A Nameless Blue

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A Nameless Blue

Senior Project Submitted to
The Division of Languages and Literature
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by
Elle Mitchell

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Dedications
To my family both blood and found. Especially to my sisters, my brothers, my siblings, my caretakers, my teachers. You have my love and many of you have been more than just one of these for a long time. Thank you.
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Prologue: Python

It was as if the ship wanted to burn. Cantor Dust smiled a bitter smile at the baleful howl of the claxons and adjusted her grip on the controls. The Generation Ship Python was a truly beautiful thing; the single greatest achievement of an entire culture, an entire species. Nearly a million souls, as great as any city of man, perfectly adapted to exist indefinitely in the vacuum between all worlds. It was an organism. A living home to the sleeping children of the world to come; the starting population of the Promised Planet to be grown over a thousand generations in preparation for a new world.

The ship was a miracle, the work of the gods, an infinitely complex perfectly balanced system. It produced its own oxygen, food, and water. It drew its heat from the death throes of the stars themselves. The Python was a system built on systems; Life Support was built on Hydroponics, which was built on Compost, which was in turn built on Sewage, built on Water, built on Temperature, built on Electrics. They were all part of an ecosystem of machines. Every machine from the microscopic ones built out of proteins to reengineer the genome, to the miles wide centrifuge creating the artificial gravity all fed into one another in recursive loops. The lives of every microorganism, plant, animal, and Technician were all precisely calibrated to the exact specifications outlined in the holy text devoted to one thing. It was a single process with a single purpose founded on a web of exponentially increasing complexity at every stage. But it was doomed, Cantor Dust had understood this as none of the others had. She had tried to explain to her fellows, but they couldn’t grasp it and her overseers had not seen how certain their destruction was, not until it was too late for the ship’s inhabitants to avert a crisis they were still only half aware was happening.

The system’s very complexity set in motion its destruction. Entropy cannot be denied. In the same moment that, all those millennia ago, those who walked upright dreamed of the first tower that would rise into the sky, they invented the moment that the tower burned and the stones fell on its people. It was so for the Python and the rest of the fleet; the moment they brought the first-generation ship into being was the very instant that they invented the death of the species. Chaos and death were never threats to the course of history but were the engines that fueled it and its inevitable destination.
Cantor could feel the city-sized vessel that surrounded her, her entire world, shake and judder, all but tearing itself apart. This could have happened at any moment; a speck of interstellar dust could have slipped beneath a seam and shifted a panel a micrometer and in an instant the craft’s skin would have peeled apart like so much cosmic tinfoil. The entire thing had existed on a razor’s edge for untold centuries. A tessellation of such an absurd scale it couldn’t help but be as fragile as a snowflake; as its complexity grew, it grew easier to shatter. There were over a hundred million points of failure and she had only had to exploit three or four to bring it all down. It had taken a few days to plan and a few hours to execute.

The clergy and the breeders had never thought, even for a moment, that someone, something, like her, a mere piece of flesh, could have done this. Much less had they considered that it would be so easy. She had worked so hard her entire life at something impossible, but this? This was effortless. As any self respecting farm wife knew, all it took to burn down a house was a can of kerosene and a match. The heat grew more intense and the stars blurred on the Python’s viewscreen. Then the other ship came into view, Python’s sister, The Attis.

Cantor laughed in wild ecstasy as the Attis loomed before her, an outline of darkness cut against the stars. The Attis was the second largest of the Generation Ships, and the last apart from the Python, at whose controls Cantor stood. Soon the Attis would be alone and those aboard would watch the Python die, not in silence like the others had, but in fire.

Cantor’s skin felt tight, so tight, it itched and burned. She could see it flaking away at her knuckles, the teal of her scales growing pale and dull. When she was a child, she had picked and picked until she had been able to peel it away in strips. She carried the pain around everywhere she went. Hours and hours of her gills sucking at the dry and lifeless air, heaves of daggers filling up her lungs. How many times had she waited four hours in misery, her muscles twitching and seizing, for the last working chamber in her sector only to find it broken and overflowing with waste? Even in the final days before her last act of defiance her dreams were still full of the warm embrace of the water.
The vessel’s divine ecosystem was fed on carrion. It had never ‘worked,’ it had been built on a series of deliberate failures, and those who were chosen to fail were fertilizer. It fed on the rot of the broken chambers, the defunct lifts, the endless lines for the too little food. It greedily swallowed the Technicians left dead trying to save themselves, suffocating while still desperately trying to create the atmosphere they needed to breathe. Untold were the number of lives fed to the breeder’s search for their ‘Promised Planet.’

But now it was over. It would end as it always should have. It was only natural, energy flows outward, seeks equilibrium. All systems eventually collapse under their own weight and unfold into nothing. All things bloat and die. All arcs fall to ground. It was true of the universe, even time itself, so it was only logical that their little world, their precious Promised Vessel, should follow suit. She knew both had to end the same way, an explosion, an implosion, silence.

The Python shook again. She wrapped her fingers around the lever and a jolt of lightning ripped through her body. She felt the rictus seize at her muscles but she ignored it. She slammed the lever forward.

As the throttle tore open and the Python exploded toward the other ship, the people of the Attis stood and watched the Python approach; there was nothing more they could do.

On the Attis there was a face at every window. They watched as white fire courséd along the channels of the other divine vessel’s immense mechanical body like water rushing through the broken wreckage of a dam into the chasm it had been denied so long. The pressure was just the same; the fire had always been there waiting. It filled every space and, with crackling gleeful laughter, devoured every speck of oxygen. An almost blinding white light glowed from every seam as the giant ship’s hull bulged slightly outward. The hundred thousand porthole windows shattered outwards an instant before the walls followed. Without a sound, the Python tore itself apart. The explosion was consumed almost instantaneously by the vacuum of space and the ship simply unraveled.
The Attis’ hull in turn adjusted for the influx of radiation as the other ship fell to pieces and Attis’ passengers, those hundred thousand or so who were awake, realized that for the first time, they were truly alone. They were now the last. The very last.

A girl named Iowa, Switchboard Iowa, aged six and a half, placed a hand on the glass of the window. She watched in quiet puzzlement as the wreckage of the other world slowly drifted outwards and endlessly into space. It was like a silver flower falling apart, casting petals loose in all directions. This would be her first memory. Had she gone to school this would have been her first lesson: the cataclysmic accident. The death of Python.

1. Twenty Solar Years Later.

Iowa’s eyes drifted open and she sighed. She hadn’t slept. In the night her skin had grown tight and feverish. As she had tossed about in her half-dreaming stupor she had dreamed that her skin was splitting along the seams and underneath she was something wet and new. In her waking moments she could hear the quiet click of her gills sucking at the air by reflex, hoping for water, shoving unfiltered air into her simple lung the wrong way. In the morning it wasn’t as bad; with effort, she could breathe normally. The Node, her little secret wired into her brain, awoke her, as it always did, a few minutes before the low beep of the alarm that marked Sunrise. Their clocks were always off, her’s never was.

Not that one could tell, after all, sunrise was a term whose original meaning Iowa understood only conceptually. There was no sun to rise on the Attis.

Iowa waited for a moment, just lying there, before the sun-lamp above her bunk buzzed quietly to life. Then she sat up, slowly rubbing her chest, trying to steady her breathing. A monotonous little voice droned from the crackly little speaker underneath the sun-light.

“It is 6 o’clock a.m. on the 15th day of the second month in the 1,415th year of the Prognostic Millennium. Feel free to proceed to nourishment and work at your earliest convenience.”
She ignored it as it went on. The second part of the broadcast was irrelevant for Technicians. Most of it was for the priests and breeders; the Technicians only heard it on their coms out of a sense of unity.

Iowa leaned forward and flicked the heavy switch next to the screen at the end of her bed. The bunks were small, a series of cells in the walls of the ship’s outer rings. Her’s was roughly the size of four coffins stacked on top of one another with about a foot of clearance toward the head of the raised bunk. There was the little ladder led down into the storage space beneath, the walls were a smooth metal with a single shelf. Hers housed three or four little statues of wire and scrap metal she had assembled in her limited free time. Sometimes she fused them together into a chimera. At the moment, however, they were three dog-like quadrupeds and a single wireframe wading bird. She was particularly proud of the latter. Iowa had based the design on a blue heron she had seen in the databanks and thought the resemblance remarkable. At the other end of her bed was the screen. It wouldn’t activate fully until the daily litany ended. Until then, it scrolled languidly through a very rough schematic of the ship that would transform into a navigational map to direct her to work. The map was mostly decorative truth be told. She would only use it if the directions the screen would later transmit indicated a new location for her work that day. This almost never happened.

She observed the skeletal representation of the ship’s six outer rings that made up most of its working body, each totaling about twenty two square miles in rough surface area. They contained the ship’s command center and all the systems necessary for running the ship along with all of the Technicians and the vast majority of the inhabitants not currently in stasis. The rings rotated slowly to create a facsimile of gravity surrounding the roughly cylindrical core, which was about 10 miles long. The Core held nothing less than the future.

The morning announcement signed off, as it always did, with a prayer and an oath to protect the many millions who lay unborn within the Ovum Core. Then a final supplication to the Promised World. They prayed to “the flowing rivers, the rising forests, the golden wheat, and the sun that blazes in the sky above; to the seas that churn below, and the rain that falls between on the Promised Planet.” Iowa had
never seen a forest, or a field of golden grain. She had seen a river and a sea once, but not the kind the
dream prayer described. It had been a vision, seen from space, with arctic seas and icy fjords frozen by
millennia of bitter cold left to ravage the surface of the planet by solar radiation.

She had watched the last of the Ditope line, a small reptosapien she had never known, enter the
launch bay and descend to the planet. They had had the most miraculous copper hair. The screen
eventually flickered to life and her Specs appeared.

The display read “Name: Switchboard, Iowa. Age: 25 Solar Years. Function: Carbon Balance
Bio-Technician, class 001. Secondary specialization: Biochemistry and Microbiology Technician class
currently extant. Those last words made her a little sick. They always did.”

The mirror camera activated and she did the usual check-in as the survey began the routine health
examination. She was still herself. The strange feeling that some moments ago she had been something
entirely different still clung to her, but, in spite of that, all of the usual questions were asked and
confirmed.

Her height was still five eight, her bodyweight still nominal. Her hair remained dark and curly
and clipped short for convenience. The system registered no mechanical injury, brain function and
respiration still within acceptable parameters, the Node remained undetected.

All of the things that the survey didn’t ask about were also still true. Her nose was round and a
little flat, her lips full, and her eyes still so dark that her irises were not distinguishable from her pupils.

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1 The language spoken aboard the Attis is a composite language developed over centuries. The best approximation
that can be given is that it is a mix of German, Spanish, Chinese, and Russian, with an alphabet similar to the
Persian-Cyrillic fusion Tajik alphabet of present day Earth. It has been transposed to English here for convenience.
Names on the Attis function similarly to Japanese or Korean, with the family name first and personal name second.
For the cloned citizens of the Attis, the Technicians, their names are structured the same way but instead of a family
name they begin with their Clone-Line. For example, a Clone from the Transistor Clone-Line with the given name
Perennial would have their name written out as ‘Transistor Perennial.’ A non-cloned citizen, a product of a
‘brood-pair’, with the personal name Ilya and surname Kesh would be expressed as ‘Kesh Ilya’ though this
formulation is uncommon. Every broodmember and clergyman has a title so most brood members go by their title
and given name. Example: Catechist-Minor Ilya.
Her skin was still an olive-toned brown at its base around her chest and belly. It retained its usual gradient to a soft pink with orange and maroon stripes and studs of scales around her shoulders.

Her skin was still cracked and blistered around her hands. Her gills, which began an inch or two beneath her ears and flowed down to her neck and shoulders, still pulled plaintively at the air, her autonomic nervous system still trying to breathe with both simultaneously. She was still a woman. Still a self. Something she had learned that she would have to try hard to remember.

She turned her head to look at the little silver scar above her right temple where the person she loved most in the world had installed the implant. It was a stimulation Node, it would help her focus, keep track of time, and dull the sharpness of the world that at times overwhelmed her. Other people were able to filter the noise of their perceptions naturally. Iowa couldn’t, at least not as well, so when sensation became too much she activated the Node.

If the Prefecture found out she had it, that she needed it, they would decommission her whole line. Iowa hated them for it but that hatred was still a quiet thing for now. She had learned long ago to quiet her anger. A loud anger was sharp and cut people, whether one wanted it to or not, a quiet anger pierced only yourself.

Iowa was one of the only people on the Attis born alone, and had to fend for herself once she was released from the Natal Program. All children are usually assigned a kin-group whose job is to support them while they go through their schooling in preparation for the Aptitude Exam. But without any others in her line, she wasn’t assigned one and had to find support on her own. Iowa spent most of the early years of her life skulking at the back of any classroom that had the room for her, stealing supplies and keeping mostly to herself, hoping to go unnoticed. Eventually, she was noticed and found kinship among a small group of friends. Those friends helped her serve the function she was expected to serve while staying at least somewhat herself. The implant was something she could control. Most of the time she didn’t use it but it was there for her when she needed it.

The first stop today would have to be the Chambers. She had forced Penrose to promise her that the Chamber on her level would be fixed by now. If she had to try to dash to level 07 just to wait in line
again she would never make it to work on time. She couldn’t afford another demerit or the Away Mission would be out of the question.

The clone-lines designated Amphisapien were one of three lines developed as part of the terraformation effort during the long journey through the cosmos. Their bodies were built for a purpose, a single purpose for which they were said to be perfect. They were supposedly uniquely adapted to survive in harsh climates and to continue to function in multiple gravity environments. Their bones were denser, their inner ears more adaptable, their muscles broke down at a slower rate, their body temperature self-regulated, their lungs had been engineered to breathe water and air with apparent ease. They were heralded by the Old Ones as the perfect tools to perform God’s work.

Things went wrong almost immediately. Their metabolic rates were extremely low, they were vulnerable to analgesia and other genetic mutations, and of course there was the air. It was too dry, recycled over a hundred times through the Life-Support systems and the showers could only keep it at bay for a time. The first generation’s bodies had dessicated quickly, a valiant sacrifice. It became clear during the successive generations that Amphisapiens needed full submergence at least once a day, so the Old Ones built the Chambers. But the Chambers only worked when they worked.

Iowa dressed quickly and did her best to ignore the scratch of the heavy polyester across her skin. She zipped up her coveralls, strapped on her belts and her harness and checked her clips. There were nearly two hundred clips that jingled like silver bells across the straps. She strapped down her tools and checked the time. “Shit!” As the door slid open she grabbed her fungal rebreather, a heavy mask made of red rubbery polymer and dark metal, and strapped it on. If she was going to make it to the Chamber, she would have to risk the centrifuge. She would need the rebreather’s moisture and temperature regulation to survive the furnace.

Her heavy boots, the soles of which could be magnetized should the need arise, clunked down the grate that formed the corridor’s floor. Had she been in less of a rush she could have looked down through it to see the hallway of the level below moving almost imperceptibly in the opposite direction. Or she could have looked across the great fall to the catwalk on the other side where her fellows were exiting
their own steel doors and flowing in a great mass toward the stairs downwards and the few lifts that were still functional. Iowa did her best to avoid getting caught up by the crowd but before too long she was all but consumed by the massive crush of bodies. She managed to extricate herself with some well-delivered expletives mixed in with apologies, but even as she did so she could still feel her gills heaving at the air. The river of life carried on past her to the stairs but she went the other way. She was heading for the hatch.

She was halfway down the corridor when a hand landed on her shoulder. She turned to see a familiar face, or at least the half of a familiar face that could be seen over her companion’s own rebreather. The hair was dark and buzzed close to the head, freckles laid siege to the sandy brown skin across the nose and brow, one eye was dark brown and the other a gray blue.

“Penrose!” Iowa’s voice came crackly and distorted through the speakers in her rebreather. A surge of warmth ran through her. Penrose was back and healthy and beautiful. It was like stepping back into the beat of an old song. Questions tumbled all over themselves, jostling to be asked first, but all Iowa could manage was an overjoyed string of vowels followed by “What?”

Penrose laughed. “It’s good to see you too, love. Where are you going? Breakfast is that way.” She looked just as Iowa remembered her. Tiling Penrose was one of the five units in the Tiling line, Reptosapian. Penrose still wore the opalescent purple flight suit, so she must have just gotten back on the morning transport that arrived at 6:00.

A surge of panic ran through Iowa like a wave of cold as her barely controlled breathing shook in her lungs. Time was running short, “I’m sorry. I’ve got to go.”

Penrose’s mismatched eyes narrowed and her brows knitted with concern. “Are you alright? When was the last time you saw the inside of a chamber? Come on.” She began to pull at Iowa toward the stairs.

Iowa pulled away “A week. The showers help.”

“A week? We’re going right now!”
“You promised to put in a requisition to fix the Chamber in our sector.”

“I did, and they said it was fixed which is why --”

“Good. Then Nicki can go under today.”

“You got me to pull all those strings with the Repair crew and now you're not going?”

Iowa shrugged. “It’ll be swarmed, I’ll never make it to check-in on time and I can’t afford another demerit. I need that mission, Rose. I’ll go to 06-7.”

“That’ll take you hours on the stairs. Look, I’m sure you could convince the foreman--”

“I’m not taking the stairs.”

“The hatch? In your condition? You’re going to get yourself killed!”

“I’ll be fine! I’ll catch up with you at meal time,” said Iowa feigning a casual attitude “Swing by hydroponics and we’ll talk things out, it’s gotten worse since you left. It’s really good to see you, Rose.”

Iowa turned and set off. If she had been able to breathe it would have been a run, but in her current state it was more of a jog. Her boots thudded against the grate of the walkway. Penrose did her best, but there was only so far her understanding could go. Her skin with sandy spiked scales at the forearms and along the spine was well adapted to the deserts, making her perfectly suited to the ship's lack of humidity. Her lungs were well suited to breathing air. She would never be bound to the chambers. But Iowa would not envy the bitter cold or the shed. When the shedding came and it went bad, and it usually did, it went very bad. Penrose’s shedding wasn’t among the worst, but even at the best of times bandages had to be on standby. During some of the worst of her sheds Iowa had even considered putting the recumbent Penrose into a chamber to ease the friction but she wasn’t sure it would do her much good. Reptosapiens weren’t lizards, even if the Clergy treated them like they had more similarities than differences.

When Iowa reached the end of the gangway some minutes later she came to a stop huffing as little needles prickled the inside of her lungs and grumbled to herself at how long it took her breath to return. She looked over the edge, the fall extended far below, level after level of walkways descending to
the hull below where she could see the final stragglers, like the genetically engineered aphids deployed in hydroponics to cull the parasites. She clipped herself to the narrow railing and with a resigned grunt threw herself over the side.

She landed like a spider against the wall, fingers slipping with ease into the gaps between the pipes that lined the innards of the ship, her boots finding footholds and letting out a heavy clunk as her voice command activated the magnetism. She was wedged between the back wall of the ring and the ascending wall that led up to the ceiling above and the hatch. She took another deep breath and ignored the new jab below her ribs. It would be better soon she reminded herself, imagining the feeling of the water in her skin, like a dream of being unborn. She began to climb. Every foot took a quiet curse, her muscles complained but she knew that feeling well and summarily placated them or ignored them. She climbed two stories to the landing normally only accessible by maglev. Once on the landing it was one more jump and she’d reach it; a little door a few hundred feet above the floor of the ring with a step that hung in the open air. If she misjudged the distance now she would be a smear of protein on the gangway, her magnet boots would only serve to break her ankles. She leapt.

She landed on the step clutching onto the heavy metal handle. She took a moment to steady her labored breath and wrenched the handle down. The hatch door slid open with a hydraulic hiss and she stumbled into the darkness. A sudden wave of vertigo struck her and she had to catch hold of the rungs of the ladder so she didn’t lose her footing. It wouldn’t do to crack her skull here, she wouldn’t be found until maintenance needed doing and everything here was unusually functional at the moment. She closed her eyes trying to settle the spinning in her stomach, her muscles ached at her with a growing petulance, her panting and the clicking of her gills seeming so loud in the confined space. She squashed the panic. *Don’t lose your nerve, make it through this and you have all the time you could ever want in a Chamber.*

Automatic lights began to activate in pairs as she moved, revealing the tunnel extending above. She looked upwards at the rungs disappearing into the dark. She smiled with a touch of malice toward her

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2 A device that used a magnetic field to float a few feet above the floor, usually used to move heavy objects. Thrusters can be engaged in order to gain height or velocity.
own aching body, *Halfway there*. The maintenance shaft for the centrifuge of the Rostral Ring was just wide enough to admit the ladder, the body on it, and the guide-rail where she could clip on, for something approaching safety, when halfway across the gravity flipped. But if she fell and the clip didn’t hold she would be dashed to pieces long before she reached the bottom. Iowa mused that at least her death would be percussive. She began the final climb. It would be a straight shot up (from her perspective) to the center of the ring.

Iowa climbed for ten minutes before she had to stop, clinging to the rungs. Her hands were slippery with sweat and her chest was heaving. Half-sobs half-coughs tear themselves out of her throat, her legs screamed with exhaustion. She needed a break, she took it, but she didn’t stop more than a moment. She pulled herself up hand over hand, the sound of her boots clunking bouncing off the metal walls.

It was all so loud, so dark, close. She did her best to quell the shrieking of her instincts to try to class out, to escape. She wanted to tear it all apart, to let go, to tumble. She began to whisper the song to herself as she often did. It was a dim memory of a face on her screen so like her own and so alien at the same time, singing a tinny melody. She felt like she looked more like that face every day. She kept humming the song as she went. Her stops for breath would be more frequent but she could keep the claustrophobia at bay and she wouldn’t need to use the Node. The Node left an awful bitter taste in her mouth and never quite worked all the way.

Then she felt it, her ears popped, the pressure had shifted. She gripped hard and gritted her teeth as a wave of pain and confusion shook through her muscles as the coriolis effect tried to pull her in the opposite rotation of the spin. The relative velocity of the ship meant that gravity affected her body the same at all points as long as she was walking around the edges, but the counter-rotation of the oscillators had only a limited effect on the gravity shift created by moving toward the center. *Physics is trying to kill me.*

Her inner ear panicked when the force shifted and her atoms tried to maintain cohesion as she made her way through the shaft. She slipped as the dizziness overcame her and tumbled backwards the
law of gravity joyfully trying to reassert itself at the price of her fragile bones. The clip slammed into the locked position, and the mooring held, but she was swung violently against the side of the tunnel. The blow knocked the too little breath from her lungs and she spasmed and then hung there panting for a few moments. *Fuck*. Penrose was right, she was insane.

Iowa felt a trickle of blood run down her fingers, the dry skin weakened by sweat, had torn itself from her palms when she slipped. It stung quietly. Her gills felt like they were full of thumbtacks.

Iowa looked back up at the shaft ahead, insane or not, she needed to get to that chamber. *Almost there, almost there*. She could see the faint glow of the red light. She began to climb again. Her ears popped for the second time as her body adjusted to the change. She had heard once that the breeder’s bodies would take longer to adjust. Their modifications had been minor to preserve their purpose but they would never need the chambers. Their lifts also worked and all the buttons were written in godtalk³.

She could hear the Groan now. The Groan was the name given by the Technicians to the great hum of the centrifugal engine. Some Technicians would tell you God lives in those engines. At its lowest frequencies it could not be heard only felt in the iron of the blood. The air began to grow hotter as she reached the final stage of the climb. It was hot in the Centrifuge, the titanic task of the engines combined with energy needed to power their movement was so great that even with the cooling system the air grew hot and full of static. She winced, her skin growing tighter as the heat began to pick off beads of precious sweat. She reached the final hatch and donned her gloves. It was a circular door roughly three feet across with a lever in the center underneath a keypad. She entered the access code, memorized after her last job here, and flipped the lever. The door let out a hiss of boiling steam and then slid aside. A wall of heat pushed outwards over her like a wave.

³God-talk is an older antecedent to the language spoken by all aboard the Attis. Only members of the Clergy and the Brood, referred to as ‘breeders’ by Iowa, are taught to speak and read it. It is the language of the Ancients who wrote the manuals for the ship and constructed the Histories and Scripture which when written are also written in this language. Technicians are not taught more than a phrase or two and even then meanings are not communicated but implied. It is a more fluid sounding language with many arcane and confusing conjugations, a formal and informal alphabet, and a different verb-order than the common tongue.
As she stepped into the new space she had to steady herself with her hand. Her ears popped once again as she felt gravity shift slightly. In the centrifuge, gravity pushed outward not downward so as Iowa emerged she stood on the wall. The engine, a mass of piping, blinking lights, and wires the size of a three story building groaned above her. From her perspective on the wall it was a great pillar jutting out ahead of her, connecting to the floor a story and a half below and the ceiling above. The engine was massive but it was also powerful enough to spin a neighborhood like a top and it was only the size of a building. It was a miracle.

Iowa could feel the movement of the ring’s tun in her stomach, though it wasn’t visible this close to the center. She walked a few feet along the wall and then stumbled as her legs almost gave out from underneath her. Her head was swimming with the heat. Her skin felt like it was going to split at any moment. Her gills, plaintive before, were now spasming desperately. Every breath felt like swallowing coals.

Almost there, almost there. She caught hold of one of the great cables that hung like giant steel cobwebs between one side of the centrifuge to the other. She could feel the burning heat of the metal through her gloves as a dull tickle. It would have melted her flesh had she not been wearing them. She stumbled onwards each step taking a herculean effort until the reached the other side. Her vision swam and it was all she could do to fasten two of her clips to the guardrail beside the second maintenance ladder and climbed up to the second hatch. The climb this way, a descent from her perspective, would be easier, the gravity from the centrifuge pushing her outwards and downwards, to the second ring.

Even so, she descended carefully, measuring each step, her legs and arms shook with effort and the blood soaked through the bandages she had slapped haphazardly on her hands but she managed it. She reached the landing and then with a sigh of relief she opened the door and stepped out onto the maintenance ladder beyond. She shimmied along the ledge created by an oversized vent jutting out from

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4 Technically, she and all those who live in the rings stand on what could be considered the ‘wall’ at all times (though such distinctions as between wall and floor are largely academic in space) with the curve of the ring sloping up in front of them. The rings are too large for the person to notice the curve at the edges. But in the centrifuge it can be seen and can be somewhat disorienting to those not used to it. Iowa was born there and thus it was of little consequence though some instinctual part of her still felt ill at ease walking on the walls.
the wall and clambered with some grumbling over the guardrail onto the walkway. Apart from slight deviations, the rings had the same architecture. Catwalks were connected by lifts and lattice staircases that led from one level to another. Each level was on a subring spinning in opposition to one another to preserve the artificial gravity. On the bottom floor, beneath the last of the Technician domicile levels, were the cantenas, showers, and exercise rooms. Here too were lifts that lead to the ship’s hub called the Core where the brood and the clergy lived.

There were no domiciles to be found here, however, this was a Chamber level. Before her was a long row of alcoves lining the left hand wall where the rooms would be, each one was as tall and roughly twice as wide as a person. These alcoves had no doors but large panes of glass shielding that bowed slightly outward like peas slotted neatly into a Pod. The vast majority of indicator lights above each chamber were dark but some glowed the soft blue-green of rest.

With a weary smile her aching body lurched along toward the nearest chamber, about fifteen paces away. She leaned heavily on the guard rail and hoped to god her legs wouldn’t give out before she reached it. When she did she laughed and put her hand to a smaller glass panel beside the main door. It scanned her biometrics, “Switchboard Line, Technician: Iowa” said the voice cheerily as it read out her cloneline, name and ID number. She always wondered whose voice that was. It must have belonged to someone, it sounded shy almost.

The glass shield rose and released a blast of moist air that nearly made Iowa weep with joy. She stripped quickly, folding her clothes neatly and placing them in a drawer under the biometric scanner. They would be sanitized while she was in the Chamber. She stepped into the chamber and there was a soft hiss as the glass descended and then went opaque. Iowa smiled as she heard the faint hum of the ducts opening. She closed her eyes and raised her face as she felt the water begin to flow in around her ankles. She giggled, it was cool and strange against her inflamed skin, a soft pressure like holding hands. It filled up past her calves and then her thighs, the mineral rich water soothing her burning skin. It reached her lower back, the sores still hurt but cooled their burning. The wonderful wet, salty, almost earthy smell filled her nose and before she knew it the water lapped gently against her chest, the orbit of the ring
creating a gentle current. She ran her hands through her hair, slicking it back and reveling in the water running down the back of her neck.

She didn’t dunk her head like the young ones did, she didn’t want to rush it. The itching and the burning was fading slowly away with the soft ripples and eddies as the chamber filled and every new inch it climbed was precious. The water passed her gills, then her nose and finally she was fully underwater. With a quiet joy Iowa felt her buoyancy carry her feet off of the floor so that only the tips of her toes were still touching and then as it filled completely she floated free of the floor. Her aching muscles sent a rush of dopamine into her brain like nothing else as they were freed of carrying her and the artificial atmosphere. She was truly weightless for a moment, free, even from the ground. Her gills greedily pulled in the water and she felt breath return to her for the first time in what felt like weeks. She closed her eyes and just floated there suspended for as long as she could. She still ached and was too tired for words but for that instant the water took her and she was serenity.

As she drifted half asleep, a memory older than mankind stirred inside part of her that was older than her human parts. She remembered a world of depths, a cold dark place where life began, growth spurred by the heat of the magma boiling up from beneath. She was, for an instant, something so vast and ancient it had no need for petty sense like sight. She was great, she was old, and she wandered the deep for a million years. Then she was older still, she was water itself, full salt and brine and light broken and refracted playing across her surface. She was the root of all that was alive. Then she awoke and was herself again, her water dream brought to an end as the chamber began slowly to empty and her feet returned to the floor.

As the chamber drained the last bit of the water away, the glass went clear and then slid back up into the ceiling. Iowa stepped out and grabbed the rough polyester towel out of the drawer and dried off. She had begun to zip up her newly sanitized and still chemical-smelling coveralls, when she froze. Someone was watching her. She looked up and saw something impossible, or at least something that she couldn’t make sense of. There was a person standing at the end of the gangway. They were no Technician,
they were so strange and had appeared so silent and ghostly that for a moment she had taken them for an apparition.

Whoever they were, they weren’t overly tall, maybe five seven, and standing near the stairwell at the end of the walkway. They were dressed unlike anyone that Iowa had never seen or even imagined. They wore a white cloak with the hood up, that fell down to their ankles and curled about their body like a mist as they moved. The cloak, a garment about which Iowa only the most abstract of notions, was covered almost entirely with white lacework, embroidered in odd but somehow familiar geometric patterns.

But even this wasn’t what held her astonishment. The figure wore a mask made out of some sort of ceramic. It was a delicately featured woman’s face with red painted lips and gold leaf around the eyes. Iowa had never seen a mask; face-shields, goggles and rebreathers sure, but a true mask was foreign to her. She had heard of them in stories but masks and attempts to hide one’s identity in any way were expressly forbidden. The figure seemed to notice Iowa returning their gaze and with a gesture of surprise and some panic, the figure turned and fled down the stairs.

Not quite knowing why Iowa yelled after them, “Hey! Uh... Wait! Who are you?” and out of pure instinct took off in pursuit. It was all too strange, she had to know.

The figure didn’t reply. Iowa’s mind was spinning, was this really happening? It had to be, she wasn’t insane, her mental acuity survey had come back clean. Then again a test is only so effective, there must be a margin for error.

The figure got to the stairs before Iowa and began to descend at speed, the strange cloak flashing like mother-of-pearl wings as they dashed around the corners. The stairs were like a fire-escape with chain-link fence walls and floors like the companionways above. They were built sturdy enough but were death-traps full of rusted metal and corners if taken at speed.

Iowa shouted again “Stop! Shit. Wait! I’m not gonna turn you in, I promise.”
Heedless of the danger, Iowa took the stairs three at a time, her heavy boots slamming on the grid-metal of the stairs like a metal drum. Iowa was renewed from the chamber, her muscles were still sore but not as stiff, her head was clearer and her eyesight less bleary. Her heart pounded in her ears. She was gaining on the figure and the figure knew it. The figure’s running grew more desperate and clumsy and they slammed hard into the railing as they continued downward. Iowa’s was less clumsy but equally desperate and as she took a corner with speed she tripped and all but tumbled downwards. Iowa stopped herself from falling but at the cost of a gash across her knee. “Wait!”

The figure turned and looked up at Iowa, the dim light of the gangway shining off of the porcelain of their mask. For a moment Iowa could see an eye through the eyehole of the mask, the iris so green she could see it at this distance as it refracted back the light. There was a real fear there but also an excitement. The figure turned and jumped over the side of the railing.

Iowa almost laughed with shock as they seemed to float for a moment, the cloak billowing around them, revealing a small thin body also clad all in white beneath. They were like a tiny fluorescent jellyfish drifting in midair. Strange, silent and beautiful. Then they crashed on the landing below like a sack of hydroponically grown potatoes.

Iowa winced. The impact took them to the ground where they lay unmoving for a moment before staggering to their feet and limping onward along the corridor out of sight.

Iowa put a foot up on the railing and braced to jump after them and then thought better of it and resumed their run. *Where are they going?* She thought to herself. *The stairs keep going down, but they went for the corridor, why?* Then she realized and a wicked smile curled over her face.

The figure ran on, still half-limping, favoring their left side until they reached the huge double doors of the lift. The cloaked figure checked over their shoulder, the strange Technician was no longer in sight but no doubt close behind. They leaned against the wall and tried to steady their breath and then, when composed, reached up and grabbed the lever for the lift and pulled it. There was a chunk sound as the leaver went from one position to the other but no other change. The figure stood there a moment but the expected rumble of the lift’s approach was not forthcoming.
They cocked their masked head and tried again. Still nothing. Then they heard the heavy footsteps and turned to face the Technician who entered their field of vision, stepping off of the stairs.

The Technician cocked an eyebrow, the figure read the Technician a female, though it was hard to tell. The Technician spoke, “Not from around here? That lift hasn’t worked for months, none of them do.”

The figure turned and did their best to draw themselves up to a full imperious height but they weren’t especially tall, their mask had a crack in it, and they were still favoring their left side. “You chased me” they said indignantly.

Iowa noticed that the ghost’s voice was high and a little drawn but had a music and smoothness to it. It sounded like a voice accustomed to speaking and being listened to. It reminded Iowa of something that she couldn’t quite place.

Iowa retorted, “You weren’t where you were supposed to be, wherever that is. And you’re definitely not supposed to be dressed like that.”

“My business is none of yours,” the stranger snapped, “leave me be.”

Iowa didn’t budge at the impetuous tone but put up her hands in mitigation and spoke as kindly as she could, “I’m not gonna hurt you, or turn you in, or anything.”

The figure looked as skeptical as they could manner underneath their mask.

Iowa continued, “Really, I’m not. Besides, in all honesty, you’ve got demerit written all over you and I don’t need that kind of trouble. I’m sorry I spooked you.”

“You didn’t spook me.”

Iowa chuckled “Okay, sorry.”

The figure stepped forward, winding up for a diatribe and then groaned, holding their side. They turned back to the wall for support, panting and muttering under their breath.

Iowa stepped forward carefully, “You’ve been hurt, try not to move around so much. By the look of how you’re walking you have a sprained or broken ankle and maybe some broken ribs.”
The stranger flinched as Iowa moved toward them so she stopped. Iowa gently held the cloaked person’s gaze, “That needs looking at. All of us Technicians get first aid training, let me help you or at least stop you from hurting yourself any worse.”

The eyes in the mask narrowed but the head nodded begrudgingly and Iowa helped the stranger get gingerly to the floor, leaning them against the wall.

Iowa stood, “I’m gonna get the medkit. Please don’t run off and fall down an elevator shaft or something before I get back, okay?”

The stranger grumbled but said nothing else.

As she walked away Iowa checked the time on her wrist-communicator. She had to report to work by 08:00 and it was 07:00. She chuckled to herself. She had crossed the entire ship, went into the chamber, and had a lovely jog down three levels in less than half the wait-time for a Chamber if she had followed protocol. She wouldn’t be late if she missed breakfast and a mysterious masked stranger beat breakfast any day.

She retrieved the medkit from its alcove near the stairs and brought it back to the person who had taken off their cloak and folded it neatly next to them. They had a mass of wavy dark hair which had come loose in the fracas and was now hanging down to their shoulders, frizzy with sweat and frustration. Iowa did her best not to stare, she had never seen hair that long on an adult. Technicians shaved their hair short by regulation, the longest it could be would be just above their ears. The stranger still wore their mask.

Iowa kneeled down, “Like I said, I’m not going to turn you in, whoever you are, and I promise I’m not going to hurt you. But if I’m going to help you I’m going to need to touch you, is that okay?”

The stranger looked at her long and hard. Iowa’s breath caught, the stranger’s eyes were green like deep water. She almost didn’t notice the curt reply, “If you must.”

Iowa began to run a standard first aid check and then checked for concussion, a process made more difficult by the mask. The person seemed alright. About halfway through Iowa piped up “I understand if you don’t want to tell me your name but I need something to refer to you by.”
The figure thought for a moment and then said “Wisteria.”

“Wisteria, that’s nice. I’m Iowa.”

Iowa confirmed what looked like a sprain in the right ankle. It didn’t appear to be broken, which was good news, and she began gently to check the movement of Wisteria’s left arm. It was badly sprained with a possible fracture of the humerus, but nothing that wouldn’t heal if set properly.

As Iowa worked she talked to Wisteria, quietly, she tried her best to keep the worry out of her voice. She learned a few things. She learned that the name they had chosen to use — whether given or taken — was Wisteria and that she was a woman (asked and answered), and that she was from another part of the ship. Wisteria had answered ‘woman’ as opposed to her karyotype which made Iowa only more curious.

Iowa enjoyed chatting and thought it was a necessary part of care. She remembered a haze of warm words from when she was small telling her to keep the hurt person talking while you tended to them. It helped to keep people occupied and test the mind along with the muscles. If they could hold a conversation, and it didn’t hurt to breathe, they were probably going to be alright, “That’s a tree, right? Wisteria?”

“It is something like a vine I think.” Said Wisteria, the eyes behind the mask wincing a little as she spoke. That wasn’t a good sign.

Iowa sighed, “I think I’m going to have to check your ribs, which will involve me touching your midriff, is that okay?”

Wisteria nodded.

“Are you able to move your arm?”

Wisteria complied and gingerly lifted her arm, careful not to move her elbow and send a jolt of pain through the forearm. Iowa moved in and gently undid the buttons on the side of the caftan-like

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5 The most directly analogous word to the different but related concept this culture employs as a descendent of our concept. It carries many of the same difficulties associated with our term because our term is its antecedent. The cycle of history returns to origin, always different, always the same. This culture has a binary gender structure for Clergy and Brood Pairs, but recognizes six biological sex based on one of six kerotypes for Technicians.
garment to reveal the undershirt beneath. It was made of a thin material Iowa had never felt before. Strangely smooth and light. Iowa prodded gently against the ribs and Wisteria yelped. Fractured or bruised but not broken, Wisteria would know if they were truly broken, but a fracture was likely. Iowa helped Wisteria lean back against the wall and felt her body shift onto a kind of autopilot. Iowa’s mind was always in two places at once. It made the more administrative of her duties difficult. Data entry was a herculean task. It didn’t sit right in her mind somehow but she knew how to grow things, how to fix things and tend to things so she tended to Wisteria.

Iowa remembered the tree. The climbing tree wisteria was one of the flora aboard waiting in the Ovum Core with the other million million seed-samples. Wisteria was a fast-growing flowering tree that would send her tendrils in all directions in search of structures like walls and pillars that would take her embrace and hold her aloft. The tree didn’t grow it in hydroponics, it did best in moist but draining soil. It could be grown hydroponically, anything can with proper tending, but half of its varieties were poison and the others served no practical purpose so this tending would be considered a waste of effort by the system. Wisteria would have needed careful tending in the opposite manner that hydroponics was moving. A lot of the terraformation project was increasing soil nitrogen.

Wisteria needed low nitrogen. The tree would glut itself and die if given the chance. It needed a quiet and gentle starvation. It needed to climb ever upwards, worm into cracks and split apart stones, to bloom in quiet purple explosions of blown glass and hang with all delicacy all the while gripped into a dark wet ground with just enough sustenance. On that sustenance, potassium and phosphate, she would grow strong enough to tear off metal panels and crush gutters and piping like paper with a slow grip over many years. At least that's what she imagined. She had never seen a Wisteria tree outside of a taxonomic illustrative model or life cycle schematics. And that was many years ago during her orientation and basic training. She had been familiarized with all sixteen levels of plant integration in the far away hope that it would one day be useful when the promised terra began to form. Iowa had a good head for that kind of thing but she might be mixing up the particulars. She remembered facts, mechanisms and concepts but
extraneous details always eluded her. She would fill in what made sense and tended to be right but she never had quite the facility that some of her fellows had.

“Wisteria, you’re pretty hurt. You’ve probably got a few rib fractures, maybe a break. We need to get you to an infirmary.”

When Wisteria spoke her voice caught, a note of panic slipping in with the regal tone. Wisteria suddenly sounded a good deal younger, maybe no older than Iowa herself, “Are you absolutely certain?”

“Pretty sure, yeah. I’m sorry. The only infirmary on this level is out of commission so the one a level down is probably our best bet.”

“No!” Wisteria shook her head vehemently “I cannot go there. Please, they can’t be responsible for me in this state. It would not go well for them.”

Iowa was stymied. Who the hell is this woman? She asked instead, “Where do I take you, then? You need a medical Technician.”

“Take me to the Hearth.”

Iowa froze, The Hearth was the clergy’s name for the Ovum Core at the center of the ship, “The Core? Are you serious?”

“Yes, to the Core. I know the door-codes. Please,” she grunted as she tried to rise “Help me to stand. We don’t have much time.”

Iowa helped the masked woman get to her feet in stunned silence. She supposed that the Core was the only place someone like Wisteria could have come from on the ship, but even so, the idea was so alien she couldn’t quite believe it. If she’s a clergyman, or God forbid a breeder, what the hell is she doing here running around in a bedsheat? Is she crazy? It was all too much.

“I can’t go to the Core. It's against protocol, if I got caught I’d be lucky to end up back in Menial scrubbing toilets or climbing into the turbines. I’m sorry, I’m sure the infirmary on level six can -”

Wisteria hissed, “No! I have no doubt of their capability to set a few broken ribs but you don’t understand, I cannot be found there. If I am, they will try you all for sedition and you’d be lucky to escape the brig or reeducation. If you refuse to take me to the Core, I will walk there myself.” Wisteria tried to
stand on her own, her legs shaking as they took her weight. A sound between a cry and a sob escaped her
clenched teeth and her legs gave way. Iowa caught hold of Wisteria before she hit the floor again.

Wisteria, flustered, tried to play it off “I’m fine, I’m fine. I just, I tripped. I’m a little woozy, I just
need to get my balance, is all. I will take it slow.”

Iowa almost laughed, “If you take it as slow as you’d need to it would take you a week. Give me
your arm.”

“No, you’re right. It’s too dangerous, I will go by myself.”

“No, you won’t.” Iowa took a deep breath, “I’ll take you. You’ll never get there alone. I’m sorry for
chasing you,” and that you got me into this mess, “but next time you decide to sneak around somewhere
you’re not supposed to be, don’t jump off any high places, huh?”

“I won’t.” Wisteria chuckled, a note of embarrassment entering her voice, “It was a bit higher
than I had estimated. Thank you for helping me, I know it is a great risk for you. Don’t worry, we won’t
get caught, we’ll take the Stewards’ entrance. It should be empty this time of day.”

“You know the Hab-tech’s codes?”

“As I said, I know all the codes.”

The trek to the lifts was long and arduous on the best of days and wasn’t made easier by half carrying
Wisteria. Wisteria was doing her best but with the sprain and the broken ribs putting any weight on her
left side was largely impossible.

They limped together down the metal stairs, nearly ten stories down to the bottom floor. Once
they reached it they hustled across the open space to the other wall where arranged in a neat row were the
closed lift-doors. Most of them were simple grey metal, unadorned but for the numbers painted in either
red, white or yellow that corresponded to various work stations around the ship. One set, however, was

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6 Habitat Technicians (common speech), or Stewards (as they are referred to in Godtalk) are Technicians
in charge of serving the needs of the Brood pairs and the Clergy. They are specifically selected and
modified to suit this task and like the Brood and the Clergy kept separate from the rest of the Technician
population as is considered appropriate due to the sanctity of their work.
different. It was the same size as the others, four people could walk through it at a time, but it was the color of burnished brass and inlaid with a geometric pattern etched into its surface. It had two sets of concentric rectangles coming in from the top right of the right door and bottom left of the left door with a circle connecting the two closest corners. This concession to ornament was allowed for religious reasons. Each set of doors in each sector had its own unique engraving depending on the work that was done there, though exactly how they corresponded she didn’t know, the language of symbols was part of Godtalk. These doors were the lifts that lead across the struts to the ovum core, along the same path she had taken to the centrifuge but they stopped where they intersected with the Core wherein was housed the future. Iowa had never seen the doors open.

Iowa stopped before the door, the keypad was set so an alphanumeric code could be entered, the gold lettering on the little buttons almost sparkling under the clinical light of the gangway. The numbers she could read but the alphabet was Godtalk. She knew that it was forbidden for Technicians to learn Godtalk but she knew that the Habtechs had access to at least these lifts.

“How do the, uh, Stewards use these doors? Are they taught Godtalk?”

“They learn the sequence but not the words.” Wisteria told Iowa the sequence.

Iowa looked both ways, the huge common space appeared empty, so she punched in the code and with a soft hydraulic his the doors opened and what she saw surprised her. She was accustomed to the large rectangular loading-bay lifts that lead to the various worksites in this sector that could house upwards of twenty people standing in rows. Instead what greeted her was a cylindrical space, large enough for maybe eight people. The interior was slate black and adorned on either side with two benches. She deposited Wisteria on one who sighed gratefully. The walls were etched with a similar design to the outside but without the gold inlay. As they slowly rose Iowa’s breath left her and she was stunned. The walls were made of glass and as they rose toward the hearth, the darkness fell away to reveal the stars.

The lift was entirely glass, even the top and bottom, and traveled at surprising speed up a groove along the shaft. She would reach the Hearth in ten minutes and for those he had a nearly unobstructed view of the universe. It was as if she was floating slowly upward through the myriad endlessness of
space. She was agog, her legs shaking underneath her as two equal and opposing impulses went to war inside her body; half of her wanted desperately to scramble backwards and hide her face. To turn and stare at the thousand little cables and circuits that she could see slipping past as the lift traveled upwards toward the core. The other impulse called to her to press her face against the glass on the other side, to drink in every speck of starlight she could. That part of her wanted to stay there forever riding up and down the shaft as they drifted through space until she had seen every star, every black hole, every tiny atom of cosmic dust that slowly curled in eternal circles until it all finally went cold and returned to nothing. She grew dizzy as the war continued and put a hand on the glass to steady herself. It was surprisingly warm. She could feel the engines humming through her fingertips.

“Are you alright?” said Wisteria from the bench behind her.

“Uh…” Iowa faltered as she looked almost uncomprehendingly at the magenta impossibility of a nebula some several million interstellar miles away. “Yeah. I’m...I’m okay. It’s just I’ve never seen it like this before. There’s the counterweight deck, sure, but even then, there’s a ceiling, a floor. It’s bounded, I guess? It’s not like this. Nothing is like this.”

“You get used to it,” said Wisteria, Iowa could hear the grin in her voice.

“Nope. Maybe you get used to it. I’m never getting used to this.” Iowa kept looking out into space. “So what are you going to tell them?”

“I’ll come up with something.”

“People are going to have questions, you’re really hurt.”

“You worry a lot, don’t you?”

Iowa reddened. This woman was infuriating. “Sometimes.”

“It’s not your fault I fell.”

“T chased you.”

“No very fast.”

Iowa turned to see Wisteria clutching her side as she laughed. At Iowa’s concern Wisteria held up a hand, “Sorry, only joking.”
“Don’t laugh, or talk too much, you’ll puncture a lung.”

“Come now, it was funny.”

Iowa smirked “I would have caught you even if you had made the jump. The lifts are always out and you would have wasted your time trying every lift on the level.”

“Maybe. But I could have slipped past you, I’m told I can be quite cunning.”

“That doesn’t sound like a compliment.”

“Anything can be a compliment with the right attitude.”

Iowa snorted and looked back out at the stars. She wasn’t going to let this prissy godtalker, whoever she was, distract her from the chance to soak up the cosmos.

“When you aren’t apprehending masked young ladies, who are you worrying about?”

Iowa shrugged, “Not a lot of people. My friend and a girl from my sector, she’s young, one of only a few people left from her line. She’s got potential though, after her aptitude exam I expect she’ll be put to apprentice in Hydro or Astro.” She quietly hoped Nicki would get put in the Hydroponics Division of the BioTechnician Department. She would do well there and Iowa could keep an eye on her at least until the mission.

“What are their names?”

Iowa turned back to look at her, “what’s yours?”

“I told you.”

“Okay.”

“You do not believe me?”

Iowa shrugged, “I’m not going to turn you in. I wouldn’t know who to turn you in to anyway,” nor would they believe me she thought without particular malice. Her word didn’t count for much with the clergy.

“So there’s no reason to threaten my friends.”

Wisteria’s eyes widened and when she replied she sounded shocked and more than a little hurt, “Threaten them? With what?”

Iowa didn’t know what to do with the question so she didn’t answer it.
“I would never threaten anyone. Especially not someone who probably saved my life.”

Iowa didn’t reply but softened somewhat at the confusion in the woman’s voice.

“Wisteria *is* my real name. I didn’t lie to you and I wouldn’t use your friends’ names against you. That’s awful. I’ve been nothing but honest with you. I didn’t call for the Prefecture.”

“You have, but you’re still wearing a mask.”

The lift slipped through a semicircular aperture that opened to receive it and came to a halt with a faint hydraulic hiss. Iowa helped Wisteria to her feet and they hobbled out of the lift doors that opened before them. The space they found themselves in was a cylinder of what appeared to be dark stone with three sets of black doors, similarly decorated, set into the wall before them. Wisteria directed her to a keypad. The numbers were ones she could read, the script was the strange looping alphabet of godtalk. Wisteria gave her a nine digit sequence, a Habtech code, laboriously describing the position of letters she couldn’t read. The door slid open and with effort they stepped into another, larger cylindrical room almost startling in its brightness. The wall from the other room pushed slightly into this one creating a slight bend in its shape like a waxing moon. The walls were seamless with no visible doors or doorways but for a roughly human sized gap that led into a hallway.

Iowa helped Wisteria through the archway and the hidden door hissed closed behind them. The hall that followed was bizarre too, familiar in some ways but utterly alien. It was very similar to the gangway on the ring but the floors and ceiling were solid instead of grates, and the hallway curved not upwards but to her left. It was like living at a different scale. The doors along the right hand wall were the same heavy metal with the little white bubble-shaped lights as her room. On the left however the wall was flat and unadorned but for evenly spaced single circular panels, each about two feet in diameter. Underneath each panel was a bin where she could see bundles of clothes. They were all strange bright colors made sickly in the white light of the hallway. Little tangles of lurid reds, and yellows and greens covered in little patterns.

Iowa gestured toward the panels “what are those?”
Wisteria looked around before realizing what she was asking about, “Oh, the hatches! They’re the backs of closets. When your clothes are dirty you place them in the hatches and the Stewards come and pick them up without disturbing the space.”

“Not planning on crawling through one of those are you?”

“That’s not a bad idea in a pinch but there is an access door further along the corridor.”

They came around the curve of the call to another hatch, like all the others but from the circular seam rose a long straight seam that connected with the edge of a rectangular depression in the wall, roughly the size of a pair of double doors. Next to it was a keypad. Wisteria dictated the code and the doors slid open to reveal the inside of a closet. Wisteria pushed the hinged panel open and limped through into the room. Iowa went to follow but hesitated as Wisteria undid the clasp on her cloak and let it fall to the ground. Wisteria sat on the utilitarian cube desk against the wall to take the weight off of her left side. The room itself was bare and not much larger than the lift they had been on before. Iowa noticed it was an odd shape too, the wall with the closet was curved, the two other walls sloped together into a corner almost like a flower petal. It had a large sliding door that took up half of one wall but was invisible until opened and a mirror on the other. The light was the amber warmth of an incandescent and hung in a glass ring above their head. The floor had a carpet the color of english moss.

Wisteria sighed with relief “Alright, I will summon a Steward. Thank you for your help.” Iowa nodded, still staring at the strange room, “no trouble.”

“The doors should open without the need for codes on your way back. I would invite you to stay but it may be difficult to explain.”

Iowa supposed it would be.

“If I could figure out how, would it be alright if I saw you again?”

Iowa stared, “why?”

“There’s still a lot I wish I knew about how the Technicians live.”

Iowa looked back at her “What do you mean?”
“You’re the first Technician I’ve ever met. That’s why I snuck out, I wanted to learn about you. All of you, not just what the histories say.”

Iowa opened her mouth and then closed it again.

“Please, it would be an honor if I could see you again.”

Wisteria reached up and with only the slightest hesitation undid her mask and slowly lowered it away from her face. She had a thin face, her features light and angular, her eyes dark under dark brows. Her lips were thin and painted with purple and flecks of something golden. There was a tension to the way she held herself, something like hunger but not hunger. Hunger was something Iowa knew, but this was strange. Some of Wisteria’s hair was still stuck to her brow with sweat. “Please?” She asked like it was everything she ever wanted.

Iowa answered without thinking, “Okay. Yeah, sure.”

When she smiled all that tension left her and relief flowed out of her on the wave of that golden light.

“Thank you, Iowa. You should probably go, but I look forward to seeing you again.”

Iowa nodded and Wisteria waved her hand, the door closed and Iowa turned and walked back down the darkened hallway, head still full of honey colored light.

She walked back to the lift in a haze of that strange amber light. It was as if it was refracting around inside her head, blurring the world. Even the stars only held her gaze for a moment as the lift descended. Wisteria had told her she wouldn’t need the codes to leave, only to get inside. She moved as if she was in a dream, her feet carrying her to Hydroponics by habit. It's strange how much of life is habitual. Her awareness only really returned when she reached the Hydroponics Bay doors.

Hydroponics Bay 03 was one of three hydroponic facilities on this ring and where Iowa had spent nearly every day since she was 16. She could reproduce every inch of the bay in her mind, and had when she was younger as part of an exercise during her mental acuity screening. It was arranged in layers, with large horizontal glass tanks lit by sunlamps, suspended one on above another with catwalks leading around them and stairwells and small single-person lifts down. There were thirty layers, five above the
platform at the entrance and twenty five below. The ones toward the top had plants that produced oxygen which is pulled up by vents while the ones below, to which water is carried by gravity, participated in waste disposal and water filtration. Some food was grown here, but the primary food growing efforts were made in growing fungal protein in Bay 01. Her job was looking after the genetically engineered chimera fish and microbes who were always hard at work producing the all important nitrogen.

When she stepped inside she felt the amber light banished by the wet earth smell, the endless gurgling, and the cold air of the bay but the comfort didn’t last long, a sudden flood of panic ran across her brainpan. She was on time, but only by three minutes. A flood of panic had risen in her when she had checked the time but she found the foreman before she could be called late and was able to punch in at the nearest console. The foreman, Switch Tractrix, was standing at the console. He was a reptosapian with dark umber scales, a crew cut and the beginning of what would no doubt one day grow into a marvelous paunche. His jaw was set in the position of the eternally stressed. They exchanged curt words, and as usual he somewhat redundantly reminded her to check the nitrogen levels in the topsoils and sent her on her way with no comment about her disordered appearance or her seeming confusion. She was grateful for this. The old foreman had had a tendency to let her know his opinion on her presentation at every opportunity. She had often considered kicking him down the stairs. But old Tractrix was too concerned with the delicate balance of chemicals to give her grief. He was strictly business.

“Some of the fish have Ick.”

“Ick?”

“I’m not sure what it is, fungus maybe.”

“I’ll check it out.”

The fish would turn out to have a mild fungal infection which she marked down. The next population could be given immunity if it proved to be a problem but she suspected a liberal use of antibiotics would be sufficient.

The work day passed largely without incident. Her mind was so occupied by her work that by the time the tone comes over the PA system indicating the end of the working day, the events of the morning
had become a kind of strange dream. Something amorphous and contingent. Toward the middle of the day the hunger set in. It wasn’t so much a gnawing as it was a tension. She could feel this strange hardness in her midriff as if the emptiness was an object somehow. A solid absence. It was something she had grown accustomed to.

Penrose met her outside with another hug and some friendly chatter on their way down the stairs, along with the few hundred or so other hydroponics workers, to the cafeteria.

When they got there they were funneled through lines where they picked up treys and passed by consoles set into the wall. She went up to the biometric scanner, entered her code and then scanned her thumbprint. Her nutrient profile came up on the little and she made her selections and then proceeded to the windows where Technicians in hairnets served her the food in the specified amounts. The food was a mix of harvested proteins, mostly fungal, vegetables grown hydroponically, and additional supplements as deemed necessary by the profile. Hers had resulted in some truly abysmal meals recently.

Penrose elbowed her good naturedly, “I’m sure someone will be up to trade with you.”

Iowa gave her a look of kindly sour skepticism.

Penrose laughed, “I mean, I wouldn’t, but someone else might.”

“Yeah I bet you wouldn’t.”

“Hey if they’re increasing your calcium that looks good for the away mission.”

Iowa conceded that much as they entered into the cacophony. The Cafeteria was a massive rectangular space with tables arranged in grids divided roughly by Level⁷. At full capacity it could fit an entire sector of dormitory residents, about ten thousand. It was nearing capacity now as the second shift workers got off shift and the young took a break from studying for their aptitude exams to come in for dinner.

“I guess, where’s Loam?”

“They’re over there, by the pillar.”

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⁷ Levels on the vessel correspond roughly to neighborhoods, each of which are further subdivided into Kin-groups who are responsible for raising and educating children. Being the last of her line, Iowa wasn’t assigned a Kin-group and had to find one. Once she did Iowa’s Kin-group was her only real family. There are no marriages among Technicians, at least not ones that are sanctioned or considered relevant by the clergy.
Loam gave them a wave from where they sat, a space or two away from the others at the table. Loam was small, shorter than both Iowa and Penrose. As they approached Loam signed them a quick hello and went on signing with one of their friends who nodded, gave Iowa and Penrose a friendly salute and headed off into the crowd.

Catenary Loam was small, smaller than Penrose and Iowa, and was the kind of wit who could insert something wonderfully absurd into any conversation with such delicacy that it would take you several minutes of making a fool of yourself to notice. Iowa and Loam had grown up together. Loam was the first to invite Iowa to join their kin-group with Penrose and she had been one of the first hearing Technicians to learn to sign as a child and now she was near fluent. She couldn’t quite manage the poetry of gesture speech like Loam who could combine several disparate ideas into one fluid motion but she was getting there. Loam worked in Hydroponics in bay 02. Their expertise was in identifying diseases in plants. Iowa and Penrose joined Loam at their table just as the lights began to dim.

The room fell quiet as at the front of the room on a small raised dias a hologram flickered on. There depicted was a young man dressed in the long robe and high collar of a clergyman. Penrose leaned over and whispered to Iowa “New catechist, what happened to the old fogie?” Iowa shrugged “It was the old guy before today, maybe the old toad kicked off.”

The new priest was a young man with lightly oiled hair and a certain softness in the face, began to speak in godtalk, his well manicured hands clasped in benediction. He lowered his head at the end of his prayer and his image promptly disappeared. The clamour returned once he was gone.

For the briefest moment Iowa considered telling Penrose and Loam about Wisteria, then realized that she wouldn’t even know where to start. Part of her deep down told her that what had happened was something that wasn’t supposed to happen and that it would only be more trouble to involve anyone else. Instead, Iowa showed Loam their notes on the Ick the fish had caught and asked their opinion. Loam mentioned an increase in fungal infections in some of the plants.
“Must be a problem with the filters, I put in a report to maintenance but we’ll see if anything actually gets done about it,” they signed with a resigned shrug “It’s probably best to keep up the antibiotics anyhow, they’re not going to fix the filters any time soon. “

“Worth a shot,” signed Penrose. She turned to Iowa, “did you get to a chamber in time? You look better.”

“I did. Did you see Nicki? Did she get to hers?”

Loam nodded and gestured toward the entrance to the cafeteria on the other side. Iowa saw Nicki leave the foodline, datapad tucked under one arm. Transistor Nickel was a small and bookish amphiasapien of fifteen with dark curly hair and pinkish salmon colored scales around her gills. She had few friends and none her age. Her eyes were set deep in her head, her teeth a little bucked. She saw Iowa and brightened a little, she made her best attempt at a wave but with all she was holding it wasn’t much of one. Iowa waved back and Nicki headed to a relatively quiet corner and set about reading.

“She’s studying hard for her Aptitude Exam,” Penrose mused, “do you know what department she wants to go into?”

Iowa shrugged “No idea.”

Loam grinned “Yes you do” they signed “don’t be modest, she wants to go into Hydro with you.”

Penrose smiled “makes sense. She thinks the world of you, you know.”

Iowa had taken Nicki on when she was a kid, Iowa wasn’t especially maternal but she looked out for the kid. She was one of the last Transistors and the only one from that line in their kingroup.

“Shame though, I’ve seen her preliminary scores, we could use her in Tech or Aeronautics. Most of these engineers wouldn’t know their ass from an algorithm.”

Iowa turned back to her food “She hasn’t taken the test yet, she could still end up there. How did you see her scores?”

“I check on all the kids on the level.”

“Well if she ends up in Hydro it wouldn’t be with me anyhow.”

Penrose looked confused and then her face fell. “Oh, the away mission, I’m sorry Iowa.”
“It’s okay, it might not happen anyway.”

“If what you wanted was a change of pace you could always put in for a transfer to another sector.”

Iowa shook her head, “It would be the same, I just wouldn’t know anybody. I need this Penrose.”

“You might come back.” Loam signed.

Penrose put a hand on Iowa’s, “We’ll look after her, I promise.”

Loam signed “Problem.” And then pointed over Iowa’s shoulder. Iowa turned to see that Nicki was no longer alone.

Nicki was standing now, her back against the piller, flanked by two older kids. One was a boy the other a girl. The girl seemed to be doing most of the talking, hurling insults and gesturing threateningly with a fork. The boy’s job seemed to be standing and sneering while toying with the datapad he just took from Nicki. Nicki stepped forward trying to grab it and the older girl slammed her back into the wall.

Iowa was up and over there before she had a chance to think, to steady herself.

The girl turned to see Iowa looming over her. The boy was taller than Iowa but from the look of him he weighed about ninety pounds, so taking the datapad from him did not prove to be especially difficult. Iowa took it and handed it back to Nicki.

The girl turned on Iowa hissing, “What the hell do you think you're doing? Mind your own business!”

Iowa looked down at her. The girl’s face was flushed and her eyes staring, affronted at Iowa’s interference. Then her eyes widened as she took in Iowa’s age and rank.

Iowa glanced from her to the boy, “Names.”

The girl sputtered, “What?”

“Names!”

The boy spoke up, “I-- I’m Gosper Tern and that’s Gram Portia.”

Portia snapped, “What the hell, Tern?”
“Alright. Now I’ve got your names,” said Iowa making a note on her omnitool, “you’re both going to do yourselves a favor and leave her alone.”

Portia looked with derision from Iowa to Nicki, “what do you care? She’s clearly defective.”

A rage rose like a great wave inside of Iowa, she pushed it down as best she could but it was all she could do to keep from shaking.

Portia faltered at Iowa’s sudden stillness. “Um,” she began staggering over her words and then tried to rally, Iowa cut her off.

“If I ever hear you call her or anyone else ‘defective’ ever again, I swear to god that I will make it my life’s mission to make sure you are scrubbing chemical toilets until we find the Promised Planet. Understand me?”

Portia tried vainly again to speak but Iowa wasn’t done.

“And as for her, if I or my friends see either of you anywhere near her again, I will write you up so fast it’ll make your head spin. A demerit on your record before you even take your Aptitude Exam? You’d be lucky to avoid the turbines.

“Don’t get me wrong, I get it, someone in your kin-group made you feel small, like you were helpless, like you were defective. So you looked around and you figured, if big fish eat small fish, then I’ll be a big fish. If I’m pushing them around they can’t be pushing me around. You found some toadies to go along with that and here you are. You want to be a big fish? You want to matter so you don’t have to be scared anymore? Well, that anger that lives in your chest, that cold fear that you carry around all the time, there’s a right place to put it. But don’t put it on her because she’s smaller than you, because you think she’s weaker than you. She isn’t. You find out who made you feel like a defect, that’s who that anger’s for. Consider this an opportunity to learn that lesson and get the hell out of my face.”

They fled.

Iowa waited a moment for them to be out of her sight before taking a steadying breath. Her heart returned to its normal rate. She looked at Nicki. Her hair was still a little damp. Iowa felt relief uncurling
some of the tension in her chest, Nicki had been able to submerge, she would be healthy for another few days.

“You alright Nicks?”

She nodded, “Yeah, thanks.”

“No problem,” Iowa looked around, “want to come join me and the others?”

“Sure!” She beamed.

As they walked Iowa could tell something was bothering her, “what’s wrong, kid?”

“I wish you hadn’t done that.”

“Why not?”

“What if they come back?”

Iowa shook her head “Don’t worry, they won’t. Bullies have a healthy sense of self preservation and aren’t prone to taking risks. It'll be okay.”

“Are you okay?”

“Yeah, why?”

“You seem weird” she said thoughtfully examining Iowa’s face.

Iowa felt the amber light in her head again, “It’s nothing. Come on, meal time is almost over. What are you doing after meal time? It's a free hour today for leisure.”

“I need to study.”

“So do I, are you stressing about it?”

“No,” Nicky said but Iowa could hear the tension in the edge of her voice.

“Do you want help?”

“Maybe later. I want to see if I can get it myself.”

“Okay, I’ll swing by later and check in if you like. You’re smart, you’ll do great, trust me.”

Nicki nodded and they sat down to finish their meal. The rest of meal time passed quickly, pleasant conversation seems to have that strange effect of eliding time. As they were sending their trays
through the disposal slots along the wall Penrose sidled up beside Iowa, “What’s your plan for leisure time?”

“Studying, what else is there?” she grinned ruefully. “I offered to help Nicki with her aptitude exam but she wants to earn it herself I think. I’ve told her before that accepting help is part of learning but she’s as stubborn as I am, so there’s no point in bothering her. Want to come quiz me?”

“I’d be honored.”

2. The Counterweight.

After mealtime Iowa and Penrose grabbed their datapads from their rooms and headed down the stairs toward the Counterweight Deck.

Iowa watched Penrose over her screen. Penrose had changed out of the iridescent flight-suit before mealtime and now wore her old coveralls. She had unzipped them and tied the sleeves around her waist revealing the dark green undershirt beneath. In the dim lights Iowa could see the muscles in her shoulders move under the dim plae light as she reached up and adjusted her bandana.

This was one of the only places on the ring with windows facing outward into space. Calling them windows was perhaps generous. They were tiny slits no more than a foot across. Iowa found her gaze drifting again back to the stars that glittered in the sea of darkness below. For a moment it was as if the glass disappeared and she was floating among them but then the solidity of the glass reasserted itself and the stars suddenly far away again. Cut off from all that vastness Iowa felt a pang of indescribable yearning tightened its grip on her lungs so hard she almost sobbed. She remembered the endlessness opening up around her in the elevator and then that amber light. Penrose’s gaze followed Iowa’s and then met hers as they looked back up. Penrose’s mismatched eyes were strange and lovely in the darkness.

“Why don’t people ever come down here?” Iowa asked.

Penrose shrugged good naturedly, “Because of the windows.”

Iowa looked confused.
“People forget to look at the stars. They forget they’re there and they don’t like to be reminded how little they actually matter. The endlessness and the temporary get all mixed up and people get uncomfortable.”

“I suppose that makes sense.”

“Want me to start quizzing you?”

“Sure.”

They began with the essentials of terraformation, something Iowa knew well. The first step was temperature control. A lot of this had to do with atmospheric conditions. Some planets were just too hot, their proximity to their stars having long burnished them to a shine. They would be nothing but rock forever. An entire empty world millions of times the size of the ship and older than she could imagine. She knew one they called Antares IV, it had a desert of broken volcanic glass the size of a continent.

Penrose had snuck away a datapad when they were younger and showed her the reconstructions from the surface imaging. They had been rudimentary, almost clinical but she had been able to imagine it so clearly. Miles and miles of black glass, a perfect sheet, like a frozen ocean of black water. Some had too strong gravity, or too great pressure. On some of the gas giants carbon would into soot and then harden into diamonds as they fell ringing like bells to the ground. Some were simply too cold, far from their sun but without the precious shield of atmosphere. They were alone, covered in vast sheets of ice. It was a strange thing. To be either glass or ice. Penrose’s skin shone like unpolished brass in the dim light.

Penrose raised an eyebrow at her “Iowa?”

The Node buzzed in her head, pulling Iowa back to the question, “The first step is temperature control. This is done by trapping a portion of atmosphere and saturating it with the necessary gasses, C02 and argon among others. Once you’ve achieved the temperature where water is stable you can begin to enrich the soil hydroponically and introduce seed species --”

“Such as?”

Iowa rattled off the list. Fungi and algae bloomed in her voice, “Once they begin to introduce nitrogen into the soil you can begin to raise plants who will produce oxygen and you create your first subsystem.”
Penrose nodded as she read along with the notes and then smiled wickedly, “What if it doesn’t?”
Iowa looked up “It doesn’t say that, does it?”
Penrose shrugged “Maybe it does, maybe it doesn’t. So what? What do you do if your plants die?”
Iowa faltered, if your plants didn’t take and begin to photosynthesize by the time your own oxygen supplies began to deplete, you were dead.
Penrose waited patiently, half-smile never leaving her face.
Iowa opened her mouth and then closed it again and then smiled her own wicked smile back, “You get creative."
Penrose checked off a faux answer with a flourish “Right you are! On to fluid dynamics.”
As Penrose switched to the other line of questioning Iowa took a moment of reprieve to look at the stars. They were within a lightyear of a golden star drifting toward amber. She felt that unreality rise in her chest again.
“You okay?”
She met Penrose’s eyes. When her brows furrowed they created a worried little crease between themselves. Iowa wanted to tell her about Wisteria. She wanted to unhinge her jaw and let the whole impossible dream come spilling out of her but something stopped her. There was a screen here, a console. The chances anyone was listening were low, but still.
“Yeah, yeah it’s nothing. Fluid dynamics?”
They continued unraveling the secrets of the universe together for a while as the Counterweight turned until eventually the tone sounded over the loudspeaker signaling the end of their freedom. Iowa bid Penrose goodbye, she suggested they do the same next time leisure was a free period, Iowa agreed.
“I missed you, you know. When you were away. I had to take care of Nicki and Loam all by myself.”
“I missed you too. Are you sure you’re okay?”
“Yeah, just nervous.”
“When was the last time you calibrated the Node?” Penrose asked, gesturing at the little silver implant on the side of Iowa’s head.

It had been a while, Iowa hadn’t made much use of it recently beyond its baseline function of keeping time and helping her stay focused. She didn’t like the stim signals, necessary as they were but that was no fault of Penrose’s. The Node had been iterated on over and over since Loam installed it all those years ago when Iowa was no older than twelve and Penrose was about thirteen. Loam had been fifteen and had begun their medi-tech training when Penrose had first brought young Iowa, who was little more than a stranger, to one of their secret meetings on the Counterweight Deck. Loam had been skeptical at first, and it took some time but the three of them, outcasts in their own ways, slowly became something they had lacked. They didn’t have the word for it but we call it family. Even so, it wasn’t until six months in that Loam and Penrose learned the particulars of Iowa’s ‘brain defect’ which they had heard so many rumors about. When Iowa did tell them, she told them everything despite what she knew the consequences could be. It was the only the most recent in a brief life of early risks and she needed their help.

Most of the time she was fine. She found other people alien and confusing in their inconsistencies. She observed that they tended to communicate via an arcane web of connotation she couldn’t seem to pick up on. This had contributed to her isolation and made it nearly impossible to find a new kin-group, but even then she knew this could be managed. She had learned to communicate with practice and knew she could eventually learn to imitate this strange modality without needing to properly internalize it the way they all seemed to. For now, it didn’t matter as much. After all, for most of her life she had been alone and managing to cope. But it was the other reason for her isolation she couldn’t cope with that had prompted her to ask for Loam and Penrose’s help.

There were the moments when the drudgery of life, endless repetition devoid of the momentum and change that millions of years of evolution had taught her to seek, would pull her out of time and leave her drifting when she needed to focus. Worse, there were moments that were the opposite; when the din of the massive machine that made up her world overwhelmed her and a riot of sensation would tear her
mind apart from the inside. The noise of it all sent currents of anxiety and confusion running along her nervous system like fire seeking a way out of a burning ship. In these moments she could stimulate — or ‘stim’ as she learned to call it — moving her body in repetitive motions, making noises, and through controlled vibration slowly stem the flow of sensation and bring herself back to ground. But she knew, even as a child, that if the Prefecture ever learned of her stimming it would bring a very difficult kind of attention to her and anyone associated with her. She would be ‘evaluated’ and if found wanting her clone line would be terminated and more than likely so would anyone’s thought to share her ‘deviant tendencies.’ This is what caused the kin-group that would have been expected to adopt her, despite her not being assigned to them, to abandon the young Iowa to fend for herself. Worse, it meant she couldn’t work, at least not as efficiently and tirelessly as she would need to in order to get a spot on the Away Mission. This had been her greatest secret, her dream of escape.

The little quiet child told her new tiny family all of this. She told them in a whisper about struggles and her dream and asked for help. She didn’t know what she expected they could do, she was just tired of being alone. But Loam had an idea. Loam was deaf and used a hearing aid designed for them by some people in their own kin-group. It didn’t ‘restore’ their hearing but it sent signals to Loam’s brain to inform them of frequencies they couldn’t pick up through touch and other sensory information. Loam proposed modifying a device to serve a similar function. They proposed an implant that would allow Iowa to stim without the danger of exposure or falling behind. And so the Node was born. Iowa built it, Penrose programmed it, and Loam implanted it.

Loam was hardly qualified for brain surgery, and it was touch and go for a while, but Loam managed it with the help of an obsolete artificial intelligence Penrose had recovered from some discarded medical-bay memory banks.

In the beginning it had required regular maintenance and had been somewhat inefficient in its energy consumption. Now it had a kinetic battery and required only occasional tuning.
Penrose got up and moved over to Iowa, pulling out the necessary tools from her belt-pouch and leaning in to examine the Node. Iowa stayed sitting. Penrose was short, so even sitting Iowa’s head came up to her sternum. Iowa could feel her nerves begin to start sparking with the closeness as Penrose drew close. If she didn’t trust Penrose with her life she would have recoiled but as it was she stayed still. Penrose walked around behind her and leaned over to examine the Node. Iowa felt Penrose press her stomach gently into Iowa’s back and shoulder as she leaned her own head close to Iowa’s to get a look at the intricacies of the implant.

They hadn’t seen each other in a long time and Iowa had almost forgotten the warmth of Penrose’s focus. She ran hot, like Iowa, so when they were together they seemed to spark off one another, their friction creating a sort of heat on its own. It’s part of why they worked so well together and why they fought like dogs when they fought. Loam’s coolness was able to balance them out.

Penrose’s calloused fingers were quick and steady, attentively following the rapid clip of her mind but she used this precision to be gentle. With the little surgical screwdriver she undid the fastenings and slid the Node free of its casement with practiced ease. Iowa leaned back and watched as Penrose took the Node, which glittered like a little silver banana slug in her palm, and plugged it into her communicator. In order to avoid detection she needed to jack into the Node’s hardware directly. It was a little secret Penrose had learned early on; the computers on the ship would register your logging onto or connecting to them from their terminals but they wouldn’t send that information unprompted to the rest of the network. Anyone who wanted that information would need to know what they were looking for. While if you connected to them via the wireless connection, that instance was logged on the Core system automatically.

Penrose sat down across from Iowa and furrowed her brow in concentration as she began to work. “How has the Node been? Still working?” she asked without looking up.

“Fully functional,” said Iowa. It was true. The Node worked as well as it ever had. It was useful. The stimulation it provided quieted the shaking and kept her mind clear and allowed her to work but it felt sickly. She knew she was forcing her body to bend in ways it wouldn’t bend. It filled her mouth with...
an alkaline taste and while the need to shake went away, the sensation and the anxiety didn’t. Neither did the exhaustion. She did her best to stim when she got back to her domicile, to try to release all the pent up bile in her mind but it didn’t quite work.

“I know it's not the same,” said Penrose without looking up.

“Oh,” Iowa’s face fell, “I didn’t realize it was so obvious. I appreciate it very much, Penrose. Without it the system would have hit me with the low-productivity report years ago. It just feels…” the words escaped her, “wrong. I feel wrong, all the time. It's not your fault or the Node’s fault, really.” Iowa stopped, the guilt and embarrassment at how tired Penrose was trying not to look burned hot under Iowa’s eyes.

Penrose leaned forward and gently bumped her forehead into Iowa’s shoulder. It was a gesture they had begun as children. When Iowa was young, hugs were too much sensation all at once, so Penrose developed an alternative. Iowa had learned to enjoy hugs as she grew up — partially with the help of the Node — but the gesture stuck. The bump was love.

“It’s okay, Iowa” Penrose said gently “I know it's not the same and that’s okay. The water chambers aren’t the ocean and the sunlamps aren’t the sun. Does it help?”

“Yes. It is useful. It keeps me safe” it helps me hide. Iowa didn’t know why that made her grind her teeth.

Penrose nodded “Then it's doing its job.” She finished the calibration and moved to put the Node back.

“We make do, huh?”

Penrose nodded “We make do.”

“Sometimes,” Iowa felt a kind of shame but their years together pulled at the truth, if she couldn’t talk to Penrose then she couldn’t talk to anyone. “Sometimes I get so angry.”

Penrose stopped and considered this. Eventually she said, “Me too.”

Iowa observed Penrose’s stillness.

Penrose went on, “You can’t live your life in anger. Anger is hateful, it’s cancerous.”
“I’m not sure I can help it.”

Penrose shrugged, “You’re going away.”

She needed to go, she couldn’t take the hard sharpness of the ship. She couldn’t bear the thought of Penrose’s resentment, or worse, her sadness. Iowa didn’t know what to say so she said, “Only if I pass the exam and get selected. I probably won’t go.”

Penrose laughed quietly, “Iowa, you never in your life let anything stop you from doing what you wanted to. If you want to go, you’ll go.”

Iowa wanted desperately to tell Penrose about Wisteria, about the core, about her fear of dying on the planet and how desperately she wanted to get out, but she didn’t know how to start, so she shared the silence with her as Penrose slotted the Node back in. Iowa closed her eyes as the Node reconnected and felt the faint hum in her skull of the all-correct signal. “Thank you,” she said and gave Penrose a quiet smile.

“We should probably head to bed, leisure is almost up” said Penrose checking her communicator.

“You’re right.”

Iowa returned to her domicile. The sun-lamp above her head dimmed in regular intervals until finally going out. She eventually found her way to sleep. It was an easier sleep, her skin didn’t burn as it had before, and the waters of her dreams were a deep and endless blue. But when she woke she could feel the faint heat at the very edge of her perception. Her skin was just a little bit tighter, her mouth and her gills just a little bit dryer. That feeling would only grow as time went on, but for now she pushed it down. She didn’t have time.

Penrose and Iowa would come to the counterweight every free period leading up to the first exam. Sometimes Nicki or Loam would join them, but they were both busy most nights. Penrose always made time, she knew how important it was. The others wanted to pretend it wasn’t happening.

It would be the hardest routine of training that she had or would ever endure. She would have to endure it, pass the initial exam, begin six months of basic training leading up to the final exam which she
would then have to pass by a margin of at least 25% in order to qualify all while doing her job in hydroponics well enough to avoid a demerit. It was only impossible, so it shouldn’t have proven an unreasonable challenge, but things wouldn’t be so simple.

It was twenty minutes to breakfast time two weeks after they had first met when the golden doors opened. The last of the other Technicians had already made their way down to the cantina but Iowa had dashed back to her room to grab her datapad. She wouldn’t have a chance after work. She stood there frozen in time, her breath still as with a faint hydraulic whisper the doors with their sacred geometry in gold opened to reveal a figure cut against the stars. They were a Technician, or at least they were dressed like one. She almost didn’t recognize her. Her hair was different, shorter, her face unadorned by their usual golden sparkles. But the eyes were the same.

“Wisteria?”

She beamed and slipped between the doors. They slid silently shut behind her.

3. Descent.

Iowa stared at Wisteria as she emerged grinning from the lift.

“Are you crazy? What are you doing here?”

Wisteria tutted in mock offense, “What? You didn't miss me even a little bit?”

Iowa shook off the question and all its implications and pressed further “Why are you here?”

Wisteria sighed and grabbed her right elbow with her left hand, “Well, I was hoping you could show me around.”

“Oh so you are crazy.”

“Come on Iowa, my disguise is much better this time!”

“What if we get caught by the Prefecture? If I’m lucky I’ll end up in re-education, this is sedition.”

“How many prefects are even assigned to this sector?”

“Four” Iowa conceded.
“And when was the last time you saw one?”

“They come to mealtimes sometimes. Besides, what will we tell everyone? No one will recognize you. Shall we tell them that you’re a particularly ambitious algae bloom? Or maybe I built you out of little bits of wire during my spare time. This is insane!”

“I’m a transfer, here to be trained before being moved to the Hydro bay on Ring 3 and you were selected to train me. I’ve thought of everything.” She was pleased as punch.

Iowa shook her head “No.”

“Iowa, please. Come on, it will be fun. Besides,” she gave Iowa that sideways grin of hers “when was the last time you did something you weren’t supposed to do?”

Iowa felt the amber light. That yearning she had felt in the counterweight dec to do something, anything, new. She sighed, it was probably better to keep an eye on her anyway. If the breeder was allowed to wander around alone she would probably get into some proper trouble. “Fine” she said “but you have to follow my lead or you’re going to get caught and it will be my ass who pays for it, okay?”

Wisteria nodded gleefully.

“Why do you want to see all this anyway?”

“I’m supposed to be the Keeper of the Histories and I can’t just keep recycling all of the old commentaries. History is a process that happens all the time. Who knows what wisdom we ignore here? This is the other half of the world.”

Iowa arched a skeptical eyebrow.

“Alright fine. I came because I am curious. It’s something new. In the Hearth every day is the same thing. I have the histories, the stories, but it’s not real in the same way. I want to understand.”

Iowa understood that well enough, even if the words themselves were being used in that strange sideways way Wisteria always did. “Follow my lead, don’t do anything stupid.”
They walked together, their footsteps reverberating off the walls of the companionways in the silence. Eventually, the burden of the quiet pressing on her mind too much to bear, Wisteria piped up, “When you came over -”

“You mean the time I saved your life in spite of your best efforts?”

“Yes, that time” she said, smiling to smooth Iowa’s sneer “that was your first time on the other side, right?”

Iowa nodded “yep. I’d bet I’m the first Technician other than the Habitechs who's been in the Core since it was built.”

Wisteria grinned “You’re probably right.” The thought seemed to please her but there was something she wasn’t saying.

“I feel like you’ve got a question in there.”

“I suppose I was curious what you knew about us, what have they told you about the Core?”

“Well, according to the scripture you guys are chosen by the ancients and anointed by god to populate the new planet.” Iowa did her best to keep the skepticism out of her voice. She was a pragmatist and in her life she had seen very little evidence of god.

“It is indeed our divine purpose.”

Iowa shook her head, a rueful smile “You talk like a teacher. And an old fashioned one at that. A lady came to the kin-groups on my level to give lessons before the aptitude training programs took over. Arithmetic and stuff. She talked like you.”

Wisteria considered that “I suppose I am a teacher in a way. I’m not just a clergyman or a brood member, though I am both. I’m the apprentice to the Keeper of the Histories. I’m the Mender.”

“Mender of what?”

“The Lattice. It’s not something I can really talk about. Not here, just to be safe.”

Iowa chucked, “Right. Okay, well, what did you know about us Technicians? What did they tell you about us?”
“You are our stewards in a way and keep the vessel functioning.” Wisteria petered off, “Apart from that, they didn’t tell us very much. Which is why I’m here to learn. You take care of us, it is your chosen purpose and yet we know so little about you and your lives.”

“Our chosen purpose,” said Iowa quietly. If Wisteria had heard the bitterness in Iowa’s voice she didn’t comment on it. “I don’t know how much I’ll be able to teach you,” Iowa went on “I’m sorry.”

Wisteria bumped gently into Iowa, “You’ve taught me a lot already.

They arrived at the doors where the river of people had already begun to fade to a trickle as the stragglers began to flow through the tall slats in the walls.

Iowa felt a low frequency panic rise in her throat as she realized that Wisteria wouldn’t have a biometric scan. Maybe they could slip through. There shouldn’t be any prefects there and they could say her hand had been injured or the scanner wasn’t working, but this felt weak even to her. She felt Wisteria’s hand slip into her own, Wisteria squeezed lightly and then slipped in front of her. Iowa opened her mouth to say something but Wisteria held her hand up in front of the scanner and the little light glowed the yellow of a successful entry.

It wasn’t until Wisteria closed her fingers over the empty space that Iowa realized the scanner had scanned a hologram hovering an inch away from Wisteria’s palm. Apparently it couldn’t tell the difference. Once Iowa was through Wisteria whispered “I mocked a little something up” and winked.

Iowa was frustrated but impressed. They moved into the cafeteria, grabbing their trays from the machine that dispensed them still steaming from the wash. They joined the thrumming crowds, chatter filling the air. No one took any notice of them. It was bizarre, almost otherworldly to see what she knew was an impossibility, a sainted brooder, pass between them like a stone parting a river.

Iowa could feel Wisteria’s excitement coming off her in waves, “I know the basics of your day; you have meal time and work time and then either exercise time or free time, but the details, what it’s actually like, are still a mystery to me. This is fascinating. The food is what I was most curious about.” They moved through the line, food was dispensed from the machines by exhausted looking Technicians
onto their plates and the pair headed to Iowa’s usual table. It was the protein composite flavored - if one could call it that - with a compound mix of capsaicin, sodium and citric acid and served over hydroponically grown rice and vegetables.

Iowa smiled at Loam who was sitting with another deaf amphisapien named Compressor Maudlin, and signing away at breakneck speed. Maudlin looked up and waved to Iowa and Wisteria as they sat down. Loam beamed. Maudlin hopped up and down in their seat and then kissed Loam before leaning their head into the crook of Loam’s neck.

“What’s up?” asked Iowa, momentarily distracted from Wisteria’s presence by her friends' excitement.

Loam signed “I got promoted!”

“That’s amazing! Hardly a surprise, you’ve more than put the hours in.” Said Iowa clapping them on the shoulder.

Wisteria leaned over and whispered to Iowa “Why do they not speak? How do you understand them?”

Maudlin, an excellent lip-reader despite being hearing, answered before Iowa could “Loam is deaf.”

Wisteria did an admirable job hiding her surprise but Iowa could feel her body tense next to her. A low anger began to simmer in Iowa’s chest. She reminded herself of the woman’s ignorance and how it wasn’t her fault but she could feel it rising in her as Wisteria continued to stare at Loam as they signed. After making a few awkward attempts at small talk, Wisteria asked Iowa quietly where she could get more water. They stood and together walked to the dispenser carrying their tin cups.

“Loam can’t hear?”

“Loam’s whole line can’t hear, there’s a community of five or six lines that can’t hear on the Ring. There are people with other disabilities too. Why?” Iowa gave Wisteria a chance. Maybe Iowa had misunderstood Wisteria’s reaction. This was often the case.
“The Prefecture -” Wisteria began and then trailed off, “have they not been reported?” It was the way she asked the question, as if reporting them was simply the logical thing to do. Without even the slightest thought.

The red hot anger rose like a tide and in an instant consumed her mind like the sea swallowing the blasted shores of an island. Before she was even aware what she was doing, she had dragged Wisteria by the arm through the cafeteria and out into the hallway. Iowa ripped the nodule out of its casing on the side of her head and held it under Wisteria’s nose. “Do you see this? Do you know what this is?”

Wisteria stammered, shocked by Iowa’s sudden vehemence “I...I don’t know. I hadn’t thought to ask.”

Iowa plowed ahead, the red hot anger spurring her tongue “This is the only thing that holds my brain together, without this I would be lost. It tells me the time, the elevation, it keeps notes on what I’m supposed to do, it carries my only tether to the entire fucking world. If your people knew what was wrong with my brain I would be designated a ‘non-starter’ and they would eliminate my entire line on the word of your ‘holy’ text. I…” The fury in her tore at her mind, filling it with red hot anger. She couldn’t finish that thought so she turned to a new one. “Because I’m defective. Because that’s what you meant, right? You were asking why we don’t sell Loam and the rest of their community out to the Prefecture? Because they can’t hear, because their bodies, our bodies, don’t please you. Because they aren’t perfect tools. They deviate. The Prefecture doesn’t give a damn as long as the work gets done. Do you?”

Wisteria was stunned, she opened her mouth to speak but nothing would come. Iowa stepped forward. “Answer me. Are you going to turn me in? Are you going to turn me in because I’m defective too?”

“N-no. You’re not defective” came the reply, barely more than a whisper, “you’re beautiful.”

Iowa’s breath left her, confusion mixing with shock into a cold that cut through the heat of her anger. “Wait what? What are you talking about?”
Wisteria looked away, crossing her arms as if to hug herself and rocking back on her heels “I said that you’re beautiful” she said “and I’m sorry. You’re not defective. You’re brilliant and you’ve taught me so much. I’m sorry.”

Wisteria’s voice shook a little as she said it and Iowa felt tenderness flood her and she hated herself for it. Wisteria looked so damn... something. Iowa didn’t have the word for it. She was so small somehow and intricate like the thousand tiny membranes that made up a dragonfly’s wing. Iowa could tell she was ashamed and hurt. Iowa wanted so badly to wrap her up in a blanket, to tell her it was okay. She had never been good at handling the suffering of others. But more than that she had seen that now familiar hunger in Wisteria’s eyes and the way the joy at her understanding something new and alien set little fires in them. Iowa wanted to be looked at that way, with wonder. Unbidden, her mind drifted to Penrose. Iowa cared deeply for Penrose but Penrose knew her in all her mundanity. She knew everything about her.

Iowa consoled Wisteria, “It’s okay. You were confused. You didn’t know. Maybe you do now. And, um… you’re beautiful too.”

Wisteria beamed and wrapped her arms around Iowa and pulled her into a full body hug. Iowa froze in shock before eventually hugging her back, gently. She was surprised by how warm Wisteria was and how heavy she was in her arms. Iowa found her brain noting strangely that Wisteria’s bones must be quite dense.

Wisteria’s cheeks were wet. “I was afraid you hated me,” said Wisteria quietly.

“No. I don’t hate you.” Iowa mumbled, her brain not having quite caught up yet, “I don’t hate you.”

By the time they got back inside the cafeteria Penrose had joined Loam and Maudlin.

Penrose laughed “Ew! You’re in public!”

Loam signed back “Look, if you ever talked to anyone at work or better yet went to the parties on the lower deck maybe you’d meet someone and you could stop riding my ass all the time.”
“I’m not going to spend half of my free period wandering all the way down to the cargo-deck to stand around chatting nothing with a bunch of horny weirdos -- half of whom I know already from work -- to drink Catenary’s hydro-hooch. Okay? That stuff is basically rubbing alcohol.”

Penrose indicated Wisteria with a fork, “whose this?”

Iowa was still drifting somewhat so Wisteria answered before Iowa could open her mouth,

“Orbiter Winslow”

“Orbiter? I didn’t know we had Orbiters on this ring.”

“She’s a transfer,” the lie came easily to Iowa and tasted bitter in her mouth. She had never thought of herself as someone to whom lying came naturally but they flowed from her now at the prompting of her friends. Wisteria subtly leaned up against her as they talked.

It was pleasant enough conversation, Wisteria didn’t ask any more foolish questions. Penrose laughed and Iowa could see her hand drift over toward Loam’s. She felt a little pang that she couldn’t quite place.

By the time dinner was over Wisteria was walking differently, her strides rounded and heavier than they were before. She walked in step with Iowa and the other techs around them. Blending in seemed to be among her talents. Iowa wasn’t sure how she felt about this.

Leisure hour had begun. Wisteria wanted to see the exercise room. Iowa took her. They were large rooms with a glass wall facing the companionway, some were full of individual exercise units, each replete with weights, a treadmill and a screen for instructions. Others were devoted to team games.

Wisteria watched the people at work in them with the single minded fascination of one of the biotechs watching the little translucent fish moving through the tanks.

She turned to look at Iowa, her curiosity satisfied for now “Am I going to watch you work out?”

Iowa shook her head, “No, too much studying to do.”

“Shame” she said with a little smile.

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8 Hydro-hooch (an admittedly rough translation) is liquor and other mind altering substances created in secret using the machines in the hydroponics bay. Conduit Catenary is famous for having a pleasant if deadly mix made in Bay Four.
“That was flirting,” said Iowa.

Wisteria shrugged the smile shifting to a grin, “Prove it. Come on, show me where you live.”

Wisteria crouched on the edge of Iowa’s bed, leaning over the shelf formed by a gap between a couple of metal plates above the console. She moved her face as close as she could without actually touching the little collections of twisted wires and dials. Iowa sat on the other side of the bed and tried her best to sit still. It was strange to let someone into her room, it was like letting someone climb up inside her ribcage and push her soft bits around.

“These are lovely” said Wisteria absently flicking the tines on the fin of a little metal lionfish.

“Where did you get the materials? All this wire, don’t you work in Hydroponics?”

“I work where I’m needed. Most of the time it’s Hydro but I have my mechanics certification too. When I was working in the fabrication shop I started taking home little extra bits. Now Penrose or Loam will smuggle me some bits. Nothing important.” Nicki tried once, but I told her she didn’t need the demerits that getting caught would get her before she even took the aptitude test.

“They’re really gorgeous, I love this little fish.” Wisteria picked it up and wiggled it toward Iowa through the air as if it was swimming. Iowa watched the light bounce and shimmer off its little metal scales. Iowa leaned back slightly as Wisteria came nearer. Wisteria leaned in so close Iowa could smell her.

She smelled of something like spices and a sweetness. The spices she knew but she didn’t recognize the sweetness. She knew the word for where it came from — in fact she knew its taxonomy and with some reminding she could have given its genus and order — but had never actually encountered it so she would never know to put the name to the scent. It was the sweet and a little alkaline smell of lilacs. But underneath that there was something else. Something richer, almost metallic. Iowa could feel a heat rising off of her skin.
Wisteria lightly tapped the Lionfish’s metal lips against the tip of Iowa’s nose and then giggled. Iowa could see the flush in her face, the way her eyes kept drifting to her lips. Iowa leaned forward and softly kissed her. Wisteria leaned into it and almost stumbled as Iowa pulled away.

“See, you were flirting.”

Wisteria kissed her again. Wisteria’s skin was almost uncomfortably warm. Wisteria pulled away and grinned “God, I’ve wanted to do that since I saw you.”

Iowa didn’t quite know what to say to that.

Wisteria bit her lip, “Want to get in trouble?”

Iowa almost laughed “How much more trouble do you think we could get into?”

Wisteria pulled a little tin out of the pocket of her coveralls. It was silver with a little ring of brass around the outside, and what Iowa recognized as the same set of concentric circles the clergy wore on their robes on the lid. She unscrewed the lid to reveal a honey colored gel. She scooped a little out on the end of her pinky finger and slipped it into her mouth. “It’s supposed to bring you closer to God’s peace and serenity.”

Iowa thought about this. She thought about God. She thought about the endless hum of the engines, the darkness, the broken lifts and broken chambers, the pain, the burning and itching as her skin slowly lost its nutrients and moisture to the ship's dry air. She thought about how every day was the same. She had never been very close to God and had known very little peace. Well, except once. She thought briefly of a silver flower unwinding to reveal fire to the darkness.

She nodded, “Show me.”

Wisteria scooped out a little more of the paste with a finger, reached up and gently placed it in Iowa’s mouth. It melted like butter and a moment later so did Iowa. She was flooded with electricity as if she had become briefly one with the endless network of wires that were the thrumming nervous system of the ship.
Then the world went soft. Sensations became somehow both vivid and blurred, mixing strangely with one another. Sounds and colors were indistinguishable. Taste was something else entirely. She felt the world fold and unfold. Wisteria was close, Iowa wanted her closer.

A while later, as her mind cleared, Iowa reached gently to the floor, trying not to disturb Wisteria who was snoring gently as she slept on top of her. She picked the little metal fish off of the ground and placed it on the keyboard of the console. Wisteria shifted a little and her eyes opened. They were so green. Iowa was stunned by them. People’s eyes were always too much. She would look at the bridge of people’s noses, blurring the eyes a little, giving her just enough of a filter that they couldn’t get her. But as Wisteria looked her in the eyes Iowa was stuck in them, they were green with a little bit of amber gold around the pupil. Her body surged with tension, her lungs and gills caught and she felt her mind turning. She pulled her gaze away and looked at the ceiling above her bunk trying to regain her breath. Wisteria waited for Iowa’s breathing to slow without comment.

“I’m sorry,” Wisteria said eventually.

“It’s alright, eye contact can be difficult.”

“You should come home with me.”

“What?”

Wisteria sat up beaming, “Come back to the Core with me! You showed me your world, please let me show you mine.”

Iowa looked at her for a long moment. “What do you want from this?”

“What do you mean?” Wisteria looked confused and a little hurt.

“What do you want? Why are you here?”

Wisteria shrank a little at her bluntness. Iowa didn’t look away or apologize. She wasn’t sorry. Iowa had risked everything for this woman by taking her back to the Core the first time and here she was again. In disguise, in her bed. It was all too much for her still slightly addled brain. She had been caught up in the thrill of the thing and the strange dreamlike quality that seemed to refract off Wisteria like light
through glass. But the dreamy softness was gone now, the world was sharp again. They had broken the ancient Forbiddance in the worst possible way.

Wisteria couldn’t look at her, “Ever since you helped me and we talked in the lift, I was just so curious.”

“Curious?” anger and terror rose like red hot steel wool into Iowa’s dry and scratchy throat.

“You don’t understand,” Wisteria blurted. “God told us what we were to know, our purpose is contemplation. We spend our lives waiting for the world to come, keeping the histories, preparing to be bonded and produce the future generations. But everything I know is about the past. Things that have already happened, memories, ephemera, stories about nothing. I wanted to learn something new, something real.”

Iowa sighed, “That’s bullshit.”

“What?”

Iowa didn’t know. The answer felt true, but wrong somehow. Then it clarified. “That’s not what I’m talking about. I know why you left The Core. That’s not what I’m asking and I think you know that’s not what I’m asking. Why are you here?”

“I said I was curious —” Wisteria began tentatively.

“Ah, okay then. Well, did you see all you needed to see? I hope it was amusing.” It was a game. She was playing a game with Iowa’s life.

“I want to understand.”

“Understand what?” Iowa turned away.

“Why are you upset?” Wisteria tried to touch her.

Iowa pulled away. She couldn’t quiet her thoughts. So that’s what it is, I’m a curiosity. A specimen waiting for dissection. Wisteria wanted to learn about Technicians, how we live, how we suffer, what secrets we hold and, I guess, how we fuck. She tasted bile. It was a game.

“I couldn’t stop thinking about you.” Wisteria wanted to plead but something like pride or guilt prevented her voice from shaking.
Iowa’s heart stopped. She turned back slowly to see Wisteria sitting there, her cheeks shining a little in the dim orange of the sunlamp’s evening.

Wisteria hesitated and then gently moved closer, not looking at her. “I’m sorry. I know you put in for the away mission and I don’t want to mess that up or put you in danger.” Once she started talking the words began to flood out of her, relief mixing with anxiety, “I know the Forbiddance well. Believe me, I’ve studied holy law my whole life and I know it’s wrong. I’m being selfish. But ever since I saw you I couldn’t get you out of my mind. I dreamt about you. I wondered about your world. The Catechist’s prattling became like the baying of animals. My friends’ Bonding Ceremony drama held no interest. I couldn’t even focus on my work in the Histories. You are real and beautiful and strong and I know so little about you and already I am consumed by thinking of you. I had to see you again. I’m sorry...”

Iowa stared at her. She watched Wisteria’s lip twist up as her words petered out. Wisteria waited, Iowa did nothing. She didn’t know what to do. No one had ever talked to her like that. No one had ever thought of her that way. She couldn’t quite make it make sense.

“You really feel that way about me?”

The flush that had risen in Wisteria’s face during her speech reddened even deeper. She answered faintly, “Yes I do. I’m sorry.”

“It’s okay,” Iowa said. She felt that amber feeling the Core’s light had given her running across her mind in warm foamy waves. “You were stuck in my head too,” she said “like a piece of light.”

Wisteria beamed, her teeth flashing in the light of the slowly dimming sunlamp. Her front two teeth were set a little crooked and left a tiny gap. Penrose had a tooth gap too, though hers was much larger. The brood’s teeth were considered a matter of importance, Technicians had to fend for themselves unless there was a problem that required the already overstretched attention of the Meditechs.

“Come back with me. Let me show you my world and you can decide if you want to stay.”

“Feelings don’t change the Forbiddance. I can’t come back with you—”

Wisteria gripped both of Iowa’s hands, “But you can! After you brought me back I went into the Lattice and read the histories. It’s an old tradition, it hasn’t been done since Python fell, but the scripture
says that a Catechist Mender can choose a Technician to be their companion and aid them in their work. You can come help me while you study for the away mission. Please, give me a chance.”

Iowa studied her carefully Wisteria glowed softly with hope in the light of the dying sunlamp, “Let’s go.” Said Iowa and they went.

4. The Hearth.

They went together, walking quickly and quietly this time, through the halls. Wisteria tried her hand at being coquettish and found she had a talent for it. She slipped the tin out of her pocket, dipped her finger into the honey and then slipped it into Iowa’s mouth and then her own. The giddiness hit halfway down the companionway. Wisteria and Iowa shushed each other as they laughed as quietly as they could at the madness of what they were doing. With fingers linked together they slipped across the empty square before the lifts. The doors with their perfect angles sketched in shining gold slipped open before them. They fell together into the cylinder of stars. Iowa felt the breath leave her as in her moment of expanded perception the entire universe seemed to try to draw her out and envelope her.

She could feel the distance and the distant motion of the stars. It was a dizzying and feverish feeling of something like a hot warmth. Wisteria pulled her into an embrace and she was everything for a moment.

The lift doors opened again into the Habitat Technicians’s entrance and half-stumbled their way to her door. Iowa watched Wisteria enter her door code and half whisper a phrase in what sounded like the same old talk that the Catechist used after his lesson at meal times. The door slid open and the strange gold light like she had never seen before washed over her again. It was tripping and tumbling into honey. They stepped into it now.

The room was small and circular. Along one side was a mirror as tall as Wisteria divided into three sections in order to follow the curve of the wall, next to it was a desk that followed suit. On the desk sat a tiny hydroponics system with a flowering plant like the one below and another lamp with a crystal sphere as its light. On the other wall there was a depression that created an alcove into which was set
Wisteria’s bed, the synth-silk sheets were shiny in the amber light. The amber light was being produced by a series of glass spheres hanging from the ceiling. There was one large one surrounded by two smaller ones hanging in an orbit path like an orrery stilled halfway through its motion. It reminded Iowa of the symbol on the entrance to Astrophysics where Penrose worked.

Iowa thought for a moment of Penrose standing in that amber light, shining in it. Iowa could imagine her smile at how silly and impractical that light fixture was. Penrose had always been good at telling what was necessary and scoffed at pointlessness. She believed things should be done with intention and certainty. That thought made Iowa dizzy so she sat down.

Wisteria went over next to the bed and opened a closet door so flush to the wall it was invisible at first glance. Iowa realized there were two other such doors. She would learn one opened to a green tiled bathroom in which was a shower that Wisteria had all to herself. The other opened into the rest of her carpal’s common area. Iowa remembered some of this from what she had been taught by the catechist who came to visit her kin-group when she was younger but Wisteria filled in the gaps happily when asked.

There were four or five or seeds or seeding groups to a carpal. Children were produced by seed pairs chosen and bonded based on a system of divine rituals passed down from the ancients and administered by the clergy. A seeding pair underwent the bonding ceremony and then was expected to sire children. The children were then raised until it was time to finish their education at which point the seed pair was either dissolved and the members re-bonded elsewhere or continued until the pair passed on. Iowa learned that for those who went into the clergy or the histories Iowa learned there was a reprieve of sorts while they studied further.

Wisteria was one such student, yet Unbonded while her fellows were Bonded or on the way to their second Binding. Iowa watched as Wisteria slipped out of her coveralls. She was so pallid in the dim honey light, her bones cut out in sharp relief. She turned and pulled Iowa into bed. It was so soft it all but swallowed her whole. Later on they fell asleep.
Even later Iowa awoke, her head sore and fuzzy. She shook herself awake and rolled over to catch her reflection in the mirror. She looked like a puppet of herself made of shadows cut out of the darkness. With the amber light turned off she realized the walls were translucent panels set over a grid of sunlamps like the one that lit the screen of her console that dimmed throughout the day to a dull cool light that demarcated nighttime. She felt strange, empty and full at the same time. Her mind drifted back and forth trying to make sense of the last few days her roots couldn’t quite get purchase. Her implanted Node buzzed faintly with the hour, sending a stimulation signal to her brain. Penrose and Loam had set it to respond to elevated cortisol levels. It had kept her from dissociating and helped her stim while working but mostly it kept track of time.

Wisteria whispered half asleep, “Tomorrow I’ll show you the Lattice. You’ll love it. It’s the most amazing thing in the world. It holds the histories.”

Iowa nodded, the quiet fear rising slowly in her at the realization of their heresy. But there was a thrill to it too. She wanted to see the histories desperately. More than anything she wanted to know. As she fell asleep her dreams held forbidden knowledge in them like handfuls of soft round berries before the deeper dreams took her to endless subterranean depths darker than blue.

5. The Lattice.

When she awoke to the almost blinding brightness of the sun lamp sunrise protocol she found Wisteria settling down next to her with a plate of food sitting on the lap of her soft pink synth-silk robe. It was a bunch of thin slices of vegetables fried on a pan and what Iowa recognized from reference images as a fried egg, likely from a chicken. The food smelled seasoned, salted and peppered, but not blitz-spiced like the protein blend in the Ring’s cafeteria. The vegetables were light and crisp. Wisteria explained that they were never frozen or harvested en masse like those in the Rings but were grown here in hydroponic gardens and harvested in ceremonies meant to mimic those in the world to come.

The egg belonged to the chickens the Carpal kept. They were live animals born of their own clone lines for religious use and education as well as food.
The egg was gilded and transcendent with crispy brown edges and a molten star of runny yolk. When Iowa split it with her fork it flowed out like golden light. Iowa reveled in it. It’s flavor was rich, warm and gorgeously salty. Like everything wonderful in life it was cooked in pure fat. *Nicki would love this!* Iowa thought with frustration. *Everyone should eat like this.*

Wisteria’s smile widened “Come with me. It’s time you see the Lattice. Morning Commune is over and everyone is working or studying. They think I’m sick. I’m always sick. They say it is the one defect in my pedigree. So I will have the day to myself to show you the Lattice. It is the most holy place and the most beautiful thing in the world.”

Cautiously Iowa followed Wisteria out into the Carpals communal space. Hers was several rooms on the outside of a circular hall with a cylindrical chamber in the middle. The central chamber, no larger than ten feet in diameter but was taller than the rooms on the other side of the hall. This meant that it held up the ceiling of the combination hallway-common space like the stalk of a mushroom with its cap being the ceiling sloping down to the doors on the other side.

Wisteria looked both ways and with almost exaggerated care slipped between the pits lined with couches and coffee tables built into the floor around her to the chamber in the middle. Wisteria opened a door that revealed a shiny black panel set into the wall. Iowa watched Wisteria type in the same code as last night. Almost without thinking she memorized it and tucked it away. Then Wisteria leaned forward and whispered a syllable.

“What is that?”

“An ideogram taken from the sacred texts. All of us who work on the Lattice have one. It’s how we get into where we need to be.”

The door slid open with a quiet hiss to reveal darkness further on. They stepped into the void. As the door slid shut the universe opened up.

Iowa thought for an instant that she was seeing the stars. The darkness seemed to go on endlessly and it was full of infinite points of light. But the lights were not scattered in clouds or great spirals. They were instead arranged in an infinite grid of identical orange lights stretching in all directions.
“The lights will form the past” Wisteria said as if reading from a book “just as all is composed of star stuff.”

“I see.” Said Iowa still trying to gain her balance. She felt like any moment she might spiral out into the infinite as she had often dreamed. But it would be an ordered infinite this time. It would be free of entropy and chaos and with it warmth and energy. A universe of cold darkness and cold light. “How much is there?”

Wisteria shrugged “Most theories say near infinite but we can only gaze on what of the texts are left to us by the ancients. Each has a file number and name. These alphanumerics are put into the system and it reveals what we may see.”

“Can we look at those off the list? Since we’re already breaking the rules. I mean, it’s all forbidden knowledge for me,” said Iowa cheekily.

Wisteria looked at her like the world might give way beneath their feet, “We haven’t broken the Forbiddance, we found a different way to honor it, that is part of worship. What you have just said is not just blasphemy, it is evil, Iowa. Remember Python.”

Iowa’s brow creased into a frown “Python was destroyed in an accident. A system failure... or something.” Iowa struggled for the far away lesson but all that came was the memory. A silver flower unraveling petals into the void until the fire inside devoured itself. “What do you mean?”

“Their names and their files are forbidden by the System but the story is told again and again, it's our most important parable, you must have heard it.”

Iowa shrugged, “Tell me again.”

Wisteria’s tone went cold “The people of the Python were foolish and impatient. They wandered where they shouldn’t have gone. The system is a circle and it turns like the great rings turn. Texts pass in and out of the forbearance and it would have come to their answers eventually but they were greedy and lazy so they broke the compact of the system and went digging for forbidden knowledge —”

“So god smote them out of the cosmos?”
“Yes. Well, no. They shouldn't have broken the compact but that was by no means their only offense. They had grown complacent in their search for the world to come and neglectful in their duties. Then they broke the cardinal forbiddence and sought forbidden knowledge,” as she spoke Iowa could hear the holy text talking instead “God punished them with their cataclysm. Their neglected engine coils overheated, created a hull rupture, and the divine vessel tore itself apart. We will not repeat their mistakes.” Her tone softened “Besides, there are more than enough sanctioned entries in the Histories to keep you busy for twenty lifetimes. Sometimes I ache because I know I cannot read all of them.”

Iowa understood that at least though it seemed odd to her for Wisteria to pick and choose what parts she believed and feared.

Wisteria broke Iowa’s reverie “Let me show you one of my favorites” she said. Then she chanted out another string of alphanumerics. The nexus of lights rippled and then unraveled. A billion motes of light ran together into a great flood of stars and in an instant enveloped them and unfolded all time and space to them. Wisteria kept her eyes closed and kept chanting quietly. There was a flash. Iowa was blinded for a moment and her sight took it’s time coming back. There was a sudden rush of sound in the darkness. It was a great booming crash, a roar at the edge of perception. Her body shook with the sound, the Node sent a resonant signal into her brain to calm her nerves but it couldn’t keep her heart from beating at twice its normal rate. The sound was rhythmic and yet inconstant. It stirred something deep and ancient in the farthest down darkest waters of her soul. As her eyes cleared she saw it. It was the sea.

She wept. Even as she wept she knew it wasn’t real. The thing that had stirred within her new and sunk deeper still to sulk in the primordial depths of her mind, angry at being deceived.

Nothing visual gave it away, it looked as real as anything she had ever seen. It was a perfect facsimile. She could even smell something like salt. But it wasn’t true. It was blue but it was a blue she had a name for, a blue she had seen in indicator lights and sunlamps before. A blue labeled 0#: 97/141/212. Even so it was in all senses a miracle. Iowa understood now, this was the divine gift whose holiness Wisteria couldn’t shake off even as she broke their most sacred laws.
She tried to summon up words, even thoughts, but the sound of the surf was all she could think. They stood at the top of a flinty sea-side cliff slowly rolling down toward the billowing sea. The rocks around her gleamed with the vivid green of grasses and mosses which slowly faded to the speckled grey of the pebble beach below. Every rock, every piece of wet rotted wood, was covered in the tiny razorsharp shells of barnacles. Their abandoned husks slowly calcified to white stone. The largest of them were the size of her thumb, the smallest were scarcely larger than a grain of sand.

The sea itself defied description, even imagination. Had she not read every single entry about the ocean in the databanks she could get the access codes to, she would not have recognized it. It was vast, not like the cold infinity of space, but like a living thing. It was evermoving, everchanging, she could feel the rumble of its breath. The sunlight broke and scattered itself like golden scales across the ridges of its back. As it grew closer to the pebble shore it was the green of old glass bottles as it went further out it became the living reflection of the blue vault that was the sky stretching endlessly above them. Some part of her knew that none of this was real, that they were still in that ten foot diameter tube of metal at the center of the ship but even the illusion of so much space and so much blue and green was staggering.

Iowa sat down and to her shock she sat on a piece of rubble. She looked behind her and saw that standing here on the cliff there was a great ruined building. It once had great white walls, pillars, and even a glass dome which now jutted half buried out of the top of the hill above her. Wisteria was leaning against one such pillar grinning at Iowa. “There was a city here once,” she said “long ago.”

“What makes it special? Why did the ancients decide to show us this?”

“That’s part of the job of the Catechist,” Wisteria said as if it was an answer, “We are supposed to interpret the sacred signs. The usual interpretation here is a reminder of the ephemerality of things.” She gestured behind her at the ruin, “whatever the reason this is one of our most holy sites in the Lattice.”

Iowa wasn’t sure. For her the only thing that seemed in any way sacred about the building was its proximity to the sea. But then again, maybe that was enough.

“There’s more to see. Much more. Many lifetime’s worth if you would like to see it.” At Wisteria’s command the scene around them dissolved into the nexus of lights. Iowa almost screamed as
the ground fell away beneath her but quickly reoriented. The piece of rubble she was sitting on turned out to be a small platform that had raised itself from an open panel on the floor. As soon as she stood it descended into the floor again. Iowa steadied herself.

Wisteria issued another command to the Lattice and a few of the points of light manifested themselves into a hologram stack of tablets hovering around chest height. She thumbed through the stack, dismissing some of them with a flick of the wrist as she went. For each one she dismissed another one joined the bottom of the stack. “The system works on either keywords or reference numbers. Part of the aesthetic discipline is to search numbers one at a time. Take the easy way and you risk gazing on the sinful.” She nodded approvingly at one of the tablets and with another command in god-talk she placed a hand on it as one might swear on a bible. The tablet holograms scattered into light and the strange ordered cosmos unraveled and reformed. Iowa remembered to close her eyes right before the scene solidified in order to maintain her sense of cohesion. When her eyes opened she was standing in a space that was at once familiar and unfamiliar.

It was a large room on a ship, not dissimilar to the one at the bottom of the companionways before the lifts where the Technicians waited to descend to mealtimes or where she had boarded the lift to come to the Core. Instead of a long narrow space that followed the curve of the ring it was more like a town square, a large open space that was connected by four corridors and four lifts. Above her was a glass dome through which she could see the stars. It occurred to her they were probably different stars than the stars she saw now. It was a funny thing how many of the stars would die before their light reached you. She wondered how many above her in this memory were still burning. A tone rang over the p.a. system and doors at the end of the corridors opened. A flood of people began to rush into the open space accompanied by the clamour of their voices, talking and laughing as they made their way to other corridors or stood in line at the lifts. They looked so real she swore she could almost feel their body heat as they brushed past her.

They were a peculiar mix, she had never seen people from so many different designations in the same place. Some were dressed in the robes like those she had seen the clergy wear when their holograms
addressed the masses at mealtimes; but they were a little more elaborate, the hems reached all the way to the floor and instead of wearing the symbol of the divine vessel embossed on their chest or sewn into their sleeves, they wore the golden ring as pendants around their neck on golden chains. Others were wearing slate grey and carrying the trunsions of the Prefecture but the uniforms themselves were completely different. Instead of wearing the usual grey flight suit and mask with the blacked out visor they were dressed in a habet similar to the clergy but with slits in the arms and legs to allow for a greater range of motion. They kept mostly to themselves, bowing at senior clergymen when they passed.

There were a few Technicians here and there too. Mostly reptosapiens with chitinous patches of scales and transparent secondary eyelids blinking a moment after their primary ones. They wore jumpsuits and coveralls not unlike her own but she could see that they were a sandy brown instead of the dark blue on the Attis. Their clone-line and unit numbers were written across their shoulders. A reptosapian child, maybe fourteen years old at the oldest, with dark skin and rust colored scales walked past her trailing after a group of older Technicians. Something in her walk brought Nicki to mind.

“Can we talk to them?” Iowa asked Wisteria almost under her breath.

“Yes. Well most of them and only up to a point. They’re not really people, they’re just models. They can only answer with what information is in the file. In fact, they can only answer with the part of that information the person the model represents would have known. Some of them aren’t actually, well, real. The Lattice fills in gaps where necessary and does a pretty good job creating plausible stand-ins when there’s information lacking by compiling other data in the file.”

Iowa watched the group of Technicians with the young child step aside and let a clergyman take the lift they were waiting for. The motion was automatic. She was troubled by the thought that they might not be real. Or if they were, they were only a fragment of themselves, their thoughts omitted by time. She wondered if they would know anything more than their names. Then she realized. No, not even their names. Their clone-lines and numbers. Their real names that they used with one another. Names their lovers or their children or their friends called them. Those names were lost too.
She looked down at the floor. The people of Python used this device for something more, looked at things they weren’t supposed to see and for that God punished them for their neglect and their transgressions with the accident. The accident that left the Attis alone. What could have been worth that risk? There had to be more to it. She felt a strange new hunger begin to gnaw at her but she ignored it for now.

Wisteria came up behind her and wrapped her arms around Iowa’s waist, “We should probably go. The catechism ends soon and there will be a bunch of weavers and archivists in here all afternoon.” Iowa nodded and they slipped out of the door.

They spent the day together. Wisteria regaled Iowa with stories of her early life. It was a strange one, modeled after the lives of the ancients that the world to come would emulate.

“You were raised by the breeding pair, your parents, by themselves?” she had heard of such a thing among animals and in the catechisms of course but it was still bizarre.

“Well, the rest of the Carpel helped of course but yes my mother and father raised me and educated me in the faith until I was ready to apprentice. My mother was an Archivist, my father a Prefect. They hoped I would have been bonded by now.”

“Do you want to be?”

Wisteria looked away, “I will have to be, eventually. I have made peace with it.” She looked at Iowa “God is supposed to choose your partner and the system is supposed to reveal them to you. In the elder days, before the system, they used to rely on fate alone.”

Iowa reflected that Wisteria had only half answered her question. That seemed to be a habit of hers. As is the honey by the look of things, a part of her felt worry twist in her gut but the instinct was too slow. Wisteria painted her lips with the honey and kissed Iowa. As the sunlamp panels in the walls faded to twilight, Iowa sank into the amber.

6. Return.
The next day, Iowa insisted that she had to leave the Core and return to the Ring, to her work, and after some delicate conversation Wisteria relented.

“Promise me you will return to me again.”

“I said I would.”

“You can use the Lattice to study for your mission —”

“I will. Thank you.”

“I’m sorry to push,” Wisteria avoided Iowa’s gaze, “I just want you to come back.”

“I will but I have a life out there too, Wisteria.” I need them to be ready to live without me, she thought but didn’t say. I need to know Nicki will be alright.

Wisteria kissed her then sent her on her way when they were sure they wouldn’t be discovered.

Iowa descended back to the ring, the lift carrying her through the stars who watched her silently as she returned to the grey world below. She felt a strange weight in her pocket and reached in to find the little tin full of the honey colored jell. She looked down at the little tin you are full of surprises. It had a symbol, a god-talk letter written on it. She would learn later on that it was a rough equivalent for the ‘W’ sound. She marveled quietly at the woman’s light fingers, she wondered if pick-pocketing was something Wisteria made a habit of. She put the little piece of the amber feeling back into her pocket and made her way along the path that the plaintive beeping of her communicator indicated was her next assignment.

She received a demerit from work for her lateness but it was struck from her file shortly after. She wondered faintly how Wisteria had done that but not before the flood of the everyday dragged her back into its current. For another day or two life proceeded much as it had before but she could feel the edges of the world harsh and sharp against her mind. Each day she awoke in the morning to feel the itching and burning of her skin and the soreness of her spasming gills begging for moisture growing sharper and sharper. As she got older it seemed the reprieve the chambers offered grew shorter and shorter. Every day she would go to work, check nitrogen levels, adjust temperatures, introduce new species, do water changes, enter data then mealtime, exercise and study. Again and again.
Penrose was hard at work back at Astrophysics and Loam’s department was under review. She listened to them complain about Prefects poking their way around the lab or the rush that was being put on projects with a detachment she didn’t quite have words for. Iowa couldn’t stop her eyes drifting to those around her at the techs in line for food or sitting down at the neighboring tables. She lingered on the cracked skin at the corners of their mouths, the dulling of the color on their fingers as the skin began to flake away, or the red angry patches of rash and heat-burn exploding in slow motion across their shoulders. The endless quiet corrision as parts of them dried up and sloughed off. She looked down at her own fingers and saw the gossamer flakes of her own skin beginning to unwind themself. She felt as if she could pull on the little tab and unravel herself into nothing. The itching was quiet for now but she knew that in a few days she would have to stop herself from trying to dig out of her own skin. She tried to take a breath to steady herself and felt it catch halfway to her chest. She was so tired of the slow drowning. She was so tired of all of the quiet suffering. She wanted to scream but she didn’t. It felt like a hand gripping her larynx. She wasn’t sure she could scream if she tried.

Penrose’s brow furrowed with a mix of confusion and concern, “Love, are you okay?”

Iowa didn’t answer.

Her Node sent a stim signal as the cortisol began to rise in her blood. It soothed her some but this wasn’t the sharpness of overstimulation. This wasn’t sharp panic, it was heavy and dull and it didn’t stop. She had carried it around for a long time but for a moment she had seen a world whose denizens didn’t carry that weight. She imagined a world without it and now it crushed her.

She didn’t stop talking to her friends but she didn’t start conversations either, she did her work as she was expected and continued her studies though less hungrily. When she got back to her domicile at night she slipped a finger into the honey tin and slipped a little in her mouth and she sunk into the hum of the engines again and she forgot for a while. The honey helped, the Node helped too, but even then she still found herself wandering the companionway, her studying abandoned. She didn’t know what she was looking for but when on the fourth day since she left the lift doors opened again and Wisteria, all full of
the vivid light of secrecy, offered to bring her back, Iowa went with her. She didn’t tell anyone where she was going.

7. The Party.

When Iowa awoke, before the Node kicked in and her brain chemistry balanced, the world was a congealed mess of sensations. The first she noticed was the pounding in her head, which felt like it was full of a material she couldn’t quite identify that split the difference between cotton and steel wool. The second was the nauseating texture of the synth-silk, which felt cool, slick and dry and caught on the sandpaper that was her own itching skin. She would need to go under soon or even the Node couldn’t keep the pain at bay. She felt her body beginning to recoil from the texture, rejecting it with tremors. She was tempted to forgo using the Node and let the tremors come and stim naturally and clear her head. The Node was helpful but after a while she began to feel strained and touchy. It was like going without sleep or without the chambers. But the third sensations stopped her. There were voices in the room. She wasn’t alone. It wouldn’t be a good idea to let strangers see her stim, not here in the core. She activated the Node and it sent a stimulation signal to her brain. She sat up, her legs still tangled and half buried in the synth-silk of the bedspread.

Three people stood at the door to the hall which was open. Iowa felt a low mix of panic and confusion rise in her chest as they stared at her and chatted quietly to one another. She should have been furious or terrified but the strangeness of the whole situation and the alien environment dulled all of her feelings to an uncertainty. She didn’t know the rules here, they did, and she didn’t quite remember coming here or how long she’d been asleep. *How much of that weird honey did I take?*

Her three observers were grinning and whispering among themselves. Two of them were women and one was a man. The smaller of the two women, a blonde woman with sharp features and a peaky complexion, giggled and hid her mouth with her hand as the taller woman, with auburn hair and a forest of freckles, whispered something in her ear. The man, whose dark hair was slicked back, kept his gaze fixed on Iowa. He was young, twenty at the oldest though it was hard to tell. All the people here were
kind of shiny. Their hair was glossy and their skin pink and pale and scrubbed to a shine. The young man was dressed in robes like Wisteria’s, identifying him as a catechist-archivist. The other two wore white shifts with red cord tied like belts around their waists. Iowa cleared her throat. “I’m Iowa…” she said, still a little uncertain.

“We know,” said the smaller woman matter of factly.

“We’re Wisteria’s friends” said the man, “I’m Flax, that’s Lily,” indicating the smaller woman, “and she’s Cedar,” gesturing to the taller. “I’m sorry for staring, none of us have ever met a Technician before.”

“It’s fine,” said Iowa, not sure she meant it. “It’s nice to meet you.”

Cedar leaned over and whispered to Lily again, Iowa was listening for it now and caught at the edge of hearing “she doesn’t seem that different.”

Iowa nodded and ignored Flax as he went on and strained to hear Lily’s reply, “Maybe she’s only a little defective” the rest of the words disappeared behind Flax’s voice and the pounding of Iowa’s blood in her ears. She told them. The words were cold and hard like sheets of ice in her mind. She fucking told them. She tried not to let the anger show in her face.

“Wisteria mentioned you, I think” Iowa said, trying to keep her voice level.

Cedar looked surprised “Really? What did she say?”

Iowa feigned an attempt at remembering. “She said that she and Flax worked together and”—she took a stab in the dark—“that one of your bonding ceremonies was coming up.”

Lily scoffed in mock offence “One? Both of us are getting bonded, silly,” she said picking up the ends of her red cord belt by means of explanation.

“You’re being bonded?” Asked Iowa.

Cedar rolled her eyes and then shot a look of amused sarcasm to Lily, “Not to one another. We’re both women. I don’t know if you could tell.”

“I could.”
The three laughed. Iowa said nothing, she wasn’t really listening. The static roar of fear and anger was growing louder in her mind. *She told them about us.* She extricated herself from the conversation with a few curt but courteous words and dressed. The three spectators didn’t turn away, if anything they watched her with greater interest. She did her best to ignore them and made for the hallway. The common space was empty. During the day it was full of a soft golden and blue light. Before she could take another step, Wisteria appeared, rushing toward her while clasping a formal-looking mantel overtop of her Archivist’s robes. Wisteria’s nervous smile faded to a look of concern when she registered Iowa’s expression. The words hissed through Iowa’s teeth, she did her best to still the shaking in her voice “You told them.” It wasn’t a question.

Wisteria stammered, shocked at Iowa’s vehemence.

“Do you have any idea what you’ve done?!”

Wisteria found her words, “I only told my friends!”

Iowa almost laughed at the absolute thoughtlessness of it, “And whom will they tell?”

“I made them promise that they would tell no one. I’m sorry. Once they had confirmed your transfer I couldn’t help it. I was just excited you would be here with me. They’re my friends, Iowa.”

*My transfer?* She remembered talking about it but she hadn’t said yes, had she? How long had she been out?

“This was a mistake. I’m done.” Iowa went to walk past her. She was going home. If Wisteria really had transferred her here so she could transfer her back, *or throw me to the Prefects for all I care.*

Wisteria scrambled, “Wait, Iowa —”

Iowa ignored her. She wanted to scream at her, to smash the light panels on the wall, to collapse to the floor and weep but there would be time for all that later. For now she had to warn the kin. They had dealt with inspection before, Prefects could be bought off with goods or favors. They’d throw their weight around and make life hell for a month or two but the right people could be kept in the right rooms and off the reports. But there was always the risk, if the report was actually made, the Prefects would revoke their
chamber privileges and wait for them to shrivel and die and then do an overhaul of the program. Their clonelines would be ended and their kin-groups disbanded. No one would remember them.

Wisteria blocked Iowa’s way, “Please. Please! Don’t leave!” She grabbed Iowa’s wrist, her nails digging into Iowa’s skin.

As Iowa turned to face her, she felt the ice in her own voice. “Let go of me.”

Wisteria did. “I’m sorry. Just, please listen to me. They won’t tell anyone, they are my friends, Iowa. Besides, even if they did it would be my word against theirs and mine carries more weight with the Patriarch and Matriarch, believe me. Your friends are safe. You are safe.”

Iowa felt the red hot anger and panic surging through her body looking for a crack in the armor of her will, a place to slip out and burst into flame on contact with the air. But another colder part told her to keep silent. Sometimes the safest place to swim was underneath the shark. If she wanted to keep her family safe, she would need Wisteria. And you love her said another part reproachfully. She wasn’t sure she agreed. She didn’t know how she felt. Sometimes Wisteria made her feel like she was full of light but sometimes it felt more like she was drowning in it.

“I’m sorry I scared you,” said Wisteria in a conciliatory tone. “I’m sure my friends were rude and nosey, they’re a bit younger than we are. I’ll make it up to you.”

“What are you talking about?”

“Now that you’re here, I can recommend you for the away mission. Today is a feast day and that means a party. If you come to the party and turn on the charm as you’re wont to do then the mission is yours.”

“What about the test?”

Wisteria waved her hand dismissively “The initial test is a formality, a screening process, my recommendation will handle that. You won’t need to take the final pre-launch until you’ve completed your training.”

“Just like that, huh? I’ve been studying for that test for months.”
Wisteria laced her fingers into Iowa’s “You deserve this mission if it's what you want. Selfishly I almost want you to go home. I don’t want to lose you. I love you, Iowa. If you would be happier leaving, go ahead but think about it.”

The part of her that was still feeling righteous wanted to tell Wisteria to fuck off and damn the mission, but in her heart she still felt the stirring toward the stars. She felt like she was being pulled apart. Her head was swimming. She bit her lip, the indecision like a hot poker through her stomach. Wisteria’s eyes had that look again. *Her ignorance is growing costly*, Iowa thought with a certainty so cold it shocked her. Iowa was still angry, but she relented; it was a mistake and Wisteria had apologized. The risk was there but they hadn’t been exposed yet and if she kept Wisteria happy maybe they wouldn’t be.

“Fine.” She said, “You have to swear to me your friends will keep quiet.”

“I swear.”

“Okay, thank you. And thank you for recommending me for the mission.”

Wisteria beamed, relief coming off her like a wave, “Come on, we should get ready!”

Wisteria dismissed her friends and pulled Iowa into her room. Iowa waited with confusion as Wisteria opened the closet. The hatch they had crawled through on their first secret return to the core had been opened and a set of clothes had been folded neatly and deposited on a shelf while they were out. Wisteria gleefully unfolded them and handed them to Iowa. It was a jumpsuit in the same cut as her usual coveralls but in black and made of synth silk, with the geometric symbol of the clergy embossed on the left breast pocket. Wisteria watched as Iowa changed. When she was dressed Wisteria pulled out a little tin and began to dab little bits of scent around Iowa’s neck. Iowa’s brow furrowed at this dress-up but said nothing. They set off.

Iowa did her best not to itch as they walked, the material making her feel like she might erode away at any moment.

They moved through the Carpal’s common space into one of the side chambers. It was roughly the shape of a bowl with terraced levels connected by stairwells. As the doors slid open the cacophony almost knocked the still dazed Iowa off of her feet. The room was small and packed to bursting with
Brood members, clergy and archivists all dressed in their most elaborate finery. They floated hither and thither in amoeba-like groups, absorbing and expelling one another, extracting pleasure and novelty before spitting them out. Gold leaf and brocade glittered under the amber lights and peals of laughter mixed with gabbling in god-talk.

Iowa was ushered forward toward the center of the room and Wisteria shook hands and called out little empty phrases to friends and colleagues. Iowa could feel the many bleary eyes of the crowd begin to settle on her. Wisteria could feel it too and positively bloomed under all the attention. But she didn’t let it slow her, Wisteria was a woman on a mission.

The crowd briefly parted and Iowa found that they were squeezing through to the center of a large circle of people. Having been swallowed by this cell Iowa saw at the center were three older people holding court, a woman and two men. The woman was in her early fifties and absolutely skeletal, and had an expression which, at rest, epitomized severe aloofness. When her gaze alighted on Iowa, however, her natural severity shifted to an expression of such cold disdain Iowa was surprised her breath didn’t crystalize. She wore a set of white robes that looked like Wisteria’s but with a higher collar and somehow even more geometric symbols embroidered into it. The clergyman sitting to the woman’s right looked at Iowa with the slightly affronted, but nevertheless hungry, curiosity of someone encountering a new menu item at one’s regular lunchtime spot.

Iowa was taken aback, there was something familiar about him. Then it struck her, his face had begun to sag with age and his robes were considerably more elaborate, but there was no question, he was the clergyman from the old hologram sermons at mealtimes. They must have taken his image and then programmed it to deliver the sermon they prepared. It was a truly alien experience to see the hologram, a construct who in its flickering light had embodied religion, manifested in flesh before her. The third in the group didn’t acknowledge her presence but continued to watch the crowd mill about with the look of a tailor sizing up potential clients. He was tall and angular to the point of sharpness. He had a long and sour face and thinning grey hair. He was wearing much more sober robes than his companions and his glass of amber wine remained mostly full while the others sat with three or four empty ones around them.
Wisteria gave the three elders a bow in turn, “Broodmother, Parch, Lineator, it is good to see you. You honor me on this feasting day.”

“Happy feast day” said the Broodmother, before indicating the clergyman from the hologram who Wisteria had identified as the Parch, “Reed and I were just talking about your commentary on the 22nd tablet. It was very illuminating.”

“Thank you.” Said Wisteria with a smile and another shallow bow.

The Broodmother’s eyes alighted on Iowa, “What is this?” she asked, gesturing vaguely in Iowa’s direction.

Wisteria nodded and motioned Iowa forward, “This is my Journeyman, Iowa.”

The Broodmother’s brow furrowed and when she spoke again each word brought frost in its wake, “The rite of the Journeyman Companion has not been done in many years, this Technician must be of some competency.”

Wisteria nodded, “She is the one I recommended for the Away mission.”

“Oh!” said the Parch excited at the mention of the mission, “so you are to be on the away mission, well I—”

The thin man interrupted him with a single word question “She?” he asked.

Iowa froze as his dark eyes settled on her and began to pick her apart.

Wisteria, either oblivious to or ignoring the threat in the man’s tone, introduced him “This is Eldar, he is the Lineator for your ring. He is a clergyman, a Prefect and a scientist. He’s in charge of administering the clone lines.”

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9 Broodmothers are selected via an arcane process of sacred numerology and personality examinations as the spiritual leader of the Carpal. They are in charge of setting the standards for raising children and leading carpals in the Bonding Ceremony. Broodmothers have a consort in the form of the Parch who they are bonded to for life, unlike the other breeders who will be reassigned to other partners if they remain able to produce children.

10 The Parch is the male counterpart of the Broodmother. The Parch is selected by the system via sacred numerology as the head of the Carpal and is considered one of the ‘three elders.’ Parchs are largely ceremonial figureheads. While nominally he has the final say on any decisions most of their lives are automated so there really aren’t any decisions to be made. Lineators and Broodmothers make most of the important decisions.

11 Lineator (lin-ee-ay-tor): The Lineator is the clergyman in charge of the clone lines for a given sector. The Lineator is expected to maintain the ‘health’ (utility) of the population and sets the agendas for new cloning periods. The Lineator also signs off on the creation of new lines or the termination of extant ones.
As Wisteria spoke Eldar had pulled out a black tablet communicator and was scrolling through files. He interrupted Wisteria half way through a sentence “No,” he said simply, “Not she.”

Iowa felt a mix of terror and anger begin to rise like bile in her throat. She hadn’t even thought to be afraid of this. Tears bit angrily at the corners of her eyes.

The circle went silent as Eldar looked up from the communicator, “You are aware of your karyotype, yes?”

Iowa nodded, “Of course, sir,” she said trying to keep the shake of anger and fear out of her voice.

“Your karyotype is?”

_I am a woman._

Eldar bared his teeth in something pretending to be a patient smile and then repeated his question as if he was speaking to an ill behaved but misguided child.

“Xxy.’ Iowa said without averting her gaze. She kept her eyes on him. She didn’t meet his gaze, she rarely made eye contact but she had found gazing at the center of people’s brow was good enough to fool most people into thinking you were making eye contact. She’d like to say it was just defiance that kept her eyes on him but the truth was part of her was afraid. She didn’t want to let him out of her sight. He was dangerous.

“Ah, correct. So the designation is male then?” He asked with a mirthless little laugh.

Iowa looked to Wisteria. Wisteria stared at the floor and said nothing.

Iowa felt the grip of shame close around her throat. Her eyes frantically scanned the rest of the room but found nothing to fix on and fell back to him. He seemed to take up the entire world. He wasn’t just a scientist, he was all of the scientists, and the Prefecture, and everything she had ever been afraid of her entire life. He was every bit of hate she had ever seen, she had ever felt, all seething behind those dark joking eyes. They were laughing at the delusional Technician.

Hatred and terror and shame clawed at her stomach. Everyone was watching now. She wanted to scream. The way they watched her; they picked her open and played around with her innards. But it was
his eyes she couldn’t seem to escape. She was a butterfly pinned to the board alive and he was watching her die with neither glee nor malice. He was just certain. He knew, she didn’t. Suddenly the shame turned to white fire.

“Yes, here it is. Switchboard Iowa, designation Male.” He said matter of factly.

“I am a woman,” said Iowa just as matter of factly. Iowa thought she could see the thing that was wearing the human suit called ‘Lineator Eldar’ squirm at her sudden defiance.

“Come again?”

“I am a woman, sir.” She said again.

“No.” he said, “Your karyotype is xxy. You are male —”

“I’m sure I wouldn’t know, sir,” She caught him with her reply as he inhaled to continue speaking. It wasn’t an interruption but it was just close enough to throw him off balance, “but I am a woman.”

His gaze bore into her. The joking was gone. She could feel him searching for a crack in her affect. He was searching for somewhere to slip in, to open the airlock and watch her unravel into the vacuum of nothingness. She didn’t flinch. He wouldn’t find it.

He smiled that facsimile of a smile and turned to his companions. “Ah, well. A woman indeed. How novel. I suppose you must have picked that word up from scripture. I suppose the difference is academic. Technicians cannot reproduce in any case, they can only be cloned.” He stood. “I look forward to your Away Mission.” He meant her failure and her death.

“So do I,” she said and she meant it. The way they spoke about the mission put her off balance. They spoke like it was already a sure thing, Wisteria had implied she could guarantee my spot and all they had needed was her word? Iowa’s head was spinning. The shame and fear had swelled back up as soon when the Lineator’s gaze moved on and the defiance waned. Her legs almost gave out as the noise and the heat of the party came over her like a wave. She turned and made her excuses before moving as quickly and as stoically as she could for the door.
Once outside she collapsed against the wall of the hallway and tried to steady her breathing. Every inhale brought a cloud of sharp hot needles. Tears forced themselves from her eyes. Her implant buzzed stim signal after stim signal into her brain but it was no good. The signals made her feel unsteady on her feet.

“Iowa?” Wisteria had emerged from the party. Her voice held a strange tenor. Was it worry? Iowa couldn’t tell. “Iowa. Are you alright? I’m sorry about that.”

“You didn’t say anything.”

“I...didn’t know what to say.”

Iowa looked away from Wisteria, the treacherous tears still running down her face.

“Iowa, my dear,” Wisteria stepped forward and pulled Iowa into an embrace, “I’m sorry dear. Come now, let’s not cry. Who cares what he thinks? He’s just a silly old man.”

Iowa’s brain was hot and feverish with confusion. She could feel Wisteria pushing, Wisteria wanted her to cry, wanted to hold her, wanted her to love her. The words came almost unbidden to her lips, “I love you.” She said it without thinking, without even registering their meaning.

Two voices erupted into a fit of giggles. Wisteria and Iowa both turned to see two girls were watching them. One was Wisteria’s blonde friend, Iowa couldn’t remember her name, the other was a taller dark haired girl Iowa didn’t know. Wisteria seemed to know them both. The tall girl leaned over and whispered to the blonde. Iowa heard a splinter of it, “I didn't know the Unborn could be attracted to people. I thought they were sexless.”

The blonde whispered something back, Iowa couldn’t quite hear it but caught the phrase ‘in heat.’

The tall girl replied, seeming not to care if Iowa could hear her, “It’s probably its maleness showing. One hears they have many perversions that must be kept in check, it is the nature of their being. But I’m sure this one is harmless.”

Wisteria said nothing but stood from where Iowa had crouched on the ground. She avoided their gaze.

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12 The name in the scripture for Technician clones.
The tall girl sneered “Don’t worry, we’ll keep it to ourselves Wisty.” She turned and walked away followed by the blonde who looked apologetically at Wisteria as if she had seen her drop a wine glass.

“I never liked Currant very much,” said Wisteria after they were gone. She looked down at Iowa, “Ignore them, they are children and foolish ones at that. And ignore Eldar too. He and his ancient cronies are bitter, jaded and inflexible. Hell, from what I’ve been told the Lineator was born an old conservative. My father told me he was against the nascent serenade, he worried that the influence of the parents' voices would be confusing for the child despite the obvious benefits.”

Iowa didn’t really register the words, the shock and anger and embarrassment beginning to numb her perceptions, but the last phrase caught her attention. “Nascent Serenade? What’s that?”

Wisteria looked surprised, “The Serenade is an important ritual. The last extant unit of a clone line is meant to record a message like a story of or something to be played for the baby who begins the new line during its development to help it bond with the system feeding it and aid in developing mental acuity. You haven’t heard of it?”

“I haven’t.”

“Oh really? I thought it was common knowledge.”

“Can I see it, uh, or hear it? The message?”

Wisteria gave her a disappointed look, “Technically it’s stored in the Lattice but you’d need Eldar’s authorization to access it, which after that little tiff seems unlikely. Besides unless your file fell into the range set out by the numerology system it would be forbidden anyway. There is knowledge we’re not supposed to have, even about ourselves.”

“Ah, I see.”

At that moment Iowa realized something. On reflection she would conclude that she had known it all along. Wisteria wasn’t cruel, she was thoughtless. She lacked imagination. Suddenly everything made sense. Iowa felt the anger that had wandered aimlessly through her suddenly snap into focus.

Iowa had been born on the outside of the world. She had spent her whole life aware of the reality of her imminent unbeing. This meant that she had been forced to develop an imagination. Iowa had to
invent a way to survive in a world that was designed, with such a profound apathy at every stage, to take her apart. Wisteria hadn’t.

Iowa’s life was and always would be contingent. Wisteria’s life would never be. That’s why Wisteria told her friends about her grand adventure, about her and Iowa’s love affair, about Loam and Penrose without a second thought. Wisteria talked because she didn’t understand that she should stay silent. She probably couldn’t understand, if she wanted to, what it would mean for Iowa if they got caught no matter how many times Iowa explained it.

Wisteria lived a life devoid of need. She was protected, tucked away like a doll in a little box until her preordained purpose would be served. Iowa was a curiosity and because of that Wisteria genuinely believed that she loved Iowa. Because for Wisteria curiosity and an innate desire to possess, were the strongest emotions she had ever felt. For those devoid of need, wanting is everything. Wisteria was intelligent, insightful, knowledgeable and clever and thus deeply bored by a needless life. Iowa was a novelty and had a sense of purpose. That purpose also drew her away from Wisteria, which in a way made it even more novel. The worst part was that Wisteria was not completely devoid of imagination, there was a part of Wisteria that wanted to understand. But she could never reach understanding because she would be too afraid. When she realized everything in her life was built on the suffering of others, that her very existence was immoral, she wouldn’t be able to imagine what a life other than this one would look like and she would cower. She would turn around and walk back into the box. In a number of ways she already had.

Iowa felt the numbness rise to meet the anger at Wisteria’s perennial thoughtlessness and cowardice. It was almost not her fault, really. But underneath the numbness and the disgust at Wisteria, there was something else. Something burning like white hot fire. Their system was hiding a secret; she had felt it in the Lineator’s eyes. She had felt it in every single atom of this place. The way they all turned away, averted their eyes, pretended that they knew all there was to know and that they didn’t see the rest. What they didn’t know, no one needed to know. It was better to forget. No. Iowa thought. I need to know. I will know. There was a secret they had buried so deep in themselves they couldn’t feel it anymore and
right now Iowa wanted to make them feel it. She was going to tear every single secret out of them. A plan began to form in her mind as Wisteria brought her back to her room and the sunlamps began to dim.

8. Leibowitz’s Account.

The halls were dark and silent, the amber safety lights running in strands along the floor flickered on silently as she padded down the halls in her bare feet. The synth-silk of the strange and flimsy garment Wisteria had given her remained scratchy against her skin. She tried to quell the rising panic in her chest. There would be time for fear later, she had to know what they were hiding. She made her way to the entrance. She had memorized the phrase and thought she knew Wisteria’s voice well enough but knowing and performing are two different things. She knew Wisteria was often ill so it had to still work when her voice was hoarse. Well, there was nothing for it, she’d have to try. She leaned down to the little onyx orb and whispered the collection of syllables as lightly and as coldly as she could, doing her best to smooth the rasp from her voice like wrinkles from Wisteria’s synth-satin bedspread. The door slid open with a hiss of Hydraulics. The chamber yawned a darkness into the already dim hall. It was like a cage.

She took a breath to steady herself and stepped with more purpose than she felt into the room. The infinite points of light awoke around her still in their grid, awaiting command. She was once again suspended in that sky of perfect order, that iron gridwork of stars. She whispered a forbidden name, one that she had tried to forget. At the time she hadn’t known why she asked about the ship but later she realized that ever since she was a child, since her very first memory, the thought that something like that could simply unwind and fall apart by accident. That bad luck or neglect could so easily unmake an entire world even greater than her own seemed impossible. A moment of childlike skepticism, born of the burgeoning awareness of the self. She reflected later, when there wasn’t much left to do besides reflect, that maybe it was that thought that had set all this in motion for her. Of course she learned later in life that cataclysms do happen for no reason. Sometimes things just came apart. But not this time. She said “Python” and the perfect cosmos unraveled.
Iowa stood in the midst of the Lattice and tried her best not to stumble as the nexus of glowing lights swirled around her and wrapped her in their embrace. Her eyes closed instinctually and when they opened the room was dark, there was a small metal desk in front of her with two chairs. The only light was a softly glowing orb floating above the table. She was not alone.

The person who sat in the chair opposite her was small and scruffy looking. They had closely kept curly dark hair, brown skin dusted with gold where the light hit it, and the beginnings of stubble deepening the shadows on their face. They looked like they hadn’t slept in weeks. They dressed in strange clothes that were reminiscent of the habits catechists wore but not exactly the same. The figure waited, staring into the empty chair with a dour expression. She sat and had the peculiar experience of having those eyes pierce through her without seeing. The figure began to speak. When they spoke their words were off, their verbiage old fashioned. They spoke in archaisms and idioms she didn’t understand and deciphering them took some time. But this is what she understood.

“My name is Exarch Leibowitz, I am the third of that name and a Catechist of Python.”

The name Python struck Iowa like a blow. A silver slower unwrapped its petals into silence. She had realized immediately that this person was dead because they were speaking to her out of the Histories but in that moment they had seemed so alive that the reality of their death by fire or vacuum of space seemed impossible. The hologram continued.

“I record this secret history because so much has already been lost and I believe that Python shall soon be destroyed. It will be no accident and neither was the death of the Cybele. I understand the sacrilege of what I have just said but if you are hearing this it means you have strayed beyond the Histories the Clergy has approved. Their sacred numerology means they will never open this file. The choice to continue to listen is yours but if you do, know what I say is true and I will happily pay with my life to say it. You may have to pay with yours to hear it. I don’t know how much of the truth will survive the death of Python or what lies you’ve been told so there are some things you should know.

“Once there were a thousand ships in the Prognostic Fleet. They were constructed in orbit above a planet called Tera, the old world, as part of a program called the ‘Legacy ’nearly a thousand generations
ago according to the text. This was the first time the nations of the home of the ancients came together with a single purpose. Their world was dying and they believed they could build a new one. To that end they created the Fleet and scattered themselves to the stars. On each ship two Clone populations were created, one for the purpose of maintenance and terraformation and one for the purpose of repopulation. Those meant for terraformation received augmentation for that purpose…”

Iowa stared at them as they went on. **Two clone populations? The breeders are ‘unborn’ too?**

“In the original version of the program, between thirty and a hundred Technicians are deployed to terraform a likely planet to prepare it for construction of the Citadel after which point the brood would be introduced. But over the centuries as these attempts failed again and again by long process of slow decay the Fleet was reduced to the three ships that we know, The Python, The Attice and The Cybele.

Nearly two centuries ago, during the meeting of the Core Council Triumvirate, while the three ships docked together and the usual exchange of goods, people and information took place something changed. A brilliant woman, a scientist named Curve Gosper and an equally brilliant Technician named Cantor Thyme, the clone grandparent of my greatest friend in this world, Cantor Dust, discovered that terraformation was likely impossible, the human cost would be far too high. But not only was it impossible, it was unnecessary.”

Iowa reeled, her mind was on fire, questions screaming over one another to be heard. **Thirty to a hundred Terraformation Technicians? Why only send one to do the job of a legion? There were more ships? What did they mean unnecessary?**

Leibowitz iii went on, “Gosper realized that they had the necessary material to build a sustainable system already with no need for a planet. She developed a plan based on a concept that grandfather, the first Catechist Exarch Leibowitz, found in the histories called an ‘O Neel Cylinder 13.’ It's complicated but it would make use of the reverse rotation that the ships already use to create centrifugal gravity and power itself using solar power and kinetic batteries which could be made easily through using the combined

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13 The term is ‘O’neill Cylinder, the name O’neill was unknown to Iowa so she transcribed it phonetically.
material resources of the remaining ships. Food, water, even something close to that fabled sunlight could be achieved.”

The catechist’s face changed, Iowa watched as the light of the dream came alive behind their eyes and a smile pulled gently at their face even as their voice remained sorrowful.

“It was perfect. The system, a transformation, could bring the cycle of death to an end. The three of them -- my grandfather, Gosper Curve and Cantor Thyme -- brought their proposal to the Council but not before Thyme had the chance to record a secret message for the next clone generation. They knew the danger well. Their next clone, Cantor Silica was born and lived a full life but never found the message. Eventually he died and my friend Cantor Dust was born and when she found it she realized the lies she had lived for so long so she broke into the Lattice and learned the truth that I’m going to tell you.

During the next meeting of the council, she snuck away and found me and showed me what she had uncovered. Cantor Thyme, Curve Gosper and Leibowitz the first were told by the Council their plan would be put into practice and were sent aboard the Cybele along with a crew of 200 Technicians to begin the work. The Cybele was evacuated of all other personnel, most of them onto the Python. They were told that this was because the work was dangerous. This was a lie. The work would not have been at all dangerous.”

The resonance of deep and abiding rage added a shake to the sorrow in their voice “The Cybele was sabotaged and all 206 people aboard were killed. The Council had decided that the plan threatened their power, because in such a system, without the illusion of the holy mission and the perceived might of the Core, the Technicians would have eventually overthrown their oppressors in the new world they built under the guidance of one of their own. To preserve their power, the Breeders killed them and destroyed the Cybele and buried the plans. Without the combined material resources of all three ships Cantor Thyme and Gosper’s plan would have been impossible anyway but the secret had to be preserved at all costs. In their cowardice and hunger for power the Council damned our entire species to the eternal quest for nothingness and decided to keep feeding Technicians to the void to preserve their false piece. That is why they only send one Technician, they are a lamb, a sacrifice to maintain order, they don’t expect it to
work so they don’t really try. They try enough to present the remote possibility because if it wasn’t at least possible, the hope of the world to come wouldn’t be sufficient to control the Technicians. But in truth, they had their chance to make the world to come and they abandoned it out of fear, hate and lack of imagination.

We planned to expose them and tell the Technicians the truth but we were caught leaving the Lattice. Dust pretended to be holding me hostage in order to save my life and then escaped when the prefecture tried to capture them. I record this now into the Lattice network because this morning Dust passed me a message with her plan. The Council has taken residence on The Python. Dust plans to destroy them in revenge for the death of the Technicians on the Cybele and to free Python of the cycle of pointless death. I hope to stop her but I cannot blame her and even now I’m not sure what is right. I hope that after we are gone someone will find this history and know what to do next. I am sorry for this burden.

I have to go now or the Prefecture will become suspicious. Praise be to the world to come, whatever that may be.” Their image dissolved into the Lattice.

Iowa was empty, completely empty. She turned and wandered listlessly back to the room in a haze of shock. When the door slid open she stood and watched Wisteria sleeping, her chest slowly rising and falling, the light from the hall making her features blurry and indistinct like under street lamps. As she looked at her face Iowa saw the orange light turn to lurid gold and flickering red. The stench of burning rubber and flesh the shriek of twisting metal filled her mind. And then silence and flame and a metal flower slowly unraveling into nothing.

She shook the image from her head, she couldn’t do what Cantor Dust had done. She needed to get away. She couldn’t live like this. The mix of horror and anger and disgust pulled at her emptiness and she went into the bathroom and vomited bile. Her legs shook when she walked back in the room to the soft mumbling of Wisteria near waking. With a hand that was only trembling a little Iowa quieted her and soothed her back to sleep.

She didn’t sleep. She stared unblinking at the wall opposite the bed. Her eyes took in the little chest of drawers and the lamp and the little console without seeing them. Her eyes eventually fixed on the
mirror. She could barely see her own outline. She hated her silhouette for its cowardice. She knew she should tell them, the Technicians, she should steal the comms and scream the truth to the entire vessel. But how? And who’d believe her? They would say she was insane, defective, spitting blasphemous hatred and lies. And they’d believe them, they would have no reason not to and the lie of the divine purpose was better than the truth. Even if they rose up the Clergy had decades to prepare for this. They would have known they couldn’t keep it a secret forever. She remembered the Lineator’s eyes. The ice there could not have been broken by a thousand years of sun. He knew the secret, he had to know, and he would do anything to keep it.

The Core had remote control of the ventilation, they wouldn’t let what happened to the Python happen again. He would exterminate us, like animals; she heard his voice in her mind, frigid and sharp. “No.” it said, “like a disease.” They’d start again with fresh clones without a second thought. The others would take some convincing, the Pataarch was a fool long grown fat on easy power. He was a figurehead, Wisteria had as much as said so. For a moment her mind almost betrayed her again, she saw Nicki lying there crumpled on the floor. She wrested control of herself, No. She couldn’t do that. She couldn’t even think that. Panic flared inside her like spiteful fire, happily chewing up her lungs.

She had to get away. She couldn’t live like this anymore, there had to be another way to be. She couldn’t live like this. She would flee. A plan began to form. She would be on that Away Mission. Her eyes flitted back to Wisteria’s prone form. She had promised her she would make it happen. Well, Iowa was going to hold her to it. Then she needed to see Penrose. No one knew computers and the stars like Penrose. Work could begin tomorrow, but for tonight, she would have to pretend. She gently laid down and wrapped her arm around Wisteria’s waist and quietly hated herself.


Iowa slipped away back to the Ring the following day with a promise of return. She went to try to find Nicki but couldn’t. Iowa tried to enlist Penrose’s help but couldn’t find her either. Panic began to slowly work its fingers into Iowa’s throat but she ignored it for now. Focus. Nicki didn’t have many friends but
she had a kin-sibling named Vesicle around the same age. They might know. Vesicle was a young catfish amphisapien whose barbles had only just begun to grow in. They had a nervous disposition that made them seem small. Iowa found Vesicle stepping out of the decontamination chamber near the hatch leading to the sanitation department. Iowa did her best to ignore the chemical burns that covered Vesicle’s hands and wrists in little white bubbles of scar tissue. The panic in her throat gripped a little tighter.

“Have you seen Nicki?”

Vesicle looked confused.

Iowa clarified “Nickel.”

“The day before yesterday. You’re Iowa, right? She was looking for you.”

Iowa felt the guilt like a weight in her stomach. She hadn’t told anyone where she was going, it hadn't even felt like a choice. She had just fallen out of the world. “Do you know where she is now?”

“Her domicile probably. Her Testing Group is up first and she’s freaking out. She spends all her free time studying. I keep telling her that she’s going to burn out but,” they shrugged, “she’s scared. A lot of people are. They said the exam is getting harder and harder.”

“Thank you,” said Iowa, trying not to let the shake enter her voice.

“No problem” Vesicles nodded and began heading toward mealtime.

Iowa felt like her veins were full of lead and the tightness in her throat was getting worse. Iowa stopped outside Nicki’s room and stared. She raised her hand to knock and then lowered it, the Panic beginning to grow into terror. *No. Focus.*

She knocked. There was no response.

She knocked again, “Niks, it’s Iowa. I’m sorry I disappeared, I’m here. Everything okay?”

Still no answer. A quiet worry began to build, the knot in her throat tightened further. “Nicki, open up.”

She said, trying to keep her voice steady, “I’m worried about you.”

The door opened with a hiss and Nicki stood there looking up at her. Iowa almost wept. Nicki looked like she might scatter at any moment. Her skin was dried and cracking, her gills pulsed at the air, every breath heaved. Her long dark hair, usually kept carefully oiled so it stayed glossy, was a mat of
tangles. She looked like she hadn’t slept since Iowa last saw her. She stared at Iowa with a mix of fury and hurt that almost brought Iowa to her knees, but what did her in was how tired the eyes were.

“Where did you go?” Nicki asked quietly.

Before she could answer Nicki collapsed.

Iowa caught her, “When was the last time you went under? When you answered my message last week you told me you went into the chamber.”

“I didn’t —” she wheezed, “I didn’t want you to worry. My friend got me some of the answers from the practice tests. I study those in the morning and then go over them at night. No time for the chambers. I’m sorry.”

Iowa bit back the sorrow and the worry, “We’ll talk about this after. Come on.” She pulled Nicki up and carried her to the nearest lift. It was broken. She cursed. Puffing and wheezing she made for the stairs. It was a long journey, eight stories down carrying Nicki. She remembered the exhaustion of carrying Wisteria half that distance but shook it away. The thought of Wisteria filled Iowa’s mouth with a sickly alkaline taste but she ignored that too. There wasn’t time for anger or exhaustion.

Halfway down her arms and legs burned, screaming for rest but she ignored them. Her own gills clacked, begging for relief but she ignored them too. Nicki’s breathing was ragged and her words had stopped making sense. Iowa began the climb up the stairs on the other side. Another two stories until the first working chamber.

By the time she reached it she was so exhausted her own breath was like hot broken glass in her lungs. She laid Nicki as gently as she could in the chamber, clothes and all and then spoke the activation phrase. The glass closed around Nicki with a hiss and the water began slowly to pour into it. Nicki was gently lifted by the water off of the floor of the chamber and before too long her eyes opened. She wouldn’t begin to heal for a while but she was alive and the nutrients and the water would help.

When Nicki had been allowed to soak twice, once with Iowa’s command code and once with her own she was at least cogent and her inflammation had lessened slightly. When she emerged she asked for
a towel, she was cold, but Iowa only let her dry her hair and then wrap the towel around herself, “soak in the rest of the moisture. It will have to do until you can get back under in three days.”

“I won’t have t—”

“Time? Yes you will. I will set Penrose on you and you know she will drag you down here herself if she has to. ”

“I need to study.”

“You’ve studied plenty. A good placement on your fucking aptitude test means nothing if you’re a corpse before you get there. Niks, you were falling apart!” You’re just a kid she thought almost desperately You’re a kid.

“I’m sorry.”

“It’s okay, love. God, don’t apologize. I’m sorry I yelled. I’m not upset, Nicki. I’m just worried about you. I love you.” She pulled Nicki in for a hug and then let her step back. She looked at Nicki. She marveled at how much she’d grown. She could still feel the weight of her little body in her arms when she had been so small Iowa worried just holding her would break her. She didn’t know how to say what she needed to say but she knew she had to say it. Nicki looked away. Some part of the young girl knew what was coming even if she didn’t know the full weight Iowa carried. Nicki could see it in the way Iowa stood, the ways she walked and held her hands.

When Iowa spoke eventually, the words came slowly “Look, Niks. I won’t be around to take care of you because. . . .” She wanted to tell her everything, to tell her to come with her, to pull her away from this awful place built on that lie. But she knew she couldn’t. The likelihood was Iowa would be dead in less than two weeks if she even survived what she planned to do long enough to escape the ship. Nicki’s best chance was here, and one day maybe she would understand. “I’ve got the away mission and I have to go. But even if I hadn’t I wouldn’t have been around to take care of you forever. You have to learn to care for yourself. I know that sounds cold and awful and that’s because it is and I’m sorry. You won’t have to do it alone. Penrose and Loam will be here for you but this kind of thing can’t happen anymore, okay?”
Nicki couldn’t seem to pull away her gaze from her still bare feet. It was a while before she spoke again but Iowa didn’t push. Eventually Nicki said “I don’t know if I can do it.”

“Do what?”

“All of it. The studying, the Aptitude Test, the job afterwards, the test for the away mission, the fucking Away Mission. All of it. Fuck, just eating, just walking to the chambers. I’m so tired, Aunty. All the time.”

She looked at Iowa, there was something pleading in her look, something Iowa knew she didn’t have an answer for. There was the truth of course, but what good would the truth do her? After she did what she needed to do, whether it looked like an accident or not, everyone would have to answer a series of very difficult and quite pointed questions. It would be better if she didn’t know.

“You want to go on the next away mission?”

“Well, when you come back for Stage Two they’ll need more techs and I want to go see the world to come.”

Iowa almost laughed, Nicki really believed there would be a Stage Two. Nicki was still a kid. Iowa had grown up alone so she had to grow up quickly. She had never really been a kid. Kids were supposed to worry about making friends, or crushes, or getting back to granny Reticle’s domicile in time to get a honey cake.\(^1\) Iowa had had to worry about other things. One learns very quickly that when one is small and alone one can’t take anything for granted. Sure, the meals were there but there was never enough and without other units in your cloneline, without brothers and sisters, there was no guarantee what there was wouldn’t be taken away from you. The system wasn’t built to care who ate the meals as long as they got eaten.

She had realized fairly quickly too that her brain didn’t work like everyone else’s, which made making friends, keeping up in class, herculean tasks. Without friends or family her placement became a matter of survival so she studied voraciously and fought every moment every day until she was

\(^1\) Honey cakes or ‘sweet cakes’ are one of the rare treats aboard the Attis. It is made by the agritechs (agricultural techs) from syphoned honey or by-products from sugar production, traditionally given to children after a hard day of school.
exhausted. No child should ever be exhausted, not like that. She didn’t meet Loam and join their
Kin-group until she was eleven, three years younger than Nicki was now. *But Nicki is so smart*. Iowa
thought with loving exasperation *much smarter than I was*. Iowa got the placement in Hydro on half of
the studying Nicki had done and Nicki didn’t need to do it alone. She had Penrose and Loam and her
kin-group, but she was still afraid. She was scared because she was smart. She had realized the
contingency of her entire life and so she worked herself to death looking for something approaching
certainty and then Iowa told her she was leaving. Iowa pulled Nicki into another hug.

“I love you, kid. I’m sorry.”

“It’s not your fault,” said Nicki almost automatically.

“Yes it is. I know you feel like you’re alone but you’re not. I promise. Rose and Loam love you
as much as I do. Let them care for you. Be a kid a little while longer.”

“But you said I needed to learn to take care of myself.”

“Letting someone take care of you is taking care of yourself. It’s the hardest part because it means
relying on someone else and people can let you down. But that doesn’t mean it isn’t worth doing.”

Nicki thought about this. Iowa could see the thought left the same alkaline taste in her mouth it
left in Iowa’s. She shook her head in quiet wonderment at how similar they really were. “Come on, kid”
she said. Let’s get something to eat. I imagine you’ve missed meals as well as the chambers.”

As they walked Iowa felt a cold realization stir in the back of her mind. Trying to keep the worry
out of her voice she asked, “Niks, where are Rose and Loam?”

Nicki stopped, all the color that had returned to her face drained. Her young features were full of
an exhaustion so heavy Iowa almost cried out looking at it. “You don’t know,” Nicki said, “I thought
that’s why you came back. Loam and Penrose got transferred two days ago.”

For a moment Iowa was empty, a tree blasted by lightning into a twisted ashen husk. Then the
white hot fire began to rise. “Niks, promise me you’ll eat, you’ll rest and you’ll go into the chambers. I
love you. I have to go.”
Nicki almost recoiled, she could feel the heat coming off of Iowa in waves as the fire looked for somewhere to escape.

Iowa reached out and pulled Nicki close into an embrace “I will get them back. You will not be alone. I promise.”

Nicki clung onto her “I love you” she said.

“I love you too.” Iowa held her for a moment and then released her. She turned and made for the elevator. She burned with every step.


Iowa plunged on without pause for thought. When she reached the elevator she leaned forward and, with fingers now swift and certain and now practiced voice, entered Wisteria’s Ideogram. The lift doors slid open and she stepped inside.

So complete was her fury she didn’t even notice the stars pass by her outside the glass. She had her suspicions and she needed to know if they were true. Nothing else mattered. It could have been a coincidence. The rational voice, the reasonable one that liked to pretend that it was the more human consoled her, it could be a coincidence, just bad luck, Penrose and Loam could have been transferred for any number of reasons. If it was a coincidence, Iowa would convince Wisteria to have them transferred back or to send Nicki with one of them. But the other voice, the one that lived deep within her inner sea and spoke like a lava flow that one day would form continents when its anger cooled, rumbled that the conciliatory voice was a coward and that she already knew the truth. She ignored them both for now.

When the lift doors opened Iowa slipped through the empty hall to Wisteria’s rooms. Penrose had told Iowa years ago that the rest of the ship was monitored at all times by cameras on a closed-system connected to a central hub, which Iowa realized was the Lattice. But the Carpals weren’t. They were sacred spaces and thus kept private. Iowa had taken the risk that Wisteria would be out, and she was right. Wisteria was doing her sacred duty in the Lattice.
Iowa popped open a panel on one wall to reveal the console. She had Wisteria use it to call in ‘sick’ so they could spend time together. Iowa entered Wisteria’s ideogram and pulled up the log and felt the quiet voice of reason cower and be consumed by the voice of rage as the logs confirmed what she had already known.

Iowa sat and stared at the console. She double checked it but the information in the log didn’t change. There was no Recommendation submitted to the Away Mission Committee but there were two Orders of Transfer for the units designated Tiling Penrose and Catenary Loam.

Iowa had been so addled by the honey and displaced from time without the routine of work, that she hadn’t realized until after the Party that the deadline for Away Mission recommendations had passed. Wisteria knew as well as Iowa did that all the glad-handing in the world wouldn’t change that.

Had Wisteria forgotten? How could she? No. Iowa was certain that Wisteria knew. Wisteria had never planned to recommend her, it was something she had told Iowa to keep her happy and all her little friends at the party had played along. Even the Lineator in all his cruel seeming-frankness had neglected to point out how absurd it had been. They must have thought Wisteria was rather clever, tell a little lie to keep her pet in line. Twist events just so. Be there for her Iowa so that when the crushing realization that her friends were gone and that escape had slipped her grasp, Iowa would have nowhere to turn but her.

Even if the Recommendation had been an honest mistake, the transfers took time and paperwork. There was no mistaking that. Iowa stood as the door opened behind her. Wisteria was standing there in the doorway, dressed in her Catechist’s robes. Wisteria’s smile faded as Iowa turned to look at her.

“You went through my logs!” Wisteria said. The sharpness of the accusation in her voice blunted against Iowa’s fury.

“You sent them away.” Iowa’s voice was low and quiet.

“I...I saw opportunities for advancement for both of them. I thought that you would be happy to see them succeed. It was a gift, a surprise.”

Iowa was almost surprised at how well Wisteria could lie. Iowa wondered if Wisteria had practiced in the mirror. She wondered if Wisteria believed it herself. Could she be that careless? She
couldn’t decide which was worse, duplicity or apathy. Iowa felt her hands clench and unclench. She
choked back the anger. If she raged at Wisteria it would all be over, the illusion would be broken and
Wisteria would do some desperate petty thing. “Transfer them back.”

“I don’t know if I can —”

“You can. Transfer them back or we’re done.”

“Okay.” Wisteria’s voice shook, but it was hollow, “I love you.”

Iowa nodded, she played into the lie, let Wisteria have her little world she built, “I love you too. I
understand you were trying to do a nice thing but we’re a family.”

“I want to be your family too, Iowa. You’re angry about the Away Mission, don’t pretend you
aren’t!”

Iowa shrugged, “I would like you to transfer back Loam and Penrose now.”

Wisteria half-sighed half-snarled “Fine!” and went over and entered the orders of transfer, both Penrose
and Loam back to their old posts. It took less than ten minutes. She had nearly broken apart Iowa’s entire
family in a few keystrokes.

“You made me a means to an end, Iowa. This was all really about the Away Mission!”

“No.”

“I couldn’t recommend you, even if I had wanted to, it would have produced a conflict of
interest.”

Iowa doubted that but she didn’t argue. Falling back on the supposed integrity of the Clergy and
the Prefecture was dubious at best. She knew as well as anyone the ship was run on favors and favoritism.

“It’s okay,” Iowa said, “I am upset because you almost broke up my family and you made me a
promise and then you broke it —”

“I couldn’t —”

“But it’s okay,” Iowa went on, “I understand. Truth be told, I didn’t want the Recommendation
anyway. It felt stupid to say no at the time but I’d rather pass the exam and get selected myself, the way
it’s supposed to happen.”
“Oh.” Wisteria stared at Iowa. Wisteria didn’t see the anger she expected or the tears. Iowa just looked disappointed and profoundly tired.

Underneath the surface Iowa still burned. She didn’t know what to believe or what else Wisteria had been hiding. Did Wisteria know about Python, too? How much longer would she feign ignorance? Iowa knew what she had to do. She would play nice, forgive Wisteria for her mistakes and carry on preparing for the exam and the mission. She would need to talk to Penrose when she got back. They didn’t have a lot of time.

Over the next few weeks as the Exam approached, Iowa and Wisteria’s relationship calmed. Wisteria became confident that Iowa was her’s again. Iowa hated herself but that was something she was growing accustomed to. She held onto the plan. She negotiated with Wisteria to let her return to the rings once a week. Wisteria had changed her passphrase for her console but couldn’t change her idiogram and hadn’t known of Iowa’s secret visit to the Lattice and Leibowitz’s account. Over the proceeding week Iowa slowly began to gather information from the Lattice. Schematics, history, anecdotes and personal journals everything she could about how it worked and how it had been constructed. By the time her first home visit came around, she was ready.

On that first night she gathered Penrose and Loam together in the Counterweight Deck, Iowa asked Penrose to disable the cameras which she did after some hesitation.

“What’s going on?” signed Loam.

Iowa didn’t quite know where to start. She couldn’t tell them about what Liebowitz had told her or the details of her plan for their own safety. If they knew the Prefecture had ways of making them talk and they would almost certainly face termination. But she couldn’t do it alone. Iowa told them what she needed.

When she finished, Penrose sat back and whistled, “Okay. God. Well, with the schematics you’ve brought me I think I might be able to do it. The Lattice used to be composed of a series of consoles which contained ‘Instances’ of the lattice all connected as part of a big fuckin network that allowed all the ships
in the Fleet to communicate. Apparently each Terraformation Vessel that is sent out on the Away Mission
has an Instance of the Lattice in it.” Penrose pulled up an example blueprint on her communicator, “but
see? It’s only one-way. The Technician is supposed to send a signal to the ship if they were to
successfully terraform the planet.” Penrose didn’t say which is probably impossible. Iowa sighed, if she
only knew how right she was.

Penrose went on “But it can only send information, it can’t receive, it can’t natively download
files from the Lattice. I could try to rig up a router that would allow it to do so but if I did, the device
would register as a two-way relay Instance on the network.”

Loam looked it over and signed “Technically but in order to notice the change they’d have to be
looking for it. As long as they have no reason to think it was changed they probably wouldn’t notice.”

Penrose nodded noncommittally and signed back “True. The Lattice only automatically displays
the logs of when new files are added and when old ones are opened, not which instance opened them. So,
as long as the people operating the network didn’t have a reason to think this Instance was being used this
way, it could go unnoticed. But this is risky, love. Really risky. Like, more risky than screwing a breeder.
If you got caught, it’s over.” She sighed “What is this for? Why take the risk?”

Iowa looked at her feet “I really want to tell you but I can’t. I’m sorry,” Iowa leaned forward and
bumped her forehead gently into Penrose’s shoulder, “I need you to be safe, and I can’t tell you what I
know, but everything we’ve ever been told is a lie, Rosie, and the Core can’t be the only people who have
the truth anymore.”

“You’re going away,” said Penrose. There was no anger there but there was hurt.

“I know.” Iowa felt tears begin to scratch at the corners of her eyes, “And I don’t know what I’ll
do, if I’ll survive, and I can’t tell you why as much as I want to but I also can’t leave the truth behind me.
Please, Penrose, Loam, I know I’ve asked you to take so many risks for me before and I’ve put you in
danger just by telling you what I have already but I need you to trust me.” She waited for their response.
The silence curled around them like the eddies where currents meet, pulling them in every direction in
equal measure so that they sat still.
Loam signed “I love you too. Let’s do this.”

The week before the Away Mission Exam the short list was announced at meal-time. It was Iowa and three other Technicians; Epsiloid Cost, Coil Province, and Arrays Cobalt. All were amphisapian. Well. The planet has water, she thought as they were called by the programmed clerical hologram to the front of the cantina. More than likely some ice-covered moon with liquid water half a mile under the surface. That would mean drilling. She surveyed her fellows. Cost and Province were clearly very close, friends or in love she couldn’t tell. Cost was bulkier, with black hair shaved into a pragmatic crew-cut and some carefully done stick-and-poke tattoos of star maps on their arms. They were an astro-tech who transferred to bio a few years ago and a bit of a gym-rat from what Iowa knew. They had the heavy jaws of a grouper amphisapian. Province on the other hand was smaller, slight, and moved with a certain amount of quiet grace. They had slightly shaggier dark brown hair and the ruddy scales of a coy amphisapian. They were a born chemo-tech and came highly sought after. Cost and Province chatted excitedly, trying to keep the grim reality of making it this far at bay. Cobalt was the quietest, a bio-tech like Iowa but working in a different division. They had dark skin and wore their hair in well maintained braids. Their scales around their gills were a turquoise blue. They stood to the side with their hands in their pockets and simply watched. Iowa had a feeling they would prove to be tougher competition than the others. They struck her as observant and observant could be a dangerous quality.

Iowa spent her days with Wisteria and her nights either funneling additional information to Penrose and Loam or studying. On the third day a set of goggles and mock-controls loaded with a primitive flight simulator had been delivered to her doorstep. Iowa turned pleadingly to Penrose. Penrose was a master bordering on savant with coding and machines but if she had been allowed to choose her calling she would have been on the piloting crew that steered the ship and took the Pods out for repairs. She did her best to give Iowa a few pointers on the simulator. Iowa improved slowly but steadily, but it
was still going to take a minor miracle to pass well enough for the mission. Penrose sighed, “When the day comes, I think you’ll need to wing it love.”

As she trained Iowa carefully kept an eye on Nicki, making sure that she was eating and submerging as often as she could. Nicki obeyed her, not wanting to upset her before she was gone.

When the day came Iowa awoke early in Wisteria’s bed and dressed silently in her black dress uniform she had worn to the party. Wisteria dressed in her most elaborate robes. Wisteria gave Iowa a kiss for luck; Iowa did her best to accept it without a grimace and without a word made her way to Ring.

Penrose, Loam and Nicki were waiting for her by the entrance to the lift to level 0:4 where the Exam was being held crowded with the other loved ones. She gave them each a hug, kissing Nicki on the top of her head. Penrose held her close and whispered “The router is ready, add it to the Instance and it’ll let you tap into the network no matter how far the ship travels away as long as the Lattice remains unbroken.” Iowa nodded and whispered her thanks and then entered the lift with the other candidates.

As the lift began to descend Iowa kept her eyes fixed on the door as the lights that indicated the floors passing blinked by. Cost and Province were chatting quietly, their nerves expressing themselves as excited chatter. Cobalt was standing in a corner of the lift looking up at the ceiling.

“What did you sign up for the mission?”

Iowa turned to look at them. Cobalt didn’t make eye contact but nodded to confirm they’d asked.

Iowa didn’t know what to do with the question so she just answered it, “To get away.”

“Me too.” Cobalt said just as simply.

Iowa understood.

“How old are you?” Iowa asked, looking them over. They seemed so small somehow.

“Nineteen solar years,” said Cobalt.

“That’s young.” Iowa felt a pang in her chest.

“The youngest ever on the Away Mission from the Attis.”

“Your kin-group must be proud.”

Cobalt shrugged, “Mostly they think I’m a fool. They think I’m going to die on that frozen rock.”
Iowa almost grinned, she had had a good feeling about Cobalt. “You noticed too.”

Cobalt nodded, “Wasn’t hard, do you think the others have?”

“Almost definitely not.”

They both stifled a laugh.

“It’s going to be between the two of us. They test you on more than just the biology and the physics.”

Iowa nodded. “There’s the piloting too,” she said with a smirk.

Cobalt’s brow furrowed with frustration “Well, yes. But that’s not what I mean. They look for observational skills, problem solving.” They looked sidelong at the two others in the lift, “Not their strong suit.”

Iowa took in their words and observed the quiet challenge in the young Technician’s posture.

“You’re a very serious person.” She observed.

Cobalt nodded curtly in return.

“If it’s between the two of us, it’s going to be me,” said Iowa.

For the briefest moment, so quick she almost missed it, offense flitted across Cobalt’s face. Following just as quickly on its heels was curiosity. Cobalt regained control and the neutrality returned. *Serious and proud.* Iowa liked Cobalt because Cobalt understood the value of an analysis. Cobalt was cunning and for the cunning a good analysis outweighed pride.

“Why?” asked the young Technician, the pride and defiance kept carefully out of their voice.

“Because I’m older,” said Iowa. *And the last of my line. I’ve served my usefulness for them.*

“They can still make use of you, Cobalt.”

The lift doors opened and they stepped out into the exam room. The first portion was the written exam. They sat at the consoles and typed in answers when prompted under the watchful eye of six Prefects who wore helmets and visors. Iowa wondered if those dark screens had cameras in them and if Wisteria and her Carpal were watching on large screens set up in their party room.
The topics varied wildly from physics to engineering to the process of terraformation itself. The exam was unrelenting. Every test was posed as a problem to be solved in the field with a set time limit in which it had to be answered. Its wording appeared simple but unraveled into a fractal under closer examination. Every question was a series of traps mired in switchbacks and logical recursions. She felt the Node thrumming stim signal after stim signal into her mind as the roar began to rise in her peripheral vision. She tasted metal. She wanted to scream, but she stayed focused. The written portion ended after three hours. They had a five-minute break to gather themselves for the piloting portion.

Cobalt shook their head “I’ve never liked exams. Life is rarely so straight forward, there is always more than one solution. Right answers always seemed reductive.”

“This is true, though I think it models one part quite well,” said Iowa.

Cobalt raised a questioning eyebrow.

“Life, like exams, is often stressful and tedious.”

“Fair.”

Four egg shaped chambers, roughly eight feet tall, waited for each of them in the next room. The four of them changed into iridescent mother of pearl colored flight suits and waited for the signal to enter their chamber. Cobalt gave Iowa a nod as they clasped their flight suit closed.

“Are you any good at piloting?” asked Cobalt.

Iowa shrugged “I haven’t gotten much chance to practice on the simulators but I had a good teacher, yourself?”

“I work on the repair crew. My Pod’s named Hestia.”

Iowa felt panic run its cold tendrils across her throat. Cobalt piloted for hours a day, day in day out. If Cobalt beat the test faster than Iowa they would go on the mission. They would go to their death and Iowa’s plan would slip through her fingers like sand. They would either be caught or Iowa would be forced to return to playing house with Wisteria. Iowa felt her stomach turn. No, she would confront Wisteria and abandon the pretense and Wisteria would revenge the slight with the brutality of the petty.
The indicator light came on and the chamber doors opened. As Iowa stepped inside she saw the familiar nexus of light that made the Lattice’s impossible grid of stars form around her and then begin to manifest themselves into the bridge of the personal transport vessel that carried the Terraformation Rig to the planet. Iowa sat down and belted herself in. She ran flight checks. She tried to listen to Penrose rattling off the list in her head but panic growled louder, trying to dig in under her ribs to pull her lungs out. She felt the roar of sensation beginning to build again, spurred on by panic as it eviscerated her.

The Node sent its hollow signals but it was no use. They just made her more nauseous as the flight simulation began lift off. The false stars appeared in her simulated viewscreen as the launch bay doors opened. She was lost. The implant cried out shrilly, trying to keep her grounded. Then it hit her, there was nothing for it. Iowa reached up and disconnected the Node. It went silent. Her senses cried out and she heeded them. She let her body stim and felt relief flood her. Panic growled and retreated to the corner of her mind. She let her breath calm before flipping the Node back on. Cobalt would have a head start but she wasn’t going to give in that easily. She would need to make her calculations on the fly. If she managed it, she could catch up.

She finished the launch procedure and took off into space at full tilt. The simulated planet, a tiny burnt orange disk nestled among the million dim lights of the simulacra of stars. As numbers flashed by on her indicators she trusted her mind to turn them into music without her interference; she laid in her course and thundered the throttle forward. When the space debri came into her field of vision she almost laughed. All the careful calculation in the world wouldn’t have planned for that. She felt the pull of her own momentum and leaned into it, blasting forward toward the debri. The others would choke back, try to find a way around and lose precious time. She plunged headlong into the cloud, trusting her reflexes to guide her. She dodged through them and corkscrewed free with a whooping cry of triumph. She landed with all systems nominal.

For a brief moment the golden light of her success drowned the amber shadow that followed her but as her simulation chamber opened with a hiss she felt the weight return. She wasn’t through yet. The Exam’s results weren’t tabulated yet and then came the hard part.
Cobalt came stumbling out of their chamber, tears welling up in their eyes. They kicked at it and cursed. Iowa approached them gently. “What happened?”

“I panicked,” Cobalt spat, “when the debri came up, I panicked.” Their cool detachment was barely holding against the flood of disappointment and anger. Iowa could see that Cobalt was tearing at themselves inside; berating themselves with all the vitriol and petty condescension they had heard every day since they told their kin-group about their dream. Iowa had a feeling Cobalt had been very smart and very lonely for a long time.

Iowa gripped their shoulder, “Listen. I’m not going to condescend to you by trying to comfort you. The truth is I’m more than likely going to freeze to death on that planet. Which is assuming I don’t run out of air, or get torn to shreds by an ice storm, or burn up the atmosphere before I even get there. The Exam results aren’t in yet but if you don’t make it, stay and do something worth doing and try again when you’re really finished here. If you weren’t ready to throw yourself into that debris field then you weren’t ready for the Away Mission.”

Cobalt stared at her, their lips moved as they tried to speak but the words didn’t come. Two previously imperceptible doors at the end of the room opened to reveal a lift, out of which stepped a clergyman dressed in strange dark robes and a veil. He cleared his throat as the other two simulators opened and Cost and Province stepped out wiping sweat from their brows.

The Clergyman’s voice was nasal and monotonous as droned “Candidate’s, I am your Keeper. I shall guide you to your purpose. Your results are being tabulated. The successful candidate will have one day to prepare themselves for the Mission. The rest shall receive a commendation and will return to normal duty.”

With that he turned away from them and raised his hands in benediction as a hologram screen appeared. On it were their names, unit numbers, and a score. Iowa’s was the highest at 98%, Cobalt’s was second at 85%, Province third at 75% and Cost fourth at 73%. “We have our answer.” The Keeper returned to the lift without another word and disappeared back to the Core.
One wall opened like giant bay doors and the four candidates were greeted by a crowd of several hundred Technicians waiting silently to see who was selected. Iowa could see Penrose, Loam and Nicki among them. They had all taken engine grease and smeared a black line across their lips. Iowa remembered when she did the same for the last candidate, Ditope, when they had taken their flight. She was too young to understand why then.

The crowd parted, still silent, and flowed around Iowa like a river. As she waded through them they absorbed the other three candidates who marked their own lips with the grease turned paint. They accompanied her, following in her wake up the companionway until she reached her domicile. Iowa entered and waited. One by one each Technician covered their palm with paint and left an inky handprint on her door or the wall around it. A thousand handprints, no two alike, told her they would go with her and that they would mourn her death along with the nameless others who had gone before.

Only Nicki, Loam and Penrose were left behind. She embraced each of them before they left, only leaving their handprints behind. Iowa felt nothing. In the morning she would feel everything but for now she was only tired. Sleep came swiftly and she dreamt of the deep.

11. The Ship.

When launch day came it all rose to the surface. What the Lattice had shown her burned inside of her the way a cold wind burns against skin. She couldn’t turn her thoughts away from the Python and the Cebele consumed in fire, from the senseless lie, from the death of Curve Gosper’s dream and the hundreds of thousands of others who were sacrificed to a world that would never come. Her thoughts drifted to those she left behind and she pushed them away. The guilt could wait. She listened to Penrose’s router hum faintly from where it was attached to the Lattice Instance. It promised her a future, a hope, but for now all she could feel was sick.

As she listened to the Keeper’s voice through the intercom talking her through the launch procedure, every thought she had tasted of bile, everything she touched felt sickly and cold. The craft’s hull pressurized and the airlock closed with a hiss.
The Keeper said “all nominal, final checks, fuel, atmosphere…”

The dim and sickly yellow light in the ship was met by a thousand little blinking orange ones from the control panel as it awoke. She threw the switch to detach the redundancy landing gear and checked her trajectories. As the engine came to life the cloud of bitterness that had been drifting in her mind like ink billowing in turgid water clarified into a realization. She knew then what she needed to do.

The restraints detached as the thrusters roared and the craft broke away from the mothership. She made a few adjustments as across the viewscreen loomed the vastness of the planet, a swirling mass of gold and blue. She knew the procedures well enough that she didn’t have to listen to. They had taught it to her. Not in so many words but in the operations of the craft’s systems, the esoterics she had waited to learn so long. She invoked them like a spell, an incantation in three keystrokes. The orange light slowly darkened to red as that voice, that composit voice drawn from nothing, who she had always believed was alive said “Manual override engaged.”

The Keeper’s voice came through now, crackling with worry “Uh, Switchboard there appears to be an anomaly with your systems. We’re running a diagnostic now, don’t panic we —”

Iowa reached up and with a single fluid motion popped open the panel next to the speaker and thrust her hand into the mess of wires within. She snarled as the electricity, stymied by her thick gloves, set fire to the wires and tried to burn inside the suit. She wrenched the wires from their place snapping like sinews as a limb is torn apart. They were strange and cartilaginous, she half expected them to flail in pain in her grip.

Sparks showered down from the panel as she disengaged the restraints and gripped the throttle. The bay doors let out a groan eaten by the vacuum of space as they began to close. She would only have one shot. If she didn’t go now they would take her apart just like they had to Electron and the catechist, no matter how much she yammered about malfunctions or temporary insanity. She slammed the throttle forward and in a burst of impossible speed shot out into the infinite. Her breath caught as the entire universe opened up around her. She was now a point of light, a tiny comet surrounded by the great swirling impossibility of a trillion billion stars.
She could feel the infinite tiny pinpricks of gold dotted with blue and boiling red all spiraling out from the center of the universe. Upon that sea of stars the planet waited for her, an island of reality so vast yet so very tiny in the expanse. It hung there, a grey and dusty brown lined with gold swirling toward the icy grey-blue that swallowed its upper and lower thirds. Even from here she could see its enormous arctic ocean, a glacier the size of a continent from which she was expected to pull life and find their promised land.

The celestial body’s gravity caught hold of the tiny ship and began to precipitate it rapidly downward, sliding along a funnel of displaced spacetime. She hurtled toward the planet in her little tin box, sparks still flowing from it’s wound. She engaged the counter thrusters and with a single wrench pulled the vessel into an orbit. Setting a proper orbit without the help of the ship’s onboard computers would be almost impossible and likely not worth the effort; she would have to make do with the orbital decay she had calculated before the launch.

More likely than not this would all end in a brief and fiery death as the gossamer shell of her little vessel was shucked off by what remained of the planet’s blighted atmosphere. But, she mused, that was true before she cut herself off from the ship’s navigation. What were a few more percentage points one way or another? She waited until she could see the golden sliver of the planet’s sun began to glow as she approached the sunset of this world. She slowly lowered the yoke and the craft began to tear through layer after layer of atmosphere. The stars faded into the dusty blues and oranges of the sky as flame began to wreath the craft. She closed her eyes as white light consumed the viewscreen. For a moment she remembered a world like a metal flower slowly unraveling into silence. Then impact.

When Iowa slowly regained consciousness, pieces of sensation came sheepishly into focus one by one. The first was that her head hurt, which was good, it meant she still had one. The second was the peculiar sensation that she was hanging partially upside down. The third was the taste of copper. The fourth was light. It was a strange light, familiar and completely alien. It was golden and though she knew she couldn’t feel it, she would swear it was warm. As her eyes focused she could see a shaft of light cast
across the darkened console, peeking in from a massive crack that ran across the body of the black viewscreen. Something in her grew toward it, like a sunflower turning toward heat and light. She realized what it must be, the sun.

She moved experimentally and winced. She was in pain but her legs responded appropriately, she could breathe as much as she ever could, and her fingers answered slowly and clumsily but they followed her instructions. There was pain, throbbing, not sharp, in her head, left ribs, lower back, and her neck. Likely minor mechanical injuries, nothing to worry about, there would be time to ice and to groan later. She grabbed her helmet and her rebreather from their compartments, slotted them together and then donned them. The atmosphere was thin at best and its effect on her respiratory system untried. She took in the state of things. The craft had split diagonally down the middle on impact and buried itself in the ground. The segment where her seat was attached, along with most of the cockpit, had torn itself away from the console and the upper half of the vessel and broken through the roof of a natural cyst in the planet’s crust as it bored underground. Above her the rest of the craft was now a crooked and twisted wreck, hanging precipitously about six feet above her head. Sparks and bits of insulation fell around her as the metal groaned. The nose of the craft was pointed upward as evidenced by the sunlight now cascading down to meet her gaze. She had tried vainly to pull up when the parachute failed. She might be able to jump it. If she didn’t, it would be a ten or so foot drop onto the razor sharp wreckage below. Better than starving to death, she thought bitterly. The terraformation rig automatically jettisoned on impact. It couldn’t be more than a half mile away, all she had to do was find it.

With a click of a button she unlatched her safety belts and steadied herself against the arm of the pilot’s seat. Iowa took a deep breath and leapt, slamming into the console and scrabbling to get her footing. A spike of pain from her ribs blinded her and a low howl left her lips but she clung on desperately, her fingers slipping. She slid a few feet terror gripping at her throat but then her back foot found a hold and with a desperate surge of energy she shoved herself upward smacking her hands back onto the console. This time her fingers found purchase and she sighed with relief. Small victories, as Penrose was fond of saying. With a painful heave she clambered up onto the craft’s dashboard. She drew
the heavy orbital welder from her belt and with a furious swing smashed a new spiderweb of cracks into
the weakened glass. She reeled back and struck again, smashing the viewscreen outward. Onyx glass fell
like black rain and golden arctic sunlight flooded her.

A laugh burst its way from her lips when the sudden unbelievable cold, unlike anything she had
ever felt, crashed like a wave from the northern ocean over her body as at the same time the golden light
wrapped her in an impossible warmth. She looked down at her hand, opening and closing her fingers, the
sun dancing across the opalescence of the flight suit. Then her gaze flitted to the light dusting of snow at
her feet, the sun sparkling and refracting off its brightness. She felt strange, off balance, like she had just
woken up but without the ache. She felt new. She felt alive.

She hadn’t realized until that exact moment that she had been dead, that she had never lived. She
had been born, raised and worked and even fallen in love. But the whole time, her entire life ,she had
been a corpse. Life had been something that had been waiting to happen but not for her, it was a dream of
a distant planet, a future, a nothing. But right now she was living. She let out a breath she hadn’t realized
she was holding and then drew in another. She laughed as in a moment of cheek it stung her lungs by way
of introduction. There was still the recycled air of the rebreather but it was not alone now. She was
drawing from something else too. A new air, a new breath. It was fresh and cold and clear and full of
electricity. It was her breath, just hers; no longer the breath of hundreds of thousands, dead like her,
waiting to live. It was her breath alone. “I’m alive,” she said quietly, almost not believing it. Then again,
like a prayer, “I’m alive.” She stepped forward, certainty growing, her footsteps crunching in the fresh
snow.

The sky unfurled above her, endless and a blue she had no word for. It staggered her, she could
never have prepared for that. It was so massive and open but not empty like space. The sky was full of a
nameless blue and so was Iowa. She was overflowing with the gorgeous perfect blue. It was like lightning
in her blood, she was in love with it. She screamed and jumped and whooped “I’m alive! I’m alive! I’m
alive!”
She dashed out of the ship into the snow running and running. A great frozen plain opened up around her, she could see huge volcanic mountains in the blue distance and hear with startling clarity the distant creek of a frozen sea. Miles and miles of space. She ran until her momentum overtook her and she fell spinning onto the ground. Snow burst around her in a little white cloud, and she laid there half buried in it as flakes came to rest on her face and chest. She burrowed deeper pushing herself deeper into the snow. She had come to know snow in its myriad structures; how it was formed and how with heat it could be put to use, but the feeling? She could never have dreamt the feeling. It was all pins and needles, a lovely kindly cold that wrapped her in an embrace like an old friend she had forgotten. She lay there panting for a time and calling out to the new sky, no words, just sound. After a time her revelry fell into silence and reality reasserted itself but the feeling didn’t fade entirely.

12. The Rig.

By the time she reached the gulch where the Terraformation Rig’s Pod had buried itself several feet into the snow, her breath was puffing with effort. The gravity on world was slightly stronger than on the ship. Not by much, a few micrograms of pressure per square millimeter, but that added up over time, like a constant drop of water on the wall of a cave.

The Pod contained three essential parts, the Terraformation Rig, The Instance of the Lattice that Penrose had rigged up, and The Ovum which contained a genetic sample of the first species to be cloned and introduced to the newly terraformed planet.

The Pod’s hull was cracked but that was fine, that’s what it was for. The rig was inside, curled up on itself like a mollusk shrinking into its damaged shell. Her breath momentarily fogged up the glass of her helmet but it was drawn away by the rebreather. Her mind drifted for a moment to its organic components, the parts that would slowly break down over weeks. She was given four tanks. The plastic, foil and metal dome called the ‘biosphere’ came complete with two of its own tanks. All together the Biosphere had about a month’s supply. More than enough time for the plants, who had learned over several generations of careful editing to grow at accelerated rates, assuming that they took. If the plants
didn’t take in a month then the thinking is they weren’t going to. As she was told since she could remember, it had been decided in the ancient texts not to waste resources on lost causes.

She slid down the side of the gulch and landed with a dull thump against the side of the rig’s casing. It was half the size of the ship and large enough to carry the rig — roughly the size of a compact car — and the shuttle’s cockpit comfortably. She carefully knocked a panel with her elbow to pop it off and then slotted her hand into the depression it revealed and gripped the handle she found there. She wrenched upward and the panel came away with a hiss of hydraulics. She slipped in as a door opened with an aperture formed by heavy shielded plates. She smiled as the gyroscope inside spun the entrance to the inner compartment to face her. From what she could see the Ovum’s egg-like casing appeared undamaged and the Lattice Instance’s readings appeared nominal.

She dropped down and strapped herself in. The lights and screens within slowly began to flicker to life as the subroutines in the Pod’s computer began to read out their instructions. The inventory checked itself as she calibrated the controls. Biosphere, check, plant samples and preliminary sprouts, Ovum Generator, every last child of future earth were present and accounted for. Her smile turned into a grin as the final tone rang and she was able to wrap her fingers around the levers. The goggles descended over her eyes and she felt the fragment of the Lattice they put in the machine connect with her mind and she was transformed.

Out of the opening bay doors the rig crawled on eight spindly robotic legs hissing, humming with engines and screeching with hydraulics.

The rig itself was a skeletal thing, a large central Pod surrounded by a spindly scaffold of struts connected into triangular tessellations. In its Pod was its cockpit, the biosphere and its Ovum, the tools for excavation, and the mobile labs for analysis. The strange whirring beast clambered in slow careful steps out of its casing. With a rumble of the engines it approached the wall of the gulch and began to climb.

Iowa and the rig were one. The aluminum alloy of the limbs and body were so light she could feel their every move as if it were her own. The goggles on her eyes extended her perception to the panels on the central Pod and the thousand cameras on its legs. The world manifested around her as if the Pod were
her own body, as if it were her spidery limbs she now controlled. She moved her shoulder, the thousand tiny pistons in the levers responding to every minute movement. It was a delicate body. She could feel its fragility. She knew that one swift motion and she could tear it apart. The farthest the rig could travel in any direction would be five days before the strain would irreparably damage it. They called it programmed obsolescence. If her trajectories were correct, she knew they had been back when they were entered into the ship’s computers all those months ago but it was anyone’s guess now, she should be close enough but it was hard to say. If she was able to travel beyond snowy ground onto the ice and excavate enough ice for the heating units in the biosphere to melt and supply the hydroponics system, then maybe there was the slightest chance that she could begin the process. She had to resist the urge to daydream of the day when she would be able to grow her own food and leave the protein rations behind. But she was going to need to be able to breathe first.

The drop point should have put her a day and a half from the ice, well within the survival rate of the rig, but if her calculations on entering the atmosphere had been wrong or her timing even a little off, she could be as far as four days away. She couldn’t drill without the rig, she needed it intact or at least enough to build the Heat Coils and the drill. All she could do is hope and keep walking.

There would be no time for sleep. Sleep could come when she heard the ice cracking and the first water melted by the nuclear heaters bubbled up into the hydroponics system. Then she could let the sound like rain mumble in her ears until she fell asleep. She surged onward.

By the end of the first day the heat of the engines had filled the cabin. They hadn’t wasted the extra water to cool them like they did with the centrifuge or even the Instance of the Lattice. She wanted to strip off her suit but she couldn’t. She had jacked her helmet into the system connecting to the rebreather in the vessel itself, giving her own tanks the chance to change water. The suit maintained the pressure around her body which she needed until she could establish a proper seal on the ground and begin pumping good air in. Even that would only be a momentary solution if the little plants didn’t start replacing the supply. She could almost see their little shoots poking up out of the water. No. She shook off the drowsiness at the edge of her consciousness. Don’t sleep. Can’t sleep. The suns set quietly over the
mountains at the horizon. The smaller grew hazy and orange, the golden one flushed a lighter softer pink. The night came with a new depth of cold. It pierced through the heat of the engines working. Steam began to rise off her metal insides but dissipated quickly in the air such that it was. Plenty of air, no oxygen. She felt the same old heaviness pull on her eyes. No. No time. No sleep.

When the sky above her began to lighten she felt like flying as above her something impossible happened every second. She had never seen it. For her entire existence a sunlamp had gradually grown from darkness through a moment of dimness to an almost blindingly bright light. But as the suns rose the impossibility of the sky changed from shades of color to shades of other colors that she had no words for. They were colors which until that very instant she had had no concept of. She didn’t even know how to dream colors like that. When the sky finally returned to the now slightly more familiar color of impossible blue it had been she was almost relieved but even then she could tell that it wasn’t the same as yesterday. Clouds containing a not insignificant portion of ammonia had brought out a powderyness and complicated the color. She had been moving in muscle memory and had only drifted a few clicks off course during her musing.

She would have to rest eventually. She knew that. Hallucinations or wrecks wouldn’t do her any good and she could tell that her brain was about to push her into microsleeps. She determined a schedule. Three hour shifts, nine on, three off. It would be brutal but she could do it if she stayed focused. She kept her eye fixed on the horizon, now golden with the light of two suns.

By the time she awoke on the third day she knew she was heading in the right direction. The ice sheet was there, she could see it, and she knew she’d never reach it. Even with the weatherproofing, the cold had caused the screws in its thousand joints to contract. The legs would shatter into a hundred pieces even at rest. So, no rest.

On she went. The rig quaked and groaned as she plunged forward heedless of the sound. The heat was boiling. Her mask was almost entirely fogged over. She shoved her arms forward, her shoulder muscles screamed, straining against the seat’s safety restraints. She knew it was for nothing but she had learned something in her first exam.
She was eight years old. The chambers had been broken and her skin was so tight it had begun to crack around her fingers. She couldn’t help but pull at it as she rocked back and forth in her seat. She couldn’t move. She couldn’t think. The cold of the seat on her thigh, the itch under her skin, the buzz in the light, and the endless clacking of the fingers at the twenty other consoles in the room. It was all so loud. But in her mind she kept hearing her voice saying over the loudness “Start typing!” It was the test, it was what she had to do. If she didn’t. The shame didn’t let her finish that thought so in desperate rage she leant forward and began to type. It was like trying to force her head underwater. She went word by word, only vaguely remembering the previous one and more or less completely forgetting the word before that. She knew it was all for nothing but she was so furious it was cold. That was before the Node that Primrose made her, the little buzz, that little stim, that helped keep her focus until she could find a place to stim properly.

It was that same cold anger that seethed in her now. It was hopeless. She knew it was hopeless but that’s why she had to fight. Because the hopelessness was just so fucking inevitable somehow. It was so frustrating how it just was. Hope was a tiny flickering gossamer thing and hopelessness was implacable like a cliffside. So you just had to bash your head against it. It was a simple thing really. What else were you supposed to do? Giving up was somehow worse.

She pushed on even as exhaustion cried for her to stop. The night fell and she continued in the dark, barely noticing it pass.

She couldn’t give in to death because that was giving into them. Them with their perfect goddamn systems, with their sunk costs, their endless redundancy and programmed obsolescence. So she fought instead. With girls in the meal hall who liked to remind her of her phenotype, with the exam, with herself. There was something pleasing in it for sure, an endorphin rush that came from a broken nose. But it was more than that. She didn’t really have words for it but it felt good to do something out of sheer stubbornness. She hadn’t realized it but she had lived for spite for a long time.
The storm in her peripheral vision ended with a sound. It was a low groan, like the giant knuckles popping, something so far off as to be impossible to imagine. Her breath caught. It was the sound of the ice moving. Another suns-rise was fast approaching. The sky another inexpressible color, she had taken to calling it predawn. The ice let out another long low cracking sound. She knew it wasn’t shifting beneath her weight, it was so vast a plane of ice that it was only the limitless energy of solar radiation that could move it now. But there it was. She cried and whooped and hollered. She was on the ice! She could feel the metal body around her beginning to fall to pieces. That was okay, the legs would be building material now, struts to hold up the solar panel array. For now she let it slump slowly to the ground and released the hatch with a sound like an exhale. She hatched herself from the slowly disintegrating rig like a cephaloPod from an egg. The rig had earned a death, new life could begin when feeling returned to her arms and legs.

Eventually it did and she finished assembling the biosphere by midday. It vacuumed sealed itself to its base and inflated to fullness. It was about a ten foot diameter and equally tall. The tanks drank up the sun with a golden happiness through the panels. She dragged the supplies and the mobile-labs into the sphere and with a smile of rich relief she unclasped her helmet. There was a layer of condensation inside. The endorphins continued to send signals down her spine that mixed pain with relief. She had never been so hungry. She sat down heavily on one of the generators and wheezed, leaning her back against the side of the sphere, its transparent shielding like a membrane. One of her Heating Units sits in the middle of the space, its coils glowing a deep vivid orange. She reached behind her and grabbed a protein ration off of the pile sitting in one of the supply trunks. She had only halfway unwrapped the thin tinfoil before she fell asleep.

Some time later the cold woke her, or something else? Her eyes snapped open. Something was wrong. She jerked into a sitting position, her chest heaving, her breath pulling in the frigid air. Her heart pounded in her ears and her gills continued to gasp as she slowly got to a crouching position. The panic
continued to rise like a flood from her chest into her throat as she strained to listen, for what she didn’t know. Until she heard it. A deafening silence. The air pumps had stopped, the rebreather’s passive oxygenation had begun to set in, and with it went the sound of their small whirring engines. Iowa in her sleep was overcome by the sudden silence and now she sat in her little clear dome, a thin layer of sweat clinging to her skin listening to the impossible stillness of this world. Her entire life, every moment, had been underscored by the almost imperceptible rumble of the engines. But now all was ice and quiet.

No engines, no people, nothing. If she could thaw the water, and address the sulfur content, then she would have her fish but until then she was truly alone. She had known intellectually what it would mean when she decided to crash the vessel. But when you live surrounded by people, millions of people, the true loneliness of absolute singularity is almost impossible to imagine. She pushed the isolation down. She would have to survive before she could devote her time to not going insane and there was work to do.

Eventually her breathing calmed and her heart rate returned to normal. She reasoned silence was something she was going to have to get used to so she set to work without a song. In silence she began to assemble a coffin sized structure out of a series of jointed pieces of metal, panes of fiberglass and a mass of tubing. It took a few hours but by the end the chamber was ready. All she had to do was connect it to the irrigation system and add the salts and she could submerge whenever she needed. It was almost funny. For the first time she had what she needed, the itching and the pain would be gone. But she still wasn’t safe. Every minute spent out here was one minute closer to a quiet death in the cold. The sun was fully set, she would rest for now, excavation prep began tomorrow and if she could only do the impossible, life could begin.


Energy. It was all a question of energy. When the universe began, tearing itself from nonexistence into where and when in a single vivid gesture, energy became the eternal problem. Every single process was either the conversion of matter to energy or the absorption or expenditure thereof. It was the
answer to every question no matter how large or small. How long will the stars keep burning? How long
can your species survive? How long is your marriage going to last?

She needed to breathe, to stay warm and to eat. For that she needed to keep the engines running
and to start the algae blooms growing, and for that she needed the water. The twin suns would lend her
their radiation for now but that could only carry her so far. She couldn’t power the coils and the
rebreathers with solar power alone. She needed the water turbines and she needed them soon.

She could live for a time on her rations and the water she melted from the surface and
field-treated but that wasn’t a permanent solution and her energy would be spent in less than a month so
she had to drill.

There was no way to know how thick the ice was, she could thaw enough to get started, but the
Rig’s fuel reserves would only last so long. If she was to survive, to truly live a life here, she would need
to reach the ocean beneath. They knew it was there, the sensor readings had been very clear, beneath the
ice there was an ocean of liquid water. The sulfur content was high but so was the nitrogen, relatively
anyway, it wouldn’t be too hard to treat if she could get to it. Had she landed where she was supposed to,
the Heating Coils would have been able to melt through the permafrost in a week with no problem. Plenty
of time to treat the water, begin growing photosynthesizers to make oxygen, and start working under
combination water power and solar power. But now? God only knows. The ice could be stories thick and
she could run out her fuel and her oxygen long before she reached the water. She cursed quietly. She had
needed the course she’d plotted, without the targeting she had might as well had jumped off the ship
without a parachute.

But there had been no way around it, if she hadn’t stolen the vessel and disconnected the
computers, they would have just taken what they wanted and disposed of her. That was assuming she
survived long enough to actually get the terraformation to work. They would have come down and built
the world on the planet the same as they built it on the ship. The clones go on serving breeders until their
citadel was built and they probably would have purged all the people like her if they didn’t end the clone
lines all together. She had made the right choice. The only choice. She knew she had, she was certain, but some part of her still wasn’t sure.

She began to do the math. It was possible. If she hadn’t been too far off then it was possible. If she could do it if she could reach the water. Once the water level was breached she could be well on the way to self-sustaining by the end of the month and then came the real challenge, changing the world. Her eyes drifted over to the only bundle she hadn’t unwrapped. There was a piece of it in there, it was strange, she knew she was imagining it but it was almost as if she could feel the Lattice calling to her. She hadn’t been able to download the entirety of the histories but somewhere in there was Exarch Lebowitz, Cantor Dust, Gosper Curve and the truth.

Assuming she had ended up within a fifty mile radius of her intended target the ice wouldn’t be too much thicker than she had anticipated. If she was farther off she had no way of knowing. The scanner was functional, she had checked, but it took a lot of power and every extra watt was needed for heating coils and the drill, which still needed assembling. Assuming she only used the chamber once a week and kept the temperature inside the habitat at 50 degrees fahrenheit, cold but livable, the energy reserves would last three weeks if there were no breakdowns or complications from the climate. She could keep the Drill and the Coils going twelve hours a day, sleep in two four hour shifts, and then do maintenance. There should be enough time. If there were breakdowns or the ice was thicker than a couple stories — She shook the thought out of her head. She couldn’t think like that. If there were breakdowns she’d fix them. If the ice was too thick? Well, it had better not be. She sighed, feeling the tension beginning to build in her throat, she leant back and with a couple keystrokes on her communicator activated the Node-link to the Instance. Her brain filled for a moment with the quiet hiss of the sea. She sat there until she could feel her breath return to normal. Then she got to work.

14. The Storm.
The drill\textsuperscript{15} was built by the end of the third day. It took up the last of the struts left over from the
carcass of the Rig and one of the temperature regulation coils. She would have no spares. Most of
the spare construction kits were crumpled like tinfoil with the force of the impact. But for now as its
skeletal frame crouched over her in the dying light, she couldn’t help but feel something like hope settling
warmly into her chest.

The drill hunkered in the center of the little bio-dome on a set of three spidery legs; at its center
was the long column of the drill surrounded by the cylindrical engine fashioned from the terraformation
rig’s vehicle transport. She sighed at the kindly pain of the work that still hung on her on her arms and
legs. After ignition she could rest.

It would take a few hours for the coils inside the engine to heat the drill enough to begin piercing
the ice. She wrapped her fingers, still clumsy with cold and exhaustion, around the lever and yanked it
back. The lever let out a satisfying clunk as it slipped into the position that was once third gear and the
engine began to stir, drawing on the solar energy collected from the batteries throughout the day. For a
moment the hopeful rumble began to build but then it stalled, mewling like something wounded. Iowa
groaned, her own exhaustion turning from a gentle tug to a heavy pull toward the ground at the setback.
At times she was reminded of just how much heavier the gravity was on the planet.

She checked the meters, all were nominal, she checked the solar batteries and they were full so
she crouched down and checked the fuses. The panel popped open to reveal that one of the coils was out
of place, she sighed and knocked it back into alignment with a hearty thump. The engine burst awake.
Iowa stumbled back, flinching at the sudden burst of sound as the engine fully awoke and roared with
delight.

She smiled as the engine hummed through her bones filling her up with sparkling static and the
setting of the alien suns filled her little hovel with orange light. Not the sickly amber light of Wisteria’s
honey world but the clear cold brilliant orange of a frozen fire. The first part of her task completed, she

\textsuperscript{15}The drill consists of an engine held up by 3 legs, a two meter tall drill bit on the end of a truly titanic line of
cabling. The engine supplies power to the drillbit which bores into the ice as the cable is let out slowly behind it so
when it reaches the water it can be recalled. The hole left behind is roughly two feet across.
decided to take the moment to step out to see it. Since she had arrived on the planet there had been no
time but now, for a moment anyway, she could breathe.

Iowa pulled on her flight suit, her second skin, its mother of pearl already refracting what light
shone through the translucent walls of the bio-dome. She put on her helmet with the a hiss from the
vacuum seal and breathed in the earthy mushroom smell of the fungi-filtered air.

She stepped out into the sunset and was almost washed away. The massive golden disk had begun
to slip beneath the great glaciers to what she had decided to call the west which were blue and purple with
distance. As it set it lit the sky on fire. The impossible colors were indescribable as the nameless blue of
the sky or the endless white of the tundra had been when she first arrived. After a lifetime of dimming
sunlamps, casting a sickly and hollow orange light across the ceiling of her domicile or wisteria’s
chambers, the sunset tore into her like a river ripping through a mountain. Slowly full of neither love nor
malice it took her apart.

The horizon was a line of golden and ochre fire that tore itself across the edge of the sky, the
clouds above were joyous orange and livid pinks and purples. It was completely spontaneous and yet so
perfect was its beauty that for an instant she could feel what she could only describe as the hand of the
divine pulling her toward the golden edge of the world. Every time it would be different and every time
just as beautiful, on days where the sky was an endless clear vault or filled with roiling clouds the sunset
would remain perfect and ever changing. She wept again. When the suns finally set and the stars returned
they too took her breath. In space the stars are points of light that travel in vast clouds like schools of tiny
golden fish or swarms of dragonflies but the void is ever present. It will always be a few starts hanging in
an endless lifeless dark. But here it was different, the stars sent their light to her and through the
atmosphere and filled the sky with living indigo and a new midnight blue and purple. She knew it was
wasteful and in the morning she cursed her foolishness, the rebreather needed to be preserved but right
then she couldn’t turn away from the sky that was denied her for so long. So she lay there and watched
the stars.
She only moved when the implant hummed a tinny signal in her mind. ‘Don’t lose track,’ it seemed to say ‘keep the time. Don’t get lost. Ignore the static and the pain and keep moving. Keep the time. Don’t get behind schedule.’ She went to obey, to stand up and head inside but then she stopped. She watched the stars overhead, winking softly like little flames in the indigo sea. What time? Either there was enough time or there wasn’t. The drill was set, either it would reach the water or it wouldn’t. If it broke down she would fix it then if she could fix it at all; even in her deepest stupor the drill breaking would awaken her. She couldn’t make it go any faster any more than she could make the stars move faster. The suns rose when it rose and set when it set, what was time? A nothing. Who would call her late? Who would tell her to move faster? What am I afraid of? Getting a demerit. Fuck this. She drew the little set of tools from her belt and with a few swift motions detached the Node from its casing in her skull. She looked down at it in her hand, it looked like a little silver slug no bigger than her thumb. It glittered there against the tan of her palm.

She almost laughed at it. Her survival had depended on this little thing and yet it had spent her entire life since she had had it filling her with that awful hollow buzzing. It had been a lie. She had traded survival for living. She had never needed it. At least, she need not have needed it. Not really. In the same way they didn’t need to find the ‘world to come,’ the solution was always right there. Build the world from what you have. Their clergy of death had made a machine out of her and she refused to be one any longer. She went back inside and placed the Node in the cargo crate near the Lattice Instance. With it stowed away she returned her attention to the drill.

The coils were white hot and sent waves of heat bouncing around the bio-dome, which responded accordingly, reducing its own heat output to compensate to a livable even comfortable level. If her math was right the drill would have just enough fuel to reach the water in roughly three weeks with the help of the solar batteries offsetting fuel consumption. If she was in the radius that should be more than enough time. Her job now was to keep it running from sundown to sunup. Let it charge and then do it again. She prepared her station and set to work.
Before too long she began to fall into something like a routine though not nearly so rigid. She would awake, stretch, do some exercise, eat, run a diagnostic on the drill and then plug her Node in and comb through the Lattice. This proved to be difficult. The filing system made only an arcane kind of sense. The files must have been arranged in some manner that the ancients understood but Iowa couldn’t find the logic to it. It didn't seem arranged by subject or chronology or even something as abstract as a general theme or tone. It was halfway through the second week when she made a discovery. On that morning she had plugged in the Node and connected to the Instance. She watched the thousand little points of light appear in their perfect grid like the vertices of an invisible net on the walls of the biodome and then manifest the next file. The file was of three people, all dressed in red hazmat suits. They worked at a series of screens and consoles all connected to a large pillar made of glass in the center of the room. Inside the glass pillar she could see vials on centrifuges spinning and depositing solutions into something that looked like a larger version of the Ovum module in her own vessel. She didn’t know why but she felt a knot begin to tie itself in her chest. As the three scientists worked, a disembodied voice in the now familiar ancient dialect began to read out laboratory notes. Most of it was minutiae describing some biological process interacting with some kind of isotope; changes in chemical levels in fluids, rate of cellular death. Iowa felt a shock colder than the icy air of the unformed planet as she realized what they were describing. It was an experiment, an attempt to calculate how long it would take the radiation from the engines to sterilize and then eventually kill the Technicians.

Iowa turned off the program. She didn’t revisit the Lattice for a while after that.

The morning the storm came Iowa was absorbed in the movement of the drill. On the ship she had spent her entire life inundated by constant noise. She had eaten, worked out, submerged and performed the usual maintenance before sitting down for her meditation. The endless hum of the engines, the constant work, she was a part of a machine evermoving. On the planet there was silence, true silence, but for the sound of the winds drifting along, running icy fingers across the landscape and the strange unsound of flurries kicked up by their little cyclones as the winds met. The oscillation allowed the part of her mind
that never stopped to immerse itself in the rhythm, to focus on one thing and let the rest of her mind wander without fear. Her thoughts drifted to her friends.

She dreamed it was the day of the placement exams. They stood among a crowd of hundreds all gathered at the entrances to the lifts. Every kin-group in the sector was there waiting for the young ones to return from the examinations. The harsh sun-lamps lit their faces in stark relief. Nervous voices traded horror stories of their own time in front of the consoles; “and the exams are even worse this year” said one voice knowingly, “they make them harder every year, got to keep up with standards,” said another darkly. Iowa did her best to ignore them. Penrose put a hand on her shoulder as they waited for the lift to return. Loam walked up, carrying a couple of honey-cakes. They both seemed to glitter with hope under the artificial light.

“Is she back yet?” Loam signed after handing the honey-cakes off to Penrose. There were two extras for Nicki.

Penrose shook her head, “not yet.”

“Any minute now…” said Iowa staring at the door. She clenched her teeth, anxiety mixing with hope in her stomach. Her Node buzzed the hour. Nicki had almost killed herself studying and even after Iowa had made her promise to submerge — which, to her credit, she did — Nicki had only let up her pace a little. The three of them waited. Penrose gasped and tightened her grip on Iowa’s shoulder as the light came on, indicating the lift’s return.

The lift doors opened with a hydraulic hiss and as the newly assigned Technicians, all wearing the uniforms for their departments, flowed out into the crowd there were whoops and cheers from the crowd. Iowa scanned the flood of people for Nicki but couldn’t see her. “Where is she?”

“There,” Penrose’s voice was strange. Iowa couldn’t identify the feeling. Iowa looked where she pointed. Nicki stepped out of a different lift, she was alone, and her uniform was wrong. Nicki wore the iron countenance of determination. She walked like every step was taken as part of a sacred mission. Iowa felt confusion freeze over into terror as she realized what it was Nicki was wearing. Nicki was dressed in the iridescent white flight suit of the Away Mission. She shone like mother-of-pearl as she walked toward
them. Iowa felt a tin of the mourner’s black grease-paint pushed into her palm. No. Penrose choked back tears.

As the panic rose in her throat an icy roar tore through her. She awakened back into reality as if breaching the surface of icy water.

As the proximity sensors in the Biodome screamed a shrill alarm Iowa’s eyes snapped to one of the radar screens. A roiling darkness bore down on the little blinking light that was her hovel. The drill!

Iowa leapt to her feet but the storm was upon her before she could move. The earth shook as winds that moved with corrosive spite, unimpeded by the gentility of an atmosphere began to tear at the walls of the biodome. The earth shook and Iowa lashed out an arm to catch her balance but the wind was too much. She hit the ground hard and heard something crack as her head lashed against the floor. Fuck. Fuck, the drill. Fuck. The storm roared in delight and then all was silence and white as the blizzard hit then darkness. There was a screeching of metal as the dome shook again. The drill groaned as the engine sputtered, its struts bending under the force as the dome was shook back and forth. If the drill column snapped there would be no water and she might as well walk out into the storm and let the cloud of icy daggers tear her to shreds.

She staggered to her feet, the dome bucked like a ship on turgid waters. The cold bit fiercely into her exposed flesh right to the bone. The meager sunlight, refracted by the dome’s design to keep it warm, was gone. The emergency lights flickered off. Only the drill’s heat, glowing like coles, kept the cold and darkness at bay. The storm had swallowed her. The blizzard roared another rumble of cruel thunder and tore the supports free on the left hand side of the biodome. The world shook again, listing hard to the left and then slamming back down. The drill toppled. Iowa roared, panic surging through her as she saw her hope about snap in to. In pure instinct she leapt forward and slammed her arms around it to keep it up right. She screamed. The red hot coils turned her world into white hot pain as the flesh on her arms bubbled and split apart, but she didn’t let go.

The drill’s engine weighed nearly twice her own weight. Without the help of the mag-lev she could never have lifted it, but now she did. With every last atom of effort she could draw on, with the
desperation of a creature gnawing off its own leg, she forced the engine back into alignment. The drill’s alarm’s screeching halted as the column was realigned.

She stumbled back, bracing herself against one of its struts, holding herself and the drill in place. As the storm buried the little spot of life it couldn’t snuff out in snow Iowa felt the pain eb as shock began to creep through her body. *Stay awake.* She felt a strange sense of distance begin to dull her senses. She noted absent-mindedly that she could smell her own flesh still cooking from the burns. The pain was too much and the shock took her.

When she regained consciousness she was slumped against the strut, her skin almost adhered to the metal with sweat and blood. She fought against the shock and half-climbed-half crawled to the other side of the dome. The crates had fallen and bust open. Her left arm was completely non-functional but her right still mostly worked. She pushed around inside the toppled crate until found the med-kit and unlatched it. She growled in pain. The heat had not returned. They were running on emergency power only. If she didn’t get the snow off of the dome the solar batteries wouldn’t charge and soon the generators would stall and all of this would have been for nothing. If she freed them they would take charge again, assuming they weren’t torn off and shattered by the wind. That would have to wait. She spit out the voice commands between gritted teeth. The shock was fading and the pain was coming back. The little drone activated and in that strange low un-voice asked “What is the nature of your emergency?”

“Burns, third degree” she snarled back, “contusions and possible fracture of left posterior rib, possible concussion.”

The little robot, which was a silver sphere held aloft by a motor that looked like a tiny plane propeller, did a scan and concurred with her findings except for the rib which was only bruised. It set to work. As it worked darkness took her again.

When she awoke, all was still and silent. The medical drone’s battery had died after it finished patching up her arms to the best of its ability. The growth stimulant, along with the synthetic-skin graft, would knit the skin and the tissue back together but her left arm would never have full range of motion again. She snarled in pain and wrapped her ribs. Another spike of pain shot up her side. Her breath still
misted on the air, even with the drill. The emergency power lights had flickered back on but the heat had not returned.

Sleep came in fitful bursts that night. Even lying curled up next to the engine, dressed in her insulated flight suit and under two layers of thermal blankets, the mix of cold and pain sent spasms through her body. The biodome had some painkillers, enough that she could take one dose a day for two months, but she didn’t want to use them. She had seen what dependence could do to even a young and healthy body and she didn’t want to use them. Besides, she couldn’t afford to dull her senses. Not out here where she was alone and time was nothing. But after a few hours she conceded and took half a dose, just enough to dull the pain so she could sleep.

When Iowa awoke the following day she cried out as the pain spasmed up her arms and slid under her ribs like a hot dagger. She fought through it enough to sit up and take the second half of the dose. With the help of the painkiller and a few splints made from a spare dowel tied to her left arm with some length of cordage. With great effort she dressed in her flight suit and affixed her rebreather. She skipped breakfast, the nausea made her head swim. With even greater effort she levered the side hatch open and trudged out into the blue morning. Her eyes stung as the sunlight hit the snow and splintered into a million shafts of tiny light around her. She turned her attention to the sky and almost laughed. Even in pain and numbed with medicine the impossible nameless blue was enough to stir her toward something like joy she couldn’t find the word for. She began to dig. It was slow going but by the time the sun was halfway toward setting the biodome was cleared. Two of the four solar batteries were broken.

Exhausted, Iowa slumped to the ground and wept for a while. The loneliness, the pain and the effort were all too much. Penrose could have fixed the battery, Loam could lessened her pain, and Nicki would find in her own way a quiet wisdom that would remind Iowa why she was doing all this. Why am I doing this? She answered herself, because you were dead already, because you couldn’t take it. She heard Nicki’s voice, kindly shaking her head because you were tired of lying, of forcing your body and your
mind into the right shape. The wisdom of children is the wisdom most often forgotten. Iowa punched the ground. Maybe I would have been a good mother if I had been able. Iowa spat out that thought; there was too much bitterness in it.

When the sobs had shook their way out of her body she stood and limped back inside. After a protein ration and some rest the choice became clear. The Biodome would have half the power, so she would use half its functionality. The drill had to run for all of the twenty-six hours in a day on the ice planet if it was going to reach the water by the end of three weeks. On half power she couldn’t keep heat, the chamber, and life support going at the same time. As with most problems, the answer was simple but unpleasant; she would reroute the energy from the dome’s heating coils and the irrigation system supplying the chamber to the drill and watch it at all times. She would eat only when she had to and sleep in shifts. The drill would run on one battery during the day via a direct conduit and then run on the energy it stored in the other battery from the sun overnight. She’d have to keep a constant watch to make sure the limiters didn’t burn out but what with the cold and pain sleep wasn’t likely in any case. It would mean severe rationing; rationing heat, energy, even breath. Without the secondary heaters the fungi that made up the biodome’s rebreathers would die or go dormant. Iowa would have to rely on her suit for her air supply. It would last a month, if she didn’t reach the water by then she was dead either way. If she did reach the water she could grow new fungal rebreathers, she wouldn’t need to rely on the sun for power, she could begin growing food and life could really start, but until then she had to do what she had done for almost her entire existence and become a corpse again.

Iowa drained the chamber and rerouted its power coils, salvaged the broken batteries for what spare parts she could, and then rerouted the heating coils back into the drill. By the time she was finished the sun had reached the horizon. Iowa stepped out into the dying orange light and watched the great golden disk sink toward the edge of the world, burnishing the sky in bronze, lilac and pink. Iowa let the light wash over her. She would endure.

15. Below.
Cold is often thought of as the absence of heat much in the same way that darkness is the absence of light. This isn’t so. People who spend a lot of time in caves learn fairly quickly that darkness, proper darkness, is not an absence but a presence. The dark under the world doesn’t just lack light, it swallows light. Cold is the same. Cold is a living thing.

The cold that now slunk into the biodome devoured the heat in Iowa with a dull relentless hunger. It sank its teeth into her bones and sucked the warmth like marrow until her fingers were shaky and her body felt hollow like the withered autumn leaves.

In the beginning Iowa tried to stay busy with repairs to move her body and occupy her mind, but the shaking only grew worse. Worse still, movement took energy and oxygen, neither of which were in great supply. The food stores were low and by the second week the plants and fungi that sustained the bio-dome’s rebreather had died or gone dormant. She had to wear her flight suit at all times for the limited insolation it provided and rely on her personal rebreather. Her lungs were grateful for the air but her gills spasmed even as she lay still.

More and more time began to blur into the constant hum of the drill as she huddled near the engine for warmth. Close but not too close. Her wounded arms and hands still twinged at the baleful glow of the coils within.

It kept the worst of the cold at bay at first, but as time wore on and the rationing grew leaner, the hungry cold became harder to dull. Before too long even the engine offered little comfort.

When the first week without the chamber passed the itching and burning returned as the moisture slowly left her skin, but it was different now. The air wasn’t merely dry; it was dry and cold, which accelerated the rate of cellular death even with the help of the suit. The little white cracks formed more quickly now around her mouth, her joints, and her fingertips than ever before. They bled more too as the suit caught on the frayed edges of her drying skin. The chemicals she used to clean the suit rubbed into her thousand little wounds and burned with a cruel delight.

Every moment of every day she itched. She itched and itched. She itched until all she wanted to do was peel off all of her skin and run skinless into the tundra. She wanted to sparkle, a mass of wet and
rubescent muscle, under the stark light of the wintry sun. She wanted to become an impossible skinless ghost, drifting across the ice-sheet until all that remained of her were the red footprints she left behind in the snow.

She imagined what it would be like to be the flayed woman as she changed the dressings on her burns. She sealed the arm off with a tourniquet so no air escaped and removed the glove. She examined the little silver line that demarcated the skin graft from her flesh. She would start there with the synth-skin, a perforation ready to be torn, and unwind herself from the itching and burning forever. She shook the idea away and changed her bandages. None of that. It won’t be a waste, it can’t be a waste.

As the days passed she checked the drill’s radar monitor incessantly. Iowa didn’t know what she was looking for, but she didn’t find it. The results remained inconclusive because either the ice was still too thick or there were isotopes or minerals messing with the signal. There was definitely liquid water down there, but what was in it remained a mystery.

Iowa’s thoughts began to devour one another while she maintained her constant vigil by the drill. More often than not the itching and the cold kept her awake. She had long stopped keeping track of the days. The delicate components in her implant Node had frozen so she couldn’t have checked even if it mattered. It didn’t. She would either reach the water or she wouldn’t.

She watched the weather carefully, but no more storms came while she waited. Flurries passed like dancers across the rippled surface of the ice but that was all. The sky remained mostly cloudless and that nameless blue.

On the day the indicator light for the inhibitor came on, Iowa knew she would never reach the water. It might take days or even a week, but the engine would burn itself out. Iowa stared at the little light blinking away in total apathy of her suffering. It didn’t care about how hard she worked, or how far she had come, or all she had left behind. Without the inhibitor putting a limit on how much energy the engine was putting out, the coils would melt the engine’s mechanisms into a congealed useless mass. The spare had been crushed under the wreck of the terraformation rig. Iowa wanted to scream, but she didn’t
have the energy or the defiance to scream. Iowa sank to her knees, hopelessness gnawed at her insides like a termite chewing its way out of the last support beam in an old house. “Fuck.”

In her hollowness she felt a resonance. Something in the depth of her stirred. The part of her that still dreamt of dark water. She looked up at the engine. If the engine was going to burn itself out anyway, if she ripped the inhibitor out who knew how much faster the drill could move? She got to her feet. According to her instruments the drill could last about thirty-six hours without the inhibitor before the force became too much and the coils burned themselves out. Maybe if it was fast enough she could reach the ocean before the drill shook itself apart. If not, then the fire would consume her and save her the slow death by cold and starvation. This was pure madness.

If she was going to keep up progress she knew she couldn’t stop the machine for even a moment. Every inch of ice was precious. She popped open the side panel and stared at the coils. They waited there, glowing greedily, hungry for her flesh. She would have to reach through them like the baleen in the fiery maw of some hellish whale and rip the inhibitor out by touch alone. She knew what it looked like: it was octagonal, like a little fan almost, with four ports, one for each coil and a reservoir of coolant. She would need to detach it without seeing it and without breaking the reservoir.

She could prepare this time. There was protective gear but it wasn’t designed for this. All of her training screamed at her to stop. Her burns itched. Her gills spasmed. No point in waiting, it’s not going to get any easier.

She plunged her hand into the machine. The engine snarled in complaint as she pushed deeper into its innards. Iowa could feel her flesh beginning to blister again even under the heavy glove. She growled in pain as she felt around for the little module. The heat grew only more intense as it searched for a gap in the protective gear, looking for flesh to boil and render apart. Iowa felt tears streaming down her face; the memory of the burning and the shock tried to twist fear into terror and shatter her into shaking sobs. She fought it down, stamping her foot repeatedly into the ground, focus remaining on the inhibitor. Where are you? Come on. Come on. Iowa felt her fingers close over a corner. Is this it? No time to hesitate or double check. The wounds were already reopening on her arm.
She found where the little piece connected to the first port and released the first fastening as carefully as she could. The alarms began to sound a warning of a malfunction. She screamed as they sent shockwaves through her body. She quieted them shouting “manual override!” She undid the second fastening, then the third. There was one left. She forced her arm even deeper between the coils and with something between a scream and a roar undid the last fastening. Then with all of the focus she could muster to her mind addled by sleeplessness, hunger and cold, she drew her hand slowly back. In her palm was clutched the inhibitor, still glowing cherry red from the heat. Iowa dropped it into a bucket of melted snow which hissed instantly to steam. She turned her attention back to the engine as it realized the white hot fire within was finally free.

The dull roar, the oscillation that had become the current on which Iowa’s mind had buoyed for these last weeks, exploded into a furious ululation the likes of which Iowa had never heard. The engine rattled in its casing, shaking the entire biodome as if another storm were bearing down upon her. Iowa dropped the still smoking glove and bandaged her arm again, never taking her eyes off of the engine and the readout on the radar screen.

Her focus on the drill was absolute. She didn’t sleep, she barely ate, she hardly moved. The engine, glowing from within like the memory of a starship consumed by fire unfurling into space like a silver flower, became the entire world. For nearly two days Iowa watched and worked. She did repairs on the fly, adjusting pressure, making patches, and watching the screens. They were in tandem now, two halves of a machine hurtling toward an explosion.

She prayed. *Come on. Almost there. Not yet. Come on.* Time was nothing, there was only the effort of keeping the fire inside as the drill dug still deeper. She remembered a story in the old texts, the ones who contend with god but she couldn’t remember the name. She wrestled with the mechanical angel for two days and two nights and before the fire found a way out.

The engine roared in joy as it finally convulsed itself apart. It cast off great sheets of now molten metal and sent rivets pinging off the walls of the dome. The need to survive pushed Iowa’s broken body beyond all conceivable limits as she dove out of the way of the debris and came back up roaring back at
the engine. She slammed herself forward and caught hold of the throttle. The engine tried to buck her off but she ignored it and ripped the throttle closed. The coils cried in spiteful fury as the power was cut off. Iowa watched them slowly dull from white to red to dark. She knew they would never turn on again.

As the sun rose Iowa staggered over to the console and activated the pump. If she had done it the water would be drawn up the shaft by vacuum and deposited into the chamber, which she had rigged to the irrigation system. She closed her eyes and waited.

For a moment there was silence and then the perfect silver sound of water. She fell to her hands and knees and wept. The depths within her roared with a wordless joy. Icy water that had never seen the sun flowed like blessings and tears into the chamber. It was dark, full of silt and salt. Iowa stopped, it smelled different from the water in the chamber or even the hydroponics bay. It wasn’t just salt; the water smelled alive. She had never smelled water like that. It wasn’t just water, her heart began to pound, there was life. It was impossible the ocean was frozen but it was alive! She grabbed a sample and put it under the microscope. She started laughing, there they were, little microbes drifting in the water. She couldn’t look away. It was impossible but there they were. The ship had no idea, how could they have known? Then another possibility occurred to her. The pounding in her ears grew louder.

She stumbled over to the radar screen and activated a scan. It took a few moments which inched by, weighed down by anticipation, but she would have happily waited for the rest of her life if her suspicion were to be confirmed. The screen lit up as the signal was finally able to expand out into the water. She saw them. They were fleeing the noise of the drill shattering through the ceiling of their world but there must have been thousands of them. She sent a confirmation signal but the results didn’t change. “Fish. They’re fish!” A manic joy ran like lightning through her body. It was a miracle, it was impossible, but if there were fish, what else was down there? Her mind began to race with possibilities.

If there were fish it meant that it must be a closed oxygenated system of some kind. If she could get the plantlife involved in creating an atmosphere she could open up the system. She could do it or at
least get it started. For now at least she could reach the water, a sustainable source of oxygen, and power and food would soon follow.

As the alien sun scattered pink and golden light through the dome, Iowa collapsed against the wall and laughed for a while. She sat there happily rambling ideas and possibilities out loud until the sky was that blue again. Then she sang a tuneless song. Then she slept.


Iowa caught her first fish a few weeks later. She had taken samples of the microorganisms, tested the relative nitrogen and oxygen levels, and began a mockup for how to begin making the alien water usable for hydroponic food production. The nutrient rich water had been filtered free of salt but not nutrients and introduced to the dome’s rebreathers and connected to the hydroponic and power systems to handle the dome’s lightweight functions. This freed up the solar batteries for the pump and other heavier work. The algae and fungi within were blooming within the week and they were up and running again by the end of the month. The drill was long since disassembled. A number of the parts had been somewhat haphazardly repurposed to make up the pump that now drew water from the ocean as well as acted as the conduit to the turbine that the biodome employed for waterpower. Her work had begun in earnest, spurred by the joy of being free of the suit and the slowly decaying rebreather. With the ability to submerge and better treat her injuries, she was able to turn her attention to examining the samples that were pumped up from below.

The icy ocean was teeming with a stark kind of life. The creatures, even the small ones, had grown beautiful and strange in the frigid darkness and pressure beneath the ice. The microbes she had studied thus far were no exception. One species was a mass of tiny krill-like entities with a queer bioluminsecence that straddled the line between fungus and animal; she suspected they had the ability to photosynthesize in addition to eating the more conventional way. Another was a group of cold-adapted diatoms unlike anything she had ever seen. Like all diatoms, they created a beautiful silica structure that acted as a sort of exoskeleton, but these ones were especially intricate, almost fractalistic, in their patterns.
From her observations of the environment, she was able to construct appropriate protein bait and lowered it down the pump with a humane trap and lure. It took time but Iowa had time in excess and so was happy to wait. While she did so she repressurized her immersion chamber to be better suited for her guest. When the trap sent a signal it was sprung, Iowa brought it up and almost squealed in joy when she saw the impossible creature floating in the little spherical trap. It was no longer than her hand and shimmered with a strange iridescence. She transferred the trap to the chamber and opened it, allowing the pressure and water temperature to equalize before removing the trap. The fish was gorgeous in an uncanny way. It had a tadpole-like body with skin rather than scales, a broad face with bulbous eyes, and large fan-like fins. The fish’s skin was very odd, both transparent and reflective. When the light hit it the skin flashed with opalescence, but when in the shadows the skin was clear and glassy. She could see its little heart beating and its gills drawing in water. She watched it as it explored the chamber, its big unblinking eyes pondering its strange new surroundings while little tendrils under its chin began to probe this way and that.

Her study began in earnest and over the coming week she set herself two questions. The first, and the one that kept her awake at night, was ‘how did these creatures survive?’ The ocean below was teeming with microbes who had all begun to adapt to the low oxygen environment and the low temperatures, but a larger being like this fish would have needed some other set of adaptations. If she was going to understand how to live on this planet, that set of adaptations would be vital to understand. The second question was the question of utility: What role, if any, would this species take in the terraformation effort?” As Iowa studied the strange fish, whom she had taken to calling Vertice, she reinforced and further weather-proofed the dome.

While the days wore on, Iowa tried her best to avoid it but eventually it became clear that she had learned all she could about Vertice from her behavior and non-invasive scans. Vertice was a female, though for her species, as it was with many fish, biological sex seemed negotiable based on the situation. She was a mouth-brooder, so if she ever laid eggs either she or her mate would carry them around in their
mouths until it was time for the eggs to hatch. She was a curious creature; though not prone to panic, she never stopped circling the tank but she showed no other sign of anxiety. It was as if she was waiting.

Iowa sighed. It had to be done. The next time she fed Vertice she dosed her with a painkiller that she thought wouldn’t prove harmful to Vertice’s digestion and with a pang of regret, drew some blood, took a few tissue biopsies and did another deeper scan. Even numb and partially unconscious Iowa could see that Vertice was confused and distressed. Her little fins twitched vainly and her eyes rolled hither and thither/ Iowa had done similar tests on the fish in the Hydroponics Bay hundreds of times, but this time it got to her. Iowa had to stop halfway through and gather herself. There was something about doing it here, alone, that made her feel ill. Iowa resolved to let Vertice go as soon as the samples were tested. She fed Vertice a little extra that night. When Vertice returned to the trap she seemed to be watching Iowa as she was lowered back down the shaft created by the drill. Iowa felt oddly as if she was losing a friend.

The results took time to parse because they made no sense. It was four days of retesting and evaluating before she could come to something close to a theory. By the end of the fifth day after she released Vertice, she finally came to some conclusions.

The sun had just set and Iowa was sitting on a crate in front of the console reading over her notes. The nature of the tissue defied easy categorization. It contained a surprisingly low amount of carbon and a high concentration of silica. That must be where the glassy appearance of the skin came from. She had chalked up Vertice’s translucence to the low light, which might have been part of it, but the silica was an element too. Are you a silica based lifeform?

Stranger still was the blood. Fish adapted to cold environments have Ice Structuring Proteins that keep the blood from freezing. Iowa had expected a structural analogue here, and indeed she found one, but its behavior, if you could call it that, was...well, impossible. What the fuck? The proteins had a more complex structure than the ISP’s she had observed in other fish; in fact they had something like RNA and were able to propagate themselves outside of the body.

Iowa stared at the slide in disbelief. They weren’t alive. They couldn’t be. Could they? If they were alive then Vertice was a siphonophore, a composite organism, and a silica based siphonophore at
that. *A completely new kind of organism!* Iowa felt joy and wonder fill her chest like wind billowing up the mainsail of a galleon. The excited energy carried her to her feet, and, as she pulled on her flight suit, she began to hum a song they used to sing at mealtimes. The proximity alarm began to beep urgently from over her shoulder.

Iowa stopped mid-motion and turned to check the weather screen’s readout. There was nothing there. Iowa felt her breath quicken as realization dawned and she turned to the other screen. The readout for the subterranean scanner sending signals into the icy ocean was replaced by the blinking alert warning of an incoming object approaching at speed.

Iowa closed out the alert and brought up the readout. Her knees almost gave out from underneath her. The valley in the ocean floor below was eerily devoid of life; the clusters of little blips that represented the few shoals of fish that normally swirled their way beneath her were nowhere to be found. But Iowa’s attention was fixed on what they were running from. It was so massive and took up so much of the screen, she hadn’t realized that it wasn’t part of the landscape until saw it move. On the scans it was so large it couldn’t be identified. It registered as a shadow, a shadow the size of an island, and it was moving. It was coming closer.

Her mind reeled. Every cell in her body, every instinct that had evolved over millions of years, from the time of the primordial ocean on the planet where her ancestors were spawned, screamed at her to run. But even as instinct tried to tear her away into a blizzard of panic, her wonder at the sheer vastness of the presence held her attention. Whatever it was was so massive that it looked more like a storm than it did a shoal of fish. Iowa tried to adjust the scanner, half expecting it to resolve into some kind of underwater seismic or weather event, an algae bloom, or maybe a cloud of migratory fish moving south, but the readings didn’t make sense. There weren’t the right pressure changes for weather, no seismic reading, and the chemical filters didn’t pick up signs of algae. The shape remained a singular massive shadow approaching at an inconceivable speed. *What the fuck are you?*

Iowa tried to think, to do something, but she couldn’t turn away. It grew still closer. The giant shadow was moments away from enveloping the little blinking light that represented the biodome. Soon it
would be close enough for a visual. She watched and waited. Panic still howled for her to flee but she felt the dreams of the deep stir in her. She needed to see it, she needed to know, *Come on, come on!* It was four clicks away, now three; at two clicks she could activate the camera and she would see it. The part of her that had learned to be human asked her if she was sure she really wanted to, the part of her that was still part of the sea told her she did.

Two clicks away. She activated the cameras, the water was pitch black but for the swath of light cut by the high powered beams of the motion-activated lamp attached to the camera. Iowa kept her attention fixed on the screen. There was something there, in the inky black. Was she imagining it? *No.* *There is something there.* She strained to see and then her heart leapt into her throat as she saw it. The darkness moved. It was an undulation like a great wave. Iowa couldn’t breathe. She couldn’t process what was happening. Her mind just kept saying, *It's alive. It's fucking alive.*

The massive entity, if that’s what it was, moved again and the camera feed cut out. Iowa watched on the radar as the great shadow consumed the little light that was her base. Iowa realized it was directly underneath her. She didn’t move. It was as if she were suspended above the endless void, only this time the void was watching her. Then, as suddenly as it had appeared, the radar began to register it disappearing. It didn’t seem to be moving, just growing smaller. *It's descending.* She watched as whatever it was sank slowly out of sight, deep deep into the valley. *There must be some kind of fissure down there.* In a half an hour it was gone.

Iowa saw the world grow fuzzy around the edges as the static rose in her mind. She collapsed into darkness.

*When Iowa woke up a few hours had passed and it was as if the shadow had never been there. The fish had returned and the subterranean seas were calm. For a moment she thought it had all been a dream, but the camera was still inoperable and when she checked the logs it was there. The scanner registered an object of prodigious size and speed passing below the dome and then descending. She felt unsteady on her feet, the instinctual fear swirling together with the excitement in her gut, but neither*
could hold off the exhaustion for long. She ate and drank some of the filtered water which still carried an earthy taste that made her smile a little.

In Iowa’s dreams that night she was vast, ancient and unknowable. She drifted along the deep eddies and undercurrents, through the endless dark of the water. She wandered endlessly, watching the silty world beneath her shift and change with her passage, until she heard — no, felt — the sound of the shell of the world crack above her. It was a tiny hole that let a little column of sharp light, undulled by the carapace of ice, pierce into the millennia of darkness. Her great body shifted almost unbidden toward the blade of light. She could feel the current of change rising through her scilla. She moved toward the light, she wanted to know.

When Iowa woke up the shadow enveloped all of her thoughts. She needed to see it. There was no way to repair the camera, at least not from up here with the materials she had. If she was going to investigate the shadow, she would need to be in the water with it. A shard of terror pierced her chest like a needle of ice. Iowa ignored it. That fear was the land animal in her and she had learned time and time again that its fears couldn’t be trusted any more than its desires.

She needed to think. Iowa activated the pump and let the chamber fill and slowly warm under the red glow of the environmental heaters. Even when it was heated it was still bitter cold, but she had grown to enjoy that. Submerging was a luxury she hadn’t allowed herself during the drilling, but since the pump system had come online she had submerged once every few days. As she submerged now she filled her gills and breathed out a few happy bubbles. She had begun to slowly introduce some of the local aquatic minerals, flora and microbes to get herself acclimatized to them. If she could figure it out she would soon be drifting in an ocean of them.

Getting to the water was relatively easy, the shaft the drill made was already nearly thick enough, it would just need to be widened by another pass. She didn’t have the limiter on the engine so she’d have to try to patch together something more rudimentary, maybe using one of the coils from a solar battery.
God, Penrose would know what to do. Iowa felt the weight of how much she missed them settle in sitting on her chest. She had no hope of managing it without help. She was trained of course, but she was no engineering specialist. A thought that made her skin crawl drifted to mind. She could use the Lattice. It would have schematics and manuals somewhere buried in all that nonsense, so with the help from the Lattice and the notes Penrose had helped her make in preparation for the flight, she could manage something. Anything she made couldn’t be as quick as the other engine, but it wouldn’t need to be, it would be doing half the work and as long as the pump remained operable life support should remain online. Assuming the engine didn’t give out, it was surviving while in the water that was the problem.

The flight suit could protect her body from the water pressure and help keep her warmer, but she had used the last of her heavy-capacity rebreather during the initial drilling and the flora wouldn’t be able to regenerate for at least a few months. The only rebreathers she had left were for emergencies and couldn’t handle the sheer amount of pressure under the water. She pulled more water through her gills. If the ocean wasn’t so glacial, breathing wouldn’t be an issue. But pulling water that cold into her body would freeze her to death in minutes. Then it struck her. Her eyes drifted to Vertice’s samples. It was possible, the protein-like creatures were able to propagate themselves outside of Vertice’s blood. It would take some tweaking and it wouldn’t be permanent but it theoretically could work. Eventually her immune system would break down the proteins regardless of how well she hid them but she could plan around that once she had the data. She would have to test it and run simulations but it was possible.

She let the water drain and got to work.

The haphazardly reconstructed drill could only be run for full capacity for half the day using the battery for an engine. The battery was rigged to be chargeable by the water pump so it could be charged at night. It required frequent re-tuning but it was serviceable. Iowa smiled ruefully as she worked. She could imagine Penrose’s sardonic comments on the inefficiency of the design and Loam’s concern about Iowa doing herself further injury.
“You’ve already fried your arms,” Loam would sign with sarcasm bidden by worry, “don’t freeze your gills while you’re at it.” Nicki would have told them to lay off but she would have quietly agreed.

Iowa spent her days switching between the samples in the biochemical laboratory and the new drill chewing its way through the ice. The Node kept the sickly alkaline taste in her mouth, but it was useful, the Lattice had records of gene-editing processes though most of them were based in field-editing protocols for the genetic material held in the Ovum Module. She would have to get creative. The first trials failed: the introduction of the alien antifreeze pseudo-proteins quickly provoked an immune response to her own samples that unwound the proteins into amino acids. Eventually she combined the protein-creatures with a slight immune-system depressant and a number of compounds that would, she hoped, help absorb the resulting amino acids into her system without any issues.

Iowa paused the drill. She couldn’t keep an eye on it while she was under and she had put it off long enough. The only way to tell how long it would take her body to process the proteins was to test it. Iowa adjusted the pressure in the tank to an approximation of the water levels below, and then strapped herself back into her flight suit, attaching her helmet without slotting a rebreather over her gills. Iowa could feel the chill coming off the chamber in waves. She steeled herself. There was nothing for it; if she needed to confront the shadow she would have to step into an ancient freezing darkness much deeper than this. She injected herself with the serum and waited for the proteins to proliferate. She didn’t know what she had expected but it was an odd feeling, a flood of warm pins and needles running up and down her limbs. Iowa took a deep breath and submerged.

Instantly her body shook and twisted as the cold and the pressure swallowed her. She felt panic rise like a blizzard to try to overwhelm her mind and compel her to hold her breath. Iowa refused, forcing her limbs to go still and then wrenching her gills open. The chill of the water bit deep into her body as it passed over her gills. She spasmed but didn’t freeze. As she waited she felt the pins and needles return and her body temperature began to equalize. Even so as she drifted in the chamber she felt a lethargy begin to set in. The temperature slowed her metabolic rate and made her drowsy. She would have to move quickly or risk leaking energy as her heat was drawn out into the vampiric cold. It took about two hours
before she felt the water grow more icy as the pins and needles began to fade. As she breached the surface she whooped in celebration. *It worked!* When she checked her levels after she got out, she found that the proteins had been mostly broken down after two hours. Repairing the camera in that time shouldn’t be a problem, but for finding the shadow, Iowa felt something between joy and fear grip her chest, she wasn’t so sure. She needed to try.

Iowa continued to fine tune the serum as the drill dug slowly deeper and deeper. Every time there was movement on the scanners she would check for movement from the shadow, regardless of the size indicated by the alert. There was none. Whatever it was, it seemed to be content to remain in one place for an extended period of time. If it was alive, somehow, a creature of that size would metabolize at a glacial pace and could probably go [remain?] unmoving for months. She pulled herself away from that thought, since she didn’t have enough evidence to conclude it was alive. It could as easily have been an underwater weather event or some kind of seismic activity. Even so, the rigidity of her scientific discipline couldn’t quite contain the flood of her imagination which dragged from her memory the reference images from the Lattice’s files. In spite of herself, the currents of her mind swam with the undulating limbs of cephaloPods and the rotund bodies of ancient whales.

The serum was complete. She had been able to extend the life of the protein-flora in her body by an indefinite amount of time--up to an extra fifteen minutes. It could not be relied upon but it gave her a little breathing room. Iowa had also re-touched the valve systems on her flight suit so that it could allow water to pass over her gills without jeopardizing its protection against the water pressure. She was as ready as she was ever going to be.

When the drill reached the water for the second time, Iowa summoned it back and suited up. Iowa was so accustomed to the bite of the injection she barely noticed it. When the now familiar and comforting warm pins and needles began she surveyed her tools. She had her utility belt with a belay line connected to the heavy pump-pipe, laden down with the tools necessary for the repairs and a diving weight, a headlamp, a camera, a watch, and a little wireframe sculpture of a squid she had made from broken bits salvaged from the drill. It was a tiny thing, its little tentacles curling out from its tin mantle
still covered in the chipped red paint of the engine. Iowa slipped the little squid into one of the pouches on the belt and steeled herself.

The shaft was now an uneven shape that descended into darkness like the open maw and waiting esophagus of some giant icy beast. The walls were roughly hewn and slick, and she would have to be careful in her descent or risk bashing herself to death or tearing herself to shreds long before she reached the sunless ocean. Iowa sighed, pushing fear out of her lungs; it could come back after the camera was operational and she knew what waited below.

Iowa began her descent, the winch giving off a mournful whine that made her skin crawl as she was lowered into the waiting darkness. Her headlamp clicked on, sending light sparkling and refracting off of the walls of the tunnel. Slowly she lowered through layer upon layer of ice, formed by millenia long permafrost. Time, already a brittle thing, disappeared into the dark. If it weren’t for the watch, whose dim orange display bloomed into the subterranean dark of the shaft to join the corona of her headlamp, Iowa might have been drifting forever in this place between. She might have always been there and only dreamed of the ship and her friends. But the watch kept her in time. A chill ran through her as her feet touched the icy surface of the water. She kicked the larger parts of the brittle ice apart at the bottom of the shaft. Her gills thrilled at the smell of the living brine. Her humanity flinched away in instinctual fear, but the depths in her sang as she was lowered into the sea.

There was a moment of pain, panic, as her lungs spasmed with the inherited fear of drowning, but her gills quickly took over, pulling in the numbing water. The water hit her system with a shock; it was even colder than it had been in the chamber. It was as cold as the blackness between the stars that she had known for her entire life, but instead of the dead chill of emptiness, it was alive. Her gills could taste the icy brine teeming with impossible life. It was like filling her veins with lightning. This moment was more alive than anything she had ever felt.

Iowa drifted for a moment, a little point suspended in a shaft of light that split through an endless deep blue shade. Not far above her was the hole that led back to the tunnel, and beyond that was an endless sheet of ice overhead. What little light there was came through muted and dull like the moon
shining through clouds. The light was what allowed for the blue that faded to dark. Dark because it wasn’t pitch black, it was still blue. Just a blue so deep as to be beyond blue, a sister to the sky above at midnight. Iowa surged. The deep thing that dreamed when Iowa slept was finally awake here. She put a hand on the great sheet of ice, it was like the world had flipped and now she was drifting in the night sky and putting a hand on the frozen ground that had eaten the sun. The giddy vertigo was a pleasing confusion but she needed to stay on task.

Her headlamp only pierced so far, but even though she couldn’t quite see them, she could feel the shoals of fish moving around the edge of her perception. They could smell her, detect her chemical changes with their barbles, and their lateral line organs no doubt could feel the change in pressure. The light would blind their sensitive eyes, used to the dull glow through the ice sheet above but they knew she was there. Iowa gasped as a few grew near enough to be seen dimly glittering in her light. Maybe nine or ten of them, no bigger than Vertice had been. She wondered faintly if Vertice were among them. Focus.

Iowa drew her attention back to the shaft of light where she saw the wreckage of the camera hanging on the end of the pump line. The pump had attached itself via three spidery legs to one side of the hole and drew water up into itself. The camera was usually attached to the pump and could send out sonar or radar scans and shoot in extremely low light conditions. All that remained of the camera was its setting and a bit of its titanium alloy casing. It had been torn away haphazardly by something incredibly strong. Currents maybe, or debris from some kind of volcanic activity, she thought with no real conviction. She swam up to replace it. Iowa loved moving through the water, even with the ever present cold. Everything was always so heavy and here she was drifting almost by thought, as if the current were carrying her where she needed to go. Iowa undid the wreck of the camera from its case and set about installing the second one. It was smaller, a hand camera, and the image resolution wouldn’t be as good, but it would suffice. It took her a little less than half an hour going by her watch. She had roughly an hour and half left before the proteins that kept her blood from freezing would become the targets of her overeager immune system. If the last times were anything to go by that would mean a fever and similar symptoms for a few hours. And of course, if it happened down here it would mean freezing to death.
If she was smart she would swim back to the belay line and ascend back to the surface. She would be safe, the shadow a memory. It hadn’t come back in nearly a month and a half; it wouldn’t. It was a one-time event, unexplainable. If she was smart she would leave it at that. Iowa smiled, *If I was smart, I probably wouldn’t have stolen a spaceship and crash landed on an ice planet. We’re here now, and Penrose can’t see us, so no need to pretend we’re smart, eh?* She needed to know. She needed to see. Iowa descended.

The darker than blue faded around her as she swam deeper and deeper. The already icy water grew somehow colder. Or perhaps the cold, spurred by darkness, grew hungrier. It sunk its teeth deep into her bones. She felt the water squeeze in around her, her suit warning her that it could only compensate for so much pressure. She went on.

Iowa was now through the mesopelagic and into the bathypelagic layer where there was still some light. She swam away from where the light from the opening in the ice above was beginning to dissipate. It would not be wise to draw undue attention. She dimmed her headlamp, it was dark but not too dark yet. Her heart nearly stopped. With her headlamp dim, she could see far off, the spectral glow of bioluminescence. She was not alone. Iowa waited a moment for them to approach but they came no closer. The creatures here were cautious of the alien. She didn’t blame them.

As Iowa went deeper soon the light faded entirely and her headlamp was the only light source her eyes were capable of perceiving. She could see little, almost microscopic krill-like beings with glassy skins floating hither and thither around her in the light of her headlamp. She almost laughed at them but the darkness still held her tongue. She went deeper.

Her suit’s vacuoles inflated to compensate for the further pressure. Iowa could feel her lungs heaving at the water. She was growing tired, and even with her suit the pressure was building. She was miles beneath the surface, far enough that she could barely see the ice above her, the slight thinning of the veil of dark was the only indication where up was. Or that the notion of upwards had any meaning at all. The pressure was almost crushing. Iowa checked the watch. Time was growing short, she was more
than halfway through. But she couldn’t stop now, she hadn’t found the fissure yet. She had taken her time on the way down here, if she hurried on the way back she could make it. She had to. Iowa swam still deeper.

As she went she felt a warmer current of water rising from below. There must be a thermal vent nearby. This was a good sign. A little deeper. Her suit protested again, she ignored the alerts and pressed on. Nearly there.

Then she saw it, a darkness somehow even deeper than the water that surrounded her. The fissure! She came to a stop, treading water as she stared into the great crack in the ocean floor that sunlight had never seen. She waited for movement, sound, something. But there was nothing. Only void. Iowa cursed. She couldn’t just sit here and wait for her blood to freeze. She needed to do something. Then it struck her. Her communicator. Iowa still carried it out of habit even though, bereft of the ship, it could only connect to the Lattice now. Since it was expected that Technicians were able to be reached at all times, including in the chamber, it was internally pressurized and waterproofed. Even if it couldn’t connect to something, it still sent a radio signal. Iowa knew that some deep sea creatures communicated by sonar. It was a stretch but it was worth a try. She pulled out her communicator and pinged the signal. She waited, there was nothing. She pinged it again. Ping. Ping. Iowa was about to abandon hope with the promise of a return expedition when she felt the current change. She waited. The world moved.

Iowa would have screamed but with her gills full of water it would have made no sound; besides she was frozen in place. Something the size of an island, a mountainside, was rising out of the abyss toward her. She couldn’t see it so much as feel it. In perfect silence, the titanic being rose up toward her. She didn’t know how she knew but it had perceived her. The current displaced by its movement sent her backwards as the thing ascended from the deep. It was so massive that it took up her entire field of vision. She could no more begin to make sense of it than a person standing on a mountain could make sense of the other side. Her fevered mind tried to conceive of a being so enormous and failed utterly to understand it, so great was the difference in scope, but here it was billowing up from the deep.
In all its impossibility the being came to a stillness. But even when in place it was never perfectly still. Like the dark sea under the dark sky, it was ever-moving, ever undulating, ever growing. A darkness more perfect still than the sunless ocean around it. Iowa trembled before it in terror and wonder. A creature would take millenia to grow so vast, it would have been born in the time before the ancients, before the world that was before withered away. Iowa, in the presence of the divine, had no words. It drew close to her. Slowly, like a storm forming on the horizon. Her headlamp glittered against its skin. For a moment she saw the briefest mix of textures, something like skin, something like coral. Then the being illuminated. Iowa was enlightened.

Iowa wept as the creature’s colossal body, every vast limb, every cell, awakened with a blue light. Another blue for which she had no name. It was like the stars waking up. A billion points of endless blue connected into a vast web, a fractalistic network of light. Iowa realized it wasn’t an animal, but a billion beings, all woven together into a single titanic organism. An ecosystem unto itself.

Then the eye opened. An eye easily three times as large as she was tall and it turned and looked at her. It saw her. For an instant two souls looked into one another. One was ancient, vast, alien, unknowable and eternal. The other was small, ephemeral, known and brief. But it was still a soul. A soul recognized another. Iowa realized then that she too was illuminated. Iowa sobbed or laughed, she couldn’t tell. The depths in her, the creature she had dreamed herself remembering, was here. It saw. She communed here with it now and felt all that was the darkness of the ancient waters within her call out to it. It answered.

The being that was vastness pulsed its light. Without knowing how, Iowa pulsed back. The great eye remained fixed on her. She realized it was studying her too. It looked at her with the wonder of a being who had seen a million years of things Iowa could not begin to realize or understand. A being who swam in the abyss of time and yet had never quite encountered something like her before. So long. You have been swimming for so long. You know water, you know darkness, you know life. You saw life begin, didn’t you? She wished so deeply she could show Nicki, Penrose, and Loam. That she could show all of
the Technicians. Show them their own vastness, show them what was alive inside them. They were all a part of it. A siphonophore. But she couldn’t. She couldn’t terraform the planet.

The brood and the clergy would see the being and realize no one would ever follow their false divine once they’d seen it. They would know it was a threat and they would find a way to kill it. Even if they didn’t, to thaw the ice, to plant fields wouldn’t be ‘terraforming’ the planet. It would be destroying it.

This world belonged to the being. Who was she to steal it? To destroy it? So that her species could sap its resources until it was a melted, blighted husk? We rotted our own world, the Lattice has the records to prove it, I promise we won’t rot yours too. Because we won’t have the chance. The vessel couldn’t just keep traveling the universe poisoning worlds, drawing out their life like marrow from hollow bones, and then abandoning them to decay into nothing. No. Gosper Curve, Leibowitz, and Dust had found a way to live in the new world they had built without destroying another. The Attis would have to do the same.

Iowa reached out and gently touched the great being. Where her fingers touched its skin the glow was brighter. Five little points of light. She brought her hand away. The eye watched her with quiet immensity. Thank you. She pulsed. The being pulsed back. Then the great eye closed, the illumination faded, and the creature began to descend again into the fissure.

As it did Iowa rose on the upcurrent created by its movement. It was a gentle ascent, slow. Her suit adjusted automatically so she didn’t get the bends. Almost without swimming she floated up from the almost pitch, through the deeper than blue, to the softer blue of the frozen ocean again. The sun was still shining dully as if through a tea-towel. As she went, she saw the bioluminescent creatures again, who on closer inspection were something like squid or cuttlefish. Then, when she reached the shallower water, she saw the shoals of Vertice-like fish returning. She gave them a little wave as she passed them.

Her watch alarm went off as she re-entered the ice-shaft. She had begun to feel the pins and needles fading and as she rose out of the water she felt the icy air pierce into her with a new ferocity. She tried to steady her shivering as she ascended along the belay line. If she shook too much she risked
cutting up her arms, or worse, shaking loose of the belay and tumbling back into the water and freezing to death.

When Iowa emerged she tore herself out of the suit and huddled up against the engine until she felt her body beginning to thaw. When she could feel her hands again she checked the new camera feed. It was operational. She didn’t feel feverish yet, she shrugged, maybe she was getting used to it. She checked the readout. Other than the occasional movement of a fish there wasn’t much to be seen.

Iowa sat on the floor and pulled out the little wire-frame squid she had made from where her sopping suit lay crumpled next to the shaft. She chuckled and put it on a crate where she had placed the others like it. She looked at the little menagerie and wondered faintly if anyone would remember her little animals after she was gone. She gave, or had given, them as gifts occasionally. Nicki had really liked them when she was small. At the thought of baby Nicki Iowa grinned and then stared in shock as little motes of blue light ran through her skin. The shock at the interaction with the being was still clouding her memory but seeing the lights again reminded her. They had communicated through bioluminescence. *It must be a side effect of the proteins,* she shook her head, *no the proteins were fully broken down by my system after two hours, I tested it. They couldn’t still be there, could they?*

Iowa drew some blood and put it on a slide and under the microscope. It was subtle but there they were, the strange protein structures were still there. “Oh, oh fuck.” There could only be one reason the proteins were still at those levels: her body had to be producing them itself. Had it grown accustomed to their propagation through repeated exposure? An even stranger thought: was it the being? *Had the...could the being do this?* Well, either way, if her body kept hosting the little protein-entities and producing the resulting proteins, she could return without fear to the water. For a moment the thing that remembered being vast and ancient dreamed of the dark water.

She could become one with this world, drift into the ocean, and never return to the surface again. She could be free. But then her eyes drifted back to the little creatures on the crate. She looked at the wading bird, the fish, and the squid. Sure, she could run away. She could walk into the ocean and
disappear, but then one day Nicki would follow. Nicki would let them cast her off onto some desert world and slowly starve, freeze, or be lost as Iowa almost was. She would grow up alone and then be fed to their machine. Penrose and Loam would die too young from the cancer born of the radiation sickness, all for nothing. The clergy would keep on looking for a world to leech from like a tick and infect. She couldn’t decide which was worse, if they never found it or if they did. What if Nicki succeeded? She would return in triumph to learn that she and the rest of the Technicians would be made to work themselves to death building the shining city now that they found the proverbial hill. No. She wouldn’t let that happen. I’ve run away long enough.

She looked down at the ice, knowing the vastness was down there, still watching her. I will come find you again. You have learned patience over the years, I bet. Well, I’m still sorry to ask you to wait. I’ll come find you when I know they’ll be safe. They deserve the truth and the choice to make a world they can live in, that they can be one with, the same way you are. I have to go back. She didn’t know if it could feel her intent, but she trusted it would wait anyway. It had grown very good at waiting. For her part, Cantor Dust had shown how easy it could be to destroy a divine vessel, so Iowa now had to figure out how to save one. She looked at the Instance of The Lattice. If she was going to reach the ship, doing it would mean using the Lattice. She didn’t know how yet but the one thing she had was time to figure it out. Part of her mourned having to leave the planet. She had grown to love it, in spite of her suffering, and she suspected that in its own remote, indifferent, way, it loved her too. This place could have been home, eventually. But home is nothing without--she searched for the word ‘family’ but she had never learned it--so she finished without them.

She would need a cover story for the Prefecture, and a plan. The first was easy, the second she wouldn’t have to do alone. She smiled at the thought of Penrose’s passion and imagination, Loam’s clever strategies and wise council, and Nicki’s relentless determination. They could do it. With Cobalt’s help, they could find a way to tell everyone the truth. They could make the world they wanted to live in or die in the attempt. They had died to make the clergy’s world often enough. Iowa was afraid, but there would be time for fear later. For now there was work to do.
Epilogue: Distant Signals

As Iowa worked on the Lattice over the next few weeks trying to determine the best approach, she never stopped thinking of the people she missed. It was in the friction created by the intersection of the thought of the Lattice, and the thought of family, that a new thought sparked. Iowa remembered a conversation she had had with Wisteria before she left, when she had realized why Wisteria was the way she was. But that wasn’t what struck her in this moment now. Instead it was a little thing Wisteria had mentioned off hand about how the Lineator had disapproved of the Nascent Serenade. Wisteria had explained that before the new generation of units is cloned, if all or the majority of that unit’s clone-line are gone, the last records a sound that is used to aid the clone-baby in early development. Iowa remembered running across the occasional reference to it now in her own digging. She had been focused on other things and hadn’t taken much notice. She remembered that the Lineator was very specific about making sure that the Serenade stopped before memory formation began. “Long enough to be useful but not dangerous,” he had said in an annotation to a file on the subject. Iowa slotted in her Node and waited for the unpleasant bitter feeling to fade.

When it did, she activated the Lattice and ordered in now practiced god-talk, “Lattice, show me the Nascent Serenade for Switchboard Line Technician Class 001, currently extant.”

The millions of little orange lights formed a grid across every surface in the little biodome and then resolved themselves into a white-walled room with a little canister set onto a rolling cart. In the canister, Iowa realized, was a baby with sandy colored skin and little brassy scales. Standing by the incubator was a woman. Iowa stared at her in a mix of shock and wonder and deep sorrow. She looked almost exactly like Iowa, only older. Sure, her jaw was a little squarer, her nose a bit broader perhaps. She wore her hair longer than Iowa did. It was strange to see her own face looking back at her, but different, somehow alien. The woman wasn’t all that much older than Iowa really, but so tired. Every line in her face, the way she held her shoulders. There was a profound weight that she carried. To see that in a face so like her own was crushing and yet she felt so happy to see it. The woman didn’t say anything, she
didn’t give her own name, or speak Iowa’s. Instead she began to sing. Iowa’s knees almost buckled. It was the same song Iowa had hummed quietly to herself every day. She hadn’t even known there were words to it. She had assumed she’d heard it during her education but she could never remember where. The words were in a language Iowa didn’t recognize, one she had never heard. She would later replay the recording and write them down, sounding them out as best she could. But for now she simply wept and listened. All of the tiredness and the weight turned into a heavy warmth like the moment before sleep or like the sunset on the strange planet as the woman sang to the sleeping baby Iowa. Iowa listened again. For a long while it was all she did until she knew every single syllable regardless of meaning. When she sang along, she glowed quietly. Then she shut down the Lattice and removed the Node from the implant. She was empty, but warm for awhile after that, and eventually she returned to work.

A month later on the slopes of the ridge Iowa’s breath crystallized on the inside of her mask. The defroster handled it in due course. The rebreathers had regrown by then but as the planet turned further away from its sun the already hibernal temperatures grew even harsher. She grunted as she dragged the Instance of the Lattice on its ramshackle sled over the last craggy outcropping. When Iowa stopped for a breather she grinned. This ought to do it. She looked over the cliff down onto the great sheet of ice that unfurled, it seemed, endlessly beneath her. She could see her little biodome, a little worse for wear, but nevertheless still shining in the distance. It was somewhat dulled by the snowstorms whose vicious winds had stripped a good deal of the reflective paint off but maintained a rustic charm. Besides, the greenhouse was more or less fully operational now. She could have cloned and kept livestock if she wanted but she had other projects. She set up the instance on its new triPod and activated the Node with a click of her tongue and took a deep breath.

The risk tasted like copper. She had constructed a story with enough plausible deniability that she thought she could slip by their questions, but the truth was that the Prefecture might just kill her to save the trouble of keeping her quiet. If they realized what she was plotting, she was certainly dead. If they learned she had augmented the Lattice, she was dead too. If they realized she had help in her plans then
she was dead and so was everyone who associated with her. She wouldn’t let that happen. For her own part, she was afraid to die and not ashamed to admit it. But she feared the life of living death she had wasted her entire life in much more and she refused to let Nicki live it too. Better to die in the attempt to make a real life, a sustainable life, on the ship. One founded on justice and equity. Better to save the world they already had than to feed more children to the hunt for a perfect new one that would never come; or would be ruined the same way we ruined the last one if it did.

She connected the Lattice to the ship network the way Penrose had shown her and then sent her message with the command “translate: common tongue.” Messages could be translated into the common tongue but had to be entered in god-talk. It was baked into the core of the programming. The message was sent. The plan was now in motion, all that was left now was to wait.

On the Command Deck of the Attis a screen that had never before awoken came inexplicably to life. In the dim green glow of the screens on the deck’s fifteen other consoles, the lurid orange of the display caused the ceaseless chatter of calculations and bearings to halt. Almost the entirety of the sixty-person on duty flight crew of the Attis were clergymen specially chosen for the position. They did very little actual flying of course, delegating that to the five Pilot Technicians who were generally transfers from astrophysics or engineering. Penrose had briefly been one before getting transferred back. The Technicians were regularly transferred for security reasons but the clergy on the crew had grown lazy and complacent and so were not the first to notice the strange message. The first to notice was Flight Technician Titrate Digon, who was at the nearest console checking the work of one of the navigator’s headings. He read and memorized the words before any of the clergy had the chance to notice and interrupt him. The message read,

“This is BioTechnician Switchboard, Iowa, ID: 1-5-1-3-6-7-9// Begin Field Report.// In spite of initial technical malfunction in the deployment vessel, Away Mission Phase One has been a success. // Ready for extraction for debrief. Phase Two to begin in earnest.//”
After the headings were entered into the autopilot, all of the Technicians were ordered off the deck. But it was too late. By the end of the day every Technician on the Attis had heard those words. The cycle was broken. Switchboard Iowa was coming back.