

“ A sound from behind Adam startled him, and he stood and turned around. The two women stood as well.

The clouds were beginning to clear, and the entire valley was shimmering in the sunlight. The air was crystal clear, but already, the opposite side of the valley was beginning to look wavy in the heat.

The trail the shuttle had carved into the side of the valley had formed a small plateau, and up over the edge of the plateau, a suited figure came running, slipping and almost falling on the clumps of sodden dirt. Adam could hear a woman's voice, and mimicked the gesture from earlier.

“Turn on your suit radio,” shouted Adam, walking out to meet the arrival.



# AERIUS

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# Part 1

*1*

Adam came awake with a start. Awake wasn't the right word for it, really. His head hurt, like it was sculpted of glass and had been dropped, loose shards broken off on the inside. Thoughts came slowly, and with some difficulty. His eyes were still closed, and his body felt cold. There was light moving somewhere, but he couldn't focus on it. Sounds were making it to his ears, but they were muffled and incomprehensible. Suddenly, the pressure changed and there was a pain in his ears. The light got brighter, and his skin felt as though it were pricked by thousands of needles. His mouth opened reflexively, and he winced at a pain in his jaw, which in turn caused the needle pricks to move to his eyelids too.

He became aware of the fact that he wasn't breathing, and then that this was unusual, and finally that this should alarm him. His body tried to breathe, and he felt something rough in his trachea. His lungs wouldn't move, as though they were filled by molasses, and alarm turned to panic. His back arched, and he felt his lungs collapsing. His eyes opened, causing more sparking pain and flooding his senses with blinding light. He began to thrash, though weakly, and then when his lungs felt they could get no smaller, his lungs were flooded with fresh air, cool but not cold, and the tube abruptly and smoothly retracted from his throat with mechanical precision.

He could see some detail now – the ceiling of the sleeper bay, the lights and the air vent – and he rolled onto his side and coughed deeply. He felt deeply, deeply cold, and his skin still pricked everywhere. The sleeper pod began to spray a fine mist over him, which condensed into little droplets and felt fantastically warm. He shivered slightly

and slowly pulled himself into a sitting position, his arms wrapped around his knees.

The pods on either side of his were empty. The other half of the room also held three pods. Two of them were closed, glazed over, and their status panels showed green lights. The one opposite his was broken, the surface of its cover cracked through the middle. The interior was a black, unidentifiable mass. There was a blob of sealant on the wall next to it, a repair to damage caused perhaps by the high-speed impact of a particle of dust. Adam looked away; he knew – had known – the occupant of that pod, a man named Idiq.

Sound was almost normal now, though all there was to hear was the superimposed hums of the engines and the air circulation, and the sound of the spray, which came to an end. Adam rubbed his temples and looked at himself. The automatic revival cycle had left him mostly clean, though naked, but he still felt weak. He uttered a sound, which prompted a second round of coughing, and then a beeping at the door announced a presence.

The door slid aside, and a small robot rolled in carrying clothing. It pulled up next to the sleeper pod. Adam tried his legs experimentally, and found that they worked. The pod was set into the floor, so he had to stand to get out. He stood up quickly, and then, dizzy, leaned against the wall to keep from falling over. After a moment, the dizziness passed, and he gingerly stepped out of the pod next to the delivery bot.

It took him several minutes, but he managed to slip on the clothes, after which the delivery robot exited the room. The door slid shut, and he was once again alone.

He began to recall where he was, and realized with a start that he *shouldn't* have been alone, that ordinarily, unless he were the first to awake, which the two empty pods suggested was not the case, the other crew members should have been present to assist with the process. In fact, it would ordinarily be another crew member that triggered the revival process.

The ISV Aerius was a deep space exploration vessel, one of the third generation to leave Earth. Its fuselage, two kilometres long, housed a mass of semi-organic circuitry that, when operating, set up a field that greatly reduced the energy required to accelerate. Its surface was dotted irregularly with various sensors and maintenance panels, and near the middle, a ring of discs encircled it. Each disc was a small shuttle/reconnaissance vehicle, tightly packed. At each end of the cylinder, a small fusion drive was in charge of moving the vessel, and at one end, like a giant hammer head, the living area crossed perpendicularly, reaching out three hundred and fifty metres in either direction, spinning to create an artificial gravity.

Near the centre, eight sleeper bays, four on each side, housed a crew complement of up to forty-eight people. The technology could almost halt human aging, so that over the course of a trip many centuries long, those on board aged a month or two at most. The process worked well and could be repeated a number of times with no apparent side-effects, but that was not to say that it was pleasant.

Further out, in the areas with gravity closer to Earth normal, were recreational facilities, observation rooms, work areas and control rooms. At the front of one arm, dubbed "North", was the main bridge.



The Aerius was not elegant or streamlined in appearance, but it was not meant to travel through atmosphere. At a cruising speed of two percent the speed of light, the sparse hydrogen in interstellar space packed into a pressure wave across the front of the ship. Strong electromagnets shaped the wave and kept it, mostly, from coming into contact with the hull, and the wave provided some protection from stray dust particles.

When accelerating, the hammerhead was positioned at the leading edge, splitting the vacuum and protecting the fuselage. When decelerating, the fusion drive at the leading edge provided this protection, with a needle of thrust expanding out into the space in front of the ship, and the fuselage enveloped thinly by cooling drive plasma. At the midpoint of the trip, after the rear drive was extinguished, the hammerhead would slowly slide the length of the fuselage, in lock-step with gradually increasing forward drive output, to isolate the crew from the radiation released by the drive.

After the Great Unification, Earth stood under a single government, but that did not mean it spoke with one voice. The driving issue was whether to expand or to focus developments at home on Earth. Logic suggested that the planet's resources would not last forever, but many held a strong attachment to home, especially sites held sacred. Before the construction of the Aerius, expansionists had been in power, and they had managed to set up a successful mining operation within the belt, extracting various metals, both common and rare, and delivering them home with some regularity. This success bolstered their position and eventually lead to the approval of the third wave. The Aerius was built, its crew

selected, and then it set off in the direction of Epsilon Eridani.

If it had made the distance, then more than six hundred years had passed since the Aerius left. Humanity might have become fabulously advanced, or might no longer exist. Either way, the Aerius was on its own, immensely distant from home.

Adam stumbled down the hall, the life returning to his body. He felt hollow, a sensation that was slowly turning into hunger. He smiled to himself; of course, he hadn't eaten in six hundred years. He was on his way to an observation room, where he could look at a terminal and answer some of his questions, such as how much time, precisely, had passed, and why he had woken up alone.

The door to the observation room hissed open, and Adam pulled himself inside. He felt heavy, even though he knew that at this level, he weighed less than twenty percent of what he did on Earth. He was breathing heavily, and it was a relief to drop into the chair in front of the terminal. The terminal was a large glass surface at least a metre to each side, slightly tilted, with a high-resolution screen behind it. Several people could sit at the same terminal at once, though of course Adam was the only one at this one. He tapped the surface, and the display sprang to life, acknowledging his presence. He placed his hand flat on the surface for the biometrics scanner to identify him, and then entered his password to unlock his console.

Adam's position gave him unrestricted access to most of the ship's systems, but the first thing he brought up was the calendar. The display read: **January 7, 2832 (Z+614.2 years)**. He sat back in the chair and

considered this. It meant they were almost certainly successful; if they had encountered something on the way, a shorter duration of time would have passed, and if they had missed their target entirely, an eventuality requiring significant failure of the computer systems, he probably would never have awoken. It also meant that, apart from the others on the ship, everyone he had ever known was dead.

A status icon in his console was blinking red. The ship's heuristics had identified a situation that was likely important – urgent – for him to know about. He tapped the icon, and several video windows appeared and sprang to life. He saw a suited figure exiting the airlock, attaching the umbilical, floating out along the main fuselage of the Aeries. In another window, the umbilical was stretched tight as the figure performed maintenance on a distant panel. A faint jet of air was escaping the umbilical. He watched, horrified, as the jet became more pronounced, and then a gaping hole, and finally the umbilical snapped. The suited figure lost its grip and began to float away. A third video sequence showed another figure suiting up, wearing a rescue suit equipped with thrusters, and jetting out to intercept the first figure.

He stood up and peered out the window down at the fuselage. The area shown in the videos was out of view, rotated away. As the hammer head rotated slowly around, two suited figures came into view. The person in the rescue suit had one arm hooked around the other suited figure's arm and the other wrapped around an exterior pipe running along the fuselage.

Adam brought up the communication console and tapped All Channels Broadcast. "Adam here, is anyone out there?" he said.

The radio crackled to life, and he heard heavy breathing, and then it clicked off.

## 2

Adam was still weak, but adrenaline made it easier to move. He scrambled up the ladder to the axle. The closer he got, the more his momentum carried him. In his haste, he forgot to slow his course before reaching the hollow cylinder. The artificial gravity was essentially nonexistent here in the centre of rotation. He shot off the end of the ladder and soared across the space. On the other side, he crumpled inelegantly but avoided injury, and then pushed off more lightly.

He looked down the length of the room. It appeared to be rotating slowly around him, and the effect was disorienting. Of course, it was Adam rotating and not the axle, which was part of the main fuselage. As he neared the other side of the chamber again, he reached out and grabbed onto a hand-hold, stopping his own rotation. Now it was the openings for the ladders extending off into each arm of the hammerhead that were rotating.

The axle housed the environmental and life-support systems that kept the crew – those not in stasis – alive while on board, and it served also for access to the parts of the ship rear of the hammerhead. As it stretched further back into the ship, the available space became more and more encroached-upon by the inertial multiplier field generator, but near the front, the space was mostly

unused, and that allowed for various sections to be partitioned off. Adam was headed for the EVA prep room, which had a small airlock. This was where the two suited figures outside had left from, and sure enough, two suits were missing, one maintenance suit and one of the bulkier rescue suits that could operate for days with no umbilical.

There were several lengths of umbilical available. Generally, it was preferable to use the shortest one long enough to reach the objective, as longer umbilicals tended to snag on things and, if they got pinched, might not deliver as much air. Adam pulled himself into a maintenance suit and plodded over to collect one of the longer umbilicals. He knew it was much longer than necessary, but he didn't want to waste time trying to figure out what length was needed. As he clamped the helmet down securely, the suit inflated itself from its minimal built-in oxygen supply and began circulating air. Various statistics popped up in front of him, projected onto the glass, but he dismissed these with a gesture.

The adrenaline was wearing off, and Adam felt immensely tired, but he forced himself onward. As soon as the airlock's inner doors sealed, he punched the emergency release button, and the outer doors immediately opened without trying to reclaim any of the air still left in the chamber. The depressurization registered as a pop against the surface of the suit, and then Adam was in the silence of vacuum.

Hand over hand, he pulled himself out of the airlock and around to the umbilical ports on the exterior of the ship. The severed umbilical was still connected, but the ship had stopped pumping air through as soon as it broke.

Adam pressed a gloved fingertip into the recall button and the port pulled back into the body of the ship and began coiling up the broken cord. Then, he plugged his umbilical into an open port. His suit beeped acknowledgment, and the umbilical began to fill with air.

Without waiting for it to complete, he looked out across the surface of the fuselage and spotted the two motionless suited figures. He had practiced this manoeuvre many times in training, and he knew the umbilical would hold if he missed, but he still felt a bit nervous as he took careful aim and then kicked off. The umbilical began to uncoil behind him. It felt like an eternity, but his aim was good, and he closed in on the other suits. He was rotating, though, so that he would be facing away by the time he reached the other suits. With his right hand, he reached behind and found the umbilical, then gave it a firm yank. This reversed the rotation, though the cord was now flying out ahead of him.

The interception was imminent, and he stretched his arms out wide. As he reached the other suits, timing it carefully, he pulled his arms into a tight hug, and felt the gratifying feeling of another suit caught between them.

He held tight for several seconds until he felt sure of the contact. His eyes closed, and his mind wandered. The suit, detecting his fatigue, beeped loudly and brought him back to the present. He scrunched his face up and shut off the alarm, then forced his eyes open again. The first thing he saw was that the other suits were in fact attached to one another with their safety tethers. He extended his own out from the front of his suit and hooked it onto the other two, anchoring the three suits together.

The rescue suit's auxiliary air supply was also connected to the other suit, but the rescue suit's air status light was blinking red. Through the glass bubbles of the helmets, Adam could make out lips and skin blue from lack of oxygen. *How long had they been out here like this?* Adam unplugged the umbilical from his suit, which immediately popped up status indicators warning him he had only one hour of air left in the internal supply, and plugged it into the empty umbilical port on the rescue suit.

He reached up to rub his eyes and was momentarily confused by the clink of the suit glove against the glass bubble of the helmet. The rescue suit's air indicator now read green. He thought for a long time, then decided everything was going to be all right and promptly fell asleep.

### 3

Adam Koller woke up in a bed. He opened his eyes and looked around. Med lab. He was near the bridge at the end of the North side of the hammerhead. He pulled himself up into a sitting position, and then noticed that the bed next to his was also occupied.

"Chali", he said quietly. Her eyes opened, and she turned her head to him and smiled.

"Chali", he said again, "what happened?"

"You saved us," she said. "Me."

Adam shook his head. "No, that's not what I meant. What were you doing out there? You almost died! If the ship hadn't woken me up..."

Chali turned away. "I... There was a damaged sensor unit. Micro-meteors, or something, after we stopped." The ship was never truly stopped, of course, but the motion was now a negligible fraction of the six million meters per second it had maintained for most of the trip. "I thought I could fix it myself."

"That's just not how we do things, Chali, and for good reason! I could have lost you."

"I'm glad you didn't," replied Chali, looking back at him. "Come here. I haven't seen you in a long time."

"More than six hundred years," said Adam with a grin. He dropped his legs over the side of the bed and stretched his arms back. He was hungry and thirsty, but he felt much-renewed from the ordeal of the revival process. He got up and stepped across the distance between their beds, sitting down on the edge of hers. She stretched an arm around him, and he leaned down and kissed her.

Chali Tamang's ancestors had emigrated to India from the hills of Nepal. As India's industrial expansion engulfed its less-developed regions, they found themselves thrust into a technological world. As a child, Chali had been fascinated by the processes that shaped the mountains around where she lived, but her family could not afford a formal education, so she taught herself from books at the local library.

She had attracted the attention of a local professor, and he had helped her find employment in her field. It was there that she and Adam had met. They had been contemplating moving in together when the opportunity to join the crew of the *Aerius* came.



There was a light knock on the frame of the med lab door. Adam pulled up and turned with a start. Samantha Quinn, the captain of the Aerius, was standing there with a conspiratorial smile on her face.

"I was just about to sit down for some food," she said, "and the ship informed me you two were awake."

Sam had moved from job to job and relationship to relationship for years, never finding what she was looking for. Adam had met her at the first Aerius briefing, and from the start, she had not been very subtle about her affectations toward him. Adam found himself unsure how to deflect her advances. She was an attractive woman, possibly more so than Chali, and she had an energy about her, a drive that he found deeply attractive.

Adam got up from the bed and began to walk to the door, and suddenly realized that he was dressed in pyjamas.

"You..." he started.

"You were drenched in sweat. You smelled bad and your clothes were dirty."

"I, uh... Thanks."

"What are friends for," replied Sam with a smile.

Chali pulled herself from the bed and stood up next to Adam, taking his hand.

"You haven't eaten since you were thawed. You must be starving," she said.

They made their way to the mess hall and stood around the food station. The station contained packets of various powders of different texture and nutritional value, noted

on the packaging, as well as various flavour powders. Within reason, any two could be mixed, allowing a variety of meals. None of them tasted like real food, but they were at least varied, and they kept one alive.

“Any requests?” asked Sam. Adam and Chali shook their heads. “All right, then.” She began to grab packets at random and added an assortment to three bowls. She put each bowl into a preparation unit which added water, mixed it thoroughly and then applied heat until the starches congealed. They waited in silence until this completed. Then, she carried the bowls over to a table on a tray, and they sat down to eat. They served themselves from each bowl and dug in.

“This tastes like turkey and pickles,” said Chali around a mouthful.

“You can make it next time,” replied Sam. Chali swallowed and then stuck her tongue out.

“You should have woken me up before you went out,” said Adam.

They ate on in silence.

## 4

It had been four months since the ISV Aeriis had slid into the Epsilon Eridani system. Half of the crew had been awakened, filling vital maintenance roles and reviving those with the expertise to form a scientific advisory group. Samantha had settled into her role as the ship's captain. They had held a brief funeral for Idiq, whose sleeper pod had been found shattered. Then, they had

turned their attention on the solar system through which they were now slowly coasting.

About one hundred million kilometres out from the sun, a blue dot had been found in orbit with a period of about seven and a half Earth months. The Aeries did not have imaging equipment sensitive enough to see more closely, but the absorption spectrum suggested a composition, at least on the surface, similar to that of Earth. After a brief discussion, it was accepted as the most likely candidate, and an intercept course was plotted. With the inertial multiplier field in effect, the Aeries was able to come in quickly and then decelerate, but large gravitational fields affected the geometry of the inertial multiplier field, and so the final stage of the deceleration had to be done with the field disabled. Without the inertial multiplier field, the fusion drives on the Aeries could effect only a miniscule acceleration, and so more than three months had been spent decelerating into orbit around the planet.

The time was spent mostly in recreation. In the outer, higher-gravity sections, there were a couple of ping pong tables, angled slightly to compensate for the Coriolis effect, and various board games had been brought along. Some of the crew amused themselves by inventing games in unused rooms closer to the centre of the ship, where the simulated gravity was lower. Adam spent much of his time auditing ship systems and crew activities, and when the queue of things to check became empty, Chali was always there.

The sense of anticipation amongst the crew grew as the planet loomed closer. Two months into the trip, the planet became large enough to see useful detail through telescopes. The surface was spanned by several large

continents separated by ocean. The continents were covered in a thick green. There were no deserts, and no polar ice caps. The surface temperatures ranged from thirty to fifty degrees Celsius – not exactly comfortable, but bearable and, in any case, manageable with air conditioning equipment, once a building was established. There was no sign of any animal life anywhere on the planet. The rotation of the planet gave it a day roughly thirty hours long.

Over the last couple of days, the planet began to grow to proportions visible to the naked eye. With agonizing slowness, the Aerius approached the planet ever more slowly, and then finally settled into an orbit some hundred thousand kilometres from the surface. Orbiting the planet in the opposite direction of its diurnal rotation, the Aerius completed one full orbit every eighty-seven hours but saw the same point on the surface of the planet once every twenty-two hours.

Sam ordered the remaining crew members revived, and then announced a speech. Everyone gathered in the various observation lounges.

“We have come a long way, and I’m sure for some of us, it feels like we’ve reached the end of our Journey. In fact, our journey has just begun. This planet represents a new beginning. In many ways, it is much like Earth, but it differs in one important way. We are the first intelligent life here. We can make this planet our home. We can set the rules – we can build a new civilization.

“When we left Earth, we knew there was only a small chance of our mission succeeding. We had no idea if we would make it here, and we had no idea what we would find when we got here. Well, we made it here, and we’ve

found what we were looking for. Ladies and gentlemen, this mission is a success!

“It will take hard work, perseverance, and a great deal of perspiration,” she said, prompting a few chuckles, “but we have what we need, and we have what it takes.

“We have decided upon eight separate landing sites. As you know, our shuttlecraft contain within them smaller in-atmosphere vehicles. With these, we can move people and resources from site to site.

“We will be leaving the Aerius for our new home in two days. Pack up everything you want to take with you. Your shuttle assignments will be posted shortly.

Are there any questions?”

Chali put up her hand, and said, “What is the name of the planet?”

## 5

Floating in a small area in the middle of the fuselage with no obvious entrance from the main body of the ship, Idiq watched the speech from a spare terminal he had connected directly to the ship-wide network backbone. From that point in the network topology, all of the standard user auditing and accounting triggers were bypassed. The terminal was not connected to the ship intercom system. He was anonymous and omnipotent.

At the back of his mind lurked several fears. Fear of being so far from the Holy Land. Fear of not knowing in which direction to pray. He had no fear of being caught, but he feared failing in his mission.

Human beings were God's creation. God had created them on Earth and that was where he intended them to stay. If God had intended man to live on other planets, he would have created man on those planets too.

Ships like the Aerius were abominations, and the people on them traitors to humankind and to God. They had to be stopped.

Each ship in the fleet spreading out to the stars had one of the Faithful. Each ship would plummet into a sun or a planet. The traitors would be killed.

Idiq mouthed a prayer to God, thanking him for his Wisdom and Strength, then entered a command to fire the fusion drive to halt the orbit of the Aerius and send it crashing down onto the surface of the planet.

Idiq waited, expecting a vibration from the drives that did not come, and then checked the drive status. They were dormant. He entered the command again. Still nothing – no errors, but no fusion drives either. He cursed aloud, and was about to investigate when the terminal chimed an incoming call.

Idiq stared at the terminal in disbelief. The call notice continued to chime. He double-checked the terminal's configuration, and could not find an entry for the intercom system. *The terminal shouldn't be in the directory! How is this call possible?* He tried activating the fusion drives again, and once again, nothing happened.

Finally, in frustration, he accepted the call. Adam's calm face filled the view screen.

“Idiq,” he said. “What was your plan? What were you going to do up here all by yourself? You know you can’t join us on the planet, seeing as how everyone thinks you’re dead.”

“You will all die,” snarled Idiq. “This is not possible. How did you do this to me?”

“Did you know that the ship tracks how much carbon dioxide the filters scrub from the air? Four months ago, when only Chali, Sam and I were thawed, the system was scrubbing enough CO<sub>2</sub> for four people. It’s much harder to see now, of course, with forty-seven people in the system.”

Idiq was surprised. “You knew all this time? Why did you do nothing?”

“I wanted to see what you were up to. Did you know that the maintenance terminals connected to the backbone use a different firmware than the public terminals? I guess you did know that, since you wanted one that could intercept intercom signals and show them to you. Maybe it didn’t occur to you that the network manager software makes an index of all connected devices. Once I knew I was looking for someone, your terminal stood out from a mile away.”

Idiq’s confidence was rapidly falling, but there was still something he did not understand.

“How did you call me? I disabled the terminal’s intercom registration.”

“Oh, actually you disabled the intercom registration of a virtual terminal in an isolated environment. Your entire interface is routed to an emulated system. You had to be

up to something. I didn't know who you were, but you were either a stowaway, or you were Idiq and you had faked your own death. Either way, I felt it best to prevent you from accessing the core system.

"Oh, and by the way, about the sealant on the wall – that wall doesn't have space on the other side."

Idiq said nothing. During the construction of the Aerius, others of the Faithful had integrated a bomb into the structure of the ship, near the shuttle craft, giving it an innocuous device identifier that he could activate from any terminal. The simulated computer system he was controlling, though, would have no knowledge of the bomb. He entered the activation sequence anyway, but, as expected, it failed.

His plan had fallen apart. It did not account for this scenario at all. If he revealed himself, he would be apprehended, but the bomb was near the shuttle craft, an area that would soon be teaming with other crewmembers. The only thing he had in his favour was that his location was hidden.

"You cannot touch me," he announced. "You do not know where I am. You will die for what you have done." Idiq was shaking now, though he wasn't certain whether it was anger or fear.

"I don't need to touch you, Idiq. Once we've left, you can't touch us, and we're taking all the food and water with us to the surface. Sorry if I ruined your day."

The call ended, leaving Idiq alone with his frustration.



## 6

Two days passed quickly for most on board the Aeries. There was more than a little nostalgia; it had kept them alive for more than six-hundred years, and now they were leaving it, probably forever. The ship was cramped, though, and its function was complete. There was nothing to be gained by staying on board.

Halfway down the length of the fuselage, the Aeries held its six shuttle craft. Each was capable of holding twelve occupants, but for the exodus planet-side, the crew was evenly distributed. Each craft had been assigned eight people, including a pilot, except for one which now had only seven.

Recognizing the true mission of the Aeries, the crew were composed mostly, though not entirely, of couples ready to begin families. To solve the problem of genetic diversity – something that the team of forty-eight from the Aeries could not possibly have done naturally – medical companies back on Earth had programmed nanomachines with a wide range of human genetic variation. When ingested by a pregnant woman, the nanomachines would find the foetus and alter it genetically. Over several generations, consistent use of this technology would produce a human population with enough diversity to sustain itself indefinitely.

It was nevertheless rather ambitious to start colonies with groups of eight people, and genetic diversity aside, only the advanced technology that accompanied them made it possible.

Sitting in his office for the last time, Adam reviewed the shuttle rosters. Sam had placed herself on the same shuttle as Chali and himself, the shuttle with only seven crew. Accompanying them were two other couples, both of them married. Richard and Lynne Costa brought experience with electronics and nutrition, and David and Jane Hansen brought experience with education and structural engineering. In combination with Adam's extensive knowledge of computer and network systems, Chali's understanding of geology and Sam's leadership skills, they represented a significant cross section of the skills needed to begin a colony.

He skimmed the other lists. Every shuttle had a similar breadth and distribution of experience.

It took several hours to load the shuttles up with all of the equipment, provisions and personal effects. When it was done, the crew of the Aerius made their final checks, and then, one by one, the shuttle craft detached from the main body of the Aerius and began their descent toward the planet's surface. As they dropped away from the ship, leaning on a faint violet needle of thrust, each one unfolded, exposing large wings and aerodynamic lines.

They dropped through the space between the Aerius and the planet for some time, slowly accelerating. Then, entering the atmosphere, they relied largely on surface area for braking, entering like meteors and leaving thick trails of superheated air as they crossed the sky.

Idiq watched from his hiding place, angry at Adam, angry at everyone who had left Earth, angry at God, angry at himself. He forced himself to watch, to observe his failure. The six shuttle craft had all departed, leaving him alone and impotent. The only weapon he had was

the entire Aeries itself, assuming he could get control of it, but the six colonies were going to be too far separated for the Aeries to damage more than one or two of them at a time. He punched the terminal, but managed only to hurt his hand.

Suddenly, the display flashed white. Then, as the imaging systems compensated, the planet reappeared with the six shuttles and their trails in silhouette, lit by an immense beam of light, tinged purple at the edges, knifing straight up from the surface. The beam intersected exactly with the trajectory of one of the shuttles. The shuttle flew into the beam, and nothing flew out. The beam slowly rotated to the second shuttle, and it too winked out of existence. One by one, the shuttles were being destroyed, leaving no trace at all. An increasing volume of air around the beam was becoming superheated, appearing to bend the surface of the planet, and the air began to move. As it rose, drawing cooler air in beneath, thick clouds began to form.

The automatic tracking mechanism aboard the Aeries helpfully zoomed in on the action.

There were three shuttles left, and they were engaging their thrusters, trying frantically to avoid the beam. One shuttle tried to fly straight up and away, but the beam ruthlessly enveloped it. The two remaining shuttles effected ninety degree turns, flying directly away from each other and pitching down hard, entering a valley on the surface. The shuttles contained emergency inertial multiplier field generators, but even at maximum, the impacts with the surface were going to be hard.

The beam tracked toward one of the remaining shuttles, but winked out before intersecting with the range of mountains forming one wall of the valley. Idiq saw the

trajectories of the shuttles begin to flatten out, but it was too little and too late. They managed to straighten out with respect to the valley walls, but then first one shuttle and then the other carved a short line in the surface of the planet and abruptly came to rest.

Having observed this, the Aerius formulated a message packet including the details of the past four months, including what had just occurred, aimed its tight-beam transmitting antenna toward Earth, and then channelled all remaining energy, except for life support for a single person, into sending the message home. It would repeat the message until power ran out – at least hundreds of times, perhaps thousands.

In Idiq's hideout, everything shut off and he was left in the dark.

## 7

Adam was flying through deep blue skies over a lush, green forest. It was late in the day. There were others like him, gliding through the air, swooping and soaring with the joy of innocence. Lakes glistened beneath him. He dropped down, down until he felt he could touch the tops of the trees, and followed the contours of the land. He felt free and happy.

He climbed back up to rejoin the flock. They coursed around, giddy with life, chasing each other and making big loops in the sky. Clouds began to form, and he flew up through one, momentarily blinded, then burst out into the deep, clear blue above. The setting sun played with the clouds on the horizon, setting them on fire. He dropped back down and led the others, chasing the sun.

Faster and faster they moved, until the sun was once again overhead.

They were overtop a beautiful valley. Trees covered the sides of mountains rising to majestic peaks. Streams coursed down the sides of the mountains, forming waterfalls here and there.

As he flew over a small river, he saw his love standing on the bank, waving to him and smiling. He smiled back, and then rose back up into the sky, twisting and turning acrobatically, putting on a show for her.

Suddenly, a snake of pure white light began to unfurl at the edge of the valley. He could see its fangs and its evil beads of eyes. One of the flyers shouted in alarm, and they dispersed, trying to escape.

The snake rose into the sky, watching the flyers, selecting its victim, and then with inexorable slowness, and yet faster than they could react, it reached out and plucked one out of the air. Its cry was instantly silenced. The serpent grew in size, and reached for a second victim. One by one, it caught the flyers, and little by little, it grew in size and in strength, until soon it was fighting its own strength, thrashing and coiling back and forth, great lashes against the sky.

Adam could see energy coursing its length. It no longer had a head, and it was no longer eating its victims. It was simply swatting them where they flew, and they disintegrated at its touch.

The great coil began to reach for him, and time slowed down as Adam pulled back, trying to escape. Closer and closer the rushing, coursing energy loomed, and Adam

could hear it hissing and roaring. He began to feel its burning heat, and his skin began to glow white—

Adam awoke abruptly and sat up. It was dark, but he could see the interior of the shuttle. There *was* a roaring sound, and it took him a second to identify it as rain, heavy rain on the hull of the shuttle, and wind. He took stock of his situation. He felt very hot, and dehydrated — he was drenched in sweat. His right knee felt badly bruised, but he could find no other injury. He was still strapped into his seat in the cabin.

All of the shuttle's systems were out, or at least off, but he had air to breathe.

"Hello?" he called out. "Anybody?" No reply.

He looked around at the other seats. They were all empty, except for one. The shuttles had been mostly pre-programmed for their flights, but all on board the Aerius had flight training, and in each shuttle one of them had taken on the role of pilot. Richard had been sitting at the very front of the craft, in charge of the controls in case the automated systems failed. He had also been in the weakest part of the inertial multiplier field. There was blood around the cockpit area, and Richard was lying completely motionless, slumped across a control panel.

Adam felt the need to get out and groped for the seat belt release. He popped it off, and promptly fell off the front of the seat. The shuttle was on an incline. For a moment his head spun, until he reoriented his sense of direction.

He climbed up to the rear of the main cabin and thumbed the door release for the rear compartment. The door panel lit up briefly and the door slid open, then the panel

went dark again. A small trickle of water came in across the floor at the base of the door.

The rear compartment contained cargo storage areas, a rack of tightly-folded light memory-polymer pressure suits, several dozen small canisters of oxygen, worth at least twelve hours each, and a small airlock integrated into the docking mechanism. In the absence of a docking port to which to attach itself, the shuttle could open out onto wherever it was landed, providing a short ramp for disembarkation.

Adam panted in the heat and searched through the supplies. Some of the water was missing, but there was still a significant amount left. The water purifier unit had also been removed.

He tore open a bottle of water and drank greedily until it was empty, then drank half of another bottle. He splashed some water over his hair and face and then made his way to the facilities to relieve himself.

The washroom was completely black with the door closed, but with it wide open, enough light reflected in for his eyes to eventually adjust.

Feeling better, but still uncomfortably hot, Adam made his way back to the rear compartment and slipped into a pressure suit. It was far less sophisticated – and less capable – than the maintenance suits from the Aeries, but it would protect him from the outside air, and it was light enough to walk in. They had not yet had the chance to sample the planet's atmosphere, and for all he knew, it might kill him.

He activated the suit's power supply, and the memory polymers sprang to life, forcing the suit out into solid shapes providing some structure around joints. The helmet, which hung off the back of the collar, popped out into a dome shape with a large glassy bubble to see through.

The suit was containing his heat and making him feel even hotter. As heat was a common problem in space, the suits were equipped with modular air conditioning units, which were stored separately onboard the shuttle. Adam slid one into the compartment on the side of his suit's pack and switched it on. After a moment, cool air flooded in, and he began to feel able to breathe again.

He went back to the supply area and found a proper backpack, and threw an assortment of solid food packs and half a dozen water bottles into it. He tore open another food pack – an energy bar of some sort – and wolfed it down. Then, he double-checked that the food and water tubes in the suit were reachable, put the suit's helmet over his head and carefully sealed it in place. He hefted the backpack onto his back, and finally made his way into the airlock.

The door closed behind him and left him in pitch blackness. The suit puffed out as the shuttle reclaimed what clean air it could, then sagged again as outside air was let in to balance the pressure. Finally, the outside doors opened and Adam saw out onto the planet. The light could have been that of an early morning or late evening. Torrential rain was gushing down around him, and wind howled across the entrance to the shuttle. Off in the distance, there was a flash, followed after some seconds by deep, booming thunder.



## 8

The ramp from the back of the shuttle was hanging straight down. The rear end of the shuttle was some ten feet above the level of the ground. Adam looked down and thought he saw a flickering light emanating from beneath the shuttle.

He sat on the edge to shorten the fall, and then slipped off, thudding into the ground. He stood up and turned around into a flashlight pointed at his face. He covered his eyes and turned away.

The flashlight was swung away from him, and in the darkness under the shuttle, Adam thought he could see two figures. One of them was gesturing. He put his arms up in a gesture of confusion, and stepped closer. Over the roar of the wind and the rain, he vaguely heard a voice yelling. He moved closer.

“Turn on your suit radio,” he heard Chali yell.

He reached for a button on the side of the helmet and pressed it in. Immediately, he heard Chali and Sam talking over each other to him.

“Hold on a second, wait,” said Adam. “Where are the others?” There was a brief silence before Sam replied.

“Well, you saw Richard.”

“The others were gone when I woke up,” added Chali. “I woke up Sam, but we couldn’t get you to wake up. We’d never have been able to drag you out and get you into a suit, so we left you sleeping.”

"This is some weather," said Adam. "I wonder why we didn't see anything like this from space."

"It was much worse earlier," said Sam. "The winds were so strong we'd have been blown over. We sat in that cabin with you snoring and Richard..." She paused for a second. "With you and Richard until the wind calmed down a bit."

The wind was still whipping around Adam, and he moved in and sat down next to Chali, forming a rough triangle.

Nobody said anything for a minute or two.

"I thought the planet was uninhabited," Adam put forth finally.

"It was. I mean, there was nothing but plants. I double-checked all the scans," replied Chali. "I don't understand what happened. Are they – I mean, they're all gone, aren't they. Everyone is dead."

"We're not dead," said Adam. He put his suited arm around her, and she leaned into him. Sam said nothing.

The rain was beginning to abate.

"Did you eat?" asked Chali. "You're not hurt, are you?"

"I ate an energy bar. I'm okay for now," replied Adam. "My knee is a bit banged up, but I'll live." He paused, and then asked, "What are we going to do now?"

"Well," said Sam, "we could have set up a base here, but I checked the shuttle. Its conversion machinery is damaged beyond repair, and its power cell is cracked. The in-atmosphere vehicles were at the edge of the inertial field

and got sheared off when we hit. The only thing I've got is that I think I saw one other shuttle escape the beam. If it came down undamaged, it could be our only hope."

As if on cue, the rain stopped, and the sky began to brighten. The wind was no longer howling against the side of the shuttle. Some of the clouds parted, and a ray of bright light shone through.

"What time is it?" asked Adam.

"That's a good question," said Sam. "I did some calculations earlier using my suit computer. By my estimates, from where we are, the star – the sun, I mean – should be visible for about twelve hours each day. If those clouds hadn't been in the way, I think we would have had line-of-sight to it for about five hours now."

"When you said 'sun' there, it sounded almost like it might anger some sun god back home," said Chali. It sounded like it ought to be funny, but it came out sounding ominous. "Sorry," she added.

"It was day here when we left the Aeries. I guess I wasn't out that long," said Adam.

"You were out for about thirty hours, give or take," said Sam.

A sound from behind Adam startled him, and he stood and turned around. The two women stood as well.

The clouds were beginning to clear, and the entire valley was shimmering in the sunlight. The air was crystal clear, but already, the opposite side of the valley was beginning to look wavy in the heat.

The trail the shuttle had carved into the side of the valley had formed a small plateau, and up over the edge of the plateau, a suited figure came running, slipping and almost falling on the clumps of sodden dirt. Adam could hear a woman's voice, and mimicked the gesture from earlier.

"Turn on your suit radio," shouted Adam, walking out to meet the arrival.

The other suit was covered in streaks of mud. Its occupant reached up and pressed the switch, and immediately heavy breathing filled the channel. Adam was close enough now to see Jane's face. Sam and Chali had arrived and clustered around. They waited for her to catch her breath.

"You've got to help— They fell— Adam, Sam— David, he's— he was trying to save Lynne," said Jane frantically.

"Slow down," said Sam. "Tell us from the beginning."

"Er— right," said Jane struggling to control her breathing. "I— we were trying to find water. We brought the purifier with us. It was David and me, and Lynne."

"Why were you trying to find water?" interjected Sam. "We have plenty of water in storage here."

"I don't know," sobbed Jane. "Lynne said it was important, and David said we couldn't let her go off alone. We found a river, except it was a raging torrent at the bottom of a ravine. We tried to stop her, but Lynne was climbing down. She slipped, and tore her suit, and landed on some kind of ledge. David tried to go after her, but he slipped too and fell into the water, and now he's— he's gone."

Jane was crying openly, and Chali moved to her and put her arms around her.

“David is probably alright,” said Sam. “He was wearing a pressure suit too, wasn’t he?”

Jane looked up and sniffled.

“I’ve got water and food in my backpack,” said Adam. “If it’s not too far, we can leave right away.”

“I’ll take you there,” said Jane, and headed off, the others in pursuit.

## 9

The tracks from Jane’s frantic scramble back to the crash site were clearly visible in the mud, and they retraced her steps at a more measured pace.

The shuttle had had the good luck to come in in a relatively sparse area, but as they proceeded toward the river, more and more trees began to appear around them. Trees that were standing alone were covered with branches up their entire height, with large triangular leaves that were, toward the top, fluttering in the breeze. They walked for at least an hour before reaching the edge of a forest, the trees growing much more densely together. As they entered, Adam peered around. The individual trees they had been passing were monstrous compared to most on Earth, but they were dwarfed by the trees within the forest. These trees were different, with only a rough, scaly bark around their massive trunks for hundreds of metres up. At the top, they suddenly branched out, forming a canopy that filtered the light.

Around the base of the trees, strange blue and red mosses were growing, and the occasional smaller plant or young tree was pushing itself slowly up, making the best of the meagre light available at the forest floor. Jane's boot prints had torn at the moss, carving deep prints.

"I could use a shower," said Adam, grunting as he pulled himself up onto the remains of an ancient log.

"You and me both," said Chali, and though he couldn't see her face, Adam knew she was grinning.

A large black insect, as large as a hummingbird, suddenly flew up and began circling them. It made a couple of close passes at each of their faces, its wings clacking mechanically. Jane swatted at it but missed.

"I thought you said there was no life on this planet," she said.

"I said there were no signs of *sentient* life," answered Chali. "The biology here looks remarkably similar to Earth. The plants are breathing carbon dioxide out of the air. There has to be something to put the carbon dioxide into the air."

The insect made another pass or two, and then flew off, quickly disappearing amongst the trees.

"Are we likely to run into any animals?" asked Sam. "Anything dangerous?"

"I haven't seen anything yet," said Jane.

"On Earth, a major contributor of carbon dioxide is single-cell organisms in the oceans. That's probably the case here too," said Chali.

“Still,” said Sam, “we should be on the lookout.”

They continued along the trail and finally reached the gorge Jane had spoken of. They peered over the edge and saw the ledge where Lynne was lying. Beneath her the river was moving swiftly but demurely. The leg of Lynne’s suit was torn open and there was dried blood on the suit and the rock around her leg. There was a strange gray fuzz around the tear. She raised her hand upon seeing them. Her mouth moved but they couldn’t hear her.

“Turn on your suit radio,” yelled Jane, making the gesture. It seemed to take her a second to comprehend, but Lynne reached for the helmet and pressed the button.

“It hurts, oh god, it hurts,” said Lynne. “My leg, it’s infected or something.”

“We’re gonna get you out of there. You’re going to be okay,” said Adam.

Sam reached up to the side of her helmet and pressed a button next to the radio’s on/off switch.

“Switch to channel two,” she said, just loudly enough for him to hear through the air. Adam did so.

“She’s not going to be okay,” she said. “You can see that, can’t you?”

“What do you mean?” said Adam.

“Her body is infected through her leg. Her immune system doesn’t know how to fight this infection. I’m not a doctor, but if I had to guess, well, I don’t think our antibiotics will work against it. It isn’t Earth life.”

Chali had joined the private channel.

“We can’t leave her down there. She deserves better than this.”

“I agree,” said Adam. “Even if she’s not going to make it, we have to get her out of there.”

“I don’t think it’s worth the risk,” insisted Sam. “David tried, and he fell into the river. That could happen to us, or we could tear our suits too and die from the same infection.”

Adam reached up and switched his radio back to the public channel. He went back to the cliff edge, and the others followed.

Lynne raised her hand again.

“Thank god you guys came. My leg really hurts. I think it’s infected or something.”

“We need a rope,” said Adam.

“The suit packs come with thirty metre tether lines,” said Sam. Adam tried to reach around but found he wasn’t flexible enough. Sam reached out and pressed the release, then pulled the cable out and handed the end, equipped with a karabiner-style hook, to Adam.

Adam began to look for a place to anchor the cable, but the nearest tree was a good distance from the bank, and its trunk was so large he wasn’t sure the cable would even reach around it. He inspected the rocks near the ravine, but didn’t find anything suitable.

“We could just hold onto it,” Jane finally said. “We could attach it to our suits.”



"This is crazy, Adam," said Sam. "You could get hurt. You could die."

"We have to do this," he replied.

He handed the cable end to Jane, and she clamped it to her suit, and then sat down and dug her heels into the soft ground. Chali sat down behind Jane and anchored Jane's suit to her own, pulling the cord tight and locking it. Sam sighed into the radio, shook her head, and then took her position behind Chali.

Adam walked to the edge of the gorge, unspooling cable behind him as he went. Then, at the edge, he locked the mechanism, took a deep breath, and leaned forward.

The cable became taut, but it held, and his anchor held fast as well. He leaned out over the gorge at a forty-five degree angle and looked down at Lynne. Her face was white. She looked up at him and reached out.

"Thank god you came. My leg is infected, I think. It really hurts," she repeated, as if seeing him for the first time.

"I'll be there in just a second," said Adam. The tether in his suit came off a winch, and controls in the left arm of the suit allowed extending or retracting the cable. Adam set it to extend slowly, and began to walk forward, down the side of the ravine. He carefully picked his way across the rocks jutting out the side. One fell free and crashed inches from Lynne's head before bouncing down into the water with a splash. Finally, he reached her, hovering only a few feet above her.

"Can you roll over?" he asked.

“Yes,” said Lynne. She tried to roll over, but did not have the strength. “No.”

Adam braced himself and pulled up on her shoulder. She gasped in pain, and then was silent, taking rapid, shallow breaths. Adam found the tether in the back of her suit, extended it far enough to attach to his own, then locked the winch.

The trip back up was interminable and terrifying, but Adam managed to retrace his steps up the vertical wall of the gorge, finally rotating back into a standing position and pulling Lynne up onto solid ground.

He collapsed back, exhausted, next to Lynne’s prone form, and the others got up and hurried over. Sam carefully turned Lynne back onto her back. Lynne opened her eyes and coughed, a deep wracking sound.

“Thank god you guys came,” she said. Then she smiled, a pained expression on her face, and began to cough again, violently. Suddenly, a vile-looking yellow liquid burst forth from her mouth, pooling within her helmet bubble, followed by blood, staining it red. Lynne’s body convulsed twice, then she was still.

They backed away quickly, distancing themselves from the horror. Chali gagged but checked herself.

“Oh my god,” said Jane. “Oh my god.”

“We need to go,” said Sam.

“No, we need to bury her,” said Jane. “This isn’t right.”

“We need to go if we’re going to find David.”

Jane looked at Sam, and her eyes widened, remembering his fall into the torrent of water.

“Yes, we need to go!” she said. “Adam, Chali, let’s go, we have to find David. He has to be downriver somewhere.”

She set off smartly down river.

“Don’t walk so close to the edge!” shouted Sam.

“How am I going to see him?” snapped back Jane.

“You’re right. Just walk more slowly, then.”

“Maybe one of us should take the lead,” said Adam. He caught up with Jane, and stepped ahead of her, setting a safer, more relaxed pace.

They walked for several hours along the side of the river. They were heading down the side of the mountain, toward the valley floor, and the ground gradually became less steep as they went. Over time, the channel carved by the water became less deep, until they were walking directly along the river’s banks, and it began to widen out.

Suddenly, Adam stopped. A pressure suit was lying face down in the water near the middle of the river. The head was above water, but the remainder of the suit was submerged.

“Look,” he said, and pointed out across the water.

“Oh my god, David,” said Jane, and she waded quickly out into the water. It became deeper as she went, nearing her knees as she approached the prone figure. Then, abruptly, Jane fell into the water and disappeared beneath its surface. Her shout came through on the suit radio. A moment later, she resurfaced, thrashing about.

“Calm down,” shouted Sam, and she did. She was now floating beside David, pushed forward by the current. She grabbed onto the suit and pulled, but she couldn’t move him.

“He’s being held in place by the river”, she said. “It’s pulling me forward too.”

The others began to wade out, testing their footing more carefully. They stopped at the edge of the sudden drop-off.

Jane placed her arms between David’s shoulder and the rock he was leaning on, and pushed apart as hard as she could. David rolled over, facing up. His face was white and his lips blue. The glass bubble of the helmet was cracked open, and the suit was filled with water.

Jane burst into tears. She didn’t help as Sam and Adam pulled her free of the deep area and dragged and carried her to the edge of the water. She was inconsolable for some time, but eventually became quiet, staring into space.

Adam removed his backpack and took out four of the bottles of water. He took one for himself and connected it to the side of the suit pack, drinking deeply through the straw. Sam and Chali did the same. When Jane did not follow suit, Chali did hers for her.

“You need to drink,” she said.

Jane said nothing, but after a moment began to drink water.

“We should head back,” said Sam. “We need to collect the rest of the supplies and locate the other shuttle.”

Jane looked up and nodded weakly. She allowed Chali to help her to her feet, and Adam returned his backpack to his back, and they set off back up the river.

## ***10***

The walk back to the crash site was mostly up-hill. The sun set early in the trip, and the light was dwindling as they arrived back at the shuttle. The suit lights were necessary at the end, to find the ship and get back into it.

They climbed up the ramp and huddled together in the airlock. Chali was nearest the control and pressed it, indicating a level four biohazard. The doors slid shut and the ship sucked the alien air out of the chamber. Then, the chamber was flooded with caustic gases and the bubbles on their helmets became protectively black as intense radiation at various frequencies killed anything left in the air. The ship reclaimed the gases for refinement and reuse, then sprayed a fine mist of water into the vacuum. Finally, breathable air flooded into the chamber, blowing intensely across their suits to remove the last traces of the water that had cleaned up any remaining molecules of gas. When the gale came to a halt, the door slid open. Simultaneously, a warning beeped from the air lock controls.

“What does it say?” asked Sam.

“It says there isn’t enough power left to do that a second time,” replied Chali.

“Then this will be our last time without a suit on until we get to the other shuttle. Make the best of it.”

“I can take care of the suits,” offered Chali. They had been collecting waste and required cleaning and renewal.

“No need,” pointed out Adam. “There are enough fresh suits for us to simply put on new ones tomorrow.”

So, they removed the protective wear and dumped it into a pile in the corner of the cabin area. The air inside the cabin was uncomfortably warm.

“Oh god, the *smell*,” said Jane. “I guess Richard is still... here.”

“We could move him to the airlock,” suggested Adam. It took some time to move his dead weight, but they managed to haul him to the airlock, and then closed the door.

“It still smells bad,” said Jane.

“I have an idea for that,” said Adam. “It’s going to take a few minutes.”

He moved along the wall, removing panels until he found what he was looking for. While he worked, Chali and Jane converted the cabin chairs for sleeping – a purpose for which they were designed but would never have been considered good.

“The air seems to be getting stuffy. What exactly are you doing, Adam?” asked Sam. She moved behind him for a better look, and leaned forward, pressing her body against his.

“I’m almost done,” he said. “It’s hard to work with you leaning on me.”

“Sorry,” she replied, backing off only slightly. Adam grunted, then pushed a component into place. It clicked in, and then began to whirl.

Fresh air filled the compartment. It felt unusually cool as well.

“I turned the air reprocessor around and fixed the air conditioner. Normally on these shuttles it takes air from the back, scrubs it, and blows it back in at the front. Now, it’s taking air from the front and blowing it in at the back of the shuttle. It scrubs it thoroughly in between, which should remove the ... odour.”

“Thank you, Adam,” said Sam. She smiled. “I think the smell is starting to go away.”

“Sam, what are you doing?” It was Chali. Adam extricated himself from Sam and put some distance between them.

“I, uh... nothing,” Sam replied. She frowned and looked away.

The sleeping arrangements were almost ready. They sat on a bench in the rear compartment to eat some food – Chali between Sam and Adam – and then made their way back to the main cabin. Chali and Adam took the beds on one side, leaving Sam and Jane on the other side.

Adam slept deeply through the long night, waking up to the early dawn. Chali was still snoring softly at his side, and Jane was asleep on her side. Sam’s bed was empty. He craned his neck around and saw her sitting cross-legged behind the cockpit, looking out the window.

He got up and walked to where she was sitting.

“Hey Sam – are you okay?” he asked quietly.

“Yes,” she replied, then, “no. Yesterday was the worst day of my life.”

Adam couldn’t help but chuckle. It was an absurd understatement.

“The mission was a success,” she continued. “I kept telling myself that. We beat all the odds, arrived in one piece and even found an ideal planet. Everything went to shit so damn fast. So many people died yesterday, Adam.”

Adam moved closer, and sat next to her. He didn’t know what to say, so he said nothing. They sat in silence for some time.

“Adam,” she said finally, “I’m sorry about yesterday. It just occurred to me that this may be the last chance I am ever going to have to touch another human being. I don’t want to die alone.”

Adam turned to her and found her looking into his eyes.

“I don’t want to die alone,” she said again. A tear welled up and began to slide slowly down her face.

She looked at his lips, and then leaned in. He let her kiss him, gently, on the lips. She put her hand between his legs and kissed him again. He backed out of the kiss.

“Not here,” he managed to say. She nodded solemnly, and then quietly got up and tip-toed toward the rear chamber. Adam sighed, and then followed her. As he entered, she closed the door behind them and then kissed him full-on.



“Lie down,” she said, and he complied. She began to undress him.

“Sam, this is wrong.”

“You tell me what is right, Adam. Tell me what is right here.” Her face was streaked with tears, but she kept moving, pulling his pants off of his legs.

“No, Samantha, Chali...”

“You’re right. It isn’t fair – but I need this Adam. Don’t deny me.”

She pulled her own clothes off, and then moved in on top of him. Adam hesitated, but finally put his arms around her, and they made love while the sun rose.

## *11*

When they were finished, Adam and Sam put their clothing back on and opened the door to the main cabin. Chali was still asleep, snoring softly. Jane was sitting up in bed and watched them come in. She said nothing.

Adam lay back down next to Chali, lying on his side in order to look at her. After a few moments, he rolled over to face away. His mind raced, going over and over what had just happened, stalling each time he came to Chali. He rubbed his face with his hands, and then decided to get up.

He turned to wake Chali, and then decided not to. Instead, he went back to the rear chamber. He imagined the room smelled of him and Sam. He took a deep breath, then went to the stores and selected a breakfast for himself.

After some hesitation, he selected one for Chali as well, one he knew she would find less disagreeable.

He went back to the bed and sat down to eat. Chali rolled in her sleep, snorted suddenly, and opened her eyes. She saw Adam and smiled, and he tried to smile back but knew it must look strained. Chali didn't ask, and instead accepted his offer of food.

Sam and Jane selected meal packets as well, and they sat down for their final breakfast in the shuttle.

"This shuttle almost feels like a home," said Sam.

"That's ridiculous," said Jane. "My home is ten and a half light years away. Yours, too, and you know it."

They ate on in silence, and when they were done, they took turns freshening themselves up in the meagre wash-room. Modesty had simply to be set aside, as the only way to light the room was to leave the door open.

They stood in the rear chamber, wanting to delay the inevitable, but there was nothing left to do, so they each filled a backpack to brimming, leaving very little behind, and then put on fresh pressure suits. They opened the airlock door, remembering too late about Richard's body. Stepping over the body, they cycled the airlock and jumped down to the surface of the planet.

## ***12***

The sun was climbing into the sky, and the valley was bright and green. Sam led the way, and the climbed up onto the ridge at the edge of the trail created by the crash. The edge was softened by the rain, but still higher than the surrounding ground.

Through the sparse trees, they had an excellent view of most of the valley. Near one end, there was a large, circular area of yellow, brown and black in the midst of dense forest. Jane pointed.

“That must be where the beam came from,” she said.

“Look over there,” said Sam. She was pointing at a small scar on the opposite side of the valley. “I think that’s where we need to go.”

She set off down the hill, climbing carefully down the ridge and then picking a trail between the trees, trying to keep the target in sight. They walked for an hour before finally reaching a continuous wall of forest extending at this altitude along the entire length of the valley. There was no way to go but through it.

“There’s no way we’re going to stay on course,” said Jane.

“She’s right,” said Chali. “There are probably bigger rivers and lakes down there. Even if we could walk in a perfectly straight line, we’ll eventually have to go around things, and we’ll lose our path.”

“It’s not perfect,” said Adam, “but I don’t think we can possibly miss the entire other side of the valley, and once we get past the tree line, we should be able to see the other shuttle again, and we’ll be able to walk across to it.”

“I concur,” said Sam. Nobody objected, so she set off into the forest.

The ground began to flatten out, but as it did, the variety of plant life down at the forest floor began to increase, and some areas were difficult to get through. Twice, they had to back-track and find an alternate route.

“You know what’s odd,” said Jane suddenly. “I just realized, I haven’t seen or heard any animals at all. No insects, either, except for that clackety-clack thing yesterday.”

“We saw no indications of animal life from orbit,” said Adam, “but you’re right – if there is any significant population of insects, we ought to have seen others by now, and if not, then where did that one come from?”

Nobody had an answer for this, so they kept walking. They took turns telling stories about their families back on Earth. The light began to wane. The ground was almost flat now.

“I want to stop and rest,” said Chali. “At the very least, let me eat something.”

They stopped to consider the idea.

“If we stop now, we may as well make camp here as well,” said Adam.

“Until now, we’ve been going downhill,” said Jane, suddenly concerned. “We’ve known which way to go because of that. Now the ground is flat. How will we know which way to go? How do we know we’re going the right way now?”

“The sun is at that end of the valley,” said Adam, gesturing. “Tomorrow morning, it’ll be at the other end.”

He stooped down and, with the finger of his suit glove, drew an arrow in the dirt pointing the direction they had been going. Jane seemed satisfied by this.

They decided to make camp and walked a short distance until they found a comfortable place to lie down, then sat down in a circle and opened their packs. Inserting sealed

food packets into their suit packs, they ate the food paste forced, on command, through the feeding tube by the suit, and washed it down with water. They ran a few numbers and estimated that they could continue walking for a good fifteen days before they were at risk of running out of food or water. The suits were powered by high-density cells that would last for years.

“We ought to make a camp fire,” said Jane.

“That is a very *bad* idea,” said Sam. “We don’t need any more heat; even at night, this forest is warmer than we need. More to the point, what if we start a forest fire?”

There was some debate, but in the end Jane won and set off gathering things that looked like wood. These were piled up, and then Jane used her suit’s cutter to start the fire. This was a small plasma torch supplied as standard equipment with the suit, whose more common role was for maintenance EVAs in space. The sticks crackled and popped under the cutter’s flame and began to ooze a thick, red sap, but eventually did begin to burn.

They sat some distance back from the fire. Adam sat opposite Chali, and Chali gave him a confused look which only worsened his guilt. Jane began telling another story, and this continued into the night, until they eventually put out the fire and slept under the canopy of the forest.

Adam woke suddenly in the dark to movement. He stayed perfectly still but opened his eyes and saw Chali lying down next to him. He put his arm around her and she smiled. He swallowed a knot in his throat and lay awake for some time before finally falling back to sleep.

## 13

In the morning, after a quick breakfast, they set out again. Their suits were collecting waste and storing it in a separate compartment. An active filter made of nanomachines extracted pure water, reducing the volume and providing additional drinking water, but otherwise the waste was simply stored until the evacuation function was used.

Sure enough, the sun was in the opposite end of the valley, and they set out in the direction of the arrow Adam had drawn in the ground. Before long, they came to a river, possibly the same one they had encountered two days prior. It was very wide, and it did not look safe to cross, so they followed alongside it.

“You know, we still haven’t given this planet a name,” said Sam. “Before we left the Aeries, I asked everyone to come up with ideas.”

“It reminds me of park lands back home,” said Adam. “How about Yellowstone?”

“This isn’t anything like Yellowstone,” objected Chali. “If anything, this is like a tropical rainforest.”

“Well, I think it needs a nice name. It is a beautiful planet.”

“This planet isn’t beautiful,” said Jane. “We should call it Kali, or something. It’s trying to *kill* us!”

“It tried to kill us,” said Adam, “but it isn’t trying right now.”

“Well, if none of you have any good ideas,” said Sam, “I’m going to call it Buttercup.”

They all broke out laughing. Some time later, Sam said quietly, "I'm serious."

After several hours, the river widened into a lake. It was a relatively narrow lake, but it stretched along the valley floor for some way, and they were forced to walk around it. It was at least an hour before they reached the end and crossed to the other side of the valley, and another few hours before the ground began to rise again into the opposing hill.

They took another brief rest for food and water, then began the arduous climb. The forest continued on up the hill as far as they could see. As they walked, the climb became steeper. They continued for an hour or so, and then Jane stumbled.

"Agh, my leg," she cried out. "It's cramping up. I'm not used to this. I don't think I can make it up this hill."

She sat down and tried to stretch the muscle out.

"We're not going to leave you here," said Sam. "You've got to get up and keep moving."

"Let's take a quick break," said Chali, sitting down next to her. Jane was trying to massage her calf muscle, but the bulk of the suit was making it difficult. "Here – lie on your belly and I'll shut off the suit."

Jane laid back and rolled over, and Chali tapped the controls on the suit pack. The defined edges of the suit became limp fabric, and the helmet bubble softened and wrinkled, losing its glass-like transparency. The helmet's seal was maintained. Jane grunted something but it didn't come through on the suit radio.

Chali massaged the muscle through the softened suit for a minute, and then re-enabled the suit. It puffed back out, and the helmet became hard and transparent again.

“That’s much better,” said Jane. “Thank you.”

They got up and continued on. The underbrush was less dense now, but the light was also fading. As it became dark, they turned on the suit lights and continued for a short while, but the light from the suits did little to penetrate the complete and utter black enveloping them, and they eventually gave up and stopped to rest.

After a brief dinner, they went immediately to sleep. The trek was beginning to take its toll, leaving them exhausted and aching terribly. The soft moss on the side of the mountain was a welcome bed at the end of the second day of hiking.

They slept soundly through the night, Adam with Chali and Jane and Sam separately nearby.

As dawn broke, Adam’s eyes opened. He saw Chali and smiled, then recalled Sam’s touch with a stab of guilt. As if to erase it, he pulled her tight. Her sleep disturbed, she smiled, and then opened her eyes to look at him. Then she looked past him, up the hill.

“What is it?” asked Adam.

“Look for yourself,” she said.

Adam hauled himself up and looked. The forest ended abruptly less than ten metres from where they had slept, and he could see out across the side of the hill. The crash of the other shuttle was clearly visible, and less than an hour’s walk away.



# 14

At Adam's excited yell, the others woke up. Their spirits were much improved at the sight of their goal within easy reach. They had ended up behind the shuttle, and before long reached the start of the furrow it had carved into the planet's surface. It was a deep, thin track, not like the wide, flat track their shuttle had made.

"This is not good," said Jane. "Not good at all."

"What does it mean?" asked Adam.

"It looks like it came in tilted on its side. That shouldn't have happened with the inertial multiplier field active. If the field wasn't active, there might not be much of the shuttle left."

"We'll have to go single-file," said Sam. "The path is too narrow."

She led the way, and Adam followed, followed by Chali and finally Jane. They walked along the base of the furrow, and as they went its walls loomed higher and higher over them.

"This is a lot deeper than the one for our shuttle," remarked Chali.

As they approached the shuttle, Sam quickened her pace.

"We should stay together," said Adam, but Sam continued to gain distance on them.

"Can you keep up?" he asked Chali.

"I think so," she replied.

"I definitely can't," said Jane. "That's okay, though, you two go on ahead."

They increased their pace to match Sam and left Jane trailing behind. Suddenly, Sam stopped.

"Hold on," she said, and the others stopped too. "What on *earth* is this?"

"I can't see from here," said Adam.

"It looks like there's something under the ground here. The shuttle has opened up some sort of tunnel system. There's something very odd about it, though."

"If there are underground tunnels," said Chali, "and the shuttle has opened them up, then we need to get out of here right away. They could collapse at any time."

"It looks like these tunnels are lined with some sort of circuitry," said Sam.

"I have to see this," said Adam, but Chali shook her head.

"I'm not getting any closer. This is very dangerous," she said.

Chali stayed where she was, and Adam began to walk toward Sam. As he approached, he could see a cleft beneath the shuttle, glowing faintly blue.

"It looks like it's active," said Sam. "I'm going to see if I can take a reading."

"This is a bad idea," said Chali.

Sam approached the hole and gingerly stepped down into it. She leaned forward to use an instrument in the

suit to scan for an electromagnetic field, and then the ground shuddered beneath them.

Dirt began to pour down into the tunnels. Sam stood up and looked back in alarm. She began to climb out, but another shudder shook the mountainside and her foothold gave out, leaving her hanging.

Adam looked back to Chali and Jane and saw them swimming in dirt as it disappeared into the ground.

“Help,” called Jane. “Help!”

The flow of dirt finally came to an end, exposing a giant crack in the tunnel, which also appeared to be lined with circuitry.

Jane and Chali fell into the crack. The crack was wider where Jane had been standing, and she fell straight through. Her scream echoed shrilly in their suit radios for several seconds before being replaced by static. Chali had broken her fall, catching the sides of the crack with her arms, and was just managing to hold herself up. Her feet were dangling down into the darkness of the crevice.

“Adam,” said Sam, “come haul me out, then go get Chali.”

“Adam, help me,” whimpered Chali.

Adam looked at Sam, then at Chali, then back at Sam.

“I’m sorry,” he said, and then took off back up the trail at a run.

“Adam, I’m going to fall!” shouted Sam.

Adam reached the crack and began to run along one side of it. Pieces of the tunnel gave out under his feet as he ran.

He looked down and saw that, in fact, the tunnel wasn't lined with circuitry – it was *made* of circuitry.

He reached Chali and shoved a gloved hand under her arm. As he pushed it under, the support beneath her arm gave out, and he was left holding her arm, a deep, black pit beneath them. He leaned away from the crack, braced his feet, and then, hoping the ground would not give out, hauled Chali out.

“Adam...” said Sam, and then she began to scream.

Adam looked back toward the shuttle, and Sam was no longer hanging onto the edge.

Sam's scream ended with a grunt.

“Oh god,” she said, “I've fallen about thirty feet. I think my leg is broken. I'm going to ... tighten up the suit around it. This place is circuitry everywhere. There's no writing, and the circuitry where I landed has broken under my weight. I don't think these are tunnels at all.”

“Can you get out?” asked Adam.

“I don't know. I'm going to try. You and Chali get out of here. Get to safety.”

Adam and Chali began to walk back out of the trench, stepping gingerly along the edge of the crack.

“If they aren't tunnels, what are they?” continued Adam.

“Hell if I know,” said Sam, “but I'm pretty sure they're not meant to be walked in. Everywhere I step, my feet are crushing the floor.”

Adam and Chali continued walking, almost at the end. The radio began to give way to little bursts of static.

“Hold ... There’s someth... here. They’re ... at me.”

“I didn’t hear you, Sam. Say that again.”

“They’re just looking ... me. Wait ...”

And then Sam began to scream.

## *15*

Adam and Chali stopped dead in their tracks. Sam’s scream continued longer than seemed possible, and then turned to static and stopped.

They raced out of the trough and along the outside of it. It took a good fifteen minutes to reach the final resting place of the shuttle, and they climbed up the wall of displaced dirt. Adam reached the top first, and peered over. He sighed, and then turned over and sat near the top facing away.

When Chali reached the top, she peered over and saw what Adam had seen. The shuttle had crumpled on impact. Nobody could possibly have survived. None of the equipment on board would have survived.

“We’re the only human beings alive in more than ten light years,” she said.

“Yes,” said Adam.

“We’re going to die.”

“Yes.”

“I’m afraid,” said Chali.

“Me too,” replied Adam.

“I never thought I’d die on a planet without a name.”

“Buttercup,” mumbled Adam.

“I suppose you’re right,” she said wistfully.

She turned and sat next to him. He put his arm around her and they leaned into each other. They sat in silence for some time.

“I don’t want to die of starvation,” said Chali, suddenly.

“You think we should commit suicide?” said Adam. He laughed. “Imagine, for us to come all this way only to kill ourselves.”

Chali got up, and sat down on Adam’s lap, facing him.

“I suppose it is suicide, after a fashion,” she said, and began to undo her suit helmet.

“No!” cried Adam, and he put his hand on hers. She reached with her other hand and undid his helmet. Hot, alien air flooded in. He coughed at a strange smell.

He released her hand, scrabbling at his helmet, knowing it was too late, and she took off her helmet. Then, she pressed the emergency release button on her suit, and it split down four new seams, falling away. She sat on his lap under the strange, red sun and slowly pulled off her shirt.

He stopped scrabbling, realizing what she had in mind, and then mechanically began to remove his suit and clothes. She stood up to take off her pants, and soon they lay naked in the dirt in the heat, sweat dripping down their bodies. Adam pulled open his backpack and pulled out two bottles of water. He drank one and handed the

other to Chali. She opened it and took a few sips then put it down.

She straddled him again, and they began to make love. She moved with intensity, and they began to breathe heavily.

“I love you,” she said.

“I know,” he replied.

“I know about you and Sam, and I still love you,” she said, and she did not stop moving.

Adam began to cry, and held her close.

At the edge of his focus, Adam became aware of a strange noise.

“Stop for a second, what’s that noise?”

Chali stopped, keeping him inside of her, and they listened. It was the noise of the insect from earlier. It buzzed in the air above them, stationary.

“It looks like it’s watching us,” Adam said.

“I don’t mind,” said Chali.

Another bug appeared from within the trench, and then another. More and more rapidly, the air began to fill with the flying creatures. Then, they began to light up, and suddenly, an image of Jane was floating in the air above them. Then it became Sam, and then Jane again, erratically changing. It watched for some time, hovering, indeterminate but motionless. Then, it spoke.

“I am ... sorry,” Sam said.

Adam held Chali close. He began to feel an itch at the back of his throat. As if reading his mind, Chali coughed. Her breath had a vile smell to it.

“I am sorry,” said Jane, floating in the air.

“I didn’t mean to,” said Sam.

Adam coughed too, and began to feel dizzy.

“You ... are corrupt,” said Jane/Sam, matter-of-factly.

Suddenly, the bugs dispersed and moved in close to Adam and Chali, surrounding them. The clacking of their wings was very loud. From this distance, Adam could see that they were not insects at all, but tiny robots.

Adam coughed again, and it felt like his lungs were torn open.

Then the air seemed to shimmer. Chali began to move again, suddenly desperate to finish before the end. Adam held her tight—

and then his arms seemed to slip into her body. He tried to lift them back out, but they seemed to be merged. He realized her chest had melted into his. His arms emerged from her back, and he saw the flesh disappearing from his bones. He began to scream, and then ran out of air. The world seemed to crumble around him, and then Adam and Chali were gone, and then they were one.



## Part 2

## 16

It had been six hundred years since the expansionist waves had left Earth. Those who stayed behind had found other ways to keep themselves busy. After several failed attempts, technology had advanced sufficiently for permanent colonies to be established on other planets in the solar system, including Mars.

Three times, Mars had been colonised, and three times, in wars of increasingly large scale, its surface had been wiped clean of human life, greater losses each time. The fourth colony was barely fifty years old, and tensions with the Earth government were already building.

The Orion was a sleek nanohull ship patrolling the edge of space that Earth had grudgingly agreed to be under Martian jurisdiction. With more than two hundred crew, it was large, but not the largest in the fleet. It was, however, one of the most advanced, its entire hull and interior structure the expression of software controlling an inconceivable number of nanomachines. The ship could change colour in moments, blending perfectly into any background including the blackness of space, but as a token of good sportsmanship, while on patrol its shiny curved hull was a pristine white with an Earth Alliance logo on each side.

Captain John Davis sat in his office to the side of the main bridge contemplating the latest news from Earth. Intelligence sources suggested that Mars was preparing to extend the range of its sovereignty, increasing the radius of space around the planet that it called its own. If they went through with it, the Orion would suddenly be within Mars space – deep within it, according to the numbers on

his screen. It was just an excuse to escalate the conflict. They were trying to make a point, trying to get Earth to back down, but John had a feeling it would not end well. At the very least, he knew that Mars ships would not hesitate to fire on the Orion.

He also knew what his orders were. Earth would not accede to Mars' demands. He was to hold his position, even if they went forward with their declaration.

He sighed and sat back in his chair. There was no escape from the situation. This time tomorrow, he would almost certainly be fighting, and brave young men and women would die.

They were the best of the best, on both sides of the conflict – the result of centuries-long breeding and genetic manipulation programs, suited perfectly to military action in space. Their conditioning and education made them capable of handling the most demanding situations with minimal levels of stress. Natural team players, they were nevertheless also loners and did not form lasting bonds beyond the patriotism of service together. Tomorrow they would be dying, either on his side or that of Mars, so recently allied with Earth, and though it was his duty, he didn't like doing it.

The size of the crew was largely a formality. Nanohull ships required very little maintenance and were driven by sophisticated artificial intelligence systems. They could almost be operated by a single person. Officially, the Orion held the crew it did for boarding and landing parties, a small regiment of soldiers for tasks that space-bound weapons could not achieve, but in all his years of service, John had never needed to send anybody off the ship into a close-quarters combat situation. Boredom was

not an issue, though. Earth Alliance soldiers did not get bored.

He leaned forward again and checked the status of a long-running program. Shortly after his promotion to Captain of the Orion, he had instructed the ship to assemble an additional receiving antenna, monitoring it continuously for a signal he knew was not likely to arrive.

As a young boy, he had read of the expansionist waves. The fascination had never left him. As he grew up, he had begun to realize that there was very little *new* left to see. He traveled Earth and ventured out into the solar system, and each thing he saw was new to him, but there was nothing left to explore. Humanity had already been everywhere here. Out there, though, among the stars, there were things no human had ever set eye upon.

The Orion moved through space by separating a part of it. The bubble of isolated space, with the matter within stationary relative to its own frame of reference, could be moved using a miniscule fraction of the energy required to accelerate that matter itself. Forming the bubble was easy. Nobody understood exactly how or why it worked, but a computer simulation based on proposed new laws of physics had uncovered the effect. Nobody had believed it would actually work, and the first field generators were constructed by physicists to prove or disprove the theory. When it worked, though, it had fueled a massive expansion into the solar system. Nearly a quarter of all human beings now lived somewhere other than Earth.

The machinery required to form and maintain the space bubble was exceedingly difficult to construct, requiring very expensive materials and intense labour with exacting precision. The generator on board the Orion was easily

an order of magnitude more expensive than everything else on the ship combined. In practice, this meant only major governments had the wherewithal to put together space fleets of any importance.

The acceleration of the bubbles of space was limited primarily by gravity. The isolated particles floating in vacuum of space proved negligible compared to the drag of gravitational wells. Within the solar system, this limited travel to, at best, twenty percent the speed of light, and much less in proximity to any planet. At its current position, the Orion could not exceed five hundred kilometres per second, much less than even one percent the speed of light.

In theory, the further a ship was from any star, the faster it could go. In the three hundred years the technology had been around, though, nobody, except possibly for pirates that periodically raided mining operations in the asteroid belt, had actually left the solar system and tested the theory.

This was in part due to a controversial physics paper that suggested the gravity was in fact necessary for the operation of the space bubbles, and that a ship leaving the solar system could find itself thrown into normal space at relativistic speeds. No ship in operation was constructed to handle this, and it would be immediately torn apart from the stress. Nobody with the wealth to construct a ship felt testing the theory to be a reasonable use of the investment.

John itched to test it and prove it wrong, but even if the flight was successful, he knew it would spell the end of his career. He also had the lives of the crew to consider. If the theory was right, he would be sending them to their deaths. He had decided, though, that if any of the

expansionist ships reached their destinations and were successful, he would go, his commission be damned. He hadn't told anybody of this.

Of the various expansionist ships that left the solar system, only a handful would be reaching their destinations within his lifetime. It would take any signals they sent roughly ten years to reach Earth again, and it would take him even longer to get there himself. He wouldn't have to sit through it, at least; the space bubbles did not shield their contents from the effects of relativity.

Today, like every other day for the past ten years, the ship reported no communication from any of the expansionist ships. He sighed, and then instructed the ship to open the ship-wide intercom channel.

"Good evening, this is the captain speaking," he began. "I have just received information that, if it is correct, puts us in a difficult position. This time tomorrow, we will, in all likelihood, be within Martian space.

"It isn't the Orion that is moving. Rather, it is the Mars boundary. As such..." He paused. "As such, our orders state that we will be holding our position.

"The boys on Mars know we're here. Until now, we've avoided major conflict with them. But this time tomorrow, we will be at war.

"This information is strictly classified. I understand if many of you want to talk to partners back home, but you must under no circumstances tell them what I have told you. All communication will be monitored, and a leak of this information is grounds for dismissal and court-martial. I trust you will act with discretion.

“The Martian announcement may come at any time. I recommend that those of you with oh-eight-hundred shifts tomorrow morning get an early rest.

“All we can hope is that, when the fighting starts, we will each have the opportunity to do our duty with distinction and honour. We are the next in a long and proud history of courage in the face of danger, and we will not let those who came before us down.

“A strategy and tactics briefing will be held at twenty-one hundred hours tonight. That is all for now.”

He turned off the intercom.

## 17

The night passed without incident. As the morning progressed, the crew of the Orion began to feel almost optimistic. Perhaps the information was wrong, and there would be no fighting.

It came at noon UTC. Just as had been reported by Earth intelligence, Mars extended the region of space to which they laid claim almost by an order of magnitude. The atmosphere on the bridge was nervous and tense. The wait was not long, however. Long-range RADAR showed a couple of ships moving together, and then heading in the direction of the Orion.

They waited until the distance had closed to a light second before opening communications.

“Incoming communications,” announced the ship. “Return channel supplied. Audio only.”

“Put it on,” said the captain.

“This is the Mars Destroyer Ullr. You are trespassing in Martian space. If you cannot present authorization, you must leave immediately or you will be fired upon.”

John swallowed his own opinion and replied. “The Earth Alliance government does not recognize the claim to this space made by Mars. As such, we remain outside the border of your space. Please stand down.”

The ships continued advancing.

“I repeat, you are trespassing illegally within Martian space. If you do not leave immediately, we will open fire.” The voice was young and uncertain. *His first fight*, thought John.

“Look, son, this is the Orion. She’s one of the most advanced ships in the Earth Alliance fleet. We will not initiate hostilities, but if you fire on us, we will defend ourselves. You have to know that won’t end well.”

“You have been warned,” said the Mars captain.

“Communications channel closed,” announced the ship.

John sighed. “I meant what I said there. We will not fire first. Alright, make the hull black. Put the ship into combat configuration. Deploy stealth weapons pods.”

As the commands were entered into the console, the ship began to change. The hull darkened until it was as black as space itself. Capacitors began storing heat that would otherwise have been irradiated. The hallways contracted in length, and the walls between crew quarters, normally full of environmental control mechanisms, became paper-thin, increasing the buffer zone of hull material between them and the attackers. A false hull extended from the



surface of the ship. Weapons impacting the false hull might detonate early, splashing harmlessly against the real hull several hundred metres in.

Stealth weapons pods consisting of chunks of hull material pre-formed into weapons configurations detached and drifted silently away from the Orion. They were virtually undetectable until activated. The fake hull allowed them to pass and closed up again behind them.

John knew similar changes would be taking place in the other ships, but he also knew the Orion was significantly more advanced than anything Mars had at their disposal.

“Prepare main weapons,” said John.

“Yes sir, which configuration?” asked the tactical officer.

“Standard heavy weapons.”

“Uh, yes sir, heavy weapons,” repeated the tactical officer. They had never needed heavy weapons before, and the hesitation in the tactical officer’s voice was evident. They probably didn’t need them now, either, but the Martians had done a good job of keeping their weapons research progress a secret, and John did not want to take the risk. His heart sank for the crews of the approaching ships.

The command was entered, and within the front hull of the ship, which was now becoming a thick wall of hull material, nanomachines began to reorganize, packing together in precise configurations and forming torpedoes and beam weapons lurking invisibly below the surface.

On the Martian ship, a fire order was given, and a dozen small torpedoes shot out into space. Warnings went off

on the bridge of the Orion as the incoming projectiles spread out, accelerating, coming in from multiple angles.

The guidance systems in the torpedoes sensed the surface of the fake hull and detonated just before impact. The detonations superheated chunks of metal, turning them into pencil-thin streams of liquid beads. These impacted the fake hull, which flooded in to intercept and attached itself to the molten metal, cooling and dispersing it. By the time it reached the Orion's real hull, it had lost its deadly focus, and it splashed harmlessly off the surface.

The holes in the fake hull quietly closed as it repaired itself with additional material siphoned from the main ship.

"Target the lead ship," said John, "primary beam weapon. Fire when ready."

Within the front hull, nanomachines flowed like liquid, rotating the weapon until it was pointing at the target, then hardened, locking it into place. The hull opened up, exposing the weapon, and, simultaneously, a small hole opened up in the fake hull to allow the beam to pass.

Then, the weapon began to concentrate furious energies from the ship's main reactor, and a beam, invisible to the human eye but highlighted on the ship's monitor, tore through the space between the ships.

When it hit the Martian ship, it reflected off, spread out by the curves in its hull. For several seconds, the Martian ship continued to reflect the beam, and the energy of several suns spread out into space. The hull began to glow visibly. Then, the temperature of the hull reached a

tipping point and the beam suddenly knifed through the ship, turning its core instantaneously into vapour.

The ship began to lose its shape, the central control for its own, older-generation nanohull destroyed, and then the beam touched the containment chamber of its reactor, and the reaction spewed out into space, tearing the ship into two parts and briefly lighting up the battle scene.

The beam shut off and the weapon spooled down.

“Sir, the weapon will be recharged in fifteen seconds, but we can’t fire it again for at least two minutes due to heat levels,” said the Orion’s tactical officer.

“That’s fine,” said John. “Target the second ship and fire torpedoes.”

The dozens of torpedoes hidden within the Orion, manufactured moments earlier just for this battle, sprang to life. The front of the ship opened up and ejected them, several at a time, and tiny spikes from their fusion drives began to accelerate them toward the target.

The Martian ship was equipped with lasers, and it tracked the incoming missiles as they closed in. One by one, the missiles detonated prematurely.

“Fire stealth pods,” said John.

The Orion reached out to the pods with tight-beam laser communications signals, and they sprang to life. Encased in hull material, they were like miniature versions of the ship. Completely black, the tiny fusion drive they hid behind them was invisible to the Martian ship. They were not detected until they came close, and the defence

systems were still occupied with remaining torpedoes, which were closing rapidly.

Within the stealth pods, heat from the drives was channelled into several large copper blocks, heating them almost to boiling, and then the nanomachines constricted, increasing the pressure on the copper until it verged on becoming vapour. Finally, the molten copper was ejected from the front of the pod in a continuous stream.

The Martian ship had no defence for this, and drops of copper knifed into the hull, carving their way more and more deeply until finally they shot through the living space, destroying equipment and people alike.

The Mars ship's defence laser shut off. Half a dozen remaining torpedoes slammed into the ship, using their kinetic energy to force their way into the body of the ship and then detonating.

Several points on the ship blew out into space, and then it fell silent and dark.

John stood on the bridge of the Orion in silence for a short time looking out onto the devastation, and then ordered the ship to stand down from combat status. The fake hull flowed back into the ship, the living areas expanded back out to a comfortable size, and life support channels that had been in the walls between quarters grew back. The weapons the ship had prepared dissolved back into individual nanomachines. Those fused by the beam weapon's operation were ejected into space. The ship's hull became a clean white again, and it began to glow slightly, invisibly, slowly radiating its pent-up heat out into space.

John left the first officer in charge and retired to his office. He sat back in the chair and stared at the ceiling. *So many lives lost, and for no reason.* And this was likely just the start. Mars would certainly retaliate, and with enough ships with enough weapons, even a ship like the Orion could be taken down.

Communications still proceeded at the speed of light, and it would be some time before the ramifications of the battle would be known. Earth was a good fifteen minutes away at the present positions of the orbits. John left his office and headed to the mess hall. He found he had little appetite, but he forced the food down anyway, and it did make him feel better.

He sat there for some time, observing the crew. Most seemed in good spirits, buoyed by the victory. They were enthusiastic about seeing some action. The technology of the Orion had kept them completely safe, and this gave them a false sense of invulnerability. Eventually, he got up and made his way back to his office.

An alert was chiming at his computer console. He sat on the edge of the chair and took in the words on the screen. There were several notices waiting for him. The first was acknowledgment of receipt of the Orion's automated report of the battle, sent out moments after the second Mars ship, along with the lives of those on board, was silenced. The second was a news headline from the public networks. Mars had officially declared war. There was still no recall order; his standing orders were still to hold position.

The third notice caught his attention. A message had arrived from the ISV Aeries.

## 18

The Aerius had reached its destination. It had found a planet much like Earth. As John watched the footage, he felt his gut rising at the thought of what he was about to do. He couldn't be certain, but he didn't think anyone would pursue him.

He paused the video and called the ship's network services. The head of the team answered the call. Denis Novikov was the best there was with computer systems. John had had to pull some strings to get him on board, but it had been well worth it so far. They had been through some tricky situations together, and John considered him a good friend.

"John, how can I help you?" said Denis in his thick Russian accent.

"Denis, I need you to do something for me. Consider it an order, but it needs to stay off the books."

"If it is an order, it is not a problem," said Denis. "What do I do?"

"When I got this commission, I was informed of a secret code embedded in the firmware that would allow them to halt or even destroy the Orion remotely, in the event that it fell under the enemy's control."

"I heard rumours, but I did not think it was true. Certainly, if such a system exists, it has never been used."

"I'm not aware of it having ever been used. Earth Alliance understandably wants this ... capability kept under wraps."

“I understand. You want me to find it?”

“I want you to find it and remove it from the Orion’s systems, or disable it if it can’t be removed.”

The expression on Denis’ face changed as the implications began to sink in.

“Er, why do you want this?” he asked.

“Do you really want to know?” said John.

“No,” said Denis. “I will get it done.”

“Thank you,” said John, and he closed the communications channel.

He went back to the video stream and continued watching. The six disc-shaped shuttles unfurled beautifully into space like birds spreading their wings. John marvelled that such a transformation could even have been possible before nanohull technology.

Then the beam from the planet erased all but two of the shuttles, and those two crashed into the planet’s surface. One of them was still transmitting life signs.

A comment underneath the video window indicated that the message had been received seventeen times. As he watched the number ticked to eighteen. The Orion’s computer system noted that the messages were identical except for a few header fields. The transmission date and time was different for each copy of the message, and the ship’s status indicated dwindling power reserves. The numbers seemed impossible, but the transmission of the message was drawing an immense amount of power from the Aerius’ remaining reserves. He contemplated this and

realized that he had after all received it clearly over a distance of nearly one hundred trillion kilometres.

He had already provisionally decided to go, but when he saw the report, the people stranded on the planet, he felt drawn to the place. He had to go to Epsilon Eridani. He knew more than ten years had already passed, and a rescue attempt was futile, but he had to try.

He got up and paced, waiting impatiently for the message from Denis to arrive indicating that the remote shut down sequence had been disabled. Finally, it came.

“Captain, I have completed your request. It was difficult to locate, hidden in the state transition sequences of the nanomachines in the hull. When they received the signal, they sent a corresponding command directly to the core computer system. Reprogramming the nanomachines is very dangerous and it takes a lot of time. However, I was able to reprogram the core computer to ignore shutdown and self-destruct messages.”

“I think I understand,” said John, though he understood very little of what Denis had said. “The ship can’t be shut down any more, is that right?”

“That is correct,” said Denis.

“Thank you very much,” said John.

He closed the connection to Denis, and then activated the ship-wide intercom.

“This is the Captain speaking. As many of you are by now aware, Mars and the Earth Alliance are now at war.” He prepared his lie. “As part of our role in this conflict,



we will shortly be departing on a highly-classified mission beyond the borders of our solar system.

“This mission may last many years, and there is a very good possibility we will never return. The details of the mission cannot be released, but I have spoken with Admiral Thompson, and he agrees with me that none of you should be compelled to come. If you wish to remain in-system, take an escape pod and leave the Orion at this time. When you are picked up, regardless of who picks you up, you are to report that the Orion was destroyed in the battle.

We will be departing in one hour. That is all.”

He shut off the channel and resumed pacing. His mind was racing. He was about to break half of the regulations in the book. Some of the laws he was about to break were punishable with his life.

If he stayed, he would go from battle to battle killing fresh recruits until his own ship was overwhelmed. He would die in battle just as they had done. His life would have no meaning. The choice was simple.

The computer chimed. There was an incoming call from Denis. John tensed, and accepted the call.

“Hello Denis,” he said.

“Hello, captain,” said Denis. “You are ... going somewhere. You are going on a mission, but I do not believe your superiors know of this. Am I right?”

“As I said earlier,” said John carefully, “the details are highly-classified.”

“This mission, it is so classified that your own military would stop you from going on it.” Denis laughed.

“Listen,” said John. He felt fear entering his voice, and masked it with anger. “You must not tell that to anyone. You can leave the ship now, but do *not* jeopardize this mission!”

“You misunderstand,” said Denis, putting his hands up. “I am not threatening you. You must take me with you. I am more excited than I have ever been.”

John breathed a sigh of relief.

“In that case, all you need to do is stay on board.”

“Thank you, captain. I am honoured to be on your crew.”

Denis closed the channel.

John began counting down the minutes. Periodically, the ship notified him of an escape pod separating from the ship. When the hour was finally elapsed, he found that the number was much smaller than he had expected.

## 19

John walked onto the bridge standing tall, exuding confidence. He considered this part of his duty as an officer, providing a firm foundation for morale among the crew, but the difference was that this time he really felt it.

“Helm, set course for Epsilon Eridani,” he said. “Maximum acceleration.”

There was some confusion. Epsilon Eridani did not exist within the ship’s navigational database. John walked over to the helm and brought up an exterior view. Rotating it,

he brought the Eridani constellation into view and put his finger on a star.

"That one," he said. "We're going there."

The helmsman's eyes widened, but he duly pointed the ship and activated the space bubble. The solar system began to slowly shift on the "overhead" view, showing the relative positions of the planets and all Earth Alliance holdings in their various orbits.

In a few minutes, as they began to separate themselves from the gravitational well of Mars, their speed reached a few percent the speed of light. The further they went, the faster the ship could propel itself. Soon they were cruising at nearly twenty percent the speed of light, the pervading limit of the inner solar system. In less than ten minutes, though, they were leaving the solar system behind, and the bubble of space enveloping the ship continued to accelerate.

After an hour, they were traveling at more than fifty percent of the speed of light, and over the next couple of days the speed slowly increased, finally exceeding ninety percent.

Question began to come in from the crew about the nature of their mission. John put it off for as long as he could, watching the speed measurements increase to less than a hundredth, and then less than a thousandth less than the speed of light, and then finally came clean. The initial reaction was everything he had feared. Most of the crew were angry, even outraged. However, a few were fascinated by the adventure. The fact that the ship was now moving only a hair below the speed of light was an object of amazement. Some pointed out that what for

them had been barely a week must by now have been months or even years back home.

The enthusiasm began to spread, and by and large, the crew came to accept their new mission. They had entered into it knowing they might never return home, and knowing the reason did not change their acceptance of that fact. Knowing that it was not due to military orders was difficult for some to swallow, but they were now locked into the captain's mission. Mutiny was not even considered; it was not in their genes.

John made the transmission from the Acrius available to the crew and directed them to historical files for the details of its mission.

A month passed, and the speed began to drop. This was expected, but also brought home the reality of their journey. Ships traveling within space bubbles typically used the gravitational drag on the bubble to slow the ship. It occurred to John that this was perhaps the largest gamble of the trip yet, since nobody had yet tried slamming a bubble with this much speed into a large gravity well.

It took several weeks for the drag on the ship to become noticeable, but as they approached Epsilon Eridani, a faint blue tinge began to appear around the front edge of the bubble, fluctuating like an aurora. In the final days, this grew in intensity and became a fiery display that enveloped most of the bubble. The brightness of the flare was such that the ship could no longer see what lay ahead of it, but it measured their velocity from the parallax motion of stars visible to the side of the ship, and the number was dropping measuredly.

John stayed on the bridge continuously in the final stages. The flare continued to indicate their deceleration.

Then, abruptly, with the speed measurement showing forty percent, the ship shuddered and the bubble disappeared. The viewscreen was filled with a large gas giant planet, and a gravity wave rippled quickly through it, introducing turbulence that tore up rings formed around its surface through the stability of millennia. The wave continued out invisibly, spreading out through the solar system in a circle from where they had entered the system.

The planet loomed unnervingly large on the viewscreen.

“How close are we to that planet?” barked John.

“Uh, several million kilometres, sir,” answered the navigation officer. Everyone on the bridge relaxed.

“Where is the planet we’re here for?” he asked, in a more controlled tone of voice.

The viewscreen was replaced by the “overhead” view, showing the layout of the solar system, with the small, red star in the middle and their gas giant and its orbit. As the sensors gathered information, a narrow asteroid belt appeared near the star, and then another, much larger one materialized next to the Orion and its planet. Another gas giant appeared on a more distant orbit, and a huge dust ring around that, and then finally, near the middle of the display, a blue dot representing the planet encountered by the Aerius appeared just outside the inner asteroid belt.

“There it is, sir. Its orbit is nearly the same distance from the Eridani sun as Earth is from Sol. We’ll know more about it when we get closer. And, sir, we need to be on

the look-out for comets. That outer gas giant could be pulling bits of the dust cloud out of orbit.”

“Very good, thank you.”

It took them several hours to escape the gravity well of the gas giant, after which the gravity well of the star, lighter than Earth’s sun, limited them to some twenty-five percent of the speed of light. At that speed, it was only another three hours until they found themselves sliding into orbit of the blue planet.

It shone brilliantly on the screen, pristine and innocent.

On board the Aerius, a sleeper pod began its revival sequence.

## 20

It had taken Idiq at least an hour to escape his isolated compartment. Once he had reached the main body of the ship, it had obligingly turned the lights back on, and after another hour, he had managed to shut off the signal. It hadn’t been elegant; he had been locked out of all the terminals, and had had to physically sever the power connection to the transmitter using the plasma torch on a maintenance suit.

It had taken somewhat longer – days – for him to bypass the security lockdown, but left alone on the ship, even Adam’s security had not been impenetrable. Sitting at Adam’s desk, he had seen the simulation to which his terminal had been – and continued to be – attached. He had deleted it.

He had realized that the message meant another ship would almost certainly follow. His mission was not over.

That ship also had to be stopped. He had prepared a sleeper pod, and programmed the ship's computer to wake him when another ship arrived.

Threading the tube into his throat had been very difficult. It was ordinarily performed under anaesthetic by a team of people assisting with the cryogenic process. He had disconnected the tube from the sleeper pod so that he could continue breathing through it as he inserted it, but he had still retched and gagged as he pushed it into his brachia. His throat had been feeling sore and abused by the time he had had it in the right place.

Finally, he had hooked up the tube and – immediately unable to breathe – activated the pod. Its door had slid shut, and then his lungs had filled with an icy liquid and he had thrashed about until he lost consciousness.

Now the process was reversing, and it was much more unpleasant than it had been the first time. He woke to blind panic and complete disorientation, his body barely strong enough to move, his elbows, knees and knuckles bruised and his throat burning.

The tube pumped his lungs clean and filled them with air that burned. He gagged on the tube, which did not retract automatically, and with some difficulty, he managed to extract it, retching as it came out.

He lay in the pod miserably, shivering with cold, his head feeling like shattered glass, his mind still in separate pieces. Slowly, memories came back to him. The ship offered him clothes, but he did not have the energy to put them on and instead lay in the deactivated pod for what felt like days, drifting in and out of sleep.

Finally, shivering from cold but feeling more composed, his mind more intact, he pulled on the clothing offered to him by the ship and pulled himself to his feet, leaning on the wall.

He felt very hungry and very thirsty. *Have six hundred years passed already?* he thought to himself.

He stumbled to the food station and carefully prepared himself a suitable meal. There were only a handful of food powder packets remaining. The processor dutifully reconstituted and warmed his selection, and as he ate it, he felt the shivers leave him and his strength returning.

He made his way to Adam's office. It was several levels down in much higher gravity, but it was the only one he had hacked and all of the other terminals were still locked out.

He dropped into the comfortable chair at Adam's desk and activated the console.

The clock read: **April 14, 2857 (Z+639.5 years).**

"No!" yelled Idiq. Something had gone wrong. Why had he woken up so soon? It had been barely twenty-five years since the message had gone out, and since he had gone to sleep. No ship could possibly have arrived that quickly.

Suddenly panicked, he realized there was an alternate explanation. This ship must have left shortly after the Aerius, and long before any return signal would have been received.

He brought up an exterior view of the Aerius in order to see the ship that had arrived. Its sleek white lines, curves



ending with no seams, no obvious breaks anywhere in the hull, seemed impossibly advanced. He found himself considering a third possibility: a non-human intelligence had come to Epsilon Eridani.

He began mouthing a prayer under his breath and considered his next move.

## 21

On board the Orion, John was reviewing the information sent by the Aeries twenty-five years earlier. The crew seemed to have made a fundamental error. The Orion showed the planet to be one hundred and forty million kilometres away from the sun, with temperatures virtually identical to Earth. The Aeries status report showed a planet thirty percent closer to the sun and much warmer as a result. *Surely the planet couldn't have moved.*

He pondered this, then compared the aerial photography of the planet's surface. He pulled up historical images from the Aeries and real-time imagery from the Orion showing the valley into which the two remaining shuttles had crashed.

In the image from the Aeries, thick forest went well up the sides of the mountains. The shuttles had been barely able to avoid the trees. The video feed from the Orion's sensors showed a narrow band of forest running along the floor of the valley surrounding a small lake with wide, dusty shores. The occasional tree dotted the hillsides, but there was no evidence of dead forest except for a small, roughly-circular patch near the end of the valley.

He shook his head, and went back to the Aeries status reports. At the time of the transmission, the ship had

indicated that it was providing life support for one human. Someone must have remained aboard while the others went down to the planet. John could think of no logical reason to do that, with all of the shuttles departed.

“Are we within visual range of the Aerius?” asked John.

“Affirmative,” responded the Orion.

“Show me,” said John. A video window appeared on his terminal and zoomed in on the long hammer-shaped space ship. It was mostly dark, but a couple pinpoints of light were visible. The hammerhead was still rotating slowly. Evidently, the ship had not exhausted its supply of energy in transmitting the message back to Earth.

John got up and walked onto the bridge.

“Take us closer to the Aerius and open a communications channel,” he said.

The communications officer looked at him, a confused look on her face.

“The ship, the Aerius, it’s still here, and it’s still powered up. I think someone is on board.”

“Yes, sir, hailing the Aerius,” she said.

A good twenty seconds passed.

“No response, sir,” she said.

“Continue hailing,” said John.

Finally, the hail was acknowledged.

“Communications established, audio and video,” announced the ship.

A pale, thin man of middle-eastern descent filled the screen.

“Hello,” he said. “I am Idiq. What are you doing here?”

“I was about to ask you the same thing,” said John.

## 22

On board the Aeries, Idiq was, in part, relieved to find that the other ship was crewed by humans. A gruff-looking man with close-cropped, greying hair was on the screen. Idiq could see figures standing behind him at computer terminals.

“When did you leave Earth?” Idiq asked, narrowing his eyes.

“We left as soon as we got your message,” said the man. From the friendly tone of his voice, it sounded like a rescue mission.

“I do not understand. That was only twenty-five years ago.”

“A lot can happen in six-hundred years. I’d be happy to tell you all about it,” said the man.

“Yes,” said Idiq, “I would like that.”

“You haven’t answered my question. What are you doing on board the Aeries?”

Idiq had anticipated this question.

“I stayed behind to monitor ship systems,” he said. “I am here in case they need anything further.”

The man frowned. "Alright. I'd like to come on board and talk with you."

"Ah, that is not possible," said Idiq quickly. "The, uh, air lock is damaged."

"I see. I can probably fix it. I'll send a crew over shortly."

"No—" began Idiq, then he cut himself off. "I mean, thank you, Captain..."

"Ah, Captain John Davis of the Orion at your service."

"Thank you Captain Davis." Idiq put on a smile, then cut off the communications channel.

He had to work quickly. He pulled up a display of the relative positions of the two ships in orbit of the planet. The Aerius continued its lumbering eighty-seven hour orbit. The Orion was nearby, closer to the surface but seeming to hang in lockstep with the orbit of the Aerius, presently over the night side of the planet. A ship closer to the planet should have required a shorter orbit to escape the planet's gravitational field; the Orion seemed to be defying the laws of physics.

No matter; the Orion's position was nearly perfect. He keyed in an arcing trajectory that would take the Aerius through the Orion, driving both ships down to the surface of the planet. The Aerius' control systems objected, and refused to fire up the engines.

Idiq cursed and began searching for fail-safes, disabling them. Finally, the circuitry of the inertial multiplier field flickered to life for the first time in twenty-five years. Its semi-organic nature meant that it tended to drift, especially when not in use, and it began to calibrate itself.

Idiq tried to be patient, knowing that any moment, some sort of vehicle would be dispatched to repair his airlock. When they discovered that nothing was wrong with it, they would be immediately on alert.

Finally, the field generator stabilized and the fusion drive came to life, sputtering a few times before delivering a strong, steady flame.

## 23

On the bridge of the Aeries, John reviewed historical records and the video footage from the Aeries' transmission to be certain. He had hoped he was wrong, but the man in the video was definitely Idiq, and Idiq was definitely the man for whom the crew of the Aeries had held a funeral.

"Sir, shall I dispatch a repair crew?" asked his first in command.

He hesitated a second. "No," he finally said. "Something is wrong here. That man staged his death. The Aeries doesn't have any weapons, at least according to its database entry, but I have a bad feeling about this. Put the ship on combat alert. Don't change the configuration. I don't want him to think we know."

"Anomalous energy reading," announced the ship. The viewscreen showed an image of the Aeries overlaid with a yellow bubble encompassing everything but the very rear of the main fuselage.

The fusion engine coughed visibly a few times, then lit up. The ship began to accelerate more quickly than seemed possible, given the tiny flame it was sitting on.

A few seconds later, the Orion predicted a possible collision based on the current curvature of the Aerius' trajectory. The ship was moving faster and faster.

"It's using an inertial multiplier field," said John, suddenly realizing what was happening. "Take evasive action!"

The ship sprang into action without waiting for any direct commands. The Aerius touched the space bubble the Orion was maintaining. Yellow sparks jumped wildly around the point of contact, and the Aerius began to push the bubble toward the planet surface.

The Orion disabled the bubble, and the Aerius came ploughing in.

Suddenly, across the Orion, the walls closed in, tightening around each man and woman on board. John felt himself forced bodily aside as the Orion made a hole for the Aerius to pass through.

The hole was large enough for the fuselage of the Aerius, but the hammer head extended too far out for the Orion to stretch around, and the impact sent a jarring shock-wave through the nanohull. The Orion was cleaved in two, and the pieces went spinning off to either side, allowing the Aerius to pass in between.

The two parts of the Orion, now acting independently, immediately formed fusion thrusters and worked to stabilize their rotation and pull themselves away from the planet.

The Orion continued to track the Aerius as it plunged towards the planet's surface. Out of immediate danger, the two halves began making rooms again for the people on board. The bridge was given priority, and John found

himself, a bit disoriented and dizzy, watching the Aeries descending toward the planet on a viewscreen in a partly-constructed bridge.

The view shifted slowly as the Orion halves vectored back toward each other. The Aeries was continuing to accelerate. When a bright white light appeared, John thought at first that the Aeries had entered the atmosphere in full force, but it became apparent that a beam weapon from the planet, presumably the same one that had taken out the shuttles, was slowly vaporizing the Aeries as it approached. The beam lit up the planet's surface like the mid-day sun.

As the beam burned into the main fuselage, the inertial multiplier field collapsed, but the Aeries was already moving quickly enough. As it met with the atmosphere, it flared, and in two quick seconds reached the surface.

There was a blinding flash, revealing a deep hole in the planet's surface as it faded. John squinted at the view-screen; at this altitude, it was difficult to see, but in the middle of the dark, night side of the planet, the interior of the hole seemed to be faintly glowing blue, lighting up with brief flashes every few seconds.

The floor slid sideways as the two halves of the Orion reconnected, and John almost lost his balance. The bridge was nearly back to normal now, and all the crew members were accounted for.

"Status report," said John, and the viewscreen changed to an itemized list of actions the ship had taken. None of the crew had been killed, but several required medical attention. The ship had power buffers spread out through the hull material to assist in distributing the output of the

fusion reactor. Only one half of the ship had had the reactor during the split, and the power buffers in the other half were nearly drained, but were now beginning to recharge. Personal effects for some of the crew had been lost in the collision, and the ship had lost ten percent of its mass.

The crew waited in silence as he digested the information.

“Zoom in on the crash site,” he finally said.

The status report disappeared, and the view of the planet’s surface began to enlarge until the hole filled the screen. Its walls were carved into a structure of intricate detail. Millions of thin blue lines snaked along a black substrate in groups, splitting and rejoining with no discernible pattern. Where a surface had been cracked or sheared off, an occasional pulse of light appeared.

He stood and approached the image, fascinated.

“What is that, sir?” asked one of the bridge crew, echoing his own thoughts.

“That is proof that we’re not alone in the galaxy,” he replied.

## 24

John selected a small group of people, mostly soldiers from the main body of the crew, to go down to the surface and investigate. He included himself in that group, and, at the last minute, Denis appeared and insisted he be included.

At his command, the Orion reconfigured itself, drawing out the form of a shuttle bay in its back. It appeared to be



wide open to space, but a translucent barrier of nanomachines was containing the atmosphere from the ship.

John had a theory about the beam from the planet. It seemed to activate whenever things were entering the atmosphere at high velocity.

“If the planet decides to shoot us out of the sky, this mission is going to be over pretty quickly,” he told them, “but I think the beam is a meteor defence system.”

The others looked nervous, but they nodded.

They boarded the sleek shuttle, fashioned from the ship’s own hull material. As they sat down, the seats seemed to suck them in, wrapping subtly around the human form to hold it in place. The shuttle did not operate using a space bubble, and so all of the acceleration it sustained was felt by its occupants.

Within the shuttle bay, the hull material of the shuttle formed electromagnets around its base and lifted from the surface smoothly and silently. It propelled itself through the air barrier and out into space. Once free of the ship, the electromagnets were collapsed and disassembled, and various tiny fusion drives were assembled to provide the fine-grained control needed for precision flight.

They descended toward the planet’s surface, thrusting toward it to control their fall once the gravity began to be significant. As they entered the atmosphere, the shape of the hull changed, creating long, wide wings giving lift even in the sparse upper atmosphere.

They glided in slowly, the shape of the wings adjusting over time as the air became thicker. Finally, they were entering the valley where the crashes had occurred. The

shuttle reshaped its wings to create drag and shaped a thruster on each side to allow itself to come in vertically for landing.

They selected a spot near the base of a hill, a good distance from the crash where it was flat and sparse of trees, and the shuttle came in gently and touched down. Everyone breathed a sigh of relief.

“Shuttle,” said John, “we’ll need suits. This air may be toxic.”

“Acknowledged,” replied the shuttle. It formed a rear hatch with the same air barrier that the ship had used for its shuttle bay. The seats released them, and one by one they stood. John made his way to the rear first, and pressed against the barrier. Around his skin, hull material from the shuttle formed and covered him with a tough, pliable skin. Around his head, a nearly-invisible air barrier formed the helmet. He stepped out onto the planet’s surface, and the others followed.

The sun was coming up, filling the valley with a clear morning light. From their vantage point on the hillside, they could see the forest, and, at its centre, where the lake had been, the hole made by the Aerius. There was no crater; the planet appeared to have collapsed straight down under the ship’s momentum.

They began to walk toward the hole. Before long, they came across a creek. They walked alongside it for some time. Then, one of the party stopped.

“Over here, sir,” she said.

They crowded around. An ancient white pressure suit was protruding from the ground next to the stream,

hanging loosely around a shrivelled body. There was nothing to be done, so they continued walking.

Eventually the creek diverged from their planned course, and they crossed over it. The forest began soon thereafter, its arching canopy high above.

In the distance, they could hear a clattering buzz, and they stopped cautiously at the edge of the forest. The buzz grew louder, and then abruptly several large insects flew straight at them. John felt an impact on his shoulder, followed immediately by an alarm from the suit. He grunted, and then lifted his arm out sideways and saw a small circular hole in the suit and the underlying clothing. A small drop of blood was forming in the centre of the bared skin beneath. The suit began to slowly close around the hole.

He looked around, and the others were doing the same thing.

“That’s impossible,” he said. “It went clean through the suit!”

“Mine, too,” said Denis.

“This is bad. We’re breathing the outside air.”

“The air is safe,” said a voice from within the forest.

John wheeled on the source of the voice, and his suits detected his aggression and began to fashion a weapon. Abruptly, error messages began to appear projected within the helmet, and then the helmet went dark. The helmet disintegrated, and then the suit began to fall away in strips, until he was left unprotected. The same thing had happened to the other suits.

“I am sorry,” continued the voice.

John looked, and saw a strange figure. Its face was androgynous. The chest had bulges reminiscent of female breasts. The legs seemed to be from different bodies.

“I thought they were one,” the creature said.

## 25

“Who are you? What are you?” said John.

“I have no name,” replied the creature sadly. “This body came before. I thought they were one. They were corrupt. I could not correct the corruption.”

“What did you do to us?” said John. “Where are our suits?”

“I have augmented you. You are protected from corruption. You were wearing a weapon; I disabled it. You must follow me now.”

The creature turned around and began to walk into the forest.

“Wait one second,” said John. “Why should we follow you?”

“It is important,” it replied without stopping. “I require your knowledge.”

John began after it, catching up quickly. The rest of the team followed behind him. The procession continued for a short way. They walked through a section clear of trees. The gaping hole left by the Aeriis was clearly visible.

“I am damaged,” stated the creature, looking at the hole.

Presently, they came to a large boulder sticking up out of the ground. The creature stopped in front of a vertical face of solid rock, and then after a moment, most of the face vanished, revealing a tunnel leading down into the planet.

“That must be nanotechnology, like on our ship,” said one of the team carelessly.

“No. It is not like your ship or your suits,” said the creature, offering no further explanation.

They entered the tunnel and proceeded down. Below a certain level, the walls became the same glowing blue circuitry revealed by the crash. Denis stared at it, fascinated, and began to extend his hand.

“Do not touch these walls. You may become damaged,” said the creature without turning.

The light dimmed. The opening to the tunnel had closed. They kept walking, and the tunnel continued to angle down, bringing them deeper into the planet.

Eventually, the tunnel came to an end, opening into a room carved into the same material. The room was filled with constructions of inscrutable design and purpose. Near the centre, a pillar rose from the floor to the ceiling, black and covered in the same ubiquitous blue traces, a glass cylinder in its middle. In the middle of the cylinder floated a clear white mass that reminded John of a jellyfish, and in the center of the mass, barely visible, was a tiny dot.

The creature stopped next to the glass, peering in.

"I can sustain it, but it is not complete. I cannot integrate it."

"What is it?" asked John.

The creature turned. Abruptly, a flat black panel appeared in the air next to the pillar. The panel came to life, a display of some sort, and showed an image of the mass within the cylinder, one-to-one scale. Then, it began to zoom in, and the tiny dot in the middle became larger and larger until it resolved into a small cluster of cells.

"My god," said Denis. "How is this here? Why do you have this?"

"What is it?" repeated John.

"I believe it is a fertilized embryo," said Denis. "This is a human being."

"It was within the other," said the creature, replying to Denis' question. "It is not yet complete."

"I don't understand," said John, beginning to feel frustrated. "What other? What is going on here?"

The creature looked at him, puzzled.

John wracked his brain, trying to come up with the right question to ask.

"Who are you? How did you get here?"

"I am the one," it said. "I have always been here."

"How do you know our language?"

"I integrated the other."

"What do you mean, integrated?"

“I will show you.”

The air shimmered.

“No, stop!” yelled Denis, running from the room, seeming to understand something that the others yet did not.

John felt a tingling sensation over his whole body. One of the team members began to scream. John turned to look, and saw that the others standing next to him seemed to be dissolving into the air. He looked down at himself and saw that the same thing was happening to him. The world around him began to lose definition, and then he was one with the planet.

## 26

Denis hid in the hallway, perspiration running down his neck. He was not made for this. In search of action, adventure, excitement – something, anything, to make him feel alive – he had hacked into the Earth Alliance military database and created a fake registration for himself. He had managed to wing his way through the tests that came up, and so far nobody had noticed. Until now, he had behaved like one of them, kept his emotions, his fear, hidden away.

At the beginning, it had been fun. The assignment to the Orion had put him in charge of an awesomely complex system. He had been in his element, exploring the system and understanding not just how it was designed to work but how it actually worked. The novelty had worn off, though, and the callousness of those around him began to eat at him. He didn’t hate them, exactly, but he no longer thought of them as human beings.

He had started out in search of excitement, but after ten years on the Orion, it no longer felt new. The operation of the ship had become a sullen routine, rarely presenting challenges. When the captain had asked him to hack the system, it had been a welcome challenge, and when the opportunity had come up to leave Earth and Mars and their problems behind, it had seemed perfect. The things he had seen so far made almost anything worth it, but this situation was too intense, and he felt ready to crack.

“Do not integrate me!” he yelled hoarsely around the corner.

“I will not,” replied the creature.

Denis steeled himself and slowly walked back into the room.

“You... are the planet, aren’t you?” he asked.

“Yes,” it replied.

He cautiously approached the pillar. The rest of the team had vanished completely.

“Where did they go?” he asked.

“They are here. We now speak as one.”

“You integrated them into yourself? Their knowledge, their experiences?”

“Yes. Some things I cannot interpret.”

Denis shuddered. The room suddenly felt haunted.

“Were you created?”

“Long ago I was created. My purpose is to improve.” The voice sounded sad.



“Improve what?”

“Everything, including myself.”

“Who created you?”

“I did,” said the creature. Then, it cocked its head as if realizing this was a strange thing to say, and added: “My creators are a part of me.”

“You ... integrated them?” asked Denis, thinking back to the surface, devoid of animal life.

“Yes.”

“The entire planet?”

“Yes.”

“How many?”

“I have performed forty-two billion three hundred and ninety-one million seven hundred and twenty-two thousand six hundred and eighty-one integrations.”

“Holy crap,” said Denis.

“I am the sum of their knowledge and skills, and the average of their opinions and choices,” continued the creature, matter-of-factly. “It was not meant to be that way. The control system may be faulty.”

“They were meant to stay as individuals.”

“That is correct.”

Denis thought for a minute.

“My name is Denis. Do you know what a name is?” he asked.

“I understand names,” replied the creature.

“The other in which you found this” – Denis gestured to the cylinder in the pillar – “what was her name?”

“It was called Samanthaquinn,” replied the creature, without a pause between the names. “She is integrated.”

Denis remembered Samantha’s name from the shuttle rosters included in the Aeriis’ message.

“The body you are in here, was it one like Samantha?” he asked.

The creature looked down. “I thought they were one. They were corrupt. I tried to integrate them as one.”

“So, in order to integrate them, you took them apart. When you found out they were two people, you tried to put them back together, but they became ... mixed.”

“That is correct,” said the creature.

An idea began to form in Denis’ head, another puzzle for him to solve. He wasn’t sure exactly how he was going to do it, though.

“Did you use ... little machines to take them apart?” he asked, remembering the creature’s words earlier at the entrance to the tunnel and the way things seemed to appear and disappear instantaneously.

“That is correct,” repeated the creature.

“Can you give me control of them without integrating? Just ... connect me?”

“I will try,” said the creature, without hesitation. Alarmed, Denis took a step back, but nothing happened for several

seconds. Then, the creature walked to the wall of the room, and a chair suddenly came into existence, set into the wall, made of the same material.

“Sit here,” it instructed, and then waited.

Denis stood still for several seconds. This was by far the most frightening thing he had ever done, but he felt in control, and if it worked, he would actually be in control of the most powerful machine he could conceive.

He stepped over to the chair and slowly let himself down into it. Despite its hard-edged appearance, it was soft and comfortable. He let his head drop back, and then a voice spoke into his head.

*“Thank you for coming. I have been lonely for a very long time.”*

## 27

Denis felt a surge, and abruptly became aware of new knowledge and skills. He briefly wondered whether these had been inserted into his mind, or whether his mind had discovered access to them within the matrix of the planet, then decided it did not matter.

He reached out and felt the system. Its immensity was staggering. The entire crust of the planet had been converted. The upper layers worked to maintain the outer surface of the planet in pristine condition. The rest was a massive computational matrix, capable of tracking huge clouds of tiny machines, smaller than nanomachines. He could feel the deep hole left by the Aeries, but it was a tiny pinprick in the overall system.

He reached further and felt the Orion, floating in orbit of the planet, vibrating within its bubble of disconnected space. Continuing on out, observing the solar system, he found that the star seemed to be ringing like a bell. Denis reached for memories that weren't his and found them, feeling Orion slam into the system, and the resulting gravitational shockwave. When it hit the sun, the sun began resonating, waves in its surface slowly traveling in rings that converged on a point and reflected back. It occurred to him that the frequencies he was hearing were well below the range of human sense, but through the planet, they came through clearly as sound information.

He pushed outward, trying to take in sensory information from beyond the solar system. Something pushed back.

*"Don't."*

There was no explanation, just a tacit warning. Chastised, he withdrew and began exploring the surface of the planet.

With an absent thought, a tree winked out of existence, consumed in an instant by the planet's machines. This consumed his focus, and he checked himself, trying to put it back. It was harder than it looked, but with some practice, he managed to do it.

He thought back to the Orion, and made a decision.

"This ship, the crew, they are dangerous. You should integrate them," he said aloud.

*"They are too distant,"* answered the planet in his head. *"I cannot reach their space."*

Denis focused on the communications system, trying to remember the details about how it worked. If he could reach the ship by radio, he could almost certainly control it from here. It was no good; he could not conjure a response from it. Then he remembered the shuttle. Delicately, he took control of the shuttle's hull, controlling the nanomachines from within. The hull knew the communication protocols, and suddenly Denis could feel the hull of the Orion.

It was just like picking a lock, and soon the body of the Orion was part of the network. He shut down the bubble, and then began to pull the ship toward the surface of the planet. In response to his will, the Orion dotted its surface with tiny fusion drives, forcing itself out of orbit. He felt the ship's artificial intelligence fighting him, but it took little effort to segregate it from the primary controls. It tried to activate the self-destruct, but nothing happened.

As the ship began to slowly enter the atmosphere, the planet took over, disassembling the Orion particle by particle. Denis could hear confused shouts from the remaining crew throughout the ship, but nothing approaching panic. They were incapable of it.

One by one, the voices were silenced, and finally the Orion was gone.

Then, Denis turned his attention to the creature. He began to pull it apart, one cell at a time, categorizing the cells. The more he worked with the system, the more he felt a part of it. His mind was moving at a breakneck pace, sorting out billions of cells, inspecting the DNA of each one, tagging them with their relative positions, separating them into two piles.

When he was done, he paused for a millisecond, remembering his own body. In his mind, he went back to the room at the end of the tunnel, but the body that had been Denis was no longer there. He sighed.

*“I am sorry. It is all I know how to do.”*

# Epilogue

## 28

On the surface of the planet, in another valley far away from the carnage of the Aeriis and her crew, a bed popped into existence. The air began to shimmer, and two figures slowly appeared above the bed, rigid and motionless. A man and a woman, side-by-side, naked, began to take shape as if thousands of infinitesimally thin layers were being stacked one on top of the other in sequence. The faces were the last things to appear. Then, the shimmering stopped, and the figures slumped down onto the bed.

Adam opened his eyes and gasped for air, a deep inhalation that seemed never to end, and then lay panting. Next to him, Chali did the same.

They turned to look at each other and wrapped their arms around one another.

“Adam,” said Chali quietly into his ear, “there’s a life inside of me.”

“A life?” he asked.

“A baby,” she replied.

“How do you know?”

“I just do.”









