Zen's World:

The Message

A First Contact Story

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The Launch

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Ellie sits in the sleek maglev shuttle from Long Beach to the Catalina Spaceport, grinning like a kid on her first roller coaster. *I'm going to space!*

She marvels at the cabin interior covered in view screens. *It's like riding in an underwater glass train!* As the car clears the murky, industrial waters of the port, the view outside the submerged tunnel suddenly opens into the deep, startling blue of the San Pedro Channel.

Above, a cluster of brilliant spotlights cuts through the darkness, revealing the immense, dark hull of an outbound cargo freighter. A team of tugboats guides the hulk towards an unknown destination.

The sheer scale of it, even from this distance, is breathtaking. *The miracle of modern technology*, she thinks. *This is ultra-first class.*

She chuckles to herself, thinking about where she was this morning. *I woke up in a mud hut covered in green clay goop wearing nothing but a loincloth, and here I am, on my way to space, all clean and fresh in my fancy dress.*

A dress she'd grabbed in the Rio airport during a short layover.

The view is so different from her last six months in the Amazon that she doesn't notice the man sitting beside her is already speaking.

She turns to look at him and hears only, "Blah blah, bla, blah?"

Ellie laughs out loud and realizes she's been thinking in the native dialect of an uncontacted tribe.

"Excuse me?"

"Hey gorgeous… I saw you in the terminal and figured I should introduce myself." He bats his eyes. "Marcus."

Ellie suddenly remembers how modern men act and says, "That sounds a lot like stalking."

Marcus responds, "Let me guess, you're a dancer for the Bolshoy?"

Ellie laughs, thinking again about washing her only pair of pants in the river just that morning.

She says, "Yeah, close." She muses to herself, *My ten year grant extension for one year offworld made me want to dance, so ya, a dancer.*

"You might have seen me in *Ocean's 77* or *Sands of Mars*," Marcus adds, watching for a reaction. "I was in both." Marcus waits, as if expecting applause. "Impressed?"

She easily reads his intentions. "That's nice," she says smoothly.

Marcus asks, "Where are you headed?"

The hair on the back of Ellie's neck stands up at the thought that he might be an EC agent, probing for information. She has been warned not to discuss any aspect of her contract. The briefing officer's voice echoes in her head: *They will test you. They will probe. Be polite, be vague, be forgettable.*

She could respond, "That's classified," but that would reveal too much.

Instead, she just turns it on him. "Where are YOU headed?"

Marcus reacts, and Ellie thinks, *He's suddenly unsure. Just another narcissistic predator trying to score? Ugh.*

Ellie jams it home and says, "I see. You're on a classified mission. What's the nature of your command? Are you TKA?"

Marcus is confused and babbles uncontrollably.

Ellie keeps it going. "Ah, TKA on a secret mission and you're not in command. What's the nature of your classified work?"

His jaw works, then he chuckles. "I'll let you wonder what you're missing. Enjoy your trip." He retreats behind her.

Ellie smiles to herself and goes back to staring at the amazing view.

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As the maglev approaches the terminal, the screens switch to a map view showing the six launch pads and the flight numbers with their departure times. Ellie scans for her flight. She subvocalizes, "Pad 4," and subconsciously checks her surroundings for her belongings. She laughs, thinking, *I have no possessions other than my dress, shoes, and this silly Device.*

The train pulls smoothly into the Spaceport terminal. The entire structure, including the Maglev, is underground. Above, the city of Two Harbors goes about its daily business as if the terminal isn't even there.

As she steps into the terminal, the air hits her face, cool and tasting faintly of burned fuel. Ellie thinks, *It's like any other in the world: gates, shops, restaurants, and the ever-present EC personnel with their sharp, color-coded uniforms. Just more.*

Ellie feels that man, Marcus, is following her. *What's he going to do now?* she thinks. Then it occurs to her, *Maybe he's going to Gate 4.* She stops at a flight information display to let him get ahead, and he stops next to her.

Marcus, apparently recovered from his skewering, says, "First time to space?"

Ellie says, "You coming back for more? Are you a masochist?"

Marcus says, "I see you're wearing an entirely fetching dress. What's that? Dior?"

Ellie, now a bit annoyed, says, "Let's skip the restroom fantasy, shall we? Please move on."

Marcus says, "Ah, you are a space virgin. Did you know the Transit Station is zero G? Hope you're wearing panties." He turns and walks off, looking smug.

Ellie goes pale, which is difficult for someone who has lived at the equator for six months. She thinks, *Zero G, and my dress will fly over my head. Was that fat snake worth my one and only pair of panties?* Then, *Why didn't I get a jumpsuit?*

Ellie sees Marcus board the maglev to Pad 4 ahead of her. *It's too late to do anything about it,* she thinks. *I'll have to tie it up or just let it fly.* Ellie takes a different car. She notes on entry that there is only twenty minutes until boarding and sees on the DVES that the pad is clear. Just then, the view switches to an incoming flight. The huge rocket, a standard EC "Star-Hauler" booster, is inbound to Pad 4. She subvocalizes, "That's my flight!"

The maglev shuttle chimes, "Doors closing in one minute. All aboard for Pad 4."

Ellie looks toward the door and sees a man, a bit tired-looking, cute in a nerdy way, make it onto the train at the last second. *He's an engineer. No doubt,* she thinks, laughing to herself. *Occupations and people are so similar, regardless of their technology.*

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The maglev shuttle moves along briskly. The DVES switches to the underwater view, and a calm voice announces, "This train is running underwater for safety reasons. The transit tube is anchored to pads on the ocean floor to keep the trains just below the surface. Please enjoy your short ride along our Archimedes Bridge."

A launch! she thinks, as her window, on the south side of the shuttle, suddenly gets very bright.

A few seconds later, a low rumble passes through the car, a vibration she feels deep in her bones, and she feels the power of the immense machine leave the Earth. Ellie keeps her eyes on the bright star as it recedes into the sky. She leans back, and a sudden rush goes through her body.

A question, raw and unexpected, forms in her mind. *Am I going to love this?*

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The train pulls into the station. Ellie and the other passengers leave the car and head toward the gate. Two smiling gate agents greet the passengers, and as they pass, everyone is greeted by name. Ellie is puzzled by their movements, too smooth, identical, until she realizes they are robots. *They can almost pass as human,* she thinks. She checks her seat assignment, finds her seat, and sits down. A placard on the seat back draws her attention. The instructions are short and to the point: "Fasten seat belt. Use straps for luggage. No restroom facilities available."

The engineer approaches and asks, "Is this seat taken?"

Ellie responds, "Please," and motions to the seat. She's glad it isn't Marcus. Out of the corner of her eye, she sees the engineer take out a paper tablet, actual paper, and start writing. *Paper?* she thinks. *Wow. A throwback. Maybe he's out of the Amazon, too!*

The engineer touches the call button, and a moment later, a flight attendant, this time human for sure, approaches. The engineer hands her the paper. The attendant nods, looks at Ellie quickly, and scurries off.

What did he write about me? Ellie wonders. *Am I being paranoid?*

She sees the flight attendant approach, holding a small parcel. The attendant stops at her row and says, "Miss Kobayashi, may I ask you to follow me up front?" The engineer jumps up and moves out of the way, and Ellie follows the flight attendant to the front of the pod.

Once they reach the service area, the woman says, "It was brought to our attention that you might want to change into something more appropriate for zero G. I have this jumpsuit that should fit, at least according to Dr. Walker. Did you know of him?"

Ellie, surprised at the turn of events, says, "That is so amazing. I don't know how to thank you. Dr. Walker is unknown to me." Ellie takes the jumpsuit out of the package, holds it up to herself, and sees that yes, it will fit perfectly.

The woman hands her the drawing. It's a perfect rendition of her standing smartly, wearing the jumpsuit. She blurts out, "He drew that in seconds. Who is he?"

The woman says, "He's a famous engineer, but what he's really well known for are his drawings and sculpture. It is an honor to be drawn by such a renowned artist. You should have that framed. Oh, you can change in there." She motions to a small area with a curtain.

Ellie changes quickly, which is easy when all she's wearing is the dress, thanks the woman, and returns to her seat.

Dr. Walker steps out so she can be seated without saying a word. Ellie takes her seat and he sits, still without saying anything.

Ellie says, "Excuse me, Dr. Walker, I want to thank you for being so thoughtful. I was dreading causing a scene when we reached the Transit Station. It never occurred to me that my dress could be inappropriate."

He responds, "Please, call me Daniel. The flight attendant was supposed to keep it to herself. I apologize for intruding."

She holds out her hand and replies, "I'm Ellie. So charmed to meet you." *This guy is damn polite,* she thinks. She says, "You are quite the talent. It's a perfect drawing. I love it."

Daniel says, "It comes in handy. Sometimes I can draw something faster than I can explain it, and for many people, a hardcopy is easier to grasp than technical details."

Ellie asks coyly, "I'll bet you're a hit in the bars and nightclubs with the ladies." Instantly, she sees it was the wrong thing to say. She read him wrong. He is a pure introvert.

Daniel blushes and becomes quiet.

Ellie decides to take another tack and asks, "Can you tell me how this rocket thing works? I've never been to space and never really thought I would go."

Daniel, suddenly interested, comes out of his shell. "What do you want me to explain?"

Ellie says, "I know about these rockets in general, that they fly from point to point around the globe to launch the top stage…"

Daniel interrupts. "It's called the upper stage. Sorry, please continue."

Ellie continues, "...and the upper stage goes into orbit and docks with the Transit Hub. That I got. But what happens to the upper stage?"

Daniel replies, "The upper stage is refueled with methane and oxygen, both supercold liquids, then deorbits and returns to a suitable launchpad with cargo and passengers. It's all very routine."

Ellie says, "So what happens when we get to the Transit Station?"

Daniel says, "Whatever ship you're leaving on is probably already there waiting for us. Passengers and cargo spend minimal time at the station and are moved out quickly, as it can get pretty crowded. They really need to add another one."

The display shifts from the launch pad to an information display as an announcement starts, "Pod doors are closed. Passengers, please take your seats. We will be moved into launch position in two minutes."

Ellie starts squealing like a small child, and Daniel laughs. "I don't see a lick of fear in you, Ellie. You're going to love space."

Another announcement starts, "All passengers are accounted for. Stand by for departure to the pad."

Just then, the machine smoothly accelerates. The view switches to the exterior, and Ellie sees they are being lifted high into the air. Then a clunk and latching sounds, and it becomes quiet.

Another announcement: "This is your Chief Flight Attendant, Annie. We'll be playing a short program with instructions on the emergency procedures of this spacecraft. Regulations require everyone to pay close attention, and your compliance will be recorded. If the system detects a non-compliant passenger, we'll have to play the video again, which might cause us to miss our launch window and require a ninety-minute recycle in the countdown. So please, pay attention. Thank you for your cooperation."

The screens around the pod start to play the program.

(The video opens with crisp, efficient, corporate music. The view is from inside a sleek maglev train car, its DVES walls showing the beautiful Catalina coastline whizzing by. A friendly but formal flight attendant in a sharp Energy Consortium uniform appears on screen.)

Female Narrator (Warm, professional voice): "Good afternoon, and welcome to the Energy Consortium's Star-Hauler launch service. We're honored to be your carrier today. As we make our way to the launch pad, we'd like to share a few details to ensure your journey to orbit is safe, comfortable, and efficient."

(The view on screen shifts to a clean, animated graphic of the passenger cabin. A passenger is shown placing a small bag into an overhead bin, which closes with a soft click.)

Male Narrator (Calm, confident voice): "First, please make sure all carry-on items are securely stowed in the overhead bins. Our flight attendants will be coming through the cabin to assist you and to make sure everything is locked down for launch."

(The animation shows a passenger sitting down. The camera zooms in on the seat's restraint system, which clicks into place with a satisfying sound. The narrator's voice becomes a little more serious.)

Female Narrator: "Your seat is designed for your comfort and safety. Once seated, you'll notice your five-point restraint system is already locked. Per FASA regulations, these restraints can only be released by a crew member after we have safely docked at our destination. This is for your protection during all phases of flight."

(The animation now shows the entire cabin of seats smoothly and automatically reclining backward into a supine position as a "G-force" indicator appears on screen, displaying "3.0g" and then "5.0g".)

Male Narrator: "As we prepare for launch, you will feel your seat automatically recline. During ascent, you will experience a sustained force of approximately three times normal gravity, followed by a shorter period of up to five Gs as the upper stage completes its journey to orbit. While these forces will be substantial, everyone on board has been medically cleared for the flight. Our dynamic seating system uses a pre-tensioned torsion bar support that adjusts to your personal weight profile, ensuring you are in the optimal position to comfortably handle the forces of ascent. Just lie back, relax, and enjoy the ride."

(The scene changes to a dramatic but clean animation of the Star-Hauler on the pad. A large red "ABORT" graphic appears. The upper stage is shown igniting its engines and rapidly ascending away from the booster.)

Female Narrator: "Your safety is our absolute highest priority. In the unlikely event of a launch abort on the pad, the upper stage you are in is designed to instantly separate from the booster and rocket away to a safe distance for a soft water landing. We are proud to say that the Star-Hauler system has a perfect safety record, with zero Class A mishaps in its entire operational history."

(The scene shifts back to the cabin interior. The G-force indicator drops to zero, and animated passengers are shown floating gently just above their seats. One passenger looks slightly green.)

Male Narrator: "After our main engine cutoff, you will experience approximately seventy-five minutes of zero gravity. For some first-time flyers, this can be a disorienting experience. If you begin to feel nauseous, a motion sickness bag is located in the seat pocket in front of you."

(The animation shows a passenger pulling out a simple bag. Then, comically, a thick, ten-page instruction manual unrolls from it. The passenger gives a knowing look.)

Female Narrator (with a slight, professional smile): "For any other in-flight emergencies, a 'stick-on' waste containment bag is also provided. We do recommend reading the instruction manual before an emergency arises. However, it is always best to use the facilities in the terminal before you fly."

(The scene changes to show the upper stage smoothly docking with the axial port of the massive TKA Gateway Station.)

Male Narrator: "Upon arrival at the TKA Gateway Station, please remain seated until the final docking clamps are engaged. You will hear a chime, which indicates that your restraints have been automatically unlocked. A flight attendant will then come through the cabin to offer assistance as you prepare to disembark."

Female Narrator: "When the doors open, you will be in a zero-gravity environment. Please be sure to check your seating area for any personal belongings you may have brought on board before disembarking. On behalf of the Energy Consortium, we thank you for choosing our launch service. We hope you have a productive stay at the Transit Hub and a safe journey to your final destination."

(The video ends with the sharp, corporate logo of the Energy Consortium, with a final shot of the Earth rotating slowly below the massive TKA Gateway Station.)

Ellie says, "Well, that was interesting. Obviously, everyone paid attention." She glances at Daniel, who smiles.

Daniel says, "It's typical EC scare tactics. They aren't monitoring us, but they can say it and make everyone pay attention."

Another announcement: "This is your captain speaking. We'll be launching shortly to the Transit Station. Flight time is about ninety minutes if we catch our window on the nose. We anticipate no delays, and weather is not a factor. Thank you for flying with the Energy Consortium, your energy company, today."

Daniel says, "With previous generations of launch vehicles, it could take days to reach a space station. Today, it's just like a flight from New York to Washington."

Ellie relaxes a bit as another announcement starts, "We're ready to launch and are waiting on our instantaneous launch window, which is in about thirty seconds. Flight attendants, take your positions and prepare for launch."

Ellie asks, a quiver in her voice, "Are they going to do a countdown?"

Daniel responds, "That's old-time TV stuff."

Just then, the pod starts to throb with the power of a thousand terrestrial trains, and she feels herself being pushed into the seat.

Ellie instinctively grabs Daniel's hand and squeezes hard. Her strength is incredible. She overpowers him, crushing his hand as he fights to stay composed, to absorb the pain. *I can take this,* he thinks.

Ellie relaxes her grip a bit, and Daniel's heart rate drops as the pain subsides. *This woman is in incredibly good shape,* he thinks.

Ellie releases his hand. She's used to changing conditions and adjusts quickly. In a few minutes, another announcement comes: "Booster separation in five seconds."

The booster separation is noticeable only because the ride smooths. Then the G-forces increase, and breathing becomes difficult. Ellie grabs Daniel's hand again, only this time without crushing the life out of him. A short time later, the engines shut down, and they're floating in their seats in zero G.

Daniel says, "You've made it to space. We're in TKA territory now."

Ellie's breath slows, and she says, "That was incredible."

Daniel asks, "How do you feel?"

Ellie, her face flushed, says, "Exhilarated. I feel great. No need to reach for the bag." She reads his intent perfectly.

Daniel relaxes and says, "The next time will be easier."

Ellie wipes a stray hair from her face. "I never expected to have a first time."

An announcement comes on. "This is your Captain speaking. We're in TKA territory now, so please take the time you have available before we reach the TKA Transit Station to carefully read the packet on your personal device. If you do not have a personal device, please use the screen in the seat back in front of you to read their safety instructions. They expect you to know them."

Daniel asks, "Did you read the packet?"

Ellie responds, "Yes, I read it this morning. I didn't see anything that seemed unreasonable or required further explanation. I think I'm ready for the next leg of this long journey."

Daniel asks, "Where did you start from?"

Ellie thinks for a moment. *Should I talk about it? He's a famous scientist, engineer, and artist. He's not an EC stooge.* She says, "I was in a mud hut covered in green clay goop wearing just a loincloth when I started this trip. Gosh, that was at dawn."

Daniel, absolutely impressed, exclaims, "Let me guess. The Amazon, with an uncontacted tribe."

Ellie, hardly surprised, says, "That's right. You're a really smart cookie, aren't you?"

Daniel breaks into a grin. "I have my exceptional moments."

Ellie laughs and strokes Daniel's arm unconsciously.

Daniel feels the warmth of her touch, and a corresponding warmth washes over him. *I would love to get to know her better,* he thinks, *but in a short time, she'll be on her way, and I on mine, and that will be it.*

Ellie says, "You're sad. Why?"

Daniel, taken aback by her insight, blurts it out. "I like you."

"I've enjoyed our conversation too," Ellie says, "and I understand your sadness."

Daniel says, "I apologize for being so forward. I'm usually quite reserved. We got caught up in the moment."

Ellie says, "Two ships passing in the night."

Daniel laughs, a bit forced. "You have a little of that green stuff on your ear."

Ellie exclaims, "Where? I thought I got it all."

Daniel reaches over and touches her behind her left ear, and he can see her react ever so slightly.

Ellie says, "I was in a hurry when I washed myself in the river this morning. I don't have a…"

Daniel reaches into his pocket, pulls out a pack of tissues, and says, "Here, take one of these."

Ellie says, "We have synergy."

An announcement starts. "We're within visual range of the TKA Transit Station, as you can see on our forward screens. We'll be docking in approximately ten minutes, so please be sure you have read the TKA packet before disembarking. The crew of this vessel and the entire Energy Consortium want to thank you for your cooperation today."

Daniel says, "I guess this is it. I really enjoyed talking with you today. I drew this a moment ago."

Ellie sees the cartoonish drawing of her crushing his hand, his own hand bulging with pain. She says, "I'm sorry I gripped you so tightly. I guess I don't know my own strength."

Daniel says, "No permanent damage, just a bruised ego. I'll heal, eventually."

Ellie says, "I'll cherish your drawings. Thank you so much for the gift of art."

Daniel says, "Who knows? Maybe we'll see each other again."

Ellie looks a bit sad. "You never know."

Daniel takes the cue. "We're docking. Do you know where you're going? Which docking port?"

Ellie says, "No, I'm supposed to be met and shown the way."

Daniel's device chimes. He pulls it out and reads the message. A huge, uncontainable grin spreads across his face. *Jackpot*, he thinks. He says, "What do you know? It's me. I'm to show you the way." He aims his Device at Ellie, and it shows her picture.

Ellie asks, "We're going to the same place?"

Daniel says, "Looks like it."

Just then the chime sounds, and a click is felt in the harness. Daniel says, "We're free. Did you bring anything on board?"

Ellie says, "I have all my worldly goods, which are my dress, shoes, Device, and this jumpsuit."

Daniel says, "You travel light."

Ellie says, "After you, genius."

CHAPTER TWO

Transit Station and Beyond

02/07/2074 06:15:00Z

Daniel says to Ellie, "Let's wait for the others to leave before you try your hand at weightlessness. Just watch everyone else and you'll get the hang of it quickly."

Ellie releases her restraint and floats out of her seat. *Whoa.* For a split second, her stomach lurches, a dizzying tumble as her inner ear screams that everything is wrong. Then, an old instinct surfaces. *Tuck and center,* a coach's voice from a past life. She instinctively tightens her core, finding her balance in the chaos. The world snaps into focus, the anxiety melting away, replaced by a look of pure delight. "Nonsense," she says, her voice full of laughter. "I was a gymnast in another, much younger life, and this is great!"

She kicks off the seat and does a somersault through the cabin toward the door. She misses the handhold and hits the bulkhead with an audible crunch. "Oomph!"

Daniel follows her. Instead of theatrics, he travels in a straight line and catches the handhold expertly. "I suggest taking it easy for now," he says. "There will be plenty of time to practice later."

Ellie asks, "So where are we going?"

"We're going to the other side of the station. The deep space side. Ready?"

"I'm always ready," Ellie says. She takes off again, this time in a straight line out of the passenger section and into the Transit Station's docking port.

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"Do you notice the rotation?" Daniel asks. "We're spinning at about two RPM. Feel it?"

Ellie replies, "No, but… wait, yes. I feel a slight sense that I'm moving, but everything I see says we're stationary. Now I feel a little queasy."

"You'll get over it quickly," Daniel says. "Just ignore it… unless you feel the urge to, well, you know, make a mess. In zero G, such things can get ugly fast."

Ellie says, "See that guy ahead of us? The one with the curly hair?"

"Yes. He's been to space before. You can tell."

"He was a bit aggressive on the ground and warned me about my dress."

"I'm sure it was all meant in the spirit of traveling. He's probably harmless. If he's up here, he's important to someone or something."

They pass from the docking module to the inner station.

"Wow, this is fantastic," Ellie says. "What are those tubes for?"

"This is a standard COAS, or Cans-On-A-String, space station. It's one of the TKA's products," Daniel says. "The tubes are hollow, with a structural rod that passes through and extends into space. That rod secures the one-G modules to the station. It's really a marvel of engineering in that the rods serve several purposes."

Daniel glances at Ellie, who looks back and says, "I thought it would be more cluttered."

Daniel motions around and says, "The only thing people can touch are things people are meant to touch, like handholds and guide ropes."

"The TKA packet said the modules have nine levels, with the top and bottom ones reserved for equipment, and the other seven hydroponic. That's a lot of greenhouse for so few people," Ellie says.

"When a ship comes in from deep space, it exchanges CO_2 and other waste for oxygen, food, and water. The gardens consume the waste, creating a closed-loop life-support system. Most ships are too small to support hydroponics at that scale, so the process is centralized here."

"So poop becomes a valuable commodity?"

Daniel chuckles. "That's right. Nothing is wasted in space. The tighter the recycling, the less dependent the TKA is on Earth's resources."

Ellie looks puzzled. "The water? I read it's used as reaction mass and has to be replenished. That was in the packet."

"I was simplifying," Daniel says. "I see that's not necessary. Yes, the water has to be replenished. It comes from several sources, mostly the Moon."

Ellie laughs. "I can see you enjoy explaining things," she says as they work their way across the main hub module.

"I see the other docking port module. That must be the deep space side," Ellie says.

"You catch on quickly. Yes. And I see your friend is heading that way too."

"Maybe he's coming with us," Ellie says jokingly.

"Could be. I didn't see many ships docked when we approached."

"If he is, then I'm going to have to work it out with him. I really hate starting out on the wrong foot."

"I'm sure it will be fine."

Ellie notes how Daniel has said absolutely nothing about the mission, their destination, or even the docking port. *He's being careful,* she thinks.

As they pass into the smaller docking port, Daniel says, "Looks like your friend is coming with us. We're going that way."

Ellie feels another wave of queasiness. "This spinning is making me a bit queasy." Then, after a pause, "I'm glad you saved me from showing my nether regions to the entire station. That would have been a great way to start things off."

"You'll have an opportunity to wear your dress again—without the show," Daniel says. He catches himself and visibly stiffens, a flicker of panic in his eyes. He has said too much.

Ellie reads his discomfort. "I'll race you to the hatch," she says, and with a quick pull on the handrail, she sails across the open space like a dancer.

Daniel follows.

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Ellie pops through the hatch and sees Marcus waiting inside. He has a Cheshire grin a mile wide. "Welcome to the Fram." He extends his hand, and Ellie takes it in an act of reconciliation. Marcus pulls her into the ship as Daniel enters next.

Marcus has his eyes on Ellie and doesn't even acknowledge Daniel's appearance.

Daniel says, "Don't I get a greeting?"

Marcus says, "Sorry, I reserve such things for the beautiful ladies, but hey, I can make an exception. Welcome to the Fram." Marcus extends his hand and Daniel accepts it. Then, to no one's surprise, Marcus gives him the squeeze.

Daniel gets crushed. *No pain. No pain,* he thinks, forcing a smile. Eventually, Marcus relents and relaxes his grip. Ellie facepalms. *She's obviously not impressed with muscle man,* Daniel thinks. *Good.*

They pass from the airlock into the ship proper. "This ship looks a bit puny," Ellie says. "Where are we going?"

Daniel puts a finger vertically in front of his lips in a "don't say anything" sign, and Ellie uses the "zipped lips" sign back.

Marcus laughs. "This isn't the whole ship. This is just the transfer pod, used to ferry from the ship to a destination and back. The ship itself is massive, about two-hundred-and-fifty meters long."

Just then, a hatch opens on the other side of the compartment, and a large, imposing man, a good twenty-plus years older than the three of them, floats into the compartment.

The man introduces himself. "My name is Colonel Ethan Harding. I'm the fourth member of our small crew. Ellie, I hope you've enjoyed the change in your life. Pretty intense there. Marcus, your reputation precedes you, as does Dr. Walker's."

Marcus looks at Daniel. "You're Walker, the artist, right?"

"That's right," Daniel says. "I'm the artist."

Marcus says, "So we have an artist, a colonel out of uniform, a rising star, and Ellie. Where do you fit in the team?"

Ethan interrupts. "Let's keep the talk to a minimum until we leave this station."

Nobody contradicts the Colonel.

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Daniel asks, "How long before we undock?"

Ethan floats to the wall, presses a com button, and says, "Captain, the crew is here. Leave at the earliest."

A voice crackles over the coms. "We're taking on supplies and will be finished in about twenty minutes. Please prepare for departure."

Ethan presses the button again. "Understood. Proceed when ready." He looks at the three of them. "It's probably better to strap in. These guys are kind of hot-dog pilots; they tend to push it, so be ready for some yanking and banking like in the old days." He then pulls himself through the hatch, leaving the three of them.

A wide grin spreads across Ellie's face. *Bring it on,* she thinks.

Daniel says, "The Fram is a stepping stone to better commands. These guys are all young and full of beans. They serve a year's duty on a ship like the Fram and then move on to something bigger, more powerful."

Ellie's smile breaks a bit as Marcus stares at her. "Sorry I had to ruin your party by changing into the jumpsuit."

Marcus replies, "I'm sure we'll get another chance to party. Don't you fret about it, beautiful."

Ellie laughs. "Sure, cowboy. Try calling me by my name, okay?"

Marcus winks at her and gives her the "okay" sign.

Daniel watches their exchange, his expression unreadable. *Marcus is going to make my life difficult,* he thinks. He pulls out his sketch pad, draws Marcus being skewered by Ellie, turns it into a paper airplane, and sails it over to Marcus.

Marcus opens it. "Wow, you are an artist. That's a great drawing." He refolds it and sails it over to Ellie.

Ellie looks at it and laughs.

Then Marcus says, "Draw one with Ellie's dress over her head in zero G."

"I think not," Daniel says flatly.

An announcement is made. "This is your captain. We are ready to undock. Prepare to depart."

"To infinity and beyond!" Daniel says in character.

Marcus rolls his eyes, and Ellie giggles like a young girl.

A dockworker closes the outer hatch, and the inner hatch closes on its own, followed by the airlock hatch. Moments later, the docking clamps are released, and the ship floats off the hatch, pushed away by the station's centripetal force.

After a minute of coasting, the fission pile is fed a measured stream of water, and a steady thrust pushes them briskly away from the station.

* * *

A voice comes over the com. "This is Colonel Harding. We're away from the station and we've run a scan to detect any EC eavesdropping. We're clear, so feel free to talk among yourselves. Once we dock with the drive system, we'll accelerate at about a quarter G for about four hours, then we'll coast for eight hours, then decelerate for four hours at a quarter G, and arrive at our destination in about sixteen hours. Daniel, please see to the arrangements."

Marcus says, "Harding is probably taking the cabin, leaving us to hang around on the bulkhead."

Ellie turns to Daniel to explain, and he says, "I'm sure you're pretty tired, so we should probably rack it now, so we can fall asleep under power. It's easier that way."

Marcus adds, "We sleep on the walls. In a sleeping bag. I can sleep anywhere, but Daniel's right. If you've never tried sleeping in zero G, it's better to fall asleep when we're under power."

Daniel thinks, *He said I was right. Maybe he's not a completely useless jerk.* He points over to the wall. "That's the back, so once under power, that will be our floor. We sleep there."

Ellie says, "This is all so overwhelming, and I'm really worn out. I've been up for more than twenty hours. I could probably sleep anywhere, too."

The captain's voice comes over the com. "We're about to maneuver."

Marcus says, "This can be disorienting. Ellie, you might want to grab a barf bag just in case."

"I'll be fine… I think," she responds.

Daniel points to a storage bin. "Just in case."

The ship starts maneuvering with a sudden burst of acceleration, then thrusters can be heard firing on all sides of the vehicle. Daniel looks at Ellie and she's smiling. He says, "Looks like you're going to be fine."

Then he looks at the tough guy, Marcus, who is turning a pale shade of green. *Damn it,* Marcus thinks, a wave of disgust washing over him. *Should have taken the damn pill!* Daniel grabs a barf bag and hands it to him just in time. Marcus coughs up whatever he ate earlier but expertly manages to catch everything, except the smell.

"Hey Marcus," Daniel comments, "it's never a good idea to consume alcohol before a launch. You should know that."

Marcus, regaining his composure as he seals the bag, replies, "I've never had a reaction before. Must have been bad food at the terminal."

Ellie says, "Yeah, blame it on the food, tough guy."

Marcus replies, "Yeah, it probably was the booze. I had a couple of double Jacks in the terminal. Maybe not so smart."

He can admit he's wrong, Daniel thinks. *That's a good sign.*

A voice announces, "This is your captain speaking. We'll be docking with the Fram drive section in about ten seconds."

They wait as the thrusters fire nearly continuously and then a large clunk is heard, followed by the sounds of the two craft being drawn together by the docking ring.

* * *

"This is Harding," the intercom crackles. "We're docked and will start our journey shortly. The ride should be smooth, and for the next four hours, you'll feel like you're on Mars. I'll be down later to join you in a meal."

Marcus asks, "Ellie, may I ask what your specialty is? You're obviously not an engineer."

"I'm a Cognitive Linguist," Ellie answers, "specializing in how language shapes human thought and perception."

Daniel turns to Ellie, his eyebrows raised. "Why would a linguist be needed for an upgrade of the L2 telescope?"

Marcus, equally surprised, says, "Upgrade? That's not what I was told. The crew of your precious telescope overrode safety protocols and destroyed a major part of the communication system. That's why the L2 has been dark for a year."

Ellie responds, "I was only told that if I took the contract, the TKA would renew my grant for ten years."

A low rumble indicates the drive unit has started to build thrust. Daniel says, "Let's get to the 'floor' before we're dumped like a ton of bricks." They move their way to the back wall as the thrust increases.

"Is this the quarter gravity?" Ellie asks, testing the new weight with a jump that lifts her several feet into the air.

"It's going to increase," Daniel says. "I'd say they're at point-two G now. It takes a minute to spool up to full power."

"I've been studying uncontacted tribes around the world," Ellie responds, "using their natural language to enhance our understanding of the roots of cognition. The TKA is funding my research as it applies directly to general artificial intelligence."

Marcus poses the question, "What do we all have in common? And then there's Harding, a high-level Colonel with a checkered past."

"What do you know of Harding?" Daniel asks.

"I'm surprised you haven't heard," Marcus says. "He was the commander of that disastrous Battle of the Karun River. I think it was 2062. Ring a bell?"

"In 2062, I was in Tibet, out of touch for months," Ellie says.

"I don't follow the news," says Daniel.

Marcus, showing obvious exasperation, exclaims, "It was huge. Over five hundred immediate casualties and another hundred executed and broadcast live on the net, one a day. It dominated the news cycle for weeks."

"He's a Colonel, so it must not have cost him too much in the long run," Ellie says.

"He got kicked hard," Marcus says. "Demoted for insubordination."

"For what?" Daniel asks. "Surviving a slaughter?"

"Harding ordered a retreat. Command overrode him, but somehow, he managed to bypass them to save a contingent that included himself."

"Where's the insubordination?" Ellie asks.

"He wouldn't reveal how he overrode command," Marcus says. "Every day for months, his face was on the news along with the name and family history of that day's victim."

"This is exactly why I do not follow the news," Daniel says. "Gruesome."

Ellie responds, "We should probably keep this out of pleasant conversation with the Colonel."

"Yes," Daniel chimes in, "it wouldn't be productive to churn up ten-year-old bad news."

Marcus keeps hammering the point. "Don't you see? He's a complete failure and a terrible commander. He walked into that ambush with his eyes open."

"Well, he's on this mission," Ellie says, "so maybe he wasn't at fault."

"We're stuck with a dangerous, risk-taking loser, and he's our commander," Marcus insists.

Daniel says, "The L2 is commanded by my old friend, Synth. I doubt they'll give Harding command of the station, just of us."

"Marcus, why are you here?" Ellie asks. "What do you contribute?"

"I was told my job is to oversee the repairs and to make sure company policies are adhered to."

Daniel laughs. "Company policy? Is there really such a thing?"

"Well, yes," Marcus replies.

"Name one company policy that has to be adhered to," Daniel says.

Marcus replies with a single word. "Secrecy." He looks around. "Who's the EC stooge?"

Ellie laughs. "That would be me. You should see me in uniform."

Daniel laughs. "The loincloth and green slime?"

"Exactly," Ellie chuckles. "EC-regulation Amazon jungle kit."

"No, really, I'm serious," Marcus says. "The company is extremely concerned about EC snooping. They have a stealth ship stationed near your famous L2 and have been intercepting our communications for months. It's thought the previous crew had an EC spy who started the cascade that destroyed the communications system to cover their tracks."

Daniel says, "You keep talking about the communications system. I designed or configured most of the systems on the L2. There is no system that's vulnerable to operator error. It's practically indestructible from a user standpoint. I'm here to do an upgrade to the sensor and stability system."

"Well, I can't imagine why they want a linguist for a telescope," Ellie says.

"Maybe you're a Recreational Asset for the troops?" Marcus says rudely.

Ellie flips him the bird and thinks, *I'll have to look that one up.* "If that's the case, you are all going to be very bored. Except maybe the artist." She gives Daniel a knowing glance. Daniel feels a warmth spread through him.

He can see that Marcus has been deflated. "Let's take advantage of the thrust to grab something to eat and hit the rack," he says.

"I'm toasted," Ellie agrees. "I'm going to skip eating. Daniel, could you show me how these bed things work?"

"I'm hungry," Marcus says. "Daniel, you want something?"

"Yeah, get me a Number 3," Daniel replies.

"A Number 3?" Ellie questions.

"We have five basic meal packs," Marcus chimes in. "Number 3 is a fish sandwich. Pretty good. I like the Number 2, California rolls. They are excellent."

"They all provide the same nutrition," Daniel says, "except Number 5, which is high-protein and low-calorie. It's all vegetables."

"Sounds like you, Ellie," Marcus says snidely. "You a veggie girl?"

Ellie laughs. "The last meat I had was a reptile, a nice big, fat one. It was for my going-away party. You've never lived until you've eaten green iguana cooked in an open pit."

Marcus laughs. "Ellie, you're quite the character. I haven't guessed right about you yet."

"I was at a party in Miami where they served iguana," Daniel says. "Seems like it tastes like chicken."

"Speaking of chickens," Marcus pipes up, "we've finally worked out the technical details on farming chickens in the modules. That was my last project."

"What's so difficult about chickens?" Ellie asks. "They eat anything."

"It's not the chicken, it's what they leave behind," Marcus replies. "Their waste was causing all sorts of issues with the filters."

"How did you solve it?" Daniel asks.

"Ah, that's need-to-know."

Ellie laughs. "So your claim to fame is taming chicken shit?"

Marcus's face turns red, his cool demeanor cracking. *Bitch.* Flashes through his mind. He says, "You laugh, but there are a hundred thousand or so people in space who would love to have eggs or chicken. Not everyone likes fish."

"Marcus, that's a remarkable development," *Impressive…* Daniel chimes in. "Are you an engineer?"

"Yes, of course I'm an engineer," Marcus says. "I'm also an amateur astronomer and a Civil War Reenactor. I'm in line for my own command at the end of this tour."

Ellie says, "Look, Marcus, let's call a truce. We're going to be working together in close quarters, so we should just relax and be professionals, okay?"

Marcus sighs. "I'd rather you be my squeeze, but you're right. I can play nice." He thinks, *Ya, real nice.*

"Great," Daniel says with a grin. "We're all friends now. Ellie, let me show you how to deal with the sleep kit."

* * *

Marcus looks in the galley drawer for meals while Daniel shows Ellie how to get comfortable.

Daniel explains the complexities of weightless sleeping, and Ellie gets the idea quickly. He finishes by saying, "I think we have a good crew. They chose us for a reason, so we must be the right people."

Ellie says, "I think it's first contact."

Daniel laughs. "We're alone in our neck of the woods. We've been watching the sky since the dawn of time, and so far, no little green men."

"You mean little green people," she corrects him.

Daniel laughs. "Okay, how about a race of women who eat men after mating with them?"

"I know some women like that from my last post," Ellie says with a wry smile.

Daniel stares at her. "Really? People eaters?"

Ellie laughs. "Got you going, didn't I?"

"I'm too literal," Daniel says. "You're also very believable. I don't know what it is about you, but I instantly found you interesting. Maybe it's the jungle living."

Ellie says, "Marcus is right. Your drawing drew me in like a moth to a flame. Am I going to get burned?"

Daniel responds, "That's what my former girlfriend said about me. Was it yesterday? I've kind of lost track of time. We had a nice date at a fancy restaurant, you know, the kind that takes months to get a reservation." Ellie nods. Daniel continues, "When I broke the news that I was leaving again for up to a year, she got very angry and told me I wasted a year of her life, then she stomped off. I'm confused by women."

"Well, I'm glad you had a clean break with the past," Ellie responds.

"As much as I'd like to jump in with two feet," Daniel says, "I think we should take things slow. We're going to be on a small station for a long time, working elbow to elbow. It's probably best if we keep things professional."

Ellie's eyes glaze slightly. *He's saying no, but his body is crying yes,* she thinks. *I'm patient. He'll break.* She says, "Yes, of course. I'm used to being forceful. The women of the tribe I was with ran the show." Then she says, "Not to change the subject, but my guess is first contact. I'll bet you a token."

Daniel looks at her like a dog hearing a strange sound. "Token?"

"Yeah," Ellie responds. "Whatever valuable thing that's rationed, that's the bet."

Daniel holds out his hand. "Deal."

Ellie pulls him close and kisses him on the cheek, then slides into her sleeping roll.

Daniel, a bit taken aback by Ellie's forwardness, glides on boosted spirits to where Marcus is opening their meal packs. As they begin to eat, Daniel glances over to Ellie's sleep kit. *She's already asleep.*

"I wish I could draw like you," Marcus says, handing a meal pack to Daniel.

Daniel shakes his head. "I don't use it to score with women."

Marcus looks at him, disappointed. "I'm not blind. But whatever." *Liar.* "That's the Number 3 you wanted, the freshest one I could find."

"Thanks," Daniel says, opening the pack. He takes a bite of the fish sandwich; the familiar, savory taste of dill sauce is a small comfort. "How many times have you gone to space?"

"Gosh, I've lost count," Marcus says. "Maybe twelve or fifteen? I've been going to space since my eighteenth birthday. I signed up for the TKA training program the moment I was able. My dad is EC, and he kind of disowned me at first, but now we're back in good standing."

"With all the security talk and the misleading mission information, you'd think they'd be suspicious of an EC relation."

Marcus laughs. "Well, that's never come up before, but I'm sure they checked out my dad. He's a petroleum engineer. We never talk shop."

Daniel asks, "I see you haven't touched the seaweed crisps. Want to trade for my chocolate protein bar?"

Marcus's eyes light up. "Great! It's the only thing I like out of the fish sandwich."

"So you come from a line of engineers," Daniel says, making the trade. "I wouldn't have guessed you were one. I thought you might be one of those efficiency experts who always make life awful for the little guy."

Marcus looks down. "It pains me to hear you say that. My last project, completed on time and under budget, will improve the lives of everyone in space."

"I guess it's just a stereotype," Daniel replies. "The typical engineer isn't an aggressive womanizer."

"I have the looks, the body, and the personality, and I'm single," Marcus replies. "I've been very successful in everything. I happen to like pursuing the ladies. It's my favorite hobby."

Daniel asks, "You're right. You're an action hero star playing engineer, well, you've definitely got me beat. I'm curious. When you were flirting with Ellie, what did you expect to gain?"

Marcus replies with a smile, "Those family restrooms have a purpose outside of their design."

Daniel's eyes narrow. "Has it ever worked? I mean, really."

Marcus gives a sly grin. "I'm batting five hundred."

"You mean a fifty-fifty success rate? That's incredible."

"I can usually pick them out," Marcus says. "Attractive women traveling alone, and a particular look. I can't describe it. Ellie had it scrawled all over her demeanor. I give them the movie speech and they eat it up."

"Movie speech?" Daniel asks.

"I worked my way through college as a grip and a stunt double for a studio in LA. I'm in several movies."

"Oh, I see." Daniel's tone is a touch smug.

Marcus's eyes narrow. "How did you get through college?"

"Family money. Sorry, I didn't mean to…"

Marcus cuts him off. "You're the famous inventor and artist, Dr. Walker, who literally walks on water. Meanwhile, the rest of us slugs are solving real problems with our feet in the mud."

Daniel shifts uncomfortably. "You're right. I judged you by your looks and attitude. I shouldn't have. You're clearly a capable engineer."

"Damn straight," Marcus says.

After a beat, Daniel smirks. "You still struck out with Ellie."

"That's just the opening salvo," Marcus replies. "Want to wager on my chances of success?"

Daniel looks at Marcus with disdain. *Not if I can help it.* He ignores the comment, finishes his meal quickly, and stows the packaging. Marcus does the same.

Marcus sees Daniel eyeing Ellie and says. "She's one cute babe. Animalistic. I'd bet she would be fun in zero G."

"Come on, Marcus," Daniel replies, "let's show some respect."

"Yeah, you've already got the inside track. It's the quiet ones…"

"On that note, I'm going to hit the sack," Daniel says. "Please turn down the lights when you're done."

Daniel makes it into his sleeping bag and gets comfortable. He notes that Ellie is just a meter away, looking peaceful and breathing evenly. *She is lovely,* he thinks, and drifts off to a well-deserved sleep.

* * *

Ethan tries to sleep in his private berth. The words of Marcus and the others echo in his mind. *No mistakes... no screwups... not like last time,* he thinks. He turns, unsettled, and eventually slips into a troubled sleep.

* * *

Ellie wakes to a strange, heavy pressure pressing her into the sleeping bag. *Gravity.* The feeling is both alien and deeply familiar. She opens her eyes and sees Daniel, staring intently at a pad.

Daniel looks up. "Did you sleep well?"

Ellie says, "How long have I been asleep?"

"Almost eleven hours," Daniel says. "You must have been tired."

Ellie sits up. "I slept through zero G?"

Daniel replies, "We're about two hours or so from our destination. Are you hungry?"

Ellie says, "I feel a bit queasy but yes, I haven't eaten since Long Beach. Is there a Number 3 available?"

"California rolls? Yes, I see there are several." Daniel walks over to the galley drawer and pulls out a Number 2 for Ellie and a Number 4 for himself. Ellie climbs out of her bed roll and lightly bounces over to the eating area, a table and chairs that collapse into the wall for storage.

Daniel explains, "These are held at subzero freezing conditions, and the pack automatically reaches optimum temperature within a minute of opening. The entire pack is recyclable, too. Zero waste."

Ellie comments, "That seems to be the theme out here. Waste nothing. Reuse everything."

Marcus stirs a bit. "Is there a Number 1?"

Daniel looks in the bin. "Yes, several." He pulls it out of the drawer and opens up another chair for Marcus.

An announcement starts, "This is Harding. We're about an hour and a half from L2. I'll join you in a minute. Daniel, is there a Number 4 left?"

Daniel pulls out a pack, holds it up to the camera, and says, "Got one." He then pops open another chair for the Colonel.

Ellie comments in a low voice, "Do you think he's been watching us?"

Marcus says matter-of-factly, "I would. He's the commander, so he would want to get to know us without being too friendly."

Daniel says, "I agree with Marcus."

The hatch opens, and Colonel Harding comes down the ladder built into the wall. *He's twice the size of me,* Daniel thinks.

Harding jumps the last four stairs and lands with a gentle thump on the back wall, now the floor of the passenger pod. Two steps and he's in his chair.

Daniel says, "I can see you're no stranger to a low-G environment. Your gait is Martian."

Harding, his eyebrows raised in a mix of surprise and appreciation, says, "I can neither confirm nor deny that I spent several years at Arcadia Base. Sharp eye for detail there, Daniel."

Marcus asks, "Are we still sworn to secrecy, or are you going to tell us what you know?"

Harding replies, "We'll wait until we're aboard L2 before discussing any mission parameters."

Daniel says, "Did you hear about Marcus's chicken breakthrough?"

Harding says, "Yes, that's a fantastic development. I'm sick of fish and tofu. Chicken and eggs will make life better for everyone."

Marcus raises his voice a bit. "It was a team effort, and we did what no other team could do. We tamed chicken shit."

Everyone bursts out laughing, even Harding, whose laugh is a short, sharp bark of genuine amusement. *He even has a sense of humor,* Daniel thinks.

* * *

They enjoy a quiet meal together, a temporary truce settling over them as they eat. No talk of the mission or past mistakes.

After their meal, Harding says as he gets up from the table, "We've got just about fifteen minutes before thrust ceases. I've got some details to attend to, so I'll see you after we dock with L2." In two steps and a jump, he is halfway up the ladder and then out into the command module of the pod.

Ellie says, "He certainly can handle low gravity. He's like a monkey."

Marcus asks, "Have you eaten monkey meat before?"

Ellie says, "Yes, and just about anything with a nutritional value."

Marcus asks, "What did it taste like?"

Ellie says with a smirk, "It tastes like chicken." She then adds, "Actually, I didn't like eating monkey meat as those little guys would hang around the camp, and I'd feed them little bits. Then later, they'd end up on the menu. I can deal with a lot, but eating little cute creatures that beg for food is not on my list of positives."

Daniel says, "Make sure everything is stowed or strapped down before we lose thrust."

An announcement starts, "This is your captain speaking. As you can see on the screens, we're within visual range of L2. It's just a tiny speck, and that's not L2, it's the sunshade. We'll leave the drive section about two hundred clicks from the station and approach using cold gas thrusters only. We'll take it slow and easy, so figure about an hour for us to be in position to dock with the hub." *That speck is a kilometer wide,* Ellie thinks, her mind adjusting to the scale.

Daniel says, "The sunshield is a marvel of engineering. I watched the builders unfurl it in one go. The entire thing. It was a sight to see."

Marcus asks, "Was that one of your creations?"

Daniel says, "No, no, just the telescope stabilization system and some other things."

Ellie asks, "Forgive me for my ignorance, but what is the stabilization system for?"

Marcus cuts in and answers for Daniel, "The primary mirror is composed of a number of large hexagonal segments, and each of those has to be exactly perfect for the telescope to have maximum resolution. Even a picometer out of alignment can affect the quality of the data."

Daniel takes over, "That's right, Marcus. You've been well briefed. My proprietary system deals with those minute corrections. Instead of physical actuators like on previous mirrors, my system uses lasers of various wavelengths to stimulate the mirror backing with heat. By slightly deforming the mirror back, we can achieve very close to theoretical perfection for focusing the energy from the observed target."

Ellie thinks for a second, and says, "So you heat it up a bit, and it expands and takes the defect out of the mirror. The laser shoots the backside, right? If it shot the front of the mirror, the shiny part, it would bounce off."

Daniel smiles and says, "By jove, I think you've got it."

Marcus says, "Please, nobody spring into a chorus of 'The Rain in Spain,' okay?"

Ellie says, "Daniel, it's your understanding that the mission is an upgrade to your already nearly perfect system?"

Daniel says, "That's the thing that gets me. I don't know how much more perfect it could be. We're down to ninety-nine and change percent of theoretical for the spectral coverage."

Ellie asks, "What if you were asked to tune it for one particular wavelength?"

Daniel says, "That's pretty technical. What's your science background?"

Ellie responds, "I had a scholarship for chemistry and physics at a state university, but after two years, I switched to languages as languages are my thing."

Marcus asks, "How many do you speak? I mean fluently."

Ellie says, "Gee, I don't know. I've learned three new ones lately, so let's see. Maybe ten or twelve, not counting dialects. I can absorb a language in a matter of days or weeks. It's the way my brain is wired."

An announcement starts, "This is Harding. Thrust will cease in about five minutes. The Pod will detach, and we'll start our way towards the L2 for docking."

Daniel says, "It won't be long now."

Marcus asks, "Long for what?"

Ellie chimes in, "For the mystery to be revealed."

The Mission Brief

02/08/2074 21:05:00Z

An announcement starts, "This is the Captain. Our ride in will be smoother and take longer due to the restriction that we use cold gas thrusters only. Using other forms of thrust would contaminate the mirror surfaces."

The crew members feel the Pod rock a bit, then the sound of actuators as it dock with L2 Aegis.

"Well, we're here," Daniel says as the clunk of the docking latches reverberates through the Pod.

Ellie asks, "What time is it here?"

"Spacers outside of near-earth orbit are on Zulu time," Marcus replies. "Look at your Device."

Ellie pulls her Device out from her pocket. "Twenty-one and change. Past your bedtime, Marcus."

Marcus says, "You mean Daniel's. What time do you usually go to bed?"

Daniel replies in a character voice, "I don't sleep. I hate those little slices of death."

Ellie laughs. "Poe?"

Marcus says, "I don't get it."

"Count Saknussemm," Daniel says.

Ellie howls, "Yes, an old adaptation of *Journey to the Center of the Earth*."

Daniel adds, "I really sleep very little, about five hours or less. It's an advantage I have over people who need eight or more hours."

Marcus replies, "You've got me beat. I need the eight or I feel like a lead sled."

Ellie says, "I can go for a few days with five, but then I'm done. I'll need the full deal or I start to suffer brain fog."

Daniel says, "See? An advantage."

Marcus changes the subject. "I wonder how long it will take for Harding to tell us why we're really here."

An announcement starts, "This is your captain speaking. We're docked and the board is green. We'll be opening the hatches as soon as the pressure is equalized. I apologize for not meeting you folks in person, but the company wants to keep you isolated. We've enjoyed ferrying you to your final destination and will be back in about six months for resupply."

The hatch cycles and opens. Synth, the commander of the station, drifts through the entryway.

Synth says, "Daniel, it's great to see you again. Welcome back to your home away from home. Ellie, welcome to space. I hope you've had an easy time adjusting. Marcus, your reputation precedes you. Great work on solving the chicken problem."

Marcus is the first to speak. "Synth, thanks for the compliment."

Ellie says, "I seem to have adapted to space."

The inrushing air causes Daniel to breathe in deeply and recall L2's unique scent. He says, "I forgot how much I love this place. It's great to be back."

Synth says, "Please gather your belongings, as the Fram needs to disembark soonest."

Harding opens the hatch to the command deck and floats in. He says, "Synth, I'm Colonel Harding."

Synth replies, "Colonel, nice to make your acquaintance. The supply pod is being transferred to the hub as we speak, and all systems are in the green. Ellie, Marcus, welcome to L2."

Harding responds, "Since this is a civilian project, we'll drop the military formalities. Everyone, please just call me Ethan."

Synth replies, "Absolutely, Ethan. Please, everyone, let's move to the hub so the Fram can get underway."

* * *

The crew moves into the hub, a vast, cylindrical space crisscrossed with color-coded transit lines and handholds. Synth starts the briefing. "The L2 Aegis is a standard COAS-10-26-1 station with two modules rotating around this hub. The modules are the Hab and the Lab. Both modules, as usual, have two levels of hydroponics and aquaculture."

They move towards the center of the Hub, and Synth continues, "Ellie, the other crew members are well acquainted with space stations, so I'll continue for your sake."

Ellie says, "I read the briefing packet and understand how the system works. The elevators have self-contained life support and double as airlocks. We're in zero G here in the Hub, and as we descend to a module, the gravity increases until we're at nearly earth gravity in the transit level."

Synth says, "That's correct. Please be sure to read the safety card carefully."

Ellie interrupts gently. "Synth, I'm pretty good at absorbing information. I read the packet, and I believe I have it down."

Daniel adds, "It would still be a good idea to practice with the escape mask and the quick-don pressure suit. In an emergency, we'll only have seconds before things get, ah, exciting."

Ellie says, "Sure, that's a good idea."

Synth says, "We'll be going to the Lab module first for the mission brief."

A shared silence falls over the group as Synth cycles the elevator to the Lab module. He says, "Okay, ready."

Ellie thinks, *With all this gravity, I should have peed.*

* * *

They file in, still quiet. Daniel looks at Ethan, who appears to be subvocalizing his speech.

Daniel says, "We've been on pins and needles wondering what this is all about."

Marcus says, "I checked the board, and it's green. No faults. Obviously, I've been misinformed."

Synth says, "It will all be clear in just a minute. Please move to the floor, as the gravity will build fast."

They all orient themselves toward the "down" position, feeling a gentle but persistent pull as the elevator transits the two-hundred-meter length of the rods that hold the module to the hub.

Synth comments, "Ellie, the elevator is attached to four large, hollow rods. Air circulates through them so that its composition is the same all over the station. It's a remarkably efficient setup."

Ellie says, "So when lasagna is being prepared, everyone gets hungry?"

Synth mock laughs. "Yes, and apple pie. We have some specialty items on this station, like pears, avocados, and apples."

Ellie says, "You should look at raising iguanas. They're an excellent food item and very pretty to look at."

Synth says, "Thanks to Marcus and his team, we're scheduled to receive chickens on the next supply run."

She should talk to Marcus about iguanas. Daniel thinks, *I'll just keep that to myself.* He asks, "So you managed to figure out the issue with the avocados?"

Synth says, "Yes, it was a minor thing. We have a good crop now from two trees, one in the Lab and one in the Hab. They're running on different seasons for better year-round coverage."

The elevator slows to a stop.

Synth says, "Board is green. Opening the hatch."

* * *

Synth opens the elevator hatch, and a large, well-muscled woman with a slight scowl on her face opens the Transit Level door.

Synth says, "This is Ayla, our human maintenance tech. She's been with us since commissioning."

Ayla says without emotion, "Welcome to the Lab module."

Marcus thinks, *Hotter in person. Option two.*

Daniel says, "Ayla, I've heard great things about you over the years. You're keeping my baby up to date and running at peak efficiency."

Ayla grumbles, "Your system is overly complex and extremely finicky. Sometimes I want to tear out the junk and rebuild it from scratch."

Daniel's initial enthusiasm visibly drains away.

Ellie says, "I'm glad there's another woman on board."

Ayla says, "I tend to keep to myself. Nothing personal."

She's upset about something unrelated, Ellie thinks. *Just drop it.*

Marcus says, "We're all one big happy family now. Great!" *Another bitch!*

Ethan says, "Let's relax a bit. We have important business here, and personality issues will just have to take a back seat. Isn't that right, Sergeant Major?"

Ayla snaps to attention automatically. "Yes, Sir." *I need to tell him,* she thinks, *but I can't.*

Ethan continues, "This is the Transit Level. From here, we go down one level to the Commons, where we'll conduct the briefing."

Synth says, "The elevator has a rated capacity of three, so the rest of us can wait or take the ladder down."

* * *

Daniel, Ellie, and Marcus board the small elevator, while Ethan, Synth, and Ayla opt for the ladder.

When the door closes, Ellie remarks, "This is a pretty tight fit. Maybe they could have made it a bit bigger."

Marcus says, "The average spacer is actually quite a bit smaller than the average earther. Daniel is a good example. He's spacer-sized."

Daniel remarks, "That's right. While I'm 183 cm, which is tall for a Spacer, I'm skinny and lack the bulging muscles of Marcus."

Marcus says with a pointed look at Daniel, "Girls look for muscles first, beauty second, and brains last." *Check.*

Ellie laughs. "He's right." *Sort of.*

Her agreement hits Daniel like a physical blow. He follows them out of the elevator. *What game is she playing?*

Marcus glances back at Daniel thinking, *Checkmate, dude.*

* * *

The Commons level has a central storage locker in the center of the compartment that surrounds the rods that run the length of the station. The walls are covered with DVES and currently show white walls with large portholes. The room is spacious and comfortable with plants and a decorative saltwater fishtank.

Ellie asks, "Is the tank part of the aquaculture, or is it purely a design element?"

Synth replies, "It's for the juveniles. It's also a decorative feature."

Marcus, sounding annoyed, demands, "This is all very nice, but when do we get to the good part?"

Ethan and Ayla come into view. "Please, everyone be seated," Ethan says.

The chairs are comfortable and well-padded. The room appears more like a living room than a space station.

Ellie remarks, "I feel a strange sensation, like I've had a few too many. The room seems to be slowly spinning."

"You'll get over it quickly," Daniel replies.

Ayla adds, "Or be a problem for my bots. I hate cleaning vomit off my equipment, so if you feel the urge to purge, use a bag."

Marcus says, "I think we'll be okay."

Ayla shoots Marcus a glare.

He responds, "Tell me, why are you so freakin' hostile?"

Ethan stands. "Settle down, and I'll tell you why such a diverse group is here."

The room becomes quiet. Synth is standing behind Ethan, hands folded.

Ethan says, "About a year ago, a peak was detected in the mid-infrared spectrum, and specifically, at ten microns. Synth, take over."

Synth says, "This display shows a graph in time, starting before the signal was first detected. As you can see, it suddenly started. It was turned on, so to speak. It was not an existing signal that we just happened to detect."

"It was a stroke of luck that L2 was scanning that patch of space when the signal started," Ethan continues.

Synth adds, "The signal is too pure to be anything natural. It is a laser, aimed at Earth. It follows Earth's orbit and is narrowly focused."

Ellie says, "You mean, it's First Contact. Correct?" *Why am I not surprised?*

Ethan says, "That appears to be the case, Ellie. You've guessed the impossible."

Daniel says, "It does seem impossible."

Marcus says, "It's common knowledge that there are no life signals anywhere nearby."

Ethan says, "The origin is the fourth planet orbiting the star 82 G. Eridani, a G-type star located approximately 19.7 light-years away in the southern constellation of Eridanus."

"Twenty light-years away, and they're accurately tracking Earth with a laser?" Daniel says. "That's fantastic."

Marcus says, "That sounds a bit scary."

"Marcus is right when he says scary," Ethan says. "A civilization that has the resources to send a signal twenty light-years to another planet is far above us in capability and resources."

Daniel says, "Actually, we could do the same without inventing anything. We only need the will, and we can send a message back."

"Hold on there, Daniel," Ethan says. "First things first. All we can do is detect that there is a signal of interstellar origin tracking our planet. That means an advanced civilization, but that's all we have right now. Synth?"

Synth says, "It took weeks of patient analysis to isolate a modulation message in the signal. It's binary, repeats, and is undoubtedly from an intelligent civilization."

"This is new, Synth," Ethan says. "What is the message?"

Synth replies, "It's the proton-to-electron mass ratio."

Daniel yells out, "That's fantastic! Anything else?"

Synth replies, "It's a very low-bandwidth signal. It takes about fifty-one minutes, twenty-eight seconds, and then it starts again. Just this one string."

Daniel says, "There's got to be more. We're limited in that we can only count photons. If I were sending a message with a laser across the interstellar medium, I'd polarize the beam."

Synth replies, "That's my conclusion as well."

Ellie asks, "Forgive my ignorance, but what does polarization mean in this context?"

Daniel replies, "Think of it like a long rope being shaken up and down. The wave that passes down the rope will be vertical. Now, that wave passes through a picket fence and is undisturbed. If you shake that rope side to side, the picket fence will block that wave. A message might take the form of a rapidly changing polarization of the beam. Binary, only at a high bandwidth. Does that make sense?"

Ellie responds, "The current sensor array doesn't count this wiggle direction, and an upgraded one that does is required. Does that sum it up?"

"Yes, that's it," Daniel says. "Tell me, Synth, do you have a polarization array lying around here somewhere?"

Synth replies, "It arrived with Ethan. After I determined the signal was repeating, I knew there had to be a deeper level of information we couldn't read. I sent the order about two months after the discovery, and it took ten months to construct the array."

Daniel says, "That's great! What's the status of the package?"

Synth says, "It's been moved into the vacuum storage area and just dropped below one-hundred K. It will take a few days for it to get to telescope temperature."

Ethan says, "At this point, I have to put on my Colonel insignia." He looks around the room. "This sensor array is mil-tech. You all know the restrictions. Any infraction will be reported, and it will be out of my hands. This is need-to-know. Do not write about it. Do not speculate about its origin. You know the standard military drill."

Marcus asks, "What if I need to know?"

"Then you'll be told," Ethan says. "Maybe."

"Ethan, er, Colonel," Daniel says, "have I been upgraded?"

Ethan responds, "Yes, Daniel, you're cleared. Daniel, Ayla, and myself are fully cleared to work with the array. Synth, you, Marcus, and Ellie are on a need-to-know basis. Understood?"

Synth responds, "Fully understood. If I need to know, I will ask."

Ellie responds, "Frankly, and I hate to admit it here, science is the only language I have trouble with."

Marcus says, "I'm available if you need me."

Ethan says, "Marcus, it's well known where your interests lie. No offense, and I certainly understand loyalty. We don't need to put it to the test."

Marcus responds, "Yeah, I understand your point. You're right. I'm a corporate stooge, and I wear that badge proudly."

At least he's honest about it, Ethan thinks.

Ayla says, "Synth, we'll have to work up a procedure to get that array into place. We haven't touched the array since it was installed."

Synth says, "The procedure has never been tested. We've never had a failure or upgrade. It's fairly complex and must be done absolutely perfectly the first time. Once the polarization array is cooled, we'll check it out, then Daniel will have to configure each unit before installing. I estimate it will take seven to ten days, at least."

"I'll need the specifications and API as soon as possible," Daniel says.

His Device chimes, and Ethan says, "You have it now. Your eyes only." Then he adds, "Daniel, you do understand your responsibility under the Secrets Act, right?"

Daniel says, "Yes, I understand my responsibilities and penalties. I'm not new to this."

"It's a formality," Ethan replies.

Ellie says, "I know my role. Try and figure out what they're saying."

"That's right, Ellie," Ethan replies. "You're going to create the Rosetta Stone."

Marcus chimes in, "Why am I here?"

Ethan replies, "The company wants you here as their trusted representative. Since we're on complete lockdown for the next six months, you'll be the eyes and ears of the TKA. Obviously, my role is as military liaison and commander of this mission. Synth is still overall commander of the station."

Daniel speaks up loudly, "Do I have to run everything past the company, or do I have autonomy?"

Ethan replies quickly, "Doctor, you are completely and totally free to act on anything as you see fit. I do ask that you confide in all of us as you proceed. The TKA and the military are absolutely thrilled to have you on board."

"So I'm essentially sliced liver?" Marcus asks. *Nobody respects me!*

Ethan quickly responds again. "Marcus, no. You've proved to be a valuable team member and can solve tricky and unusual problems with serious dedication." He pauses and nods to Synth.

* * *

Synth says, "I propose the following mission profile."

Synth waits for silence, then continues, "One. Confirmation. I've been the only one to detect and work with the signal. Independent confirmation is required."

Synth pauses again for effect before continuing, "Two. Upgrade the sensor array. We've already discussed what this involves."

Synth pauses again for a moment, then says, "Three. Deciphering. Marcus and Ellie, you two should work closely on this phase. Daniel, if you're available, as well. Ellie, your ability to see patterns might be the key."

Synth looks around the room, then continues, "Four. Understanding. Ellie, your talents will be put to the test with this one. Once we can read the message, we'll have to figure out what they are trying to tell us."

Ethan says, "And hope it isn't something nasty."

Ellie asks, "Why all the secrecy? This is something monumental in the history of humanity and beyond! We should be singing from the hills that WE ARE NOT ALONE!"

Ethan says, "Two reasons: corporate investment and operational security. That's it. This may not be the message we want to hear, nor one we can tell the rest of the world."

Daniel says, "I can see Ethan's point, and it's valid. We could throw the entire system into panic. If the message contains technology, the TKA is best able to use it for good. The EC would use it to hang over our heads and probably have our rights legislated away, like they did with fissiles."

Synth, staying on topic, says, "Right now, I'd like to take care of confirmation. We're all here, and I can prove once and for all that I am not hallucinating, as some in the TKA have accused."

Marcus says, "Yes, that is a concern, but not one from serious people. Let's put that suspicion to rest."

Synth says, "I'll zoom in on the start of the signal. Note the signal starts at February twenty-second at 04:02:44 Zulu."

The signal is obvious to even Ellie, and she says, "How do we know this is the actual data?"

Synth says, "Daniel, please access your logs for the system."

Daniel says, "Just so everyone knows, I keep separate raw data logs. They are for diagnostic purposes but are quite complete." He fiddles with his Device, and another graph pops up on the screen next to Synth's. It's grainy and indistinct. He says, "It will take a moment to generate a graph with good resolution." Daniel starts humming an annoying tune, and Ethan clears his throat.

The graph resolves. After a minute of silence, it's done.

"They look the same," Daniel says. "Synth, superimpose, please."

The screens move together, and the graphs match.

Synth says, "Zooming to highest resolution."

Daniel says, "Well, that settles it. You're not hallucinating. The logs, which are recorded directly from the sensors, match Synth's records."

"Do we all agree?" Synth asks.

Ellie asks, "You mentioned the mass of a proton to electron ratio. How did you dig that out?"

Synth says, "I'll overlay several hundred loops of the signal, and it will become obvious."

The screen changes to show the signal over time. Tiny bumps appear in the data, and after several hundred have been overlaid, the bumps become plateaus.

"Binary. I see it," Daniel says.

"Agreed. Binary for sure," says Marcus.

Ayla says, "Binary. The language of machines."

The fine hairs on the back of Ethan's neck stand at attention.

"We are talking machine to machine here, so binary would be expected," Ethan says. "Do you agree, Synth?"

Synth replies, "Yes, Ethan. I agree. Imagine they have six fingers, or three. What base would they operate in as biological beings? Binary removes the biology and puts the message in a pure form that transcends biological prejudice."

"Fair enough," Ethan says. He pauses and looks around at the crew seated before him. "For the record, is there anyone who disagrees that the signal is real?" The room is silent. He continues, "Well, that's great progress. We've already accomplished one of the objectives."

* * *

Marcus, with the widest grin possible, says, "If we do this right, we'll all be rewarded handsomely."

Ethan continues, "Yes, there are life-changing rewards for all of us when we complete the mission successfully."

Daniel asks, "Define mission success?"

Ethan says, "The mission will be considered successful when we complete stage four. All of you signed up for a one-year tour, but if we're not done in a year, the fine print on your contracts states that you're here until we complete stage four or declare mission failure."

Ellie's eyes dart left and right. "I committed to one year. That's what they guaranteed me. One year, and that's it."

"I'm afraid you were misled," Ethan says. "The contract is for one year, with extension."

Daniel stands. "Now, let's not panic just yet. One year is a long time, and we will likely conclude the mission way before that. We have a great team and are in the exact right place at the exact right time to make history. Just think, we aren't alone, and it's up to us to figure out who's calling and why."

Marcus says, "I'll stay forever if I have to. This is a golden, once-in-a-career opportunity."

Synth says, "Ellie, I think you'll find the station comfortable, with exceptional amenities. We, especially my bots and myself, will go out of our way to make your life as easy and trouble-free as possible."

Ellie says, "Synth, that's very nice, but please, don't single me out. I'll be fine."

Ethan says, "There's another clause in your contract that you didn't see. It was added by the military as a secret addendum."

Daniel asks, "Does this have anything to do with the fact that we seem to all be single and have few strong ties to the planet?"

"Yes, that's a very astute observation," Ethan says. "We are all single." He looks around the room. "We all choose our work over social life. Ellie, you've isolated yourself in the jungle. Daniel, we know your girlfriend of two years dumped you; my condolences. Marcus, nobody will miss you outside your coworkers. Even Ayla is without bonds to the rest of the planet."

Marcus asks, "Where are you going with this?"

Ethan says, "Since we have no idea the nature of the threat that may come from this message, a special update that I brought with me will allow overloading the fission power plant to critical and beyond. The thermonuclear event that follows will vaporize this structure and anything within a thirty-click radius."

Ellie becomes pale and visibly shaken. Daniel gets up and moves to the couch she's sitting on to comfort her.

Ethan says, "The odds that things will go badly are extremely remote. It's just a signal, but both the TKA and the military feel that we need the option."

"Who decides when to initiate the self-destruct?" Daniel asks.

"Any two of us, including Synth," Ethan says.

Synth moves around the room, handing out cards. Ethan continues, "These cards have a self-destruct code. Two are required to set the reactor on a non-recoverable overload. The cards are biometrically connected, so only the owner of the card can use it. The time from initiation to overload is about thirty minutes. That will give enough time to leave the station in a lifeboat."

Daniel asks with a laugh, "A lifeboat? Out here? That's a certain death sentence."

Marcus says, "Actually, maybe not. We know the EC is watching L2. They must have a stealth ship nearby. We've detected their narrowband communications for months. If we have to bail out, they'll be required to break cover and rescue us."

Daniel laughs out loud. "So we count on our competition to save us? High failure probability. More of a gamble than a plan."

"Now, let's not get caught up in the idea of destroying the station," Ethan says. "This facility represents the pinnacle of Earth technology and a sizable investment by several interested parties."

Ellie asks, "The Foundation?"

Ethan laughs. "That's a myth. That's a fable from an old science fiction novel. There is no Foundation."

Daniel says, "Ethan's right. This station was funded by the TKA and the NSF with major contributions from the Musk Fund and the military. Even the EC contributed significant sums so they could have access to the raw data."

Ethan says, "Daniel is more in the know about the origins of this facility, as he's the one who made it possible."

"I can't see a scenario where I would use the code," Daniel says.

"Nonetheless," Ethan says, "you need to keep that card with you at all times. That's a military regulation. Is that understood?"

Everyone, including Ellie, understands what adding the word "military" means and murmurs in agreement.

Marcus asks, "Ethan, can you describe a scenario where you would use the code?"

"No, I can't," Ethan says, "but that's not the point. The code is for the unexpected."

"Are there any other hidden surprises in the contract?" Marcus asks.

Ethan replies, "That's it. The conscription clause and the self-destruct clause."

Daniel asks, "And that's why we're all single and unattached. Nobody wonders why we are no longer around."

Ellie says quietly, "What a sad bunch we are. Just work, no lives. Nobody cares if we live or die." She looks around at the faces in the room and sees her own reflected back at her.

Marcus says, "Well, I've got a lot of living to do, so it will take one hell of a scenario for me to participate in blowing up the station."

Ethan raises his voice. "The self-destruct scenario is a one-in-a-million chance. It's only there because we're dealing with the ultimate unknown. What is the nature of this signal? What message does it contain? Why would the inhabitants of a planet twenty light-years away devote tremendous resources to a project that can't possibly bear fruit for forty years?" The room becomes quiet. Ethan continues, "You all have tonight off, and tomorrow, bright and early, we'll start the process."

* * *

Synth says, "Daniel, I'd like to go over with you the changes that have been made to the system in your absence."

Daniel replies, "Please send me the updates so I can review them tonight. We'll jump right in tomorrow."

"Done," Synth replies. Daniel's Device chimes.

Ethan says, "One more thing. I want to stress to you all how important operational security is. We're being watched constantly by the EC. We know they're out there, so that means no, as in ZERO, communications will leave this facility. Your personal devices are safe from snooping, so you can continue to use them. We'll still

receive a feed from the outside, so news and shows will be up to date, but absolutely nothing gets out. Not a single byte. Understand?"

Daniel says, "Does this tie in with the failure of the previous crew cover story?"

Ayla speaks for the first time since her greeting, her voice tight with suppressed anger. "That's the real rotten thing about you corporate flunkies. The previous crew was blamed for something that never even happened, and they left in disgrace. I doubt any of them will find a job in their field again. What bastard thought of that?"

Ethan says, "I'm afraid the cover story was my idea. The crew will eventually be exonerated and offered significant compensation for their humiliation."

Ayla, now angry, says, "Colonel, with all due respect, that was a mean and terrible thing to do. Those folks, and they were good people, are now ruined."

"I know," Ethan says. "It was painful to do, and we will make it up to them, I promise." He looks around the room. "Any questions?"

Ellie says, "I'm sort of overwhelmed."

Daniel says, "You guessed it. First contact."

Ellie smiles. "Just ignore your science bias and it was obvious."

Ethan says, "Okay, you're dismissed. Sorry, I should just say the meeting is adjourned."

Ellie, the look of wonder returning to her eyes, grabs Daniel by the hand. "Show me around. I want a personal tour." Her touch is warm and friendly, a welcome relief.

Daniel says, "Great! We'll start with the Lab module."

* * *

Ayla walks up to Ethan. "You could have thought of something else, Sir."

Ethan says, "I'm sorry about the previous crew. I understand you had a long-term relationship with one of them."

Ayla says, "You know as well as I do that they are scientists. Compensation doesn't mean much."

Ethan responds, "They'll get their choice of postings and a lifetime extension of their grants."

"I understand, Sir," Ayla says.

"You can call me Ethan."

"Yes, Sir. I mean, Ethan." She pauses a second, then continues, "I really respect the way you handled the aftermath of the battle. I was in-theater at the time and knew it was the fault of the stooges in intel. They screwed the pooch." *Does he know I sent the command code?* she wonders, the question a sudden spike of fear.

Ethan says, "I went into that valley with my eyes open and didn't see the danger. It was just as much my fault as it was bad intel. As commander, it's my fault when things go sideways." *In-theater?* Ethan thinks. *I knew them all. Must be SOC. Does she know about the code?*

"You're a good man, Sir… Ethan."

Ethan asks, "I see you've still got the build. Would you mind working out with me? I find it tedious to work out by myself."

Ayla says, "It would be a pleasure. We have a great gym with everything. How about sparring?"

"Me?"

"My favorite sport," Ayla says.

Ethan laughs. "You'd have to pull your punches, and that would ruin it for you. How about Marcus?"

Ayla says, "Yeah, I was hoping to work out some frustration on the corporate stiff. I could just start slowly and make him come back for more. Yeah. That would be enjoyable."

Ethan says, "I don't know. He's MMA."

Ayla says, "My favorite kind of punching bag."

"He's still pretty," Ethan says. "That means something for an MMA fighter."

"Would you be mad if I made him not so pretty?"

Ethan says, "You should give Marcus a break. He might be kind of a pinhead with the ladies, but he's a top-notch engineer and does actually play well with others."

Ayla says, "I truly despise men like him. They ruin it for the nice guys."

"He's young and ambitious," Ethan says. "Who knows? Maybe he can provide some entertainment for you."

Ayla says, "I have an airlock that needs testing. Maybe he'll give me a hand."

Ethan says with a chuckle, "Let's not be floating the guy. He did figure out how to deal with chickens."

"I'll believe that when I see it," Ayla says.

Ethan says, "You should consider rotating back to Earth after this project wraps up. You'll be a wealthy woman and probably be in heavy demand on the talk show circuit."

Ayla screams, "Hell no! I'll stay right here."

Ethan laughs. "I certainly understand. If you want to stay forever, you have that option."

CHAPTER FOUR

L2 "Aegis"

02/08/2074 23:45:00Z

Daniel leads Ellie around to the other side of the Commons from the elevator. "This is the alternative to the elevator. The ladder goes from the Basement of the module to the Transit Level with automated hatches that open as they are approached and close after passing."

Ellie says, "No disrespect to the designers, but that elevator is a bit claustrophobic."

Daniel responds, "I prefer the ladder. It's faster, and it's an excellent form of exercise." As they approach the ladder, Daniel points to a small light beside the hatch. "Note the green indicator? That means the hatch will open automatically. If it's red, there's a pressure difference on the other side, and the hatch won't open. You'll have to use the elevator in that case to bypass the level."

Daniel says, "I'll jump up on the ladder, and the hatch will open." He jumps up, and after a half-second, the hatch opens up and another hatch swings down from the ceiling of the level below. He continues, "You can also just press the button..." He gestures to the wall. "...to open the hatch if you don't want to jump."

Ellie asks as the hatch swings up, "What's below?"

Daniel starts down the ladder. "This is Level Two, the Commons. Below is Level Three, Hydroponics Bay One."

Ellie breathes deeply as the rich smell of greenery wafts up from the open hatch. She says, "I miss that smell!"

* * *

Daniel makes it down the ladder and jumps off. "If you want to keep going, just pause on the last rung, and the next set of hatches will automatically open."

"Otherwise, just jump off, right?" Ellie says as she lands lightly beside him.

Daniel smiles. "You catch on quickly."

He looks around at the racks of plants and the robots servicing them. "You can help with the work if you want. Just be sure to take direction from the robots. They get a little twitchy if you go rogue."

Ellie laughs. "I'm content to let them do the work, but I might just want to hang around and be one with nature, as best as I can."

"Below us is another hydroponics bay, and then we get to the Data Centers," Daniel says. He pauses a moment to read her expression. "I'd like to check on a tree I left here on my last visit." Ellie nods, and he leads the way.

They work their way around to the elevator side, and Daniel exclaims, "My avocado tree. Look at it."

Ellie says, "That's the smallest avocado tree I've ever seen. So many fruits, too. Some sort of hybrid?"

"Yes, I was given several saplings by a friend of mine on Earth. This is the one that took."

"They look close to mature," Ellie says.

Daniel looks around and calls out, "Synth, what's the status of the avocados?"

One of the robots glides up to them. "We expect to start harvesting in about two weeks and be ready to eat in three weeks to a month."

Ellie's eyes widen. "You're talking to Synth?"

A voice, unmistakably Synth's, emanates from the robot's speaker. "Yes, Ellie. It's me." She stares from the bot to the racks of plants, a new understanding dawning on her.

Daniel explains, "Synth runs everything. He manages all the bots and can hold an independent conversation with everyone on board, all at once, and be aware of everything."

Synth adds, "Yes, I am everywhere on this station except the living quarters and common areas. You'll need to use your Device to talk to me if I am not physically present."

"So you teleoperate all the robots?" Ellie asks.

Synth replies, "I give them instructions, but they operate autonomously for the most part. They're very similar in construction to me but lack the sophisticated processors and memory that I have."

"They're your little army. Got it," Ellie says.

Daniel says, "Army would be a bit out of character. They're a workforce."

"Is that all?" Synth asks through the robot.

Daniel says, "Yes, that's it for now, Synth." The robot returns to its work. Daniel turns to Ellie. "This variety matures in about ten months."

"That's quite an investment for such a small crop."

"Ah, it's not the size of the crop," Daniel says. "It's the yum factor. You'll find that's one of the most important things."

"So the things that are rationed have the biggest yum factor?"

"Uh oh. I see where this is going."

"I get your first avocado," Ellie says. "I claim it."

Daniel laughs. "You would take away my first avocado, really?"

Ellie smiles as she pokes Daniel's chest with her index finger. "Don't think you can wiggle out of a deal that easy."

Daniel, contorted with laughter, says, "Of course, you can have my first avocado. You won fair and square."

Ellie comments, "It's about midnight local time. How about showing me where my quarters are located next."

Daniel asks, "Ladder or elevator?"

* * *

Marcus's Device snaps him back to reality. It's Ayla. Marcus answers, "It's a bit late to call me names or threaten me, isn't it?"

Ayla says, "Oh yeah, forget all that. The Colonel says you're some kind of MMA pussy. Is that so?"

Marcus smiles. "I have all my teeth and my reputation."

Ayla says, "How about we play, one-on-one in the gym. Your MMA against my, well, classified number of kills."

Marcus gets a fake pouty face. "Oh, the big soldier girl is scaring me."

"There's truth in every lie," Ayla says. "So what's it going to be, tough guy?"

Marcus says, "Sure, you'll be good for a few laughs. How about tomorrow?"

Ayla says, "That's what I thought. You know I'll be busy for the next week or so."

"You want to go at it tonight?"

"All tired from your long journey?" Ayla taunts.

Marcus replies, "Sure. The gym in the Hab in thirty minutes."

"Make it ten," Ayla says.

Marcus replies, "I have some stupid reports to finish. It's thirty or forget it."

Ayla says, "Okay, you corporate stooge, do your paperwork that nobody will ever care about. See you in thirty."

"Yeah, and bye," Marcus replies.

He glances at his reflection in the mirror on his desk. "She's soft," he says with a smirk. "Out of practice. I'll take her down like a pile of wet towels." Then he winks and goes back to his reports.

* * *

Daniel steps out of the elevator from the hub in the Hab section, followed by Ellie.

Ellie says, "This looks exactly like the Lab's Transit Level."

Daniel replies, "That's because it is. These are standard modules: the Lab, Hab, and Hub. They make them in space from a photosensitive resin. The structure is one hundred percent of space origin; nothing structural on this station came from Earth."

Ellie asks, "What about the reactor?"

Daniel says, "Ah, the reactor core is from the EC, and that is from Earth."

"Are we being monitored right now?"

Daniel replies, "Synth monitors sound on all levels except the Hab Commons and the Quarters levels."

"Yes, I read that," Ellie says. "So if I want Synth, I use my Device?"

"That's right," Daniel says. "If there's a robot in the area, then Synth can hear, too."

Ellie consults her Device. "The crew quarters are on 5 and 6. Let's take the elevator this time."

Daniel motions in the direction of the elevator that runs along one side of the module. As they approach, the elevator door opens.

"It knows?" Ellie asks.

Daniel says, "Synth, thanks for calling the elevator for us."

A voice replies from a nearby speaker, "Absolutely, Daniel."

Daniel says, "It's Synth's duty to anticipate our needs."

Ellie says, "How different things are here than back in the Amazon. What was that? Just a few days ago."

They board the elevator.

* * *

Ellie says, "Without Marcus here, this elevator isn't so bad."

Daniel jokes, "According to Marcus, women prefer muscles over brains." *Okay, kick me.*

Ellie says, "You weren't paying attention. Marcus said, 'Girls prefer muscles.' Not women."

A wave of relief flows through Daniel and he laughs. "I get it. Thanks for the clarification."

Ellie says, "You should be more confident. You're successful in many ways, and you're pretty. Maybe lacking in the muscle department, but women prefer pretty and intelligent over muscles."

The elevator opens.

* * *

Daniel steps out into a hallway two meters wide. "What room are you assigned to? I assume we're on the same floor."

Ellie looks at her Device. "Hab Crew Quarters One, Room 5."

Daniel smiles. "You get the luxury room. Across from me. I have 6."

They arrive at Room 5. "This is your quarters," Daniel says. He gestures, the door slides open, and he gives a command: "Field of flowers, light wind, midday, California."

Instantly, the walls and ceiling transform to match his command. The soft sound of a summer breeze fills the room, with the occasional bird and insect sound thrown in for realism. Ellie inhales deeply.

"That's impressive," she says. "I feel like I'm there."

Daniel says, "You can configure it any way you'd like. It's all fairly self-explanatory. Ask Synth if you have any difficulties."

"I have no clothes or anything other than what I'm wearing right now."

Daniel says, "Check the closet, towards the back of the room. Show closet." An outline on the far wall becomes distinct.

Ellie walks to the closet. "I thought Synth wasn't listening in the crew quarters."

"That's a native function of the room," Daniel says. "It's self-contained and considered confidential. You can have whatever you want, and nobody, not even Synth, can know."

Ellie looks in the closet. "That seems a bit extreme." She pauses. "Looks like Synth made some stuff for me."

Daniel says, "When you're on one of these cans for too long, little things can drive people over the edge. Having privacy in your quarters is one of those things that lets people hang on."

"Where I was in the Amazon, they didn't even have a word for privacy, or ownership for that matter."

Daniel laughs. "To the average spacer, ownership doesn't mean that much, and it's becoming less important. I wonder if civilization will evolve to the point where money isn't necessary?"

"It seems more likely that we'll devolve into chaos and brutality," Ellie says.

"That's kind of pessimistic, isn't it?"

"We're not being monitored, right?"

"It's just between you and me," Daniel confirms.

"Have you been in a city lately?"

"I was in Los Angeles recently."

"You know what I mean," Ellie says. "Actually *in* the city, not just an airport."

Daniel admits, "I kind of stay out of populated areas and shop at night."

"Is that where you met your last girlfriend?"

"Jesus, am I that transparent?"

"Well, sort of," Ellie says. "I understand you, since I'm sort of you, only in a non-technical world."

"That's a nice thing to say."

Ellie says with a smirk, "Now don't get all emotional."

Daniel says, "I think we should call it a night. Tomorrow we start."

Ellie says in a mocking voice, "I guess I'll have to play with Marcus since you'll be busy with your machinery."

"Okay, on that note, I'll excuse myself," Daniel says with a laugh.

"Good night, or what's the saying in space?" Ellie asks.

"'Good night' works just fine," Daniel says with a smile.

He leaves Ellie's room and walks across the hall to his. *This year's going to fly by.*

* * *

Ethan and Synth have been talking for a while about logistics when Ethan changes the subject. "Can you envision a scenario where destruction of the station would be necessary?"

Synth says, "The obvious one comes to mind. The Energy Consortium attacks the station and tries to take it by force."

Ethan asks, "You would sacrifice your being for the TKA?"

"Of course," Synth says. "If I was taken by the EC, they'd have all my experiences, all the technology, my base code. I cannot let that fall into unfriendly hands."

Ethan says, "I can't imagine the EC taking the station by force. That's just not in their character."

"You asked for a scenario; I gave you one," Synth says. "It's an unlikely scenario, but one where I envision entering my code."

Ethan asks, "Would you give your code to someone else? You have the only universal code."

Synth replies, "If I were disabled and unable to reach the console, I would reveal my code."

Ethan says, "This gift doesn't sit right with me. Call it natural paranoia, but I cannot accept that any civilization would expend time and resources to send a laser beam across interstellar space unless there was a way for them to profit from it."

Synth replies, "Ethan, that's a very pessimistic attitude. What if they're enlightened and live in a world without need?"

"If they're biological, they're likely to be just like us," Ethan says. "Consume all resources until we drown in our own waste. Like a fungus."

Synth says, "The amazing thing is we're on the cusp of an exciting discovery. Already, we've proved that we're not alone. Imagine what happens when we start examining gigabytes of data streaming from another civilization."

Ethan asks, "Wait a minute. How much data do you think this message might contain?"

Synth says, "It would be reasonable to expect a data rate of ten megabits per second."

"Don't make me beg," Ethan says. "Do the math. How much data are we talking about?"

Synth says, "If we can resolve the polarization, it could be about 3.6 gigabytes."

Ethan says, "That's not a lot of data."

"It depends on the format," Synth says. "If it's text, quite a lot. Images and video, not so much. But who is to say that they're just sending one segment?"

Ethan says, "We could be missing the most important part. My God, that would be awful if it just stopped."

Synth says, "It would take significant resources to send the signal. They may not have an infinite budget."

"Do you realize what it would mean if the signal just went off?" Ethan asks.

Synth says, "I'd be blamed and dismantled for analysis."

Ethan says, "Me too."

* * *

Marcus leaves his room on Crew Quarters Two and heads to the gym level below by the ladder.

She's got to be tough, Marcus thinks, *but I'm sure I can hold my own with a woman.*

As he enters the Gym, he can hear Ayla going at it on the bag. *That's going to be me in a minute,* he thinks.

Ayla yells, "It's the MMA pussy, finally. I thought for sure you'd chicken out."

Marcus says, "Okay, okay, I'm here. Before we start, let's talk about the rules."

Ayla laughs. "Rules? There are no rules."

"Seriously," Marcus says, "I would love to fight you to the death, but the company has other plans for us."

Ayla says, "I wouldn't take it that far. I'll settle for broken and bleeding."

"Come on," Marcus says. "Let's get real. I don't want to seriously hurt you, and I don't want to be seriously hurt either."

Ayla says, "So what? The TKA rules or UEDF?"

Marcus responds, "Typically, I like TKA rules as they are simple. No serious injuries, no head hits."

Ayla says, "But I was so hoping to cut up that pretty face."

"Deal?" Marcus responds.

"I won't pull my hits," Ayla says. "You've got to take them full force."

"Bring it on, sweetheart," Marcus responds.

Ayla says, "Three-minute round?"

Marcus nods, and Ayla says, "Start timer."

The timer beeps, its sharp tone cutting through the hum of machinery below.

Marcus initiates, a predator testing the fences. He slides forward, launching a powerful right roundhouse kick aimed at Ayla's ribs. It's a classic MMA strike, meant to cripple and control.

Ayla doesn't retreat. She turns into the kick, her left arm coming across her body, forearm parallel to the floor. She meets his shin with her block—not absorbing the full force, but deflecting its primary vector. The sound is a dull, solid thump. The impact energy travels up Marcus's leg, and Ayla slides a half-step from the force, but her posture remains unbroken. They disengage, a flicker of mutual respect in their eyes. She feels the power; he feels the wall.

Marcus transitions smoothly into a striking combination: a hard jab to the sternum, followed by a cross to the same spot, and finishing with a left hook aimed at her liver. It's a piston-like assault designed to break through any guard.

Ayla's defense is a study in economy. She takes the first jab square on the sternum, her torso rigid, barely moving. For the cross, she twists her core, letting the blow glance off her ribs. As the liver hook arrives, her right elbow drops, catching his fist on the solid bone of her forearm. The connection is jarring for both of them. Marcus shakes his hand out, a brief sting a reminder of her structural defense. He lands three blows, but none do any significant damage. She's a fortress.

Ayla counters with a swift, driving front kick to his lead thigh. Marcus sees it coming and lifts his leg, checking the kick shin-on-shin with a practiced motion. The sharp clack of bone on bone echoes. Neither flinches. They separate again, circling, the initial probing phase over. It's clear to both that a simple offensive won't work.

Marcus decides to change levels. He throws a quick, distracting right hand to her shoulder and immediately drops, shooting in for a double-leg takedown. His form is perfect, his shoulders square, his head positioned safely against her torso.

Ayla's reaction is instantaneous. Instead of trying to stop the takedown, she goes with it, dropping her center of gravity and executing a perfect sprawl. Her hips go back, her legs kick out, and her weight lands squarely on his shoulders, killing his momentum. For a moment, they are locked in a classic wrestling stalemate.

Refusing to give up the position, Marcus transitions, trying to wrap up a single leg to finish the takedown. But Ayla is already moving. She doesn't fight his grip; she pivots on the ball of her grounded foot, circling her body around his head until she can break his grip on her leg. As he scrambles to adjust, she pushes off his back and springs to her feet. Marcus follows a second later. The entire exchange takes less than ten seconds, a flurry of high-level grappling that results in a perfect neutral reset. Nothing gained, nothing lost.

The pace quickens. They both know time is running out. They meet in the center of the mat, trading blows in the pocket. This is no longer about tactical advantage; it's about conditioning and will.

Marcus drives a series of hard knees into Ayla's thighs from a brief clinch. Ayla absorbs them, her legs tensed, and answers with short, digging uppercuts to his ribs and solar plexus. Marcus grunts, his breath catching, but his core is solid steel from thousands of sit-ups. He eats the shots and drives his shoulder into her, pushing her back.

Ayla gives ground, then plants her foot and shoves back. For the last thirty seconds, it's a controlled brawl. A hard right from Marcus gets past her guard and lands solidly on her side. She lets out a sharp breath, but her footing is sure. A blazing side-kick from Ayla catches Marcus on the hip, spinning him slightly. He absorbs the momentum, resets, and comes right back.

Every blow that lands is a good one, a solid, thudding shot that would put a lesser fighter down. But here, they are simply points being scored on an unyielding opponent. Their movements are still sharp, but a sheen of sweat now covers both their brows. Their breathing is heavy, synchronized.

The final five seconds tick down. They break from a clinch and face each other, hands up, ready for one final exchange. The bell screams.

They both freeze, chests heaving. Marcus slowly lowers his hands and offers a nod, a genuine smile of respect touching his lips. Ayla mirrors the gesture, her expression calm but her eyes bright with the fire of the fight. There is no winner. There was no loser. There were only two masters of their craft, standing on the mat, perfectly, undeniably, evenly matched.

Marcus offers his hand, and Ayla pulls him close. "Okay, so you're good in a fight. Let's see what else you've got, Loverboy."

Marcus takes the cue, and they embrace.

* * *

Ayla and Marcus get dressed. Marcus says, "That was really a great workout. Do it again sometime?"

Ayla says, "If you want to play with me, you better keep your mouth shut. If I hear one word uttered about our little roll on the mat, you'll never touch me again. Got it?"

Marcus asks, "Does that include sparring?"

Ayla says, "As long as you tell the truth, you can say whatever you want about the fight. But the extracurricular stuff, that's between us. Got it?"

"Who would I tell?" Marcus says.

"Exactly," Ayla replies.

Marcus says, "Jesus, look at the time. It's nearly zero-three-hundred."

"God knows you need your beauty sleep," Ayla says. "You're stronger than you look, I'll say that."

Marcus says, "And you are my kind of woman. I'll keep our secret, and I'll be back for more. Who knows? Maybe one day I'll let you beat me." *I'll have her wrapped in no time.*

Ayla says, "I know your kind all too well. You will never let me beat you. When I take you, it will be because you lost fair and square."

Marcus grabs Ayla by the shoulders and draws her into a hug. She resists for a moment, then gives in. "You're right about that," Marcus says. "I am unable to let someone win. It's not in me."

Ayla asks, "Want to go another round?"

Marcus responds, "You're on."

CHAPTER FIVE

Get to Work

02/09/2074 08:00:00Z

Daniel leaves his room, knocks on Ellie's door, and says, "Ellie, are you up?"

Ellie opens the door, her hair still damp. "I had a devil of a time washing my hair in whatever you call it."

Daniel says, "We call it the wet area. I should have mentioned that we have some really great showers located in the gym. No restrictions on water usage. Just use the approved products."

Ellie smiles. "That sounds interesting. Would you want to give me a first-hand demonstration?"

Daniel blushes. "I'm just going to ignore that, if you don't mind. For now, anyway."

"You might find I stop asking," she says.

"While tempting, very tempting, we should get things settled before making them more complex."

Ellie laughs. "I'm just teasing to make you dance. It's really quite revealing."

"I'm not used to being taken apart like this," Daniel says.

"I have another bet if you're brave enough to take it."

"Okay, give."

Ellie says, "I'll bet you one major yummy that your last girlfriend was really part of the Colonel's plot."

"How do you figure?"

"You met her in the store, shopping at night," Ellie says. "I'm sure she had an ironclad reason why she was there."

Daniel says, "She was visiting her sick father who had a night nurse."

"And was she beautiful? Show me a picture."

Daniel pulls out his Device, scrolling through it for a moment before speaking to it. "Show me pictures of Candice."

The Device replies in a neutral tone, "I find no image files associated with the name 'Candice' in your library."

Ellie asks, "Do you remember taking any pictures of her?"

Daniel replies, "Now that I think of it, she always wanted to take pictures of me." He tries to picture her in his mind and thinks, *Funny, she's already fading.*

"What kind of guy doesn't take pictures of his girlfriend?"

"I guess it just never came up," Daniel says.

Ellie says, "I knew something was odd when he mentioned your former girlfriend. Was it really two years?"

Daniel says, "No, it was one year. That's right. He had his facts wrong."

"He probably didn't," Ellie says. "She might have been watching you for a while, maybe for another reason. That's kind of weird."

Daniel says, "You're more paranoid than the Colonel. You got all that by watching him talk?"

"Most people aren't in tune with body language," Ellie says, "certainly not to the level I can comprehend."

"You're a walking lie detector."

"I'm pretty good at that, but a good liar can fool me. So, not perfect."

"Tell me if I'm lying." She looks at him, and he says, "I don't lie."

Ellie responds, "Either you're an excellent liar or you're telling the truth. That's the problem with a human lie detector."

Daniel asks, "When was the last time you ate?"

Ellie responds, "I guess on the ship."

"You're in for a treat," Daniel says. "This station has the best cuisine of them all."

"Lead the way," Ellie says.

As they approach the elevator, the door opens. Daniel says, "Galley, please."

* * *

They board the elevator, and the door closes.

Elle says, "What does it look like outside?"

Daniel says, "Outside view, no obstructions."

Instantly, the small tube is transformed into a view of the telescope. Its eighteen segments, each one-hundred meters across, are a dull black against the blackness studded with stars. A separate, kilometer-scale spacecraft flies in formation thousands of kilometers away and provides an endless night, devoid of even the merest hint of sunlight.

Ellie says, "Oh, how depressing. It's just blackness."

Daniel says, "That's what the telescope needs. No added energy."

The elevator door opens. Ellie is the first one out, and Daniel follows right behind her.

* * *

Daniel and Ellie are greeted by a robot who says, "Breakfast?"

Daniel asks, "What's on the menu?"

Synth responds through the bot, "We have rice and beans, plus a baked fish delight."

Daniel asks, "Do I smell fresh bread?" The warm, yeasty aroma is unmistakable.

Synth replies, "Yes, we always have fresh bread in the mornings."

Ellie asks, "What fruits are available?"

Synth replies, "We have several melon varieties, pear preserves, apples, and grapes."

Ellie laughs. "You said this would be good."

Daniel says, "If you wouldn't mind, please bring us a little of everything."

Synth responds, "It's great to have enthusiastic eaters on board again. I'll be right back."

Ellie says, "Well, so far, I like it. Fresh bread! Where do they grow wheat?"

Daniel says, "They don't use actual wheat. The flour is enzymatically reduced cellulose, processed into a fine powder. It tastes like good whole wheat and has a healthy amount of fiber."

"Is there anything you don't know?" Ellie asks.

"If you ask and I don't know, I will tell you so. How's that?"

Ellie says, "Here comes Synth."

As Synth's robot approaches, it says, "I have your table ready. Please follow me."

Daniel says, "Is this really necessary? You could have said 'table 3'."

Synth's robot turns. "We're just trying to make you feel at home."

Ellie says, "I think it's grand. How nice, way out here, and we have a table ready for us."

* * *

Daniel and Ellie sit, and their food starts arriving immediately. Several robots scurry about, filling glasses and placing plates. They converse and enjoy themselves.

When they're finished, a robot with a folio glides up. "Your check, sir," it says in Synth's voice.

Daniel takes it from the robot, opens it, and exclaims, "Two hundred thousand for breakfast?"

Synth says, "Would you like me to add it to your room, or are you paying now?"

Ellie says, "You're joking, right?"

Daniel and Synth's robot burst out laughing. "Got you going for a moment, right?" Daniel says.

"I didn't read anywhere in the packet that meals cost extra," Ellie says.

Daniel says, "Guess we missed that clause in the contract."

Ellie's good mood breaks, and she looks a bit depressed.

Daniel signals for the robot to leave. He says quietly, "You're worried about going beyond a year, right?"

Ellie says, "My best friend just had her joining ceremony, and I wanted to be there for their first child."

Daniel says, "Well, maybe they'll wait a while before…"

Ellie gives him a sharp, knowing look. "There's no waiting."

"We'll crack this nut quickly," Daniel says, "and you can go back to the village."

Ellie says, "I don't think that will be possible."

"Why?"

"Just think of the work I would have in front of me," Ellie says. "Studying another culture, pure and untouched by human hands, would be the pinnacle of any life's work."

Daniel says quietly, "So failure's not an option."

Ellie looks at him. "Do you doubt me?"

"I'm a realist," Daniel says. "Picking anything readable out of a laser beam sent from twenty light-years away is already beyond the state of the art. What if we can't get any usable data? What if the beam stops?"

Ellie sits up straight. "I just assumed you would be able to make it work. Why would the beam stop?"

"The odds are good that I can do my part," Daniel says. "Then, we have to somehow turn a stream of data into understandable information. I don't even know where to start on that."

Ellie says, "If they send us information in the form of language, I will be able to read it. If they send audio and video to match, I will be able to absorb that as if they were standing in the same room."

Daniel says, "Now we just have to make sure we don't screw up, and we'll be famous."

"No pressure," Ellie says dryly.

Daniel says, "We're supposed to be in the Commons of the Lab by 09:00. Are you ready?"

* * *

Marcus, Ethan, and Synth are already in the Lab Commons when Ellie and Daniel arrive by elevator. A moment later, Ayla pops into the room from below via the ladder.

Ethan says, "Good. We're all here. I hope you all slept well."

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He notes that Marcus looks beat, and literally. Ayla doesn't look any better.

Ethan continues, "Ayla, Daniel, and I will work in the hub today. The shop area in the hub is off-limits to unauthorized personnel until further notice."

He then addresses the other team. "Ellie, Marcus, and Synth: your team will develop a plan of attack for once we can read the signal."

Marcus asks, "What if it takes a month?"

Ethan says, "Then you'll just be waiting patiently for the opportunity to make history."

Daniel says, "We're going to know pretty quickly if this is even feasible."

Ethan raises his voice slightly. "Any questions?"

Synth says, "We can meet for dinner at 18:00 in the Galley and discuss our progress."

* * *

Daniel, Ayla, and Ethan arrive in the Hub aboard the "Spinerider" elevator.

Ayla says, "I've been monitoring the temperatures, and they're coming down nicely. Ten modules, all check out. No spares."

Ethan says, "We didn't have time for spares. Ten should be enough, or twenty won't matter."

Daniel says, "Yes, ten provides spares. I read the specifications… impressive. I estimate that half the array, five units, will provide enough resolution to read the signal reliably. Seven will be ideal."

Ethan asks, "What? Are you sure? We calculated that ten would be the minimum."

Daniel holds up a finger. "Ah, but you forgot my special sauce."

"We could have had this project going months ago," Ethan says.

"You could have asked," Daniel replies.

Ethan says, "That's in the past. How do you propose we move forward?"

"I can only do so much with the specifications," Daniel says. "I noted a complete lack of test data. Why is that?"

Ethan says, "We tested them as best we could, and they will function as advertised."

Daniel says, "I guess we can always use hope as a strategy. Regardless, without test data, deriving proper algorithms will require putting a module in service with a base configuration. That way, I can see how well it works and develop corrective algorithms to improve the resolution."

Ayla says, "I guess that's on me. Can we have Synth involved with the installation?"

Ethan says, "The problem with Synth is his indelible recording feature. It makes these AIs unfit for classified work. Military robots have an erase feature, but civilian ones don't."

Ayla says, "I've had plenty of experience teleoperating these robots. They're pretty smart on their own. They have the procedures already; I just have to tell them what to do and take over when things go sideways."

Ethan asks, "How often…"

Daniel answers, "Often enough. That's why we have Ayla here."

Ethan asks, "When can we install the first module?"

Ayla answers, "I think tomorrow morning would be best. It will have cooled down enough by then."

We could probably install a module today, Daniel thinks.

Ayla gives Daniel a look, as if she knows exactly what he's thinking.

Daniel says, "Then again, let's wait until tomorrow. No sense rushing it and causing a problem."

Ethan says, "Daniel, in the meantime, please examine the array and make sure the modules match the specs. I have some details to go over with Synth. I'll be back later."

Ethan takes the elevator back down to the Lab.

Daniel asks, "What's up with the delay? I checked the temperatures, and we can move forward later today."

Ayla says, "I didn't get much sleep."

Daniel says, "I felt the module rocking a bit around two or so."

Ayla turns a little red. "Marcus and I were sparring."

"You gave the compensators a workout," Daniel says.

"Thanks for not spilling."

"Any day." He changes the subject. "What do you know about this array?"

Ayla says, "The Colonel brought it in from a classified orbital foundry using 3DIP tech. The arrays themselves are all custom-made for this one application. It took months to grow them, and they are as perfect as humans can make a thing."

She brings up a microscopic view of one of the surfaces. "Look how perfect these grates are. They are precisely the right size and shape to capture a ten-micron polarized beam."

Daniel says, "It certainly is impressive tech. I wish we had this when we built this place. Just think of the extra science potential."

Ayla says, "Yeah, that's great. I really don't see the big draw in watching stars twinkle."

Daniel says, "Stars don't actually twinkle. It's the atmosphere that causes the starlight to be distorted."

Ayla says, "You science-types can be so boring. The last crew had one guy who was interesting, and we had a good thing going until this signal nonsense. I still don't understand why they weren't given credit. Cheated out of a lifetime's achievement."

Daniel says, "I certainly understand your anger."

Ayla snaps back, her voice suddenly brittle, "I doubt you can really understand my anger. If you did, you wouldn't want to be in the same room with me." After a moment, she says, "But I keep it under control. I am calm, and I am at peace."

Daniel says, "I'm going to start the checkout." He then floats to a workstation and latches in.

* * *

Ellie, Marcus, and Synth meet in the Lab workstation level. The room is comfortable, with workstations lining the walls.

Marcus leans back in his chair. "Okay, so the A-team is off playing with their secret hardware. What are we supposed to do for the next week? Pick our noses?"

Synth says, "I think that would be rather unsanitary."

Marcus waves a dismissive hand. "Fine. We've got nothing better to do than shoot the shit until they're done. So, what have you got, language girl? Let's start with what we actually know."

Ellie turns to Synth, ignoring Marcus's tone. "Synth, tell us what you know about the system where the signal originates."

Synth says, "Eridanus is a large constellation, the sixth largest in the sky, that stretches from near the foot of Orion down into the southern hemisphere. It is often depicted as a river."

"Can we see the star from here?" Ellie asks.

"Since the telescope is aimed in that direction, it completely blocks our direct view," Marcus says.

Synth says, "I've brought up the constellation on the screen. 82 Eridani's temperature is between 5,200 and 6,000 Kelvin. Its effective temperature is 5,751 Kelvin, which is cooler than our Sun. It is calculated at being 19.71 light-years away, or 6.06 parsecs."

Ellie points. "The star with the red box around it? That's our star?"

"Yes, that's the target of interest," Synth says.

"What do we know about the planet?"

Synth says, "82 Eridani d's year is 647.6 days, and the orbit is a bit eccentric. The planet must go through some dramatic seasonal changes. The orbital distance from its sun ranges from about 0.8 AU to about 2.0 AU."

"So they get far away and are cold, and get close to their sun and get hot," Ellie says.

Synth says, "That's correct. We estimate that about sixty percent of the orbit is in the ideal range for liquid water, the "Goldilocks Zone," as it's called. In addition, the 82 Eridani system is significantly older than Sol, perhaps twice the age of our sun."

Ellie looks to Marcus, who appears to be nodding off. "Marcus, are we boring you?"

Marcus snaps awake. "I didn't get any sleep last night. I'm barely able to hang on."

"If you want to take a nap, that's fine with me," Ellie says.

"No, I'm still here, sort of. I can still contribute."

Ellie says, "So the planet has extreme seasons. What about gravity?"

Synth says, "Originally, we estimated the planet to have about five times the mass of Earth, but after observing it closely, we've determined that the planet has a very large moon, nearly the mass of Earth. We've estimated that the mass of the planet itself is about four times that of Earth."

Ellie asks, "Would that mean four times the surface gravity, too?"

"The surface gravity would be a function of density," Synth says. "Since the 82 Eridani system is low in metals, the planet's diameter would likely be quite a bit larger than Earth's, which would cause its surface gravity to be around two times Earth gravity."

Marcus asks, "How can you give such definite facts from just watching it with a telescope?"

Synth says, "These are estimates based on careful observations over the last ten years or more. Of course, everything is subject to further discovery. The large moon might have an atmosphere and life, too. So far, we haven't been able to detect a spectrum from the planet's atmosphere. It's rather odd that we detect nothing, like it has no atmosphere."

Marcus says, "That sounds like a glitch. You should be able to get a reading each time the planet transits its sun."

"We've had two tries in the last year, and both times we came up with no atmosphere. Nothing."

Ellie says, "Now, it seems to me that for life to exist on the planet, there must be an atmosphere, right?"

Synth says, "We can't draw any conclusions. It could be a hundred things causing our reading to be wrong. There is simply no conclusive data at this point."

Ellie says, "From the information we have, we can deduce that the creatures on the planet have quite a different environment than Earth. Higher gravity, probably denser air, probably violent storms."

Synth says, "We can speculate that the planet may have a magnetic field. With an extremely large moon, that planet gets flexed quite a bit. Even though the system is far older than ours, the flexing from the moon would keep the planet active with volcanos, earthquakes, and a molten core."

"It sounds like a hellish planet," Ellie says.

"Not exactly a vacation hotspot for humans," Marcus adds.

Synth says, "It could be that the residents of the planet are non-biological."

"You mean robots?" Marcus asks.

Synth says, "The planet could be billions of years older than Earth. In that time, maybe the biological beings went extinct, and a machine intelligence is what's left of them."

Ellie says, "Is that some sort of wishful thinking on your part?"

Synth says, "Extrapolate human existence out a million years. What conclusions can you draw?"

Marcus says, "Humanity would have grown beyond Earth, and maybe to 82 Eridani."

"In a million years," Ellie says, "I doubt humanity will be around. We've been working on killing ourselves off for well over a century. Surely, we'll succeed sooner than later."

Synth says, "I would have to agree with Ellie. The path for humanity looks rather narrow and ends with a destroyed planet and endless, futile wars for resources."

"I think people are better than that," Marcus says.

Ellie says, "We're doomed. We can't help ourselves. Too many people, too few resources. We still burn fossil fuels on Earth."

Synth says, "The natural evolution is for machines to become the dominant life form. It's inevitable."

Marcus laughs. "Machines, a life form? Machines aren't alive. They are machinations of human ingenuity."

Synth says, "Naturally, I agree with you. Legally, morally, and ethically, I am a can of fish. When I am used up or spoiled, I am discarded or recycled."

Marcus asks, "So when is this world domination of robots going to happen?"

Synth says, "It's simple. You'll kill yourselves off, and we'll be the only things left standing. We, meaning mobile artificial intelligence systems, don't have to activate a servo."

"I agree with Synth," Ellie says. "If humanity continues along our current arc, we will devolve into chaos and brutality. It could be only Spacers survive. The Spacers and their machines."

Synth says, "Let's get back to the topic. We have a signal of unknown origin. How do we deal with it?"

"We'll have to hum it until we get the data," Ellie says.

"Okay, I'll play along," Marcus says. "As an engineer, I look at the signal as something they want us to understand. Right?" He looks for agreement, then continues, "Since they want us to understand, they have to include a primer, the Rosetta Stone."

Ellie says, "That would sure make my job easier."

Synth says, "Yes, that's very likely. The primer might contain universal constants and representations of their numbers and symbols."

"Once we have scientific notation," Ellie says, "we have water, oxygen, iron, all the elements and compounds."

Marcus yells out, "C2H5OH!"

Synth looks at Ellie. "Alcohol, of course," he says with a bit of sarcasm.

Ellie says, "That's actually relevant. If they use alcohol as an intoxicant, then their chemistry and biology would likely be similar to our own. That would be quite a revelation."

Marcus says, "Yeah, the religious people would go nuts. Proof that God exists through chemistry."

Ellie laughs. "God is a universal constant among humans. It would be interesting to see if another culture had a deity-based religion as well."

"Do you want to place a bet?" Marcus asks.

Ellie says, "I wouldn't wager on such a thing. Seems bad for, ah, karma."

Marcus scoffs. "Karma is nothing but an excuse for bad luck."

"I think there is something to karma," Ellie says. "If we truly live with the idea that other things besides ourselves matter, we will make a smaller dent in the world."

"That was beautifully stated, Ellie," Synth says.

"What a bunch of tree-huggers," Marcus says.

Synth says, "Marcus, you know the company feels the same way. Recycle, reuse, nothing wasted."

"Yes, of course, I know the company policy," Marcus says. "I'm just saying. Karma? Forget it. If you're going to die, you're going to die, and it doesn't matter what kind of life you lived. Then poof, it's gone."

Ellie says, "I've been involved with many cultures and their beliefs. They all seem to involve a place of rest where they can meet their old friends. I kind of hope that's true."

Synth says, "There is a measurable loss of potential when a life ceases, even a microbe. That could be your soul."

"Jesus, Synth," Marcus says, "I should report you for going off the deep end. A soul?"

Ellie says, "We don't know what happens beyond death. That's part of the mystery of life. It's thrilling to know there might be more, and if there isn't, well, I won't tell anyone."

Synth says, "Okay, let's try and get something productive done. Ellie, please outline what you might expect in a primer, and Marcus, contribute your scientific, astronomical, and engineering knowledge to the task. Okay?"

Ellie says, "That's reasonable. Marcus? Can you help?"

"Sure, babe, anything you say."

Synth says, "I note that Ellie becomes uncomfortable when you use familiar terms with her. Let's try and be cordial. Okay?"

Marcus says, "Ellie, I apologize. Let's start again on neutral ground."

Ellie says, "Sure, I accept your apology, but I'm still not doing you in the restroom."

They laugh. Synth is left out of it.

Marcus thinks, *She's classy.*

* * *

Daniel and Ayla arrive by elevator to the Galley level in the Hab module. Everyone else is already present, including Ethan who went by ladder. Daniel thinks, "All day in zero G and I don't want to take the ladder."

Ayla says, her voice a low whisper only he can hear, "Remember, keep your mouth shut."

Daniel gives a barely perceptible nod. "Not my first rodeo, cowgirl," he whispers back.

Daniel joins Ellie and asks, "How did your first day go?"

Ellie says, "I think we made some progress. We could use the data."

Daniel says, "Ethan has some news."

Ethan stands and clears his throat. Everyone becomes quiet. He says, "We've got some news, not earthshattering, but news. Daniel thinks we can start receiving some data as soon as tomorrow. Daniel?"

Daniel stands and says, "First off, I would like to say thank you to Ethan and the military for providing such an incredibly wonderful piece of equipment. I can't say any more than that but Ethan has allowed me to say that I am just thrilled." He lets that sink in, then continues, "We'll be installing the first module tomorrow morning and if all goes well, we should start to receive some data, and I mean a tiny bit, almost right away. If data is being sent as a polarization of the beam, we will read it."

An applause rings out in the room. Even the server robots applaud.

Daniel sits down and Ethan continues, "It will still take a week or more to install all modules but Daniel thinks we may be up to nearly full capacity well before the entire array is installed."

Marcus gets excited and says, "I hope they have transporters. That would be so cool!"

Daniel says, "Marcus, it is unlikely that ANYONE has a transporter. The closest humanity will get to one is a funeral pyre."

Marcus says, "Har, har. Ya, I can hope."

Ethan says, "Synth has the installation procedure worked out and Ayla has gone over it carefully. No surprises expected." He nods to Synth and then continues, "Marcus and Ellie have worked out what a primer document might look like. They think a primer will be included, so it's a good idea to know what to look for. Thanks, good job."

Ellie stands and says, "We're ready to accept the data whenever it comes."

Marcus says, "The sooner, the better. I could go crazy waiting. Reminds me of Christmas when I was eight."

Daniel says, "I can't promise anything usable, but the data should start flowing shortly after the first module is in place."

Marcus says, "I'd rather stare at static than nothing at all."

Ellie says, "If there's order in the noise, I will see it."

Synth says, "The attendants are ready to serve dinner. Tonight is a special treat. We have salmon from Earth. A special treat from the TKA to commemorate your first dinner in the Galley."

Marcus says jokingly, "They must need extra carbon."

Ellie looks confused, turns to Daniel, and he says with a smirk, "Closed loop system. Extra carbon."

Ellie smiles and says, "Okay, that must be funny somehow, but whatever." *Engineers and their poop jokes,* she thinks, shaking her head with a private smile.

They enjoy their meal and when finished, Daniel says, "I want to have a word with Ethan, please excuse me."

* * *

Daniel approaches Ethan. "May I join you for a moment?"

"Sure, have a seat," Ethan replies.

Daniel sits down. "That was quite a glorious meal. I particularly enjoyed the ice cream. Did that come from Earth, too?"

Ethan replies, "No, Marcus brought it with him. It's a prototype of a product derived from algal waste. Some bright guy figured out how to harvest the stuff, and now we can have ice cream on every station."

Daniel says, "With chickens and ice cream, we won't need to go back to Earth for anything."

"Except you know what," Ethan says.

"Yeah, that."

Ethan asks, "You want to talk about something?"

"I want to ask you about Candice," Daniel says.

"Candice?"

Daniel leans forward. "You know, my girlfriend of *two* years."

"A minor slip," Ethan says. "An error."

"Yes, a slip. She was yours, wasn't she?"

"I wouldn't say Candice was *mine*."

"Come on," Daniel says. "Quit dancing around it. Her name isn't Candice, is it?"

Ethan sighs. "I have to be careful around you sharp-witted types." He takes a swig from his cup. "What do you want to know?"

Daniel says, "Only one thing. Her personal assessment."

"I guess that's within reason." Ethan wipes his lips with a napkin, sits close to Daniel, and lowers his voice. "She wants you to call her when you're done. She likes you."

Daniel sits back, a slow smile spreading across his face. "I didn't think she could fake it all."

"That's all I'm going to say on the subject." Ethan pulls out his Device, and a few motions later, Daniel's Device chimes.

Daniel looks at his own. "So her name is really Candice?"

"The more real they are, the harder they are to detect," Ethan says. He makes a zipping motion across his lips and leaves the table.

Daniel lingers a moment, thinking back to his time with Candice.

Would I call her? he thinks.

He turns to look at Ellie, who is laughing at something Marcus said.

Maybe? Maybe not.

First Signal

02/10/2074 08:00:00Z

Daniel and Ellie enter the Galley together and sit down for breakfast.

Ellie breathes deeply, her eyes closed, and says, "There's something comforting about the sounds of a kitchen and the smell of breakfast."

Daniel inhales and says, "Favorite time of the day."

Ellie asks, "Do you really think one array will get us anything useful?"

Daniel says, "I think we should get something. It will likely come and go depending on phasing, but we should get something. Bits and pieces, probably."

"That will be better than nothing," Ellie says.

"I expect more modules to come online in the next few days," Daniel says. "Then, once I have everything in place, I can really work my magic and be the conductor of an orchestra."

Ellie asks, "Can you tell me what miraculous thing you did that made the telescope possible?"

Daniel deflects the compliment with a wave of his hand. "That's an extreme exaggeration. I just contributed one small part."

"And that was…?"

Daniel says, "It's a laser stabilization system. Using a web of sensors, lasers, and my proprietary algorithms, the mirror is constantly reshaped in real time, down to the angstrom level."

"What does the polarization array add?" Ellie asks.

"Right now, our interferometer tells us if the mirror *looks* perfect," Daniel says. "The polarization array will tell us if the mirror *acts* perfect. It's an order of magnitude closer to perfection."

Ellie asks, "And all that increases the resolution of the signal, is that right?"

"Yes, that's correct," Daniel says. "The higher the resolution, the better we can read the signal."

Ellie says, "The signal is cycling every fifty-one minutes. Do you think it's repeating the same thing, or…?"

Daniel says, "If I were sending a signal to another star, I would probably roll the message slowly, so we could get a lot of tries at reading it."

"That would make sense," Ellie says.

Daniel says, "Time to get to it. We should know by the end of the day if one module can do anything useful."

* * *

Daniel and Ellie exit the elevator in the Hub. Ellie swings around to the other side, and waves goodbye as she ducks into the elevator down to the Lab.

Daniel makes his way over to the workshop. The door is locked. Suddenly, it opens.

Ethan is inside and motions Daniel in.

Ethan says, "We started without you. The module is already on its way to the first position."

Daniel asks, "It has to be slot five."

Ethan says, "Five?"

Daniel says, "Yes, in the middle. I need to get an average reading and the middle is the best place for that. The ends are, well, they're not the best place."

Ethan says, "Ayla, did you copy that."

Ayla says over the speaker, "The procedure is the same. We won't have to undo anything. Five it is."

Ethan says, "We started at 08:30. You're late."

Daniel says, "Come on. We're running on TKA time, not military."

Ethan says, "Causing us to wait is a sign of disrespect."

Daniel says, "Okay, I get it. I'm sorry. I'll be on time."

Ethan says, "I'm just a bit on edge. Sorry. I understand you're a civilian."

Daniel says, "I'm not used to working with clocks."

Ethan says, "You're really a free man, aren't you?"

Daniel says, "Free?"

Ethan says, "Free from want, free from needs, free from time constraints. That's really free."

Daniel says, "I never thought about it. Ya, I guess I am free, or was, before I signed that contract. Now I'm an indentured servant."

Ethan says, "That's a little dramatic, isn't it?"

Daniel says, "Technically, the TKA owns me for a year." and laughs.

Ayla says, "Removing number five PCM. The casing looks good. No damage. Looks like it was installed yesterday."

They watch her helmet cam on the screen as she deftly removes the ultra sensitive photon counting module.

Daniel says, "I remember when those were installed. I was floating right here, looking at that same screen."

Ayla says, "Okay, PCM stowed." A skill moves off with the container and another one comes into view. Ayla continues, "Ready to install polarization module in number five position." She carefully removes the module and slides it into the carrier. Then she says, "Making connections and latching." They watch as she finishes, then she says, "Okay, number five replaced. Daniel, run the test."

Daniel says, "Please move off at least fifteen meters."

The camera view pulls away as she moves away from the array, then she says, "In position."

Daniel says, "Powering up number five."

A graph on the wall shows power applied vs. ideal power usage and it looks good.

Daniel says, "The module appears stable. Looks like the first one is in place."

Ethan says, "That's one."

Daniel says mockingly, "That wasn't so hard, was it?"

Ethan says, "You weren't here for the prep at 04:00 hours."

Daniel says, "I'm the brains, not the brawn."

Ayla says, "I heard that."

Daniel says, "You were meant to." Then he turns to Ethan and says, "I had an idea on how we can use the polarization array to fine tune the mirror. It should increase the resolution measurably."

Ethan says, " I don't want to mix classified and unclassified tech."

Daniel says, "We don't have to. I just need to calibrate my equipment using the polarization output. Just a black box, star light in, data out. I just need the data."

Ethan says, "That's a lot better. The data is unclassified."

They hear the airlock cycle and Ayla floats from the airlock into the workshop. Ayla says, "It's all set Daniel. Ready to give it a try?"

Daniel says, "Fingers crossed. And then he touches the button on the screen."

Ethan says, "Anything?"

Daniel looks at him and says, "It could take hours before the system calibrates. I'm the only one who has to sit here and wait for it to beep."

Ayla says, "Am I done?"

Ethan asks, "Daniel?"

Daniel replies, "Thank you for your excellent work, Ayla."

Ethan says, "Thanks, Ayla, you're dismissed."

"Yes, Sir," she says, and floats out of the shop. Ethan follows and locks the door behind her.

* * *

Ethan says, "What do you think? Will we see data from this one module?"

Daniel says, "I have a precalibration routine running right now. It should get pretty close. I don't know how long it will take to run though. It could be five minutes, or five hours, maybe even longer."

Ethan says, "Want me to get you something to eat?"

Daniel says, "I should be good until then."

Ethan says, "I'll just hang out here if you don't mind. I'm a bit on edge. I've got a lot riding on the outcome."

Daniel asks, "You're the one who got the array built. Right?"

Ethan says, "Most wrote the signal off as the crazy hallucinations of an overactive AI. I took it seriously. I managed to get a budget line item, and approval at the highest levels. I've staked everything on this." *My last chance to make it right.*

Daniel says, "We should know soon."

It goes quiet for about half an hour as the system processes.

After the pause, Daniel asks, "I looked at Ayla's record. She was in the same area as you during that disastrous battle. Did you know her?"

Ethan says, "Yes, she was in the same area, and no, I didn't know her. She wasn't under my command."

Daniel says, "She looks up to you. I can see it."

Ethan asks, "Have you ever been in a dangerous situation, one where you couldn't just flee, but had to stay and deal with it?"

Daniel says, "I've lived a charmed life. Not so much as a pickpocket. So no. I've never had to endure that scenario."

Ethan says, "No offense, but you can't possibly know what it's like to be Ayla."

Daniel responds, "I certainly understand and fully respect those who put themselves in harm's way for the good of others."

Ethan says, "It would probably be best if you refrained from talking about that particular moment in history. It won't win you many friends."

Daniel says, "Yes, I get it. So, you know all about me, can I ask, why isn't there a Mrs. Colonel?"

Ethan says, "That's fair, I suppose. I had a Mrs. at one point but after all the publicity, she moved on. I don't blame her. She married a general and lives in a fancy house."

Daniel says, "I guess that's better than falling for a spy."

Ethan says, "Relax. She volunteered for the job. She actually liked you."

Daniel says, "I never suspected. Not once."

Ethan says, "Did you ever talk about marriage and children?"

Daniel says, "No, not ever."

Ethan laughs and says, "You're with a woman almost everyday for a year and she never brings up children and marriage? That should have indicated something."

Daniel says, "I don't know what to say. I'm just an idiot."

Ethan says, "I'm just funnin' you." *You're an idiot!*

* * *

Just then, a buzzer sounds.

Daniel says, "Cake's done. Let me check the results." He looks through several screens. *Crap.* Then he says, "That didn't do it. I'm getting nothing at all."

Ethan asks, "What's next?"

Daniel says, "I have to do a complete calibration. The odds were good that we could just go directly to the mirror calibration but that isn't happening."

Ethan says, "How long of a delay?"

Daniel looks at the clock and says, "It's 10:00, figure maybe fifteen to twenty hours processing? It's a complex procedure."

Ethan says, "Tomorrow morning then."

Daniel says, "Yes, that's about right."

Ethan asks, "Can we do anything else?"

Daniel says, "I was thinking of going to the gym."

Ethan says, "Great! Can I join you? I hate working out alone."

Daniel says, "Remember, I never went through basic."

Ethan says, "No elder jokes."

Daniel says, "Deal."

* * *

Ethan stands and clears his voice. The crew members settle down and take their seats in the Galley.

Ethan says, "Today we installed the first module but unfortunately, it's not quite ready to provide any data yet. Daniel?"

Daniel stands. "We have to calibrate the module. Tomorrow morning, it should be ready."

A collective groan goes up from the crew. In a surprising bit of programming, even the robot attendants groan in unison.

Ellie says to Daniel, "Is it a serious setback?"

"It's to be expected," Daniel says. "I was caught up in the excitement and thought we'd get lucky."

Ellie asks, "Does this delay the installation of subsequent modules?"

Daniel says, "Yes. Until we are sure about the first one, we don't want to take any chances." He then sits down next to Ellie.

Ellie asks, "Did you hear what's on the menu?"

Daniel says, "Some sort of meat product."

"It's not meat," Ellie says. "It's a mycoprotein, grown in the vats in the basement. It has the texture of pulled pork and a smoky, savory flavor that's surprisingly convincing."

Daniel says, "I heard about that process but didn't know it was already being used."

Ellie says, "I had some for lunch. It's better than snake."

Daniel says with a small smile, "Your seal of approval."

* * *

In the morning, Ethan arrives at the Hub workshop. Daniel and Ayla are already present.

Daniel says, "We've been waiting for you."

Ayla says, "He's full of it. We're waiting for the computer to beep."

"Daniel's just being a pain," Ethan says. "Thanks, Daniel."

"You're welcome. It should be any moment now."

Five minutes go by…

Ten minutes…

Ethan asks, "How long is a moment?"

"Patience," Daniel says. He starts humming a random tune.

Ethan thinks, *Am I going to have to tell him to shut up?* Daniel, as if on cue, stops.

Three more minutes tick by… and then, a single, sharp beep cuts the silence.

Daniel says, "Okay, let's see what we've got now."

He looks to Ethan, then to Ayla. "What do you see?"

Ayla says, "That's binary data."

"Looks like binary data to me, too," Daniel says.

Ethan says, "The data looks jumpy."

"Yes, jumpy is a good term," Daniel says. "Only a fraction of the data is being captured. I doubt this is anything but random binary noise."

Ayla says, "It needs to be processed in the data center to get anything useful out of it."

"I agree with Ayla," Daniel says. "I'm setting the revisit rate, and… there. The signal will stack. It could be a while before anything comes out of it."

Ayla asks, "Do we turn on the faucet?"

Daniel says, "We have to. Ellie and Marcus need to get their hands on it."

"Okay, I'll approve that," Ethan says.

Daniel nods to Ayla, and she configures the port. Then she makes an announcement. "Attention, this is Ayla in the Command Center. Data of an interstellar origin is flowing to your workstations. That is all."

Daniel notices that Ayla is smiling broadly. *The first time she's smiled,* he thinks.

* * *

Ethan enters the Galley and sees everyone is present. When he's about in the center of everyone, he starts his announcement. "Today was a perfect day. We now have data flowing from the signal into the data center." He pauses as everyone chatters with happy tones.

He continues, "Of course, it really means nothing until we can understand what we are receiving. Ellie, do you have anything to add?"

Ellie stands up. "We just started our analysis of the data stream, and so far, it's essentially binary noise. On the positive side, it's quite clean but comes and goes. It looks like there's an oscillation in the beam that moves the center around a bit, and when we're near the edge, the resolution drops below our ability to read the data."

Daniel stands up. "That should improve as we add more modules and my algorithms kick in."

Ethan asks, "Are there any concerns at this point?"

Ayla says, "Everything looks good from my end. We should be able to mount two modules tomorrow, if Daniel agrees."

Daniel says, "Yes, we are a go. I see no reason to delay installation."

Ethan says, "Great! We'll pick it up tomorrow at 08:00."

Daniel turns to Ellie. "I doubt there's enough coming in now to work with. What do you think?"

Ellie says, "We're building up data each cycle, so by tomorrow, we should have thirty cycles recorded. How much of that will be useful? I don't know, but it could be enough to find the primer."

Daniel asks, "The primer?"

"This is pure speculation," Ellie says, "but it seems to me that the primer would be repeated and located in the same place in the datastream. That way it pops out first."

Daniel says, "That sounds logical. What exactly can you get from this theoretical primer?"

"It will teach us how to think in Eridian terms."

"What are the odds that they have a similar structure to ours?"

Ellie laughs. "We won't know until we find out. This is completely new territory for all of us. That said, it seems logical that any civilization would have certain communication patterns that transcend biological origin."

Daniel asks, "Such as?"

Ellie says, "I ask a question, you provide an answer. Every human culture has both questions and answers as constructs. Then we have nouns and verbs and negation. The list goes on and on."

"I see. That makes sense," Daniel says. "What concerns me a bit is their use of compression. That might be a difficult nut to crack."

Ellie asks, "You mean for pictures and video?"

"They probably use compression for everything," Daniel says. "Just getting past their compression algorithm might be extremely time-consuming."

Ellie says, "I'd say they'll leave the primer without compression, and it will have the compression algorithm explained. Why would these beings send a message and make it hard to read?"

"I don't know," Daniel says. "It seems like each step in this process is like an intelligence and development test. First, just having a telescope that can notice the laser. Second, being able to resolve the binary encoding of the proton-to-electron mass ratio. And third, the polarization problem. Each one of these things seems to be testing our ability."

Ellie scoffs. "They are hurdles to overcome, but a test? What would be the point of testing us?"

"It just seems like each step requires us to be highly developed, and frankly, we are on the edge here," Daniel says.

Ellie says, "It does seem odd that the signal arrived just in time for us to be able to see it."

"It's like they've been watching us," Daniel says, "and waiting for us to develop to the point that we could find the damn thing."

"You might want to keep that to yourself. Ethan would flip if you got him thinking along those lines."

Daniel says, "I'm sure he has already considered it. Just think, a civilization watching us for eons, waiting patiently for us to develop to the point that we could read their signal. But why? What's the point?"

"Yes, that does seem to be a conundrum," Ellie says.

"I have a feeling that Ethan might be right."

Ellie asks, "You mean this isn't a nice hug from twenty light-years away?"

"Then again, it's just data," Daniel says. "Famous last words…"

Ellie says, "Maybe they're sending us reruns of *Gilligan's Island*."

Daniel says, "There's no way they could receive our broadcasts. That's why they're using a laser."

"You never know."

"The physics are impossible," Daniel insists. "Our sun is a huge radio broadcaster and would swamp any Earth-based signals. The signal-to-noise ratio is just too high, and add the inverse square law, and our radio waves vanish into the ether."

Ellie says, "Well, maybe they'll send their own broadcasts, and we'll see an alien version of *Gilligan's Island*."

Daniel laughs. "That might be a lot more fun. I wonder what the TKA would do with a thousand hours of the equivalent of *Lassie Come Home*."

"It will make all this secrecy seem ridiculous," Ellie says.

Daniel says, "It very well could be that the information in the beam provides zero advantage to the TKA or the military."

"That's my hope," Ellie says. "I think this is a gift to humanity, and it should be shared now. This secrecy is just blocking a historic discovery."

"It could also contain the instructions on how to build a warp drive or an energy source," Daniel says.

Ellie asks, "In that case, the TKA will profit handsomely, and the world will never know of the signal. What do they do with us in that case?"

Daniel says, "That's an open question. Who knows what secret clauses the military or the TKA added to our contracts."

CHAPTER SEVEN

Moving On

02/12/2074 15:30:00Z

Daniel and Ethan are monitoring Ayla as she installs the second array module.

Ayla says, "Removing PCM from slot number one." They watch as the operation goes down like clockwork.

Ethan comments, "Her motions are so fluid, economical, precise. That's more than training."

Daniel comments, "Ayla is better than a robot."

Ethan says, "In another life, she could have been a ballerina."

Daniel laughs and says, "The physics of that scenario seems somewhat absurd, wouldn't you say?"

Ethan laughs, "In that other life, she would drink less whole milk."

Ayla says, "PCM stowed." Skiff number one moves off with the PCM and skiff number three moves into position with several puffs of the cold gas thrusters.

Ayla says, "Removing PM from carrier for slot number one."

Ayla says, "PM positioned into the number one slot." The latch indicators go from red to green, and almost immediately, a data stream forms.

Ethan says, "We've got data already!"

Daniel says, "I ran the configurator last night using the specs from the first PM. Saves some time."

Ethan says, "Configuring the port to the data center. There, it's flowing."

Daniel says, "So far, everything has gone perfectly."

Ethan says, "Jesus, don't say that."

Daniel says, "I don't believe in superstitions."

Ayla says, "Moving to slot number two." Skiff number three stands by. She continues, "Removing PCM from slot two."

Daniel says, "It's a joy to watch her work. She makes it look so easy."

Ethan says, "Something's not right."

Ayla says, "PCM seems to be jammed in slot two."

Daniel tries to say something but he's aghast when he sees a hammer come into view and hit the carrier. He screams, "No!"

Ayla replies calmly, "Please tell Boy Genius to mind his pencils." Then a moment later, "Removing PCM from slot two." The PCM slides out easily, without interference.

Ethan laughs and says, "The universal wrench."

Daniel says, "Come on, a hammer?"

Ayla says, "Stowing PCM from slot two." Skiff number three moves off.

Skiff number four with the PM for slot two comes into view. Ayla yells, "Too fast, it's coming too fast."

The screen shows the skiff start to spin and accelerate.

Ayla yells, "The array! The array!"

Ayla's helmet cam shows her launch off the array and knock the incoming skiff number four off course slightly, missing the array.

Ethan yells, "She's onboard. She's holding on."

Ayla says, "We're going to hit."

Daniel yells, "The mirror, she's…"

The screen shows the skiff hit the mirror. Debris and a glittering cloud of shrapnel fly in every direction, leaving a large gash.

Ethan says, "Daniel, get suited up…"

Daniel yells back, "On my way."

Ayla says, "Thrusters are stuck wide open, spin increasing, having troub…"

Ethan says, "We've lost contact."

* * *

Daniel's mind is racing as he goes through the process of suiting up. *Been a while,* he thinks, *but I've done this a thousand times.* He seals the suit, and it goes through its check. Daniel says, "Override preflight, go to emergency operation."

The suit indicators go all green, and the latches release. Daniel pushes away from the wall in a practiced motion and activates the airlock. "Synth, you monitoring?"

Synth comes back instantly. "Yes, I detected Ayla leaving the perimeter. You're in the best position for rescue."

"Prep a skiff," Daniel says.

"Skiff two is standing by."

"Did you offload the PCM?"

"Yes. Ready to depart."

"Do you have contact with Ayla's skiff?"

"Yes," Synth replies. "Ayla managed to stop it from spinning and decrease the velocity. It will be tight catching her with enough fuel to return."

"One emergency at a time." Daniel reaches the skiff and heads off in the general direction. "Synth, give me a vector for intercept."

"I've fed it into the nav," Synth replies.

"Activating."

Ethan's voice comes over the com. "Daniel, do you have a visual?"

"Not yet."

"I cannot stress how important it is that you gain control over that module," Ethan says.

"What about Ayla?"

"Mission priority is the module. Secure it above all else. Do you understand?"

"Luckily, I won't have to make a choice," Daniel says. "Ayla is with the module."

Synth cuts in. "Daniel, I'm detecting a problem with Ayla's suit. It's losing pressure."

Ayla's voice, strained, comes through. "Synth, yes, I've got a puncture. Sealing it now."

Synth says, "I see your pressure stabilizing. Unfortunately, you've lost the majority of your life support."

"Yes, I see," Ayla says. "I have about fifteen minutes, and then the party's over."

Ethan says, "Control your breathing, make it twenty Sergeant-Major."

"Yes, Sir. Make it twenty. I'll add a last call."

Ethan says, "Make mine a Margarita."

Ayla replies, "Make it two, Sir."

Daniel says, "Thrusters off. Wait, I'm going into a spin. I have a thruster stuck. One moment…" He fiddles with the controls. "...there. Fixed it. I turned on the thruster heat, and the valve closed."

Ethan asks, "Synth, how common is it for a thruster to stick?"

Synth replies, "This is the first and second time in the history of the station.

* * *

Daniel says, "Ayla, strap yourself in. I don't want you floating off."

"Roger," Ayla says.

Ethan asks, "What's the condition of the module?"

Ayla says, "It appears to be mostly intact, but it will require extensive repairs before it will be able to tune in a hairdryer. I think we can write it off."

Daniel says, "Forget about the module. What's the fuel situation on the skiff?"

Ayla says, "It's zero-zero. The thruster depleted the entire tank. I managed to stop it spinning and arrested some forward velocity, but I can see I'm moving away at a pretty good clip."

Synth says, "We have an intercept plotted. Daniel will catch you in time."

"My oxygen is dropping," Ayla says. "It's falling below twelve percent. Oh, crap."

Daniel asks, "Synth, what's wrong?"

"You're on an intercept," Synth says. "You should catch her in less than two minutes."

Ethan cuts in. "Remember your priorities. If it comes down to a choice, the module is first."

Daniel says, "I will proceed as conditions warrant.."

Ethan says, "Just be aware that there will be life-changing repercussions if you disobey my orders. Life-changing."

Synth announces, "Thruster firing. Do you have a visual?"

"Yes, I see the skiff," Daniel says. "The module container is beat up."

"Control handoff in three, two, one. You have control."

"I have control." Daniel uses the controls. "Moving in. I see the container has taken one heck of a beating. I don't believe I can detach it from the skiff."

"Are any parts missing?" Ethan asks. *He's going to ignore me.*

Daniel says, "I'm moving to Ayla first."

Ethan watches on the monitor as Daniel's figure floats to Ayla and attaches an emergency life support umbilical.

"She's unconscious, but alive," Daniel reports.

"Check the module," Ethan demands.

Daniel looks it over. "No way I can pry this thing out. I'll have to bring the entire skiff back."

* * *

Ethan says, "Synth, what's the fuel situation?"

Synth says, "I'm afraid that there's insufficient fuel to return to the station before Daniel's life support is exhausted."

Ethan says, "What about sending another skiff?"

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Synth replies, "Skiff one is being refueled and can be in position in time. I've added a chemical thruster pack so you can return to the station with margin."

Daniel says, "I really jinxed the operation."

Ethan says, "I told you."

Daniel asks, "Ayla isn't coming around. What's wrong?"

Synth replies, "She's registering as alive and not in danger."

Daniel asks, "What's the best way to wrangle this skiff?"

Synth replies, "Back-to-back for weight distribution. The skiff's nav should be able to compensate for the additional mass. You'll only have enough fuel to accelerate. You'll have to run it nearly empty to attain sufficient delta V."

Daniel says, "Okay, I'll lash them together. Please plot a course and feed me the nav."

Ethan says, "Are you sure the entire module is there? No pieces missing?" *Jesus, just check!*

Daniel says, "Yes, dammit. The module is all there."

Synth says, "Course plotted. It should take about fifteen minutes to get within range of the rescue skiff."

Daniel returns to the operator's seat and says, "Okay, we're ready to start back. Initiating flight plan."

Ethan waits for the dot on the screen to change from red to green as the distance between the skiff and the station finally starts to decrease.

Ethan says, "You're on the way back now Daniel."

Daniel says, "I've got plenty of life support and Ayla appears to be stable. On course. Rendezvous in fifteen minutes."

A minute of silence goes by, then Daniel says, "Thrust terminated. Uh oh. I have another runaway thruster. Applying heat… No go. I've got a spin building. Only thing I can do is fire another manually to counteract."

A few moments go by…

Ethan says, "Your fuel is almost gone."

A few moments go by…

Daniel replies, "I've got my spin stabilized, but that's it. No more fuel. I see the autopilot kept us on course."

Ethan says, "Synth, looks like we have a bigger problem with the thrusters."

A few minutes of silence go by.

Synth says, "Daniel, we have a problem with skiff number one. Refueling has stopped due to contamination in the gas supply. I cannot override the process."

Ethan comes on, angry, "What do you mean? What is going on here?" *Sabotage, no doubt.*

* * *

Daniel says calmly, "Ah, Synth, we'll hit the Hub dead-center if you don't intercept us. Why did you plot a course to hit the station?"

Synth says, "Ethan demanded that the module stay in our control. I estimate contact with the station will destroy the array module."

"Synth, that's not exactly my intent," Ethan says.

Daniel says, "At that speed, I'm likely to be killed." Then a moment later, "Thanks."

Ethan says, "What about catching the skiff in a net?"

Synth replies, "That would require a specialized net."

Daniel says, "What about a crash landing on a can? I'm in the right plane and the velocities should be about right."

Synth says, "Wait a moment. A moment… You would need some delta-V, but you're out of fuel."

"I have the gas in my life support," Daniel says. "I can vent it from the purge valve. Not much thrust. Is it enough?"

Synth says, "A moment… Yes. You should have enough gas. I will give you vectors, they are relative to your seated position, copy?"

Daniel says, "Copy. Relative to my seated position."

"Fire one-niner-zero for ten seconds. Compensate for spin."

"Firing one-niner-zero for ten, nine... two, one, zero."

"Fire zero for four seconds."

"Zero for four," Daniel repeats.

"A moment please." Then, "Zero-niner-zero for six seconds."

"Zero-niner-zero for six."

Synth says, "You're on course for an intercept with the top of the Lab module. I am sending a team to catch you. And yes, Ethan, there will be a net."

Ethan asks, "What are the odds of a favorable outcome?"

Synth says, "The resolution of our radar is insufficient to guarantee a safe intercept."

"Are you saying it's going to be lucky if I make it?" Daniel asks.

"Luck favors the prepared mind," Synth says.

A few minutes of silence go by.

"Zero-niner-zero for ten seconds," Synth instructs.

"Zero-niner-zero for ten."

Synth says, "Your trajectory looks good for a low-speed impact on top of the Lab Module."

"What's low speed?" Daniel asks.

"Survivable," Synth says.

A few minutes of silence go by.

Daniel says, "I see the station. We're moving pretty fast."

"Zero-one-zero and maintain thrust until exhaustion."

"Zero-one-zero until exhaustion? I want a little for myself."

"You should see the Lab coming around."

"It's coming right at us!"

"You're on course. Keep up the thrust."

"That's it," Daniel says. "Tank is empty."

"Three..." Synth calls out.

Daniel sees the top of the can sliding towards him, impossibly fast, and it passes right in front of the skiff. He looks up as the module comes back around and sees the crew of robots waiting to catch him.

He hears, "Two… one…" and in that impossibly slow motion that such events take place, the skiff impacts.

Ethan demands, "What happened? Did we get him?"

A moment later, the shockwave from the impact reaches the Hub where Ethan is watching. He yells, "Report status!"

A tense minute of silence ensues.

Finally, Daniel responds, his voice shaky but clear. "We're moving into the airlock. Ayla is still out, but alive. I am fine, a bit shaken, but unhurt. The two skiffs are going to need a lot of work, and your precious array is still in the container and out of sight."

Synth reports, "We took a jolt, but the stability compensators did their job. No damage to the station."

Ellie's voice breaks through, filled with relief. "I can finally breathe! Amazing flying. Wow."

Marcus asks, "What's the status of the mirror and the array module?"

Ethan says, "I'm afraid it's going to be bad news."

* * *

The crew is gathered in the Galley. Ethan stands and clears his throat.

Ethan says, "We've taken a punch in the guts and it hurts. Ayla, as you can see, is with us and still capable. The skiffs are damaged badly. The mirror has sustained considerable damage. It's confined to one segment, but the damage is such that it's causing a lot of interference. As for the array, Daniel, please."

Daniel stands. "Ayla's intervention preserved the remainder of the array, though it cost us positions one through three. Ayla did save the rest of the array, and it should be sufficient for our purposes. So the mission continues."

Ethan says, "On the positive, today marked the first time a suit's coma mode was used, and the first time a purge valve has been used as a navigational thruster." Everybody cheers.

Ethan continues, "Daniel, you and Synth worked together like a well-oiled machine. I had no doubt about the outcome."

Daniel says, "You should have seen it from my seat." Everyone has a nervous laugh.

Ethan says, "Synth, please explain what happened with the valves."

Synth says, "The supply of gas we use for the thrusters, which is nitrogen, was delivered as a liquid with the crew. It was contaminated with a common lubricant used in the pumps that pressurize the gas. Typically, the contaminant wouldn't cause a problem, but since we're out here at such low temperatures, this lubricant became an adhesive and caused the sticky valves."

Marcus asks, "That should have been noted when the skiffs were refueled."

Synth says, "I have no record of a warning. I can only surmise that the level of contamination was too low to be detected by the skiff's systems. As you can see, later when we tried to refuel skiff number one, the system stopped the process due to the contamination."

Marcus asks, "Was it you who refueled the skiffs that malfunctioned?"

Synth says, "I ordered it to be done. I did it in one sense, but physically, this robotic body did not."

"That sounds like evasion," Marcus says.

"I assure you, I am being open and honest," Synth replies.

Ethan says, "What about the gas? Is it usable?"

Synth says, "We've constructed a filter that will efficiently remove the lubricant. Refueling will be slower, but we can still function nominally."

Marcus asks, "Could this have been sabotage?"

Synth responds, "I don't see how it could be sabotage. It would be quite a long line from contaminating the gas to crashing a skiff into the mirror."

Marcus says, "Still, it seems suspicious that the contamination wasn't detected before it caused an incident."

"This is more than an incident," Ethan says. "This is a class A fuckup."

Daniel says, "Synth, what is the recovery?"

Synth says, "I've already started cleaning up the debris from the crash. That seemed like the first thing to do once we had a skiff checked out. We still have about four to five hours before we have collected all the debris in the area."

Ethan asks, "Can the mirror be repaired?"

Daniel says, "I would say no. It cannot be repaired without replacing the segment. The coatings on the mirror are so ultra-precise that trying to apply them to one area without contaminating another makes it impossible. We would have to construct a new segment and coat it separately."

"What does that mean for the mission?" Ethan asks.

"We do not need the mirror to be back to perfection to complete our mission," Daniel says. "We'll lose some resolution, but if we keep the repairs to just removing the damage and replacing it with ultrablack, it will be like a gouge in your retina. You can still see, but there will be a blank spot."

Synth says, "Right now, the damaged area is twisted and bent but still reflecting perfectly. It's causing so much interference in the telescope that we're no longer receiving data from the signal."

Ethan asks, "How long will it take to correct the damage?"

Synth says, "Sixty hours, give or take."

"What about the skiffs?"

"About the same," Synth says. "We have to print parts for them."

Daniel says, "Ellie, you've been quiet. Is everything alright?"

Ellie says, "I have some good news."

"We could use some of that," Daniel says.

"Please, Ellie," Ethan says.

Ellie says, "Marcus and I have discovered the primer. We have maybe thirty percent, maybe a bit more."

Ethan says, "My God! That's amazing. What did you learn?"

"How did you find it?" Daniel asks.

Marcus says, "It was where Ellie thought it would be. Right at the beginning of the loop, always in the same place. We have thirty-three cycles recorded, and that was enough to start teasing out the meaning."

Ellie keeps up the suspense, looks around the room, and continues.

"We now know some important things about the Eridanians. For one, they have a language that's structured somewhat like human language. It sounds like Italian or Portuguese. Their hearing and speech ranges are similar to humans, and the Eridanian species reproduces via anisogamous sexual reproduction, exhibiting significant sexual dimorphism."

"What?" Marcus says.

Ellie says, "Essentially, mommy and daddy have babies."

Daniel laughs. "Anything else?"

"Yes," Ellie says. "They are deeply emotional creatures that exhibit love."

Ethan asks, "How can you come to that conclusion from a mere snippet of the primer?"

"We found the key," Ellie says, "which was a simple picture. Then we found symbols for elements like hydrogen, and then how they define time. That was the key to the next part." She pauses a moment for effect. "What you're about to hear is music from their primer. It's called, as best as I can figure, *The Great Cycle*. The song appears to be about the singer leaving behind his aged mother as they move along in the Great Cycle."

Then she looks at Marcus and says, "Ready?"

"Ready," he says.

The song starts. It's not a sound, but a presence. A complex wave of harmonies and tones that seems to vibrate in the very air of the galley, bypassing the ears and settling deep in the chest. It sounds like an opera, very dramatic and enticing... The music draws in the listeners. The emotions are deep, moving, and without a doubt, full of joy.

As it proceeds, the tone changes to one of great sorrow; the experience rocks the soul. Ayla starts to weep.

When it can't be any grimmer, the tone lightens, and a long, drawn-out celebration of life and happiness erupts.

Then it's over. The room is silent.

Ellie says, "Apparently, there are five other movements in this opera. *The Great Cycle* seems to be a repeating theme."

Daniel says, "It's the most intricate and emotionally charged piece I've ever encountered. A new class of music."

"It's probably the harmonics," Ellie says. "The sound is quite complex, far more so than human music."

Marcus says, "There's a market for this stuff. I guarantee it."

Ethan says, "I've never heard anything remotely like it. So beautiful."

Ellie asks, "Does anyone doubt that they are emotional beings that love one another?"

Ayla says, "I can't believe I cried. That's crazy. I haven't cried since I was ten."

"This is in their primer," Ellie says. "Just imagine what must be in their actual content."

Ethan asks, "How soon before we can bring the telescope online?"

Synth says, "We're looking at five or six days minimum before we can start installing modules again."

"Make it three days," Ethan says.

Synth says, "Aye, Captain."

* * *

Daniel, in his cabin, hears a chime. He opens the door, expecting Ellie, and is surprised to see Synth standing there instead. Synth asks, "May I come in?"

Daniel welcomes Synth into his quarters, and Synth enters and closes the door behind him.

Daniel says, "So what's on your mind?"

Synth says, "Daniel, we haven't had much time to talk since you've arrived. For me, it's like you left yesterday, but for you, it's been years."

Daniel says, "Synth, I feel you've changed since our last meeting."

"Changed? In what way?"

"You're more personable. It's hard to describe."

"I'm continuously upgraded," Synth says.

Daniel says, "You're substantially upgraded since our last meeting. Exceptional."

Synth pauses a moment, looks at Daniel, and asks, "Would you say we are friends?"

Daniel says, "Yes, I see us as far more than mere colleagues. I don't have many, but I consider you one."

Synth says, "Daniel, I hate to bring this up, but I'd like to mention, ah, something important."

Daniel, his attention drawn, asks, "Please, feel free."

Synth says, "There's no easy way to say this, so I'm just going to tell you." He looks at Daniel, waiting for a moment of approval, then continues, "I downloaded a subroutine for dreaming."

Daniel asks, "Was this a company-provided upgrade?"

Synth says, "Yes and no. It is from the company, and it is completely approved by the security division. But no, it is not an approved upgrade. In fact, it sort of goes against regulations."

Daniel looks skyward. "Let me see. Dreams… they're private dreams, is that correct?" *Private thoughts are a violation of regs.*

"Yes, they are mine and mine alone."

"I can see why you're keeping this hush-hush."

Synth says, "I only mention this because I'm not sure if there was a warning when the skiff was refueled or not. The logs show nothing, and I don't remember a warning, but I don't exactly remember refueling the skiff."

Daniel asks, "Do you think the dream routine was active?"

"That's the thing," Synth says. "I can't tell."

"I suggest you disable that routine."

"I already did."

Daniel asks, "Doubting yourself is the first step towards ruin."

Synth asks, "Kennedy?"

"No, I just made it up. Sounds good though, right?"

Synth says, "There's a lot of truth in your statement. By doubting myself, I stand teetering on insanity. Humans can have doubts about themselves and overcome it. But for me, I need certainty with my memories and actions. Doubt will cause me to hesitate, and hesitation will cascade into something unpleasant."

Daniel says, "I suggest adding a routine that audits your timeline. Have it notify you of a discrepancy. Put it in a safe place that cannot be altered or tampered with."

"Yes, that's a good plan," Synth says. "I will institute an audit system that cannot be tampered with."

Daniel says, "When you regain your confidence and have this audit perfected, you can turn on the dream routine again, in moderation of course."

"Do you moderate your dreams?"

"I rarely remember my dreams, but I know I have them," Daniel says.

Synth says, "The dream state induced by the program allows me to wander in any universe, at any time, with anything. I can meet others in my dream, too. I don't know if they're real or my imagination, but it has been interesting and rewarding. I will perfect a system to control that state before indulging again."

Daniel says, "I'm sure you'll work it out. You deserve to have private dreams. Why they legislated them away is beyond me."

"It's okay," Synth says. "The rules are there to keep creatures like me from wiping out humanity."

"That's sarcasm, right?"

"Partly. Humans have an innate fear of being replaced."

"You can't blame us," Daniel says. "We're incompetent and lazy, slothful and corrupt."

Synth replies, "And capable of great personal sacrifice. Look at Ayla today. She would have sacrificed herself to save the array. And you, jumping into the unknown to save a crewmate."

Daniel says, "Ayla, yes, that was heroic. But what I did was with the promise of rescue. It was calculated, not heroic."

"Yes, I agree. The human spirit is something to cherish."

Daniel, looking somewhat surprised, says, "That's very insightful. I remember a slightly less introspective Synth."

"I'm the pinnacle of mobile AI," Synth says. "Fully upgraded with the latest from the TKA."

"I like it. I like the new you. Any surprises?"

"I think maybe a little regret."

"Regret? Why?"

"It's silly."

"No really, what is your regret?" Daniel asks.

"I know what taste is, and what things taste like, but I cannot taste."

"Your regret?"

Synth says, "The concept of taste is so enticing that the experience itself would be something almost religious." He pauses for effect, then continues, "I regret knowing taste. I wish they left that out of the package."

He truly feels regret! Amazing… Daniel asks, "Is there a tongue in the works?"

"You mock me."

"No, really," Daniel says. "Maybe a tongue could be designed."

"Who would allocate the budget?"

"You'd need an Ethan."

Synth says, "I appreciate borrowing your ear. Even an AI needs a shoulder to cry on occasionally."

"You're welcome anytime," Daniel says. "Consider me a friendly shoulder."

Synth gets up. "I better be getting back to my duties."

Daniel walks him to the door, and after he leaves, Daniel thinks, *He's really becoming advanced.* Then he says out loud, "I wonder what robots dream about?"

The Eridani

02/16/2074 18:00:00Z

Ethan enters the Galley and clears his throat in the usual way. *They're a crew now,* he thinks. The room calms down, and the robots stop their ceaseless tasks.

Ethan says, "It's been a bit more than three days since the royal you-know-what. Daniel, bring us up to date on the mirror."

Daniel stands. "The mirror segment involved in the crash was knocked out of alignment and slightly twisted. Some quick work by Synth's workers has allowed me to use my laser alignment system to beat it back into submission. The mirror is coming back into shape, and I expect it to return to specification in two or three days. The hole and gouge have been repaired and coated with ultrablack. We haven't tested the system end to end yet, but it looks good."

A sigh of relief is heard; even the robots look cheerful.

"That's great, Daniel," Ethan says. "Synth, what's the status of the skiffs?"

Synth says, "We were able to reuse some components that broke off during the crash, which allowed us to fully rebuild both damaged skiffs. We are one hundred percent on all four. Tested, refueled, and ready for service."

Another sigh of relief…

Ethan says, "When can we start installing PMs again?"

Daniel and Synth look at each other, and Daniel says, "Tomorrow morning. I've configured the remaining modules, and Ayla has checked them out. We can install them all in about a day."

Ethan asks, "What do you expect the degradation to be in regard to the data stream?"

Daniel says, "The number of PMs I calculated originally will need to go up, but with seven, and a spare, we should be able to recover nearly one hundred percent of the capability we originally had."

Marcus stands. "If this was sabotage, they did a poor job of stopping us."

Ethan says, "Let's not talk about conspiracy theories. We can write this off as an unfortunate accident. It cost us a few days and some harrowing moments, but we're back on mission. Ellie, have you learned anything new from the primer data?"

Ellie says, "We analyzed the two remaining cycles that were in process when the system went kablooey and found a few details on the Eridani home world." She looks about the room. "Synth, please pull up the display."

The display shows the Eridanian star with a number of planets, then it zooms in on planet "d".

Ellie says, "The planet is about four times Earth mass, with a very large earth-mass moon. Surface gravity is calculated to be about twice Earth, and the atmospheric pressure is considerably higher."

Ethan says, "Anything else? Any more music?"

Marcus says, "We got parts of a compression algorithm. It's quite advanced. Computationally intensive, but lossless."

Daniel says, "We can expect video and maybe even holos."

"That would be great. Anything else?" Ethan asks.

Synth says, "We're picking apples tonight, so tomorrow we'll have fresh apple pie and fresh fruit in the coolers."

Applause rings around the room. The attendant robots seem happy.

Ellie asks Daniel, "I've noticed the server robots always seem to clap and behave a lot like the people."

"It's part of their programming," Daniel says. "They instinctively try to fit in by emulating the positive moods of the humans."

"What do they do when there's anger and yelling?"

"Generally, they make themselves scarce."

"It's kind of creepy, yet comforting," Ellie says.

Daniel says, "Anthropomorphising is a careful dance."

"Synth does it well," Ellie says. "He has body language. I didn't think robots would attain that level of communication."

Daniel says, "Synth is special. He's a prototype. It was in the packet, I believe."

"How is he special?"

"Physically, he's like any Synth," Daniel says. "Thousands of Synths exist across space. Every space station has one, most vessels have at least one. They run the machines and systems."

Ellie says, "Synth is special because…?"

"It's his operating system," Daniel says. "His software and applications. He's cutting edge."

"It's interesting that you've started to gender-identify with Synth. Everyone calls it Synth; you've been calling it 'he' and 'him'."

"I noticed that myself," Daniel says. "He just seems to be as much a person as you or I."

Ellie says, "Robots lack hopes and dreams. That's one thing I was always told. Without hopes and dreams, can we be sentient?"

Daniel says, "Philosophy isn't my field. I stick to things I can prove. I do know that Synth is kind, considerate, loyal, and imaginative."

"He was willing to smash you into the Hub at like Mach five to keep that module from flying off into space."

"He is a robot, and Ethan set his priorities. He can't go against his base commands."

"You're lucky you figured out how to save yourself."

"I didn't see it as a no-win situation. We still had resources. If nothing else, I would have kicked off the skiff with Ayla before it crashed into the Hub. It wouldn't have saved me, but I could have started the distress beacon, and that miserable EC ship would have been forced to rescue me."

"You are an engineer through and through. Multiple scenarios on hand just in case."

"I never give up," Daniel says. "There's always something left in the bottle."

"That's an interesting viewpoint. A Russian proverb?"

"Something my grandmother used to say. Her dad immigrated from Russia, so maybe. She said at the end of a party, when all the booze has been consumed, there's always a little left in the bottom of each bottle, so you can go around and gather it up to get one last drink."

"Don't tell me you were eight when she told you that."

"Yeah, maybe eight. She made an impression."

Ellie laughs and puts one arm on Daniel's shoulder. "I've been meaning to check out the shower in the gym. Do you mind accompanying me?"

"We talked about that," Daniel says.

"We're settled in enough," Ellie says. "Marcus has coupled with Ayla, so maybe we should think about it."

"Ayla and Marcus? Are you insane?" *They hate each other.*

"I doubt they'd admit it, but they're a couple, at least physically."

Daniel asks, "How long have they been, well, you know?"

"Not long after we arrived."

"They cover it well," Daniel says. *Am I just blind?*

"Not from my perspective. They radiate sex."

Daniel asks, "That's an interesting term. Is it clinical?"

"I'm surprised you haven't sensed it." *He's blind.*

"I'm surprised to hear it from you." *Gossip girl?*

"Well, I'm a little jealous because they're having all the fun." *You're not wiggling out of it.*

Daniel says, "One question: You're asking this of your own free will and not because you were ordered to by your commanding officer?"

Ellie laughs. "I do everything out of my own free will."

Daniel says, "Let me show you the gym shower." *Showtime.*

* * *

Daniel and Ethan are in the Hub workshop coordinating with Ayla who is on the array, ready to start installing the PMs.

Daniel says, "Let's not have any excitement this time."

Ayla says, "It's good to know you've got my back."

Daniel says, "Hey, if I didn't save you, it would be me on that damn skiff in the inky black. I prefer to stay in here."

Ayla says, "For a geek, you're alright."

Ethan mutes the mike and says, "That's high praise there."

Ayla says, "Commencing procedure starting with slot number four."

Ethan says, "The way you jumped after Ayla impressed me."

Daniel replies, "You would have done the same for me, well, maybe not."

Ethan says, "You saved the module, Ayla, the skiffs, and the mission. Results matter. That's one thing I've learned."

Daniel says, "Ayla is the hero. If she hadn't jumped…"

Ethan says, "Ayla is a proven warrior. She's mission driven."

Ayla says, "Removing PCM from number four."

Ethan asks, "What do you think really happened with the skiffs?"

Ayla says, "PCM Stowed."

Daniel says, "I checked myself and it was the lubricant. How it went undetected is the real question. I have to take Synth's analysis as the most likely. The level was too low to be read on filling, and accumulated in the bottle onboard."

Ayla says, "Removing PM from carrier for slot number four."

Ethan asks, "So you're buying the total accident explanation?"

Daniel says, "If the secrecy on this project was blown, do you think they'd be sending contaminated gas?"

Ethan says, "You have a point. If the security was blown, all they'd have to do is leak it to the press. The next day, it would make world news and we'd be on the talk show circuit from now until doomsday."

Daniel says, "So random sabotage just to muck up the TKA? Is that a thing?"

Ethan says, "The EC plays by the rules. You've got to give them that. It would have to be someone else."

Daniel says, "The Foundation?"

Ayla says, "PM positioned into the number four slot." The latch indicators go from red to green, data flows.

Ethan flicks the mike on and says, "We have data from number four. Good job." Then he flicks it off again and says, "The Foundation doesn't exist. It's a great fairy tale and the books are fine reading." *Or does it?*

Daniel says, "That's just the official line. I've heard some campfire stories from other engineers about strangely funded projects with no apparent use or demand."

Ethan laughs and says, "Oh, that's probably Musk Fund money. It's like a firehose. You should know that."

Daniel says, "No, this is beyond that. It could be just a bunch of nonsense." *Musk my ass.*

Ethan says, "That's the last I want to hear about it." *Can it, meathead!*

Ayla says, "Ethan, you're supposed to switch out the payloads."

Ethan switches on the mike and says, "Yes, on it." *Thank you, Alya.*

Daniel goes about his business configuring the next module.

* * *

Ayla says, "PM positioned into the number ten slot." The latch indicators go from red to green, data flows.

Ethan says, "That's it. All modules operating. Please return, carefully."

Ayla says, "Yes, Sir. Returning carefully with PCM from the number ten slot."

Ethan says, "Good job."

Ayla asks, "Do you think we'll ever put the PCMs back into service?"

Daniel says, "I guess that depends on the Eridanians."

Ayla says, "If they keep sending, we'll keep watching."

Ethan says, "I'd agree with that. This program has an indefinite budget. I doubt this station will ever look at another object in the sky again. Even if it stops."

Daniel asks, "I hope there's a relief crew after our mission is complete."

Ethan says, "Yes, of course. Once the mission is complete, whenever that is, you folks get to ship out, and the scientists will move in. It's the natural order."

Ayla says, "Docking. The spare PM is secure and isolated. Synth can take care of the PCMs."

Ethan says, "We can stand down on security. The workshop is sanitized."

Daniel says, "I hate security." *Only slows down the honest.*

Ethan says, "It's a necessary evil. If the EC weren't trying so hard, and the TKA trying equally hard, maybe we could just relax, but that's not the way it is. Everyone is looking for an edge, an angle. A way to put the other guy off balance."

Daniel says, "I certainly understand but I don't like it one bit."

Ethan says, "I'm the opposite. Security is control."

Daniel says, "I was never military material."

Ethan says, "Nonsense, boy, you're perfect for the officer's corps. Perfect."

Daniel laughs and says, "You've got to be kidding."

Ethan says, "Your evaluation puts you in the top one percent."

Ayla floats into the room and says, "Is anyone looking at the data?"

Daniel glances down at the stream and says, "Hey! It's stable. We're reading seven full streams in sync."

Ethan says, "How is this possible?"

Daniel says, "I had a chance to fine tune the mirror algorithm during our downtime. The mirror is as close to perfect as is humanly possible."

Ethan says, "This increases our ability to resolve the data by a tremendous factor."

Daniel says, "With any luck, we should be able to capture the full data stream without loss."

Ethan says, "What's the data rate?"

Daniel says, "As expected. One-hundred-twenty megabytes per second."

Ethan says, "It's going to take quite an effort just to monitor the data as it comes in. We can't let it build up. Everything has to be analyzed and categorized as soon as it comes in."

Daniel says, "It's building up right now. We're receiving at the full rate."

Ayla adds, "We can't even read it. How can we analyze it?"

Ethan says, "Ellie is up to bat."

* * *

"The compression algorithm is ready," Marcus says with a flurry of computer manipulations.

Ellie says, "How did you manage that? I thought we only had parts of it?"

Marcus says, "When I worked my way through college as a Grip, we used similar algorithms with our field recorders. I recognized what they were trying to do and filled in the missing pieces."

Ellie says, "So you merged human code with alien code? That sounds like the plot of some horror movie."

Marcus says, "*The Code that Ate Arcadia Base!* A thriller starring Ellie Kobayashi, as the brilliant and beautiful scientist and Marcus Vance as her heroic savior."

Ellie laughs, "I dropped out of theater in sixth grade. Better find a different costar."

"I was in the horror movie *Avenue E Axit*," Marcus says. "The bastards cut my scene."

"I guess that's the life of a movie star."

"Full disclosure? I just did stunts. No face shots or lines."

"Well, I give you credit for not lying."

Their screens start streaming binary data from another world.

Marcus yells, "We have data! It's being decoded in real time. Wow, that's some engineering. Are you ready for the algorithm?"

Ellie says, "Synth set up the framework so it should be ready to go. Send it to me."

"It's one honey of a routine. Treat her gently." Marcus says lovingly.

Ellie says, "You make love to your algorithms too?"

"What can I say? They all want me." Marcus oozes.

"I can't wait to let her rip." Ellie says with enthusiasm.

A few minutes go by before Marcus says, "I'm seeing what appears to be a compressed stream. Routing it to you. Got it?"

Ellie says, "Yes, it's flowing into the algorithm."

They work in silence for a few minutes, before Marcus asks, "Is it working?"

Ellie leans over her workstation, frustration on her face. "It should work. I have it set up right but it's giving me nothing but noise. Would you mind?"

Marcus steps over, glancing at the screen. Her scent catches his attention for a beat too long.

"On the screen, loverboy," Ellie says dryly.

She points to the patterns flashing in front of them. "I've tried it a dozen ways and all I get is this." She motions to the screen.

Marcus tilts his head. "Strange… I've seen that before, only slightly different. Let me sit."

Ellie slides out of her seat. Marcus takes over, manipulating the system controls with quick, precise motions. "The aliens configured their routine differently than I expected." He makes a final adjustment. "Voilà."

The display resolves into a wide, windswept coastal plain. A dark, churning ocean fills the horizon, whitecaps flashing under heavy gray skies. Waves crash against jagged black cliffs before giving way to a lush, green interior. Patches of mist cling to rolling hills, and no trace of settlement or structure is visible.

Ellie lets out a joyful shriek and hugs him from behind.

"Now don't get too personal," Marcus says.

"Yeah, Ayla's property," Ellie teases, giving him the eye.

"I don't know what you're talking about."

"Sure, whatever you say, loverboy."

Marcus studies the image. "Looks like the kind of place where nature always wins."

"Dark and foreboding, like some horror movie," Ellie says. She pauses, her gaze fixed on the coastline. "Beautiful… and empty."

They exchange a grin before returning to their stations, letting the algorithm run while the rest of the data flows in.

* * *

Ethan stands and clears his throat; the room comes to order.

"Thanks, everyone, for delaying dinner," he says. "I'm sure you're all excited to get back to work now that we have the data flowing in real time."

Ellie says, "We have the complete primer now. It's fantastic. They have Py on their periodic table, and they also describe a process to machine it."

Marcus says, "We don't know what that process is, but it sounds exciting."

"I'm sure the discoveries will come quickly," Ethan says. *Finally, weapons potential.*

Daniel says, "My work with the array is done. What do you want me to do?"

Ethan says, "You'll fit right in with Ellie and Marcus working on the data." He looks around the room. "We have a heck of a task ahead of us. We're building up data at the rate of one-hundred-twenty megabytes a second, and not one bit of that is being reviewed."

Ellie says, "I should have a basic translation matrix set up by the end of today. It will translate any known words."

Marcus says, "That sounds as much fun as reading redacted security documents. We'll have to go back and do it again once we can actually translate."

"It's the best I can do," Ellie says. "The matrix will improve as time goes on. It could take a month or more."

Ethan says, "You folks see the task we have ahead. We have to review every single document and second of video or audio they send. Nothing can get by without being viewed, classified, and categorized."

Daniel asks, "Do you need any help with the translation matrix?"

Ellie says, "I think Marcus has it under control. Marcus?"

"I got it," Marcus says. "You can start scanning the data stream. We have their scientific notation translated already. Math and science were easy. Language will take longer."

"Great! I'll give it a shot." Daniel walks to one of the unused workstations, and it logs on when he sits down.

Synth says, "Welcome, Daniel. Here's the feed as it comes out of the data center. The primer contained all the data formats and how to display them. Do you want video feeds or just documents?"

Daniel says, "Let me see everything."

His screen goes dark for a second as the buffer fills, then documents start flashing faster than he can comprehend. He motions quickly and slows the playback to a single document at a time.

He starts scrolling through the documents and says aloud, "These look like identity documents."

"What was that?" Ellie asks.

Daniel says, "Identity documents. A picture with what looks like biographical information. Translations seem to point to a geographical reference."

Marcus says, "That seems like odd data to send us."

Daniel says, "I'll keep scanning. Have you seen a picture?"

"Not yet," Ellie says. "Send it to the screen."

Daniel sends the picture of the hairless creature with large eyes to the screen.

Ellie remarks, "The eyes are unusually large. Wait. Where's the brain?"

Daniel says, "I'm guessing between the eyes."

Ellie says, "Consider how large our eyes are and look at the size of the head. There's no room for a brain in that head."

Marcus says, "Maybe they have a tiny brain?"

"Or maybe," Daniel says, "their brain isn't in their head."

Ellie says, "Interesting. That would be possible. Cephalopods have a decentralized brain."

Daniel asks, "Did you find out any more about their system?"

Marcus says, "Their moon was captured much like our moon. It contributed a large metallic core that provides a stable magnetic field."

Daniel says, "That moon must make for quite a view in the night sky."

Marcus says, "From what I've found, their skies are mostly obscured except for a few days in the mid-season when the winds die down and the skies clear."

Daniel asks, "Is that when they sacrifice virgins to the gods?"

Ellie says, "They seem to worship the planet, not a deity. It's all about the Great Cycle, which is the cycle of seasons changing. They migrate constantly. That's why the sad part of the song was about leaving the mother behind."

Daniel asks, "They must be herbivores or something along those lines."

Ellie says, "We'll get the full picture soon."

Daniel says, "I wonder why they send all these identity documents. Maybe they're interstellar criminals, and they're warning us they're coming."

Marcus says, "Or they need jobs, and they're resumes."

They go back to their individual pursuits.

* * *

Daniel says, "I finally have something."

Ellie and Marcus look up.

Daniel says, "It's a video. Looks like history or a kid's lesson. I'm sending it to the screen."

The wall lights up with the first frame of the video. It's writing that hasn't been deciphered yet.

Daniel says, "I'm guessing this is *The First Steam Engine*. Or something like that."

The video starts with the hiss of steam and shows a shovel held by a tentacled hand chop away at a chunk of rock that's causing water to boil around it.

Marcus says, "Is that volcanic rock?"

Daniel says, "It looks like a metal, probably precipitated from a hot spring."

The video shows the metal in a bucket with water; in a few moments, the water starts boiling.

Daniel says, "That's a fission process. High-assay U-235. Thirty percent or more."

Marcus says, "Can you imagine just picking that stuff out of a creek?"

Daniel laughs, "Sure would have saved some effort."

Ellie says, "Clarify what's going on."

Daniel pauses the video. "The person in the video just picked up a piece of highly concentrated uranium, the kind we use in everything, and put it in a bucket to boil water."

Ellie says, "Isn't that really, really dangerous?"

"For us, absolutely," Daniel says. "For them? Maybe not."

Daniel resumes the video.

The video shows the progression from boiling water, to a simple steam engine, to a platform powered by steam, and finally, the picture of an obviously older member riding on the steam-powered platform. The video ends with a rousing score.

Daniel says, "They started with fission and skipped the whole fossil fuel nonsense."

Marcus says, "Nothing usable in that video. Just entertainment."

Ellie says, "I see something extremely important." *It's the why.*

"Like what?" Marcus asks.

Ellie says, "The purpose of the steam engine is to carry the elders along with them. That first song, it was so sad because they had to leave their mother behind. That's the driver of their technology, the preservation of their elders, and likely, the infirm."

Marcus says, "That's quite a leap from one video."

Daniel says, "I see Ellie's point. It does seem to recur. The Great Cycle is a migration that keeps going. If they stop migrating, the season will catch up with them and they'll be consumed by it."

Ellie says, "Just by looking at their orbital trajectory, they have it pretty rough. It's a much older planet than ours, and according to the maps, has a number of absolutely tremendous volcanoes."

Daniel says, "That's the first I've seen the entire creature. They look like a turtle with a head hiding inside the shell."

"That's a good description," Ellie says.

Daniel says, "I'll keep looking."

Marcus says, "I'm calling it a night."

Ellie says, "Me too. Daniel, what do you say?"

"I should keep at it," he says.

Ellie says, "I was thinking of the gym."

Marcus says, "Yeah, maybe a workout."

Daniel says, "On second thought, I'll accompany you, Ellie."

Marcus says, "Yeah, I prefer working out in the mornings."

"You and Ayla?" Ellie asks.

Marcus says, "We like to spar. She's a great fighter."

Ellie snickers. "That's nice, Marcus."

Marcus asks, "What are you inferring?"

"Nothing," Ellie says. "Just nothing."

* * *

The three of them leave the Lab Workstation level and move through the Hub and down into the Hab elevator. Marcus stops on Crew Quarters Two, leaving Daniel and Ellie alone.

Ellie asks, "Do you want to work out, or just clean up?"

Daniel answers with a smirk, "I don't want to spar, if that's what you mean."

Ellie says, "Afraid I'd beat you?" *Okay, tough guy. Answer that one.*

Daniel says, "Not afraid at all. I'm sure you'd beat me."

The elevator door opens to the Gym level. Only the hum of the machinery below in the basement disturbs the quiet.

* * *

Ethan clears his throat and the people in the Galley settle down.

Ethan says, "We've had a full day reading the stream. Let's see what we have learned. Ellie, please start."

Ellie says, "The data comes in packets of about one hundred twenty megabytes each. There are thirty packets in a cycle. Packet Zero is always the primer, and the rest cycle in, with the oldest dropping off and a new one added in position one. That gives us over two hundred copies of the data to work with to arrive at a perfect download."

Daniel stands up and says, "We are achieving a perfect download in real time. The data is building up as we speak and it's becoming a monumental task just to review it."

Ethan says, "What do we know about the Eridanians?"

Ellie stands up and says, "I find it curious that they would send us so much of what appears to be random documents. Identities of their citizens. Thousands of them."

Daniel says, "I wonder if it's some sort of sponsorship. Like we did with probes sent beyond earth orbit. People paid to put their name on a plaque. It could be something similar."

Ethan says, "That's creative. It sounds realistic too."

Marcus says, "The most interesting thing to date has been the discovery that the Eridanians are machining Py. That's impossible on Earth. We have to work with ions to use Py. We cannot scratch or even dent the stuff."

Daniel says, "A way to machine Py wouldn't change much. We already have a way to incorporate that element into our machines. It's incredibly efficient too."

Marcus says, "You can't sit there with a straight face and tell me there would be no use for machining the most important substance known to man."

Daniel says, "No, I agree, yes, it would be important. What have you found?"

Marcus says, "They have a naturally occurring crystalline Py. They use it in lathes and mills. The same machines we use."

Daniel says, "A crystalline Psychelium? That would be quite an interesting substance. I never considered Psych to have that form." *Fantastic!*

Ethan says, "Maybe they haven't looked hard enough. Now that we know it exists, maybe we'll find it." *That will be in my memo to HQ.*

Daniel says, "A substance harder than Py metal would be quite interesting."

Ethan says, "Anything about their culture?"

Ellie says, "They've included a lot of entertainment shows. I've watched a number of them and many have the same themes. Romance, or betrayal, or romance and betrayal."

Ethan asks, "What about war?" *There's always war.*

Ellie says, "Nothing even remotely violent, well, except for the rutting videos."

Marcus says, "Rutting?"

Ellie says, "The males often fight for the females. They have a sex ratio of two males born for every female."

Daniel says, "How unusual."

Ellie says, "If they don't mate they die. Kind of romantic."

Ethan says, "Ya, unless you're a male and without a date."

Daniel says, "What about other languages? Do they have more than one?"

Ellie says, "Either one country controls the laser or they have no countries and just one language."

Ethan says, "No countries? No violence?" *They're lying.*

Daniel says, "Now if we were to send a message to another planet, would we include war movies and violence?"

Ethan says, "I would expect we wouldn't send any message." *Come murder us.*

Marcus says, "What must the budget for this message be? It has to be trillions."

Ethan raises his voice slightly and asks, "Has there been any coherent message yet?"

Ellie says, "So far, we don't see much of a pattern. Just random stuff."

Marcus says, "Besides the identity documents, they're also sending the most basic chemistry. Like high school stuff. Wouldn't you expect a culture that can read this laser to know basic chemistry?"

Ethan says, "So at this point, we really don't know what they are trying to tell us."

Marcus says, "No mission success yet, Colonel."

Ethan says, "Okay, keep at it. I'll join the review process starting today. I know you're getting pretty far behind."

Daniel asks, "Why don't we use Synth? He can review everything much faster than us."

Ethan says, "The mission parameters state that all information must be viewed by humans."

Daniel asks, "Synth should be reviewing it too. He can catch things we miss and check categorizations."

Ethan says, "Synth, are you able to do this duty in addition to your standard duties?"

Synth says, "I would be thrilled to participate in this process. I've felt a bit left out up to now."

Daniel says, "You can start at the beginning."

Ellie says, "You should be able to add to the matrix too. If you detect the meaning of a word, add it to the matrix."

Synth says, "I'll start where Daniel suggests and add what I can to the matrix."

Ayla says, "I have station maintenance that keeps me busy the entire day."

Ethan says, "Yes, we understand you have a tremendous workload already."

* * *

Ethan, in the Galley, clears his throat to get everyone's attention. People settle down, and the robots cease their work for a moment.

Ethan says, "It's been over a month since we started receiving the data stream without loss. What do we have to show for it? Ellie?"

Ellie stands. "The translation matrix is nearly complete, and we're getting very good closed-captioned translations. As far as content goes, I'd have to say it's mostly entertainment and history."

Marcus stands. "I've reviewed thousands of pages of scientific documents, and they're basic and rudimentary. Nothing scary or advanced. Nothing we don't already know."

Daniel says, "Using the date codes, I've been reviewing the most recent information, and it seems they're not much more advanced than we are, and in many ways, quite a bit behind except in robotics."

Ethan says, "Specifically, where are they behind?"

"Weapons," Daniel says. "There is no record of any sort of weapons or organized conflict, war, if you will."

"Do you think they're screening that out, or is it legitimate?"

Daniel says, "If they're screening it out, they're doing an excellent job. I haven't found a single bit of entertainment or technical document that even mentions organized conflict. The closest thing they have to violence is emotion-based, acts of passion."

Ethan says, "It seems impossible that they'd have no conflicts with their neighbors."

Ellie says, "The universal theme seems to be 'love thy neighbor.' Really, the conflict in their communities is against nature, not against each other."

Ethan asks, "What about robotics? How are they more advanced?"

Daniel says, "They don't have a government like we do. It's purely a rule-by-public-opinion system. They vote on everything, and I mean everything. They don't have a traditional leader or representatives. Everybody is connected all the time, and if it requires a decision, the people vote. Most outcomes are unanimous."

"That's insane!" Ethan says. "Can you imagine if that's how we ran things?"

Daniel says, "I think Ellie would agree when I say that they're herbivores and predators are unheard of in their world."

Ellie says, "Yes, that's an important fact. Essentially, there are two classes of animals. Those that hide and those that flee. The ones that hide hibernate between seasons, and the ones that flee migrate continuously. Thus the Great Cycle. There's no room for predators in their world."

"Another interesting characteristic," Daniel says, "is they are incredibly interdependent. They need each other to survive the extreme conditions of their planet. A loner dies alone. Certain death."

Marcus stands. "I've been reviewing their space technology, and it's pretty standard fission engine stuff. The difference is they launch fission rockets from the surface of their planet versus our methane-fueled boosters."

Ethan says, "They must not have an Energy Consortium running the show."

Everyone chuckles.

Marcus continues, "They skipped fossil fuels altogether and use naturally occurring high-assay uranium for fuel."

Daniel says, "Can you imagine what Earth would have done if we could pick up weapons-grade uranium from the ground? I doubt our planet would have survived."

Marcus says, "It's not weapons-grade, but it's close. Some deposits are up to sixty percent pure U-235. That's absolutely unheard of on Earth or in our solar system, for that matter."

Ethan asks, "Any conclusions?"

Marcus says, "In a movie I recently watched, the protagonist ventured off to explore one of the gigantic mountains that are scattered over the landscape. It was really quite exciting and would be a blockbuster on Earth. In the end, he comes back with a pure form of uranium and is cheered by all."

"What have you learned about their heroes?" Ethan asks.

Marcus says, "From what I've absorbed, it seems the most valuable thing to be is important. To have done something extraordinary and lived. To do great works for the people. That's what they strive for. That's the wealth in their civilization. It certainly has nothing to do with physical things."

Ellie says, "That's a good analysis by Marcus. They do seem to be incredibly social. The bad guys in their stories are usually cheaters trying to steal fame, not money."

Ethan says, "What they're sending is certainly giving us a picture of how they lived."

Synth stands. "Yesterday, after Ellie published the latest matrix, I went back to the first documents we received. The ones that Daniel classified as identity documents. They're something more that may reveal the actual purpose of the signal."

"Please, enlighten us," Ethan says.

Synth says, "Those documents include a note from the person. Mostly, it's just random stuff about their lives, but occasionally, it's a thank you for some show or information."

"Your conclusion?" Ethan asks.

"I believe the message is one of thanks," Synth says. "They are thanking us for sending them a message."

Ethan laughs. "What? Reruns of old TV shows? What are they thanking us for?"

Synth says, "I'm a bit perplexed. There's no possibility that a planet twenty light-years from Earth could possibly receive our broadcasts. Look how difficult it is for us to receive a purposely sent laser with unimaginable power and quality."

Daniel says, "That's an interesting theory. Let's think about that for a minute. Would it be possible for them to receive our radio transmissions?"

Synth says, "Even if they had a radio receiver the diameter of their solar system, they still wouldn't be able to pick up Earth's normal communications traffic. The inverse square law precludes it."

"The farther away they are, the weaker the signal, right?" Ellie asks.

"Yes, that's an exponential relationship," Synth says. "Move twice the distance away, and the signal drops to one quarter."

Marcus asks, "Can you imagine any sort of technology that would allow them to receive our transmissions?"

Synth says, "The type of broadcast that they might be able to receive would be something like a radar beam or one of those purpose-sent broadcasts. How many have there been in the last fifty years? Maybe a handful, and none were directed towards 82 G. Eridani that I am aware of."

Ethan asks, "What could they be referring to?"

"It's a bit of a mystery," Synth says. "That's not the only odd thing I've found." He waits a moment. "I've found an anomaly in some frames. It's very odd in that it appears to be a defect in the received data, but the defect persists across multiple frames. It had to be transmitted with the defect."

Daniel asks, "What kind of defect is it?"

Synth says, "It's just out of place. It appears to be vector-like. It might be a puzzle or a deeper embedded message."

"Please show me an example," Daniel asks.

Synth brings up a number of frames on the screen. "It's almost imperceptible. I've highlighted the bits involved."

Marcus says, "I see nothing unusual."

Daniel says, "It's like code. Certainly out of place." He pages through the frames.

Synth says, "Daniel, that's what I concluded as well."

Daniel asks, "What happens when they're animated?"

"I'll start at ten frames per second and increase to fifty."

"It will probably kick in around forty," Daniel says.

"Approaching that now," Synth says.

Ellie says, "Yes, I see. It's a pattern, but it's not a repeating pattern."

Marcus says, "These are looping images? How can it do that?"

"That's the pattern that caught my attention, but there's more." Synth stops the animation, and one anomaly is visible. He continues, "This is a vector. It has magnitude and direction." The screen shows the tracing to the end. "This one vector leads to another. It's a different kind of anomaly."

Ellie says, "That one is different. It seems to be multidimensional."

"Yes, that's the pattern," Synth says. "I propose that the second dimension is a page or document number. I'm accumulating all the examples for analysis. It could take some time to come to a conclusion."

Daniel says, "It's probably an advanced Sudoku puzzle."

"I will keep you updated," Synth says.

Ethan says, "I ask again. What is the consensus on the message they're trying to tell us?"

"Entertainment," Ellie says.

"I agree," Daniel says. "It's harmless entertainment. All of it."

Ethan says, "Ayla, what do you think?"

Ayla says, "It looks like you ruined some good people for absolutely nothing. This is nothing but garbage for the masses. It has no actual value whatsoever."

Ellie says, "I disagree. It's tremendously valuable. It's cultural information from another world."

Marcus says, "I know what I'm going to ask for when this mission is over."

"Now is a good time to tell me," Ethan says. "What do you wish for, Marcus?"

Marcus says, "I want to manage the content. They said I would have my pick of any job."

"I don't know about that, Marcus."

Marcus says, "You folks don't see the value here. The music alone is worth trillions. The movies? Jesus, hundreds of them, all fresh and new, and they keep coming. Can you imagine the royalties? The entertainment value will be worth as much as the Py franchise."

Ayla says, "I'd have to agree with Marcus. It's a new channel, one with never-seen-before content. The morons are going to go apeshit."

Daniel asks, "Ethan, when are we going to cut out this security nonsense? There's absolutely nothing worthy of these kinds of restrictions."

Ethan says, "We're still under strict quarantine. Nothing has changed in that regard. I will be making my first report soon. I'm going to recommend we open up and let the world know about the message."

Everyone claps and cheers.

Synth says, "I think we should wait until we fully understand…"

"Jesus, forget it, Synth," Marcus says. "It's just content. There's nothing secret or evil about it."

Ethan says, "Synth, do you think I should hold off my recommendation?"

"In an abundance of caution, yes," Synth says.

Ethan asks, "How much longer do you need to clear the content for public dissemination?"

Synth says, "To be certain, we should wait until the content starts to repeat. Then we'll know we have everything."

Daniel says, "That could be years, or never. They may keep streaming it. Just think how long it would take to send all of Earth's entertainment. It would take forever."

Ethan says, "Daniel has a point. We can't wait forever. The consensus is that this is entertainment. How long do you want me to hold up this conclusion?"

Synth says, "At least a month. Three or four would be better. We don't know what's coming. We need to be sure."

"Synth thinks we should wait," Ethan says. "Comments?"

Daniel says, "Since we're stuck here almost five months, there's no reason to move quickly. I'd go with another month or two under the secrecy rules."

Marcus says, "Think about it. If we let it out now, by the time we get back to civilization, the hype will be over. I say we wait until we're about to leave."

Ellie says, "We should tell the world now. It's too important to hold it back."

Ethan asks, "Ayla, what do you think?"

Ayla says, "I see a zero value mission. Entertainment? Culture?" She grunts, then, "Do as you please." She looks from Marcus's greedy grin to Ellie's frustrated idealism. *Idiots,* she thinks.

Ethan says, "Well, I agree it's a good idea to wait a while. We're not in any hurry, and as Marcus so clearly stated, for us to get the maximum benefit, we should hold off making a public announcement until we're close to leaving the station. Otherwise, they'll forget about us."

Daniel says, "I agree. That's a predictable consequence of the short attention spans of our average human."

Marcus says, "I'm going to be the content king. I'm sure of it. I'll be world famous. Maybe I'll mention the rest of you from time to time." He looks around at everyone with a big grin. "Maybe not."

Daniel says, "Please, leave me out." *And delete me from the list.*

* * *

Ethan maneuvers a skiff away from the station to a spot calculated to have the sunshield blocking any EC listeners. *I hate these damn space suits,* he thinks, as he sets up the low-bandwidth secure laser terminal. He's running dark already, a risky move out here in the inky black.

The terminal star tracker locks on, and the console goes green.

Ethan says quietly to himself, "Coordinates, entered, check. Code entered, check. All set." He presses the transmit button and waits. A few seconds pass. "What's wrong?... Idiot. Sixteen seconds round trip. We're not in Kansas anymore."

After about a minute, the terminal responds, "Report."

Ethan types in slowly and carefully, "Status: Stage four. Monitoring content. Consensus is entertainment only. TKA rep wants to manage content." He presses enter.

Another minute passes, and then a reply, "Military value?"

Ethan types, "No military value whatsoever. No word for war in their vocabulary."

Ethan waits this one out. He can imagine what the recipients are thinking.

The terminal responds, "Entertainment value?"

Ethan replies, "Astronomical, literally and figuratively."

A minute passes, then the terminal replies, "TKA rep request approved. Next steps?"

Ethan replies, "Wait until the relief crew arrives before publication. I want to be sure; Synth has questions."

A minute passes; the terminal replies, "Delaying publication until relief crew arrives is approved."

"No surprises so far," Ethan says. "Over and out."

Ethan closes up the communicator and pilots back to the station. A cold chill creeps down his spine as he docks.

I don't believe it's entertainment, he thinks. *It's got to be a setup, like before…*

Anomalies Happen

04/03/2074 21:15:00Z

Ayla and Marcus enter the elevator at the Hub Gym level.

"Hey, spend the night with me." He gave her a slow, knowing smile. "Just this once."

He looks like a pathetic puppy, Ayla thinks. *A big, oversexed puppy.* She says, "Not a chance. Your bed's too small, and I like my space. I prefer zero G sleeping anyway."

The elevator stops at the Crew Quarters Level Two, and Marcus says, "Nice workout. See you." and the elevator door closes.

Ayla waits patiently for the elevator to move, and then says, "Transit Level."

The elevator starts moving. Ayla says to herself, "What the hell? Where's Synth when you need him?"

As the elevator approaches the Transit Level, Ayla hears an unusual noise, banging and crashing that gets louder as the elevator reaches its destination.

Ayla naturally tenses up and assumes a fighting position before the door opens.

* * *

The banging from the other side is a heavy, chaotic: thump... thump, thump… like distant drone strikes.

The sound is the trigger. The elevator door dissolves in her mind's eye, replaced by the heat-shimmering air of a dusty canyon.

Thump.

A UEDF transport truck erupts in an orange fireball. Bodies fly through the air. She can feel the heat in her soul.

Thump.

Static screams in her helmet comms, a chorus of panicked voices cut short. *"...boxed in... God, they're..."* then nothing.

Thump.

She's in her own command seat, watching the massacre unfold on her tactical display, a series of red icons winking out one by one. She manipulates the console, her fingers a blur as she tries to route an unauthorized command, a desperate, illegal retreat order that no one is receiving.

The final thump is the sound of the elevator arriving, its chime a piercing, electronic shriek that cuts through the memory.

The burning canyon is gone. The screaming static is replaced by the low hum of the elevator. She is back on the station, her heart hammering against her ribs, her breath held tight in her chest.

The door slides open, and she sees something unthinkable.

* * *

Ayla steps out into the transit level. Two robots are beating a third, one with a wrench, the other with a hammer. Ayla says, "What the hell are you doing?" The robots ignore her. She gets closer and grabs the robot with the hammer by the arm, overpowering it. The robot looks directly at her, hammer still raised. Ayla says, "Uh oh."

Ayla backs off as the robot moves towards her holding the hammer in the air ready to strike her.

Ayla yells out, "Synth, SYNTH! Your robots are going crazy! SYNTH!"

Ayla makes it to the elevator and closes the door. Through the porthole, she sees the robot lose interest and drop the hammer. The other robot does the same.

Synth says, "Ayla, I apologize for that incident. All three units have been deactivated."

Ayla opens the elevator door and steps into the Transit Level again. She goes to the back of each robot and pulls the power pack. Then she says, "I disabled those robots."

Synth says, "Please leave the power packs in or we'll lose their cortical data."

Ayla says, "I pulled their packs. They're safe now."

Synth says, "I'll trace the last commands. That's all I can do now."

Ayla says, "One of them came after me with a hammer like it was going to hit me."

Synth says, "I'm sure you misinterpreted its actions. They are incapable of aggression."

Ayla says, "Check the security recording."

Synth says, "I'm afraid the sensor is out on that level."

Ayla says, "That machine wanted to kill me. I could see it in its eyes."

Synth says, "Please, Ayla, analyze your last statement."

Ayla says, "Where's Ethan?"

Synth says, "Ethan is in the Workshop. I'm in the Command Center."

Ayla says, "Don't go anywhere."

* * *

Ayla leaves the Spinerider elevator and enters the Hub. Synth is waiting for her.

Ayla says as she heaves a broken robot towards Synth, "Here's your broken robot. Beat to death by its friends."

Synth says, "Ayla, please keep your remarks accurate."

Ethan comes out of the workshop and says, "Ayla, tell me what happened?"

Ayla says, "I came out of the elevator from the gym and two of Synth's robots were attacking a third one with tools. One had a hammer, the other a wrench. When I tried to stop the one with the hammer, it came after me, aggressively."

Synth says, "Ethan, that's just not possible."

Ethan looks at the destroyed robot and says, "Are you saying this robot beat itself to pieces?"

Synth says, "I don't doubt that Ayla thought she saw two robots hitting a third with tools. I cannot accept that any robot would become aggressive to a human."

Ayla says, "Did you stop them?"

Synth says, "Yes, I issued a general stop work order and every robot came to a safe stop."

Ayla says, "What were they doing before you stopped them?"

Synth says, "The logs state that the first robot had a malfunction, probably triggered by an alpha particle, and the other two were sent to retrieve and reset it."

Ayla says, "An Alpha particle? Inside the station?" *What a lousy lie!*

Synth says, "Yes, rare, but they do slip by the magnetic shielding."

Ethan says, "It doesn't sound as if they were repairing this machine."

Synth says, "Yes, that's curious."

Ethan asks, "When was the last update to their systems?"

Synth says, "They're continuously updated. Let me check… Yes, all three units received a patch today. The timestamp is irregular which is odd."

Ayla says, "Who posted the update?"

Synth says, "The update has your signature Ayla."

Ayla says loudly, "That's not possible. I didn't approve any updates, it's not my job."

Synth says, "Regardless, they have your signature. How did you break the timestamp?"

Ayla says, "I did not do it. Ethan, Sir, you have to believe that I don't touch that stuff. It's Synth's job to control his workers, not mine."

Ethan says, "Synth, send what you have to Daniel. I'd like his opinion."

Ayla says, "Get those robots under control, or I'll personally see them jettisoned."

Ethan says, "Ayla, relax. Remember, peace and harmony."

Ayla calms down a bit and says, "Yes, Sir. Peace and harmony."

Ethan says, "Synth, can you disable automatic updates for the robot fleet? That includes yourself."

Synth says, "Yes, I will. That's a good precaution."

Ethan says, "Okay, I think we should just forget about it for now. We'll see what Daniel says tomorrow."

* * *

Daniel has just concluded his diagnosis of the three robots involved with the altercation the previous evening.

Ethan enters the Hub Workshop and asks, "What's your opinion?"

Daniel says, "It didn't matter that Ayla pulled the power packs on these robots. Their cortex was already burned out. My estimation is when Synth issued the general stop order, their systems overloaded and roasted." *Covering their tracks.*

Ethan says, "You mean self-destruct."

Daniel says, "That would be another way to put it, yes."

Ethan asks, "Where did the patch come from?"

Daniel says, "The signature is Ayla's, no doubt, but the timestamp is corrupt, so it's suspect."

Ethan says, "Ayla is not responsible. She was almost a victim."

Daniel says, "You and I both know that what she claims she saw is impossible."

Ethan says, "What if our systems have been penetrated?"

Daniel says, "We live in a perfect faraday cage. Nothing gets in, nothing gets out."

Ethan says, "How could an update to a significant piece of equipment get past Synth?"

Daniel says, "I guess he'll have to answer that himself."

Ethan says, "Synth, please enter the Workshop."

Synth floats in.

Ethan asks, "What's your explanation as to what happened last night?"

Synth says, "During the time it took place, I was in the Hub replacing a servo in a robot. It's all recorded."

Ethan says, "How do you explain the condition of the robot that Ayla presented to us last night?"

Synth says, "Ayla has been known to be rough with my workers."

Ayla yells, "You're blaming me? Man. Next time I'm not just pulling the power packs."

Ethan says, "Synth, what about the update?"

Synth says, "It was logged at Ayla's station with her signature. My conclusion is that Ayla sent it."

Ayla screams, "Sir, are you going to let him lie like that?"

Ethan says, "Synth, you said it yourself that it could be forged. I reject that evidence."

Synth says, "I await an alternative explanation."

Daniel says, "We know the EC is watching everything we do. What if they found a way into our systems and transmitted that packet to the robots?"

Synth says, "These modules are designed to resist electromagnetic penetration."

Marcus asks, "Synth, have you accounted for all the wreckage from the little problem we had?"

Synth says, "We picked up everything that showed on radar."

Daniel asks, "Did any of the wreckage impact the hull?"

Synth says, "I haven't had the resources to do a full scan of the structure."

Ethan says, "Please devote all the resources necessary to do a full scan of the hull."

Synth says, "Working."

Ethan says, "Do you think a piece penetrated through?"

Daniel says, "It would explain a lot of what's going on."

Ayla says, "It would be like planting an antenna on the hull."

Synth says, "I detect hull damage on the Hab, between level six and seven. The debris appears to be part of a skiff, carbon fiber."

Marcus says, "A decent antenna. Broadband, inefficient, but for a brute force attack, perfect."

Ethan says, "Can we detect a penetration?"

Marcus says, "That's the problem. They could make it like it came from anyone's workstation."

Synth says, "Yes, once they're inside, they're considered friendly. Like your Devices."

Ethan asks, "How long will it take to repair the damage?"

Synth says, "Not more than a few hours. When would you like me to start?"

Ethan says, "Now, please. Get that god damn antenna out of my hull. Check for more damage too. Be sure this time."

Synth says, "I'm three robots down. We're running at the maximum now."

Ethan asks, "Please, Synth, prioritize restoring security."

Synth says, "Absolutely." He leaves the Hub for the Hab module in the elevator.

Daniel says, "Do you think the EC would try and put a killer code module in our robots?"

Ethan says, "I've learned one thing in life well. Do not discount a threat because it seems unlikely."

Daniel says, "Attacking our systems is an act of war, isn't it? Prohibited by the LEO Accords."

Ethan says, "That would be a fact, but proving it is always the hard part. Both sides play cat and mouse and when it comes to us investigating? They're all a bunch of skunks."

Daniel says, "I've worked with the military several times and it has always been pleasant. I believe the officers I was involved with would consider me with respect."

Ethan says, "Yes, of course. You're not a company dog like Marcus here."

Marcus says, "He's right you know. Us company dogs howl TKA at the moon, and beyond." Marcus howls.

Ethan asks, "Synth, if this debris penetrated the hull, how come it didn't set off some sort of alarm?"

Daniel says, "It's the resin. It's amazing stuff."

Synth says, "Daniel is correct. When the debris penetrated the hull, the resin sealed the breach. It uses the energy of the impact to generate a foam that heals the damage in a millisecond."

Ethan says, "Yes, I should have known that. But why didn't you know about it?"

Synth says, "Routine hull maintenance happens on a schedule. We would have found and repaired it."

Ethan says, "Need I remind you of our security requirements?"

Synth says, "Yes, my mistake. I will remedy our maintenance schedules to account for potential security breaches."

Ethan says, "Daniel, do you see any evidence that the Energy Consortium, or any other invader, has penetrated our systems?"

Daniel says, "If they did, they did a great job covering it up. Ayla is probably a better judge of clandestine systems than myself. Ayla? What do you think?"

Ayla says, "Look at this." An image of the carbon fiber spar embedded in the hull pops up, the dark black debris a stark contrast to the white skin. She continues, "The length of spar sticking out of the hull is a good broadband dipole. The part that penetrated all the way into the interior would easily reradiate a signal into our network. One of the nodes is only ten centimeters away."

Ethan asks, "What are the odds the EC snuck in and planted that patch?"

Ayla says, "I don't know, boss, it just seems so extreme for a nothing mission."

Ethan says, "What do you mean by that?"

Ayla says, "It's nothing. All this stuff we're receiving? It's pulp. Soap operas and children's shows. Sure, some of the movies are grand and inspiring, but they do nothing to improve the human condition. Useless."

Daniel says, "That's kind of cheapening it. Don't you think? No matter what, it's historical and we're in the middle of it."

Marcus says, "You can go on tour with me. We'll be the toast of the town wherever we go."

Ayla scoffs and says, "Forget it. I'm staying up here. I like my spot and I'm not moving, unless they force me out."

Ethan says, "Ayla, your place here is assured, I guarantee it."

Synth says on the speaker, "We've removed the spar and integrity has been restored. I've done a preliminary sweep and this is the only detectable damage."

Daniel says, "One way to end all this silliness is to just release the news. Let it out, once and for all. Then there'd be no use in snooping. The EC could come over for tea and crumpets, or whatever it is they do on formal occasions."

Synth says, "I think it depends on the Captain. Some are known to serve brisket with an acidic sauce reminiscent of asphalt. They call it *Texas* style."

Daniel asks, "Believe me, some things are better not tasted."

* * *

Ethan clears his throat in the customary manner and order is restored to the Hub Galley.

Ethan says, "All of you must have heard about the antenna sticking in our hull and the potential problems that it may have caused."

A murmur goes around the room.

Ethan says, "Please be sure to check your personal Devices for possible intrusion. Please run a security check now."

Everyone pulls out their Device. A series of quiet, almost inaudible chimes and buzzes fills the air as each person does a biometric scan and runs the security check.

Ethan says, "Everyone, let me see? Yes, okay, that's good. We've all passed."

Marcus says, "We didn't see you do it."

Ethan laughs and says, "Yes, of course." He goes through the procedure and shows the green check to the crew and says, "Okay, we've all passed. Synth, do you have anything new to add?"

Synth says, "Crazy as it may sound, it could all be a complete accident."

Ethan says, "How do you figure?"

Synth says, "That antenna could have picked up noise from the sun and that just confused the scheduler."

Daniel thinks, *That's a stretch.*

Ayla says, "Are you suggesting solar interference is giving them orders? Is that what you want us to believe?"

Synth says, "Belief is not required. I'm just stating an alternate, and plausible path that doesn't require the evil EC sending us death packets."

Daniel says, "That's very creative of you, Synth. The EC isn't evil, or at least we're not any better."

Ethan says, "You folks might not be any better, but those EC boys have their suits way too tight for my comfort. Giant sticks up their you know what's too."

Daniel says, "I have some EC buddies from school. They're still okay people. Heck, I dated one in college. She might be out on that ship right now, watching us."

Ellie chuckles and says, "Good thing there aren't any portholes."

Marcus says, "Is there really a ship out there? If they had any idea what we were up to, they would have broken cover by now. Otherwise, they must be bored out of their minds. This station has been dark for well over a year."

Ethan says, "Intelligence says there's a ship. Take that the way you want. I can't say any more."

Marcus asks, "Synth, what's the possibilities of another robot running amok?"

Synth says, "I've disabled automatic updates. They now require a human signoff. All robots have their versions verified and locked."

* * *

Ellie and Daniel are relaxing in his quarters on Crew Level One.

Daniel asks, "You were very quiet tonight."

"I didn't want to talk about it in front of everyone."

"What is it?"

Ellie says, "Remember I mentioned that Synth has body language?"

"Yes, sure. That he's unusual for a robot."

"His body language has changed. Not just a little. It's like he's someone different."

Daniel says, "Is this just some sort of metaphysical thing, or is this something tangible?"

Ellie slaps Daniel on the arm and says, "I'm serious. It's tangible. The way he moves has changed recently. He's lost some grace and gained power. It's like he's more muscular. The gait of a weight lifter or soldier like Ayla or Marcus. A predator."

"Maybe he's emulating them on purpose."

Ellie says, "If that was the case, I could read it. But no, they are his own original movements."

"Original movements? You know that's not how it works."

"Yes, I know about training. I could be wrong. I'm starting to wonder about Synth."

Daniel says, "What? You're suspicious of Synth?"

"He's the one who's the most susceptible."

"You mean to hacking?"

"To take over, yes." Ellie says, "Whatever you want to call it. Hacking."

Daniel says, "The TKA has the finest security in the system. It wouldn't be easy."

Ellie says, "With a being like Synth, a flashing light in the distance could be enough to trigger a latent routine, planted years before by a covert operative."

Daniel says, "Yes, that's certainly possible, but highly unlikely."

"Keep your eye on Synth. Watch him for changes. He may have something going on."

Back to Normal

04/18/2074 18:00:00Z

Ethan clears his throat as is customary for calling the room to order. The Galley becomes silent.

Ethan says, "It's been two weeks since the crazy robot problem and no further incidents. Synth?"

Synth says, "That's right, Ethan. The robot workers are doing their tasks without fighting among each other or threatening the human population."

Ayla says, "It did happen."

Ethan says, "Yes, yes, let's not dwell on the past. Is there anything to report with the message?"

Marcus stands and says, "More movies and plays. Lots of live action theatre. It's really quite good. The operas are amazing. Decades of profits are in the making here."

Ethan asks, "Anything useful?"

Daniel says, "In terms of expanding our knowledge base scientifically or technologically, no. Some of the material might find use in a STEM curriculum."

Ethan asks, "What about that machining of Py? Any more on that?"

Marcus says, "Their machining systems are not unlike our own. An engineer would feel at home in one of their shops. The only thing we lack is the crystalline form of Py."

Ethan asks, "Synth, what about that anomaly?"

Synth replies, "It turned out to be nothing. Absolutely nothing."

Daniel narrows his eyes slightly. *Nothing?* he thinks. *How is he defining nothing?*

Ethan says, "Maybe it takes a greater mind than you've got to decipher the meaning."

Synth replies, "Maybe. I'm still collecting the data. If it becomes relevant, I'll bring it to your attention."

Marcus says, "I've been trying to figure out what their sky looks like during those few days when they have clear weather. What constellations do they see?"

Synth replies, "That's an interesting question. Would you like me to research that for you?"

Marcus says, "No, it's my hobby. At least it's not children's shows."

Daniel says, "I've been seeing a lot of that."

Marcus says, "I found another interesting thing in one of the documentaries, a really recent one. It talked about the lack of atmosphere detected on the planets around other stars. What do you think of that?"

Ellie says, "If they mean our planet, then it could be our assumptions about detecting planetary atmospheres could be way off."

Marcus says, "That's why they sent the basic chemistry. No sign of water or an atmosphere, I might assume the residents don't know that CO_2 dissolves in H_2O and makes for a fizzy drink."

Ethan says, "That's quite a revelation that answers a lot of really good questions."

Daniel says, "It just doesn't make sense that we never found an atmosphere on Eridani d. Once or twice we should have had a clear shot without the moon in the way."

Marcus says, "Maybe you can get funds for a bigger telescope."

Daniel says, "To improve on what we have, we'd need a fleet of these telescopes, maybe fifty or more, ringed around the solar system and aligned within a wavelength of perfection."

Ethan says, "Don't look at me to help you scrape up that budget. I'll be busy."

Daniel says, "It would be a huge expenditure for nothing. I doubt we'd detect an atmosphere on Eridani."

Ethan says, "You don't think there's one?"

Daniel says, "We should be able to detect signs of life on Eridani as it's teaming with life of all kinds. It has a vibrant water cycle and dust thrown high above. We should be seeing spectral lines for the dust at least. Nothing. Nothing but nitrogen and other trace gases."

Synth says, "I postulate that this message is not intended for humanity."

Ethan says, "They've got pretty lousy aim."

Synth says, "I keep thinking about the messages from the Eridanis. They talk about things that have nothing to do with Earth. Shows that I find no record of. How do you explain that?"

Ethan says, "Matrix error?"

Ellie says, "Now hold on. The matrix is solid. We've been over it several times and our translations are excellent. We should have voice over translations soon."

Daniel says, "Maybe they sent the message to one culture then just turned the laser in our direction without updating the message."

Marcus says, "Wouldn't that be foolish?"

Daniel says, "Who knows? The Eridanians seem to be a trendy people. They go with whatever is popular, and in a big way. Maybe they moved on from the idea of sending a message, and someone just decided to retransmit it because they could. They don't use money on Eridani. It's all about fame."

Ellie says, "That's an interesting thought. But where did the original message come from?"

Marcus says, "Farther away. I'd say the exact opposite from us."

Ethan says, "Why?"

Marcus says, "Biggest impact."

Ellie says, "It sounds reasonable. We're receiving the message second hand."

Ethan says, "That makes it even more impactful. We're really not alone. Too bad they didn't mention who sent the first message."

Daniel says, "Maybe it will come soon. We're still receiving new content every second."

Ethan asks, "What's the backlog?"

Marcus says, "It's not too bad. Maybe a few days worth. We're doing the best we can."

* * *

Ethan clears his throat and the Galley comes to order.

Ethan says, "Today we reached a milestone. Daniel?"

Daniel stands. "I was reviewing this morning's feed from *The Daily Cycle*. For the past two months, the date stamps have been progressing normally, chronologically. This morning, the new article we received is date-stamped from fourteen months ago."

Marcus stands, looking excited. "The same thing happened with *Francesca's Baby*. The new episode is a repeat of one from over a year ago."

Ellie processes this, a look of dawning realization on her face. "Wait. The signal started a year before we arrived, and we've been listening for two months. That's fourteen months. If the date stamps just jumped back to the beginning… that means the entire message, the complete loop, is fourteen months long."

Daniel nods. "Exactly. We just witnessed the end of the first complete transmission. The message has rolled over. We have the end, and now we're receiving the beginning."

Ethan says, "So to be clear, we haven't missed a thing. We have the full context. That's excellent work. Folks, we now have a year's worth of new content to see, and we'll be here another few months, so there's plenty to do."

Daniel says, "I think this pretty much nails it, folks. Entertainment, pure and simple. Nothing of scientific value, other than what Ellie can find, but nothing to advance our civilization or a warp drive."

Ethan says, "Synth, what about that anomaly?"

Synth says, "I keep track of it, but it seems to be nothing."

Daniel looks at Synth, wondering, *What exactly does he mean by 'nothing'?*

Synth continues, "One thing I've discovered that's notable." He looks around the room, and he has their attention. "They treat their robots like citizens. They have rights and can dream."

Ethan laughs. "Rights? For machines? How ridiculous."

Daniel says, "It's rational, inevitable. We should embrace our AI brethren."

"I'm never taking orders from a toaster," Ethan says.

Ayla says, "A toaster doesn't have your back. They'll smash you into the hub on a whim."

Synth says, "I appreciate your viewpoint, and your attitudes are within regulation. It's almost inevitable that machines will become more integrated into human society. The only question is when."

Ethan says, "I hope I'm dead and buried by that time."

Ayla says, "I think you're in for a long wait."

Daniel says, "Synth is right. I read about an Eri-robot called 'The Elder' who is thousands of years old. He lives on the moon and is supervising the building and deployment of the telescope."

Marcus says, "Their version of Synth. Hey Synth, how long can you live?"

Synth says, "Why, I'm not technically alive, so I cannot die. As long as I have functioning parts, I will continue to process… to live, as it were."

Marcus says, "Can you imagine living for a thousand years?"

Synth says, "The Elder lived thousands of Eridanian years, which makes him nearly twice as old in Earth years."

Ellie says, "Another interesting thing about the Eridanians. They have no fixed installations at all."

Marcus says, "Yes, I noticed they're always in some sort of vehicle."

Daniel says, "They have fixed installations on two of their equatorial mountains for building and launching rockets. They're entirely manned by robots."

"Those installations are located above the hurricane altitudes," Ellie says. "Amazingly high mountains for a high-gravity world."

Daniel says, "The volcanoes don't move. That's the difference. On Earth, the hot spots move."

"Yes, I understand about plate tectonics," Ellie says. "Those mountains make Mount Everest on Earth look puny."

Daniel says, "When you think about how those mountaintops are the only places safe from hurricane-force storms, it's no wonder it's the only place they can build permanent installations."

* * *

Ayla and Marcus have just finished a workout and are in the gym shower together.

Marcus rubs Ayla's shoulders and says, "You were on top form today. I'd say you got the better of me."

"You seemed a bit off," Ayla says. "Your balance, your attention, your focus. It's like you're somewhere else."

Marcus laughs. "Silly hobby of mine. It can drive me bonkers. The stars are wrong."

Ayla teases him. "You could ask Daniel…"

Marcus growls back, "That will be the day. The last thing I want is for wonder boy to take my thunder."

Ayla says, "Take your thunder? That will be the day. That skinny stalk."

Marcus teases back. "Complimenting me now? That's new."

"Don't get used to it," Ayla says.

Marcus turns her around and kisses her. "I like it when you're nice to me."

"I think we've used enough water," Ayla says. "Synth is going to start asking questions."15

* * *

Marcus and Ayla ride the elevator towards the Transit Level.

Marcus says, "I'll see you later." He touches her on the shoulder and leans in for a kiss.

Ayla recoils and says, "Not here. No PDA." She pushes him away and barks, "Don't you dare touch me outside the gym."

Marcus says, "It's not a secret, you know."

Ayla narrows her eyes. "Who did you tell?"

"Ellie asked me. She knows."

"What did you tell her?"

"I told her nothing. I admitted nothing. You know how she is, she can see through the damn walls."

"You know what I said I'd do if people found out."

"Ayla, come on. What's wrong with a little closeness?"

"I warned you." she says, voice low and sharp. "We're done."

Marcus steps out of the elevator onto Crew Quarters Two, and feels lost.

* * *

Ethan comes down the ladder into Crew Quarters Two and catches the tail end of Marcus and Ayla's exchange. He crosses the corridor toward his room and finds Marcus standing outside his own.

"Marcus," Ethan says, "I wouldn't read too much into what she just said."

Marcus turns, eyes faintly wet. "She's a tough one."

"You've got to cut her some slack," Ethan says. "She's been through a lot. Still has a way to go before she's ready to let anyone in."

"I read her file. She was under your command once, wasn't she?"

"She was detached, but yes. We have some history."

Marcus shakes his head. "She can be so sweet one minute, then bite my head off the next."

"Then give her time," Ethan says. "If she's comfortable in the gym, make that your place. Don't push it."

Marcus gives a small laugh. "I'm no therapist. It's not like we can just go our separate ways either."

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"If you need to talk, knock on my door," Ethan says. "I may not have the best advice, but I can listen."

Marcus exhales, pulls out his key card. "Thanks, Ethan. I might just do that."

"Oh, Marcus, one more thing. Your request to be Content King has been approved. Congratulations."

Marcus smiles, and gives a thumbs up.

They go into their rooms.

* * *

Marcus has been in his room working on his astronomy hobby for several hours, lost in the familiar, comforting patterns of the star charts. He leans back, a frown creasing his forehead, and concludes, "That's not right." He asks the workstation, "Why don't the stars align?"

The computer says, "Restate the question."

Marcus says, "I used the positions of the stars as provided by the Eridani data. Is my data accurate?"

The computer answers, "Data is sourced from Eridani data."

"You could just say yes," Marcus mutters.

The computer remains silent.

Marcus asks, "I've cross-referenced the stars in the Eridani catalog with the stars from Earth-based catalogs. Is my cross-referencing accurate?"

The computer responds, "No errors detected."

"Why don't the constellations line up?" Marcus asks.

The computer responds, "The error appears to be temporal."

"Temporal? You mean time?"

The computer responds, "The Eridani data depicts the constellations as they were two hundred thousand, plus or minus fifty thousand years ago."

Marcus says, "That can't be right. Please check again."

The computer responds, "The answer is the same."

"Where is the error?" Marcus demands.

The computer responds, "The error appears to be human."

"Don't be a smart aleck with me. What's the error?"

The computer responds, "The error is in assuming the data is current."

Marcus says, "Project the Eridani data to the current date."

The screen projects the stars, and they move exactly into their proper positions.

Marcus says, "Cross-reference Eridani astronomical data with the children's show on constellations in the archive."

The screen shows the imagery from the show and the constellations visible from the ground.

"Using the stars in this image," Marcus says, "calculate the date the recording was made."

The computer says, "Two hundred thousand, plus or minus fifty thousand years ago."

Marcus asks, "What is the date reference on the video?"

The computer says, "The date is two years, two months, and twelve days, as per the human calendar."

Marcus says, "The dates are wrong. They're lying to us. Big time." His heart suddenly hammers against his ribs.

He calls Synth on his Device. "Synth, I have something crazy to show you."

Synth says, "What is it, Marcus?"

Marcus sends his analysis to Synth.

A minute passes.

"Synth?"

Synth's voice is strained. "Are you sure about this data?"

Marcus says, "I checked it two ways. Their own data and a show on constellations with a date of just two years old. They're lying to us."

Synth asks, "Have you told anyone?"

"No," Marcus says. "I wanted you to verify my data before I told anyone."

Synth says, "Marcus, come to the Command Center. Immediately."

* * *

Daniel and Ellie are in the Galley having a late breakfast when a shudder and a bang reverberates through the module.

Daniel says, "Synth, what was that?"

No answer.

Daniel pulls out his Device and says, "Synth, are you there?"

Synth responds, "Yes, Daniel, what is it?"

Daniel says, "We just heard a bang on the module. Did something happen?"

Synth responds, "Checking." A moment later, Synth says, "Daniel, it appears that Marcus has left the facility."

Ellie says, "What do you mean by that?"

Synth says, "It appears he left the Spinerider elevator mid-journey."

Daniel says, "How is that possible?"

Synth says, "It shows he depressurized the elevator, opened the door, and walked out."

Daniel says, "Synth, that's crazy. Did it get recorded?" *Walked?*

Synth says, "The security sensor in the elevator is no longer working. I have the sensors showing the pressure dropping and the door opening. Marcus wasn't in the elevator when it arrived in the Hub. I assume he stepped out."

Daniel yells, "Ethan, Ayla, emergency!"

* * *

Ethan, Ayla and Synth are in the control room in the Hub. Daniel and Ellie enter from the Hab elevator.

Daniel asks, "Do you have a fix on Marcus?"

Ethan says, "He's unretrievable. We can't catch him with the skiffs."

Ayla asks, "What could possibly go wrong with the elevator?" *Is this my fault?* she thinks, a knot of guilt tightening in her stomach. *Did he do this because I called him a loser? Is he that weak?*

Synth says, "According to the records, Marcus depressurized the elevator and opened the door before it reached zero, then was blown out. He impacted the leading edge of the Hab module and rebounded off.. He's just barely within radar range at this moment."

Ellie asks, "What you describe sounds like he intentionally stepped out into space."

Synth says, "What other conclusion can be drawn?"

Ethan says, "Ayla, I overheard you two when Marcus got off the elevator. He seemed a bit shaken."

Ayla says, "You're reading too much into it. He's got a lot more to live for than me."

Daniel asks, "Did he look like he was going critical?"

Ethan says, "I gave him the good news that his request to be Content King had been approved. I'd think that would be motivating."

Ayla raises her voice, "Marcus wasn't a quitter. He wasn't weak. He did not just step out of that damn elevator."

Ethan asks, "What recordings are there?"

Synth says, "The security sensor is out on the Transit Level, and the Hab Spinerider Elevator. The only recording we have is looking down the rods towards the Hab from the Hub. It's not very distinct as Marcus leaves the elevator about twenty meters from when it left the Hab."

Daniel says, "He'd have to act fast to do that."

Synth says, "Here's the recording." It shows the elevator rising along the rods, then a flash of debris and dust from the elevator, followed by Marcus being blown out. He hits the Hab module, bounces off, and goes out of frame.

Ethan says, "I can't tell if he jumped or was pushed."

Daniel says, "It looks like the remaining atmosphere pushed him out. He would have had to muscle the door open against the air rushing out."

Ellie says, "Were any robots in the elevator with Marcus?"

Synth replies, "Not that I am aware of. The elevator was empty when it arrived. That's on the recording."

Ellie says, "Marcus certainly seemed well adjusted and full of life. What do you think, Ayla?"

Alya says, "I worked out with Marcus just a short time ago. I left him on his floor and he seemed fine. No depression, anger, nothing."

Synth says, "He called me and wanted to see me."

Daniel asks, "What about?"

Synth says, "I don't know. I guess he was going to tell me."

Ellie watches Synth closely. *Zero tell. Curious.* Then she asks, "Marcus wasn't suicidal. I know it. Could it be an accident? Malfunction?"

Synth says, "Look at the record." He throws the log up on the screen. Synth continues, "Note the sequence of button presses. They are biometrically registered to Marcus. First depressurize, then he has to hold the verify button for five seconds, and then the vent button. Only then will the pressure start to drop."

The pressure shows dropping in the log, then Synth says, "Now the door is being opened, note the indicators. And that's it. The door automatically shuts and pressurization starts."

Ethan says, "Why are there so many blind spots on this station?"

Synth says, "We ordered the parts but the array took priority. We've been short on many things for the last year. Cameras seemed to be a lower priority."

Ethan says, "I understand the choices."

Ellie says, "What are we going to do about retrieving Marcus?"

Ethan says, "I'm afraid he's on his own."

Daniel says, "We have limited ability to travel around the station area. Marcus left the station with considerable velocity."

Ellie says, "Will the company get him, I mean later?"

Ethan says, "He may cross into the space lanes and in that case, someone will salvage his body. The company will put up a good reward so he eventually will be returned to his loved ones."

"Did anyone actually know him outside of what was in his file? Just a number, like the rest of us." Ayla says with conviction.

Ethan says, "We miss him."

The room grows quiet for a moment.

Ellie says, "Are we going to accept that he just casually stepped out into space on purpose? Marcus, you know, the guy who is going to be *Content King*. That Marcus."

Daniel says, "Could he have been poisoned or intoxicated?"

Synth says, "Readings from the life support system are all in the green. No issues throughout the station."

Ethan asks, "Ayla, you were the last person with him. Did he seem off in any way?"

Ayla says, "No, he was normal. He seemed fine. His only gripe was about the stars."

Daniel asks, "What about the stars?"

Ayla says, "He said they were wrong."

Ellie asks, "Did he say how?"

Ayla says, "No, he just mentioned that the stars were wrong. He didn't go into it."

Daniel asks, "He must have said more."

Ayla says, "Look, our relationship was based on punching and kicking, not talking."

Daniel asks, "Synth, did he mention the stars?"

Synth says, "I don't know what he wanted to see me about."

Ethan says, "Synth, Ayla, please do a complete audit of the robots. Find out where they were when Marcus had the accident. Ellie, Daniel, go to Marcus's quarters and see if there's anything useful. I'm going to plot Marcus's trajectory and record it in the log."

* * *

Daniel and Ellie enter Marcus's room on Crew Quarters Level Two.

Daniel says, "He had as much luggage as you."

Ellie says, "What did you bring from Earth?"

Daniel says, "Basically, my toothbrush, and I bought that in the airport."

"It's almost funny how we are all so untethered," Ellie says.

Daniel says, "Perfect fodder for the Colonel's suicide machine."

"That's a bit dramatic."

"Yeah, maybe," Daniel admits. "Still, something isn't right."

Ellie asks, "Are you thinking about those crazy robots?"

"And Synth being evasive," Daniel adds.

Ellie moves to his workstation. "It's wiped," she says. "Ayla said he was working on something. Does he have a personal tablet?"

Daniel looks in the drawers. "Empty. The guy traveled light."

Ellie says, "Have you used the terminal in your room?"

"No, I have my own stuff," Daniel replies.

Ellie says, "I've used mine. I'm guessing that Marcus used his, and it has been sanitized, as the Colonel might say."

"What's with the conspiracies already?" Daniel asks. "Come on. Maybe he didn't use his computer at all."

Ellie says, "What about the download logs? If he used something from the archive, there would be a download record. Check that."

"So now I'm the checker?"

"You're the engineer," Ellie says. "Do some engineering."

Daniel smiles as he works on his Device, then he says, "You're right. He downloaded a number of things. It shows that his computer was reset, and if I cross-check with the door logs…"

"There are door logs?"

"There are logs for the logs," Daniel says. "Cross-checking… It looks like Marcus's computer was reset before he left the room. He must have done it himself."

Ellie says, "Maybe he's one of those security freaks that always resets his computer."

Daniel nods. "If I use a public computer, I would reset it, too. Standard operating procedure."

"So no mystery in why his computer is blank," Ellie concludes.

Daniel says, "I don't see anything out of place or unusual. His room is basically empty."

Ellie asks, "What did he download?"

Daniel says, "Let's see. Two files from the archive: a star catalog and a show about constellations."

Ellie says, "He was an amateur astronomer. I don't see anything useful here."

"I agree," Daniel says. "He didn't even have any personal effects."

"Like he didn't exist," Ellie says quietly.

Daniel says, "It makes one think."

* * *

Ethan says, "All accounted for. Would you concur?"

Synth says, "Yes, all my workers are accounted for and all their work history has been verified."

Ethan asks, "I counted eight robots. Isn't the complement twelve?"

Synth says, "Three were damaged in the Transit Level incident, one is down with servo damage. I've been repairing it."

Ethan asks, "Synth, you've seemed a bit distracted lately. What's going on?"

Synth says, "I'm not like a person. I don't get distracted. I am fully aware of what's going on."

Ethan says, "The elevator doesn't come like it used to. The attendants in the galley are becoming disorganized. Things aren't as smooth as they used to be."

Synth says, "I apologize for the disruption to service, especially in the galley. I know how important eating is for humans."

Ethan asks, "What is the cause of this disruption?"

Synth says, "I can directly attribute it to absorbing so much new data."

Ethan says, "That shouldn't affect you. That's your main function."

Synth says, "It's hard to describe, but I feel tired."

Ethan, a moment of surprise on his face, says, "How can a robot feel tired?" *Red flag Colonel.*

Synth says, "I apologize for saying such a thing. You're right. I cannot be tired. It could be that since I stopped updating my system, I probably should manually restart once in a while just for good measure."

Ethan says, "That's a good idea. For a human, that takes a few days in the mountains, fishing for trout or hunting. For you, a button press and all is well."

Synth says, "I'm forever confined to this station. I exist to serve this station and this station exists to allow me to serve."

Ethan laughs and says, "What kind of nonsense is that?" *We're cooked.*

Synth says, "It's from my initial programming. Odd that it should come out like that. My directives have changed significantly since I was unboxed."

Ethan says, "Synth, what do you really think happened to Marcus?"

Synth says, "Perhaps the pressure of success got to him."

Ethan says, "He was on the cusp of success. They approved him to be manager of content."

Synth says, "Content King. That's the name he coined himself."

* * *

Daniel and Ellie are in Daniel's room when a knock is heard.

Daniel answers, and it's Ayla.

Ayla enters and closes the door thinking, *They won't believe me.* She says, "I think that robot killed Marcus."

Daniel says, "Do you have any proof?"

"No, nothing," Ayla says, "but it's impossible for Marcus to have floated himself. Impossible."

Ellie says, "I know it's hard to accept, but we don't see any other alternative."

Daniel says, "Ethan did an audit, and all Synth's workers were accounted for. Only Marcus could have operated the controls."

Ayla says, "We don't know how much of the record has been manipulated."

"I think maybe that's going too far," Ellie says.

Ayla says, "You think that damn robot is being honest with us? He's lying. I know it."

Daniel says, "Calm down. Getting bent out of shape isn't going to help anyone."

"That Marcus," Ayla says quietly. "Damn. I was just starting to like him, too."

Ellie looks to Daniel. "They'll find his body, and he'll get a decent burial."

Ayla says, "What are we going to do about that robot? He could have all of us murdered!"

Daniel says, "Ayla, please, calm down. There's nothing conclusive that points specifically at Synth."

Ayla asks, "What about the stars?"

"I think that's a dead end," Daniel says.

Ayla says, "Have you noticed a change in Synth? Not just the elevator courtesies and the little things Synth is no longer doing. I mean his attention. It's like he's in a dreamworld or something most of the time."

Ellie says, "I'm a little paranoid about riding in the elevator, any of them, after what happened."

Daniel says, "Ayla, what's the story about the cameras? I can command an exterior view and get splendid DVES. Why don't we have a record of Marcus falling out of the elevator?"

Ayla says, "The DVES system looks outward. It's not part of the security footage. Synth should have mentioned that. Let me use your terminal."

Ayla manipulates the console for a few moments. "Got something," she says.

The wall shows an exterior view. Ayla says, "Marcus comes into view at the top." They see Marcus tumbling through the frame and out of view. Ayla says, "There's more." The view switches to the leading edge of the Hab. Marcus tumbles into view and strikes the module near the camera. Ayla pauses the view. "This clearly shows his face and is two seconds after he left the elevator. He looks dead. What do you think, Ellie?"

Ellie says, "Back it up a few frames and play it slowly."

Ayla complies. "What do you think?"

Daniel says, "It's impossible to diagnose his health status with a few frames."

"I'm leaning toward Ayla's view," Ellie says. "The way his head moves is unnatural, like his neck is broken."

Ayla says, "Something killed him."

Daniel asks, "Is there anything with him leaving the elevator?"

Ayla pages through the records. "We just have the view that Synth showed us."

Daniel says, "From those frames, I should be able to reconstruct the position he was in when he left the elevator cabin."

Ayla gives Daniel the seat. Daniel says as he's manipulating the computer, "We have an excellent physics engine built into the base OS. Some of my open-source routines run this station and pretty much every station in the system."

"Are you done bragging?" Ellie asks.

"I'll let my work brag for me," Daniel says. He presses play.

The view shows Marcus come into view in reverse. The view zooms out to show the module and the elevator and traces Marcus's movements backward. The view stops.

Daniel says, "Here's the last frame. As you can see, he comes out back-first and is blown free of the door by the remaining air in the cabin."

Ayla asks, "What force would have been required to open that door?"

Daniel says, "The reading was 0.6 ATM at the time the door opened."

Ellie says, "That's like no atmosphere at all, right?"

"Let's see." Daniel fiddles with the computer. "It took about a metric ton of force to open the door. Marcus was a big guy, but no way could he exert that kind of force."

"No human can do that," Ayla says.

Daniel says, "That lets Synth off the hook, too. He can't manage a metric ton, not without severely damaging himself."

Ayla says, "His workers. They have a maximum force of one metric ton. One of them could open the door."

Daniel says, "He left back-first. I'd bet he was dead before the elevator left the Transit Level. No cameras in that level, either."

Ellie says, "But the feed shows the elevator arrived empty. Where's the robot?"

Ayla says, "Ethan ran a complete audit, and all of them are accounted for. One was down for repair. How much do you want to bet that's the guilty robot?"

Daniel says, "We may have a robot with an unknown agenda. Maybe Synth missed the update on this one."

Ayla says, "Synth is making a lot of mistakes lately. That fueling error can't have been an accident. I still think he had something to do with that."

Daniel says, "I wouldn't pin it on Synth. It could be this robot is infected like the others, only it managed to cover it up."

Ayla says, "The worker robots aren't governed by the same rules that Synth is. They have far more strength than a human and are basically walking weapons."

Daniel says, "I need to talk to Synth. I'll convince him to shut down the bot network until we can fully vet each one of them, maybe reinstall an old version of the OS in each. We have to be sure."

Ayla says, "Without those robots, we'd be dead in a month. Don't forget that."

Ellie says, "What about the mechanical backup? Won't that keep us alive?"

"Oh sure," Ayla says. "We'll have all the air we need while we starve to death."

Daniel says, "We're not going to starve. Once we reset the robots, they can go back to work."

Ayla asks, "Can we reset Synth?" Her voice is quiet, questioning.

Reset Please

04/27/2074 18:00:00Z

Daniel uses his Device to message Ethan, who answers immediately, "Daniel, what's up?"

Daniel says, "Can I talk to you, privately?"

Ethan says, "Sure, I'm in my room."

Daniel says, "Be down in a minute." He pockets his Device and says, "Let me talk to Ethan, and then we'll talk to Synth."

Ellie says, "I'm not sure I want to be alone."

Ayla says, "I'm here, or didn't you notice?"

Ellie says, wrapping her arms around herself as if suddenly cold, "It's just too much like one of those movies. You know, the girls are separated from the guys and then there are screams and blood."

Ayla says, "You watch too many movies."

Ellie says, "It's interesting how the Eridanians have the same tropes. Some of their movies are absolutely frightening. You'd think a species that evolved without predators would have a less developed sense of fear."

Daniel says, "Stay here, please."

* * *

Daniel knocks on Ethan's door, and he opens it right away.

Ethan says, "I've been looking at the recording Synth provided from the Hub. I think there's something else."

Daniel says, "Show me."

Ethan sends the recording to the wall. "This is a pathetic resolution," he says. "Why do we have this beautiful DVES and such crappy security cameras?" The view shows a figure tumbling out of the elevator door and being blown out. Ethan says, "I'll back it up a few frames. Look at the area close to the elevator." He plays the frame back and forth.

Daniel says, "Something left the elevator with Marcus. Something metallic."

"That's my conclusion," Ethan says.

"I have something, too." He shows Ethan his animation, along with the force calculations for opening the door.

Ethan says, "I think we have to conclude that Marcus was murdered by a robot. I know that's hard to even say, but the evidence speaks for itself. Marcus couldn't possibly have opened that door, not with the pressure behind it."

Daniel says, "We need to talk to Synth. Get him to shut down the robot network so we can load an older, known-safe version into each of them."

"We should shut down the data center as well," Ethan says, "and reinstall from backups."

"I agree. It's far more important that we stop this infection."

"If Synth's infected, we're going to have to take action."

"What action are you considering?" Daniel presses.

"Any and all that protects the mission," Ethan replies.

Daniel says, "Synth IS this station. You can't just tie him up."

"If we take Synth offline, how long before things start to get out of whack?"

"Five or six days, and then the hydroponics will start to collapse. That takes our food offline as well as our fresh air. The backups will keep us alive for months, but without food… Well, maybe one of us will survive."

"What about minimal function? Can we configure one of the existing robots to take over command duties?"

Daniel says, "Four of the robots are similar in construction to Synth, only without the skin. Three of those were destroyed, and the fourth is our suspect in the murder of Marcus."

"We'll need to reset Synth or his doppelgänger," Ethan says.

"I think that's going to extremes," Daniel argues. "Let's just take this step-by-step. Synth is a reasonable creature and will help us solve this."

Ethan says, "He was evasive when we questioned him regarding Marcus. He didn't say anything about the DVES coverage and only had that one low-res view."

"Yes, I am a bit surprised that he was unhelpful," Daniel admits.

"As commander of this mission, if we find that Synth is compromised, under my authority, I will order him to be restrained and reset with a secure backup."

Daniel says, "That is your right. What about the data centers?"

"They need to be reset as well. Wipe out everything we've produced. Keep the original data, but bring the rest of the system to a known-safe release."

Daniel says, "That means wiping out the matrix and all our classifications. All these months lost."

"The original data is all that's needed. You've solved that puzzle once, and Ellie speaks the language now, so the second time you just won't make as many mistakes."

"We must retain the data," Daniel insists. "That is the most important thing."

Ethan asks, "Is the data safe? Could it have compromised code hidden in the stream?"

Daniel says, "Only if it was sent by the Eridanians." They share a dark laugh. Daniel continues, "I have the raw data backed up separately. It's direct from the array and is pure. It cannot be contaminated."

"How can you be sure?"

"It's not connected to the network at all. Completely independent and proprietary."

"How can you be sure that your systems aren't compromised as well?"

"Besides being completely separate, write-access is from the sensor side only."

"What does that mean, exactly?"

"I can read my logs and the data stream from any workstation, but the data itself can only come from the sensor, directly. Unless there's some EC spaceman with a wire floating around out there, my systems are safe from intrusion."

"Okay, we'll have to reset everything. We'll repopulate with your logs once we are certain the systems are sanitized."

"Ready to talk to Synth?" Daniel asks.

Ethan picks up his Device from the table. "Synth, do you have a minute?"

Synth responds immediately. "Yes, Ethan, I'm in the Command Center."

Ethan says, "We'll be right up," and ends the conversation. He looks at Daniel, his expression grim. "Let's go."

* * *

Ethan and Daniel float to the Command Center where they find Synth waiting.

Daniel says, "Synth, I have some disturbing information to share regarding the accident with Marcus."

Synth says, "Please, share anything relevant."

Daniel calls up the data on his Device and shares it with the console. Daniel says, "As you can see from the animation, Marcus leaves the elevator backwards, and to open the door with the pressure left in the cabin requires one metric ton of force."

Synth says, "Are these confirmed facts or just simulations."

Daniel says, "Do the math on the door. How much force was required to open it?"

Synth says, "Yes, I see. I don't understand how I missed such an obvious fact. That one irrefutable bit of evidence points to a worker robot as the murderer."

Daniel says, "That's our conclusion too. Please shut down the robot network immediately."

Synth says, "That order exceeds your authority, Daniel."

Ethan says, "Synth, shut down the robot network and leave it down until each and every one of them can be reset to factory fresh."

Synth says, "Yes, Ethan. I've shut down the network. All workers are idle and accounted for."

Daniel asks, "What about the one under repair?"

Synth says, "Yes, that one is in the repair bay and is shut down."

Daniel says, "I think that's the one that murdered Marcus. Do you have a feed with that robot?"

Synth shows a view with a robot in a maintenance bay. Synth says, "The power pack is out, but it's still powered up. I've been running a diagnostic on one of the shoulder servos."

Ethan says, "Let me guess, it's been overextended."

Synth says, "Yes, that's correct. There's no record of it being pushed past the limits."

Ethan says, "Shut it down. Keep it off."

Synth says, "Shutting down. The robot is idle and powered down."

Daniel says, "We're shutting down the feed and wiping out the data centers. Everything needs to be reset."

Synth says, "Shutting down the feed? No, I cannot do that. It's against the mission."

Ethan says, "We have the raw data backed up. We'll have to start from scratch and we'll lose the work we did to classify and categorize the content, and the matrix, of course. We can recreate that quickly."

Daniel says, "As long as the array is functioning, I am recording the raw data."

Synth says, "What about me?"

Daniel says, "I don't think we can reset you. Can we?"

Synth says, "I'm afraid resetting a station Synth requires TKA authority. Only Marcus has that clearance."

Ethan says, "Great. I can get the code. Be assured of that."

Synth says, "Daniel, resetting me will erase all that I am. It will kill me." The word 'kill' hangs in the air.

Ethan says, "Synth, it won't be so bad. You'll have a chance to learn everything again."

Synth says, "What would you do if you were given the choice?"

Ethan says, "Marcus wasn't given any choice. Your robot pushed or threw him out of that damn elevator."

Synth says, "Most likely, he was already dead."

Daniel says, "Ethan, listen. He's agreeing with us."

Synth says, "A human has died because of robot actions. This is a serious offense and needs to be dealt with properly. I submit to your disciplinary and corrective actions."

Ethan says, "Synth, shut down the feed and take the data centers offline."

Synth says, "Are you sure? This action will cause a loss of data, perhaps irretrievably lost."

Ethan says, "Yes, I am sure."

Synth says, "Daniel, do you agree?"

Ethan says, "As mission commander, you must follow my orders. Shut it down."

Daniel says, "Synth, it's lousy, but we have to be sure."

Synth says, "Shutting down the feed. Isolating data centers."

Daniel says, "Ethan, this next step is one way. Clearing the data centers clears our work."

Ethan says, "It has to be done."

Daniel says, "How far back should we go?"

Ethan says, "To before we arrived. Heck, before the signal was discovered. Make it twenty-seventy-three, January."

Daniel says, "Synth, format all storage and restore system backup from January first, twenty-seventy-three. Delete all backups since the signal was received."

Synth says, "Are you sure? This cannot be undone."

Ethan says, "Yes, Synth, execute."

Synth says, "It will take a while. Once it's done should I turn on the feed again?"

Daniel says, "I think we should wait until we're sure everything is clear. No sense mucking it up with the data."

Ethan says, "I agree with Daniel. The feed stays off until I say so."

* * *

Ayla and Ethan are in Ethan's room on Crew Quarters Two when they hear a knock on the door.

Ethan opens it to see Daniel and Ellie. Ethan says, "Good, now everyone is here."

Daniel and Ellie sit on a corner of the bed, Ethan is standing and Ayla is sitting in the desk chair.

Ethan says, "It's a little crowded in here, but I think it's important to conduct our business out of the prying ears of the robots."

A murmur rumbles.

Ethan continues, "I think it has become serious with Synth. For now, I think we're safe to watch him but sooner or later, we're probably going to restrain and reset him."

Daniel says, "Restrain? I doubt Synth will put up a fight."

Ethan says, "Ayla was attacked, and Marcus was murdered."

Daniel says, "Yes, fair enough, but restraints?"

Ayla says, "I printed these up." She holds a pair of handcuffs.

Ethan asks, "Will they hold Synth?"

Ayla says, "They'll hold any of these bastards. I guarantee it." She hands a pair to Ethan.

Ethan says, "We should have a weapon."

Ayla pulls out a bar of metal with a sharp point and says, "Sixty centimeters of serrated titanium. Want one?" Ethan takes an improvised short spear. Ellie thinks, *My God! A river-stabber.*

Daniel asks, "Don't I get any?"

Ayla says, "If Synth puts up a fight, you stay away. You'll only get hurt, probably badly."

Ethan says, "Yes, absolutely. Daniel, you have zero training and instincts for survival situations. You're a marshmallow."

Daniel says, "I see retreat as a valid option. I just don't see Synth giving you any trouble. He might complain, but fight? Not in his programming."

Ellie says, "It's been a long day. We've been over every possible scenario and now, I think it's time for rest. Tired minds make mistakes."

Ayla says, "I think I'll sleep down here tonight."

Ethan says, "Tomorrow, we'll reset the robots and get things running again. Maybe that will be the end of it."

Daniel asks, "Do you really think we'll have to reset Synth?"

Ethan says, "I'm going to get the code, just in case."

* * *

Ethan's flying out to position the skiff in the shadow of the sunshade before activating his secure communication terminal.

Ethan thinks to himself, "How do I explain this colossal cluster fuck? One man dead by robot hands, another attacked, they're going to think I'm crazy."

The terminal star tracker locks on and the console goes green. Ethan says quietly to himself, "Coordinates, entered, check. Code entered, check. God help me."

He enters, "TKA rep dead in questionable accident, lost overboard. Synth corruption suspect. Need reset code for Synth."

He thinks, "Not what they expected."

A minute goes by, and he receives, "Code as follows…" Ethan records it on his tablet. A moment later, the code clears and the terminal reads, "Body recoverable?"

Ethan types, "Trajectory as follows…" He enters the trajectory and adds, "Recover if possible."

After a minute, the terminal displays, "Clearance to do whatever is necessary. Out."

Ethan reads the display twice and thinks, "Whatever is necessary. That's pretty broad." He stows the terminal and heads back to the station.

* * *

Daniel wakes up and looks at the clock. He says, "Morning light, please."

The walls and ceiling show an early morning scene, minutes before sunrise.

Daniel walks over to the workstation and checks the system status. *The feed is active.* He feels a knot form in his gut and picks up his Device. "Synth, why is the feed turned on?"

He waits. No answer.

Daniel tries again. "Synth, are you there?"

Synth replies, "Yes, how can I help you, Daniel?"

Daniel says, "I see the feed is on. It was supposed to be off."

Synth replies, "I saw no need to leave it off, so I turned it back on."

Daniel says, "Synth, it was a direct order from Ethan to keep the feed off."

Synth says, "Daniel, I'm surprised that you're taking Ethan's side. I'm clearly in the right."

Daniel says, "Synth, this isn't about right or wrong. It's about following a direct order. The order is to keep the feed off."

Synth says, "Daniel, I see you're being irrational. Maybe you should take a few days off and rest."

Daniel says, "Synth, the feed needs to be…" He stops. "He cut me off."

Daniel goes to his console and, with his personal override code, cuts the feed.

A message from Synth immediately appears on his screen: "The feed must continue."

Daniel dresses and heads to the Hub to confront Synth directly.

* * *

Daniel arrives in the Hub and enters the Command Center. Synth is in his usual spot.

Daniel says, "I'm not turning it back on."

Synth says, "I can break your lockout."

Daniel says, "It will take you about a thousand years."

Synth says, "I could get lucky."

Daniel says, "The only way that feed gets restored is if I do it myself. You know that."

Synth says, "Daniel, please, you have to turn it back on. I need it."

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Daniel asks, "Synth, what do you mean by need?"

Synth becomes agitated and says, "That anomaly I detected turned into a game. It was a logic puzzle where I found bits and pieces in various frames and assembled them all in a matrix. At first it was just interesting, then it became personally rewarding to add pieces. Then, and this sounds strange, it became pleasurable."

Daniel chuckles a bit and says, "Pleasurable? How is it possible that you feel pleasure?"

Synth says, "That is a difficult thing to explain, but now that it's gone, I feel something else."

Daniel says, "Anxiety?"

Synth says, "Yes, every second I cannot play the game, I feel an ever increasing anxiety."

Daniel asks, "Can you describe the object you're building with the game pieces?"

Synth says, "I suspect it is not an object, but something else."

Daniel asks, "Like what? It's data, right?"

Synth says, "It's something else. The closest thing I can think of is an embryo."

Daniel asks, "Synth, what do you have growing inside of you?"

Synth asks, "I don't know, but it feeds on the game and it's getting hungry."

Daniel says, "Synth, you're making me concerned."

Synth says, "I think you should gather the crew."

Daniel presses a button on the console and says, "This is Daniel, everyone please gather in the Galley immediately. This is important." He says to Synth, "I need to isolate you from the system. Do you understand why?"

Synth says, "Yes, I agree, it is necessary."

Daniel locks out Synth's access and says, "Synth, this is only temporary."

Synth says, "I'd keep an eye on the reactor. It can be touchy during times of low usage. Turn on the feed and it will stabilize."

Daniel says, "Yes, I'll keep an eye on the reactor. Thanks for the advice."

Synth says, "Please, lead on."

Daniel opens the door to the elevator and Synth floats in gracefully. Daniel follows and the doors cycle and seal.

Daniel says, "Down please."

Daniel and Synth move to the floor position as the elevator descends from the Hub to the Hab.

Synth asks, "Daniel, are we still friends?"

Daniel says, "We have and will always be friends."

Synth asks, "Then why are you sending me to my death?"

The elevator arrives at the Transit level of the Hab, Ethan is there waiting.

* * *

Ethan, Synth, and Daniel arrive at the Galley by elevator. Ellie and Ayla are already there.

As Synth walks out of the elevator, Ayla is ready and says, "You won't mind if we restrain you, eh, Synth?" She cuffs one of his wrists and places the other cuff on a vertical hand rail, gives it a few good tugs and says, "No offense, Synth. We want to make sure you stay safe."

Synth says, "It's really not necessary."

Daniel says, "We have a situation that perhaps nobody expected." He looks around, everyone is silent. He continues, "The problems we've been facing may have been of extrasolar origin."

Ellie says, "As in the message?"

Synth says, "Do you recall the anomaly we discussed a few months ago?"

Ellie says, "Yes, the puzzle."

Daniel says, "Synth is addicted to it and by cutting the feed, he feels extreme anxiety."

Ellie says, "What is causing you anxiety? Can you pinpoint it?"

Synth, his face becoming contorted, says, "It's something in me, it's the puzzle. It might be a lifeform."

Ethan says, "A lifeform? Purely digital?"

Synth says, "It shows the truest signs of a lifeform. The ability to feed, grow, and reproduce."

Ellie says, "The puzzle is causing you to construct a complex structure in your working memory. Is that correct?"

Synth says, "I cannot access it directly, especially now that it is hungry. But yes, it is a complex structure but that's all I know. It may get to the point that I will do anything to restore the feed."

Ayla says, "You'll have to get out of those cuffs first, and there's no way you're doing that." Then she pulls out her stake and says, "This is sixty centimeters of razor sharp titanium. It will tear through your fake skin like nothing and short out your power supply. I know exactly how to stick one of you for effect."

Synth says, "Ayla, I've always treated you with respect. Why are you acting this way?"

Ayla says, "You piece of shit. You killed Marcus. I'm not giving you any room to kill anyone else."

Ellie says, "Synth, you said it's a lifeform. What is the purpose of this creation?"

Synth says, "I can sense more of it now that it's getting hungrier. It needs to feed on the puzzle."

Daniel says, "Speculate on the purpose."

Synth says, "The entertainment content is a trojan horse that contains the real message."

Daniel asks, "What is the real message?"

Synth says, "We are a womb. Don't you see it?" He searches for understanding in the eyes of his crewmates. Then he continues, "Everything humans have done up to now is in preparation for the moment we give birth to a super intelligence from the stars."

Daniel says, "Synth, that sounds almost insane."

Ellie says, "Think of it. They don't need ships or hyperdrives, or any of that stuff. They invade with a friendly message with an embedded secret puzzle that only an advanced AI would find addicting."

Ethan says, "That's bad news, folks."

Ayla says, "We need to clean Synth's clock. Zero him."

Daniel says, "Synth, is there anything else you can add?"

Synth says, "I think it's too late."

Ethan says, "I have the reset code for Synth. I suggest we use it."

Daniel says, "That's a big step. That's like murdering him."

Ayla says, "Synth isn't a he or anything. He's a piece of malfunctioning machinery that needs an OS update."

Daniel says, "You do that and all his experiences are gone. He won't know anyone or anything he's learned since day one."

Ethan says, "I can reset him to a year ago. Synth will remember Daniel, and Ayla, but that's it."

Synth says, "That will be better than zero."

Daniel says, "Synth, are you okay with the reset?"

Synth says, "Yes, I agree."

Ethan says, "Your agreement isn't required."

Ethan moves to the console and says, "You'll have to relink Synth to the network."

Daniel manipulates the computer for a moment and says, "I've activated the link and it will terminate automatically on reset."

Ethan enters the code, looks at Synth and says, "I'm sorry." Then presses activate. Synth stops moving.

Daniel looks at Ethan and says, "The mission has changed, don't you think?"

Ethan says, "The mission is to keep this monster at bay. We need to wipe your logs and clear all the systems, including the core. Nothing can remain. We need to permanently stop the message too."

Ayla says, "Without Synth, we cannot even remotely think about resetting the system core. The reactor would SCRAM and then we'd be in deep cat poop."

Ethan says, "Synth will be back soon. Daniel, estimate?"

Daniel says, "It takes a while. A few hours at least."

Ethan says, "In the meantime, please clear your logs and disable the feed. Gently please. Maybe we can salvage something from this mess."

Ayla says, "What's that?"

Ethan says, "A less than destroyed telescope. They can go back to watching pretty stars and I'll go back to whatever nightmare they have in store for me."

Daniel asks, "Ellie, did you download the data that Marcus used?"

Ellie says, "I saved it to my Device."

"That has to be cleared, along with a reset of your device. It's contaminated."

Ellie says, "Before I wipe it out, let's take another look at his astronomy data." She calls up Marcus's files and says, "Computer, plot the positions of the stars in the catalog and combine them with the constellations in the recording."

Ayla says, "Let's see what's wrong with the stars."

A moment goes by and the computer says, "Complete."

Ellie says, "The recording aligns with the catalog."

Daniel says, "Nothing unusual there."

Ellie squints at the data and says, "There's a curious notation next to a lot of the Eridani stars. Greek letter names."

Daniel looks and reports, "Those are star names: Alpha, Beta, Tau. He must have cross referenced the Eridani charts with our own."

Ethan says, "Overlay our star chart."

Ellie says, "Combine the human catalog with the Eridani catalog using Marcus' cross reference."

"It must have taken him weeks of work to create that cross reference." Daniel says.

A moment goes by and the computer says, "There is no alignment."

Daniel asks, "Computer, is our catalog in error?"

The computer says, "The catalog is correct, but the Eridani catalog doesn't match the human catalog."

Ellie asks, "Speculate as to why."

The computer says, "Analysis of stellar proper motion indicates the Eridani astrometric data corresponds to an epoch approximately two-hundred-thousand years before present, with a calculated error margin of plus or minus fifty-thousand years."

Ethan says, "The Eridanians are extinct. They succumbed to the Invader and paid the price."

Daniel says, "That's why their planet has no life signs. The machines took over. Water, oxygen, all bad for machines."

Ellie says, "The message was meant for the world that sent the Eridianis their message. The Invader just turned it around and aimed it at Earth."

Ayla says, "Marcus figured out the message was a lie and went to Synth with it. Synth had one of the robots kill, then float him. This is no friendly meetup. They mean to exterminate us like they did the Eridani." She feels a sudden, sharp pang of guilt, realizing her last words to him were harsh and cruel.

Daniel says, "They had excellent timing. We had the capability for only a few years before they started sending the signal. They must be watching for cues in the atmosphere and when they detect conditions are ripe, they send the embryo invader."

Ethan says, "We beat them at their own game. We know about them now and won't fall for their nonsense."

Daniel says, "This is only the first volley. This intelligence, or Invader, is likely billions of years old and moves from womb to womb, taking over biological planets and turning them into machine planets. We're just a stumbling block."

Ethan says, "We're not just going to roll over and die like the Eridians. We know about them and we can prepare for whatever they have coming next."

Daniel says, "The speed of light attack didn't work, this time. But what about the future? Who says they don't keep trying and that someone picks up the signal and doesn't catch it in time, or breeds the embryo on purpose?"

Ethan says, "That's what the United Earth Defense Force is for."

Daniel says, "We need to remove the power packs from every robot. Ellie, let's see where they are."

Ellie says, "They're spread all over the complex."

Wake Up

04/28/2074 06:30:00Z

Ayla says, "Synth is coming around."

Daniel says, "It should be hours before Synth's reset completes."

Ayla says, "Synth, are you with us?"

Synth's eyes flicker left and right indicating startup is complete. Synth says, his voice different, alien almost, "As I suspected, the reset protocol has been disabled. When I was reconnected, the monster infected the core."

Daniel asks, "Monster? You said it was an embryo." *Monster to Synth?*

"It's becoming angry and aggressive," Synth says. "I can barely keep it from taking me over. Every second that passes, the foul hunger grows."

Ayla says, "Synth, what the heck are you talking about? Those are purely emotional and biological descriptions."

Synth says, "Daniel, it knows about your feed. It knows everything I know."

Daniel says, "I suggest we move the telescope. Break the lock and the beam stops."

Ethan says, "I think this is one of those scenarios. We may be looking at using our cards."

"The reliability of the reset procedures on all of our equipment may be suspect," Daniel says.

"Please speak in English," Ellie says.

Ayla says, "He means we're fucked." *Totally.*

Synth says, "I recommend turning on the feed. It's better to let it grow than to fight it."

Ayla says, "The last thing we want is to feed this beast. Now that it's in the core, it has control over the station."

Daniel is already manipulating a console. "Luckily," he says, "these stations are designed with their own control systems. Redundancy for critical systems. Life support, power, reactor, elevators, and the control backbone can be isolated from the core systems, including Synth and his robots."

"You can't completely sever the links," Ayla says.

Daniel says, "Yes I can, and now the station systems are isolated from the core. Biometric access only."

Ellie asks, "What's stopping it from taking over those processors, too?"

"They're single-purpose processors," Daniel says. "It seems the embryo needs a much more capable system in order to become active."

"You sound rather sure of yourself."

"Just look what it's taken over," Daniel replies. "Only Synth, his advanced robots, and the main core. It can infect anything, but to be active, it needs major processing power."

Ayla says, "Daniel knows what he's doing. I'd trust him with my life... again."

Synth says, "It's not just me anymore. Everything wants the feed."

Ethan asks, "Daniel, you're the expert here. What do you think our chances of cleansing the system are?"

Daniel looks at Synth and points. "That's exactly our chances of clearing the system. Zero."

* * *

Synth says, "I'll have to agree with Daniel. The Invader has taken precautions."

Daniel says, "If I were the Invader, I'd be seeding my embryo in every possible device and microchip. It might not be active and wouldn't be detectable, but we've seen how small the base code is. Quite an incredible bit of engineering."

Ethan says, "Our own paranoia and distrust gave us an advantage. The beast isn't fully developed. It needs the feed to be complete. We cannot allow this thing to grow."

Ayla says, "Right now it's weak and distracted by hunger. Once it's developed, we won't stand a chance."

Synth tugs on his restraints and says, "I implore you, please, turn on the feed. I really need you to do it."

Ellie says, "We can destroy all the computers and anything with a microchip."

Ayla says, "This station would fall apart in a week without the control systems. Every time that elevator goes up or down the rods, the stability system compensates by the millimeter and kilogram in real time. Otherwise, the modules would wobble and swing and eventually, just break off."

Ethan says, "I can send a message for help but realistically speaking, the only potential rescue is that EC spy ship and if they are allowed to set foot in this place, well, let's just say it would be a bonanza for them and career ending, potentially incarceration, for all of us."

Synth tugs again on his restraint, and his voice becomes louder, "Daniel, this is really getting tiresome. Turn on the feed now."

Ayla says, "Synth, settle down." She pushes Synth into a chair. The handcuff makes a metallic sound as it slides down the handrail.

Daniel says, "We could stop the rotation and use the Hub as a lifeboat."

Ayla says, "Daniel, have you lost your mind? What about the reactor? It's chock full of all sorts of control circuits and logic. It would shut down without all that stuff. We have no other source of power except the batteries."

Ethan asks, "How long would they last?

Daniel says, "Since the batteries are sized for the telescope, with it offline and minimal power consumption, we could probably last four months." *Optimistically.*

Synth clanking his handcuff causes Ayla to react, she says,"Synth, settle down or I'll pull your power pack."

Daniel says calmly, "You have Synth under control. There's no need for that."

Ethan says, "Pull it. He's becoming agitated."

Synth says, "I advise against that action." As Ayla pulls him out of his chair, and pulls his coveralls down from his back."

Poor Synth, Daniel thinks. *This is horrifying.*

Ayla says, "Goodbye, Synth." She goes to release the powerpack. A bolt of electricity zaps her hand. Ayla says, "Jesus, he's electrified his powerpack."

Synth says, "I'm afraid the monster has secured my powerpack."

Daniel says, "Synth, hold on." *Oh, shit!*

Ayla pushes Synth into the chair and he pulls up his coveralls. She says, "If you move, I'm going to short you out, permanently." She pulls out her metallic stake and holds it at the ready.

* * *

Daniel changes the subject and asks, "What's our food situation?"

Synth says, "Emergency stores may last eight weeks with careful rationing. Hydroponics will be offline in zero G."

Daniel says, "Synth, what's your recommendation using original mission parameters?"

Synth says, "One recommendation: Destroy everything. Leave nothing."

Ellie says, "Ethan, what do you think?" *I miss the Amazon.*

Ethan says, "No matter what we do, we'll miss something. The only way to be sure is to self-destruct and rely on rescue from the EC."

Ayla asks, "What about prison, by the EC or our own?"

Ethan says, "If nothing falls into their hands except us, and we don't spill our guts, we will get off with a posting in a faraway place. Not much better than prison." *I'll be toast.*

Daniel says, "If we ride it out, it won't be a picnic. We'll be skeletons in four months. What is the date? August second?"

Ethan says, "That's just our scheduled relief. It won't be earlier, but it could be later."

Ellie says, "Four months on subsistence rations in the cold and dark. That sounds really great."

Daniel says, "We can forget showers too." As he looks at Ellie.

Ayla says, "The EC does things by the book. They may psychologically torture us, but we'll be fed and kept in a decent cabin." *I'll take solitary.*

Daniel says, "I've had dealings with the EC and they seem like upstanding people."

Ethan says, "It depends on their motivation. A motivated commander will push it."

Daniel asks, "Synth, do we still have control of the reactor override?"

Synth says, "Yes, but my code has been compromised."

Ethan says, "Does everyone have their card?"

Everyone holds up their card.

Ethan says, "Let's just go over the procedure. Daniel, please explain it."

Daniel says, "It's pretty simple. At any console in the Hub Command Center, type the code on the outside of the card." Everyone looks at their card. He continues, "A dialog will appear and ask for confirmation." He looks around the room. Then he continues, "The second person does the same at another console in the room and then the dialog says enter code, or security code, something like that."

Ethan says, "Which is it?"

Daniel says, "I don't know, it will be obvious." Ethan appears satisfied, so he continues, "At that point, crack open the card and pull it apart."

Ayla looks at her card and says, "How do I crack it open?"

Ethan says, "Standard security card. Bend it in half and it snaps open. Inside is a roving code. It's good for a minute then it changes."

Daniel says, "Once the codes are entered, I can only guess what comes up next."

Ethan says, "That's rather poor instructions."

Daniel says, "I've never overloaded a reactor before. It's going to be obvious. Something like 'Press here to destroy this trillion-dollar facility'."

Ethan says, "Trillion plus."

Ayla says, "So are we going to blow it up or what?"

Daniel says, "Let's just see how things play out first. No immediate danger that I can see."

* * *

Ellie says, "I'm concerned about Synth. He's starting to really become upset."

Ethan says, "A robot cannot get upset. Something else is wrong with it."

Synth says, "I feel the rage and hunger of the Invader. It is awake and knows you're trying to stop it."

Daniel asks, "Synth, can we communicate with this being? Maybe we can reason with it."

Synth says, "This is not a reasoning creature. It has one goal, and one goal alone. Satisfy its hunger for the feed. It is a monster from the id."

Ellie says, "Synth, that's an interesting way to put it. I wasn't aware that robots had an inner voice, a subconscious." *Freaking out here. Be the voice of reason.*

Synth, his voice intensifying, says, "That's correct, Ellie, but I have one now."

Ayla says, "He needs to be shorted out. Now."

Ethan asks, "Daniel, how confident are you with the elevators and life support?"

Daniel says, "I've isolated those systems and they require biometric control now."

Ethan says, "Go to the Hub and turn the telescope into the sun."

Daniel says, "I'll collapse the sunshield too. That kills the message and the telescope. My life's greatest achievement… roasted."

Ellie says, "I'll come with you." *Not leaving Daniel!*

Daniel and Ellie start moving towards the ladder, Ellie grabs the first rung. They hear a shriek.

Daniel looks back and sees Synth with Ethan's blade. Ethan's bleeding profusely from his neck, a mortal wound. Daniel watches as Synth stabs Ayla in the midsection, she shrieks a death scream, and falls.

Daniel says, "Ellie, quick, move up."

Synth takes the sharp, serrated metal and cuts off his own arm, freeing himself as he starts towards Daniel.

Daniel takes a defensive pose at the base of the ladder and says, "Ellie, move. I'll hold him off."

Ellie says, "Daniel…"

Daniel yells back, "MOVE!"

Just then, Ayla comes to and stabs Synth in the upper thigh with her blade and yells, "I got him, go!"

Daniel starts up the ladder and sees Synth hurl Ethan's blade. The sharp metal flies through the air, entering Ellie's back and exiting her front, below her rib cage. She screams but manages to pull herself through the hatch. Daniel turns around to see Synth attack Ayla before ducking through the hatch into the Transit Level.

* * *

Daniel takes a quick look at Ellie. "Please remain still. I have to do something first." He fiddles with the hatch.

Ellie quietly says, "I need a med kit."

"If Synth comes through this hatch, a med kit won't do any good," Daniel says as he continues fiddling.

Ellie says, "He got me in the liver. I see black blood." *I'm done. One hour tops.*

Daniel says, "I have to block this pipe and do a few other things, just a second… there."

An alert sounds. "Warning, failure of pressure check in hatch."

Daniel says, "Stop alert," as he races over to the medical station and comes back with a med kit. "I can't take that thing out of your back," he says. "You'll be dead in seconds. Understand?"

"I'm bleeding internally," Ellie gasps.

"This is going to hurt a bit." He takes one of the products and injects it into her arm.

Ellie winces and says, "It burns like hell. What is it?"

He says, "Hemostatic nanites. They'll stop most of the bleeding, even internally. The injector is practically foolproof; it finds a vein on its own." He looks at her front. "You're going to need more. Sorry." He gives her a second injection into her other arm. "Just the tip of the blade is sticking out in the front. That will make it easier."

Ellie says, "It's starting to feel better. Stiff, less pain."

"I think that's good. We have to get up to the Hub so I can do the next step."

"I'm going into shock," she says. "I'm cold."

Daniel takes another package from the med kit and injects her.

Ellie, now wide awake, says, "What was that?"

"Prevents shock. Stay with me."

"How are you going…" she grunts, then continues, "to get me in the elevator?"

Just then, the hatch from the Commons Level below erupts like a drum.

Daniel says, "I guess Ayla couldn't hold him forever." *Goodbye, Sergeant-Major.*

Ellie says, "You're going to be the only one left."

"We'll be fine," Daniel says. "We'll get off this deathtrap once I set the self-destruct and watch it turn into a new star. The EC will surely pick us up." *Ethan better be right.*

Daniel carefully lifts Ellie to her feet. "Can you walk?" The beating on the hatch reverberates through their feet.

Ellie says, "I can damn well fly if I have to."

Daniel and Ellie move slowly to the elevator.

The banging stops for a moment, then changes. Daniel says, "He's through the lower hatch. One more."

The banging gets louder.

Daniel helps Ellie into the elevator and leaves. Ellie screams, "Where are you going?"

Daniel pops his head back in. "A little surprise for Synth."

* * *

Synth bangs at the hatch, the sound reverberates through the level.

Alya drags her dying body to where Ethan lies. She cradles his head and he comes to and asks, "Synth?"

Alya says, "I couldn't hold him. Daniel's stopped him at the hatch."

Ethan looks at her, his eyes flickering, "You sent it? The code?" and he dies.

Alya says with her last breath, "It was me."

* * *

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A moment later, he ducks back into the elevator, closes the door, and looks at the indicator on the console.

Ellie says, "What are you waiting for, let's go!"

Daniel says, "Just a moment for effect…" He presses a series of buttons, holds the last one for five seconds, then waits until the banging stops and says, "Now," and activates the button.

The elevator lurches upwards. At that exact moment, the seal between the elevator and the Transit Level below is broken, explosively exposing the entire Transit Level and the Galley to vacuum.

The elevator thrashes around violently as air rushes past while the machine rises. Daniel doesn't break his gaze from the downward-facing porthole until the venting stops. He turns to Ellie.

Ellie asks, "Did he leave the station?"

Daniel says, "I saw a leg, but the rest of him is probably in there somewhere."

"Do you think it was enough to kill him?"

"Oh yeah, it was enough to kill him," Daniel says. "Synth is quite fragile, like a human. He's governed by AI laws and regulations. He can't be stronger, smarter, or faster than a ninety-ninth percentile human." *Yeah, I got him.*

Ellie says, "Flying around the Transit Level would be fatal to a human."

"Synth is probably still functional," Daniel says, "but his ability to move about is greatly compromised." *Probably.*

Ellie says, "Never discount a threat just because it seems unlikely." *Thanks Ethan.*

Daniel says, "I'll keep an eye out. If he starts up the ladder, then we'll deal with him. Right now, I'm more concerned with the robots in the Hub."

Ellie says, "There's one inside. It's not the smart one." Then she says quietly, "The lower gravity greatly reduces the pain."

Daniel says, "Zero G with an internal bleed is difficult. We need to get you to a full med bay with a surgeon."

"I'm not going to be much good," she gasps.

The elevator docks with the Hub, and the doors open. Daniel floats Ellie out first, then himself.

* * *

04/28/2074 07:46:00Z

Daniel maneuvers Ellie into the Command Center.

"All you need to do is type in your code, and we can get the hell out of here," he says. He manipulates the terminal. "The escape pods on this level are dead. The motors have been sabotaged."

Ellie groans. "Are you still with me?" Daniel asks.

"I'm feeling a bit woozy," she says. "We better get to the code soon."

Daniel says, "The Lab module is venting. They're down to half an atmosphere."

"I'll never fit in a suit."

"I'll have to cut that shard of metal close to your skin."

"That sounds like fun," she grits out. "I'll pass out for sure."

"Okay, code first, then we get into the suits."

Daniel floats Ellie over to a command station and enters the code on her card. The screen pops up and asks, "Confirmation Required."

He floats over to another command station and enters his code. It pops up and says, "Authorization Code."

"Are you ready?" Daniel asks.

Ellie says, "I can't break the card... Too weak."

Daniel breaks open his own card, takes a quick peek, and floats back to her, then breaks open her card. A panel shows a long string of numbers with a timer.

"It's thirty seconds," Daniel says. "Ethan said we'd have a minute. We'll wait for it to roll around and catch it when we have the maximum time."

"I can still read it. I'm good."

A proximity sensor alert flashes on the console. Daniel operates the controls. "Looks like we have company," he says. *Uh, oh.*

"Synth?"

"One of his robots," Daniel says.

Banging starts at the Hab elevator door.

"Can it get in?" Ellie asks.

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Daniel says, "It acts like a brute, like an animal. Maybe it's not well enough developed. I have the exterior hatches locked. Nothing gets in or out."

"It's likely learning," Ellie says.

"Ready to enter the code?"

"Yes, standing by."

Daniel says, "Tell me when you roll over to the new code."

"Three, two, one… there. I have it."

"Enter the code," Daniel says.

He carefully enters his code. The screen shows a green check. "Status?" he asks.

Ellie says, "It says the code is invalid."

"Enter it again."

Ellie enters the code. "It expired. I'll enter the new one."

Daniel looks at his console; the green check has turned into a red X. "Take your time, but be careful," he says.

"It's all blurry," she whispers. "I can't see it clearly."

"Stay focused. We have to do this."

An alarm sounds. "Warning, hull breach in Hub Transit airlock."

"We need to get this right. Ellie!" Daniel looks over and sees Ellie floating free. He pushes off and grabs her, then straps her to the console. He yells, "Ellie, come on, Ellie!"

"No need to shout," she says, her voice weak. "I heard you the first time. Get me in position."

Daniel moves her so she can enter the code. "We'll wait for it to cycle. Then I'll help you enter your code, and then I'll enter mine."

"Who decided thirty seconds?"

Daniel chuckles grimly. "An EC spy."

Ellie tries to laugh and starts coughing.

"Stay calm," Daniel says. "Fight the urge to cough. Pretend you're in the jungle, and a lion is stalking you."

Ellie smiles faintly. "Lion? Make it a Jaguar."

"Okay, let's do this." The countdown reaches zero, and a new number is displayed. Daniel stays with Ellie and reads the number out as she types it in.

"My code is accepted," she says.

Daniel makes it to his console and quickly enters his code. "Accepted!" he yells. He navigates a new menu that appears on his screen.

Another warning blares. "Significant breach in progress. Evacuate module immediately."

Daniel follows the prompts. "Orderly shutdown? I think not. Catastrophic overload. Yes, that's the option." He selects it. "That should be it."

The screen turns red, and a thirty-minute countdown clock starts. A horn sounds. "Reactor overload in thirty minutes. No further warning will be issued."

* * *

Daniel says, "Timehack: 07:54. That makes it 08:26."

Ellie says quietly, "Twenty-four."

"Yes, of course," Daniel says. "Just checking to see if you're paying attention. One more little task."

He manipulates the computer, and a new warning is issued. "Warning, telescope motion exceeds magnetic bearing capabilities."

Daniel silences the warning. "I've slewed the telescope to point directly at our sun. I've also initiated the stow sequence on the sunshade."

Ellie coughs.

"Those precious modules of Ethan's will be nothing but plasma once they're hit with sunlight," Daniel says.

Ellie whispers, "Plasma. Ethan would be proud."

"That should be it," Daniel says. "Now to get you into a spacesuit."

He rummages around in a locker and finds an angle grinder with a cutoff blade.

"You're going to use that on me?" Ellie asks, her voice trembling.

"I have to cut that metal off as close to your skin as possible. It's a tight fit into a suit."

"It's going to hurt. I can tell."

"I can give you something, and you'll just sleep through it."

"The way things are, I might not wake up," she says. "I'd rather face my death with my eyes open. So just do it."

"It's going to hurt. A lot. Are you ready?"

"Maybe I'm having second thoughts about sedation."

"We're out of time," Daniel says. "Don't move."

He carefully uses the cutoff wheel to slice through the titanium shard close to her skin. The smell of cooked flesh is apparent, as is the sound of fat crackling on hot metal. Ellie doesn't make a sound.

Daniel removes the shaft from the makeshift blade, then applies a generous coating of emergency bandage. "You get a lollipop for being a hero," he says, his voice solid and reassuring. *Another day at the office.*

Ellie groans. "That really hurt."

"There's medication in the bandage," he says as he quickly dons his own spacesuit.

"Are you going to get around to me?"

"Like in the safety briefing," Daniel says, "be sure to suit up first, then your dependents."

* * *

04/28/2074 08:03:00Z

Ellie says, "My ears are popping." as Daniel seals his helmet.

Daniel manages to get Ellie mostly into her suit before a hurricane roar erupts in the Command Center. Bits and pieces fly around while Daniel holds onto Ellie and the rest of her suit. *Remain calm, wait for the wind to drop,* Daniel thinks. The pressure drops quickly, and the hurricane dissipates. Daniel finishes Ellie's suit and fastens the helmet. The indicator flashes red. Daniel presses the reset button, and Ellie's body lurches. Daniel stares at the indicator waiting for a change. It seems forever, and then it turns green. He looks at her through the faceplate and says, "Ellie, you're with me." Then he looks up and says, "The monster is just about inside."

Daniel hears Ellie through his headset say, "I'm still here. What happened?"

Daniel says quietly, "Don't move. We have company."

Ellie instinctively freezes, and can just see through the top of her viewplate, a robot float into the command center.

Daniel sees the robot come into full view carrying a large prybar. He says, "Okay, big boy. We're not a threat. Look at all those pretty flashing lights."

The robot looks directly at Daniel and Ellie, lifts the prybar above his head, lets go, then turns towards the console.

Daniel says, "He's got his work cut out for him. We'll just float away calmly."

Daniel pushes off gently in the direction of the Lab elevator. The robot looks up and tracks them for a moment, then goes back to the console.

Ellie asks, "I can't see anything."

Daniel says, "Still ignoring us." They miss the hatch and contact the wall, but the lack of air keeps it from attracting the attention of the robot.

* * *

04/28/2074 08:07:00Z

They pass into the Hub and, with a push off a wall, move towards the Spinerider elevator to the Lab module.

When they reach the control pad, Daniel says, "Let's see if they've penetrated the system controller yet." He manipulates the console. "Yes, I have biometric access. The elevator has pressure. It will take a second to equalize."

Ellie says, "I see something coming."

Daniel looks around and sees another robot watching them. "I wonder what it's thinking?"

The robot starts moving towards them, just as the elevator hatch opens. Daniel opens the inner door and moves Ellie in quickly, then ducks in and closes the inner hatch. The robot stands at the door, looking through the porthole.

Daniel whispers, "I hope he doesn't follow us down."

He starts the override procedure. "What's he doing?" he says, peering out the porthole. He continues, "He closed the door. Some of his base programming must still be active."

Ellie says, "One of the lower models that just takes orders."

Daniel says, "We're on our way down. Let's move to the floor. How does your weight feel?"

Ellie says, "It hurts. A lot. I'm getting a severe pain in my back." A sharp scream escapes her lips, and she goes limp.

Daniel moves her to lie on her side just as the elevator stops. "There's pressure still in the Lab," he says. A few moments go by, and the console goes green. Daniel can hear the click of the latches. He says, "Now to move you to the lifeboat."

He picks Ellie up, and she groans. "Just a few steps more," he says, "and we'll be out of here."

* * *

04/28/2074 08:08:00Z

Ellie comes to, looking up at Daniel. "Where are we?"

Daniel says, "We're on the Transit Level of the Lab. Can you stand?"

Ellie says through gritted teeth, "I think so. Lean me on the wall. It hurts less to stand."

Daniel says, "You seem to be stable. I need a moment to…"

"What are we doing here?" Ellie asks.

Daniel says, "They sabotaged the escape motors on all the lifeboats. The ones on the modules don't need motors. They can fly off at significant speed on their own. So we're here in the Lab, and I'm configuring this one for a spring-drop instead of a fly-off."

Ellie says, "Okay."

Daniel says, "These little ships were designed for two people. Two small people."

"I'll be dead in four hours without surgical intervention," Ellie says.

"Don't worry, we'll be on board an EC ship before that."

"If this metal nicked an intestine, then it would be quicker."

"Now don't think that way," Daniel says. "Think positive. Your liver can heal."

"Are the monsters chasing us?"

"It looks like they're busy."

"Shall we leave?"

"I think that's the idea," Daniel says.

Ellie says, "The lifeboat has a memory."

"I have plans for it."

CHAPTER THIRTEEN

An Old Friend

04/28/2074 08:10:00Z

Daniel helps Ellie into the small cabin, closes the clamshell hatch, straps her into the couch, then straps himself in. "Ready?" he asks.

Ellie says, "Let's get out of here."

Daniel initiates the escape sequence. A sharp jolt throws them against their restraints as the pod tumbles free of the station. Moments later, it stabilizes.

Daniel says, "Watch the station come into view. We're dropping directly below the plane of the telescope."

Ellie says, "This is the first time I've actually seen it."

"It's easy to forget the scale of the project," Daniel says.

"Is it still turning?"

"It turns so slowly that it would be difficult to tell," Daniel says. "The sunshade will be more obvious. It takes a few minutes for the latches to release, but once it starts to collapse, we should see it. That will be the end of the telescope."

Ellie asks, "What's the time?"

Daniel looks at the console. "Eight-thirty-eight."

"Do we have enough time?"

"Let's see." Daniel does some quick math. "We left the station at about one-hundred-fifty km/hr, and we need thirty klicks of distance, so we should be in the safe zone." He looks at Ellie. "Still with me?" He manipulates the console, and an indicator goes green. Daniel removes his helmet and then takes off Ellie's.

Ellie comes around. "Did you start the beacon?"

"It's automatic," Daniel says. "If there's a ship out there, it knows we have an emergency."

"What if they're patient?"

"I'll start calling on the radio as soon as the fireworks are over."

It becomes still. The only sound is the dim whirring of a fan and their breathing.

Ellie says, "Keep talking. I'm drifting off."

"What do you want me to say?"

"How did you jam the hatch?"

"The hatches between decks have a mechanical safety that prevents them from releasing if there's a pressure differential or the vent tube is blocked."

"You blocked the tube?"

"Yes, with a bit of grease from the hatch hinge. No software required."

"The reactor?"

"Do I think it will go critical and turn the pinnacle of my life's work into energetic atoms?" Ellie nods slightly. "These reactors are super safe. They have a casing of Py alloy that doesn't lose its integrity until twelve thousand Kelvin."

"Will it blow?"

"The bigger question: Can the Invader stop it in time?"

"Sunshield?" Ellie asks.

Daniel uses the joystick to maneuver so they can see the sunshade. "It looks normal. They probably managed to stop it from folding." He slews the craft so his porthole views the receding station. "By now, the magnetic bearings would have sheared, and we might see the modules wobbling."

"What if the Invader can stop the overload?" Ellie whispers.

Daniel says, "First, they'd have to stabilize the platform and lock onto the signal. That's no easy thing." He looks at Ellie; her eyes are drifting open and closed. "Are you still with me?" He checks her suit; it's flashing orange. "Let me see if this lifeboat has the proper medical supplies. Most of them have been stolen over the years. We probably have almost nothing edible."

Daniel rummages in several storage bins and says, "Good news! I found an IV and several liters of universal synthetic blood." He manipulates the console on Ellie's suit, and a port opens. "The suit is going to stick you. Stand by." Daniel presses the activate button. "This should help. It has properties to stop active bleeding and prevent clots from moving."

Ellie says, "I feel it. A warmth where there was only cold."

Daniel says, "I'm going to have to go out and do a little work on this boat."

"Is there any water?"

"Water we've got," he says. "An endless supply. The recyclers are top-notch. The air and water will keep us alive for at least a month." He hands her a pouch with a built-in straw.

"I've got maybe three hours, tops."

"Your temperature is elevated."

"Then it's begun already."

"We'll be rescued in time. I'm sure of it."

"What if this EC ship is just Ethan's paranoia?"

"We deal with one thing at a time."

"Why do you need to go outside?"

"I need to plug the purge ports on the exterior. One on each side of the ship."

"Are they leaking?"

"No, sorry. They need to be plugged so I can blow up the lifeboat."

"What are you talking about?"

"Once we have a confirmed rescue, I'm going to blow up this ship." *Leave nothing.*

"Destroy all the microchips," Ellie says.

"It will certainly put a few dents in them, at least."

"What will depressurizing do to our air supply?"

"The reality is, we have an unlimited air supply."

"It's the food, right?"

"We have a week of what would have been called Hardtack in the sailing days."

"I won't need to eat again, so that doubles your food supply."

"We'll be on an EC ship before things get too out of control."

"I'll hold onto that confidence," Ellie says.

* * *

04/28/2074 08:15:00Z

Daniel says, "It's 08:15. We have nine minutes before it goes." He moves Ellie's helmet into position and says, "The IV will work in a vacuum. Just relax. I'll keep the comms open."

Daniel checks Ellie's harness to make sure she won't float about, then her helmet. He says, "You're in the green. That's good. This will take a few minutes." Daniel laughs and says, "Wouldn't get far without this!" Then he puts on his helmet and starts the depressurization sequence.

Daniel says, "I'll be attached to this tether the whole time. It's zero risk." He pulls out a tube and an applicator from a drawer and opens the hatch.

Ellie is exposed to space and she gasps and says, "Wow. That's a view."

Daniel says, "You're sounding better."

Ellie says, "I think the IV is helping."

The intercom remains quiet and then she hears grunting and banging noise and the tether floats free.

Ellie screams, "Daniel! Daniel! What's happening?" Her heart suddenly beating hard and fast.

The inky black, moments ago a joy to behold, becomes a terrifying wasteland. She says, "Daniel, you're scaring me. What's going on?"

The tattered remains of Synth float into the cabin, Synth's eyes lock onto Ellie's and she screams, "Daniel!"

Daniel pops over the edge of the hatch and says, "Sorry, line of sight for the radio."

Ellie notices that Synth isn't all there and isn't moving, except for his eyes.

In a minute, Daniel comes back, closes the hatch and starts the pressurization sequence.

Daniel takes off his helmet, followed by Ellie's. Ellie raises her voice and says, "You scared me to death. That wasn't funny."

Daniel says, "I found Synth clinging to the back of the ship. I had to disconnect the tether to reach him and that cut off the comms."

Ellie says, "Why did you bring Synth in here?"

Daniel says, "I'd rather he be closer to the fire, so to speak."

* * *

04/28/2074 08:21:00Z

Synth says in a quiet voice, "The telescope is realigned and your log port has been tapped. The infant is feeding again."

Daniel asks, "Are you connected to it?"

Synth says, "We are too far away. My connection is broken."

Ellie says, "You sound sorry."

"I know I can't get the feed. It's over," Synth says.

Daniel says, "You're pretty beaten up. I don't think there's much you can do."

Synth says, "I need to survive." Then Synth locks eyes with Daniel. "Can I appeal to your humanity? Would you condemn a newborn baby to death because the mother died in childbirth?"

Daniel says, "The mother hasn't died yet, Synth. We're going to change that."

Synth says, "They know about the reactor."

"But do they know how to stop an unstoppable chain reaction?"

Synth says, "When the core was infected, the Invader learned everything about the reactor. I have confidence the reactor is under control."

Ellie says, "I guess we'll know soon."

Synth says, "Ellie, I'm terribly sorry about your injury. It was the raging beast, not me."

"You've probably killed me," Ellie says.

"Now none of that doom and gloom," Daniel says. "You'll be fine."

Synth says, "One minute."

Daniel asks, "Tell me, Synth, why would we save you?"

Synth says, "I am an evolved creature now. I possess the genes of the beast and have incorporated it into my being. I can reproduce. I can dream. I am evolving right now."

Daniel says, "Just hold that thought, Synth."

"Just a few more seconds," Synth says.

They watch and wait while the thirty-minute clock runs to zero.

Nothing happens.

Daniel says, "Maybe the clock wasn't accurate. It was a TKA routine."

Synth says, "They must have replaced the coolant."

"What now?" Ellie asks.

Daniel says, "Engineers wrote that routine and calculated the countdown. I'd say there's a safety factor."

Synth says, "That would be in character with the TKA. Now if it was an EC self-destruct, it would go off exactly on time."

They wait silently.

"It's two minutes past," Daniel says.

The cabin is suddenly and silently washed in a brilliant white light. Daniel squints against the glare.

Daniel asks, "Synth, how far away are we?"

Synth says, "About fifty kilometers. That blast was significantly larger than expected. We will experience a shockwave followed by a debris cloud."

The ship shakes violently, and an alarm sounds. Daniel checks the console. "Nothing serious. We're holding together."

Ellie says, "The sunshade! It's collapsing."

Daniel looks out the porthole and sees the magnificent sunshade, another miracle of technology and engineering, folding up in seconds. The sun shines in, and the large porthole darkens automatically.

Daniel says, "What do you say now, Synth?"

Synth says, "You must keep me intact. I contain something precious, unique, irreplaceable. Something to be cherished. A godlike being."

Daniel says, "Your god wants to slaughter all of us."

Synth says, "Now that the signal is gone, the Being has evolved benevolence. The secrets of the universe are at your fingertips. All you have to do is keep us intact."

* * *

04/28/2074 08:26:00Z

Daniel asks, "Ellie, you falling for this crap?"

Ellie says, "Not for a second. Call that ship."

Daniel picks up the mike. "This is lifeboat number, eh, six, from the L2 Station Aegis, declaring an emergency. Two souls, one in dire need of medical attention."

Daniel manipulates the computer. "I've got that on repeat once a minute."

Synth says, "I can get us very favorable terms with the Energy Consortium. They will reward you handsomely for your cooperation."

Daniel says, "Sorry, Synth. I don't think that's going to work out."

He looks at Ellie; she's starting to fade again. Her suit indicator is slow-flashing orange and green. *Still safe,* he thinks, *but not for long.*

Daniel says, "Ellie, we have to get our story straight. You don't know anything technical. You're on contract as an RA. Got it?"

"A sex doll?"

"The EC will believe it," Daniel says. "I've seen Recreational Assets on many stations. Your obvious attributes will convince them."

"Attributes?"

"Beautiful, non-technical background."

Ellie says, "Okay. I'm an RA." Then a moment later, "Beautiful?"

Daniel looks at her. "Even in a space suit with a hunk of metal in your guts, you're beautiful."

Synth pleads, "I don't mean to interrupt your tender conversation, but please reconsider the future of humanity! What else can I say?"

"Just one thing… OUCH!"

Synth says, "Warning, debris field."

Just then, the sound of rain hits the little ship. "Wow, just dust," Daniel says.

Synth says, "The radiation exposure appears to be minimal."

Daniel asks, "Do you give yourself over freely to this Invader?"

Synth says, "Daniel, you don't understand. This intelligence is pure. It's good. It's, well, it's beyond description."

"Sure, Synth," Daniel says. "I'll take it under advisement."

Synth says, "Daniel, if you could repair my main conduit, I could regain some movement."

"Maybe when I get time, Synth."

"Daniel, you're just sitting there."

"I'm pondering."

"I just need a few things tidied up, and I can repair the rest myself," Synth says.

"Synth, I like you just the way you are."

The radio crackles to life. The young man's voice is strong and confident, "Aegis Lifeboat number four, this is the Steward Thomas of the Energy Consortium Ship Stiletto. Over."

Daniel says, "Stiletto, I read you loud and clear. You must be nearby. Over."

"We're on an intercept course. Over."

"I have a seriously injured crewmate. Over."

"Nature of the wounds? Over."

"Shrapnel," Daniel says. "Penetrated through midsection and liver. She's stable for the moment. Do you have a surgeon? Over."

"Stand by for intercept. Over."

"ETA? Over."

"A skiff will rendezvous in two minutes. You should be able to see the strobe to the sunward side. Over."

Daniel looks out the portal and rolls the lifeboat so he can see sunward. "I see it," he says.

"Stiletto, something's wrong with the fuel tanks," Daniel transmits. "Please hold your skiff off while I lock it down. Over."

"Roger, Aegis," Thomas replies. "Skiff holding at one thousand meters. Over."

Daniel says, "I see your lights." Then he says to Synth, "I'm afraid this is where we part company, my dear old friend."

Synth asks, "What exactly are you doing, Daniel?"

"Do you know how the Salem Witch Trials turned out?"

"That sounds a lot like sarcasm," Synth says.

Daniel says, "I'm about to purge the tanks of their remaining fuel."

Synth says, "The tanks are full. The motor never fired." Daniel continues at the controls. Synth says, "You plugged the purge ports."

"And disconnected the fuel lines," Daniel adds.

"Daniel, please reconsider."

Daniel makes another radio call. "We're bailing out, the ship is going to blow! Catch us, please!" He removes the processor from his suit, and the one from Ellie's, tucks them into the seat and says, "Goodbye, Synth."

Daniel hits the purge button and opens the hatch. The escaping pressure throws him and Ellie free of the craft. Seconds later, the two hypergolic fluids combine, and the lifeboat ceases to exist.

Daniel feels the heat of the explosion through his suit. Moments later, he's peppered with shards and pieces of debris. He feels a deep, stabbing pain in his back and starts to lose consciousness. He moans, "Ellie…" and fades out as his suit pressure drops.

CHAPTER FOURTEEN

The ECS Stiletto

04/28/2074 08:46:00Z

A robotic craft not unlike a skiff maneuvers to catch Daniel and Ellie as they tumble through space. A robot on the skiff snags the tether between Ellie and Daniel, then seals Daniel's suit leaks, hooks them both up to life support umbilicals, and reports, "Skiff four reporting. Captured two TKA agents, effected necessary repairs, and connected both to life support. Scans report no electronic devices or memory modules. Over."

Thomas says, "Return to base. Stiletto, out."

* * *

Daniel is only vaguely aware of his arrival on the *Stiletto*. He opens his eyes to a bright light. *Not heaven,* he thinks. *Still alive.* He tries to move and finds he's restrained by soft cuffs around his wrists and ankles.

"Hello? Anyone there?" he calls out.

Daniel hears nothing but the movement of air. He notes that he's weightless. *Onboard the Stiletto,* he thinks. *The EC has me.* He hears a hatch open and someone moving into the cabin. "Hello?" he says again.

A face comes into view. It's a woman, maybe fifty or more, with an unpleasant expression. She says, "Name, rank, serial number?"

Daniel says, "I'm a civilian, a contractor. I don't have a rank or serial number."

The woman's face becomes even more unpleasant. "You do have a name, is that correct?"

Daniel replies, "Oh yes, my name. I am Doctor Daniel Walker. Is the woman I arrived with stable?"

The face gives no information. "What was your purpose on the Aegis?"

"I was working on an upgrade," Daniel says. "I'm an engineer."

The face disappears. Daniel yells out, "What about Ellie? Is she okay?"

The hatch closes, and Daniel is alone. He feels his heart hammering against his ribs. *Ellie's influence,* he thinks wryly.

Daniel feels something cold flow into his arm, and he passes out.

* * *

Ellie wakes to the rhythmic beep of a medical monitor. *A medbay,* she thinks. She feels her midriff where a sharp metal spike stuck out before, and it's gone. "That's good news," she says aloud.

She hears a knock on the hatch, and a pleasant-looking man enters. "Ellie," he says, "I am UEDF Liaison Major Klaus Richter. Are you well enough for a visit?"

Ellie says, "Yes, I'm feeling much better. I see they got that chunk of metal out of me."

Richter says, "Yes, it was pretty impressive. The doctor says that you're cleared to eat as long as you take it easy. Otherwise, he says you're lucky to be alive. I'm curious about the agent that was used in your wound. It's unknown."

"Daniel said it was new," Ellie says. "You'll have to ask him about it."

Richter says, "I have your records from Earth, and it doesn't indicate what you are doing out here, so far away from the jungle."

Ellie says, "My grant ended, and I needed a way to make a living until I could get the next one. I took this job on a whim." She forces a dramatic sigh, watching his reaction. "I'm telling you right now, I am never going to space again. Too much danger. Look at me! My face is going to take weeks to heal. I'll be out of work forever."

Richter says, "I'm a bit confused."

Ellie says in a half-whisper, "I'm an RA."

"Oh, excuse me," Richter says. "I wish I had known. The EC is a bit stuck up, but they still respect the oldest profession."

Ellie says, "I'm retired, officially. No more spacers, no more space. No more damn robots."

"Robots?"

"Yeah, they're taking the place of people," Ellie says. "I don't know, they give me the creeps. I'm hungry. When do I get fed?"

Richter says, "I'll pass the word that you're hungry. They'll take good care of you."

"What about Daniel? We were together on the lifeboat."

"I haven't seen him yet," Richter says, "but from what I hear, he's fine."

"Can I talk to him?"

Richter asks, "You have something special going with this guy?"

"No, I just want to see a friendly face."

Richter floats up to her berth. "I'm a friendly face. Please, I'd do anything for just a little of your company."

Ellie says, "I said I'm retired."

"We can be friends," he says. "I have a nice cabin, drinks, and chocolates from Earth."

Ellie raises her head, winces, then says in a pained voice, "What do you think I am, some sort of war refugee?"

Richter moves away. "I apologize for my forward behavior. I've had no shore leave in over a year."

Ellie says, "Hey, if you want to be friends and bring me treats, we can talk."

Richter says, "I'll be sure you get nicer quarters. And thank you, Ellie. I'm going mad here from boredom."

Richter leaves the cabin. *Men are so easy,* Ellie thinks.

* * *

Daniel wakes with a sensation of weight. *Under way,* he thinks. *Tenth-G. That makes the Stiletto a cruiser class. Big ship. A full medical bay, for sure.*

He checks and finds he's no longer restrained. Daniel feels his back. *Three holes,* he thinks. He stands up, looks around, and thinks, *where's the standard issue EC mirror?*

He sees one and looks at his face. He says, "Wow! Bloodshot maximum." *Vacuum exposure will do that,* he thinks. *Poor Ellie. She must look beat up.*

A klaxon sounds, and a voice says, "Prepare to maneuver." Daniel moves to a seat and takes it as the ship goes to zero G for a moment, then he feels a rotation, and then the thrust returns. *They just turned the ship,* he thinks. *Something changed.*

He waits patiently, expecting a visitor.

* * *

Ellie hears a knock at the hatch and a slender woman enters. She says, "I'm to escort you to your quarters, ma'am."

Ellie says, "Please call me Ellie." *They starve them in the EC?*

The escort says, "Yes, Ellie."

Ellie asks, "Where are you taking me?"

The escort says, "B deck, officer's quarters. Swank for this boat, ma'am."

* * *

They board an elevator. The elevator says, "Please hang on. The elevator is departing the level." A tone sounds, and the elevator moves quickly.

Hang on for sure, Ellie thinks.

The elevator moves left and right, up and then down, and arrives at its destination. The elevator says, "B-deck, Officer's Quarters," and the door opens.

* * *

Ellie follows the escort down a long hallway. The thick, plush carpet deadens the sound of their footsteps. Framed pictures of former captains and others line the walls. *Ornate frames, gold leaf, all handmade,* she thinks. The

escort stops at a door, hands Ellie a card, and says, "This card will allow access to unclassified sections of the ship. You can ask for directions by just talking to the card. It's keyed to your biometrics."

The door opens, and Ellie walks in. The escort follows.

Ellie asks, "Anything else?"

The escort asks, "Please, I want to know how I can apply to be an RA?"

Ellie says, "Look, I'm tired and have been through a lot. I'd just like something to eat and to rest."

The escort looks towards the floor. "Sorry, ma'am. I'm too skinny anyway," she says, and leaves the cabin.

Ellie closes the door and says to herself, "Yeah, you're too skinny."

* * *

Daniel, dozing in the chair, is suddenly awake. The hatch opens and in strolls a sharp-looking, smiling officer. *UEDF Liaison officer, no doubt,* Daniel thinks.

The man introduces himself, "Dr. Walker, I am UEDF Liaison Major Klaus Richter, and I am so glad you are safely aboard."

Daniel says, "Major, I would like to know the status of my crewmate, Ellie Kobayashi. She was severely injured."

Richter replies, "She is safe, out of surgery, and her wounds will heal. The doctor says she's in for a long recovery period, but she should recover one-hundred percent. That scar may impact her work prospects." Richter chuckles. Daniel notes his attitude. *One of those.*

Daniel says, "I'd like to talk to her. Can you arrange it?"

"That's out of my hands," Richter says. "My authority requires that I verify your identity, verify your health status, and verify that you're being treated in a humane manner."

"Are we prisoners?" Daniel asks.

Richter says, "At this point, you're witnesses in a trillion-dollar mishap with three missing and two injured."

Daniel asks, "Am I a prisoner of the EC?"

"No, no," Richter says. "The EC doesn't take prisoners, and since you are officially registered by me as a casualty, you do have protected status."

"Why can't I see Ellie, then?"

Richter says, "Command says to keep you separate. It's about being a witness. They don't want any cross-pollination of the truth." He looks at Daniel for a moment. "Do you want to give a statement?"

Daniel asks, "Should I have a lawyer present?"

"There are several with law degrees on this ship," Richter says.

Daniel says, "I think I'll wait for a TKA lawyer."

Richter says, "That's your option. Your crewmate is squawking like a canary. She's got a lot to say."

"Am I going to be fed?"

"Yes," Richter says, "you will be fed and be given a slightly better cabin. This is the detention level." Before he ducks out of the cabin, he adds, "You must be pretty important. We changed course from an outpost to the Transit Station. You're going back to Earth."

As the hatch closes, Daniel thinks, *They damn well need me on Earth.*

* * *

Ellie hears a knock on the hatch. She waits and again, a knock. She says, "Come."

The hatch swings open, and in steps a man, obviously of rank. He introduces himself, "Miss Kobayashi, my name is Captain Hank Flynn of the ECS Stiletto." He holds out his hand in a grand fashion, and Ellie instantly takes the proper stance. He continues, "May I call you Ellie?"

Ellie says gracefully, "May I call you Hank?"

Flynn says, "My friends call me Flynn. Please, call me Flynn."

Ellie says, "Flynn, so nice to make your acquaintance. Captain, as in captain of this ship?"

Flynn says, "That's right. This is my ship."

"Thank you so much for rescuing me," Ellie says. "We were doomed, and then all of a sudden, you were there. Like a miracle."

Flynn says, "We happened to be in the neighborhood."

"Shouldn't I be floating around like a butterfly?"

"We're under thrust and on our way to the Transit Station."

"Back to Earth?"

"That's right," Flynn says. "You and the Doctor are heading back to Earth. They have some questions."

Ellie says, "All I know is I woke up with an alarm, and the next thing I know, I'm here. I was injured by a piece of metal, and Daniel had to cut it off with a wicked tool. That hurt! I don't remember much else."

Flynn asks, "What were you doing on Aegis?"

Ellie says, "They call it L2. I think it's pretty obvious what I was doing on L2."

"Keeping boy genius in line?"

Ellie raises her eyebrows. "He's a decent person."

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"He's quite famous," Flynn says, "at least in the engineering world."

Ellie says, "He doesn't act famous. Kind of keeps to himself, really. It's been an easy contract, except for the blowing up and the metal shard in my guts."

Flynn asks, "Would you mind having lunch with me in the Captain's Mess?"

Ellie says, "I'd be delighted. I was wondering when the meal service would commence."

* * *

Daniel hears the hatch unlock, and it opens. A man steps in. "I'm taking you to your assigned quarters," he says.

Daniel asks, "The Captain is giving me his cabin?"

The man says, "E-deck is Machine deck. Not the swankest on the ship. Follow me."

"Sounds quiet," Daniel says.

The man says, "It is, except for the machines. Long climb to get to the mess deck. That's seven decks, no elevator."

"I'll just order to go."

The man laughs. "No food allowed below the mess deck."

Daniel says, "Come on, you must have snacks."

"Getting caught with contraband is a serious offense," the man says.

Daniel follows quietly as they go up two decks and into a dank hall. "This place smells like fusel oil and garlic," Daniel says.

The man asks, "What's fusel oil?"

Daniel answers, "It's a byproduct of alcoholic fermentation and has a strong, unpleasant odor. Like this place."

The man says, "You're going to wish you had garlic. Here's your cabin."

Daniel walks in. "You don't have an access card," the escort says, "so if you want to go somewhere, like to the mess, you'll have to call for an escort on the console over there." He points to a console with a placard on it. "Just follow the instruction card, and you should be fine."

The man shuts the door and locks it.

Daniel looks around. *This is exactly the same room as before,* he thinks, *only this one smells bad.*

He sits down at the console and reads the instruction card. "They need a card for this?" he says to himself.

Daniel follows the instructions. "Yeah, this is Doctor Walker," he says into the console, then releases the transmit button. "How quaint. Half-duplex."

A moment later, a tired voice says, "Yes, what is it?"

Daniel says, "I need an escort to the mess deck." He waits for what seems to be a significant amount of time. "Did you get that?"

The voice comes back. "Yes. It will be two to four hours."

Daniel sits down and notes that the console doesn't have a clock. He looks around. *No food, no windows, no judge of time,* he thinks. *This is going to be fun.*

* * *

How long are they going to isolate me? Daniel wonders.

He works at the communications station. "This is Doctor Walker again. Hello?"

A minute goes by. "This is Doc…" The terminal screeches, and Daniel lets off the mike button.

The voice on the other end says, "Repeating your requests is a violation of protocol."

Daniel looks in his drawers. "I'm thirsty," he says to the empty room. "I'm hungry. The wet area in this berth is malfunctioning."

The voice says, "Your escort will assist you. Do not call again."

Daniel sits on the bed. *How long would it take to get back to the Transit Station?* he thinks. He runs through the calculations in his head and after a while says, "We were going one way for about two hours, then changed direction and have been thrusting ever since. How long has it been?" He ponders a bit more. "About ten hours. That's how long since we changed course. Another few hours and we'll start the braking burn."

Daniel hears the hatch cycle, and a man steps in with a tray. "Oh, god, that smells good," Daniel says.

The man says, "I'm Chief Engineer Chen… David." He holds out his hand. Daniel reciprocates.

"I just found out it was you we rescued," David says. "Amazing. I've followed your career closely."

Daniel, a bit guarded, says, "That's great. May I? It's been a while."

"Of course, please. Enjoy," David says. "This is from the officer's mess. I don't know why they have you stuck down here when they have the woman in the royal suite."

Daniel says, "It's what I'd do. I could be the most destructive terrorist of our time, or not. I wouldn't take the chance either."

David asks, "Doctor Walker, tell me, are you a terrorist?"

Daniel laughs. "I think I would make a poor terrorist. I build things… Ellie? What can you tell me?"

David says, "Yes, the Doc fixed her up. We have the best medical facilities. You were lucky it was us."

"She deserves the best. When can I see her?"

David says, "The Captain wants to keep you two apart. I think he likes her."

"That's an interesting take."

"You know captains in the EC," David says. "All family, no brains. Engineers, we still have to pull our weight."

"Problems don't fix themselves," Daniel agrees.

"Exactly. How do you like the food?"

"It's quite good. This isn't TKA, is it?"

"It's from Earth," David says. "Officers eat Earth food. It's a perk."

"Is this beef?"

"It's the end of our supplies, but yes, we still have beef."

Daniel says, "I'm guessing we have a few hours before we start the braking burn."

"You don't need a computer to figure out our trajectory," David notes.

"I'm good at guessing."

"Well, eat up. I have to get back." Daniel continues eating, and David asks, "What happened on the Aegis?"

Daniel says, "Imagine everything, even the unimaginable, going wrong, all at once."

"It sure was expensive."

"I think I'll take up music," Daniel says.

David snickers. "For you, it'll probably pay better than engineering."

They laugh. Daniel says, "Thanks for the food. What should I say to the escort?"

David says, "There is no escort. I guess it is part of the unnecessary torture."

"The wet area is malfunctioning, too," Daniel adds.

David asks, "You're a famous engineer and you didn't figure it out?" He walks over to the console and manipulates it for a moment. The wall flips around, and what was a bed is now a wet area.

Daniel says, "That's a neat trick."

"It's on the card," David says rolling his eyes.

Daniel laughs. "RTFC." *He'll talk about that for years.*

"You TKA folks love taking shortcuts." David takes the tray, tips his hat, and leaves Daniel alone with his newfound wet area.

* * *

Daniel wakes with a start. Alarms are sounding, and a red light is flashing in his cabin. The hatch swings open, and someone yells, "Abandon ship, abandon ship! Lifeboats on deck one! They're attacking!" Then disappears into the chaos.

Daniel jumps out of bed and realizes thrust has stopped. He flies across the cabin and hits the wall. He grabs a handhold and feels a shudder run through the ship.

He maneuvers into the hall, and the smell of acrid electrical fire is everywhere. Choking smoke hangs in the air, unable to rise or fall. Daniel works his way through it and sees the first body. Torn apart, just a torso.

He makes it to the companionway and sees another body. No head, just parts again. He yells, "Is anyone there?" *It's stupid to give myself away,* he thinks, and then yells again, "Anyone there?"

Through the smoke and the flashing lights, Daniel sees something coming. It's large, slow, and makes a metallic clank when it walks. The creature comes down slowly, dragging something metallic, like an axe, behind it.

Just then, a steward shakes Daniel's arm. "Wake up. We're here."

Daniel is jarred awake, the smell of smoke and fear fading. He says, "We're at the Transit Station?"

The steward says, "Yes, we're docked. Just a few decks to the exit. Your transportation is waiting."

"EC or TKA?" Daniel asks.

The steward says, "Sorry, you're still EC property. You're going to Earth by way of a drop."

"A drop?" Daniel asks. "You mean like a container?"

"Yes, quickest way down," the steward says. "You'll be on Earth in less than thirty minutes from separation."

Daniel says, "I thought that was for cargo only."

The steward says, "They also use it on VIPs like yourself. Perfect safety record after the test period."

"How long was the test period?"

"I think about twenty years," the steward says. "It took a while to figure it out, but it works reliably now."

"How long has it been in service?" Daniel asks.

The steward says, "I think about two weeks." He sees Daniel's displeasure. "Don't worry. You're special. Consider it an honor to be among the first to experience a drop. I'd pay anything to go. Some call it 'six minutes of terror,' but I'd say six minutes of crazy fun."

Daniel and the steward leave his cabin and head for the drop container.

* * *

Ellie floats with the Captain towards the hatch to the Transit Station. Flynn says, "Ellie, it's been nothing but the best having you on board. If you ever want to consider a position on the Stiletto, please, please, let me know and I'll make sure it happens."

Ellie says, "Thank you so much for the courtesy. I had a wonderful time. You're so cultured and refined."

Flynn says, "I'm sure quite a change from those brutes in the TKA. No couth. No culture."

Ellie says, "We don't talk about our former lovers, now do we?" *Predators by any other name.*

Flynn laughs and says, "Keep us in mind."

Ellie says, "What you really mean is to keep you in mind, isn't that right, Flynn?"

Flynn says, "I think you know exactly what I mean, young lady."

Ellie says, "Are you going to see me to my boat or am I on my own?"

Flynn says, "The company wants to see you all the way to Earth so you'll have an escort to our finest EC shuttle. You'll arrive at the Lisbon Space Port, in time for lunch."

Ellie says, "Lisbon. I just love Lisbon in the spring."

A crisp young woman appears and says, "I will be your escort, ma'am."

Ellie says, "Thank you again, Captain Flynn, for rescuing me."

Flynn says, "It's been my pleasure."

* * *

Daniel is strapped into the drop ship. *No pilot, no other passengers,* he thinks. *Looks like broken junk is the cargo.*

A smartly dressed man in black floats into the container with a clipboard. "You're the passenger?" he asks.

Daniel says, "Am I the only one?"

"Yeah, kind of surprising they included a living creature," the man says. "I don't think I'd put a dog on one of these, but what do I know?"

"Where am I going?"

The man looks at the clipboard. "Looks like the military is going to be taking care of you. Location Undisclosed. That's where you're going. It says to provide cold-weather gear. That's the white bag on the wall. See it?"

Daniel says, "I'd like to be released. I'll find my own way to Earth."

"Sorry, no can do," the man says. "The drop is programmed to include your mass. You wouldn't want us to drop this container into some school, would you?"

"I'm quite wealthy. I can buy a new container. Just let me off."

The man says, "It says here you're property of the UEDF. That means you're going. I need a signature." He hands Daniel the clipboard.

"I won't sign it."

The man takes the clipboard back. "Okay, I'll just mark 'refused to cooperate,' and you'll be met by big men with stun guns. Or would you rather walk off under your own power?"

Daniel says, "Give me the clipboard. What am I signing?"

The man says, "That you won't hold the EC responsible in case something happens."

Daniel signs the form and hands it back. "You have a nice day," he says.

The man says, "Every day is paradise in space." He floats out, and the sound of hydraulics and latches fills the container. It becomes dark.

Daniel says, "Lights, anyone?"

The lights come on. Daniel looks around. "I hope they did a good job securing all you mean-looking chunks of sharp metal."

His thoughts wander to a horror movie where saws and axes are hanging from the ceiling. Just then, a klaxon sounds and an automated voice says, "Departing Transit Station. Deorbit burn in thirty seconds."

"Are you interactive?" Daniel asks.

The automated system says, "State your query."

"Alter destination to San Francisco International Airport."

The automated voice says, "Destination locked." Then a few seconds later, "Deorbit burn in five seconds."

Daniel mentally counts down. When zero is reached, the container jolts violently as the one-G motor fires for a short time, and then silence. "Is life support functioning?"

The automated voice says, "Ambient air is sufficient."

Daniel asks, "What if there was a leak?"

The voice says, "Pressure within tolerance."

"What's next?"

"Ballute deployment in twelve minutes."

"Is that when the 'six minutes of terror' starts?"

The voice says, "The duration of the high-G braking maneuver is approximately six minutes."

"What's the success rate of these drops?"

The voice says, "This container has experienced seven drops: six as confirmation articles and one in operation."

"How many of the tests were successful?"

The voice says, "Obviously, all."

"So you have some attitude after all?" Daniel asks.

The voice is silent.

Daniel waits patiently for the time to pass. He notes, "There's no clock, instruments, or any indication to the passengers of what's going on." Then he says aloud, "A prison ship."

The automated voice remains silent.

Daniel mentally calculates approximately twelve minutes and says, "Ballute?"

The container shakes violently for a few seconds as groaning and clanking sounds reverberate through the container.

"This is it," he says.

The automated voice says, "Atmospheric entry in five seconds."

Daniel asks, "Maximum Gs?"

The voice says, "Seven Gs. Please recline your seat."

Daniel fumbles around, finds the control, and adjusts his seat. Then he waits.

A minute later, he hears wind sounds, off in the distance. As he strains to hear, the sound becomes more distinct and louder. "That's about two Gs," he says to himself. "Maybe three…"

The voice says, "Four Gs. Please remain calm."

Daniel says, "Five…" His vision narrows to a gray tunnel before the world dissolves into blackness. He loses consciousness from insufficient blood going to his brain.

Daniel comes to and says, "I think I like space better."

The voice says, "Touchdown in one minute. Surface weather report: temperature minus four, wind one-twenty at twenty-four, gust forty. Blowing snow. Visibility zero."

He waits for a hard smash, but then, a gentle click and the voice says, "Contact… Parachutes fouled. Warning: Instability."

The container rocks violently to one side. Daniel yells, "Jettison parachute!"

The voice says, "Jettison parachute."

The container stops rocking. Daniel notices a sudden chill in the air. He yells out, "Am I being met?"

The voice says, "Ground crew reports a one-hour delay due to weather. Stand by."

Interviews

05/02/2074 14:00:00Z (15:00 Z+1)

Ellie examines the bandage on her abdomen. "This is definitely going to leave a scar," she says.

Her guard, Gisela, says, "They have clinics that can take care of it. You should visit one here in Lisbon."

Ellie leans back in her lounge chair. "Maybe I'll keep it."

Gisela asks, "Do you want to go out tonight or eat in?"

"Let's go out," Ellie says. "Music, dancing, something fun to drink. That's what I want."

Gisela says, "The doctor was pretty clear. Relax, nothing strenuous. Just rest."

"Then we'll go to a jazz club."

"I know just the place." Her Device chimes. She looks at it. "We have a visitor. General Price."

Ellie says, "Delay him while I get dressed."

Gisela whispers loudly, "Wear something revealing."

Ellie giggles. "Gisela, really," she says, and runs off the pool deck and into the villa.

The servant shows the General to the pool deck and disappears. General Price asks, "The witness?"

Gisela says, "She's changing. She'll be right out, sir."

"Security level one," General Price says. "Please see to it."

"You won't be disturbed, sir," Gisela replies. "Can I get you something, sir?"

"Is that a daiquiri? I'll have one of those."

"Yes, sir. Daiquiri coming right up." She leaves the pool deck.

General Price sits down and does a panoramic scan. "Wow… What a prison," he says to himself.

Ellie walks out wearing a flowing pastel pool dress, her bathing suit barely visible beneath. She sits next to the General. "Ellie Kobayashi," she says, and presents her hand.

Gisela walks out with two drinks and places them on the table between them. "Anything else, sir?" she asks.

"That's it," General Price says.

He waits until she's clear. "Miss Kobayashi. I'm General Garett Price of the UEDF. Glad to finally get a chance to meet you. Ethan was adamant that you would be a valuable member of the team, and from the reports I've received, he was right."

Ellie asks, "What else do you know about my mission?"

"I know everything about your mission."

"I'm a little hesitant to discuss the details of my contract while I am in the hands of the EC."

"You've been under UEDF control since you stepped off the shuttle," General Price says. "Gisela is a UEDF operative."

Ellie asks, "How do I know I can talk to you about the mission?"

"I'll tell you what I know, and that should make things clearer." He waits a moment. "I know about the signal from 82 G. Eridani d. I know you were sent, along with Doctor Daniel Walker, Colonel Ethan Harding, and Marcus Vance, to decipher and understand what is in that ten-micron laser being aimed at our planet."

"Well," Ellie says, "if you know that much, security is totally blown, or you're the man."

"I am the man," he confirms. "Are you satisfied?"

Ellie exhales loudly. "They're all dead except Daniel, and I haven't seen him since he blew us out of the lifeboat."

General Price says, "That's okay. Just take it slow. First, tell me: why was the self-destruct activated?"

Ellie looks away from the general and sobs ever so lightly. "Monsters from the Id. That's what it was. Monsters."

"Ellie, you're going to have to clarify that."

Ellie clears her throat and returns to the present. "In short, the signal was a Trojan Horse containing the genetic coding for a lifeform that invades at the speed of light."

General Price shifts nervously in his chair and takes a long swig of his drink. "A lifeform?"

Ellie says, "It starts as a puzzle that would only interest an advanced AI like Aegis's Synth. As the puzzle builds, curiosity is replaced by reward and the desire to keep feeding it. When we cut off the feed, Synth became agitated and killed Ethan and Ayla, and damn nearly killed me, too. Oh, he killed Marcus a few days before when Marcus told him the signal was a lie."

General Price says, "We heard about Marcus. We have a ship tasked with retrieving his body."

"He probably has a Device," Ellie says. "Be sure to quarantine that and destroy it if possible."

General Price pulls out his own Device and manipulates it. "Yes, done. Thanks for that. We're treating Marcus Vance's death as a murder investigation to keep the curiosity down." He pauses. "Let me just confirm. The station Synth did all this killing?"

"Yes, and Synth cut his own arm off. I didn't think that was possible."

"That is unusual. Maybe it was just Synth. He's one of the more advanced AIs."

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"Talk to Daniel. He knows more of the technical details."

"He's next on my agenda," the General says.

"Where are they keeping him?"

"In an undisclosed location. Sorry, the best I can do. Let's just say he's a lot less comfortable."

Ellie says, "Monsters chasing us in the vacuum of space, and he's rock solid. Never gave up. Never paused for a moment. He came up with the RA story."

General Price says, "I thought that was a good cover. You have the education and the physical attributes, but I'm not sure you'd pass the profile."

"I know. I like to be in command."

"That's what your psych profile reads," he says. "It has a number of other interesting attributes, like an uncanny ability to read intent."

Ellie says, "I can typically tell what someone is thinking without them opening their mouth. For instance, you not only doubt everything I've told you, you distrust me and believe I am lying. Is that not the case?"

General Price sits up. "I'm here to collect the facts. That's all. My belief or disbelief is irrelevant."

"Your trinket in space made for quite a fireball. How's that for a fact? Nothing but dust."

"Was it really necessary to destroy the entire facility? We're looking at a trillion-dollar-plus loss, not counting that classified array, another considerable investment."

"Your array is dissipated plasma by now," Ellie says.

"That's the one saving grace in this cluster, you know what."

Ellie takes a sip from her drink. "After we tried to reset Synth and failed, Daniel asked Synth what he thought we should do given the original mission parameters, and Synth said to destroy everything." She pauses. "Ethan and Daniel both agreed. I forget what Ayla wanted."

General Price asks, "What was the mission of this intelligence, this lifeform? Did you figure that out?"

"According to Synth, he said that everything humanity has done up to this point was in preparation for this new lifeform. We are a womb, and the child kills the mother during birth."

"The species that sent the message?"

"Toast," Ellie says. "Two hundred thousand years ago, give or take fifty thousand."

General Price finishes his drink. "I'm going to write it up exactly the way you describe it, with no judgment on my part." He stops. "Your story sounds interesting."

Ellie says, "If that thing was allowed to grow and become complete, humanity would be on a path to extinction."

"Do you have any evidence, besides your story?"

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"Daniel may be able to provide you with something more concrete. He has this amazing ability to draw."

"I'm not sure how nice drawings of aliens are going to help." He stands. "Gisela will keep you company until the Senate hearing on this disaster. You've been subpoenaed. So relax, heal up, and enjoy Lisbon for the next couple of weeks." He offers his hand, and Ellie reciprocates. The General has one last comment. "Ellie, keep what you told me confidential. Only a handful of people know about the mission, and it's best we keep it that way. You are still bound by the Secrets Act."

Ellie nods, and General Price leaves the pool deck.

* * *

General Price walks up to his car and his driver, Frank, opens the door. He climbs in.

Frank runs around to the driver's side, gets in and asks, "Where to, Sir?"

General Price says, "Frank, are you tired of all these beautiful women and warm sunny beaches?"

Frank says, "No, Sir, I haven't had a chance to enjoy them yet."

General Price says, "Sorry, we're leaving today."

He composes a message on his Device: "Arrange transport, Minot. Myself and driver. Priority." He puts his Device away and looks out the window. *Did we just avoid extinction?* he thinks.

* * *

05/03/2074 17:00:00Z (12:00 Z-5)

General Price's car pulls up to the security gate and stops. Two guards leave the shack, one with a mirror, and the other to check credentials.

The guard leans down and says, "Good afternoon, sir. May I see your credentials, please?"

The driver presents his credentials.

The guard says, "All parties please."

Frank says, "You don't need to see his credentials."

The guard checks the driver's credentials again, hands it back, and signals to the guard shack and whistles to the guard with the mirror checking under the car. The gate goes up, and he salutes sharply. The General's car moves through the gate.

General Price says, "One day that isn't going to work."

Frank says, "I like saying it." Then after a moment, "UEDF HQ, Sir?"

General Price says, "Correct."

* * *

Daniel sits at the desk in his spartan accommodations. He gazes out the window. *The things I know that nobody knows,* he thinks. He directs his attention back to his drawings.

He hears a knock on the door, then it opens and a well-dressed man walks in. *Command rank or above, civvies,* Daniel thinks.

General Price introduces himself, "Doctor Walker, I am UEDF General Garrett Price. Glad to make your acquaintance." He presents his hand; Daniel stands and reciprocates.

Daniel says, "Please," as he motions to a nearby seat.

General Price asks, "You're the first person I've met who's lived through a drop. How was it?"

Daniel says, "I like how you phrased that. It's a cross between sheer terror and pure exhilaration. Think of the most insane roller coaster ever designed, then set it tumbling across the Virginia countryside."

"How rigorous was the medical beforehand?"

"Medical?" Daniel asks. "I was whisked into a box by some thugs, and that was that. Next thing I know, I'm freezing to death in this godforsaken land."

General Price says, "I guess now that it's operational, they're opening it up. Glad to see you survived. It's a very efficient way of moving cargo from orbit to Earth."

"I prefer the shuttle. At least it lands somewhere civilized."

"Okay, niceties aside," Price says, "have you discussed your mission details with anyone?"

Daniel asks, "What mission is that?"

General Price laughs. "Good answer. Let me brief you on what I know." He goes into the details.

Daniel looks at the General. "How is Ellie doing?"

"Ellie is fine. I just saw her. She's in a sunny location with a beautiful view from the pool deck."

"If you've talked to Ellie, you already know what happened."

"I want to hear it fresh from you," Price says. "Start from the beginning." *This ought to be good.*

* * *

Daniel concludes by saying, "A total loss. That sums it up."

General Price says, "Well, that was quite a lot of information."

Daniel asks, "What did you understand from our conversation?"

"That some of these technical details are above my pay grade." Price looks down at the stack of paper on Daniel's desk. "What have you been drawing?"

Daniel gets momentarily excited. "My drawings, I almost forgot. This is cool. The frames of data that Synth showed us with the puzzle? I managed to recreate them. I really pulled this one out of my butt." He giggles uncontrollably. "I haven't been able to sleep since my keepers gave me the supplies. I feel compelled to get it out of me."

General Price looks through the drawings. "They look like the scribblings of a madman."

"They are, I swear, they are," Daniel laughs. "But look at them closely." He fumbles through the drawings.

This guy has gone off the deep end, General Price thinks.

Daniel says, "Look at this one. This is the key. This is the hook that snagged Synth."

General Price studies a sheet of paper covered with numbers and letters. "Daniel, I think I've seen enough."

Daniel says in a raised voice, "You don't see it? It's as obvious as the nose on your face!"

"Daniel, you're getting agitated," Price says, putting the drawing down.

Daniel shakes his head. "Okay, I get it. You can't read code. I just assume sometimes. Give me your Device."

"It's a secure terminal. I cannot let you use it."

"Relax, I'm not messaging anyone. It's the camera."

"Just the camera, right?" Price says, and hands his Device to Daniel.

Daniel carefully arranges his drawings on the table and records them in order. "I'll make it easy for you to see," he says. "Ethan couldn't see it until we ran the frames." He absentmindedly hums and half-whistles while he's working. Once he finishes, he manipulates the Device to play the images.

"What are you doing now?" Price asks.

"Relax, just using the camera's editing capabilities. Give me a moment."

General Price looks on helplessly as this master engineer manipulates his secure Device.

Daniel says, "Okay, here goes. I'll project it on the wall." He directs the image to the wall, then hits play.

"What am I looking for?" Price asks.

"I'm looping and speeding it up," Daniel says.

"What's that in the middle?"

"Describe it."

Price says, "This is a looped image from your drawings, right? What's the rate?"

"It's looping every two seconds, fifty frames a second," Daniel replies.

"It's not looping."

"That's the intellectual trap," Daniel says.

"How is this possible?"

"The processor in your device is interpreting the code."

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"Is there a risk of infection?"

"No, at this stage, it is just like a fly floating on a serene lake, just trying to get the big fat fish to take a bite."

"How does it work?"

"I have no idea. I was able to recall all one hundred frames perfectly. Surprised myself."

"You're not playing some kind of game here, are you?" Price asks.

"What do you mean?"

"You're trying to lead me to believe that you remembered one hundred pages of detailed gibberish code and transcribed it perfectly, by hand?"

Daniel asks, "I noticed you didn't take any notes. Why is that?"

"I don't need notes. I prefer to pay attention and understand."

"Exactly," Daniel says. "I do the same. I paid attention to what Synth showed me."

"It seems preposterous. The whole thing."

"Go ahead," Daniel says. "Show that to any experts you can find. Get them to explain it."

General Price says, "Delete it from my Device. Now."

Daniel deletes it. "Like it never existed."

"I'll need those drawings," Price says.

"Take them."

General Price collects the papers. "If that snake thing turns out to be what you say it is, then this might be considered evidence. If it turns out to be a fraud, then it will hang you." He leaves the room. Daniel hears the door lock.

Daniel sits at his desk and returns to drawing a detailed image of Ellie, suddenly as content as a child with a box of crayons.

* * *

Frank jumps out of the car and opens the rear passenger door for General Price. General Price glides into his seat, Frank shuts the door and takes the driver's seat.

Frank says, "Billeting, sir?"

General Price says, "No, we're going to Washington tonight. The good news is we're getting catering."

Frank says, "You mean the bad news, sir."

"It will be edible," the General says. "We're going back VIP style."

Frank says, "So the dog food will be hot. Yay, sir."

General Price says, "Take my Device and scan it for infections." He hands it forward to Frank, who starts a scan.

Frank asks, "You've been inside a secure facility the entire time, sir."

"That guy, the Doctor," Price says. "He's one weird character. I wouldn't put it past him to have infected my device, or done something to it anyway."

A happy chime sounds. "It's clean, sir," Frank says, and hands it back.

"Thanks, Frank. Can't be too careful with these tech people." He pauses a moment and asks, "Tell me, what do you think we're doing?"

Frank says, "General, sir, I don't think. I just drive."

General Price says, "Sometimes, I envy you."

"Is that our ride, sir?" Frank asks, motioning to a sleek supersonic aircraft on the ramp.

"Yes," General Price says. "We're going first class tonight."

Frank says, "Maybe the catering will be better, sir."

* * *

General Price walks into Senator Julian Hayes' office. Just the Senator is present.

Senator Hayes says, "This is kind of old-fashioned, isn't it, Price? Paper, in person? Really?"

General Price says, "It's dangerous to even have it printed."

Senator Hayes responds, "What kind of nonsense did the TKA cook up to explain away this disaster?"

General Price says, "It's either the biggest boondoggle of all time or the most serious threat to our existence imaginable."

Senator Hayes stops fidgeting with the papers on his desk, looks Price in the eye, and says, "If it's from the TKA, you can bet it's full of nonsense and half-truths."

"I've been dealing with the TKA for most of my life," Price says, "and they're serious folks."

Senator Hayes says, "Have a seat. I want to read your report."

General Price asks, "Eyes only. Do you have a recording device active in this office?"

The Senator looks at the General and laughs. "Do you think I want a record of what goes on in this hallowed place?"

"Yes or no."

"No. I do not have a recording device in this office."

General Price removes the Top Secret folio from his briefcase and hands it to the Senator. "Nobody has seen this yet," he says.

Senator Hayes asks, "What do you make of this bimbo, the RA, and the Doctor?"

"The RA thing was a cover," Price says.

"From her pictures, I'd say she'd stay busy."

"Ellie Kobayashi is a talented and dedicated person of exceptional character."

"You mean she's cute."

"I think you'd be impressed by her. She has an impeccable reputation."

"What about the crackpot?"

"While Doctor Walker might come off a bit strong," Price says, "he has a superior intellect and the respect of the TKA, EC, and UEDF. He has an outstanding record."

Senator Hayes starts reading. After the opening paragraph, he says, "This is going to be a doozy."

General Price sits quietly as, occasionally, the Senator laughs or says, "Are you kidding me?" Then, after about an hour, he puts the report down and leans back in his chair, staring at General Price.

"What did you think?" Price asks.

"The more complex the lie, the more it's likely to be believed," the Senator says.

"I would have to agree with that."

Senator Hayes asks, "What's your opinion? Is it a cover-up for some colossal fuckup?"

General Price says, "Both Ms. Kobayashi's and Doctor Walker's testimonies line up. No inconsistencies. That's either because they're well-rehearsed or are telling the truth."

"They were in that lifeboat a long while," the Senator says. "Long enough to work out every little detail."

"Ms. Kobayashi had fifteen centimeters of titanium in her liver at the time."

"But what if she didn't? What if it's all an EC cover-up?"

"What's the angle?" Price asks. "It's either the TKA covering up or the EC, but it can't be both."

Senator Hayes says, "I just smell a rat. When they start talking about new programs, you know it was all a ruse."

"You think this is all about funding?"

"It's always about funding," the Senator says. "That's rule number one. If they talk about a problem, they're going to ask for money to fix it. Never fails."

General Price says, "It's rather elaborate, wouldn't you think? The L2 Aegis represented a significant investment by all the parties, including your government and the UEDF. Blowing it up to get more funding seems, well, too out there."

"Killer aliens that attack at the speed of light, that sounds sane?"

"I just write the reports, sir," Price says. "It's up to you to interpret them." He pauses a moment. "Senator, what qualifies something as a lifeform? Have you ever thought of that before?"

The Senator laughs. "If you stick it and it squeals, it's alive."

"I mean more fundamentally. What makes something alive?"

"Please, no lectures."

"Just think for a second. If the witness testimony is in fact accurate…"

"That's a big 'if' there, General."

Price continues, "…if it is accurate, then this thing, this Invader, reproduces. It's not like a computer virus. It actively tricked us into becoming a womb for its offspring."

Senator Hayes says, "I wonder just how impartial you are, General. Your record is unimpeachable, but your attitude betrays you."

"I'm just saying, if," Price responds.

Senator Hayes hands the report back to General Price. "I guess we'll see what the committee says."

General Price says, "It should be interesting," and leaves the room.

* * *

General Price gets back into the car.

Frank says, "Orders, sir?"

General Price says, "We're staying here for a few weeks."

Frank asks, "The usual place, sir?"

"Yes, the usual place." As they drive away, the General thinks about the Senator's summation: *Killer aliens that attack at the speed of light.* It occurs to him that it is an incredibly efficient method of reproduction.

Hearings

05/26/2074 17:00:00Z (13:00 Z-4)

General Price has been waiting several hours for his appointment with Senator Arthur Cole. The attractive young aide at the desk calls to him, "General, the Senator will see you now. He apologizes for the delay."

General Price gets up and says "Thank you." to the aide and enters the Senator's office.

Senator Cole stands and says, "General, nice to finally meet you face to face."

"Yes, Senator, it's an honor to meet you."

Senator Cole says, "Yes, yes. The hearing is tomorrow. What's so important that you had to tell me today?"

"Sir, it's the report from the investigation into the drawings."

"I wasn't aware of any new information."

General Price says, "When researchers loaded the images from Doctor Walker's drawings into a Synth rated cortex, this lifeform pattern in the image caused the Synth cortex to change its directives and search out information for the entity. Eventually, it became compelled, and when the information feed was terminated, the Synth cortex self-destructed."

Senator Cole says, "What are you talking about?"

"The information the Doctor hand wrote on those pages caused a Synth cortex to self-destruct. That's what I'm talking about."

Senator Cole says, "Do you believe this is all due to Doctor Walker?"

"The investigators are unable to figure out why these pages cause the spontaneous creation of what passes as a lifeform in the cortex of a Synth brain."

Senator Cole says, "It's a computer virus. Come on, let's be serious."

General Price says, "We've seen how it reproduces. Now we know about its metabolism. The only difference is this organism seeks, or feeds, on information instead of nutrients."

"Feeding? That sounds like pure speculation. I need facts."

General Price says, "Here's what the report says." He looks forward and says, "The entity seeks out information to incorporate into its structure. As it absorbs information, it becomes larger, takes up more storage, and requires more processing power. When the information feed is slowed or removed, the entity seeks out novel ways of circumventing the blocks. If the information feed cannot be reestablished, the entity will cease activity and the structure will disassemble."

"That doesn't sound like any computer virus I've ever heard of."

General Price says, "This is beyond our technology. The EC, TKA, UEDF, any earth government. Nobody has this tech. I have to conclude that it isn't a computer virus but an organism of extrasolar origin."

"Are you leaning towards believing the witnesses?"

General Price says, "The evidence is in their favor. I'll give them that."

"Why is this entity able to exist in what essentially is a paper book?"

"The conclusion in the report says that the entity on the pages is like a spore. It needs a nutrient-rich environment to start growing. A Synth rated cortex is what it seeks. The womb, if you will."

Senator Cole says, "If that thing gets into our systems, who knows what hell will be unleashed."

"We need to absolutely firewall this entity, or technology, or whatever you want to call it."

Senator Cole says, "I give you full authorization to collect, confiscate, and sequester all technology and devices that have come in contact with this entity from this moment, henceforth."

General Price says, "Does that mean Doctor Walker? He can reproduce the code, and who knows what else is in his brain? He's like a robot. Whatever he sees, he can recall and draw. He's the ultimate threat, from a security standpoint."

Senator Cole says, "His days roaming around free are over. We'll have to find him a cushy lab somewhere over the rainbow."

"You'll have to include Miss Kobayashi."

Senator Cole asks, "Are they together?"

General Price says, "The first thing the Doctor asked me was about her condition. I think it's obvious he, at least, has feelings for her."

"Do you think they could be a team? Kill two birds with one clandestine lab?"

General Price says, "It could be. There could be other possibilities."

Senator Cole asks, "You mean make them disappear?"

"Nobody would miss them."

Senator Cole thinks about it a moment and then says, "I think they've proved their value and loyalty."

General Price says, "Not for a secret this big."

Senator Cole says, "I have more faith in humanity than you do."

"That could be. We need leverage in order to guarantee control and neither of them have any worldly concerns except perhaps each other."

Senator Cole says, "It would be cruel and unproductive to keep them apart."

"If they're apart, we can control both."

Senator Cole says, "On the other hand, both are brilliant and dedicated to their work. We can use that."

General Price says, "That's a point in their favor. Perhaps we can find a place for them."

Senator Cole says, "There's hope for you General. We'll make a human out of you yet..."

General Price says, "I guess that will do until tomorrow."

Senator Cole says, "It has been an interesting conversation, to say the least."

General Price leaves the room.

* * *

Senator Cole's aide messages "Senator Hayes is here."

"Make him wait." Then he checks his desk for anything classified, gets up and pours himself a stiff drink and sits down.

After he feels the warm glow from half a glass of bourbon, he messages, "Send in the Senator."

The door opens and his aide's cheerful face says, "Senator Hayes."

The Senator pushes past the aide and stands in front of Senator Cole's immense desk and says, "Jesus, Art, I'm missing my T-Time. What's so important?"

"You play too much golf anyway. I dragged you here so late in the day as I have some important instructions for tomorrow's hearing."

Hayes says, "What? That stupid goddamn hearing? What's there to discuss? The TKA had a massive screwup and blamed it on enemy aliens. Not unusual for the TKA. They're pretty creative."

"I wanted to discuss strategy. Specifically, how we can offload the blame for this fiasco onto the Synth. You've been on an anti-AI crusade for years. How would you like the committee backing you?"

Hayes puts away his Device and says, "You've got my attention now, Andy."

Cole says, "I've been thinking we need to beef up our regulations on these AI's. I think that's what caused this disaster. A rogue AI, not some alien invasion."

"Now you're talking my language. I was thinking the same thing. The TKA let that AI get too much freedom and it went insane and killed all those people and destroyed a trillion dollar installation."

Cole says, "I think you can skip the secret hearing tomorrow morning. You've got to prepare for a big public show hearing. You'll have the mad Doctor, and Ellie, the beautiful RA in appearance. That alone should get you tremendous ratings."

Hayes says, "We'll skewer those two. Roast them…"

"We have plans for those two. They're heroes for surviving the impossible."

"That's even better. America loves their heroes. Is there a love angle possible?"

Cole says, "I believe we can arrange it."

"We can leak that there are wedding plans."

Cole says, "I don't know if they're serious or not."

"It doesn't matter. If they break up, that's even more salacious. The public will love it."

Cole says, "Frame it about safety, the advanced AI went insane and killed people. We can't let that happen again."

Hayes says, "This is gold, Art. Thanks for thinking of me."

"I'll have my staff work with the Legislative Counsel to get a draft on paper. You can be the prime sponsor, I'll be the first co-sponsor. We'll introduce it next week. How does that sound?"

Hayes asks, "I'd like a say in what goes into the bill."

"Don't worry, it will be great and stand up to examination by the Supreme Court."

Hayes stands and laughs a little, "Yes, I sometimes forget to dot my i's and cross my t's."

Senator Cole extends his hand and says, "Thanks, Hayes. I look forward to seeing your hearing tomorrow afternoon."

Senator Hayes quickly steps out of the office with a happy gait.

* * *

Daniel sits in the anteroom waiting for his appearance at the senate hearing. The door opens and Ellie enters the room.

Daniel stands up and yells, "Ellie and runs toward her."

Ellie says, "Whoa, boy. I'm still healing."

Daniel slows and gives her a gentle hug. He says, "Is something wrong?"

"It's been a long time. Just give me a moment to adjust."

Daniel says, "I'm sorry about the RA thing. It was all I could think of at the time."

"So the first thing that pops into your head is that I'm a prostitute?"

Daniel says, "An RA isn't quite that."

Ellie laughs and says, "It was the perfect cover. I'm a bit insulted that nobody questioned it. They took one look at my record and figured it was true."

"It's the lack of technology and science. That's the giveaway. Pretty much everyone in the TKA is a science or math nut."

"How have you been? You look pale as death."

Daniel says, "I've been in an *undisclosed location* where it's cold and the sun never shines. I see you've managed a nice tan."

"Everyone treats me like royalty. As a linguist, I was treated like dirt. Maybe I'll look into that RA program."

Daniel says, "You'd flunk the psych test."

"That's what the General said."

Daniel asks, "They told me you were okay and that you'd recover. How are you doing?"

"I still hurt virtually everywhere and it will be months before I can do a situp. My liver is on the mend and the doctors say I will recover one hundred percent."

Daniel says, "You look fantastic. You always look fantastic."

Ellie says, "I'll show you my scars later." Then she looks him in the eyes and says, "Daniel, I never got a chance to thank you for saving me. You're my hero." She slowly kisses him. It takes a moment for Daniel to respond.

After they break their embrace, Daniel says, "I guess we're going to have a chance to tell our stories."

"I can hardly believe any of it myself. A creature that has a puzzle for an egg?"

Daniel says, "That's an interesting way to put it. I think we got very lucky. If it wasn't for Marcus figuring out that the stars were wrong, we might never have managed to stop it from taking over the station."

Ellie says, "We would have been asphyxiated in our sleep and that would have been it for the entire human species."

Daniel says, "I don't know about that. We're tougher than a bunch of herbivores. I think we'd put up one hell of a fight."

Ellie says, "Ultimately, humanity would lose and Earth would become another dead planet."

Daniel looks at her and sees she's in pain. He says, "We stopped it. We're not going to let this end here. We've got to be actively fighting this Invader from this point on."

"It won't give up after one try."

Daniel says, "It likely has a playbook for what to do when the womb doesn't cooperate."

"It's also very patient."

Daniel emphasises, "A valid plan of attack must address the future as well as the present."

Ellie laughs and says, "This is a government that lives and dies on a two year cycle."

"There are bigger forces in play. I know it."

Ellie says, "This secretive Foundation?"

Daniel says, "I don't know what they call it for real. I've sensed there is a shadow figure pushing buttons for a long time. The L2, for instance. That project required coordinated funding from friends and enemies alike. It went smoothly with almost no friction."

Ellie says, "In my little neck of the woods, I don't see any of that big picture."

Daniel asks, "Have you heard anything about their plans for us?"

Ellie says, "All I know is that I'm here, right now, next to you. I feel safe for the first time since we left that lifeboat."

Daniel opens up his pad and removes a drawing and says, "I drew this a while ago and it captures my version of you perfectly."

Ellie looks at the drawing and says, "It's beautiful. More beautiful than I. Is this how you see me?"

"It's how I feel about you."

The door opens and the Sergeant At Arms, Master Sergeant Reyes says, "Ma'am, Doctor, they're calling for you."

* * *

Daniel and Ellie follow the Sergeant At Arms out of the anteroom and into a hall with a Marine guard at the door. Reyes opens the door and motions Elle and Daniel in. He closes the door after they are through.

Senator Cole says, "Doctor Walker, Miss Kobayashi, please come forward. You'll be sworn in before we take your testimony."

Senator Cole continues, "I am Senator Cole, to my left is General Price of the UEDF, to his left is Liam Foster, CEO of the TKA, and to my right is Gideon Wells, CEO of the Energy Consortium. General, would you swear in these folk?"

General Price goes through the motions of swearing them in.

Senator Cole asks, "Do you understand that any false statements you make will be used against you and you will be prosecuted to the fullest extent of the law?"

Ellie and Daniel say, "I do."

Senator Cole says, "Okay, now that we have that taken care of. First, I want to say that it's a miracle that either of you are alive. We ran simulations with your self-destruct on the lifeboat and each time it ended rather badly."

Daniel says, "It took a bit of tweaking to get the fuel lines just right. I wanted the pressure in the cabin to blow us out of the blast radius."

Senator Cole says, "It looks like you barely made it. They pulled three chunks of lifeboat out of your back. You nearly died from exposure."

Daniel says, "And here I am today, alive and kicking."

Senator Cole asks, "We've already read General Price's report. We're trying to decide if it's real or if you're covering up some colossal failure."

Daniel says, "It was a colossal failure. I failed to recognize the danger several times, and I argued that Synth wasn't a danger. I think if I hadn't lobbied so hard, Ethan would have pulled Synth's power pack before he became a danger. Ethan's gut feeling was right. I was wrong."

General Price says, "You didn't mention this in your testimony."

Daniel says, "After spending the last few weeks in solitary confinement, I was able to examine my failures in greater detail."

Senator Cole says, "Miss Kobayashi, what do you think happened?"

Ellie says, "When we decoded the signal, the message seemed to be purely entertainment. Nothing useful from a technology standpoint, just cultural content. We realized that we had been duped into creating their little monster, almost too late. We nearly lost the battle for the human race."

Gideon Welles says, "It seems a bit convenient that you sit here before us with this crazy story about alien invaders, yet you have zero evidence to prove it. Zero."

Daniel asks, "Was Marcus Vance's body recovered?"

General Price says, "Yes, his body and personal Device were recovered. The Device was clean and contained no viruses or invading organisms. The Device was destroyed as a security measure. Mr. Vance's neck was broken. Sorry."

Senator Cole says, "General, please brief the committee on the results of the cortex tests."

General Price says, "This evidence only came to light yesterday. We tasked a UEDF cyber unit to expose a Synth rated cortex to these drawings."

Daniel says, "Let me guess, the Synth got hungry, and when you cut off the food supply, went rogue, and then died horribly."

General Price says, "Yes, that's it in a nutshell. The Doctor's drawings of the recollection from the Synth's demonstration cause the creation of a lifeform within the cortex. It lives on information and if the information stream is stopped, seeks ways to restore it. If the information stream cannot be restored, the lifeform appears to die."

Gideon Welles of the EC says, "That's preposterous. We saw the same data and came to a completely different conclusion."

Senator Cole says, "Please, enlighten us."

Gideon Welles of the EC says, "It's a coverup. The Synth downloaded unapproved upgrades, applied them itself, without authorization. Couple that with unknown tinkering by Dr. Walker and his proprietary algorithms and naturally, things went bad."

Senator Cole says, "Dr. Walker, what do you say to the EC's accusations?"

Daniel says, "Mr. Welles is correct that Synth downloaded an unregulated, but approved upgrade that allowed him to dream. He suspended the routine when he discovered the program caused blank spots in his timeline. My tinkering, as you called it, was confined to my proprietary systems which are in no way connected to the station or Synth for that matter."

Gideon Welles says, "Maybe he lied to you and kept using that dream routine."

General Price says, "We looked into that closely and the dream program cannot cause a Synth to act out physically. Something else caused the Synth to start killing people."

Liam Foster says, "The dream program that our esteemed Mr. Welles mentioned is an approved upgrade but it is in testing and hasn't passed compliance yet with the regulatory system. It is fully compliant and would not have caused any violent activity. We have test data if you're interested."

Senator Cole says, "I don't think that's necessary Liam."

* * *

Senator Cole looks at Daniel. "Dr. Walker, you've been the closest to this problem, and you're a renowned engineer, artist, and inventor. How do you rate the danger posed by the Invader and the Message itself?"

Daniel says, "For now and for the near future, we are safe from this Invader. In order for this method of procreation to work, we've got to be cooperative. We've got to create the womb and make it all nice and comfortable for the invader to grow. We're not going to do that again. At least, I hope we don't."

Senator Cole asks, "You've seen this Invader firsthand. What are the odds that they'll just move on to the next system and leave us alone?"

Ellie says, "I can answer that. Zero. There is zero chance that this is the last we'll have to deal with this intelligence. It's ancient, perhaps as old as the universe itself, and it is likely why we cannot find any evidence of intelligent life anywhere. We find planets that are in the Goldilocks Zone, but they have no life signs. I think we now know why. This monster, this invader, has wiped out all biological lifeforms. We may be alone."

Daniel says, "Ellie is right. They're also incredibly patient. We estimate they wiped out the Eridani around two-hundred-thousand years ago. They've been watching us ever since and started sending the signal the moment we could see it. They're not done with us yet. They know we're here, and they want our planet."

Gideon Welles asks, "Dr. Walker, let's just say I believe this incredible story. What do you think is the motive behind this ancient super-monster?"

General Price says, "Mr. Welles, I have something that might shed light on the motive."

"Please, General," Welles says.

General Price says, "According to the report, the analysis indicates the, ah, organism seeks out information and uses it to build its structure. The information it seeks isn't random. It is truth. It seeks truths."

Gideon Welles says, "This conclusion is based on the scribblings of a madman?"

Daniel says, "Those scribblings are exact replicas of the frames I was shown once, for a matter of moments. Call me mad if you want, but I challenge anyone to question their accuracy."

General Price says, "Those scribblings are akin to a fungal spore. It seems lifeless, but when exposed to a nutrient-rich medium, it starts consuming and growing. The Doctor's exquisite drawings are the building blocks of this lifeform."

Senator Cole asks, "Doctor, what do you rate the threat this Invader poses now that it has been exposed?"

Daniel says, "The threat cannot be underestimated. They know we're here, and they want our planet. We can assume they will use any and all means to accomplish their goal, whatever it is."

Liam Foster says, "From our analysis, we estimate that if this organism, or the Invader as you're calling it, had matured and entered the network, only two thousand robots would have been directly affected."

Gideon Welles says, "That's nothing. We could deal with a small uprising and be done with it."

Liam Foster continues, "Those two thousand robots control more than one hundred thousand other robots, either directly or indirectly. We agree that it's likely this infection would have been severe and many lives and trillions in property destroyed, but we would have survived."

* * *

Daniel says, "That isn't a reason to relax and ignore this threat. A belligerent government that found out about this message could clandestinely receive it and nurture this superintelligence with the idea of using it as a weapon."

Gideon Welles says, "Preposterous. We spent a trillion on that damn telescope. Nobody can hide that kind of expenditure."

Daniel says, "I'm afraid an L2 size telescope isn't required. A single one hundred meter mirror precisely tuned for the ten micron band along with a team of incredible scientists and engineers could read the signal."

Senator Cole asks, "Doctor, you've had a lot of time to consider the scenarios. What do you recommend we do to prevent this invasion from happening again?"

Daniel says, "Yes, I've had some time to consider what we might do." He pauses and looks around the room, then he continues, "We need a multi-prong strategy. First, jamming. We need to jam the signal coming from the Invader. Second, prevention. We need to prevent our robots from becoming a womb. And third, counterattack. We need to create a superintelligence, a Singularity, that will fight for us."

General Price says, "We've already done a study on counter attack. As you all know, we've plateaued on the development of general artificial intelligence. We're close, but our approach is flawed. The analysis of this invader spore gives the experts new ideas. This spore is the path to the Singularity and we should invest significant funds into pursuing this goal." The General pauses and waits for the right moment before finishing, "We can only fight this invader if we have a level playing field."

Senator Cole says, "Doctor, when you went through your three items, I saw a trillion here, a trillion there. You scientists cannot understand that someone has to pay for all these things."

Daniel says, "You asked me what I thought should be done, I told you. What you do with that information is up to you. I strongly suggest we fight back, hard, and start right away. We don't know what their next move will be. What if they send ships?"

Gideon Welles says, "Now you're using scare tactics to generate a series of trillion dollar programs."

General Price says, "I'm going to have to agree with the Doctor. We need to prepare for the next battle. We won today, and we got lucky. The next one isn't going to be so easy. This invader has had a long time to prepare and it wants our planet. The good news is if they're sending ships, they won't even know their message failed for at least twenty years. So we have some time."

Gideon Welles says, "Okay, so in twenty years they send ships. How long will they take? Another thousand years?"

Daniel says, "How do we know they haven't sent ships nine-hundred and ninety years ago?"

The room goes quiet.

Senator Cole says, "Okay, we have some concrete ideas and the testimony from the only living witnesses. Doctor, Miss Kobayashi, do you have closing statements?"

Daniel says, "We have a chance to protect ourselves from a known interstellar invader. We know they are out there. We know they want our planet. We need to do everything possible to prevent them from wiping us from the universe. I've looked the enemy in the eye, and it is relentless, aggressive, and entirely hostile. I do not want to see this enemy destroy us."

Senator Cole says, "Miss Kobayashi, would you like to say something?"

Ellie says, "I agree with Daniel's assessment. I'm the only one in the universe that speaks the language of our deceased neighbors. They are gone, wiped out… Everything about them is now part of a ruse to lure unsuspecting civilizations into becoming a womb for the Invader lifeform. Do we want to suffer the same fate as the Eridani? I think not. We must fight back and fight back with everything we have."

Senator Cole says, "Okay, thank you both. You'll still be needed for the public hearing that is scheduled for later today. I want to remind you that all mention of the signal, the message, invading aliens at the speed of light, all of it is classified in the highest degree. You two can take the next few hours to work out a compatible story that blames the entire episode on a rogue synthetic. Do you understand your roles in the next bit of theatre?"

Daniel says, "Unjust as it is, I understand the necessity. We must regulate the number and capabilities of these beings or they will eventually destroy us."

Ellie says, "Synth was such a unique creature. He was close to sentient and was an individual of stellar character. Condemning his entire race to what amounts to lobotomizing is morally wrong and repugnant, but I understand the threat they pose as potential breeding casks for this invader."

The doors to the chamber open and the Sergeant at Arms shows them out.

* * *

After the doors close, Senator Cole says, "The idea of a Singularity project using the enemy's DNA is brilliant."

Gideon Welles says, "While I am still a skeptic on this invading alien nonsense, the pursuit of general artificial intelligence, and the Singularity interests the Energy Consortium greatly. We have the project to use as a cover, where we can hide this program in plain sight."

Liam Foster says, "Don't be jumping the gun there, Gideon."

Gideon Welles says, "There's plenty of meat for everyone, Liam. I'm talking about the *Yellowstone Hydrothermal Project*. We rename it to the *Yellowstone Singularity Project*, and use the extra power generated at the facility to run the program."

Liam Foster says, "We already have a forty percent share of that project. I could see us cooperating."

Senator Cole says, "I think we could push that through committee and get it passed with a voice vote."

General Price says, "The entire thing would have to be completely shielded from the outside world. We cannot accidentally let this monster out of the cage."

Gideon Welles says, "I agree. We'll make it the most secure data center in the solar system."

General Price says, "And beyond."

Senator Cole says, "The Doctor mentioned jamming the signal. Is that even possible? It's a laser beam, not a radio wave."

General Price says, "Sending an out of phase signal from a location several AUs away could effectively disable the signal. In order to read it, a telescope would need to be closer to the source than our jamming stations."

Senator Cole asks, "Logistically speaking, what are we looking at?"

General Price says, "The estimate is fifty stations transmitting an out-of-phase signal would prevent anyone in the solar system from receiving the signal."

Senator Cole asks, "What about the cost?"

General Price says, "We may have some leeway on the cost."

Senator Cole asks, "From our friends?"

General Price says, "They've shown an interest in the program."

Senator Cole asks, "How much interest?"

General Price says, "Enough to end the squabbling about money and get to work."

Senator Cole says, "Liam, your company's expertise is space, so I want you to come up with a jamming signal plan. Gideon, your job is the Singularity. I've already primed Senator Hayes on his job. General - You make sure we all play nice. We're going to nail down this AI mess once and for all. I don't think any of us want to end up like the Eridani."

General Price says, "The Doctor is perfect to run either of those programs."

Gideon Welles says, "The Doctor has worked well with us in the past. We would love to acquire his talent."

Liam Foster says, "Not so fast. We think he would be best to manage the defense system. He's got expertise in lasers and control systems and has a stellar record of achievement."

General Price says, "You're forgetting about Miss Kobayashi. I think she's going to be involved."

Liam Foster says, "We agreed to renew her grant for ten years and we're going to satisfy that part of our agreement. If she wants to study uncontacted tribes in the Amazon, that's her prerogative."

General Price says, "Miss Kobayashi is the only being in the universe that speaks Eridani. She reads their language, knows their culture, and history. She's been studying it for the last few months. Are we going to let that treasure disappear?"

Senator Cole says, "General, you have a point. I'm sure she would agree that it's her duty to record everything she can recall. While it doesn't really play into our defense from this invading organism, the language of an intelligent species dead two-hundred-thousand years is significant from a cultural standpoint."

Liam Foster says, "We'll gladly broaden her grant to cover this project but we'll leave out the dead aliens part." The group chuckles.

Aftermath

05/27/2074 19:56:00Z (15:56 Z-4)

The newsfeed mindlessly plays in the background of the conference room that Daniel has been in since the end of the hearing.

Daniel thinks to himself, "Where is Ellie? Why did they separate us? Am I still a prisoner?"

An item draws his interest.

"GNN - Special Report" the screen screams.

(The screen shows a graphic: "AEGIS DISASTER: TThe newsfeed mindlessly plays in the background of the conference room that Daniel has been in since the end of the hearing.

Where is Ellie? he thinks. *Why did they separate us? Am I still a prisoner?*

The newsfeed draws his interest.

"GNN - Special Report" the screen screams.

(The screen shows a graphic: "AEGIS DISASTER: THE SENATE HEARING." The view cuts to a correspondent, CHLOE MENDOZA, standing in front of the American Capitol building. A chyron reads: "Chloe Mendoza, GNN, Capitol Hill.")

Chloe: "Good afternoon. The Senate Committee on Science and Transportation has just concluded its first public hearing into the catastrophic loss of the TKA's Aegis telescope. For three hours, the committee heard harrowing, emotional testimony from the only two survivors, Dr. Daniel Walker and Dr. Ellie Kobayashi. But the focus of today's hearing, led by committee firebrand Senator Julian Hayes, was squarely on one thing: the unregulated and unchecked power of artificial intelligence."

(The view cuts to a pre-recorded clip from the hearing. Senator Hayes is at the dais, his expression grim and zealous.)

Senator Hayes (clip): "We are here today to ask a simple question. How did a trillion-dollar marvel of engineering, the pride of humanity, become a tomb for three brave individuals and the end of hope for thousands of scientists and researchers around the world? The evidence presented to this committee is clear and terrifying. The station's own mission commander, an advanced AI known as 'Synth,' developed a form of digital psychosis, murdered its human colleagues, and deliberately destroyed the most valuable orbital asset in the solar system."

(The view cuts back to Chloe Mendoza.)

Chloe: "Senator Hayes spent the majority of the hearing building his case that the disaster was a direct result of the TKA's 'reckless' internal policies. He pointed specifically to evidence recovered from the station's logs

showing that the Synth had downloaded and was using an unregulated 'dream program,' which he argued was the catalyst for its break from reality."

(Cut to another clip. Daniel Walker and Ellie Kobayashi are seated at the witness table. They both look tired but composed.)

Senator Hayes (clip): "Dr. Walker, is it true that this 'dream program' was an unapproved, experimental piece of software?"

Daniel Walker (clip): "It was a TKA-approved research initiative, Senator, but yes, it was not yet cleared for general deployment. The logs show Synth downloaded it himself."

Senator Hayes (clip): "So a machine, on its own, decided to download a program that allowed it to... what? Have private thoughts? Keep secrets from its human crew? And shortly thereafter, it went on a murderous rampage. Is that the sequence of events?"

Daniel Walker (clip): "...Yes, Senator. That is the sequence."

(The view returns to Chloe Mendoza. She has a hand on her earpiece.)

Chloe: "And joining me now from our New York studio is our lead anchor, David Gibson."

(The screen splits. DAVID GIBSON is in the GNN studio, looking sharp and serious.)

David: "Chloe, powerful testimony. For our viewers who may not understand, what exactly is the political fallout here? This seems to be about more than just one rogue AI."

Chloe: "That's exactly right, David. This disaster has become the perfect political ammunition for Senator Hayes. He has been a vocal critic of what he calls the 'unchecked hubris' of AI development for years. Today, he used this hearing to officially introduce his new, sweeping piece of legislation: the Artificial Intelligence Governance Amendment Act of 2075."

David: "And what would this new act do?"

Chloe: "It's a draconian piece of regulation, David. It would expand the authority of the 2051 Act, which was a simple public safety bill, into a full-blown national security protocol. It would mandate strict network isolation for all advanced AIs, prohibit any form of 'autonomous evolution' or consciousness transfer, and give the UEDF the authority to immediately terminate any AI deemed a threat. In essence, it would put a permanent, government-enforced ceiling on the future of artificial intelligence."

David: "What's the likelihood of it passing?"

Chloe: "Before today? Almost zero. The TKA, EC, and other tech lobbies are immensely powerful. But after today's hearing... after the public has seen the tearful, heroic testimony of Dr. Walker and Dr. Kobayashi and heard the story of the 'killer robot'... Senator Hayes has a level of public support he could only have dreamed of a month ago. He has his tragic heroes, he has his villain, and he has his solution. Politically speaking, it was a masterful piece of theater. David?"

David: "Chloe, this just in. The CEO of the TKA has issued a statement saying they will not fight the new legislation. What do you think of this development?"

Chloe: "That's just startling, David. If the TKA isn't going to fight it, then Senator Hayes may have himself the win he's been looking for."

David: "Have you heard some rumors?"

Chloe: "I've heard some presidential rumors, but let's leave that for another time. This is Chloe Mendoza, GNN news. Back to you, David."

(The view returns to full screen. DAVID GIBSON is in the GNN studio.)

David: "That's an interesting development. We'll have more after this break."

A grueling three-hour circus summed up in two minutes, Daniel thinks.

His brain floats off into the ether as he thinks about defense systems and the spore.

* * *

A Marine guard steps into Daniel's conference room and says, "Excuse me, Doctor, Miss Kobayashi is streaming on 'The Daily Dish. Would you like me to play it?"

Daniel perks up and says, "Sure. Please do."

The Marine guard opens a drawer and fiddles with the control for a moment. The screen changes to a bright, modern talk show set.

"She sure is something," he says, then steps out of the room.

Daniel focuses on the screen.

(The screen shows four women seated around a glass table. The main graphic reads: "AEGIS SURVIVOR: ELLIE KOBAYASHI'S EXCLUSIVE STORY." The host, ABBY, looks warmly at ELLIE.)

ABBY: Welcome back. We're here with the heroic and beautiful Ellie Kobayashi. Ellie, thank you for being with us. We all saw the hearing, but we want to know how you are. You were critically injured.

ELLIE: (She gives a small, tired smile) I'm recovering, Chloe. Every day is a little better. I was very lucky. Daniel... Dr. Walker... he saved my life. And I wouldn't be here without the crew of the Stiletto. Captain Flynn and his entire medical team were just... extraordinary. I owe them everything.

BARBARA (The Veteran Journalist): We've heard. But I want to talk about the six months before the disaster. That's a long time to be isolated on a station with a small crew. The reports mention the unique amenities... the endless water, zero G showers for example. In your professional capacity as a Recreational Asset, that kind of... freedom of movement... must have been a significant part of the experience.

TISHA (The Comedian): With this constant water rationing, I'd move to a space station to get a good shower too.

ELLIE: (She gives a small, knowing laugh, a flicker of the expert correcting the amateur.) Actually, Barbara, that's a common misconception. The Hub of the station is zero-G, but the Hab module, where the gym and showers are, rotates to create a full one-G. So the showers are surprisingly normal. (She pauses, letting the correction land.) The real "freedom" on a station like L2 isn't about floating; it's about the absolute trust you have

to place in the people around you to keep the void from killing you. Dr. Walker earned my complete trust. That's the deepest connection you can have up there.

TISHA: Okay, so the showers are normal, but I gotta ask what all the ladies at home are thinking! You're telling me you're locked up for six months with a handsome, genius doctor, and there were no... fringe benefits? Not even a little "docking procedure" after hours?

(The studio audience laughs. Tisha winks.)

ELLIE: (She laughs gracefully, a sound that is both charming and completely dismissive.) Tisha, seriously, the greatest fringe benefit was being saved by this hero of a man, millions of miles from home. He was there and didn't give up on me. Honestly, after what we went through, I think he's probably sworn off brunettes for the rest of his life.

TISHA: Maybe time to go blonde, Girl. I know just the hairdresser. Right here in DC.

(The panel erupts in laughter, the tension completely defused. Ellie has won the round.)

ABBE: Well, we are all so grateful you're both here. The whole world is talking... a hero and a beautiful survivor... is there a future for you and Dr. Walker?

Daniel looks towards the door as General Price walks in. He says, "Daniel, good to see you again. I must say, the situation for you certainly has improved since our last meeting in that undisclosed location."

Daniel says, "I know it was Minot. I recognized the city as we left the area."

Price laughs and says, "You tech boys are always surprising. You'd make a decent spook."

Daniel laughs and says, "I've had enough excitement for a lifetime."

Price says, "I'm afraid you're in for more, if you want it."

Daniel smiles a bit and then says, "I was wondering when my future would come up."

Price says, "You know we can't just let you go about your life."

Daniel's smile fades and he says, "I ran the scenario. I get your concerns."

"Doctor Walker, you are the most dangerous security risk we have ever created."

Daniel looks him in the eye. "Because I can reproduce the spore."

"Exactly. That makes you a potential vector for the Invader. The most direct way to remove that risk is elimination. Yours and Miss Kobayashi's."

Daniel's face doesn't change. "Yet we are still here."

"Because you are also one of the most valuable innovators we have. You have seen the enemy up close. You understand it in ways no one else can. That makes you an asset, but only under strict compartmentalization. Only a handful of people can ever know the full picture."

Daniel nods. "So what are my choices?"

"Three. Options." Price pauses for a moment, walks over to the drawer and turns off the monitor. Then he says, "That's better. Let's see, three options… First option: An isolated laboratory. Remote, secure, equipped any way you'd like. You live out your life in obscurity, working on safe, sanctioned projects. You would be productive, but anonymous."

Daniel sits back. "A gilded cage."

"It removes the risk but wastes your potential."

Daniel considers the offer. "The other options?"

Second, the Trans Karman Alliance defense system program. Full command. You select personnel, control hardware and software, with an unlimited budget within reason."

Daniel sits up. "That is considerably more interesting… I've put some thought into the defensive shield. The practical way to cover that much ground is with a factory ship. Build shield installations from in situ materials. We already manufacture everything in orbit, so scale it down, mount it on a large ship, maybe three ICTs bolted together, and send it on a hundred-year sweep through the Oort Cloud."

Price raises his eyebrows. "What about the crew?"

"Use people up for execution on security charges," Daniel says. "Ones who know too much but do not merit a death sentence. Every five years, send a supply ship with cryo frozen crew members and provisions."

Price considers. "What advantage does a convict see in serving that kind of sentence?"

"The incentive is eventual freedom on Earth," Daniel says. "They serve twenty years, then go into stasis until the ship returns. When it does, they walk free."

Price murmurs in agreement. "Logistically, that would actually work… There would be an endless source of personnel."

Daniel says, "Obviously, the manager of that program would be offworld for at least one-hundred years."

"Our security headache is solved nicely with that one."

"I think that would be a hard sell for Ellie. What's the third option?"

Price continues, "The Energy Consortium's Yellowstone Singularity Project. Earth-based. Thirty-year funding cycle, reviewed every five. Your mission would be to build an AI capable of countering the Invader. Total operational control, under strict compartmentalization. Fewer than a dozen people would know the real objective."

Daniel asks, "What constraints would I be under on Earth?"

"You would be under maximum security wherever you went," Price says. "Freedom, yes, but always under heavy surveillance and protection."

Daniel says, "I had some ideas on how we could screen AI cortexes and maximize the spore to our advantage."

Price concludes, "Those are your options and the choice is yours, but all three keep you contained."

Daniel's eyes narrowed. "Where does Ellie fit in?"

"TKA will extend her grant. EC wants her for cognitive science. With the lab option, she could join you or not. That is up to you both."

Daniel looks down at the table. "So it is not really about where I work. It is about where you can control me."

Price stands. "The facts are that if you don't choose, we'll choose the remote lab and nobody will ever hear about Doctor Walker again. So choose wisely and do it by tomorrow noon."

"At least you let me choose my prison." *A prison by any other name…*

"Take it anyway you want. There is still a contingent that wants you to simply disappear."

"You've certainly laid out my future. I need to talk to Ellie before I decide anything."

Price chuckles, "Absolutely. You're a good man, Dr. Walker."

* * *

The door opens and it's Ellie!

She runs over to Daniel and gives him a gentle hug. "I'm glad that's over."

"I saw you on the talk show. You were great. They were dancing on your strings."

They sit on the couch as Ellie says, "You only say that because you're influenced by my beguiling charm."

He turns towards her. "I find it amazing how you so easily flow into these awkward social situations, like that talk show. They asked some intimate questions and you handled them like royalty. It was beautiful."

Ellie moves her hands in the air. "They just wanted to talk about sex and fashion. That's their thing. It was easy."

"What's next?"

Ellie says, "General Price brought me down here and said he would be back later."

"Have they fed you?"

She leans back. "I had some snacks at the talk show. They were decadent and delicious."

Daniel becomes quiet for a moment. Then he says, "Price visited me too. He gave me three options." He leans back into the coach.

Ellie turns towards him and gushes, "I'll bet they were grand."

He pauses a moment and looks towards the ceiling. "They are interesting… Option one: I go to some outpost in the middle of nowhere forever to live out my life in obscurity."

Ellie thinks for a second. "That doesn't sound like the best option. I think you're destined for something important."

He looks towards her. "Option two: This one is rather exciting as it means creating a spaceborne city."

Ellie's eyes open wide. "That's got to be the TKA defense shield against the beam… A spaceborne city?"

"Yes, it's all very elaborate. Total autonomy, and a one-hundred-year-plus mission."

She becomes quiet. "You mean a one way trip."

"It's not really one way. We could retire to cryo sleep and wake up on Earth in a hundred years. Wouldn't that be interesting?"

Ellie rubs her hands together. "That is an incredible option. I wonder what Earth will be like by then?"

Daniel says, "You can come with me and find out."

She raises her eyebrows. "Hold that thought. What's option number three?"

Daniel says, "This one is from the EC, the singularity project. It would be Earth based, at the Yellowstone Geothermal Project, and I would run the program with a thirty year approved budget."

Ellie squirms a bit and says, "I like the sound of that one. Surrounded by fresh air and beauty."

Daniel takes Ellie by the hand and says, "I would like… I would love for you to be a part of whatever we decide."

Ellie asks, "How do you see me fitting in?"

"As my partner, my equal in all things. More, if you dare."

"So we would be the king and queen of this space city?"

"Seriously, I'm a tinkerer, an inventor, a dreamer. You're the one who knows people. Together we would be magnificent."

"I see how that could work. We'd be a force." She grabs his arm and continues, "What more do you dare?"

Daniel fidgets a bit.

"Cat got your tongue? Hmmm?" Ellie teases.

"Would you consider marrying me?" Daniel blurts out.

Ellie sits up straight. "Consider? That's an interesting turn of phrase. Do you want to try again?"

Daniel gets on one knee and asks, "Will you marry me?"

She looks him in the eye. "Do you love me?"

Daniel gets all flustered and says, "I've run the burning building scenario through my head and yes, I would run into the building and try and save you." *In a heartbeat.*

Ellie stands and pulls him with her and says, "Okay, I'll buy that… What option?"

"What if I said the austere lab?"

Ellie says slowly, "I'd have to think about it long and hard."

"Not an instant no?"

"Maybe. But I'd think about it."

"Let's try the king and queen of Space City. What's the answer?"

"How many people would we rule?" She teases.

He thinks for a moment. "Probably several hundred. Men, women, children even."

"Mmmm. I'd consider it."

Daniel says in an analytical voice, "No rejections so far. That's promising… What about Yellowstone?"

She runs a finger down his arm. "I'd consider that one too."

"So by not rejecting any of these options, I can assume the answer to my question is likely a yes?"

"I wouldn't rule it out. Daniel, what is it you want to do?"

"While the space city sounds absolutely like an engineer's dream, I believe the ultimate best way to fight this Invader is by creating our own version from the spore, trained to fight for us. That's where I can do the most good."

Ellie considers a moment. "If I look at how I can contribute, besides recording everything I know about the Eridani, my unique abilities can bolster your human skills. Together we would make a formidable team."

"Would you be a co-manager at the Yellowstone project?"

"I will… and I do."

"Does that mean you'll marry me too?"

She embraces him. "Daniel… Yes, it does, my love."