

Where Gravity Sleeps

15 – Germination

The Belt society flourished. By the time the spinworld had been pressurized for two years, three quarters of the people in the Belt lived there. The birth rate in the Belt had been low before the spinworld project had begun, but many new people took their first breaths of life about the same time that the spinworld took its. There was a genuine population explosion in the Belt. A new generation was being formed.

The discs had names now. The first disc was called Spinland. The third disc had been pressurized, and people were debating how it should be used, if at all. A dozen huge, elevators were created to help bring materials into the discs. Each elevator was large enough to hold a single spacecrate, making them the largest elevators ever created by humans. Rose World spun fast enough now that there was a light spingravity. People no longer wore jet packs. Rose World felt about like Jane's World, aside from the obvious differences in size and architecture.

About a third of the people who had been living in Jane's World had moved to Spinland, including the entire Belt government. Morena Ramirez had moved too, although he still loved Jane's World. The obvious differences in size and architecture were extremely important to him, he discovered, and he wanted to return. Morena had served very well as President of the Belt. He had run the spinworld project fabulously, by getting capable people into positions where they could do the most good. It was an ultimately challenging task, because he had responsibility but not much real power or authority. Nonetheless, he had succeeded. Now he was spent from the effort.

Claudia had also moved to Spinland along with the rest of the government and she was no happier about it than Morena. Her passion was the skating sphere, and she missed it sorely. She tried to skate in the low gravity of Spinland, but it was not the same. She felt a strong commitment to her role in government, but the move had forced her to decide what was really important to her. For a long time all that had mattered to her was having a purpose and skating. Now they were at odds with each other. She hadn't felt as torn about anything since she had survived a terrible accident in space in a lifecraft with her page-pal, Greg. She exchanged pages with Greg frequently. She consulted with him not long after she arrived at Spinland, because she already missed the skating sphere. He told her to follow what made her happiest, because that was all that mattered.

The second disc was called New Brazil, and it was slowly on its way to becoming a rain forest. Water had been refined from asteroids and some borrowed from New Atlantis, to raise the humidity adequately. It lacked the huge trees, but already there were established ferns and undergrowth. There was natural weather, but it was not yet very diverse, and New Brazil alternated fairly predictably between downpour and cloudbreak. Many

smaller animals had been introduced, as well as hundreds of varieties of insects, fish and birds. Some of the plants developed strangely, due to the low gravity, but they grew and the air smelled of life. Frogs had to learn some control or they would spend most of their lives in the air. They adapted. Birds seemed best adapted to the low gravity. They simply spent more time gliding. Gwendolyn's Gardeners had been efficient and thorough in their work. Many had no intention of ever leaving New Brazil. Already it had an untamed appeal.

Spinland by contrast was the undisputable evolution of civilization in the belt. It had many large cooperative farms and now most of the food consumed in Rose World was produced there. Synthetic foods were still imported from factories, but people understandably preferred the naturally grown food. The diversity of food and plants were all due to the extensive archives of DNA on New Eden. It had taken a while to find crops that would thrive in the low gravity. Each new plant that thrived was cause for celebration. Spinland had a smaller, but still stable ecosystem of animals. It lacked as much variety as New Brazil, but that was entirely by design.

People lived in the housing they had made together. But now there were many other structures. If someone thought a fountain was needed, they would propose it, and request help. If enough other people offered to help by providing materials and labor, it would get built. If not, it wouldn't. Buildings like schools and hospitals were easy to get support for. It was a form of natural selection, and it worked wonderfully. Effort and materials were applied where people needed them, although everyone knew that something was missing, even if they couldn't put their finger on it. Something about how Jane's World felt reminded people vaguely of it. For now, a utilitarian society flushed and grew, and people were happy to be free and alive, and working together.

The imbalances in production capacities had been improved dramatically, and now most goods were no longer scarce. The government had modeled the scarcities and oversupplies, and recommended to factories what they could produce that would be more useful. There still were many scarce services, but the universities at New Eden had opened campuses in Spinland, and people were learning how to fill the roles that provided those scarce services.

The request/fulfillment system was beginning to show its weaknesses though. There were a number of problems. It still worked, but people knew it needed some changes if it was to scale up with society. The original Belties were all so compelled by their magnum opus, the spinworld, that there had been little fraud. Many had been without luxuries for so long, that they didn't care about them. But the infusion of people from Earthspace, brought with it many problems. Now a black market for scarce goods had become established, and they were even issuing their own currency. The Belt government was powerless to stop it, lacking both the means and the personnel to oppose it.

It was a very frustrating time for anyone working to improve the request/fulfillment system. They had already made significant improvements, such as an automatic fulfillment trace, which made it trivial to find whoever was fulfilling a given request. You

could hold a portable console next to an object which had been encoded with an identification key, and the console would display who had provided it last. For some objects you could follow the fulfillment history back to its creation based on components. The information lubricated the exchange of goods and services, by making it easy for people to stay informed.

One of the growing problems was the complexity of the system. It had worked very well when there were only a hundred thousand participants. But when there were ten times as many, the sheer number of requests and fulfillments made it difficult for people to cope. It began to take a long time to scan through lists of requests, and it meant fewer were fulfilled. People began to complain more than usual to the Belt webs, and some non-critical requests were marked as critical simply so they would get some attention. It wasn't that people were unwilling to work, but it was getting difficult for people to connect to each other due to the volume of data they had to wade through.

The neocapitalists stepped up their rhetoric, and their currency spread. Soo Ying made several postings, imploring people not to resort to currency and the black market. But it was difficult to argue with the fact that one could get things on the black market that were otherwise unavailable. Soo Ying pointed out that those things would be available if people didn't hoard them to exacerbate the scarcity, just so they could demand more currency for them. Some people understood, but others compromised and participated in both economies.

Morena was exhausted from the effort with the spinworld, and he had no enthusiasm left to fight the neocapitalists. He decided that he should get out of the way and let someone else deal with them. He decided he would ask for a new Presidential election, and not run for the position himself. He was very popular, and most people read his posting.

I have been proud to serve as your President these three years since the Belt Accord on Government was created. During that time I have tried to serve faithfully and tirelessly. I am proud of our accomplishments and of all of us for finding a way to work together and keep our society healthy.

I believe that an important step in the art of our continued health is to select new leaders. We try to give to others than those from whom we receive. We are most valuable when we can fulfill the most kinds of requests. We are also strongest when the positions of power in our society are occupied by a variety of people over time. It is not a disparagement of anyone to share a role with another. The Presidency is only a role and all who every hold it are simply sharing it with all their predecessors and successors.

Therefore, I have decided that my time in this role is nearly over. I will remain here until an election is held to select a successor. I ask you to look around you, and nominate anyone whose guidance you would follow. Let the nominees debate, and then let's hold an election to narrow down the choices to five. Then a

final election will determine our new President. To anyone who is considering running for President I can tell you it is a difficult but rewarding role.

I also propose that we amend the BAG to include a provision for a vice President, and that we vote on this amendment in our election. If approved, we can elect a Vice-President in a subsequent election.

We face serious challenges as a society now that we have addressed our survival needs. Our next President will have their work cut out for them. I have enjoyed the trust and responsiveness of our citizens during my term, and I ask you to afford our next President the same cooperation. Remember that all minds are equal and equally entitled to the benefits of our society, but that all bodies are not equal and roles should be chosen by and allotted to those who are able to fulfill them. It means that the strongest among us must carry the heaviest loads; however, it is not difficult to see that none of us is so strong forever.

May peace warm the Belt forever. Good twilight to all.

People were sad to see Morena call for his own replacement, but they took his words to heart. An election was structured, and in the two-week nomination period a total of one thousand two hundred nineteen nominations were put forward. About three quarters of those people declined. But it still left over three hundred nominees. There was a three week debate period. Only the nominees were allowed to post pages to the Presidential debate webforum; however, people were free to post pages to nominees directly. Everyone could read the Presidential debate webforum, if they had time to follow it. Many people made time. It was really up to them how to spend their time, and they believed that choosing the next President was extremely important.

It was not surprising at all that Rose Wiseman was nominated. At first she planned to decline. But over six hundred people and artificial minds nominated her independently, the most by more than a factor of four over the next most nominated individual, Soo Ying Lee. However, despite his popularity, Soo Ying declined, claiming to be too old and tired to serve society well in that role. The first election was held and the field was narrowed to five. Everyone knew Rose's face and name. She had the kind of natural following that made it difficult for anyone to compete against her. Anytime someone mentioned Rose World, they would recall that she was a candidate for President.

There was a period of three days when the Presidential debate raged. The issues they debated were the titanium crisis that had all but ended the da Vinci project and threatened the ship industry; the neocapitalists, black market and currency; what to do with the third pressurized disc, and the problems with the request/fulfillment system. The debate process helped people select their President, but it did much more than that. It focused people's attention on the issues for a while. The five candidates were all very capable people, and they fully engaged themselves with the debate. The debate evolved, and ideas were offered and challenged. Two of the candidates did little but undermine the arguments and suggestions of the others, and they used rhetoric instead of offering their

own ideas. The other three were more straightforward, hoping to win the Presidency on their own merit.

Rose distinguished herself in the debate on the titanium crisis. She suggested that Earth's moon could still be mined for titanium, using Belt rock patrol techniques, and avoiding the surface during periods when the moon crossed the Neobelt. Other candidates had been pushing a plan to deconstruct the da Vinci and use its titanium. People wanted titanium, but they also wanted the da Vinci completed, despite the development of Rose World. Rose offered them both.

When the election was held, she won by a huge margin, to nobody's surprise. On Tuesday, November 21, 2147, Rose Wiseman became the first elected President of the Belt, and the second person to be President. Morena kissed her cheeks and gave her a ceremonial sash. Then Rose addressed the Belt via a holographic broadcast, and thanked everyone for their participation in the election process, and for selecting her as their next President. She also launched a new government department dubbed Moontech, whose charter was to find a way to mine titanium safely from the moon. She asked Albert Chan to head it. He later accepted.

Interestingly, the proposal for a Vice-President was not favored by a majority, and so no election was held. The primary argument against it was that any time a new President was needed, an election could be held. The Belt lacked violent political opposition, or nationalism, which might make a convenient line of replacement leaders important. The Belt could operate without a President long enough to elect another.

After the first couple of months of her term, it was clear though that the primary problems were the request/fulfillment system and the black market currency problem. Rose consulted with the aging Soo Ying Lee. Soo Ying had declined his Presidential nomination, but he was willing to be an advisor. Soo Ying convinced Rose not to view the neocapitalists as a threat, but instead as an indication of where the request/fulfillment system was failing. If the system were working better, the black market currency would become valueless.

Rose requested analyses of what the problems were with the system, and she learned a lot. The essential problem was that the system wasn't scaling well. The nearly tenfold increase in population had made it much more difficult for requesters and fulfillers to get matched up efficiently. Several proposals for automation were put forward, but mindless automation was inadequate to the task.

One proposal suggested mindful automation. Mindful automation meant using artificial minds to help requesters and fulfillers connect. Rose was intrigued and asked for a demonstration. It was a remarkable success. Not only did it address the issue of scalability, the process was more efficient and pleasant than before. Now there was someone to interact with instead of just a user interface. Artificial minds were much better equipped to cope with the volumes of data, and they never tired of tedious work. They also did not need to sleep, but they all took time away from their duties to pursue

their own interests and development. They were called connectors, and being a connector was considered a prestigious role for an artificial mind.

The artificial minds were pleased and proud to have such visible and critical roles. There were only forty seven advanced artificial minds ready and willing to be connectors. It was not enough to fill the need, but more were being created. Even the existing connectors made a noticeable difference. People could see the system could now be made better and most were willing to be patient while it got there.

The black market didn't disappear, but it was dealt a heavy blow. However, nothing like what would happen next. Soo Ying had met with Rose to discuss one of the serious problems with the system. People had accumulated such extensive request fulfillment histories that certain undesirable patterns were emerging. One problem was that people who fulfilled many requests developed a kind of wealth, which made their own requests get fulfilled more often than other people's. That was a desirable effect, but only to a point. The goal was not to create wealthy individuals, but a wealthy society.

Soo Ying explained that people should purge their histories, all at the same time, and start over. At first Rose was horrified by the idea, but he explained that nothing was actually being lost or destroyed that had any intrinsic value. Instead, it was an act of renewal which reinforced everyone's essential equality and reaffirmed everyone's equal obligation to contribute if they could. It started everyone off on the same footing again. After Soo Ying convinced Rose she posted a proposal to the Belt.

We are challenged today with many problems, but the hardest one we face is to live for today and not in the past. Our request/fulfillment system is improving with the help of the connectors and we are grateful for their skill and patience, but it is still up to us to offer our goods and services to those who request. It is still up to us to decide who shall receive them first when there are limited supplies. It is up to us to be fair. Any deviation from fairness undermines the trust on which our system is based.

We don't all agree on what is fair and what is not. That is generally good, because no one interpretation is probably adequate. I believe the combination of people's diverse view of fairness is possibly broad enough to be fair more than any one of those views possibly could. So I encourage you all not to delegate your sense of fairness to anyone else. Form a vision of fairness in your mind and be true to yourself and to it.

When we began our request/fulfillment system, we all had blank fulfillment accounts. Everyone who joined the system since then also had blank web accounts. Now, our accounts show our long history of requests and fulfillments. It is no longer easy to understand who is contributing. The danger is that fairness is being threatened because of that difficulty. Having contributed in the past is not as important as contributing now. People get feeble and disabled too, and they cannot contribute much if anything. We can all understand that and we provide

what these people need because we are able and they are not. That is the strength of a society: that it can care of its weaker members.

Our fulfillment histories are not ourselves. We are changing creatures of thought and ability. What we were, what we are, and what we will be are all different. Yet our histories pin us to what we were and can inhibit what we might become.

Therefore, based on a suggestion by and subsequent discussion with the venerable Soo Ying Lee, I have drafted a proposal for a Belt-wide Potlatch. On the day of the Potlatch, everyone's request and fulfillment accounts are renewed. The entire request and fulfillment history is archived, but not present on the main web account pages. If we make the Potlatch a regular event, then we will remain more truly equal. If we forego it, then the fullness or leanness of our fulfillment accounts will become the new currency, the new means of discrimination. If we keep the Potlatch, then we will reaffirm our equality in entitlement and obligation to society.

The history has no real value, other than to tie us to the past. We need to remain fresh. I said we must live for today and not in the past: here is what I mean. We cannot substitute our system for money. We must transcend the need for money. To do that, we must transcend the desire to accumulate personal wealth in contrast to others. We are either all wealthy or we are all poor. It is up to us to decide. If we do not keep the Potlatch, then some will inevitably become poor and none of us should be subjected to that.

I call for a debate and a vote on the proposal for a Potlatch to be held on a new webforum dedicated just for the Potlatch.

The debate was the harshest one ever in the history of the Belt. There were old thinkers who believed that the Potlatch was like burning money. There were new thinkers who understood the Potlatch was an ultimately fair event since everyone was more equal after it than before. Some people rejected the idea because they had built up sizable fulfillment accounts and were enjoying the benefits of that. Many people supported the idea because they saw little value in the histories anyway. They focused on the present.

The neocapitalists however took the Potlatch as an unholy and deadly threat. It went against everything they understood and believed in. They also realized that it might threaten their precious black market. Most people didn't participate in the black market, but the ones who had were usually the ones with sparse fulfillment accounts. If nobody's was any more sparse than anyone else's, then they would lose a steady source of currency addicts. People became addicted to currency because after they had been relying on currency instead of requests and fulfillments for a while, they found it more difficult to get their own requests filled. People preferred to provide for those who contributed to society.

The neocapitalists were very powerful. In some ways even more powerful than the government. The government could not actually force anyone to provide for anyone else. Instead, the government provided leadership for people to follow. By contrast, the neocapitalists used coercion and bribery to make things happen. Some enterprising individuals used violent acts to create scarcities. Most people were unaware of this and accepted the scarcities as merely unfortunate. But it raised the prices of those scarce goods and the neocapitalists reaped the profits.

The neocapitalists waged a bitter debate full of rhetoric and specious arguments. They did everything possible to defeat the Potlatch. But the more they opposed it the more they alienated the majority of the people in the Belt who were steady fulfillers and who expected everyone else to be too. They saw no real danger in the Potlatch and it was approved.

The day of the Potlatch was a holiday and nobody worked. The Potlatch happened automatically. People didn't have to do anything to make it occur for their account. The effect on most people was to make them feel free. It felt like starting a new job or a new project. It felt like getting a second chance or being forgiven. It felt like waking up to a new morning. It was liberating in a way that few people really anticipated. Even people who had opposed it felt better about it after it had happened, except for the neocapitalists of course.

The Potlatch was a devastating blow to the neocapitalists. Suddenly, all the currency addicts were given a second chance and they flew from the black market, back to the now-improved request/fulfillment system. The black market continued, but with the expectation for periodic Potlatches there was no real hope for a large constituency for currency again. Some of the neocapitalists gave up and others specialized still further. Capitalism wasn't illegal: it just wasn't profitable anymore.

Moontech was popular from its very inception. People competed fiercely for positions in the department and for key roles. There were many problems, but nobody expected it would be anywhere nearly as difficult as building the spinworld. The Belt had developed a certain collective arrogance about survival and growth. Not only had mankind survived, but people were happy and peaceful and had what they needed in their lives. It was a golden moment and Moontech was the epitome of the times and the state of the people.

An initial survey team was selected to investigate the status of the moon, its existing mining facilities, and conditions in the Neobelt that now occupied the former Earth's orbit. They had data from the initial cataclysm, but the observation craft had followed the bubbles out of Earthspace shortly after. In the more than two years since Heccat destroyed the Earth, the Neobelt had become surprisingly distributed. It still occupied about a half of the orbital path, but the moon was within that region, and crossed the Neobelt once every half year due to its more elliptical orbit. The survey team observed the results of four such crossings on the surface of the moon. It was devastating. The albedo of the moon had changed. The moon was now darker because of the accumulated debris on the surface. Not only that, but there were signs of fresh volcanic activity in the

vicinity of huge neoasteroid strikes. The moon was still intact, but it was being mauled twice a year.

The survey team included Ishmael and Hermes. It had been difficult for Ishmael and Rose to part, but she could not run her Presidency from on-board Hermes, and Hermes needed to be in the Neobelt so he could use the Crawford Scanner on the moon and neoasteroids. Ishmael could have asked someone else to fly Hermes, but he wanted to remain Hermes' pilot. Finally, Ishmael had a contribution to make which demanded his skills. He wanted to make what he could of it. Rose understood that well. They were joined by a host of rock hunters and researchers from New Eden. Among them was Greg Hayes and Jennifer Arnold, two accomplished if new rock hunters. Moses flew with Ishmael on Hermes, because Betty was working at Fox World training new artificial minds.

The three week journey was boring for all the pilots. They called it a giant dullfield, a play on the word rockfield. It was difficult to play any rock games, because they were accelerating. Instead, they talked with each other and the scientists about what to expect in the Neobelt, and how to cope. They discussed many aspects of the Neobelt, but nothing prepared them for what they found there.

The moon was on the inner side of the Neobelt. They would either have to cross the Neobelt to get to it, or they would have to go around it. It was decided that a group of rock hunters would attempt to fly through the Belt, but that the rest of the research armada would go around the Neobelt. They would meet in orbit around the moon approximate three days later. Ishmael, Greg and Jennifer were three of sixteen rock hunters who would brave the Neobelt. Rock hunters teamed up in pairs so they could fly eight ships continuously. Greg and Jennifer shared one ship. Ishmael and Moses took turns flying Hermes. Six other ships were crewed by other superb rock hunters.

At first, the Neobelt was sparse, just like entering the original Belt. But the rocks were very different looking. Most were at least partially rounded. Many were nearly spherical. Some were fractured, indicating collisions had occurred. There were rocks of all sizes, and they were all untrained. Rocks were moving in all directions. The rock hunters ran with maximum power in their deflectors, and they used very short term simulations. Often there was no safe route, and they had to resort to firing at rocks much more than usual. If Moses had been there, it would have pained him to see such destruction. It was a matter of survival though and people destroyed more rocks in a matter of an hour than they otherwise would have in a year.

There was more than just rounded rocks, or balls, in the Neobelt. There were two other things that one would never find in the Belt. The first was crust. Crust was the remains of the crust of the Earth. There were pieces no larger than a dozen meters, up to pieces where were almost two hundred kilometers across. Crust looked very different than balls. Balls were mostly smooth unless they had been fractured by collisions. They all reflected the sunlight like a million eyes all watching. But crust was dark. It was ragged, and it had

a flat sid, and it all tumbled. Crust was usually so out of balance that it tumbled badly. Some spun very quickly and some much slower. A few pieces had almost no spin at all.

Only about fifteen percent of the original crust survived in pieces large enough to be recognizable. Significantly more than half had been completely pulverized, and most of what remained had been melted in the initial explosion. The portions farthest from the original line of collision survived best.

Flying through the balls was challenging, but within the abilities of the rock hunters. Avoiding the tumbling fragments of Earth did not require difficult flying, but it was wrenching. Some of the pieces of crust still had the remains of human structures. There were destroyed buildings still clinging to some. Flying through the balls was an exercise in piloting; whereas, flying past crust was an exercise in grief.

The other thing you didn't find in the Belt, but which existed in the Neobelt, was debris: debris from the former Earth society. Vehicles, tree trunks, ocean craft, train cars, light poles, pieces of bridges and heavy equipment, all horribly mangled and partially melted or burned. Some was crushed, or embedded into other pieces, balls and crust. It was dangerous to look at anything for too long, because something else would hit you. Less than a day had gone by before someone had seen part of a body. Most soft tissue had been liquefied by the force of the collision. But there were some people who had been more or less lucky, and portions of their bodies survived the immediate impact. It was still an unsurvivable event, but not total disintegration. It was gruesome, because the vacuum of space had preserved the flesh. There were also fragments of the bodies of other kinds of animals as well. But they hadn't decomposed, and wouldn't for a long time. It would take a very long time before anaerobic bacteria would be able to consume them in the dark, cold Neobelt. After bodies had been seen everyone's spirits sank.

Ishmael flew while Hermes used the Crawford scanner to take readings on the Neobelt. They learned that the composition of the balls meant they had come from the molten interior of the Earth. They found that despite the chaotic nature of the Neobelt, there were still a few very large voids which ships could travel through relatively safely. They also found that there was a dispersed and impossibly thin cloud of air and water in the Neobelt, held there by the distributed mass-gravity of the rock maelstrom.

There were also large chunks of ice from the polar caps. Much of the ice had melted and boiled away from the heat of the initial impact, and still more ice had sublimated into water vapor when the radiant heat of the originally molten balls warmed it. But there were still many small and large icebergs floating among the balls and crust. These were an extremely valuable find, because water was difficult to manufacture quickly in the Belt. Water was always a recycled resource in the Belt. Atomic reassemblers could manufacture water steadily, and several factories did so. But it wasn't a fast process. Water was also used in large quantities. New Brazil had used eighty percent of the surplus water supply in the Belt. It was an extraordinary amount of water, but it was better to store it as life, clouds and rain in New Brazil than to leave it in tanks or barges.

The Neobelt was also full of small debris, sand, and gravel. This was sometimes in clouds, but generally permeated the space. The deflectors easily handled these, but they interfered with scanning and that made for interesting flying. Simulations were nearly useless in the midst of matter clouds like that, and the rock hunters had to fly more slowly and carefully. They were supposed to reach the moon in three days, but it took a week. They were in contact with the research armada frequently, and they relayed copies of their scan datapages as well as their own impressions.

The Neobelt was very, very different from their familiar, and comparably tame asteroid belt. Even flying through a clump was easier than flying through the Neobelt because clumps were just more dense. A clump was still mostly trained at least. It seemed like nothing would be trained here. Also clumps didn't randomly remind you of the greatest tragedy ever to befall the human race.

The sixteen people who flew out of the Neobelt were all hardened by the experience. Not only had they survived some of the most difficult flying anywhere, they were the closest witnesses to the disaster of Heccat to have survived the encounter. They had broadcast holographic data throughout their trip, but it wasn't the same as being there.

They met the rest of the armada in orbit around the moon, and Hermes scanned the locations of the four mining facilities. Two had been completely destroyed. One was partially damaged, and one was barely damaged at all. That facility was on the Southern Pole. The poles of the moon looked only moderately damaged, but everywhere else was savagely torn.

Since the moon was in a relatively safe portion of its orbit, two of the ships descended and landed on the moon at the South pole mining facility to check first hand on its status. The remainder of the ships ran rock patrol around the moon. They could not have defended the whole moon with even a hundred rock hunters; however, they only needed to defend a small part. There were no threats during the expedition, but the rock hunters were ready for them if there were.

The lunar expedition revealed that the South pole titanium mine was operable with some minor repairs. Another expedition was sent to the partially damaged titanium mine. It was in a region of the halfway between the equator and the pole, and the area around it looked ravaged. The facility was no longer air-tight, and a lot of work would be required to make it operational. However, there was a lot of useful equipment there which had survived. That equipment would be helpful at the South pole mine should it ever be put into production again.

After two days studying the moon, it was time to return to the Belt, but this time everyone in the armada went around the Neobelt. The information they had gathered all along the way had been broadcast back to the Belt and Moontech workers and interested people in the Belt watched in rapt attention during the days of exploration. In particular, the flight through the Neobelt captured the attention of the people in the Belt and many people watched for hours. People weren't used to so much firepower being employed. It

was thrilling and dangerous. People learned the names of the sixteen rock hunters. When there were close calls people held their breath and cheered when the rock hunters succeeded at the last moment. They were like sports heroes, a phenomenon that otherwise did not yet exist in the Belt.

The journey back through the dullfield was trivial, of course and the armada stopped at the bubbles to drop off the research crews and ships at New Eden. New Eden was unquestionably the center of most science and research in the Belt society, despite the tremendous growth in Spinland.

One ramification of the widely watched journey through the Neobelt was that Captain Wayne Arnold of the frustrated da Vinci Bubble project finally discovered where his runaway daughter had disappeared to. He was furious with her for running away, but as he watched he could not help but feel proud of her skill and bravery. The more he watched, the more he wanted to know who this Greg fellow was that was flying in the same ship with his daughter for weeks at a time.

He sent her a private page where he asked her to return home to talk with him. She had not replied for days. But she finally agreed to meet him on-board her ship after she returned

Now Wayne floated outside her ship's airlock. He used the intercom to request that she open the door. When he floated through the airlock into the ship, he was greeted not by Jennifer, but by Greg. It wasn't what Wayne expected, but he wanted to meet Greg anyway.

"You must be Greg Hayes. I saw your flying in the Neobelt holos. You're a fine pilot." Wayne said stiffly.

"Yea, well thanks. I learned from the best. Jennifer was a great pilot when... I first met her. Did you teach her?" Greg knew Wayne would be uncomfortable and he tried to be friendly. He had slipped though and almost mentioned his role in her running away. Jennifer insisted that any discussions of her departure from the bubbles should be between she and her father.

"No, she had private lessons." Wayne wished he had taught her. He might have realized how talented she was. He learned that only by watching her brilliant flying in the Neobelt. "I guess they were worth the money I paid for them." He exhaled once in a single coughed-like laugh. He closed his eyes and shook his head briefly.

Greg decided not to touch that line. He changed the subject. "So, I hear you're a Captain. What's your ship?" He asked politely. Jennifer had obviously left out some important details about her family.

"I am the Captain of the da Vinci." Wayne said flatly. It would have been an incredible point of pride, were it not such a painful disappointment. The two extremes tore Wayne

in two, but his professionalism still shown through. He remained capable and decisive, but inside he hurt badly. He hurt both from the ignoble state of the da Vinci, his beloved bubble, and from the alienation he shared with his daughter.

“The da Vinci? Oh.” Greg’s felt embarrassed. He looked out the window of his small rock hunter at the spaceport which stretched in all directions for over two thousand meters. That was just the outside of the spaceport of Floyd Bubble. From where they were docked, they could see the da Vinci in the distance. It was the only bubble which wasn’t rotating. “I’ll bet that’s harder than flying through the Neobelt right now.” Greg wasn’t being condescending. Wayne’s role wasn’t one that anyone would have wanted recently.

Wayne nodded. He thought more highly of Greg now, because of that. “So, where’s Jennifer? Is she ready to speak with me?”

“Yes, Wayne, I’m ready.” She was floating above them in the bridge of the small ship. She called him by his first name, something she knew he didn’t like.

“Jennifer, it’s good to see you darling. I... I was so proud of your flying in the Neobelt.” He looked over at Greg.

Greg understood. “Hey! I’ve got to work on the thrusters for a while. It was good to meet you Captain Arnold.” They shook hands and Greg left through a hatch into the back of the ship. He closed the hatch, to give them their privacy.

Wayne and Jennifer Arnold stared at each other for a moment in silence, trying to size up who each other really was. They both knew that Greg could listen to them via the ship’s intercom if he wanted to but somehow they both knew he would do no such thing.

“I’m not coming home. There’s nothing for me there now.” She said coolly.

“I’m not asking you to come home. I can see now that you have your own life to lead. But you’re wrong: there is something there for you any time you want it.”

“I don’t need anything from you anymore.” She said it a little too quickly.

“I know that.” He said it slowly. It was what he needed to say, but he felt entirely empty inside like the motionless da Vinci he had once dreamed would be the salvation of humanity.

“Then what did you come here for?” There was an edge of exasperation in her voice. She had expected the same kind of confrontation with him she had always had in the past. She knew how to fight with him, but she didn’t know what was up now. She had experienced too much pain in her relationship with her father to be able to view the situation from a point of wonder, or even confusion. She felt threatened because she couldn’t predict what he’d do next. In the past such surprises had never been pleasant.

“I came here to... request... that my daughter not abandon me. I’m hoping you will fulfil my request.” He stopped there, and waited for her reply. He’d thought of a lot of other things to say, but he hoped she would recognize through this that he had changed in the two years since she had left.

Jennifer stared at him. She felt like she didn’t even know him. “I ran away from the life you had cut out for me, daddy. I wanted to be part of the Belt, and you were so dead-set against it. I couldn’t be happy living that life.”

“I voted for the Potlatch, Jennifer. I’m not a capitalist anymore.” He sounded sincere, but she looked at him skeptically. He continued. “Capitalism didn’t serve me very well even though I defended it for a long time. Do you know why everyone was surprised that the da Vinci couldn’t be finished? It’s because at every level of the project, people were motivated not to reveal critical information to those above them. It’s because their bonuses and raises were based on how their managers perceived them, and they only wanted to reveal good news. It was a bitter lesson, darling. Somehow you learned it sooner and easier than I did.”

“I’m still not coming home, daddy. But, I won’t shut you out of my life if you’re going to be reasonable like this. That’s all I can say right now. We’ll see how it goes.” She had no tears in her eyes. She was as strong and confident as he was. She had many of his better qualities and the benefit of observing his lesser ones.

“OK, that’s fair. Thanks. You know, you’ve always been the brightest star in my view, Jennifer.”

“Thanks, daddy.” She was totally surprised by her father and for the first time she could remember, it didn’t hurt.