows for sure, of course,” said the Doctor. “The working hypothesis is synesthesia.”

“We all have synesthesia,” said Elgin. “What’s different now?”

“That’s the thing,” said the Doctor. “We all have synesthesia, so for the first time we’re all reproducing within a closed pool of strong synesthetes. It seems unavoidable that the number and strength of synesthetic traits in each individual would increase with time. The hypothesis is that we’ve crossed a threshold where this new effect has become apparent.”

“That might be a factor, too,” said Fran. “The number of children like this might have just become large enough to become noticeable.”

“Yes,” said the Doctor. “It could be that instead. Or as well.”

Elgin wasn’t satisfied. “You still haven’t said how more synesthesia makes them this way.”

“I know,” said the Doctor. “So, hypothetically, each time a new form of synesthetic perception is integrated into the brain, it increases the amount of brain power required to process it. The result is that everything they perceive is more layered and complex. They see subtle shades and nuances that we don’t.”

“So they don’t necessarily see more than we do,” said Fran, “they just see more subtleties.”

“Yes,” said the Doctor. “Now, it’s possible that it will lead to

increased intelligence eventually, as the brain learns how to take advantage of the new processing power, but there's no evidence of that yet."

Elgin was shaking his head. "You haven't explained how their brains can handle it all. With the flood of new perceptions, why aren't they overwhelmed?"

"They would be if their brains were like ours, but the hypothesis invokes the infantile synaptic die-off."

"The what?"

"The synaptic die-off. We are born with an excess of synapses, then a number of them are discarded while we're infants."

"But that's crazy," said Elgin. "Why would we waste all the energy producing them only to throw them away?"

"It's thought that we start out with too many so we'll have enough for whatever contingency arises. Whatever kind of situation we're born into, our brain is able to adapt. Then, when it knows what it's up against, it discards what it doesn't need."

Elgin was nodding. It sounded right. "So their brains are adapted to the new perceptions and they can handle them."

Fran said, "Does that mean that we will never be able to enjoy this new vision, even with brain conditioning in hibernation?"

"Most likely not," said the Doctor. "We'll be able to replicate some of it, even most of it, but we won't be able to replicate the way they have to adapt to it in their formative years."

"Ah," said Fran, "so they'll always have the advantage of it being completely natural to them." She nodded. "This certainly explains it. And you can see why Winston would say it looks as if they have to use a different language to talk to us."

"Yes," said the Doctor. "I do hope they continue to want to talk to us."

“What?” said Fran. “How can you say such a thing? Of course they’ll keep talking to us.”

“Are you sure? If future cohorts continue to increase their abilities, how long will it be before we’re not worth talking to?”

“Don’t say that, Doctor. I prefer to believe that they will become more compassionate, not less.”

“So they’ll continue to care about us?”

“Yes.”

“Like people,” said the Doctor, “or like bright pets?”

“Oh, Doctor,” said Fran, “it won’t be that bad.”

“I hope you’re right,” he said.

Stanton said, “She is right, Doctor. The ones I saw were just like regular kids.” He laughed. “You should have seen them following that Francesian. They had him down pat.”

“They were following him in a line,” said Elgin, “mimicking him?”

“Yes,” said Stanton. “Like they did with Buzzard the day we joined the comets.”

“I remember that,” said Elgin. “They did that with me, too. At the swimming hole. Under water.”

“I remember,” said Fran. “That was sweet.”

“Yes it was,” said Elgin. “And funny, too. I almost drowned when I laughed. Under water.”

Everyone laughed at him, and Fran took his arm and gave it a squeeze. “You were such a good sport about it. It’s one of the things that let me know that you were the man for me.”

“If I had known that, I’d have tried drowning sooner.”

She slapped his arm, while he grinned at her.

Buzzard spoke up. “Does anyone know if they see shapes?”

“Shapes?” said the Doctor.

“Yes,” said Buzzard. “When I’m doing numbers, I see shapes. Does anyone know if they do that?”

“Or colors,” said Archie on the monitor.

“I see,” said the Doctor. “No. No one has said anything about the children seeing shapes or colors while doing numbers.” Buzzard and Archie looked mildly disappointed. “But they do see more auras,” he added. “Those might qualify as shapes and colors.”

“No,” said Buzzard. “Auras have shapes and colors, but they’re not the same. Not the same.”

“No, I suppose not,” said the Doctor.

“Wait,” said Fran. “Auras? They see more auras?”

“Yes,” said the Doctor. “A large percentage of them, the majority, see auras around almost everything. Not just people.”

“Everything?” said Fran. “Why? I mean, we know why we see auras around people, but why other things? What good does it do to see an aura around a chair, for instance?”

“I don’t know,” said the Doctor. “What could an aura tell you about a chair? Not much. But presumably it’s telling them something. If you’ve grown up seeing auras around everything, then you’d probably get something useful out of it.”

“Maybe it tells them whether the chair wants to be sat on,” said Buzzard.

Everyone laughed, but the Doctor said, “That’s a good point. We know that chairs don’t care whether they’re sat on or not, so it must be about the observer’s state of mind.”

“That’s right,” said Fran. “We know that the auras we project around people are our impression of their state of being. We pick up on their tone of voice and their body language and our synesthesia translates it into light and color.” She nodded. “Chairs don’t have

‘states of being’ in the same way we do, so their auras would be more about the person looking at them.”

“Yes,” said Buzzard. “Like, maybe last time they sat in it, it wasn’t comfortable.”

Fran laughed, but she said, “Exactly! Or maybe they had a really nice cup of iceberry tea, so it has a nice aura.”

“These are good ideas,” said the Doctor. “I’ll have to bring them up next time I’m talking to my colleagues.”

35.

RELICS

“We thought we felt like relics before,” said Elgin.

“Yes,” said Fran, her face re-focusing. “Now it’s official.”

Elgin looked into the featureless white light. “I wonder what it’s going to be like when we go back.”

She looked where he was looking and didn’t see anything either. They were both quiet long enough to completely disappear. Finally Fran said, “We can deal with that when the time comes. In the meantime, we have the Makers to look forward to.”

“That’s right,” said Elgin, his brown eyes intent. “When we get up we’ll be on the last leg. Only two more sleeps after that.”

“Nigel had a good idea, didn’t he? To send a message in the Prime’s language.”

“Yes,” said Elgin. “Send a message. Wait for a reply. Send it again. Repeat until successful.”

“Or until we’re sure it won’t be,” said Fran. “And keep it simple, too. Announce your presence and await acknowledgement.”

“Let them puzzle it out,” said Elgin. “If they can figure it out, that’s good. If not, then we can eventually call them in their own language. But no need to let on that we’re here, or how much we know, until necessary.”

Fran frowned. “I’m still not sure how I feel about that. It feels strange to begin with deception.” But she nodded. “Best to proceed with caution, though.”

“That’s right. We have no idea what we’re getting into. We don’t

know if the Makers are dangerous or not, and we won't know until we meet them." Elgin nodded too. "We're not being deceitful so much as prudent."

Fran shook her head. "Do you ever wonder what we're doing here? Why we're out here, light years from home, heading into who knows what?"

"Nope," said Elgin. "Oh, I think about it, of course. Who wouldn't? But I don't have any questions about why we're doing it. How could we be doing anything else?"

Fran smiled. "You're right. How could we? We couldn't have let the Prime fly away without doing something."

"No," said Elgin. "This might be dangerous and scary and weird, but it's where we belong."

They were looking into each other's eyes as the white light turned to gray.

36.

PARASITE PUPPETEERS

“Release your controls now, Buzzard.” Maria and Buzzard were out in a pair of the hundred meter modules, checking out their new control systems.

“Okay Maria, it’s all yours.”

“Here goes,” she said. She applied forward thrust, and Buzzard’s module moved ahead along with hers, a hundred meters off her starboard beam. She turned left, and it followed. Right, the same. She pitched up until they were upside down, then rolled them back upright. The two vessels were like a pair of synchronized swimmers.

“That’s perfect,” she said. “Now unlock your controls and set them to coordinated maneuvers.”

“Roger, wilco,” he said. “All set.”

“Good. Now let’s do the routine we planned.” Side by side they flew up to the front of the Prime, where they turned left to swing around it.

“It’s doing it,” said Buzzard. “It’s accelerating on its own to match your turn. I’m making the turn, but it’s adjusting to keep up with your module.”

“Excellent,” she said.

“And it’s helping with the turn, too. I can feel it in the controls.”

“Good,” said Maria. “That’s just what we were hoping for.”

“So these things will be able to assist us when we fly them,” said Buzzard. “And they’ll be able to fly themselves when necessary.”

“That’s right,” said Maria. “And they’ll be able to fly and maneuver in tight formation, or avoid collisions when we fly in tight formation.”

“Like we’re doing now,” said Buzzard.

“Yes, I guess you’re right. A separation of one vessel’s length probably qualifies as a tight formation.” She looked across the gap to her right. “Let’s see,” she said, and yanked her controls over.

“No, wait!” said Buzzard. “Oof!” he added as his module matched hers. “You could have warned me,” he protested as they straightened out to continue their circumnavigation of the Prime.

“What fun would that have been?” she said, laughing.

Buzzard laughed too. “That’s what I love about you, Maria. Your sense of fun.” He added, “One thing. One of the things. That I love.”

“Modules One and Two, this is the Ball, over.”

Maria said, “Ball, this is Mod One, go ahead.”

“Hi Maria. This is Elgin.”

“And Fran.”

“And Archie. On Tainui.”

Maria couldn’t see them, since the modules had audio only, but she could tell by their voices that it wasn’t serious. “Hi guys,” she said. “What’s up?”

“Hi guys,” said Buzzard. “Hi Archie. What’s up?”

“Hi Buzzard,” said Archie. “We got it.”

“You got it?” said Buzzard. “Yes!”

“Got what?” said Maria.

“We got a reply,” said Elgin. “The message to the Makers, in the Prime’s language. We just got a reply.”

“Oh!” said Maria. “Just now? What does it say? Are you going to answer it?”

Fran laughed, delighted at Maria's enthusiasm. "It's very short," she said. "All it says, really, is 'Who are you?'"

"I see," said Maria. "Well, what are you going to tell them?"

Fran said, "We're not going to tell them anything for now. We'll wait until you guys are back, and then we'll talk about it. There's no hurry, since it's been over six years since they sent it."

"Oh, right," said Maria. "Of course." Then she asked, "Is Nigel there? He must be pretty pleased with himself."

"Yes." Nigel's voice came on. "Here. And pleased."

"You should be," said Maria. "You got it right."

"Thank you," he said, "but it was just a lucky guess. They could just as easily have not understood the message. Or ignored it."

"Nigel's being modest," said Fran.

"I know," said Maria. "It might have just been a lucky guess, but it was obviously the right guess."

"That's just it," said Nigel. "It was the obvious thing to do. I just happened to say it first."

"Sure," said Fran.

"Obviously," said Maria.

While everyone was laughing at Nigel, Archie spoke up. "We've already learned something about the Makers," he said.

"What?" said Buzzard.

"They don't remember sending the Visitor. And they don't remember its language."

"How can you tell that?" said Elgin.

"The way they used the language shows that they've deciphered it, rather than remembered it. And they said 'who' rather than 'what.' 'Who are you?'"

That clicked for Elgin, and Buzzard said, "Yes. Archie's right."

Maria said, "Okay. We can talk about this when we get in. See you in about half an hour." She pushed her controls forward.

~

"How was it?" asked Fran.

"It was good," said Maria.

"Really good," said Buzzard.

"The control systems work just the way we planned," said Maria. "The automatic assist is really nice." She grinned at Buzzard, who laughed.

"Where the modules smooth out your inputs?" said Fran.

"Yes. And the Prime, too," said Maria.

"Oh, yes," said Fran. "I think Nigel was saying that the Prime could control its whole fleet at once, if it had to."

"I don't see why not," said Maria. "From what we saw, fourteen scouts and fourteen modules should be no problem."

Fran shook her head. "It's still hard to believe. Who'd have thought, not so long ago, that the Prime would be taking orders from us like this?"

"I know what you mean," said Maria. "Before, we were worried whether it might destroy us just for being here. We were glad to be like stealthy parasites. And now we seem to be able to get it to do whatever we want."

"It's like we've become its masters," said Fran. "As if we were puppeteers."

"Parasite puppeteers," said Maria, laughing.

"Parasite puppeteers!" said Fran. "I love it!"

"Me too," said Elgin. "It's perfect. We've infected our host, and now we're controlling its behavior."

“Puppeteers,” said Buzzard, his long-fingered hands in front of him, manipulating an imaginary marionette. “Puppeteers.”

Elgin got up and imitated a puppet on strings. As the laughter ran its course, Stanton said, “So, what else do you think we can get it to do?”

Fran gaped at him. “That’s usually my line,” she said.

Stanton smiled at her. “It’s different now,” he said. “Your small steps have shown the Prime to be harmless, so now we can proceed with confidence.”

“I see,” she said. Then, with a wink, “I guess I’m going to have to start taking bigger steps, then.”

He cocked an eyebrow at her, but he was still smiling.

Nigel said, “I think we should start by preparing it to communicate with the Makers.”

“We’ve already done that, haven’t we?” said Galatea with her usual trenchant brevity.

“Yes,” said Nigel, “but I think we should prepare it to have a two-way conversation with them. We want to make sure that it tells them enough, but not too much.”

“Nigel’s right,” said Stanton. “We need to figure out what to say to them.”

They discussed it but nothing sounded any good until Archie said, “I think we should have the Prime tell them what it is.”

“That’s a good idea,” said Stanton. “How do you think we should do that?”

“Well, we know that the language won’t be a problem,” said Archie. “The Makers have already shown that they can figure that out.”

“Okay,” said Stanton.

“So now we just need to tell them what the Prime is.”

“Like, ‘Makers, this is the Prime. I’m a hundred kilometer vessel full of resources?’”

“Not exactly,” said Archie. “We’ll be able to tell them about that, but we can use its real name.”

“You know the Prime’s real name?” said Stanton.

“The Prime has a real name?” said Fran.

“Yes,” said Archie. “Not a real name, as such. More of a designation, really.”

“What is it?” asked Stanton.

“It’s the equivalent of what we’d call letters and numbers. They don’t match up directly with our letters and numbers, so I’ve made something up that we can use.”

“Understood,” said Stanton.

“Okay. For the Prime I’ve chosen MvNM-2, for Makers von Neumann Machine Two.”

“That’s logical,” said Stanton. “Now, don’t tell me. Let me guess. The Visitor is MvNM-1, right?”

“That’s right. But those are just our equivalents. We’d send the Makers the actual designations in the Prime’s language.”

“Of course,” said Stanton. “But in our translations it would be MvNM-1 and -2.”

“Right.”

Stanton looked at Fran and Elgin, who nodded. Looking around at everyone else, he saw agreement as well. “That sounds good, then,” he said. “Now it’s just a matter of putting together the actual message. Any suggestions?”

Fran said, “Just one thing. Keep it short, whatever it is. Tell them enough to answer their question, but leave the important things unsaid. Make them want more.”

Buzzard started to laugh. “What’s so funny, Buzzard?” asked Fran. “The Prime is number two,” said Buzzard, laughing and laughing.

There were some shrugs and raised eyebrows, but the dimples in Archie’s cheeks were deeper than they’d ever seen them.

Galatea said, “Math humor, I guess.”

~

The message didn’t take long to craft, once they knew what they wanted to say. It began, “Makers, this is MvNM-2.” Of course, the Prime used its original designation, given to it by the Makers’ predecessors in the first place. And it addressed itself not to the Makers, but to the original entity that communicated with the Visitor during its expedition in that distant time.

Then it reported on its mission. The stars they visited, and when. The disappearance of the Visitor. The decision to come home.

Finally they had it send a request for the construction of enough lasers to slow them down when they arrived. The Prime was already talking to the original laser installation, the one that started the Visitor on its journey those thousands of years before. But they thought they might as well get the Makers involved, too. They weren’t sure that the small laser would have the ability, or the resources, to build itself up enough in the time remaining to it.

Now it was just a matter of waiting somewhat over a decade for a reply. They were curving past the last star before their destination, but they were still well over six light years away.

37.

UNDER THE SKIN

“We’ve found something.” Elgin and Frances were on the surface of the Prime, up near its bow.

“What does it look like?” asked Stanton, who was in a pod with Galatea.

“It looks like a hatch,” said Elgin. “It’s square and it has a seam all around. Here, I’ll get you a good picture. It just stands out from everything else.”

“I see what you mean,” said Stanton. “We’ve got no perspective here though, Elgin. How big is it?”

“It’s about two meters across.”

“Where are you?” It was Maria’s voice. She and Buzzard were also on the surface, escorted by Nigel and the Doctor in another pod. “We’re not finding anything here.”

“We’re close to the centerline, Maria,” said Fran. “We must be within a few hundred meters of it.”

“About a hundred meters,” said Stanton.

“Thanks, Stanton,” said Fran. “And we’re very close to the leading edge too, right?”

“About ten meters back,” said Stanton.

“Okay,” said Maria. “We’re still about five kilometers from the centerline, but we’re close to the edge, like you. We’re going to fly directly to a hundred meters, in case it’s laid out symmetrically.”

“It probably is,” said Elgin. “That would fit with what we’ve seen so far.”

“Yes,” said Buzzard, his voice reflecting the activity of flying. “Fourteen scouts. Fourteen modules.” He flew for a while. “The shape of the whole thing is symmetrical. Bi-laterally, at least. It has a definite top and bottom, and front and back, but the sides are symmetrical.”

“That’s right,” said Elgin. “I would be surprised if you don’t find another hatch right where it should be.”

“Me too,” said Buzzard.

After a brief silence, Fran said, “Nigel. Do you think you can open this hatch?”

“I’m working on that, Fran,” he said. “It looks like I should be able to, but it’ll take some study.”

“I’ll leave it to you, then,” she said. After a moment of staring at the hatch, she started rising straight up.

Elgin joined her and together they went up about three hundred meters. From that height they got a clearer picture of the local terrain, and it really was as much like terrain as it was like machinery. At a hundred kilometers long and about thirty wide, the Prime was as large as a small moon. From their high vantage point, they could see that it was laid out symmetrically on either side of the centerline. They could see exactly where Buzzard and Maria should go.

In the distance they could see the blinking red lights of their pressure suits picking their way toward the middle. “Maria,” said Fran. “Keep going that way. You’re heading right for it.”

“Will do,” said Maria. After a moment she added, “Where are you?”

“Look up,” said Fran. “We’re about three hundred meters up.”

After some silent searching, Maria said, “Ah! There you are. You look like a pair of flashing red stars.”

Fran and Elgin waved, even though they knew it was pointless. “Red dwarfs?” said Elgin.

“Never! Not you two. Red giants for sure.”

“Dying, grotesquely swollen and devouring our young?”

Everyone laughed, especially Buzzard. “Grotesquely swollen Elgin,” he chortled.

Chuckling, Fran said, “You’re getting close now. Less than a hundred meters. Just keep going that way and you can’t miss it.”

“I think I can see where it must be,” said Maria. “I’m beginning to get a feel for how it’s laid out.”

“It looks like you’re on a beeline from here,” said Fran. “We’re going back down now.”

As they were drifting back down, Nigel said, “I’ve got it. At least, I think I have. Let me know when you’re ready to give it a try.”

“We’re just about there, Nigel,” said Elgin. “And Buzzard and Maria should be, too.”

“We are,” said Maria. “And you’re right, Elgin. It really does stick out, doesn’t it?”

“Is yours the same as ours?”

“As far as I know,” she said. “Two meters square with a seam all around.”

“That sounds right,” he said. Then to Nigel, “I think we’re ready here. Ready when you are.”

“All right,” said Nigel. “Stand back.”

“What for?” said Maria.

“Just to be safe. There’s no indication here, but we don’t know what’s going to happen. What if there’s some kind of atmosphere under there and the door blows open?”

“Or,” said Buzzard, “it’s an emergency door and it opens explosively. Explosively.”

“Right,” said Nigel. “So, is everyone clear?” When that was confirmed, he sent the command to open.

It didn’t blow open, in either sense, but there was a kind of a bang. As with the release of the scout, they felt the jolt through their feet as the door unlatched. The hatch swung up and over until it was lying flat on the Prime’s surface, just like a small version of the big hatch on Green Comet.

“Hey!” said Maria. “You didn’t say you were going to open our hatch too.”

“I didn’t know I was,” said Nigel. Then, “Oh, no.”

Everyone wanted to know, but it was Stanton’s voice that carried. “Oh, no, what?” he said.

“Oh,” said Nigel, “nothing serious. At least, I hope not.” He sounded bemused, hints of laughter in his voice.

“Well, what is it?” said Stanton.

“It’s the hatches,” said Nigel. “Now that I know what I’m looking at, I think there are around eight hundred of them.” Laughing nervously, he finished, “And I think I just opened all of them.”

Stanton barked a laugh, but stifled it. The image of a hundred kilometer freighter flying through interstellar space with eight hundred hatches gaping open was pretty funny, but potentially serious, too. “Can you close them?”

“I think so,” said Nigel. “Are you all clear of your hatches?” With that confirmed he said, “Here goes,” and the hatches swung shut.

“Good,” said Stanton. “Now can you isolate these two?”

“Give me a minute. I think I can see the difference between the big ones and the little ones.”

“Big ones?” said Stanton.

“Yes,” said Nigel. “I opened all the big loading hatches for the freight compartments, too.” He was quiet and everyone knew he was working on it. “Okay, I think that takes care of the big ones. Now I’m going to try something, and you tell me if your hatch opens or not.”

“Ours is opening,” said Maria.

“Ours isn’t,” said Fran.

“Good,” said Nigel, closing the ones that had opened all down the left side. “That settles the lateral question. Now for front and back. Anything now?”

“Nothing here,” said Maria.

“Nothing here either,” said Fran.

“Right. I think I’m almost there. Now I’m going to open the hatch that’s closest to the front, on the top, just right of the centerline. That should be you and Elgin, Fran.”

“Yes, it’s opening.”

Nigel shut it. “Now yours, Maria.”

“There it is,” said Maria.

“Excellent! And I’m not showing any others opening at the same time.”

“Great!” said Maria. “Now open up so we can get in there and start exploring.”

“Yeah!” said Buzzard. “Open up. Let’s go.”

“Hold your horses,” said Stanton. “We haven’t decided which one yet.”

“Which one?” asked Maria. “Both of them, of course.”

“No,” said Stanton. “We can’t send you all in there at once. We’ll send two of you in, and the other two can stand by at the entrance.”

Before Maria could protest, Fran said, “Let Maria and Buzzard go first. Elgin and I can stand watch.”

“No, Fran,” said Maria. “If we can’t all go, then you and Elgin should go. Or we should at least draw straws.”

“No,” said Fran. “Elgin and I are agreed. It should be you and Buzzard.” When Maria didn’t answer she added, “You guys have all the experience with the scouts and modules. That should count for something.”

Elgin said, “She’s right. It’s right.”

When Maria still didn’t answer, Stanton said, “Make up your minds, or I’ll pick someone.”

“Okay,” said Maria. “We’ll go. You guys stay there. We’ll use your hatch.” You could tell by her voice that she was moving. “That’s the first one we found, so it’s only fitting.”

“That’s right, too,” said Elgin.

It didn’t take long to fly two hundred meters. Within minutes the four of them were clustered, staring at the portal that was about to open. It only hit them then. They were about to open up the Prime and invade its innards. They looked at the hatch, and they looked at each other. You could see in their faces that things had changed.

Stanton broke the silence. “Is everyone just about ready?”

That broke the spell. Now they were looking sheepish. “Yes, Stanton,” said Fran. “We’re ready.”

That would have been it, but Elgin had something to say. He said, “I’m not usually the one for making speeches. Almost anyone would be a better choice for that than me.” He might not have been very practiced at it, but he certainly had their attention. “It just struck me. What we’re about to do, well, it’s pretty weird when you think about it.”

There was general agreement to that.

“But really,” he went on, “that’s what we do, isn’t it? We do weird things, I mean. Like even being here in the first place.”

They were pulling for him, willing him to get through it.

“So, anyway, I just thought that, even if this seems weird, it’s not, really. It’s not that weird, I mean. Because, for us, this is normal.” He stopped there, feeling unfinished.

They surprised him with a round of hearty agreement, and Fran came over and slipped her arm through his. She beamed into his face, proud as could be.

Stanton said, “Nice speech, Elgin. I think you spoke for all of us with that.”

Galatea chipped in, “Elgin making speeches. What next?”

“Thank you Galatea. Stanton. Everyone.” Elgin sounded embarrassed. “Don’t worry. I won’t make a habit of it.”

“No, you were fine,” said Stanton. “Now, if everyone is ready, let’s open up and get going.”

“We’re all set here,” said Fran.

“Okay,” said Nigel. “Opening up.”

The hatch swung up and laid itself flat beside the opening. The four looked at each other, then Buzzard and Maria moved forward. At two meters wide, the hole was big enough for both of them to go through at once, which they did, heads first. Elgin and Fran closed in and looked down, their eyes following the lights as their friends looked around. There was nothing much to see. It looked like there was a corridor under there, running fore and aft.

“It looks like we’re in a passageway,” said Maria, confirming what their friends could see, and what their helmet cameras were transmitting. “Looking forward, it stops at a bulkhead after a few meters. But looking aft, it seems to go forever.”

“Go forward first,” said Stanton. “Let’s see what we’ve got.”

“On our way,” said Maria, and they headed for the bulkhead, their lights pushing the shadows away. It was only a few meters, since the hatch was just ten meters from the Prime’s leading edge. Elgin and Fran could more or less keep an eye on them, if they moved around to the back of the opening and crouched down.

“There’s another passageway,” said Buzzard. “Just before the bulkhead. Going sideways. A lateral passageway. Going both ways.”

“Okay, Buzzard,” said Stanton. “Hold your head still for a while and let’s have a look.” Buzzard happened to be looking to the right, away from the centerline, when he stopped moving. Stanton saw an empty passage, its lines converging on the vanishing point. “That’s good. Now look inboard.” It looked the same, only he could see what looked like another bulkhead in the distance.

“It occurs to me,” said the Doctor, his voice surprising them, “that passageways are made for passage, and I wonder what is meant to be using these.”

He wasn’t the only one. They’d all thought about it, and they’d all assumed the same thing: service robots. That calmed the brain’s rampant speculation while they got on with things, but the Doctor’s comment repopulated the passageways with other possibilities.

“Just robots,” said Maria, trying to sound calm.

“Just robots,” said Buzzard. “So, which way do you think we should go? Inboard or outboard?”

Maria smiled at him. He made it seem so natural. “Definitely in,” she said. “I think that’s where the action will be.”

“Me too,” said Buzzard. “That outbound tunnel looks boring, but I bet that bulkhead at the end of the inner one is the centerline.”

“I bet you’re right,” said Maria. “So let’s go.”

At three meters square in cross section, the corridor was big enough for them to fly comfortably side by side. They set an easy pace of two meters per second, what would have been a brisk walking pace back on their planet. At that rate they would have reached the bulk-head in less than a minute, but there were periodic openings in the walls, and they had to explore every one.

The openings led into alcoves, each about five meters cubed and lined on every surface with what looked like the components of a larger system. The components appeared to be modular, each one well under a meter in size. Curious, Buzzard took hold of one by what looked like an obvious handle, and pulled. After a good tug, it slid out smoothly and they could see a tidy array of smaller components inside. There was also a green light that started flashing. "Uh-oh," said Buzzard, and slid it back in.

"Uh-oh what?" said Stanton.

"Nothing," said Buzzard, although the green light didn't go out. And then they noticed a light in the hallway. A moving light.

"Uh-oh," said Buzzard again.

"Buzzard!" said Stanton, who couldn't tell the new light from their lights.

"Something's coming," said Buzzard.

"What?" asked Stanton.

"There's something out in the hallway."

"Well, what is it?"

"I don't know. We can just see its light. Moving. In the hallway."

Maria flew over to the door and had a look, popping her head out and back in.

"What is it?" asked Buzzard.

She popped her head out for another quick peek, then backed in

and pulled Buzzard to one side. "I think it's a service robot," she said. "I'm pretty sure it's coming here. We'd better turn our lights out."

"What does it look like?" asked Buzzard, switching off.

"Can't you get out of there?" said Stanton.

"It's too late to get out of here," said Maria, as the robot turned into their alcove.

It took a while to see it properly. Firstly, they were so keyed up that their eyes were trying to see everything at once, and therefore not seeing anything very well. Secondly, there were far too many parts. They got an impression of a bulky mass with a large number of appendages, and all the limbs seemed to be moving at once.

Buzzard and Maria stared from the side of the room as the robot crossed from the opening to the blinking green light. It reached out with two of its limbs, the topmost two, and pulled out the component. A second, smaller pair of limbs reached up to hold the component while it worked on it with the top two. It had four more appendages down below that seemed meant to function in a quadrupedal way.

Seemingly satisfied with its inspection, it did something that turned out the green light, then slid the component back in. Mission accomplished, it turned to leave, and stopped dead when it saw them.

"Uh-oh," said Buzzard again, when he saw it pointing something at them.

"What's that?" said Stanton, seeing it on his monitor.

"I don't know," said Buzzard. "It doesn't look like a gun. There's no hole in the end. Just some spiky things."

"Maybe it's some kind of energy weapon," said Stanton.

"I hope not," said Buzzard.

Nigel cut in. "There's a lot of activity here. The Prime's main processors are receiving a lot of data."

“Ah!” said Elgin. “A sensor. The robot’s pointing a sensor at you and sending the data back.”

“I hope so,” said Buzzard.

“Come on,” said Maria, heading for the robot.

“Wait!” said Buzzard. “Wait for me.”

Side by side they approached it, while it stood and watched them come. It was standing squarely on its four largest limbs, with its main body erect above them. The upper arms hung unmoving from its sides, while the smaller arms were waving slowly, questing absently. The sensor retracted, leaving just two big eyes about two-thirds of the way up the trunk. It didn’t have anything like a head, unless you thought of the whole body as one.

They stopped in front of it. They were close enough to reach out and touch it, or for it to touch them. Forgetting its strange morphology, and the fact that it had four limbs to their two, it was about the same size as them.

“Nigel,” said Maria, “what’s happening now?”

“The heavy data flow has stopped,” said Nigel, “but there’s still information moving.”

“From this robot?”

“It looks like it. I believe I’ve identified this particular unit and its connection to the central node.” He gave a satisfied chuckle. “And I’ve been able to use this to isolate similar signals. It looks like there are about eight hundred of them.”

“That’s the same as the number of hatches,” said Buzzard.

“That’s right,” said Nigel. “I’m trying to figure out now if they’re associated.”

Maria moved closer, keeping her eyes on the robot’s arms. Slowly she reached out, wanting to touch it, and one of its arms came at her.

She jumped back so fast that Buzzard helped to slow her down, his hand on her prism-shaped service pack. They both drifted backward together. The robot's arm stopped, and drifted back to its previous position.

Maria and Buzzard looked at each other. Without a word, they moved forward once again. This time she reached out for the robot's arm, and it reached out to meet her hand. She grasped it and it stopped moving. She glanced at its eyes and could tell somehow that it was watching her. Looking back at the arm, she turned it over to get a good look at the structure at its end. The robot neither resisted nor helped her efforts.

There were six appendages on the end of the arm, forming what she instinctively thought of as a hand. Manipulating them, she quickly saw that two of them were analogous to the thumb on her hand. Each thumb naturally opposed two of the four fingers, and each other. She looked at Buzzard and he raised his eyebrows as the possibilities blossomed in his mind.

Maria said, "Pretty effective, eh?"

"Yes," he said. "Half of the hand could hold onto something while the other half worked on it."

Nigel's voice broke in. "I think I have it figured out," he said. "It looks like there is one robot assigned to the area around each hatch. This one covers the hatch you used, and a good chunk of that quadrant of the Prime. There's another one on the other side of that bulkhead you saw at the end of the hallway."

Elgin and Fran showed up in the doorway. "We thought we should come in case you needed our help," said Fran. "But it looks like you've got everything under control."

Maria said, "More or less." She released the robot's hand, which

slid back to its neutral position. “So,” she said to Nigel, “you can identify them individually. Do you think you can control this one?”

“Well,” said Nigel, “probably. Eventually. With practice.”

“Try it now,” she said. “Move the hand I was holding.”

“Really?” he said. “Are you sure?”

“Sure.”

“Okay. I’ll give it a go.” He muttered to himself, obviously trying to work it out. “Okay, I’m ready. Stand back.”

He might have been half joking, but it’s a good thing they did as he said. He was able to move the hand, all right, but only by moving the whole arm, and that rather spastically. It flailed wildly, and would have struck them if they hadn’t moved. It did end up striking itself, severely lashing its own face, leaving it permanently scarred. It made no move to avoid the damage, and gave no reaction to it. They would end up giving it the nickname “Scarface.”

“That was good, Nigel,” said Maria. “Could you do it again?”

“Ha-ha,” he said. “Not if I can help it.” He pored over his data. “All right, I think that’s got it,” he muttered. Then to Maria and Buzzard, “Stand back. I’m going to try that again.”

Buzzard and Maria backed up all the way to the wall, and pressed themselves theatrically against it. “All set,” they said.

“You guys are a laugh a minute,” said Nigel drily. He could catch glimpses of what they were doing through their cameras, and that gave him an idea. It took only a moment to tap into the data stream from the robot’s visual sensors, and a few more to figure out how to convert it for output on his own monitor.

“Well,” said Maria. “Is something going to happen?”

“Hang on,” said Nigel. “Just about there.” Then the image popped

up. "Ah, there you are. Oh yes," he said, seeing them in their humorous pose, "you two are hilarious."

"Wait," said Maria, "are you looking at us through its eyes?"

"Yes," he said. "That's where it happens to be looking. Now, if I can just ..." The robot's hand moved slowly in front of its face, and they could see its attention turn that way. "Good. And it automatically adjusts focus, too."

"It looks like you have good control of the arm now," said Maria. "It hasn't slapped itself in the face for a while."

"Thank you," said Nigel, equally facetiously. "With some practice, I think a person could make one of these do almost anything."

"Only one?"

"Oh, now that you mention it, I suppose a person could run a few of them simultaneously."

"That's interesting," said Maria, as she watched Nigel put the supple, unjointed arm through its paces. "We can use these robots to explore the whole Prime."

"Yes," said Nigel. "That will save a lot of time." They were just getting into the possibilities when they got a call from the other end of the big ship.

"Pods one and two, this is Tainui, over."

Stanton answered. "Pods here. Go ahead, Archie."

"Hello Stanton. Everybody. We got a reply from the Makers."

"Oh, good," said Stanton. "What does it say?"

"Not much," said Archie. "Hardly any formalities. Only a few words that boil down to, 'Why should we help you?'"

38.

FIRST CONTACT

“At first it looked like it was galloping.” Buzzard was telling Archie about the robot. “And then, once it was up to speed, it settled into a trot.” He shook his head. “But not a trot. Not really a trot.”

“How was it not like a trot?” said Archie.

“I didn’t know this,” said Buzzard. “I never thought of it before Maria told me. She used to ride horses, you know. Back on the planet.”

“No,” said Archie, “I didn’t know that.”

“Yes,” said Buzzard. “With her father.” His face fell. “And her mother. Her mother.”

“What’s the matter, Buzzard?”

“Her mother,” he said. “She was killed in a riding accident. That’s the main reason they went on Green Comet.”

“That’s sad,” said Archie.

“I know,” said Buzzard. He looked at his friend. “But if it hadn’t happened, I wouldn’t have met Maria. Is it bad to feel happy about something so sad?”

Archie nodded. “That’s hard all right.” Then he firmly shook his head. “You can be happy about meeting Maria and still be sad about her mother dying. She didn’t die so you could meet Maria, even if you were only able to meet because she did. You know?”

Buzzard looked at him. “I guess you’re right,” he said. “I know you’re right. But it still feels bad that my happiness is contingent on something so sad.”

“I know,” said Archie. “But what about all the other things it’s

contingent on? And then all the things those things are contingent on. And so on.”

“I know,” said Buzzard.

“And then, why did you go on Green Comet? And what was that contingent on? And so on.”

“I know.”

“It’s illogical, Buzzard.”

“I know, but there it is.” Buzzard turned his palms up.

Archie shook his head. “I think I understand,” he said. “Anyway, what did Maria tell you about trotting?”

“Oh,” said Buzzard, “that’s right. Maria pointed out that most quadrupeds move their diagonal legs together. I mean, one leg on each side is going forward while the other is going back, and it’s opposite on the other side. You know?”

“I can see that.”

“Okay, well, the robot, after it finished galloping, was moving both legs on the same side together.”

“So, it was like us walking, only with two legs on each side?”

“That’s right. Only not really walking, because it would glide without touching the ground.”

“I see,” said Archie, with a puzzled frown. “But if it’s going airborne, I mean, if it’s leaving the floor, why doesn’t it soar right up and hit the ceiling? There’s no gravity to speak of.”

“I wondered that too,” said Buzzard, “so I had a good look at the recording. The robot doesn’t push off to propel itself, it reaches forward, gets a grip, and pulls itself.”

“So it has magnets, or suckers.”

“It has to be magnets. Suckers wouldn’t work with no air. Or maybe it has setae, like us.”

Archie rolled his eyes. “How long have we been out here? And I’m still assuming there must be air if you’re indoors.”

Buzzard laughed, and turned to watch Stanton and the others fly up.

“Are we all here?” Stanton counted heads, finding all eight. “Good. I think we’re all aware of the message.” Nods all around. “Right, so now we need to figure out how to answer it. This is serious because, if they don’t build up the laser, we’re going to blow right through that system.”

Fran raised her hand. “It’s not quite that bad,” she said. “There’s not enough to stop the Prime, that’s true, but there is enough to stop the balls.”

“Thank you, Fran. That’s right, of course. We probably won’t have any trouble stopping, provided the Makers don’t turn off the lasers that are already there.”

“That’s the problem though, isn’t it?” said Elgin. “As far as the Makers are concerned, we don’t exist. It’s just the Prime. And if they decide they don’t like the Prime, what’s to stop them from turning the lasers off?”

“Are you suggesting that we tell them we’re here?” Stanton’s expression was sceptical.

“No,” said Elgin. “I think our plan of letting them know in the last year is the way to go. I’m just saying that, since the Prime is all they know, it’s the Prime that has to convince them.”

Stanton nodded. “I agree. But the problem is, how do we do that? We have no idea what the Makers are like, so we don’t know how to appeal to them.”

There was silence while everyone pondered that, then Buzzard

tentatively suggested, "They like symmetry. The Prime is symmetrical. And the Visitor. And the modules and scouts."

"That's true," said Stanton, "but I can't see how it helps us. Sorry Buzzard."

As Buzzard's face fell, the Doctor said, "Buzzard might be onto something." When they looked at him he said, "Maybe their liking of symmetry goes beyond appearances."

"What do you mean?"

"I mean, maybe they like symmetry in actions. Like, they do one thing and expect or want something else to balance it."

Stanton did not look enlightened.

The Doctor tried to clarify it. "I guess I'm thinking of a sense of fairness, or an expectation of reciprocity."

"Ah," said Stanton. "So you think they might be asking what we'll do for them if they build the lasers. 'Why should we help you?'"

"Yes," said the Doctor. "Only what will the Prime do, rather than us."

"Of course," said Stanton. "But what can the Prime do for them?"

"The only thing it has to offer," said the Doctor. "Its cargo."

That was greeted by general approval, and they immediately began to discuss how to word the message. Everyone came up with a variation on, "If you will build the lasers, then I will give you ..." The suggestions became increasingly fanciful and humorous as each tried to outdo the other, and that exposed the flaw in that approach. They knew instinctively that the Prime couldn't bargain with the Makers. Its makers. It wouldn't ring true for a device that was ultimately of their making to act like an equal in a negotiation. They were going to have to find a way to do it that would feel right to the Makers.

"Just tell them," said Galatea. "Tell them that the Prime has tons

of valuable resources on board, and if they don't build the lasers, then they won't get them. What's the problem?"

Elgin said, "That sounds right. Almost."

"Almost?" said Galatea.

"Yes," said Elgin. "It's almost right, but not quite." Seeing her frowning at him, he said, "Sorry."

"Well, what's wrong with it?"

"I'm not sure." He shrugged. "Maybe it sounds too much like a threat."

"That's it!" Nigel burst out.

"What?" said Fran. "Have you got the answer?"

"Yes!" said Nigel. He grinned at them, nodding vigorously. "It's perfect."

"Tell us," she said, "and let's see what Elgin's sense of right makes of it."

"Okay," said Nigel. "We don't want the Prime to sound as if it's bargaining with them, right?" They agreed. "Or threatening them." He looked at Elgin, who nodded. "But we want them to know what they'll be missing if they don't help the Prime stop."

"I think that sums it up," said Fran.

"So," said Nigel, "we don't have to actually do anything."

Stanton was frowning now. "Are you suggesting we do nothing and hope for the best?"

"No, not at all," said Nigel. "I just mean all we need to do is let the Prime give the Makers the straight facts, with nothing added. No embellishments, no explanations."

"Oh," said Elgin, beginning to nod.

Stanton looked at him. "Do you know what he's getting at?"

“I think so,” said Elgin. To Nigel he said, “You just want the Prime to tell the Makers what it’s carrying, right?”

“That’s right,” said Nigel. “We get it to send them its manifest, and that’s all. Just a machine reporting to its makers. No threats and no promises.”

Elgin was nodding decisively now.

Stanton said, “I like the sound of that. That’s how I would expect my machines to talk to me.”

“Is that it, then?” said Fran. “Is that how we’re going to do it?”

Stanton looked around. Everyone seemed agreeable, so he said, “It looks like it.”

“Good,” said Fran. Looking thoughtful, she asked, “How long would a message like that take to send?”

Nigel said, “Well, it depends on how we send it. Why?”

“I think we should make it take a while,” she said.

“How long of a while?”

“Is a week too long?”

“No,” said Nigel. “It has a slower data mode, which I presume is meant for critical transmissions, with redundancy checking for accuracy and all. We could easily make that take a week.”

“Good,” said Fran. “The critical redundancies will no doubt impress the Makers.” She grinned at him.

“No doubt.” He grinned back at her. “But why do you want it to take a week? We could do it in less than a day.”

“I’m not sure. Something just tells me it might be useful.” She shrugged and looked at Elgin.

He said, “It feels sort of right.”

“Sort of?” asked Stanton.

“Yes,” said Elgin. “There’s no big click, but it has a sense of being

right. There's no sense of wrong at all, but I guess there's not enough there to know for sure."

"I get you," said Stanton, who was used to dealing with Elgin's sometimes vague talent. "It can't do any harm to use a slow transmission, and Fran thinks it might do some good." He looked around and got a consensus. "Let's do it, then."

"After we finish the tea and biscuits," said Fran.

~

The Doctor had been quiet for quite a while when he spoke. While everyone was drinking tea and chatting about the Prime and the Makers, he'd been silently gazing out through the Ball's shell at the immensity of the great cargo ship. If anyone had been watching him they'd have guessed that his mind was on something important. As it was they'd almost forgotten that he was there, and his voice surprised them. It wasn't the first time that had happened. He said, "This isn't how I imagined first contact."

In the surprised silence he added, "I imagined that there would be more ceremony, somehow. An exchange of greetings, momentous greetings. I guess I was expecting some kind of revelation." He laughed softly. "Instead we're sending a list."

Everyone laughed. It was funny when you put it like that. The laughter faded quickly, though, because he was right. Here was the only chance they'd ever have at first contact with an intelligent alien species, and it was being wasted on a prosaic list.

Nigel had an objection. "Technically," he said, "this isn't first contact."

"Do you mean the Visitor?" asked the Doctor. "I don't think that

counts because it was just a machine. And it never tried to talk to us. All it did was destroy us.”

Nigel nodded. “You’re right,” he said. “There might have been contact there, but there was certainly no exchange of ideas.”

“If that doesn’t count,” said Archie, taking a biscuit from the tray offered by Fran, “then this one doesn’t count either.” He took a neat bite.

“Why not?” said the Doctor, but Archie was busy chewing.

“I know. I know why not,” said Buzzard. “I think I know.”

“Why then, Buzzard?” asked the Doctor.

Buzzard looked at Archie, who nodded, still chewing. “Because if the first one didn’t count because the Visitor was just a machine, then this one doesn’t count because the Prime is just a machine.”

The Doctor didn’t say anything, so Elgin said, “He’s right. It’s almost perfectly analogous.”

Nigel said, “But it’s different. The Visitor never talked to us, and the Prime is talking to the Makers.”

“It’s still just a machine,” said Elgin.

“But it’s saying what we tell it to say,” said Nigel, “so it’s really us making contact.”

“That’s true,” said Elgin, “but the Makers don’t know that. Can it really be contact if only one side knows?”

The eight of them, nine counting Archie, knocked that around for a while, but they couldn’t settle it either way. Fran was the one who finally put it to rest. “Those two cases might be ambiguous,” she said, “but there’s one that won’t be. When we call the Makers a year before we get there, that will be definite contact.”

39.

PURSUED BY FIRE

“Makers, this is the Comets.” They were one year out and slowing quickly. Once the Makers received the Prime’s manifest, the lasers started to come on line with brisk regularity. The Prime wouldn’t be required to use its huge ion drive to slow down, beyond what it would normally.

They’d debated how to phrase this message and soon settled on “the Comets” as their identifier. “The Ball” didn’t sound so good, and besides, that would have left out Tainui. Calling themselves by their old, dead planet was a popular choice, and made it down to the final two. The Francesians voted as a bloc for that choice. They thought it would be a good opportunity to repeatedly admonish the Makers for their sins. To really rub their noses in it, if it was discovered that they had noses. But they were comet people now, and the Ball and Tainui were here representing all comet people, so their designation inevitably settled on “the Comets.”

“Makers, this is the Comets. We are accompanying the Prime and will arrive at your location in one year.” That year was translated into orbital periods, the time the Makers’ moon took to orbit its gas giant planet, which was two weeks. They reasonably assumed that the planet, which would fill a large part of their sky, would be their primary celestial influence.

“Makers, this is the Comets. Thank you for adding the lasers so promptly. The Prime now has enough to successfully stop in your system. When we arrive, you will receive a large quantity of resources.”

They were close enough now that the round trip time for a radio message was down to one week. They had been slowing down from their normal cruising speed of one-tenth of the speed of light for much of the final leg, and now they almost felt like they were back in normal space. Even though there are no significant relativistic effects at ten percent of lightspeed, the great distances and times involved can leave you feeling disconnected.

So, this was it. They were coming down out of interstellar space, and were about to engage with normal life again. They had sent their message, what they all felt was the real first contact between alien species, and within a week they expected a reply. Everyone was infused with feelings of drama and history. Everyone on the Ball and Tainui, Green Comet and Orange Comet, Pharos and Scintilla, was looking forward to this pivotal moment when two peoples, risen out of two worlds, evolving separately for billions of years, would come together at last. Thousands of people, living light years apart, were clustered around their windows, speculating wildly about how the Makers would respond.

There was mild disappointment when the moment passed in silence, but they were prepared for that. It might take a few minutes to get over the shock of receiving such a message. When they thought about it, it seemed reasonable to take an hour or two to compose a reply worthy of the occasion. They were surprised when it took over a day. And they were let down when the answer finally came.

“Who are you?” it said. “What do you want?”

~

“Not what we might have expected,” said Winston. He was at the window chatting with Stanton. With him was Minder, who now chaired the planning committee. Elgin and Fran were there too.

“No,” said Stanton, “but maybe we should have. They weren’t very wordy when they were talking to the Prime, either.”

“That’s right,” Fran said. “They said almost the same thing then.”

Everyone nodded, then Elgin said, “Congratulations, Minder. I always knew you were destined for great things.”

Minder blushed, the colors cycling through his cheeks.

Fran took pity on him and changed the subject. “So, mister chairman,” she said, “we hear that you have five comets completed now.”

Minder looked pleased. “Yes, we do,” he said. “We just attached the fifth one, and tomorrow the pressure tests will be done and the tube will be open to traffic.”

“Congratulations,” said Fran. “It must be satisfying to have it happen on your watch.”

Minder looked at Winston and the two of them chuckled. Turning back, he said, “Coincidentally, we were just talking about that. I occasionally seek out Winston’s wise counsel, to get the benefit of his experience.” He smiled faintly and shook his head. “It’s a great honor to have the chair at such a time, but the responsibility surprises you.”

“I guess the pressure can get pretty bad,” said Fran.

Minder scoffed and waved it off. “It’s nothing compared to what Winston faced. Or the Five, when you were facing down the Visitor.”

“But it’s still there,” insisted Fran. “It might not be on the scale of the Visitor, but the potential for disaster is still there. And you’re the one responsible.”

Minder laughed. “Thanks for reminding me.”

They all laughed with him, then Elgin said, “The Minder I know,

the one who took care of me, wouldn't want to give the responsibility to anyone else."

"That's right," said Fran.

"Hear, hear," said Stanton.

Winston nodded sharply and patted Minder's shoulder, while Minder blushed again, lights in his face. "Anyway," he said, smiling through his bioglow, "this is only the penultimate comet. We hope to have Winston back in the chair when we attach the sixth one. When we complete the hexamer."

Winston shook his head. "I don't think ..."

"The hexamer," said Elgin. "The smallest possible droplet of water."

"The smallest droplet of water," said Fran. "I'm glad we came up with that. It's so appropriate."

Winston said, "We should really ..."

"I think it's better than Orange Comet, with the benzene ring," said Stanton.

Winston shrugged and turned up his palms.

"Oh yes," said Fran, "although six comets in a ring is better than the sixty in a sphere that they were planning."

"Right," said Elgin, "C60. That would have taken forever."

"Twelve pentagons and twenty hexagons," said Stanton. "That would have been a sight to see though, eh?"

"Yes," said Elgin, with a faraway look. In a musing tone he said, "You know, we could probably build Green Comet up into a snowflake. If we wanted. Given time."

"Right," said Stanton. "Time. At this rate, thousands of years, at least. More likely tens of thousands."

“That sounds right,” said Elgin. “It’s a long time, but it’s only time, isn’t it?”

That rang true for all of them, given that they’d already been at this for several millennia. They went quiet, their minds far away. Eventually Winston broke the spell. Clearing his throat, he said, “Meanwhile, what are we going to say to the Makers?”

~

They decided to tell the Makers a bit more about themselves, but not too much more. They told them they were comet people. That they lived on comets. They told them that they saw the Prime setting out, with its enormous sail, and that they decided to tag along and see where it was going. They told them that comet people were explorers, curious and adventurous. Nomadic, even.

They decided that now was not the time to tell them why comet people had no home. This was going to be a lot for the Makers to absorb. This gigantic ship that they didn’t remember making and launching, now returning laden with resources beyond their greatest fantasies. And now this alien species announcing its presence and its intention to visit them. This was definitely not the time to tell them that their creation wiped out a species, and that the few survivors of the outrage were about to drop in on them. They would find the right moment for that revelation later, after they knew each other a little better.

They sent along a picture of themselves, of Elgin and Frances standing side by side. The picture showed the very slight dimorphism between their sexes, and gave them the opportunity to explain their genders. They used multiples of the wavelength of the radio signal to demonstrate their size.

They bundled everything up in a nice package and sent it on ahead, with their best wishes, in anticipation of meeting in person very soon. At the end of the message they asked the Makers to tell them a little more about themselves, in the spirit of openness and good intentions.

A week later, when they got the reply, Elgin said, “Oh, so that’s why Scarface looks like that.”

In the picture that accompanied the message they saw one figure, presumably of a Maker. Just like the service robots, it had eight limbs, four below and four above. It was easy to picture them in use, with the bottom four for ambulation and the upper four for manipulation. The arms and legs grew from the sides of a body that began nearly horizontal between the legs, then curved up to vertical between and above the arms.

On the front, above the upper arms, was a face of sorts. There was a pair of big eyes, forward looking and probably binocular, and below them a mouth. Presumably a mouth. It wasn’t open, so they couldn’t be sure, although it seemed most likely. If it was a mouth then it was probably a rudimentary beak. They could see a seam between its upper and lower halves, which looked like large, rigid lips. The big, staring eyes and immobile mouth left the face uncomfortably devoid of expression. There was no nose.

The accompanying text described the Makers as the people of Water, living under Air, pursued by Fire.

Elgin and Fran looked at each other and nodded. “Their moon must be mostly water,” said Elgin.

“Maybe all water,” said Fran. “And the fire must be their star. The red dwarf.”

“That’s right,” said Elgin. “It would be close enough to see its flames.”

“Yes. It must look like a ball of fire,” said Fran. “But what about the air?”

Elgin frowned in thought, but didn’t reply. It was Archie who spoke up. “It says they’re living under Air. Not in air, but under it. Maybe Air is the gas giant.”

“Yes!” said Elgin. “Water, air and fire. But no earth.”

“Well,” said Stanton, “if they live on a water world, there might not be any land. There’d be no reason to have earth in their mythology.”

“I wonder,” said Fran. When they looked at her she said, “I wonder if they even have a concept for earth. And if they do, what they think of it.” She looked around, taking them all in. “I wonder what they will think of terrestrial creatures like us.”

40.

COMMUNICATION

Whatever the Makers thought of earth or terrestrial creatures, they wouldn't be finding out right away. There were too many other things to think about for now, too many other things to learn about each other as they steadily came closer. And besides, the Makers had no idea that they were terrestrial. As far as they knew, comet people lived on comets, and that's all they needed to know for now.

As the distance between them shrank, the time between messages also grew shorter. While they wouldn't be able to have a normal, two-way conversation until they were much closer, each time they had an exchange it was different from the last time. At first they were more like proclamations. Statements of facts, with no expectation that the reply would be any different. But as the delays got shorter, from days down to hours and eventually minutes, they found that they could say something and the response would be almost natural.

They got in the practice of having one person act as their representative, reasoning that it would be easier to form a relationship that way. It almost went without saying that Fran would represent the comet people. When the Makers complained that they couldn't tell her apart from the others, she began wearing a small gold pendant around her neck for identification.

The Makers also decided to nominate one person to represent them. When it said its name, its lips didn't move. Rather its beak. The Makers didn't use their mouths for speaking. That appeared to be done another way. When they were making speech sounds, you could

see a fluttering at the sides of the face and subtle vibrations above the eyes. Now they could begin to see why Maker speech sounded the way it did.

Fran's counterpart told her its name. In amongst the bubbling and hissing, she thought she could hear something like "Plublublorp." Even the computer, which was doing a running translation of their conversations, couldn't do any better than that. What it could do was faithfully recreate the sound. That was no good for Fran, but it was useful because the computer could substitute that for whatever she did manage to say. So she settled on "Plub" and the Maker heard its name.

Plub didn't have any more luck with her name than she did with his. What he said sounded to her something like "Fannie," once she got past all the extraneous sounds. That was fine with her. The computer interpreted it as "Frances," and most importantly, there was no loss of meaning.

Fran didn't have to ask Plub to wear anything so she could tell him apart from all the others. The Makers were already wearing clothing, and it appeared to be at least partly meant to provide identification. She would have described his as moderately decorative, but primarily utilitarian. Others that she saw had plain clothing, simple and unremarkable. And occasionally someone came into the room in an elaborate outfit, obviously meant to impress. Even with her limited experience, she thought she could see the others defer to those ones.

In addition to the clothing, which seemed meant to identify groups rather than individuals, Fran began to notice more subtle differences in their appearance. Their skin was primarily beige, but it was darker on the back and lighter on the front. Fran could see that the line marking the transition from dark to light had small variations among individuals. That helped to differentiate among them when they were in

groups. More useful were the spots. These were reddish and greenish, circular, and in a range of sizes, but all smaller than the eyes. She soon grew familiar with Plub's pattern and could recognize him immediately. She was grateful for these cues because their faces, with the staring eyes and rigid mouths, seemed all so much alike to her.

Now she needed some way to discern feelings, or intentions. It was quite clear, usually, what Makers meant when they said something. Their language, at least as they used it when talking to her, seemed clear and simple. Or, looked at another way, blunt and to the point. They would never use ten words when nine would do. But she couldn't rely on other cues, like facial expressions, to fill in the subtleties.

Plub, for his part, complained of the opposite. He said he found her mobile expressions confusing. "Your eyes jiggle," he said through the interpreter.

"I'm sorry," said Fran. "I'll try to make them jiggle less, but I can't promise anything. It's an unconscious part of the way we communicate."

"And those things over your eyes. Going up and down."

"Do you mean these?" she asked, wiggling her eyebrows.

"No, but those are bad, too. I mean the things covering them."

"My eyelids," she said, blinking a few times.

Plub turned away. "Stop!" he said.

"Of course," she said. "I apologize if it upsets you. I will try to remember to blink less, but again, it's instinctual."

Plub looked back. "What's it for?"

"We need to blink to clean and moisten our eyes."

"Why don't you do this?" He wiped his big eyes with one of his appendages.

Fran had no answer for that, so she shrugged.

“Is that instinctual?” Plub raised his uppermost appendages in a futile attempt to mimic her shrug.

She laughed. “No. That’s more cultural.”

“What does it mean? And what was that noise?”

“A shrug,” she demonstrated, “can mean many things, but as a general rule it indicates unsureness, or not knowing what to say.”

“I see,” said Plub, trying it again. “And the noise?”

“That was a laugh,” she said. “Do Makers laugh?”

The pause before his reply was longer than normal. Longer than the lightspeed delay. Finally he said, “The interpreter doesn’t have a word for that.”

“For ‘laugh?’”

“Laff.” Plub couldn’t quite replicate the sound. Too much hissing and gurgling.

“Laugh,” said Fran. “When something is amusing or surprising or incongruent, we find it humorous. We laugh.”

After another pause, Plub said, “I don’t get it.”

“No,” said Fran, “I suppose not. Not yet, anyway.”

“Not yet,” said Plub. Then he said, “You talk with your eating hole.”

Fran laughed again. “My mouth,” she said. “We use our mouths for eating and talking, and also breathing. Although we can also breathe with just our nose, too.” She touched it with her forefinger.

Plub touched the blank spot between his beak and his eyes. “We don’t have noze. We breathe with our breathing holes.” He touched the sides of his face, where she had seen bulges and undulations while he spoke. “We also speak there, and with our vibrators.” He touched the dome of his head.

“And eating?” asked Fran.

Plub delayed again, and exhibited some behavior that they would later learn meant embarrassment. A combination of subtle cues that included averting the gaze, bending slightly forward, and a curious fluttering around the breathing holes. One of his hands came up and covered his beak. Then he straightened up and took away his hand. He opened and closed his beak and spoke through a wild fluttering. “Food hole,” he said.

~

Stanton said, “What have we learned?”

They were at the window again, with Winston and Minder. Galatea was there too this time, along with the Doctor and Nigel. For their part, Winston and Minder had been joined by a Francesian.

Fran said, “It’s possible that they don’t understand humor.”

Stanton nodded. “Anything else?”

Fran said, “I think we’ll find that they do have a sense of humor, but we might not get it.”

“You’re probably right,” said Elgin. “I think there will be a lot of things that we don’t get right away.”

“I think we should keep our eyes open for subtleties,” said Fran. “Their expressions are bound to be more full of meaning to them than they are to us.”

“Yes,” said Elgin. “And vice versa. I doubt that they get much out of ours either.”

“That’s right,” said Fran. “Far too much jiggling and twitching. Plub had to look away.”

Nigel jumped in. “And what was that thing about his mouth? He was feeling something strongly there.”

The Doctor said, “I think he was embarrassed. Don’t ask me why, but that’s the sense I got.”

Nigel nodded assertively. “I think you’ve got it, Doc.”

Stanton said, “Sense of humor, subtle expressions, embarrassment. Anything else?”

“Their clothing,” said Fran. “They seem to use it to indicate a hierarchical structure. Whether it’s institutional or social, I don’t know yet.”

Elgin said, “Probably both.”

Everyone nodded again, then Galatea said, “What I want to know is, where are the females? As far as I can tell, they’ve only let us see males.”

“Uh-huh,” said Stanton.

The Doctor cleared his throat. “To be honest, we don’t know that for sure.” When Galatea narrowed her eyes at him, he hastened to say, “I agree that it’s most likely. That’s what it feels like to me, too. But, for scientific rigor, we need to allow for other possibilities.”

“Like what?” said Galatea.

“Like maybe the differences between their genders are too subtle for us to see.” Galatea snorted, so he continued. “Or maybe they have more than two genders. Or maybe they’re hermaphrodites, and don’t express their gender except when they’re actively breeding. Or maybe they reproduce in some way we’ve never seen before.”

“Okay,” said Galatea, “but I still think they’re all males.”

“I agree,” said the Doctor.

They all agreed, really. It felt right to them that the Makers they had seen so far were males, and that the species had two sexes. They just had to officially keep an open mind to other possibilities. They were

left wondering, though, why they hadn't been allowed to see any females yet.

Into the thoughtful silence Nigel said, "As far as learning about their feelings ... with their lack of expressions."

"Yes?" said Fran, keenly interested.

"I'm thinking I can program an avatar, and as the interpreter figures out their language better, I can analyze their body language and have the avatar on your screen display the appropriate equivalents."

Fran liked that. "Could you?" she said. "That would help so much."

"Sure," said Nigel. "It'll take some time, but we already think we know one: embarrassment."

Fran remembered Plub averting his eyes. "Yes," she said. "And as we get closer, with less gap between our responses, it will really help me know what to say."

"That's what I thought. We can get everybody to watch what Plub and the other Makers do, and chip in with what they think they're feeling."

"How do we even know they have the same feelings as we do?" asked Galatea.

"That's a good point," said Nigel, "and no doubt one of the things we'll discover."

Stanton looked around the group, his eyes glancing off the Francesian. It wasn't as if he really belonged, anyway. He hadn't contributed anything to the discussion. "Is that it, then?" asked Stanton. "Can anyone think of anything else?" No one had anything and they were about to break up when the Francesian spoke.

"I have a question," he said.

Stanton stopped and looked at him. "All right," he said, "go ahead."

He glanced at Fran to see how she was taking it. She seemed to be okay.

The Francesian moved forward, looking around to make sure he had everyone's attention. "You've never asked us for any input. In all the decisions you've made, you never once asked for our opinion." He continued, in tones of righteous grievance. "We're members of Green Comet too, and we deserve to be heard. We deserve to have our suggestions debated and enacted as much as anyone else, rather than brushed off the way you always do." He drew himself up, apparently set to carry on in even higher dudgeon, when Stanton stopped him.

"Whoa!" he said, putting his hands up. When the Francesian stared at him, open-mouthed, he said, "You had a question?"

Haughtily, the Francesian said, "I was about to ask it when you interrupted me." He shook his vestments. Unlike the rest of them, he and his people wore clothing. Like the Makers, their clothing appeared to serve the purpose of demonstrating the wearer's place in a hierarchy. "You people ignore our good counsel, then you interrupt it after you've explicitly asked for it." He looked as if he was declaiming from a mountaintop.

Stanton threw up his hands again. "Hold on, uh ..." He lifted his chin at the man. "What's your name, anyway? What can we call you?"

"You know very well that we don't give our names to the un-initiated." He looked as if he'd nearly stepped in something that would stick to his foot.

"Right," said Stanton. "I'll call you Frank then, shall I? So, Frank, just ask your question, okay? This is not the time for the big speech."

Frank looked offended, but when he saw the expressions of strained patience all around, he finally took the reasonable route. "The question, entrusted to me by the holy council, though I am unworthy,

is about the Maker religion. Have you determined what their religious beliefs are yet?"

Stanton gaped at him. "Religion?" he said. "You want to know if we asked them about religion?"

"Yes," said Frank. "Is it monotheistic or polytheistic? And do they have any living saints?" He glanced covertly at Frances and Elgin.

"No, we didn't ask them about religion." Stanton's voice had become measured and painstakingly patient. His friends noticed and began to feel a growing tension.

"Well, you should have," said Frank. "It's the most important thing you could ask them."

"No, it isn't." Calm. Quiet.

"Yes it is! Now, you make sure you ask them next time you're talking to them." The Francesian looked archly at them all. "We want to begin talking to their spiritual leaders as soon as possible."

"Oh, do you?" Stanton couldn't do Elgin's face thing, but his eyes were enough for this man. When his wandering gaze fell on them, he visibly recoiled. Holding him fast with those riveting eyes, Stanton said, "If that's what you wanted, maybe you should have come along."

His mouth opening and closing, the startled man looked at them all, surprised at their lack of compliance. He backed away wordlessly, then turned to fly back to his masters, no doubt to report their insolent disobedience.

"I'll do it," Fran said, loudly enough for her retreating supplicant to hear. He hesitated, turned back to give her a grateful bow, then flew on. She looked at her friends, a little abashed. Their faces showed their surprise. "I was going to do it anyway, eventually. I think it's an interesting question."

“You realize you’ve just encouraged your devoted followers,” said Stanton.

“I know.” She turned her golden eyes down. “I hope it doesn’t cause any more trouble.”

41.

MOTIVES

“Plub! What happened?” As soon as they began their exchange, Fran noticed it. One of Plub’s lower arms was cut off. All that was left was a stub that moved in a truncated version of the idle questing that lower arms do.

He showed the embarrassment that they’d already figured out, and the avatar on Fran’s screen exhibited the equivalent. There were also some other expressions. They couldn’t yet sort them out, but Fran felt that there must be at least two more emotions there. The avatar did nothing.

It was obviously uncomfortable for Plub, but he squared himself up and looked right in her eyes. “There was a Cutting,” he said, his breathing holes shaking.

“A cutting?” said Fran. “You had an accident?”

“No,” said Plub. She could tell that this was hard for him, but he pressed on. She began to like him a little more right then. He told her, “It was decided to cut me because of how I shamed all Makers.”

“Shamed? What could you have done that would shame your species?”

“It was what we talked about before.”

She paused, then, “Oh, you mean when we talked about ...” She stopped with her hand part way to her mouth, alerted by some instinct. She said, “When we talked about that which we will never talk about again.” It was good she did because in a few minutes when she saw his reaction, he’d gone rigid, with his limbs slightly flexed. Plub’s

obviously alarmed posture made her guess that he desperately wanted to avoid talking about his food hole again. She didn't know why that would shame the Makers, but she didn't want to be the cause of any more cuttings.

Plub relaxed, clearly relieved. She couldn't say why, but she thought there was something about him that said gratitude. Then she scolded herself, reminding herself that she was most likely projecting her own emotions onto him. He said, "That is correct. Never again."

She changed the subject as quickly as possible. "It won't be long now before we meet in person, will it?"

"No," he said, his overall appearance seeming to smooth out. "We look forward to that. It is an honor to be part of such a significant moment in our history, and to meet intrepid comet-dwellers from the stars."

"We feel the same, I assure you." She made a mental note of what relief looked like on a Maker. She was sure that's what the smoothing out was. "The importance of this meeting isn't lost on us, either."

"You didn't lose the importance?"

Fran laughed, and added confusion to the growing repertoire of expressions they were collecting. "I'm sorry," she said. "That's a figure of speech. Not being lost on us means that we're aware of it and know its meaning."

"I see," said Plub. "That's good. We haven't lost it either."

Fran stifled another giggle and wondered if she was the right person for this job. If she found every little thing funny, then it could affect her performance. Like right now, the way Plub was looking at her.

"You're making that noise again," he said. "Laff. What is incongruous?"

Fran quelled her incipient laughter. "It's hard to explain, Plub. That

little misunderstanding over an idiom just struck me as funny. And the thing about humor is, if you have to explain it, then it's not funny any more." She shrugged.

"Ah, shrug," he said. "You don't know what to say."

Fran hung on for dear life. "That is correct," she managed to say.

Plub said, "We have a question, Fannie. What are you doing here?"

Her mirth evaporated. "But we told you, Plub. We wanted to see where the Prime was going. To see if we could meet the people who'd made the Visitor." The interpreter converted those to MvNM-2 and -1, then to the original Maker equivalent, and finally into audible modern Maker.

"We know that," said Plub, "but why? What are you going to do when you get here?"

"We're explorers. We'll explore and learn." She gestured at him.

"We hope to learn about you. Your people and your world."

"What do you want to know?"

His abrupt manner was making her uncomfortable, but she didn't let it affect the way she acted. She'd already learned that Makers tended to be terse. In fact, she'd seen evidence of something, most likely impatience, as they listened to her relatively wordy speeches. If their way made them seem brusque, even rude, how did she seem to them? Indecisive? Evasive? She'd resolved to try to make her sentences shorter, if only to make her hosts more comfortable. "We want to know as much as you'll let us know."

"But why? What do you want?" Plub was unreadable, even to their rudimentary level. "Why have you brought the Prime here?"

Stanton stopped her from answering right away. "If they think we could do that, it could be to our advantage."

Fran didn't like that. It wouldn't be the first thing they kept from

the Makers, but she was naturally reluctant to lie. Besides, she couldn't think of any reason why they would have brought a hundred kilometer long vessel across all those light years, when they could have kept it and its resources with a lot less trouble. "I can't think of a good reason. Can you?"

Stanton shook his head.

So Fran told Plub, "We didn't. We saw the Prime going and we tagged along, as we already told you."

"No," said Plub. "You want something. What do you want to acquire?"

Acquire? That was pretty specific. Not just "want" or even "get," but acquisition. Of something physical? Were these people that base? Were they incapable of imagining abstraction? "All we want to acquire is knowledge, Plub. To get to know you."

Plub hesitated, looking off camera. It looked as if he was listening to something. When he looked back he said, "What do you want to know about us?"

"As much as you are willing to tell us," said Fran. "How you live. What your world is like. Do you have any dreams or aspirations?" She stopped, realizing how open-ended those questions were. "And there's one thing that has us curious. Why haven't you shown us any of your females?"

After the lightspeed delay, Plub looked shocked. He went rigid again, in his defensive posture, and he looked off camera again. When he looked back she was sure he looked desperate. "Why do you want to know about the females?"

Fran tried to mollify him. "It's all right. We don't need to know, if it's a sensitive subject." She glanced at his stump. "I don't want to be the cause of another cutting."

Plub looked down at his severed limb, then back at Fran. "I think you are concerned about my arm," he said. He stared silently at her, then said, "I don't know why you would care. It's my Cutting, not yours." A little more staring, then, "Don't worry. It's only a minor Cutting. It will grow back."

That was a long speech for a Maker. Was Plub trying to empathize? That would be interesting to know, if it was true. It served its purpose for the present, anyway. Fran was very relieved to learn that Plub's injury was considered minor, and even more so that it was temporary. She said, "I'm glad to hear that, Plub. Even so, I still don't want it to happen again."

Plub shrugged. As well as a Maker could shrug, having no shoulders. "It will happen or it won't. It's not up to you."

"No," said Fran, "it's not up to me. But it is my wish."

Plub stared silently again. It went on for so long that Fran was beginning to think that this interview was over, but he finally stirred himself. With a brief glance off camera, he said, "The females are in the water. That's all I can tell you."

"That's enough," said Fran. He had grown in her estimation again. He'd pushed himself into territory that certainly made him very uncomfortable. Even if it did grow back, getting an arm cut off had to be unpleasant, and he'd risked it to answer her question. It seemed like a real risk, too. From the way he said it, it sounded as if these cuttings were quite common. She said, "Thank you, Plub. That was very generous of you." She thought she'd turn the conversation to safer areas. "So, your females are in the water, and you're on the land?"

He recoiled. "Land? No, we are not on the land. Primitive animals live on the land." She'd plainly horrified him. But, if they weren't on the land, then where were they? Once again he visibly struggled, and

again he succeeded. “There is not much land on our world. Only enough for a few creatures. We live on the mats.”

~

Archie asked, “What did he mean by the mats?” He’d been visiting when the time came for the meeting at the window, so they invited him along. That was a recent development, having people visit back and forth between the balls. They were afraid that their populations of pathogenic microbes might have mutated, diverging significantly in the millennia since Green and Orange comets separated. They were concerned that one or the other of them might be carrying something that would be lethal to the other. But they did all the tests and they didn’t find anything. There was no evidence of any lethal microbes. No evidence of any deficiency in either of their immune systems. There was nothing that stood out as dangerous. Nor was there anything that guaranteed their safety. As usual, they were left having to make a decision based on probabilities. They did what they always did: debate and vote. And as usual, they voted on the adventurous side.

So Archie visited often. He seemed to spend as much time on the Ball as he did on Tainui. And he wasn’t the only one. Plenty of people went back and forth, so much so that the two balls were less like two places and more like two halves of the same place. Archie, or almost anyone, was as likely to be in one as the other, so it was no surprise that he was there when the time came for the meeting.

“What did he mean by the mats? And how can there be no land?”

“As far as no land is concerned,” said Nigel, “there’s a good, plausible explanation for that.” When Archie fixed him with his characteristic attentive gaze, he continued. “We know that their world

is a moon orbiting a gas giant, right? Well, remember all those moons in the system we saved? The one where a piece of the Visitor might have hit that planet?”

Archie nodded, even though he hadn't actually been there. That was before Tainui even left Orange Comet. But he'd followed it all on the window.

“Okay,” said Nigel. “There were a lot of moons around those gas giants, and many of them were icy. Completely covered by thick ice.” He gestured in the general direction of their destination. “The Maker world could be like one of those moons, only with the water liquid.”

Fran said, “Oh, a water world.”

“Yes,” said Nigel. “With a few isolated mountain peaks sticking up. Maybe extinct volcanoes. They can get pretty tall on a place with low gravity.”

Archie nodded economically. “That makes sense. But why did he react that way? He seemed offended when Fran implied that they lived on land.”

“I don't know,” said Nigel. They looked around and no one else seemed to have any idea either. That is, until the Francesian stirred.

“Maybe it's just alien to them.” It was Frank. They could tell by his tonsure. It wasn't as extreme as most of the others. “When people are unfamiliar with something, they can end up despising it for no good reason.” He gave them all a significant look, to get his point across. “Like when some people believe something and they get ostracized by those who don't.”

As her friends began to bristle, Fran kicked the legs out from under that topic before it could get any traction. “I think Frank is right. Remember when Plub described the Makers as people of water, under

air, pursued by fire? There's no mention of land, so either they just didn't think to include it, or they deliberately excluded it."

Looking grateful, Frank said, "Yes, my lady. In your wisdom you have shown us the truth."

Fran bit her tongue and did not roll her eyes. "Thank you," she said.

Archie nodded again. He said, "That makes sense, too. That takes care of the land question. Now what about the mats?"

No one appeared to have a ready answer for that. There were shrugs all around, even from Frank. They were about to let it go, when Minder said, "Let's start from first principles." He got some encouraging nods. "All right. Plub said that their females are in the water, and implied that the males are not. But he was disgusted at the idea of living on land, so what else is there?"

Archie said, "Something floating?"

"Right," said Minder. "But he specifically said mats, so it's not just random bits of stuff floating around. I don't know if a species could evolve to their apparent level of technology without having large, reliable tracts of dry ... not land ... surface of some kind to work on."

"So that's what the mats would be?" said Archie. "Large contiguous areas of floating stuff? What would do that on a water world?"

"Pumice, perhaps?" said Minder. "Maybe the moon had a period of intense volcanic activity and now there's a lot of pumice floating on the ocean."

"Plausible," said Archie. "It's possible that it could have clumped together into floating islands." But he was shaking his head. "I don't think you'd call those mats, though."

Minder was shaking his head, too. "Vegetation?" he guessed. "That's the only other thing I can think of."

Archie nodded sharply. "Yes!" he said. "That fits perfectly. They could have evolved concurrently with mats of vegetation, so coming out of the water to live on them would have been a natural step. And it's not mineral, like pumice, so it can't be confused with land."

There were nods all around then. Even Frank was nodding tentatively, though he would surely have his own explanation that didn't involve evolution. But everyone seemed reasonably satisfied, so Fran summed it up. "They live on a water world, kept liquid by a combination of heat from their star and from the gas giant. Their females live in the water, and the males live on large mats of vegetation, which allows them to develop technology. Their mythology features water, air and fire, and they seem to disdain earth." She frowned. "Something about their females makes them uncomfortable. And something about their mouth, or about eating, makes them feel ashamed." She mentally reviewed her summary, then said, "Have I missed anything?"

They all shook their heads, and Stanton said, "I think that answers Archie's questions, and then some." He looked around. "Are there any more questions?"

After a polite pause, Frank said, "Lady Frances, have you asked them about religion yet?"

"No, I haven't," she said. "The timing isn't right."

"Yes it is!" he said. "It's the most important question you can ask them, and it's best to do it immediately."

"No, it's not." Her voice was neutral, her gaze sympathetic.

Frank stopped, his mouth open and his eyes widening. He was just realizing what he'd done. He'd disagreed with his saint. Argued with her. Practically scolded her. "I'm sorry, my lady," he stammered, backing away. "I'm so sorry. I didn't mean ..." He turned and fled.

Fran watched him go, disappointed, a little sad. Next to her,

Stanton said, “Well, that’s one way to get rid of them,” and was surprised by the way she looked at him. “What’s wrong?” he asked.

She said, “Nothing. We have plenty of good reasons to feel that way about them.” She looked at the exit, flanked by columns of red ice. “It’s just that I’m getting to know this one, and I’m beginning to develop hopes for him. I feel like I should resolve to be less suspicious.”

“Suspicious? They’re the ones who are suspicious.” But he stopped and looked at her. “Maybe you’re right, though. Maybe we could allow them a little more leeway. This one, anyway.”

“Suspicion,” said the Doctor, reminding them of his presence. “That’s something the Makers seem to have in plenty. Plub asked some pointed questions about our motives, didn’t he?”

“Yes, he did,” said Fran. “It’s probably prudent to be somewhat suspicious of strangers who come bearing gifts, though. We have to admit it’s a very peculiar situation.”

“That’s true,” said the Doctor. “Looked at from their perspective, this must be bizarre.”

Galatea laughed. “From their perspective?” Everyone joined her, on both sides of a window separated by light years of cold void. Some of them were living on comets, far from any star, while the others were attached like parasites to a ridiculously enormous spaceship.

“You’re quite right,” said Fran. “The situation is pretty bizarre all around. The Makers have good reason to be sceptical.” She frowned. “But it felt like more than that. It felt as if it was coming from an ingrained distrust.”

They accepted that. They were accustomed to Fran forming these feelings, and being right. Elgin smiled and said, “I think I would be

naturally distrustful if I lived with people who habitually cut each other's arms off."

"Exactly," said Fran.

Winston cleared his throat and said, "If they cut off an arm because someone says something embarrassing, what would they do for something more serious?"

"Yes," said Fran, "although who's to say how serious Plub's crime was to the Makers? Depending on their cultural mores, talking about that could be among the most serious."

Winston nodded, then croaked, "You're right, of course. We had better keep our minds, and our eyes, open."

42.

THE CUTTING

With a final burst of its thrusters, the Prime came to a full stop one ship's length from the laser array. That's when they realized something. Just as the Prime had a definite up and down, so did the lasers. The Prime was symmetrical from side to side, but it had a back and a front, a top and a bottom. The laser array also had, by appearance, a top and bottom, and they were perfectly aligned with the Prime's. Now they knew why, during its long flight, with its many changes of direction, the Prime had always maintained the same up-down orientation. It was keeping itself upright with respect to this installation.

Up, for the lasers, happened to be up for the rest of the system. With only very small deviations, the axes of the red dwarf, the gas giant and its moons were all the same. That was it for major bodies in this system. Just the star and its one planet, along with the planet's collection of moons. With such a small star and such a large planet, this was almost a binary system. If the planet, already massive enough to be a brown dwarf, had been bigger, this would have been a binary of two red dwarfs. Likewise, if the star were smaller, it could have been two brown dwarfs.

With two bodies so similar, the system's Lagrangian points were quite well-defined. That's how the laser base was able to remain on station unattended for thousands of years, though when the Makers got there they found its propellant reserves dangerously low. In a matter of centuries it would have found itself at the mercy of the vagaries of gravity.

The Makers, who were just then returning to space, noticed activity out in the planet's L1 Lagrangian point. The desire to explore, to figure it out, meant that their spacefaring abilities were maturing just as contact with the Prime, and its passengers, was made. All this meant that they had a well-established presence at the laser when the Prime arrived. All of their vessels also had clear tops and bottoms, and they were all aligned with the laser and the rest of the system, and now the Prime.

"Look at that," said Nigel. "They're all the same."

"That's pretty significant," said the Doctor, "given the possibilities."

Stanton said, "It's significant, but it's not that different from what we've done with the comets and lighthouses."

Nigel said, "You mean aligning them to galactic north?"

"Yes," said Stanton. "The only difference is that we're using the galaxy while these people are using their own system."

~

Fran was holding her hand up to the monitor to give Plub a good look at it. She opened and closed it a few times, then sequentially touched her thumb to the tips of her fingers. Her idea was to give Plub a clear idea of how it worked, and perhaps to help him get over his squeamishness. He was getting better. He went whole days now without having to turn away from her. If it wasn't her jiggling eyes then it was the way her arms were so stiff and jointed. She hoped that showing him how dexterous her fingers were would allow him to accept that they were full of bones.

The Makers had no bones. Their arms and legs could bend arbitrarily, something that might make Fran squirm if she were squeamish. Their bodies consisted mostly of muscle, skin and cartilage,

giving them an enviable combination of rigidity and flexibility. The lower limbs had a higher ratio of cartilage, for support, while the upper limbs were more supple. Plub put his hand up, opening and closing the double fist, then sequentially touching his two thumbs to each of the four fingers, and to each other.

He said, “Why do you have bonze? They restrict your mobility.”

“When our ancestors came out of the ocean, they needed more support,” said Fran. “Our gravity was about three times as strong as yours.”

Plub couldn’t nod, of course, but a slight bending forward of his body served that purpose. “You needed a strong structure to hold you up.” He looked at her legs. “But how did you stand on only two legs? Didn’t you always fall over?”

Fran suppressed a laugh. This was an important moment. “Our ground wasn’t always moving, the way yours does. We didn’t live on mats.” She held her breath. How would they take this?

Plub’s avatar displayed uncertainty. “What did you live on, then?”

“Our planet’s surface was only about three-quarters covered by water. The rest was land.”

“Land?” Plub looked repulsed, maybe even betrayed. “What happened to the water?”

“Nothing happened to it. There was at least as much water on our world as there is on yours. It’s just that our world was so big compared to yours.”

Pity and condescension? Plub’s avatar wasn’t that sophisticated yet. “I suppose you had to use land, then. It couldn’t be helped.”

“No,” said Fran, “it couldn’t be helped. But it turned out to be a good thing. If our ancestors hadn’t come out of the ocean, we would never have evolved the technology to be here.”

“Like we did on our mats.”

“Yes. Our continents were our mats.”

Plub bent forward slightly. It looked as if he might be coming to terms with their terrestrial roots. “Even here it’s true that we had to come out of the water. The things living in the water are still primitive.” He asked, “Why do you speak of your world in the past tense?”

They were talking in real time now, so Fran’s hesitation was painfully obvious. She chastised herself for lack of preparation. They had known all along that it would come to this, that they would have to tell the Makers how their von Neumann machine had turned into a killer. It just never seemed like the right time.

“Fannie?” said Plub, his big eyes staring.

Well, said Fran to herself, I guess the time is now. So she began the long, sad tale, while Plub listened intently. He didn’t interrupt and he never showed the least impatience with her sometimes tangential story. He waited until he was sure she was finished before he spoke. What he said was surprising.

“So that’s why you came here,” he said. “You’ve come for a Cutting.”

~

Back at the window, Fran said, “Why do you think he ended the session so abruptly?”

The Doctor said, “It must have been a shock, hearing that you’re responsible for worlds being destroyed. Maybe he needed some time to get used to it.”

“He didn’t seem shocked to me,” said Fran.

Galatea said, “How can you tell, with that face?”

Fran laughed. “I know what you mean, but I think I’m getting a feel

for it. It seemed to me that he was more satisfied that he finally knew why we came here.”

“That’s it, I think,” said Elgin. “He acted as if he was having his suspicions confirmed. But what did he mean by a cutting?”

Winston cleared his throat. “Punishment,” he croaked. “They use cuttings as punishment, so he thinks you’re there to punish them for what happened.”

“But we’re not,” said Fran. “We’ve told them why we’re here.”

“I guess they don’t believe you,” said Winston.

“This could be useful,” said Stanton. “If they think we’re capable of punishing them, then that could be to our advantage.”

“But we’re not capable of punishing them,” said Fran. “And that’s not why we’re here anyway.”

“Still,” said Minder, “Stanton’s right. Even if it’s not true, having them believe it might come in handy.”

Fran didn’t like it, but she had to admit that they were right. Ultimately, they were in a very vulnerable position. Having the Makers believe that they were powerful and dangerous could be useful. She didn’t want to think of that, though. She felt that she was developing a rapport with Plub, and she preferred to believe that it was indicative of the relationship forming between their species. She shrugged, accepting the extra possibilities, and said, “At least there’s no one asking me about religion. Where is Frank, anyway?”

“I don’t know,” said Minder. “I haven’t seen him today.” He looked at Winston, who shook his head. “I have seen him around,” Minder continued, “but we haven’t spoken. If I had to describe it, I’d say he was avoiding me.”

“That’s odd,” said Fran.

“Maybe he’s embarrassed,” said Winston. “After what happened

last time, I wouldn't blame him." When Fran looked at him, he said, "You know. Arguing with you."

While she shook her head, Stanton said, "That's right. He took off like a spooked quail after that." He smiled. "That was nice to see, eh?"

They agreed with him, but they were looking at Fran, who was lost in thought. She had expressed reservations about condemning Frank too harshly, and they didn't want to go too far. They were antagonistic toward the Francesians for her sake, and if she wanted to moderate that, then they wanted to follow her lead. She finally said, "Yes, that was something." She shook her head. "But more importantly, the Makers know more about us now, and we'll soon see what they think of it."

"Right," said Elgin. "They know we have bones. They know we are, or were, terrestrial. And they know that their ancestors are responsible for nearly wiping us out."

Nigel said, "From what we've seen so far, they seem quite judgmental. I expect them to be contemptuous of the bones, if only because it is unlike them. Being terrestrial might be worse, since it seems to be part of their mythology. I think we must be prepared for condescension at least, and possibly much worse."

Elgin agreed. "It could get interesting. They also seem to assume that we're very advanced and powerful. Those two opposing sentiments will conflict with each other."

"Yes," said Nigel. "Then there's the genocide. Will they be burdened with guilt and remorse, or will it make us look weak and even more contemptible?"

The Doctor said, "Or do they experience cognitive dissonance? And if so, will they need to demonize us to preserve their self-respect?"

“And what about the cutting?” said Galatea. “Does that mean they expect us to punish them?” She pointed with her chin in the general direction of their world. “Maybe they think we’re preparing to destroy their moon right now. What would they be doing then?”

~

Fran was summoned to a meeting with Plub. As she rushed up to the monitor, she saw him standing in an odd posture. Of course he wasn’t standing, he was floating, just like her. He had microgravity in his room at the laser array, too. But his posture made him look as if he was standing at attention, with his limbs stiff and symmetrical. It looked formal and Fran wondered what he wanted to say to her. “Plub,” she said, “what is it?”

He drew himself up even more erect, and said, “Fannie, and people of the comets, it’s my duty to tell you that the Cutting has begun.”

“Cutting? What cutting?” asked Fran.

“In retribution for destroying your world, we will be cutting the descendants of the ones who sent the Visitor.”

Fran still wanted to know about the cutting, but something else jumped out at her. “The descendants? But after all this time, wouldn’t that be almost everybody?”

Plub unstiffened a little. “Yes,” he said, “so we’re having a lottery. We estimate that ten thousand people must have been on the project, so ten thousand will be cut.” He stiffened up again. “We hope that will be sufficient.”

“You’re going to cut the arms off of ten thousand people?” She glanced at the stump ruining Plub’s symmetry. She thought she could see where it was growing back.

“No,” said Plub. “They will be killed, like your people.”

“Killed? No Plub!” she said. “We don’t want them killed. We don’t want that. Stop the cutting.”

“I can’t stop it,” he said. “The decision was made at the highest levels, and I’m only a messenger. A negotiator.”

“Then put me in touch with your superiors, so I can tell them to stop it.”

Plub crumpled slightly, averting his eyes. “They won’t listen to you either. To them, you’re no better than me.”

Fran got it. “Because I’m just a negotiator, too,” she said. Her golden eyes pierced him. “We don’t have time for this, while you’re running around massacring people.”

Plub straightened up. “It’s not a massacre,” he insisted. “It’s being done systematically, under law, one hundred per day.”

“A hundred per day,” said Fran. That meant they had time. She didn’t like even that many being killed, but at least it wasn’t all ten thousand at once. “Plub, you have to help me stop the cutting. We don’t have a hierarchy like you, so there’s no ‘highest level’ here. But we can assign someone else to talk to them if it will make your superiors feel better.”

Plub stared at her for a long time, his posture gradually returning to normal. “I will do what I can,” he said, and cut the link.

~

When next they talked, Plub had someone with him. Not actually with him at the laser station. This person was obviously back on the water world. You could tell by the light and by the way he moved in gravity. It was also easy to tell that this was an important person. Not only was his clothing elaborately ornate, he also took up most of the screen. Plub was relegated to a corner, not unlike his avatar.

For this formal occasion they decided to also have two people, so Elgin was there with Frances, but they were side by side and the same size. Plub introduced the other Maker with a long, convoluted name. As it went on it became obvious that they were hearing much more than just his name. They surmised that it must include his title or titles. It was so long that they concluded that he must be very important indeed.

After Plub's introduction, the newcomer looked back and forth between Fran and Elgin, then asked, "Which one is the female?"

Fran touched her gold pendant and said, "That is I, Plublub." Then they had to wait while the translator read back the entire list of names and titles.

If he was put out by how silly it sounded, he didn't let it show. He graciously gave them a shorter title by which they could address him, and that got linked to Fran's "Plublub." He looked at her and said, "I'm told you have concerns about the Cutting."

"Yes," she said, "grave concerns. We want it to stop."

"But why?" asked Plublub. "We're doing it for you." He spoke as if he knew he was speaking for posterity. He was fully aware that this meeting was being seen all over his world. After all, he'd had to use his executive power to force the rights holders to release their copyrights on images of the aliens so this meeting could be broadcast. He knew that would cost him something in the future, but he thought it was worth it. Linking his image to these exotic creatures, and his name to the whole venture, promised to do wonders for his brand.

"We want it to stop," said Fran, "because the people you're killing are not responsible for what happened to our world."

"So what?" said Plublub. "Someone has to be punished." He was clearly dismissive of their underdeveloped sense of justice.

“Not on our account,” said Fran. “Under our laws we only punish those responsible, not their distant descendants.”

“Well,” said Plublub, “this is our world and our laws.”

“I understand,” said Fran, “and if you want to continue killing your own people, then make it clear that you’re doing it for yourselves, and not for us. Because we don’t want it.”

Plublub looked a little flustered, but he covered it up smoothly. He hadn’t been prepared for a female who could argue so cogently, but he quickly adjusted his expectations. Tactically, he asked, “What does the male say?”

Elgin was well prepared, so he spoke without hesitation. “Greetings Plublub, and all Maker people. We come to you as explorers, with curiosity and good will. We are not here to punish you or to seek retribution. So I agree with Frances and join her in asking you to stop this cutting. Let us come together as two peoples, free and unburdened by the past.”

Plublub, the experienced politician, paused impassively, giving the impression of thinking about what he’d heard. He sensed immediately that these apparently uncultured aliens had adroitly cast themselves as protecting the Maker people from their own leaders. Clearly his assumptions had allowed him to underestimate them. It wouldn’t happen again. He said, “We will consider this,” and terminated his connection.

Plub’s image momentarily filled the screen before he also broke the link. It was subtle, as if he was trying to hide it, but the avatar appeared to be trying to conceal amusement.

43.

JUST A FEW QUESTIONS

“I hope Plublub can stop it.” Fran was looking into the Square, her mind filled with memories. She remembered getting on Green Comet after the destruction of Yellow Comet. The excitement and mystery of the Visitor, followed by the horror of its real nature. Their escape from it. The gratification of destroying it. The Discovery of the Prime, and of the Makers, the descendants of those who sent the hated Visitor. And now, given the opportunity for vengeance, they were trying to stop their hosts from executing it for them. “I hope he can stop it soon, before too many more people are killed.”

Everyone was quiet, influenced by her pensive mood. Elgin moved close and put his arm around her shoulders. “You’ve done what you could. I don’t think it could have been done any more effectively. Now we just have to rely on them. We have to hope that this unique situation will allow them to ignore one of their own laws.”

The Doctor brought it down from the hypothetical to the concrete. “I hope Plublub can look beyond his own sense of self-importance and see what is really important here.”

“And he’s going to have to overcome the competing self-importance of everyone else involved, too.” said Nigel. He glanced at the Doctor and said, “The Doctor and I have been talking about this, and we think these people have a really primitive society. From what we’ve seen, we think it’s probably based on self-interest and deep suspicion of the motives of others.”

Fran nodded tentatively. “I can see that,” she said. “The obvious

hierarchy. The way rank is shown with clothing. Their persistent suspicion of us. And,” she finished, groping for words, “that blatant bargain with the cutting.”

“Yes,” said the Doctor. “They seem to put great value on status, and their interactions seem to be based on bartering and keeping score.” He shrugged. “At least that’s how it seems to me.”

“I think you’re probably right, Doctor,” said Elgin.

“If they function by trading and keeping score,” said Fran, “is there any way that we can tell what the score is? Any way we can tell how this is going to turn out?” She looked at Archie. “Is there any way you can make an estimate?”

Archie’s only reaction was to go even more still than usual. They knew he was running numbers, what little they had, and they knew to wait. It didn’t take him long to surface and say, “No. There’s not enough data. It would just be a guess.”

Someone who wasn’t familiar with Archie might have wheedled. They might have thought that even a guess would be better than nothing. But Fran was familiar with Archie, as she was with Buzzard. She knew that if they said it was a guess, it would be no better than anyone else’s guess, maybe even worse. She could probably guess better than they could, because she was used to guessing and they weren’t. “I didn’t think so,” she said. “So we just have to wait and hope for the best.”

“Huh,” said Stanton. “Hope for the best.” He had a bemused smile. Like Fran, his eyes were roaming the Square, and his memory was reaching deep into the past. He was thinking of when they figured out that the murderous Visitor was a von Neumann machine, and how he wanted five minutes alone with its criminally incompetent engineers. His smile faded.

Fran noticed. She said, “What are you thinking about, Stanton?”

He came back to the present, drawing a deep breath. He looked at her and said, “I was thinking about the Visitor, and how I wanted to kill these people for building it.” His smile came back. “And now we’re trying to stop them from being killed.”

Fran smiled too. “I bet you’re not the only one who wanted revenge.”

Winston, on the other side of the window, said, “I know you’re not the only one.”

There were sounds of assent on both sides of the window, and the Doctor said, “As a doctor, I am naturally averse to violence and killing. But back then, with what happened, and especially when Fran was ...”

“When I was dying?” Fran finished for him.

“Yes,” said the Doctor, glancing at Elgin.

Elgin looked at her. With that memory, his face had begun showing signs of its legendary mask, but now it relaxed into a smile. “I was ready to destroy that scout and endanger us all,” he said, shaking his head.

She put her hand on his arm. “We were all different people then. Those were different times.”

“Different people,” said Stanton, his bemused smile back. “I think that’s more true than you intended. Sometimes I wonder if that was really me, or just someone in the history books.”

Elgin looked at him. “Me too,” he said. “Fran and I have talked about this. It’s the same body, but is it still the same person after all this time?”

“Well, actually,” said the Doctor, “it’s not technically the same body, either. All of the cells have been replaced many times over.”

“Right,” said Nigel. “It’s like the parable of the axe. If you’ve

replaced the head once and the handle three times, is it still the same axe?”

“The answer is yes and no, depending on how you look at it,” said Stanton. “That’s the point of that parable.”

“Right,” said Elgin, “so we’re left with the same question. Are we the same people we were back then? If so, then we somehow kept a continuous identity even though everything else changed. And if not, then who are we?”

Winston and Minder looked at each other.

Fran noticed. “What?” she said.

They looked again, and Winston nodded.

Minder nodded back and said, “Right, then. It’s funny that this should come up because we were just talking about it.”

“Really?” said Fran. “That’s quite a coincidence.”

“Not really,” said Minder. “It turns out a lot of people are thinking about it. It’s even becoming a public health issue, if you can believe it.”

The Doctor was intrigued. “Public health? How?”

“Yes,” said Minder. “Counselors are reporting a continuing increase in neuroses associated with it. Even psychoses. They’re thinking of calling it identity angst.”

No one looked impressed by the choice of name.

“I don’t like it either,” said Minder. “It doesn’t sound right.”

“No,” said Fran. “It’s too awkward to say.” She demonstrated. “Identity angst.”

“You’re right,” said Elgin. “It doesn’t flow.”

Stanton laughed. “And the lines have to flow, don’t they?” he said, referring to Elgin’s finely-tuned sense of structural integrity.

“That’s right,” said Elgin, laughing with him.

Chuckling, Minder continued with his story. “The counselors are

reporting that some people are so troubled by this that they are refusing to let people call them by their name. They claim that they are no longer that person. Even that they never were that person. It's leaving them with a serious identity crisis."

Fran looked at the Doctor, who nodded. "Entirely plausible," he said. "It's our minds that construct our identity, so our minds are perfectly capable of rejecting it, too."

"I find that hard to believe," said Stanton. "If we reject our own identity, then who's doing the rejecting?"

"That's not a problem, Stanton," said the Doctor, "merely a paradox." He smiled at the engineer's frown. "I'll give you a more concrete example that's less mental and more physical, okay?" When Stanton nodded, he said, "You might have heard of people who believe that certain of their body parts don't belong to them. They've suffered damage to the part of the brain that integrates their body self-image, and now believe that their arm, say, must belong to someone else."

Stanton said, "Yes, I think I've heard of that. I found that hard to believe, too. The arm is attached to their shoulder, for goodness sake."

"I know what you mean. It doesn't make sense to our normal idea of identity, but I promise you it's true. And I think that's what might be going on here, only with the psyche instead of the body."

Elgin was nodding. "I think you might be onto something, Doc. All those years and all those hibernations. Why wouldn't you begin to feel disconnected, even from yourself?"

Minder had been watching this idea develop, and now he said, "That's what our medical people think, too." He and Winston looked at each other again, then Minder said, "So we've been wondering if there's something we could do about it."

“The planning committee?” said Stanton. “What could you do about this?”

“Nothing,” said Minder, a glimmer of light appearing in his cheeks. “We’re obviously not equipped to help people with their psychological problems.” He glanced at Winston, who nodded reassuringly. “We’re thinking of how we can help them through structural means, by providing the services they need to get through this crisis. And possibly with legislation, too.”

“New laws?” Stanton’s expression was baffled.

“Yes,” said Minder. “If time and hibernation can have such a profound effect on our self-identity, then maybe we can deal with it by allowing people to change their identity.”

He was greeted with silence. They could not have expected that. They were naturally thinking of how to help people hang on to their identities, and now Minder was suggesting helping them shed them. It flew against instinct, but Fran quickly adapted. “I think that might work,” she said.

That rang the rightness bell for Elgin. “We’ve already done it once, when we chose our comet names.”

“And if this is a trend,” said the Doctor, “It could eventually affect all of us. We had better prepare.”

Stanton said, “So, we’re like the Makers. We’re not the same people we were thousands of years ago.”

~

This time Plub had two other Makers with him. If he’d had shoulders, they’d be right behind them, just within arm’s reach. The clothing on these ones looked tough and intimidating. It was as much like armor as it was like clothing.

“Hello Plub,” said Fran. “Who are your friends?”

“Not my friends,” said Plub. The two didn’t react.

“Oh,” said Fran. “Are you going to introduce them?”

“No.”

“I see. Could you tell me what they’re here for?”

“They signify the importance of this meeting. They are for decoration.”

Fran was getting good at stopping her laughter before it got up into her throat. “Decoration? Do you mean like an honor guard?”

He paused. Apparently the translator couldn’t quite get it right. He said sharply, “They’re ceremonial. Only ceremonial.” He drew himself up again, like before, and spoke. “The purpose of this meeting is to make two announcements.” The guards also made themselves rigid and symmetrical.

Fran found herself adopting a formal pose. “I see,” she said. “Go ahead, Plub. We’re listening.”

“Announcement number one,” he said. “The Cutting has been stopped, as you requested. Only three hundred forty-seven were cut.”

That was awful, but it was good news, so Fran was grateful. “Thank you, Plub. And thank Plublub. That is very happy news. What’s the other announcement?”

Plub was a little more reluctant with this one, and Fran detected signs of distress, similar to what they’d seen before. “I have been authorized,” he said, although the translator noted that “ordered” also fit, “to answer your questions.”

Fran was delighted to hear that. Maybe they could learn more about their hosts now. “Any questions at all?” she asked.

Plub bent forward, but maintained his rigidity. Fran noticed that his amputated arm curled protectively toward his body. “Yes,” he said.

“I am to answer anything.” This order was directly from Plublub who, along with his backers, would own the exclusive broadcast rights to the conversation. With that, and with all the associated promotional opportunities, they were set to make a killing.

“That’s wonderful, Plub.” She looked at his curled stump and at the two guards. “Are you sure they’re not here to cut you? The last time we talked about something they didn’t like, you were punished.”

“No,” he said, struggling to relax, “they are decoration only, as I told you. I have been given a pre-emptive pardon.”

“If you’re sure, then.” When he bent forward she said, “What about our side of the bargain? What is expected of us in return?”

“You will answer our questions.”

Fran nodded. “That sounds fair.”

“It is fair,” said Plub. He braced himself. “What is your first question?”

“I apologize in advance for making you uncomfortable,” said Fran gently. “Tell me about your females.”

Plub stiffened right up, as did his honor guard. But they were ready for this. They’d been told what to expect and they quickly relaxed back to a state of anxious anticipation. Plub pulled himself erect and, with much fluttering and shaking, told Fran about the females, and why they stayed in the ocean. It was because they were about five times the mass of the males, on average, and needed to go into the water when they grew up and began to put on the weight.

“Maybe if we had bonze, like you,” said Plub, “then they could support that much weight out of the water.”

“Maybe,” said Fran. Her mind was racing. The answer had stimulated many more questions, but she chose the most important one. “Do you still interact with each other? Do you have a shared society?”

Plub hesitated, then said, “We have separate societies. We have ours on the mats, and the females have theirs in the water.” He struggled mightily to add, “We only interact for ...” He strained to finish, but couldn’t.

Fran helped him out. “To mate?”

The three of them were shocked. One of the guards had to turn away, he was so stricken. Plub forced himself to say yes, hugging himself with all four arms.

Fran admired his pluck, and was inclined to let up on him. “Just one more question, Plub, then it’s your turn.”

He gave her one of his nods and braced himself.

She said, “Why is this so repugnant to you?”

He said, “Because, during the ...”

“The mating?”

“... Yes. During that, the females try to eat us.” Plub collapsed into a trembling heap of writhing limbs.

Fran was surprised into silence. Meanwhile, back on their world, Plublub and his backers were delighted. This was practically pornography. With aliens. They were broadcasting to the largest audience in history, and they owned exclusive rights to everything. Plublub basked in it. What an acquisition!

Fran was trying to understand how a sentient creature could try to eat another sentient creature, especially of the same species. She said, “I don’t understand, Plub.”

Gamely, Plub pulled himself up. “We become feral during,” he forced himself to say, “mating.” His guards recoiled in shock. Plublub rubbed his hands greedily. “The females go completely feral, and we males become just irrational enough to do something so dangerous.” He forced himself to meet her gaze. “It is primitive. It is embarrassing.”

“I can see that,” said Fran. She decided that was enough of an ordeal for poor Plub, and said, “Your turn now. What do you most want to know about us?”

“Thank you,” said Plub gratefully. His guards perked up and moved forward, while he took a few moments to compose himself. When he was ready he said, “When you told us about the Visitor destroying you, and you destroying it, you spoke as if you were there.”

Fran nodded. “Yes,” she said.

“You can’t mean that you were actually there.”

“Yes, we were.”

“But that’s thousands of years. Do you live that long?”

Fran shook her head. “No, but we were there. We’ve spent most of the intervening time asleep, though. In hibernation.”

“Ah,” said Plub. “We have some primitive species on our world who hibernate.”

“We did too,” said Fran, “but our species wasn’t one of them. We invented hibernation techniques as the only practical way to do extended space travel.”

“I see.” He stared at her, then asked, “How old are you really?”

Fran laughed. “I don’t know. I’ve lost track. But I’ve lived more years than I would have without hibernation. It slows down some of the effects of aging.”

That would interest Plublub, Plub knew. Owning the rights to such a technology could be very valuable, and Plublub and his backers would own the rights to everything that came out of this discussion. Plub knew he should pursue this and get as much as he could out of it, but he didn’t. Logically, he should favor his masters over these aliens, but he found that he was growing to like this Fannie better than he liked any of them. He heard himself saying, “Your turn. What else

would you like to know about us?” and not caring whom it made unhappy.

“Okay,” said Fran. “We have been wondering about this. How is it that you were advanced enough seven thousand years ago to send a spacecraft to the stars, but you’re no further ahead now?”

She asked tough questions, but he was getting used to it. He said, “That is also embarrassing. We had a ... setback. Our civilization wasn’t as advanced as our technology was, and it broke down.”

“I understand,” she said. “When something is dynamic, it’s inherently unstable. But why did it take so long to recover?”

“It was a severe collapse,” he said. “By the time it was over, our population was near zero. All our knowledge was lost and the few remaining Makers had to struggle just to survive. It’s only recently that we’ve been able to rebuild, and to have the luxury of rebuilding our knowledge. I can only tell you this because of the few artifacts our archeologists have been able to find.”

“I see,” she said. “You might find that embarrassing, but it’s also inspirational. You survived. Not only that, but you’re thriving again.”

Plub’s expression brightened, and his guards stood up straighter. “You’re right,” he said. “Our ancestors might have failed, but we’ve rebuilt what they lost. We don’t have to be ashamed. We can be proud.”

“That’s right,” said Fran, “And now there’s something I’d like to ask you.”

Plub and his guards became attentive again. “Of course,” he said. “Go ahead.”

“We’re wondering if you’re ready for a little adventure. We would like you to come over here for a visit. We can show you how we live.”

Plub was speechless. His guards were wary and apprehensive,

looking back and forth between the negotiators. Back on their world, Plublub didn't know whether to be happy at the prospect of more valuable footage, or worried about the loss of control. Plub found his voice quickly. "Yes!" he said. "I'd like that very much."

"Good," said Fran. "We'll need to do some tests to ensure that it's safe for you. I think the oxygen and nitrogen levels are close enough, but we'll have to check for toxins and possible pathogens." She smiled at him. "We don't want you getting sick."

"Or you," said Plub.

That pleased Fran. A simple show of concern. She'd begun to worry that there was no altruism in these people at all, and Plub changed that with one simple phrase. "I don't foresee any problem," she said. "Our doctor says it's unlikely that any pathogens would be viable across species. And it's a simple matter to find and eliminate toxins."

"I'm not worried, either."

"In the worst case, you can keep your spacesuit on."

"Exactly."

"We should use one of our excursion pods. It's better suited for this than any of your vessels."

"Fine."

"So, you and your two friends?"

"They're not my friends, but yes. The three of us."

"Good then," said Fran. "Let's make the arrangements."

44.

I'LL SHOW YOU MINE

Elgin and Frances went across in one of the pods to pick up their three guests. Their trip took an hour in all, most of it coasting. The pod could go faster than a hundred kilometers per hour, but it would have wasted far too much fuel. So they had an hour to enjoy the view.

Out here at the gravitationally stable L1 Lagrangian, both the brown dwarf planet and its red dwarf star were easy naked eye objects. They were very close to the same size visually, with the main difference being in their brightness. On one side, the star was bright enough that they could make out details on its red surface, and its spherical shape was plainly evident. On the other, the planet was dimmer, but they could just make out hints of banding in its atmosphere. Knowing where to look, they could pick out the glint of a moon, the home of the Makers.

Ahead was the laser array. It looked as if it was cobbled together from junk found trapped at the Lagrangian point, because it was. They could see the small original laser that had sent the Visitor on its journey of discovery, and surrounding it was the rest that was thrown together a few decades ago when the Makers learned of the treasure the Prime was bringing home. Their target was below the lasers where the habitat was constructed. As they approached, it resolved itself into a collection of modules tied together by tubes. They could see a few vessels parked nearby.

They slid smoothly to a stop just ten meters from the pickup point, their airlock open and facing the habitat. Within a few minutes the

airlock on the habitat opened and three space-suited figures emerged. They moved slowly across the gap, and Elgin and Fran could see that they were joined by lengths of rope or cable. It seemed to take a long time, but they were moving carefully and deliberately. At least, two of them were. They were pulling the third one along as if it were an empty suit.

Fran got on the radio. "Is everything all right, Plub?"

The lead figure raised an arm. Their suits were designed with only two arms and two legs, presumably to simplify things. "Yes, Fannie," came Plub's voice. "One of the decorations just fainted."

"Oh. Is he going to be okay?"

"Yes." They arrived at the pod at last, and crowded into the airlock, pulling on the inert one and stuffing it in a corner. The airlock seemed just as full with three Makers as it did with four comet people. They weren't that much bigger, just built bulkier. "We're in," said Plub. "All clear."

Elgin closed the airlock door and started the pump to fill it with air. That done, he opened the inside door and the three Makers drifted into the main cabin. With a brief message to the habitat, he turned the pod and set course back to the Prime.

"Welcome aboard, Plub," said Fran. "It should be safe to open your suits now. In fact, you can take them right off if you want. When we dock with the Ball, we'll be able to enter directly."

The Makers looked at each other. Then Plub, Fran could tell by his markings visible through his faceplate, reached up and opened it. After a tense moment, he confidently pulled his suit down, exposing his whole top half. He freed his arms and tied the suit's arms around what would have been his waist, if he'd had one. Then he stared at his mate until he did the same, and between them they did the third one,

who woke up during the process. He struggled and protested until Plub violently slapped him, when he seemed to get hold of himself. Once that was done, Plub turned to Frances and Elgin for a formal greeting from Makers to comet people.

Fran was distracted by the smell, but she managed to reciprocate the greeting, along with Elgin. Then she held out her hand. She said, “My people have a custom of touching hands at these times. If it doesn’t make you too uncomfortable, I’d like to share the custom with you on this special occasion.”

Plub hesitated, while his guards stared at him apprehensively. Then he slowly extended his hand, touching Fran’s palm to palm. The contact was brief and they both broke it as if they’d received a shock. Plub’s mates were cringing and averting their gaze, but Elgin moved forward and reached out. With less hesitation, Plub repeated the contact with him. It lasted longer this time, giving Elgin time to experience the strange geometry of Plub’s hand, as well as its odd texture. He was sure he could feel dozens of vestigial suckers, and his fur began to rise. The supple flexibility of Plub’s hand felt so alien that it made him wonder what the Maker thought of the stiffness of his bones. When they broke contact, he had to make a conscious effort to not wipe his hand on his fur.

The formalities over, they settled in for the return flight. Given enough time, the conversation eventually loosened up and took its own direction. Fran found the opportunity and she took it. “Plub,” she said, “some of our people have been wanting me to ask you this. Do you Makers have any mythology?” He just looked blank so she assumed the translator couldn’t do that one. She tried again. “Do you have any stories about how your world came to be? How Makers came to be?”

She could tell she’d put him on the spot again, but he rallied

quickly. “Yes, we have many such stories. Different stories from different times and different parts of the world. The one that’s currently dominant says that Air created Fire and Water and Makers. When we die, we rise up to live in Air for the rest of eternity.”

“That’s interesting,” said Fran. “Do you have a personal belief?”

“Yes. I believe that the Great Maker created the universe, then left it to evolve on its own.”

“I see,” said Fran. “Thank you. I’ll have something to tell people now.”

~

Elgin didn’t take them directly to the Ball. Instead they went on a tour of the Prime. They circumnavigated it, flying up one side and back down the other. As kilometer after kilometer of vessel slid by, the appearance of something different became very welcome. They pointed out the Ball and Tainui moored near the back end. Then, halfway up, there was the massive strut holding up the sail. A little further on, seven scouts and six modules, a sight that seemed to impress their guests. Then it was around the front end, interesting only because it was the front, and back down the home stretch. Once again, six modules and seven scouts, followed by the big mast, then nothing much the rest of the way.

The Makers conferred among themselves, then Plub posed a question. “Those vessels,” he said, “the modules and scouts.”

“Yes,” said Fran. “The Visitor had hundreds of them. Very powerful. Lethal.”

“I remember from your story. The thing is, are there two missing? We counted two more scouts than modules, and there seemed to be two empty spaces.”

“Yes, there are,” said Fran.

“Do you know where they are?”

“No. They were here when we joined the Prime, but some time since then they disappeared. We’re pretty sure it was on the last leg, just before we got here.”

“But why? Why would they do that?”

Fran shrugged, a gesture Plub knew by now. “We’ve been with the Prime for a long time, but it still does things we don’t understand.”

“So they could be anywhere, planning anything.”

“Planning, no. They’re not that intelligent. But you’re right that they could be anywhere.”

“Would they attack us?” asked Plub. “Destroy our world?”

“Probably not,” said Fran. “They probably remember that they’re from here. That’s good because two of them could easily knock down your civilization.”

The Makers clicked and growled and fluttered together, with much waving of limbs, until Fran said, “We’re almost there. Prepare to disembark.”

Elgin docked the pod smoothly, the airlock lining up with the entrance to the Ball. It opened and Fran led the Makers in, their space-suits still covering their bottom halves. They were greeted by Stanton, with most of the population of both balls arrayed behind him at a respectful distance.

“Greetings Makers,” said Stanton, “and welcome to our humble home.”

Plub stopped himself from trying to take in the entire two hundred meter sphere at once and said, “Thank you. We bring greetings from the Maker people.” He chose to leave out the promotional speech

Plublub had instructed him to make. Instead he asked, "Is that ice? Is your vessel made of ice?"

"Yes it is," said Stanton. "Come, let us show you around." He led the Makers into the Ball, the crowd parting before them. Plub looked startled, and Stanton asked, "Is everything all right?"

"Yes," said Plub, moving forward again. "It was just the sound. It surprised me."

"Oh, right," said Stanton. He hadn't even noticed the leathery rustle of wings as the people moved. He shook his head and carried on, showing their guests almost everything the Ball had to offer. They started in housekeeping, with the hibernarium, and followed with the laser light dispersal system, the command center, and finally the flash-ball court. One thing they didn't show them was the window. They didn't think the Makers needed to know about their capability for instantaneous communication. At least not yet. So the window was displaying a big image of the beautiful ringed planet from the system they saved.

"Is that your home?" asked Plub.

"No," said Stanton. "Ours was a small, rocky world closer to our star. This is one of the planets orbiting the star the Visitor was going to next, before we destroyed it."

"It looks something like Air, except we don't have any rings here."

"It is a gas giant," said Stanton, "but it's less than a tenth of the size of Air. And its star is a yellow dwarf. It's much hotter, so this planet is much farther away than you are from your star."

"Does it have any worlds like ours?"

"It has many moons, but none with liquid water on their surface. It's too cold there. Too far from the star, and this planet doesn't generate nearly as much heat as Air does."

“I see,” said Plub. Staring at the ringed planet, he said, “There’s so much out there that we’ve never seen. Couldn’t even imagine.”

“It was the same for us not long ago,” said Stanton. “And now I think we should take a break and watch a flashball game.”

The Makers were fascinated by flashball, and they carried on a spirited discussion throughout. Plub was sure they could adapt the game for their own use. Maybe they could hold paddles in their lower arms for flying. But, even though one of the players once threw the ball hard enough to flash white, none of the Makers heard a crack.

~

“One good turn deserves another, I guess,” said Elgin. They were on their way over to the Maker habitat for a return visit. The invitation came shortly after Plub’s visit, and they were quick to agree. It was a perfect opportunity to cement relations between their species, but they were more motivated by curiosity. They couldn’t miss this chance to learn more about the only alien species they’d ever met. So Elgin and Fran volunteered quickly, before anyone else could, and brought along with them an odd third member. Scarface, the Prime’s service robot.

“I think you’re right,” said Fran. “I suppose they thought they had to invite us back just to be polite.” This time when two figures were hauling a third across the gap, the third one wasn’t wearing a spacesuit.

It was cozy in the habitat’s airlock, but not crowded. When the inner doors opened, they were let into an anteroom that was just big enough for the three of them and the three Makers who were there to greet them. They recognized Plub, and he was accompanied by an honor guard, possibly the same two as before. They greeted Elgin and Frances ceremoniously, but they were distracted by Scarface. Here was

a machine designed by their distant ancestors, and made in their own image. Scarface accepted their attentions unperturbed.

They'd lost radio contact with the Ball as soon as they entered the airlock, and it hadn't returned in the anteroom. Nor did it return as they went deeper into the habitat. They thought this was odd since they'd arranged for Plub to have continuous contact during his visit, and they'd expected the same in return. Plub explained that the relay equipment was set up in the main living area of the habitat, and that they'd soon have contact again.

They came out of a short passageway into a large space lighted brightly in red, closely matching the star's natural light. There were about a dozen Makers in there, dominated by one in impressively elaborate clothing. He was flanked by half a dozen guards in hard clothing similar to that worn by Plub's guards, only more ornate. The remainder looked like ordinary guards, but they appeared to be holding weapons.

The armed guards moved around behind the visitors and awaited orders. Elgin noticed that two of them stationed themselves behind Plub and his escorts. He wondered what was going on, but decided to continue with their rehearsed diplomatic protocol. For all he knew, this is how these people did things. He said, "We bring you greetings from the comet people." He gestured at Scarface. "And we bring you a gift that we hope will interest you."

The highly decorated Maker said, "We accept your gift." Then he looked back and forth between them. Even with their helmets pulled back, he couldn't tell the difference. "Which one is the male?" he asked.

Elgin indicated himself. "That is I," he said. "My name is Elgin, and this is ..."

“Take that one away,” said the Maker, and two guards grabbed Elgin and dragged him from the room. Two more grabbed Fran, and the other two pointed their weapons at Plub and his guards.

The last thing Elgin saw as he was hustled out the door was Fran’s face, showing concern, but also resolve.

45.

THE LAW OF PROPERTY

The two guards took Elgin down a short hallway, one of the tubes, he thought, then through a room and into another hallway. This one connected with a longer corridor, where the guards settled into an easy lope like Scarface's. They reached out with a leg, gripped the floor, and pulled themselves forward. He assumed they must have suckers on their feet, which were unshod. It was such a natural gait that it was easy for them to set up a rhythm, unconsciously moving in synchrony.

Elgin felt them relax into it and took his opportunity. Wrenching himself out of their loosened grasp, he flew back up the hallway. He didn't know what he was going to do when he got there, but he couldn't leave Fran alone without doing anything. He had to try. So, back up the long hall, the short connector, through the room and into the tube. The Makers were pursuing him, and they could really move when they wanted to, but he had the advantage. He could fly, while they had to run.

The guards must have called ahead because when he burst out of the hallway into the bright red room, other guards were converging on the doorway, raising their weapons. Elgin glimpsed Fran, who appeared unhurt, and in the same instant he saw the head Maker approaching her, flanked by his fancy guards. His body decided for him, heading for the Maker before he could even think about it. If he could get there, get his hands on him, maybe they'd have some bargaining power.

The room was like a snapshot, with all the people in it just

beginning to react to his entrance. Forewarned, the honor guard was already facing him, ready to defend their master, who was just catching on that something was happening. His body was twisting toward the doorway, the big eyes staring and the upper limbs rising defensively. The other guards, the ordinary ones with the weapons, were surprised by his speed and he was by them before they knew it. They couldn't use their weapons now for fear of shooting their own people.

Elgin ducked his head and rammed the wall of guards, his hands reaching out for the head Maker. He felt fabric and clutched a handful of it, pulling himself closer to that empty face. The beak was open and the eyes were staring into his own as he cocked his other fist to punish this treachery. Then it all ended abruptly in a tangle of limbs, the head Maker's flung up in front of him, warding off Elgin's fury, and the guards' wrapping themselves around his attacker.

Once they had hold of him it was all over. Any one of them could have subdued him easily, their strength being so much greater than his. This is what happens to a body when it spends so much time in micro-gravity. He was helpless, but his face was still close to the Maker's. In a voice that was almost a growl he said, "You will pay for this." As he was being dragged away again, he said, "I will come for you. I will find you. And you will pay."

This time there were four guards, and this time the ones holding on to him didn't relax their grip. They held on so tightly that if it weren't for the protection of his pressure suit, which stiffened automatically under compression, they might have broken some of Elgin's bones. After a brief struggle, he relaxed and let them tow him down the long corridor. As they glided along, Fran's face filled his thoughts. Her expression, in his snapshot memory, was complicated. There was alarm, of course, due to the sudden violence of his actions. There was

fear and concern for him as the guards subdued him. There was anger, and worse, for the guards. Much worse. And there was something else. Her eyes were shining with love for him. That made Elgin glad he'd done it, and certain that he'd do it again, given the opportunity.

They'd been passing doors along the hallway, and finally they stopped at one of them. One of the guards opened it, and he was flung into a dark room. He spun and lunged for the door, but it slammed before he could get there. He held his breath and listened, and he could hear faint noises for a while, then nothing. Either his guards had all gone away, or they were still out there being very quiet.

He suddenly felt the darkness looming behind him and he quickly turned on his lights. One look told him that he was alone in a small room. Another that it was bare and empty. He turned back to the door and found what had to be the latch. He tugged and shook and rattled it, but nothing happened. He pounded and kicked the door, but it was solid.

That left the room, so he examined it closely. It was a perfect cube, all six sides identical. If it wasn't for the door, there'd be no way to tell them apart. Fortunately, the door was set in at floor level, giving him a way to orient himself. A closer inspection of the walls revealed thin slots up near the ceiling on the hallway side. Elgin flew up to have a look and found that he could see through them. Turning off his lights, he found that he could make out the features of the hallway in its dim lighting. He looked for a long time, allowing his vision to adapt to the dimness. Breathing shallowly, he looked and listened until he was pretty sure that there was no one out there.

Leaving his lights off, he moved back to the center of the room and floated there, letting everything settle into a quiet stillness. In moments the room seemed to brighten as his dark-adapted vision enhancements

took over. Soon he was able to see the whole room, almost as clearly as if there were a light on. His hearing also adjusted. The clamor of recent events faded away and he was able to pick up tiny sounds that he wouldn't ordinarily hear. First was the hushed susurrations of moving air. Ventilation most likely. Then it was tiny sounds from far away. He moved back to the ventilation slots and listened, and he could almost create a mental picture of where the sounds were coming from. He was sure there were raised voices coming from the direction of the habitat modules, and nothing coming from the other direction, further down the hallway. And now he was completely sure that there were no guards outside his door.

~

"Stanton," he said, "did you get all that?"

"I'm right here, Elgin." Stanton did sound as if he was right there. With the implanted receiver he sounded as if he was right inside Elgin's head.

"How's Fran? What have they done with her?"

"She's okay. They're still talking."

"Talking about what?"

"This and that," said Stanton. "Now you be quiet while we sweep your room for listening devices."

"My cell, you mean."

"Okay, your cell. Now be quiet. Explore your cell so we can get a close look at every little corner."

Elgin began a methodical examination, while stifling an urge to ask questions. He didn't hold out for long. "What difference does it make if I talk? For all they know, we talk to ourselves all the time."

Stanton chuckled. "Okay," he said, "how about if I talk and you

listen? I'll tell you what's going on with Fran while we complete the scan."

"Okay," said Elgin.

"Be quiet," said Stanton. "Keep moving. Okay, right now the Maker, the big cheese with the fancy clothes, is bragging about how clever they are. How they built the Visitor and how it went to the stars and sent back the Prime with all those resources."

"But they ..."

"Be quiet. So Fran told him that their ancestors did build well. They only made that one major mistake. The one that made the mission worse than a failure."

"Yeah," said Elgin. "You tell them, Rannie."

"The Maker just asked how she knew it was a mistake. How does she know they didn't plan it that way?"

Elgin snorted. "Yeah, sure."

Stanton laughed. "Good one."

"What?"

"She just asked him if he wanted to take credit for that." He laughed again. "You should see him. He doesn't know what to say." Still chuckling, he said, "I think she's okay there, Elgin. She should be fine. And it looks like your cell is clean. You can talk as much as you want."

"Good," said Elgin. "You can tell her I'm all right."

"Already done."

"Good. Thank you." Elgin looked around the room. "I think this really is a cell. I mean, I think it was constructed specifically to be a cell."

"It looks like it," said Stanton. "But I don't think they plan to keep you there for long."

“Why not?”

“Well,” said Stanton, “it looks like it should do a good job of keeping you in, but that’s all. I mean, there are no facilities.”

“Oh, right,” said Elgin, turning slowly to look at his whole barren cell. “Well, I’m glad I went before we came.”

When Stanton spoke, Elgin could hear Galatea laughing in the background. Stanton said, “They can’t be planning on leaving you there for long.”

“My suit can take care of things for a couple of days. Maybe longer if they decide to not give me food and water.”

“They won’t do that.”

“They might,” said Elgin. “How would we know? All we know about them so far is that they’re crude and violent.”

“Come on, Elgin, they’re not that bad. A little crude, maybe. A tendency toward violence, sure. But surely there’s more to them than that.”

Elgin bit down hard on his response. This was not the time to debate the qualities of his hosts, even if his personal contact with them did give him the advantage. Now was the time for cool heads and clear thinking. He said, “Anyway, if they do leave me in here longer than my suit can handle, I’m going to have to ask you guys to look the other way.”

Galatea was laughing again as Stanton said, “We can deal with that if the time comes. Meanwhile, what are those walls made of? It looks white, but not quite, from here.”

“It is,” said Elgin. “It looks white, but up close it’s kind of opalescent, or iridescent.” He turned on one of his lights at low power, with a narrow beam for close work. “It looks like mother of pearl.”

“I can see it,” said Stanton. “When the light moves, the colors move.”

Elgin took one of his gloves off and ran his hand over the surface. “It doesn’t feel like metal or plastic,” he said. “It feels like ceramic. Maybe ...”

“What?”

“Well, maybe it is mother of pearl.” He nodded. “It makes sense. Metallic ores and hydrocarbons are probably hard to come by on their water world. Biomimetics is a logical alternative.”

Stanton said, “You’ve got Archie’s vote. He’s nodding.”

“Imagine,” said Elgin. “A technological civilization built on biology.”

“Did you happen to notice what the rest of the place is made of? You went up and down that hallway a couple of times.”

“No,” said Elgin. “My mind was on other things. However, I do have a good idea of what this place is.”

“What?” said Stanton.

“I think I’m inside an asteroid. Those habitat modules and the tubes connecting them are definitely artificial, but I think this place is dug out of an asteroid.”

“I think you’re right,” said Stanton. “That’s good. That could come in handy later on.”

“Right,” said Elgin. “So Fran has to get herself put in here, too.”

~

Fran was holding her own. She was faced with a Maker who seemed to want her to appreciate what he had done. He had arranged this trap and he had taken them captive, and now he was in control of the

greatest acquisition in history. So Fran asked him if this kind of thing was considered heroic on his world.

He brushed it away with a sweep of his arm. "Heroism is for fools and dreamers," he said. "The only thing that matters is the acquisition and who owns it." All she did was look at him with those damn jiggling, blinking eyes.

In addition to wanting to be admired he also seemed to want to justify himself. He said the Makers had sent the Visitor and therefore they owned everything it and the Prime had acquired. Frances and the rest of the comet people were trespassers and had no right to expect to get anything out of this. So Fran asked him again if he was taking responsibility, both personally and for all Maker people, for the things the Visitor did. He didn't handle the question any better this time than he did the first time.

"You think you're smart, don't you? With your clever words and your sneaky ways." Maker bluster was really something, involving a rapid swelling and shrinking of the face around the breathing holes and an almost theatrical waving of the arms. "You think you're better than us, don't you?" He'd handled intellectuals this way before. This always shut them up, without fail. He looked around to be sure his people were aware of what he'd done.

Fran didn't answer right away. She paused long enough to see the beginnings of uncertainty, then she said, "Better? Better at what?"

"At everything!" the Maker shouted, a visible spray jetting out of his breathing holes. His honor guard didn't appear to notice as it settled on their skin. "You think you're better than us at everything. You just think you're better than us."

She paused again to give him time to review what he'd said, and to begin to second-guess himself. Then she said, "No, we don't think

we're better than you. We know that you are definitely better than us at one thing, at least. You're better at abducting and imprisoning your guests."

"Abducting?" The Maker looked shocked. Stanton confirmed for Fran that his reaction was genuine disbelief. "This isn't an abduction. It's an acquisition. The Prime and everything on it, including you, are now my property."

"Prisoner, you mean," said Fran.

"What?"

"We might be your prisoners, for now," said Fran, "but we are not your property."

"Yes you are," said the Maker. "It's the law."

"The law?" said Fran. "Whose law?"

"Our law. Maker law. The law of property."

"I see," said Fran. Another perfect pause, then, "This law of yours. Does it cover aliens?"

46.

CELLMATES

After all the excitement, and then long hours of tedium, Elgin inevitably got sleepy. He resisted for a while, but soon realized that there was no point. There was nothing to stay awake for, nothing he had to do. There was nothing he could do, anyway. Stanton caught him yawning and told him to try to get a few hours of sleep.

“I’ll wake you up if something happens,” said Stanton.

“But what about Fran?” said Elgin.

“Don’t worry about Fran,” said Stanton. “Mister Big has left her alone. Well, alone with a few guards, anyway.”

“Left her in that same room?”

“Yes. I can’t be sure, but it looked as if he got frustrated and left in a huff.” Stanton chuckled. “Don’t you worry about her. She’s got Bubblup right where she wants him.”

“Bubblup?” Elgin laughed. “That sounds like her, all right. But she can’t be in that room. She needs to get to shelter.”

“It’s okay, Elgin. She’s got a couple of days. I’m sure she has something in mind.”

“Of course she does,” said Elgin. “Of course. She’ll be way ahead of the rest of us, won’t she?” He yawned cavernously. “Okay, I guess I’ll get some sleep. You be sure to wake me right away if something happens.”

“I promise,” said Stanton. “Right away.”

“Good.” Elgin closed his eyes and let sleep rush in. “Good.”

It wasn't Stanton that woke him up. It seemed to Elgin that he had just dropped off when he was awakened by a big commotion. His door was open and he could see some Makers in the dim light. They were struggling and shouting and to Elgin it was a confusion of far too many limbs and an indecipherable cacophony of sounds. By ignoring the limbs and the voices he was able to isolate three bodies, and to see that two of them were trying to force the third into his cell. It was surprising how difficult it appeared to be. It didn't seem to do much good to hold an arm, because it could elongate and get thinner, making the grip futile. So, while the arms and legs writhed and flailed, the two guards concentrated on pushing the body into the cell. Any limbs that tried to hold on to the door jamb were beaten viciously with a short whip until they let go. At last, after beating him around the head and face, the two guards got the third Maker through the door and flung him to the back of the room. Before he could get back, they slammed and locked the door.

While his new cellmate was shaking the latch and pounding vainly on the door, Elgin cleared his throat and said, "Hello."

The Maker spun and backed away toward the corner, his limbs up in the defensive pose. He was obviously searching for the source of the noise.

Elgin realized that the Maker didn't share his night vision. He helpfully turned on one of his suit's lights, dim and diffuse, to make himself visible. "Hello," he said again. "Welcome to my humble cell."

The Maker stared at him for a long time, then slowly let down his guard. "You're the male," he said.

Elgin recognized his markings. "Yes, Plub. My name is Elgin."

“I remember,” said Plub. “Ellie. Fannie and Ellie.” He’d come out of the corner and was moving closer, peering closely at Elgin as he came. “Since we can talk,” he said, “you must have a translator with you. Where is it?”

Elgin pointed to a device the size of a button attached to the front of his suit. “It’s tied in to the external speakers,” he said.

“That’s small,” said Plub. “Very advanced. Have you been using this technology for a long time in your space journeys?”

“No,” said Elgin. “We just developed this when we realized we’d need it. After we discovered you.” When Plub goggled at him, he added, “You’re the first alien species we’ve met.”

“The first? We’re the first alien life you’ve seen?”

“No,” said Elgin. “There was some life in that other system we explored, but we didn’t actually meet it. Do you remember that system we told you about? The one the Visitor was going to next? We showed you a picture of a planet with rings.”

“Yes, I remember that,” said Plub. “I remember wishing I could go and see for myself.” Before Elgin could reply, he said, “That will never happen. And even if it did, it would be too late for me.”

Elgin didn’t try to argue with him. He also believed that Plub would never travel to the stars. “I guess you were just born before your time, Plub,” he said.

“What?” said Plub. “How can I be born before my time? I was born when I was born. How could I be born at any other time?”

“It’s just a figure of speech, Plub,” said Elgin. “Of course nothing can happen except when it happens. You can only be born when you’re born.”

“Then why did you say that?”

“As I said, it’s just a figure of speech. I sensed that you wished

you'd been born later so you could travel to the stars, and I indicated my sympathy by saying you were born too soon."

"So, figures of speech are used to indicate sympathy?"

Elgin laughed. "This one was, but we've got them for every occasion. We have so many embedded in our language that we're not even aware of most of them any more."

"But why? Why speak in figures when you could just say what you mean?"

That gave Elgin pause. Why, indeed? They were second nature to him, but he could see how they would be confusing to a plain speaker like a Maker. "I'm afraid I can't answer that, Plub. They're just part of the language, our everyday language. I'm not a linguist, so I don't know that much about language. I just use it."

Plub bent forward slightly in a Maker nod. "I understand," he said. "I'm not a linguist either." After a second he extended his hand. "Let us do your hand touching ritual again, to mark this meeting."

Elgin reached out, and joked, "We've got to stop meeting like this."

"What?" said Plub, his hand pulling back.

Elgin laughed. "Sorry, Plub. That was just an old joke." He shrugged, which hardly showed at all in his pressure suit. "It doesn't mean anything."

Plub said, "Ah, shrug. And laff." He attempted a shoulderless shrug. "Fannie told me that you can't explain something that's funny, or it stops being funny."

"That's right. It's just an old joke. We don't even find it funny any more, which is what makes it funny when we say it."

Plub didn't say anything, just stared for a long time. Finally he reached out again to shake hands. "I might never understand your humor," he said.

Elgin took his hand. "I'm sure there will be many things we don't understand about each other. Some things we might never understand." Continuing to hold Plub's hand, he said, "But I'm sure we both understand this."

Plub agreed. "Yes," he said. "Touching like this has made me know as much as all the talking. And I'm hardly disgusted by your bonze any more."

Elgin gained even greater respect for Fran then. Now he knew what strength it took to not be laughing all the time when talking to these people. "Thank you," he said. "And I'm not disgusted at all by your suckers."

When Plub took his hand back he stared at it for a long time. You could practically see him thinking. At last he said, "Of course. Of course you would find us disgusting too." In a rush of embarrassed fluttering he said, "What must you think of us? We've been so arrogant, when you're so far beyond us." He covered his eyes. "And now taking you captive. You must think we're such crude savages."

That wasn't very far from what Elgin did think of them, so he didn't say anything. But he was willing to change his opinion, given what he was seeing in Plub. He said, "We know we can't condemn you all for the crimes of some of you. Nothing is ever that simple."

"That's right," said Plub eagerly. "It's not all of us. Just the Acquisitors. They own everything and control all our governments." His healing amputation curled in toward his body. "They're the ones who revived the ancient custom of Cuttings. They're the ones who start all the wars."

"You have wars?" Elgin was surprised, but not really.

"Yes. If one Acquisitor wants what another one has. Or if one simply insults another. Then we have to fight another stupid war." Plub

slumped and turned away. “You should never have come here. We’re not worthy of a visit from star people.”

Elgin didn’t protest. He didn’t try to soothe Plub with platitudes. He just let the silence steep for a while, then asked, “So, what are you in for? Why have they thrown you in a cell with one of the aliens?”

“They called me a traitor! They said I didn’t try hard enough to get marketable information out of you. They say I care more about aliens than I do about them.” Plub looked down at his arm. “They said they’re going to cut me.”

“What? Another one of your arms?”

“No,” said Plub, looking up into Elgin’s eyes. “They’re going to kill me. And they said they’re going to broadcast it, to try to recoup the losses I caused.”

Elgin was shocked. He was beginning to think that nothing these people did would surprise him. “When?” he asked. “When do they want this killing done?”

“They want to do it tomorrow,” said Plub.

“First thing?”

“No. They want to wait until later in the day, to get the best demographic.”

“Demographic?”

“The best audience. The ones who will buy the most stuff.”

Elgin shook his head. “Pragmatic, aren’t they?” he said. “So, they didn’t send you here to spy on me, then.”

Elgin didn’t need an avatar to tell him that Plub was shocked. There were other emotions in there too. He wasn’t sure, but he assumed they were hurt and anger. He took that as his answer. “No,” he said, “I guess not. So, why did they put you in here with me? I saw other doors, presumably to other cells. Why here?”

Plub was embarrassed. Elgin knew that one well by now. As always, Plub pushed through it. Fluttering, he said, “They wanted to humiliate me. Make me spend my last night with a degenerate alien.” He was quick to clarify. “I don’t think you’re degenerate. That’s what they’re trying to sell you as.”

Elgin’s brain was jostling with a hundred questions, but he put them aside for later. “Tell me about this cutting,” he said. “All about it. How is it done? How do they prepare for it? Anything you can think of.” Elgin nodded at Plub, his jaw set. “We might have a thing or two to say about it.”

~

Fran nodded, satisfied. Stanton had been relaying the scene in Elgin’s cell, and she was happy with the way it went. There wasn’t much she could do about it here. She wasn’t in a cell like Elgin, but she might as well have been. After Elgin was removed and Bublup tired of verbally sparring with her, he left, taking Plub with him. She was left in this room, alone apart from some guards, to contemplate the extent of his power over her.

She wanted to think the best of these people, but they were making it hard. She tried to attribute their actions to cultural differences. Maybe a reaction to a strange and possibly dangerous circumstance. She tried to give them the benefit of the doubt, but they were quickly erasing all doubt. They seemed to be going out of their way to confirm that they were as crude and crass as they seemed.

At least, the bossy ones were. What did Plub call them? Acquisitors? Maybe it was just the Acquisitors who were so vile. Maybe most Makers weren’t so bad. Plub himself didn’t seem so bad, once you got to know him. Maybe she could dare to hope that the majority of them

were intrinsically good, as Plub appeared to be. She frowned. And look where that got him, she thought.

~

Plub looked as if he wanted to say something. Elgin couldn't pin down exactly what it was, but he looked like he was right on the verge of talking several times, only to subside. He didn't push him. If it was this hard, then he didn't need someone making it harder. Plub thought he was going to die tomorrow. Elgin thought the least he could do was not make it any worse.

Eventually Plub seemed to get it resolved. He quit dithering and made up his mind. Standing straight and looking Elgin right in the eye, he said, "There's something else I need to tell you. Something else you should know."

Elgin nodded formally and said, "I'm listening."

"This is something your people should know about my people. You can tell them when you get out of here."

"Of course."

Plub said, "Do you remember when I told Fannie that our females try to eat us during mating? How they become feral?"

"Yes, certainly."

"What I didn't tell her is that they have a good reason for trying to eat us. Other than for the food, I mean." He looked away, then firmly looked back. "They want to kill us because later, when they spawn, we come back and try to eat the young." Plub turned away, his breathing holes flapping noisily. Still looking away he said, "We become completely feral, with not the slightest bit of rationality left."

Elgin didn't know what to say. He didn't want to judge, but it was hard not to. They eat their own young? Sure, there were bound to be

differences between their two peoples, things that were hard to understand. But eating their own young? He thought it was bad that the females tried to eat the males, but this was even harder to accept.

Plub spun around. "You despise us now, don't you?"

"No," said Elgin, "not at all." He hated how false he sounded.

"Of course you do!" said Plub. "How could you not? It's primitive. It's disgusting. It's why we're not worthy of even talking to enlightened star people like you."

"But all people are different," said Elgin. "All people do things differently."

"Fah!" said Plub, with a fine spray of mist. "Don't bother making excuses for us. We're nothing but clever animals." He reached out and grabbed Elgin's arm. "Mating isn't the only time we become animals. During the wars that the Acquisitors make us fight, we gladly kill each other. Friends, neighbors, relatives, it doesn't matter. Once the frenzy is on us, we'll attack anyone we're told is the enemy."

Elgin couldn't help but shrink away. "Would you attack me now? Could you go feral now and kill me?" As far as he knew, it was a real possibility.

"No!" said Plub, releasing his arm. "I couldn't hurt you."

"Not unless the Acquisitors tell you I'm the enemy?"

"No. How could you be the enemy? You're not even a Maker." But he looked away and it was clear that he was thinking about it. He said, "You're right. We might attack you if we were told to. But that just makes it more obvious that we're unworthy. You should never have come here and you should leave immediately. Leave us here to rot in our own foul stench."

"You don't stink at all, Plub. In fact, to us you smell like fresh water."

“You know what I mean. Leave us. We’ll destroy ourselves again soon enough, and then you’ll be rid of us.”

“It’s not that easy,” said Elgin. “We need a functioning laser array to go back, so we need your cooperation. We need the help of Makers, otherwise we’re stranded here.”

“You’re depending on us?” Plub sagged. “You are fools.”

47.

THEY ALWAYS WIN

“How did things get this way, Plub?” asked Elgin. “Have you always had this feudalistic, hierarchical society?”

“No,” said Plub. “When we came out of the bad times, it was much better. After the long years of struggle people realized that if they worked together, then everyone could live well.”

“That sounds very rational,” said Elgin. “Very enlightened.”

“It was,” said Plub. “For almost a hundred years Makers had everything they needed. Food, shelter, work if they wanted it. Even the shirkers were taken care of.”

“That’s a generous attitude, Plub. Admirable.”

“Yes it was, until our true nature came out.”

“That’s funny,” said Elgin, “I thought I was hearing about your true nature.”

“No,” said Plub, “that was just an aberration.”

“A hundred year aberration?”

“Yes,” said Plub. “Our true nature is this primitive, violent one that you see now. It’s obvious. Otherwise, why would we be this way?”

“Okay,” said Elgin. “Then, how did you get from there to here?”

“We weren’t satisfied. We had free food, shelter, education and medical care, but it wasn’t enough for us. Everyone was rich, but we weren’t really happy.”

“Nobody was happy? Everyone was unsatisfied?”

Elgin was wearing him down. Eroding his determination to condemn his entire species. “Not everyone,” he admitted.

“I didn’t think so. That didn’t sound like the people who wanted to support everybody, even the shirkers. Or who were willing to do the work, in spite of the shirkers. Those sounded like good people to me.”

“They must have been,” said Plub, “but look at us now. Full prisons. People begging for handouts. Others forced to do work they hate, and still not able to support themselves.”

“And a few very rich, very powerful people,” said Elgin.

“The Acquisitors,” said Plub.

Elgin nodded his head, but didn’t say anything. They floated together in their cell, each momentarily lost in their own thoughts. After a few minutes Elgin said, “You know what this looks like to me?”

“What?” said Plub.

“I think most of you were happy. Most Makers were satisfied with the good life they’d built for themselves. But a few of them weren’t. For a few people, being rich wasn’t good enough. What’s the good of being rich if everyone’s rich?”

“What do you mean? Of course it’s good to be rich.”

“I know,” said Elgin. “And most of you Makers know it, too. You couldn’t have had a hundred years of peace and prosperity otherwise. But for some of you, the only way to feel rich is to be richer than.”

“Richer than what?”

“Richer than someone else. Richer than most people, preferably. Than everyone, if possible.”

“Like the Acquisitors,” said Plub.

“That’s right. So they start accumulating wealth so they can feel rich. But they’re not alone, and a competition develops. Pretty soon they’ve got all the surplus wealth tied up in their little game.”

“It’s a game to them?”

“Yes, and you ordinary Makers are just pieces in the game. The only ones who really matter are them. The real people.”

“But we’re real people too,” protested Plub.

“I know you are,” said Elgin. “Just as real as them.”

“Thank you.”

“You’re welcome. But now there’s a problem. All the surplus wealth is used up, and the only way to get more is by making the rest of you poorer.”

“But why?” asked Plub. “Why can’t they just play with the surplus? Then there would be enough for everyone.”

“You’re too logical, Plub. They don’t care about that, only about how rich they feel. You’re just part of the background. In fact, if you get poorer, then that makes them richer by comparison.”

“But they’re not,” said Plub. “They can’t make themselves richer by making us poorer.”

“I know,” said Elgin. “Anybody can see that. But remember, to them the important thing is feeling richer.”

“So, if all Makers were as rich as the Acquisitors, then they would have to get even richer?” said Plub.

“Yes,” said Elgin. He made a face. What he was about to say, he could feel in his mouth. It was jagged and tasted like acid. “And they’ll do anything to get that feeling. They’ll make you poorer, turn you into slaves, send you to your deaths.”

Plub said, “Now that you’ve shown me, I can see that it’s true. But how do you know all this about us? You just got here.”

Elgin smiled sadly. “What I was describing wasn’t your world. It was ours. We went through a period, much too long, where we let our own Acquisitors take over. Everything I told you happened to us, just as it’s happening to you.”

Eagerly, Plub said, "What did you do? How did you fix it?"

"There is no easy fix, Plub. Every time we took care of the problem, they found a new way. It took generations of effort and constant vigilance. Slowly, people were less willing to accept their games, and it became harder for them to play."

"So everything is all right now? You have no more Acquisitors?"

"That's true," said Elgin, "but only because we live on comets now. We've all shared the danger and the loss, so we're more like equals, sharing everything."

"Of course," said Plub. "I'm so stupid to forget."

"It's okay, Plub, I know it's still just a story to you. And as far as our planet is concerned, before our people were all killed, we still had our Acquisitors."

"Even you?" said Plub. "Does this mean we can never be rid of them?"

"If your experience is anything like ours, you will always have Acquisitors, under the right conditions. It won't always be the same, though. The means they use to control and manipulate you will change to suit the circumstances."

Plub was disappointed. "What's the point then, if it keeps coming back?"

"The point," said Elgin, "is that it makes you better. Every time you make it harder for them, you make your world better. Every time you stand up to them, you make yourselves better."

Plub thought about that, and Elgin could see the change in him as it happened. "You're right," said Plub. "We shouldn't expect any final solutions. It's not about what happened last time. It's about what we do this time, isn't it Ellie?"

"It's always about what you do this time, Plub."

Plub was about to answer him when Elgin got a call from Stanton. “Elgin,” he said, “something’s happening. Bub lup just came back to the room, and it looks like he’s wearing a spacesuit.”

“A spacesuit?” said Elgin. “Why?”

“What?” said Plub.

“I don’t know,” said Stanton.

“Nothing. Just a minute,” said Elgin.

“What?” said Stanton.

Elgin laughed. “Hang on, Stanton,” he said. Then to Plub he said, “I’m talking to my friend back on the Prime. Something is happening, so wait a minute, okay?”

“How can you do that? Your radios are blocked.”

Elgin looked him right in the eye. “We didn’t come here unprepared, Plub,” he said. To his relief, Plub gave one of his nods and backed up a meter or two, then hovered silently. To Stanton Elgin said, “What’s going on?”

“He’s ordering Fran to seal her suit,” said Stanton. “It looks like they’re planning on going out.”

“They can’t do that,” said Elgin. “We’re not ready.”

“Uh-oh,” said Stanton.

“What?”

“One of their vessels is moving toward the airlock. It looks like they’re planning on going somewhere.”

“Where?” said Elgin, though he already guessed.

“I think there’s only one place to go,” said Stanton. “Their moon.”

“But they can’t take her there,” said Elgin. “The gravity will kill her.”

“She’s trying to explain that to Bub lup right now.”

“How’s he taking it?”

“It’s not having much effect. He doesn’t seem to care.”

“He must be insane,” said Elgin. His agitation was contagious, and Plub began to show signs of stress, too.

“I don’t think he’s insane,” said Stanton, “just greedy. She asked him if she wasn’t worth more to him alive than dead.”

“And?”

“And he said that here he can only show her on video, but down there he can charge people to come and see her.”

“Has he no conscience?”

“She just asked him that, if not in those words. He said, quote, ‘While it pains me personally, I have a responsibility to my shareholders.’”

“He is insane,” said Elgin. “I’ve got to get out of here.”

“Not yet,” said Stanton. “It’s not time yet. And you couldn’t do much anyway, with all those armed guards.”

“But it’s happening faster than we thought it would. They’re going to kill Plub tomorrow, and now Fran.” Plub was getting really agitated, his limbs coiling and uncoiling. Elgin said, “It’s time to change the plan, Stanton. We’ve got to adapt to the changes.”

“Not yet,” said Stanton. “Hang on a little longer. Fran says she can handle Bublu, and we can find a way to keep them from killing Plub.”

“How?”

“We still have options, Elgin. Hang on. Don’t panic.”

“That’s not that easy in here.”

“I know, but you’ve handled worse before. I have to go now. Just try to hang on a little longer.”

“Fine,” said Elgin, looking at his blank white walls. “I don’t really have much choice, do I?”

Plub could tell the conversation was over and Elgin’s attention

was back in this room. Wringing his three remaining hands, he asked, "What's happening. Why are you upset?"

Elgin took a deep breath and let it out slowly, calming himself. Then he explained.

"That's terrible," said Plub. "Fannie is going to die."

"No she's not," said Elgin. "And neither are you."

"Yes we are. Bublup won't change his mind. There's nothing we can do. We're all going to die."

"Don't panic," said Elgin, finding himself in Stanton's role. "There's still time. There are still things we can do."

"Like what? There's nothing. They always win. The Acquisitors always win." Plub turned and went over to the door. He kicked it. Then again. And again. As the echoes faded he said, "They always win."

48.

THE TRANSFORMATION

“Elgin?”

He opened his eyes and looked blearily around. He could see Plub’s dim shape floating quietly over by the door, but that was all.

“Elgin, are you awake?”

Stanton! “Yes,” he said gruffly. Clearing his throat he said, “Yes. What is it?”

“It’s Fran. She can’t stall them any longer,” said Stanton. “The vessel is in position and they’re making her go out.”

“We’ve got to do something!” said Elgin.

“We are,” said Stanton. “We’re preparing for the pulse.”

“No!” said Elgin. “You can’t do that while she’s exposed.”

“She’s ready for it,” said Stanton. “This is her idea.”

“But, she has no protection out there.”

Stanton understood. Something like this nearly killed Fran once, and that had nearly killed Elgin. He said, “It’s going to be okay, Elgin. We’ve run the numbers. Archie did it ten times, just like Buzzard. Your suits have got extra shielding, and there won’t be any flukey refractions this time.”

Elgin knew all this. In his mind, he knew that the conditions were different. But his body knew otherwise, and it was near panic. He wanted to shout at Stanton, to make him stop, but he didn’t. He ground his teeth together and pushed the panic down. “Okay,” he said. “If this is how it has to be.”

“It is,” said Stanton. “We can’t afford to let that vessel leave.”

"Agreed," said Elgin. "Meanwhile, what am I supposed to do?"

"We're going to break you out of there," said Stanton, a grin in his voice.

"How?"

"They left Scarface alone in that room, so we're sending him down to open your door."

"All right!" said Elgin. "I can't wait to get out of here."

"Good," said Stanton. "I've got to get back to Fran now. I'll talk to you later. I'll keep you apprised."

"Right," said Elgin. "Talk to you later."

Plub was awakened by Elgin's voice and was hovering nearby. "What's happening?" he said. "You can't wait to get out of here?"

"Things are underway," said Elgin. "It's earlier than we planned, but we can't let them take Fran. We have to act now."

"This was planned? You had a plan?" Plub stared at him. "I didn't realize. They called you naive fools. Trusting. Easy prey."

"I told you, Plub. We weren't unprepared."

Plub's demeanor changed. He straightened up and smoothed out. "I see that now," he said. "What can I do to help?"

Elgin stopped and looked right at him. "Are you sure you should be helping aliens against your own people?"

Plub said, "In the year I've known you, known Fannie, you have become my people as much as other Makers are. More than Acquisitors." He spread his arms. "That you would do this. Risk so much to save one of you. That feels so much more right than the way we treat each other."

"That's pretty bad, Plub."

Before Plub could answer, they heard a noise at the door. Glancing at each other, they went over there and listened. They heard scraping,

and a whirring noise, and they could see the latch moving. Elgin nodded. "That'll be Scarface," he said.

"What?" said Plub. "The translator didn't get that."

"Oh," said Elgin. "That's the name we gave the Prime's service robot. The one we brought over as a gift." The scraping had evolved into a serious grinding.

"The robot? You brought the robot here as a ... a weapon?"

"No," said Elgin. "We brought it as a gift." He shrugged. "But, in case your intentions weren't honorable ..." The pitch of the whirring dropped a few octaves, and the door began to vibrate.

Plub looked at the door and back at Elgin. "This is what you meant when you said you weren't unprepared."

"That's right," said Elgin, "one of the things I meant."

"One? What are the others?"

"No," said Elgin, "I don't want to spoil the surprise."

Plub was quiet for a while, as the door began to rattle. At last he said, "You don't trust me. I don't blame you."

"No," said Elgin, "I trust you. I just don't trust my judgement. This is too important to risk on my hunches."

Whether Plub would have had an answer for that wouldn't be known, because the latch popped off and the grinding and rattling stopped. Elgin reached out and pushed, and the door swung open, revealing Scarface returning a grinding bit to its clip at his waist.

Elgin pushed through the door, Plub following close behind. He stopped and turned. "No. You stay here with Scarface."

"But I want to come. I want to help."

"I know," said Elgin, "but something is going to happen and you'll be safer here. Afterwards, take Scarface and see if there are any repairs needed anywhere."

“Repairs? What are you going to do?”

“Nothing too bad,” said Elgin, “but some of your systems might be down when it’s over. We don’t want to hurt anyone, if we can help it, but we have to stop you from what you’re doing.”

“Not me,” said Plub. “The Acquisitors.”

“I know,” said Elgin. “Just stay here with Scarface, okay? You’ll know when it’s time to go.” He flew out into the hallway, Scarface backing up to make way. “You’ll have to trust me, Plub. Now, I’ve really got to go. Fran might need me.” He flew off down the hall, looking back once to wave.

~

He moved rapidly but cautiously, expecting to run into someone at every turn, but the place appeared to be deserted. Down the long hall, the short connector, the compartment, another connector, he found no one. The room where he’d left Fran was empty, and there was nobody between there and the airlock. The Makers, Bublup and his minions, must have thought everything was under control. Elgin shook his head at the hubris, but he didn’t relax his guard. He didn’t want to blunder into a trap now, when Fran needed him. When he arrived at the airlock, he put his ear on the door and held his breath. Only when he was sure there was no one on the other side did he begin the process to open it. Fran had picked up the procedure when she was being taken out, and Stanton relayed it to him now.

Once in the airlock he told Stanton, “I’m in position. Where’s Fran?”

“To your right,” said Stanton. “About a hundred meters out. It should be safe to look out the window. They seem quite preoccupied with their vessel.”

Elgin edged over to the porthole and snuck a peek. Stanton was right. Fran and Bublu and his six guards were clustered by their vessel, in front of an open airlock. “What’s going on? Why aren’t they going in?”

Stanton was chuckling. “Fran can’t talk to them right now, but she thinks, from their body language, that they’re arguing about who should go in first.”

Elgin took another look, a longer one, and thought he could see why. The airlock didn’t appear to be big enough to hold all of them at once. Nowhere near. He estimated that it would probably take four cycles to handle all eight of them. He could imagine Bublu wrestling with protocol and appearances. Whom to send first. Whom last. Who would go with whom. Elgin chuckled.

He couldn’t talk directly to Fran yet, their radios still being blocked as long as he was inside the habitat, but Stanton must have told her he was there. He saw her casually rotate until she was facing him, and raise an arm in a covert wave. He lifted his hand to the window and waved back. At a hundred meters, and through a window and two faceplates, eye contact was uncertain, but he felt it anyway.

~

The Prime, inert since they arrived, stirred to life. Its big radar dish slewed and tilted until it was pointing directly at the Maker habitat. Inside, powerful capacitors were powering up. Once fully charged, it waited.

“Elgin,” said Stanton, “we’re all set here. Cycle your airlock and crack the door.”

“Right,” said Elgin, “here goes.” He checked the seal on his faceplate and confirmed his suit’s integrity. He could hear the pump

clearly at first, then more faintly as the air attenuated. He kept his hand on the control for the outer door. A big green light was flashing. "I bet there are alarms going off inside now," he said.

"No problem," said Stanton. "Once you have that door open, they won't be able to open the inner one."

"I know," said Elgin. "Here goes." He popped the outer door, just enough to break the seal. Through the window he saw the Makers turn toward him. While they were distracted, Fran began to drift subtly away, opening a gap of five meters before anyone noticed. At that point, two of the guards began to pursue her. She was more nimble, more maneuverable, but they were closing the gap. They must have panicked and used full thrusters.

Elgin couldn't let them get hold of her. "Now!" he said. "Do it now!" He pushed his way out, calling her name.

"Ah, Elgin," she said, smoothly evading the grasp of one of her pursuers. "Stanton told me you were on your way to save the day."

"Keep doing what you're doing. They're overreacting."

"Sure thing," she said. "I could do this all day." She cut a tight turn, reversing direction, and the guards went flailing past her. They were almost completely by when one snagged her foot with his hand. She instinctively reacted, trying to escape, and her thrust combined with his trajectory resulted in them spinning as they sped away.

Elgin called, "Rannie!" and flew after them as fast as he could. At the same time, the other guard had turned around and was coming back to help, while the other four guards were setting out to cut Elgin off. They stopped and two of them went back to Bublup, who was waving his arms and obviously giving orders. The other two started out again in Elgin's direction.

Fran looked as if she was panicking now. She and her captor were

spinning faster, like two gravitating bodies in a tight orbit, the Maker gripping her foot while struggling to reach her with his other hand. Elgin's plan was to crash into them, right where the Maker held Fran's foot. Once she was free they could make a run for it. He was focusing hard on his target when the Maker began getting larger, and now he was looking at Elgin.

"Oh!" said Elgin, and ducked. The Maker sailed over him, and he felt something strike his service pack, then his heel. He glanced back and saw the Maker receding rapidly.

"Sorry about that," said Fran, getting her spin under control. "For some reason he let go all of a sudden."

Elgin was about to reply when there was a sharp crack in his speakers, followed by a cold silence. The Prime's radar dish emitted a hard pulse of forty gigahertz radiation, the same kind that so severely injured Fran long ago. They assured Elgin that it wouldn't hurt her this time. There was no refraction to focus it, and she was in her suit, with added shielding. Elgin believed them, but he still raced toward her. To his relief, she gave him a thumb's up. Once they were together they looked around for her pursuers, and saw one rapidly receding on his last trajectory, and the other one coming toward them on his. They moved aside to give him a wide berth. Turning the other way, they could see two Makers coming toward them, and the other three over by their vessel, their limbs thrashing as they slowly spun and drifted. They moved out of the path of the approaching two. "Stanton," said Elgin, "be sure to track them. We don't want to lose them."

"We've got them," Stanton said. "Your radios should be coming back on line soon."

Sure enough, he heard humming and crackling as it came back to life. It quickly settled down and he tested it. "Can you hear me, Fran?"

"Loud and clear," she said.

"Let's go over to the pod," said Elgin. "Then let's see what we can do to help these people."

"Their spacesuits must be controlled by electronics," said Fran. "Otherwise the EMP wouldn't have knocked out their maneuvering thrusters. I hope it didn't knock out life support. I wouldn't like it if they were asphyxiating."

"After what they were prepared to do to you? I wouldn't be disappointed. And I wouldn't feel guilty, either."

"Oh, Elgin," she said as they entered their airlock, "I know you better than that."

She was right, of course. Now that she was safe, his feelings toward Bub lup and his minions was more like resentment than anything else. But while she was in danger, he would not have hesitated to use whatever means were required, right up to lethal force. "You're right," he said. "Let's go and make sure they're okay."

It was a matter of moments to activate the pod and fly it over to the Makers' vessel. Three Makers were still nearby, although they were slowly drifting away from each other and their vessel. The first one they approached was Bub lup, who flailed in abject panic as he slowly tumbled. He didn't appear to be asphyxiating, which was a relief, but he was obviously helpless. Fran was already tuned to their radio frequency, which was silent. Watching his glittering, decorated space-suit, and his staring eyes each time the faceplate rotated into view, Elgin could imagine Bub lup's fear. Given what he was willing to do to them, and what he had purportedly already done to others of his own kind, he was probably imagining the worst.

Elgin deployed the harpoon gun, waited until Bublu could see what was happening, and shot him. His frantic struggles were quelled as the net enveloped him, and they reeled him in. They repeated the procedure with his guards, then went looking for the ones who had been chasing them. It was an hour's work to capture them and return, seven Makers stuck on the pod like barnacles.

~

“What do we do with them now?” They were halfway between the Prime and the laser station. Should they take them back to the Ball and improvise some kind of prison? Or should they take them to the station and lock them up in their own cells? Elgin was hoping that Fran had an idea.

Fran shrugged and said, “What do you think, Stanton?”

Stanton said, “I’d just as soon you didn’t bring them here. We’re not really set up for housing alien prisoners.”

“I agree,” said Fran. “Is there any word from Plub yet?”

“Not yet,” said Stanton. “We’re calling every five minutes.”

“What about Scarface?” asked Elgin. “Any communication with him?”

“Nigel says Plub left him at your cell,” said Stanton. “He was ready to make Scarface go with Plub, but after the radar pulse he just took off and left him there.”

“How about if Nigel takes him for a walk? A little reconnoiter.”

“Good idea,” said Stanton. “Stand by.”

Elgin took the time to check on their passengers, who all appeared to still be alive, if not lively. He didn’t blame them. He knew he wouldn’t be very enthusiastic about being lashed to the outside of a

spaceship, either. "We have to do something soon," he said. "We don't know how long their life support will hold out."

"That's something else we need to talk to Plub about," said Fran. "Where is he? What's he doing?"

"I told him to be ready to repair any systems that the pulse knocked out," said Elgin. "Maybe he's busy."

"Maybe," said Fran. "Or maybe we damaged their radios so badly that they can't be repaired."

"That's possible," said Elgin. Something came up on their video feed. "Here we go," he said. "Scarface is on the move."

They watched him move up the deserted hallway, through the module and on to the big room where they first met Bublup. Nigel took him out to the airlock, just to be sure, but they still saw no one. Back to the meeting room where he said, "Where to now, people?"

"That third opening," said Fran. "That's the one Bublup used."

Nigel directed Scarface through the doorway and down another short tube. The next module contained a lot of equipment, which they took the time to examine closely. There were green lights flashing everywhere, the color of alarm in a world of red light. Even to someone who didn't know exactly what the equipment was for, it was obviously out of commission.

"There," said Stanton. He touched the screen being used by Nigel. "That big button flashing green. If my guess is right, that's part of the comm system."

"That room does look familiar," said Fran. "Take a look around, Nigel." When he complied she said, "Yes, it's the room Plub used to be in during our talks."

"Good," said Stanton. "Get Scarface to push that button. We might get lucky." When the robot pushed it, the light stopped flashing green

and burned steady red. Nigel got him to push it again and they heard something. They could hear a quiet white noise, like background ambience. “Get him to make a noise,” said Stanton. “Clap his hands or something.” Nigel did, and they clearly heard it.

“That was easy,” said Elgin.

“Too easy,” said Stanton. “I mean, if it’s this easy, then why haven’t they done it?”

“Maybe they’re preoccupied with something else,” said Fran.

“Could be,” conceded Stanton. “There might be something more critical somewhere else.” He nudged Nigel. “Let’s go find out.”

Scarface left that room and entered the next tube. It was another short one feeding into another module, which was empty and uninteresting, so they got him to exit again immediately. This tube was a little longer and it took a few seconds before they noticed something moving near the far end. Nigel instinctively stopped the robot, going still to avoid detection. Then he laughed at himself and got moving again. “For a second it felt like I was there,” he said.

As they moved forward, it was soon clear that they weren’t looking at a Maker. Not a whole one, anyway. This was a single limb, an upper arm, drifting slowly down the hallway toward them. It looked as if it was writhing, although it was likely just a complicated tumbling motion. It still made them feel queasy, though. Nigel got Scarface to get close to it, and they could see by the stump that it had been hacked off. It lightly brushed Scarface and immediately grabbed him, coiling itself around one of his arms. They jumped, startled and horrified. Nigel’s hands came right off the controls as he recoiled. He took a deep breath and forced them back on. “That was surprisingly scary,” he said.

“I know it startled me,” said Fran. “I’m glad it was you operating Scarface, and not me.”

Elgin asked, “Are they having another cutting?”

“Like Plub, you mean,” said Fran. “I don’t think so. That was careful. Ritualistic. This seems crude.”

“You’re right,” said Elgin. “Maybe it was an accident, then. The EMP caused an emergency and it cost someone an arm.”

“If that’s the case,” said Stanton, “then someone might need our help. Let’s get going.”

They found their answer in the room at the end of the hallway. In it they found more body parts, as well as bodies. All showed signs of brutal hacking, with more severed limbs than seemed possible, and bodies split wide open. None of them seemed alive, but they kept Scarface away just in case. They didn’t want him festooned with any more stray limbs.

“Maybe they were having a cutting after all,” said Fran, “only not the kind we’re used to.” She was making herself look at the bodies, to see if she recognized Plub’s markings. So far she hadn’t.

“You might be right,” said Elgin. “Plub told me that they’re never far from violence.”

“Could this be our fault?” she asked.

“How could this be our fault?” asked Stanton. “We only just got here.”

“Exactly,” said Fran. “They had enough stability to build all this, then as soon as we show up, they fall to pieces.” She remembered the Makers lashed to the pod. “Now we really do have a problem. If we take these people back, they might be in danger.”

“What’s wrong with that?” said Stanton. “Let them have a taste of their own medicine.”

“But it could be a death sentence,” said Fran.

“So?” said Stanton. “Why should that be our problem? It didn’t seem to be a problem for them when it was your life in danger.”

“But we’re not them,” said Fran. She was right of course. They wouldn’t send people to their deaths. Not even these ones.

Stanton nodded. “I know,” he said. “But if we can’t take them there, that only leaves here. We don’t have any way to lock them up.”

“Maybe we do,” said Fran. “We can make the flashball court secure, can’t we?” When he didn’t answer right away, she said, “It will only be temporary.”

They set course for the Ball. Then it was a matter of ferrying their captives in before they could dock the pod. Once all seven Makers were in the flashball court and the door secured, they released the nets. The Makers lunged immediately for the door, slapping and kicking angrily at it, while their attendants watched impassively. Only his clothing set Bub lup apart from the others as they raged at their impotence. It wasn’t until they settled down that their hierarchical structure begin to reassert itself.

~

Meanwhile, Scarface continued his exploration. Once they were sure there were no survivors in the room of carnage, they sent him on through the next doorway. If necessary, they would search every last module in this station. They would keep looking until they found someone alive, or until they were sure otherwise.

They didn’t have to go far. After just a couple more rooms full of evidence of acute violence, Scarface entered one where there was someone who was still alive. He had his back to them, and it was a rich ocher color, unlike the beige they were used to. Something must have alerted him to Scarface’s presence, because he turned, holding a large

machete-like weapon in one hand. They thought they must be seeing another type of Maker, a type they'd never seen before, because it was different in every way. In addition to the ocher back, which continued all the way down the outsides of the arms, all its other markings looked different, too. They were all more vivid, more sharply defined. It also looked bigger, or stronger, or something. It was hard to define but it just looked more dangerous, even disregarding the machete.

As this strange Maker approached Scarface, its weapon extended in front of it, Fran said, "Oh my. I can't believe it."

"What?" said Elgin.

"Look at its markings," she said. "Never mind the colors. Just look at the spots and the margin line."

"Oh," said Elgin. "I see what you mean."

"Yes," said Fran. "That's Plub."

49.

THE ARMADA

Plub slashed and the Maker arm fell away from Scarface. Then he spoke, but all they could hear was hissing and growling. They hadn't foreseen the need for putting a translator into Scarface's communication system. Nigel was just about to patch it through to their main system when Plub brushed past and left, back the way they'd come. Nigel was turning to follow him when the Doctor stopped him.

"No," he said. "Keep him here for a while."

"Why?" said Nigel, turning the robot back.

"Anatomy," said the Doctor. "This is our chance to study Maker anatomy."

Nigel nodded and moved toward the nearest body.

~

Plub was moving quickly. He passed through a pair of modules without stopping and sped on until he came to the communications room. They saw him burst in, still gripping the machete, and hurry directly to the console.

He reached out with his free hand and reset the controls. His monitor must have come on because he finally looked at them and spoke. Even through the translator they could tell that his voice had changed, too.

"Greetings Fannie and Ellie and all comet people," he said, his voice somehow carrying more weight. "Welcome to the new Maker world."

“Plub,” said Fran, “what’s going on?”

He held up the machete. “The Great Cutting has begun,” he said.

~

Stanton was called away to the observation station, where they were maintaining constant surveillance of the Maker moon. Their optical telescopes had picked up something interesting. The observer on duty pointed at a cluster of bright spots that weren’t stars.

“They just showed up,” she said. “They must have just crossed the resolution threshold.”

“Are they moving?” asked Stanton.

“It’s hard to say,” she said. “I don’t have enough data to be sure, but if you want me to guess, then I’d say they’re moving this way.”

Stanton looked over at the people talking to Plub. Great Cutting? What was that? He looked back at the cluster of spots. And what was this? An armada? He asked, “Where are Buzzard and Maria now?”

She consulted her instruments. “They’re just a few hours from arrival at the Maker moon,” she said. “Do you want me to divert them to check out this?”

Stanton thought about it. “No,” he said. “Let them keep to the original plan. We can deal with this.”

~

Fran said, “Did you kill all those people, Plub?”

“No,” he said, lowering his weapon. “There are a few of us united in this cause.”

“It looks like it’s over now, Plub. I think you can put down your weapon.”

“No!” he said, raising it. He caught her reaction, even though she

quickly stifled it. "What's the matter?" he asked. "Is the violence too real for you?" He looked and sounded scornful. "I tried to tell Ellie. We're never far from the truth."

He caught her off guard, but she rallied quickly. "You surprised me, yes," she said. "Surprised and shocked me."

"You didn't think I was capable of this, did you?" he said. "That timid coward could never do this, could he?" The avatar on her screen seemed to be gloating.

"You're right, Plub," she said. "We should have known though, shouldn't we? From what you've told us already about your violent tendencies, we should have expected this."

"Yes you should," he growled. "But you were too worried about stopping the Cutting." He held up his amputated limb, which seemed to have grown a lot since she last saw him. "You were too worried about me to see the truth."

"I admit it, Plub. We were hoping that we could develop a good relationship with your people. We were probably too optimistic."

"Yes you were. And now you're forced to face the worst of us."

"That's not quite true, is it? We have faced far worse before." Her voice lost its strength. "Far worse."

That caught Plub off guard. He remembered her story about the Visitor killing her people, and suddenly his little murder spree didn't seem so grand. He looked around, then back at her. She thought she saw a change in his appearance. A little less of the warrior rampant, perhaps. She asked him, "How long does this usually last, Plub?"

"What?" he said.

"When you change like this, to killing mode, how long do you usually stay this way?"

"Why?" he demanded, shaking off his doubts. "Are you afraid?"

“I would be afraid of you if we were in the same room now,” she said. “But since we’re not, I’m only curious.”

That gave him pause again, remembering where he was. He threw up a brazen front and tried to force it, but he was losing his impetus. Grudgingly, he told her, “It lasts as long as it is needed.”

“And now that the killing is over?”

“Now that the cutting is over, I’m beginning to change back.” His disappointment was obvious, even without the avatar.

“You like feeling like this,” she said. “You prefer it.”

“Of course!” he said. “It’s so clean. So pure. No questions to fill me with weakness.” He raised the machete in front of his face, trying to recreate his heroic posture of moments before, then lowered it again, his body sagging. “And now, by tomorrow, I’ll be that soft weakling again.”

“I understand,” said Fran. Stanton bent in and whispered in her ear. She raised her eyebrows at him, then turned back to the screen. “Plub,” she said, getting his attention, “there seems to be a fleet of vessels en route from your world.”

“Acquisitors!” he roared, straightening up again. “We must destroy them. You must help us destroy them.”

“Not so fast, Plub,” she said. “It’s not that simple. Yes, if they threaten us, then we might have to destroy them. But we can’t take sides in a local dispute.”

“But you have to,” he said, brandishing his machete. “It’s the Acquisitors. They were going to cut ten thousand people. They cut me. They were going to kill you.” He waved the blade for emphasis. “They’re bad.”

“I agree,” she said. “But how good are you, and the ones like you, who are doing this Great Cutting you told us about?” When he just

stared, she said, “How many people have you killed? How many more will die? And when you have taken the power, how will you use it?”

His breathing holes flapped in the Maker equivalent of stammering. “But, this Cutting is good,” he said. “They’re bad, and this is good. They’re evil and they do evil things.” He noticed he was waving the machete, and lowered it below the console.

“And what would they say, if I was talking to them? Would they tell me that their civilization is under attack by violent dissidents? Terrorists? That’s what they always said on my world.” She shook her head at him. “No,” she said. “We will defend ourselves if necessary, but we will not take sides.” She softened. “I’m sorry, Plub. You’re going to have to sort this out for yourselves. I hope you’ll still be there afterward, and we can pick up where we left off. But if we intervene, we’ll only give Makers reason to distrust us.”

“Distrust you? Our world hangs in the balance and all you care about is whether we trust you?” He pushed away from the console. “Do what you like,” he said. “We don’t need you.” He waved her away. “And don’t think you can just stand back and then be friends again afterward. Maybe we’ll cut you, too.” He reached forward and slapped off the connection.

~

“You did the right thing,” said Minder, with Winston nodding emphatic agreement. “The worst thing would have been to take sides.”

“I know,” said Fran, her gaze roaming the Square.

“There was nothing else you could do,” croaked Winston. “Nothing you can do to stop it.”

“I know.”

“You can’t blame yourself,” said Minder.

“I don’t,” said Fran, looking at him. “I just regret that there’s nothing more we can do. Knowing you’re helpless doesn’t make you feel less helpless, does it?”

They all knew she was right, so there was no argument. Minder changed the subject. “What about the armada, then? Any idea what’s going on there?”

Stanton picked it up. “Not really, no. We’ve been able to resolve the number, a dozen. We know they’ll get here in about twelve hours. The ships are about the size of our pods. About the same size as the one by their airlock now. We don’t know if they’re armed or not, but we’re assuming they are. And we don’t know if they’re going to the laser base, or coming here.”

“So, wait and see on that then, eh?” said Minder. “What about Buzzard and Maria?”

“They’re in position now, in orbit around the Maker moon.” Stanton used his hands to demonstrate. “Buzzard is in a geosynchronous orbit out by their communications satellite, and Maria is in closer on a circumpolar orbit. They’ve got it covered.”

“What do they say about it? Did they send any pictures?” Minder was asking for everyone. Even though they’d already met the Makers, it still felt incomplete to come this far and not see their world yet.

“They say it’s about what you’d expect,” said Stanton. “It looks like a small planet with an ocean and continents, or at least big islands. The difference is that the islands are floating and drifting around a bit. Kind of like continental drift, only faster.” He was using his hands again. “And the gas giant, Air, fills a big part of the sky. Oh, and the islands have about a twenty meter variation in elevation from place to place, as ocean swells pass under them.”

“I see,” said Minder. “That sounds interesting.” He winked at Winston. “But no pictures, though?”

While everyone laughed, Stanton said, “Okay, I get it. I’ll ask them to send some snapshots.”

Winston said, “So, Buzzard and Maria got there too late to see the armada leave, right?” Stanton nodded. “Have they seen any other activity?”

“No other launches, if that’s what you mean. But they did describe their launch system. It’s like the one we used to use back on the planet.”

“The balloons, you mean?”

“That’s right. Forty-eight balloons in the upper atmosphere, suspending what looks like a track underneath them. The angle is around twenty degrees, the same as ours was.”

“Electromagnetic propulsion like ours?” asked Winston.

“They can’t tell,” said Stanton, “without seeing a launch. It could just as easily be rockets.”

“But,” said Minder, “no pictures though, eh?”

~

“This is fascinating,” said the Doctor. He was going through the thousands of images they’d acquired through Scarface. So thorough was the hacking done by Plub and his friends, that they didn’t have to make one cut during the autopsies. “Look at that,” he said to Nigel, “multiple brains.”

Nigel could see one obvious brain in the center of the upright part of the body. It was almost directly behind the eyes, and below the lung. The other things the Doctor was calling brains were associated with the limbs. From his rudimentary knowledge of anatomy, he’d have

called them ganglia. Eight large ones where the limbs joined the body, and then two smaller ones in each limb. "It must be handy to have twenty-five brains," he said.

"I would say that each limb has the ability to be autonomous," said the Doctor. "Even when separated from the body, they should still be capable of independent movement."

"That would explain that arm glomming onto Scarface," said Nigel.

"Yes," said the Doctor, musing. "I wonder what extra layers of meaning that adds to their cuttings."

"Right," said Nigel. "It's not just an arm. It's part of their intelligence. I wonder how much of their identity is in one arm."

They looked at each other while their minds raced. Finally the Doctor shook his head. "Fascinating," he said, moving on to another picture. "Now, look at the eyes."

~

The armada was coming for them after all. Two of them separated and went to the laser station, but the other ten came straight to the Prime and parked themselves a few hundred meters from the balls attached to its stern. Their radios came to life and a Maker in hard clothing appeared on their monitor. Without preamble, he said, "Surrender and turn over our property."

They let Fran do the talking, since it worked out so well in the past. She introduced herself and asked, "What is your name, please?"

"My name is not important," he said. "Comply or be destroyed."

"Whom do you represent, then?" she asked. "Is it the Acquisitors, or have they been removed in the Great Cutting?"

"There is no Great Cutting," he said. "Our true masters are still in control."

“I assume your true masters are the Acquisitors,” she said. “We have one of those here, as it happens.” They transmitted images of their captives, sullen and defeated. “Would you like us to send him over, along with his guards? We don’t really have room for them here.”

“No,” said the Maker. “We don’t want them. They are weak. They allowed themselves to be taken by a female.” The Makers in the flash-ball court reacted violently when they heard that. They raged and ranted impotently.

Stanton had a small pleased smile. As he had said while they were installing the live feed in the improvised cell, “Never pass up a chance to divide your enemy.”

“I didn’t think you’d want them,” said Fran. “I suspect you work for a competitor, don’t you?”

“It doesn’t matter who I work for,” he shouted. “Turn over our property or be destroyed.”

“I’m afraid it’s not that simple,” she said. “We don’t control the Prime. We can’t tell it what to do. If you want it, you’re going to have to convince it that you own it.”

That made him think. “How can we do that?” he said. “Every time we try to talk to it, it transmits its manifest. You have to tell it to listen to us.”

She shrugged, spreading her palms. “As I said, we’re just passengers. We don’t tell it what to do.”

Before the Maker could answer, he was swept aside by a large Acquisitor in the most splendid clothing they’d seen yet. He was also the largest Maker they’d seen. He was more than large. He was obese to the point of corpulence. He announced himself with the second longest name they’d ever heard, and said, “We will listen to no more of your alien lies. You will turn over my property, or you will die.”

“Greetings, Blublub,” said Fran. After waiting for the translator to repeat his long name, she said, “If we’re dead, then we really won’t be able to help you, will we?” Nigel was trying to get her attention, so she asked Blublub to wait.

He reacted badly, demanding that she listen to him, warning her to not turn away from him, and being very noisy and distracting, so she turned down his audio to hear Nigel. Nigel was saying, “Our sensors show strong electromagnetic fields around their vessels, and our telescopes show holes that could be the openings of projectile weapons. My best guess is that they have rail guns or projectiles propelled by explosions, or both.”

“Would they be able to penetrate our shells?” asked Fran.

“Probably not with one shot,” said Nigel, “but repeated impacts might do it, especially if they hit the same spot.”

“So,” said Fran, “we’re outgunned and we’re easy targets.” Nodding, she turned Blublub’s audio back on. He was still carrying on, and now he was issuing an ultimatum with a time limit.

“You have one minute to comply before we destroy you. Give me my property or we will fire upon both of your vessels and you will all die.”

50.

SHOWDOWN

"I'd be careful if I were you, Blublub," said Fran. "Be careful what you do."

"Why?" he said. "What are you going to do? You only have one weapon, and it's not even charged up."

"Yes, we know our rail gun is no match for your weapons, so we're not even going to use it," said Fran. "No, I'm thinking of the Prime."

That made Blublub nervous. According to his avatar, if his eyes were more mobile they'd have been darting around. But he bluffed his way through. "What about the Prime? It never does anything."

"You never know what it's going to do," she said. "You've no doubt heard about the two missing vessels. Who knows what they're up to?"

That got him thinking. Maybe he'd heard about some mysterious sightings back at his moon, and was having second thoughts. But the sight of the Prime, so unbelievably big, and so near, must have bolstered his resolve. Being that close to so much wealth gave him strength. He made a slashing motion with his arm and shouted, "Your time is up." To his crew he said, "Shoot both vessels."

The holes in the fronts of the Maker vessels were the muzzles of projectile weapons after all. Two of them puffed and less than a second later a chunk of ice was blown out of the Ball's shell.

Galatea groaned, and Stanton said, "Don't worry Gay, we can fix it later."

Nigel's status report was immediate and reassuring. "Minor damage," he said. "The hole is less than a meter wide and only a few

centimeters deep. And there are no cracks.” He cocked his head, obviously listening. “Tainui reports the same. Archie says that enough hits in the same place will produce a breach eventually. He estimates between ten and twenty.”

“Let’s begin the random oscillation protocol,” said Stanton. “Let’s make sure they can’t hit the same place twice.” The Ball began to wobble slowly. To Galatea he said, “It’s a good thing the shell is an amorphous solid. Crystalline ice might have cracked.”

It’s hard to not be nervous when someone is shooting at you, especially when a hull breach would be fatal, but the people in the Ball and Tainui were prepared for this. And now that the first shot was fired and the damage was as small as expected, they found themselves relaxing. They took further comfort from the fact that the flashball court gave them extra protection. If the shell did start to leak, the smaller sphere was sealed and would protect the rest of the Ball. The only people who weren’t comfortable were the Makers who were confined to the flashball court. They were pressed up to the inner door, pounding and shouting for salvation, all thoughts of rank and privilege apparently forgotten.

Blublub brayed at them, “Now what have you got to say? Are you ready to give me my property?”

Fran ignored him for the moment. She appeared to be getting some important information. She nodded, then turned to the Maker. “Something’s happening, Blublub,” she said.

“Of course something is happening,” he crowed. “We shot you.”

“That’s not what I mean,” she said. “Something’s happening to the Prime. We heard something. Right after you shot us, we felt something.”

Blublub didn’t say anything, just looked around at his crew, who

also said nothing. He turned back to Fran and said, “You’re bluffing. There’s nothing happening.” He slapped one of his crew and said, “Prepare to fire again.”

“I advise against it,” said Fran. “You don’t know what the Prime might do.”

“The Prime is my property,” he said. “It will do what I want it to do. Fire!”

Another chip in the front of the Ball. Another groan from Galatea. Increased panic from the prisoners in the flashball court. And more noises from the Prime. “There it goes again,” said Fran. “I strongly advise you to stop shooting at us.”

“I don’t care what you advise!” he shouted, a fine mist expanding away from his breathing holes. “Give me my property!” He was going to say more, when something diverted his attention. A crewman pointed at something in front of him, and he said, “What’s that?”

“Have you spotted something on your radar?” asked Fran.

“Yes,” he said. “There’s something moving. Make it stop.”

“I’ve tried to tell you, Blublub,” she said. “There’s no predicting what the Prime will do.”

“But what’s it doing?” said Blublub. “What’s it going to do?”

“I can’t tell you what it’s going to do,” said Fran, “but I expect that it will depend on what you do.”

“What do you mean?”

“I can’t guarantee anything, but if you stop shooting, maybe the Prime will do nothing.”

“What? Just give up? Give up my property?” He made a chopping motion with both of his top arms, sending waves through his fat. “Never! You’ll never take it from me.”

At this point, the objects of Blublub’s agitation cleared the end of

the Prime and became visible to the Ball and Tainui. It was a pair of scouts. They weren't that much bigger than the pods or the Makers' vessels, but they certainly looked more dangerous. They looked tough and capable, making the Makers' ships look amateurish and fragile. Glittering redly in the sunlight, they moved with a silent, deadly efficiency. They glided to a synchronized stop halfway between the armada and the Prime, then did nothing.

~

"They're shooting at us." It was Buzzard's voice. "Actually, they're shooting at Maria. They're not shooting at me yet. Maybe they haven't seen me, since I'm on a higher orbit."

Stanton said, "Is she all right? What are they shooting?"

"Yes," said Buzzard, "she's fine. They're shooting rockets, but she destroys them before they get to her. She waits, though. Just like we talked about. She waits until the rockets are out of the atmosphere, just in case there's any dangerous fallout."

"That's good, Buzzard," said Stanton. "It's time for you to move into position now. The situation here is about to become critical."

"Okay, will do," said Buzzard. "Oh! Now Maria says they're shooting at her with laser beams. Or particle beams. Some kind of beams."

"And?" said Stanton.

"She says they're not causing any damage. Nothing serious, anyway. She's letting the module's automatic targeting system take care of it."

"How's it doing?"

"It's just as good as we remember, from when they were destroying us," said Buzzard. "Only it's limited to just the source of the beams. It doesn't destroy everything around it, like they did in those days."

“Good,” said Stanton. “Just as we hoped. Are you in position?”

“Just getting there,” said Buzzard. “They should be cut off now.” He added, “When Maria shoots the rockets, no one gets hurt. But when she shoots something on the ground ... I mean on the mat ... on the surface ...” He trailed off.

Stanton said, “On the ground is fine, Buzzard. On this world, the mats are the ground.”

“Okay, well, when she shoots something on the ground, then people probably do get hurt, don’t they?”

“They probably do,” said Stanton, “but it wouldn’t be happening if they weren’t shooting at her, would it?”

“I guess not,” said Buzzard. “But they wouldn’t be shooting at her if she wasn’t there scaring them.”

Stanton sighed. “You’re right, Buzzard. It’s partly our fault, isn’t it? If we weren’t here, none of this would be happening. But we are here, and it is happening, so when it comes down to it, the sooner they stop shooting, the better.”

Buzzard thought about it, then said, “You’re right. But I still feel bad.”

“Good,” said Stanton. “It’s good that it makes you feel bad.”

~

“Shoot them!” yelled Blublub. “Shoot them!”

They prepared to lose another chip of ice, but apparently Blublub was referring to the newcomers. His crew dutifully shot the scouts, which immediately returned fire, taking out the weapons used. Blublub was exhorting them to shoot again when his crewman pointed at something on their radar. All the Makers froze, staring.

“What’s going on, Blublub?” asked Fran. “Why did you stop shooting?”

He glanced at her, then back at the radar screen. Then he looked up, through what must have been a forward viewport. Maker eyes were already wide and staring, but Blublub’s avatar showed his reaction by widening its eyes in shock. Fran looked back toward the Prime and soon a pair of modules loomed into view. If the scouts were scary, then the modules were terrifying. More than three times their length and about thirty times their mass, modules practically made scouts look harmless.

Everything was falling apart for Blublub. His advantage was gone. His riches were slipping away. His hubris was biting him painfully. Worst of all, this was making him look bad. How could he face the other Acquisitors after this? He had boasted so grandly when his armada set out, gloating about the acquisition he was about to make. He had gloried in their envy and resentment, and now they would only laugh at him. He couldn’t bear the thought of that so he screamed, “Shoot them! Shoot them all!”

When they hesitated he raged at them, lashing out and striking those nearest to him. When they still didn’t comply, he lunged for the controls, ready to do the shooting himself. That’s when they moved, seizing him and forcibly stopping him. They had seen enough to know that they were hopelessly outmatched, and they didn’t have Blublub’s incentives of pride and greed. They only wanted to stop him and save themselves, but he wouldn’t stop. The struggle went on, escalating steadily. It was pathetic to watch. Fran was embarrassed for them, and for all Makers. When the machetes came out, she turned off the monitor.

“That’s not exactly what we had in mind,” she said.

“No,” said Elgin. “A peaceful surrender would have done.”

Stanton said, “It’s good enough for me.” When Fran looked at him he said, “Any kind of surrender is better than the alternative. We’re helpless here, remember.”

She nodded, but she still wasn’t happy. She was staring at the blank monitor, trying to not visualize what was going on over there, when they heard a commotion over by the flashball court.

“What’s that?” she asked.

“I don’t know,” said Elgin, heading that way.

She followed him, and so did Stanton and the others. They could see a small crowd gathering outside the court, and signs of frantic activity inside it. By now they were used to their prisoners’ antics. Much of the time they’d been locked up they’d spent violently protesting their imprisonment, or demonstrating their fear of being killed, so no one paid any attention to this last upheaval at first. When they got close they could see why that changed.

Bublu’s guards were engaged in tearing his parts into even smaller parts. Not having any machetes, they were using their beaks to do the cutting, and their hands to do the tearing. The six of them, often pulling the same part in opposite directions, almost had him down to where there were no more parts that were big enough to work with. He and his fancy clothing drifted in a slowly spreading constellation of fragments.

Fran’s face was so full of horror and guilt that it wounded Elgin. He took her in his arms and turned her away. “There was nothing we could have done,” he said.

“They were in our care,” she said, her voice shaking. “This wasn’t supposed to happen.”

“We did our best,” he said. “We couldn’t have predicted this.”

“Well, we should have,” she said. “We had plenty of time to plan. We should have planned for this.”

Elgin agreed with her, and he felt almost as bad as she did, although mostly for her pain. But he also knew that it was impossible to plan for everything, especially when you don’t know all the variables going in. He didn’t try explaining, though. He knew logic was inadequate for this, so he just gently led her away.

They were almost back to the control center when a beeping signaled an incoming call. When they got there Fran said, “It’s from the laser station. What now?”

It was Plub. He still had his machete, and he was looking fully feral again. “That was good,” he said. “Tell them to send more prey.”

Fran turned away, her eyes seeking refuge in Elgin’s. “What is wrong with these people?” she asked. “What have we got ourselves into?”

51.

MASTER OF THE PRIME

Stanton moved in front of the screen. When Plub craned to see around him, he said, “Plub, I want to talk to you. Look at me, Plub.”

“I don’t want to talk to you,” said Plub, “I want to talk to Fannie.” He tried to see over Stanton’s shoulder. “Fannie and Ellie.”

“Too bad,” said Stanton, lifting his shoulder and wing top. “You’re talking to me.”

“I don’t want to talk to you,” said Plub, turning away. “I don’t have to talk to anybody.”

“I guess you don’t want to hear how Bublup died, then.”

That stopped him. He turned back. “You killed Bublup? Did you decide to help us after all?”

“No,” said Stanton. “We didn’t kill him. His guards did.”

That caught Plub’s interest. “His guards? Have they joined the Great Cutting?”

“I don’t know about that,” said Stanton. “There were extenuating circumstances. They all thought they were going to die.”

“Oh,” said Plub. “Did they make the change?” He held up an arm to show the color. “Do they look like me?”

“No, they look normal. I think they just panicked. Maybe some of Blublub’s people changed, though. I was just about to talk to them.”

“Blublub too? Maybe they’ve joined the Great Cutting.” Plub gave his machete a little hopeful wave.

“Maybe,” said Stanton. “We didn’t actually see him get killed, but it looked inevitable when we cut the connection.”

“You didn’t watch?”

“No. Unnecessary violence is abhorrent to us.”

“Unnecessary? There’s no such thing as unnecessary violence.”

“Really? How will you feel about that tomorrow, or the next day?”

“What do you mean?”

“When you come down from this killer’s high and return to normal. How will you feel about all this then?”

“Don’t talk about that!” said Plub. “This is my true nature. That is just wasting time, waiting for this.” He struck a heroic pose.

“If you say so, Plub. Now just wait a minute.” Stanton re-opened the connection with the armada. “Blublub!” he said. “I want to talk to Blublub.”

No one was at the communications console on Blublub’s ship. He could see a couple of people moving in the background, but they seemed to be involved in mundane chores. It looked as if they were cleaning up, putting trash in a bag. Only when a severed limb drifted slowly by at close range did he realize the nature of the chores. When a hand slapped the limb away and a face filled the screen, he barely kept himself from jumping.

“Blublub is no longer here,” said the face. “You can talk to me now. My name is Blup.” It was really more than that, but that’s what Stanton settled on. It wasn’t as long as the titles that Blublub and Bublup and Plublub gave themselves though, so Stanton thought there was a good chance that this wasn’t an Acquisitor. He also noticed that this Maker was the usual beige, so he hadn’t made the change.

“Hello Blup,” said Stanton. “Is Blublub dead, then?”

“Yes,” said Blup. “You no longer need to fear us.” He glanced off screen, probably at the forward viewport. “And neither does the Prime. Can you tell it that?”

Stanton shook his head. “No, Blup. We’ve told you. It doesn’t work that way. Your safest bet is to not do any more shooting.”

“We won’t,” said Blup quickly. “None of us wanted to do it anyway. Just the Acquisitors.”

“Good,” said Stanton. “Did you kill anyone besides Blublub?”

“Just a few who foolishly tried to defend him.”

“All right,” said Stanton. “It couldn’t be helped, I guess.” He shrugged. “I might as well fill you in on what else has been happening while you’ve been busy.” Blup listened avidly as Stanton told him about Bublup being killed by his guards. “You were shooting at us then,” he said, “and I think the fear overcame them.”

“Did they change?” asked Blup.

“Change?”

“Yes. I mean, did they change color? Did they look different?”

“No,” said Stanton. “They were using their beaks to cut up the body, but they looked pretty normal otherwise.” While Blup thought about that, Stanton said, “Someone who did change though, is Plub. He looks completely different.”

“Plub,” said Blup. “Yes. The negotiator. You say he has made the Change?”

“If that’s what you call it. His back is darker and he just looks more dangerous.”

“Yes,” said Blup, “that’s the Change.”

“Very well,” said Stanton. “All we know is he seems to have killed almost everybody on the station, and he keeps talking about a Great Cutting.”

“The Great Cutting? It has begun?”

“I don’t know about that, other than what he’s said.”

Blup rubbed his upper hands together. “If the Great Cutting

has begun, then there is much to do.” He looked around, then back at Stanton. “I must meet with Plub. We need him to lead us into the knives. You must arrange for us to meet.”

“I’d be careful if I were you,” said Stanton. “I think he killed the last people you sent over. He asked us to get you to send more prey, as he put it.”

Blup’s avatar showed awe and reverence. “He truly is in the exalted state,” he said. “It might be best if we talk by radio first, to give him time to acknowledge me.”

“Sure,” said Stanton. “I’ll put you in touch with his exaltedness. Meanwhile, can you take Bublup’s killers off our hands? It’s probably best if they face Maker justice for their crime.”

“Certainly,” said Blup. “But they’re not criminals. They’re heroes of the new order.”

“Of course they are,” said Stanton. “We’ll bring them over, then. We’ll get them to bag up Bublup’s remains too, and bring them along.”

“No need,” said Blup. “We don’t need Bublup’s remains for anything.”

“Don’t you do a service for the dead?”

“Not for the likes of him.”

Stanton nodded. “Fine,” he said. “We’ll send it along anyway. It’s no use to us.” He turned to talk to Plub.

“Wait,” said Blup. “If you please, do you know why we’ve lost contact with our moon?”

“Lost contact?”

“Yes. We can’t seem to connect with the satellite any more.”

“Why don’t you try something else?”

Blup’s avatar was sheepish. “We don’t have anything else. Blublub paid for time on the satellite, and he said that was enough.”

“He let you come out here with no redundancy?” Stanton held up his hands. “Don’t answer that.” He shook his head. “Maybe that’s where the Prime’s other modules went. The ones that are missing.”

“Do you think they destroyed the satellite? Why?”

“Maybe somebody shot at them. Do you think someone might have done that?”

“Yes,” said Blup, looking down. “What else do you think they might have destroyed?”

“I think that would depend on how long they were being shot at. How long do you think that might be?”

“I don’t know,” said Blup. “There are many different people, with many different allegiances. It could go on for a long time.”

“Well, I hope you’re wrong,” said Stanton. “And now let me talk to Plub and arrange a meeting for you. And we’ll send over your people, too.”

~

“There’s hardly anyone shooting at us any more, but we’ve noticed a big balloon.”

“What’s it doing?” asked Stanton.

“It looks like it’s rising up to the launcher,” said Buzzard.

“We can’t let them launch any more vessels.”

“Do you want us to shoot it down?” You could tell that Buzzard didn’t like the sound of that.

“No,” said Stanton. “We’ll just stop them from using the launcher.”

“You want us to shoot that down?” Even worse.

“No,” said Stanton. “If you take out one balloon, then the track won’t be straight, right? They won’t be able to use it.”

“Right,” said Buzzard, “okay. Okay. Right. We can do that. That’s what we’ll do.”

“It will keep their casualties to a minimum.”

“That’s right. That’s good. That’s what we want,” said Buzzard.

“It is,” said Stanton. He had already told Buzzard what happened with the armada, and now he had a question. “The Makers here are curious about why they’ve lost contact with home. What are you hearing there?”

“They keep trying,” said Buzzard. “No messages, though. They’re not sending messages. They just keep trying to make contact.”

“Good,” said Stanton. “Let me know when they give up.”

“Okay,” said Buzzard. “That’s what we want, isn’t it? Give up? We want them to give up.”

“That’s right. The Makers here think the Prime is doing who-knows-what there, and we want the ones there to wonder if their armada has been destroyed here. We want them to think there’s no point in carrying on.”

“We want to break their spirit.” Buzzard didn’t sound as if he relished the idea.

“I know it sounds cruel, Buzzard, but it’s better than the alternatives. You didn’t see Plub. We don’t want to deal with these people if they all become warlike. We would really have to hurt them then.”

“I know,” said Buzzard. “This is the least bad option. Least bad.”

“Yes it is,” said Stanton. “Good luck. Keep us informed.”

~

Transferring Bublup’s remains and his guards to the Makers’ ships went smoothly. Taking no chances, they had the guards do up their suits, then they netted them again and transported them by hand. If

they resented it, they didn't let on. They cycled them in through the airlock in three sets of two, stuffing the bag full of Bublup's parts in with the last set. As they were flying back to the Ball, they saw the Makers throw the bag of parts back out, along with another bag, presumably containing the remains of Blublub. When they had drifted a safe distance away, the Makers shot them. Of course, the two weapons used for that were immediately destroyed by the Prime's vessels.

"Make them stop!" said Blup. "Make them stop shooting!" There was an alarm sounding and green lights were pulsing everywhere.

"Why did you do that, Blup?" asked Stanton. "You know the Prime doesn't like that."

"It wasn't us. It was one of Bublup's guards. They surprised us."

Stanton nodded, remembering the terror they'd endured not long ago. "Well, get control of your people, or there's no telling what the Prime might do. How bad is the damage? Will you be all right?"

"Yes. It's repairable." He glanced behind him, where the guard was being brutally subdued. "It won't happen again."

"It had better not," said Stanton sternly. "I don't know why the Prime isn't just blasting you all to pieces. And worse, what if it decides to turn on us, too?"

"I'm sorry," said Blup. "It wasn't my fault."

"You wanted to be in charge, Blup. From now on, everything is going to be blamed on you."

Blup looked abashed, but then firmed up. "I understand," he said. "And it won't happen again."

"Good," said Stanton. "And about time, too." He was reassured by the abject expression on Blup's avatar. "Okay," he said, "enough of that. We got hold of Plub, and he's willing to talk to you."

Watching them talk was awkward, even uncomfortable. The way Blup and his crew looked at Plub, the attention they paid him, could only be called obsequious. They appeared to be doing an eight-limbed, microgravity version of genuflecting. A hairless form of tugging the forelock. And Plub basked in it, as if it were his due.

In time the talk turned to the Great Cutting. Plub wanted to go home and lead it. He would arrive in the midst of the chaos and mayhem, and the people would rally around him and follow him to glory. Blup and the others thought it was an inspired idea. The armada would take him home and triumphantly deliver him to his people. Together they would be the shining star that would lead the Maker people on to the greatness that had always beckoned.

Fran turned away and shuddered. Elgin looked as if he was going to be sick. Stanton shook his head in disgust and pushed into the celebration. “Plub,” he said. “Plub. Hey Plub!”

The mighty warrior finally heard him and crossly deigned to look. “What?” he said. “Stannie, isn’t it?”

“Yes, Plub. It’s Stanton. I just have a couple of questions.”

“Very well,” said Plub. “You have been loyal and true, even though you are aliens. You may speak.”

“Thank you,” said Stanton, without a trace of sarcasm. “First, it will take several days to get there. How long can you maintain this exalted state?”

Plub hesitated, but only briefly. “In the company of my followers, and on such a mission, I can stay this way indefinitely. As long as it takes to win victory.” His followers cheered and shouted praise.

“Okay,” said Stanton, “but what will you find once you get there?”

In a few days, the Great Cutting could be over. The people might have found another hero.”

“Never!” Plub shouted. All the Makers loudly agreed.

“Wouldn’t there be other Makers who have made the change? Couldn’t they be rallying followers right now?”

Their reaction made the truth of that plain. They began to lose their assurance. Blup tried to sustain their flagging fervor. “If they do, then we will crush them when we get there. The plain truth of Plub’s ascendancy will sweep them away.” But it wasn’t doing the trick. Even Plub began to lose his confidence.

“What do you suggest, then?” he asked haughtily. “Should we just give up and live out here like hermits?”

“Not at all,” said Stanton. “I’m suggesting that you use your position to your advantage. You might be far from home, but you’re close to the Prime.”

Plub stopped and looked away. There were no viewports in the communications room on the station, but there might as well have been. The way Plub looked now, you could tell he was seeing the Prime in his mind’s eye. “Yes,” he said slowly. “Yes,” again, more firmly, his people beginning to respond. “We can use that. When the people see that the Prime is mine, they will come to me.” He looked back at them. “Plub, Master of the Prime, will lead the people into a new age of enlightenment.” His followers cheered and began to chant, “Plub, Master of the Prime!”

~

Stanton looked at Fran and rolled his eyes. She laughed, glancing at the monitor to see if Plub heard. He was oblivious, wallowing in adulation. She said, “I hope you know what you’re doing.”

Stanton shrugged. “He’s going to be like this anyway. We might as well let him think we’re on his side.”

She nodded. “We’re not going to interfere,” she insisted.

“We won’t have to. The Great Cutting will run its course, and then we’ll deal with whoever’s left.” He tipped his head at the monitor. “Most likely him, since he’s safe out here.”

She nodded again, slowly. “I hope this is over soon,” she said. “I want my old Plub back.”

52.

A MAT DIVIDED

It turned out there were three other exalted ones, and the Maker world found itself divided up into a trilateral power structure. Two of them happened to be on the same mat, so their forces inevitably clashed in a big “meeting of the knives.” It was long and it was gruesome, and Fran was glad that she only had to hear about it after it was all over. That left two charismatic leaders with roughly equal numbers of avid followers, ready to spend the rest of their lives fighting for total domination.

Maria and Buzzard could see some evidence of the conflict, but not much, and nothing definitive. Most of what they learned was from the sporadic bits of radio traffic they were able to pick up. The Makers had given up completely on communicating with their satellite, and if they had other means of reaching the armada and the laser station, they weren’t using them. They seemed to be focused entirely on the Great Cutting taking place on the ground. It was after the first great battle, in a confused hiatus before the remaining two factions could find a way to get at each other, that Stanton asked Buzzard to stop blocking the satellite.

After several weeks of babysitting Plub, Master of the Prime, talking him down every time he wanted to go home and join in the glory of the Great Cutting, it was a relief to be able to tell him that the satellite was back on line and he could talk to his people. He eagerly lunged at the chance.

Stanton was right. Plub's proximity to the Prime did turn out to be a powerful motivator. The majority of Makers weren't directly involved in the fighting. Most of them were just trying to carry on, to keep things functioning in spite of the madness erupting all around them. Some were taken as slaves to serve the opposing interests of the combatants, and many were simply victims of blind violence. When they heard Plub's voice coming from the heavens, and saw his exalted image against a background filled with the awesome sight of the Prime, they were ready to be moved.

Plub called upon them to rise up and destroy their masters. Bring down those false prophets of the past, and follow him into a new age, where they could take their rightful place among the stars. They listened to him, and many more Makers met their end in chaos and confusion. The mobs managed to overwhelm one of the two remaining forces, the one already weakened in defeating its enemy, but the other resisted, safe and secure in its redoubt.

Plub's army laid siege and the war settled into a long, tedious waiting game. Occasionally, to break the monotony, fighters would come charging out of the fortifications and engage in a frenzied bout of slaying. Mostly though, nothing much happened at all. The stronghold was on the coast, in a very defensible position. There didn't seem to be any reason why it couldn't persist indefinitely.

Even though association with the Prime did give Plub a certain amount of cachet, it could also be used against him by his adversaries. They insinuated that he had an unhealthy relationship with the aliens. The same aliens who had sent ships to attack their world. He claimed to be the Prime's master, but he was really the aliens' lackey. Hadn't he

turned on his own people at their bidding? If he truly was Master of the Prime and such a great hero, then why was he hiding behind them? Why wasn't he down here fighting his own battles?

The propaganda campaign was working. It began to undermine the loyalties of the people fighting for Plub. More importantly, it tweaked his pride. He made an immediate decision to go home. He would leave the safety of his lofty perch, and he would personally lead his people on the battlefield.

Not even Fran could talk him out of it. It was no use trying to tell him that he was being manipulated. He only saw such attempts as her own sneaky manipulations. He declared that he'd always known that comet people couldn't speak the plain, simple truth. He said he should never have listened to them, and swore that he never would again. To the delight of Blup and the rest of the armada crew, and to the delirious joy of his followers back home, Plub set out on the road to honor and glory.

The excitement and anticipation were high. Plub's army thought that his presence would make all the difference, and they threw themselves into renewed attacks on the redoubt. Before he even got there, another ten thousand had died, mostly his people throwing themselves futilely against impregnable defences. His opponent laughed and sneered, calling him a soft plaything of an alien female. He knew that his insults and goading were driving Plub and his minions to reckless folly. If he could keep it up, then their strength would be spent, and he could go out and vanquish them. Then the world would be his. After that it would be a simple matter to kill the aliens and lay claim to the Prime and its riches.

It was a surprise to everyone when Plub arrived and called his people back. They retreated from the walls, pulling back to a radius

of about five kilometers. There they settled, establishing permanent encampments, and it looked as if they intended to do nothing but wait. It seemed like a futile strategy. Plub's hordes outnumbered those of his rival. In open battle they would be an irresistible force. Meanwhile, his foe's fortifications were unassailable. He would not be moved. So this siege looked like a poor strategy.

Fran was of two minds about it. At least now there weren't thousands of people throwing away their lives in pointless fighting. On the other hand, it wasn't doing anything to help the cause of the comet people either. They were stuck here as long as this situation remained unresolved. To be sure, they could start up the laser array and begin the long journey home. But without a pact, or at least an understanding with the Makers, they would be vulnerable to simple sabotage. Like it or not, they needed this war to be over. Then they had to deal with whoever won it.

~

It was during one of the lulls that Buzzard noticed it. The siege had settled back into a pattern of long periods of boring inactivity, punctuated by brief spells of frenzied killing. To pass the time, he trained his telescope on the conflict zone. Not that he could see any details, but he could make out the fortifications and a kind of ring that hemmed them in. He surmised that the ring was the encampments of Plub's army, imprisoning his enemy against the sea. To him it was a static tableau that looked as if it would never change. But then it did.

"It's moving!" he said. Then he opened his link to Stanton and said it again. "It's moving!"

"Buzzard, this is the Ball," said Stanton after a few seconds. "What's moving?"

“Stanton, it’s moving,” said Buzzard. “The fort. The one under siege. It’s moving.”

“How is it moving, Buzzard?” asked Stanton.

“It’s moving away from the mat. Or rather, it’s not moving in the same direction as the mat. They’re both moving, but they’re not moving the same way.” Buzzard kept trying to say it right, and kept just missing.

“You mean they’re separating?”

“Yes!”

Stanton was silent. If he spoke, it would only be to ask how that could be, and he was sure Buzzard wouldn’t be able to tell him anyway. Finally he asked, “Can you tell how quickly they’re separating?”

“Not exactly,” said Buzzard. “The numbers I’ve got from the telescope so far aren’t smooth. They’re variable.”

“But there’s enough of a trend to say they’re separating?”

“Yes,” said Buzzard. “Just barely. Anyway, for the numbers to be different, they can’t be connected any more, can they?”

“I suppose not,” said Stanton. “What about Maria? Can she see it from her current position?”

Buzzard did a quick calculation. “Not quite,” he said. “In a few minutes, though.” So they waited, Buzzard continuing to watch his telescope’s numbers. Slowly they formed a trend. The part of the mat that was isolated by Plub’s army was definitely moving differently from the rest of the mat. But Buzzard still couldn’t see enough detail to confirm it visually.

Maria could, though. “You’re right, Buzzard,” she said. “I can see a gap there.” She was quiet for a moment, then said, “It goes all the way around. It starts at the coast, then it forms a circle, or half of one, with a radius of about five kilometers, and ends at the coast again.”

After another silence she said, "I can see water. I'm catching glimpses of water as the gap opens and closes. It seems to match the period of the ocean's long swells."

"So they are separated," said Stanton. "And all the way down to the water, too." He asked them, "Have you seen anything that would indicate that this is a natural phenomenon? Are there any other similar chunks of mat floating free?"

"There is other stuff," said Maria. "Other bits of debris here and there. But nothing like this. It's too regular. Almost a perfect semicircle."

She kept a close eye on it, until it disappeared behind the bulge of the moon again. She noticed that the gap would open up and then close again, almost rhythmically. She would see the water shining in between, then lose it again. The period of this rhythm matched that of the longest ocean swells. As that part of the mat rose up the swell, the gap opened up, closing as it went down the other side. It wasn't completely symmetrical, though. Looking closely she could see that the gap was getting gradually bigger, and not closing as snugly either. By the time she lost sight of it, she was sure the ten kilometer wide plug of mat was destined to break free eventually.

"The question is," said Stanton, "who cut it free?" They were waiting for Maria to come around again, where she could see what was happening.

"Right," said Elgin. "I think we can assume that someone did. That feels right. So, was it cut by the attackers or the defenders?"

"The defenders," said Archie. "To get away."

"The attackers," said Nigel. "To get rid of them."

Even though the discussion continued, and they analyzed the possibilities in fine detail, it always came back to those two hypotheses.

Escape or banishment. But Stanton had an argument against both of them, and it was basically the same argument. Neither side would want to do it because it would remove the opportunity for more fighting. The Great Cutting would be over, and Stanton couldn't see any Makers opting to conclude it on such an anticlimactic note.

"It's free!" said Buzzard. "Oh, sorry. I mean, Ball, this is Buzzard, over."

"Go ahead Buzzard," said Stanton.

"It's free. It's broken free," he said. "The gap kept getting wider, and as soon as it was halfway out, it came free."

"No chance, of it going back in?" asked Stanton.

"No," said Buzzard. "Well, of course there's a chance. There's always a chance. That's how probabilities work. There's always a finite probability for every outcome. It's just that some probabilities ..." He wrestled his prattling to a halt.

"I get you, Buzzard," said Stanton. "The probability of this plug of mat blundering back into the hole is infinitesimal, right?"

"Right."

"So that's that," said Stanton. "It looks as if this war is over, or at least getting there. What now, I wonder?"

When Maria swung back in sight of it, she confirmed that the separation was complete. "They're getting further apart rapidly now. I guess the small piece is more susceptible to currents than the whole mat is."

Stanton had nothing to say about that. He looked at Elgin, who shrugged his shoulders, and they both looked at Fran. In fact, everyone was looking at Fran. When she noticed, she laughed. "Okay," she said. "My best guess would just be a guess. Either Plub cut them off to get rid of them, or they did it themselves to escape. Right now, we don't

have anything to help us decide either way.” She looked at them all.
“We’ll just have to wait until Plub calls, and then we can ask him.”

STRANDED

“We killed thousands!” Plub was jubilant. “Thousands!” His avatar was grinning. “The battlefield was littered with the writhing limbs of our enemies.”

Fran forced herself to not look away. “Congratulations, Plub,” she said.

“What’s wrong?” asked Plub. “Why aren’t you happy? We won!” He spread his arms triumphantly, the severed one nearly completely regrown.

“I am happy for you, Plub” she said. “I’m happy it’s over. I’m glad you won.”

“Oh,” he said when he got it, the pause a little longer than the radio delay of several seconds. “This is about the violence, isn’t it? The ‘unnecessary’ violence.”

“I’m afraid so,” she said. “It seemed like so many people were dying when they didn’t have to.”

Plub’s excitement was draining away. He said, “I told you, Fannie. You and Ellie. That’s how we are. That’s what we do.”

“I know, Plub. I know that in my mind. But emotionally I keep hoping it’s not inevitable.”

Plub stared silently for a moment, then said. “Your feelings are separate from your thoughts?”

“Not entirely,” she said. “We are able to separate them, but it’s rare that our thoughts aren’t affected by our emotions.”

“Then why ... Oh, I see. They’re just different enough that you can

separate them.” Another silence. “We can’t. They’re different enough that we can tell them apart, but we can never think without emotions.”

It was Fran’s turn to be quiet. In time she said, “That makes sense, now that you mention it.”

“Yes, it does,” he said. “That’s why it was so hard to do what we did.”

“What you did?”

“Ending the war the way we did.”

“Ah,” said Fran. “So you did cut them off to end the siege. We weren’t sure if you did it, or they did.”

“It was us. We wanted to keep fighting. We wanted the Great Cutting to go on forever, because it feels so good. But I decided to end it.”

“You did?” Hope flickered in Fran’s stomach.

“Yes,” he said. “And it was hard. It was against all my instincts. And the only reason I could convince my people to do it that way was their unquestioned devotion to an Exalted one.”

Fran looked at Plub wondering. “But why? Why did you go against your instincts?”

It was hard to reconcile his avatar’s bashful expression with his feral appearance when he said, “I was inspired by you. By you sophisticated space people. I wanted to show that we’re not completely primitive.”

“So you banished them instead of killing them,” said Fran. “Now I really do congratulate you.”

“Thank you,” he said, looking proud.

“This has never been done before?”

“No. At least, there’s no record of it. As far as is known, Great Cuttings always end in a complete breakdown.”

“You’ve made history, Plub. This time you’ll be able to rebuild without having to start from the ground up.”

“Yes, we can rebuild,” said Plub, “and you can help us.” His avatar looked hopeful.

“Of course,” said Fran. “Of course we can help you. We will help you in whatever way we can.”

“We’ll rebuild here, then as soon as we’re ready, you can help us get back into space.”

“Certainly,” said Fran. “We’ll help you get back to normal as quickly as possible.”

“With your technology, and with what you know, we can go to space for real,” said Plub. “Not just into orbit or out to the laser station, but to the stars like you.”

Fran was ready for that. They’d discussed it. They guessed that it was inevitable that the Makers would eventually ask them to share their knowledge and technology, so they prepared a position. She told Plub that the comet people would help them rebuild their society, and help them get back to the level they were at before the Great Cutting. They would help them regain whatever knowledge had been lost, so they could get back to normal. And when they were ready for it, the Makers would receive new knowledge and new technology that would help them take the next step. When they were ready, comet people would help them become true space people. That seemed to make Plub happy, so Fran changed the subject. “We’re curious, Plub. We’re wondering what’s going to happen to the people that you cut off. Are they going to be okay on that little piece of mat?”

Plub’s avatar grinned again. “That depends,” he said, “on them. There’s enough mat there for that many people to survive.”

“So they should be all right?”

“Yes, depending on what they do. If they work together they’ll have

enough resources for everyone.” Plub’s avatar displayed a nasty leer. “But if they don’t work together, then there will be trouble.”

“And you don’t think they will cooperate, do you?”

Still leering, Plub said, “That will be up to them.”

Fran said, “If they can’t do it there, then they’re certainly not ready for extended space travel.”

“No,” said Plub. “They’re not civilized enough. That’s why I cut them off. I didn’t want them spoiling it for the rest of us, making us look bad.”

“Yes,” said Fran. “That will be a factor in deciding when you’re ready. If you can show that you can get along.”

“Like I did, right? I showed it by stopping the Great Cutting, didn’t I? I showed that we can get along. That must show you that we’re ready. That I’m ready.”

Fran was prepared for that, too. “It’s a good sign,” she said. “It’s encouraging that you can show such foresight and restraint, especially in your condition.”

“My condition?”

“Yes. In your feral state. I’ve seen you act rashly and apparently without much thought since you made the change, so this is good to see.” She made a gentle patting motion. “But let’s take it one step at a time.”

“I don’t want to take one step at a time. I want to do it now.”

“I know you do,” she said, “but let’s take care of the rest of it first. Let’s get your society back on its feet. Then, when you’ve changed back to normal, we can think about the next step.”

Plub began to get agitated. “I don’t want to get back to normal. Soft and weak. I want to go to space, to the stars, now, while I’m strong.”

“I’m afraid that’s not possible, Plub.”

“What do you mean it’s not possible?”

“I mean we can’t do that.”

“You can’t? Or you won’t?” Plub looked as if he was swelling up.

“All right,” said Fran. “Since you put me on the spot, we won’t.”

Plub snapped, “Why not?” his voice rich with a deep growl.

“We will help you take that step when we think you’re ready, and not before.”

“But I’m ready now!” Plub shouted.

“No, you’re not,” said Fran.

Plub pulled himself up in a righteous outrage. “Who are you to decide that? I’ve shown that I’m ready by stopping the killing. I stopped a Great Cutting. No one has ever done that before, so who are you to say I’m not ready?”

“I’m sorry, Plub, but even if you’re ready, what about everybody else? Can you really say that you’re ready as a people?”

“Sorry? You’re sorry? What right have you got to be sorry for me?” Plub looked almost twice his size now. “I won the war. I ended the Great Cutting.” He spread his arms in a grand sweep. “I rule the world!” He glared at her. “You’re the one who’s going to be sorry.”

Before he could cut the connection, she said, “Don’t do anything rash, Plub. We can still talk about this.”

“Talk! All you do is talk. I’m going to act. I will take your technology if you won’t give it to me, and I will go to space whether you want me to or not.”

He killed the connection before she could stop him this time, and it was over. Fran was left replaying the conversation in her mind, wondering what she could have done differently. Whether she could have done something that wouldn’t have ended in blatant threats.

“You had no choice,” said Winston.

“That’s right,” said Minder. “You had to tell him. We agreed that you had to tell them clearly that we wouldn’t give them access to technology before they were ready for it.”

“I know,” said Fran, “but it’s different once you do it, and you realize that you might have just stranded yourself here.”

“We all knew it might happen,” said Elgin, “and we were all prepared to accept the consequences.”

“That’s right,” said Stanton, and everyone else agreed. “We went into this with our eyes open. From the very beginning, before we even started out, we all knew we might not be coming back.” He put his hand on her shoulder. “You did the right thing and we all support you completely.”

“I know,” said Fran. “I know all that. But I can’t help but feel that it might have turned out differently if I had handled it better.” She looked around the Square, wondering if she would ever get back there, to breathe its air and smell its smells.

“Of course you do,” said Elgin, putting his arm around her waist. “That’s what you do. And if it had ended better, and Plub hadn’t ended up threatening us, you still would have been thinking about how you might have done it even better.”

They all agreed emphatically, and when she looked at them they were grinning at her. She laughed. “I do, don’t I?”

They nodded and Elgin said, “Uh-huh, and that’s one of the things we love about you.”

She looked at him, grateful and a little abashed. “I’m fussing unnecessarily, aren’t I?”

“Fussing, yes,” said Elgin. “Unnecessarily, no.”

Nodding all around, then Winston said, “It’s not really as bad as all that anyway, is it? Even without their help you can still reactivate the laser array and get out of there.”

“That’s true,” she said.

Stanton said, “The problem with that is that they can come out here and turn it off again.”

“But they can’t turn off the other ones,” said Winston, “so you can still get home. The only problem is, depending on when they turned that one off, the first leg might be a long one.”

“You’re right,” she said. “It’s not an impossible situation. I would just hate to leave here with bad feelings between us. I don’t like the idea of absconding and leaving them in a bad way.”

“They’re the ones causing the bad feelings,” said Minder. “You tried hard to make it work. You’ve done everything you could. They’re just not ready.”

She nodded, saying, “The way this has worked out, I wonder if we’re ready.”

“You could wonder that about anyone, I bet,” said Elgin. “I think that we’re not perfect, but we’re ready enough. And the Makers are definitely not. I hate to imagine what might happen if they came to the comets and then something set them off.”

That was something that required no debate and no second guessing. They couldn’t allow these dangerous and unpredictable people to become a threat to the existence of the comet people. They couldn’t give them the opportunity to finish what their ancestors had begun millennia ago. If that meant being stuck here with them, perhaps never to get home again, then so be it. It was a price they were glad to pay.

54.

SAVAGE JOY

The metal and ceramic arm reached out and seized the piece of rubbish, a section of thorax, from the look of it. It was tied onto the daisy chain of body parts that Scarface was pulling behind him as he cleaned up the station. This was the last piece of Maker in the habitat, so he headed for the cargo bay. That was the only place that had an airlock big enough to handle all this material in one cycle.

He pulled his grisly burden out into space, and jetted away on the vector in his orders. Orders that came to him in the same way as ever, and that he didn't question any more than he ever had. When he reached the prescribed speed, he released his load and turned back to the station without a backward glance. He had no curiosity about the purpose of this chore, or about the fate of the remains of the erstwhile Makers. He didn't know the significance of the gas giant, Air, in Maker mythology, and it would have meant nothing to him to learn that it would be the final destination of this string of mortal remains. For Scarface the rubbish was out, and now he had to get back to tidying up.

There was a lot to do. The first order of business was to begin training in the operation of the station. It wasn't much like his duties on the Prime, but not that different either. His trainer would control his body, showing him what to do, then he would add the task to his routine. Slowly he built up the collection of skills he would need to maintain the laser station single-handed. He would have to work alone because all the Makers who remained alive after Plub's rampage would

have gone with him on his mission. Scarface wasn't lonely and he didn't resent being left alone with all the work.

Once his essential duties were under control, he began a thorough cleaning. Soon the entire station gleamed, with not a trace of carnage left behind, and all systems were functioning at peak efficiency. Now, except when his handler checked in with new orders, Scarface spent his days in maintenance mode. It would have been blissful, had he been capable of feeling bliss.

Today though, he was being taken to the communications module. He knew he didn't have any duties there. There was no equipment that needed tending, and it was days before the next scheduled cleaning and inspection. None of that mattered to Scarface, though. He went where he was taken and, for now, forgot about his normal routine.

On the console he could see some activity. In addition to the normal lights indicating equipment functioning in standby mode, there was a pair of lights showing radio transmissions being sent and received. There was no one here using the radio, which must mean that two other parties were communicating through this station. On the monitor Scarface could see one of them. It was one of the eight-limbed creatures. The ones that were constructed on the same pattern he was. He could recognize the sounds it was making, which matched the movements of the image on the monitor. The other sounds, made in reply, were coming from one of the four-limbed creatures, the ones who were presently controlling him. But they were just sounds. There was no accompanying image.

Soon the conversation stopped, and not long after that the airlock indicator lit up. It went through its cycle and Scarface could hear and feel that someone had entered the station. That person was coming this way. He could tell by subtle currents in the air, and by the increasing

volume of their speech noises. They were saying, though he didn't understand it, "Where are you?" The voice was rich with growls and hisses and expressive flutterings. "I'm here," it said. "Where is my Fannie?"

"I'm in here," called Scarface, but it wasn't his voice. He didn't have a voice of his own, since it wasn't required in his original occupation.

Plub swept into the communications room accompanied by two other Makers. He looked around, his eyes brushing right over Scarface. "Where?" he said. "Where are you?"

"Here," said the robot. "I'm right here, Plub."

He located the sound and stared at Scarface in disbelief. "Fannie?" he said. "But you said ... I came all the way out here because you said you wanted to meet in person."

"I know, Plub," said Fran through her mechanical avatar. "And I still do. This is just a first step in that direction."

Plub was momentarily speechless. He couldn't believe he'd been tricked. That she had tricked him. While his attendants waited impassively, he struggled to find his voice. When he found it all he could say was, "You tricked me."

She said, "I know Plub, and I'm sorry. I hope you can believe me when I say that I really do look forward to coming together in person." Her words were coming from Scarface, but there was no other activity there. The limbs didn't move to indicate expression. There was no fluttering at the sides of the face, nor undulations in the dome above the eyes. Nigel did manage to keep the eyes on Plub, so there was at least that nominal contact. It gave him something to focus on while they talked.

“I thought that you meant to meet in person this time,” he said. “How can I believe you now?”

“I apologize for deceiving you,” said Fran. “It’s just that I really wanted you to come back out here. There is so much we need to talk about, but I was too afraid to meet in person yet.”

“Afraid?” Plub seemed genuinely wounded. “You don’t have to be afraid of me.”

“I know you feel that now, but you could change any time.” Her voice was calm, reasonable, placating. “I could say one little thing and you’d go off. You could kill me in a few seconds.” She finished firmly. “As long as you’re like this, I can’t trust you.”

“Trust? You lied to me, and now you want to talk about trust?” Plub was starting to puff up again. His indignation was making him look bigger and more dangerous. “How can I ever trust you again?”

“I think you’ll learn,” said Fran. “Once you change back to normal, and you’re not so volatile, you’ll understand why I had to do this.”

“Normal? Weak, you mean. You want me to be weak because I frighten you when I’m strong. You’re just afraid.”

“That’s what I’ve been trying to tell you, Plub. You scare me when you’re like this. You’re violent and unpredictable. That’s why I can’t be in the same room with you.”

Plub hesitated. When you insulted the enemy, called them a coward, they weren’t supposed to agree. They were supposed to insult you back, and then you could follow the natural path of escalating epithets and eventual fighting. But this alien female wasn’t doing that. She was admitting that she was afraid. Was this another trick? Was she trying to make a fool of him again? He glared at the robot, standing there so innocently. Was it mocking him? “Maybe I should give you something to be afraid of,” he said. “Maybe I should come over there

with my ships and we can have our talk there.” He adopted a threatening posture, his hand on the hilt of his machete, in its ceremonial scabbard. His guards emulated him, half drawing their own machetes.

Fran sighed. “Oh, Plub,” she said. “That won’t solve anything. Remember what the Prime did when Blublub tried that.”

He did remember. Blublub was blinded by greed and ambition and he didn’t pay attention to the warnings. In the end it cost him his life when his own people turned on him. But if that was supposed to scare Plub off, it didn’t work. He wasn’t like Blublub, and his followers weren’t like Blublub’s people. Plub was exalted and his followers would never betray him. He pulled his machete out and approached Scarface, who didn’t move. “The Prime would never do that to me,” he said. “I am Plub, Master of the Prime.”

Fran sighed again. “Okay, Plub,” she said, “we’ll try again later.” The last thing she saw as she cut the connection was an enraged Exalted Maker raising his machete.

~

“I hope he didn’t hurt Scarface,” said Fran to no one in particular.

Nigel said, “I’m still getting readings from him. His accelerometers did register a pretty hard shock just after you hung up, but he still seems to be functioning normally.”

“That’s good,” she said. “I feel guilty sending him in there to face that.”

The Doctor quirked an eyebrow at her. “You know what they say about people who attribute feelings to machines.”

“I know,” she said, laughing. “But he’s cute, and he works so hard and never complains.”

“I know what you mean,” said Galatea, surprising everyone. “What?” she said. “You don’t think I appreciate a good worker?”

Stanton said, “You’ve never given much indication with live ones.”

While everyone laughed, Galatea said, “None of them has ever measured up. If it’s not smudges and smears on the work, then they’re showing up late. Or,” she added indignantly, “they need a day off to go to a wedding.”

“That happened once,” said Stanton, “and it was their own wedding.” Everyone knew this story, but they laughed anyway.

“I don’t care,” she said. “That would never happen with Scarface, would it?”

“I don’t suppose it would,” said Stanton, thinking. Then he said, “You’re not finished fixing the damage on the balls yet, are you? Would you like to try out one of the Prime’s other robots there? See how it goes?”

She looked at him, pure delight on her face. “Yes!” she said. “Yes, I would.”

~

When Plub next talked to them, Galatea was out on the front of the Ball with her new worker, as pleased as could be. The worker, which didn’t have a name because she didn’t believe in naming machines, was more than satisfactory. It learned quickly, worked diligently and never complained. They had to modify its feet because magnets don’t work on ice. With setae, it could move and hang on with its four feet, leaving its four hands free. It was working out well and Galatea was pleased. They could hear her humming out there alongside her new favorite worker.

She refused to come in as the armada approached. “They won’t

shoot,” she said. “They wouldn’t dare. They know what will happen if they do.”

“You don’t know that, Gay,” said Stanton. “They’re Makers led by an Exalted one, and he thinks he’s the Master of the Prime.”

“I don’t care,” she said. “Even he couldn’t be that crazy.”

“Yes he could!” he said. Then he threw up his hands. “That’s it. I’m coming out there.”

“You won’t change my mind,” she said, humming contentedly.

“I wouldn’t think of it,” he said. “I’m going to give you a hand. If you’re going to get yourself killed, then I might as well keep you company.”

~

The armada pulled up a few hundred meters away, about where they were last time. It was faced by two scouts and two modules. The Prime’s vessels were outnumbered by Plub’s ships, but they were bigger, faster, more maneuverable and better armed. Anyone who remembered what happened last time knew that it could be over in seconds, with the armada destroyed, should the Prime’s guardians so choose. The only question was how much damage Plub could do before his fleet was destroyed.

Once everything was in place, Fran’s monitor indicated that there was an incoming call. She took a deep breath and let it out slowly, her face setting into very businesslike lines. When she opened the connection she saw Plub, and standing next to him, Scarface. The first thing she noticed was Scarface’s new injury. He had a vee-shaped dent near the top of his dome. He didn’t seem to notice it, and Nigel said he was functioning normally. Oddly, it seemed to give him more character.

There was something different about Plub, too. It was more subtle than Scarface's new dent, but once you noticed it, you couldn't ignore it. The ocher color on his back was a little lighter, and his markings were less vivid. His appearance was less striking and he appeared smaller and less dangerous. Could it be that the Exalted one was changing back to normal?

Fran caught herself before she could say anything. She intuitively realized that this might be traumatic for Plub. Hadn't he said several times that he hated his normal existence? She fell back on formality, planning to feel her way through. "Greetings, Plub," she said. "To what do we owe the pleasure of this call?"

"Greetings Fannie, and all comet people," said Plub. His avatar looked self-conscious and nervous. "We come on a mission of peace and friendship." They could see how hard it was for him to say that. "To begin what I hope will be a long and prosperous relationship."

Those were just the sorts of things your enemy might say when they were setting you up for betrayal, and Fran knew that. On the other hand, Plub was nervous and awkward and uncomfortable, not sneaky and sly. But maybe he was nervous because he was being sneaky. She decided to play along while she learned more. "Greetings Plub and all Maker people," she said. "We welcome you in the same spirit."

Plub relaxed a little then. Was it because he was being sincere, or because the subterfuge was working? What he said next decided it for Fran. He said, "I wanted to start over again." He pointed at Scarface. "I knew it as soon as I hit the robot. At least, I began to know it."

Fran relaxed too. He did want to start over. Somehow she could just tell. Whether it was the avatar, or maybe she was learning how to read him better, she knew he was being sincere. She said, "Tell me about it, Plub."

So he began his story. It was not very well told, since Makers weren't used to storytelling. Their normal way of speaking was much more plain and terse. But he persisted, and she admired him for that. He told them how the savage joy of chopping Scarface was immediately mixed up with an unfamiliar feeling of regret. He didn't understand it, but he stopped his guards from emulating his attack and saved Scarface from any further injury. Then came a time of alternating rage and ... was it shame? Some kind of self-reproach anyway. One moment he would be swollen with indignation, and the next with deep embarrassment. He would be justifying his anger at the comet people, then he would be remembering all the good things they'd done.

"You were always fair to me," he said. "Ellie helped me escape when I was going to be executed." He turned and looked at Scarface. "Even the robot helped." He turned back to Fran. "But especially you, Fannie. You were always kind and generous, even when I treated you badly." He stopped, exhausted from the unaccustomed effort.

"Of course I was, because you deserved it. As far as I was concerned, I was still talking to the Plub that I've known for over a year." She tilted her head and smiled at him. "I knew that you were swept up in your biological imperative, so I just waited and hoped for the best."

"I can see now that that must have been hard for you," said Plub. "I couldn't see it then. Even now it sometimes slips away as my feral nature rises." He did a shoulderless Maker shrug. "It's a good thing you're not like us, or you'd have destroyed us as worthless primitives long ago." He curled slightly forward, looking down at the floor. "We don't deserve your attention, much less your mercy." His avatar showed the effort required to make that admission, fighting the proud vanity still ascendant in his Exalted body.

Fran noticed and her admiration for him increased. If he could do

that under these circumstances, then maybe there was hope for these people after all. “You should know us by now, Plub. We abhor unnecessary violence, remember? We were certainly ready to defend ourselves if necessary, but there was never any question of arbitrarily destroying you.” When he continued to look down, fighting his raging emotions, she added, “We came all this way hoping to find the people who sent the Visitor, and we found you. We would never waste anything so precious.”

55.

A PRETTY PUZZLE

Buzzard said, "It was long, but not too long." He looked at Maria and they grinned. "Not long enough, though," he said. Everyone on both sides of the window was grinning. Even Galatea.

She said, "It's about time you came back. We haven't had a decent game of flashball in over a year."

He laughed a Buzzard laugh, loose and easy. "We'll fix that," he said. "I'm ready to play. Ready."

"What was the longest part?" asked Stanton. "Was it getting there? That was pretty long."

Maria looked at Buzzard and he lifted his chin at her, so she picked it up. "No," she said. "Sure, it was long, but everything was new. Just flying those things was enough to keep us interested for the first while." From the look on her face they could tell that she was reliving it. "Then there was the star. We swung so close to it that we could see its photosphere writhing in the magnetic fields."

"We saw the pictures," said Fran, "but that's nothing like being there."

"No," said Maria. "After that came another fairly long leg as we went back out to the planet. To Air. But that was fine too, because we were getting closer to the Maker world all the time."

"So you were learning new things every day," said Fran.

"Almost," said Maria. "After we got there we had all those braking maneuvers to get us into the right orbit." She and Buzzard grinned at the memory. "That was just fun," she said, while he laughed. Then her

face got serious. “That’s when it looked like we were going to be late. After all that, late by a day or two.”

“When they launched their armada,” said Fran.

“Yes. But that turned out okay after all. Then came the longest part. After we set up in orbit around their moon, and after the surveys and all that, then came the waiting.”

“While they had their wars and whatnot.”

“That’s right,” said Maria. “We knew it was important and everything, but it just went on and on. The Makers kept fighting and fighting, long after there was any point to it.”

“If there ever was.”

“Exactly. So, that’s why that was the longest part.” She and Fran nodded.

“Well,” said Stanton, “it worked out pretty much the way we planned it. It was a good job well done, you guys.”

As everyone on both sides of the window joined in, Buzzard and Maria accepted their praise, holding hands.

The Doctor said, “That was a good strategy, wasn’t it?”

“Tactic,” said Nigel. “I think that’s a tactic.”

“What’s the difference?” said the Doctor.

“The strategy was the whole big plan,” said Nigel, “and that tactic was part of it. They’re similar, but different. At least, that’s the way I understand it.”

“I guess I see,” said the Doctor.

“Yes,” said Nigel. “The strategy is the big, elaborate overall plan. The tactic is one part of the strategy.” He looked around at all the others for confirmation, and got a lot of shrugs and upturned palms.

The Doctor said, “Where do you learn this stuff, anyway?”

“I don’t know,” said Nigel, shrugging, palms up.

Minder said, “So, when are you guys coming home?”

Elgin leaned forward and looked down the length of the Square to the yellow end, where he could see the apartment. He looked at Fran, then back at Minder. He said, “Do we even have a home there any more? Is our place still a museum?”

Minder glanced down the Square, then at Winston. They both looked down at the floor, embarrassed. Minder said, “Yes. And the Francesians hold weekly services there, too.” He had trouble looking them in the eye.

Elgin snorted, and Stanton backed him up, but Fran said, “It’s just an apartment. We can always get another one. The important thing is the people. Our friends. That’s where our home is, right?”

“That’s right,” said Minder, with Winston croaking his agreement. “You’ll always have a home here Elgin, no matter what.”

Elgin was almost mollified. He nodded at Minder, and at Fran. He looked at Stanton, who was still frowning. He said, “It’s not that bad, Stanton. As Fran says, it’s just an apartment.”

“But it’s your apartment,” said Stanton. “And those ... arrogant ...”

Fran put her hand on his arm. “It’s not worth getting angry over. It’s done with. Let’s talk about something else.”

“Right,” said Minder. “So, when are you coming home?”

Fran laughed. “I think it will be a while yet,” she said. “We promised Plub that we’d help them get back on their feet, and that might take time.”

“There’s hope for them though, right?” said Minder. “Plub said they had almost a hundred years of peace before the Acquisitors, so they should be able to do it again.”

“Well,” said Fran, “it turns out their period of peace and prosperity wasn’t that peaceful after all. Their idea of what comprises peace is a little different from ours.”

“How so?”

“From what we’ve been able to gather, it boils down to the lack of a Great Cutting. Other than that, there’s still plenty of violence. Murders. Skirmishes. Small wars. Quite apart from the females eating the males and the males eating their young.”

Minder shook his head. “And I thought running this place was complicated,” he said. That got a good laugh. “Given all that, how are you going to know when it’s time to leave?”

“We’ve decided to play that by ear,” she said. “Either events will let us know, or we’re thinking we might stay as long as Plub lives.”

“Okay,” said Minder. “How long do you think that might be?”

“That’s just it,” she said. “We don’t know. It seems it’s so rare for Makers to die of natural causes that we can’t really calculate their natural lifespan.”

“So it could be ten years, or a hundred.”

“Or more. They could live for a thousand years, for all we know.” She looked at Stanton. “We’re going to have to work out a hibernation schedule. One that can run indefinitely.”

Buzzard said, “No problem. I can work that up.” He looked at Archie. “I think we should combine the populations of the balls. If we still keep just thirty-five active, we can get a lot more sleep time.”

“That’ll work,” said Archie. “Meanwhile, I’ll start working out some actuarial tables for the Makers. There have to be some of them who’ve died naturally.”

“Well,” said Buzzard, “not necessarily.”

“Okay,” said Archie, “then I’ll find the ones who got the oldest before they got killed. That will at least put some constraints on it.”

“Good idea,” said Buzzard, and they huddled together, preparing for their math excursions.

“Well, that’s taken care of,” said Minder, smiling. “There is one big thing though, that hasn’t been.” He looked over their shoulders, through the shell of the Ball. He couldn’t see it from his angle, but it loomed even so.

“The Prime,” said Fran. “You’re right. What do we do with the Prime when we leave?”

“We take it with us,” said Stanton. “By rights, it belongs to us. It’s full of stuff stolen from our system. From our planet.”

“Yeah!” said Galatea, taking his arm. “It’s our stuff.”

That seemed reasonable to everyone, but Winston cleared his throat and said, “Not entirely.” When they looked at him he said, “The Visitor was built by the Makers, so the Prime could be considered theirs.”

“The Visitor would have been tiny when they sent it,” said Stanton. “It only got big on stolen resources.”

“True,” said Winston, “and that’s another thing. Most of those resources came from systems the Visitor, uh, visited before ours. If we take the Prime back, would we stop and drop them off along the way?”

Stanton had no answer, and Fran said, “Winston’s right. Even if the Makers have no right to the resources, we’d be stealing them from those other systems if we took them home.”

They were all quiet while they thought about that. It promised to be a pretty puzzle.

Book III
THE FRANCESIANS

For Sanura

1.

ELGIN WAKES UP

Elgin saw the gray light, and he knew they must be waking him up. It was hard, in this plain white place, to measure time. Especially alone. And that was the point, he thought. To be forced to spend time alone in hibernation. To contemplate life without her. Without Frances. To wonder what was happening to her while he wasn't there to defend her.

Not knowing how long he was down here was more than an inconvenience. It was frustrating to the point of pain. Not knowing magnified his pain like a lens on sunlight. He was anxious to get up there, to see her and find out how she was. But he was also afraid. What had they done to her while he was gone? Was she still in that ghastly prison? Was she even alive? If he'd had a physical body, his jaw would have been bulging as he ground his teeth.

Her jailers were deluded. That was obvious to anyone who wasn't a believer. But it didn't help. If anything, it made them more dangerous. While Elgin could almost see how they would make Frances a saint in their theology, he knew they were fools and liars when they made him one, too. It wasn't long before he made them regret that mistake, and they'd been regretting it ever since. He even told them that they should have waited until their saints were dead, so they couldn't contradict them. Now he was worried that they might decide to rectify that error.

For the thousandth time he wondered if they could have done it differently.

2.

COMING HOME

“Now let’s look at the eyes.” The Doctor was at the window giving an anatomy lesson on the Makers. Counting the people on the Ball, Tainui, the comets and the lighthouses, he had a sizable audience. Everyone was still interested in the Makers, the people who sent the Visitor. Now the Ball and Tainui were on their way back from visiting their home world, and the Doctor was making his report on the trip. He’d just been explaining their twenty-five brains, and now he was on to their compound eyes.

“They appear to have had eight eyes in the past,” he said. “From their current state of integration — you can still see the seams between the pupils and the retinas — and from what we’ve been able to learn about their genetics, I estimate that the final fusion took place between two and three million years ago.” He took a deep breath and had a sip of water, looking a little sheepish. He knew he was running on, but it was so fascinating.

He put a drawing on the window. “As you can see,” he said, “the optic nerves connect directly to the three brains in each arm, as well as to the main brain behind the eyes. My hypothesis ...” He stopped, self-conscious, and ran his hand back over his bald head. He looked at his friends, gathered for support, and Fran nodded her encouragement. Emboldened, he went on. It was his hypothesis after all. “My hypothesis is that there used to be one eye associated with each limb, before they migrated to this bifocal arrangement.” He stopped and looked directly at the window, taking in his whole audience. “This

adds yet another level to the punishment in their cuttings. When they amputate a limb, not only do they lose the use of it, they also lose the intelligence in its brains, and they are partially blinded.” He paused again, letting that sink in, while he had another sip of water.

Again he marveled at the amount of anatomy he’d been able to do without making one cut himself. Shortly after they arrived, after their initial introduction to the Makers, complete with subterfuge and aggression, they were witness to a Great Cutting. It turned out this was a regular thing with the Makers. They would act in a civilized way for a while, and then something would set them off and they’d have a cataclysmic war. A Great Cutting. It was at the beginning of this one that their friend Plub hacked up most of his fellow Makers on a space station. He did such a thorough job that the Doctor had everything he needed for an exhaustive anatomical study. He shook his head, marveling.

“Okay,” he said, wrapping up. “That’s enough for today. Tomorrow we’ll look at the lung and the sonar apparatus.”

~

The Makers weren’t as scary as they might have been. The people who sent the Visitor, the insane von Neumann machine that destroyed the comet people’s world, could have been diabolically evil. Instead they were just crude, primitive and violently unstable. There was more to fear from their greed and vanity than from any malicious plotting.

When Elgin and Frances and their friends hitched a ride with the Prime, the Visitor’s hundred kilometer long cargo ship, they didn’t know what they’d find. The Prime, bereft of leadership after the Visitor was destroyed, looked as if it might be heading back to its makers. Naturally the comet people tagged along. They wouldn’t miss

such an opportunity to learn and understand. When they met the Makers it was both a disappointment and a relief.

Now they were headed back home. On the way they were taking little side trips, swinging through the two star systems between the Maker world and their own. It was somewhere in there that the Visitor had changed from a tiny craft of exploration to a murderous behemoth. Maybe they could find some clues. At least they could learn something about those two systems. Had there been life there? Possibly intelligent life. Checking seemed the least they could do, since they were passing anyway.

While the Prime cut the corner, arcing onto its new trajectory without entering the system, the Ball plunged into it. They took a ballistic path, swinging around on the star's gravity, and rejoining the Prime and Tainui on the other side. As always it was challenging, possibly dangerous, and as natural as breathing for these intrepid comet dwellers.

The first star was a red dwarf, like the Makers' star. It had a few small gas giants orbiting it really close in, and those planets had some moons. They found no liquid water, no oxygen atmospheres and no signs of life. Nor was there any indication that there ever had been life there. They took comfort in the knowledge that, here at least, the Visitor hadn't killed anything.

Things were different at the second star. It was an orange dwarf, and it had a more varied collection of planets. On more distant orbits were three medium-sized gas giants. Inside those, on orbits closer to the star, were three rocky worlds. Two of these were at a distance from the star where liquid water could exist on their surfaces, and it did. There were also several moons orbiting the gas giants that had liquid water under their frozen surfaces. This star offered prime habitat for

life, and they did detect signs of it. It was weak and patchy, obviously trying to recover from a system-wide catastrophe.

Something must have happened here, they thought. This must be where the Visitor's programming had its glitch, and the little spacecraft went insane. If not here, then somewhere between the last star and here. They hadn't seen any signs of destruction at the red dwarf, and here it was plain as day.

"Maybe it's something to do with life," said Fran.

"What do you mean?" asked Stanton. "What difference would that make to a machine?" He was her oldest friend, but the engineer in him made him pragmatic and sceptical.

"I'm not sure," she said, "but the Makers are ambitious and suspicious. Maybe that somehow got into the Visitor." She shrugged. "Maybe the presence of life somehow threatened its mission."

Stanton shook his head at her. "That's quite a leap," he said. "Unless you think there was an advanced species here that tried to destroy it?"

She shrugged again. "I don't know," she said. "Maybe. Remember how violently it reacted to radio transmissions when it got to our system? Maybe it first encountered them here."

Stanton shook his head again, but Elgin was nodding his. When they looked at him he said, "I don't know, but it sounds right." His sense of right, the most prominent of his synesthetic traits, was sure. It all lined up. "Something happened and it triggered its instinct for self-preservation." He grimaced and shook his head. "No, that's not it."

"If not self-preservation," said Fran, "then maybe the safety of its mission?"

"Yes!" he said. "The importance of its mission. They must have emphasized that in its programming, and that's its point of failure."

Elgin and Fran both looked at Stanton. His shoulders rose and he turned his palms up. "It's possible," he said, "but I still think it's quite a leap."

"I agree," said Fran, "but it makes sense. Remember, by this time the Makers have had their Great Cutting and their civilization has collapsed. The Visitor has been cut off from its masters and left to rely completely on its programming." She nodded as the story came together. "So it visits that first system and does what it's supposed to do. It explores. It finds resources. It builds itself up."

"That's right," said Elgin. "And that meant it needed more processing power. Plenty of opportunity there to build in errors."

Stanton nodded, not very enthusiastically. "I suppose," he said. "We could use it as a working hypothesis, anyway."

"That's enough," said Fran. "We might never know for sure. A good guess might be the best we can do." She chuckled. "We went right to the source, and even they couldn't give us the answer."

Elgin laughed. "That was funny, wasn't it? We followed the Prime all that way because we thought it might be taking its cargo home, and they didn't even remember sending it."

Stanton snorted. "What a waste."

"No!" said Fran. "Don't say that. It wasn't a waste." She looked at Elgin, who gave her a firm nod. She said, "We found out where the Visitor came from. And we had a grand adventure." She grinned at the memory. "And we discovered life. Intelligent life at that."

Stanton snorted again. "I wouldn't go that far," he said. "Calling the Makers intelligent might be overstating your case."

She gave him a little shove. "Oh, come on, Stanton," she said. "They're not that bad."

“No? Killing each other all over the place? Threatening us? I don’t call that very intelligent.”

“Okay,” she said, “maybe they were a little violent.” Another snort. “But they had the technology to get into space. And we were able to communicate with them. I’d call that intelligent, wouldn’t you?”

He smiled at her. “That depends on your definition of intelligent, doesn’t it?”

“You’re right,” she said. “I guess we could say they’re technically intelligent, but maybe not as intelligent as they could be.”

Now Stanton laughed. “You are generous to a fault, Fran.” He nodded. “Okay. I admit they meet the criteria for intelligent life. Language. Technology. Meta-consciousness. And so on. Unfortunately, it just makes them intelligent enough to be dangerous.”

Now it was Fran’s turn to nod. She said, “And I’ll admit that they might not be intelligent enough. Their social skills certainly leave something to be desired.” They all laughed, remembering. “But in spite of all that, I still have hope for them. Plub showed me that.”

They were quiet for a moment, thinking about their departed friend, the humble negotiator who was their first contact with the Makers. He changed to become an Exalted one and killed most of the Makers on the space station, then went on to lead millions to their deaths in a Great Cutting. He continued to be their prime liaison with the Makers for the rest of their stay there.

3.

THIS WAS PLUB

After Plub ended the Great Cutting he became a legend. No one had ever done that before, to the best of their knowledge. The normal trajectory of a Great Cutting ended with the collapse of Maker civilization and a similar collapse in their population. Usually they were able to recover in decades, centuries at the most, but occasionally it took them millennia to come back. It depended on how many survived to rebuild, and on how much knowledge they retained. Plub's cutting was unique. By ending it before it ran its course, he saved countless lives and precious knowledge. That, and the presence of the comet people, meant that their largely intact civilization could rebuild quickly.

This unusual situation, with most of them still there afterward, and much of their infrastructure still functioning, meant that their collective memory carried on without a gap. Everyone remembered what Plub did and he became a living legend. He was a hero. As the saying went: he never had to pay for another fish for the rest of his life.

Riding a groundswell of sentiment, Plub became the people's politician. He had plenipotentiary power and extraterritorial influence. He used his power and influence to cajole people and remind them that they could only achieve their dream of going to the stars if they overcame their primitive and violent nature. With the help of the comet people, he inspired his people to repair their world and regain their previous heights of accomplishment. Once again there was food and shelter and work for all who wanted it. And by not wasting resources on endless fighting, they were soon able to return to space.

That's how Plub's legend was born and how it grew to eclipse everyone who came before. Maker society was healthy and rich. All its people had at least the chance of making good lives for themselves. They had the opportunity and the freedom to pursue their own interests. To use their talents and see where their dreams might take them, including to the stars.

This all made for a large pool of wealth and power, and that was an irresistible temptation for those among them who were drawn to wealth and power. For some there is no point in the existence of such things if they can't accumulate as much of it for themselves as possible. Once the prize was available, the rebirth of the Acquisitors was inevitable. But as Elgin had told Plub when they were sharing a prison cell, they always came in a different form. Each time you overcame them and repaired the harm they did, they came back in another form suited to the new situation. In this case, they sought to become mandarins in the new civil order.

~

"It's just like you said, Ellie," said Plub. "They always come back."

Plub was getting old. You could see the senescence in his skin, and in how he moved. They'd been wondering about the normal lifespan of Makers. It was hard to calculate because the odds of a Maker avoiding death by violence were so low. But not so with Plub the legend. He was venerated and cherished. Even his enemies were hesitant to kill him, so he was left to live out his full life. The only confounding factor was his exaltedness. Had his time in that feral state taken a toll on his health? Would it shorten his life? Or would it have somehow enhanced his longevity? They had no way of testing that, much to the Doctor's disappointment. They were left with Plub's age when they met him —

about twenty-five years — plus the thirty years since. So their best estimate for Maker lifespan, with all kinds of caveats and margin for error, was fifty-five years plus however much longer Plub lived. They didn't think it would be long.

“No matter what we do,” said Plub, his growling, hissing, bubbling voice much weaker than it used to be, “they always find a way to come back.”

Elgin nodded. “It was the same for us, Plub,” he said. “I remember we talked about this.”

“Yes,” said Plub. “I remember it very much too. It is one of my biggest memories.” He looked down at his lower arm, fully regrown after his personal cutting. “I remember being in prison with you. How we talked. What you told me.” He looked up, his breathing holes flapping lightly in a Maker chuckle. “On that day I received wisdom from a star person.”

Elgin chuckled too. “You make it sound so grand,” he said.

“It was grand,” said Plub. “Maybe to you it was just telling stories to your primitive cellmate, but to me it was a revelation.”

Elgin didn't protest Plub's self-deprecation. It was true. Makers were primitive and everyone knew it. That self-knowledge was one of the things that gave hope for their future. He said, “Thank you, Plub. I'm flattered.”

“You're welcome,” said Plub. “You deserve it. If we've learned nothing else from you, that makes it all worth it. You told me that it doesn't matter if they keep coming back. It doesn't matter what happened last time. The only thing that matters is what we do this time.”

“That's right,” said Elgin. “So,” he said with a grin, “what are you going to do this time?”

Plub's breathing holes flapped softly again. "I won't be doing much," he said. "I think I'm past all that."

"Surely not," said Fran. "The people still love you."

Plub turned to her and reached out a hand to touch her arm. "Thank you, Fannie," he said. "You're always so kind."

"I'm not just being kind," she said. "It's still true. After all these years, they still love you."

He bowed a Maker bow, curling the upright part of his body forward. "I know they do," he said. "Almost too much, in fact. They tried to make me a saint, like you, remember?"

"I certainly do," she said. "That was a close thing."

"I still don't really understand what was wrong with it," said Plub, "but as I get older, I think I'm beginning to see."

"Trust me," she said. "It's far better if your saints are dead."

"I do," said Plub. "I do trust you. And soon enough I will be dead, and then they can do what they want."

"Not for many years I hope," said Fran.

"No," he said, not meeting her eyes. "Of course not. In the meantime, I'm just this nice old Maker that everybody is supposed to love. But nobody has to listen to me any more."

"You're exaggerating, Plub. I've seen your speeches. The people still listen to you."

"The people do, yes. But the people can't do anything. And the people who can do things don't listen to me." He hunched his upper arms in a Maker shrug. "The Acquisitors of this age, the mandarins, just ignore me and do whatever suits them best."

"But," said Elgin, "you've got safeguards in place, don't you? So they can't get too much power?"

Plub turned his upper body back and forth, emulating a shaken

head. “Yes, we do have safeguards, but so far they haven’t been necessary. So far, no cabal has lasted long enough to do any serious damage. But like you told me a long time ago, it never stays done. We’re going to have to constantly adapt to their sneaky ways.” Plub shrugged again. “Anyway,” he said, “that’s all in the past for me now.”

“No, Plub,” said Fran. “It can’t be. It’s too important to just give up. And you’re too important to your people to walk away from them.”

Plub chuckled again. “I’m less important all the time,” he said. “Now I’m just that funny old Maker. The oldest most people have ever seen. The people are nice to me. Polite. Because I’m a hero and a legend. But not someone to take seriously any more.”

Fran was wounded. “Don’t say that, Plub. You still have plenty to give.”

“No, Fannie,” he said gently. “That’s all for me.” He looked directly into her eyes, not bothered at all by their incessant giggling. “You know why I’ve come out here this one last time.”

She did. She couldn’t help it. It was her talent to see the meaning in things, and she knew almost as soon as Plub told them he was coming out that he was coming out to die. She stopped protesting and bowed her head. Elgin moved in and put his arm around her, and Plub took her hand in his. “I know,” she said. “I know, Plub.”

Plub said, “Of course you do. You’re Fannie, the wise star person.”

She laughed, with tears floating away from her eyes. “I don’t feel very wise right now,” she said. “I just feel sad.”

“Don’t be sad,” said Plub. “You should be happy for me. I’ve had a long life. Longer than anyone else I know. And it’s been a good life. I’ve seen and done things that no Maker has ever seen or done.”

“I know,” she said. “And I am happy for you. It’s myself I’m sad for.”

“Of course,” he said. “I know that.” Age and experience had brought him a sort of wisdom. Something that never happened to Makers in their normally short, brutal lives. That it could happen was another reason to feel optimistic for their future.

“Well,” she said, briskly brushing the tears away, “this is not about me, is it? You’ve come out here to ... to die, and we should be making your last days as pleasant as we can.”

“Thank you,” he said. “You’ve already done that.” He released her hand and folded all four of his. “Now I must tell you this officially.” He looked out through the ice shell of the Ball, at his red star and its faintly banded planet, Air. “You mustn’t feel bad about not using your hibernation technology to try to extend my life. I understand that my biology is too different. And besides, you can’t risk giving such a thing to us while we’re still so primitive and violent.” This was something else Plub learned during his long association with the comet people. Before, he would have been irritated and impatient when they made a long speech. And he certainly would never have made one himself. Now, not only was he able to accept their withholding technology, he did it using more words than were strictly necessary. It seemed that Makers didn’t have to be selfish, short-sighted literalists.

Fran didn’t argue with him. She said, “Sadly, you’re right, Plub. The prospect of Makers showing up at the comets is just as bad as the idea of being in the same room with you when you were exalted.”

“I understand,” he said. “I didn’t then, but I do now.”

“I know you do, Plub,” she said. “I hope you know how happy that makes me.”

~

It turned out that Plub's anticipation of his death was a little premature. He lived for another year and more. It was a happy and fruitful time for him, spent shuttling back and forth between the laser station and the Prime. Scarface, one of the Prime's service robots, was re-programmed and assigned to caretaker duties. As Plub slowly weakened and became more frail, his faithful servant was always by his side, making his life that little bit easier.

He made weekly broadcasts back to the Maker moon. Ostensibly they were about great affairs of state and the state of interstellar negotiations. He summarized the political events of the week, and kept people abreast of their relations with the star people. This included discussions on the disposition of the Prime's cargo. How much should the comet people leave behind, and how much should they take with them when they went? That's what his broadcasts were about, certainly, but they were really about keeping the people in touch with their beloved Plub.

On the matter of the Prime's cargo, Plub was the chief negotiator on the Maker side. Naturally Fran was the spokesperson for the comet people, just as it was at first contact. They were backed up by support staff who did all the detail work, but Plub and Fran were the ones who acted it out for the record.

In the end it was a simple formula. One third of the cargo would remain with the Makers, and two thirds of it would go back with the comet people. None of it actually belonged to the Makers, but they had built the Visitor, which started the whole thing. Some thought they should be punished for that rather than rewarded, but Fran insisted that they should encourage this generation of Makers, rather than punish them for the mistake of their ancestors. Of the two thirds going back, half of it was meant to go to the two star systems in between,

should they have life in them that could make use of it. The remainder would go with the comet people back to their own system.

~

They began offloading cargo during Plub's last year. They concentrated on the things the Makers particularly needed, especially those metals least available to them here. The assays of their system, done both before and after the arrival of the comet people, showed some useful minerals on the few other moons of the gas giant, Air. And there were some resources to be found out here at the system's L1 lagrangian point. But looked at objectively, the system was resource-poor, especially for the needs of a technological species like the Makers. This supplementary boost was gratefully welcomed.

They built a crew of smashers, the five-meter exoskeletons used for heavy work, adapting the plans to the Prime's fabrication facilities. For transport of the cargo they built a fleet of simple ice spheres. They would be parked out here in the gravitationally stable lagrangian, available whenever needed. This project of unloading the Prime was just the beginning. Once begun, it was natural to continue working out here where the resources were, rather than hauling them back to their moon. By the time the comet people left, a thriving city was growing around the laser station.

Plub spent as much time at the Prime, accompanied by Scarface, his mechanical valet, as he did in his quarters on the station. He claimed to be very happy, and Fran was able to confirm it with her senses. He loved to see the industry of his fellow Makers, busily building their future. He loved the cooperation of their two species, working together instead of against each other. He was proud of his part in it, and satisfied with the legacy he was leaving behind.

On what he was sure would be his last visit to the Prime, he asked Elgin to fly him once around it before going to the Ball. Elgin circumnavigated the one hundred kilometer vessel, staying well back to avoid interfering with the workers. Many of the big cargo hatches were open, smashers moving around as they filled up the hollow spheres of ice near the openings. Plub looked up, still impressed by the size of the light sail as they passed under it. In front of that, toward the prow of the mighty vessel, the Prime's fleet of scouts and modules. All fourteen of each were there now, unlike when he first had this tour. He chuckled softly at the memory.

"What is it, Plub?" asked Fran.

He looked at her, then back at the twenty-eight attack vessels. He said, "I was just remembering when you lied to me."

Fran recalled the tactical deception, when they pretended that the Prime was controlling its own fleet. "I'm sorry, Plub," she said, "but it was necessary."

He raised a hand to stop her. "Don't," he said. "I know. It was an excellent tactic that probably saved many useless deaths."

"Not least our own," admitted Fran.

"Especially your own," said Plub. "There are millions of Makers and only a few of you. Your lives are much more important than ours."

Fran smiled at him and shook her head. "There are certainly many more of you than there are of us," she said. "But remember, there's only one of each of us."

He bowed again. "I do remember," he said, "but I keep forgetting. Such respect for life is not natural to us, as you know."

"I know, Plub, but I think it can become natural to you. I think you just need to train yourselves. And as more of you grow old enough to become wise, it will get easier."

He turned. "But how can we become wise if you're gone?" He was going to ask her to stay again. Just a little longer. Just until the Makers were ready to do it on their own. But he stopped himself. "I'm sorry," he said. "I know you have to go. You can't stay forever, even if we need you to."

She put her hand on one of his arms. "No we can't," she said. "I think we've stayed as long as we could."

If she was completely honest she would admit that part of the reason for going now was purely pragmatic. Makers were unstable. Inherently, practically genetically unstable. They wanted to leave now while the leaving was good. They wanted to be sure that the laser array would remain functional long enough for them to get to the next one. Maker society was quasi-stable now, and they didn't want to waste the opportunity. Fran preferred to be honest, but she knew that they couldn't risk honesty with Makers. She was sure that Plub knew that, and that he could see the conflict in her, but he didn't mention it.

~

When Plub died he was in his rooms on the laser station. He was surrounded by his friends and closest associates. Most of his friends were comet people, Elgin and Frances in particular. The paradox of his people's love for him was that it made him too great, too distant to be a mere friend. The Makers there were the ones closest to him, but only as assistants or acolytes or disciples. And of course Scarface was there, but he wasn't a friend or a disciple. He was just a robot.

Fran was holding Plub's hand when he took his last breath. She felt the life go out of his body, and saw it go out of his eyes. "Good-bye my friend," she whispered. She couldn't close his eyes because he

didn't have any eyelids, so she covered them with his arms, in the Maker custom.

She was crying and the other comet people were plainly choked up, but the Makers didn't display their grief very openly, if they felt it at all. Except for two of Plub's closest aides, they drifted out of the room almost immediately. And the two who stayed only seemed to be interested in making arrangements for the disposal of the body. They were relieved when Fran said she'd take care of it, and they left too.

~

Fran didn't want to use the Makers' customary methods. She'd asked Plub when they were discussing his final wishes, and his answer didn't inspire her. Their most common way of disposing of the remains was to chop the body up and throw it in the sea. It was pragmatic. The mats were not ideal for burial, and it satisfied any spiritual questions too. They were returning to the eternal source of life, and they could feel that they were replenishing that source. The ceremonies were always well attended by marine scavengers, prominent among them Maker young. Even if it didn't involve transporting the body all the way back there, she wouldn't have wanted to do it.

She asked Plub if he wanted his body to be sent to Air, the gas giant that filled his world's sky and its mythology, but he said no. He didn't believe the Maker myth that their souls rose up to Air once released from their bodies in the sea. The prospect of plunging into the atmosphere of the planet did nothing for him. Meeting star people had made him see how narrow their beliefs were. He wanted this to be indicative of his new, broader vision.

Fran thought about that, then she smiled. "I think I know just what to do," she said.

“What?” he said, his body tense with curiosity and anticipation. When she told him, he smoothed right out. It was perfect.

~

The procession consisted of two pods, two scouts and two modules. The pods, excursion craft from the balls, carried the people who were closest to Plub. They were mostly comet people, along with a few Makers who wanted to be seen there. One of the pods had Plub’s body secured to it. Elgin flew that one, while Nigel flew the other. Buzzard flew a thirty meter scout, with the other one slaved to it, and Maria flew the pair of hundred meter modules. Scarface was on the outside of the pod, accompanying Plub’s body.

The body was encased in a block of ice, three meters by three meters by three. Plub was arranged in a standing pose, gazing at something in the distance, one arm slightly raised as if about to reach for it. He was dressed in simple white clothing, completely unlike the ostentatious clothing worn by the Makers in the procession. He showed the humility and wonder that had come with the wisdom of his later years.

Their destination was the largest body among the debris trapped in the lagrangian area. It was an irregular chunk of rock and ice, twelve kilometers on its longest axis. Its gravity, feeble as it was, would hold the block in place. Its size would make it the object least likely to be ejected from this area of gravitational stability. It would give Plub’s final resting place the best chance at eternity in their power.

When they arrived, Scarface took the block and flew down to the surface. He went to the high point they’d chosen and embedded Plub’s block in it, giving him a clear view of the stars he longed for.

~

Fran gave the eulogy. It wasn't something that Makers normally did. They couldn't see the point in talking about someone when they were dead. But Fran couldn't imagine leaving without saying a few words about someone who had come to mean so much to her. So, with Plub's image transmitted by Scarface, she spoke for her friend.

"This was Plub," she said, looking at the image they were sending back to his world. "Plub was the first Maker I spoke to when we arrived here. And I was the last person he spoke to when he died." She smiled, remembering the early days. "He wasn't sure what to make of us at first. We were so unlike anything he was used to. But he overcame the strangeness and did his job as a negotiator, in spite of how the Acquisitors treated him." She paused to think about their capricious punishments.

"Then there was the Change, when Plub became an Exalted one and led you into a Great Cutting." She paused again. "That might have been the end. You might have destroyed yourselves and sunk into chaos, but Plub wouldn't allow it. He ended the Great Cutting — something never done before — and led you back to order and civilization." She took a long pause, to allow them to think about the significance of that.

"Plub told me that the reason he stopped the Great Cutting was so he could lead you, his people, to the stars. He saw a future for you beyond Acquisitors and cuttings, and he wanted to show that you were ready for it." She let a little sadness into her voice. "Regretfully, he wasn't able to realize his dream. His life was too short. And now his body will be here for all time, looking at the stars he dreamt of." Her voice firmed up with resolve. "The last thing he said to me before he died was a message for you. He wants you to know that, just as wisdom came to him when he lived long enough to allow it, so it can come to

the Maker people if you allow it. If you can learn to avoid destroying yourselves long enough, then your civilization can and will reach for the stars. This was Plub's dream, and now it can be yours."

She stopped there, but they continued to send the image of Plub gazing out upon the universe. With any luck, this could be one of the things that would eventually lift the Makers out of their primitive, violent past.

4.

LESSER CUTTINGS

They weren't surprised when the laser beam cut out twenty years into their flight. They wouldn't have been surprised if it had happened earlier. Communication with the Makers became sporadic, then sometimes antagonistic, before stopping altogether. Not long after that they lost their laser beam.

With no propulsion they had no more acceleration. They hadn't reached their normal cruising speed of one tenth of the speed of light, and they never would on this leg of their journey. But they had reached a good percentage of it, so the time they'd lose was only decades rather than centuries or more. It would only add one or two more sleep cycles, and then they would pick up the beam at the next star. It was considered such a minor problem that the duty crew didn't even wake up Elgin and Frances and the others. They only had another five years before they were due to come on shift anyway.

They knew this could happen. The less optimistic among them expected it to happen and made sure that no one else would forget about it. Fortunately, twenty years was long enough that any gloating was muted. When the five thousand kilometer sail went dark, there was very little fuss. Those who were more optimistic even remarked that it was a good thing they'd given so much of the Prime's cargo to the Makers before they left. Less mass meant they'd accelerated more quickly.

~

“We’ll be going up soon,” said Fran, her face becoming clear. “Then we can find out who won the bet.” They were almost a minute into their hibernation time. Almost twenty years of real time.

“You never should have given me so much time,” said Stanton. “You’re going to lose for sure.”

“Not necessarily,” said Elgin. He could see both of their faces in the white light. “You might be a little too pessimistic you know, Stanton.”

“There’s no such thing as too pessimistic for my Stanton,” said Galatea. “Low expectations mean less disappointment.”

“Oh, that is just too cynical,” said Fran. “Even for you two.”

“Be realistic, Fran,” said Stanton. “Twenty-five years is more than a generation for Makers. Plenty of time to forget any good intentions.”

“But maybe things are different now,” said Elgin. “Maybe this is the time that separates the Makers’ future from their history.”

Stanton looked at him with pity. “How can you say that as an engineer? Surely the facts, the numbers, the data, must carry more weight than wishful thinking.”

Elgin didn’t get a chance to answer because the white light turned to gray. They were going up.

~

“I win,” said Stanton.

“Told you so,” said Galatea.

“Yes you did,” said Fran. “I guess I was just too optimistic. But they almost made it. They kept the beam up for twenty years. Just five more and I’d have won the bet.”

“Close,” said Galatea, “but no cigar.”

“That’s right,” said Stanton. “A miss is as good as a mile.”

Fran took the ribbing well, passing around some muffins to go

with the tea. Elgin was smiling too, as he chewed. They were all friends enjoying their first post hibernation get-together. But Maria looked at Buzzard, who shrugged, so she asked everyone, "What's a cigar?" She looked at Galatea.

Galatea shrugged and said, "I don't know what a cigar is. It's just an old saying."

"It sounds like some kind of prize, or trophy," said Elgin. "From context."

"It's not," said the Doctor. When they looked at him he said, "It's a tube of rolled up leaves."

Maria said, "And they gave it to someone when they won something?"

"No," said the Doctor. "They lit it on fire."

"Oh," said Maria, "then they waved it around in celebration."

"No," said the Doctor. "They sucked on it and inhaled the smoke." He grimaced. "Thank goodness we don't do that any more."

No one knew what to say to that, so the Doctor went on. "It was a drug delivery system. Back before we knew how to synthesize and refine chemicals, people had to ingest them somehow. They could eat them, or make an infusion and drink it." He held up his cup. "Like this tea. Or they could burn it and inhale the smoke." He looked at their faces. "I know it sounds crude, but that's what they had to work with."

Maria said, "What did they treat by inhaling cigar smoke?"

"Nothing," said the Doctor. "In fact, it made them sick and shortened their lives. And it was addictive."

"But why did they even do it, then? Why did they even start?"

The Doctor shrugged, palms turned up. "I don't know," he said. "Those were different times. If I had to guess, I'd say it must have been something psychological."

Maria shook her head. “I guess there’s no way to know what was going on in their heads. They’d be almost as different from us as the Makers are, wouldn’t they?”

“Just about,” said the Doctor.

“Yes,” said Maria. “But a tube of rolled up leaves?” She looked at Galatea. “How is that even a prize?”

“Well, I don’t know,” said Galatea, looking around. “It’s just a saying.” She crossed her arms. “I’m sorry I said anything.”

They laughed at her, and she scowled like a chastised child. But she couldn’t completely hide the little smile. As Stanton knew, there was usually a grain of humor in her grumpiness.

~

They were surprised five years later when the beam came back on. They were playing a last game of flashball before going down for hibernation when the light changed. Suddenly it was a little brighter as the sail reflected laser light. They quit the game and rushed to the control area. As they got there, a message arrived from the Makers.

“Fannie and Ellie and all comet people,” it said. “We are returning your laser beam to you. We apologize for the fools who took it away, but they’re dead now, so we’re giving it back.

“We had some trouble. Some bad people took over power, and they didn’t like the new ways. They wanted to return to the old days, before the arrival of you star people ruined it for them. But we had a Cutting and they’re gone now.

“It wasn’t a Great Cutting. We followed the example of Plub, the star seer, and stopped it before it went too far. Thanks to Plub and you wise star people, we won’t have any more Great Cuttings. We now live in an age of Lesser Cuttings.

“Safe journey, Fannie and Ellie and all star people. Remember us kindly on your great voyages, and watch for us to join you one day.”

They acknowledged the message and thanked the Makers for restoring the beam. This would cut decades off their trip. At a little more than a light year out, it would be over two years before a reply.

Fran smiled at Stanton and said, “I win.”

“No you don’t,” he said.

“Why not?”

“Two reasons,” he said. “First, we initially lost the beam within twenty-five years, and that was the original bet. Second, you still haven’t made it to twenty-five years. Who knows how long the beam will stay up this time?”

“Okay,” she said. “That’s all very logical, and I concede that you won the first phase of the bet.”

“First phase? Oh, no you don’t.”

“Oh, yes I do,” she said. “In five more years I win the second phase.”

Galatea laughed at him. “She got you, Stanton,” she said.

He looked at her open-mouthed. “Now the women are conspiring together, I see,” he said.

They all joined Galatea in laughter. Even Stanton.

~

Naturally, they had to stay up. Rather than keep to the normal schedule of five years up and twenty-five down, they stayed up to see what would happen. Fran got her five years and more, so she won the second phase of the bet. Then Stanton declared a third phase when the beam went out again, and claimed that he’d won the best two out of three.

By this time they were almost two light years out and had reached a good percentage of their normal cruising speed. It was still going to take longer than it had to, but it was much better than it could have been. This time there was no warning. Communications were normal and there was no sign of trouble right up until the beam cut out.

Next time it came back on, it was incomplete. It was only at about sixty percent of its full power. The accompanying message explained that the enemy had gone beyond simply turning it off and had tried to destroy it. The Makers apologized and regretted that this was making their species look bad. It turned out that having all those resources from the Prime just sitting there, ripe for the picking, was too much temptation for the worst among them. They hoped that the comet people would make allowances and try to see beyond this temporary setback.

“Not likely,” said Stanton.

“Why not?” said Fran. “At least they’re trying. We should give them the benefit of the doubt.”

“We’ve already done that,” he said. “Repeatedly. Now I think it’s time to admit that it’s beyond all doubt.”

Fran wanted to argue with him, but she didn’t. Even she was losing faith in the ability of the Makers to overcome their nature. The evidence seemed to be showing conclusively that they were still too primitive and unstable to be relied upon.

This time they weren’t even able to keep the beam on for five years, although they did build it up during that time. When it went down for good, it was up to eighty percent of its full power.

“Best three out of five,” said Stanton with a smirk.

“All right,” said Fran. “You win. In spite of my best hopes and their best intentions, I admit that Makers are just not ready.”

Stanton didn't gloat. He was a better man than that. In spite of betting on their failure, which he thought was a sure thing, he had been hoping that the Makers would prove him wrong. He was just as disappointed as Fran was that they hadn't been able to.

They'd already stayed up longer than they should have, and it was time to get back on their hibernation cycle. They still held out hope that the beam would come back on again one more time while they were sleeping. When it hadn't by the time they got up for the maneuver to catch the next beam, they were disappointed, but not surprised.

5.

FERTILE SOIL

The Prime flipped and caught the beam from the next star. If a twenty-four hour rotation can be called a flip. The one hundred kilometer long cargo vessel took a day to turn around and point the other way, stopping just short of a full one hundred eighty degrees. Right on cue, the beam arrived, and the Prime began to curve onto its new trajectory. The one that would take it on the second leg of a long journey.

The beam was not entirely aimed at the Prime's big sail. Some of it was redirected at the Ball's small, ten kilometer sail. Just as the Prime used the braking power to set a new course, so did the Ball. They would use the beam to turn the two hundred meter sphere of water glass toward the star. While the Prime turned away, heading outward, the Ball headed inward. Elgin and Fran and the others wanted to explore this system, to see if there was any life there that could make use of the resources the Prime was carrying. If there was, then the Prime could be sent back later to deliver them.

They also wanted to see what damage the Visitor had done. In their own system it had sought out and destroyed their whole species. They decided it saw them as competition, or at least corrosion. A threat to the resources it considered its own. So they wanted to see if there had been any similar carnage in this, the first system it encountered since being sent on its mission of discovery by the Makers.

They had to use the beam to slow down enough so the star's gravity could swing them around and send them after the Prime. Once on the main beam again, they would slowly overtake the big ship, then

stay with it until the next system. During their ballistic, comet-like pass, they would have plenty of time to study and analyze this one.

They didn't find much. There were no planets in the star's habitable zone. That is, none where liquid water could exist on their surface. There were a few gas giants orbiting inside that zone, closer to the star and searingly hot. It's possible that life could have existed on some of their moons, but highly unlikely. All their volatiles would have been blown away long ago, not to mention the extreme temperature swings as they orbited in and out of their planets' shadows.

There were some minor bodies farther out, and they could see signs of plunder on them. It seemed the Visitor had carried out its mission of discovering and securing resources. It was easy to imagine that this was the beginning. This is where its mission got perverted and it began down its insane path of growth and destruction. Still, although this system had signs of plunder, obvious signs of the Visitor's presence, it didn't have any signs of the manic destruction that took place in their own system many years later. It might have begun here, but it was only the beginning.

~

They decided there was no need to send the Prime back here. It would be a wasted trip. They saw no sign of life, nor that there had ever been any. They felt comfortable leaving it behind, a small red star, not unlike the Makers' own red dwarf. Maybe if its planets hadn't been so close to it, they might have provided the same kind of habitat as the Makers' own water-covered moon. The Makers might have discovered alien worlds that they could one day visit. Maybe even alien creatures living on worlds much like their own.

The comet people took pleasure in that kind of speculation. What

might have been. What could have been. Of course, it could only go so far before Stanton started pulling back on the reins. After all, it was a sterile system even before the Visitor arrived. And the Makers had apparently already self-destructed, and if not, were soon about to. Even if there were life here, even intelligent life, they would never have learned about it.

So the Ball sped out of that system, sailing on a laser beam. Its inhabitants went methodically through their duty cycles, working for five years and sleeping for twenty-five. They caught up with the Prime and Tainui, their twin ball from Orange Comet, and settled in for the trip to the next star.

This one was an orange dwarf, a little bigger than the red dwarfs behind them. They knew from their trip out, when they followed the Prime to see where it was going, that this system had many more planets, and they were much better organized. There were three medium-sized gas giants out on distant orbits, giving the system a stately stability. Closer in were three small, rocky planets, two of them on orbits where liquid water could exist on their surfaces. They knew from experience that at least some of the giants' moons were likely to have liquid water under their frozen surfaces, kept warm by gravitational kneading.

When they separated from the Prime and plunged into the system, they discovered that it was just as good as they thought it might be. Several of the moons in the outer system did have water, some of them demonstrating that with geysers spraying it into space. Life could theoretically have taken hold here.

On the two habitable rocky planets in the inner system, life definitely had taken hold. From a distance they could detect free oxygen and methane in their atmospheres. When they got closer the signs of

life got more obvious. Their rich blues and greens were a treat for the eyes after all the barren monochrome that came before. Closer, they could see brilliant white clouds, with the star's light glinting off large oceans. These were living worlds, no doubt.

But they were damaged. There was life, yes. But where there should have been rich fecundity, it was thin, almost patchy.

Fran sighed. "I guess we knew it would have to be this way," she said, "but it's still a disappointment."

"That's right," said Stanton. "We knew how bad the Visitor was by the time it reached us. It had to have been bad here too," The logic was solid, but that didn't stop his face from settling into a deep scowl.

"I know," said Fran. "I can't help hoping, though."

"Of course you can't," he said. "And we wouldn't want you to."

"Oh!" Elgin was at a monitor, analyzing the data from their scans. He looked up at them and excitedly waved them over. "I've got something here," he said.

He re-ran the data and let them see for themselves. Fran was the first to see it and she said, "Oh!" She looked at Elgin, then at Stanton.

It only took him a second longer, but he soon saw it. He said, "So, it's worse than we thought."

The monitor was showing images from their ground-penetrating radar. While their telescopes revealed the surfaces of the two planets, covered in somewhat sparse vegetation, the radar showed something hidden underneath it. There were straight lines and right angles. While nature can make straight lines, and even the occasional right angle, it never made this many. They were showing up everywhere they ran their scans.

Every continent had at least some plainly artificial features. And

in many places, especially on the coasts, there were clusters of them. These were surely settlements, and some of them were quite large.

“And it’s not just on the one planet,” said Elgin, showing them both worlds. “Both planets were fully populated.”

Stanton said, “They look the same.”

Elgin and Frances nodded.

“No,” said Stanton. “I mean, they look the same.”

Elgin stopped nodding and looked at the monitor, but Fran said, “You’re right! They look as if they were made by the same people.”

“That’s right,” said Elgin. “It’s right.” The lines smoothed out and the picture fell together with a soft clunk. “This is one continuous civilization across two worlds.”

Fran stared, her mouth open, but she couldn’t speak.

Stanton could, though. “This must be what set the Visitor off. If these people could maintain their civilization on two planets, then they must have had quite sophisticated space technology.” He nodded, his mouth a grim line. “They would have been a threat to the Visitor’s mission.”

“So it annihilated them,” said Fran, her voice barely a whisper. She turned away, the pain of empathy too much.

Elgin would have gone to her, but she turned and waved him back. “No,” she said, “stay there.” When he’d settled back in, she asked, “Is there any ... Can you tell if any of them survived?”

He turned back to the display. “I don’t know,” he said. “There aren’t any structures on either planet anywhere nearly as big as these old ones.”

Stanton said, “And of course, we’ve picked up no radio. There’s no unusual electromagnetic activity at all.”

“The atmosphere appears normal,” said Elgin. “On both planets.

Maybe the carbon dioxide is a little high, which it might be if people were burning wood for fires. But it's just as likely wildfires. Normal."

"And other than that," said Fran, "there's nothing in the atmosphere? Nothing to indicate any kind of technology?"

"No," said Elgin. "Nor the oceans, as far as we can tell. And there's nothing on the land that stands out. We're too far away to resolve anything as small as a house, much less people or other animals, so they might be there. But they can't be there in any significant numbers, and they're not using any kind of detectable technology."

"I think," said Stanton, "that we have to admit that the Visitor wiped them out."

"Unless ..." said Fran.

"Unless what?" said Elgin.

Fran looked a little abashed, but she still said it. "Unless they're hiding."

Stanton laughed. "Hiding? What are the odds of that?"

"I don't know," said Fran. She looked at Buzzard, their math genius, but he gave a large, exaggerated shrug. There was not enough data to even make a first approximation on that. Fran shrugged too. "After what happened to them, isn't it at least somewhat plausible that they would hide? If they survived."

"Somewhat plausible," said Stanton. "Sure. Highly unlikely, certainly. But not entirely implausible."

"Actually," said Elgin, "if they survived, I think it's highly likely that they are hiding. If their experience was anything like ours, then they must have figured out that it was their technology that made the Visitor attack. Especially radio. That would be a good incentive to eschew technology, or at least to hide it."

“Yes,” said Fran, looking at Stanton. “You have to admit that there’s at least a chance that they weren’t completely wiped out.”

“Okay,” said Stanton grudgingly. “There’s a chance that some of them survived and that they’re still there now. But it’s a small chance.”

“That’s okay,” said Fran. “A chance is all we need.”

“You know,” said Buzzard, one long finger raised, “there’s a good chance that they weren’t wiped out. Wiped out.”

Stanton said, “What do you mean, Buzzard?”

“Time,” said Buzzard. “Progression. Growth.”

“Okay,” said Stanton.

Buzzard flexed his hands in frustration. He always had trouble with words when he got excited. “Growth,” he said. “Over time.”

Elgin jumped in, much to Buzzard’s relief. “I think I know what you mean, Buzzard. You’re saying that the visitor wasn’t that big when it got here, right?”

“Yes,” said Buzzard. “Not that big.”

“Certainly not as big as it was when it got to our system,” said Elgin. Buzzard shook his head emphatically. “So,” Elgin said, “it might have built itself up a bit in the first system, but it wasn’t big enough when it got here to carry on a major war, right?”

“Right,” said Buzzard.

“So it did most of its growing here. And it learned how to wage war here, too.” Elgin nodded. “It eventually won the war, but it took time. The people here were defeated, their interplanetary civilization destroyed, but they weren’t surprised and overwhelmed like we were. It is most probable that some of them survived and went into hiding. Right Buzzard?”

“Right,” said Buzzard enthusiastically. “Elgin’s right. Elgin knows. Hiding, not wiped out.”

Fran had a big smile and Stanton was nodding thoughtfully. He said, "That makes sense, Buzzard. I'm ready to admit that these people might still be here, but they're hiding."

Buzzard grinned one of his big happy grins and exchanged nods with Elgin. Fran, still smiling, slipped her arm through Elgin's and said, "So, we leave some cargo here then. Right?"

Stanton laughed out loud. "Right," he said. "We'll send half of our cargo back here."

So, their rough guess was right. One third for the Makers, one third for the comet people, and one third for someone in between, if there happened to be anyone there. If there hadn't been anyone in between, then two thirds would have been fair for the comet people, with all they'd suffered. All told, it was a very satisfactory result. They just wished they could tell the Makers how it turned out, but they hadn't heard from them since their last breakdown.

Fran sighed. She said, "So now it's just a matter of catching the Prime, and we're on our way home."

6.

GOING BACK

“Today we’re going to look at the lung and the sonar apparatus, as I promised yesterday.” The Doctor was in front of the window, continuing his lecture series on Maker anatomy. He had his usual good audience back on the comets, Green and Orange, and on Pharos and Scintilla, the lighthouses. On the window was a schematic of a Maker body, with the dome at the top highlighted. Below the dome were the big, staring eyes. “You’ll remember that yesterday we talked about the compound eyes. How Makers used to have eight eyes that migrated over time to become two.” He opened the dome to show the lung. “The lung is almost the opposite. It only ever was one. They didn’t have multiple lungs that evolved into one. And, more interesting to me, the lung didn’t bifurcate. The lung, like the heart, doesn’t follow the trend to bilateral symmetry seen in much of the rest of the body.”

Continuing his lecture, the Doctor could see his audience in the window. They were in the squares on the comets and at the windows in the common areas of the lighthouses, and on Tainui with their own little section of the window. He could also see through the window to his local audience. After demonstrating where Makers showed bilateral symmetry, he highlighted the lung. “This started out as a swim bladder many eons ago. It was used to control buoyancy in the water.” He pointed at the breathing holes at the side, the image rotating slightly to show them. “These breathing holes, used today for breathing and speaking, were gills back then, before Makers came out of the ocean onto the mats. You can imagine how the gas exchange tissue spread

into the lung over time. Now they can breathe quite comfortably in both the water and the air.”

Above the lung, rounding out the dome, was the area that produced the sounds used in their sonar. It was tempting to call it an organ, since it was a specific body part used for a specific function. But it didn’t really qualify because it didn’t actually do anything itself. It was just a mass of specialized fatty tissue that focused and amplified sounds, the clicks and buzzes and chirps that were produced by the air and tissues in the lung. These sounds were used both in the water and in the air. In the water it served as a localizing sense, helping them perceive their surroundings, and for communication. In the air it was part of their vocalization, and it contributed in a rudimentary way to their perceptions.

The Doctor closed up the image in the window, leaving it slowly rotating as he wound up the lecture. “That’s it for my series on Maker anatomy,” he said. “Thank you for doing me the honor of paying attention. Now it’s off to the Hibernarium for me. See you in twenty-five years.” He got a nice round of applause.

~

“Did anyone else notice something strange about the Square?” The Doctor’s face appeared as he spoke, and stayed for a while before starting to fade.

Fran asked, “Strange how?” That was enough to show her golden eyes and her mouth, which began to go right away.

“I’m not sure,” said the Doctor, “but it was right next to Orange Comet’s square and they looked different. Usually they look the same. Or similar, at least.”

“The Doctor’s right,” said Nigel. “I can’t say I noticed it at the time,

but when I think about it, he's right. Something was a little off on Green Comet."

"Yes," said the Doctor. "Thank you, Nigel. Something is just a little off."

Stanton spoke up. "Now that you mention it, I did notice something. I just thought it was a trick of the light or something."

"Or you were afraid that you were seeing things, more likely," said Galatea. "Afraid your mind was starting to slip in your old age."

They all laughed, and all eight of their faces showed in the featureless white light. Elgin, Buzzard and Maria were there, in addition to the five who'd already showed themselves by speaking. The eight liked to take advantage of the ability to share their hibernation, even if twenty-five years only gave them a minute and a quarter together there.

By the time this big sleep was over, the Ball would have caught up to the Prime. They'd work a five year shift, have another twenty-five in the Hibernarium, and when they got up they'd almost be home. Home in the sense of their old star system, anyway. The place the Prime started out from when it turned around and headed back to its makers. They would offload their share of the resources and send the rest back to the system with the two-world civilization. They planned to have the Prime park itself in the outer planet's L1 lagrangian, so it could wait for the re-emergence of the space-faring species. If they did re-emerge, then they would be sure to notice the big cargo vessel in its stable orbit between their worlds.

Stanton was still smiling at Galatea's joke, but his smile was fading faster than his face. The truth is, he was concerned about his mind and its stability. They all were. They, along with psychologists on both comets, were concerned about the increasing prevalence of psychoses as people's personalities tried to maintain continuity across the millen-

nia and many hibernations. These concerns lent extra weight to little things like Green Comet seeming a little off during the Doctor's lecture. Stanton's smile faded, and so did the rest of them.

He said, "As usual, Gay, wisdom in a wisecrack,"

"Shut up," she said, but you could tell she was pleased.

"So, anyway," said the Doctor, "we'll be home soon. Then we'll find out if there's anything off, or if our minds are going."

His timing was perfect. The white light turned to gray.

~

When they got up, the Ball was lashed firmly to the stern of the Prime, and they were in straightaway acceleration mode. At a tenth of the speed of light, it wouldn't be long before they'd be flipping and catching the braking laser from home. The flip would take place during this waking, then after their last big sleep, arrival would be in their next.

The flight was routine. They held a small ceremony to mark the little excursion they had on the outbound trip. Tainui was coming from Orange Comet, which was further away, and they hadn't caught up yet when the Prime surprised them by flipping early. They'd estimated the time by the distance to the star the Prime was heading for, then it flipped early and cut the corner for another star. That left Tainui on the dark side of the Prime's sail, and gaining quickly with no way to slow down. Rather than let Tainui tear through the sail, they neatly cut it and resealed it. That was when they learned that they had nothing to fear from the Prime and began the next phase of their relationship with it. They soon realized that they could be masters of it, that it expected to be in service of a master, as it had been of the Visitor. That was an important moment, and they marked it with a ceremony.

When they made the flip, their home star was still just another star among many. When they rose from their final hibernation, it was the biggest, brightest star they could see. As they got closer the details came out. They were able to find the familiar planets in their predicted orbits. Soon they were able to see the shadows they cast in the dust that still filled the system. It seemed odd that it should still be there when they felt as if they'd been away for so long. Of course they knew it would take millennia to clear out the dust of the Visitor's violence. Their little jaunt was nothing compared to that. It still felt strange to see it apparently unchanged.

The laser beam stayed on until the Prime came to a complete stop, the last of the momentum killed by its huge ion drives and thrusters. There was the moon that served as the base for the beam. And there were the pods and shuttles coming out to greet them. They were back.

7.

POWER AND POLITICS

As it had done with the laser station at the Maker world, the Prime parked a hundred kilometers away from this one. One ship's length. The pods coming across took an hour to do so, giving them plenty of time to chat. Even so, when they arrived they still made a formal request. The station's current governor, Fenwick, made the call.

"Ball, this is Prime Light, pod One, over."

"Pod One, this is the Ball," said Stanton. "Go ahead."

"Ball, pod One," said Fenwick. "Permission to come aboard."

"Permission granted," said Stanton.

Since all of the Ball's pod berths were occupied, they had to debark from their pod and fly across. It was not a problem. The two people in pressure suits looked completely comfortable, and the crossing was done quickly and efficiently. When Fran commented on that, Stanton said, "That makes sense. Out here, they probably spend half their time in those suits."

"Mm," said Fran, who'd noticed something. "What's that?" she said. "On their legs."

Stanton squinted and leaned forward. "I don't know," he said. "A tool belt maybe?"

"Maybe," said Fran.

Elgin said, "They're probably in the habit of carrying tools everywhere, out here."

While Fran and Stanton and the rest nodded, Buzzard said, "It looks like a gun. A gun."

Fran gasped. “You’re right,” she said. “It does.” She shook her head and looked at Elgin. “But surely not,” she said.

He shrugged. “It sure looks like it, now that Buzzard pointed it out.” He looked at her. “We’ll know soon enough,” he said.

Their two visitors cycled through the airlock, and they could see that they did appear to be wearing guns. It didn’t seem to make them self-conscious, and they went through the introductions as if everything were normal.

Fenwick said, “This is Dempster, my number two on the station, and the real brains behind the operation.” Dempster smiled and nodded, blushing a little. They both were looking around, trying to take it all in. It was no different from any other ball they’d been on — the design was almost unchanged, even after all these centuries — but this was the Ball. The original. And it was just back from a long interstellar journey. “I know who you are,” he said. “You’re Elgin and Frances, right? And Stanton.” He looked at Buzzard, hanging there all long and loose and lanky. “And this has got to be Bussard.”

“Buzzard,” said Buzzard and Maria simultaneously.

“What?” said Fenwick.

“It’s Buzzard,” said Maria. “He prefers it.”

“Buzzard,” said Buzzard. “I prefer it.”

“Oh, sorry,” said Fenwick. “Buzzard it is, then.”

Buzzard and Maria nodded.

“Okay,” said Fran. “Now that that’s settled, why are you wearing weapons?”

Fenwick and Dempster were surprised. They reflexively looked down at their guns, then they looked at each other. It was obvious that they’d forgotten they were wearing them. That told Fran that it was an old habit. Fenwick finally found his voice. “I’m sorry. We should

have thought. We shouldn't have come aboard like this." He looked imploringly at Dempster.

Dempster ran his hand through his hair, his helmet folded back against the top of his service pack. "We should apologize for this. It's insulting for us to come onto your vessel armed." He looked at Fran. "I'm sorry," he said. He indicated Fenwick. "We're sorry. You have every right to send us away." He turned to leave. "We'll go back and wait for you to invite us to return, should you decide to do so."

Fran stopped them. She looked at Stanton, who nodded. "Please stay. We're not insulted. Just curious."

They turned back. Fenwick began to remove his pistol. "You're very kind. At least we can turn over our weapons while we're here." He held it out to her.

She waved it off. "Keep it," she said. "We wouldn't want you to be uncomfortable. It seems to be an integral part of your equipment." She watched him re-attach it to his thigh. "We're just curious how that came to be."

Fenwick and Dempster looked at each other again. They both shrugged. Fenwick said, "There's no specific reason. It's just a habit."

"But all habits start somewhere," said Fran. "Was there some trouble out here on the frontier?"

"No," said Fenwick. "All officers were issued sidearms at the beginning of the mission."

"Officers?" said Fran, surprised.

Stanton said, "They have weapons on Green Comet?"

"Yes," said Fenwick, looking back and forth between them. "Only the police are allowed to carry weapons, though."

"Police?" said Stanton.

Fran said, "You have a hierarchy on this station?"

Fenwick's head kept swiveling, and he laughed. "I'm sorry," he said. "It looks like you have some catching up to do. This station isn't the only place with a hierarchy."

Between them, Fenwick and Dempster tried to explain the changes that had taken place on Green Comet.

~

"No, it was before that," said Dempster.

"Are you sure?" said Fenwick. "I always thought it happened just after we completed the hexamer."

"That's when it really took off," said Dempster, "but it started when they took over the planning committee."

"Well, technically, sure," said Fenwick. "But you could say the same thing about the schools. They were controlling education before they took over the committee."

"That's true," said Dempster. "But then it's a case of how far back you want to go. Where do you draw the line?"

"I know," said Fenwick. "That's why I go with the hexamer. When they started forming governments."

Stanton looked at Fran and Elgin, and they were just as surprised as he was. "Hold on," he said. "Governments? Green Comet has governments?"

"Yes," said Fenwick. "Ever since the hexamer. And the first thing they did was divide it up into provinces. One for each of the six comets. Well, the five completed ones, anyway"

"Divided?" Stanton frowned. Soon it deepened into a ferocious scowl. "They took over Green Comet, and then they divided it up?"

"That's right," said Fenwick. "Each comet is a principality, run by one man. And there are checkpoints leaving and entering each comet."

Stanton's eyes widened. "How ..." he said. "How did ..." He couldn't finish. He turned away.

"It wasn't us," said Fenwick to Stanton's retreating back. "It wasn't what we wanted." Stanton kept going, and Fenwick turned to Elgin and Fran. "You've got to believe us."

Dempster said, "We didn't see it coming. Maybe we should have, but we didn't. It happened slowly, bit by bit, and then one day, there it was." He spread his hands.

Fran watched Stanton moving away, her mind whirling. She looked at Elgin, and took strength from his bedrock support. Turning to their two visitors, she said, "Let me get this straight. The Francesians took over the schools, then they took over the planning committee, then they took over Green Comet. And no one tried to stop them. Is that right?"

They looked guiltily at each other, then Fenwick said, "It sounds bad when you put it like that." He dropped his eyes to the floor. "You're right, though. That's just what happened."

"And now Green Comet is a police state," said Fran. "No freedom."

"They've still got freedom," said Dempster. "Quite a lot of freedom, really. And they still get to vote."

Fenwick snorted. "For any Francesian they want," he said.

"Still ..." said Dempster.

"Freedom?" Fran's chin came up. "Between the checkpoints, you mean?"

Dempster nodded, looking away.

"That's right," said Fenwick. "And I heard they're thinking of ruling that only Francesians can vote, too."

Fran's brow came down. "They would do that?"

“Sure,” said Dempster. He looked at her. “We don’t blame you, Frances,” he said.

She gaped at him. “Blame me?”

Elgin blurted, “That’s crazy.”

Stanton came storming back. “You’d better not blame her. She’s got nothing to do with it,” he bellowed. Galatea and everyone else within earshot backed him up with a chorus of shouts.

Dempster and Fenwick backed up. “We don’t,” said Dempster. “I just said we don’t.”

“That’s good,” said Stanton, “because we’ve been trying to straighten those idiots out for a long time. Frances never wanted to be their saint, but they wouldn’t listen.”

Elgin said, “And she would never condone the kind of repression you’re talking about.” He moved close and put his arm around her waist.

“We believe you,” Dempster said. “The trouble is, half of the people on Green Comet believe them.”

“But you don’t?” said Elgin.

“No,” said Dempster. “Any rational person would believe someone if they say they’re not a saint. She should know better than they do, right?”

Elgin relaxed a little, his face smoothing out. He felt Fran relax beside him. “That sounds reasonable,” he said. “Why can’t everyone see that?”

“Because some people are born to be followers, that’s why,” said Stanton. “Some people need to be told what to believe.” He looked as if he had something bitter in his mouth. “They found someone to follow, and they’re probably happy where they ended up.”

“That’s about right,” said Fenwick. “Every time there were new

rules, there were a lot of people saying how good they were. How much we needed them.”

“But not you,” said Stanton, glaring.

“No, not us. That’s why we left. Why we came out here.” He glanced at the laser station. “And why we didn’t let any Francesians come along.”

“Did they want to?” asked Stanton. “Did any Francesians want to come with you?”

“A few,” said Fenwick. “I got the impression they were under orders, though. Like they were being sent, rather than wanting to come themselves.”

“Why didn’t they come, then?” insisted Stanton. “If they’re as powerful as you say they are, why didn’t they just force you to take them?”

“We got out just under the wire,” said Fenwick. “It was just before they were able to openly use their power. I guess they were afraid of a backlash if they showed their hand too early.”

“Okay,” said Stanton, nodding. “That makes sense.”

“Yes it does,” said Fran, taking Elgin’s arm. “Now enough of this talk. Our guests haven’t even had tea and biscuits, and here we are interrogating them.” She led them deeper into the Ball. “And then we’re going to want a tour of Prime Light, too.”

~

“Why didn’t Winston and Minder say something?” Fran was serving tea for the eight. Before their tour of Prime Light, they had a lot to talk about.

The Doctor said, “Maybe this explains why they’re not up now.

They always made sure to be up when we were, but this time they're still in hibernation."

Fran said, "Do you think that's on purpose?"

"Well," said the Doctor, "I can't say for certain of course, but it seems a likely explanation, doesn't it?"

"Yes, it does," she said. "So the Francesians force them to stay in hibernation. But why? Punishment? Politics?"

"Plausible," said the Doctor. "I can't imagine Winston or Minder allowing a hostile takeover without resisting." Everyone nodded and voiced their agreement. There were grim smiles as they imagined their friends standing up to the Francesians. "But it might also be so they couldn't warn us."

"Warn us?" said Fran. "Why would they care if we were warned? What can we do?"

"And anyway," said Stanton, "we were bound to find out when we got here."

"That could be why they wanted their people here," said the Doctor. "To control this place, too."

Fran shook her head. "Really? Do you think they could really be that devious and paranoid?"

"That's usually the nature of the beast, isn't it?"

"I guess you're right," she said.

"Unfortunately," he said.

They all sipped and nibbled for a while, thinking about that. Green Comet, the last refuge of their people, the shining beacon of their stand against annihilation, now succumbing to the paranoia of power-seekers. The very pettiness shown by the primitive Makers and their Acquisitors, now ascendant in their own world. Elgin had told Plub that the Acquisitors would be back. Had told him that the same thing

happened on their own world, and that the Makers would have to be prepared to deal with Acquisitors, or their analogues, over and again.

Plub was shocked that it could be a problem for them. That people so grand that they traveled to the stars could be troubled by something so mundane. But Elgin assured him that it was so. Even comet people had this problem, so Makers should take heart and be optimistic about their own future. The only reason comet people weren't afflicted with this problem now, he said, was because of shared danger and hardship. Now that seemed to have ended. Now, the last refuge appeared to be found by predators.

Elgin's head came up. They weren't the last refuge. Not really. "Orange Comet," he said. "We need to find out what's happening on Orange Comet."

Fran looked at him. "Oh no," she said.

Stanton said, "Let's get Archie."

~

"What are you thinking?" asked Archie. "That the Francesians have taken over Orange Comet, too?"

"No," said Buzzard. "Well, maybe. But probably not. But it could be." He forcibly stopped himself.

Stanton said, "We don't know what to think. Anything's possible, right? As Buzzard says." He winked at Buzzard, who grinned gratefully. "We just need to find out, and we thought you'd be best able to tell."

Archie went completely still, thinking, and they waited. In less than a minute he said, "Okay. But remember, I've been away from Orange Comet longer than you've been away from Green Comet."

"That's right," said Buzzard. "Tainui left Orange Comet before the Ball left Green Comet."

“We know,” said Stanton, “but you’re still our best bet.”

Archie gave a crisp nod. “You’re right,” he said. “What do you want me to ask them?”

Stanton shrugged, looking around. “We’re not sure. We won’t really know what to say until we know more. We want to learn as much as possible while giving away as little as possible.” He shrugged again. “We were hoping that you could play it by ear.”

That would be difficult for Archie. Dissembling wasn’t his metier. He was happier with directness. He gave another crisp nod. “Okay,” he said. “I’ll do it.”

“Good,” said Stanton. “We just want to find out if the Francesians are running things there, too.”

~

“The Francesians!” That didn’t take long at all. Archie just started talking to his friend on Orange Comet, and already they had their answer. All he did was mention that they’d heard there was some trouble on Green Comet, and his friend went straight to the heart of it. And he didn’t seem reluctant to speak openly about it.

“So, you know about it,” said Archie.

“Know about it?” Archie’s friend’s name was Hardwicke. He was among the two thousand who emigrated from Green Comet to Orange Comet during the original diaspora after the arrival of the Visitor. He still felt a strong attachment to his old home. “Did we know about it? We saw it coming. We tried to warn them. But they cared more about their precious democracy. They played right into the hands of the Francesians, who weren’t troubled by such niceties.”

“You couldn’t help them,” said Archie.

“We tried, but they didn’t want our help,” said Hardwicke. “By the time they woke up to the danger, it was too late.”

“How about Orange Comet?” asked Archie.

“What about it?” asked Hardwicke.

“When you came over,” said Archie, “there were some Francesians with you. Are they causing any trouble there?”

“No,” said Hardwicke. “Oh, they tried. They wanted to get on the school board and the planning committee here, too. But we nipped that in the bud.”

“Nipped it in the bud?”

“Yes. We saw what they were up to, and we stopped them before they could get started.”

“How?” said Archie. “What did you do?”

Hardwicke saw the doubtful look on Archie’s face, and was quick to mollify him. “Nothing violent,” he said. “All we did was bar them from holding critical positions. We’re just keeping them away from the power they want.”

“So, you took away their rights.”

“Not all of them,” said Hardwicke. “Just enough to avoid the trouble they’re having on Green Comet.” Archie was still looking at him, so he said, “Isn’t that better than letting them take away everybody else’s rights? Because that’s what they would have done.”

“I suppose,” said Archie.

“There’s no supposing about it,” said Hardwicke. “It needed to be done. You weren’t here, so you don’t know.”

8.

A LOT TO TAKE IN

It took an hour to fly from the Prime to the station. Plenty of time for sightseeing. The main thing was the laser array. A collection of clusters of lasers, forming a disk shape five thousand kilometers across. It matched the Prime's sail and was almost perfectly aligned with it. Their destination was at the bottom of the array, where Fenwick and his people had their habitat. Knowing the configuration of the Prime, with the Ball and Tainui on the big vessel below its sail, they located their habitat to match. They had a larger habitat on the moon itself, a five hundred kilometer sphere behind the center of the array.

The habitat itself consisted of the ball they'd come in, when they made the journey from Green Comet, and another smaller ball. The crew lived in the big ball, and worked out of the small one. They were charged with the maintenance of the laser array in this quadrant, while the main base on the moon was responsible for the rest. In reality, maintenance was handled by service robots, much like their own Scarface. There was one at each cluster of lasers, and they handled routine maintenance and repairs. The comet people were redundant. They were really here at the edge of the works to meet the returning Prime and its occupants.

The Ball's pod was not the only traffic in the area. Two more pods had been authorized for deployment. That allowed some of the Ball's crew to take an excursion, while leaving enough crew and pods for the safe operation of the Ball. Similarly, three pods had left Tainui. They were out for some sightseeing, and for a little shore leave.

None of the other five pods was going to Prime Light. There was little interest in seeing another ball. Instead, they were heading for the moon, Prime One, passing by a laser cluster on the way.

This activity was replicated in the other direction. There was just as much interest in exploring the new arrivals as there was the other way. The main difference was that there was an interest in the Ball and Tainui. They might have been just another pair of balls, but these ones had been to the stars and back. The main interest, though, was in the Prime. It was their first chance to see the alien vessel up close. They had images and memories of the hated Visitor. And they were intimately familiar with the laser array and its technology. But this was their first chance to see a ship up close. They flew its length, slowing to stare at the twenty-eight scouts and modules. They stopped at the bow and flew down to go inside, through the same hatch first used by Buzzard and Maria.

The pods heading for the moon were able to fly there directly. They didn't have to fly around the laser array, they were able to fly through it. The lasers were grouped in clusters, with space in between. The object of the array was to give the Prime's sail full coverage, to take full advantage of it. Just as they wouldn't want the beam to be too wide, wasting light around the edges, so they wouldn't want it to be too narrow, wasting sail. That was how it worked out, but that wasn't how it came to be.

The Visitor and the Prime didn't start out big. Originally the Visitor was a tiny craft, with a relatively small sail. It only started to grow after it reached its first star. Having lost contact with its makers, it was on its own and having to adapt its existing technology to the new situation. Rather than invent a new solution, it simply scaled things up on the old template. If the sails were now bigger, the Visitor didn't just

build one big light. It divided the new sail size by the old sail size, and built that many lights. So each cluster in the new array was the size of the original, and they were simply added as needed. The spacing between clusters reflected the amount of natural divergence there would be in the beams at the light year distances involved.

The pods were able to fly directly to the moon, passing between the clusters on the way, but it didn't save them that much time. They had to go twenty-five hundred kilometers, give or take, and cutting that corner didn't save much in comparison. The pods weren't built for speed, but they had enough thrust to get going pretty fast, given enough time. The only constraint was the amount of fuel they'd use. Whatever speed they built up, they'd have to dump to stop at their destination. Then again on the return trip. All things considered, it was feasible and safe to go a thousand kilometers per hour. That made for two and a half hours each way. Closer to three, all in. You might think, given the distances they'd traveled and the time they'd spent doing it, that they'd be immune to boredom. But it's different when you can see your goal right there, and it seems to take forever to get closer.

~

Elgin and Frances and the rest of the eight, nine counting Archie, didn't fly directly to the moon. Their destination was the habitat only a hundred kilometers away at the edge of the array. But it still took an hour. At that distance, the safe speed was a hundred kilometers per hour. So that gave them plenty of time for sightseeing, and plenty of time to talk.

"This is a lot to take in, isn't it?" said Fran.

"It sure is," said Elgin.

"I take it you're not just talking about the view," said Stanton.

“No, you’re right,” said Fran. “I mean weapons and hierarchy and some kind of police state back on Green Comet.”

“And don’t forget Orange Comet,” said Archie. “They’re being repressive there, too.”

“At least they’re doing it in a good cause,” said Stanton.

Fran looked at him. “No!” she said. “Don’t say that. Repression is never in a good cause.”

“You’re right,” said Archie. “I can’t believe they did that.”

Stanton said, “Would it be better if the Francesians did it?”

“No,” said Archie, “but it feels like they might as well have.”

“Repression is repression,” said Fran, “no matter who’s doing it.”

“But this — what Orange Comet is doing — is precautionary,” said Stanton. “To prevent worse repression.”

Fran looked at him. “Or so they say, anyway.”

“But they were trying to do the same thing,” said Stanton. “Archie’s friend ...”

“Hardwicke,” said Archie.

“Hardwicke,” said Stanton. “Hardwicke said they were trying to get into positions of power. Just like they did on Green Comet.”

“That’s the nature of democracy,” said Fran. “Everyone is free to participate. In fact, it’s expected.”

“I’m not against democracy,” said Stanton. “I’m saying it needs to be protected.” He waved an arm in the general direction of Green Comet. “They already destroyed it on our comet. We shouldn’t let them do it on Archie’s.”

In a small voice, Archie said, “It looks like they already have.”

Stanton threw his hands up. “It’s not the same,” he said.

“You’re right,” said Fran. “It’s not the same. On one comet they’ve

taken away the rights of everyone who isn't a Francesian. On the other, everyone who is."

Stanton glowered at her. "You're oversimplifying," he said. "On one comet they failed to stop it. On the other, they're trying."

Fran nodded. "I agree they had to do something. I just think they could have tried something else."

"Like what?" said Stanton. "They were set to take over, just like they did on Green Comet."

"Is that a fact?" Fran crossed her arms. "Is there any evidence that they were planning the same thing? Were they in cahoots with the Francesians on Green Comet? Or under their orders, maybe?"

"Well, it stands to reason," said Stanton. He looked at Archie. "Did Hardwicke say anything?"

Archie shook his head. "All he said was that they nipped it in the bud."

Fran said, "Nothing to indicate that they were planning anything?"

"No," said Archie.

"And no indication that they weren't, either," said Stanton. "Right, Archie?"

Archie was getting nervous. The last thing he wanted was to be in the middle of an argument between two of his friends. He looked around, and caught Buzzard's eye. Of all the people he had known, Buzzard understood him best. They were very different physically. Buzzard long and supple, Archie compact and contained. Also, while Buzzard openly displayed his feelings, Archie's were subdued. But their inner selves were much the same. They were both brilliant and they understood each other, often without speaking. And they shared a certain difficulty understanding irrational behavior. Now Archie was

feeling uneasy in the face of an argument he didn't understand, and Buzzard got it.

"Archie doesn't know," Buzzard said. "He wasn't there. He wasn't there, so he doesn't know." Archie's minimalist expression showed his gratitude.

Fran was abashed. "Of course he doesn't," she said. She looked at Stanton.

He lowered his eyes and his shoulders. "You're right," he said. He looked at Buzzard and said, "Thank you."

In the awkward silence, the Doctor said, "We don't know enough about Orange Comet's situation to judge. We have to trust that they made the best decision, for them."

"The Doctor's right," said Fran. "Until we know more, this is all speculation."

Elgin nodded. That felt right. "We can be pretty certain about Green Comet, though. Not much speculation required there."

"No," said Fran. "But we need more information. We need to know exactly what happened, and how. And we need to know exactly what the situation is there now." Her face set in its familiar determined lines. "We need to know just what we're in for when we get back there."

"Hold on," said Stanton. "Are you still planning on going back there?"

"Of course," she said. "Our mission is complete, and now we head back as planned."

"I think we should consider changing our plans, in light of what's happened."

"Not go home? How can we not go home?"

Archie said quietly, "I'm not going home."

Buzzard stared, open-mouthed. "How can you not go home?" he said. Like Fran, the idea never occurred to him.

"It doesn't feel like home any more," said Archie. "It feels like some strange place." He looked around. "This feels more like home."

"What will you do, then?" asked Buzzard. "Where will you go?"

"I don't know," said Archie. He was looking at the habitat as they approached it. "Maybe I'll stay here. They can probably use another hand. Or maybe there will be another lighthouse crew heading out. I could go with them."

"Or Green Comet?" said Buzzard. "You could come to Green Comet."

Archie gave his head a fractional shake. "Too much like Orange Comet," he said. "Been around too long. Getting tunnel-vision." He turned around to look at the Prime. "I need something new. Something useful." He nodded minutely. "Maybe the Prime."

Buzzard looked at the Prime, then Archie, then Fran, his head swiveling as he desperately searched for a hopeful sign. "But you can't," he said. "You can't do that."

"Why not?" asked Archie.

"Because," said Buzzard. "Because it's not coming back. You can't go with the Prime because you couldn't come back." He looked around, grinning. Archie couldn't argue with that.

"I hadn't thought of going with it, but maybe I should," said Archie. "Maybe we could set up a lighthouse there. Call it Prime Two." His cheeks dimpled at Buzzard, who couldn't help laughing at their private joke. "And the people there. Maybe we can help them. Fix some of the damage. Do something useful."

"But you can do something useful here," said Buzzard. "Help us save Green Comet. And we can help you fix Orange Comet." He tried,

but he couldn't keep up the enthusiasm. He could tell that Archie was serious.

Archie turned back around. "Maybe you're right," he said. "Maybe I'm just disappointed now. Maybe I'll get over it." But he didn't sound like it.

Buzzard wasn't the only one affected by Archie's mood. It had them all thinking, and it was a very somber pod that eased up and docked on the habitat's ball.

9.

PATTERNS AND REFLECTIONS

They didn't stay long at the habitat. After all, it was just another ball much like their own. They took the tour, as good guests would, and it was interesting in a way. Even though it was laid out the same as the Ball and Tainui, and every other ball made, it had its own individual features. There was the flashball court at the front, and housekeeping at the back. In the middle was the control center, for communications, command and control, and the window. They would have had no trouble living in and operating this ball, with minimal adjustment.

There were two main differences. They couldn't help noticing that it looked worn. Corners, edges, surfaces all had a used look that they weren't accustomed to. Their attention to detail and maintenance on the Ball and Tainui was impeccable. Other than a comfortable degree of looking lived in, they were almost like new. Compared to that, this place was almost grungy. They didn't say anything about it though. Maybe this was just the nature of frontier life.

The other big difference was the use of fabric to partition the interior. They were using a lot more of it here. On the Ball they used fabric to mark off different areas, like work and eating and sleeping. And of course everyone had their own little private space. Other than that it was pretty open. In places, a person could fly almost the full width of the ball without running into anything. Here, though, you couldn't see from one side to the other. The most open space was the flashball court and a small viewing area around it. Everywhere else

it was chopped up by fabric walls and corridors. You couldn't just fly from one place to another. You had to traverse fabric tunnels.

Elgin looked at Fran and saw that she was feeling it. It was subtle, and he didn't think anyone else would see it, but she seemed to be drawn in on herself. He knew what it was. He could feel it himself. It was a mild case of claustrophobia. They were used to their open plan back on the Ball, and this felt like it was closing in on them. He put his arm around her waist, and she did likewise.

Dempster noticed. Fenwick was too involved in the tour and the duties of being a host, but Dempster was more attuned to the subtleties. "What is it?" he said quietly. "Is something wrong?"

"No," said Elgin. "It's just not what we're used to. It's broken up here. More closed in."

"Ah," said Dempster. "I know what you mean." He smiled. "In fact, I felt something similar in your ball, only it was too open. I felt vaguely nervous. Exposed, or something."

Fran nodded. "Of course," she said. She looked around, unconsciously seeking some way to see out. On the Ball, from almost anywhere, you could find a way to see out through the shell. In here it always stopped at another piece of fabric. "If it's not too rude," she said, "how did it come to this? Why did you decide on this closed format?"

Dempster raised his shoulders. "We didn't make any decisions really," he said. "It just happened. People started putting up fabric, and they didn't stop."

"It's still going on?" asked Elgin. "People are still putting up more fabric walls?"

"Yes," said Dempster. "Although it's more rearranging them than putting up new ones now."

“I see,” said Elgin, his gaze roaming the busy patterns of intersecting planes.

Fran was still curious. She asked, “How do you think it started? Do you ever wonder?”

Dempster’s shoulders went up again. “I don’t know,” he said. “Maybe people just like their privacy.”

“Privacy,” said Fran. “Privacy is important.”

“Yes,” said Dempster. “We think so.”

The tour was nearing its end and they were flying along one of the main corridors, back toward the control center. Fran slowed down and took a good look at the patterns woven into the fabric. “These are all different, aren’t they?” she said. “I’ve been noticing different designs in different places.”

“That’s right,” said Dempster. “Whenever someone puts up a new piece, they put a design into it. It’s become a kind of tradition.”

“So they’re all different,” said Fran.

“Almost,” said Dempster. “When you do it, you can choose to do your own design, or use one of the built-ins.”

“Ah,” said Fran.

“That’s it,” said Elgin, returning from his reverie. “I thought I saw something. Some of these designs look more standard than others.”

“You’re probably seeing the difference between the built-ins and the custom ones.” He gestured at the corridor wall. “This is one of the standard patterns, since this is more of a public area. The more private areas tend to have the more personal designs.”

“So they would become associated with the people who live there. The people who made them. Kind of like totems.” Elgin was nodding as it came together.

“Yes,” said Dempster, “sort of. But not everyone takes it that

seriously. A lot of people just let the fabricator pick a random design. Or they just use the last one that was put in there.”

“They use someone else’s design? Does that ever cause problems? People can get pretty fussy about that kind of thing.”

“Yes they can,” said Dempster. “Not always, though. Some people are happy to let others use their work. It makes them feel good to see it up there. But not everyone feels that way. Some people are more possessive about it. Very serious.”

“How serious?”

“Pretty serious,” said Dempster. “There have been fights. People coming to blows right out there in the corridor.”

“That sounds like a problem,” said Elgin. “For the whole station, I mean. It can’t be easy running this place with that going on.”

“No. Although that’s more Fenwick’s area. I’m just an adviser.” He looked at Fenwick, who was busy talking. “It is a problem though. Fortunately no one’s been killed yet, but that’s more good luck than good management.”

“How do you arbitrate the disputes? I mean, once the dust has settled, you must have some way to resolve it.”

“Yes we do,” said Dempster. “The design belongs to the original creator. They have the right to say how it will be used.”

Elgin nodded. “That makes sense,” he said. “If they’re going to fight over ownership, then you need some way to establish ownership.”

“Exactly,” said Dempster. “Our first piece of property law.”

“Oh,” said Elgin, looking at Fran.

“Oh,” she said. “Property.”

“I know,” said Dempster. “But we had a problem to solve, and so far it’s working.”

“It didn’t stop there though, did it?” said Fran.

“No,” said Dempster. “Once that became property, it spread to other things. It seems like we have to decide about something new every week.”

“So, designs,” said Fran. “And if someone can own a design, can they own other ideas like, say, techniques?”

Dempster nodded wearily. “A few of those snuck in before we got up to speed. Now there are a few ways of doing things, like handling ice during construction, that we can’t use without running into ownership problems.”

Fran nodded sympathetically. “But you’re getting a better grip on it now.”

“Yes,” he said. “We clamped down, declared a moratorium and drafted a legal framework, trying to anticipate everything.”

“How’s it working?”

“Okay. Of course it’s impossible to anticipate everything. But we locked down the important stuff.”

“Such as?”

“Communal property, mostly. No one can own part of this habitat. They can partition it off for their use, but they never own it.” He gestured in the general direction of the laser array and the moon. “And nobody can own our resources. They are essential to our well-being as a community, so they belong to all of us.”

“And everyone’s happy with that?” Fran’s smile was knowing, but kind.

Dempster shook his head with a wry smile. “No,” he said. “Some think we should allow it. It’s still a minority, but it’s a noticeable minority.”

“What’s their reasoning?” asked Fran. “How do they justify it?”

“That’s just it,” said Dempster. “They seem to feel very strongly

about it, but when you ask them, they're not strong on specifics." He raised his eyebrows and his shoulders at her. "But they all agree on one thing. They say that private ownership would be more efficient."

"More efficient," said Fran. "Do they say how?"

"No," said Dempster. "When you ask them, they can make a list of the ways they think we're doing it wrong. But when you press them for how they'd do it better, you get vague generalities like more efficient."

Fran nodded. "Be careful," she said. "People who feel strongly about things they can't explain can be dangerous. I speak from experience."

He nodded. "You're talking about the Makers."

"Yes," she said, looking into his eyes. "Among others."

He hesitated, then, "Oh, you mean the Francesians."

~

After their tour of the habitat, they went on to the main base on the moon. Prime One had shuttles specifically for that. The crew at the habitat was continually swapped out, so they had a well-developed transit system for getting people back and forth. The shuttles could also be used for taking maintenance crews to the clusters in the laser array, but usually they used smaller ones for that.

This bigger shuttle could easily carry thirty-five passengers, enough to replace half the crew on the ball. So there was more than enough room for the nine of them, along with Fenwick and Dempster and a handful of their staff. They had straps to hang onto while under acceleration, but were free to move about during the coasting phase. The interior of the shuttle was spacious and pressurized.

They hadn't been at Prime Light long enough to remove their pressure suits, but they did so here. With their suits being serviced and

replenished, they took advantage of the opportunity to stretch their wings in the generous cabin. It had viewports on all six sides, screens attached to cameras on the outside. These were lightweight craft, meant to be quick and nimble, so they were made of ordinary metal. Their hulls were simple thin sheets, cheap and opaque. To keep it simple, they didn't complicate the construction with transparent windows that would compromise the integrity. But the screens were so good that it looked as if they had.

On the way to the moon they took a detour by one of the clusters so they could have a close look at it. When they got close they realized the size of it. It dwarfed their shuttle as they took one loop around it, skimming over the generators at the back and the massive crystals at the front. Elgin and the others were used to the Prime and had become accustomed to its size. It was much bigger than this one cluster of lasers, but they realized that this one represented thousands of others spread out across five thousand kilometers of space. All together they were bigger than the Prime.

Elgin's brain was automatically doing rough size and mass calculations when Fenwick spoke to him. He reeled himself in and said, "Pardon me?"

"I said, it's pretty impressive up close, isn't it?" said Fenwick.

"Oh," said Elgin, "yes." He laughed. "I thought I was used to big, after spending all that time with the Prime, but this is on another scale altogether."

"That's funny," said Fenwick. "We're used to this, and we think the Prime is impressive." he laughed. "I guess it depends on what you're used to, doesn't it?"

"I guess so," said Elgin. "But it still takes a while to get used to it. You should have seen us at first, when we didn't know what to expect."

“I know what you mean,” said Fenwick. “When we first got here this thing looked so big, and covered so much space, that we thought we’d never be able to handle it. But now it’s all routine, and we can make it do whatever we want.”

“Whatever you want. So you’re using it for other things?”

“Sure,” said Fenwick. “We use it like a regular lighthouse. Regular runs between here and Green Comet, for instance.” He frowned. “Until recently anyway.” He shook his head, then his brow cleared. “And we’ve got one en route to Orange Comet, and another coming this way.” He smiled. “And we’ve just sent another pair of balls off to establish another lighthouse.”

Elgin nodded. “You are keeping busy.” He looked at the huge cluster of lasers out the viewscreen. “So you can use these individually.”

“Yes,” said Fenwick. “We can even take just a few lasers out of a cluster and use them separately. We do that for short local trips, within this system.”

“Oh,” said Elgin, his interest piqued. “How’s that going? Are you getting pretty well established here? Has anyone been to our old planet yet?”

“No,” said Fenwick. “Well, yes,” he corrected himself. “No one has actually been to it, but they were pretty close when they were in the inner system working on the Visitor’s old solar collectors.”

“How’s it looking?” asked Elgin, suddenly subdued.

“Pretty good, considering,” said Fenwick.

“Of course,” said Elgin, thinking of what they were taking into consideration.

“There’s plenty of life,” said Fenwick. “It looks as if it’s almost back in balance, if you know what I mean.”

“Yes,” said Elgin. “You can tell, can’t you?”

“That’s right,” said Fenwick. “It just looks wrong when it’s out of balance, doesn’t it? Like that place you saw. The one you saved from the Visitor.”

“Yes. You could just tell that something was wrong.”

“It was hit by a big comet, wasn’t it?”

“Or part of the Visitor. We never settled that.”

“That’s right,” said Fenwick. “I remember that now. We used to have big arguments about that. Big debates.”

“Did you ever settle it? Any final conclusions?”

“No. There was never enough definitive data. Knowing what we knew, you could never say for sure either way.” Fenwick grinned. “It was perfect.”

Elgin laughed. “Perfect for an eternal debate, you mean.”

“Yes,” said Fenwick. “You never had to worry about having nothing to say. It was always open for discussion.” He looked at Elgin. “Well except for the Francesians.”

“What about them?”

“They have officially decided. It was the Visitor. And because Frances was there, because she was responsible for the destruction of the Visitor, causing it to hit that planet, it must have been ordained.”

Elgin’s brow began to pull down. “They’re blaming it on Fran?”

“Not blaming so much. More like attributing. To them it’s a good thing. It must be, because it was ordained and Frances was the instrument through which it was carried out.”

Elgin couldn’t speak. The airtight circularity of it was too stunning. Finally he said, “They just keep getting worse, don’t they?”

“That’s why I left,” said Fenwick. “I couldn’t take it any more.” His eyes widened. “I just realized. If I can’t stand it, how bad must it

be for you and her.” He looked at her, where she was standing talking to Dempster. “For Frances.”

Elgin looked, and his face softened. “She handles it really well,” he said, “but I can tell it’s wearing on her.”

“I hardly know her,” said Fenwick, “but I can tell she’s a remarkable woman.”

“She is,” said Elgin. “And she was an important part of destroying the Visitor. It deserved it, after what happened here. But they can’t blame her for what happened to that planet.”

“No,” said Fenwick quietly. “The Visitor got what was coming to it, after what it did here. And the good news is that our old planet is recovering. Coming back into balance.”

“That is good news,” said Elgin.

“And it’s not just the small things, either. It’s not just moss and algae and insects. It’s actual forests. And we can see evidence of larger animals, especially in the ocean.”

“But no people?”

“No. At least, no sign of civilization. No roads or big buildings. They could be living at subsistence level, I suppose. Just another animal.”

“That doesn’t seem likely,” said Elgin. “Not after thousands of years.”

“No, you’re right,” said Fenwick. “Wishful thinking, I guess.”

Something caught the corner of Elgin’s eye, and he turned in the direction of the Prime’s big sail. It was reflecting the stars, of course, so it was hard to see it against the rest of the star field. He moved close to the screen, craning to see the top, where he knew it was almost touching the laser array. But he was too close to the array and his view was obscured by five thousand kilometers of clusters. He gave up

trying to find the edge and went back to what had caught his eye: the Sun. It was being reflected in the sail, and it was close enough that it was clearly larger and brighter than any other star. He looked out the other side and saw the real Sun, to his eye identical to its reflection in the sail. “That’s interesting,” he said.

“Yes,” said Fenwick, looking back and forth. It was the first time he’d seen it, too. He’d moved out to the habitat well before they arrived, at the edge and at the wrong angle to see this. And they were also lucky that the sail happened to be pointing at the Sun. The Prime entered the system aiming at the array, not the Sun. On any other part of the array’s orbit around the Sun, they would not have had this alignment.

Elgin had a thought and his brain started doing calculations. He soon shook his head. The moon they were headed for would not eclipse the Sun at any point on their route. Not directly and not in the reflection. “Oh well,” he said, “you can’t ask for too much, I guess.” When Fenwick looked at him, he just grinned and shook his head.

10.

THE BAZAAR

Prime One had a square. Not some perfunctory replica of a square, but a real, full-sized one, the equal of the squares on Green Comet and Orange Comet. It was two hundred meters on each side and a hundred twenty-five meters high, and it was the center of life on Prime One.

“The moon is like a big comet with a rocky core,” said Fenwick. “We didn’t have to think long about how we would go about things here.”

“Meaning you burrowed,” said Elgin. “Tunneled out rooms and corridors.”

“Yes,” said Fenwick. “Just like back on Green Comet.”

They were in the square, just inside one of the eight entrances, and that’s where the similarities petered out. Unlike in the original, the four sides of this square didn’t display the colors of the four comets, red, orange, yellow and green. The columns flanking the entrances were clear, uncolored ice. The friezes above them, where they existed, didn’t have a common theme. Instead they appeared to have an idiosyncratic association with the structures below them.

Those structures, mostly fabric with some ice, metal and plastic, looked like nothing so much as stalls in a bazaar. And like a bazaar, there were people apparently haggling over wares. Elgin could see some of his own people among the shoppers. In addition to the stalls, there were other structures, obviously purpose-built for something, but not all immediately obvious to Elgin. He asked Fenwick, “Is this more private property?”

“Not really,” said Fenwick. “They don’t own the space. They have a license to use it.”

Elgin nodded, looking around at the colorful activity. “What for?” he asked. “What are they licensed to do?”

“A variety of things,” said Fenwick. “There are stalls like these ones where people can buy things.”

“Such as?”

Fenwick shrugged expressively. “Well, you know,” he said, “things they don’t want to make or do for themselves. Bits of clothing. Laundering. Specialty items, like arts and crafts. Snacks.”

“Clothing?” said Elgin, looking around. Come to think of it, he was seeing a lot of clothing.

“Yes,” said Fenwick. “You haven’t had a chance to see it yet, because we don’t wear much of it on the job. In and out of those pressure suits all day long, clothes are too much trouble.”

“That makes sense.”

“But here we can go for weeks without having to put on a suit. Here, people can indulge themselves and dress up.”

Elgin nodded, taking in the variety of dress. He looked at the shops again. “And it gives these people something to do. Making and cleaning and mending.”

“That’s right,” said Fenwick. “Nothing builds community like interdependence.”

“That’s true,” said Elgin, looking around. It was messy. It was noisy and somewhat chaotic. But it seemed to be working. They were near the center of the square now, and he could take it all in. He could see that what friezes there were, ten meters off the floor at the height of the tops of the columns, seemed to be associated with larger, more permanent looking places. “Tell me more about these places.” He

pointed at one below a frieze that looked like a stylized image of a bed. “What’s that one?”

Fenwick glanced at it. “That’s one of the sleepers,” he said. At Elgin’s blank look, he explained. “A lot of the people who work out at the array sleep in places like this when they’re here. They can’t be bothered to keep a place of their own here when they’re away so much, so they use the sleepers. There are a few of them around the square.”

“Okay,” said Elgin. He spotted a frieze that looked like a coffee cup. “I think I can guess what that is.”

Fenwick’s eyes lit up. “Ah, yes,” he said. “It’s been a while since I had a good cup of coffee. Would you care to join me?”

“Sure,” said Elgin. He looked around to see where everyone was. He spotted Fran first, in focused conversation with Dempster. And there were Stanton and Galatea and the rest, in a group with their guides. Except Buzzard and Maria. He found them up high, taking advantage of all the space to do some proper flying. Buzzard was even doing some of his trademark swoops to express his joy in the open spaces. Elgin said, “Sure,” again and headed for the nearest coffee shop.

Fenwick took his arm. “This way,” he said. “My favorite café is over here.”

“There’s a difference?” said Elgin. “Don’t they all serve the same coffee made from the same algae?”

“You might think so,” said Fenwick, “but some of them make it better than others. Then there’s the ambience, and the service.” He was waving his hands now. “It’s just better.”

~

Fran saw Elgin heading across the square with Fenwick, and it pleased her to see him enjoying himself. Apparently Fenwick knew how to be a good host. Dempster seemed to be more interested in talking than in being a tour guide, but that was okay with her. She enjoyed learning about the political and social facets of this place as much as the physical mechanics. Maybe more so. And her host was proving to have much the same inclination.

Now he was explaining the details behind the licensing. “If they’ve followed the rules,” he was saying, “and they’ve met the criteria by the end of their probationary period, they get the license.”

“What kind of criteria?”

“They need to provide real value,” said Dempster. “Their offerings have to be something that people want and need. And they can’t have a negative impact on the people or the other vendors or on the square in general.”

“That sounds pretty subjective.”

“It can be.”

“What do you use as a point of reference? How do you decide if someone’s impact is positive or negative?”

“I try to refer to our values as a community. And then we interview people and ask them.”

“I get it,” said Fran. “You really have to use your judgement.”

“Yes,” said Dempster, “but only for the subjective criteria. We do have the concrete tests too. How much trade do they do and so on. And the final test is that their presence mustn’t seriously harm an incumbent vendor.”

“Hm,” said Fran. “Plenty of opportunities for pitfalls, aren’t there? Why couldn’t you allow open competition? Let the people decide who they’re going to support.”

“That’s how it started out, and it worked at first. There was plenty of room and stalls could come and go naturally. But once we ran out of room for new stalls, then we started having problems.” He looked around the square. “As you can see, every spot is full. Before we had regulations, when a vendor was failing they’d sometimes just stay there. They’d live in their stall, taking up space that could be used by someone else.”

“I see,” said Fran. “You couldn’t have your square turn into a squatters’ camp.”

“No. We have to maintain a basic level of order and civility, or we might end up encouraging degeneracy.”

“Of course,” said Fran. “You couldn’t have that.”

“I knew you would understand. So, having told you all this, with your fresh eyes, do you have any suggestions?”

“No,” said Fran. “That’s not my place. This is your world and you should decide for yourselves.”

“Of course. I understand,” said Dempster. “But as a favor. With your experience. Does anything stand out?”

“Okay,” said Fran. “But I want you to know that I’m not criticizing the way you’re doing things. Your system seems to be evolving quite well on its own.”

“Understood. Anything you have to offer will be taken in that light.”

“All right then.” Fran gathered her thoughts for a moment, then said, “Okay. Here it is, for what it’s worth. I understand and agree with most of what you’re doing. You have good reasons for your regulations. Just two things stand out.” She looked in his eyes, and he nodded. “First is the subjectiveness. I don’t think it’s a problem now but it will be eventually, no matter how you try to avoid it. You might have the best intentions, but it’s inevitable someone will come along

who will see it as an opportunity to further their own ends. Then you will have corruption.”

Dempster looked grim. “You don’t pull your punches, do you?”

“I didn’t think you wanted me to.”

“No,” he said. He took a deep breath. “And the second thing?”

“Competition,” she said. “Natural selection. I understand your instinct to keep things orderly, and to protect the vendors who are already providing good, reliable service. It’s working and who wouldn’t want to hang onto something that’s working?”

“That’s the idea,” he said.

“And that’s why I hesitate to suggest this, but it’s not going to work forever. In spite of everyone’s best intentions, you’re going to come to a point where your incumbents feel as if they’re entitled to your protection. Once that happens, it’s only going to go from bad to worse.”

“But we’re trying to provide stability,” said Dempster. “Trying to prevent chaos.”

“I know,” said Fran. “It’s a good motivation, but it can lead to inflexibility, and that can lead to stagnation or worse. Your incumbents have less reason to make the effort to provide good service, because they don’t have to. And their potential competitors can end up despairing, or becoming resentful. That sets the stage for a lot of unhappiness amongst everybody. And that’s going to be a bigger problem for you than a little chaos.”

Dempster looked thoughtful, even a little sceptical, but he said, “I can’t deny the plausibility of what you say. We had some of the same ideas while we were planning this. Ultimately we chose certainty over uncertainty, but what you say has me thinking again.” He looked around the square, with its shops and sleepers and restaurants, and

all the tidy stalls. "It looks good now," he said, "but I can see the logic in your forecast." He looked back at her. "Do you have a recommendation?"

"It's not my place to recommend," she said. "However, I can offer a suggestion for your consideration."

"Okay," he said. "I will take it as such."

"Competition," she said. Now she looked around the square. "Let's take restaurants. If your analysis shows that the optimal number of restaurants is twenty, then license twenty-one or twenty-two. Keep your incumbents uncomfortable, and give hope to your outsiders."

Dempster nodded slowly. "That could work," he said.

"It could. All things being equal, it would be a five or ten percent reduction in revenue for your established restaurants. But all things wouldn't be equal. Some would lose little or nothing while others lost a lot. The worst of them would fail and the best of the newcomers would take their place."

"Like you said. Competition." He looked away, scanning the square. "Natural selection."

"A little bit of chaos," she said, "to keep things dynamic."

He looked at her and smiled. "Frances's chaos theory, eh?"

She laughed out loud, turning heads, among them those of her friends. Stanton and the Doctor at a stall displaying medical equipment. Nigel and Galatea looking at cleaning supplies. Maria and Buzzard still exploring the heights. Archie in the middle of the square, turning slowly and trying to absorb all the sounds and activity. It's possible even Elgin heard her from inside the café, since the walls were only fabric.

"Thank you for the tour, Dempster. It's been enjoyable and informative." Fran looked around and made eye contact with her friends,

and they began to move in her direction, with the exception of Buzzard and Maria, who stayed aloft. “Now if I can just find Elgin ...”

Dempster glanced across the square, and she followed his eyes to a coffee cup sign. He said, “He’s with Fenwick, so the chances are good that he’s being treated to a cup of coffee.”

“Maybe we should join him,” said Fran. “If there’s a good cup of coffee to be had, then I know a few people who’d probably like to check it out.”

“You can count me in,” said Stanton, gliding up to them.

“Me too,” said Galatea, hooking her arm through his,

“I’ll show you the way,” said Dempster, leading them toward the café. “I’m sure Fenwick will enjoy the company. He’s always happy to introduce people to what he calls the best coffee on Prime One.”

He led them there, then said his goodbyes at the entrance. “Fenwick will take care of you,” he said. “I have some things that I need to tend to. Clerical stuff.” He shrugged apologetically.

“We understand,” said Fran. “We’ve kept you from your duties long enough. Thank you again for the tour.”

“My pleasure,” he said. “And thank you for your suggestions. I’m sure they will prove to be just what we need.”

He turned and flew away, heading toward one of the exits in the wall with the window. What would be the orange wall back on Green Comet. They turned and entered the café, so they didn’t see him veer away from the exit and toward the window. They didn’t see him make a call to someone on Green Comet. Didn’t see the intense, focused conversation that went on for several minutes. They didn’t, but Buzzard and Maria did.

11.

ONE BAD APPLE

Elgin was facing the opening when Buzzard and Maria came into the café. Buzzard gave a small nod and Elgin nodded back. He looked at Fran, and he could see that she'd got it.

Fran had been complimenting Fenwick on the coffee. "It's almost as good as what Elgin makes at home," she said.

Fenwick looked at Elgin, impressed. "I didn't realize," he said. "I hope this isn't too disappointing."

"Not at all," said Elgin. "This is good coffee."

"Just not as good as what you're used to."

"No, it's fine," said Elgin. "Really." He took a sip. "I know good coffee when I taste it, and this is good."

Fran asked, "Do you come here often, Fenwick?"

Buzzard and Maria arrived at the table, and they went through the hubbub of getting them seated and served. Then Fenwick said, "Do I come here every day? Yes, when I can. Twice, sometimes. I guess it's my little vice."

"Well, if this is it," said Fran, "then I don't think you have anything to worry about."

Fenwick ducked his head. "I'm afraid this is it," he said. "I don't lead a very exciting life."

"I don't know about that," said Fran. "You're running a lighthouse, using captured alien technology. You're helping to send out more lighthouses, to broaden your people's presence in this part of the galaxy. And you're entertaining people who have just come back from meeting

the aliens who sent this technology. That sounds pretty exciting to me.”

Fenwick sat up a little straighter. “I never thought of it like that,” he said. “I’m used to thinking of myself as more or less of a clerk. Just keeping things organized and running efficiently.” He looked around. “Now that you mention it, I guess there’s more to it than that, isn’t there?”

“Of course there is,” said Fran, while everyone nodded their assent. “You do a lot here.”

“Thank you,” he said. “Of course, it’s not just me. I wouldn’t be able to do it without Dempster.”

“No, I can tell you rely on him.”

“Yes,” said Fenwick. “Sometimes I think he knows more about this place than I do.”

“He must be invaluable.”

“He is. He takes care of all the little things. He never bothers me with the details.”

“It must be nice to have someone so dependable,” said Fran. “Someone you can trust so much.”

“It is,” said Fenwick. He looked thoughtful. “I do trust him,” he said. “I have to.”

“It looks as if Dempster has made himself indispensable,” said Fran. “Irreplaceable.”

Fenwick peered at her, but saw only a sincere smile. “Yes he has,” he said quietly. Then, sucking a sharp breath through his nose, he looked at everyone’s cups. “Does anyone want more coffee?” he asked. When they declined he said, “Then let’s go finish the tour.”

There wasn’t much left to see. Most of Prime One was in its square. Other than the flashball court, everything outside the square was either

for services or administration. So far, anyway. That would change as they grew. The corridors would expand, and new areas would open up. Maybe even new squares. There was certainly enough room for it on this big, snow-covered ball.

Now, though, they were treated to a flashball game. It was an exhibition game put on for their benefit, featuring teams comprising the best players on the moon. They played a friendly match, displaying their skills and highlighting the beauty of the sport. They finished up with a variation on Elgin's Fractal, a pattern used by Elgin's team, the Harriers, a long time ago. He graciously acknowledged this tribute to a long gone time, before they even knew what the Visitor was, or what it would do to them.

~

Their hosts put them up in one of the sleepers. Fenwick assured them that it was the best Prime One had to offer. He said, "Or so Dempster tells me, and he'd be the one to know."

"I guess he would," said Elgin. "I get the impression that he knows everything, and everybody."

"He sure does," said Fenwick. "He got you guys the best suites." He winked. "Says the manager owed him a favor."

They were laughing as they split up to go to their four separate suites. There was one for each couple, and the fourth one would be shared by Nigel, the Doctor and Archie. Once they got settled in and checked out the amenities, they all went and gathered in Elgin and Fran's room. As all the suites did, it had a big window with a great view of the square.

As they stood looking out, Elgin said to Buzzard, "You saw what we thought you might?"

“Yes,” said Buzzard. “At the window.”

Elgin cautioned him with a glance. If what they suspected was true, then it was likely that there was surveillance in their rooms. He forced a chuckle. “I told you so,” he said. “I win the bet.”

Buzzard, who couldn’t force anything false, just tried to stick to the script. “You were right,” he said. “It’s just like back on Green Comet.”

“Right down to the point?” Elgin asked, surreptitiously touching his hairline.

“Yes,” said Buzzard. “We were pretty far away, and we didn’t want to stare, but it definitely came to a point.”

“Okay you two,” said Fran. “You can discuss engineering and design later.” She pointed out the window with her chin. “Interesting, isn’t it?” she said. “How this works, I mean.”

Everyone agreed with her, but Stanton said, “It’ll never last, though.”

Elgin nodded. “That’s right,” he said.

“Why not?” asked Fran, though she felt the same way.

Stanton said, “I expect Elgin will say that the lines don’t flow.” They all laughed, then he went on. “But to me it’s something like engineering, where this is like a machine. But instead of concentrating on the function of the machine, they’re focused on its operation and its parts.”

Fran nodded. “Like the political and economic philosophy, instead of the practical outcome.”

“Exactly,” said Stanton. “Made them more important than the finished product.”

“The concepts of property and ownership are more important,” said Fran

“Right. And in abstracting those principles — property and owner-

ship — they’ve made it more likely that they will become more valuable than the whole machine. People who seek power and wealth will find them hanging there in concentrated form. They won’t be able to resist.”

“Resistance will not even occur to them,” said Fran. “Accumulating power and wealth is its own justification.”

“Right,” said Elgin. “That’s right. It sounds right.”

Buzzard looked worried. “We should tell them,” he said, his brow wrinkling. “We should warn them.”

Stanton put his hand on Buzzard’s shoulder. “It wouldn’t do any good, Buzzard. They wouldn’t listen to us. We’re outsiders. What do we know?”

“But Elgin said,” said Buzzard. “Elgin knows.”

“We know that,” said Stanton.

“Everyone knows that,” insisted Buzzard. “It’s a legend.”

“Right,” said Stanton. “And to most people, that’s all it is. They wouldn’t think it would apply to their actual situation.”

“But, that’s crazy,” said Buzzard. “How can they not see what’s true? How can they not see what’s right?”

Stanton shook his head. “I’m sorry, Buzzard, but people are very good at ignoring the truth when the alternative is to change their behavior.”

Buzzard was shaking his head, unable to think of anything to say. Fran put her hand on his arm and said, “It’s not our place to make them change. I gave Dempster a couple of suggestions that might help, if they follow them. But whatever they do is up to them.”

“Up to them,” said Buzzard. “Up to them.”

~

Fenwick accompanied them back to the Prime Light habitat, where they took the pod back to the Prime, and the Ball. That hour gave them a chance to talk, the first time they felt free to do so since their suspicions were aroused.

Elgin asked Fran, “When did you first become suspicious?”

“Do you remember when they were telling us about how the Francesians took over Green Comet?” When he nodded, she said, “He was making excuses for them. Saying it wasn’t as bad as it looked.”

“That’s it? It doesn’t seem like much.”

“That was enough to put me on my guard. Then I was able to watch for subtle clues.”

“Such as?”

“Shadings of language. People find it difficult to speak against their beliefs, so when they try they often end up using less definite language.”

Elgin smiled at her and raised his eyebrows. “Subtle is right. I’d never notice that.”

“Not casually, no,” she said. “But you could if you had to. And anyway, I’ve seen the way Francesians look at me. Even though he was trying to hide it, I could catch glimpses of it.”

“Now that you mention it ...” said Elgin. He had seen enough Francesians looking at her to know what she meant.

“Fran.” It was Nigel. “Everybody.” When he had their attention he said, “I’ve found three listening devices.”

Stanton looked shocked and outraged, but before he could speak, Fran said, “I thought you might. Where are they? Are they still functioning?”

“Not this one,” said Nigel, holding out something barely visible in

the palm of his hand. "I've disabled it. But the two on the outside of the hull are still working."

"The outside?" said Fran. "What would they expect to hear out there?"

"It's not as good as having it in here," said Nigel, "but they can pick up vibrations in the hull when we talk." He flipped up his helmet, which stiffened, and sealed it. "I'm going out to get them now."

Elgin went to help him with the airlock, his mind going back to when Nigel spent fourteen years searching the surface of Green Comet for the Visitor's spies. "Be careful," he said, "and don't take so long this time, eh?"

Nigel looked blank, then he got it. "After what happened last time," he said, "with all those cancers, I don't think the Doc would allow it."

While Nigel was outside scouring the hull, Fran asked Elgin, "Do you think Fenwick knows? You spent the most time with him."

Elgin shook his head. Then his eyes unfocused as he thought about it. Then he shook his head again. "I don't think so," he said. "I think he's just what he seems. A man devoted to his duty. It probably hasn't occurred to him that his most valuable assistant could be any less devoted."

"That's what I thought," said Fran, to nods and agreement all around. "Fenwick doesn't know that he has a Francesian spy in the heart of Prime One."

"We have to warn him," growled Stanton, his outrage still simmering.

"I don't think that's a good idea," said Fran. "At least, not right now."

Elgin agreed with her. "Having people he barely knows accuse the person he knows and trusts best wouldn't solve much."

Stanton knew that was true, but he didn't like it. "We still need to do something," he said. "We can't leave him at the mercy of a traitor."

"We might have already done something," said Elgin.

"Like what?" said Stanton. "We've done nothing."

"It might not seem like much, but think about when we were in the café and Fran was talking to Fenwick."

"Okay."

"When she was telling him how lucky he was to have someone he could trust to do such important work, she made him think, didn't she?"

Stanton nodded, his mind's eye back in the café. "Yes," he said. "He did seem to think about it."

"So," said Elgin, "a word to the wise, without him even knowing about it." He looked at Fran, a proud smile stretching his face.

"I'll be," said Stanton, also looking at her. "Still the smartest woman I know."

"Hey!" said Galatea, punching him on the shoulder. But she wasn't vain about that, and she laughed along with the rest of them.

Now Fran was blushing. "Okay you guys," she said. "That's enough of that. It's not as if I had this big plan or anything."

"No," said Elgin. "You just instinctively did exactly the right thing." He winked at Stanton. "Nothing special."

If Nigel had come back in right then, he'd have seen Fran, flustered but smiling, awash in warm laughter.

~

Buzzard and Archie were in the flashball court, throwing the ball around and talking. When the pod got back to the Ball, everybody went their separate ways. They needed to rest and take care of personal

business, and they needed to come to terms with what they'd learned on their excursion. Even before they went, they found out that Green Comet had become a police state and theocratic dictatorship. Then Archie discovered that his home, Orange Comet, had become just as repressive in reaction when it threatened to happen to them. Finally, Prime One was infiltrated by a fifth column, agents of the Francesians, who had gone so far as to put listening devices in and on their pod. Archie and Buzzard had chosen the flashball court as their place to think about all that.

Buzzard said, "I wonder what we're going to do." He threw the ball. "When it's time. To do something."

Archie, moving efficiently, caught the ball and threw it back. "Me too," he said.

"I wonder if we're going to go back to Green Comet," said Buzzard, fluidly snagging Archie's throw. "Back to Green Comet."

"Probably not me," said Archie.

Buzzard caught himself in mid-throw, but he didn't say anything. He couldn't think of anything, so he just threw the ball.

"It's not my home," said Archie, catching it. "There's no reason for me to go there." He threw it back.

Buzzard absently caught the ball. "But you said you can't go back to Orange Comet. Can't go back." He didn't even throw it this time.

"I know," said Archie. "I can't live in such a repressive place. Not when it was so free and open when I left. And your comet wouldn't be any better." He clapped his hands. "Come on. Throw the ball."

Buzzard tossed it slowly. It hardly lighted up at all. "But what will you do? Where will you go? Will you stay here?"

Archie gave his head an economical shake. "I doubt if I will stay

here.” He caught the ball. “Spies? Guns?” He flung it hard. “This might be even worse.”

It slapped into Buzzard’s palm, and he raised his eyebrows. It hadn’t flashed white, but it was hard enough to glow bright yellow. “That doesn’t leave much,” he said. “Lighthouse? A lighthouse?”

Archie shrugged. “Maybe.” He looked out at the looming shape of the Prime, distorted by two shells of ice. “Maybe I’ll just stay with the Prime,” he said.

“Oh,” said Buzzard, noticing the ball in his hand. He threw it. “Sure. You could be in charge of the unloading. In charge.”

“Yes,” said Archie. “That would give me something to do while I think about it.”

“But then what?” asked Buzzard. “After the unloading is finished, then what would you do?”

“I don’t know,” said Archie. “Maybe I’ll go back with the Prime.”

“Go back? With the Prime? Go back with the Prime?”

“Maybe,” said Archie. “It’s an option. It’s no worse than the others.” He threw the ball back to Buzzard.

12.

GOODBYE TO THE PRIME

The pod was hanging above the prow of the Prime, waiting for some of its passengers to return. They were down inside the ship, having a last look. Buzzard and Maria, Elgin and Frances, and Scarface, the Prime's service robot, went in by the hatch near the centerline. The same hatch they used when they first entered the Prime, and when they first met Scarface.

"I still get shivers sometimes, when I think about that," said Fran. "Watching you guys disappear down here. Not knowing what you were going to find." She shook her shoulders.

"Yeah," said Elgin. "I remember crouching down and watching your feet as you went up the corridor. Then you turned the corner and it was just your voices, and flickers of your lights."

"It was kind of scary," said Maria, "but by then we were pretty sure that the Prime was harmless, weren't we?"

"No," said Fran. "All we knew was that it hadn't reacted to our presence yet. We had no idea what it might do when we penetrated inside it."

"Okay," said Maria. "We weren't sure. But it hadn't done anything yet, so the odds were that it wouldn't."

Fran knew that they were nowhere near that certainty, but she also knew that Maria and Buzzard had never needed that level of assurances before they acted. Sometimes they made her feel timid and stodgy. She laughed. "And that was good enough for you, wasn't it?"

"Of course," said Maria, grinning at Buzzard.

“Of course,” he said. “Good enough for us. Good enough.”

They entered the alcove where they first met Scarface. Where Buzzard pulled out the drawer of components, setting off a flashing green light. It must have triggered an alarm because within minutes they were joined by an eight limbed service robot. That’s when they first saw Scarface, and when he had the mishap that earned him his name.

They looked at him, hovering quietly, awaiting instructions. In addition to the scar across his face, he had a vee-shaped dent near the top of his dome. He got the scar when Nigel was experimenting with controlling him. He was a little more sensitive to inputs than Nigel thought, and he lashed himself across the face before settling down. The dent came from Plub’s machete in a moment of exalted rage.

Buzzard drifted over to the drawer and gave it a tug. It popped out a couple of centimeters, and the green light began flashing. They looked at Scarface, but he didn’t react at all. He was no longer programmed to service this part of the Prime, so he did nothing. In a couple of minutes though, another robot entered the alcove, crossed the room, checked the equipment, reset the alarm and closed the drawer. Then it turned and looked at them.

“This is where it got interesting the first time,” said Maria.

Buzzard laughed, remembering Scarface’s arm flailing as Nigel tried to learn how to control it. He said, “And funny, too.”

Then, the robot was surprised to find them there, and it checked them out with its sensors. This time there was no surprise. The Prime’s robots were accustomed to working with them and taking instruction from them. That’s what it was doing now. It was waiting in case they had any instructions for it. They didn’t, so Maria sent it on its way, using verbal commands.

“Thank you,” she said. “That’s all for now. You can go back to your station.”

It turned and left immediately, and they rushed to the door to watch it go. In the microgravity, with no atmosphere, the robots used to rely on magnetic feet to get around. They had retrofitted them with setae, so they weren’t dependent on metal surfaces, but their means of locomotion were the same. It reached far out in front of itself with a leg, and pulled itself forward. Repeating, alternating side to side, it quickly built up to an appreciable speed. They watched it cover the hundred meters to the centerline in a few seconds, then turn left, disappearing.

“I love watching that,” said Maria.

“Me too,” said Buzzard.

“It looks so languid,” said Fran, “but then they go so fast.”

“It’s very efficient,” said Elgin. “There should be some way we can use that.”

Fran looked at him. “Any ideas?”

“I don’t know,” said Elgin. “Not really.” He looked at Maria. “Maybe the smashers, somehow?”

“The smashers!” she said. Operating smashers was one of her favorite things. She loved to slip into a five meter exoskeleton and go out and reshape the surface of a comet. “Do you think we could?”

“Maybe,” said Elgin. “I don’t see why not.” He looked down the hallway, where the robot had gone. “We’d have to change the legs, of course. They couldn’t walk like that with the legs they have now.”

“Right,” said Maria. “How about four? Do you think we could give the smashers four legs, like Scarface and the other robots?”

“I don’t see why not,” said Elgin. “That’s just a matter of

engineering.” He shook his head. “The problem would be trying to adapt your bipedal gait to four legs.”

“Oh yeah,” said Maria. She laughed. “That could get complicated.”

Elgin agreed, and they became so engrossed in the details that they didn’t notice they were being herded out of the alcove, back up the corridors to the hatch.

~

Back in the pod, cruising down the length of the Prime toward the balls on the stern, the nine were in an emotional conversation. Stanton and Galatea, the Doctor and Nigel had stayed aboard while the other four went inside. With them was Archie, the center of their attention. The pod was reaching its limits with nine passengers. Ten, if you counted Scarface.

Fran was saying, “By now we know you’re serious about this, Archie, so no more questions about that.”

In what for him was broad humor, Archie wiped his brow. “Thank goodness,” he said.

Laughing with the rest of them, Fran said, “Okay, I admit I might have dwelt on it a bit, but it’s such a big decision.”

Stanton looked at Galatea. “She might have dwelt on it a bit.”

“A bit,” said Galatea, distractedly. She was closely examining Scarface, checking to see that he was okay after his excursion. He was her favorite worker, after all. Always did the work exactly as instructed, and never complained.

“Okay,” said Fran, “maybe more than a bit. I’m not going to apologize for caring. I’ve gotten to know Archie, and I’ve come to care about him. Now he’s planning to go away and we might never see him again. You can’t blame me for wanting to be sure. For wanting to know

that he's sure." She was talking about Archie, but she was looking right at him.

"I'm sure," he said. "And I don't mind, really. It just shows me that you care."

"Well I do," she said. "But this isn't about that. We know you're going and we know you've thought it through. So now I just want to know if there are enough people who want to go with you."

"I think so," he said, nodding slightly. "We found with the balls that thirty-five is a good number to have awake, and there are about a hundred people who want to go."

"That's enough for three shifts," said Elgin.

"Yes," said Archie. "Five years up for each ten in hibernation. It's not ideal, but it's doable."

"At that rate it would only be about four shifts to get there," said Elgin. "You can handle that."

"No problem," said Archie. "And so far most of them are from the Ball and Tainui. We haven't tried very hard with Prime One, yet."

Stanton frowned. "You don't think they'll mind you poaching their people?"

"They shouldn't mind," said Archie. "They don't have a shortage of personnel."

"There's not a big surplus either," said Stanton. "It's not as if they're overpopulated. And they sent that lighthouse recently. That took away about four hundred people."

"I know," said Archie. "But they can still spare a few."

"Of course they can," said Fran.

Elgin said, "There was no shortage of people for unloading the Prime. If anything, we had more volunteers than we needed. I don't

think you're going to have any trouble finding people for your expedition."

"That's right," said Archie. "I have a few in mind already. I worked with them transferring the resources, and I got to know them."

"Me too," said Maria.

"Me too," said Buzzard. "Got to know them."

Archie gave one of his economical nods. "A lot of them are getting tired of this place. They say it's losing its simplicity. They like it when there's a job to be done, and people to do it with." He looked at the moon in the distance. "They say this place is getting too political."

"Too political," echoed Buzzard.

The Doctor cleared his throat. "Be careful," he said. "When you're choosing people, be careful of their motives. If they're running away from this place, how will it be on the Prime, with fewer people, more restrictions and the inability to run?"

"I know," said Archie. "I know I have to be careful." He looked worried. A tiny crease had formed on his smooth brow. "But I can't tell. I can't tell what people are thinking." He looked at the Doctor. "You know."

"Yes I do," said the Doctor. "Reading people is not one of your many skills." He pursed his lips, then nodded. "Reading people is one of my skills. A requirement in my profession. If you like, I could help you in the vetting process."

Archie's crease went away. "I would really appreciate that, Doctor."

"Consider it done, then." The Doctor nodded sharply, the cabin lights catching his pate.

~

They hadn't had to fabricate ice spheres for transport and storage of the resources they removed from the Prime. It was necessary back at the Makers' world, because they were just leaving the stuff floating in space at the lagrangian point. Here they could dump it onto the surface of Prime One. At five hundred kilometers wide, the moon didn't have much gravity, but it had some. Enough to hold the stuff down once they put it there. It wasn't as if it was going to blow away. Or get rained on.

So they stuffed it into big bladders, hauled it over there, and dumped it. It was quick and efficient, and ended with conical piles dotting the surface of Prime One. You could practically tell by the color which piles were what.

It was so easy that they had it done in less than a year. Now it was time to send the Prime back to the double world, and Archie could get serious about it.

~

When they got back to the balls they found they had company. There were two shuttles standing off just fifteen meters away, inside normal safety limits, and well inside the boundaries of etiquette. It was normally not only rude, but disrespectful to intrude so far into your host's space. Unless you were specifically invited in, this kind of intrusion could only mean that something was wrong. That there was an emergency, or worse.

"What do they think they're doing?" growled Stanton.

"Yeah," said Galatea, moving to his side. "What's going on?"

Elgin frowned. "If there's something going on, why didn't anybody call us?"

Fran chose moderation. "Let's not get ahead of ourselves," she said. "Maybe there's a good reason for this."

Stanton and Galatea snorted in synchrony. Stanton said, "I'm having trouble thinking of any."

Elgin said, "Why wouldn't they call us, if there's a good reason?"

"I don't know," said Fran. "Maybe Fenwick planned a surprise to celebrate finishing the unloading. Maybe anything. The point is, we don't know, so we shouldn't assume."

Stanton and Galatea snorted again, but Elgin's frown loosened up and he said, "Fran's right. We should find out what's going on, and not jump to conclusions."

Nigel, who was flying the pod, got on the radio as he set final course for its dock. "Ball, this is Pod One, over."

There was a delay before the reply finally came, and then it was not very informative. "Pod One, this is the Ball. Go ahead."

"Ball, Pod One on final approach for docking. Requesting clearance."

Another short delay, then, "Pod One cleared to dock. Ball out."

They looked at each other, open speculation on their faces. Nigel finally shrugged and began the docking sequence. They weren't going to learn anything out here.

It took only a few minutes to get securely docked, and a couple more to go in through the airlock. They made their way through a silent ball directly to the control center. There they found an anxious radio operator, and their guests.

It wasn't Fenwick after all, but Dempster, along with six others. They all had guns attached to their thighs, of course, and two of Dempster's companions had larger weapons in their hands.

Fran felt Stanton bristling, and Elgin was projecting what she felt

as distant thunder. She spoke quickly, to deflect the coming storm. “Dempster,” she said. “To what do we owe the pleasure of this surprise visit?”

“Frances,” he said. “It’s a pleasure and an honor to see you again. Please excuse the way things appear. I’m hoping it proves to be nothing but a formality.”

“Things do appear strange,” she said, looking pointedly at the armed men. “I hope you can explain.”

13.

NO FAILURES ALLOWED

“There’s really no explanation necessary,” said Dempster, glancing at his six companions. “We’ve just come to take possession of the Prime, and our resources.”

Fran heard shocked gasps, and the quiet Ball became quieter still. Some of her companions were shocked, but Fran had anticipated something like this. Coming here armed and apparently ready to do violence was audacious, and thinking they had the right to take the Prime was presumptuous, but it didn’t surprise her. She expected something like this from the Francesians. Maybe not this extreme, but she had expected them to put a claim on the Prime. Given this turn of events, she said the only thing she could say. “The Prime doesn’t belong to you.”

“Not me personally, of course,” said Dempster. “I’m making this claim on behalf of Green Comet.”

“Oh,” said Fran, “how noble.” She smiled with satisfaction at his offended reaction. While he struggled to regain his poise, she looked at the radio operator, who nodded. She turned back to Dempster. “What you really mean is you’re seizing these resources for your Francesian masters. Isn’t that right?”

“They are the duly elected representatives of Green Comet,” he said. “Whatever they do is in the name of Green Comet.” He was flushed. His shoulders were up. This was obviously not going as expected.

“Did you really think you could just come in here with your guns and take what you wanted?”

That was exactly what he thought, but he didn't want to admit that now. What was wrong with these people? Why weren't they afraid? “This is not about what I think, or what you think,” he said. “These resources clearly belong here. They were taken from here, and now they're back where they belong. Prime One has its share, and now we're going to take the rest to Green Comet.”

“It's true that some of them belong here,” said Fran, “and that share has been delivered to Prime One. Now the rest is going back where it belongs.”

“There's no one there who can use those resources. You said so yourself.”

“Not at present, true,” said Fran. “But when they are ready, it will be there.”

“If you wanted them to have it, then you shouldn't have given their share to the Makers. They certainly didn't deserve it.” Dempster drew himself up and looked around for approval.

“You people have covered all the angles, haven't you?” said Fran. “You've really convinced yourselves that your greed is justified.”

“It's not greed!” Dempster shouted, flustered and embarrassed by his outburst. “It's ...” He stopped and put his hand to his ear. “What?” His eyes widened and turned to the Ball's shell, searching for something.

“What is it, Dempster?” asked Fran.

He stared at her. “What did you do?” He looked at the radio operator. “Get away from there,” he said, his hand near the pistol on his thigh.

The radio operator looked at Fran.

“Get away! Move!” said Dempster, hand on the butt of his weapon.

Fran nodded, and the woman fluttered away a few meters, joining a small group of other crew members. Fran turned back to Dempster, who was glancing repeatedly at the stern of the Prime towering above them. She said, “What’s troubling you, Dempster?”

“You know full well what it is,” he said. “You’ve launched two vessels, and they’re coming back here.”

“Yes, of course,” said Fran. “The scouts.” She opened her palms and said, “That’s automatic. When we put the Prime on alert, it will do that when it senses danger.”

“You put the Prime on alert?” Dempster’s hand went slack and fell away from his gun.

“Yes,” she said.

“But why?” he said. “Are you saying you knew this was going to happen?”

“Not exactly like this, no. But we saw the signs and it seemed likely that something like this might happen.”

“Signs? What signs?”

“Nothing overt,” she said, hastening to reassure him. “We saw you calling your masters.” When she saw his shocked response, she said, “Oh yes. We knew right away that you’re a Francesian. Even without the funny hairdo, we’ve seen enough of you to know.”

Dempster’s shoulders slumped. When the scouts cleared the end of the Prime and flew over the Ball, he hardly looked at them.

“Then there was your interest in the offloading of the Prime.”

He looked at her, his mouth open. “Of course I was interested. Everyone was,” he protested.

“Yes, they were,” she said, “but your interest was of a more focused

nature. We've just experienced similar greed and ambition with the Makers, so it wasn't hard to recognize."

"The Makers? You can't possibly be comparing us to those primitives." Now he looked offended.

She raised her hands, placating. "Not all of them," she said, "but there are certain similarities to the Acquisitors."

"The Acquisitors?" He was dumbfounded that she would compare his people to them. They were the epitome of avarice.

"Yes," she said, "but other than that, you're quite different. Their theology, for instance, is much more reasonable than yours."

"Reasonable?" Dempster had forgotten all about his gun. "They think their souls go to a brown dwarf when they die."

"Some of them do," said Fran. "That's true."

"Well, then?" said Dempster. "Or maybe you're thinking of your pet Maker, who believed that his god created the universe, and then left it alone. A god that never intervenes. Really?"

"Plub was by no means my pet," said Fran. "And that is certainly more reasonable than having saints who disagree with you, isn't it?"

That stopped him. Now he looked nervous and embarrassed. But he managed to say, "No, it isn't."

Fran glanced aft where, distorted through the flashball court, she could see the scouts deftly inserting themselves into the fifteen meter gap between the Ball and Dempster's vessels. Dempster was looking, too, but she got his attention by asking, "Why isn't it?"

Struggling with his embarrassment, he said, "We are admonished by our spiritual leaders to cling to the truth that brought you to sainthood, and to overlook the errors in your mortal lives since then."

"I see," said Fran, amusement lighting up her face. "That's convenient, isn't it?"

Dempster blushed, like a child being teased by an adult. Scowling, he said, "It's not just convenient. It's the truth, as revealed by God's mortal representatives. His saints, who were temporarily given divine wisdom to show us the way."

Looking at him standing there, proud and defiant, Fran shook her head. "I can see that I won't be changing your minds," she said, "so give us your weapons and stand down."

Dempster's hand went back to the butt of his gun. "No," he said. "The Prime belongs to Green Comet and we will have it."

"How are you going to do that? There are seven of you here. Your vessels are cut off, and can't help you. And how do you propose to get Prime One to send you home? Or have you taken over the moon as well?"

Now he looked sly. "Prime One will not be a problem," he said. "It should be under our control by now."

Fran nodded. "Your plan to destabilize the place worked, then."

He was startled. "How do you know about that?"

"By simple reasoning," she said. "You had the ability to make the place work better, but you chose not to. That, along with other indications, told me that you wanted it unstable. The only reason you would want that would be to make a coup easier. Everything went as you planned, and here you are."

If he was disappointed that she figured him out, he didn't let it show. "That's right," he said. "It all worked perfectly, and here we are. And soon more of my people will be here, and we will have the Prime. It is ordained."

"Ordained." Fran sighed and looked at Elgin. "Here we go again," she said.

It wasn't clear to Elgin what she meant by that. Was it yet another

tiresome example of the theology built around her? Or was it a reference to the entitled attitude they'd seen in the Acquisitors? No matter. It might just as well be both, because here it was happening all over again. "Never mind," he said. "It will be over soon."

Dempster didn't like that. He thought they should be worried. Not only were they not worried, they seemed to be thinking about something else altogether. "Hey," he said, "stop that. Let's get back to the matter at hand."

"Of course," said Fran. "Is there something more you wanted to say?"

"No," he said. "It's all been said. Now we'll have the Prime."

"Why don't you just take it?" she asked. "It's right there. You have the guns."

His smirk was almost a contemptuous leer. "Do you expect us to fall for that?"

"Fall for what?"

"Such an obvious trap. Something as valuable as the Prime's resources would never go unguarded. And you've had plenty of time to set any number of traps."

"Traps? You suspect us of setting traps on the Prime?"

"Of course. You'd be fools not to. It's what any rational person would do. It's what I'd do."

She bit her tongue and didn't point out the obvious contradiction between what a rational person would do and what he was doing now. Besides, for a specific narrow set of examples, she supposed that this would count as rational behavior. "What kind of traps would you lay?" she asked.

"Any number of things," he said. "You could program hatches to

open and close. Or those eight hundred robots. They could be programmed to protect the resources.”

“Do you really think we’d program a robot to hurt a person? Just to protect resources?” She shook her head again.

That gave him pause, but he rallied. “What about those scouts?” he said. “You programmed them to attack.” He pointed out through the front of the Ball at the offending vessels.

“Technically, they’re there to defend.”

“Semantics,” he said with an angry sweep of his hand. “In the end, they will attack people to defend resources.”

“Actually they won’t attack people. They’re there to defend people from attack. All they ever do is destroy any weapon that is fired. As they did in this same situation involving the Acquisitors.”

“You can’t compare us to those primitive Makers!”

“Perhaps only in your actions,” she conceded. “At any rate, if your people are planning on firing any weapons, they should ensure their pressure suits are on and sealed. I don’t think those shuttles are armored, are they? A shot that takes out a weapon could easily breach the hull, couldn’t it?”

Dempster got a panicky look on his face, and Fran guessed that he had an open connection with the shuttles. He confirmed that when he put his hand up to his ear and turned away, talking. When he turned back she asked, “Did you warn them against shooting?”

“No,” he said. “They will shoot if they have to. They are brave and loyal to the cause.” His body betrayed his words, and she could see his uncertainty, but he pressed on. “Besides, they don’t have to do any shooting out there.” He glared meaningfully.

“I understand,” she said. “They can come and shoot us in here, and the scouts won’t be able to do anything, right?” When he didn’t reply

she said, “You are prepared to shoot us, aren’t you? I can’t see how far your plan can go if you aren’t.”

Dempster didn’t look sure, but one of his guards moved forward and said, “I’ll do it, sir. I’m ready. You can count on me.”

The shock on Dempster’s face told her everything she needed to know. “There you go,” she said. “You just have to say the word.”

He was still trying to find his voice when another guard said, “They’re here. The other vessels are arriving. I can see them.”

He looked out and saw that it was true, and that lifted his spirits, renewing his resolve. Once more he was in control, filled with certainty. He said, “There will be no need to shoot anyone. We will simply take what is rightly ours, and there’s nothing to stop us.” He re-opened the connection that he had just closed, and said, “Right on time. Good. Come to the airlock as planned, and we’ll let you in.”

The reply extinguished his triumphant smirk like flipping a switch. It came on the Ball’s radio, on loudspeaker, and it said, “Dempster. What do you think you’re doing?”

After a stunned pause, Dempster said, “Fenwick? What are you doing here?”

Fenwick said, “When Frances told me you were planning this little party, I couldn’t believe you forgot to invite me. So I invited myself.”

Dempster gaped at Fran. “You knew?” he muttered.

Fran demurred. “It’s a little much to say we knew,” she said. “Let’s just say we were prepared. We guessed that you might try something like this, and it looks like we guessed right.”

Dempster looked around and his plan must have suddenly looked tawdry and small. He was speechless, but his eager guard said, “Do you want me to shoot them? Should I shoot them now?”

Fenwick could hear this on the open relay, and it alarmed him.

“Dempster?” he said. “Don’t go too far. You can stop this now, before anyone gets hurt.”

Dempster didn’t respond, but the guard brought his weapon up and aimed it at Fran.

“What’s happening, Dempster?” said Fenwick. “Stand down. Stand down now.”

The guard said, “Say the word. We can still do this.” When Dempster hesitated he said, “We have to do this. They’re expecting us to bring the resources.”

Elgin moved in closer to Fran and cupped her back with his wing. The gunman moved his rifle to point at him. Then Galatea and Stanton moved in on Fran’s other side, and the rifle had to swing back and forth to take them all in. Nigel moved in front of them, and the Doctor joined him, his bag in one hand.

The gunman was getting nervous and, as the rest of the crew in the control center bunched up behind their crewmates, he looked at his mate, the other one with a rifle. He needed help to cover this many people, but the man refused. He wouldn’t point his gun at them, at least not without an order from Dempster. Realizing he was on his own, he turned his weapon on the Doctor. “What’s that?” he demanded. “What’s in the bag?”

The Doctor held it up. “It’s my bag,” he said. “My medical bag. I’ll be needing it soon, I think.” He held it toward the man. “Do you want to see?”

Fran assessed the situation. While Dempster dithered and his excitable henchman threatened, the rest of the armed men were doing nothing. The other rifleman was relaxed, with his weapon pointing at no one, while the other four tried their best to look at ease. She looked at Stanton, and he nodded.

“Buzzard is all set,” he said.

“What are you talking about?” shouted the guard. “No talking.” He tried to look even more threatening.

Fran smiled sadly at him. “I’m sorry,” she said, but she didn’t look as if she was apologizing for talking out of turn. She turned to Dempster and said, “Are you ready to stand down and end this?”

He didn’t answer, but his guard said, “Never! The only way this ends is with us taking the Prime back to Green Comet.”

Fran nodded. Her golden eyes shone with compassion as she slowly raised her hand. “I’m sorry,” she said again as she closed her fist.

There was a crack, and the gunman looked as if he’d been struck by lightning. He was curled up, his mouth open in a silent scream. His rifle drifted away, unnoticed.

The Doctor moved forward with his bag. He pushed the rifle toward his people, then pulled the pistol off the man’s thigh and sent it after. Then he turned his patient so he was looking right in his face. “This is what happened to Fran. Burned by the Scout’s radar when she was saving Green Comet. Do you remember the stories?” When the man stared at him, too stunned by pain to respond, he shook him. “I asked you a question,” he said.

Gasping, the man nodded rigidly, and whispered, “Yes. Yes.”

“Good,” said the Doctor. “This is why you couldn’t frighten her. You, with your little gun and your big plans. Do you understand?” The response was quicker this time, so he opened his bag. “I have something here for your pain, and with proper treatment in hibernation, you should come out of this as good as new.” The eager look on his patient’s face was pathetic, then panicky when the bag closed again. “On the other hand, Fran had to wait for thirty-six hours before

she got treatment. Maybe you'd like to do the same. To emulate your saint."

"No." With his face full of agony, the man reached out a hand. "Please," he said. "Please."

The Doctor relented and opened his bag. While administering a powerful analgesic, he said, "Frances was much braver than you." Watching his face to measure the effect, he saw relief, gratitude and resentment. He shook his head and sighed, then looked at the other rifleman, still holding his weapon.

"It was the Prime," said the Doctor, closing his bag. "It doesn't like weapons."

The man looked at his rifle, then at his injured mate, and the Doctor could see his thoughts in his face. While he was thinking, two of the other guards quickly removed the pistols from their thighs and pushed them away, while the other two looked back and forth between the injured man and Dempster. The Doctor turned and looked at Fran.

She nodded and spoke to Dempster. "It's over now, Dempster," she said. "Let's end this now before anyone else gets hurt."

He stared at her, then finally spoke. "I can't," he said. "If I go back without the Prime ..."

"Are you afraid of what they'll do to you if you go back there empty-handed?"

"Yes," he said. "They have expectations, and they expect them to be met." He glanced at his men, and they looked nervously at each other.

"Then don't go back there," said Fran. "Stay here where you'll be safe. Or go on the next lighthouse mission."

Dempster shook his head. "You don't get it. There's nowhere we can go that will be safe. They have people everywhere."

“You must be exaggerating,” she said. “Surely it can’t be that bad.”

“Yes, it can,” he said. He nodded at his men and reached for the gun on his leg.

“Be careful,” said Fran. “The Prime can shoot four people at once, if it has to.”

“It’s all right,” he said, as he slowly peeled off the weapon and pushed it across to her. The others followed suit, the second rifleman last, and most reluctantly.

After he had given them his rifle and his pistol, he spoke to Dempster. “I want it on record that I disagree with your decision,” he said. “I was prepared to fight and die for the cause, and I’m not going to be punished for your cowardice.”

“Of course,” said Dempster. He looked at all of his men and said, “I will take full responsibility for this failure. I will make sure that they know that you are not to blame.”

Fran said, “Well said, Dempster.” She took a deep breath, suddenly aware that she’d been holding it. “Well,” she said, “I think we’d better let Fenwick’s people in.”

~

“All of them?” asked Fran.

“All of them,” confirmed Fenwick. “Even the one who disagreed with Dempster’s decision.”

“The one who didn’t want to be punished for Dempster’s ‘cowardice,’” said Fran. “So they weren’t punished for betrayal, but for failure.”

“That’s pretty harsh,” said Fenwick.

“Did they all have their throats cut?” asked Fran.

“Yes,” said Fenwick, “and all in the same way. It looks like the

handiwork of one person. Or else it's a standard method that they teach to all their assassins."

"Oh, surely not," said Fran. "Trained assassins? That's a bit much, don't you think?"

"I don't know, but I wouldn't doubt it. The more I learn about these people, the less I like them." He sighed. "I thought we'd left them behind, but they sent their spies along. Right under our noses."

"Are you going to be able to find who killed them?"

"I don't know. There's not much evidence, but I wondered if we could get Buzzard and Archie to look at it." He looked at the two of them, standing with the rest at the hotel window, overlooking Prime One's square. "I know it's not your usual line of work, but maybe you'll spot something."

They looked at each other and Buzzard said, "Okay. Maybe we'll spot something. Spot something." Archie nodded microscopically.

They were having one last visit before they parted ways. The Prime was ready to go, to take its remaining resources back to the double world. The Ball was set to make its journey back to Green Comet. Even Tainui was returning to Orange Comet, though only with about half of its crew. The other half had chosen other adventures. Some were staying at Prime One, and some were going to go with the next lighthouse. But the majority wanted to stay with the Prime. It was the same with the Ball's crew. Only about half of them would be returning to Green Comet. So Archie had his crew, and then some. It would have been too many people for a ball, but they weren't taking a ball anyway. There was plenty of room inside the Prime for living quarters. And they would have the scouts and modules for excursion craft.

~

Buzzard and Archie would have identified the murderer. He had left enough clues in his chosen locations and times and methods. Prime One was a closed system and only a very small number of its people had the opportunity to commit all the crimes. They would have caught the killer, even if he hadn't tried to kill them.

Their security detail, in place at the insistence of Fenwick, did its job at the cost of their lives. Two innocent men died, but they didn't go quietly, so Archie and Buzzard were alerted just enough. Fortunately, Buzzard was drinking a cup of coffee when the assassin went for Archie. On instinct, he rared back and he threw the cup at the intruder's head. Had it been a flashball, it would have flashed white. This time, there definitely was a crack.

14.

FLIPPING THE SAIL

Green Comet was considerably above the ecliptic, so their best bet was to point the laser up there and go. But they wanted to visit their planet, so they had to first head in toward the Sun on the ecliptic. It made for some complicated maneuvering, and it would add time to their voyage, but they were determined to do it this way.

The first time they came back here, after destroying the Visitor and before discovering the Prime, it was to visit their planet. They wanted to come and see what had happened to it, see how it was doing. But then they spotted the Prime out on a more distant orbit and they had to change their plans. They had to go and see what it was up to, and postpone seeing their planet. Then they went on to explore the system they'd saved by destroying the Visitor, and by the time they got back from that the Prime was on the move. It was leaving their system and heading back the way it came, and they had no choice but to go after it.

Now they finally had the time and the opportunity to do it, and they weren't going to waste it. So the laser would drive them inward, where they would swing around the Sun, going around about two hundred seventy degrees. On the way around they would nearly match their planet's orbit for a while, cutting between it and its star. They would rapidly overtake it, but would still be close enough long enough to get a good look at it. Then, once they'd come around and were heading in roughly the right direction, they'd pick up the beam again. Using an angled sail, they would gradually change course until they

were pointed at Green Comet, and then it would be a straight shot home.

~

Fenwick had something to say before they left. "I know we've talked about this before. And I know your minds are made up. But I wish you'd reconsider. I wish ..." He stopped, and his shoulders slumped.

Fran put a hand on his arm. "We know, Fenwick."

He said, "I hate to see you throw everything away on a lost cause. That's all. There's so much more you could do."

"We know," she said. "There must be many other things we could do. And maybe we'll get time to do them afterward. Green Comet might be a lost cause, but it's our lost cause and we're going to fight for it."

He nodded. "I know," he said. "And like you said, I'd probably do the same thing if it was Prime One. But I had to try. I knew what you'd say, but I had to try."

"And we thank you for it," she said. "It's what a friend would do."

"I hope you think of me as a friend," he said. "I haven't known you for very long, but I'd like to count you among my friends." He laughed. "Who am I kidding? I obviously don't have a clue about picking friends."

"Don't you worry about that," said Stanton. He gripped Fenwick's shoulder. "Dempster was no friend of yours. He targeted you, deceived you and manipulated you. He took advantage of your better nature. That's what people like him do."

"Well he sure found an easy mark in me," said Fenwick. "I can't let that happen again." He got a worried look on his face. "Does this mean I can never trust anyone again? Is that the end of my 'better nature?'"

"It doesn't have to be," said Fran. "Really. You have to be more cautious, maybe a little less trusting. But you don't have to lose the better parts of you. Like the part that worries about your friends heading into trouble." She smiled at him.

His chin came up. He grinned back at her. "That's right," he said. "Dempster took away a lot from me. His betrayal took away a lot. But he didn't take away that, did he?"

"Nope," said Fran, with Stanton nodding his agreement.

"He and his type can pull their dirty tricks all they want, but in the end they're only hurting themselves, right?"

"Right."

Fenwick was filled with renewed vigor. "That's right," he said. "The bad they do doesn't diminish the good we do. Does it?"

"Absolutely not," said Fran. "Good deeds and true friendship are always important, no matter how futile they might look."

"Yes," said Fenwick. "And that's a good note to part on, isn't it?" He winked. "But I still wish you wouldn't go."

~

Of course they went. They had to. It was Green Comet, and they couldn't leave it to its fate. Besides, they still had friends there, foremost among them Winston and Minder. Winston was head of the planning committee when the Visitor arrived, and his decisive action saved Green Comet before they knew they were in danger. And Minder was Elgin's minder when he most needed taking care of. Normally the two of them maintained the same hibernation cycle as their adventuring friends, to keep up with their exploits and to be their constant contact with home. But this time they weren't there. There was no explanation for that, no reason given. It was worrisome and even if

there were no other reasons to go back to Green Comet, they would still want to find out about their friends.

“What do you think happened to them?” asked Buzzard. He was outside the Ball with Maria and Elgin. They were flipping the sail, so the reflective side would be facing the Sun when they made the close pass of their planet.

“I don’t know,” said Elgin, “but it must be something serious. They wouldn’t miss our up time together if they could help it.” The propulsion laser back at Prime One was off, and they were in the ballistic phase of their flight, letting the Sun’s gravity swing them around. The sail was mostly retracted, the six hawsers shortened from ten kilometers down to a few hundred meters. They had disconnected the sail at three points and flown it across, reconnecting it there. Now they were flying the other three points back across, flipping the sail so the reflective side faced away from the Ball, rather than back toward the laser source. The idea was to cut the glare from the Sun while they were in close.

“You don’t think they’re dead, do you?” said Maria as she pulled a hawser’s coupler toward her mounting point.

Elgin and Buzzard were shocked and they both protested the possibility.

“Don’t get me wrong,” said Maria. “I hope they’re not. I don’t even want to think about it.” Her connectors slid together and she pulled down the first of the locks. “But I think we have to think about it.” Her second lock snapped down. “After all, those Francesians are clearly crazy. I mean, spies? And assassins? I don’t think we can put anything past them.”

Buzzard looked at Elgin and back at Maria. “You don’t think they’re

dead really, do you? Not really?" He looked back and forth, his open face showing his feelings.

"Of course not," said Elgin. "They're probably just in hibernation." He glanced at Maria. "We'll find out when we get there."

Maria looked at him, then at Buzzard. "Of course there's no way for us to know," she told him. "Maybe they were forced into hibernation for some reason." Her face and voice got sterner. "But maybe not. We have to face the possibility that it's worse. We can't go in there all trusting and naive."

Buzzard dropped his eyes to his work and said nothing while he snapped down his last two locks. He remained silent while each of them checked the work of the other two. Only when they were finished did he look back up, his face showing acceptance and resolve. "I guess you're right," he said. "We have to be prepared for anything." He looked at Elgin, then straight into Maria's eyes. "I still don't like it, though."

She smiled at him, blinking at a pricking in her eyes. "Of course you don't," she said. "And I'm glad you don't."

~

Their planet was just as reported by Fenwick. It was lush with life again, both in the ocean and on the continents. It looked just as it had when they left, aside from any sign of their technology or their civilization. But that wasn't entirely true. There were signs of their civilization, if you looked hard enough, and everyone did. They all took their turn with the telescopes and, without exception, looked for their old home towns. In most cases it was hard to locate the exact area with any certainty, since the structures were gone and overgrown. If the natural landmarks were unchanged, coastlines or rivers exactly

where they used to be, then it was possible to do it by eye and memory. But often even those had been altered during the thousands of years of their absence, so they had to rely on the equipment to show them where they used to live. It was gratifying to have this look, but also frustrating and heartbreaking. It brought back memories of what they used to have and who they used to be. And it reminded them of the terror and loss. Everyone on the Ball was up for this, and it was several days of memories and tears. It was a painful, happy time, with a lot of tears shed through trembling smiles. Everyone agreed that they were glad they did it, and they would recommend it to anyone.

Once by the planet and speeding away from the Sun, they flipped the sail back over and seventy of them went back into hibernation. Half of the crew had opted to return to Green Comet in the end. They would have gone simply if they were asked, but they didn't wait to be asked. They all acted as if there was no question what they would do. It was Green Comet. It was their home. If it was lost and in trouble, then their place was there, helping it find its way back.

So they turned their backs on their old world. Turned their backs on their new friends at Prime One. On their adventures with the Prime. They turned their backs on all that and set sail for home, their faces turned firmly toward Green Comet.

15.

RETURN TO GREEN COMET

Once they reached the halfway point and picked up the beam from Green Comet, it became a different trip. All those thoughts and worries that they'd been putting off now became more real. Yes, they knew they were real before. They weren't living in a dreamy world of self deception. They knew that their home was run by a hierarchical dictatorship that indulged in espionage and assassination. But until now it was far away in space and time. They hadn't been home for centuries. Many wakings. They'd been light years away and beginning to feel the separation and alienation. They were beginning to wonder if they still belonged there. If they were even the same people who used to live there.

Now they were inbound to Green Comet, and it was all very real once again. On this final leg of what now seemed to be a stupendously long journey, they began to feel as if they were coming home at last. And that meant that all the bad things that were happening, were happening to their home. Sure, they'd always said it was home, and that they were bound to defend it. Something that almost went without saying. But now, this close to finally being there again, now they could feel it.

It wasn't that straightforward, though. They reached the midway point, flipped over and deployed their sail in the opposite direction, but the beam from Green Comet didn't appear. When they called to ask why, they found themselves caught up in a bureaucratic mess.

They hadn't completed the correct procedures. They hadn't provided proper credentials, nor adequate declarations of intent.

When they asked what the proper procedures were, what kind of credentials were required, what was meant by declarations of intent, they were told that all those things were available before they left Prime One, and that it was their responsibility to know that. "You should have prepared properly before you set out," said the functionary, her smirk faint but intentional.

Stanton's scowl deepened. It had begun when what should have been a routine flip maneuver turned into this ... whatever it was. Seeing the scowl, the woman on his display widened her smirk. His voice deepened by anger, he said, "We did prepare. We made all the normal preparations. We had no reason to expect this nonsense." He let his contempt show.

"If you think the laws of Green Comet are nonsense, then maybe you shouldn't come here," she said with the smug superiority of a weak person with power.

Stanton was about to let her know what he thought about that, when Fran put her hand on his shoulder and whispered, "Don't give her the satisfaction." He took a moment to reel himself in, then nodded and gave up his position.

Fran looked at the clerk, basking in her self-importance, and said, "Hello there. I'm Fran. What's your name, dear?"

The smile faltered momentarily, then returned, less genuine, more practiced. "I don't have to give you my name," she said, returning to her training.

"Of course you don't, dear," said Fran, "but that doesn't mean you can't tell me, does it?"

The smirk came back, fully renewed, only this time colored by

contempt and exclusivity. “We don’t tell our names to non-believers. Everyone knows that.”

Fran did know that. She learned it from Frank, the Francesian who tried to horn in on their diplomatic efforts with the Makers. He wouldn’t tell them his name, so Stanton christened him Frank. She said, “Of course. How silly of me to forget.” Her smile told the young woman that here was a sweet old woman who could no longer trust her memory. “Please forgive me,” she said.

The smirk faded and the uniformed young woman said, “It’s not up to me to forgive people.” Now her face had a sheen of condescension. “It’s up to you to remember and follow the rules.” After an obviously practiced stern stare, she relented and said, “But since you’ve been away for such a long time, we’ve been instructed to overlook your transgression this time.” She moved to break the connection, pausing to say, “You can expect the beam within the hour.”

“Wait,” said Fran, stopping her. When she had her attention again she said, “Thank you for overlooking our shortcomings. We will try to do better in the future.” She had to stop herself from laughing as Stanton rolled his eyes off screen. “Without the beam from Green Comet, we’d have to ask Pharos to turn theirs on.” The woman’s eyes showed her displeasure and told Fran everything she needed to know about the independence of Pharos, the lighthouse established in the system they saved from the Visitor. “We could use their beam,” she said, “but we’d have to wait several years for it to get here. Not to mention all the planning and calculating.” She fluttered her hands. “This is so much more convenient. Thank you.”

That re-established the woman’s smugness. She tugged her jacket straight, showing its markings to best effect. It had designs on it that probably had some hierarchical significance. “Yes, well,” she said,

enjoying herself, “try to be more careful in future.” She moved for the switch again, pausing again when Fran spoke.

“Thank you dear,” she said, “we will. I promise.” She added, “I still don’t know your name. I know you don’t tell your Francesian names to people like me, but what about your original name? The one your parents gave you.”

“I’ve only ever had one name,” she said stiffly. “My parents gave me my Francesian name.”

Fran let her face show her disbelief. “They chose your name? They decided for you?”

“Yes, of course. And I’m grateful.”

“But shouldn’t that be your choice? We all choose our own names. They took that away from you.”

“All they took from me was years of despair. Years outside the fold. It’s the greatest gift a parent can give a child.”

“I see,” said Fran, watching her face. “Thank you, dear. I won’t keep you from your work any longer. Unless there was something else?”

“No, there’s nothing else. You’re free to go. Just be sure to pay better attention to the rules in the future.”

“Yes ma’am, we will,” said Fran, the model of sincerity.

~

“Dear?” Stanton was looking at her, a sceptical smile on his face.

“What?” she said. “Don’t you like the sweet little old lady?”

“Sweet little old lady? Right. Sweet like a trapdoor spider.”

“I, for one, love the sweet little old lady,” said Elgin.

Fran put her hand on his arm. “Thank you, dear,” she said, to a

hearty round of laughter. When it settled, she said, “I think we learned a few things, didn’t we?”

“I did,” said Elgin. “Her jacket looked awful. I hope we don’t have to wear stuff like that when we get back.”

“I know what you mean,” said Fran. “That — I guess you’d call it a uniform — was not attractive. Or flattering, the poor girl. What do you think those stripes and things meant?”

“Rank?” ventured Elgin. “Status? Position? I would guess the more stripes and things you have, the more important you are in the hierarchy.”

“Probably,” said Fran. “And our nameless officer had quite a lot of decoration, so she must be quite important.” She looked around, her eyebrows up. “Should we be flattered?”

“Maybe,” muttered Stanton, his eyes narrowed. “But more than anything, I think we should be suspicious. I mean, what’s the idea of pretending the beam was off when it was on all the time?”

“Yes,” said Elgin. “We’re still way over a light year out, and she said it would get here in an hour. Obviously it’s been on all along.”

“Demonstrating their power,” said Fran. “They just wanted us to know that they have that to hold over us. It’s simple posturing, that’s all. We expected that.”

Elgin said, “That was a good one. Letting her know that we could use Pharos. Did you see her face?”

“Yes,” she said. “We learned that Pharos is still independent. I don’t think they would have wanted to admit that.”

Elgin looked glum. Something else had occurred to him. “I don’t think they respect you as much any more.” He was looking into Fran’s eyes. “She didn’t show any sign of it. I think she saw you just the way you wanted her to. A harmless old lady.”

“I think you’re right,” she said. “But that makes sense, doesn’t it? Given what Dempster said about us not being divine any more.”

“I suppose,” said Elgin. “But I still think you’re divine.”

She kissed him on the furry cheek. “Thank you, dear,” she said.

~

Final approach and arrival went normally, except for the detention and search. They weren’t allowed to proceed directly to the big hatch to dock the Ball on the comet. Instead, they had to come to a complete stop ten kilometers off and then wait for the boarding party.

“Boarding party?” Stanton was steaming, his voice not much more than a hoarse whisper. “They’re sending a boarding party?”

“Just relax, Stanton,” said Fran. “Don’t let them see that it bothers you.”

“Bothers me?” He looked at her with smouldering eyes. “What makes you think it bothers me?”

She laughed. “Nothing, I guess,” she said, looking around. All one hundred crew members were up and about, out of hibernation for the homecoming. They were milling around, in and near the control center, frustrated by this anticlimax. If they were left like this, with the frustration building while they waited, then the boarding could lead to a confrontation. She found Elgin and Buzzard in the crowd and beckoned them over.

“What’s up?” asked Elgin when they arrived.

“We have a problem,” she said, “and I’m pretty sure it’s part of their plan.” She indicated the restive crowd. “If they can provoke a reaction, especially if it turns violent, then they’ll be able to use it against us.”

Elgin nodded, waiting for more, but Buzzard looked confused and

apprehensive. He looked at Fran and Stanton, his face a great big open question.

Fran explained. "This is a ploy, Buzzard. They could have told us about it long ago and given us time to prepare, but they chose to spring it on us. They seem to want us off-balance and anxious, and that can only be because they want to manipulate us."

Buzzard looked at all three of them, and finally asked Stanton, his mentor and surrogate father, "Why would they?" He looked out through the Ball's shell at the hexamer of comets ten kilometers away. "Why would they?"

Stanton put his hand on Buzzard's shoulder. "It's what people like that do," he said. "To them, everyone is a potential adversary, so they are in a constant power struggle. Little ploys like this become second nature."

Buzzard nodded, not really getting it, but at least having something to think about. Fran looked at Stanton, eyebrows raised, and he said, "I've been doing some reading on dictatorships, I thought it might come in handy." He smiled.

She smiled back. "Then you know we can't allow them to provoke us." His nod was stiff, but good enough for her. She turned her attention back to Buzzard and Elgin and said, "We need something for people to do. So they're not just waiting around getting frustrated and angry. Something to focus their minds and their energy."

Elgin and Buzzard looked at each other, then they looked at the flashball court. They looked at each other again, then back at Fran, and Elgin said, "We've got enough people for a real game."

"Enough people," said Buzzard. "Thirty-two people. Plus three officials. We can have an official game."

That would be a nice change. Under normal operations, with most

of them in hibernation and only thirty-five active, they could never play a real game. There were enough people for two full teams plus officials, but they couldn't all be playing flashball. Some of them had to be on duty running the Ball, and some of them needed to be sleeping at any given time. They might forego sleep for a flashball game, but never duty, so this was a real opportunity.

They grasped it enthusiastically, drawing straws for who would start, and drawing up a schedule for substitutions so everyone would get a chance to play. Everyone who wasn't inside the court playing was outside it watching, so everyone was fully involved. The Ball was alive. The shouts of the players, the cheers, applause and laughter of the spectators, filled the place with a happy noise not heard for a long time. It was more than diverting. More than simply something to occupy them and burn off their pent up energy. By the time the boarding party finally arrived, the anticipation and anxiety were forgotten.

Elgin and Buzzard were both playing when they arrived, and Elgin was momentarily distracted. Just as Buzzard passed the ball, Elgin glanced at the newcomers. Fortunately, Buzzard didn't throw it hard enough to crack white this time, so it didn't leave much of a mark when it smacked into Elgin's chest. His startled reaction and the incongruity of a very rare error were enough to provoke a burst of surprised laughter.

Fran and Stanton had pulled themselves away from the game to greet their guests. With them were the Doctor and Nigel, Galatea and Maria. Fran's expression was welcoming, while Stanton's was strained neutrality. The Doctor and Nigel presented a very studied formality, while Galatea didn't bother trying to hide her feelings. Maria wasn't even paying attention. She was overtly watching Buzzard play flashball.

"Hello," said Fran, "and welcome to the Ball. My name is Fran."

She was looking at the man who appeared to be in charge. She guessed he was by how the others positioned themselves relative to him, and by the fact that his jacket had the most symbols on it. She hoped she was leaving him a good opening to give them his name.

He did give them a name of sorts, although it was more of a title or a designation. He stopped, facing Fran. He pulled himself up straight and said, “Good day, Frances. You may call me Commander.”

Unfortunately, that’s when everyone laughed. The Commander’s face tracked his reaction. At first he was surprised, even shocked. It was easy to see that this was the first time his arrival had ever been greeted with laughter. He didn’t know what to do. Then his pride kicked in. He’d already turned his head toward the noise, and now his face drew down into a frown. He took a breath and was about to say something, when he visibly got hold of himself. You could see his rational mind regain control as he realized that the laughter likely had nothing to do with him. Still, he showed his need to demonstrate his authority when he said, “We will be searching your vessel and interviewing your crew. Please have them make themselves available.”

“Certainly,” said Fran, glancing at Stanton. His neutral expression hadn’t changed. He was expecting this and had prepared for it. As had the Doctor and Nigel, who maintained their formal postures. Galatea’s faint sneer had turned into a contemptuous smirk, as if her low expectations had already been met. Maria glanced at the Commander, rolled her eyes at Fran, and went back to watching Buzzard. “We will naturally comply with whatever rules you have in place for returning explorers. You and your people are free to look anywhere you want, and our people will answer any questions you have.”

“Very good,” said the Commander. He pointed with his chin. “Now have them stop playing and come out here.”

“Commander,” said Fran, favoring him with a smile, “as you only have ...” she paused to count, “... twelve men here, and some of them will have to stand guard anyway, and you have a hundred people to interview, why don’t you start with the people already out here and let them finish their game.”

The Commander spoke sharply, and his men stiffened, gripping their weapons. “That was not a request, Frances. Order your people out here now.”

“Okay,” she said, holding up placating palms and giving him an openly appraising look. “I will ask them to come out, but I don’t give orders to anyone.”

“Whatever you call it,” he said, “you’re obviously in charge, so make them comply.”

She was about to signal Elgin and the others in the flashball court, but now she turned back to the Commander. “Comply?” she said. “We don’t make people comply. That’s not how the Ball operates. These people work together out of duty and common respect. Not because of an arbitrary hierarchy.”

“Nonsense,” he said. “You need a firm command structure. That communal sentiment might be nice for a while, but it will break down in the real world.”

“You might be right in theory,” said Fran, still smiling, “but in practice we made it to the Maker world and back without going to pieces.”

The Commander looked as if he wanted to argue. After all, he had a vested interest in his belief in a rigid hierarchical command structure. But then he looked around and his rational side must have seen that she was right. The Ball had been out there for a long time and it seemed to be all right. On the other hand, everyone knew they were

following Frances, whether she admitted it or not. Her and that Stanton. And Elgin, of course. He gave his head a shake, and said, "Very well, then, would you please ask your people to come out here."

"Of course," she said, turning to signal Elgin.

So the players quit their game and came out of the flashball court and joined the rest of the crowd milling around the Commander and his twelve armed men. Now he could put the plan into action at last. The first thing they did was get the people to form a queue. Then they processed them four at a time, each one being interviewed by two officials, while the other four stood guard, weapons at the ready. It took five hours in all.

Not that the first ones through were any luckier than the last ones. Once they were processed they had to gather on the other side and wait there until everyone else was done. What it amounted to, what was apparently the point, was a demonstration that these minor functionaries had the power to make them endure this indignity, all for the purpose of gathering pointless data.

They did endure it, and with grace. Taking their cue from Fran as always, they waited quietly, even serenely. They also had Stanton for a model. He was not known for having much patience with pettifoggery, so when they saw how calmly he put up with this, they steadfastly did the same. In spite of the attempts to upset them and make them angry, they maintained their tempers and their dignity. The supercilious smirks of their questioners, the same inane questions asked in countless ways, all the practiced methods of irritating and angering their victims, fell flat in the face of stoical patience. By the end it was the men in uniform who were upset and red in the face.

The Commander watched it unfold. At first he had a small satisfied smile. Things were finally going as planned. Now they would show

these people who was in charge. But the smile faded as he watched all their efforts go for naught. The sly manipulations, the subtle goading, were having almost no effect at all. Even when they escalated the abuse to a more physical level, pushing and harassing the people in the queues, they didn't react as expected. He put a stop to that right away. He was surprised by the feeling of shame he experienced from Fran's look of admonishment.

By the time they were done he was no longer looking at these people with suspicion and contempt. Now it was with the beginnings of respect, even admiration. And now he understood the legend of Frances. Now he knew why these people followed her.

~

Elgin and Buzzard went back to their flashball game. When it began it was meant to be a way to pass some idle time and burn off some pent up energy. Now it was a game interrupted. Something that needed to be finished.

While the teams tossed the ball around, warming up, Fran and Stanton escorted the Commander and his men to the airlock and their shuttle. He said, "You are free to dock now. A pilot will come aboard and bring you in. You will be entering Green Comet. The original. The one you were living in before you left." He looked sternly at them. "For the time being you are restricted to this comet. Do not try to leave it."

As Stanton glared, Fran said, "Of course. We understand. You can't be too careful." The look on her face said that these peculiar precautions were perfectly natural.

He hesitated, as if he wanted to say more, as if he wanted to explain, but he shook his head and left it unsaid. In the airlock he turned and said, "It has been a pleasure meeting you," as the door

closed and sealed. It was the first thing he'd said since arriving that wasn't somehow bent to the service of his job.

Fran looked at Stanton, smiling, brows up. "That was nice. Maybe things aren't so bad here after all."

He shrugged, unconvinced. "It looks like you've got another fan, anyway."

16.

SALVAGE

The eight were the last to leave the Ball. Like the rest of the crew, they took one last slow circuit of it before going. It wasn't anything special, just another ball, almost identical to all the others. From the utility area at the back end, which held their living quarters along with the rest of the mundane functions, up to the flashball court up front, it was just another interstellar vessel. There was nothing unique about it, in the purely physical sense anyway. But it was special to them. They felt an attachment to it that they wouldn't feel to any other ball. It had been their home for several centuries, after all, and it was thoroughly impregnated with memories.

It was this ball that traveled beyond Green Comet to the star that they saved from the Visitor. With them went Pharos, their first lighthouse. When they returned from that trip they had to take off after the Prime, which seemed to be heading back where it came from. They met the Makers, who built and sent the Visitor, setting in motion the calamitous events that turned them into comet people. They saw the two-world system, which the Visitor destroyed before getting to theirs. They were with Tainui, the ball sent by Orange Comet, on that trip. Now the Ball had made the final leg of its long journey, back to Green Comet, and they were having trouble leaving and ending it.

They gathered in the control center, just aft of the flashball court, the sphere within a sphere. They were silent, lost in their own memories as their eyes tried to fix them in their minds. Surprisingly, even

Galatea had nothing to say. No trenchant comment to break the mood and move them on. It took something else to do that.

Sounds intruded on their reverie, quiet at first but quickly getting louder. They were coming from aft, the housekeeping end, where the Ball was docked to the big hatch on the comet's surface. As they watched, people appeared, talking loudly as they flew into the open area of the Ball. They looked to be a motley bunch, a rabble even. They were unkempt and undisciplined, unlike the Commander and his men. About two dozen of them appeared, clustered in an untidy group, apparently arguing. Then one of them noticed the eight in the center of the Ball, and they went quiet. They hovered there, staring.

Fran moved immediately, flying toward them, a welcoming smile on her face. Elgin reacted instantly and was soon by her side. Stanton was next, Galatea joining him, and the other four weren't far behind. As they approached the people, who more and more resembled a mob, they saw them take on an aggressive posture. When they got closer they could see their expressions, which ranged from uncertain to openly hostile.

Fran didn't let that stop her. She pretended she didn't notice their surliness and flew right up to them. "Hello," she said. "Welcome to the Ball. Can we help you?" She gestured. "Maybe you'd like a tour."

She caught them off guard and most of them lost their frowns, with some even beginning tentative smiles, their mirror neurons responding to her expression. Most of them, but not all of them. There was one man whose face didn't change at all. It was expressionless when they arrived, and remained so when he said, "Yes, you can help us. You can get out of here and let us get on with our work." He indicated the passageway leading back the way they came.

"Your work?" said Fran, still smiling.

“Yes, our work,” he said, still pointing.

“What work is that?” asked Fran.

He stared at her, as if he couldn’t believe she was still there. When he didn’t speak, the woman next to him, wearing the same flat expression, said, “Our work is none of your business. Get out of here now.”

Elgin didn’t like to see anyone treat Fran that way, and his own face began to change. The corners of his jaw began to get blockier and his brow became heavier. People who saw this face, who had it looking at them, didn’t look back on it with fond memories. But Fran felt the storm brewing and put a stop to it before it could amount to anything. With her hand gentle on his arm, she said to the woman, “Of course, dear. We were just leaving anyway. We were just taking a last look around.”

That made the man think. Maybe this wasn’t what it looked like. He was about to ask when the woman said, “So you’ve had your look around, dear, now get moving. This is our salvage.”

For Fran’s sake, Elgin didn’t react to her tone. Stanton was also good, his forbearance carrying over from their dealings with the Commander. It looked as if they might get out of there without any trouble, until Galatea spoke up. “Oh yeah?” she said. “Says who?”

Anger sparked in the woman’s eyes as she glared at Galatea. She moved forward, her body radiating aggression. “What’s it to you?” she said, shoulders up, chin out.

If it was supposed to intimidate Galatea, it wasn’t working. She moved up, confronting the woman chin to chin. “Am I supposed to be scared?” she asked. “Well, I’m not.” She disdainfully looked her up and down. “You probably don’t even know how to polish the shell of

this ball.” Her look was dismissive, as if the whole confrontation was beneath her.

No one spoke for a while. No one knew what to say. They couldn’t figure out what she meant. Stanton was biting his tongue, trying to look serious. Finally the woman said, “What’s that supposed to mean?”

“What’s it supposed to mean?” said Galatea. “What do you think it’s supposed to mean?”

The man tried to calm the woman, but she shook him off, glaring at Galatea. Fran, and then Stanton, tried to talk to Galatea, but she only had eyes for the woman. It looked as if there was only one way that this could go. The two women would escalate their argument until it became physical. Others would feel compelled to intervene if one of them looked to be in danger, and it would quickly become a brawl. The eight were outnumbered three to one, so the outcome wasn’t hard to imagine. Elgin could see it all unfolding, so he got close to Fran to protect her. They might be overwhelmed but some of them would be sorry if they came after her.

But then, just as it was about to explode, the man looked at Elgin and Fran. He was next to her with one wing cupped protectively on her back. It triggered a memory in the man and he shouted, “Stop!” He reached out and took the woman’s arm again, and this time when she shook him off he grabbed her arm and yanked her roughly to his side. “I said stop,” he said.

“Let go of me,” she said, tugging at her arm. “Let go. Did you hear what she said?” She struggled but couldn’t break his grip.

“Slow down,” he said, shaking her. “Take a breath. Get a grip.” She didn’t want to. The heat was still on. But he held her until she looked at him, then he told her, “Look at them.” He was pointing at Elgin and Fran. “Take a good look. What do you see?”

She looked, humoring him, but with no intention of seeing anything. She wanted to get back to the fight. But he held her and made her look, and you could see the change when it happened. Her eyes widened, her mouth opened and all the anger in her face was replaced by surprise. The surprise turned to realization and the realization to shame. Before her, in the very pose held by their statues that had once stood in the Square, were Elgin and Frances. She wanted to speak, but she couldn't. She looked at Galatea, whose face was still angry, but now also accusatory. She looked around at all the people who were on the brink of violence because of her. Timidly, hesitantly, she looked at Fran. She would have expected a scowl of condemnation, and she would have accepted it as her due, but what she saw was a gentle smile of acceptance and forgiveness. Only years of hard living kept her eyes dry. This time, when she gently moved her arm, the man let it go. She went straight to Fran and Galatea and apologized. Fran forgave her immediately. Galatea took a little longer.

~

The man's name was Parrow and the woman's was Barker. They explained that they and their people controlled most of Green Comet Principality, under the aegis of Verdi, whose principality it was. They could do what they wanted, as long as they paid tribute to him.

"So the Ball belongs to you?" guessed Stanton, looking at the small mob.

"In principle, everything belongs to Verdi," said Parrow, "but in practice it belongs to whoever claims it."

"Whoever's the strongest," said Stanton.

"That's right," said Parrow. "And right now, that's us."

Stanton was curious how that was decided, but he was also pretty

sure he didn't want to know. "So, what happens now?" he asked instead.

Parrow looked around. "Now we start salvaging stuff. All that fabric will be worth something." He indicated their partitions. "Then there's the equipment. Tools. You name it."

"And it's all yours."

Parrow laughed. "Not exactly," he said. "We salvage it. Itemize and catalog it. Then Verdi looks it over and takes what he wants. We get what's left."

"Ah," said Stanton. "The tribute."

"Yes, the tribute."

"How much does it amount to? What percentage does he take?"

"He doesn't take a percentage as such. Nothing so formalized." Parrow's mouth pinched. "It's nothing you can count on. He just takes what he wants and leaves you the rest." He chuckled wryly, and said, "The trick is to not let him see what you want. If it looks like there's something you especially want, he'll make sure to take it."

"I see," said Stanton.

"Yes," said Parrow. "He's a sadistic old bastard."

Stanton nodded. "Of course, one thing comes immediately to mind. I mean, if he always takes what you want."

"You mean try to fool him?" Parrow nodded too. "Yes, we do that all the time. We ignore some things and try to look like we're interested in others. But I think he enjoys that, the old dog."

"Enjoys it?"

"Yes. He treats it like a game. It's like he knows what we're doing and tries to outguess us." He shook his head. "He's good at it, too. He looks in your eyes and he knows what you're thinking."

"Bluffs? Double bluffs? Triple bluffs?"

“That’s right,” said Parrow. “He loves it. The more convoluted the better.”

Stanton shook his head. “All the comets are like this?”

“No,” said Parrow dismissively. “There’s just the three of us.” He counted on his fingers. “There’s us. Then there’s two of the bottom four.” Meaning the bottom square of the six-comet hexamer. “One of the other two on the bottom is completely isolated and the other one’s not even complete.”

“We noticed that on approach,” said Stanton. “Why was it never completed?”

“The Francesians.”

Stanton could tell that Parrow didn’t want to talk about it, but he insisted. “What about them? What did they do?”

Now Parrow looked around nervously, then said in a near whisper, “They decided we had enough. Nobody was living on it anyway, so why waste the effort? Besides, they said it was a distraction from our more important religious observations.”

Now Stanton winked. “Like plundering returning balls.”

That made Parrow really nervous and he harshly hushed Stanton. “Quiet! Don’t say stuff like that. It’s too dangerous.”

“Why? It was just an observation.”

“Well, don’t. It could be worth my life to even listen to you.”

“Your life? Someone would kill you for that?”

“Keep your voice down.” Parrow looked around to make sure all his people were out of earshot. “The Francesians take it all very seriously. You’re either with them completely, or you’re a heretic and an enemy of the comets.”

“An enemy of the comets,” mused Stanton. “More like an enemy of the Francesians, eh?”

Parrow's face contorted with fear and anger, but he still took the time to say, "Don't ever let anyone hear you say that. Ever. Just don't, if you value your life."

Stanton's face showed his disbelief. "You can't mean that. It can't be that bad, can it?"

"No? I don't know why you'd think that. Wasn't there some trouble just before you left Prime One? Some deaths?"

The memory stopped Stanton cold. Those assassinations were carried out with cold efficiency, one after the other. It was only by good fortune that they hadn't included Buzzard and Archie. Looking across the Ball at his longtime friend and surrogate son, he decided he should take the threat very seriously. "Okay," he said to Parrow. "You've convinced me."

~

They visited with the salvage crew for a little longer, then left the Ball for good. They went through housekeeping and into the cargo bay behind the big hatch. They crossed the big bay, heading toward the exit on the other side. No one looked over their shoulder.

Once in the airlock they turned around, and before the door closed they could see the shell of the Ball bulging into the cargo bay, snugly compressing the gasket it rested on. Then the door closed and they turned away, facing the door that would let them into the comet proper.

The Doctor said, "This reminds me of that time we came up here in our pressure suits, and I couldn't make myself go outside."

"I remember, Doc," said Nigel. "And I remember you did go outside, scared as you were."

The inner door opened with little delay, since there was no equalizing of air pressure to do. The pressure was the same in the Ball,

through the bay and into the comet. As they moved into the hallway the Doctor said, “Yes I did, and I wouldn’t have been able to do it without you.”

“I was glad to help, Doc,” said Nigel. “I’d been through it often enough myself.” Nigel had spent fourteen years out on the surface of Green Comet, searching for the spy drones sent by the Visitor’s scout. He said he had to overcome his fear every time he went out. So, when they woke to find Green Comet apparently abandoned and their investigation led them outside, Nigel was able to help the Doctor overcome his fear.

“I remember that,” said Elgin. “We were trying to figure out what Laika had done.”

“Yes, Laika,” said Fran, and they were all quiet while they thought about the woman who’d sacrificed herself to save the comet.

So, as they returned to Green Comet after centuries away, they were thinking about a woman who died millennia earlier. A brave, strong woman who deserved the statue erected in her honor in the Square. As they flew down the corridor, and joined a larger corridor heading to the Square, they savored the anticipation of homecoming.

17.

WHAT'S THAT SMELL?

This corridor brought back memories for Elgin. For some reason it had him thinking about Minder, and the time long ago when they were flying down this big passageway together. Fran was still in hibernation, but they'd woken Elgin for some reason, and Minder was his minder. Elgin remembered looking at the corridor and seeing that it was well made and well taken care of. The good work and the good lines made him feel good. He felt as if his bones were sitting comfortably, in perfect alignment. It reassured him that the comet was in good hands.

That wasn't the case now. He felt uncomfortable. His bones weren't sitting right. He looked around, concentrating, knowing that something was wrong, and it didn't take long to find it. There was something wrong with the corridor itself. The perfect lines of the orbital were still there, curving down in front of them, disappearing a few hundred meters ahead. Nothing could change the mathematical precision of a curve meant to circle the comet and meet up with itself. The basic structure of the corridor was still intact, still true to its original design. It was the superficial appearance of it that jarred his sensibilities. It looked rundown. It looked shabby and uncared for. And now, not only was his synesthesia offended in its proprioceptive sense, now it was coming out in his sense of smell. What he was seeing, the wrongness of it, was being reinterpreted as a bad smell. That had never happened before. He was about to tell Fran about it when Stanton spoke.

"What's that smell?" said Stanton, nose up, sniffing the air, his face wrinkled in disgust.

Elgin was surprised. "You can smell it too?" he said.

"No kidding," said Stanton. "It's hard to miss."

"So it's real," said Elgin. "I thought it was my synesthesia acting up."

"I wish it was," said Stanton, "because it's vile."

Everyone was sniffing now, their noses wrinkling and their lips curling. They all smelled it, and they all knew instinctively what it was.

The Doctor cleared his throat and they all looked at him. He was nodding when he said, "I think we all know what this smell is, don't we?" They nodded with him. "Our sense of smell is primitive. It bypasses our conscious minds and goes straight to our emotions and instincts. Good smells attract us and bad smells repel us, before we even begin to think about it. Some smells disgust us. Our faces take on archetypal expressions that everyone instantly understands." He looked around, and they all had it. "Some smells instinctively warn us of danger, like putrefaction and excrement. Something bad might have happened. Something that could kill us or make us sick, so smell tries to warn us." He looked down the corridor toward their destination. He said, "This is excrement."

"Well," said Elgin, "I'm glad it's real." When they looked at him he said, "If it was my synesthesia, then I'd have to smell this every time I saw shoddy workmanship or poor maintenance."

Stanton said, "At least it would only be you. This way, we all have to suffer."

"Sure," said Elgin, "but at least this is temporary."

"Oh, really?" said Stanton. "How do you know that?"

"Well, it has to be," said Elgin. "It's obvious. No one would put up with this for very long, would they?"

"Again," said Stanton, "how do you know?"

Elgin's certainty stumbled. It might have been obvious to him, but he had to admit that he couldn't say with certainty that it was true in this particular case. But he rallied anyway. Maybe he had to concede the point philosophically, but surely that didn't apply here. Not on Green Comet. "Maybe I don't know for sure," he said, "but it stands to reason. We wouldn't put up with it, so why would they?" He shook his head. "No. It's got to be a temporary problem."

Stanton said, "I hope you're right. Otherwise, things are a lot worse here than we thought they were."

They were all thinking about that when they came to the tee intersection, where they could go right for the flashball court or left for the Square.

They were deciding which way to go. Did they want to have a look at the flashball court, or go directly to the Square? There wasn't really any doubt about it. They knew they'd be going to the Square. They wanted to find out what was going on, and the Square was the place to go for that. Elgin was saying that to Stanton when he noticed his friend was looking at the blank wall on the other side of the intersection. "Stanton?" he said.

Stanton looked at him. "Sorry," he said. "I was just remembering something."

"What?" asked Elgin.

Stanton pointed at the blank wall. "Weren't they planning to finish the orbital?"

Elgin looked. He remembered that, too. The plan was to push this corridor all the way around the comet. That meant they should have punched through this intersection to do that. This blank wall clearly showed they hadn't. He shrugged. "Maybe they just haven't got around to it yet."

“Are you kidding?” said Stanton. “They’ve had plenty of time.” He looked at Elgin. “We were gone a long time. More than enough for them to finish a simple job like this.”

Not all that simple, Elgin knew, but he knew what he meant. It’s a good challenge to build a corridor like that, with a constant curve, and that long. Not to mention meeting up accurately at completion. But it’s not the sort of thing that should take centuries. Whatever stopped them from completing it, it wasn’t the challenge. He agreed with Stanton. He said, “They’ve been slacking off, haven’t they?”

“Yes they have,” said Stanton, offended not only as an engineer, once Green Comet’s chief engineer, but also as a man with a healthy work ethic. He frowned and turned toward the Square. “Come on,” he said, “someone’s got some explaining to do.”

They hurried down the corridor. There was something strange about the air, other than the odor. Elgin couldn’t identify it at first, but it was unlike other times he’d approached the Square. It was the hub of activity on the comet and the approach always meant anticipation. You knew when you got there you’d be greeted by a bustle of activity and energy. But not today. Now the air was dead. No echo of voices. No tremors of life. Elgin began to worry. To really worry for the first time. He looked at Fran, and she was looking at him, her golden eyes troubled. Of course she would feel it too. Probably more than him, and sooner too.

Fran said, “I think we need to prepare ourselves for the worst. This is more than shoddy maintenance and unfinished tunnels.”

They’d all felt it, but now that she said it, they knew it was real. They were a quiet bunch when they emerged into the Square, gliding out between two red pillars and stopping just inside, near the orange wall.

There was so much wrong with the place that they didn't take it in at first. Naturally, the first place they looked was straight across the Square to the yellow end. Down there, right up against the darkened orange wall, was Elgin and Fran's apartment. What used to be their apartment, anyway. The first one built in the yellow end, because before then people had been hesitant, out of deference to Yellow Comet, the one lost to terrorism. Their example freed the people and many more apartments were soon under construction.

Now, though, it wasn't theirs any more. Now it was a Francesian shrine, taken over by the church of Frances. Several centuries after she and the rest of the Five saved Green Comet from the Visitor, they made her a saint and built a theology around her. It seemed safe to do so, since she was in protective hibernation, the only way to keep her from dying. When she was finally able to come back to life, they discovered how embarrassing it can be to have a saint who isn't dead. Especially when she disagrees with you. They had also, in the euphoria of the moment, made Elgin a saint too. Because of their legendary love, it had seemed a reasonable and safe thing to do. He had repeatedly made them regret their impulsive decision.

Now their home was a home no longer. Their sanctuary was now a Francesian shrine. And they were no longer saints. The Francesians solved the conundrum of having saints who disagreed with them by de-sanctifying their saints. While they had been divine at first, they had since lost their way. That's how easy it was to defend the institution against the very thing it was based on.

This shrine to conditional devotion was the most prominent thing in the Square. It was illuminated by bright lights and festooned with gaudy colorful banners. On the wall above the windows, twice the size of the apartment itself, was the Francesian symbol of two joined

comets. The whole area was littered with smaller items too. The overall effect was garish. It looked like a cheap carnival attraction.

Elgin put his arm around Fran, and the others murmured comfort. She said, “Never mind. It hasn’t been our apartment for a long time, anyway.”

They looked around the rest of the Square, its four walls each two hundred meters long and a hundred twenty-five high, and pierced by two entrances. The doorways were ten meters high and flanked by two huge colored columns. Yellow on the far side. Orange down their left. Green far away on the right. And red on the side they came out of. Each wall had friezes of the same color running its full length just above the doorways. The friezes were designed to depict important things and events in their history, and in the history of their erstwhile planet. When constructed, the effect of the columns and friezes was beautiful and inspiring. Now there was something wrong.

It was night, comet time. The bureaucratic delays on arrival had ensured that they would get here in the middle of the night. Whether that was intentional they couldn’t say, but it did seem to serve the purpose of muting any excitement their arrival might have generated. Another effect, whether intended or not, was that they could see that many of the lights in the columns and friezes were defective. Some were flickering, and others were dark, presumably burnt out. It gave the whole Square a sad, shabby appearance.

They’d drifted out into the Square a ways, so they could take in the whole thing. The tacky shrine and the defective lighting. One of the pillars on the very entrance they’d used was flickering. A random flashing of red light, which somehow seemed to encapsulate the whole situation. More significant, though, was the orange wall. They’d noticed earlier that it seemed darkened, but now they could see that

it was really completely dark. None of the four columns bracketing the doorways, and none of the friezes above them was lighted. More alarming though was the window. The means of instant two-way communication with Orange Comet. The big screen five meters high running between the doorways was completely black.

Elgin flew past the nearest doorway and up to the window, his seven friends not far behind. The sixty meter long rectangle looked like a hole in the wall. A dark slot leading into a lightless unknown behind the ice. The effect was strong because the last time he saw the window, it appeared to open into a bright and lively space. The illusion was that it was a portal into the square on Orange Comet. People on both sides could come up to the window and chat across light years. Or, with a simple adjustment, a section of the window could be used to communicate with any other place that had a similar window. The lighthouses, Pharos and Scintilla and others. Any of the balls. In fact, while they were away visiting the Maker world, they used to call home and talk to Winston and Minder. They might have been right here, where he was now.

At Prime One they were told that Winston and Minder were in hibernation, and that's why they hadn't heard from them. From the looks of this window, they probably wouldn't have heard from them anyway. Elgin put his hand on the inert surface, as if he might feel if there was any life in it. It felt cold. He looked at Stanton and asked, "Can you tell what's wrong with it?"

Stanton shook his head. "Not without instruments. Or access to the equipment and the monitors." He looked at the blackened window. "The odds are, if it was going to fail, it wouldn't all fail at once. A small section would go out here or there." He looked over his shoulder at the

Square. “Judging from all this, either it broke down bit by bit, and no one bothered to fix it, or someone has shut the whole thing down.”

“Shut it down? Why would someone do that?” Elgin looked at his friend, eyebrows up, eyes wide.

“I don’t know,” said Stanton. “But then, why would anyone hold us up for five hours, searching and interrogating? Why would a gang board the Ball before we even got out of it, looking for salvage and plunder?” He indicated the darkened Square, with its patchy night lighting. “Why would they allow the Square to deteriorate like this?”

Elgin looked around, nodding. “Not to mention the shoddy maintenance we saw on the way here.” He glanced at Stanton. “Maybe they’re lazy? Or incompetent?” He shook his head. “No,” he said. “Not the people of Green Comet. Not our people.”

“No,” said Stanton. “Not the people we know.”

“Then what?”

“There’s another possibility,” said Stanton, his face hard. “They could be doing this on purpose.”

“On purpose? That would be crazy.”

“Yes,” said Stanton, “crazy. You’d have to be crazy to deliberately make things worse, especially out here where we’re so vulnerable.”

“Then why? Why would anyone do that?”

“Whenever anyone has done it in the past, according to the reading I’ve been doing, it was to weaken people’s cherished institutions so they could be replaced by new ones.”

“Reading?”

“Yes,” said Stanton. “On dictatorships, and other totalitarian governments. Remember when I told Buzzard about it? Just after the flip.”

“Oh, right. I do remember that now.” Elgin looked at the black window. “I guess I must have thought it was all theoretical, though.

Not like something that could really happen. This makes it a little more real, doesn't it?"

Stanton nodded. "Although, I'm still hoping for the best."

"Oh?" said Elgin.

"Yes. I'm hoping it's just incompetence. Amateur foolishness. Rather than an effective dictatorship."

"What difference would that make?" asked Elgin. "The place is still a stinking mess."

"I know," said Stanton. "The difference would be when we start cleaning it up."

Elgin nodded. Of course they were going to fix the place up. First thing tomorrow, after a good night's sleep. But his eyes told Stanton that he still didn't get it.

"It's pretty simple," said Stanton. "If this deterioration is due to incompetence, then there won't be very much resistance when we start working on it. But if it's intentional, then they'll have to try to stop us."

"Do you really think they'll try to stop us?"

"I hope not, of course," said Stanton. "But from what I've seen so far, I don't have much hope."

Elgin was more inclined to be hopeful. He wanted to hope for the best. It was in his nature. But he'd heard what Stanton said, and he knew it was right. He wished he didn't, but there was no controlling his sense of right. Given the information they had so far, the evidence they'd seen, he was sure that Stanton's more pessimistic assessment was the right one. He was morosely pondering the consequences of that when Maria shouted.

"Hey!" she said. "Where are the statues?"

They all spun and looked at the center of the Square, where there should have been five statues. Five people whose selfless heroism had

saved Green Comet were honored by having their statues displayed on the floor in the middle of this grand space. Fran, who was the inspirational leader who gave them the courage and strength they needed. Elgin, her champion and her greatest supporter. Nigel, who'd spent fourteen years out on the surface of the comet hunting down the Visitor's spies. Buzzard, who had taunted and baited the Visitor's scout into wasting its energy reserves, so it didn't have enough to destroy them. And Laika, who had singlehandedly saved Green Comet from a deadly plague. Once they had stood clustered there, and now they were gone.

Maria, who was looking for the statue of her beloved Buzzard, said, "Where did they go?"

Elgin glanced at Stanton and, as one, they headed that way, quickly followed by the rest. Half a dozen quick strokes and a few seconds of gliding got them there, where a few cupping backstrokes stopped them. They had to look around, orienting themselves relative to the walls, to locate the center of the Square. There was no mistaking it when they did. Whoever removed the statues hadn't erased the marks that showed where they were attached to the floor. In his mind's eye, Elgin could still see where the statues once stood. Fran here with him next to her, one wing protectively around her back. Nigel over there. Buzzard on the other side. And Laika back a ways, with the hummingbird on her shoulder.

Elgin said to Stanton, "It looks like your theory is correct."

"Hypothesis," said Stanton. "Not even that." He looked up from the marks on the floor, glancing into Elgin's eyes. Then he looked around the dim Square, with its burnt out lights and general air of disrepair. He looked at Elgin's old apartment, now a tacky shrine. Finally the window, once a lively, vital connection with Orange Comet,

but now dark and empty. Putting it all together with the pettifogging bureaucracy, the paranoid, antagonistic security they faced on arriving, and the blatant criminality of the gang of salvagers, he had to agree with Elgin. "You're right, though. Green Comet's democracy has definitely been replaced by something else."

"A totalitarian dictatorship, like you thought?"

"Something like that," said Stanton, "but something else, too. Something about what Fenwick said. Do you remember? About principalities. Each of the comets being given to someone as a principality."

"I remember," said Elgin. "Like what Parrow and Barker told us about their boss, Verdi. He owns Green Comet."

"Right," said Stanton. "And that's like something older. From before people even thought of things like dictators and democracy."

"Like the olden days?" said Elgin. "With kings and stuff?"

"Yes," said Stanton. "But there's a name for that era. I'm trying to think of the name."

The Doctor had drifted up to them, interested in their conversation. Now he cleared his throat. When they looked at him he said, "Feudalism. I think you're thinking of feudalism."

"That's right!" said Stanton. "Thank you, Doctor. I knew I'd seen it somewhere in my reading, but it just wouldn't come to me." He looked around, nodding with satisfaction. "That's what this place reminds me of. Those old feudalistic societies. One primary power, maybe, and a bunch of lesser powers owing allegiance to it."

Elgin nodded sharply. It sounded right. He had enough information for his sense of right to activate. "I think that's it," he said. "And the central power must be the Francesians. They dole out these principalities to buy allies. To make people indebted to them. Right?"

"Right," said Stanton, while the Doctor nodded his agreement.

Elgin nodded absently, while looking around. "I don't get it," he said. "Why is Verdi here? Why aren't the Francesians here?"

"Yes," said the Doctor. "You'd think the central power would reside here, on Green Comet. The original. Wouldn't it be the most prestigious?"

"You'd think so," said Stanton. Then they all stood quietly, trying to understand. After a moment, Fran broke their reverie to remind them that they had more chores.

"Nigel and I are going to see what's happening with the planning committee. We're going to check out the meeting room. Then we have to think about where we're going to sleep." She looked at Elgin.

He said, "That's right. Stanton and I will check out the shop. And the Doctor was going to the hospital. Right, Doc?"

"Yes," said the Doctor, and he started to move away.

"Hold on," said Stanton. "You're not going alone. Until we get this figured out, nobody goes anywhere alone."

They took a few minutes to work it out. Fran and Nigel were fine. So were Elgin and Stanton. But then Buzzard wanted to check out the shop, too. He used to work there, after all. Maria wanted to stay with Buzzard, of course. And Galatea wanted to be with Stanton. That left no one to go with the Doctor. If everyone did what they wanted to do, then they couldn't do what they needed to do. Faced with an impasse, Stanton drew a breath, prepared to start giving orders. But Buzzard spoke, saving him from the unpleasant task.

"I'll go with the Doctor," said Buzzard. "I'll go. With the Doctor." He drifted over until he was next to him. "It's logical," he said. "The most logical." He looked nervous and self-conscious, until Maria came over and hooked her arm through his. Then he grinned, his long, lanky, limber body flowing loosely again. Maria looked into his big

happy face, her dark eyes shining. The Doctor passed a hand over his pate, smoothing his nonexistent hair. There was enough light to make his bald head glimmer, and to show his little smile.

As they split up to go to their three separate destinations, Stanton called out, "I hope you didn't take that personally, Doctor."

The Doctor looked back, his smile bigger now. He looked as if he was going to say something, but then he just waved Stanton away and flew on.

~

"This reminds me of the time we did this before. When we were trying to figure out why Green Comet was evacuated."

Elgin and Stanton and Galatea were crossing the Square toward the green side, heading for the opening on the left. Fran and Nigel were taking the one on the right. The Doctor, Buzzard and Maria went the opposite way, toward the orange side. They were headed for the opening on their right, closest to the shrine. It was very much like that time, only Galatea, Buzzard and Maria weren't there then. Other than that, the same people were going to the same places.

"Me too," said Stanton, "other than the fact that there was no air that time, and we were wearing our pressure suits, and it was pitch black in here."

Elgin laughed as they glided out through the opening. "Other than that, of course."

They only had to go a short way up the hallway to reach the doorway to their shop. This also reminded Elgin of the very first time he came here. Brought here by Stanton that time too, to begin his probation period as an engineer. It was the first time he met Buzzard. The beginning of a long friendship. He remembered Stanton opening

the door, and seeing Buzzard working at the big table. This time though, the door was ajar.

They stopped and looked at each other, Galatea unconsciously getting closer to Stanton. He reached out cautiously and pushed the door, letting it swing inward. They released their breath when they saw that the big room was empty. In the same moment they saw that it was trashed.

With a cry of disgust, Galatea rushed into the room. Her expression rapidly evolved from disgust to outrage as she saw the extent of the damage. Every drawer was removed from the table and smashed. The table top was cracked and gouged, as if it had been attacked with an ax. The galley was so badly damaged that it looked as if it had never been there. Galatea didn't know it, but she was making a noise like a cross between a growl and a moan as she headed for Stanton's office. When they caught up to her she was stopped in the doorway, her body rigid and trembling.

"How could they do this?" she was saying. "How could they?"

When Elgin saw what she was looking at, he was shocked. The outer office was bad enough, but it had only been trashed. In here it was worse. This room had been defiled. Of course, the furniture was broken and destroyed, but that wasn't the worst of it. In here, the vandals had got personal. They'd left a message, written in paint and what looked like excrement. The least graphic of the inscriptions said things like, "HERETIC" and "BLASPHEMER."

Galatea looked at Stanton, the rage on her face only made more terrible by the tears. Her voice shaking, she said, "If I ever find out who did this ..."

Stanton took a quick look, cycling from shock through fear to outrage and finally calm acceptance in a matter of seconds. He put a hand

on Galatea's shoulder and said, "It's not important, Gay." Turning her, he said, "Let's get out of here."

He had to drag her out of there, talking to her the whole way. He knew she was hurt and angry, and he knew it was for him. She might tease him and give him a hard time, but he knew that it was from a place of fierce and protective love. She tried to hide it behind her gruff mannerisms, but it was clear to anyone who knew her. And that would have been reason enough why he had to drag her away. But Stanton knew it was more than that. He knew that she would want to stay to clean the place up. She hated dirt and disorder, and this place had both in quantity. There were stains that needed cleaning out. Smudges that need polishing. He knew that if he let her get started that she wouldn't leave until it was finished. He took her shoulders in both hands and steered her toward the door. "Come on, Gay," he said. "We can come back and do this later. I promise. But right now we've got to get back to the others."

She let him guide her out of there and back down the hallway. Elgin followed them out and latched the door firmly behind them. She said, "Promise?" When he promised again, she nodded, accepting. But all the way down the hall, she kept looking over her shoulder. The mess untidied, the cleaning undone, pulled at her, and it was hard to turn away from it. Her synesthesia took external imperfections like these and turned them into physical discomfort inside. So it was hard, but once they were past the green pillars and back into the Square, she was able to shake him off and manage on her own. "Okay," she said gruffly. "You don't have to lead me around like a child, you know."

"Of course not," he said. "Sorry."

Straightening her fur, she said, "Well, all right, then."

Hiding a little relieved smile, Elgin set off to their left. “Come on,” he said. “Let’s see how Fran and Nigel are doing.”

They caught up with him, Galatea trying to look as if nothing had happened, and Stanton apparently deeply interested in something on the other side of the Square. They were just approaching the other set of green pillars when Fran and Nigel came out, engrossed in whispered conversation. They jumped when they saw their friends.

Elgin said, “What is it? What’s wrong?” He looked back up their hallway, the way they’d come. “Is someone there?”

Fran glanced back, then at Nigel. “No,” she said. “There’s no one there. It’s just ...”

Elgin thought he knew. “A big mess. Graffiti?”

Fran got it right away, in part because of the deep scowl on Galatea’s face. “Yes,” she said. “You too?”

Elgin nodded. “They seem to think Stanton is a blasphemer,” he said, punctuated by Stanton’s snort.

“It’s much the same in the meeting room,” said Fran. “Winston and Minder are also called names.”

“Blasphemers?” said Elgin.

“Yes,” she said, “but they’re also accused of sedition and treason.”

“Winston and Minder? Treason?” Elgin was shocked. “Are you sure it was aimed at them? They’re not the only ones to use that room.”

“Yes,” said Fran. “They were mentioned by name.”

Stanton snorted again, and muttered, “It’s like they’re following a script.”

Fran looked at him. “Like the reading you’ve been doing?”

He nodded. “In the books, they all follow the same path. Use the same tactics. They eliminate the people most dangerous to them.”

Elgin said, "I guess if they want to be dictators, it makes sense to get rid of the biggest democrats."

"That's right," said Stanton. "And if they follow the formula, anyone who tried to defend them, too. Then, depending on how far gone they are, anyone associated with their defenders."

Fran shook her head, smiling. "Surely not. That would be insane."

"Yes," said Stanton. "And paranoid. And highly effective."

That clicked with Elgin. "People would be afraid. If the punishment appeared capricious and extreme, they would be afraid to do anything to bring attention to themselves."

"That's right," said Stanton. "And some would be so frightened that they would betray other people to try to save themselves."

While Elgin nodded, Fran said, "No. That can't be right. Not here, Not the people of Green Comet." She looked at Elgin. "Not our people." But he could only look away. He couldn't reassure her because he knew that what Stanton said was right.

Looking grim and angry, Stanton said, "These aren't our people any more, Fran." The look on her face wounded him, but he had to continue. "Once they start they can't stop. Once they hurt people, they make enemies, so they have to keep going. They know that if they let up, then the people might find their courage again and come after them. Their victims aren't the only ones who are afraid."

Fran looked at Elgin again, and saw that it was true. Her face trembled and fell, but then he saw the strength come back into it. Lifting her chin she said, "If they're afraid, then let's give them something to be afraid of. We can't let them do this."

Stanton was nodding before she was finished. "I expect they already are afraid of us. That means that we are likely their next targets. And they've already begun, haven't they? They've de-sanctified you

two.” Then he turned and very deliberately scanned the deserted Square. “And where is everybody?” He turned to face her. “More specifically, where is our crew?”

She followed his gaze around the Square. “Maybe they’re exploring,” she said. “We’ve been away a long time. They must be curious.”

He smiled at her, shaking his head. “Okay,” he said, “let’s say they’re exploring. What are the odds that, out of a hundred people, none of them is exploring the Square?”

“Pretty small,” she said, conceding his point. “Where do you think they are, then?”

He looked grim. “The only reasonable explanation I can come up with is that they’ve been detained by something.”

“Detained?” said Fran. “Where? Why? By who?”

Stanton shrugged. “I don’t know. From the looks of things though, the Square at night doesn’t seem to be the place to be.” They all looked at the dim, unkempt place, with its missing statues and its dark window. “Come on,” he said, “let’s go see how the Doctor’s doing.”

They traversed the Square catercorner, to the exit closest to the shrine, then up the hallway to the hospital. They found their three friends right away in the main admitting area. Buzzard and Maria were standing looking at the Doctor, who was standing with his fists on his hips, surveying an untidy mess. He was in a loud running monologue that included words like “dereliction” and “unprofessional,” and he was listing the things he would do to whoever was in charge of this “travesty.” The place was messy and even dirty, with used medical supplies haphazardly discarded, but they noticed right away that there was no graffiti. It looked as if the hospital was still being used, however badly, unlike the shop and the committee room.

When they finally got his attention and told him what they’d found,

he calmed down and re-appraised his situation. He said, "This place might be in a terrible state, but at least it's still functioning. I guess I should be grateful for that."

"That's right, Doc," said Nigel. "This is nothing. We can get this fixed up in no time."

"And disinfected," said the Doctor. "And I have to check the supplies. Who knows if there's enough of anything?"

"You've got it," said Nigel. "Whatever you need."

Once that was settled, Fran said, "I suppose we should be thinking about where we're going to spend the night." She looked at Elgin. "We obviously have nowhere to stay, and there are no sleepers here, like there were at Prime One."

"Why don't you stay here?" asked the Doctor. "There are plenty of rooms, and no patients at the moment."

Fran looked around, nodding. "That sounds like a good idea, Doctor. In fact, I think we should all stay here tonight."

There was a brief discussion and, even though Galatea said she wanted to go and see their apartment, they soon decided that it would be best to stay together. Stanton told her they could go to their apartment tomorrow, in the light of day.

So they found some rooms and settled on the ones that had functioning water and power. Still, they stayed up for a couple more hours, exhaustion mounting while sleep was held back by anxiety and curiosity. They talked in the hallway until the silences got too long, then they went to their rooms to lie awake a little longer. They all got at least a little sleep before morning.

18.

WAS IT SOMETHING I SAID?

They spent the first part of the day at the hospital, getting it tidied up. They concentrated on the admissions area and a few of the rooms that were in better shape. The Doctor wanted it to be ready for anyone who showed up with a problem, so they could be treated and taken care of. He said once that was done, then he could get on with the rest of it at his own pace. He wanted to disinfect the whole place, get all the rooms up to standard, check out all the equipment and get the laboratories up and running. It was going to be a big job and he expected it would keep him busy for months, possibly years.

“And I’ll need to find some staff,” he said. “We’re going to need people to keep this place running. And doctors. I’m going to want to talk to the doctors.”

“That’s for sure, Doc,” said Nigel. “This is too much to run all on your own.”

“That’s not all I want to talk to them about,” said the Doctor, his eyes roaming over the neglected hospital. “I want them to tell me how they let this happen. Someone has got some explaining to do.”

“You bet they do, Doc,” said Nigel. “This would never have happened if you had been here. No real doctor would have let this happen, if they could help it.”

“Yes,” said the Doctor. “So that means that there are either no real doctors left on Green Comet, or if there are, then there’s something stopping them from acting like it.”

Nigel was shaking his head. “I know we’ve been gone a long time,”

he said, “but it’s hard to imagine that there are no good doctors left here. You worked with them, and you never said a bad word against them.”

“That’s right,” said the Doctor. “Good people, most of them. Good scientists. Even the least inspired of them were at least competent technicians. It’s just not possible that they all would have let this happen through simple negligence.”

“So, what’s the alternative, then? Something must have happened here.” Nigel stopped as a thought hit him. “Wait a minute. If something happened that made all the doctors let this place go to ruin, then what’s to stop the same thing happening to you, Doc?”

The Doctor looked at him. “What indeed.” But he lifted his chin and looked around. He was pleased with what they’d done so far, and he had ambitious plans for the rest of it. He clapped his hands together and gave them a brisk rub. “Well,” he said, “if something’s going to happen, then it might as well happen while we’re doing something. Come on. Let’s get to work.”

“Are you sure you guys will be all right on your own?” asked Elgin. “We don’t all have to go, if you think you could use any more help.”

“No, no,” said the Doctor. “You all go ahead and explore. We can manage here for now. Later, if this place gets busy, we will need more help. For now, though, we’re fine.”

“Okay,” said Elgin with a smile. “Don’t say we didn’t ask.” With the Doctor waving him away, he joined his other five companions and headed down the corridor for the Square.

Slipping in beside him, Fran said, “That is a point, isn’t it? They never would have let their hospital deteriorate like this if they could have helped it, would they?”

“What are you thinking, then?” asked Elgin. “That someone made this happen on purpose?”

“I’m not sure,” she said. “It’s not vandalized like the other places. It just seems abandoned.”

“So, someone made the doctors and other medical staff abandon their hospital. What could do that?”

“It would have to be something significant. This is a hospital, after all. And they are doctors.”

“Then something scared them off,” said Elgin. “Or they were threatened. Or they were physically removed.”

“You mean they might have been arrested and taken away?” That troubled Fran, partly because it seemed plausible. “They wouldn’t have let themselves be frightened away. Not all of them. Not for long, anyway. The Doctor speaks highly of his colleagues.”

“Even if they were threatened?”

“Maybe it’s a little more likely then,” she said. “Not everyone is physically brave in the face of threats. But even so, some of them would have been.”

“And yet none of them is here,” said Elgin.

“Yes,” said Fran. “Which seems to increase the likelihood that they’ve been deliberately removed.”

That was on their minds as they emerged through the orange columns into the Square. Unlike last night, where the air was dead when they arrived, today it was alive with sounds and vital currents. Not a lot of sounds and not very energetic currents, but at least they were there. Until the six of them emerged, anyway.

As soon as they appeared, all conversation and all activity stopped. As the echoes faded and the air currents died down, everyone in the Square turned to stare at them. There were several clusters of a few

people, huddled in widely separated groups, and a few others crossing the vast space, and they all stopped what they were doing to stare at Elgin and Fran and the others.

They stared back for a while. The six of them were stopped just outside the doorway, and they hung there staring, until Fran lifted a hand and called out a tentative, "Hello."

Most people turned away from them and went back to their business. But there was a lone man who didn't look away. He was all alone in the middle of the Square, near where their statues used to be. He didn't move when they began to fly in his direction. He continued watching them, even as everyone else in the Square subtly moved away, maintaining a maximum gap. A few of them slipped out of there altogether. One hundred meters must have been too close for them.

As they neared, Fran called out, "Hello. Good morning to you."

"Quiet!" he hissed. "Keep your voice down." He looked nervously around.

"Sorry," she said, lowering her voice.

Peevishly, he said, "If I had known you were going to be so careless, I wouldn't have let you come out here."

"Sorry," she said again. "We didn't realize."

"Obviously not," he said. "You're not going to survive long if you keep acting like ignorant tourists." He looked around again, then beckoned them in close. "They've got spies everywhere. You can't trust anybody."

Stanton spoke up. "Even you?" he asked.

"Yes!" said the man. "Good. Keep that attitude and you just might make it." He sneered. "Not the rest of these amateurs, though. Flocking around like a bunch of pigeons."

Stanton carried on. He looked over his shoulder, then leaned in

close. “You know we’re new here, right?” he said in a low voice. “Can you fill us in? What are we supposed to be afraid of?”

The man gave an exasperated sigh. “Isn’t it obvious?” he asked. When Stanton shrugged, he said, “The spies, of course.”

“What spies?”

“Them,” said the man, his eyes sliding sideways. “No, don’t look.” He shook his head. “You have a lot to learn.”

“Them?” asked Stanton. “Which them?”

“All of them, you fool. I told you. You can’t trust any of them.” He looked around again, grinning slyly. “That’s why I stay out here in the middle. Because no one’s got any business coming out here, so if they do, then I know they’re spying on me. And then there’s the cameras and the microphones. Out here, away from the walls, it’s the farthest you can get away from them. Anywhere.”

“Anywhere? That’s a little hard to believe.”

“Well, you better believe it.” The man was agitated. “Take the hospital, for instance. You stayed there last night, didn’t you?”

“Yes,” said Stanton. “Are you saying there are cameras there?”

“Of course there are. And microphones. They’re all over the place. Did you even look?”

“No, of course not. Why would we think of looking?”

“See? That’s why you haven’t got a chance. You’re too trusting.” He waved Stanton in closer and lowered his voice further. “See the window over there? It’s full of cameras, isn’t it?”

“Sure,” said Stanton, looking at the long black rectangle that used to connect them with Orange Comet. “It has to be to transmit images. All the pixels can emit or absorb light. But it’s not working, is it?”

“That’s what you think,” said the man. “But just because it’s dark doesn’t mean it’s completely off, does it?” He grinned triumphantly

when he saw that register. “That’s right. The whole thing could be one big camera and microphone, and you’d never know.” Then his face fell. “I’ve got to go,” he said, looking over Stanton’s shoulder. “I can’t be seen talking to you.” When Stanton turned his head to look, he said, “Don’t look! How many times do I have to tell you?” Then he flew off in a rush, shaking his head and muttering.

Watching his retreating back, Stanton said, “Crazy.” Then he had a good look over his shoulder, but didn’t see anything alarming. In fact, swiveling his head, he didn’t see anyone in the Square at all. Apparently, while they were talking to their paranoid informant, everyone else had left. “Now what?” he said.

“Everyone’s gone,” said Elgin.

“Yes,” said Stanton, thinking. Then he said, “Can you remember what we talked about yesterday? After we got here. When we were over beside the window.”

Elgin looked at him, surprised. “You believe that guy?”

“I don’t know yet,” said Stanton. “But something is going on here. Something strange. Maybe that guy is crazy, but that doesn’t necessarily mean he’s wrong. So, do you remember what we talked about?”

“Let me see,” said Elgin. “We talked about what a stinking mess this place is, and fixing it up.”

“And whether we’d be allowed to,” said Stanton.

Buzzard interrupted. “We talked about the interrogation and the salvage crew. We talked about shoddy maintenance and whether the people of Green Comet were lazy or incompetent. And Stanton, you talked about whether a dictatorship was deliberately running this place down, or if they were just inept.” Buzzard looked at Elgin. “And then about the stinking mess and cleaning it up.”

Elgin and Stanton looked at each other. “That sounds about right,” said Elgin.

“Yes,” said Stanton. “And if someone was listening, then we sure gave them an earful, didn’t we?”

~

They left the Square then. There was nothing to keep them there. No people. No signs of activity. There weren’t even any of the old landmarks they were used to. The café that they used to like to go to, for instance. Just a fabric enclosure extending out from the wall. Nothing special, but it had become important to them. Not there now. Worse than that, all the shops that occupied the ground level of the four walls were gone. Where there used to be the bustle of people engaged in lively exchange, both commercial and social, now it was blank and dark.

It looked as if the Square was no longer the heart of Green Comet. It was a sad thing to realize, but also bewildering. If people didn’t come to the Square to interact with each other, then where did they go? Because surely they needed some place to meet. They couldn’t imagine life on Green Comet without a center of vigorous intercourse. What would be the point?

“What would be the point?” asked Fran.

“What?” said Elgin. “The point of what?”

Fran laughed. “Sorry,” she said. “Did I say that out loud?” She sobered. “I was just thinking about how no one seems to be using the Square, and I was wondering why. This place used to be the heart of the comet. Almost everything happened here. People came here to see and be seen. A lot of the time they just came here to be here. Now, other than a few people we saw skulking, and that one crazy guy,

it looks as if nothing happens here any more. And I thought, without the Square, what would be the point?"

"I see what you mean," said Elgin. "That makes me wonder, too."

"Any ideas?" asked Fran.

"Not really," he said.

They left the Square to go have a look at their apartments. Stanton and Galatea, Buzzard and Maria didn't have theirs in the Square. They had to go back out through the right hand red door to the major corridor that went past the water reclamation plant. Before it got that far, though, it came to a residential area, where Stanton and Buzzard had their apartments. They'd been living there since they first arrived on Green Comet, before it even left their solar system, and well before anyone knew the Visitor existed. They were both still single then, and Stanton was more than Buzzard's boss. He had become somewhat of a surrogate father to him. Buzzard was smart. Brilliant, really. But he was not as precocious on the social side of things, and he was not blessed with a childhood well-suited to that. His parents, especially his father, could only see his shortcomings, and they failed to nurture his gifts. They didn't object when he signed up to go on Green Comet alone, and that was the last he saw of them. Luckily for him, Stanton did recognize his gifts, and he was perceptive enough to offer him the support he needed, including the tacit support of being a close neighbor.

Once they got into the corridor, the stench magnified considerably. They realized, to their surprise, that they must have been getting used to it. At least enough to forget about it momentarily. Now it hit them again, forcefully reminding them of its presence.

Elgin said, "Once we're done here, that is my first priority. I don't

know how these people can put up with this, but I know I'm not going to."

"I'll help you," said Fran.

"Are you sure?" he said. "It's going to be pretty vile in there, judging by how bad it is here."

"I'm sure," she said. "I've heard the stories about how you did that job while I was stuck in hibernation. Now here's my chance to find out for myself."

He grinned at her. "Okay," he said. "But I have to warn you that it's not very romantic."

"I know," she said. "That's what makes what you did so special. And part of what makes you so special to me."

"Okay," said Galatea, "we've all heard this before. Can we get a move on now? I'd like to see my place some time today." She hustled on ahead, muttering.

"Gay!" said Stanton, looking an apology at Fran before hurrying after her.

Fran just laughed. She knew Galatea. The woman just had no patience for the "mushy stuff." She hurried to catch up, along with Elgin and Buzzard and Maria, all of them grinning.

The grins didn't last long. They soon arrived at their apartments and saw what had been done to them. Like the shop and the meeting room, they'd been vandalized. There were the same epithets scrawled on the walls, including the addition of "ATHIEST" in Stanton's place. Elgin was watching his friend, and he saw the anger begin. It grew worse when Stanton saw what it did to Galatea. She was in shock. As well as an attack on their home, this was an assault on her sense of order. But she was tough. This might upset her, but she could handle it. What really hurt Stanton was how it affected Buzzard.

When they went into his place, Buzzard stopped moving. He hovered just inside the door. With wide eyes he looked around at the mess, his face showing hurt and confusion. When Maria came close and squeezed his arm, he looked at her. Then he looked at Stanton. When he could finally speak, it was with the small voice of a child. "Did I do something wrong?" he asked them.

"No!" said Maria sternly. "Of course you didn't."

"Buzzard," said Stanton, "listen to me. They didn't do this because you did anything wrong. They did it because they knew it would hurt you."

"But why?" asked Buzzard. "Why do they want to hurt me?"

"I don't know," said Stanton, his voice a husky growl, "but I will find out."

19.

PERFECTLY WRONG

Any sense of adventure or exploration that they might have had about this was gone. Everything they'd seen so far was a disappointment, or worse, and they didn't have any optimism left for the rest. So, without delaying any longer, they decided to get right down to business. It was time to start fixing this place up.

There was a lot to do, and it would have been easy to get discouraged. Everywhere they'd been was a mess, and everything they'd seen needed fixing in some way. From the burned out lights in the Square to the wear and tear in the corridors, it would take a long time to bring everything up to their standards, especially if it was only them working on it. And, from the look of it so far, it would be only them. The people they'd seen so far didn't seem like the type to help. From the mercenaries on the Ball, to the crazy paranoid in the Square, they weren't likely to be interested in repair and maintenance.

So that left the eight of them, and any of their crewmates from the Ball that they could find. And, come to think of it, that was something else they needed to do. They needed to solve the mystery of where their crew had gone. It was possible to imagine that they were off somewhere, doing something, but it was improbable that they hadn't seen even one of them since they left the Ball. That was something they needed to figure out, on top of everything else.

It looked like a big job, and the way to handle that was to break it down into smaller jobs. They'd already made a start on that at the hospital, and now it was time to tackle the next most important task.

Arguably even more important. In a closed system like Green Comet, the most important elements were the ones that contributed most directly to survival. Air, water, food. The air seemed okay. Nothing immediately dangerous about it, anyway. The water was adequate. It was one of the things the Doctor made sure of at the hospital. They hadn't seen any evidence of a problem with the food. Everyone they'd met so far seemed to be well nourished. The obvious next step was the sewage treatment plant, as their noses had been telling them since their arrival.

So the six of them headed for the plant. The smell got worse the closer they got, and by the time they got there it was like a palpable force pushing them away. It was almost impossible to enter the place. The primal revulsion included the feeling that they were being poisoned. Their instinct was to hold their breath and flee, but they overcame that and carried on.

Elgin headed for the controls, with Fran at his shoulder. What he saw made him groan out loud. The gauges monitoring the effluent were mostly in the red, or close to it, and the controls themselves were set all wrong. He immediately began adjusting them, explaining to Fran as he went.

"It's about balance, isn't it?" she said.

"Hm?" He was fine tuning the oxygen, and it wasn't working, so he checked the oxygen reservoir.

"Getting this working right is a matter of balance," she said.

He glanced at her, distracted. "That's right," he said. "If it's not balanced properly then performance suffers badly. Like now, with the oxygen." He found the oxygen reservoir empty, and shook his head in disgust. He looked around for Buzzard and called him over. Maria

came with him, but Stanton stayed with Galatea, who was immobilized with shock. This must be hard for her, thought Elgin.

“Do you guys need a hand?” asked Buzzard as they glided up.

“Yes,” said Elgin. “This oxygen tank is empty. I need you to figure out why.” He tapped a couple of connections. “It comes in here, and it’s tapped off here. Okay?”

“Okay,” said Buzzard. “Find out where it’s leaking. Or why it’s not filling. Where it’s leaking or why it’s not filling.” He trailed off as his mind bore down on its focus. Maria stayed with him, shoulder to shoulder, a second brain and a second set of hands and eyes.

Elgin forgot about the oxygen problem. It was solved. Or as good as, anyway. Buzzard would find it, and he would know how to fix it. The only variable was the time. With that taken care of, he and Fran were free to carry on with their inspection. They continued to find problem after problem. Every system they looked at seemed to have something wrong with it. Every setting was just a little bit off. Soon a pattern began to emerge, but Elgin wouldn’t believe it. At last he just stood back, fists on hips, staring at the whole thing.

“What is it?” asked Fran.

Elgin shook his head. “It can’t be,” he said. “It’s crazy.”

“What’s crazy? Tell me. Maybe it will make sense to me.”

“I doubt it,” he said, “but I might as well.” He shook his head again, then said, “It looks as if this was done deliberately.”

Fran looked concerned. “You mean sabotage? You’re right. That would be crazy.”

“Not exactly,” said Elgin. “I mean it looks as if someone has deliberately set the system to run like this. As if someone wants it to function at this level of inefficiency.”

Fran stared at him. “Now that would be really crazy. Why would someone want that?”

“I don’t know,” he said, and went back to adjusting the controls. He was fine tuning the rate of flow when they were startled by a shout.

“What do you think you’re doing?” someone bellowed from the entrance.

They all spun to see an angry looking man rushing toward them, waving them away from the equipment.

“Get away from there,” he said. “Leave those controls alone.” He was across the room in a few strokes, pushing them away.

Elgin and Fran backed away. “Okay,” said Elgin. “Sorry. We were just trying to help.”

“Help? Look what you’ve done. Do you have any idea how long it took me to get this just right?”

“Just right?” asked Elgin. “There’s nothing right about it. Everything is set just wrong.”

“Exactly,” said the man. He spun to glare at Stanton, who was edging closer from the other direction. “You back off too!” he said. “I see what you’re doing.” Stanton stopped and backed up a little.

“Exactly?” said Elgin. “Do you mean to say that you wanted to do this?”

“Of course,” shouted the man, busily making adjustments. “Do you think I’d let this happen if I didn’t want it?” He glared at Elgin. “I am an engineer you know,” he said.

“Well, no,” said Elgin. “I mean, of course you are. I mean ...” He stopped himself and got a grip. He tried again. “What I mean is, we had no idea. We thought there was something wrong, and we were trying to fix it.”

“Well, there’s nothing wrong. Everything is just the way it’s sup-

posed to be.” He peevishly twisted a knob. “At least it was, before you meddling fools came along.”

“We didn’t think we were meddling,” said Elgin. “We thought we were helping.”

“Is that right? Well, meddlers usually do, don’t they?”

Fran saw that Elgin was beginning to get frustrated, so she jumped in. “It was just a misunderstanding,” she said. Then, “We haven’t been introduced, have we? I’m Frances and this is Elgin ...”

“I know who you are,” he said. “You’re the returning heroes. Went and got our resources back, and then left them behind.”

“We didn’t exactly leave them behind ...”

“You didn’t bring them with you, did you?”

“Well, no ...”

“Then you left them behind, didn’t you?”

She let her shoulders slump. “Okay. Technically, we did.”

“Okay,” he said, stepping back to look at his work.

“Anyway,” she said, “you know who we are. What do you call yourself?”

He looked at her. “Norton,” he said. “I call myself Norton. And you two are Frances and Elgin. The one trying to sneak up on me is Stanton, and there’s Galatea. It was Buzzard poking around the oxygen reservoir, and his lady Maria. And back at the hospital, Nigel and the Doctor.”

“That’s right,” said Fran. “You seem to know a lot about us, Norton.”

“Everyone does,” said Norton. “We’ve all been fully informed about your misdeeds.”

“Informed? Misdeeds?”

“Yes.” He pushed past her to get at some more controls. “Your

misappropriation of our resources. Your willful disregard of our wishes.”

“We didn’t misappropriate anything,” said Stanton loudly. “Those resources went right where they belonged.” He pushed up close to Norton, so he could look him in the eyes. He said, “When did your wishes become so important?”

Norton looked him up and down. “They said you were the pushy one. Looks like they were right.”

Galatea jumped in, eyes flashing. “Pushy?” she said. “You want to see pushy?”

Norton laughed. “And here’s your plucky sidekick.” He looked and found Buzzard. “And your trained monkey.”

Now Maria’s eyes flashed, but before she could get to Norton, both Fran and Elgin intervened. Fran said, “Where are you getting all this slander?” She thought of what they’d learned from the salvage crew on the Ball. “Are you getting it from Verdi?”

“Do you mean His Excellency Verdi, Prince of Green Comet? Sure we’re getting it from him. But only because he’s getting it from higher up.”

“Higher up?” asked Fran. “From where? Who?”

Norton laughed again. “I think you’ll be finding out soon enough.” He faced them, making shooing motions. “Now get out of here. Thanks to you, I have a lot of work to do to get this place running right again.”

Elgin, who knew what had to be done to get it running right, said, “When you say running right, you mean running wrong in a very specific way, don’t you?”

“Smart man,” said Norton. “But then, you ran this place yourself for a while, didn’t you?” He peered at a gauge, gave it a couple of taps,

and nudged a dial. With a satisfied nod, he said, "I have to admit, the improvements you made have made my job a lot easier."

"Your job being to make it run badly in a very particular way, right?" said Elgin. "If I had to guess I'd say you're trying to maximize the smell without affecting the overall efficiency."

"Of course," said Norton. "We live in a closed system here. We have to treat the effluent and the water seriously."

"And the smell?"

Norton shrugged. "The powers that be want their subjects to know how lucky they are."

"Lucky?" said Elgin. "Lucky to live in a stinking pit?"

Norton looked at him. "Yes," he said. "Lucky it's not worse." He shooed them again. "Now get out of here," he said. "I don't want to end up like old Snowy."

"Snowy?"

"That guy you were talking to in the Square." He was herding them out the door. "Lord Snowden, he likes to call himself."

"The paranoid guy?" asked Elgin. "The one who thinks there are cameras and microphones everywhere?"

"You can be paranoid and still be right," said Norton. "Now get out of here before the same thing happens to me."

"You mean there really are cameras and microphones?" asked Elgin, but Norton had turned away.

"What did happen to him?" asked Stanton. "To Snowy?"

Over his shoulder, Norton said, "They took him," and flew on.

"Who took him?" asked Stanton. "Where?" he insisted. But Norton ignored him, as if he hadn't heard. "Hey," said Stanton. "I asked you a question."

Elgin took his arm. "Come on," he said. "Let's leave it." He looked at Norton's retreating back. "We don't want to get him in trouble."

Stanton grudgingly allowed himself to be pulled away. "I wish someone would tell us what's going on here," he said.

"I think they might be too scared," said Elgin. "If Norton is right, then Snowy got taken away just for talking to us. And he was afraid the same thing might happen to him." They were idling along, not headed anywhere. They were just headed away from Norton and the reclamation plant. "Come on," he said, giving his wings a decisive flap. "There doesn't seem to be much we can do out here. We might as well go back to the hospital and help them."

~

They saw no one in the corridors and they heard nothing either. As they flew in silence, Elgin got thinking about other times he'd flown here. And he remembered one time flying with Fran and Stanton, coming down from inspecting the Ball before they set out on their great voyage. He remembered what they heard then, in the still of the night. "Hey you guys," he said. "Fran? Do you remember when we heard the Singer?"

Yes," she said, a smile brightening her pensive face. "I do remember that."

"I remember too," said Stanton. "We were in one of the orbitals. In the middle of the night."

"That's right," said Elgin. "I wonder if she's still around. Still singing."

"If I recall," said Stanton, "they were getting pretty close to tracking her down. She's probably been outed by now."

Elgin's mouth turned down. "I hope not," he said. "I much prefer the mystery."

"Odds are, though," said Stanton, also glum.

"I wouldn't be too sure," said Fran. "I think she probably had a trick or two up her sleeve."

"I hope you're right," said Elgin, and they all agreed with him. "The way this place is now, it really needs her, or something like her."

With those thoughts in mind, they entered the Square, which was deserted. In their day that would have been unheard of, particularly at this time of day. In the late afternoon there would be people just beginning to get off work, while others would be preparing for the evening shift. Then there were the shoppers picking up the makings of their evening meal, and those who would be having that meal here to begin their evening's entertainment. The place would have been alive with activity, but now it was like a mausoleum. Even Snowy's post in the center was empty, and that reminded them of what Norton said. The crazy old man was taken away, supposedly for talking to them. If that was true, then it was no wonder that the Square would be empty if people knew they were on their way.

"The question is why," said Elgin, "Why would they take people away just for talking to us?"

"They're afraid of us," said Galatea. When they looked at her she said, "They're scared. They don't know what to make of people like us. They're used to dealing with a bunch of timid rabbits, and we might change that."

After a short silence, Stanton said, "I think she might be right."

"I am right," said Galatea. "They've done everything to make us look bad. To turn people against us. And when that doesn't work, they make people disappear. They're afraid we might rub off on them."

Stanton was nodding. "I think that's it, Gay," he said as they left the Square and flew up the right hand orange passage.

"I wonder how the Doctor and Nigel are getting on," said Elgin. "They should have a good piece of the hospital usable by now."

"And we can pitch in and help them," said Fran. "I have quite a bit of pent up fixing up inside me, since Norton put a stop to our work back there."

"Me too," said Elgin. "I really wanted to get it cleaned up, and now I feel frustrated."

"We'll soon take care of that," said Fran as they flew into the hospital. "Doctor," she called. "Nigel. We're back." When they didn't see them in the admitting area, she raised her voice. "Doctor! Nigel! We're here and we're itching to pitch in." But there was still no answer.

As the frightened look spread on Fran's face, Elgin began to search the rooms, calling their names as he went. It didn't take long. They didn't appear to have done much more cleaning, but they did find a piece of equipment that had been partially disassembled.

Stanton said, "They must have been working on that when ..."

"When they left?" asked Fran. "But left for where?" She looked on the counter and on the walls. "It doesn't look as if they left a note, does it?" She looked around on the floor, in case it might have fallen down somehow.

"No, it doesn't," said Elgin, but he was looking at the piece of equipment, with its parts strewn on the counter. "Nigel is pretty good at working with this stuff. And the Doctor is pretty particular. I don't think either of them would just wander off and leave this like this."

"No, they wouldn't," said Fran.

"Well, we can't leave it like this," said Stanton. He looked at Buzzard. "Do you think you could put it back together?"

“Back together,” said Buzzard, moving toward the counter, his eyes darting over the scattered parts. “I think I could. Put it back together.” His voice slowed and got lower the nearer he got. “Yes, I could,” he murmured as he put his face inside it. Then he pulled out and spent ten minutes just looking at the parts and where they came from.

Fran said, “Why do you think they left?” Her voice sounded as if she already knew.

“It’s possible they were called away to a medical emergency,” said Elgin.

Fran smiled at her optimistic lover. “Yes,” she said. “Maybe that’s it.”

Stanton snorted, and Galatea said, “Fat chance.”

Fran’s smile faded. She shrugged and looked at Elgin.

He said, “She’s right.” He bowed his head. “It sounds right.”

“Of course I’m right,” said Galatea. “They were taken. Same as Snowy, the crazy guy. And probably Norton by now, too.” She threw her arms wide. “And I bet the crew was taken, too.”

“Okay, Gay,” said Stanton. “No need to get carried away.”

“Carried away?” said Galatea. “It’s perfectly logical. It explains everything.”

Before Stanton could say anything, Elgin said, “It is. It does. They wouldn’t have left things like this voluntarily.”

They were all quiet because they knew he was right.

At the five minute mark, Buzzard said, “I’ve never worked on one of these before.” Then, moving only to position one or another of the parts, he stared at it for another five minutes. Then he began to put it together, his hands moving rapidly and without hesitation. In five more minutes he was snugging down the cover.

“That was quick,” said Stanton.

“Not really,” said Buzzard. “Not really quick. I had to learn how it worked first.” He pushed a switch and the machine turned on.

“It’s working,” said Stanton. “If it was working, then why did they take it apart?”

“It wasn’t working,” said Buzzard. “It was broken.” He adjusted some dials, watching the readouts. “Wasn’t working.”

“So you fixed it, too?” said Stanton. Then he laughed. “I’m not surprised,” he said. “But you said you’d never worked on one of these before. How did you know how to fix it?”

“I didn’t,” said Buzzard. “Didn’t know how to fix it. I just looked at it until I could see what must be wrong.”

Stanton nodded. “Of course you did,” he said. “So, what does it do?”

Buzzard raised his shoulders and turned his palms up. “I don’t know,” he said. “Don’t know what it does.”

Stanton’s reply was interrupted by the arrival of five men. He instinctively moved in front of Galatea. Elgin did the same with Fran, and Maria did the same with Buzzard. As Galatea slapped Stanton’s shoulder and moved up beside him, the men stopped, forming a straight line across the entrance.

They were all colorfully dressed, with ornate decorations on their clothing. Four of them were holding pikes that had green pennants on them. The pennants were all embossed in gold with a large letter “V”. The fifth man moved forward, their ranks closing behind him, and unrolled a scroll.

“A scroll?” asked Stanton. “Really?” Galatea snorted.

The man read from the scroll in portentous tones. “You are summoned,” he intoned, “by His Excellency Verdi, Prince of Green

Comet, to an audience tomorrow in the Grand Court, where he will hear the tale of your quest.” He rolled up the scroll and turned to go.

“Wait,” said Fran. She waited until he turned back. “What time tomorrow, and where is this Grand Court?”

The man was appalled. “You will be there when His Excellency arrives.” He turned to go again.

“Excuse me,” said Fran, “but when does he usually arrive?”

As if speaking to a recalcitrant child, the man said, “His Excellency arrives when he pleases. You will ensure that you are there when he does.” Once again he would have left.

“Okay,” said Fran, “we will try to be there on time. Now, if you could just tell us where.” She smiled nicely.

The man rolled his eyes. “Everyone knows where the Grand Court is.”

“I’m sure they do,” said Fran, “but we’ve been away.”

Understanding flickered in the man’s eyes. “Of course,” he said. “You might remember it as the flashball arena.” He paused. “Is there anything else?”

“No,” said Fran. “That’s fine. We know the way.”

The men flew away, looking like a stately procession.

After a minute of stunned silence, Stanton said again, “A scroll?”

“Really,” said Fran. “At least it looks like our schedule for tomorrow is set.”

Into the silence that followed, Buzzard said, “Maybe we’ll find out what happened to the Doctor and Nigel. Find out.”

20.

THE GRAND COURT

They made it to the Grand Court bright and early the next day. Out the red end, through the opening with the flickering column, and up the corridor to the tee intersection. They went straight through, with just a glance up the orbital on the way by. It wasn't far after that to the flashball court.

They knew they'd be taking that orbital again in the near future. They wanted to explore the other comets that made up the hexamer, and this orbital was their access to the bottom two on this end. The big corridor went on beyond the big hatch and then split off into two, one going to each of the comets. They knew they had to go and have a look, especially after hearing about the feudalistic competition between comets.

For now, though, they were just going to the flashball court, or rather the Grand Court, to see this Verdi, and to try to find out what happened to Nigel and the Doctor. And maybe the rest of their crew while they were at it. They didn't know what to expect, but they thought they'd just jump right in and play it by ear. It had always worked for them in the past.

So the six of them came out of the corridor and into the cavern with their eyes wide open and their minds prepared for anything. Or so they thought. Afterward, they wondered if anything could have prepared them.

The first thing they saw was the flashball court itself. A hollow sphere of ice a hundred meters across. But it wasn't that. It was what

was inside it. Their crew. It looked as if all one hundred of their crew were there, all shut up in this big ice ball. And it looked as if they were playing flashball. Or some parody of it, at least. They were flapping listlessly, flying slowly, and when a player threw the ball, it drifted across the court, hardly glowing at all.

Fran reacted first, with Elgin right beside her, and Stanton not far behind. A few strokes and a few seconds took them to the curving ice shell, where they tried to get the attention of someone inside. The players looked as if they were playing in their sleep. Their movements were sluggish and their eyes were half closed.

Stanton slapped the shell, then they were all pounding and shouting, until finally someone noticed them. It took a moment for recognition to break through the lethargy. Then there was a flash of hope, quickly displaced by fear.

She was their radio operator. The one who was so calm and brave while they were under threat from Dempster. Now she looked drawn and exhausted. And frightened. She pushed at them with her hands, trying to make them go away, all the while her eyes darting around the gallery.

“What is it?” asked Stanton. “What’s happening? Why are you in there?”

She couldn’t hear him, of course, any more than they could hear her through the thick ice. But they could read her lips. They knew she was saying, “Get away. Go away. Please,” while she desperately pushed at them with her hands. Then her eyes widened, and she scurried back into the middle of the court.

“Hey!” They heard a shout and they turned to see four men rushing toward them from the access tube. “Get away from there! What do you think you’re doing?”

They were startled and momentarily frozen, then Stanton flew toward them. "What's the meaning of this?" he demanded. "Why are these people in there?"

Elgin was behind him, along with Galatea and Maria. They were about five meters back when Stanton reached the men, and that was long enough for him to receive three or four blows from what looked like heavy rubber truncheons before they were close enough to intervene. "Here now!" said Elgin, grabbing one of them from behind. His two friends picked one assailant apiece, and that left Stanton with only one to deal with.

Elgin's man was stronger than him. In fact, they all looked big and strong. However, even though his man threw him off, the situation was now more even. At four to four instead of four on one, and with Fran and Buzzard for backup, it became more or less of a standoff. Elgin looked at Stanton, who seemed to be all right. He would probably have some bruises, but he didn't look to be bleeding anywhere.

He looked at the men and picked the one who seemed to be in charge. He had slightly more complicated clothing, and a slightly more arrogant attitude. "All right, you," said Elgin, "what's going on here?" He had his fists on his hips and his face was beginning to set.

In answer, the man whacked the shell of ice, causing the players to flinch. "What's it to you?" he said, sneering broadly.

Elgin didn't answer right away, so Galatea pushed forward. "What's it to us?" she said. "I'll show you what's it to us."

The man raised his truncheon, a smile of anticipation on his face. Stanton held Galatea back, wincing slightly as the jostling hurt his injuries. Galatea was saying, "Let me go. I'll show him. I'll polish the ice with his stupid face."

The man's sneer fell into a slack-lipped expression of rage. He

advanced, weapon raised. Stanton was turning, prepared to shelter her with his already bruised body, when they heard a shout.

“Stand down!” it said. When the man didn’t lower his weapon, they heard, “Stand down, soldier, or you’ll be spending the next month on surface duty.”

That got the man’s attention and he backed up, putting his truncheon through a loop at his waist. Stanton was able to pull Galatea back, although she didn’t miss the opportunity to smirk smugly at her opponent.

The origin of the new voice was a man approaching from the direction of the flashball court’s access tube. The tube also provided access to the dressing rooms behind the gallery wall. They assumed these guards or soldiers or whatever they were must be housed there. The new man had slightly more ornate clothing and an air of authority. He was obviously in charge. He said, “Where are your manners, men? These people were invited. They’re guests of His Excellency.”

His four soldiers looked shocked, admonished, frightened even. The one who faced off against Galatea looked down, up, sideways. Anywhere but at her. She smirked harder. Hard enough to be called a leer.

The new man moved forward and stopped, facing Elgin and Fran. “My apologies,” he said, “and welcome to the Grand Court. You may address me as Captain. On behalf of Verdi, I welcome you.”

Elgin said, “Thank you. Pleased to meet you.” But Fran wasn’t paying attention. She was looking at the action inside the shell, where their crew was painfully going through the motions of a flashball game. She was concentrating, her lips moving slightly.

“My lady,” said the Captain. “My lady Frances.”

She finally turned to look at him, her attention focusing. She said, "There are three missing. Where are the other three?"

He glanced at the players. "Is it three? I didn't realize." He smiled. "They must be out of the game," he said. Some of his men smirked.

"Out of the game?" said Fran. "What do you mean? Where are they? Can we see them?"

"See them? That will be up to His Excellency." He looked toward the back of the gallery.

"When will he be here?"

"He will be here when he gets here. Now move along. This way." He gestured with his arm. "Let's go."

"Where are we going?"

"To the waiting area. Come along."

"All right," said Fran, glancing over her shoulder as they went. "But while we're waiting, do you suppose our people could take a rest? They're exhausted."

"A rest?" said the Captain. "That will be up to His Excellency." He looked at her. "Don't worry," he said. "They will get to rest soon." Some of his men snickered.

Suspicious, Fran asked, "What do you mean, soon? Why will they get to rest soon?"

"Never mind," he said. "You'll find out soon enough. Now wait here." He ushered them into an area bounded by velvet ropes. Clipping the rope back onto its stanchion, he said, "I'm sure you won't have to wait long."

The Captain left. He went back to the access tube, which connected the hundred meter sphere to the wall of the cavern, and used it to exit, presumably to go to the rooms back there. That left them alone with

the four guards, who posted themselves at the four corners of the roped off area.

Elgin looked around. The gallery they were in was enormous. To begin with, it had to house the one hundred meter flashball court. It did that with room to spare. But in addition there was enough space left over to fit in another whole flashball court if they wanted. It wasn't as big as the Square, but it was close.

The large empty space was apparently where Verdi held court. Besides their little waiting area, the place was empty except for one large structure over against the back wall. It was an elaborate structure, and it was surmounted by something that looked like nothing more than a large throne.

"I guess that's where Verdi sits," said Elgin.

"It looks important," said Fran.

Stanton and Galatea snorted in perfect unison.

Other than the throne and the velvet ropes, and of course the flashball court, there was nothing else in the gallery. The Grand Court. And other than themselves and the guards at the corners of the waiting area, and of course the prisoners inside the flashball court, there was no one there. Elgin looked at their crew struggling to keep playing, and he shook his head. They had to play until they could play no more, and then they were removed from the game? Or was there some other criterion? Score so many points? Execute a particularly good pattern? How would anyone know if they had? It didn't look as if anyone was watching them overnight. There was certainly no one here when they arrived. Elgin sighed. What would be the point of all this, anyway?

He couldn't do this. He couldn't hang around in this ridiculous velvet square, waiting for what was undoubtedly an equally ridiculous man, while his crew suffered. With six sharp strokes of his wings,

he crossed the distance to the access tube and entered through its lenticular opening. In a second he was at the door, which he wrenched open.

He called to the people to come, to get out of there, but they ignored him. They wouldn't look at him, turning their backs and continuing to throw the ball. He flew inside, trying to get their attention, but even when he got close enough to touch them, they pulled away and kept on playing. He was hanging there confused when the truncheon went across his throat and he was dragged out of there. He was choking and couldn't cry out when he saw the other guards wading in and beating people indiscriminately. The one choking him hissed in his ear. "We might not be allowed to hurt you," he said, "but there's nothing to stop us from hurting them."

Elgin stopped struggling and allowed himself to be taken back to the waiting area. He saw the Captain enter the big ice sphere and put a stop to the beatings. He seemed to take his time about it. Elgin was pushed roughly behind the rope and told to behave. "Or some of your friends might be leaving the game sooner than they thought."

"What do you mean, sooner than they thought?" asked Elgin, his voice rasping. But the guard just turned and flew away.

Fran grabbed him and pulled him around. She lifted his chin and examined his throat, while he craned, still trying to talk to the guard. "Hold still," she said. After peering closely, she said, "It doesn't seem to be too bad. How does it feel?" She gave it a tender kiss.

~

While they looked at their people laboring inside the big icy sphere, wondering what the guard had meant, they were surprised by Buzzard's voice. He and Maria hadn't said anything since they entered the

Grand Court, but now he said, “We’re supposed to stay inside the ropes, right?”

Stanton said, “It looks like it.”

Buzzard nodded, his big head bobbing on his long neck. “So, inside, but not how high?”

“How high?”

“Yes. They didn’t say we had to stay down here, did they? Down here?”

“No,” said Stanton, beginning to smile.

“So we can go up if we want. Go up.” He looked up at the ceiling, more than a hundred meters up there.

Grinning now, Stanton said, “I don’t see why not.”

“Well then,” said Buzzard, looking at Maria and giving his wings a flap.

She laughed and flapped too, rising up with him. Side by side they ascended straight up and touched the ceiling. Then they dropped down and began to fly around within the top half of the area bounded by the ropes. They almost did a synchronized routine, flying patterns together, Buzzard doing an occasional swoop. It looked like aerial ballet, without the costumes.

The other four were watching, unconsciously drifting upward themselves, unaware when people began to arrive. They didn’t notice until one of them tittered and all the newcomers began to talk and point. Elgin and Fran saw them and drifted to a stop. Stanton and Galatea followed suit, and soon Buzzard and Maria did too, hanging up there high above their heads.

The new arrivals were very colorful, wearing bright clothing, and even bits of other decoration. They huddled and milled in small groups, staring unabashedly, their mouths open even when they

weren't talking. They and the six looked at each other with open fascination.

They could see the cliques form as people came in, and they watched the power structures form within. Then they noticed that there was a difference in the clothing and decoration worn by the people in the different groups. Each clique contained only people who had the same kind of adornment. They might have been involved in power struggles and pecking orders, but only among their own kind, as denoted by their attire. Another distinction seemed to be how close each group was to the big structure with the throne on it. The more elaborate the clothing, the closer they were.

Other than glancing regularly back toward the entrance, presumably to see who would be the next to come in, they spent most of their time looking at Elgin and Fran and the rest. They looked as if they were gossiping, and they were always hiding giggles behind their hands. The less well-dressed were, anyway. The higher-ups probably had too much gravitas for that.

They kept arriving until there were about thirty of them, then there was a brief dead spell. It soon became obvious that they must be awaiting the arrival of Verdi himself. Elgin and his friends prepared for a long wait, given what they had been told about the man. They had the impression that he kept his own timetable, regardless of whether it inconvenienced anyone, so they went back to what they'd been doing. Buzzard and Maria began a slow dance, and their friends alternately watched them and observed the tribal practices of the colorfully dressed courtiers.

For a while nothing changed. They kept gossiping, some giggling and others looking important. The six continued to wait, Buzzard and Maria staying up high. Their crew kept playing flashball, while their

guards tried to not look bored. But the people in the groups still kept glancing at the entrance behind the throne. Elgin guessed they must be anticipating the arrival of Verdi, now.

He guessed correctly. After not too long — sooner than they expected, given what had been implied about Verdi's appearances — the man himself flew into the room, instantly killing the buzz of conversation. Everyone stopped what they were doing and looked at him, even the flashball players. Everyone knew that from now on everything that happened would be through his sufferance.

Elgin had assumed that Verdi would be a man of substance. Big, possibly fat, and lavishly dressed to outdo his most extravagant courtiers. So he was surprised to see a slim man, slight of stature. He could even be described as lean, or wiry. And his clothing was understated. Simple, close-fitting, and quite plain. Green with gold trim. But he carried himself with such confidence that he made everyone else look as if they were overdoing it. He made their attempts at grandeur look like the vanity they were.

Verdi acknowledged his more important courtiers. Then he looked at the prisoners in the flashball court, and they immediately, if painfully, began playing again. His gaze passed over the guards as if they weren't there, then fell at last on his guests. His eyes widened with shock, especially when he noticed two of them flying high above him.

He turned his face away, glaring at one of his attendants. He pointed at the four down by the ropes, and hissed, "They're naked!" Then he pointed at the two up high, and said, "They're above my throne!" Then he turned and left.

21.

THEY GET DRESSED

Naked?

They looked at each other, then down at themselves. What naked? The fur was still there. Nothing was hanging out. Elgin heard a fluttering and looked up to see Buzzard and Maria spinning down in a tight double helix. He also saw the guards coming in from the corners of the waiting area. They were smirking condescendingly, glancing suggestively at the women's bodies.

Elgin saw Maria fold slightly in on herself, as if she could hide her body. He looked at Fran and saw that she was having to make an effort to not do the same. Not Galatea, though. She stood straight and proud and stared brazenly right back at them. He was gratified to see the other two follow her lead. Not with her level of confrontation, but enough to show that they wouldn't be cowed.

The guards started herding them away, toward the access tube connecting the flashball court to the wall. As they went by, the players were covertly staring, while continuing to play. Elgin noticed that none of them had any clothing on either, and he got a vague idea. He was just about to mention it to Fran when he saw a couple of guards in the tube who appeared to be dragging someone away. He rushed toward the lenticular opening to see what was going on, but he was held back by their guards. The ones in the tube went straight through the opening in the wall with their burden. It looked inert and lifeless. Elgin hoped his crewmate was just exhausted and was being taken away to

recover, but his guards dashed that hope. One of them said, “That’s four down.” And another replied, “And six to go.”

They were herded into the tube and on through the wall, the way the others had gone, but they didn’t see anybody when they got there. Elgin recognized this place from his many flashball matches. A short corridor, with a door on either side leading to the teams’ dressing rooms. Straight down the end of the corridor was another door leading to service areas, storage rooms and medical facilities. He assumed that was where his crewmate had been taken, and once again hope sprang up that he might be receiving medical attention at that moment. Something told him that it was probably a false hope.

Their guards took them to one of the dressing rooms and shoved them inside. “Wait here,” they said, and slammed the door.

~

“Naked?” Stanton looked around, then shook his head.

Fran said, “I think our Verdi is a bit of a prude.” She was smiling.

“I think maybe they all are,” said Elgin. When they looked at him he said, “I’ve been thinking back, and I think everyone we’ve met so far has been wearing clothes.”

They all stopped to think about it, then Stanton said, “I think you’re right. The salvage crew. The people in the Square. The sewer guy ...”

“Norton,” said Elgin.

“Right, Norton,” said Stanton. “Even old Snowy had on that ratty old vest.”

“All the people in the Grand Court,” said Fran. She frowned. “Except our people in the flashball court. And us, of course.”

“Speaking of our people,” said Stanton, “I’m going to see if I can

find out where they've taken him." He tried the door and found it unlocked. With a quick look at Galatea, he eased it open and stuck his head out.

"Be careful," said Fran. "They already beat you once."

"Hardly hurts at all," said Stanton. "And besides, what can they do? They're under orders not to hurt us." He slipped out and pulled the door shut behind him.

Fran opened it and pulled it back a little, giving her a crack to peer through. She saw Stanton moving cautiously toward the door at the end of the short corridor. Then she felt a hand on her shoulder and turned her head to see Galatea's face. "Oh, of course," she said, making way for her friend and Stanton's lover.

Galatea watched for a while, not making any commentary. Then they saw her tense up, then partially relax. After a minute of this, Fran finally said, "Well, what's he doing?"

Tersely, Galatea said, "He's gone through the door."

"Is that all?" asked Fran, trying to peer past Galatea's head.

"Yes," said Galatea. Then she pulled the door open. "I'm going to look."

"Wait," said Fran, holding her arm.

Galatea looked at Fran's hand. "Let me go," she said.

Fran said, "Just give him a few more minutes. I mean, what if you go there and open that door at just the wrong moment? You might just make things worse for him."

Galatea scowled, thinking about it, then said, "Okay. Just a few more minutes."

It was a tense few minutes. Galatea stood in the doorway, looking through a crack, while the rest of them tried to get into positions where they could see something. All they saw was another door down the

hall. Nothing was moving out there, and they couldn't hear a sound. It didn't take very long for Galatea to lose her patience.

"That's it," she said. "I'm going out there."

"Are you sure?" said Fran. "Are you sure that's the best idea?"

"No," said Galatea, "I'm not." She looked Fran in the eye. "But what would you do if it was Elgin?"

Fran stepped back. "Just be careful," she said.

So Galatea squeezed out the door and crept down the hall, the four of them watching her. She made her way slowly toward the door at the end, painfully aware that she was completely exposed out there. The hallway offered no cover at all. If anything happened, all she could do was fly back to the dressing room she'd just left. Or to the other one across the hall, and she had no idea what she'd find there.

With these thoughts jittering in her mind, she covered the last few meters and reached out for the door handle. Just as she was about to put her hand on it, it was snatched away as the door swung open and Stanton burst through. As he collided with Galatea, the four guards came through behind him, three of them carrying bundles of white fabric. The other one used the end of his truncheon to push Stanton again, and when he saw Galatea, he poked her too.

"You people," he said. "You just don't know when to quit, do you?" He kept prodding them, driving them back toward the dressing room. "Come on," he said, "let's just get some clothes on you so we can get this over with."

"Quit pushing," said Galatea, turning to face her assailant. She'd have gone right after him, but Stanton grabbed her and turned her back around.

"Not now, Gay," he said. "Not right now."

She wouldn't have listened to him, not with her back up like that,

but then she saw his face. It was like nothing she'd seen before, and it scared her. There wasn't much that could do that to her, but the look on Stanton's face did it. So she went quiet and allowed herself to be herded back to the room, glancing nervously at Stanton as they went.

~

The clothing they were meant to put on consisted of a pair of loose trousers and a smock-like blouse. They were made of a light fabric that draped loosely on their bodies, the trousers cinched with a tie and the blouse pulled in at the waist by a kind of belt that was fastened with a knot. The blouse had slits in the back for their wings. The material was white and completely unadorned. They needed quite a bit of instruction from the guards to get it on and properly done up, simple though it was.

Galatea had been watching Stanton while they dressed, and he was obviously preoccupied by something. Probably, she guessed, by something he saw on the other side of that door. Finally, when they were all dressed and ready to go, she asked him.

He looked at her, unfocused, as if he were just waking from a deep sleep. When she asked him again, he nodded, but he still wasn't able to speak. His face, when he looked at her, showed an odd mixture. Shock, anger, disbelief, sadness. She was about to ask him again when the guards started chivvying them out the door. They clustered around Stanton as they flew down the hallway and out into the access tube. The sight of the flashball court seemed to breach the dam, and he said, "Flashball!"

"What?" said Galatea. "What about flashball?"

"The game," said Stanton, heedless of the truncheon prodding him. "How they get out of the game."

“How?” asked Galatea.

He looked at her, his face setting hard. “By dying. He was dead, Gay. That man they dragged out of there was dead. They still had him in that back room.”

She shook her head. “No,” she said.

“Yes he was, Gay. I saw him. He was certainly dead.”

“No, I mean what you said. That the only way to get out of the game is to die. That can’t be true.”

“I think it is,” he said. “Remember those guards saying, ‘Four down, six to go?’”

She did. She didn’t say anything. They were crossing the Grand Court now, heading back to the roped off area over by the throne. The courtiers were staring and giggling again. They did it when they were “naked,” and again now that there were clothed. She couldn’t figure out the contradiction, and she didn’t bother trying. She just stared back at them, her lip curled contemptuously. If they would do what Stanton thought they were doing, then that’s all they deserved.

When they were back in the waiting area, with four guards posted at the corners and two more above them, Fran turned to Stanton and said, “Do you really think he’s making them play themselves to death?”

He said, “It’s the only thing that makes sense.”

“But why?” she said. “What would be the point?”

“I don’t know,” he said. “Maybe he’s just crazy.”

Fran looked around. The Grand Court. The guards. The colorful courtiers. The endless flashball game. “You might be right,” she said.

“Hey!” said one of the guards. “You mind your mouth there.”

“Or what?” said Stanton, turning his battered body to face him.

“Yeah,” said Galatea, taking his arm. “Or what?”

The guard hefted his truncheon, but did nothing, remembering the threat of surface duty from the Captain.

“That’s right,” said Galatea, “you stay there. You’ll be safe there.” She laughed when the guard’s eyes flashed.

“Okay, Gay,” said Stanton. “Don’t embarrass him too much.”

Fran, straining to suppress her grin, said, “Take it easy on the poor man. He’s just trying to do his job.”

“Some job,” said Galatea, with one last glance before turning her back.

Fran said, “Whether or not Verdi is crazy, this is a crazy situation.” She shook her head. “I don’t know how we’re going to be able to set this right.”

“Me neither,” said Stanton, glowering as he shrugged inside his blouse, trying to find a way to make it comfortable. Galatea reached over and straightened the material out for him, trying to get it to drape properly. “They make you wear clothing,” he grumbled, “and they can’t even make it fit right.”

“Hm,” said Fran, looking down at her own clothing.

“What?” said Stanton, stopping wriggling.

“Well, I think you might have hit on the kernel of what’s going on here.” When they focused on her she said, “I think they’re so obsessed with the form of things here that they’ve lost sight of the function.”

“Like these clothes,” he said. He waved his arm. “And like this place. These silly twits fluttering around that throne like moths on a light. While the rest of the comet is falling to pieces.” He nodded, his eyes narrowed. “I’ve come across this kind of thing in my reading.”

“Like what?” asked Fran.

“It often happened toward the end of the reign of a particular power. It degenerated into displays of power and influence, spiraling

toward increasing excess. They always lost sight of what made them great, while they concentrated on being great. Appearing great.”

Fran looked around, nodding with recognition.

“It’s right,” said Elgin. “It feels right.”

Fran pointed at the flashball court. “What does that have to do with it?” she asked.

Stanton looked, and shrugged. “Power, I think. ‘Look at me. I can make people play until they die.’” He looked as if he wanted to spit.

Fran shuddered, and Elgin’s brow darkened. “If you have to show how powerful you are,” he said, “then you’re obviously not powerful enough.”

“Exactly,” said Stanton. “There’s something else here, too.”

“What?” said Elgin.

“When they would kill people like this. As a demonstration. They called it a decimation.”

“Decimation?”

“Yes. Killing one-tenth of them.” Stanton asked, “Do you remember the guard talking about six to go? That would make ten, and there were a hundred to begin with. One tenth. He’s decimating them.”

Elgin’s scowl deepened and his jaw began to bulge. “Killing them,” he growled, “for a demonstration.” He glared at the throne. “We have to stop these people.”

There was an excited ripple in the crowd and Verdi made his entrance again. Not looking at anyone, he flew to his throne and sat. When he finally looked at them, you could see that he was pleased that they were down low and covered by their humble clothing. But if he was expecting to see humility and adoration in their faces, as he was used to from his courtiers, then he was to be disappointed. Nor would he get the servitude that he got from his guards. Anything but. He saw

pride and defiance. The first face that jumped out at him was the contemptuous sneer of Galatea. Next to her was the knowing look of Stanton. Then Elgin. He quickly looked away from that one. To the comfort of Fran's expression. Softer. More welcoming. And, oddly unsettling, understanding and compassion.

This was disturbing to Verdi. He was used to, and felt most comfortable with, adoration, awe and especially fear. Expressions that confirmed his preferred balance of power. But these people looked as if they thought they were his equals. At least. Even that long, skinny clownish one was looking at him as if he was examining him. And his dark-eyed mate. Was that challenge in her stare?

Well, he could remedy that. He could show them that he now owned what were once their most valuable possessions. He made a languid gesture and looked expectantly back at the entrance.

Everyone followed his eyes, and waited for whatever it was that he wanted to show them. Eventually something appeared, moving slowly and laboriously out into the court. Whoever it was, they must be important, because they were wearing the most elaborate clothing of anyone there. Also the most clothing. They seemed to be wearing several redundant layers of expensive cloth. So much extra cloth that it was impeding their progress.

Then there was a glint of light reflecting off a polished metallic dome. A dome with a vee-shaped dent in it. "Scarface!" exclaimed Fran, surging forward. Elgin held her arm to keep her inside the rope.

The eight-limbed robot saw her and began to struggle in her direction, cloth tangling its legs. It was a pathetic sight, even if Scarface was just a robot. They all knew that he didn't have any feelings, but they still felt sentimental toward him, and seeing him like this made them feel bad. The fancy clothing, rather than conferring the status that

might be expected in this place, was serving as a mockery. Fran suspected that Verdi wasn't only mocking Scarface, either. She thought he was probably mocking the well-dressed courtiers who hovered around him, by dressing his new toy up to outdo them. She also suspected that he was taking a shot at her and her friends.

Scarface unknowingly thwarted that by turning his back on Verdi and heading for his long-time masters and companions. "Stop!" snapped Verdi, his narrow face showing panic under the haughty anger. Scarface kept coming, hitching and halting in his mess of fabric. "Stop!" shouted Verdi. "Stop at once and come back here." He gestured sharply at his guards. "Stop it at once," he said, and they advanced, pulling their truncheons.

Fran sighed. "Stop," she said softly. Scarface stopped, waiting expectantly. Verdi looked at her. Even the guards hesitated. "Go back, Scarface," she said. "Go back there and wait." She pointed toward the throne, and Scarface turned to go back, stumbling and struggling in his confining clothes.

Verdi was incensed. His display of power had been deftly snatched away and thrown back in his face by this woman who was supposed to be his prisoner. He wanted to do something to reassert his superiority. To put her in her place. But if he reacted now he sensed it would only make things worse. Instead he smiled, and to most people it probably looked sincere, that's how adept he was at the courtly arts. It didn't fool Fran, of course, and she sighed again. She knew instinctively that someone would pay for Verdi's embarrassment, even if he had only brought it on himself. She smiled back, just as sincerely, and said, "You were going to say something, Verdi?"

He flinched, but hid it well enough that most people wouldn't have noticed. Fran did, of course, and she nodded when a man, who must

have been one of Verdi's advisors or assistants, said, "The proper address is Your Excellency."

She nodded again and said, "Of course. I apologize, Your Excellency." She didn't laugh when Stanton snorted almost inaudibly. She just smiled and sternly kept all judgement out of her expression.

He seemed mollified and generously told her, "You're only recently arrived. Such ignorance is to be expected, and overlooked." His expression told her that it wouldn't be overlooked again. He idly waved away his aide. "Now then," he said, "I had you brought here so I could hear your tale of travel and adventure." He spun a hand on a wrist. "Proceed."

"Of course, Your Excellency," she said. "We will be happy to tell our story." She looked at her mates. "It's a long story and may take a while to tell, so we will have to take turns." She waited, and when he graciously nodded, she said, "Before we begin, though, we're concerned about our friends. Can you tell us where Nigel and the Doctor are?"

He looked puzzled and his aide slid over and whispered in his ear. "Ah," said Verdi, "yes. Them. They are no longer required. Carry on."

"No longer required? What do you mean?"

He frowned and said crossly, "They're not needed. Supernumerary. Surplus to requirements. They were interfering with the functioning of the hospital."

"Interfering?" said Fran. "They were improving it."

"Exactly," said Verdi as if it was obvious. "The hospital is functioning just as it should. They were going to spoil that." He looked at her as if she must be especially dense.

"But it's functioning poorly," she said. "They were just trying to make it better."

“And that’s what we couldn’t allow,” he said, the exasperation beginning to show. “I can’t have my subjects getting soft.”

“Soft,” said Fran. “I see. So, what did you do with them?”

“With whom?”

“Nigel and the Doctor. What did you do with Nigel and the Doctor?”

“I didn’t do anything myself, of course. I have people for that sort of thing.” He softly rubbed his hands, as if he were washing them.

“They were put in hibernation.”

“So they’re all right,” she said.

“Yes, of course they are. Now, get on with your story.”

“Thank you,” she said. “That’s a relief. We were quite worried.” She glanced over her shoulder at the game. “Now, there’s just one more thing before we begin.”

“Yes,” he said impatiently, “what is it?”

“We’d like you to let our people go.”

“What?”

“Our people,” she said, indicating the players. “They’ve been playing long enough. It’s time to let them out.”

Verdi stared at her in open-mouthed shock. “Are you telling me what to do?” he asked.

“Yes,” said Fran. “Well, strongly suggesting. Obviously it would be futile to try to tell you what to do.” She tipped her head to indicate the guards.

Verdi was gratified at the acknowledgement of his power, but chagrined at the implication that he needed it. “Well, you can forget about that,” he said. “They’re not finished yet.”

Fran nodded. “You still have to kill six more of them, don’t you?”

“Kill? I haven’t killed anybody.”

“Who has, then? They’re certainly dead, aren’t they?”

“If they die, it’s their own fault,” said Verdi, with a superior sneer. “If they were in better condition, then a little exercise wouldn’t hurt them.” He smiled at her. “You should be thanking me,” he said. “I’m weeding out the weak. Making your crew stronger.”

Fran bit down her anger. She wanted to slap this foolish man, but she knew that would get them nowhere. “Isn’t four enough?” she asked.

“No,” he said. “They have to be decimated, or it won’t work.” He looked at his advisor and got a nod of confirmation, and he nodded briskly at her.

Fran couldn’t speak. Won’t work? What did that mean? Was there some kind of formula for how many people to kill? She was going to ask, when she was cut off by Stanton. He said, his voice low and dangerous, “So you have to kill six more.”

“Five,” said one of the guards. When everyone looked at him, he pointed at the tube, where another body was being dragged out.

Stanton looked back at Verdi, his eyes hard. “Five,” he said. “Now you’ve killed five. Isn’t that enough for you?”

“I told you I haven’t killed anyone!” shouted Verdi.

“You’re the one in charge,” said Stanton. “They’re dead because of you. That makes you a killer.”

Verdi’s face turned red and seemed to swell up. His green costume with the gold trim looked as if it was too tight for him, and getting tighter. He looked as if he was going to scream at them. His advisor subtly backed away. His courtiers huddled in frightened clusters. Even his guards seemed to shrink in on themselves. But, other than Buzzard casting worried glances at Stanton and Maria, the six stood fast.

He didn’t explode. He got a grip on himself and in less than a

minute returned almost to normal. The tension sagged out of the place and Verdi cleared his throat to speak. He said, "In view of your ignorance of our ways, and your lack of experience in civilized society, I'm going to overlook your rude behavior." He flicked his fingers at the guards. "As a further demonstration of my magnanimity, I'm going to end this game early. Your people will be released."

Stanton and Galatea immediately flew off to join the guards as they got the people out of the big ball. Verdi bristled at their effrontery, and again when Buzzard and Maria went to join them, but he chose to ignore them. He turned to Fran and Elgin and said, "I hope this will help you to learn to accept my good will. I want you to be valued members of my court, and am making these unusual gestures to convince you of my sincerity."

There were some gasps among the courtiers, and a buzz of conversation. Did he really mean to allow these people into his court? With them? In their peasants' clothing? And them so recently naked, too. But a glance, the merest sliding sideways of Verdi's eyes, put a stop to that.

Fran, in diplomatic mode, not wanting any capricious changing of his mind about letting their people go, said to Verdi, "Thank you for your generous gesture. We appreciate it." She looked around at the splendidly dressed courtiers, then down at her own clothes. "Should we keep these clothes to put on if we decide to join?"

If? Nobody had ever taken one of his invitations as optional before. But he handled it smoothly. "Of course not. We'll get you something more befitting your status."

"Speaking of status," said Elgin, "I'm curious. Which has lower status: nakedness, or these clothes?"

Verdi leaned his head over and allowed his advisor to whisper in his

ear. He straightened up and said, “Apparently, technically, nakedness has no status at all, so there can be no comparison. Of course, clothing is preferable.”

Elgin nodded, and Fran said, “It’s time for us to go now and see to the well-being of our people.”

“No, no,” said Verdi. “I insist that you stay here and tell your tale, as you agreed. Your people will be well taken care of. I promise.”

“What will happen to them?” asked Fran.

“Hibernation,” said Verdi.

Fran thought that was better than decimation, so she didn’t object. But she insisted, “They need to recover first, though. They can’t go down in this condition.”

22.

STORY TIME

They told stories until noon, Frances and Elgin swapping off the narration. Verdi appeared to be quite interested at first, but his interest was clearly flagging after two hours of listening. His courtiers were different. When Fran began the first story — from departing Green Comet to catching the Prime — they were at great pains to make their disinterest plain. Then, when they saw Verdi paying attention, they were at equally great pains to show how interested they were.

At noon, as Elgin was telling the last story of the day — ending as they picked up the first radio signals from the Makers' world — Verdi's attention was wandering and he was stifling a yawn. About half of his court emulated him, ostentatiously stifling yawns of their own. The other half were rapt, mouths open, hanging on every word, until he finished. Only then did they notice what was going on around them and adopt the correct attitude.

Fran saw her opportunity and said, "Your Excellency, I believe your people are getting tired of hearing us talk." When he looked around at the signs of boredom and ennui, she said, "And we're getting a little tired of talking." She coughed softly. "My throat is getting dry and a little sore. Perhaps we could take a break. Get some lunch. Then we could come back another time for more stories." She looked at him, carefully blending respect and supplication in her expression. Beside her, Elgin stood in neutral deference.

That suited Verdi perfectly, as she knew it would. He said, "Of course. My court is fidgeting like children, and I am feeling a little

hungry.” He turned to leave his throne. “You may go. You will be summoned when I need you.” And he flew out of the gallery.

Scarface didn’t move. He was still looking at her. She shooed him out of there. “Go,” she said. “Go with him. Go on.”

He turned and headed for the exit, struggling with his burden of clothing. She knew he had no feelings, but he looked so pathetic that it broke her heart.

~

They found their friends in the dressing rooms with the rest of the crew, and a couple of guards. All of the players were exhausted and dehydrated, some of them unable to hold the water to their own mouths. It was crowded, there being about three times as many people in each room as they normally housed during a game. They went first to the same room they were put in when they were getting their clothes. Stanton was there.

“How does it look?” Fran asked him, looking around sadly. Some of the people tried to respond to her presence, while others didn’t respond at all.

“Not good,” said Stanton. “Some of them are in really bad shape.” He shrugged, frustrated. “I don’t know what I’m doing. We could use the Doctor.” He showed her the bottle in his hand. “The best we could do is this.”

She reached out and took it. “I can use some of that. I’m parched after all that talking.” She took a swig and was about to pass it to Elgin, when she stopped. “This tastes funny,” she said. She took another taste, then a longer drink, before passing it on. She smacked her lips. “It tastes funny, but good funny.”

Elgin took a drink, raised his eyebrows, and took another. “You’re

right,” he said. “It doesn’t taste like you’d want to drink more, but you want to anyway.”

“Well, don’t drink too much,” said Stanton, taking the bottle back. “It’s got a ton of salt in it.”

“Oh, right,” said Fran, while Elgin grimaced lightly. “I can feel that, now. But it was masked by sweetness before.”

“It’s also got a ton of sugar in it,” said Stanton. “You really don’t want a lot of it, if you don’t really need it.”

“No, I can see that,” said Fran. “In fact, now that my thirst is quenched, I wouldn’t want any more.”

“Me neither,” said Elgin. “Where did you get the idea for this, anyway?”

“Sparky,” said Stanton. “The radio operator. She was working with the Doctor, remember? He was always trying to train people in first aid and basic care, and she’s one of the ones who really took to it.” He pointed her out, trying to help people, though she seemed barely able to move herself. She must have felt them looking at her, because she looked over and smiled, with a weak wave, before going back to nursing sips of water into someone’s mouth.

Fran felt a swelling in her throat and a pricking in her eyes. This made her even more glad that they’d fought to get their people released. It was worth it to prevent even one more of these good people dying. She swallowed and said, “How about the others? How are Buzzard and Maria doing?”

“Good,” he said. “I sent Gay over there to tell them about this water idea, and she’s still with them.” He looked around at his fifty patients, some helping others, some hardly able to move. “It’s hard to say, but maybe it’s a little worse over there, if she hasn’t come back.”

“Maybe,” said Fran.

“I’ll go check,” said Elgin, heading for the door.

He went across the hall and entered the other dressing room. It looked much like the first one. Quiet. Not much movement. People helping other people. He spotted Buzzard, his length and fluidity making him visible, and flew over to join him. “How’s it going?” he asked.

Buzzard looked at him, his face a mask of anguish. “It’s awful, Elgin. It’s awful.” He gave Elgin a bottle of the special water, and looked around, near panic. “They’re so sick. And there’s so many of them.” It was obvious that he wanted to help them all at once, and so was not able to help them one at a time. Normally Maria would get him through it. Shield him from the trauma and focus his mind. But she was busy and he was in danger of overloading.

Elgin patted Buzzard on the shoulder. “Think of this like a flashball game,” he said. “You don’t do a whole pattern all at once. You do it one throw at a time. Right?”

Buzzard’s eyes steadied and focused on Elgin. The anxiety drained out of his face and he began to smile. “Right,” he said. “Like the Elgin Fractal.”

Elgin suppressed a grimace. He said, “That’s the Flying Fractal. The Harriers did that as a team. Not just me.”

“But you’re the only one who calls it that,” said Buzzard, his great big grin coming back. “The rest of the team calls it the Elgin Fractal.”

Elgin sighed. “All right,” he said. “The Elgin Fractal.” He’d lost that argument long ago anyway. The flashball pattern had got attached to his name while he was a hero, and no amount of protesting on his part could shake it loose. Even when Buzzard used a similar pattern of rockets and laser beams to battle the Visitor’s scout, the name stuck to

Elgin. Some things you just have to learn to live with. He shrugged and said, “Come on. You’re first throw.”

Buzzard nodded, his game face on. Without hesitation, he went straight to the nearest crew member and began coaxing him to drink. Elgin was doing the same when Maria caught his eye. Elgin felt her look of gratitude like a warm hug.

~

Nearly everyone recovered. There was only one more death. He was nearly comatose and unresponsive when they got to him, and he couldn’t be made to drink. If they had been able to get fluids into him intravenously, they might have been able to save him. All they could do was watch him die while the guards ignored their pleas to get him to the hospital. This was the thing that crystallized their resolve to change things. They knew before that they couldn’t allow things to go on like this. Now they knew that they wouldn’t.

Their crew was sent down to the Hibernarium for an unspecified period of hibernation. It seemed to be the Francesians’ preferred way of dealing with problems. It served as both a threat and a solution.

The six, especially Fran, reassured them that it wouldn’t be for long. They’d get them back up and onto a regular schedule as soon as possible. They told them that they intended to rehabilitate Green Comet, and they would require all of their help to do so.

~

“I don’t care,” said Elgin. “I’m going to fix the treatment plant. People can’t live like this.”

“But what about Norton?” said Fran. She’d given up arguing about

the greater consequences. About what Verdi and his people might do. Elgin said he wasn't worried about Norton.

"He can either help me, or he can get out of the way," said Elgin.

Stanton said, "My sentiments exactly. I'll come along in case he gives you any trouble."

Elgin nodded and looked around the table. Fran was looking a little worried, but not unhappy. Stanton looked determined and Galatea looked belligerent. Buzzard looked uncertain, but with Maria next to him, he looked ready. Elgin nodded again.

"Well, all right," said Fran. "As long as we're cleaning up, I might as well pitch in." She looked around the planning committee room, at the mess and graffiti. "And I might as well start here."

"I'll help," said Galatea, her hand unconsciously beginning to polish the table.

"Me too," said Maria.

"And me," said Buzzard.

"And after we're done here, then we'll do your shop," Fran said to the men. "Then the apartments."

"Yes!" said Galatea, her hand flexing.

"Yes," said Maria, looking at Buzzard, wanting to take away the hurt she had seen in his face.

"And when we're finished with yours, we'll do ours." Fran lifted her chin and stared a challenge at them all.

They all went silent. They were enthusiastic about the prospect of fixing Green Comet up, and challenging the status quo in the process. But they were a little more hesitant about directly challenging the Francesians at their shrine. Power and authority were one thing, but when you mixed in beliefs you were stepping into territory ruled by emotion. It gave them pause, but then Elgin's face showed the

beginnings of a small, tight smile. That made Stanton smile. Then Galatea grinned. When Maria nodded, Buzzard nodded with bouncing enthusiasm.

Fran said, "We have to lead by example. People have been living this way for so long, they've learned to not expect anything else."

"That's right," said Elgin.

"That's how it works," said Stanton.

"So, if we start to clean things up, maybe they'll start to get the idea." She set her jaw. "And if we show them that you can challenge authority, then maybe they'll start looking for ways to do it themselves."

"We have to remember, though," said Stanton. "When we start to push on them, they're bound to start pushing back."

Fran thought about that. Stanton was right. If they stirred up trouble, they might get more than they bargained for. And not just for themselves. She looked around the table at the faces of her friends, and she was reassured. They all looked back with calm determination, and Elgin's little smile brought it all together. She smiled and said, "Let them push."

~

They hadn't forgotten what Snowy said about spies and cameras and microphones. And they didn't doubt him, either. They were sure a paranoid, despotic regime like the Francesians would have spies and monitoring equipment. They had no doubt that their actions were being monitored and their words recorded. They knew that and they didn't let it bother them.

It's just as well, because they were being watched. Had been since they arrived. The big window in the Square was, in fact, full of cameras and microphones. And every room, every hall and corridor,

every space on the comet was infiltrated by surveillance devices. They were all ready and waiting, and could be activated as necessary. As the ones in the planning committee meeting room were now.

Up in the right angle where the walls met the ceiling, held in place by a weak electric field, were over a dozen devices. Each was a couple of millimeters in size and invisible to anything but a determined inspection. Each one was capable of capturing everything said and done in the room, and together they could render it in 3D, with immersive audio.

There was no point in worrying about being overheard. They might as well assume that the Francesians would be aware of everything they said and did.

23.

FREE ALTERATIONS

The cleanup began in the meeting room. The three women stayed there while the men headed for the sanitation plant. It felt like a natural division of labor, since Elgin wanted to go and Stanton was going to support him. Galatea was the clear choice for cleaning, since it was her specialty. Her compunction, to be honest. The only hesitation was Buzzard, who dithered, unsure whether he wanted to go with the guys, or stay with Maria.

She pushed him out the door. “Go on,” she said. “You guys are used to working together. We can handle this.”

~

Getting paint off walls made of ice wasn’t difficult. A little water and a little wiping was all it took. Or, more accurately, some water, some wiping, and a few hours of buffing it up to perfection. They quickly developed a routine. Maria would spritz it and wash it, then Fran would wipe it and dry it, and finally Galatea would polish it to a high luster.

They enjoyed it. Working together, the teamwork, the conversation, the easy camaraderie, all put them into a state of calm satisfaction. They could talk or not, and be comfortable either way. Even when Maria and Fran finished, and Galatea was working alone, they all still felt as if they were doing it together.

Fran and Maria were sitting at the table, having tea and some old packaged muffins they’d found at the hospital. Galatea’s tea was getting

cold, because she was finishing up her work. The whole place shone, and now she was making sure that the joint between the wall and the ceiling was thoroughly cleaned out, sharp and smooth. But she was having trouble. Some specks that she was trying to wipe away weren't cooperating. Every time she wiped at them, they would go back where they were. They seemed to snap back with a soft elasticity.

"You guys," she said. "You've got to see this."

Fran and Maria joined her up there and watched as she demonstrated.

"What are they?" asked Fran.

"I don't know," said Galatea. "It makes me think of static electricity, except it doesn't go away."

Maria said, "We have to show this to the guys."

"Why?" asked Fran. "What do you think it is?"

"I'm not sure," said Maria. "They remind me of the elements used to make the window. Millitools. But we need to get a closer look at them. And we need to get the guys to look at them. Get their engineer brains on it."

~

The men were also working together as a team. Elgin mostly had them watching the readouts as he made adjustments to the controls. They'd done all the simple changes, where he could move one dial and watch one meter to get the right setting. Now they were fine tuning, where he could make the adjustments while they watched several meters simultaneously. These were the fine tweaks Elgin made long ago when he worked here. Then, he had to do it incrementally, one small step at a time. Move a dial a hair. Go around and check all the readings. Move

the dial again. Check again. It was slow, repetitive and tedious. Now, with help, it was going much more smoothly.

They had more help, too. Once they convinced Norton that they were serious, he seemed to put aside his previous attitude and he agreed to stay and help them. He said, "They're going to throw me in the Hibernarium anyway. It might as well be for something I did, instead of just something that I didn't stop you from doing."

Snowden was there, too. He hadn't been sent down for talking to them after all. "I just disappeared for a while," he said. "I felt their eyes on me, and decided that I needed to be invisible."

"Where did you go?" asked Elgin.

Snowden glared at him and turned away. Norton chuckled and said, "Snowy can't tell you that. If he does, they'll hear, and then he won't have any place to hide."

"Oh, of course," said Elgin, tapping a meter. "I should have thought. I'm sorry, Snowden."

He turned back. "Yes, you should have thought." He straightened his ratty old vest, smoothing one of the pocket flaps. "I forgive you, since you're still ignorant." He turned to Norton and said, "And for your information, I have more than one place. A secret hiding place wouldn't last long if it was the only one."

"Of course, Snowy," said Norton. "I didn't mean anything."

"Okay then. I'm not a fool, you know."

"Of course you're not. I never said you were."

"Good, then." He lifted his face and talked to the air. "You're not dealing with a fool here. You might think you're clever, with eyes and ears everywhere, but you're not as clever as you think you are."

"You tell 'em, Snowy," said Norton.

"You'll never take me, and you'll never catch the Underground."

He stopped, horrified, and clapped both hands over his mouth. Then he turned and fled.

“Underground?” asked Elgin, looking at the doorway just vacated by old Snowy.

“Fairy tales,” said Norton. “An imaginary resistance army that will one day free us from our oppressors.” He shrugged, a wry smile twisting his mouth.

“I see,” said Elgin.

Stanton joined the conversation. “It’s not unusual for oppressed people to invent powerful saviors. An anodyne for the hopelessness.”

“That’s right,” said Norton. “Stories to make themselves feel better.”

“That makes sense,” said Elgin. “It sounds right.”

~

That’s when the women showed up. They had bright, eager looks on their faces. Galatea sniffed, her nose in the air. “Smells better,” she said. “Not perfect, but better. We actually noticed a decrease in the stench as we got closer.”

“Good,” said Elgin. “It’s good to know it’s working.”

Then, without further preamble, each of the women went to her man and gave him a hug and a kiss. The hug lasted long enough to whisper something in their ear, and then it was suddenly time to leave.

“We’ll see you tomorrow, Norton,” said Elgin. “That’s enough for today. Let’s let it settle overnight and see how it looks tomorrow.” And with that, they were gone, leaving Norton to wonder why the women all suddenly needed their men.

Out in the hallway Fran continued to whisper in Elgin’s ear, looking as if she was nuzzling him flirtatiously. They stopped to pick up some

tools, and flew on to the apartments, where they stopped outside Stanton and Galatea's. Stanton turned on a device and said, "Show me."

Galatea pulled him in and up to where the wall joined the ceiling and said, "This is where they were in the meeting room."

"Ah," said Stanton, "I see what you mean." He made room for Elgin and Buzzard, and they all looked, conferring in low voices.

"Well?" said Galatea. "Were we right?" Had she been standing on the floor under gravity, she would have been tapping her foot.

Stanton nodded at her. "It looks like it, Gay. Good catch."

Elgin confirmed it. "They do look like the elements in the window. I expect with minor modifications." He put a magnifier back up to his eye and continued his inspection.

"Are they turned off?" asked Fran. "Did that thing work?"

"Yes," said Stanton. "Not really turned off, though. Just stuck on the last thing they saw."

"So you can do that to them any time, anywhere?"

"Yes," said Stanton. "With one of these, you can go anywhere and not be seen or heard." He thought about that. "Well, there would be the matter of other moving objects freezing momentarily. It wouldn't work like actual invisibility."

"No, of course not," said Fran. "But it could be useful in some circumstances."

"Yes."

Elgin said, "I think I know another way we can use these milli-tools." His voice was quiet. Thinking out loud.

"How?" asked Fran.

"Well," said Elgin, looking at Buzzard and Stanton, "these are moved and positioned using an electric field, right? You shape the field

and alter its characteristics to move these things around. They can obviously be made to change their polarity.” He trailed off.

“Obviously,” prompted Fran.

“Right,” said Elgin, snapping back. “So, theoretically, you could move them into whatever configuration you want. Providing you had control of the electric field.”

“What sort of configuration did you have in mind?” she asked, but she’d lost him. He and Buzzard were into it now, focused, speaking in rapid, partial sentences.

Stanton chuckled. “Looks like that’s that for now,” he said.

They laughed with him. Then Galatea said, “As long as we’re waiting, we might as well start cleaning up.” She briskly rubbed her hands and rolled up her sleeves. They’d discovered that clothing was inconvenient in more ways than one. When they were cleaning the meeting room, they found their sleeves always getting in the way. Getting wet and picking up stains.

~

Elgin and Buzzard came up with something. They said you could call together any number of the window elements, the millitools, and use them to construct a device. Asked what kind of device, Elgin said, “The first thing that comes to mind is communication. These millitools are designed to transmit light and sound, so you could make a little handheld device to use to communicate.”

“Sounds plausible,” said Stanton.

“It’s early stages yet,” said Elgin.

Buzzard nodded and said, “Early stages. Early stages.”

“But it looks doable,” said Stanton.

“Yes,” said Elgin, with Buzzard nodding vigorously.

“Good,” said Stanton. “How are you planning to call them together? Do you have to carry something to remotely control them?”

“We thought of that,” said Elgin, “but decided against it.” He looked at Buzzard, who grinned. He went on. “We figured these communication devices would be something we’d want to keep to ourselves. Something we could use clandestinely. So we don’t want to be carrying something that will give them away.”

“Makes sense,” said Stanton. “So, what did you decide?”

Elgin and Buzzard grinned at each other again, then Elgin said, “Whistling.”

“Whistling?”

“Yes,” said Elgin, still grinning. “You whistle one thing and the bees come together to form a device.” He looked at Buzzard, who demonstrated with one high note and two shorter, lower ones.

“I see,” said Stanton. “Bees?”

“Oh, right,” said Elgin. “That’s what we’ve been calling them. They’ll zip around, kind of like bees.”

Fran said, “I love it. I love the name, and I love the whistling.”

“So do we,” said Elgin, Buzzard nodding happily.

Fran imitated the three note whistle. “That’s not quite it,” she said, and tried again.

“That’s good enough,” said Elgin. “It doesn’t have to be perfect, just close. The bees will adapt to each individual.”

“Oh, good,” said Fran, trying again. Soon she found a comfortable one and blew it a few times. The rest of them were doing the same thing, and the hospital dining room sounded briefly like an aviary. Fortunately, they all could whistle.

Stanton said, “So that brings them together. What sends them back?”

Elgin looked at Buzzard, who demonstrated a rising two note whistle, and they all tried that for a while. Then both of them. Soon the air was cacophonous again as they concentrated on perfecting their whistles. Then they made the mistake of looking at each other, their lips pursed and their faces concentrating seriously, and the laughing began.

They discovered that you can't whistle and laugh at the same time, and their attempts made them laugh harder. It turned into a full laughing jag, and by the time they were done they all had sore stomachs and tears in their eyes. It felt great.

~

There was one more thing: their clothes. If they were going to have to wear them, then they had to be better than these baggy white things. The basic design was okay, as far as clothes went, but in practice the details were not well executed.

First there was the matter of the sleeves, which tended to get in the way when they were trying to do something. They'd discovered that when they were cleaning, having to roll them up to get them out of the way. It was a nuisance and just plain inefficient.

The sleeves were too long and too baggy, and Galatea, who worked with her hands a lot, especially didn't like them. The obvious solution was to shorten them and make them snugger. That led to the idea that the legs could also be made shorter, and everything could be made snugger. That pleased Buzzard and Maria, who found that all that baggy fabric affected their flying.

"It's not aerodynamic enough," she said. "Too much drag."

"Too much drag," he said. "Drag."

They found a sewing machine, with Norton's help. "It's probably

the very one that made the clothes you're wearing now," he said. "There aren't that many of them."

"Why not?" asked Fran. "You'd think that with everyone wearing clothes there'd be a big demand for sewing machines."

Norton snorted. "It's like everything else. They make you do things, but don't give you the means to do them."

Fran shook her head. "I'm getting the impression that they spend a lot of their time thinking up ways to demonstrate their power."

"Exactly," said Norton. "That's exactly right. But also, they have their clothes hand made. It's got more status than machine made. So there's not as much call for these machines."

"I see," said Fran. "Well, I guess that's good for us, isn't it?"

Norton smiled at her. "You know how to look on the bright side, don't you?"

"Of course," said Fran, smiling back at him. "Now, let's see how this thing works."

~

They were done in a couple of hours. They let the machine take their measurements, then they gave it their clothing and instructions. One at a time, it took their clothes apart, trimmed the pieces to the right size, and sewed them back together to the new specifications.

One by one, as they came out of the machine, the outfits went on their owners. The results were just as they intended. Their new clothes were fully form fitting. The sleeves of the smocks came part way down the forearm, stopping well before their wrists. The trouser legs did the same thing on their calves. The smocks hugged their torsos, and were fastened with setae, rather than the original knotted belt. They fit perfectly, felt great and, incidentally, looked great too.

There was one question that could only be answered in practice, and Buzzard and Maria were the ones who answered it. Since the clothes now fit so snugly, would they restrict motion and hamper their mobility? This called for a test flight.

They went to the Square and Buzzard and Maria put their new clothes to the test. They did some laps around the perimeter of the Square, gradually increasing their speed. The hard turns at the corners gave them no problems. They tried variations on everything you'd encounter in normal flight. Again, no problems. Finally, the ultimate test. Buzzard did a few of his trademark swoops, and Maria her maneuver. Judging from the looks on their faces, their new clothes were passing this test, too.

They came back to their friends, breathing hard, their faces shining with delight. Maria said, "They're good. No binding. And no drag."

"No drag," said Buzzard. "No drag."

24.

DIVISION OF LABOR

Breakfast was iceberry tea and more packaged muffins. The hospital might have seemed like a strange place to live, but it did have that going for it. They wouldn't run out of food for a while. That was important because they hadn't yet figured out how people were feeding themselves. There must be something, they knew, but until they found it they at least had this.

The first thing after ablutions this morning, even before scrounging breakfast, they got dressed in their new clothes. When Elgin and Fran came out of their room, tugging and shrugging them straight, they saw the others doing the same. It made them all oddly uncomfortable. How had they acquiesced so readily?

Stanton frowned and said, "I only got dressed because I'd have had to eventually anyway. Might as well do it while I was right there."

"Yeah," said Galatea, straightening his tunic for him. "Saves the trouble of going back later."

Elgin nodded and said, "Same for us." He winked at Fran. "We didn't feel naked or anything, did we?"

"No," said Fran, working her right wing more comfortably into its slit. "Not at all."

"Well, we did," said Maria. "At bedtime last night. Didn't anyone else notice when you took your clothes off to go to bed?"

Buzzard didn't say anything, just ducked his head. But you could see the beginnings of his blush.

"Well, now that you mention it," said Fran. "It was kind of ..."

“Yeah,” said Galatea with a leer. “Kind of ...”

“I thought so,” said Maria. “I didn’t think it could be just me.” She looked at Buzzard, and mused, “Especially when he was taking his off. Did you guys happen to notice that?”

“Yes,” said Fran, looking at Elgin. “Now that you mention it.”

“Yeah,” said Galatea. “There was something about watching him slide his tunic off his wings. Do you know what I mean?”

When the women pulled closer, obviously intending to continue this train of thought, Stanton said, “All right, you. We’re right here, you know.”

“I know,” said Galatea. “In those tight trousers, too.”

“Now Gay,” said Stanton, beginning to look flustered.

When Fran laughed, so did the other two, while their men fidgeted self-consciously. Then she sobered and said, “Isn’t it funny how adding clothes emphasizes the nakedness without them?”

Elgin said, “That’s right. That is strange. Ironical?”

“I think so,” said Stanton, “but you know how much I know about that. I’m never sure what irony is.”

“I think this qualifies,” said Fran. “When you’d expect one thing, and then it’s the opposite.”

They thought about that for a minute, then Buzzard said, “One thing about clothes.” When they looked at him he said. “Pockets.” He patted the blank expanses of his tunic. “If I had a few pockets, I could carry a lot of stuff around.”

“What kind of stuff?” asked Maria.

“I don’t know,” said Buzzard. “Stuff.” He shook his head, raising his shoulders. “You know. Stuff.”

“Like tools, maybe?” suggested Fran. Buzzard nodded eagerly. “Or snacks?”

Stanton said, "It might be handy at that. As it is, when we want to bring something along, we just carry it."

"Or put it in a bag," said Galatea, "and carry it over our shoulder." She was thinking of how convenient it would be to have some things with her all the time. Like cleaning and buffing cloths. She couldn't count how many times she'd seen a smudge and not had anything with her to take care of it.

"Right," said Elgin. "Pockets. That would be handy. It would keep our hands free."

"Hands free," said Buzzard. "Hands free."

They would definitely be going back to the sewing machine to design version three of their clothing, complete with pockets. But first they had some chores to take care of, like checking on the sanitation plant, and a lot more cleaning.

They were just tidying up after breakfast and preparing to leave when five men arrived. Four of them had pikes and one of them stepped forward unrolling a scroll.

"Again?" said Stanton. "Another scroll?"

The man looked at him, a trifle embarrassed at his own silliness. He didn't let it stop him, though. He held up the scroll and proclaimed, "His Excellency Verdi requires your presence in the Grand Court immediately." Then he turned and left, followed by the other four.

"Hmph!" said Stanton. "I wonder what his excellency wants this time."

"Maybe he wants to hear some more of our story," said Fran.

"Yes," said Elgin. "He seemed pretty interested the last time."

"Well, if that's what it is," said Stanton, "then he doesn't need me. You two can go, and we'll get back to work."

“I don’t know if that’s a good idea,” said Fran. “He seemed to be asking for all of us.”

“Well,” said Stanton, “if he wants me, he can send someone with a scroll to get me.”

“Me too,” said Galatea. “I’m coming with you.”

“Okay,” said Stanton. “Us, then.”

Buzzard looked back and forth between Fran and Stanton. Then he looked at Maria. “What about us? What should we do?”

“That’s up to you, Buzzard,” said Stanton. “If you want to stay out of trouble, go with them. If you want to get some work done, come with us.”

Maria took Buzzard’s hand. “It’s not that simple,” she said. “We don’t know what kind of trouble it would be. And we can always get back to work tomorrow, or even this afternoon, depending.”

“Like I said, that’s up to you,” said Stanton. He reached out and took Galatea’s hand. “We’re going to start at sanitation, in case you want to know where we are.” They flew off, hand in hand.

While Buzzard got more agitated, Maria got more sure. “We’re staying,” she said. “I mean, we’re going to the Grand Court with Fran and Elgin.” Still holding Buzzard’s hand, she nodded firmly. “There’s plenty of time for work. We’ll just do this, then get back to it.” Buzzard’s face cleared, and his shoulders relaxed. He squeezed her hand and nodded.

“Plenty of time,” he said. “Plenty of time.”

~

“Where are the other two?” demanded Verdi.

“They’re working,” said Fran. “We didn’t think it would take all of

us to tell a few stories.” She looked around and noticed that everyone was glaring at her. “Oh!” she said. “Uh, Your Excellency.”

“I sent for all of you and I expected all of you here.”

“We’ll keep that in mind for next time,” she said. “Meanwhile, no harm done.”

He peered closely at her. “I don’t think you’re taking this seriously,” he said.

“On the contrary, Your Excellency,” she said. “You may rest assured that we take it very seriously.”

He took that suspiciously, too. He didn’t like these people. They were too ... relaxed. He liked people to be nervous, even frightened. That way he knew they were taking him seriously. But these people weren’t nervous. Far from it. They acted as if they had nothing to be nervous about. Except that long, gangly one. He always looked a little uncomfortable. But then the dark-eyed one always calmed him down. Speaking of which, she was quite attractive. Those eyes. And something about the way her clothes fit her. Come to think of it, there was something about all of their clothing. Even on the men. And that Frances, the de-sanctified saint, was looking pretty good, too.

She cleared her throat. “Your Excellency?”

His eyes snapped up to see her smiling at him. Was that a knowing smile? Recovering, he snapped, “What have you done to your clothing?”

“We modified it,” she said, turning to let him see how well it fit her. While her back was turned, she winked at Maria, who got it immediately and began her own show. Elgin and Buzzard also demonstrated how their clothes fit, but hardly anyone was looking at them. When she completed her circle, Fran caught Verdi’s eyes darting between her and

Maria before he managed to drag them back up to her face. “What do you think?” she asked, her hip cocked.

Flustered, he stammered, “Who told you you could do that?” He pointed. “Change your clothes like that.”

“No one,” she said. “They were poorly made and inconvenient, so we took the initiative and made some alterations.”

“What was wrong with them?” he asked, apparently offended.

“They were too baggy. They got in the way when we tried to work. And they interfered with flying,” she said. “So we made some improvements. Next we’re planning on adding some pockets. That was Buzzard’s idea.”

“Pockets,” said Buzzard, patting the front of his smock. “For stuff.”

Verdi looked sternly at them. “What makes you think you can do what you want with them?” He pulled up straighter. “That clothing belongs to me, you know.”

“Oh,” said Fran, reaching for the setae seal on her smock. “Would you like them back? We’d just as soon do without, anyway.”

“Except the pockets,” said Buzzard.

“Right. Except the pockets,” said Fran, beginning to open the seal.

“Stop!” said Verdi. “Do what you want with them. It’s better than having you naked.”

“It is, isn’t it?” she said, turning to let him see the curve of her hip. Maria subtly mirrored her move, to double the effect.

“Yes. No. That’s not what I meant.” He let out an exasperated breath and gestured impatiently. “Just get on with your story,” he said.

~

They told stories until nearly noon. This time it wasn’t only Elgin and Fran. Maria and Buzzard also tried their hands at it. Maria turned out

to be a good storyteller. She had a natural sense of drama and timing, a good voice and an engaging delivery. At times, Verdi appeared to forget entirely about her tight trousers as he raptly watched her face.

Buzzard was a different story. He had a tendency to get wrapped up in the details, and lose sight of the larger story. But he told it with such enthusiasm, with such large movements of his long, supple body, that his listeners were on his side. They forgave him his faults and filled in the story in their minds.

Elgin was a competent storyteller. Like Maria, he had good timing and a good voice. He knew which details to emphasize and which long passages to condense. His audience paid attention, and they were duly rewarded.

The best was Fran. Like Elgin and Maria, she had the natural gift. Like Buzzard, she could make the audience love her. What gave her the advantage was her synesthetic talent: the ability to know what her audience was feeling. She knew just what they needed to hear next to make the story perfect. She could make them feel as if they were there. They knew what it felt like to be alone out in the middle of vast, empty, cold space. They knew what it felt like to face violent, dangerous, exalted Makers. Listening to her, they were often caught holding their breath as she revealed the climax of a story.

She finished their stories that morning by telling of the offloading of resources from the Prime, of the death of a Maker, their friend Plub, and of the loss of communication with the Maker world as they were heading back home. There was silence for a while as everyone thought about the implications. Were the Makers lost, or would they bounce back again? If they did, would they be able to keep from killing each other long enough to make serious forays into space? And if they did

that, could they make their way here and be a danger to the people of Green Comet? It was Verdi who broke the silence.

He said, "You should have destroyed them when you had the chance."

"We might have been able to do that," said Fran. "We chose not to."

"Well, you chose wrong," said Verdi. "They're violent animals. They're a danger to us. It was your duty to prevent them from coming here and attacking us."

"Perhaps if you had been there, we'd have done things differently," said Fran. "Your Excellency."

"You certainly would have," he said. "I'd have overruled your softness and you'd have done the right thing. You can't show any sentimentality with your inferiors."

"Yes," she said. "I can imagine how it would have gone."

"Yes," he said, apparently missing her tone. "And another thing. We certainly wouldn't have given away two thirds of our resources. We would have brought them all back home."

Fran didn't ask how he would have convinced the Makers to provide them with the laser power for their sail without giving them some of the resources in return. And she didn't talk about the fairness of sending resources back to the double worlds. This wasn't about being reasonable or fair. It was about Verdi demonstrating his greatness. So she simply said, "Of course you would."

"At least you brought some of them back," he said, apparently relenting. Then he added, "But you should have brought them all the way back, instead of leaving them at that outpost."

"But that's where they came from," protested Fran.

"And that's where we came from, isn't it? So the resources should have come here, where the people are."

“But there are people there.”

“Bah!” said Verdi, sweeping it away with his hand. “Colonists. They don’t have the sense to run their own affairs, much less manage our resources.”

“Is that why you try to run their affairs for them, from here?” When he looked at her blankly, she said, “Your spies.”

“We don’t employ spies,” he said haughtily.

“Well someone does. They attempted a coup. Then, when we stopped that, your assassin went to work.”

“Assassin? We most certainly do not use assassins!”

“Again, someone does.” She looked at him, assessing. “Maybe your superiors don’t tell you everything.”

“My superiors? What makes you think I have superiors? Do you see anyone fitting that description here?” He tipped his head at his courtiers.

“Not here,” she said, “but it’s obvious that this isn’t the top of the Francesian hierarchy. You’ve been granted this principality, and you take your orders from somewhere else.”

“No one gives me orders!” snapped Verdi, his face red and his body taut. “They give me spiritual guidance only. All matters of governance are my domain.”

“Things like the daily running of Green Comet,” suggested Fran.

“Yes. And dealings with the other comets, and so on.”

“And athletics,” she said, looking at the flashball court, then back at him. “And entertainment.”

His gaze broke, then reasserted itself. “Yes,” he said defiantly.

“So they give you that in return for keeping the people here in line. Ceding you limited authority, and keeping the ultimate power for themselves.”

“I have full authority!” he shouted. “I can do whatever I want.”

“You do seem to be the ultimate authority on this comet,” she admitted. “You can make the place stink. You can arbitrarily condemn people to the Hibernarium. And you can kill people in the flashball court.” She nodded. “That does have the appearance of full authority.”

“That’s right,” said Verdi. “Green Comet is mine.” He slapped his green-clad chest. “Mine!”

“I can see that,” she said. “And that’s enough for you. You don’t concern yourself with what the higher powers do. Nor with the decisions they keep from you.”

“As I said, spiritual matters.”

“Spiritual matters like coups and assassinations.” Fran tilted her head sympathetically and said, “Don’t worry about it. According to Stanton it’s normal for paranoid dictatorships to hoard information as a matter of habit. And he says as they degenerate it gets worse. Eventually, everyone is suspicious of everyone else all the time.” She saw the light of recognition in his eyes. “If I were you, I wouldn’t take it personally.”

His expression and his body language, and hence his aura, showed that he certainly did take it personally. A man of his character couldn’t take it any other way. He stared at her, his eyes flat. “Stanton,” he muttered.

~

They went directly from the Grand Court back to the hospital to eat. As they had their packaged food, Fran said, “We’ve got to find a way to prepare proper meals.”

“Definitely,” agreed Maria, and they both looked at the men.

They looked at each other and shrugged. Elgin said, “I guess,” and

took a bite of his muffin. With his mouth full he added, "This is all right for now, though."

"All right for now," agreed Buzzard. "For now."

Maria rolled her eyes and both women shook their heads. Fran said, "It will have to do for now. We have too much to do."

"Right," said Maria. "Let's go get Stanton and Galatea and get to work." She dropped her cup and wrappers into the recycling bin and dusted her hands.

On the way to the water reclamation plant, Maria said to Fran, "You sure didn't take it easy on Verdi back there, did you?"

Fran smiled at her. "I was just giving him a little gift," she said. "I'm pretty sure he doesn't get to hear people being frank with him very often."

"Frank?" said Elgin. "You were brutal."

"No," said Fran, "not brutal. I prefer to think of it as candid."

Elgin laughed. "You were candid all right. You made it clear that he takes orders from his superiors. I guess you just wanted him to face facts."

Fran nodded. "He needed to know, if he was ever going to be at peace."

"At peace? You were worried whether he's at peace?"

"Yes," said Fran, "of course. He was conflicted. In a hierarchy, some people are content to be princes, filling a lesser role like his. Some only want to be king."

"So?" said Elgin. "Are you saying Verdi wants to be king?"

"Yes," said Fran. "But he's stifling those feelings. Hiding from them. I just wanted to help him face them, so he can resolve the confliction."

"And if it happens to foment unrest?"

She smiled at him. "I'm just trying to help," she said innocently.

They knew there was something wrong as soon as they entered the water plant. Norton was there, and so was Lord Snowden, but they didn't see Stanton or Galatea.

"Where are they?" asked Elgin.

Norton and Snowy looked at each other, then everywhere but at Elgin.

Elgin's face began to harden. "What happened?" he asked. "Where are they?"

Snowy looked as if he wanted to run, but Norton showed his mettle. He swallowed and met Elgin's penetrating eyes. "They were taken," he said.

"Taken? When? Where?"

"Not long before you got here. About a half hour ago."

"Where?" barked Elgin, advancing on Norton. He only stopped when Fran put her hand on his arm.

"To the Hibernarium," said Norton, forcibly keeping himself from backing up.

"And you just let them?"

Norton turned his palms up. "There was nothing we could do."

"Nothing you could do?" Elgin felt Fran's grip tighten on his arm, and realized he was moving forward again.

She said, "They would have had weapons. I'm sure there really was nothing Norton and Lord Snowden could do."

Elgin felt himself relax, his shoulders loosening and his face softening. He saw some of the apprehension go out of Norton's face, and he felt bad. "I'm sorry," he said. "It's not your fault."

Norton let out his breath. "Don't worry," he said. "I'd be the same

way.” He laughed nervously. “I don’t know if I could be quite that scary, though.”

Elgin looked at Fran and she nodded. He still didn’t really believe that his face changed like that, or if it did, that it could be that bad, but he’d heard it from people he trusted and he took their word for it. “I’m sorry,” he said again.

“It’s okay,” said Norton. “Now if you don’t mind, we’ve got to get back to work.”

“Still fine-tuning?” Elgin asked.

“Actually,” said Norton, looking ashamed, “we have to make it stink again.”

Elgin wanted to say something, but was afraid he’d get angry again, so he said, “Come on. Let’s go find them.”

~

The entrance to the Hibernarium was guarded by two armed men. They had the usual truncheons, as well as handguns stuck to their thighs. When the four approached they barred the door, their truncheons in their hands.

This time Fran did the talking. She said, “We’re here to visit Stanton and Galatea.” To their stony stares she said, “They were just brought in. You probably saw them.” She looked at their flat eyes. “Actually, we’d like to see Nigel and the Doctor as well.” She moved to get around them, followed by the other three.

The guards blocked the way, truncheons raised. One of them said, “No visitors.”

Fran pulled back. “No visitors? Why not?”

The guard looked into the middle distance. “No visitors.”

“But how are people supposed to see their friends and family?” She tried to catch his eye, but he wouldn’t let her.

Suddenly, surprising everyone, Buzzard burst forward. “I want to see Stanton,” he shouted. “See Stanton.”

Maria grabbed the back of his smock, slowing him down, but he got close enough that one of the guards cocked his arm back, ready to strike, while the other put his hand on the pistol on his thigh.

Buzzard was still advancing, pulling Maria with him, when Elgin swung in front of him. He craned around his friend, oblivious to the danger, shouting, “Stanton! See Stanton!”

Elgin grabbed his shoulders and said, “Buzzard.” He held him and repeated his name, while Maria hugged him from behind and did the same. Eventually Buzzard’s eyes cleared and he started to listen to them. He calmed down and they were able to pull him out of reach of the guard’s club. The other guard’s hand moved away from his thigh.

“Come on,” said Elgin, his arm around Buzzard’s shoulders. “There’s nothing we can do here. There’s no point in making things worse.”

Maria was on the other side of him, her arm around his waist. “We’ll figure this out,” she said. “We’ll find another way.”

Buzzard craned his neck, looking over his shoulder. His eyes were worried, his face a mask of apprehension. He whispered, “Stanton?”

25.

THE BEES

They could have gone back to cleaning. There was certainly enough of that to do. Or they could have gone back to the water reclamation plant and forcibly taken over again. It would have been satisfying to defy Verdi. To let him know that they wouldn't be intimidated by his thuggish tactics. It might have been just the thing to give direction to Buzzard's fear and anger. But Elgin had a better idea.

"Back to the hospital," he said.

"But we've got to do something," said Maria, her arm still around Buzzard's waist, guiding him in his blind flight. "We've got to do something for Stanton."

"We will," said Elgin. "I promise."

"But what?" asked Maria. "What can we do there?"

"That's where Buzzard can do something for Stanton. Something that only he can do." He looked at Buzzard's face then back at her. "Something that he really needs to do right now."

Maria saw it in Elgin's face, and she knew she could trust him. She nodded and squeezed Buzzard's waist, and flapped her right wing. He automatically flapped his left wing and, as they had many times during their long love affair, they flew as one.

~

Elgin took Buzzard to one of the hospital's terminals and said, "Do you remember the back doors Stanton showed you?" While his friend

began to focus, he said, “It’s time to work on the bees. We want to be able to call them any time, anywhere.”

So they got to work, diving into the details together until they were lost to the two women. An hour later, when they brought them coffee, Buzzard just nodded absently, but Elgin looked up and saw Maria. The love and gratitude in her face did much more than the coffee to re-energize him.

They were at it all afternoon, took a short break for food, and worked on into the night. Finally, shortly after midnight, Elgin said, “Let’s try it.”

The honors went to Buzzard and he whistled, one short note followed by two lower ones. The response was immediate, and within two seconds a few hundred of the millimeter-sized bees came together and formed a simple device. In what should not have been a surprise, but was, it formed right at Buzzard’s lips, where he had just puckered them to whistle.

He jerked his head back, and they laughed out loud. The women looked over to see them doubled over, holding their stomachs. Elgin straightened up, then jerked his head back with a comically alarmed expression, and they laughed some more.

“Well,” said Fran, with an indulgent smile, “I guess they got it.”

“Good,” said Maria, turning back to their cooking. “Now if we can just get this.” She looked over. “It should be a nice surprise.”

“I think we did pretty well,” said Fran, “considering the ingredients we were able to find.” She frowned. “I still can’t believe we couldn’t find any iceberries.”

“Even that patch by your old place was gone,” said Maria.

“Oh well,” said Fran. “This will do fine, whenever they’re ready.”

Elgin and Buzzard were back at it, their heads bent over their work. Elgin said, "It should be easy enough to get it to form away a little."

Buzzard said, "That gave me an idea." He made some adjustments, rewrote a little code, and tried again. This time the device didn't try to form in his mouth. Instead, it came together in his ear. "Since this version is an aural communication device ... aural comms ... aural ... Anyway, I thought why not plug it right in."

"That's brilliant, Buzzard," said Elgin.

"And hands free," said Buzzard, holding up his hands. "Hands free." He whistled two ascending notes and the device disassembled and scattered back up where it came from. He pointed at Maria. "You try it," he said.

"Me? Okay," she said, and whistled the three note descending pattern. It sounded quite different from Buzzard's, but the bees came anyway. Maria jumped when the device formed in her ear. "That was surprising," she said. "But it feels okay. It fits fine." She whistled and jumped again when it took off. "I guess it'll take some getting used to."

"Yes," said Buzzard. "Getting used to." He pointed at Fran and said, "You try."

She did. She was prepared, having watched Maria, but she still jumped a little when it entered her ear. But she said, "It's a perfect fit." She shook her head vigorously. "It feels solid." She blew the up whistle.

While Elgin was whistling it down for his turn, Maria said, "Can we test them?" Then her eyes widened. "Can they hear us when we use them? Can they tell when we're moving them around like this?" She looked around, her eyes raking the joint between the wall and ceiling. "Are they watching us right now?"

"Yes," said Buzzard. "And no. And no. And no." He looked at

the ceiling while he reviewed her questions, then nodded when he was sure he'd answered them all.

Elgin saw that she was about to ask for a clarification, so he whistled the device away and volunteered. He said, "We can test them right away, tonight. They won't be able to hear us because we isolate the ones we're using from the rest of the system. That's also the reason why they can't tell what we're doing. And as far as right now, they think we're asleep with the lights out."

"Oh," said Maria. "Good. Let's test them. I'll go down further. Down where you found Laika. Then we can give it a try." She took off, and Buzzard took off after her.

Elgin and Fran whistled some bees down and waited. Fran said, "That was good, what you did."

"Hm?" he said.

"For Buzzard," she said. "It was good to give him something to do, to take his mind off Stanton."

"Oh, yeah," he said. "He needed something."

"Yes," she said, "and you knew the perfect thing."

He was beginning to get uncomfortable, and so was grateful to hear Buzzard say, "Testing. Testing. One, two, three."

He replied, "Reading you loud and clear, Buzzard. Do you read me?"

"Loud and clear," said Buzzard. "Loud and clear."

Maria said, "The fidelity is great. And it's full duplex. None of that 'over and out' stuff."

Elgin and Buzzard both tried to confirm that at the same time, and while their transmissions collided and overlapped, they didn't obscure each other. They did interfere, though. It wasn't like being right with someone, where there were lots of other clues. They were going to

have to develop a feel for it, especially if there were more than two people involved.

“Anyway,” said Maria, “it works really well.” Then she said, “It’s kind of spooky down here.”

“Spooky?” said Fran.

“Yes,” said Maria. “There’s the isolation chamber where you found Laika, and ... I know it’s silly, but it feels spooky.”

“Laika,” said Fran. “She was so brave. What she did all by herself. Then preserving her own body so we could find the pathogen.” Fran remembered the pain of hearing her die on the recording. “When this is over, we are definitely putting her statue back in the Square.”

“Definitely,” said Elgin, and everyone agreed. Then he said, “Okay, they seem to be working. Now let’s get some sleep. I’ve got an idea how to really test them tomorrow.”

~

They were at a tee intersection. Not the one that went to the Square and the flashball court. Or the Grand Court, as it was now. This tee intersection was halfway around the comet. They’d flown the orbital first thing in the morning, before Verdi could decide he wanted them again. The beauty of an orbital is that you can travel in freefall. Once you get up to orbital velocity, you can glide indefinitely, with only occasional flaps required to overcome the drag of air.

Now they were at the bottom of the comet, with the bottom being defined by where four of the six comets in the hexamer were. Those four formed a square, held in place by the kilometer-long tubes joining them. The top of the hexamer consisted of two comets: the original Green Comet, and the one commandeered by the Francesians. Those two were joined by a tube, and each was joined to two of the bottom

four. The bottom tubes were so close to the bottom of the comet that the engineers decided to make the intersection right at the bottom. The legs of the tee were short orbitals curving up to the tubes.

And that's where they were. They were about to separate and fly a few kilometers up their respective corridors to the gates. Just a few more minutes and they would know what the frontier looked like. And they would also get to give their new communication devices a good field test.

"Remember," said Elgin, "keep in touch. And don't take any unnecessary chances."

"Keep in touch. No unnecessary chances," said Buzzard earnestly, while Maria barely kept from rolling her eyes.

"This is serious, Maria. We don't know what we'll be dealing with here."

"Okay," she said. "Don't worry. I can be serious."

Fran giggled and he realized that he might be overdoing it. "Okay," he said, chuckling. "Just, if there's any trouble, yell, and we'll meet back here."

"Yes sir," said Maria, smirking as she saluted. Buzzard mimicked her, with a much more expressive salute.

Elgin sighed, but he couldn't help smiling. "All right," he said. "Meet back here in one hour."

They all whistled down their comms, and set off.

~

The bee comms were just as good as they hoped. In spite of the increasing distance, the fidelity remained excellent. Since they were tapped into the electromagnetic field that controlled the bees, they had

reason to expect that would remain true all over Green Comet, possibly all over the hexamer. It was still nice to get confirmation.

They kept chatting for most of the journey, though circumspectly, cognizant of the whispering gallery effect in these curved tunnels. They expected there would be guards at the gates, and they didn't want to rouse their suspicions.

"We can see the guards now," said Maria. "They've spotted us."

"Ours are just coming into view now," said Elgin. "I see two of them."

"That's what we have here, too," said Maria. "They have weapons. It's too far to tell for sure, but it looks like the standard truncheons. And there's a bulge on their legs. Probably a pistol."

"It's the same here," said Elgin. He turned his head so it looked as if he was talking to Fran. "They're starting to look at us funny. It might be time to remove the bee comms."

"My thoughts exactly," Maria said. "See you in an hour."

"In an hour," said Elgin.

"In an hour," said Buzzard. "An hour."

"Be careful," said Fran. "See you soon."

"You too," said Maria. They heard the rising whistles and she was gone. Then they heard Buzzard whistle his two rising notes, and he was gone.

Elgin and Fran looked at each other, and whistled their bees away. Then they gave their full attention to the guards at the gate. The guards were watching them with at least equal intensity.

They were standing in front of the massive pressure door that was currently rolled in place, sealing the entrance to the tube. Their truncheons were held across their chests, at the ready. Their faces were

hard, expressionless, the eyes darting about, doubtless looking for weapons, or threats of any kind.

“Halt!” said one of them. “Don’t come any closer.”

Elgin and Fran stopped. They could see that the guard who’d spoken had a slightly less plain uniform. It looked as if the hierarchy held, even out here. The guard said, “What do you want here? State your business.”

“Wait,” said Fran. “I know you. Don’t you recognize us?”

He peered at her, concentrating on her face now. His eyebrows went up, and he looked at Elgin, then back at her. “Frances?” he said. “Frances and Elgin? I didn’t recognize you with those clothes on.”

She turned back and forth, showing them off. “It wasn’t our idea,” she said. “Verdi didn’t like us naked.”

“Yeah, he’s funny that way.” The other guard looked at him, alarmed. He waved him off. “Don’t worry. I know these people.”

Fran said, “Parrow, isn’t it? Where’s Barker? And what are you doing here?”

Parrow laughed. A cynical snort. “I told you His Excellency plays a tough game, didn’t I? So, after we got him your ball, he decided me and Barker were getting too cozy with each other. Then, I guess because we were too friendly with you while we were taking your stuff, he decided to teach us a lesson.” He spread his arms to indicate his current situation.

“Too friendly?” said Fran. “That doesn’t sound right. I didn’t think you were particularly friendly.”

“I know,” said Parrow. “But he’s got his own ideas, and here we are.”

“That’s so unfair,” said Fran. “Where did he send Barker? Was she punished as much as you?”

“As far as I know, she’s at one of the other gates. And I think our whole crew was punished. At least, that’s what I hear.”

“Do you think she could be at the other gate down here? Because that’s where Buzzard and Maria went.”

“Could be,” said Parrow. “That’s a lot more likely than the top gate, anyway.”

“Why’s that?”

“That one’s more prestigious, so it’s reserved for the most ... deserving, let’s say.”

“Because it connects to the other top comet?”

“That’s right,” said Parrow. “The Francesians’ comet. You’ve got to be a good little Francesian to get that one.”

Fran laughed. “I thought you had to be a good little Francesian to stay out of the Hibernarium.”

“Just about,” said Parrow. “You have to be one to get anywhere, so everyone claims to be one.” He looked at his partner. “It doesn’t always help, though.” The man blushed and looked down at his feet.

Fran said to him, “What’s your story? What happened?” When he didn’t look up, she said, “Start with your name.”

Parrow scoffed. “Real Francesians don’t give their names to us commoners.” He poked him with his truncheon. “Do they, Frank?”

Elgin’s mind had begun to wander, but it snapped back now. “Is that your name? Frank?”

Without looking up, the man said, “Yes. Not my Francesian name. My comet name.”

Elgin hadn’t recognized him, but hearing his voice did it. “Given to you by Stanton, right?”

Frank looked up. “That’s right. When I was arrogant and so sure of the truth, Stanton showed me how shallow my pride really was.”

“It was when we were at the Maker world, and you kept wanting us to ask them about their religion,” said Elgin. “When the window was still working.”

“Yes,” said Frank. “I thought you were fools to waste time on diplomacy, on just getting to know the Makers, while ignoring that most important question.” His eyes were shining now. “Stanton, the most wise of men, showed me that I was the fool.”

“Steady now,” said Elgin. “Don’t start another religion.” He glanced at Fran. “You’ve probably heard by now how unhappy Frances is with hers. Well, Stanton would be even worse.”

“But you are truly blessed,” said Frank to Fran. “They should never have de-sanctified you. That’s when I knew they’d gone astray.”

“More to the point,” said Fran, “they never should have sanctified us in the first place.” She saw the shock and protest in Frank’s face, but she continued. “Their whole edifice is built on a false premise, and now they have to keep lying to shore it up.” She smiled at Elgin and said, “They should have listened when they were told to wait until their saints were dead, so they couldn’t disagree with them.”

Frank looked stricken, and Elgin said, “You’re just getting out from under one case of false idolatry, now don’t run to another one.”

Fran saw Frank’s pain and confusion, and spoke softly. “Stanton is a wise man, and you are wise to listen to him. But if he was here, he’d be the first to scold you for putting him on a pedestal.” She spoke directly to him, as if they were the only people there. “He would tell you to take him down from that pedestal and talk to him as one man to another.”

Frank didn’t speak. They could see the conflict in his eyes. He was being told by someone he adored, to stop adoring her. Or anyone, in fact. To be his own man. When he’d been taught all his life that his

whole purpose was to adore someone. To subsume his self to theirs. His mind was in chaos.

“Okay,” said Parrow, “enough of that.” He pointed at Elgin and Fran with his truncheon. “What brings you down here, anyway?”

Elgin said, “We wanted to see it.” He pointed at the gate with his chin. “To see the rest of it. We’ve seen Green Comet, and it’s bad. Now we want to see the rest of it.” He looked at Fran and grinned. “And we wanted to get out and do some fast flying, too. We were cooped up in the Ball for a long time.”

Parrow grinned back at them. “There’s nothing like stretching it out in an orbital, is there? Feeling the wind in your face.”

“Yes,” said Elgin. “Feeling your nictitating membranes closing when the speed gets up there.”

“Right,” said Parrow. “I forgot all about that. Taking it for granted, I guess. But you wouldn’t have had much opportunity for that to happen for the last few centuries, would you?”

“Not much,” said Elgin. “A bit in the flashball court. Occasionally when traversing the Ball. But never for long. Never for sustained flight, like in an orbital.”

Parrow nodded. “So, did you feel it in your muscles after all that time?”

Elgin shook his head. “I thought I might,” he said, “but most of the flight was gliding, once we got up to speed.”

“That’s right,” said Parrow. “You get more of a workout in the shorter corridors, don’t you? Changing your momentum all the time.”

Elgin nodded, and they were quiet for a while. It was a comfortable silence, but eventually Elgin broke it. He said, “So, how about it? Are you going to let us through so we can explore?”

Now Parrow shook his head, while Frank looked worried. "Sorry," said Parrow. "We can't do that."

"Why not?" asked Elgin, looking at the distorted image of the tube through the thick ice. "All you have to do is roll the gate back for us."

Parrow continued to shake his head. "If it was just that, then it'd be no problem. I'd let you go through and worry about the consequences later."

"So, what is the problem?"

"The problem is that it's too dangerous. If I let you through, the chances are we'd never see you again. We haven't known each other for very long, but I find I like you, and I don't want to let that happen to you." He gave a small, rueful smile. "Then there would be the matter of explaining it to His Excellency."

"He'd be upset if we disappeared?"

"Just a little, yes. You must have some idea by now of what he's like. And when it comes to what he thinks belongs to him ..."

"He thinks he can own people?"

"He doesn't have to think about it."

Elgin nodded. "You're right. We have seen some evidence of this." He nodded sharply. "We certainly don't want to get you in trouble with Verdi, so we won't insist. But you also said it's dangerous. Tell us about that."

"Okay," said Parrow, "simple. The prince of Red Comet, Rufus, is crazy."

"Red Comet? They called themselves Red Comet? But there already was a Red Comet."

"That's right," said Parrow, "and originally this was meant to be a tribute to them. But like I told you, Rufus is crazy."

"Crazy how?"

“Well,” said Parrow, thinking. “Okay. You know how you haven’t seen any armfuls around?”

“We haven’t, as a matter of fact. Why is that?”

“The Francesians have decreed that they are an abomination, so they’ve been forced into hibernation to have the procedure reversed. Lower arms removed. Legs put back. Same thing with bioluminescence. You haven’t seen any bioglow either, have you?”

“No. But how does this make Rufus crazy?”

Parrow frowned. “On Red Comet, they were hunted. They didn’t get a chance to go into hibernation. Rufus gave the order that they be hunted down and eliminated.”

Fran gasped and turned away. Her hands covered her mouth, and her shoulders curled in. Elgin moved close and put his hand on her back. He said to Parrow, “Is this true? It’s not just rumors and lies you tell about an enemy?”

“It’s true,” said Parrow, and Frank nodded in solemn agreement.

Somehow, Frank’s concurrence made it more real for Elgin. He nodded as he stroked Fran’s shaking back. “I guess we don’t want to go there, then.” His eyes widened and he asked sharply, “What about the other side? The other comet. Where our friends went.”

“Winter,” said Parrow, with a glance at Frank.

“Winter? What about it?” asked Elgin. “And why isn’t it a color?”

“It was a color, originally. They were calling themselves Blue. But then the Francesians took it away from them. Said blue was the holiest color, so it rightfully belonged to them. So, Winter it was.”

“Okay, but what about them? What are they like?”

Parrow glanced at Frank again. “It’s hard to say,” he said. “They’re pretty secretive. But, pretty bad, I think.”

Fran spun back around. “We have to go,” she said.

Elgin nodded and turned to Parrow and Frank. "Thank you," he said. "It was nice to see you again." He and Fran were already moving off. "We hope to see you again." Then he turned away and they both flapped hard for speed.

~

They whistled down their bee comms as soon as they felt they were far enough away. They were flying hard, exceeding orbital velocity, so they had to constantly correct downward to stay on course. Their nictitating membranes were firmly in place. They called repeatedly, but couldn't raise Buzzard and Maria.

"They're probably still talking to whoever's guarding that gate," said Elgin. "It hasn't been that long, really."

"Of course," said Fran. "We'd still be talking to Parrow and Frank if we hadn't got worried."

"That's right. They'll probably be surprised to see us so soon."

Fran didn't answer. They both knew that was the most probable case, but neither of them believed it.

They whistled their comms up when the gate rolled up into view. They were hoping to see at least four people, but could see only two, and they both had the profile of guards, with the bulge on one thigh. Neither of them looked like a woman, so it was unlikely that Barker would be here. There was no one with Buzzard's unique shape.

As they neared, the guards raised their truncheons to chest height, and dropped their other hands to their thighs. "Stop!" said one of them. "Don't come any closer." When they stopped, he said, "State your business."

"We're looking for our friends," said Fran. "A man and a woman. They came down here." She was unconsciously drifting forward.

“Stay back!” said the Guard.

Fran stopped herself. “Please,” she said. “Our friends. Have you seen them?”

The guard said, “Are they the ones called Buzzard and Marie?”

“Maria,” corrected Fran. “Yes. Were they here?”

“Yes,” said the guard. “They’ve gone.”

“Gone? Where? We didn’t pass them on the way here.”

The guard tipped his head toward the gate. “They’ve gone to Winter, as guests of His Excellency Lavender.”

26.

SCARFACE

“You must let us through,” said Fran. “We have to find our friends.”

“No passage,” said the guard.

“But we have to help them. They need us,” she said. “We’ll take full responsibility. Please let us through.”

“No passage,” said the guard. Then he relented. “Even if we let you through at this end, they wouldn’t let you in at their end. And even if they did, you wouldn’t want to be there.”

“Why not?”

“I’ve never been there myself, so I can’t tell you from personal experience, but I’ve heard rumors.” He looked at the other guard. “We all have.”

“What kind of rumors?”

He shrugged. “I hear that Lavender is ... a little bent. He likes to use people in his sick little games.” He shrugged again, while his partner looked around nervously. “At least, that’s what I hear.”

Fran was quiet, so Elgin asked, “But it’s just rumors, right? Do you know anyone who’s witnessed it and come back to tell?”

“Yes,” said the guard. “Well, not personally, but my friend knows someone.”

Elgin nodded. “Thank you,” he said, taking Fran’s arm and turning them back the way they came. “We’ll take your advice and try to find another way.”

“Okay,” said the guard. “I’m sorry we couldn’t help you.” He looked right at Fran. “You know, some of us still believe in you.”

That brought her back from her terrible contemplations. She looked at him and said, "Thank you. But be careful. Don't let it get you in trouble."

"We won't," he said. "Good luck."

~

As soon as they were covered by the curve of the corridor, they whistled down their bees. No sooner had they formed in their ears than they heard Maria whispering.

"Fran. Elgin. Do you copy?"

"Maria!" said Fran. "You're all right."

"We're okay," she began.

"Where are you?" asked Fran.

"I don't have much time," said Maria. "They'll be coming back to get us soon, so just listen, okay?"

Fran was bursting with questions, but she bit them back. "Okay," she said. "Go ahead."

"Good," said Maria. "They're taking us to the Hibernarium. They've left us in this little room while they go get the official Francesians guards to take us there."

"And you're okay? You and Buzzard? What about Lavender?"

"We haven't seen Lavender, but we've heard a lot about him. He sounds like a very odd man."

"Then why ..."

"He must be afraid of the Francesians."

"So you're going to be all right?"

"Other than being put in hibernation, it looks like it."

"Good," said Fran. "We were so worried."

"Hold on," said Maria. "They're coming back. I'll have to stop

talking, but I'll leave the bee comm in for now. I think my hair will cover it."

"Okay, Maria," said Fran. "Don't take any chances. We'll find a way to get you out of there."

They heard some muted background noises, but nothing they could make out clearly. It was obvious, though, that they were being taken out of the room, and none too gently, judging from Maria's response. She told them to take it easy and stop shoving. Fran and Elgin smiled when they realized that she was doing it in a way that would convey maximum information to them.

"We'll get you out of there, Maria," said Elgin. "You and Buzzard. We'll get you all out of there. Somehow." He swallowed. "We'll get you out and then we'll all fix this place together."

Fran squeezed his hand as they flew. She said, "Elgin's right, Maria. We'll all be out here working together again. Making Green Comet great again."

Maria said, "It's okay. Don't be ashamed. You're just doing your job." Talking to her escort, they assumed. "When we get out, we're not going to come looking for revenge."

They heard a muffled reply, but they couldn't make it out.

"Of course we'll get out," said Maria. "Our friends will get us out."

Another muffled reply.

"What do you mean?" asked Maria. "If you were planning on locking them up anyway, why haven't you?"

A longer reply.

"Oh," said Maria. "Your fearless leader wants to talk to them first. When might that be?"

A short, sharp reply.

“When she’s good and ready? Why the delay? What’s she afraid of?”

A loud reply. Even though they couldn’t understand it, they could tell it sounded threatening. After that, Maria didn’t talk again, and the last thing they heard was her whistling her bees away.

~

By this time they were past the intersection and in the main orbital, on their way back to the Square and the hospital. They were flying at orbital speed, fast enough that their nictitating membranes were closed, but slow enough that they could glide for long periods without having to make corrections. It made for easy conversation.

“They’re going to be all right, aren’t they?” said Fran.

“Of course,” said Elgin. “They’ll just be in hibernation. If they’d wanted to hurt them, they could have done it before now.”

“Of course,” said Fran. “I wonder who they were referring to. Someone who wants to talk to us.”

“It sounds like it’s a woman,” said Elgin. “And the way they were talking, I’d guess it’s the leader of the Francesians.”

Fran nodded. “It felt that way to me too.”

Elgin said, “It looks like we can look forward to an invitation from Blue Comet sometime soon.”

“I don’t know if it’s something to look forward to,” said Fran. “We thought Verdi was bad, and he was, but then we found out about Rufus and Lavender. They make Verdi look good.” She shook her head. “But they’re all afraid of her, whoever she is. The leader of the Francesians.”

“On the other hand,” said Elgin, “I’ve got the impression that we’ve

been under her protection. That we've been safe from these princes because of her."

"That's right," said Fran. "I've felt that, too."

"Buzzard and Maria were taken right through Lavender's principality unharmed, and he might be the worst of them, if the rumors are true."

"Yes," said Fran. "She locks up our friends. Our whole crew, except for the ones Verdi killed. She keeps us for last. Saving us for herself, for some reason."

"It doesn't seem like she means us any harm," said Elgin.

"No," said Fran. "At least, not so far."

"Maybe she doesn't dare," said Elgin. "Maybe there are still too many people who admire you. Maybe she can't hurt you without risking an uprising."

"Maybe," said Fran, unconvinced. "But she could just put dissenters in hibernation. She doesn't have to fear them."

"You're right," said Elgin. He shrugged. "Oh well. We'll find out soon enough. Meanwhile, we need a plan. I don't want to just sit around waiting for a call."

"Me neither," said Fran. "I think we should continue with the cleaning. There's still plenty to do around the hospital."

"And we might as well check on the shop and the meeting room," said Elgin. "Even though there's no one left to use them."

"We might as well have them ready for when there is someone to use them," said Fran. "As a reminder of the greater good."

Elgin smiled at her. "You're right of course. And as a sign to everyone. A reminder of how it used to be, and how it could be again."

"Yes. People need hope."

That's when they got their first whiff of the water treatment plant. Elgin said, "There's something else that needs fixing."

"But every time you fix it, Norton sets it back again."

"I think I'm due for a serious talk with Norton." Elgin was frowning, his lips pressed together.

"How serious?" asked Fran. "I mean, it's not his fault."

"Serious enough that he understands," said Elgin. "He doesn't have to make it as bad as he has. I think we could get away with less stinky."

"So, you're not going to try to make it perfect."

"No. Just a little less bad. Then, after a while, maybe a little less."

"Enough so the Francesians, or Verdi, or whoever it is, still believes that it's miserable enough. So they won't worry that their subjects are getting 'soft.'"

"Exactly. Maybe we can find that magic balance."

So they stopped at the water plant before getting back to the Square, but Norton wasn't there. No one was there. There was no one for Elgin to tell his plan to, so he made the first adjustments himself, with Fran's help. He thought about leaving a note to explain things to Norton, but he thought that the changes he'd made would be obvious to him. And he was sure Norton would be able to figure out what he was doing.

"It's not all the way," he explained to Fran as they were leaving, "so he'll know I wasn't trying to get it right. That should make it obvious that I was only trying to adjust it a little."

"Norton's pretty smart," said Fran. "And I don't think he's very happy with his job. Maybe he won't set it back. Maybe he'll see your plan and try to help it along."

"Maybe," said Elgin. "We can hope."

They carried on to the Square, where they entered at the red end,

up against the orange wall. Turning right, they headed over to the green side, where they popped up the hallway to the meeting room. They half expected the graffiti and vandalism to be back, but it wasn't. That was a pleasant surprise, and it made them want to immediately check out the shop.

Back down the hallway and out between the green columns into the Square, where they went to their right, to the second opening in the green wall. A short jaunt up the hallway brought them to the shop door, which they tentatively opened. They were surprised again to find it just as they'd left it. They looked at each other and smiled.

Fran said, "Maybe it's working already."

"Yes," said Elgin. "Maybe the people aren't as far gone as we thought. Maybe they just needed a good example."

"Then we have to keep setting it," said Fran.

Elgin nodded as they headed back to the Square. "We can do that," he said.

Even with everything that had happened, they were feeling pretty good as they flew across the Square to the orange side, and the hospital. Their mood was dampened by the presence of the shrine in and around their old apartment. It was low on the yellow wall to their right, at the far end where it joined the orange wall. Fortunately, the opening they were headed for was sixty meters away from the yellow wall, but the shrine was so gaudy that, even with their eyes averted, it was impossible to not see it.

They were relieved to enter the corridor and pass the Doctor's old medical office just inside the entrance. But then, that reminder turned them back to sadder thoughts. The Doctor was gone, along with Nigel. And Stanton and Galatea. And now Buzzard and Maria. All they had

left now was each other, and with the way things were going, they couldn't be sure how long that would last.

Fran said, "We've got to figure this out, and soon."

"We will," said Elgin. "We always do."

Just then they entered the hospital, and got another pleasant surprise. It was just as they'd left it. Whatever had prompted the initial vandalism seemed to be no longer active. Maybe there had been a period of zealous animosity some time ago that had worn off. Maybe things were more stable now, having settled down to the simple routines of survival. Maybe the people were more like Norton and Snowy, just keeping their heads down and trying to get by.

They smiled at each other and headed for the pantry. It had been a long day and they'd had a lot of exercise, and now they were hungry. They'd barely sat down to eat when five men intruded on their privacy. Four of them had pikes and one of them had a scroll.

"Oh, for crying out loud," said Elgin. "What now?"

The man unfurled his scroll and said, "His Excellency Verdi requires your immediate presence." He rolled it back up and stood waiting with his four attendants. To their credit, most of them looked as if they knew how silly they looked.

Elgin took a bite of his muffin and said, "Okay, you've told us. You can go now."

The scroll man said, "Your presence is required immediately. We will accompany you."

"But we're eating," said Elgin, still chewing.

"No matter. You must come now. It is late and His Excellency wants to go to his dinner."

Elgin had a sharp retort for that, but Fran quietly interrupted him. "It's okay," she said. "We can eat on the way." She picked up her tea

and muffin and moved toward the exit. Elgin scowled at the men and picked up his own dinner to follow her.

The messenger led the way, followed by Elgin and Fran, surrounded by the four pike bearers. They flew down the hallway, past the Doctor's office, and out into the Square, where they picked up speed. At least, the leader picked up speed, and the escort tried to, but Elgin and Fran maintained their leisurely pace, slowing everyone down.

"Come," said the messenger. "You must hurry."

"But we're eating," said Elgin. "Hurrying would be bad for our digestion."

"But His Excellency ..."

"His Excellency needs to learn to take it easy." Elgin chomped a big bite to make his point. Then he felt a point in his back. He looked over his shoulder and saw that one of the escorts was jabbing him with his pike. When the point swung over toward Fran, Elgin's brow clouded and his jaw bulged. He moved toward the man, and the pike swung back to his belly. Elgin didn't stop. He continued moving forward until his stomach was pushing on the point of the weapon. The man realized his predicament immediately. He could either give way, or risk injuring Elgin. He began to back up.

Elgin growled at him. "You know you're not allowed to hurt us, so why don't you just put that silly thing away."

The struggle that showed in the man's face was brief, and he quickly withdrew the pike. Now his face showed frustration and humiliation and resentment. He knew that he was helpless against whatever degradation Elgin wanted to heap on him, and he was surprised when Elgin turned away without another word. But he was not spared the contempt on the faces of the other pike bearers, nor the disappoint-

ment from their leader. That was only slightly ameliorated by Fran's compassionate look.

Elgin drifted over beside her and raised his iceberry muffin. They bumped muffins and took a synchronized bite, which they chewed thoroughly before swallowing. Then they had a sip of tea. Elgin said, "There's nothing like a sip of iceberry tea after an iceberry muffin, is there?"

"No," she said. "Nothing like it."

With one last look at the pike poker, Elgin turned to the messenger and nodded. The man nodded back and led them onward, this time at a stately pace suitable for muffins and tea.

~

"What took you so long?" Verdi was glaring at his emissary, who was looking uncomfortable. Four pike bearers were standing erect, staring into the indefinite distance. One of them was smirking.

"We were eating," said Elgin. "I'm afraid we slowed them down."

"I wasn't talking to you," snapped Verdi. "I was talking to him."

"Well, I'm answering," said Elgin. "The holdup was our fault, not theirs, so you can direct your anger at us."

"I don't get angry," said Verdi, "I get results."

"That's a trite motto, if you don't mind my saying. A man in your position could do better." Elgin waited a beat. "Your Excellency."

Now Verdi was angry. His eyes were narrowed, his shoulders tense. He struggled visibly with it for a few seconds, then abruptly let it go. His face smoothed and his body relaxed. "So," he said, "you're late because you were eating."

"Yes," said Elgin, reaching into his pockets and bringing out his tea cup and muffin wrapper. "We hadn't eaten all day, you see."

“And you thought that eating was more important than me?”

“Not as such,” said Elgin. “Obviously any individual is more important than one dinner. But in this case, eating was more important than getting here five minutes earlier.”

Verdi’s eyes were hard as marbles. He didn’t think that anyone’s meal was more important than five minutes of his time. But he brushed it all aside with an abrupt sweep of his hand. “That is all irrelevant,” he said. “I’ve brought you here to give you an important message from the Central Council.” He nodded at the messenger, who removed a scroll from his belt. Whereas the scrolls from Verdi were decorated with green and gold, this one had pure royal blue. He unrolled it reverently, and read.

“The Francesian Central Council,” he intoned, “on behalf of Her Grace, most high representative of God, does hereby summon the persons Frances and Elgin to an audience in the Supreme Square tomorrow, at a time convenient to Her Grace.”

The Grand Court was filled with an awed silence, as the people basked in the power and glamor represented by the message. Even Verdi looked suitably impressed. It all collapsed as Elgin spoke. “Is that it?” he asked. “You didn’t have to drag us over here for that. You could have had the message delivered to us at the hospital, and we wouldn’t even have had to interrupt our dinner.”

Verdi recovered quickly. “You think you’re clever, don’t you? You think you’re being funny.” He sat back and crossed his arms. “You think you’re too important to be afraid. Well, I’m warning you. You’re about to find out just how important you are tomorrow.” He was about to leave when Fran stopped him.

“Your Excellency,” she said. “Thank you for your concern. There’s just one thing I’d like to know before we go.”

“What is it?” he asked tightly.

“It’s about Scarface,” she said. “Can you tell us where he is?”

“That useless thing? What do you want it for?”

“Useless? Don’t you like Scarface?”

“I thought it might be amusing,” said Verdi. “I thought it might do things to entertain us.” He sneered. “It can’t do anything on its own. You have to tell it what to do.”

“That doesn’t sound very useful,” said Fran. “What does he do, then? What work have you put him to?”

“‘Him?’” Verdi smirked. “Why do you call it ‘him?’ It’s nothing but a machine.”

“You’re right,” said Fran. “It’s silly. But we worked with him for so long and, well, he became kind of like a pet.”

“That’s ridiculous.”

“I know,” said Fran, “but that’s how it is. And I’d really like to know what he’s up to.”

“He’s ... it’s not up to anything. It was so useless that I had it put in a storage locker so I wouldn’t have to look at it.”

“Oh my,” said Fran. “That’s pretty useless.” She looked at Elgin and back at Verdi. She nodded. “Why don’t we take him off your hands? I’m sure we can find something for him to do.”

“Like what?”

“Well, we have a lot of cleaning and repairs that he could help with.”

Verdi snorted. “I have people for that. They don’t have to be told what to do all the time, and if they’re defective, then they’re easily replaced.”

“Then you won’t mind giving us Scarface. We can make proper use of him, and he’ll be out of your hair.”

He thought about it, the process plain on his face. When he couldn't come up with a good reason to deny them, he said, "Why not? It's useless anyway. And taking up space. It's a useless waste of space." He flipped a hand and one of his attendants ran off to get the robot.

"Thank you, Your Excellency. I think this is best all around."

Within minutes the attendant was back, dragging the robot behind him. He was pulling him by a length of the fabric he was draped in, in too much of a hurry to wait as he laboriously tried to walk.

Scarface saw them immediately, and had he not been a mere machine, they would have said his expression was hopeful. Verdi nodded and the attendant dragged Scarface over to Fran and Elgin.

"Thank you, Your Excellency," said Fran again. "Until we meet again, then."

As they were turning to leave, Verdi said, "Yes, you're free to go. Dismissed." If anyone thought it wasn't his idea that they should go right then, they weren't saying.

27.

THE BLUE SQUARE

They got up early next morning and went immediately to see what the sewing machine had produced overnight. They'd given it all of Scarface's fabric and told it to get to work on the patterns it had, to turn the useless material into more clothes for them. This was fancy fabric, draped on Scarface in great swaths by Verdi to show up his courtiers. Now it would serve as form-fitting outfits for them, with pockets, in case they needed a change of clothing.

They stored the sets made for Stanton and Galatea, Buzzard and Maria, for when they would need them, and kept their own out. There were none for the Doctor and Nigel because the machine didn't have their measurements. Now, with all that taken care of, they had to decide whether or not to wear the new clothes to this morning's meeting.

"Maybe we should wear something fancy," said Elgin. "She's the big cheese, after all."

"Maybe," said Fran, nibbling at a muffin while she looked at their outfits arranged in front of them.

"It's bound to be a fancy place," he said. "It might help if we try to fit in."

"Mm," she said, chewing thoughtfully.

"On the other hand, maybe plain is better," said Elgin. "After all, we do prefer nothing, and plain is closer to nothing."

"Right," said Fran.

"Plain might suit us better, too," he said. "We've never been much for putting on airs, have we?"

“No,” she said. She nodded and turned her attention back to her breakfast.

“Well, what do you think?” he asked.

“Oh, I agree,” she said. “For the reasons you said.”

“Agree with what?” he said. “I said a lot of things.”

“Plain,” she said. “Plain suits us better, doesn’t it?”

He nodded, its rightness plain as soon as she said it. “Yes,” he said, “it does.” He raised his teacup. “Plain it is then.”

She touched his cup with hers. “Plain it is.”

~

Within the hour they were at the blue gate, dressed in their plain white blouses and trousers, with Scarface in tow, seeking admission to the tube leading to Blue Comet. As with the other gates leading to Red and Winter, this gate was guarded. The difference was that there were more guards here. Six that they could see. And these weren’t locals grumbling about their crummy assignment. They could tell by the color of the decorations on the uniforms that these guards were from Blue Comet itself. They barred the way, their faces impassive.

Fran approached and said, “We’ve been summoned to appear in the Supreme Square this morning. We need to use this tube.” She nodded at the massive disk of ice blocking it.

The guards didn’t move. One of them, the one with the slightly more ornate decorations on his uniform, said, “No passage.”

“You don’t understand,” said Fran, smiling. “We’re on our way to see your boss. You have to let us through.”

“No passage,” said the guard, unmoved.

“I understand,” said Fran. “You’re doing your job. No one told you we were coming. I just hope they don’t blame you for the delay.”

His eyes betrayed his uncertainty, but he stoutly stuck to his duty. “No passage,” he said.

Fran nodded sadly and they turned to go, but they were stopped by another man coming out of an alcove. They could see that he was more important than the guards because his uniform had more blue on it, and a much more stylish cut. “Well done, soldier,” he said to the guard. “I’ll take it from here.”

Fran looked at him and recognized him from the boarding party that came aboard the Ball when they first arrived back home. “Commander,” she said. “We meet again.”

“Yes,” he said, glancing discretely at her outfit. “How things have changed in just a few days, eh?”

“Has it been only a few days?” she asked. “It feels much longer.”

“I can imagine,” said the Commander. He nodded at the guard, who went to open the gate. As it rolled back from the opening, he said to Fran and Elgin, “Come. I’m to accompany you to the Supreme Square.”

They entered the kilometer long tube of ice, Scarface following behind them, and emerged into a vast space lighted only by the stars of the galaxy, and the portals at the ends of the tube. The bulge of Blue Comet ahead of them curved away quickly, its horizon quite close, and getting closer as they flew. The tube was big enough that they could fly three abreast, with Scarface loping along behind them, and they flew quietly until they reached the midpoint, where Fran stopped.

“If you don’t mind,” she said. “One last look before going in.”

“Of course,” said the Commander.

“What do you mean,” asked Elgin, “one last look?”

Fran didn’t look at him. “Nothing,” she said, her eyes on the icy fire of the galaxy. “Just a figure of speech.”

Elgin looked past her at the Commander, who quickly looked away. “No it’s not,” he said. “It’s not nothing. What do you know?”

She turned to him and looked into his eyes. All there. All his. “I don’t know anything,” she said. “It’s just that everything feels as if it’s been leading up to this. So I guess it feels kind of final, or something.”

That didn’t sound quite right to Elgin. He looked at the Commander, who still wouldn’t meet his eyes, then back at Fran, who did. “It’s just a feeling?” he asked.

“Yes,” she said, shrugging. “You know me.”

He did, and that’s what made him worry. Her feelings were usually correct. So much so that they had relied on them in the past to get them through some dicey situations. Now it just made Elgin worry, and there was nothing that he could do about it. His shoulders sagged, and he sighed.

The Commander seized the moment and said, “Come on. We should go.” So they turned and flew the rest of the way, the big gate rolling aside as they approached it.

Fran stopped and looked back at Green Comet, then took Elgin’s arm and entered Blue Comet without another backward glance.

~

Blue Comet didn’t look any different from Green Comet at first. They flew a long way in a big orbital, the first part nothing but a large, curving corridor, its floor rolling under them as they flew. Eventually they began to pass openings to side passages and more signs of occupation. They went by an exit that Elgin knew led to the water treatment plant, and that made him notice the smell, or rather the lack of one.

He nudged Fran. "Smell that?" he said.

She sniffed. "No."

"Right," he said, scowling.

Eventually they came to a tee intersection, where they could imagine a flashball court to the right and a square to the left. They hesitated, unsure which way they would go. Verdi had his court in the flashball gallery, so should they go to the right? But the Commander didn't hesitate. He banked and turned left without breaking speed.

"Of course," said Fran as she and Elgin flapped to catch up. "It's the Supreme Square, not Court."

"Right," said Elgin as they fell in alongside the Commander once again. Scarface scuttled along behind them.

Soon they heard, or felt, vibrations coming out of the Square and up the hallway. The air was carrying the vibrancy of a living square, something that Green Comet once had, but no longer. That made Elgin's scowl deepen.

They flew out into the Square through what would have been the red end on Green Comet, but here the pillars were blue. It was a deep, royal blue, and it was repeated all the way around the Square. All sixteen columns, bracketing all eight openings, were blue. As were the friezes running all around the Square above them. Elgin only glanced at the friezes, but he could see that they seemed to be telling some kind of story. He assumed it would be about the glories of Francesianism.

Then he noticed Fran looking at them, her expression disappointed but resigned. When he looked again he saw what could have been a depiction of her during the debates. Before they knew how dangerous the Visitor was, and they were deciding whether or not to run and hide. He heard her moan softly and saw that now she was looking at a picture of herself as she came so near death during their confrontation

with the Scout. Nearby was another figure that had to be himself, shown at half the size of her, and striking a heroic pose in her defence. There were three other characters, half the size of his, that had to be Stanton, the Doctor and Nigel. Now he moaned with her. A quick glance told him that the theme continued in bas-relief all the way around.

The Commander said, "Is everything all right?"

Elgin turned his deepening scowl on him, but Fran saw the flicker of alarm in his eyes and quickly said, "Yes. Everything's fine. We just weren't expecting the ... artwork."

"Oh yes," he said. "It's quite grand, isn't it?"

Fran glanced at Elgin, her hand lightly touching his arm. "Yes, quite," she said. He got it and reeled in his growing ire.

Apparently oblivious, the Commander carried on. "This was all done quite recently. When Her Grace learned that you were returning, she ordered the friezes all be redone in your honor. She was deeply involved in the design, too."

"I see," said Fran.

Elgin managed a non-committal grunt.

The Commander was quite animated now as he led them across the Square toward what would have been the yellow end. "We can wait up here," he said, "until Her Grace arrives." He was leading them toward the middle of the wall where there were a dozen people in fancy dress milling around a big table. "There's food and refreshments while we wait."

To the left of the table, in front of what would have been their apartment on Green Comet, stood a huge dais. On top of it was a big ornate chair, which they assumed would be Her Grace's throne. It put Verdi's pretension to shame.

As they approached the table, the others backed deferentially out of the way, and waited at a respectful distance. Several of them hurriedly swallowed and surreptitiously wiped their mouths. The Commander muttered, "At the trough already, I see."

Fran said, "Maybe they haven't had breakfast."

He looked at her and his gaze softened. "Of course, my lady," he said.

"Oh, come now," she said. "Don't be so formal. You can call me Fran." She saw the doubt in his eyes, and amended, "Or Frances, if that's too informal."

"Thank you ... Frances," he said. "I would like that." He looked up toward the throne. "But not here. In any public or official setting, it's best to keep it formal."

"I see," she said. "You could get in trouble."

He was going to deny it and try to explain, but he saw the understanding in her eyes, and he nodded.

"That's all right," she said. "Let's follow the rules for the sake of appearances. There's no point getting you in trouble."

"Thank you ... my lady Frances," he said. He would have said more, but was interrupted by a commotion behind the throne. People were streaming out of the apartment there and arranging themselves around the big chair. The people who had been clustered around the breakfast table hustled out into the Square to gather in front. Even the Commander reacted, composing his face into a practiced look of respect and attention. "Come," he said to Fran and Elgin. "Her Grace is coming out." He led them to join the others, Scarface trailing behind.

Once everyone was in position, and the commotion had settled down, one of the attendants bracketing the throne said in a loud voice,

“Prepare to honor Her Grace, most high representative of God, holy vessel of the Word, and the one true spiritual descendant of Frances.”

In the hush of anticipation, Elgin whispered to Fran, “Reminds me of the Makers. The more important the person, the longer the name.”

Fran stifled a giggle and jabbed him with an elbow. The Commander stiffened and struggled to maintain his expression. That was when Her Grace swept out of her apartment and was guided by the hands of her attendants to the seat of her throne. It was very grand and impressive, and belied only by the look on her face. The suspicion in the hard little eyes darting between the Commander and her guests took away whatever dignity had been invested in this ceremony. The eyes barely flickered over Scarface.

“Do you find something amusing, Commander?” she snapped.

“No, Your Grace,” he said quickly. “May I present Frances and Elgin, here as commanded by Your Grace.” He indicated them with his hands while subtly backing off an arm’s length.

She stared at him for a few seconds. “We’ll deal with you later,” she said, before turning to Fran and Elgin. “How about you?” she said. “Does something amuse you?”

Fran and Elgin looked at each other, then he said, “I guess you could call it amusing. But it was more of an observation, really.”

“Really,” she said, her small eyes boring into him. “What observation was that?”

“Just that when you were being introduced, it reminded me of the Makers.”

“The Makers?” Her eyes flashed and her brows met. “How do We remind you of them?”

“You don’t, per se,” he said. “It was your name. Or your title. Or whatever that was.”

“Our title,” she told him. “What about it?”

“Your title?” he said, frowning in thought. Then, “Oh! You refer to yourself in the first person plural. I see.” He nodded to himself.

“Yes, We do,” she said coldly. “Now what was so funny?”

“Well, as I said,” said Elgin, “it wasn’t that funny. Just an observation. I think it just caught everyone off guard.” He saw her fuming, and raised his hands calmly. “It just struck me that, as with the Makers, it seems like the more important a person is here, the longer their title is, too.”

“Are you comparing Us to those primitives?” she asked, her voice dangerously quiet.

“Only in that one, small thing,” said Elgin. “Other than that, you’re quite unlike.”

“We should hope so,” she said. “You will be forgiven for that, but you must learn how to properly address Us.”

“Address you?”

She glanced at the man who had introduced her, and he told Elgin, “The proper form of address is Your Grace. You mustn’t forget to use it.”

“My Grace?” said Elgin, his brow creased.

The whole place suffered an arrested spasm of shock and surprised laughter. “Your Grace!” said the man loudly. “Not My Grace!”

“Oh, of course,” said Elgin. “I’m sorry, Your Grace.”

“You think you’re funny, don’t you?” she barked.

“No, Your Grace. I’m just not used to all this stuff.”

She glared at him. “Verdi told Us you were insolent,” she said.

“Not insolent,” he said. “Just ignorant. Your Grace.”

She frowned a little longer, then visibly shook it off. “This is not

why We brought you here,” she said. She sat up straight and flexed her wings, which were oversized and decorated with bold stripes.

Fran said, “Oh, they’re beautiful!” She flew toward the throne. “May I see, Your Grace?”

Four of the attendants immediately barred the way, threatening scowls on their faces, and the Commander grabbed Fran’s arm, pulling her back. But what Fran really noticed was the alarm and fear in the face of her “one true spiritual descendant.” She allowed herself to be pulled back, and said, “Forgive me, Your Grace. I didn’t mean to cause a fuss.” She patted the Commander’s hand, and he automatically let go of her arm, then self-consciously took hold of it again. “I only meant to have a look at your lovely wings. When did you have it done?”

After nearly everyone present gasped again, their demigod said, “We didn’t ‘have it done,’ as you say. God did it during Our last hibernation to show that We are destined for Our role as His, and your, representative.” Her eyes raked over her subjects, looking for confirmation of their belief. She got it, except with Fran and Elgin, who weren’t practiced in such deception.

“I see,” said Fran. “Do you think I could have a look? It really is quite lovely.”

Her Grace thought about it, her eyes narrowed. Then she nodded and her protectors parted in front of her. The Commander released Fran’s arm, and she flew up to the throne, followed by Elgin. The guards bristled at his approach, but their boss waved them off. “Let them both approach,” she said.

Fran flew up and hovered right beside the throne, where she could get a good look at the enhanced wings. That’s when she noticed the mane of dark hair tumbling halfway down the woman’s back. “You

have beautiful hair, too,” she said. “Did God do that, too?” She reached out as if to touch it, and Her Grace flinched away.

“You’re not to touch Us without Our blessing,” she hissed.

“Once again, I’m sorry, Your Grace,” said Fran. “I’m just not used to all these formalities.” She straightened up and formally asked, “May I have permission to touch you, Your Grace?”

She received a curt nod. “Permission granted.”

Fran reached out and tentatively stroked one of her wings, and was a little surprised when the bold stripes felt just like ordinary fur. She pulled the wing up and looked at the underside. Like an ordinary wing, it was furred more thinly there, and the stripes were less bold and more suggestive. She tucked the wing back down and reached for the hair. “This is beautiful,” she repeated. “Do you ever do anything with it?”

“Do anything?”

“Yes,” said Fran. “Like put it up, or braid it.”

“No,” snapped Her Grace. “We have no time for such vanity.”

“Oh,” said Fran. “That’s a shame. You could do so much with it.” She released the lock of hair she was holding and patted it back into place.

The woman unconsciously preened. Her eyes, so dark as to be almost black, glimmered with deep red-amber lights, and a light flush came to her cheeks. “Well,” she said, “since you bring it up, perhaps We could give it a try. We would only be enhancing God’s gifts, after all, wouldn’t We?”

“Of course,” said Fran. “It would almost be churlish to not appreciate those gifts, wouldn’t it?”

“Yes. Yes it would.” The red lights glimmered in her eyes.

“Now, Your Grace,” said Fran, “there’s something else.”

“Yes?” she asked, her suspicion momentarily forgotten.

“Since we got back, we haven’t seen anyone with four arms. Or anyone with bioglow, for that matter.”

The red-amber lights dimmed. “No, of course you haven’t,” she said, her body tensing up.

“Why is that, Your Grace?”

“They were an abomination. A perversion of God’s plan. We gave them the opportunity to do the right thing.”

“To change back,” said Fran.

“Yes. To return to God’s image, as shown by His saints.”

“You mean us?”

“Yes, of course. You never had either of those things done to your bodies, did you?” Her Grace showed the subtle beginnings of a smirk. This was her shutdown argument.

“No,” said Fran. “It never appealed to me.”

“Right. So why should they?”

“Their choice, I thought. Their right.”

“Rights,” said Her Grace with a sneer. “People make such a fuss about their rights. What about doing the right thing?”

“Yes,” said Fran. “I agree with you about doing the right thing. How can we expect to exercise our rights if we can’t make the effort to do the right thing?”

“Exactly!” The red-amber lights flashed, then the eyes narrowed. Was there some implication beneath Frances’s words? She checked her face. Then Elgin’s. Then the Commander’s. “Exactly,” she said again. “And the right thing is whatever We say it is.” She watched their faces.

“As the vessel of the Word,” said Fran.

“Yes!”

“And my true spiritual descendant.”

The woman frowned at her.

“One more thing,” said Fran. “While we were gone, we thought the population of hypersynesthetes had grown considerably. Only, we haven’t seen any since we got back, and we were looking forward to it.”

“You won’t,” said Her Grace. “They’re all in hibernation.”

“Why?” asked Fran. “What did they do?”

“They were fomenting trouble. Causing unrest. Creating dissatisfaction. We couldn’t allow them to upset the true citizens.”

“True citizens?” Fran shook her head. “So you threw them all in hibernation.”

“Yes, except the ones who ran to Cloud City.”

“Cloud City?” Fran remembered calling this place Cloud City when they prepared it to intercept and destroy the Visitor.

“Yes. The mining community on the comets. Our influence is not what it could be there, so fugitives sometimes run there to escape justice.” She compressed her lips. “Not for long, though.”

“You mean the collection of comets we used against the Visitor. The ones that were struck by the debris.”

“That’s right. The ones that weren’t already used to build this place up. We’ve been mining them ever since.”

“And the name Cloud City has since become specific to them. Just as Green Comet is generalized to this whole hexamer.” Fran nodded thoughtfully. “Interesting.”

An irritated rustling of striped wings. “You may find it interesting, but to Us it is a problem that must be solved. And it will be. Soon they will be in hibernation where they belong, along with the rest of them.”

“Excuse me, Your Grace,” said Fran. “Isn’t that just delaying the problem? Won’t they still be a problem when they get out? If you ever intend to let them out, that is.”

“We’ll let them out eventually.” Hard little points of red in her eyes. “When they’ve been brought back to normal.”

“Back to normal?” Fran gasped. “You’re going to ... what? You’re going to try to change their brains? You’re going to try to take away some of their synesthesia?”

“Why not? It’s no different from the freaks. We’re just returning them to the way God intended.”

Fran was momentarily speechless. She looked around the Square. All the blue columns and friezes. The attentive retinue. The Commander. And finally Elgin, where she stopped and absorbed the strength in those brown eyes. She looked back at the supreme leader of the Francesians, whose eyes flinched ever so slightly, and said, “The hypersynesthesia wasn’t made in hibernation like the second arms and bioglow. It’s natural. How do you expect to reverse it?”

“It’s not natural. It’s unnatural. They’re not like everyone else. They’re different. They think they’re better.” She stopped suddenly, as if she realized she’d said too much. It was confirmed when she saw Fran’s eyebrows go up a fraction.

Fran looked at her for a moment. At the large, exorbitant wings and the long, luxurious hair. The speculation left her face, to be replaced by understanding and compassion. She remembered the alarm and fright when she tried to approach the throne. And now all this fear of difference. “Your Grace,” she said, “when did you become so frightened?”

The red-amber lights disappeared completely, leaving behind hard, shining marbles. “I’m ... We’re not frightened. We have nothing to be frightened about. No one would dare.” She looked at Elgin, who was staring at her as if he’d almost remembered something, but couldn’t

put his finger on what. She smirked at him. “You don’t remember Us, do you?”

And suddenly he did. “The Square,” he said. “With Minder. You accosted us.” He nodded. “I recognize those eyes.”

“Yes,” she said. “We wanted to honor you, in the name of Frances, and you were quite rude.”

“I was rude? You attacked my friend, Minder. Then you presumed to know Fran better than I did.” He let his eyes take in her vanities. “And now you claim to know what God intends. You haven’t changed a bit, have you?”

“We know what God intends better than you do,” she snapped. “You don’t even believe in God. You’ve made that clear. One of his own saints.” She shook her head.

“I didn’t ask to be a saint,” snarled Elgin. “That was you people.”

“Yes,” she said. “An obvious mistake, which has been rectified.” She looked him up and down. “Can’t even get the simple things right. Letting our resources get away like that. To those primitive Makers. And some other people who might not even exist.”

“I did more than that,” he said. “I helped them get away.”

Her eyes narrowed, and she looked at them. Elgin was glaring at her, and Fran’s face was sympathetic. She didn’t like either one, because neither one admitted that she was entitled to more. She looked at her chief attendant, the one who’d spoken for her before, and sent him off with a negligent toss of her head. Then she looked back at them, her eyes glittering as she smiled.

In a few moments the man came back, accompanied by two more who were bringing a large, oblong, transparent box. It looked big enough to hold a person, and it had a lot of tubes and wires inside it.

Trailing behind was a bundle of them, ending in a complicated looking fitting.

Fran, in a voice that said she knew, asked, “What’s that for?”

The glittering eyes fell on her. “It’s for you.” said Her Grace. “You’re going to get into it, and then you’re going into hibernation right here, where everyone can come and pay their respects.”

Elgin surged forward, but Fran’s hand on his arm stopped him. She said to him, “Be strong. You know what we must do.” Then she flew to the ice sarcophagus and climbed in. Her eyes locked on Elgin’s as the lid closed and the box was moved over by the wall where it was plugged in. The tubes and wires moved and crawled over her body, finding their own way. Her eyes never left Elgin’s until they gently closed.

Elgin turned to see the head Francesian’s triumphant smile. But then she saw his face and the smile faltered. His brow was somehow heavier and his jaw blockier, and she felt an unexpected frisson of fear. Then he tilted his head and looked at her as if he were her disappointed grandfather.

WORKING ALONE

Her Grace didn't like that. She sent Elgin away immediately, with much imperious shouting and gesturing. The Commander grabbed his arm and pulled him out of there. All the way across the blue square and out the door at the other end, Elgin allowed himself to be towed along, while he stared at the diminishing image of the woman who took Fran from him.

It wasn't the first time he'd lost her. After she was injured by the Visitor's scout, he had spent centuries in a gray world, unsure if she would ever come back to him. The patience and hard work and sacrifice of his friends made it happen then, but now his friends were all gone. They were all in the prison of hibernation, just as she was. There was no one to help him this time. He would have to rescue her from that grotesque box on his own.

He considered and rejected ideas as he was hauled back to Green Comet. Raid the Hibernarium and rescue his friends? Attack Blue Comet and rescue Fran? Seek out and form alliances with Red and Indigo comets and start an all-out war? None of his ideas seemed viable, and by the time the Commander deposited him at the entrance to the hospital, Elgin was discouraged and his face had set in a deep frown.

"Are you going to be all right here?" asked the Commander. "I can stay with you for a while if you want."

Elgin came out of his gray fog long enough to register the question. "No," he said. "No. I'll be fine." He turned to enter the hospital.

“Are you sure?” asked the Commander. “It’s no trouble. I don’t have anything else on my agenda for today.”

“Yes I’m sure,” said Elgin. “You’d better go. You don’t want to get in trouble for abetting an enemy of the state.”

The Commander looked down, stung. His face reddened and he said hoarsely, “If you’re sure.”

“Yes,” said Elgin, softening slightly. “You go ahead. I’ll be okay here.”

The Commander looked into his face, then nodded. “Okay then,” he said. “I’ll leave you alone. But if there’s anything you need, get in touch with me and I’ll see what I can do.”

Elgin looked right into his eyes and said, “You can’t get me what I need, Commander, but thank you anyway.”

The Commander’s gaze broke again, and he turned and left, his shoulders sagging.

Elgin had a moment of regret for his harshness, and he almost called out to soften it. He didn’t though, partly because of the torpor of his mood, and partly because he instinctively knew that the man deserved it. He’d made his choices along the way, and he’d traded principle for privilege. That wouldn’t be set right by a little belated regret, or by a safe and essentially pointless gesture.

So he turned away from the rounded, retreating back and went into the hospital, the most recent place he’d called home. Now, though, it was just another cold, empty place, one among many. The place where he’d shared meals with his friends, now silent. The room where he’d shared a bed with Fran, now dark. With a sigh, Elgin went further down the hall to an empty room. One they hadn’t used before. One that didn’t have any memories in it. He shut the door and wept in the dark where no one could see him.

When Elgin woke up he knew what he had to do. He put on his plain white clothes, ate a quick breakfast and headed out. His talent for knowing when something is right could work just as well in his sleep as it could in the daytime, and he knew with his usual certainty that this was the right thing to do. When Fran told him that he knew what he had to do, she was right. She just happened to know it before he did. His job would be to carry on what they'd started, to do what was best for Green Comet, and to set a good example. With any luck, maybe a few people would follow him.

No one would want to follow him this day, though. No one would want to get near him. He had his face on, and it was set like stone. He didn't see anyone in the Square, nor in the corridor out the flickering red doorway. At the tee intersection he glanced down the hall toward the Grand Court, and turned right, taking the orbital. The Grand Court would be for another day. Today he planned to take care of another stench.

He encountered no one on the flight to the water reclamation plant, but there was someone inside when he got there. Both Norton and Snowden were there, though they didn't appear to be doing anything as far as he could tell. As if this was nothing more than a place to hang out.

They looked up when he came in, and Norton said, "Elgin! Nice to ..." before he really saw his face.

Elgin ignored him and went directly to the controls.

Norton said, "We were sorry to hear about Frances, Elgin. Let us know if there's anything we can do."

Elgin continued to ignore him, putting in the settings that he was

beginning to know by heart. He brushed past them on his way to a set of ancillary controls.

“Really, Elgin,” said Norton.

Snowden said, “It’s awful what she did to you. We’d really like to help.”

Elgin stopped and turned his face on them, noting the flinch in their eyes when he did. “If you really want to help,” he said, his voice nothing more than a growl, “then you can shut up and get to work. Or you can get out of here and let me work in peace.”

Harsh words, and you couldn’t blame them if they took them badly. But they didn’t. They looked at each other and nodded, and got to work. They knew the legend of Elgin and Frances, and they’d seen enough to know there was some truth to it. Enough to know that losing her again would be more than enough justification for a little rude behavior. So they shut up and got to work. Norton almost patted Elgin on the shoulder as he passed, but he wisely refrained.

They worked the rest of the day in silence, speaking only to give or acknowledge instructions, and they got the system working near peak efficiency. It would only require someone to come in for the next few days to make some final adjustments, then a normal program of maintenance to keep it functioning properly. Elgin took one last look around, then apparently satisfied, nodded to them and left without another word. Norton and Snowy looked at each other and shrugged.

“I guess that’s that,” said Norton.

“I guess so,” said Snowy, adjusting his ratty vest.

~

Elgin slept soundly and awoke refreshed. He had a breakfast of old packaged iceberry muffins and tea while he planned his day. Looking

around him, he decided he would make a start on the hospital itself. A start on finishing it, that is. Finishing what the Doctor and Nigel started before they were taken away.

That thought made Elgin frown, but it didn't take away his feeling of resolve, or its comfort. He knew it was terror tactics that were supposed to break him down. Decimating the crew. Disappearing his friends. And finally doing that to Fran. He knew it was supposed to break him down and make him useful to the Francesians in some way. Probably for propaganda. Show the people that he could be broken so they'd lose hope. But before going into that box, Fran had told him that he knew what to do, and he did. She said it and he knew it was true. So they might be able to make him angry, they might be able to break his heart, but they wouldn't break him. He would clean Green Comet up one piece at a time. If he inspired others to chip in and help, then good. If not, then he'd do it himself.

So, yesterday the water treatment plant, and today the hospital. Well, beginning today, anyway. This was certainly going to take more than a day. He'd start with the rooms. He could get them cleaned up and fit for occupation. That didn't take any special knowledge, just a willingness to work. The admitting room was also pretty straightforward. Any equipment and procedures there had to be pretty simple. He could get that functioning at least adequately without too much trouble. The examination rooms and their equipment were going to take more time and study, but so what? What else was he going to do? By the time he got to the treatment rooms and the specialized equipment, he hoped he would be joined by someone with more knowledge and expertise. That was his hope. But if it didn't happen, then he'd just have to study up on it and do it himself.

He was on his third room when the man with the scroll arrived. He continued working, lending half an ear as the man read the message.

“His Excellency Verdi requires your immediate presence in the Grand Court,” he intoned, then allowed the scroll to roll itself back up.

Elgin kept working, putting fresh sheets on the bed.

The fancy-dressed messenger said, “Excuse me. Did you hear me?”

“Mm-hm,” said Elgin, tucking in the corners.

“Well, come along then. You know His Excellency doesn’t like to be kept waiting.”

Elgin surveyed his work and gave a nod of satisfaction. Then he looked at his visitor and the four pike bearers he had with him. “Please send my regrets,” he said. “Tell Verdi I’m too busy for social calls.”

All five of them were shocked and they gave no resistance when he brushed past them on his way to the next room. He softly rubbed his hands as he surveyed the work ahead of him, then he plunged in.

“That’s His Excellency to you,” the messenger said at last, “and I’m not about to let you keep him waiting.” He crossed his arms and glanced at his armed escort.

“Is that right?” asked Elgin without interrupting his work.

“Yes, that’s right!” said the man, his voice rising.

Elgin looked at him. “Then quit dithering,” he said, “and do something about it.”

The man’s mouth opened in shock, but nothing came out. He looked at the pike bearers, who wouldn’t return it, then back at Elgin, who was picking up trash. Finally he found his voice and said, “Seize him!” He immediately blushed, possibly at the realization of how silly that sounded. That just made him more angry, so he shouted, “Now! If he won’t come peacefully, then we’ll have to take him. But he’s coming with us.”

The guards moved, two of them seizing Elgin's arms while the other two pointed their pikes at him. They dragged him out of there, past the messenger and into the hallway. As they proceeded out of the hospital and down the corridor toward the Square, the messenger flew past them to be in the lead. As he went by, Elgin said, "That's better. It's time you showed some initiative."

The scroll man didn't answer, but his body was rigid with indignation.

"Don't worry," said Elgin to his stiff back. "I know it must be hard when you're so used to being servile."

The man wheeled on him, his cheeks shaking with rage, but got control of himself again and the threat subsided.

"That's right," said Elgin. "You can't actually do anything, can you? I'm still under the protection of the Big F." Even as the man turned away, Elgin could see the question in his face, so he said, "That's what I call her. Or refer to her as. At least to myself. To her I say, 'Your Grace.' It's important to her that people show respect, even if she hasn't earned it."

His companions were visibly uncomfortable. They unconsciously pulled away from him, looking around to see if he'd been overheard.

To their dismay, Elgin continued. "For expediency's sake, and especially for Fran's sake, I feigned respect. To smooth things over, you know?" The chiding lightness went out of his voice. "But after what she did to Fran, there was no point any more."

His audience became even more uncomfortable.

"You know what she did to her, don't you? She put her in a transparent case, like some kind of trophy." He sighed. "That's who you're working for," he said. "You're here in that ridiculous outfit because you're afraid of that little twat, Verdi. He acts like a big man,

but he's afraid of the Big F. And here's something you probably didn't know. She's afraid of everyone."

The messenger spun around, his eyes wide. "Be quiet," he said. "Don't say any more." His eyes darted to the great black window running along the orange side of the Square.

"I don't care who hears me," said Elgin.

"Maybe you don't, but I do. You're not the only one here, you know."

Elgin looked more closely at him. "Oh," he said. "They would punish you for what I say?" He gave the wall a long, appraising look. "Things are even worse than I thought." As they cleared the end of the window and headed for the flickering red entrance, he said, "Well I'm sorry, but I'm done making it easy for everybody. You chose your path. You chose to wear those clothes and work for those people. You've been taking the easy way. Now you might have to find out the cost of that."

"The easy way? You think this is easy?" The messenger looked down at his clothes. "You're right. I look ridiculous. And these scrolls." He looked at the scroll tucked under his belt. "Scrolls? I feel like a participant in some re-enactment or something."

"Be careful," warned Elgin. "Someone might overhear you."

"I don't care. I just don't care any more. I'm tired of this. Whatever they do can't be any worse than doing this for the rest of my life."

"Are you sure?" asked Elgin. "It looks like you've got a pretty comfortable life right now. Have you seen what it's like for other people?"

That made him hesitate, but he said, "I can adapt. I'll be fine."

"What about hibernation, then? It seems to be what they do to people who cross them."

The man relaxed. Elgin could see that he'd thought of this before.

“Hibernation,” he said with a sigh. “I’ve got over ten years left before I’m due to go down again. Ten years.” He got a longing look on his face. “I don’t think I’d mind hibernation. Maybe when I wake up, this will all be over.”

“You’d like to escape,” said Elgin.

There was a pause, then, “I don’t think any of us will ever escape. I think this will just go on getting worse.”

Elgin laughed. “Nothing goes on forever. Everything eventually ends. It’s just a matter of how long it lasts before it’s finally over.”

“What are you telling me?”

“I’m telling you that one day you’ll wake up and this will all be changed. If you’re lucky, it will be for the better.”

“If I’m lucky? You’re saying it could be worse?”

Elgin looked at him. “That might be up to you,” he said.

The man’s face showed surprise, shock and the beginnings of fear. “Up to me?” he said. “It can’t be up to me.”

Elgin smiled at him. He would have patted his shoulder had his arms not been held by the guards as they hustled him along. Smiling, he said, “Then it won’t be.”

The fear gave way to relief, but that was quickly modified by realization. “Just a minute,” he said. “Wait. What do you mean by that?” He tried to stop Elgin, stop the guards who held him, but it was too late. They were entering the Grand Court.

The guards pulled Elgin right over to the roped off area and deposited him there. Then they posted themselves at the four corners of it. Their leader, the messenger, took up a position just outside of it, and they waited.

Elgin looked around. In addition to the six of them, there were about thirty courtiers clustered in their cliques and bunches. Everyone

was waiting for Verdi. By their expressions and body language he could see that they were well accustomed to waiting on their master. Other than these, the place was empty of people.

He looked at the flashball court, empty and quiet, and his lip curled. He looked again at the courtiers, the messenger, the guards, and said, loudly enough for everyone to hear, “What was the hurry? You dragged me here so we could wait for that twat again?”

Everyone was too shocked to answer, although one of the guards snickered, and there were some nervous giggles among the courtiers. Those overdressed sycophants unconsciously drifted away from him, while emphasizing their hierarchical positioning relative to the throne. Meanwhile, the waiting continued.

“No one has anything to say?” said Elgin. “Well, I don’t blame you, really. There are few things more dangerous than a frightened, cornered rodent.”

That elicited a spate of excited chatter, and a further widening of the gap between him and them. The courtiers milled in their pods, casting frightened glances at the back of the gallery. They also looked at him with the beginnings of open hatred.

“Oh, come now,” he chided. “Surely you can’t be afraid of being punished for simply hearing something. It’s not as if you said it yourself, or even listened to it, is it?” He looked at them and saw them shrinking and cowering. “I mean, he’d have to be crazy to punish you for that, wouldn’t he?” His grin was hard, even cruel, as he stared a challenge at them all.

Then one of the courtiers glanced to the rear and pushed himself forward. He haughtily glared at Elgin, peeking furtively over his shoulder to ensure his audience had arrived, and said, “You will not speak that way of His Excellency. You are in his court. Show some

respect.” He turned triumphantly for the praise he expected from Verdi.

Verdi dismissed him with a contemptuous glance, and focused his attention on Elgin. His voice an icy threat, he said, “So, you think I’m an insane rodent, do you?”

Elgin shook his head. “In retrospect, no,” he said. “If you were insane, then you couldn’t be held responsible for your actions. Also, it would be an insult to rodents.” He glared levelly at Verdi, smiling when he saw the barb hit home.

Verdi was so enraged that he shook, and his eyes were hard, black marbles that reminded Elgin of something. Verdi said, “You speak quite freely for someone who has no power. Aren’t you afraid of the consequences?”

“You mean afraid of you, right?” said Elgin. “Because that’s important to you. Just like power.” He paused to contemplate those eyes, a memory tickling him just behind his nose. “Unlike you, though,” he said, “I don’t need power.” His grin was challenging as he watched Verdi struggle.

The courtier shouted, “You will address His Excellency correctly!”

Simultaneously, Verdi and Elgin said, “Shut up!” and he quailed and shrank away.

Verdi was as shocked as everybody else that Elgin would presume to give orders here, but as usual, he recovered quickly. “You don’t need power,” he said. “Unlike me, you say.”

“That’s right. I know who I am, and I stand on my own.” Elgin looked around. “You’d be nothing if you weren’t propped up by all this.” Watching Verdi’s eyes, the memory tickled again.

Verdi was fully under control now and didn’t react. “That’s your opinion,” he said.

“And everyone’s entitled to their opinion, right?”

“Actually no, they’re not. I decide what opinions people may have. I decide what they can do.” Verdi began to grow more confident again. He sat straighter and looked bigger. “I decide everything, and I had you brought here today to remind you of that.” He looked down on Elgin as if from on high. “You’re to stop what you’re doing.”

“Stop what I’m doing?”

“Yes. At the water place and the hospital. Stop interfering.”

“Stop making improvements, you mean.”

“Whatever you call it, you’re to stop.”

“And if I don’t?” asked Elgin. “I don’t need to remind you that the Big F has plans for me, do I?”

Verdi’s face darkened and his eyes became hard as stone. “Are you referring to Her Grace? You will not show such disrespect to Her Grace.”

Now Elgin had it. He knew where he’d seen those eyes before. He smiled. “She’s your sister. The Big F is your sister, isn’t she?”

“You will stop calling her that. She is the most high representative of God.”

“Right,” said Elgin. “And a couple of other things. A vessel?”

“The holy vessel of the Word!”

“Right. And I remember the last one because it was so obviously wrong. That woman is certainly not the spiritual descendant of Frances. Not by a long shot.”

“You’d better watch what you say,” said Verdi. “You might think you’re untouchable, but you’re not.”

“Not by you, though,” taunted Elgin. “If by anyone, it will be your sister, won’t it? Because she’s the boss of you, isn’t she?” He laughed. “Has it always been that way?”

Verdi scowled at him, deep resentment in his eyes. “Get him out of here,” he said. “Take him away. I don’t want to see him any more.” He left the throne and angrily headed for his rooms.

Elgin looked at the guards and cocked his arms for handles to drag him away. “You heard him,” he said.

29.

TOO TACKY

“You’re braver than I am.”

“You think I’m brave?”

“Of course you are,” said the messenger. “What you did.”

“That’s not bravery,” said Elgin. “That’s just being fed up with the whole thing.”

“Plenty of people are fed up. They don’t do what you did.”

“They’re not protected by the Big F,” said Elgin.

“But still ...”

“And more importantly, they haven’t had their beloved locked up in a box for all to see.”

“Ah, of course,” said the messenger.

They broke out of the corridor into the Square. Ahead on the left was the black window, and straight ahead across the Square was the shrine in their erstwhile apartment.

“Do you ever go there?” asked Elgin.

“Where?”

“There,” said Elgin, pointing across the Square with his chin.

“Oh,” said the messenger. “No.” He quickly added, “Not that I don’t respect lady Frances. I do. It’s just ...” He faltered.

“It’s okay,” said Elgin.

“I mean, I would go, but ...”

“Don’t worry about it.”

“Well, it’s so tacky.” He looked at Elgin, worried that he was being insulting.

“I agree,” said Elgin. “Very tacky.”

“Yes,” said the messenger, relieved. “And besides, they don’t let just anybody in.”

“They?”

“The Francesians.”

“I thought you were all Francesians.”

The messenger blushed. “Yes, of course. You have to be to get anywhere here. I mean the real Francesians.” He gasped. “Not that I don’t really worship lady Frances, because I do.” He faltered again, his worried eyes on Elgin’s face.

“It’s okay,” said Elgin. “She wouldn’t thank you for it anyway.”

“But ...”

Elgin held his eye. “We didn’t ask to be saints, and we’ve told them so before. They never listen, though. Their theology has become bigger than the person it’s based on.”

“Not to me,” the messenger insisted earnestly.

Elgin sighed and shook his head. “Anyway, they couldn’t have their saints disagreeing with them, so we’re not saints any more.”

“You are to me,” declared the messenger faithfully.

Elgin glowered at him sternly. “Haven’t you been listening? We never wanted to be saints in the first place.”

“But ...”

“No buts about it.” Elgin softened. “Look. If you want to honor Fran, honor her wishes. Respect her as a real woman, not as some magical being. She didn’t do what she did by magic. She did it by facing the danger as an ordinary woman.”

“Not ordinary,” objected the messenger. “Not ordinary.”

“Okay,” said Elgin. “I agree with that. Fran is certainly not ordinary.”

The messenger nodded emphatically. “Anyway,” he said, “the real Francesians don’t let us commoners use the shrine.”

~

They left him at the hospital, where he went back to work. Back to the soothing rhythms of cleaning and tidying and making things right. He would have been tempted to settle into it, but he was hit by a sudden impatience. Now it was no longer soothing. Now the small, simple tasks had become annoying. He began to feel frustrated at the size of the task and the slowness of his progress. His exasperation at the people began to boil over. The timidity and complacency of them in the face of this criminal subversion of their world. And the arrogance and vanity of their masters. Elgin threw down his cleaning rag and flew out of there.

He was entering the Square when he realized he didn’t know where he was going. He looked around and saw nobody, just the dark window, the faulty lighting and the tacky shrine. He blocked it out and flew straight across the Square to the opposite entrance, one with green columns. He went through and up to the shop. It looked just as they’d left it. It was clean and tidy and looking as if it was waiting for them to come back to work.

He let his mind go back to working at that big table, opposite Buzzard, whose long body was curled over the paper he was checking. Buzzard straightening up with that great big grin on his face, saying, “All done. All five. All good.”

Elgin’s throat tightened up. He spun around and flew out of there. He went down to the Square, turned left, and over to the other green entrance. He took it and went up to the planning committee room, which was also just as they’d left it. The vandalism appeared to be a

thing of the past, and his mind went back to a much deeper past. This was the room where he first met Fran. He still blushed at his comical awkwardness. He smiled in gratitude for her generosity. He thought he'd be wasting her time, and he still marveled that she had chosen him.

He had tears in his eyes when he flew out of there. He quickly flew to the flickering red exit and headed for the orbital. He had no destination in mind, but he ended up at the apartments of Buzzard and Stanton. Everything was fine there, too. When he found himself in the doorway of Stanton's rooms, awash in memories of his friend and mentor, he sighed and turned away once again. He shrugged and headed for the water treatment plant.

He found it empty, and was half relieved and half disappointed. He wouldn't have minded a little company. He realized that he probably needed a little genuine contact with people. Not an argument with a pompous fool like Verdi. Nor a quasi-conversation with a conflicted functionary like the messenger. Just some ordinary give and take with regular people. Norton and Lord Snowden were the closest thing he had to that right now, and he wouldn't have minded if they were there. But he was just as glad that they weren't. That half of him was aware of the exposed sensitivity of his feelings, and was just as glad that there was no one there to see them.

He occupied himself with checking the settings, and was soon lost in the comforting familiarity. He was pleased to find that the settings were not exactly as he left them. They'd been tweaked to get even better performance out of the system. Elgin smiled. Maybe he was getting through to someone after all.

"Well, look who's here."

Elgin's head snapped around and he was looking at the doorway

almost before he realized he'd heard anything. The effects of his reverie drained away and he saw two people entering the room. "Norton," he said. "Snowy. What brings you here?"

"Good question," said Norton. "We actually weren't going to come in today. Thought we'd take a day off and let it settle in." He looked around and took a big breath of fresh air. "Not bad." Turning back to Elgin, he said, "Then we heard you were here, so we thought we'd come and see what's going on."

"Heard I was here?"

"That's right." Norton smiled at him. "People are interested in you, you know. They like to keep track of you. Follow your exploits." He laughed. "You sure have a knack for stirring things up, don't you?"

"Stir things up?" said Elgin. "Me?"

They laughed, Snowy stifling his and glancing furtively over his shoulder. In a low voice he said, "Everyone knows how you stuck it to Verdi. They're pulling for you."

"Betting on you, too," said Norton.

"Betting?"

"Yes. How long before they throw you in the Hibernarium? Who will do it, His Excellency or Her Grace? Or someone else entirely?"

"I see," said Elgin. "If I were you I'd put my money on the Big F. Her brother Verdi wouldn't dare without her permission."

Norton shook his head. "I don't gamble," he said. "And even if I did, I wouldn't gamble on that." They looked at Snowy, who had been nodding since Elgin spoke, but who stopped as Norton finished.

"Snowy?" said Norton. "Did you bet on this? How could you?"

Snowy started vigorously shaking his head, but soon stopped and shrugged. "Easy money," he said. "If fools want to give away their money, who am I to stop them?"

Norton said, "You're betting on Her Grace, aren't you?"

"The Big F," said Elgin.

"Sh!" said Snowy. "Not so loud."

"What are you worried about?" asked Elgin. "You bet on her, didn't you?"

"Yes," said Snowden, "but it's not going to do me any good if I'm in hibernation, is it?"

Elgin laughed. "I suppose not." He searched their faces. "If everyone's so interested," he said, "maybe some of them would like to help me rescue Fran."

They leaned back, looking uncomfortable.

"Well?" asked Elgin. "What do you think?"

Norton shook his head while looking at the floor, and Snowy kept his eye on the doorway. Norton said, "No one's that brave."

"Or that stupid," said Snowden. "I mean, say you do rescue her. Say you get her out of there. Where are you going to take her?"

Elgin turned his face away from them. He knew Snowden was right. He knew there would be more to saving Fran than just getting her out of that box. That was why he hadn't even begun to make plans to do it. That's why he was just fixing up Green Comet and trying to set a good example. He hoped he was laying the groundwork for long-term change that would eventually see her released someday. He knew it wouldn't seem that long to her.

The problem was not her, it was him. He didn't know if he had the patience for this any more. He had no idea how long it would take. The entire culture of Green Comet, of the hexamer, needed to be changed. The Francesians needed to be removed from power, and democracy needed to be restored. But it wasn't just the Francesians on Blue Comet. He also had to break the power of the princes, like Verdi

and Rufus and the others. And he had to break down the culture of fear and obedience that had the people thoroughly in its grip. He saw all that, and he saw how small he was in the face of it, and he began to despair.

Snowden was still talking. “And don’t think you can take her to any of the other comets, either,” he said. “Rufus and Lavender would eat you alive. Literally. Especially Lavender.”

Norton could see how it was affecting Elgin, and he said, “Come on, Snowy. It’s not that bad.”

“Not that bad?” said Snowden. “Not that bad? No, it’s not that bad. If anything it’s worse.”

Norton reached out and cuffed Snowden on the back of the head. When Snowden looked at him in open-mouthed shock, he said, “No, not that bad.” He looked pointedly at Elgin’s downcast face. “Right?”

“Oh,” said Snowden. “Oh, right. It’s not that bad, Elgin. I just got carried away again. You know me. It’s really not that bad.”

“That’s right,” said Norton. “It might look like a big problem, but we just have to break it down into smaller chunks. And there are still plenty of people who’ll help you, when they can.”

Elgin lifted his head and turned to face them. “It’s okay,” he said. “It’s okay. It’s just that I’ve done this before, and I don’t know if I can do it again.”

They knew the story. Everyone did. Elgin had lost Frances and didn’t know if he’d ever get her back. He’d gone through a long, dark time, only relieved long after he’d given up hope of ever seeing her again. She was trapped in hibernation then as now, and Norton seized on that. “Sure you can,” he said. “You did it then, and you can do it now. That was serious. This is just a bit of dirty politics”

“Politics,” said Snowy. “Dirty politics. That’s all.”

Elgin had to smile. Things might be bad. People might be bad. But you could still find good ones, even so. “Thanks,” he said. “Thanks, you guys. This is just what I needed.” He took a deep breath, filling his lungs to the very bottom. “It’s the same answer as it always is, isn’t it? All you can do is your best. That’s what Fran would tell us if she were here.” He took another bracing breath and turned back to the knobs and dials. “Come on,” he said, “let’s make it better.”

~

Norton and Lord Snowden weren’t bad company once you got to know them, Elgin thought. They kept him company for the rest of the day, while he buried himself in the comforting complexities of the work. By the time he left that evening, they had the plant working at peak efficiency, and they had the solid beginnings of a very good friendship. That’s what made the next day harder than it had to be.

He got home to the hospital fairly late in the evening, with just enough time for a quick meal before bed. His sleep was deep, with only brief snippets of dreams that slipped away when he woke up. He was sitting at a table having a muffin with tea, trying to remember some of the snippets when the Commander showed up.

“Well, there he is,” said Elgin. “Right on cue.”

“Right on cue?” said the Commander.

“Yes,” said Elgin. “I was just trying to work out who that was in my dream. I never got a good look at them, but their presence was foreboding.” Elgin took a bite and spoke around it. “Or was it just annoying?”

A spot of color came to the Commander’s cheeks. “I’m sorry to interrupt your breakfast,” he said. “She wants to see you.”

“For crying out loud,” said Elgin. “Don’t these people have anything useful to do?”

The Commander shrugged. “Ours is not to reason why,” he said. “Come on. Let’s go.”

Elgin popped the last of his muffin in his mouth and got up. He dusted his hands and wiped them on his white trousers, then picked up his tea and finished it off. He wiped the table and tossed his trash in the recycler. “Lead on,” he said. “Let’s get this over with.”

Flying side by side with the Commander, surrounded by four guards, or as the Commander said, their escort, they flew through the Square and out the red end, past the intersection and around the orbital to the tube.

Out there between the comets, the Commander asked, “Do you want to stop again and look at the view?”

Elgin didn’t even glance sideways, keeping his eyes on the other end of the tube instead. “No,” he said. “Let’s just find out what the Big F wants so I can get back to work.”

If they were shocked none of them showed it. “As you wish,” said the Commander.

They repeated their route in reverse. The orbital, the tee intersection and the blue square. As they crossed the vast blue space, Elgin noticed another significant difference from Green Comet’s square. This one didn’t have a big window to his left, not even a blacked out one. He thought that meant that the Francesians must have taken over this comet very early on, before the finishing touches were added.

“Commander,” he said, “how long have the Francesians owned Blue Comet?”

“Just about from its very beginning, I think. Why?”

“Hm,” said Elgin. “They’re really playing the long game, aren’t they?”

“Long game?”

“Never mind, Commander,” said Elgin, pulling away a little. “Time to look official. You wouldn’t want them to think you’ve befriended me.”

The Commander scoffed. “Do you really think it’s that bad?”

“No,” said Elgin. “I’m sure it’s worse. Every time I think I know how bad it is, it gets worse. So I’m sure it’s worse than I think.”

“That’s cynical isn’t it?” said the Commander. “Pessimistic.”

“Actually I’m naturally optimistic,” said Elgin, “but these people are wearing me down. They’re frightened and paranoid, both with very good reason, and it’s making them do crazy things.” He caught the Commander’s eye. “You watch today and see if you don’t agree.”

By this time they were almost across the square, and the Commander and his men headed for the table. But Elgin stopped before getting there. He stopped right where he’d been standing last time, and got a grip on the floor with the setae on the soles of his feet. He finally looked at Fran’s sarcophagus, and her frozen body inside it. The sight of it twisted his heart, and he looked away as the tears pricked his eyes. The others came back, the Commander to stand beside him, discretely not looking at his tears, and the four guards to surround them. The people who’d backed away from the table as they approached went back to foraging for breakfast.

“How long do you think she’ll keep us waiting this time?” asked Elgin.

“I’m sure she’ll be here in good time,” said the Commander.

“A nice vague answer,” said Elgin.

“She’s an important woman,” huffed the Commander. “I’m sure she’s very busy.”

“Important,” said Elgin. “And this is one way to prove it.”

“Keep your voice down. Someone might be listening.”

“I’m sure someone is listening. I wouldn’t be surprised if it’s the Big F herself.” Elgin looked around. “There are probably cameras trained on us, too. I told you, she’s paranoid.”

The Commander looked around in spite of his best efforts to control the impulse. “I wish you would watch what you say,” he said.

“Commander,” said Elgin, “it doesn’t matter what I say. Can’t you see that this is all part of a plan in that feverish little brain of hers?”

The Commander shook his head and drew himself into a pose of professional detachment. If he couldn’t get Elgin to protect himself, then at least he could ensure that he didn’t get caught in the ensuing firestorm.

They stood like that for another ten minutes, Elgin calmly taking in his surroundings, the Commander and his men staring stoically into the middle distance. Then there was an upwelling of anticipation, and Her Grace was carried out and deposited on her throne. She settled her big, striped wings and gazed down upon them with a practiced regal countenance. As the silence stretched out, it built the tension and the import of what she was going to say.

“Good morning, Your Grace,” said Elgin. “Do you think we could get on with it? I have a lot to do today.”

Her smug certainty gave way to a momentary dark rage at the effrontery, but she quickly quelled it. She was getting used to him. To reassert control, she glanced at Fran’s sarcophagus and said, “As you can see, We’re taking good care of her.”

Elgin was ready for that and he controlled his face, but not well

enough to fool her penetrating eye. When he saw her small triumphant smirk, he felt his anger flare. But he thought of his beloved and what he would tell her when they were together again. The return of peace to his face was accompanied by vexation in hers. He allowed a hint of a smirk to show and said, "Did your brother come crying to you?"

"That is of no concern to you," she said. "The affairs of state are beyond the likes of you."

"I'll take that to mean he did," said Elgin, nodding with satisfaction. "He might be pompous, but he's petty, too."

"You can't talk about him like that," she said, insulted for both her brother and herself.

"But I just did," said Elgin, "and the longer I'm here, the more likely I am to say more things just like it."

She knew his ways by now, so she got a grip on her emotions and brought the conversation back to the point. "You might be interested to know that your friends have been taken to the Hibernarium," she said, watching for a reaction.

"What friends?" said Elgin. "You already took all my friends."

"Your new friends," she said. "You worked with them yesterday. We believe they're called Norton and Snowman." One of her attendants whispered in her ear. "Snowden?" she asked. When her aide nodded, she said, "Snowden then. Lord Snowden."

Elgin was surprised by how it affected him, and he was sure it showed in his face. He hardly knew those two, and yet after working with them for a day he seemed to care about their fate. "Why would you do that?" he asked. "What did they do to deserve to be punished?"

"They were interfering with the operation of Verdi's water plant. After you had been repeatedly told to leave it alone."

“Oh,” said Elgin, “another request from your sad little brother.”

She frowned, then said, “And just as importantly, for helping you.”

“For helping me? Are you saying that you punished them to get at me?”

“I’m saying that they’re in hibernation now because of you.”

“Oh,” said Elgin. “You want to make it my fault now.” He nodded.

“That’s typical of your type. It can never be your fault, can it?”

“Our type?” she snapped. “We don’t have a type. We’re unique.” She flexed her big wings and tossed her styled hair.

“Sure you do. You and your brother. Like two peas in a pod.” He could see immediately that he’d guessed right. She couldn’t bear the thought that she was like Verdi, but feared she was.

“That’s a lie! We’re nothing alike.” She looked around at her grand surroundings and her attentive subjects. “We’re here and he’s there, in the comet We gave him. He’d be nothing without Us.”

“I suppose you’re right,” said Elgin. “You never let him forget it, do you? Doesn’t he resent it?”

With a contemptuous smile, she said, “What if he does? What’s he going to do about it?”

“Nothing, I guess,” said Elgin.

“Exactly,” said Her Grace.

“As long as you’re here and he’s there, he wouldn’t dare, would he?”

“No, he wouldn’t.”

“Of course not.” Elgin appeared to think about it, then he said, “And you always make sure that he goes down to the Hibernarium first, don’t you?”

“What do you mean?” she asked, stony-eyed.

“Well, that has to be a cause of some concern to you. What happens while you’re hibernating, I mean.”

“Our people take care of things for Us. Nothing changes while We’re gone. It’s all preserved for Our next incarnation.”

“Incarnation,” mused Elgin. “Interesting. So, you make sure that Verdi is sleeping at the same time.”

“No,” she said. “He’s one of the people who keep things going while We’re gone.” Her voice was less forceful.

“Oh,” said Elgin. “So, even though you despise him, and he knows it, you don’t worry about him resenting it. Maybe doing something while you’re helpless to stop him.”

“No,” she said, forcing certainty back into her voice. “We don’t worry because he wouldn’t dare.”

“Good,” said Elgin. “That must be reassuring.” He nodded again. “So, if that’s all, I’ll get going. I really do have a lot of work to do.”

“We will decide when this audience is over,” she said. So she kept him there a while longer to prove her point. And she told him that he didn’t have any work to do because he wasn’t going to be allowed to interfere any more. Then she sent him away.

He looked longingly at Fran’s tomb as they left, and swore again that he’d make her proud.

~

They could smell it in the orbital. Not long after they came out of the tube, while they were flying toward the Square, they were assaulted by the smell of the water treatment plant. They didn’t have to stop off to check. Elgin knew exactly what was wrong.

No one spoke the entire way. Elgin was not feeling talkative, and the Commander was too embarrassed. Once again his masters were shown

to be unworthy of his service, and once again he served them in their petty endeavors. He didn't feel entitled to talk to someone as admirable as Elgin, and anyway, he just wanted to get it over with and get away without having to look him in the eye.

They delivered him directly to the hospital, which they found trashed. Things were strewn about. The beds were torn apart. The machine that Buzzard fixed was smashed. Three of the guards leered, gloating, while he took in the destruction. The other guard and the Commander looked away. Elgin turned his back and ignored them. The leering guards taunted him, laughing nastily at his distress, until a sharp order from the Commander took them out of there.

Elgin found the room he and Fran shared and tidied it up enough to use. Then he sat on the bed staring at the floor, for he didn't know how long. Finally he decided he should go and check the other projects — the shop, the meeting room, the apartments — so he took himself out of there and across the Square.

There were lights and movements in the shrine, and he diverted his eyes as he went by. But anger flickered in his solar plexus, and some of it leaked upward, toward his dull, gray mind. It built when he found the shop in a mess again. As were the meeting room and the apartments. Vandals, or people in the employ of the Francesians had undone all their good work. The only difference seemed to be in the graffiti which, though liberally applied, wasn't as vituperative as the original.

He carried on to the water plant fully expecting more of the same, and he wasn't wrong. Even though he knew they wouldn't be there, he half expected to find Norton and Snowy working and joking, but it was just four guards. He tried to get close enough to see some of the readings, but the guards wouldn't let him. He was worried that it might

have been set beyond smelly, to unsafe, but that was going to have to be someone else's problem.

He left the plant and headed back to the hospital. He didn't have a plan, and he didn't know what he was going to do when he got there. He couldn't work, so he had nothing to do. He didn't know anyone, so he couldn't visit. At least, he didn't know anyone who was up. All his friends were in hibernation, and he wasn't in the mood to make new friends. He wouldn't want to anyway. They'd probably just end up in the Hibernarium, and it would be his fault. So much for trying to set a good example, he thought.

When he entered the Square, the first thing he looked at was the shrine. Their apartment, really. He immediately turned his face away. It hurt too much to see it like this, remembering how it used to be their sanctuary of happiness. He was facing the darkened window, and he thought about that loss, too. He thought about how the Francesians had cut them off from Orange Comet, and how the window was now just a glorified spying device. They might be watching him now, he thought. Were they enjoying his helplessness? With that he turned away from the window and back to the shrine. If they wanted to watch him, let them watch him watching them. So he stared at the shrine, their apartment, all the way across the Square.

It made him feel a little better, but not much. He couldn't see much detail, just the lights and occasional movements as people passed in front of the openings. He was beginning to feel the futility of his gesture as he approached the passageway to the hospital, and he just wanted to get there and go to his room. He had no purpose beyond that. No plan for what to do. Sleep maybe, if he was lucky. He was just entering the doorway when he heard someone laugh in the shrine.

He stopped and turned. He knew they weren't laughing at him.

They probably didn't even know he was out here. It would be something completely innocent, having to do with something else entirely. That's what bothered him. They were up there enjoying themselves, completely oblivious to the feelings of the people whose space they were enjoying. Laughing while their erstwhile saint languished in a see-through box.

He didn't feel it, but his face began to set and he found himself moving in their direction. As he got closer he could see people inside. It looked as if they were all watching one man who appeared to be holding something up while he talked. The way he held the object and the way the rest of them looked at it, he guessed it must be important to them. Maybe some kind of holy artifact. He snorted. If they had waited until their saints were dead, it might have been their bones.

He stopped, hovering just off the balcony, and watched the ceremony. His face set harder. This was the cause of all their problems. A simple desire to honor Frances for her part in saving Green Comet, perverted into a system of rules and rituals. Now the object of their veneration was a prisoner, and here they were blindly engaged in their meaningless rites.

He moved forward and seized the nearest piece of tacky decoration, and pulled. It came away from the wall with a satisfying tearing sound, so he changed his grip and pulled again. It came away completely, so he flung it into the Square and grabbed another piece. People were coming out of the apartment now, but he ignored them and kept pulling. Another piece came free and he flung it away.

"Stop," said one of the worshipers. "Stop that."

Elgin didn't look, just grabbed the next piece and ripped savagely. Two good pulls and it was behind him, sailing across the Square, and he was halfway up one side, working his way toward the top.

“Stop I said.” The man flew toward Elgin. “You’re defiling the holy shrine.” He put his hand on Elgin’s shoulder, and found himself sailing out into the Square.

The leader of the ceremony came forward holding the artifact, and now Elgin could see that it was the double comet icon, the symbol of the Francesians’ faith. Before he could speak, he was sailing after the other one, and Elgin was back to ripping. They could see his face now and it scared them. Some of them flew away and some sought refuge inside. Elgin ignored them and continued removing the decorations, the symbols of the forces that took his beloved away from him. Soon the Square was littered with tacky fragments curling and drifting away, and Elgin headed inside.

There were half a dozen people in there, most of them shrinking away from him and his terrible face. One brave one stood fast, protecting their things, and he was soon out the doorway and tumbling away. When Elgin turned on the others, they couldn’t get out of there quickly enough, and he was alone.

While the rage was upon him, he stormed about the apartment finding and rooting out every vestige of the Francesians’ presence. Once he was satisfied with that, he stopped and let himself calm down. Now that he could think again, his first thought was of Fran, and what she would think of this. Would it make her proud, or would she be disappointed in him? That thought filled his mind as his mad energy drained away.

When a pack of guards came for him, they found him sleeping peacefully on the bed he once shared with Fran. As they were taking him to the Hibernarium, the Commander told him, “All you had to do was help her bring Cloud City to heel.”

30.

RUDELY AWAKENED

Elgin saw the gray light, and he knew they must be waking him up. It was hard, in this plain white place, to measure time. Especially alone. And that was the point, he thought. To be forced to spend time alone in hibernation. To contemplate life without her. Without Frances. To wonder what was happening to her while he wasn't there to defend her.

Not knowing how long he was down here was more than an inconvenience. It was frustrating to the point of pain. Not knowing magnified his pain like a lens on sunlight. He was anxious to get up there, to see her and find out how she was. But he was also afraid. What had they done to her while he was gone? Was she still in that ghastly prison? Was she even alive? If he'd had a physical body, his jaw would have been bulging as he ground his teeth.

~

The gray light ended with a blink of blankness, and was replaced by silent explosions of color and light. His other senses also began to stir as they were reactivated. Bursts of sound and smell and taste. And disorienting twitches of touch, unable to tell where on or in his body they were. And then the vertigo. His body, desperate to locate itself in space, assaulted his mind with impossible positions.

But something was wrong. The vertigo and disorientation were worse than usual. Much worse. Not since the early days, before they learned how to do it better, was reanimation this bad. Elgin let out a

voiceless groan. This must be another punishment. Another way for the Francesians to demonstrate their power over him.

Well, Elgin knew how to deal with that. Don't let them get away with it. Don't let them see that it's working. Don't give them the satisfaction. He pulled himself in to his hard core. Thinking of Frances, he bore these indignities and prepared to face down his tormenters, and wondered yet again if they could have handled their homecoming better.

31.

ELGIN WAKES UP AGAIN

“Elgin?”

The voice. Flaring in the midst of the sensory chaos was a voice. It was familiar. Could it be? “Rannie?” he said. Or he would have if his voice wasn’t a croaking gargle.

“It’s no use,” said the voice. “He’s not ready yet.”

Another voice spoke, but not in any language that Elgin understood.

“I know you’re in a hurry,” the first voice said, “but it takes time for the senses to come back together.”

The other voice spoke shortly.

“I know what you want,” said the first voice. “You’ve made that very clear. I’m just telling you that you can’t always get what you want.”

The other voice spoke loudly and Elgin’s already chaotic world shattered completely, and he sank into blankness.

~

“Elgin?”

He woke up and opened his eyes, which he immediately slammed shut again. He felt as if the vertigo was going to whirl him right out of bed, and he hung on with desperate strength. But the rest of him was okay. He could separately identify all of his other senses, and if things progressed normally, the vertigo would settle down in a few hours, especially if he could spend some time on a bike. But the important

thing was, he recognized the voice now. Without opening his eyes, he croaked, “Stanton?”

“Yes,” said Stanton.

“Fran?” asked Elgin. He vigorously cleared his throat and repeated it. “Fran?”

“No,” said Stanton.

“Oh,” said Elgin, sinking back.

“Stay with me,” said Stanton, putting his hand lightly on Elgin’s shoulder. “You’re needed here.”

“Here?” asked Elgin, flinching at the shower of sensations triggered by Stanton’s hand.

“Under ground,” said Stanton.

“The Underground? So Snowy was right,” said Elgin.

“Yes,” said Stanton. “And literally under ground. Speaking of Snowden, he and Norton are down here too. They can’t wait to talk to you.”

“They’re here?” asked Elgin. “But they were put in hibernation. And so were you.” Elgin’s heart sank. “Are we still there?”

“You tell me,” said Stanton. “When have you ever felt like this in hibernation?”

Noting how bad he felt, Elgin’s spirits rose again. “So we’re really out?”

“Yes,” said Stanton. “All of us.” Seeing hope and confusion in Elgin’s face, he corrected that. “Except Fran,” he said. “She’s too well guarded, so she’s going to have to wait.”

Elgin was tripping over his own thoughts. “Everyone? Buzzard? The Doctor?” His mind jumped. “Wait? Wait for what?”

“Yes,” said Stanton. “Buzzard and the Doctor. And Nigel and Maria. And Gay. We’re all here.”

Elgin grinned, then it went out like a light. "Except Fran," he said.

"Yes," said Stanton sadly. But he brightened up when he said, "But the whole crew is here."

"All of them?" asked Elgin. "How?"

"That's a long story," said Stanton. "There will be time to tell it over the next few days." He saw Elgin crack a huge yawn. "For now, you need to get a little more rest." He shook his head when he saw his friend struggle against sleep. "Get some sleep."

"But I want to know," said Elgin, his eyes heavy. "I want to know what's happening. How you did it."

"Later," said Stanton. "I'll tell you this for now, though. It all began with the Singer."

"Singer?" asked Elgin as he dropped off.

~

The corridor was dim with night lighting. In the distance, far beyond where it curved out of sight, he could hear the faint sound of someone singing. He realized he was flying in that direction, even though he wasn't using his wings. Didn't have wings. He couldn't feel his wings. Panicking, he twisted his head to look, and there he saw a wing top behind his shoulder. Relieved, he flexed the wing, reassuring himself that it was still there and still working. Then he realized that he couldn't hear the singing any more, and snapped his head back to the front.

Something was there. Just coming up over the curve was something made of ice. His heart squeezed when he saw that it looked like an oblong box. Like Fran's sarcophagus. Her display case. His breath shallow in a tight throat, he hurried forward. There was a body in the box. A woman. He clutched at the case, his hands slipping on the ice

as if they had no setae, and pulled his face close. He could see her face. Her dark hair. The eyes opened — black marbles with red lights. The lips split in a leering grin.

Elgin was snatched from sleep, lurching upright in his bed. There were people there with him, but they were obscured by the remnants of the dream. He sat, trying to blink the images away.

“Elgin?” It was Stanton’s voice. “Are you all right?”

He slowed his breathing, and felt his heart begin to slow as well. His vision cleared and he could see his friend standing by his bed. “Yes,” he said. “I’m okay. It was just a dream.”

“Good,” said Stanton, “because we have some work to do.” He held up an apparatus that resembled the bikes they used for exercise when coming out of hibernation. “Not the real thing,” he said, “but sometimes we have to make do down here.” He took Elgin by the arm. “Come on. You get started and we can talk while you work.”

Elgin was struck by a rush of dizziness, and he closed his eyes. But he reached out for the bike and fitted it to his hands and feet, and started the isometric routine. “It was awful,” he said. “It was Fran’s coffin, but it was the Big F in it.”

“That does sound awful,” said Stanton. He laughed. “I bet the Doctor would have something to say about that, eh?”

Elgin laughed too, but it set off his vestibular system, so he stopped. “Where is he?” he asked. “The Doctor. You said he’s out, so why isn’t he here?” The dizziness passed quickly, so he was able to hold Stanton’s eye, pushing and pulling on the bike.

“He’s busy,” said Stanton, looking at Elgin’s vital signs. “We have a lot of work to do down here.”

“So you said,” said Elgin. “Where exactly is here, anyway?”

“Inside Green Comet,” said Stanton. “Come on. Step it up. You want to get the blood pumping.”

Elgin increased his pace. “I got that,” he said. “But where?”

“That’s good. Keep going like that.” Stanton took his eye off the instruments and looked at Elgin. He said, “Do you remember the network of cracks and fissures we mapped out? The ones you used to get Fran to the Hibernarium after the Scout attack.”

“Sure. We followed fluorescent markers.”

“That’s right,” said Stanton. “We’re using them to conduct our business.”

“But everyone knows about those. The Francesians must have them all mapped out.”

“They know about some of them, and that’s just what we want,” said Stanton. “That’s where the Singer comes in.”

“The Singer again,” said Elgin. “What’s she ...”

A man appeared behind Stanton’s shoulder and Elgin broke stride. “Keep pedaling,” said Stanton. “Never mind him.”

The man spoke, short and peremptory. Elgin recognized the words, but he still didn’t understand what was being said.

“I told you I’d let you know when he’s ready,” said Stanton, putting himself between the man and Elgin.

The man pushed past him and thrust a piece of permapaper at Elgin, saying, “Yes-no?”

Elgin couldn’t take the paper without letting go of the bike, and Stanton said, “Keep working,” so he didn’t.

The man pushed closer and snapped the paper open right in front of his face, and repeated, “Yes-no?”

Elgin tried to read the paper but the words swam in front of his eyes, so he closed them and looked away. The man grabbed his jaw

and tried to make him look, but Stanton barked, "Leave him alone!" and pulled him away. "I told you I'd let you know when it's time," he said, and pushed the man right out of the room.

He turned back to Elgin's quizzical look and said, "Step it up. We'll never get there if you keep dawdling."

Elgin ramped it up again. Then he asked, "What was that about?"

Stanton looked at him, assessing, then nodded. "You might not be quite ready to go to work yet, but I think you're ready to hear about it." He instinctively lowered his voice. "We're planning an assault. We're going to take back Green Comet."

"Good," said Elgin. "How? Just Green Comet?" He was pedaling faster.

"I mean Green Comet in the sense of the whole hexamer," said Stanton. "As for how, that's kind of why you're here."

"Me? Why? I don't know how to plan a war."

"No," said Stanton, "but you'd know when a plan is right."

Elgin slowed down. "You've got a plan? Where is it? Let me have a look at it."

"You just did."

Elgin glanced at the door, slowing even more. "You mean that man who was just here? That paper was the plan?"

"Pick it up," said Stanton, then watched until Elgin got back up to speed. "Yes, that was the plan. How did it look?"

"I don't know," said Elgin. "I couldn't focus on it."

"Of course you couldn't," said Stanton. "I told them that, but we have a bit of a communication problem."

"Is it because of his speech impediment?"

"Speech impediment?" asked Stanton. Then he laughed. "No," he

said. "That wasn't a speech impediment. That's just the way they talk to us."

"They? What do you mean?"

"The hypersynesthetes," said Stanton. "Remember how we heard about a younger cohort that had more and better developed synesthesia?"

"Yes," said Elgin, pedaling steadily now. "We speculated about what might happen, but decided they were pretty normal."

"That's right," said Stanton. "I remember we wondered how they would think of us, given that their brains would be processing many more sensations than ours. Well, now we know." He looked out the door, where he'd pushed the intruder and sent him away. He looked back at Elgin. "They tolerate us," he said. "At best, they're condescending."

"Are they?" Elgin pedaled a little harder. "They think they're better than us, do they?"

"No," said Stanton. "It's not something they think about. It's just the way things are."

"Are you saying they are better than us?"

"It's not a matter of better or worse," said Stanton. "They're certainly different. And they think at a level, and in concepts, that we can only imagine."

"And that gives them the right to condescend?"

"It's not like that, Elgin. They don't lord it over us or anything. We're all treated as equals. It's just that when they talk to us they have to slow down. Almost as if you were talking to a baby."

"That was baby talk? 'Yes-no? Yes-no?'"

"Yes. If he'd tried to use their language, you wouldn't have understood a thing."

“They have a different language? Completely different?”

“Not completely different,” said Stanton. “They still use many of the same words, and some of the syntax, but it comes out as a different language.”

“Then why can’t they use that language and we could use a translator for it?”

“Their language, as they use it among themselves, seems richer than the words they use. Or more distilled.” Stanton made a face. “Okay,” he said. “Here’s how Nigel described it after he tried to do just that. Use a translator. He said their language has about ten times the idea density of ours.”

“Idea density,” said Elgin. “That’s an interesting concept.”

“I think Nigel made that up,” said Stanton.

Elgin looked over Stanton’s shoulder. “Well, look who’s here,” he said. “We were just talking about you.”

Nigel came in, followed by the Doctor. “All good I hope,” he said.

“Stanton was just telling me about your idea density, uh, idea.”

“Oh, that’s not mine,” said Nigel. “The Doctor came up with that.”

“Now, that’s not entirely true,” said the Doctor. “Nigel was explaining it to me and I just helped him find the right words.”

“The right words for what? Right words.” Now Buzzard was coming in, along with Maria and Galatea, and there was another round of explaining what they were talking about.

Galatea said, “Fighting over who’s the most modest again, eh?”

Stanton frowned at her, but everyone else laughed, including Nigel and the Doctor. Nigel said, “Right on the mark as always.”

Elgin was still pedaling, but he started to slow down, looking at Stanton. “Is that enough for now?” he asked.

“Oh, yes, sure,” said Stanton. “We can do more later. How do you feel?”

“Pretty good,” said Elgin, “as long as I don’t move my head too fast.”

“Yes,” said the Doctor. “The vestibular system. Primitive and powerful.”

“Harrumph!” All heads swiveled to the doorway and there was Winston, his big, wide mouth spread in a smile. Beside him was Minder.

“Minder!” said Elgin, reaching his hand out to his one-time minder. “And Winston. I wasn’t sure I’d ever see you again. How have you been? What happened?”

They came in for hugs and handshakes, and everyone was milling around him in a dull roar of conversation when Elgin’s world began to spin. Minder and Stanton noticed simultaneously, and his two minders got him into bed and cleared the room. He wasn’t quite ready yet.

“You rest,” said Stanton, giving him a little chemical help. “We’ll talk more when you wake up. I’ll tell you all about the plan. All about everything.”

Elgin, eyes closed tightly, murmured, “Everything,” as he floated away.

32.

THAT'S WHAT FRIENDS ARE FOR

This time when he woke up, Elgin was almost back to normal. He sat up and reached for the bike beside the bed. While he was fitting himself into it, Stanton came into the room accompanied by Buzzard.

"Up and at 'em, I see," said Stanton. "How do you feel?"

"I feel good," said Elgin, pumping away. "Where's that guy? I want to see the plan."

Stanton laughed. "You are feeling better," he said. "That guy's name is Rama, and I've arranged to meet with him later. That was depending on how you felt, but I guess that's no longer an issue."

"Nope," said Elgin, pumping hard. "Why can't we see him now?"

"What's the rush?" asked Stanton. "A couple of hours won't make much difference, will it?"

"The longer we wait, the longer they keep Fran in that box."

"Ah," said Stanton, "of course. But Elgin, she's not going to notice, is she? At twenty years to the minute, a few hours here won't even register."

"Maybe not for her," said Elgin, his breath beginning to labor, "but for me it will. And besides, the longer they have her, the longer they have to hurt her." He didn't know it, but his face was changing.

"Right," said Stanton. "Okay. I understand. But the meeting is planned. All their lead strategists will be there. Our people will be there. Everyone's making preparations."

"So tell them to come early. Let's get this over with so we can get going."

“That’s not going to happen, Elgin. This is the most important meeting of the whole campaign. They’re not going to change everything because you’re suddenly getting impatient.”

Elgin glowered and pedaled. “They’re as bad as the Francesians,” he grumbled.

“I don’t think you believe that,” said Stanton. When Elgin just kept scowling and pedaling, he added, “Besides, I want to fill you in on everything. Get you up to speed before we go in there.” More sullen frowns, but the face was softening. “Good,” said Stanton. “The first thing you should know is that Buzzard has already seen the plan.”

Elgin’s head came up. “You’ve seen it? What did you think?”

“Seen it,” said Buzzard. “Yes. Seen the plan.”

“Well, what about it?” asked Elgin. “Is it any good?”

“Yes,” said Buzzard, with a slight hesitation. “All ten. All good.”

“Then what’s the problem? Why haven’t they started?” His pedaling was slacking off. “If you’ve gone through it ten times, then what are they waiting for?”

“Not the same,” said Buzzard, glancing uncertainly at Stanton. “Not the same as an engineering paper. Not the same.”

“Why? What’s so hard about it?” Elgin’s scowl was coming back, along with his impatience.

“Not hard,” said Buzzard. “Not hard. It’s not hard.” Now he was looking at Stanton with hurt and pleading on his face.

“Elgin!” Stanton said, his voice admonishing.

“What?” snapped Elgin, his eyes hot.

Stanton tipped his head toward Buzzard. “Take it easy,” he said.

Elgin looked, his eyes still hot, then his face fell. He slowed his pedaling and spoke as he stopped. “I’m sorry, Buzzard. I ...” He couldn’t look at him.

Buzzard said, "It's okay. Okay."

"No, it's not okay," said Elgin. "You're my friend and you didn't deserve me acting like that." He looked into his friend's big worried face, and he could tell that Buzzard was worried for him now, rather than himself. "I'm sorry," he said again. "I didn't mean to hurt you. I'm just ..." His throat closed up on him.

"I'm not hurt," said Buzzard. "You're my friend. Not hurt."

Elgin was about to speak when Stanton said, "I think what Buzzard's trying to say is that sometimes that's what friends are for." He looked at Buzzard, who nodded vigorously, his head bobbing emphatically on his long neck.

Buzzard said, "Friends, Elgin. Not hurt. Friends." He tipped his head. "You're just worried about Frances. Worried."

Tears pricked Elgin's eyes and his throat clenched painfully. He nodded and said, "Yes," a hoarse whisper the best he could do.

Stanton patted him on the shoulder, and Buzzard fidgeted, not knowing what to do with his hands. Brushing tears from his eyes, Elgin went back to pedaling. It just felt good to have something to do.

"Hard at work I see," came a voice from the doorway. There were two people there waiting to be invited in.

"Norton," said Stanton. "And Lord Snowden. Come in. We were just about to let Elgin know what he's getting into."

"I asked you to call me Snowy," said Snowden. "Or at least Snowden. I think we've worked together long enough to drop the formalities."

Norton said, "It's good to see you up and about, Elgin." Then he noticed his eyes and sensed the mood. "Are we interrupting something?" he asked, stopping just inside.

Elgin looked away, pedaling, and Buzzard clasped his hands to-

gether to settle them down. Stanton said, “Not at all. Come in. We’re just trying to get the electrolytes balanced.”

“Ah, the electrolytes,” said Norton, nodding. “They can be tricky, can’t they?”

“Yes,” said Stanton, “especially if you haven’t got the hormones just right.” They discussed the intricacies of being a minder while Elgin and Buzzard regained their equilibrium.

~

“You were working for the Underground?” Elgin stared at Snowden, who was standing there in his ratty vest, grinning at him. “The whole time?”

“Yes,” said Snowden. “Working undercover for the Underground.” He winked.

“I just thought you were this crazy old guy in a vest,” said Elgin.

Snowden looked left and right. “Not so loud,” he hissed. He grinned while everyone laughed.

“What a great disguise,” said Elgin.

While Snowden preened, Norton said, “Who said it was a disguise? He always acts that way.”

Snowden shook his finger at him, but laughed along with everyone else. “Actually,” he said, “it’s a perfect disguise. Nobody pays any attention to the crazy guy.” He pointed at Norton. “He had the hard job. He had to pretend he believed in what the Francesians were doing.”

Elgin gave Norton an appraising look. “That would be hard,” he said. His eyes widened. “I got you guys thrown in hibernation,” he said. “My blundering around took you from your important work.”

They shook their heads and Norton said, “Don’t worry about it. It was just about time to pull us in anyway.”

“Pull you in?”

“Yes. There are ways to get here other than through hibernation.” He pointed his thumb at Snowden. “He was back and forth all the time.”

Realization lighted Elgin’s face. Nodding, he said, “When you were supposedly hiding, you were actually coming here.”

“That’s right,” said Snowden. “I had to report on your arrival. And on your attitude.”

“My attitude?”

“That’s right. You. Frances. The whole crew. We needed to know whether you’d be a problem, or a possible asset.”

“I see,” said Elgin. He looked around, reassessing everything. “Then you ended up bringing all of us here, so I guess we all passed.”

“With flying colors,” said Snowden. “It didn’t take long before it was obvious that none of you were ever going to sympathize with the Francesians.”

“Not much chance of that,” said Elgin, remembering the Big F and her little brother, Verdi, and the things they’d done. “By the way,” he said, “how do you get people out of hibernation?”

Snowden grinned again. “Good question,” he said. “We have a hidden entrance in the Hibernarium, and we get there in our system of hidden passages.”

“But you didn’t wake me up there. You woke me up here.”

“That’s right. We swapped out your cell with a dummy cell that shows fake readings. Then we brought you here to wake you up.”

Elgin shook his head. “That sounds dangerous. You’re doing it right under their noses.”

Snowden snorted. "It's not that bad. Their security is lousy and the guards are lazy." He pulled his vest askew and got a wild look in his eyes. "Sometimes I would create a diversion. Like one of my rants. Or maybe a paranoid delusion." He straightened his vest and laughed.

Norton said, "As you know, he's very convincing."

Elgin nodded, and then he frowned. "This all makes sense," he said. "You have this place where you can bring people when you rescue them. But what about the first time? How did you do it before there was anyone here? Or even a here to come to?"

Norton smiled and said, "You ask good questions, don't you?" He glanced over at Stanton and Buzzard. "I guess it's okay to tell you. I don't see why not."

"Tell me what?" asked Elgin.

"About the Singer," said Norton. "This all began with the Singer. She's the one who rescued the first one."

"Stanton said something about that," said Elgin.

Stanton heard his name and came over, Buzzard close behind. "Someone taking my name in vain?" he asked.

"No," said Elgin. "Norton was just telling me about the Singer, and I mentioned that you'd said something."

"I see," said Stanton. He looked at Norton. "You go ahead," he said. "You know more about it than I do."

~

As Norton told it, the legend of the Singer grew over the long years, with always a few people hearing her but no one ever seeing her. When Elgin said he'd heard her once late at night, with Fran and Stanton, Norton was envious. Until he met her here, he had never been so lucky. Like most people, he'd had to make do with rumors and second-hand

reports from those who claimed to hear her haunting, far-away voice echoing down an orbital.

The claims weren't always true. Sometimes people would say they'd heard her just for the momentary notoriety it gave them. Others honestly believed they had heard her when they hadn't. Either they imagined it through psychosis or wishful thinking, or they thought they heard a voice amongst the white noise and susurrations in the big whispering gallery. There were times when they did hear singing, but it was one of the many practical jokers who imitated her to fool their friends. All the false reports confounded the evidence and made it much more difficult to track her down.

"We were worried about that," said Elgin. "We thought it was just a matter of time."

"That worried you?" asked Norton.

"Yes," said Elgin. "We decided we preferred the mystery."

"You and most other people," said Norton. "It got so the searchers weren't very popular, which also delayed discovery."

It continued to be a harmless game of hide and seek, and her legend continued to grow. But that's all it was and all it would have been if the Francesians had been able to restrain themselves. If they had been satisfied with a reasonable level of influence in the affairs of the comet, she wouldn't have done anything. But they weren't. They wanted control, and when they had it they wanted to make use of it. What's the good of power if you don't exert it?

When they divided the hexamer up into principalities and allowed them to degenerate into feudalistic enclaves, the Singer had to respond. For one thing, it interfered with her freedom of movement. Then the Francesians began persecuting people and condemning them to the Hibernarium. It was when they started to experiment on the hyper-

synesthetes, trying to reverse their evolution and make them conform, that she decided to act. That's when she rescued her first sleeper.

"Who was it?"

"No one you'd know." Norton scowled. "Unfortunately it was too late for him. The brain damage was irreversible."

"Are you sure?" asked Elgin. "Maybe the Doctor should take a look at him."

"He already has," said Norton. "It's hopeless. You can see for yourself when you meet him later."

"He's here?"

"Yes. Everyone she's rescued is here."

Her many years of singing and hiding gave her intimate knowledge of the comets. She knew every nook and forgotten passageway on them. That wasn't enough, though. She knew that she and her rescues couldn't remain hidden forever if there was ever a serious search. Fortunately she was also familiar with the rest of Green Comet too. That part that hadn't been constructed by people. The intricate system of natural cracks and fissures within the comet.

She began with the one that everyone knew about. She first explored the route taken by Elgin and the Doctor when they took Fran from the outpost to the Hibernarium, after she was seriously injured by the Scout's radar. It was a simple matter of following the route from one splash of fluorescent paint to the next.

From there she branched out and established a complex network of passages connecting many scattered galleries acting as nodes in the network. As she rescued people, her workforce grew and the Underground gradually became established. Now it functioned as a self-contained community independent of the one above ground.

Elgin was snagged by one apparent inconsistency. He said, "You

called it 'her workforce.' Aren't the hypers, as you call them, contemptuous of us normals? Or have I misread that?"

"No you haven't misread it, but it's not that bad. They don't really despise us, although there is a kind of unquestioned sense of superiority." Norton shrugged. "It's completely justified, though. They do think in breadths and depths that we can only imagine."

"That's what I mean," said Elgin. "Given that, how can they imagine working for a mere normal like her?"

Norton chuckled. "That's one of the mysteries that make it all worthwhile. In spite of everything, they still look up to her. Maybe it's some kind of gratitude for rescuing them. Maybe it's spillover from her legend as the Singer. Or maybe it's something in her that just commands respect. Whatever it is, they all defer to her." He raised his eyebrows at Elgin and smiled broadly. He said, "They call her Mother."

33.

THE RIGHT THING TO DO

The main gallery was large. Like Elgin's recovery room, it was irregularly shaped. There wasn't a right angle anywhere. For the most part, they'd taken it just as it came and sealed it off to keep the air in. Not even the floor was flat. Since they flew and it was microgravity anyway, they didn't need something level to stand on.

There were over a hundred people there, including what looked like the entire crew of the Ball. They were standing, or hovering, in a group on the other side of the room, and they burst into cheering when he appeared. After a momentary startle, he crossed the room to see them, accompanied by his friends. It was a hearty reunion. They seemed exceptionally glad to see him, and he asked Stanton why.

"They were worried, Elgin. They heard what happened to Fran, and they didn't know what would happen to you."

"That's nice," said Elgin, distracted. He'd just realized that the crew, which he'd been thinking of as lost, was actually down here the whole time, waiting. "I really appreciate their concern, but why would it matter particularly what happened to me?"

"You're special, of course," said Stanton. "You and Fran. And besides, they knew that we weren't going to start until you got here."

"Start what?"

"The revolution, of course. They weren't going to do anything until you saw the plan and said whether it was right or not."

Elgin nodded because that made sense. Everyone knew about his ability to tell when something was right, so it was logical that they'd

wait for him before starting. Then he shook his head and asked, “But couldn’t they just go ahead without them? The hypers I mean. Why do they need our crew?”

Stanton’s mouth twisted. “No they couldn’t,” he said.

“Why not? Aren’t there enough of them for whatever it is that they want to do?”

“That’s not it. There are enough of them. They just don’t want to take the risk.”

Elgin was baffled. “Isn’t the risk the same for everyone?”

“Yes,” said Stanton, his mouth severely pulled down, “but not everyone is as important.”

“Not as important?” Elgin couldn’t process it. “Everyone’s just as important.” He started to get angry. “Who do they ...”

Stanton held up his hands. “Don’t get started,” he said, “or you might get me started.”

“But ...”

“I know,” said Stanton. “It’s not right.” He looked around and saw the people he knew. Remembered the things they’d gone through together. Important things. Things that had saved Green Comet in some cases. These people were important, and not only to him. But he also knew the hypersynesthetes, and he knew that they were very important. The changes in their brains due to the synergies of their burgeoning synesthesias made them different. When he thought about it, he thought that they were almost a new species, and if not, then at least they were a big step in the evolution of this one. So while no one was more or less important than anyone else, the hypersynesthetes were important as a phenomenon, and worth protecting. Even if it meant that the rest of them would face increased risk to do so. “It’s not right,” he repeated, “but it’s the right thing to do.”

Elgin was prevented from replying by the arrival of someone he recognized. It was the man who'd come to his room earlier and stuck a piece of permapaper in his face. The plan. He didn't have the paper this time, but he came right up to Elgin. He said, "Up. Good?"

Elgin looked at Stanton for help and Stanton said, "He's glad to see that you're up and about, and he wants to know how you're feeling."

"You could tell all that?"

"Sort of," said Stanton. "I'm getting so I can read their auras a little bit, and some I could infer from context. A lot of it is still guesswork though." He glanced at the man, who was waiting patiently. "The one who can really understand them is Buzzard. He took to it right away."

Buzzard heard his name and came over. He nodded at the man, who nodded back and looked at Elgin. Buzzard turned to Elgin and said, "Rama wants to apologize for earlier. Too impatient. Impatient." He looked at Rama and back again. "So he apologizes and says whenever you're ready you can look at the plan. When you're ready. The plan."

Elgin looked at Buzzard and at Rama. First the hypersynesthete used a look to say something to Buzzard, then Buzzard used many words to interpret it. More words than normal for him. Elgin laughed and asked, "You got all that from a look?"

Buzzard nodded enthusiastically, then shook his head. Then nodded. Then tried to shake and nod at the same time. Finally he hunched his shoulders and clamped his jaw, and his head stopped moving. "Yes and no," he said. "Yes and no. I understand them, but Rama asked me before to apologize. Before."

"I get it," said Elgin. He thought for a moment, then said, "Do you think you're like them? I mean, since you understand them so well, do you think you're a hypersynesthete? Born before your time maybe?"

“Maybe,” said Buzzard. “Maybe. Always different.” His face got pensive as he remembered growing up.

“You never fitted in, even with other synesthetes, did you?”

Buzzard shook his head, looking sad, then his face split in a great big grin. “Until Stanton,” he said. “Boss Stanton. And Frances. And you.” He nodded with certainty. “Elgin knows,” he said. “And Frances.” But his eyes were on Stanton.

Now Elgin shook his head. “If only you hadn’t been alone,” he said. “If only your father had known.”

Buzzard shrugged. “Then maybe it would have been all right, and maybe I wouldn’t have gone on Green Comet. Wouldn’t have gone.”

Elgin nodded. “Maybe you’d have been happy, but then we’d never have met.” His eyes went far away as he contemplated the contingencies that brought them all together. Then he looked at Buzzard and at Rama. “Do you think you’ll ever become enough like them to fit in? They might really understand you.”

“I fit in here. With you,” said Buzzard. “Fit in with you.”

“Of course you do,” said Elgin. “It’s just ...”

Rama chose that moment to join in. He and Buzzard shared a look which must have meant something to them because they both turned to Elgin. Rama stopped in front of him and said, “Rama.” Elgin thought he could see a little smile there, so he smiled back and returned the greeting by saying his name. Rama kept smiling, but he turned to look at Buzzard for help.

Buzzard said, “There was a little more to it than that, Elgin. A little more.” He thought about it, then said, “Rama got what you were saying, but he knows you didn’t get him.”

“Get him?” asked Elgin. “I thought we were just exchanging names.”

“I know,” said Buzzard. “It took me a while to get it too.”

“Well, I still don’t get it. All I said was my name, and I didn’t mean anything by it. He said his name and I said my name, and that’s all.”

“Are you sure? Sure?”

Elgin stopped and thought about it and realized that there was more to it. He had seen Rama smile. He’d noted it at the time and had smiled back. But that wasn’t all. He’d also noted the posture. The way the limbs were held. The tilt of the head. And he’d heard the voice. The inflections. The lack of tremor. All of this and more he’d picked up and turned into Rama’s aura, and he’d done it completely automatically. “No,” he said to Buzzard, “you’re right. There was a lot more. But it was only feelings. Shadings. All it did was add nuance to the meaning. There wasn’t any more actual information. Still just his name.”

“That’s right,” said Buzzard. “For you. For you that’s right.”

“But for him there’s more?”

“Yes. I can’t get it all yet. Can’t get it. But I know that he could tell that you were saying that you didn’t like him.” When Elgin began to protest, Buzzard gave him a look and he dropped it. He couldn’t deny it. “And you don’t like all of them. Any of them. You don’t like the hypers.”

“That’s going too far,” said Elgin. “How can I dislike them all when I’ve only met this one? I just woke up. I haven’t had time to learn to dislike them all.” He crossed his arms.

“It’s true though,” said Buzzard. True enough that he didn’t bother to say any more about it. “He also knows that you care more about saving Fran than you do about their plan.”

“Oh, does he?” said Elgin. “How is he supposed to know that? I haven’t even seen his precious plan.”

Buzzard looked abashed and Stanton said sharply, “Elgin! Get a grip.”

Elgin had already done that. He said, “Sorry Buzzard.” Then he turned to look at Rama. He caught the face changing from the neutral expression of an impartial observer back to the small smile he’d seen before. He said, “I apologize for my rudeness, Rama. It’s not a very good way to start out.”

Rama continued smiling and shook his head, but he didn’t say anything, so Elgin took a good long look at his aura. It was good. Calm. He didn’t see anything to indicate that the man was upset with him, nor did he see any sign of deceit. Now that he was looking at it closely though, he could see that it was different from the ones he was used to. Subtly different. Of course, all auras are different, and each person’s aura changes over time, but Rama’s aura was different from all of them. His had the colors they had, and the shapes and varying intensities that they exhibited. There were even parts that had Fran’s clear light, the first time he’d seen that in anyone else. Rama’s aura was different in that it had all these pieces combined in a subtle complexity that went beyond what Elgin had come to accept as normal. The glimpses he was getting of these complexities were fleeting, though. More like hints and promises that slipped away as soon as he tried to focus on them. He stopped trying and said, “Does smiling and shaking your head mean apology accepted?”

Rama nodded his head, still smiling, but the smile changed slightly and so did the aura.

Elgin could tell that he was only half right, and Buzzard could see that, so he interpreted for his friend. “He’s saying that he accepts your apology, but also that it’s not necessary. Not necessary.”

“You could tell that from his aura? He didn’t even say anything.”

“I’ve had practice,” said Buzzard. “But I still can’t see everything.”

Elgin asked Rama, “Is that why you can communicate with so few words?”

Rama nodded, but there was a slight darkening of his aura. It lasted less than a second.

“Do you mean I’m partly right?”

Rama’s smile broadened and he gave a small, sharp nod. “More. Less,” he said.

“More or less?” asked Elgin.

Rama shook his head and looked to Buzzard for help.

“He means more and less,” said Buzzard, looking apologetic.

“You’ll have to explain,” said Elgin.

“Okay,” said Buzzard. “He means he can see more in your aura than we can. More. But our auras have less in them than theirs do. Less. But he can see enough to know that you don’t need to apologize. He can see.”

“So they can tell what we mean just by looking?”

“Not quite,” said Buzzard. “They can never understand us as well as they can each other, because our auras are simpler. They don’t say as much as theirs do.”

“I can see that,” said Elgin. “I can see that his aura is more complex. And more subtle.”

“More and less,” said Buzzard. “More and less. Also their auras show more than we can see. We can see less than there is. Less.” He looked at Elgin to see if he understood.

He did. He mused out loud. “So, our auras are simpler than theirs, and they can see more in them than we can. And their auras are more subtle and complex, but we can see less in them than they can.” He looked at Rama, realization blooming. “We’ll never be able to

communicate fully, will we?” And something else. “Do they think of us as, what, primitive throwbacks?”

“No!” Rama startled them. His smile was gone and he was frowning. His aura was very dark. “No!” he repeated.

Stanton took over for Buzzard, who was getting nervous and uncomfortable. “No, Elgin,” he said. “They might have good reason to look down on us like that, but they don’t. They honor us. They even seem to cherish us.” He smiled wryly. “They’re impressed that we have accomplished so much in spite of our limitations.”

“In spite of our limitations?” said Elgin. “This is honoring us?”

“I know how it sounds,” said Stanton. “Even they know how it sounds. But it’s sincere.”

Elgin frowned in thought, and it deepened into a scowl as he worked through it. Then he thought of what he must look like to Rama, straining to understand, and his brow smoothed. He tried to look casual and unconcerned, but that just made him feel self-conscious. Finally he mentally threw up his hands and said, “That’s going to take some thought.” He realized that Rama had probably followed his whole thought process in his aura, and he felt the heat rising in his cheeks.

“Never mind,” said Stanton. “We’ve all been there.”

That didn’t help much, but it did help a little. Elgin shared Stanton’s wry smile. “Always one more thing, eh?” he said, and they both nodded with the wisdom of long experience. He looked at Rama, matched his smile and said, “Let’s have a look at that plan.”

34.

THE SINGER

The plan was fine. Not right, just fine. There was a crimp in the lines at one place that caught Elgin's eye and wouldn't let it go. It wasn't the sort of thing that would show up in Buzzard's deep analysis because everything hung together. All the parts were good and they all fit together, but for Elgin there was that crimp. He went looking for Rama and found him in a quiet corner of the main room with two other hypersynesthetes. There didn't appear to be much going on. Not many words were being spoken and they were standing quite still, but Elgin could tell that they were deep in conversation, so he stopped and waited.

Rama caught his eye and gave him a minimal nod and smile, then went back to his discussion. The other two didn't even look at him, and Elgin briefly considered taking offence. He didn't, though. He was already getting used to it and knew by then that there was no offence intended. The question of whether they should concern themselves with unintended offences wasn't worth pursuing. Maybe when all this was over and they had time to get to know each other, maybe then they could work on the finer points of social etiquette. For now it was better to quell his sensitive feelings and take care of business.

After a very short wait they were done and Rama's two friends left, but not before giving Elgin a polite nod. He nodded back, thinking how efficient it made things when you didn't worry too much about people's feelings. More to the point, when you didn't have to. If everyone could assume that no one was getting their nose out of joint, think

of the time you could save. And now when he looked at Rama and saw the small smile, a completely different smile from the last one, he knew that Rama knew what he'd figured out. He grinned back at him and passed him the plan.

"Right?" asked Rama, but he didn't look as if he believed it.

"No," said Elgin. "Good but not right." He pointed out the crimp and explained that it didn't have the same level of redundancy as the rest of the plan. "There's no out," he said, "in case anything goes wrong."

Rama nodded, but said, "Risk."

"I know," said Elgin. "I understand risk." He could see that Rama knew that, and that he'd simply been referring to knowledge that they shared. Once again Elgin adjusted his expectations. He was learning to assume that Rama could be counted on to have thought of the nuances. "Okay," he said. "The problem is that the lack of an out threatens not only the people involved, but the whole plan."

Rama's eyes sharpened and went back to the plan. In a few seconds he looked up and even Elgin could tell that he was deeply pleased and gratified. Even grateful, he thought. The effort of rescuing Elgin and waiting for his analysis had paid off. Rama smiled and nodded and he even reached out and patted Elgin's shoulder. As Elgin was reassuring himself that it was nothing like a pat on the head, Rama said, "Stay," and flew off clutching the plan. With a great effort of willpower, he obeyed.

~

Elgin was speechless. He'd never seen anything like it. Told to stay, he'd waited, and this was why. Someone had come to see him and there she stood in front of him. He thought that she was the most

beautiful thing he'd ever seen, until he remembered Fran. So this had to be the second most beautiful thing he'd ever seen. And it was a close second. When she spoke to him he completely missed it. She didn't seem put out when she had to repeat herself.

"Elgin?" she said again, and held out her hand.

He roused himself and looked at her hand. He didn't know if he was supposed to kiss it or bow down and touch his forehead to it. After what could have been an embarrassing pause if she hadn't handled it so well, he finally closed his slack mouth and shook the proffered hand. He mumbled something.

She didn't seem bothered when he forgot to let go of her hand for far too long. She just smiled and said, "My name is Nana. You're going to be with me for the next while."

He noticed her hand and dropped it, then immediately regretted the wrong impression that would create. It was too late to take it back, so he simply said, "With you?" That didn't make him feel any more clever, but he wisely left it there.

"That's right," she said. "I'll be teaching you the songs."

"The songs?" His repartee was not improving.

"Yes," she said. "You might know me as the Singer." She looked down, obviously uncomfortable with a pretentious name.

"The Singer!" he said. "But she wasn't ... I mean, I didn't know you were ... I thought you were normal."

She smiled indulgently while the color rose all the way to Elgin's hairline. "I am," she said, "completely normal."

"But," he said, and stopped. His vision, partially blinded by the glow of glamor, was returning to normal. Now he could begin to see that her aura, though still unique, was less complex and subtle than

a hypersynesthete's. She was normal. Special but normal. "I'm sorry," he said.

"No need to be sorry," she said. "I caught you off guard, and with you so recently out of hibernation. Not to mention the Singer silliness."

"It's not silly," said Elgin. "The Singer is a legend. You're a legend. Important to people."

"Like you," she said. "You and Fran."

He was going to protest. He wanted to make the usual disclaimers about his legendary status, and how it was blown up out of proportion. How being a legend wasn't what it was cracked up to be. Then he saw her smile, and he said, "Yes. Like Fran and me." He knew how alike they were now. He said, "You have to meet Fran. I think you'd really like her. I know she'd like you."

"Yes," she said, turning her face away to look around the room. Some darkness flitted across her face and through her aura.

With her head turned, Elgin really noticed Nana's hair for the first time. It was pulled straight back and bound in a casual ponytail, and it was white. Pure white. He'd never seen anything like it. Not since leaving home and going to Green Comet, anyway. Ever since they'd discovered that hibernation rejuvenated their bodies and seemed to extend their lives almost indefinitely, no one had aged enough to turn their hair white. They were aging, though. No one was staying eternally young. At present they were mostly physiologically in their fifties or sixties. Physically they had the attributes of someone that age, including some gray hair. Stanton referred to his as shots of silver, and Galatea said it made him look distinguished. But no one had gone white like Nana.

Her hair was snow white, as was her facial fur, and on down her

neck and across her shoulders. Below that the rest of her brown fur was patterned with white. The overall effect was striking, and Elgin got the feeling that at least part of the effect she had on him — the slack-mouthed adoration he'd exhibited earlier — was due to her unique pelt. Now she turned back to him though, and he knew it was also in her face. It had such quiet, serene strength that it was the perfect setting for her cool, chalk-blue eyes. And now he noticed the lines around those eyes, and the network of fine wrinkles peeking out from behind the white fur.

His shock must have showed on his face because her sad smile showed that she knew. She said, "Yes. I'm getting old."

Elgin wanted to say no. He wanted to tell her that she looked fine, hardly old at all. He wanted to tell her a white lie, but he knew he couldn't. He couldn't insult her. He nodded and said, "After this is over you can have a nice long sleep. As long as it takes to wind it back, at least part way."

She smiled and put a soft hand on his arm. "That's what they say, too," she said. She saw the question in his eyes and said, "My children." She said it only partly ironically. She knew it was a vanity, but it was also true in the most important ways. She cared for them as if they were her children, and in a sense they were since she had delivered them from their sleeping prison. It was true enough that they called her Mother with no irony at all.

"Well then," he said, "that's what you can do."

She shook her head and glanced around to make sure they wouldn't be overheard. "I haven't told them this," she said, "but I must tell you. After all, we have much to do while we have the time."

Elgin's mind started after three different things. What had she not

told her children? What did they have to do? And what about the time? After a couple of false starts, he settled on, “What?”

Nana compressed her mouth and looked into Elgin’s face. She nodded and said, “Once you stay up too long, you start to age at an accelerating pace. I barely have enough time to teach you what you need to know. There won’t be time to do the work and get me into hibernation.”

“Of course there will,” he said. “There must be.” He spoke without thinking about it. He couldn’t accept it. It couldn’t be the end for the Singer. Not for someone so beautiful. Especially not when he’d just met her. If she died now, then Fran would never get to meet her. “Surely the Doctor can do something.”

“He already has,” she said. “I’ve asked him to speak to you, but after I spoke to you first. I know how you value his opinion.” She saw the stubborn hope in his face. “He’ll tell you the same thing.”

Elgin tried to hang onto his hope, but decided to do it privately. He nodded and asked, “What work are you talking about? What is it you need to teach me?” Maybe if he learned quickly enough they could get her into hibernation and save her life.

~

Elgin had a fine tenor voice. It surprised him. He had no idea he could sing, and it wouldn’t have occurred to him to try. This was what Nana had to teach him. He had to learn all the songs, and he had less than two weeks to do it.

They were in one of Green Comet’s many cracks and fissures, deep inside the comet. They were flying in their pressure suits, coasting at a carefully calibrated speed, while he sang the song for this segment of this route. With Nana flying silently beside him, they rounded a

familiar broken formation of snow and spotted a daub of fluorescent paint marking the entrance to another passageway. They ignored it and flew on while he sang the coda. He finished just as they came abreast of another marked opening, but they didn't go in. As they continued on to yet another daub of paint nearly hidden beside another opening, he said, "I always do that. I always finish too soon."

"You sang the coda too quickly," she said patiently.

"I know," he said, his voice trembling with frustration.

"It's because you're in a hurry, Elgin. You want to hurry up and get it done. I know why and I'm grateful, but you're not doing me any favors. This will take as long as it takes. There are no shortcuts." Her voice softened and she said as kindly as possible, "You have to get this right, Elgin. We don't have much time left." She pointed at the correct opening. "Get in there and lead us back home. When you get to the second junction, use route number one." She put her hand lightly on his shoulder. "Control your pace this time, all the way to the end."

He took a couple of deep, shaking breaths, and started out. At precisely the right moment he began to sing, his voice clear and strong. It was a new song for this route, as it was for every one. The right song sung at the right pace would get them home. Anything else would get them hopelessly lost and they would die in some anonymous hole, strangling as they ran out of air.

They would if Nana wasn't there, that is. On this practice run he could make all the mistakes there were to make, and she would get them home safely. But soon, much sooner than he liked to think about, she wouldn't be here to save him from his own foolishness. Already in the short time he'd known her he could see that she'd aged. She was right about it being accelerated. The lines on her face were deeper and more numerous. More of her fur was turning white. Her hands were

thinner and beginning to shake. And her beautiful singing voice was weakening, its range diminishing. While Elgin originally was inclined to hurry so they could get Nana to the Hibernarium in time to reverse the damage, now he realized it was so they could finish in time. He was hurrying because he was worried that he wouldn't learn all the songs well enough to take over before she was too weak to carry on.

He was holding her arm as they entered the big room. He'd managed to follow her instructions without getting them lost this time, and now they were back, another long day of training over.

"Take me to my room, Elgin," she said. Her suit's helmet was collapsed back around her neck, showing her pure white ponytail. Her chalk-blue eyes were laughing as she said, "Get me out of this pressure suit and put me to bed."

He laughed at their private joke and did as she asked. He gently removed her pressure suit and stowed it. Then he brushed her thinning fur, wanting to weep as more of it ended up in the brush. She brushed away the tears that leaked from his eyes as he put her in her bed and pulled the sheet up. He gave her what they both knew was a false smile as he turned to go, but she grabbed his wrist with her weak, bony hand.

"Stay," she said. "Stay and talk."

"Yes Nana," he said, and stuck his feet to the floor beside her bed.

"Thank you Elgin," she said, then she went quiet, looking at something far away. Certainly much farther than the walls of her room.

Elgin was happy to wait, and he waited quietly as her eyes slowly closed. Maybe she thought she wanted to talk but all she really wanted was some company while she fell asleep. When her eyes were fully shut and her breathing was slow and even, he quietly unstuck his feet and turned to go. She snatched his wrist again.

“Don’t go,” she said. She took a deep breath and gathered herself up on the bed. “I need to tell you something.” Once again she paused, but only briefly before she riveted him with her blue eyes. She said, “Your training is over, Elgin. You’re on your own now.” She released his wrist.

“No,” he said reflexively. “I’m not ready.” Even he didn’t know whether that meant ready to work on his own, or to let her go.

“Yes you are,” she said. “You know all the songs, and you know all the routes. You know everything you need to know.”

“But I don’t,” he said. “What about today? If you hadn’t been there, we’d have been lost.” He frowned. “I mean, I’d have been lost.”

She laughed. A sound encouraging for its hopefulness, and heart-breaking for its weakness. “I know what you mean,” she said. She patted his hand. “In these past two weeks you’ve learned everything I taught you, and you never made a mistake more than once. The one you made today, you’ll never make again. Your sense of right won’t let you.” She had to pause and catch her breath. He tried to tell her to stop and rest, but she ignored him. “That’s why I chose you to replace me. I knew your sense of right would tell you if anything was wrong. Now you know everything you need to know to lead our people where they need to go. And when visitors come, to lead them where they need to go.” She stopped, panting for air.

“That’s enough now,” he said, stroking her dear, white head.

“Yes it is,” she said. “You go now. When you see him, send Rama in.” She closed her eyes, and as he turned to leave she whispered, “You’ll be fine, Elgin.”

He nodded, and because her eyes were closed, said aloud, “Yes I will. You say it and I know it’s right.” He knew he would never forget that smile. He was looking at it as he closed the door, so he was

surprised when he turned and almost bumped into Rama and two other hypers.

One glance at him and their faces fell. They nodded at each other, then at him as they went by to enter Nana's room. Their faces and their auras held the usual politeness that was always there when they dealt with normals, but Elgin thought he saw something else. He saw compassion. And he also saw respect. As they went into the room, he realized that they were acknowledging his special relationship with Nana. With the Singer. With their Mother. And he also realized that they were going in there to be with her as she died. He hadn't known it, but his body had, and they had seen it as soon as they saw him. His impulse was to go back in and say goodbye properly, but he knew that was their place and not his. So he swallowed a hard, painful sob, and turned away.

35.

THIS WAS NANA

Elgin was leading the mourners as they took Nana's body to its final resting place. They were all in pressure suits, with him at the front, followed by Rama and one other of Nana's children carrying her, and then the rest off them stretched out behind in ones and twos and threes. Rama had told him where to go. Nana told Rama, and he told Elgin, and now they were flying there.

Elgin recalled that conversation, still impressed by how much information could be transmitted in so few words. Rama told him, in one and two word bursts, the location of what was to be her crypt, the route he needed to follow to get them there, and the songs he would need to sing to do it. He also told him what she had said about Elgin's ability to do the job. How he was ready to take over from her. She also reminded him about Elgin's character, and of his dedication to Frances. How they must do whatever they could to rescue her and bring her to safety. As much as her children loved her, she told Rama, the normals loved Frances just as much.

The similarities between the two women were not especially remarkable. In appearance they were quite different, with Fran's golden-blonde hair and golden eyes contrasting with Nana's dark brown fur and chalk-blue eyes. Fran was more extraverted, more inclined to do her work with and among people, while Nana had built her legend largely without revealing her identity. She'd only come out, partially at least, to save the hypers from the Francesians' murderous experimentation. She'd left the safety and comfort of anonymity to prevent the

wholesale destruction of her children's brains. She refused to retreat to hibernation while they needed her, and continued to devote herself to them while accelerated aging worked on her body.

That's where she was similar to Fran, who had been prepared to sacrifice herself after she was so severely injured. She wouldn't let them take her to the Hibernarium until the Scout left, and by then she was almost dead. As different as they were, these two women were the same. They gave themselves completely to the service of their people, and their people loved them unconditionally for it.

Elgin had tried to tell Nana that. In his inadequate way, he had tried to tell her how similar they were.

"You remind me of Fran," he'd said.

"Oh, I'm no Frances," she'd said, "as much as I might have tried."

"What do you mean?"

She'd laughed and said, "Everything I know about how to be, about how to act, I learned from watching her."

"You watched her?"

"I watched both of you. I watched you fall in love."

Elgin's mind went back there, to the time when he and Fran were falling in love, but he couldn't pick out who she might have been. "It seemed like everybody was watching us."

She laughed again. "They were," she said. "It was a very special time for everyone." Here she'd gripped his upper arm and held his eyes. "You have a special woman there, Elgin."

He knew that and he told her so. He also told her that she was a special woman, too. He told her that she was just as important to Green Comet as Fran was, and he knew that Fran would agree. He knew that he wasn't betraying his loyalty to her by the comparison.

She had tried to deny it because she simply couldn't think of

herself that way. She couldn't compare herself to the woman she'd adored and idolized for so long. Elgin didn't let her get away with it, though.

"It's true, Nana," he'd told her. "No matter how much you protest, it's true. In fact, when this is over and things are back to normal, I'm going to see to it that we get another statue in the Square. You can join Fran and Laika and the rest of them."

"The rest of you, you mean," she'd said. "There was a statue of you there, too."

Now it was Elgin's turn to be embarrassed. He said, "My statue was just there because of Fran's. All the rest of them did something, but all I did was be with her."

She smiled at him. It was kind of sad and kind of motherly. Something about it and something about the way she looked, with her white hair and the lines in her face, made him feel like a child. He remembered looking up from under his brow and smiling shyly.

At that moment his song ended and his mind came back to the present. After an instant's panic he saw that they were exactly where they were supposed to be, so he turned and led the cortège into the final passageway. It was a short one and twisty, and it let out into a small gallery. Small by the comet's standards, anyway. It stretched upwards, disappearing into shadows almost a hundred meters up. It continued in front of them for about fifty meters before ending abruptly in a wall of snow. In width it varied from not much more than the width of the cleft that brought them here, to as much as twenty meters where a large alcove opened up to one side. Their destination was in that alcove. Resting there, gleaming in their lights, was a box made of ice, with its lid off and leaning on it.

Rama and his partner took Nana's body and placed it gently in the

box. After carefully straightening the simple white smock and trousers she was wearing, they picked up the lid and fitted it securely over the opening. A crewman made a few quick spot welds for good measure. Lying there, with her hands resting peacefully on her abdomen, she looked as if she was asleep. You could almost imagine that she might wake up after a little rest.

After looking silently at her body for a moment, Rama turned to face the gathering. There were about fifty people there, roughly half of them hypersynesthetes and half from the crew of the Ball. That was everyone who could be spared from their preparations for revolution, and from the necessary maintenance and protection of their underground sanctuary. Rama looked at them and said, "This was Nana."

Their auras were obscured by their pressure suits so it was hard to see what people were feeling, but Elgin thought he could see a few people blinking away tears behind their faceplates. It seemed to be affecting hypers and normals equally, but Elgin couldn't be sure because he was blinking away tears of his own.

Rama said, "Mother is dead," then he bowed his head. It looked as if he might be crying too. Everyone was quiet as they assimilated the experience, and Rama's words. There were six words, and that was a long speech for them, but only fitting for the eulogy of someone so important to them. After a moment, Rama lifted his head and flew slowly out of the alcove, heading for the passageway. Everyone turned to follow him, Elgin included. He stopped at the entrance to the passageway, and Elgin stopped beside him. They hovered side by side looking back at Nana in her ice box. Elgin didn't know what Rama was thinking, but his own thoughts were a bit of a turmoil. He wanted to get back and get to work, the sooner to rescue Fran, but he was

reluctant to leave Nana while she was sleeping so peacefully there.
What if she woke up and they were all gone?

36.

THERE'S NO SONG FOR THAT

Elgin was flying too fast for the song. He was going to get lost now, and there would be no way of finding his way back. Against all his training, and against his instincts, he stopped singing. There was no point anyway, and he had to concentrate on following them.

They were up ahead, just going around that corner. He had to hurry so he wouldn't lose them. He used full thrusters on his pressure suit to get there, and full thrusters again to slow down and make the turn. He got there just in time to see them disappearing into a side passage. Once again he flew full speed to get there, nipped into the opening and hurtled along a winding passage, bouncing off the walls to make the turns.

He burst out into a large gallery, and there they were. Two oblong boxes apparently made of ice. In the more ornate one was a beautiful woman with golden fur, and in the simpler one another beautiful woman with snow-white hair. They were both lying on their backs with their eyes closed, and yet they seemed to be looking at him, their eyes wide with terror and pleading. He had to catch them and save them. He didn't know how he would save them or what he would save them from, he just knew he had to hurry and catch them.

The boxes disappeared into a crevice, the women motionless and frantic with fear. Elgin tore across the space, not slowing down until the last second. He hit the edge of the opening hard, knocking his wind out and dazing him. He darted into the passageway, his head spinning and his diaphragm seized. By the time he was able to breathe

again there were stars in his vision. He spotted the boxes before they went through another opening, this one filled with a frightening blackness.

He rushed along, the blackness getting larger, and then he flew out into the void. He panicked and back-thrust hard, coming to a stop within a few meters. Even so, he knew without looking that the comet was no longer behind him. In front of him he could see the two boxes of ice holding the two women who mattered most to him racing away on diverging paths. He couldn't tell which was which at this distance, but he could feel their terror and disappointment as they dwindled.

When he was snatched out of sleep, Elgin was sure he could hear his scream echoing in his small room.

37.

A SONG FOR GOING

It was the final meeting before deployment. Rama was giving them their final instructions, reviewing their assignments and offering encouragement. It didn't take long.

The team leaders expanded on it, particularly for the normals. They used about ten times as many words, and then some. Not that it was necessary. Not strictly, anyway. They all knew what they had to do, and they were anxious to get started. They still listened intently, though. Nobody wanted to get it wrong and be the one to blow it for everybody. This was also the last time they would all be together before going out. They wanted to feel that to its fullest.

There were three tube teams, as they were called. Their job was to take out the three tubes connecting Blue Comet to the rest of the hexamer. That would isolate the majority of the Francesians and their armed soldiers. A larger team would do the more dangerous job of landing on Blue Comet and neutralizing its big hatch. That's where the soldiers and whatever vessels they used would have to come out, once the tubes were out of commission. Once that was done, Blue Comet would be cut off.

When Blue Comet was isolated and neutralized, then came the job of ridding Green Comet of whatever Francesian soldiers and guards were on it at the time. They would have to be actively taken out because they couldn't be allowed to take the remaining inhabitants hostage. Victory would have to be swift and complete, with no possibility of entrenchment by the Francesians.

Beside Rama for the sendoff was Leonardo, another hypersynesthete. Leo was the first hyper to undergo the therapy that the Francesians were experimenting with. The therapy that they hoped to use to “re-normalize” the brains of the hypersynesthetes and make them more like everyone else. The Francesians didn’t like the way things were going. They didn’t like that they didn’t understand the hypers. They didn’t like that they seemed to be smarter than normals. Most of all, they didn’t like the way the hypersynesthetes seemed to be increasingly immune to the blandishments of Francesians. None of the tried and true indoctrination techniques seemed to have any effect on them, so the Francesians had to try to remedy that. For their own good, of course. They couldn’t allow them to suffer the painful absence of God’s grace.

The therapy hadn’t worked with Leo. Or maybe it had. He certainly wasn’t any smarter than the Francesians now. There was no way he could resist their teachings, or anything else. He would follow anyone anywhere and do what he was told, to the best of his ability. And he would do it smiling. And smiling and smiling and smiling. Everything was really simple for Leo now.

When they saw the results, the Francesians were first inclined to cover it up. They didn’t want people to see their failure, or to begin to speculate on their fallibility. Was not God’s rule supposed to be perfect? But then they realized the propaganda value of it. It could be a constant reminder to the people of their vulnerability. Leo could be a symbol of the power that the Francesians had over them. Were their changing brains giving them perspectives and insights that normals couldn’t even imagine? Well, look what we can do about that.

The hypersynesthetes and everyone who sympathized with them — pretty well everyone who wasn’t a true Francesian — hoped that they

would be able to help Leonardo when this was all over. They hoped that with enough time in hibernation, and with proper brain conditioning, they would be able to restore him to his former self. They didn't have much hope, though. His brain was too damaged. They didn't think they would be able to bring him back even to the level of a normal.

Leo could serve as an inspiration, though. He inspired the Singer to begin rescuing other hypers, and them to rescue the rest. And now he would inspire them to win this war and ensure that it couldn't happen to anyone else.

~

Nine people had their own final meeting. There were seven of the original gang of eight, missing Fran, with the addition of Snowy and Norton. They were sharing information that they mostly already knew, since they were all privy to all the major facets of the operation. They were telling each other things that they already knew, but nobody minded. This wasn't about learning something new, it was about sharing this really important moment with your closest friends. Saying it out loud to them and by doing so making it real.

Nigel and the Doctor weren't going out. They'd been told that they would be more useful here. It would be best to have the Doctor at a known location and bring any injuries to him, rather than out there trying to be everywhere at once. Not to mention putting himself at risk. Nigel's proven abilities at organization and communication, and at methodically assessing a situation and finding solutions, made him an obvious choice to stay back at the command center.

Stanton, Buzzard, Galatea and Maria were assigned to modified smashers and would be taking out the intercometary tubes. The third

tube team would be two hypersynesthetes. The three tube teams had met for their own final briefing earlier, but beyond the facts and details, not much was shared between hypers and normals.

The smashers had been modified so they had Maker-style legs in place of the regular ones. They'd considered going with four legs like the real Makers, and like Scarface and the other Maker robots, but decided that two would be enough and easier as well. By stretching out and pulling, rather than clomping along for locomotion, the smashers could move more quietly. It was also a much faster way to move. With regular legs they could bound great distances on the surface of a comet, but in the weak gravity it took a long time to come down. That was time better spent reaching and pulling and covering a lot more ground. It turned out that setae worked fine on the feet.

The best way to blend in on a dark comet is to be just as dark, so the smashers were matte black. They were also designed to avoid reflecting radar. If they were in danger of being discovered, they could hunker down and become one dark shadow among many.

The smashers also had small thrusters with enough propellant to complete the mission, plus a small reserve. They would be traveling great distances, in some cases hundreds of kilometers, so it made sense to do as much of it as possible by the quickest means they had: flying.

Once at their targets the tube teams had the supplies they needed to do their jobs. They had enough air, water and fuel to do the work and get home safely. Being lean made them efficient.

Stanton and Buzzard would make one team, and their target was the tube connecting Blue Comet to Indigo. Maria and Galatea were the other and they would be rounding Green Comet to take out its link to Blue. The hyper team would take the tube connecting Blue Comet to

the unnamed, unfinished one. They would coordinate through Nigel to act simultaneously for maximum surprise and effect.

Snowy was reluctant to talk. He didn't have a mission and it bothered him. "Hold down the fort, they said," he grumbled. "Hold down the fort. Right." He barked a laugh. "Actually they said 'Stay.' Can you believe that?"

"That is the way they talk, Snowy," said Elgin. "You can't fault them for that."

"I know," said Snowy. "I know. What they were really saying was that I should stay here and stay out of the way." He snorted and looked away. "Keep the crazy old guy out of the way where he can't cause any trouble." His bony shoulders slumped, the ratty old vest sagging with its lumpy pockets.

Norton patted his friend's shoulder. "Never mind," he said.

Elgin said, "What about you, Norton? What have they got you doing?"

Norton looked embarrassed. "I can't really tell you," he said. "It's all hush-hush." He glanced toward the door of the room they were using. "I can tell you I'll be going up to the surface, though. Or close to it." His eyes flickered and his mouth clamped shut. As much as he might have wanted to join in the sharing, you could tell he would go no further.

"Never mind," said Elgin. "You can tell us when it's all over."

Everyone made noises of agreement and then they all had the abrupt realization that the meeting was over. They began to drift away, their minds focusing on what they would be doing in the next few hours.

~

Elgin's job meant that he was the first to go. Being the new singer, he had to guide all the others to their egress points. For the ones going to Blue Comet and beyond, this meant leading them to the far side of the comet, where the weapon and all the sensors had been aimed at the Scout during the long ago standoff. From there they would fly out around Red and Winter comets and on to Blue's two farther tubes, or to its hatch.

The long trip gave Elgin plenty of time to think. There were a lot of segments and a lot of songs, and he couldn't talk to anyone because it might disrupt his rhythm. One mistake in here and they could all be lost. In reality he could probably back up to the last known point and start that song over again, but he didn't want to do that. It would waste time, it would undermine everyone's confidence, and it would be embarrassing. So he concentrated on maintaining the correct pace, both flying and singing, and that allowed his mind a little freedom to work on some old memories. It was a bit like meditation in that way.

Because of where they were going, they passed within less than a kilometer of the operations center, where the Five had stood their vigil in the confrontation with the Visitor's scout. He had spent many long, beautiful months alone with Frances, and he still thought of it as the most special time in their lives. Then she was injured by the Scout's radar, and she almost died because she wouldn't allow them to take her to the Hibernarium until the situation was resolved. That was the incident that got statues of Frances and Elgin and Nigel erected in the Square. It also resulted in the formation of the Francesians a few centuries later, and ultimately in the situation they were facing today. Elgin had long ago come to terms with the irony of a threat to Green Comet resulting from thwarting an earlier threat.

Stanton had once boiled it down to the old cliché that no good

deed goes unpunished. Elgin was chuckling wryly at that when they arrived at their destination.

~

After his charges filed out through a small crack in the surface — no need for an airlock here, since they'd already been flying in a vacuum — Elgin had to sing his way back to the control center and pick up his next customers. On the way he mused about the way everyone had filed past him on their way out. They'd all paused and looked into his eyes, nodding or reaching out to touch him before they went. It was more than thanking him for leading them safely through the comet. It was as if they were assuring him that they would carry out their missions, not just because they were important, but for him, personally. For him and for Fran.

It was understandable coming from Stanton and Buzzard, who formed one of the tube teams. He was also used to this kind of loyalty and dedication from the crew of the Ball, many of whom were there. But he got the same from the hypersynesthetes, and they had no particular reason to feel that way, did they? It occupied his mind all the way back. Had they transferred their admiration for the Singer in some small way to him? Or to Fran? Maybe they were just as susceptible as everyone else to the glamor of their legend. Or maybe he had misinterpreted. Maybe it was something purely of the moment. Maybe it was just one of those little rituals that form of their own accord in situations like these.

He tentatively settled on that explanation as he arrived, but decided that he would have to wait until he could talk to Fran about it. She'd be able to explain it to him.

38.

GREEN, BLUE AND INDIGO

Maria was flying over the dark surface of Green Comet. She and Galatea were rounding the big comet, heading for the tube connecting it to Blue Comet. It was just a few minutes since they'd left Elgin where he dropped them off, and their whole flight time was estimated to be just under an hour. Their starting point was a lot closer than the one Stanton and Buzzard started from, because they didn't have to go out and around the other comets to get where they were going. They began within a quarter of the comet's circumference, so the flight portion of their journey wouldn't be long at all.

Their speed would be nowhere near that of Buzzard and Stanton either. They were hugging close to the surface and not going very far. Their men, and the others with them, were flying around the outside of the whole big collection of comets. They had long stretches where they could coast at high speed, so that's how they did it, while the women's route was shorter and slower.

Maria was enjoying this. It was a long time since she'd operated a smasher out on the surface, and now here she was at last. The machine fit her body like a glove, and it responded as if it really was the extension of her body that it was meant to be. She'd had to get used to the new legs, whose function was quite different from what she was used to. Instead of rigid sections connected by joints — hip, knee, ankle — they were unjointed, long and flexible. Right now while she was flying they were stretched out, trailing behind her. Once she was on the ground again she would reach out, grip with the setae and pull

herself along. It had taken a couple of hours of simulation, but she'd taken to the new form of locomotion right away. She preferred it to the original and planned to convert many more of their smashers when this was over.

~

Buzzard was cruising the length of the tube connecting Red Comet to Indigo Comet. After leaving Green Comet, he and Stanton flew down and around Red and headed for Indigo. Once there they would skim the surface of Indigo, much as Maria and Galatea were doing on Green, to its tube connecting it to Blue Comet. Those last kilometers spent exposed on the surface, in plain view of Blue, were probably the most dangerous. Second most dangerous would be crossing the gap between Red and Indigo. In truth, neither one was that dangerous because someone would have had to be out there looking at the right place at the right time. Their black smashers were almost invisible against the dark surface of a comet, and they could avoid the areas that were white after being exposed by construction activity. In keeping with the principle of practicing an abundance of caution, they made use of the meager shelter provided by the tube while crossing between comets.

Their counterparts, the two hypers tasked with taking out the third tube, would be doing the same thing on the other side of the hexamer. They'd be crossing behind the tube joining Winter Comet and the unnamed one, and then they'd be parting company with the team that was headed for Blue Comet to intercept and neutralize any excursion force that tried to come out.

Stanton was waiting on the other side for Buzzard to join him on the last leg. This was another of the little details they used to improve

the odds of the mission. Never expose both of them at once. It was the same when they flew over the surface. They kept a separation of at least a hundred meters. Better to make two small targets rather than one large one. That was the whole point of having two of them in the first place. The redundancy made one of them expendable.

When Buzzard was nearly across they had a brief opportunity for eye contact and a quick nod, then they split up and headed for their target.

~

The main team was crossing the gap between the unnamed comet and Blue Comet. They were doing it far from the tube and at a point out of sight of all the places where someone might reasonably see them. After swinging out around Winter and flying across behind the tube to the unnamed comet, they traversed the surface with the tube team. At a dark, isolated point they parted ways and began their covert transit to Blue Comet. They crossed one and two at a time, always well separated, and when they got there they began their solitary journeys to Blue Comet's hatch.

Some of the team were in simple pressure suits, while some were in smashers, the better to carry the gear they would need. They were carrying a bunch of tubes that appeared to have the nose cones of small rockets sticking out of them. Others had bundles of what looked like fine netting. Most of the people not in smashers were carrying projectile rifles, and they all had a projectile pistol stuck to their thigh. If things degenerated into chaotic skirmishes, they wanted to be able to defend themselves. They moved in complete silence across the dark landscape. They'd said everything they needed to say before they left, and there would be plenty of time to talk when this was over.

Rama stood behind Nigel, who was monitoring the communications array. The Doctor was over to one side checking his medical equipment one more time. Lord Snowden was assisting him.

Rama said, “Frances.”

Nigel said, “I know. I worry about her too.”

Rama didn’t say anything, and Nigel couldn’t see his face, but something told him what he was thinking.

Nigel said, “You’re right. We had to do it this way. We had to secure the exterior like this. It would have been impossible to go storming into Blue Comet and rescue her.” He turned and looked into Rama’s face in time to see a small nod of agreement.

The Doctor and Snowy came over. The Doctor told Rama, “We did the right thing. Fran wouldn’t want us to risk lives, or the plan, on a foolish rescue mission.” He’d been watching these hypersynesthetes long enough to know that they weren’t as aloof as they might seem. It might look as if they were so far above everything that it could never affect them, but he’d seen the way they adored their Nana, and he’d seen how her death hurt them, in spite of Rama’s very brief eulogy. So he knew that the concern for Fran was real, as was the regret and worry that the plan couldn’t protect her. He even suspected that there was some uncertainty about it.

Snowy said, “The Doc’s right, Rama. You did the right thing. There was no other way.”

They saw Rama’s face relax, then his body, and that caused his aura to smooth out. He took the time to look each of them in the eyes, and to let them see his gratitude. Then he said, “Elgin.”

They all nodded and Nigel glanced toward the darkness where

Elgin would emerge when he returned. “He’ll be all right,” he said. “Well, if it goes wrong somehow and we lose her, then he won’t be all right. But he agreed with the plan partly because he knew she would. Remember what he told us? What she said when she climbed into that box?” Nigel nodded firmly. “Don’t worry, Rama. Elgin isn’t going to blame anybody for anything.”

Rama nodded and looked toward the darkness. He sighed.

Snowy sighed too. “If only there was something we could have done.” He scowled. “If we could have had somebody on the inside, we might have got her out of there.”

Rama looked at him and shook his head.

“I know,” said Snowy. “Wishful thinking. We don’t have anybody on the inside.”

Nigel smiled and flipped a switch on his console. “Actually,” he said, “we do.”

~

Maria and Galatea were approaching the tube connecting Green Comet and Blue Comet. The transparent tube made of ice, five meters in diameter and a kilometer long, looked frail and fragile between the two massive comets. It looked as if the slightest thing would snap it. But she remembered Stanton explaining how it was stronger than the comets. The water glass it was made of had more structural integrity than the comet material it was embedded in. Combined with the branching network of corridors it connected to, it was almost as if it was the foundation and the comets were added on to it. It was even enough to convince the Doctor, who had a pathological phobia about being exposed to the bottomless void. They were able to convince him to take the tube across, providing he was able to wear his pressure suit.

That toughness of the water glass was the problem they had to solve. Even in their smashers they wouldn't be able to break it with a hammer. Not even one of the big ones designed for the smashers. Rather, they would be able to, but it would take too long. Before they could even make a good start on it, the guards would be alerted and would come out and stop them. They needed something that could sever the tube before the Francesians became aware that anything was happening.

They considered lasers, but that meant bright lights and a big piece of equipment. They almost went with a hot wire. It was quiet and elegant, and could be done fairly quickly. Unfortunately the simulations showed that they couldn't count on the severed segments not simply re-freezing together behind the wire. In the end they went with explosives. Crude, noisy and decidedly inelegant, but simple, quick and effective.

Maria activated the bees in her ear and spoke to the command center. She said, "Unit one in position."

~

Buzzard and Stanton approached the Indigo end of their tube from opposite sides. When they were about a hundred meters from it, they stopped. That was the protocol they had settled on in their planning sessions. They would be widely separated to lessen the chance of both of them being discovered, and they would settle down for a period of observation before moving in to complete their mission. No one thought it would really be necessary to be that cautious. They didn't think anyone would be expecting this. They especially didn't think anyone would be outside keeping watch. This was the plan, though, and this is what they would do.

As they remained still and their breathing slowed down, along with their blood and their minds, the world seemed to get quiet. Then details began to come out of the black on black landscape. Illuminated only by the stars, they were still able to see gradations in the darkness. It was so dim though, that they could see better with their peripheral vision than with their central vision. If something caught the corner of their eye, it disappeared when they tried to look at it. If they wanted to examine something then they had to look past it to see it. It made for uncertainty. If they had been suggestible, then they might have begun to see all sorts of things creeping about.

Stanton activated his bees and reported in. "Team two in position," he said. They'd heard Maria announce her position a few minutes ago, and in a few more they heard the third tube team check in on the unnamed comet. Now they all had to wait for the main team setting up on Blue Comet itself, and that might be a while because theirs was the most complex operation. That meant waiting, with nothing to do but think and watch shadows.

Buzzard was the first to speak. "Stanton?" he said.

Stanton roused from a semi-meditative state. "Yes, Buzzard?" he said. Officially they were meant to maintain strict radio silence except when required by their mission, but he didn't think the Francesians knew about the bees, and Buzzard was on their low power, short range channel anyway.

Buzzard hesitated, then said, "Nothing."

"It was so something," said Stanton. "Tell me."

Buzzard hesitated a little longer, then said, "Do you think there's anyone out here?"

"Only us," said Stanton. "Why?"

Sounding reluctant, Buzzard said, “I keep thinking I’m seeing something moving.”

“Where?”

“Over there,” said Buzzard, pointing. Realizing his mistake, he said, “To the left of where I think you are. To your right, if you’re facing me.”

Stanton looked in that direction, and of course saw nothing. “There’s nothing there, Buzzard. It’s probably your imagination. You know how our minds play tricks on themselves.”

“Yes,” said Buzzard, unenthusiastically.

“You’re looking really hard for something, but there’s nothing to see. There’s not enough information to give you a good picture, so your mind is trying to fill in the blanks.”

Buzzard nodded, then said, “You’re right. That’s probably it.” He settled down to wait, scanning the comet’s shadows.

~

At the big hatch the main team was just finishing setting up. The rocket tubes were embedded in the ground and the netting was strung between them. The team members were dispersed around the hatch and now they were all reporting their readiness to the team leader. Anyone looking at the scene would see nothing unusual. The rockets, the netting, the smashers and their suits were all dark and non-reflective. The gear was hidden in cracks and crannies, and where necessary, covered with a skiff of dark snow. The people, in their suits and smashers, were all hunkered down in the shadows. What shadows there were in starlight.

They weren’t too concerned about being discovered. They were sure the Francesians weren’t in the habit of making very many surface

patrols. Observation had shown that they were making fewer patrols all the time, no doubt due to a combination of hubris in the leadership and low morale and laziness among the troops. Things had been going their way for so long, with so little resistance, that precautions had become rote and discipline simulated. The revolutionaries weren't worried about being discovered, but their precautions were earnest and their discipline honest.

They were in position now and all they had to do was wait. They expected, when the other teams severed the three tubes connecting Blue Comet to the rest of the hexamer, that the Francesians would send soldiers out through the big hatch to begin a counterattack. There would be men in pressure suits and military smashers, and possibly some light vessels as well. They couldn't be allowed to disperse and become a threat, so they had to be stopped here. They would be at their most vulnerable as they were emerging, and that's when the team would strike.

The team leader activated her bees. "Main team in position," she said.

~

Rama asked, "Scarface?"

"Yes," said Nigel. "I know what you're thinking. You're thinking that a robot can't be smart enough to sneak her out of there. Right?"

Rama nodded.

"And anyway, won't the place be full of Francesians and their guards and soldiers?"

Rama nodded again.

Nigel nodded. "I thought so," he said. "Maybe he's not smart enough, but I am. I've used him like this before and he's done fine."

He looked at Rama's face, but it was neutral, so he carried on. "As for the Francesians, I think that once the excitement starts they'll leave the square and retreat to more secure areas, along with their guards. And the soldiers will go to the critical areas to defend them. I'm hoping that the square will be empty."

Rama didn't quite nod. He looked sceptical.

"I agree," said Nigel. "It might be wishful thinking. But I think we should prepare for it, just in case it works out." He waited.

Rama thought about it, weighing the possibility of rescuing Fran against the potential for damaging the overall plan. In a few seconds he came to a conclusion. He looked at Nigel and smiled. "Scarface," he said.

~

Maria went first, while Galatea hung back in the shadows. They both had an explosive device, each capable of taking out the tube on its own. This was another example of the redundancy built into the plan. If one of them was stopped, the other one still had a chance of completing the mission.

No one stopped her. She walked out onto the tube and stuck her device to it about ten meters out. They wanted to break the tube while minimizing any damage to Green Comet's pressure door. She noted that the door was closed and appeared to be sealed. She walked back to her position a hundred meters away and hunkered down in the shadows to wait. She used the bees to call in their status.

Team three on the unnamed comet called in next. Their bomb was in place and ready to be detonated. Now they were only waiting for Buzzard's team to report their readiness, then they'd be able to set the plan in motion.

While they waited they sent out the assault teams that would take care of any Francesian soldiers who thought they could use the breached tubes to get out and cause trouble. The stealth phase was over now so they could head for their destinations at full speed without worrying about the consequences of being detected. Once Stanton called in there would be no more need for that.

Stanton was too busy to call in. He was being pursued. He didn't know who they were, but he was sure there were at least two of them. He hadn't been able to identify them in the brief glimpse he got before turning and fleeing. They didn't have any insignia on their pressure suits or their service packs, and he was sure Francesian soldiers would. He didn't spend any time worrying about who they were, though. He had seen the rifles they were carrying and they had already been bringing them to bear on him. He couldn't hear them shooting at him, of course, but he had seen at least one puff of a bullet striking the comet ahead of him. His back crawled as he concentrated on leading them as far away from the tube and Buzzard as possible. "Buzzard," he said, the pitch of his voice surprising him, "they've seen me."

"Stanton?" said Buzzard.

"They're chasing me. They have rifles. I'm leading them away. It's up to you." It sounded like he grunted on the last word.

"Stanton? Stanton?"

Stanton was panting when he said, "It's up to you, Buzzard. Do it. Do it."

Buzzard heard no more. His mind spun with fear and concern for Stanton. His boss. His mentor. The closest thing he had to a father. He didn't know what was happening. He didn't know if Stanton was all right, or if he had just sacrificed himself. That's what snapped him

out of it. If Stanton had sacrificed himself, then he couldn't waste it. He had to complete the mission.

He set out for the tube, forsaking any thoughts of stealth or caution. He got out his device and, after some thought, set it to detonate in one minute. He could cross the hundred meters to the tube in a few seconds, with a few seconds more to place the bomb. That would give him time to get out of range before it went off. More importantly, it would go off whether or not he was incapacitated.

He was just stepping out onto the tube when his faceplate filled with cracks. He clapped a hand over it to keep it in place as he felt the impact of more bullets. He kept his service pack and the bulk of the smasher in the way as he stuck the bomb to the tube and activated his bees. "Unit two to command," he said. "Device in place and set to explode in thirty-seven seconds." He felt more impacts. "Under attack by unknown force. Stanton gone. I think he's ..." He sobbed. The last thing he said was, "Detonation in twenty seconds. Buzzard out."

~

"Buzzard?" Nigel was stunned. He tried again. "Buzzard?"

"Nigel," said Rama.

That brought him back to his console, and its clock. Less than ten seconds. "Units one and three prepare to detonate in five seconds." When they acknowledged, he counted the last two seconds and all three charges exploded almost simultaneously. "Units one through three report," he ordered.

"Unit one successful," said Maria's voice. "Tube severed."

She was followed by silence as they waited for Stanton to report for unit two. After a few seconds unit three reported. "Unit three success-

ful,” they heard. A remarkably long speech for a hypersynesthete, but they’d all agreed to the need for clarity. “Tube severed.”

“Roger units one and three,” said Nigel. “Unit two report.” He waited a couple of seconds, thought it was longer. “Unit two? Buzzard? Stanton?”

“Nigel, what’s happening?” It was Maria.

Nigel swallowed and said, “I don’t know, Maria. I can’t raise them.”

Galatea cut in, her voice harsh. “Try again,” she demanded. “Try again.”

“Of course,” said Nigel. “Unit two, this is the command center. Report.” Pause. “Unit two, report. Stanton. Buzzard.” He got nothing in return except silence. Finally he said, “Maria. Galatea. I can’t raise them. Buzzard reported that someone was shooting at them, so he set their bomb on a timer. We haven’t heard from them since.”

“Who was shooting at them?” asked Galatea. “Was it the Francesians?” Anyone who heard her would not want to let on if they were a Francesian.

“We don’t know, Gay,” said Nigel. “You know as much as we do now. You’d better come in. Team three, you come in too. Your job is done out there and the armed squads are on their way to lock it down.”

Tube team three acknowledged and headed back, but Maria and Galatea said nothing.

“Team one, report,” said Nigel. “Maria? Galatea? Come back in now.” Silence. Not even any indication that the connection was open, nor that their bees were even on. “Come on you two. Come back in now.” Stubborn silence. “You guys, the armed squad is on its way and they’ll take care of things.” He knew what they were doing. “Look,” he said, “whoever’s out there, they have guns and you don’t. And they know the territory and you don’t. There’s nothing you can do.”

He knew he wasn't getting through to them, but he tried one more time. "You're just going to make it harder for our people. They won't know whether you're in their line of fire."

That got a response. "Tell them not to worry," said Maria. "We're not going to get too close. We just have to see what's going on."

Nigel's throat filled up with arguments and pleading, but he understood what his friends needed to do. "All right," he said. "But you guys be careful. And call in once in a while. Let us know how you are."

"We will, Nigel," said Maria, and signed off.

Nigel straightened up and took a deep breath. He hadn't realized he'd been hunched over, and he stretched his back and neck to relieve the tension. He was reviewing what happened when Rama spoke again.

"Nigel," he said.

"Right," said Nigel, refocusing on his console. "Main team," he said, "tubes one and three confirmed destroyed, and tube two presumed destroyed. Prepare for action at the hatch."

"Control center, this is main team," came the reply. "In position and all set."

"Roger that," said Nigel. "Squads one, two and three, be advised tubes destroyed. Proceed with all haste at your discretion." When they confirmed that he said, "Squad two. Be advised that unit two was met with armed resistance. We don't know the status of our people, but they are presumed to be captured, injured or dead." He had to take a moment to get his voice back, but no one interrupted. "We don't know the identity of their attackers, or their number, but we do know that they are armed and will shoot without warning. Proceed with due caution."

Unit two responded firmly, all business, and Nigel knew that

situation was in good hands. He looked at Rama, who nodded calmly, then at the Doctor and Snowy. Lord Snowden's face was knotted with worry, and he kept tugging at his ratty old vest, trying to cover his bony chest. The Doctor looked grim and determined while he absently turned a medical instrument in his hands.

Nigel looked past them into the darkness, and he remembered Elgin. Shouldn't he be here by now? His stomach clenched when he thought of what he had to tell him, and he opened the channel.

39.

SAVING FRANCES

Nigel tried to raise Elgin, but he got no reply. “He must be singing a route,” he told the others. “He’ll call when he gets a chance.” He thought it was odd, though. Elgin should have been back now, or at least close. Why would he still be on a route that needed singing?

Elgin wasn’t close. He was running for his life. He was being chased by about twenty men. He assumed they were Francesian guards, a suspicion supported by the fact that they had shot at him. It was only the once, and just a few shots, but it had been enough to interfere with the calm concentration needed to properly navigate. He didn’t know why they stopped shooting at him, but he thought he knew how they got here.

Just before the shots someone said, “We can hear you singing, Elgin.” The voice was taunting and familiar. Elgin scowled at the betrayal, which was at least as bad for his concentration as the shots were. He had thought that he and Norton had become friends. At least as confounding as that was the fact that Rama and the hypers had accepted him. They had entrusted him with a secret mission and now here he was leading the enemy into their stronghold.

Elgin scowled, his face setting into the glowering mask that had frightened more than a few, friend and foe alike. He deactivated his bees, realizing when he did so that this must mean that Norton had told the Francesians about them, too. What did that mean for the security of their communications? Were the other missions flying into traps? The glower grew deeper, and Elgin began to plan a new route.

If they wanted to follow him, fine, but he wasn't going to lead them back to his friends. His real friends.

He took the first marked passage and began its song. He locked his mind down, locked it onto the correct tempo, and set his flying speed. This was going to take all his skill and training. He was going to have to use everything that Nana had taught him. The Singer. If only she could be here with him. He needed her knowledge and experience now.

Elgin set his jaw so hard that he ground his teeth. He had to stop this. Nana was gone. He was the Singer now. She wouldn't hesitate to remind him of that if she were here, but she was gone and now there was only him. If this was going to work, it would be because of what she taught him, and how well he learned it. And one more thing. Something she hadn't taught him. He glanced back and saw that the men were gaining on him. They would catch him before he could reach the point where he could make his plan work. He had to change the variables.

He made the next marked turn, and they were close enough to see where he went. He increased his thrust enough to exactly double his speed, and he set his mental metronome to match. At least he hoped it would match. He was going to cover the distance in half the time, so he needed to sing the song at twice the rate. This had to work the first time or they would all be lost. No time for practice. No one had even thought of doing this before, much less tried it, but he had to keep ahead of his pursuers. There were no other options.

~

They couldn't get through to Elgin, so Nigel checked on everyone else. Tube team three was on its way back and hadn't encountered anyone

yet. Team one was on its way from their tube to team two's tube. Maria and Galatea needed to find out what happened to Buzzard and Stanton, but they hadn't seen anything yet either. The main team was still waiting for the hatch to open. They'd heard activity in the big bay below the hatch, and they heard the pump come on to depressurize it, so they were expecting something soon. Squad one had reached the tube that connected Green Comet to Blue, but they weren't seeing any activity. The other two armed squads were due to reach their tubes soon. Squad two was in communication with Maria and Galatea and expected to overtake them any minute.

With nothing going on, Nigel decided to check on Scarface and see what was happening in Blue square.

~

In a dim corner of the big blue square, a small form stirred. It probed the vast space with its senses: sight, hearing, radio, infrared. When it was sure it was alone, it began to move. It didn't wonder why it had been left alone, nor why the creatures who kept it here had all gone away. It just began to follow the instructions it was receiving as it always had. It looked around for the oblong box made of ice, and found it against the wall where it had always been. Scarface stretched out his legs and moved in that direction.

Once there he closely examined the box and its fittings and connections. He soon seemed satisfied and began detaching the box from its station. That done, he immediately began hauling it toward the nearest exit. Then he stopped and paused, before turning and heading for another exit.

Scarface wasn't thinking about it when he stopped. That was Nigel and Rama and the Doctor and Lord Snowden. They didn't just have

to get Fran out of the square, they had to get her off the comet. They wouldn't be able to use the tubes, which were out of commission. They couldn't use the big hatch, which would presumably be crawling with Francesian soldiers. There were no other obvious ways of getting out, so Nigel came up with something less obvious.

Scarface headed into the corridors and put some distance between himself and the blue square. Eventually he began working his way toward the surface, the corridors getting progressively smaller as they went.

~

Elgin finally put some distance between himself and Norton. He smiled with satisfaction at besting the traitor, then almost lost his place for thinking about him. He forced his mind back onto the job and chastised himself for letting his emotions interfere. There would be plenty of time for gloating if this worked. Until then the only thing that mattered was getting the job done.

He arrived at the next marked turn right on time, then flew on for a few more meters while he finished the coda. He nodded when he saw the correct patch of reflective paint. When they laid out these routes, they planned for the possibility that they would have intruders. In case the unwanted guests thought they could simply follow the blazes of paint, they included some dummy markers to throw them off. The false trails led to dead ends, or simply came around in circles. The detours would delay and frustrate any invaders at least. Even better, it would leave them unsure of how to continue. They'd realize that they couldn't count on anything. In some cases they could end up irretrievably lost. They might wander for a couple of days until their

suits could no longer sustain them, and they'd die in an anonymous crack in the belly of the comet.

Of course Norton knew this, so they would be watching for it. He couldn't be counted on to turn at the first marker. He would probably have the men look around and it wouldn't take long to find the second one. The ruse would only slightly slow them down at best. That's why Elgin's plan had another layer.

~

The hatch slowly began to open, and the main team's focus intensified. The cover swung up on its hinges, letting light out of the bay. When it reached the vertical, the team launched the first set of rockets as planned. It was just in time as it turned out, because the net caught the first vessel just as it rose above the opening. The rockets arced over and plunged into the ground, pinning the corners of the netting. The net struck the open face of the hatch and slid down to form a tight seal on the hinge. The center of the net bulged with the rising vessel, then rebounded back down.

At the four corners of the open hatch, surveillance cameras snaked up and peered over into the bay, giving the team a comprehensive view of what was happening in there. It was havoc. It looked as if another vessel must have been following the first one out and they collided. There were two of them careening about, both still under power, and another half dozen sitting on the deck, ready to go. Men were boiling out of those six and joining the others in pressure suits desperately looking for any kind of cover.

One of the two moving vessels flew upward, striking the netting at an angle, and rebounding with an added vigorous spin. Its pilot should be commended because he finally managed to cut the power, as did

his comrade in the other one moments later. Now it was just a matter of bouncing around until they bled off their kinetic energy. Eventually they would slow down and their momentum would be low enough that they could be safely captured and secured. Until then, their passengers remained inside and the rest of the soldiers remained in hiding.

~

Maria and Galatea were within a kilometer of the Indigo tube. They'd flown from the Green tube down to Red Comet and around to the tube connecting Red to Indigo. That's where they met up with squad two, which escorted them around Indigo to the tube connecting it to Blue. They were approaching very slowly now, the squad fanned out ahead of them, expecting the shadows to start shooting at them any moment.

The squad consisted of twelve people, six in smashers and six just in pressure suits. The ones in suits carried rifles and had pistols stuck to their thighs. The ones in smashers had pistols too, but they also had heavier projectile weapons attached to their exoskeletons. A couple of the women in suits offered Maria and Galatea their pistols. For personal protection, they said, in case things got crazy. Maria declined. She reasoned that she would be safer if the pistol was in the hand of someone who had trained to use it. Galatea took hers and let the woman give her a quick lesson in its use. She showed her how to attach it to her thigh and how to disengage the safety, and Galatea told her that was all she needed to know. "It's just point and shoot, isn't it?" she said.

Maria looked at her friend, but it was nearly impossible to read someone when they were in a suit and smasher. "Gay?" she said.

"What?"

Maria was startled by the brusqueness. “What’s the plan?” she asked.

“Protection,” said Galatea. “Like they said. In case it gets crazy.” She patted the pistol and moved off to re-establish their hundred meter separation.

“Okay,” said Maria, unconvinced. She moved, rejoining the advance. As she slid from shadow to shadow, she hoped her friend wasn’t planning anything dangerous.

~

Team three arrived back at their entry point, but there was no one there to guide them back to the control center. They called and Nigel told them he hadn’t heard from Elgin in a while. He advised them to stand by and he tried again to raise Elgin on the general channel. Once again there was no reply. Nigel was getting genuinely worried.

Elgin didn’t have time to worry. He had gained on his pursuers, but he could already see the light that preceded them. He didn’t have long, so he got right to work. The first thing he did was take a single bee and send it up high on the wall. Then he punched the snow at the corner leading to the marked opening. He nodded at the effect, snow twinkling in his light as it sifted over the opening, then crossed the cleft to a small, dark opening on the other side. Being careful not to let his suit touch anything, he eased his way into the hole. Carefully, resisting the growing urge to hurry, fearing that they would arrive any second and see his feet, he wormed his way forward.

He was able to watch them arrive, using the small monitor in his helmet to display the information being sent by the bee he’d left out there. He’d set it on a different channel from the one Norton was on, hoping they wouldn’t be able to guess it.

So far all he could see was their lights as they appeared to stop at the first mark. He thought he was far enough in now to be hidden, but he kept going for a few more meters anyway. It didn't cost him anything to do so, and it couldn't hurt to be that little bit better hidden. Still he felt oddly exposed, not being able to see behind him. He knew it was irrational, but his feet felt as big as suitcases back there, and he badly wanted to turn around so he could be facing the danger. He told himself to stop being foolish and watched his enemies on the monitor.

They seemed to make a decision and he saw them come into sight, and then mill around when they discovered the second mark. He couldn't hear what they were saying, of course, nor see their faces very well, but he got the sense that they were indecisive. From the way they held their bodies and moved their limbs, he could tell that they must be unsure about which route to take. Eventually he saw them all focus on the two men who were closest to the opening.

Elgin didn't know why, but he assumed that one of the two was Norton. He looked more closely at the other one and noticed that there were markings on his suit. Insignia. He gave a little gasp of recognition when he realized he'd seen those insignia before. They were worn by someone who met them when they arrived at Green Comet on the Ball. Someone who accompanied them on their visits to Blue Comet to see the Big F. It was the Commander. That gave him a chill. If he was here then this wasn't some ad hoc pursuit. This was an important mission, and one that had been planned.

How far back did Norton's deceit go? Had he been a spy since they first met him? Was meeting them all part of a long term plan? Elgin got another chill as he realized how out of their depth they were when dealing with these people. He looked at them now in a new light. They didn't represent an adversary in an honorable conflict. They were

dangerous. Lethally so. And it would be foolish to treat them as anything else. Elgin's lips curled back from his teeth and he muttered, "Come on. Make up your minds."

~

The careening vessels in the bay under the hatch finally slowed down enough that a few brave men ventured out to try to catch them. It quickly became a game of dodging and weaving around, avoiding being struck while at the same time arranging to hit one of them in such a way that it lost some of its momentum. They got quite good at it and watching them became enjoyable, somewhat like watching a flashball game. They didn't become so engrossed in watching, though, that they didn't notice the man with the cutters. He crept up the side of the bay then, under cover of the overhang, reached up and began snipping at the net. Once they saw him they soon picked out the other three at the other sides of the opening. At the rate they were cutting, it looked as if the net would be free in less than fifteen minutes.

They were ready for this. They released some bees and guided them to the four targets, then ordered them into linear chains which then wrapped around the cutters' hands, securing them to the netting. When the hypersynesthetes learned of Elgin's and Buzzard's invention, they liked it so much that they improved on it. While Elgin and Buzzard were focused on communication, the hypers realized that if the bees could come together for that, then they could come together for other things.

With four of their men hanging helplessly above them, the men back down on the floor raised their heads and began scanning the rim of the opening. They must have realized that they were being watched, and were looking for the watchers. At only a couple of millimeters

across, the bee cameras were not likely to be spotted at that distance. They sent men to search, beginning at the corners. As the men loomed large, the team pulled the bees back, losing their surveillance.

They couldn't have that. They needed to see what was going on. After a brief consultation, they sent the bees up high, where they could peer into the bay from a safe distance. They got into their new positions just in time.

The Francesian soldiers finally managed to get the rogue flyers under control, and now they were aiming lasers upward. They turned them on and began cutting the net, disregarding the men trapped up there. They cut through the net all the way around, severing four men's hands. When it was free, they sent up one vessel into the middle of it, dragging it up and away. As soon as it began to open up, they launched four more flyers in a bid to escape.

The team was ready for this, too. As soon as the old net was high enough they launched two more rockets, which pulled another net across the opening. Once again it was a close thing, but they managed to capture three of the vessels. One of them escaped, though, and flew away at high speed.

~

Team three was still waiting on the far side of Green Comet for Elgin to come and guide them in. Squad three, guarding the tube they destroyed, was still reporting no activity. Squad one was also reporting no activity at the Green Comet tube. Team one was with squad two, closing carefully on the Indigo tube. Team two was still missing and they were increasingly sure that they were dead. No one said anything like that to Maria and Galatea, though. Especially Galatea. Especially anyone who got close enough to see her eyes.

You can't hear when you're being shot at in a vacuum. You only find out when the bullet hits you or, if you're lucky, you see it hit something else. Rarely, if you happen to be looking in the right direction at the right time, you might see a muzzle flash. The woman in the smasher on point saw the flash and felt the bullet strike her. She would later say that she had no memory of returning fire, but her compatriots said the first indication they had of something going on was when her big weapons flared to life and obliterated a little hillock of snow about a hundred meters out. Seconds later they saw a pressure-suited body tumble slowly away.

One of her mates went to her aid, while others covered them, taking the occasional shot to keep any other shooters from getting too bold. She was beginning to get woozy by this time. Pain, shock, fear and the first signs of blood loss were setting in. Her friend found the wound right away. It was in her right thigh, and it looked bad. He could see chunks of frozen blood drifting away from the hole torn through her suit. He could also see that the suit was snugging down hard around the wound. There would be no more air or blood lost, so she was safe on that account, but it caused another problem. They had to get her back to the Doctor before the lack of blood began to cause necrosis in her lower leg.

The team leader told him to take her and go. Forget about stealth and hugging the surface or hiding behind tubes. Take the shortest route back to the point where they emerged from Green Comet and have Elgin, the Singer, lead them back to the control center. They took off without any further discussion, and everyone turned back to the job at hand. They were just in time to see Galatea halfway across neutral ground, flying at full speed with her pistol extended in front of her.

Elgin watched Norton and the Commander talk, trying to tell what they were saying by their posture and the way they were moving their arms. He couldn't tell much. The way they were positioned, the Commander was facing more or less back the way they came, while Norton was looking at the second opening. He guessed they were trying to decide which way to go, and he knew it couldn't be easy. They could have split up and gone both ways. Because they hadn't he guessed that they didn't want to do that. Maybe Norton warned them how easy it would be to get lost. Maybe the Commander wanted to maintain strength in numbers.

He saw them stop talking, or at least they were no longer waving their arms. The Commander turned to look where Norton was looking, and they moved in that direction, Norton pointing. They stopped and closely examined the opening, then the Commander went back to the corner and looked. He waved Norton over and pointed out where there was some snow knocked off.

Elgin smiled. "Good for you," he said. "You found it."

The Commander moved out into the open and gesticulated urgently. Apparently he'd been on the radio too, because his men rushed up to join him. He pointed at the opening and waved them in. After a final look around, he and Norton followed them.

Elgin waited five minutes, staring at an empty scene, then began to back out of the hole. Once out he contemplated retrieving the bee, but decided to leave it where it was. It could act as their sentinel in case the Francesian soldiers came back this way.

He crept forward to the corner and peeked around it. After a good long look, he decided they hadn't left anyone behind. He flew ahead

to the first opening and carefully peeked in, just in case. Again there was no one there. He took two deep breaths, calibrated his internal metronome, and took off, flying and singing at double speed.

Only when he had completed that route and the next, and he was back where he'd first encountered the soldiers, did he begin to feel safe. That's when he re-activated his bees, switched channels and called the control center.

"Thank goodness you called," said Nigel, his voice laden with relief. "Where have you been? We've got an emergency going on here."

"I had a bit of an emergency of my own," said Elgin. "What's going on?"

Nigel hesitated. "First I have some bad news, Elgin," he said.

Elgin's heart clenched. "What?" he said. "Is it Fran?"

"No," said Nigel. "Fran's okay. We're working on getting her out of there." He paused. "It's Stanton and Buzzard."

"What about them?" Elgin's brief relief turned to dread.

Nigel didn't draw it out. "They were attacked. They're missing and presumed dead."

Elgin was silent for a long time. It wouldn't register. It couldn't be true. He'd just seen them a few hours ago. He shook his head and said through his rigid jaw, "Is that the emergency?"

"No," said Nigel, grateful that Elgin wasn't making it any more difficult. "A member of squad two has been seriously injured and she's being brought back to their exit point. We need you to meet them and bring her back in for immediate medical attention."

Elgin's mind became all business. "Roger that," he said. "What's their ETA?"

Once they had that all sorted — flying at double speed he could get there just before they did — Elgin told Nigel about Norton and the

Commander and the soldiers, and Nigel told Elgin about Maria and Galatea joining squad two. Elgin shook his head, his heart breaking for his friends. Then he shook it again more firmly and got to work. Wallowing in grief wasn't going to get the injured woman the help she needed.

~

Scarface stopped at a small door, gently parking Frances's sarcophagus. He hadn't seen anyone on his way here, although once he did hear someone coming and had to duck into a side passage until they went by. Now he waited quietly, listening, to make sure there was nobody on the other side of the door. When he was sure, he carefully opened it and looked inside.

Actually it looked more like outside in there, with nothing to see except stars and blackness. He reached back and pulled Fran in, then shut the door and jammed the mechanism. Had Scarface been capable of awe, he would have been mesmerized by the view. It was as if they had emerged onto the surface of Blue Comet, with an unobstructed view of the cosmos. The ice shell between them and the void was of pristine clarity and it really did create the illusion of not being there. But he wasn't capable of awe or any other emotion, so he ignored the view and got to work.

He stowed his package to one side and attached a cutting tool to the end of one of his arms. He selected a spot at top dead-center and began cutting. The hole would be rectangular and slightly larger than the cross section of Fran's box. It would be about a half-hour of constant cutting before they would break through. Scarface didn't hum while he worked. He didn't even think. If he had been thinking, he

might have been thinking about where they were, and how close they were to the hatch.

The version of Stanton's bubble on Blue Comet, just as the original on Green Comet, was only a kilometer away from the hatch. While he was here with Fran, calmly cutting a hole in this fifteen meter hollow sphere embedded in the comet, a battle was being fought only a kilometer away. Scarface didn't think about that, he just kept cutting. Other than the practical matter of the possible complications such proximity might bring, it had no significance. Not to him, anyway.

~

Maria took off after Galatea, then the squad leader took off after her. The two flankers advanced at high speed, laying down withering cover fire, while the rest of the squad tried to get into positions where they could join in without shooting their own people. Galatea reached the blasted hummock first and went directly to the body, which was still slowly tumbling. She stepped on it to get it to stop, then turned it so she could see the face. She was pointing her pistol at it when Maria caught up to her and put her hand on her arm.

"He's dead, Gay," she said. "You can see that."

The squad leader arrived and waited at a respectful distance. He told the flankers to stand guard and brought the rest of the squad up to search. There was every indication that Stanton and Buzzard were attacked by more than one person, so they had to account for the others. They also had to find their point of egress — how they got out onto the surface — and that had to be secured. Then there was the important matter of confirming that the tube was severed, and completing the job if it wasn't. Finally they had to find their friends,

alive or dead, and bring them home. The squad quietly and efficiently executed their orders.

“Gay?” said Maria. “Come on.” She tugged her arm. “Let’s help them look.”

Galatea looked at her friend, then gently shook off her hand. “Okay,” she said, and made as if to go. Then she turned back and calmly shot the dead man in the face. She stuck the pistol on her thigh and said, “Okay. Let’s go.”

~

The vessel that escaped from the hatch was coincidentally flying in the direction of the bubble. The main team was ready for that, too. This contingency was covered by the people posted on the perimeter, about a hundred meters out from the hatch. Unfortunately, the vessel passed almost equidistant from two postings, and consequently near the limits of their effectiveness. They both launched their nets simultaneously and they both hit the target. One slipped off with little effect, but the other managed to snag it. Since the net was tethered, it swung the flyer down and smacked it onto the surface.

The impact jolted it free of the net and sent it tumbling away, damaged but still intact. The pilot was good. He recovered from the severe jolt and fought the vessel under control. Once stabilized they were free and flying away. The pilot was beginning to relax, the laughter of released tension bubbling in his throat, when they were struck out of nowhere by something small and hard.

The viewport filled with a pair of big, staring eyes, a face marred by a big scar and the gleaming dome of a head sporting a vee-shaped dent. Then a hand came up, holding a spinning cutting tool.

The searchers reported that the tube was successfully cut. In addition, the ends of the cut were already misaligned. With its three tubes detached, Blue Comet was already drifting away from the rest of the hexamer. That part of the plan was working. If the Francesians decided that they didn't want to play nicely, then they could go off and play on their own. They took a page from the book of Plub, when he cut a section of the mat free on the Maker world and let his enemies drift away. It was not as dramatic as a big battle, but it was efficient and prevented a great many needless deaths. Plub made Maker history with that, and gave them hope for the future of the Maker people. It didn't last long, of course. They soon reverted to their violent, irrational ways. It was nice for a while, though, and a good precedent for the current situation.

Not long after confirming separation, they found Stanton's body. It was caught against an outcropping, and they could imagine him fleeing and being shot, then drifting until he ran into this bit of a protrusion. It was also easy to imagine that if he hadn't stopped here he might have drifted indefinitely, breaking free of the comet's weak gravitational pull. From the estimated trajectory, they couldn't say for sure whether he would have struck one of the other comets or drifted away into the void.

Galatea pushed her way to the body, not caring whom she bumped or jostled. She gently took Stanton's helmet and turned it so she could see his face. She had to blink furiously at the tears, but she could see his expression. It had pain and fear, of course, but she could also see peace and something that she could only call satisfaction. He must have had time to realize that his diversion was successful and Buzzard

had destroyed the tube. Galatea saw the bullet holes and she put her hands over them, rubbing, trying to erase them. Then she stopped, forcing her hands to stop trying to fix what couldn't be mended. She seized Stanton's exoskeleton and began dragging it away, struggling in the direction of Green Comet. Taking her Stanton home. The squad leader gave an order and two people in pressure suits joined her, to escort her safely there. After a few tens of meters she stopped and looked back at Maria, asking a silent question. She would stay if her friend wanted her to, but Maria waved her on and said, "Go, Gay. Take him home. I'll be all right."

~

They never found Buzzard's body. Their best guess was that it was blown away into space by the force of the explosion. Maria never had to suffer Galatea's pain of seeing the horrible wounds on her lover's body, but she also didn't have anything to take home. That would leave her with an unresolved sense of loss for the rest of her life.

~

The main team subdued all resistance at the hatch and took control of the soldiers and their remaining vessels. Most of the small craft had some degree of damage from all the careening around they'd done in there. Of the four men who'd had their hands cut off in the effort to free the net, two survived. Their suits clamped down and kept them alive long enough to get the medical attention they needed. Morale was poor among the soldiers, and no one had much respect left for the chain of command.

~

Scarface cut the thrusters off his captured flyer and pushed it back in the direction of the hatch. Then he went back and got Fran and began towing her serenely toward Green Comet.

~

Elgin got to the meeting point before the wounded squad member and her escort. They waited for Galatea and her escort with Stanton's body — it didn't seem right with all that had happened, but they were only a few minutes behind — then Elgin led all of them back to the control center.

After that he sang his way to the far side of the comet and brought team three back in.

Finally he met Scarface and the two of them took Fran directly to the Hibernarium, where they hooked her up. Once it was confirmed that she was stabilized and would be all right, they would wake her up.

40.

THE BALCONY

Fran came out of the apartment carrying a tray of iceberry tea and muffins. She glanced to the left of the balcony and smiled at the sight of the new iceberry patch started there. On the balcony she began with Rama, who was with Nigel, Lord Snowden and the Doctor. It was the first time here for Snowy and Rama, and she was glad they were with someone familiar. Next was Galatea, who was with Maria. They were both staring at a pair of men whose heads were shaved and covered in tattoos. Those men tried to look tough as they refused the offered tea, but they kept glancing nervously at Galatea. Finally she came to Norton and the Commander, who accepted graciously, while keeping a cautious eye on the bald men.

After giving Elgin his, and having him hold hers, Fran took the tray over to the edge of the balcony and handed it to Scarface to hold. The balcony was quite crowded feeling with twelve people, so Scarface was hovering just off of it, one setae foot attached to keep him close. The tray he was holding had four teas and four muffins, two refused by their guests, and two served for the two men who couldn't be here.

Fran joined Elgin and took the tea he held out to her. She turned to Maria and Galatea and raised her cup. "To missing friends," she said.

Everyone there, except for the two strangers, raised their cups and said, "To missing friends." Most of them were looking at Maria and Galatea when they did it, but those two were still looking at the two men, whose bald, tattooed heads gleamed with an oily sheen.

They had refused to give their names, saying that the state had no

right to know them. They wouldn't be bound by slave names and only used them in the sovereign state of Indigo, where men were free.

"Women too?" Fran had asked. When they stared at her stupidly she said, "Are women free in the sovereign state of Indigo?"

They both smiled, though they were more like knowing, sneering smirks, and one of them said, "They're free to do as they're told." His eyes slid sideways as he felt Galatea's eyes scorching the side of his head. "Make her stop," he said. "Make her stop staring at us."

Fran smiled at him and said, "She's a free woman. She can stare at you if she wants." She looked at Galatea and nodded, then back at the men. "You understand that, don't you? You understand freedom."

They scowled, not used to being treated this way, particularly by women. "We didn't do anything wrong," said the man. "We were defending ourselves. We were defending our sovereign territory." They both straightened up with that, chins up, shoulders back.

"Yes you were," said Fran, "and that's the only reason you're here as our guests rather than as our prisoners."

They bridled, their eyes flashing and their hands reaching instinctively to rest on the butts of their weapons. They found nothing and tried to look as if it hadn't happened.

"That's right," said Fran. "We took your weapons away. I'm sorry if it makes you feel naked." She watched them try to regain their haughty confidence, and fail. "Given your lack of discipline in their use, we thought it best."

They stared at her in shock and anger. "Discipline?" said the spokesman. "You talk to us about discipline? We're the only ones with the discipline to remain free. The rest of you are soft and dependent on authority." They stood there, trying to stare everyone down from

their pedestal of superiority, but they couldn't stop their eyes from sliding sideways.

The two women were still staring at them. Maria's face was mostly sad, maybe even a little empathetic. It wasn't threatening. Galatea's face was another matter. There was no empathy there at all. The eyes were as hard as stones and the little smile was nasty and cruel. Her hand rested on the butt of the pistol that she had been wearing ever since that day. The men's hands once again reached unconsciously for their weapons, and found nothing.

"Yes," said Fran. "Discipline. How else do you explain killing two unarmed men without warning? If you had any discipline, why would you shoot at people before you even found out why they were there?"

"We don't need an excuse to defend our sovereign territory against the illegitimate state."

"But those two men didn't represent the state, did they? Something you could have found out if you'd exercised a little discipline." Fran stopped talking and turned away, a hard lump painfully blocking her throat.

"How were we supposed to know that?" The man moved toward her. "Hey! I'm talking to you."

"Shut up." Galatea's voice was soft and low. "Back up. She's done talking to you."

"You can't tell me what to do." He turned on her, perhaps thinking that here was a woman who needed to learn her place. Then he saw the eager anticipation on her face, and he knew then that the pistol wasn't just for show. He allowed his partner to pull him back, saving what face he could.

Galatea resisted Maria's hand at first. She didn't want it to be over. She wanted the man to try something. She wanted an excuse to shoot

him. She would shoot his friend too, if they would give her the least reason. As far as she knew, these were the ones who had killed her Stanton, a better man than both of them put together. They deserved to die. But they wouldn't give her the opening. They wouldn't even look at her now, the cowards. Finally she let Maria pull her back, and she let her hand draw away from the pistol grip.

"Rabbits." All eyes turned to look at Rama, who was looking at the tattooed men.

"What's that supposed to mean?" barked the man, his face reddening.

Lord Snowden chose to interpret for him. "After you ambushed squad two, who were there to stop any Francesians from using the broken tube, they searched for you. All they found was your bolt hole. Your rabbit hole."

That infuriated them. They were accustomed to thinking of themselves as predators, like hawks and wolves. "You watch what you say," said the man, pointing a shaking finger.

"Truce," said Rama.

"That's right," said Nigel. "You came here under a truce. You're hoping to negotiate an arrangement with us, now that we've removed your old enemy for you." He saw the man's face shift. "Only they weren't exactly the enemy, were they? You've been doing business with them all along, haven't you?"

They looked as if they wanted to deny it, but they knew they couldn't.

"You're not quite as independent as you make out to be, are you?" Nigel bored right in. "You depended on them for certain essential goods that you can't produce yourselves." He let them think about that.

Rama looked around at everyone, then right at the Indigoans. "Treaty," he said.

Their pride almost got the better of them. They looked as if they were ready to leave and turn their back on the rest of the hexamer again. Nigel stopped them.

"You're hoping to negotiate a treaty with us now, to replace your source," he said. "We're willing to do business with you, but only openly. We're not prepared to do business with people we can't trust. People who hide in their rabbit holes and snipe at anyone who goes by."

"So?" said the man. "What are you going to do about it?" He just wanted to get back home where people listened to him and didn't try to make him look bad.

"We will do the same thing we did to the Francesians. We will cut Indigo Comet loose, just as we did Blue Comet, and you can have all the independence you want."

They were speechless. They looked around at everyone and saw a unity of calm resolution, and they had no doubt that it would happen. They left without another word, their backs stiff as they flew across the Square, almost as if they might be anticipating a bullet between the shoulder blades.

The people on the balcony watched in silence until the two men passed through the red exit and out of sight. The first one to speak was Elgin. He said, "I know what Stanton would have said. He'd have said, 'Good riddance. I hope they choose independence.'"

During a small round of agreeable laughter Galatea said, "That's right. That's exactly what he'd say." She took her hand off the pistol and picked up her muffin. While her jaws powerfully ground it, she

picked up her tea for a big slurp. “Exactly.” She took another bite, still staring at the red exit.

Fran’s eye had wandered to the orange wall where crowds of people were clustered around the working parts of the window. She smiled and said, “That is good to see.”

Elgin looked and said, “Yes. One of the worst things was being cut off from Orange Comet.”

They all agreed with that, then Norton said, “One of the worst, for sure. Maybe not the worst.” When they looked at him he put his nose in the air and sniffed. That brought a gale of laughter and a spate of stories about how bad the stink used to be. He looked at Elgin and said, “Once we got at it, it didn’t take long at all, did it?”

“No,” said Elgin. “But then, with you breaking it and me fixing it all those times, we got plenty of practice.”

“That’s right,” said Norton, then he looked at the apartment. “Not that you spent all of your time fixing things though, eh?”

Elgin looked and recalled his little confrontation with the Francesians in their shrine. He chuckled when he remembered the things and the people he’d flung out into the Square. With a wink at Norton and a look at Fran, he said, “I don’t know. I thought of that as tidying up.”

Fran was still laughing when she said, “Tell me again how you got lost, Norton.” She shrugged and added, “I seem to sleep through all the good stuff.”

Norton looked at the Commander apologetically, and the Commander narrowed his eyes at him. “I’m sorry, Commander,” he said. “It was my mission.”

The Commander held the stare a little longer, then clapped Norton

on the shoulder and said, “Well played, my friend. Don’t tell anyone, but I’m glad you did it, and glad it worked.”

Norton let his breath out. “Thank you. You’re a good man and I feel bad for tricking you.” He smiled. “Not that I wouldn’t do it again, of course.”

“Of course,” said the Commander. “I would expect nothing less. Go on with the story.”

“Okay,” said Norton. “So, it was my secret mission to pretend to be a traitor and bring a bunch of soldiers down there. It was just an added bonus that the Commander was one of them.”

“Lucky me,” said the Commander.

Elgin said, “It was a really good secret, Norton. I hated you for betraying us.”

“Thank you,” said Norton. “Anyway, I knew where you would be, so I led them there. I knew that you would lead us away from the control center, so I gave you that warning and a head start.”

“That was a warning? I thought you were taunting me. Especially when you started shooting.”

Norton looked abashed and the Commander said, “Sorry about that. Some of them are more excitable than smart.”

Norton said, “That was not part of the plan, believe me.”

“I believe you,” said Elgin. “Carry on.”

“Okay. So I practiced how I would follow you and keep just the right distance, and then you just about lost us by going faster. We had to scramble to keep up.”

“Sorry,” said Elgin with a grin.

“Yeah, well, I figured it out and it worked out perfectly. When I saw the evidence you left at that corner, the snow, I had to pretend to notice

it at about the same time as the Commander. And it was a real struggle to not look around and try to see where you might be hiding.”

“You knew I hadn’t gone that way?”

“I had a pretty good idea,” said Norton. “It would work either way, though. With the time we spent there, we couldn’t be sure that you hadn’t eluded us. Then it was just a matter of a wrong turn or two, and twenty soldiers were out of it.”

“And you,” said Fran. “You could have died there.”

“He almost did,” said the Commander. “After the first day, I had some trouble controlling the men. They wanted to blame someone, and Norton was the obvious target.”

“Did you suspect him?” asked Fran.

“Yes. I was pretty sure I knew what he’d done.”

“Then why did you spare him?”

“Why not? It would have been pointless revenge.”

Fran’s smile warmed him through. “I knew I saw a good man in that uniform, Commander. I would be pleased if you would stay when the Francesians leave.”

The Commander was quiet. He sipped his tea and looked out over the Square, which was brightly lighted and vibrant with activity. At that moment another couple of meters of the window came to life and the people down there cheered and rushed over to use it. The Square was looking good and getting better as people worked on it. It would be good to stay here and be part of the rebuilding. The enthusiasm and optimism were attractive. These people were the kind of people he would like to spend some time with. But he finished his tea and shook his head. He said, “Thank you for the offer, but I have to get back.”

Fran’s face fell. “Of course you do,” she said. “You have to tell her the conditions if they want to stay here.”

He nodded. "She won't accept them. In her mind, Francesianism can't be subordinate to anything. Particularly secular governance."

"It's non-negotiable I'm afraid," said Fran.

"I know," he said. "I think you're right. I think they're going to go."

"To that small world?"

"In the asteroid belt in the system we saved from the Visitor. I think two balls should take everyone who wants to go."

"We'll have to build one," said Elgin. "There's the Ball ..." Saying that made it real. That was Stanton's Ball. The original. It had been their home for many adventures. "Maybe we'll have to build two," he said.

He heard a little hiccup and turned to see Maria crying. It was a surprise because she'd been so strong since Buzzard died, taking care of Galatea in her grief and anger. Now for some reason her fortifications gave way and she began to cry inconsolably. Was it something to do with the Ball? Did the conversation trigger some little memory of Buzzard? Maybe it was just that the bald-headed men were gone and Galatea didn't need her so much. Whatever it was, she let it go and sobbed with her whole body. Now Galatea put her left arm around her, so as not to bump the pistol on her right thigh, and led her into the apartment, murmuring gently.

The rest of them looked at each other, most of them brushing away tears of their own. The Doctor was smiling through his tears, nodding his head at Fran. She also smiled as she shook away her tears. They had shared their concerns as Maria went day after day suppressing her grief, so this was a relief.

Fran turned back to the Commander. She cleared the tears out of her throat and said, "It will take a few months to prepare two balls. Blue Comet will have to remain unattached for that time. The

Francesians have chosen to no longer be a part of us, so they will remain apart. You, of course, are free to come and go. Maybe one of those times we'll be able to convince you to stay for good."

"Maybe," he said. "That's a risk I'll have to take. But I don't think I'll change my mind." His face firmed up. "For all their faults, they're my people and it's my job to protect them. You tempt me, but my duty calls me." He tugged his tunic, straightening it.

Fran had a sad smile. "Of course it does," she said. "And you will answer because you're too good a man not to." She flew up close and hugged him. She squeezed him hard and said, "Our loss is their gain. Take care of your people Commander."

He didn't trust his voice so he just looked at everyone, nodded, and flew away across the Square.

Just about the time the Commander went out the red exit, two figures entered by the far opening in the green wall on their left. The only thing of any note up that hallway was the planning committee meeting room.

"It's them," Nigel said. "The meeting must be over at last."

They were coming this way and it soon became clear that Nigel was right. Winston was recognizable first. His size and shape and generous features were unique and easily seen. They had to come closer before Minder could be identified, but they were sure it was him anyway.

When they got close enough Minder called out, "Sorry we're late. The meeting dragged on and we couldn't leave."

"Of course you couldn't," said Fran. "The chair and his special adviser have to stay until the end." She went and got the tray from Scarface and offered them tea and muffins as they landed on the balcony. "The Indigo delegation didn't want any, so you can have

theirs.” She gave the tray and its two remaining servings back to the little robot.

As soon as Minder and Winston had their first sips, Rama asked, “Comets?”

They looked at Nigel and he interpreted. “How did the talks with Cloud City go?” The comets assembled to destroy the Visitor ended up being struck by a lot of its debris, and now there were permanent communities out there mining the resources. They refused to kowtow to the Francesians and had cut off contact with the hexamer.

Winston opened his wide mouth, and his deep voice croaked up out of his chest. “They are open to our proposal. They agree that it is in everyone’s interest to re-unite with us.” His chuckle was a deep rumble. “They just want to wait a while and make sure that we’ve really got things settled.”

“Smart,” said Rama. He didn’t need Nigel to interpret that.

“Yes,” said Elgin. “I don’t blame them at all.” He glanced toward the red exit, where the Commander had gone to return to Blue Comet. “Maybe they will feel safe after the Francesians have left.”

Winston nodded. “That’s the impression I got,” he said. “They don’t trust the Francesians, and I don’t think they fully trust us to handle them.” Minder nodded his agreement, little glimmers of light in his cheeks.

“I think that’s wise, given their situation,” said Elgin. “They’re vulnerable out there, and they can’t really be sure of anything they hear.” He looked at Fran.

She nodded and said, “That’s right. I’m sure we’d do the same thing, wouldn’t we? They’ll come when they’re ready. There’s no rush.” She looked at her empty cup. “Does anyone want more tea? Muffins? There’s plenty.”

They did, and when she went inside she found Maria and Galatea puffy-eyed and sniffing, but ready to help. This time there were two trays, one holding six servings, the other seven, one carried by Maria and the other by Galatea. After everyone was served, they each gave Scarface a tray holding one tea and one muffin, for their missing loves. It helped.

After they'd all had a taste, Rama spoke again. He said, "Bees."

Nigel said, "That's right. Rama wanted to be sure to thank you, Elgin, and Buzzard, of course" — he looked at Maria, concerned, but she just nodded and smiled through fresh tears — "to thank you for the idea of using the bees to make communication devices. It turned out to be very useful." He looked at Rama.

Rama nodded and looked at Elgin, then Norton. "Soldiers," he said.

"The Underground," Nigel continued, "was able to adapt the idea to make other things, like restraints. When you and Norton led those soldiers into a trap, that left few enough up here that they could be captured and restrained by strings made of bees."

"Bee strings," quipped Snowy, to a round of groans. He grinned and smoothed down the pocket flaps on his brand new vest. Other than the Commander, he was the only one still wearing clothes. He was used to his vest. It was part of him.

"That wasn't all though, was it?" said Fran. "You used them to incapacitate the soldiers who were trying to cut the net on the hatch." She frowned when she remembered what happened to them — two dead and two needing to regrow a hand. Elgin noticed and put his arm around her shoulders.

"Elgin," said Rama.

"And Elgin used one to keep an eye on Norton and the Com-

mander,” said Nigel. “The bees might have been made by the Francesians for their purposes, but they’re turning out to be useful in ways they never thought of. And I think we’ve only just begun.”

Now Rama looked right at Fran and addressed her directly. “Brains,” he said.

“Yes,” said Fran. Then, including everyone, she said, “Rama and I talked yesterday, along with his medical experts, and the Doctor of course.” She looked at the Doctor and he acknowledged the attention. “They think that we will be able to replicate hypersynesthesia with brain conditioning during hibernation.” That stimulated a burst of talking which she allowed to run. When it slacked off she said, “That will go a long way toward helping communication between normals and hypers. It will be good if we can talk normally with each other without the need for interpretation.”

Elgin was frowning. Just a thoughtful frown, not one of his scowls. He said, “What we talked about before. How the hypers are born with it and grow up adapting to it. Will there always be a difference?”

Fran looked at the Doctor, and he said, “Probably. Of course we don’t know because this has never been done before. So time will tell and we’ll have to see how it goes, especially over the course of many hibernations. Then there’s the matter of increasing the clock speed in our brains to match theirs. That’s never been done either.” The Doctor realized he was beginning to pile on the qualification, and he laughed at himself. “At any rate I suspect we’ll be able to get close, the more practice, the closer. But I have a feeling that there will always be a little difference due to the fact that their brains got that way naturally.”

While Elgin nodded, still frowning as he tried to figure out what it meant, Fran said, “Of course the similarities will far outweigh the differences.”

That brightened everyone up. Elgin lost his frown. Rama even smiled when he said, “Similarities.”

Elgin was still nearby Fran so she put her arm around his waist and pulled him in tight. He put his arm back around her shoulders and they stood side by side looking out on the Square. They liked what they saw. There were people still repairing and cleaning. There were others at the window, talking to Orange Comet and Prime One. Talking to the lighthouses, Pharos and Scintilla and the newer ones. They gave another happy cheer when another block of the window activated. It was a scene of energy and hope, and of great anticipation for the future.

Elgin squeezed Fran’s shoulder and said, “Are you ready, Rannie?”

EPILOGUE

Cloud City did renew convivial relations with Green Comet. Once the Francesians were well on their way, past the ring of comets where they lived and worked, the miners were glad to associate themselves with the hexamer once again. They knew that Elgin and Fran and the rest wouldn't treat them like indentured colonials, as the Francesians had tried to do. They opened up their windows and opened up their lives, and even began to come home for visits again. The converse was also true. They opened up their communities to visits from the hexamer. People who were curious, or who just wanted a little adventure, could go out there and satisfy the urge. It was especially popular among young people. Some would go at the end of their birth waking, before they were twenty years old. Others would go at the beginning of their second waking, which was generally thought of as their first adult waking. This was the source of many of the migrants who ended up staying out there to live. With them, and others who had their own reasons for the change, the population of the ring comets remained stable, and even grew, in spite of the balancing flow of people the other way, people who wanted the greater population and sophistication of the hexamer. Mostly young people once again, who wanted something different from what they had grown up with. The free movement of people revitalized the relationship, and brought renewed life and vigor to both places.

While this was going on, the people of Indigo Comet were debating whether to remain independent or to rejoin the rest of the hexamer. It was a vigorous debate involving shouted arguments and fights that

often ended in injury or even death. The ones in favor of continued independence were of the ilk of those who had visited the balcony of Elgin and Frances. The men had shaved heads illuminated by tattoos, some of which emulated the tonsured widow's peaks of the ruling Francesians. They were quite happy in their positions of authority over the rest, who were either enthralled or intimidated. The women who belonged to those men weren't allowed to shave their heads or to have tattoos. Those honors belonged to the men, who were jealous of their privilege.

The ones in favor of opening up and rejoining the greater society were largely the ones without power in the current arrangement. People whose lives were spent in submission, either being used by the most powerful as pawns and cat's paws, or completely outside the power structure in complete subjugation. They were suffering at the hands of the few exactly what the few said they would suffer at the hands of the Francesian overlords. They were being told that enslavement was the price of freedom.

Maybe their tattooed masters suffered from the same hubris as the Francesians had, or maybe they simply underestimated the fury of their victims. Whatever it was, the revolution was short, shockingly violent, and successful. The forces in favor of openness won, and the next delegation to grace the balcony was larger and mixed, with women being in the majority. Galatea found some kindred spirits there.

Winter Comet also chose to open up and rejoin the hexamer. Their only reason for cutting themselves off before was the obnoxious degree of interference that the Francesians wanted to have in their affairs. Life on Winter wasn't as terrible as it was made out to be. It just got distorted by speculation and prejudice after they became so secretive. No one knew what went on there, so it must have been bad. But it

wasn't so bad. It was just that they were tolerant of ways of living that the Francesians wouldn't tolerate, because the Francesians believed that there was one best way to be. No one was forced to stay on Winter. Anyone could leave any time they wanted.

That wasn't the case with Red Comet. No one could leave this second iteration of that color, just as no one was allowed to visit. Like Winter, Red was secretive, but unlike its neighbor, Red was also bad. Their leader, Rufus, was a sadistic psychopath. He was also paranoid and a textbook narcissist. To him, people were either resources to be used or threats to be eliminated, often in that order. Red Comet could not be allowed to join with the rest of them as long as he was in power. The simplest solution would have been to cut them off. To break the three tubes connecting them to the hexamer and send them on their way. But they couldn't do that while there were innocent people trapped there. They were going to have to figure out a way of liberating the comet and freeing its people, either by negotiation or revolution.

The sixth comet got some attention right away. They immediately set to work finishing it, harvesting small comets and packing them on until it was as big as the rest. They put some thought into how they would use it. Some people thought it would be a perfect place for hypersynesthetes. A new home for new people, they said. There was a lot of sympathy for that idea. Many people were still uncomfortable with them. They didn't know how to relate to them. They couldn't understand them and it was easy to resent what seemed like an obvious assumption of superiority. In truth, some of the hypers got exasperated with the difficulties of communication, too.

It might have gone that way if not for Fran and Rama. They knew that this was not the time for dividing people. There might have been

big differences among them, but with time and brain conditioning, they knew the differences would shrink and the similarities would grow. They convinced people that the new comet should be a heterogeneous one, as Green Comet already was, and as Blue Comet would become. They knew that the best way to keep the hexamer healthy was to keep it open and well blended. They demonstrated that intention when they christened the completed comet Prism.

~

The Five statues from the Square hadn't been destroyed, merely hidden. They were found and returned to their rightful places in the center of that vast space. There was Fran, standing as if she were giving one of her great speeches during the debates. That was Elgin a little behind one of her shoulders, with a wing cupped behind her back. He was her rock, looking at her with love. Back a little more and off to one side was Nigel, looking at them. He'd spent fourteen years out on the surface of Green Comet hunting down some of the Visitor's spies. He'd endured that and the subsequent cancers to protect his home and people, it was said. He'd done it for her, really. For Fran.

On the other side was Buzzard, looking just like himself. His face was full of joy and anticipation, and he was poised to take off and fly. He had laid a trap for the Visitor's scout and then risked being lost in the cold void forever, trusting his friend Elgin to find him. In back of him was Laika, who had sacrificed herself to save Green Comet from a deadly infection. On her shoulder was the little hummingbird that had given its life to protect its nest.

Now there was a sixth statue standing behind them all, its feet planted firmly and its arms crossed on its chest as it looked at the rest of them. It was actually looking specifically at one of them, Buzzard.

Its expression would brook no nonsense, but its lips betrayed a little smile as it watched the closest thing it had to a son. Standing next to the sixth statue was a seventh, as Elgin had promised. She had a ponytail and her smile spread a web of wrinkles across her face. Stanton and Nana had joined the heroes of Green Comet.

~

The Francesians left in two balls. That was all it took to carry the six hundred or so who chose to go. As with most totalitarian societies, those who professed to be true believers and those who really were proved to be two different things when people were free to be honest. The six hundred chosen ones paraded through the big cargo bays and into their balls, their heads held high in dignified martyrdom. They knew that they were leaving behind the darkness of iniquity and heading toward the light of their god's grace.

Her Grace led the way into one of the balls. It had been selected and blessed and sanctified and declared to be the more holy ball, and thus worthy of her presence. So she led the way with her beautiful hair and her glorious wings, and she was followed by the best of the best Francesians. They were the ones who were allowed to wear the most elaborate tonsures. They were the elite of the elite. The ones going into the other ball had more modest tonsures. They were deemed holy enough to wear one, but not as holy as the ones going on the first ball, now named Blue Ball.

They had a grand mission ahead of them. They were not merely being exiled, they had embraced it and turned it into a holy cause. They would go to the system that Green Comet had saved from the Visitor, to the asteroid belt between the fourth small, rocky planet and the first large gas planet, and find the largest asteroid. It was almost

a thousand kilometers in diameter and would be sure to have all the resources they would need to establish themselves. Surely it would be as good as a hundred comets of the kind they were leaving behind.

Once established there, they would send people to the inner system to survey the third planet. That was the one where Elgin and Fran and their friends had seen signs of life recovering from a planetary disaster. Now the Francesians would evaluate that life and see if it was worthy of their attentions. If it was, then they would send volunteers down on a one way trip to select some forms of it to remake in their own image. Of course, that meant forming them in their god's image.

~

Meanwhile, in the other direction, Archie and his crew on the Prime arrived safely at the double planet. They parked at L1 of the outer of the two planets, the lagrangian point between the planet and its star. That way they had one planet in view all the time, and the other most of the time. Since their plan was to observe the planets and their people, that gave them a good platform from which to do it. If the people of either planet ever recovered enough to turn their eyes and telescopes back to space, and especially if they ever returned to space again, Archie and his people would be ready. They would be there to explain and to give them back their stolen resources.

They had no intention of simply sitting and waiting, though. They had the Prime and its collection of scouts and modules, and they planned to make good use of them exploring the system. First there was the matter of the planets themselves. They were over a million kilometers away from the closer one, and tens of millions away from the other, and their telescopes could only tell them so much. If they

were going to keep close track of these people, then they had to get close, so they would periodically visit them in scouts and modules.

Archie had another idea as well. He wished he could talk it over with Buzzard at the window, but that wasn't possible. He did talk with Elgin though, and he realized that Buzzard was right. Elgin did know. He got it. Even though Elgin didn't give him the answer straight out, talking with him made the answer clear to Archie. They would begin a program of dropping artifacts onto the planets that would give the people who found them hints of what had happened to them. Hints of the existence of the Prime. At least they would give the possibility of that if the people found them, and if they figured them out. Of course there was always the chance that they wouldn't be found. Or, if they were found, the people might just be afraid of them and shun them all together. Or, if it turned out that they had a religion instinct, the artifacts could get spun into something else. They might end up perverting the whole intention of the exercise. That was one of the things that worried Archie, and one of the reasons he needed to talk to Elgin. The answer to that one actually came from Fran. She told him that if people were inclined to let their beliefs deceive them, then they would do it no matter what you did. She could speak from experience on that, so Archie put his worries aside. They would try to show the people the truth, and let things unfold as they would.

~

The brain therapy worked. Normals caught up to hypers and were able to relate to them eye to eye. The brain conditioning, especially when refined over several hibernations, almost perfectly replicated the changes seen in hypersynesthesia. It was true that there would always be a slight difference attributable to the fact that the hypers were born

that way, and their brains matured under the demands of their heightened perceptions. That didn't have any practical effect on their daily intercourse, though, and if it engendered classist thoughts in anyone, it seems they kept them to themselves. One thing that they were all hopeful for was not to be. They had hoped that they would be able to use what they learned to help Leonardo recover, but some of the things done to him by the Francesians were irreversible. When they blundered into his brain in their clumsy attempt to "re-normalize" him, they damaged it too badly to ever fix. Now the only consolation was that he appeared to be happy, if you could go by how much he smiled.

For Elgin and Fran and their friends, this change to their brains and their perceptions was yet another reason to think about their identities. They had talked about it before and had come to the conclusion that they were probably not the same people who started this journey. Even though they woke up each morning feeling like the same person who went to sleep the night before, they knew they weren't the same person they were millennia ago. They weren't the only people thinking about it, either. Green Comet had begun to debate the issue, too. They were beginning to think about how to deal with the consequences of evolving identities before the Francesians took over and put a stop to that. With them gone it was time to open up the issue once again. Eventually they came up with a formula whereby, after meeting certain conditions of the number of years lived and the number of hibernations taken, people could petition to adopt a new identity. They could officially become a different person.

~

Elgin and Fran stayed up for a while during the rebuilding. They weren't strictly needed because there were plenty of people with plenty

of motivation to get it done, but that was part of the reason they stayed up. People were motivated not only by the desire to see Green Comet rebuild and return to its open ways, but in some cases by anger and resentment and desire for revenge. They needed Elgin, and especially Fran, to remind them that Green Comet also stood for compassion and forgiveness. With their guidance and example they kept the Francesians from the harm that might otherwise have come to them. The worst that happened was that a few of them were waylaid and had their widow's peaks shaved off. Of course the Francesians decried this as the worst sort of persecution, and used it to strengthen their resolve.

Once the Francesians were finally gone and things had a chance to settle down, Elgin and Fran took the time to bask in the satisfaction of good works and good friendships. Many hours were spent in repairing the myriad things the Francesians had allowed to deteriorate, and many more on the balcony admiring the results of their handiwork. It was a good time. The best kind of time they could imagine, full of good work and good friends. It was the best time to go down for their hibernation, to replenish their bodies and their minds, and to begin the transformation to a new way of being. When they woke up they would see the world in a new way, with more depth and more detail. They would finally experience the new level of understanding that could never be adequately explained, and which they would immediately see had always been there waiting for them. Everything was familiar, but completely new. Everything they knew was waiting for them to discover as if for the first time. Most importantly, they discovered each other. With only a few words, but with the rich complexities of every other way of communicating, they found each other and fell in love for the first time all over again.

Lying together in their apartment, their auras fully entangled, they looked up at the lights from the Square glowing in their bedroom ceiling. The red, orange, yellow and green suffused the room with their soft radiance, and Elgin saw them glimmering in Fran's eyes. As they looked at each other they smiled because they both knew. In the morning they would tell the others. Maria and Galatea, the Doctor and Nigel, and whoever else was interested. It was time to go. There was a lot of galaxy out there, and it wasn't going to explore itself.

HOW IT HAPPENED

Green Comet began in 1994. It also began before then and after then. I'm sure most books are the same. They're impossible to pin down to a specific date, depending on what you use for criteria. But let's use 1994, since that's the year the Shoemaker-Levy 9 comet smacked into Jupiter. At that time I was active in the Science conference, one of the Usenet newsgroups. Another member posted, asking for ideas he could use for a disaster story. I suggested some non-ecliptic comets on a dangerous orbit. I wonder if it was a coincidence that the movies *Armageddon* and *Deep Impact* appeared in 1998. Probably.-)

The idea began simmering in my mind, and I even wrote a couple of short stories to explore the concept of living on comets, but it was mostly conceptual until about 2004. I decided then to think about it seriously. Since I had a menial job at the time I could spend the whole day thinking about it, and jot down notes after work. I knew I had a story when Elgin and Frances showed up. In 2009 I finished with that job and that's when I put pen to paper with the aim of getting the story written. Three years later it was ready to publish. Three more years for the sequel, *Parasite Puppeteers*, and two more for *The Francesians*, to complete the Green Comet trilogy.

I won't be writing any more books about Green Comet, but that doesn't mean that you can't. That's the point of publishing it with a Creative Commons license. You're free to take the characters and other story elements and expand on them. Providing you adhere to the principles of Creative Commons, no one is going to come after you waving their copyright club. So, write a story, draw a comic or animate

a video, or do whatever creative thing you do with it. I only want Green Comet and its characters to continue to live, free and open. Meanwhile, I'll be getting on with the next story. I can already see bits of it, and it looks like fun.