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The Adiona Logs

Day 0, 14:02 hours

And so begins our journey to oblivion!

Like Columbus's brash voyage to the edge of the Earth, MacGregor's imprudent trek to Alpha Centauri, and Siloban's mad venture to the surface of Venus, ours is the next step in mankind's achievement of the impossible.

My colleague, Dr. Yoichiro Imura, was somewhat less poetic in his remarks at our launch party: "Let's prove those fuckers wrong!"

I am unaccustomed to keeping an audio log, so this will be a new experience. Maintaining a record of my thoughts during this voyage and a description of events will no doubt prove useful to historians writing about this monumental endeavor.

My name is Dr. Richard Denby, Professor of Astrophysics at the University of New Oceania, and the leader of this expedition to Sagittarius A Star, the black hole at the center of our galaxy. My eighteen expedition-mates are professors and a smattering of their graduate students, experts in disciplines ranging from Loop Quantum Gravity Theory to Warp Mechanics, to Homo- and Xeno-Medicine, fields of study that fall under the University's interdepartmental School of Space Exploration.

This expedition, the tenth in the school's eight-decade history, will test theories I have developed for navigating through the extremely deformed space that exists around Sagittarius A

Star, a 4.24 million solar mass black hole—navigating through and safely returning from that space, I should say, as neither has yet been accomplished, and the first is irrelevant without the second. I have reinforced this point by naming our ship the *Adiona* after the Roman Goddess of Safe Return, a reference I pulled from my undergraduate training in the Classics. It was a reference that went unrecognized by my colleagues.

Our liftoff from the space center at the Atoll was uneventful. The full brunt of summer arrived two weeks early, and we were grateful to escape the muggy December weather for the temperature-controlled, atmosphere-conditioned confines of the ship. We spent an hour in Earth orbit rechecking our navigational and propulsive systems before a 1.5-million-kilometer tow to Lagrange Point L2, opting for a tug service to conserve our hydrogen stores at the start of our voyage.

We left L2 an hour ago and have been moving at warp speeds since then, with an estimated travel time of seven days to Sag A Star. Everyone is settling into their quarters. We have a few veterans of space exploration aboard, but the majority of us has not logged many hours beyond commercial flight between systems. For most of our grad students this trip is already the farthest distance they have traveled from home.

Columbus. MacGregor. Siloban. Denby! Palpable excitement fills the corridors of the ship at the start of this historic voyage.

Day 1, 16:14 hours

Today we said farewell to the Orion arm of the Milky Way galaxy, the happy residence of the sun and Earth, and ventured into the dark lane that separates it from the neighboring Sagittarius arm, the next limb we will transit on our journey [... TRANSMISSION ERROR ...]

Day 2, 15:31 hours

We have settled here, halfway across the Sagittarius arm, to test the device Hohlt will use to find a habitable planet within the space around Sag A Star. This is happening despite my quite vocal and vigorous objections.

Two months ago, Dr. Jakob Hohlt, Professor of Xenobiology at the University, visited me in the midst of my frenzied last-minute preparations to propose attaching himself to my expedition. At that time, discussion of my theories and their imminent validation had no doubt reached a fever pitch within the University and likely spurred others to dream of how they might leverage my work to achieve their own success. Hohlt suggested living evidence of our travels to Sag A Star would prove much more compelling than sensor logs and cryptographically verifiable location data. Of course, I saw through this poor man's sales job: Hohlt was in truth considering the fame such a find would bring to him and his department. I would have thrown him out right then, but he had the University president in tow, and as I learned later, the provost and several of the University's trustees in his back pocket. I initially refused his request, citing the problems of integrating his project and staff into my logistics at such a late date, but after the president took me aside and explained the University would not otherwise fund my expedition, I relented, with the stipulation that his opportunistic efforts not impact the project I had first conceived almost three years ago.

Despite their assurances, I was forced to accompany Hohlt to the offices of Orbital Spectrum, wasting most of a precious day traveling to and from lunar orbit for a demonstration of their Collimating Planetary Telescope. This device, when trained on a distant star system, can image its planets and determine with almost perfect accuracy which ones harbor life.

During the meeting I expressed how our tight schedule would deny us time to test the device ourselves and forced Hohlt to accept Orbital Spectrum's assurances the telescope would perform flawlessly in the field. They described the telescope's operation and construction, explained their extremely rigorous testing regimen, and trotted out their independent lab certifications. They ended with an impressive demonstration, training the telescope on Helvetios and generating detailed images of and biosphere reports on the twin planets Helvetios b1 and b2. The telescope even captured the faint life-form readings from the near-dead moon orbiting Dimidium, the system's Jupiter analog.

I stress again that Hohlt accepted their avowals and agreed we had no time to vet the device ourselves, yet once underway he came to me with a list of possible stopping points along our route to test the telescope. I refused to consider stopping and stressed the pointlessness of doing so, for we would not turn back if we discovered a problem with his telescope. Hours later, I received a message from the University containing a list of three candidate stopping points and instructions to select one of them.

And with all of this the test proved wholly unnecessary. We have the CPT trained on Sol, and the images and readings we are getting from the equipment are truly exceptional. The telescope has correctly identified Earth, Mars, Europa, and Enceladus as life-bearing worlds in our home system and produced images with phenomenal clarity for a device over five thousand light-years from its target. The images so shocked Yoichiro he declared he will now either remove the skylights from his house on Oceania or no longer sleep in the nude.

The cost of this diversion will be significant. After dropping from warp, we nudged the telescope out of the cargo bay and spent the next two hours trying to convince it to power up its systems. Once activated we waited three hours for its optics to chill to absolute zero and devoted

another two and a half hours to imaging. Now that Hohlt has finished the tests the telescope will take several additional hours to raise its internal temperature, secure its sensor arrays, and return to its compact travel configuration. Adding the time to retrieve the device and to strap it to the cargo bay's deck, we will have lost about fourteen hours total, or nearly a full day of travel.

The whole episode infuriates me. When we return, the University will regret having ever strong-armed me into this arrangement, for I will be in such demand I think it unlikely I will decide to remain at their institution.

Day 3, 20:19 hours

[... TRANSMISSION ERROR ...] just as the jet engine allowed us to rise above the Earth to take the photographs we used to build accurate terrestrial maps, the Gravity Drive allowed the human race to rise high above the Milky Way to take the snapshots we used for the accurate maps of our galaxy and to discover important details such as the spiral's asymmetry, shown to be the result of the Milky Way's collision with a globular cluster.

I felt somewhat shaky again today and have a slightly elevated temperature. We have been running nonstop for the past few months to make this expedition a reality. I am hopeful this is just a case of exhaustion catching up with me. I took a nap this afternoon and I do feel considerably better now after eating a light dinner of chicken broth and bread.

Day 5, 12:57 hours

I awoke yesterday with difficulty swallowing and a complete inability to speak. Dr. Mawen's tests confirmed what I suspected but was unwilling to voice: my Craeter's disease has returned. I contracted it over a year ago during a foolish weekend on Darwin's Planet. My doctor

at the time explained how Craeter's is fully treatable, but those afflicted will sometimes relapse when stress brings viral reserves out of hiding.

Thankfully the symptoms were not nearly as severe as during my initial bout, when the disease freely ran its course over the several days it took to pinpoint the cause. The *Adiona's* MediCenter synthesized a dose of Demerosol, which Dr. Mawen administered midday yesterday. His prognosis as of fifteen minutes ago was that I'll spend most of today in bed but should expect full recovery by tomorrow morning. He also said we must watch for symptoms of a second relapse, which statistically has the highest chance of occurring within the next two weeks.

I woke this morning to a world tinged in yellow and immediately worried the Craeter's had affected my liver and jaundiced my eyes. Thankfully it was just a thick shaft of yellow light streaming through the small porthole above my bunk. During my almost forty hours of incapacitation, the *Adiona* traveled quite a distance closer to the great galactic bulge where the lower star formation rate results in significantly fewer young stars. Without the white-blue hue from their youthful furnaces, the starlight settles into a deep yellow from the preponderance of older stars.

Even the mild exertion of recording this log entry has tired me. I must sign off for another nap.

Day 6, 19:23 hours

I snapped awake at 6:30 this morning after sleeping [... TRANSMISSION ERROR ...] ion. I hadn't bathed in several days and looked forward to showering, but unfortunately Craeter's sensitizes the skin, which turned the normally refreshing ultrasonic waves into a rain of pinpricks across my body.

Tonight we are orbiting a gas giant from a class B star system in the central bar region of the galaxy. We just retracted the skimmer we deployed to extract hydrogen from the planet's upper atmosphere, our scheme to top off our intentionally minimal hydrogen stores. We had decided [... TRANSMISSION ERROR ...]

Even four thousand light-years away, I find Sag A Star intimidating, its four-and-a-quarter-million solar masses compressed into a region smaller than the orbit of Mercury. We are still too far away to see the hole itself, but its accretion disc put on quite a display of explosive flashes soon after we arrived. Yoichiro showed me an impressive snapshot where the surrounding gas resembles an immense jack-o'-lantern.

After decamping tomorrow morning we will travel most of the remaining distance to the galactic center where we will position the ring of tachyon beacons. Once we've completed that task, we'll make the final short jog to the black hole itself.

Day 7, 13:36 hours

We are still hours away from the galactic center; that is, if we could fly there directly. For all the fretting that had gone on about returning from the deformed space around Sagittarius A Star, we did not consider the difficulties we would face trying to reach the hole itself.

Our plan for approaching the black hole was simply to pilot the ship into the region around Sag A Star, not considering how navigation towards the singularity presents the same challenges as navigating away from it. We are therefore taking this final leg of the journey slowly and carefully. We've improvised a plan to wait for the spacetime ahead of us to calm enough to support a reasonably safe sprint towards the hole, and to halt when the deformations flare up. Repeating this enough times will get us to our destination, a position roughly two hundred

astronomical units from the event horizon. Dr. Alcott calls this process “inch-worming.” My thoughts immediately went to a small, green worm wending its way towards an enormous fanged spider sitting at the center of its web. The parallels are hugely disturbing.

At the end of each sprint, we are creating a gravimetric map of the surrounding space, and this four-dimensional imaging has allowed us to so far locate twenty-two nearby invisible gravity wave point sources. Those black holes, orders of magnitude smaller than the one at our galactic center, are still very dangerous. Knowing their locations, we can give them a wide berth.

Our herky-jerky progress makes estimating our final arrival time at Sag A Star difficult. I grow excited on each lunge until the inevitable klaxons sound just before the Gravity Drive disengages. I pray we have not become unwitting prisoners in a Zeno’s paradox come alive.

Day 8, 10:21 hours

We arrived at Sagittarius A Star fifty-five minutes ago, parking an uneasy 102.5 AU from the event horizon. I am both giddy with excitement and afraid beyond words.

As our final sprint landed us here in system, an unremarkable star field greeted us upon our deceleration to sub-light speed. Ordinary warp speed journeys conclude with the celestial destination, typically a planet or moon, centered in the ship’s viewscreen; however, we dared not set a direct course for the black hole for fear of Gravity Drive overshoot. We targeted instead an adjacent patch of space a few degrees to the left of the event horizon, which placed Sagittarius A Star outside our field of view upon our arrival. A short force pad pulse brought the *Adiona* around and revealed our considerable host.

Despite the thousands of long-range images of our galaxy’s black hole, I doubt anyone can ever be fully prepared for the sight. If Paradise Planet is the closest thing to Heaven in our

galaxy, Sagittarius A Star is certainly a slice of Hell. The hole is an angry sphincter onto the underworld itself, encircled by a rotating river Styx of debris spraying synchrotron radiation across the entire region. Hydrogen gas clouds accelerated to near light speed shower deadly gamma rays on any object unlucky enough to venture too close. Pulsar-like particle acceleration drives brilliant blue-green bolts of electrical discharge that serrate the hole's thick magnetosphere and threaten to lash us with their million-volt tendrils. Gravitational waves are plentiful, though thankfully too small to wrench the ship's superstructure.

Alex Kondo, the other young research assistant from Dr. Reed's lab, was overcome by the sight of this galactic beast and broke down crying. Dr. Mawen escorted him to his bunk and placed him under light sedation. At this moment I am actively resisting the urge to order us away from here. Leaving now would mean the end of this research trip and my tenure at the University as the president expressed my relationship with the institution would come to an end should we return without providing Hohlt a chance to unfurl his telescope. That process has begun, and I am anxious for the results. The sooner we locate a suitable system to explore, the sooner we can leave this space.

Day 9, 9:35 hours

The *Adiona* is holding up well twenty-four hours after our arrival at Sag A Star. A sub-atomic detritus surrounds the ship and continually slams against our magnetic field, violently at times. The computer assures us we are parked a safe enough distance away to withstand the onslaught.

Alex is much better today—Dr. Mawen predicts his return to duties starting tomorrow. I, too, have settled down after a night in the shadow of the beast. Everyone else seems to be coping

well enough, though I can feel the tension. During our days of travel from Earth, conversations filled the control room and the internal comm channels. Now the ship has all the ambiance of a mortician's parlor. I have to believe time dilation effects are partly to blame for the change in mood. As the black hole rotates, it drags space around like batter in a mixing bowl, with the resulting eddies and whorls felt up to three parsecs away. The distortions can occur on a small enough scale that two clocks sitting side by side will momentarily tick at different rates. Such time divergences can create problems in biological processes, especially within the human brain where its structures rely on adjacent neurons firing at the same rate. Physiological symptoms of Spacetime Deformation Sickness include muscular aches and nausea. The psychological symptoms range anywhere from mild depression to madness.

I confess there are other psychological side effects of our proximity to this Grendel. It is easy to sit twenty thousand light-years away with a nice cup of hot tea and read about plummeting into a black hole. It is another thing entirely to sit only a hundred times Earth's distance to the sun from the hole and realize one errant force pad pulse could render us irretrievably lost.

We remain at this location because efforts to use the CPT have so far failed. I refer to it as the Collimating Planetary Telescope, but Yoichiro has reminded me of its full name, the Collimating Refractor Array Planetary Telescope, or CRAP Telescope as he now calls it. The device worked well enough when we tested it in normal space but has so far lived up to Yoichiro's derisive moniker within the extreme deformed space conditions around Sag A Star.

We deployed the telescope almost twenty-four hours ago and positioned it about a hundred meters off the ship's leeward side, employing the *Adiona* as a shield against the black hole's relentless gale of sub-atomic particles. When aimed at a planetary system, the telescope's twenty-

meter-wide aperture collects photons, which its sensor array converts to a raw data stream that it transmits to its signal processing AI here aboard the ship. Orbital Spectrum said to think of the signal processor as a magic black box, where raw photon data go in one end, and crisp, vivid planetary images and biospheric information come out the other.

Unfortunately, the CPT has been unable to photograph any systems within the deformed space around Sag A Star. Every photon matters when imaging remote objects, and in the case of these planetary systems the photons have been stretched and twisted during their travels through the distorted spacetime. I find it difficult to imagine recovering much signal from such deformed packets of light; however, this is only a guess as to the root cause. The actual problem may reside in the telescope's hardware, or in its software black box. In any case, the planetary photographs captured by this device so far resemble the bright, blurry images from a ground-based telescope flailing beneath a thick blanket of atmosphere.

Without planetary imaging, we remain unable to locate a habitable system for Hohlt. If we head back now, the bastard will certainly try to end my career at the University with complaints that we left too soon, that I did not provide him an adequate opportunity to test the CPT, or both. They can stick my tenure right in their bottoms, but I prefer to leave the University on my own terms; not with them eagerly throwing me out the door but instead begging me to stay. Unfortunately, that means it is in my best interest for Hohlt's mission to succeed. So, I wait for now and pray for the device to start working. I only hope the *Adiona* and its crew remain intact until it does.

Day 10, 21:47 hours

We arrived at Sag A Star two days ago and have not moved more than twenty kilometers

from our original position.

Three hours ago, the quiescent hole turned maniacal, releasing a torrent of energy across the electromagnetic spectrum. Most of the ship's viewports remain almost perpetually black, made opaque by the ship to protect us from these energy bursts. The rocking and jostling caused by Sag A Star's churning of the local spacetime has also increased, and we have all been stricken with moderate to severe cases of nausea. Dr. Mawen's Nausox shots have helped me, but the high dosage needed to tamp down my queasiness has not been without side effects, loose stools the most notable complication. As a result, I have been dividing my time between my station in the control room and my new, second station in the starboard head.

While our nausea can be managed with pharmaceuticals, there is no treatment for the curious form of double vision that also afflicts us at various times. Corridors seem packed with people as we move through the ship with our blurred doppelgängers. Mealtimes have become more challenging with doubled forks and cups confusing us as to which one we should raise to our mouths. Dr. Kelechi Adeyemi, Professor of Spacetime Mechanics, tells us these are further time dilation effects, the result of seeing the same object at two different points in time. I have found it best to focus on the eyes of the person I am speaking to, as the jumble of mouths in different states of openness is both distracting and horrifying.

If this is what we can expect by remaining here in D-space, I think it is best we leave and not subject ourselves to more torture. Hohlt made some adjustments to the CPT, but the improvements were minimal, not nearly enough to give us accurate readings on habitable planets in the vicinity. Yoichiro suggested Hohlt try using the computer to squeeze more signal out of the images. That is his goal for tomorrow.

Day 11, 07:47 hours

Early this morning, I woke to the ship wildly rocking and the roar of a ferocious rainstorm.

Certain we were being drawn into the black hole, I leapt from my bed. At that moment the entire ship rose violently as if being lifted into the air. I resisted being drawn down as best I could while a loud groan, the *Adiona's* superstructure struggling under the stresses, carried through the ship.

Suddenly I saw doubles of my bunk, the one still in my grasp and a duplicate a half meter lower, its blankets erupting through the floor. Realizing I had only a moment, I quickly swung my other arm around and dug my fingers deep into the mattress just as the ship fell into a steep drop, as if racing down the back side of a mountainous ocean crest. I clung there with white knuckles, my legs flailing in the air.

The ship continued rising and falling for several minutes. I held fast to my bunk as my body flopped about like a soggy pennant. When the pitching subsided, I slowly worked my way through my cabin door and scurried to the control room like a panicked crab on a blustery beach.

Yoichiro arrived just ahead of me. The two of us strapped ourselves into our chairs and set about analyzing sensor data. We discovered the previously placid spacetime around the ship took a violent turn at 2:34 a.m., pitching the *Adiona* like a small sailboat on a storm-churned ocean. We took the computer's recommendation to set the artificial gravity to full inertial dampening. Activating it was like flipping a switch that reduced the ship's violent pitching to a gentle bobbing. After checking on the rest of our shipmates, Yoichiro and I set about ensuring all massive items were battened down to prevent them from wreaking havoc in any future rough sailing.

All the while we worked, the sound of a violent rainstorm filled the ship with an almost

deafening pounding. Placing my ear against an outer bulkhead, I heard a sleeting rain as intense as anything I have experienced. Dr. Shales, Professor of Subatomic and Quantum Physics, concluded the thick magnetic field lines emanating from the black hole corral free protons from the surrounding super-hot plasma into tight bundles. Those proton bundles follow the magnetic field lines, picking up speed and momentum as they do, and striking the ship with the rasping patter of rain. After consulting the computer, Dr. Reed believes the net effect of this intense proton bombardment is similar to sitting in a mild acid bath, nothing to worry about at least while our shields are up.

Thankfully no one was seriously hurt during the ship's violent moments last night, though Wright and Shaw who sleep in bunks in one of the aft crew compartments both bumped their heads when the storm flung them into the air above their beds. Neither has a concussion, but they both have knots on their foreheads.

Day 11, 13:22 hours

Ten minutes ago, we made the discovery of a lifetime.

As if the supermassive black hole were not enough trouble, the space around Sagittarius A Star teems with smaller black holes, which the literature refers to as a "swarm." To map the locations of these black holes, Dr. Church, the post-doc from Dr. Iweala's lab, configured the computer to take gravimetric snapshots at set intervals on our inbound journey to Sag A Star. Examining how the point source locations changed as we moved closer to the galactic black hole allowed us to create a three-dimensional map of their locations in space. Once we arrived at Sag A Star, the three-dimensional swarm map was complete; however, no one told the computer to stop taking the gravimetric snapshots. With the *Adiona* stationary, the post-arrival snapshots form

a time-lapse of the point sources traveling around us, an animated movie, if you will, of the swarm moving through space, rotating round the center of the galaxy.

Overall, this movie is quite boring. Most of the black holes orbit Sag A Star with periods on the order of thousands of years, making their gross movements undetectable to us. Church noticed one of the nearby holes moving at a relatively quick pace across the sky. What was truly remarkable, however, was its circular orbit did not have Sag A Star at its center. One of the swarm black holes was apparently orbiting some other body.

On a whim, she asked Hohlt to aim the Collimating Planetary Telescope at this system. The device, miraculously shaking off its troubles for ten minutes, revealed a modest-sized black hole orbiting a supergiant star. The telescope also revealed several planets, one of which appears to be habitable. I stress the qualifier “appears”—the telescope detected key markers for life, but some of the data were inconsistent. It also could be the telescope malfunctioning more severely than before. With no better options, and the desire to move away from the galactic black hole, we are treating this as a solid lead. It’s actually an ideal development, for if the telescope is correct, this will be the planet Hohlt has been looking for. And if the telescope is wrong, Hohlt will have had his chance to find a planet. Either outcome sets a cap on our—up until now—open-ended stay in D-space.

I have dubbed this newly discovered system RD Sagittarii, assigning a Bayer-style designation based on my initials. Let the record show the schemer Hohlt’s obsession with fame and glory came into full view with his demand I include his initials in the name. I noted that only by my grace was he even aboard this ship, and how his contributions to this discovery amounted to nothing more than the tapping of a few buttons on a viewscreen. With the xenobiologist shaking and sputtering before me, I made it clear that any spoils the Fates choose to grant him

lay on the planet's surface.

We will make way for RD Sagittarii shortly. Navigating anywhere within the space around Sag A Star is essentially as impossible as navigating out, but Dr. Alcott believes his inchworming technique will allow us to travel to this nearby destination. As if aware of our imminent departure, Sag A Star has begun lashing out with writhing red tendrils of plasma. I will be happy to leave this place.

Day 11, 23:05 hours

Not once have I ever imagined being in the presence of a star as large as RD Sagittarii A. This thirty solar mass red hypergiant shines a million times brighter than the sun, with an incredible radius of 12.34 AU. If this stellar beast resided in our own solar system, its bulk would engulf all the planets from Mercury to Saturn.

Orbiting at 183 AU is the ten solar mass black hole RD Sagittarii B, encircled by a massive accretion disc filled with enough matter to form several planets on its own. Whenever substantial amounts of this material spiral down to the black body, the hole erupts with blue flashes along its equator and energetic white jets from its poles.

The reason for our visit, RD Sagittarii C, orbits at 551 AU and does appear to be habitable. Normally the gale force stellar winds of a hypergiant star like RD Sagittarii A would strip away the atmosphere surrounding a small, rocky planet, even that far from its sun. It turns out the red titan's companion black hole sweeps up the bulk of the brisk stellar wind in its accretion disc.

RD Sagittarii's two other planets, D and E, are gas giants orbiting at 575 AU and 621 AU respectively. At 700 AU begins the system's Kuiper Belt, harboring a substantial number of planetesimals.

We are headed now to RD Sagittarii C. At this late hour we plan to merely park the ship in a safe orbit around the planet and rest for the night rather than plow ahead with our exploration.

Day 12, 16:13 hours

We are in a low orbit above RD Sagittarii C. Liquid water covers half the surface, a violet soup that sloshes against five dark ashen continents. Daylight falls upon the planet for fifteen hours, a burning red that glints off the violet ocean crests and bounces off the white polar ice, capping both ends of the globe in fiery crimson.

The planet's molten inner core vomits itself onto the ashen plains of every continent through numerous active volcanos of various sizes. Where these volcanoes reside along the coasts, their lava runs in angry torrents many kilometers wide that extend down to the violet water. Great clouds of steam and ash hide their convergence with the sea, enormous white plumes that from space appear as cotton dabbing a slew of vicious open wounds.

The largest continental landmass spans an entire hemisphere along the planet's equator but does not extend above or below the fortieth parallel. A tall mountain range runs south to north near the continent's eastern coastline, featuring numerous ice-capped peaks that strafe the gray clouds. The four other continents that populate the opposite hemisphere are less remarkable—that is, more of the same—except for the third-largest, which harbors a massive volcano at its center, from space an angry red anthill oozing lava.

I have taken to calling this planet Infernum for its obvious allusions to Hell.

The atmosphere is an argon, nitrogen, oxygen, and CO₂ mixture, and temperatures range from ten to fifty-seven degrees centigrade. In short, breathable air and comfortable temps, at least beyond the equator and away from the volcanos. As for life signs, the sensors report level

twenty-three on the Alan-During scale: plants, insects, and some animals.

We are finishing a sequence of orbits from which we are building radar terrain and gravimetric maps of the surface. This is not the most exciting work, and Yoichiro jokes the soft pings the computer makes on the completion of each orbit are there to make sure we are all still awake. I considered tasking drones with this mapping job, but the process will take less time using the ship's sensors.

I did dispatch two drones to take detailed scans of several candidate landing sites. Most are in the nighttime hemisphere currently, so we will likely remain in orbit for the next ten to sixteen hours, aiming for a sunrise descent on the planet.

Day 13, 07:08 hours

Landfall this morning was quite dramatic.

The computer guided the *Adiona* to a position 450 kilometers above our primary landing site, a rolling plain of short yellow brush 170 kilometers from the largest continent's eastern coastline along the thirty-second parallel north. Thick cloud cover obscured our destination, and the computer [... TRANSMISSION ERROR ...] erate turbulence jostled our ship once we pierced the clouds. Thankfully everyone was strapped into their seats.

We passed quickly through the cloud cover. One moment the forward viewport presented an expanse of pink-gray fluff. The next it showed a puffy ceiling extending to the eastern coastline and a violet ocean stretching beyond to the horizon.

To the west, the cloud cover we had penetrated minutes before floated above us up to the steep slopes of the continent's eastern mountain chain. Dr. Pak, a planetary geologist who came aboard with Hohlt, says those mountain peaks now hidden by the clouds reach into the planet's

stratosphere some thirty-five kilometers above the sea.

At ten kilometers above sea level, trees with thick shimmering metallic blue trunks and yellow-gray needles began dotting those slopes like week-old stubble, thickening to a yellow carpet that obscured the mountain base. Yellow, if I didn't mention before, is the color this ecosystem settled upon for its chlorophyll analog to extract the most energy from its red giant star.

At 1.5 kilometers above our landing point and just a few minutes before touchdown, the hypergiant peeked over the horizon, flooding the control room with a searing red light and setting the violet ocean's wave tops aflame with fiery red.

Our now-suspect computer pilot required two attempts to place us in a satisfactory landing spot. On its first try, the computer, evidently believing any non-eventful landing a good one, placed us on solid ground with a fifteen-degree slope. The computer adjusted the landing gear's struts as best it could but in the end the ship listed too much. I instructed the computer to try again, and on its second attempt it set us down 330 meters to the west on mostly flat ground covered in a pale yellow thistlebrush, fifty meters from a tall expanse of rock—a cliff face—rising two hundred meters in the air.

The post-landing system checks are in progress. After they complete we'll exit the ship to have a look around and begin collecting samples.

Day 13, 09:23 hours

This planet may become our permanent home.

During our descent several klaxons sounded. I had assumed them related to our increasing hull temperatures and chose to clear the alerts to silence their bleating. Apparently the computer

noticed a problem with the Moscovium 299 cylinders, important components of the Gravity Drive. After reviewing the failed post-landing system checks and reading the alert messages in-depth, I at first could not believe what they suggested and had the computer rerun them. I finally climbed down the narrow ladder to the engine compartment and applied a gravimeter to the casings myself. My findings confirmed what the computer had flagged: all but five percent of the Mc 299 has gone inert.

The most likely explanation involves the extreme gravity waves we encountered during our extended stay near Sag A Star. There are other theories, but in fact I have no stomach for debating them. Whatever the cause, we are stranded here on the planet's surface.

Day 13, 13:24 hours

Yoichiro, brilliant scientist and intrepid friend, you may have saved us all!

During our mapping of the surface from high orbit, Yoichiro configured the scanners to collect data on caches of heavy elements and atomic decay byproducts. He hoped to find deposits of gold and other precious metals, a "pirate's plunder," he called it, to ferry back to Earth to take the sting out of this planetary adventure. Without access to a network, however, our single computer had to handle the job of crunching the data. It finally produced its report about three hours ago. In light of all the bad news, Yoichiro originally saw little point in reviewing the document, being as dejected as the rest of us, but brought himself to read the summary. The computer found no gold or silver, but it did locate several large deposits of rare earths, including Moscovium. One of those deposits lay just forty-one kilometers away, a roughly two days' trek on foot!

The fact the scanners detected the Moscovium at all indicates its nearness to the surface,

another bit of luck as we don't have serious mining equipment. We have the equipment to refine the Mc 299, but the process may take several weeks. Considering our predicament, time is our most abundant resource.

I have organized an expedition of five people. In addition to myself I chose Dr. Katherine Reed and Alex Kondo, senior professor and post-doctoral student respectively, for their expertise in metals and materials; Dr. Abebi Iweala, so that I am not the sole astrophysicist on this trip; and Dr. David Post, an astrochemist I selected for his large biceps rather than his chemical knowledge, on the assumption there could be heavy digging required to free the Mc 299. Hohlt makes the sixth—he's coming along because he insists. At the least he can provide xenobiology experience.

I have prepared my pack and am waiting for the others to finish assembling their gear. For supplies we'll have enough food for a ten-day journey, and we grabbed two tents from the ship's stores. We'll also each be outfitted with an electron pistol and a plasma rifle. There so far are no readings of large life-forms, but we do not have an exhaustive survey of the planet's fauna.

We head out in ten minutes.

Day 13, 19:11 hours

After hiking for five hours, we decided to stop for the night.

Thick cloud cover had obscured the hypergiant for most of the morning, burning off just before the star reached its zenith. A quirk of orbits today perfectly aligned RDS A, the black hole RDS B, and Infernum, placing the singularity in the direct center of the star's red disc. We crossed the rough plains with this eye, a black pupil within a flame-red iris, transiting the sky like an angry god monitoring our progress.

Our first sunset on this planet was spectacular. The light violet sky took on deeper shades as the red eye began its descent. With half the hypergiant visible above the jagged peaks to the west, the mammoth star appeared to have set the entire mountain chain on fire. Even now, two hours after the angry orange blob dipped below the mountain line, the peaks along the darkened western sky retain a fiery red glow.

Our travel was slow going for the first two hours of our journey today as we worked our way through a dense forest. The trees had thick, blue trunks and their barren, twisted branches appeared to end in gnarled hands, creating an eerie canopy. Their dark silhouettes against the overcast red sky formed an image straight from a Halloween diorama.

We've set up our two tents in a small, flat area, almost a valley between two modest hills, a wide expanse filled with more ankle-high, pale-yellow brush and many tiny purple buds. We cleared a portion of the brush and piled a circle of rocks to form a home for our makeshift campfire, fueling it with shimmery blue wood from nearby fallen trees. The burning bark spits bright blue sparks out of the yellow flames, some sort of phosphorescent chemical release. The smoke carries an odd, sweet odor.

After a long afternoon of hiking and many days of stress, we are all exhausted. I will recommend we all turn in early and get a quick start in the morning.

Day 14, 13:27 hours

Hohlt woke two hours before dawn. The rest of us rose with the morning sun, refreshed from a good night's sleep in spite of the major commotion. The heavenly smell of fresh brewed coffee filled our nostrils, luring us from our tents.

The commotion I mentioned relates to the prairie of tiny purple flowers we camped in last

night. The existence of flowers implies pollinators, but we had seen no evidence of insects during yesterday's hike. I thought that odd but gave it no further consideration.

The four men—Hohlt, Post, Kondo, and I—slept in the larger tent, with our female colleagues sleeping in the other. Just after 1 a.m., Kondo shook me awake. I opened my eyes to a frightened look on his face. At times he seems more of a child than an adult, which I find quite annoying. His mouth moved hurriedly, imploring me to do something, but the only sound that came from his lips was a loud buzzing. At first I thought it all a dream. I closed my eyes and sank deeper into my sleeping bag, but Kondo proceeded to roll me over, smashing my nose against the tent floor. At that point I realized I was awake, not inside a dream, and that the buzzing was not coming from Kondo.

I jumped up and headed to the tent's thin glassteel window. Outside a swarm of electric blue lights bobbed and bounced in the darkness. Shining a light into the field revealed hundreds of what are best described as winged black caterpillars, their thick wormlike bodies easily as large as the palm of my hand. We had found the planet's missing insect life, or at least one form of it.

The light chased them away, and with its absence came the silence to which we originally retired. When I removed the light and allowed my eyes to slowly adjust to the darkness, the field remained quiet but still filled with thousands of lights, though mostly stationary. Stepping out of the tent and into the field, the small closed purple buds we observed at twilight had opened wide, their many petals glowing blue in the darkness, evidently acting as beacons for the pollinators.

Those pollinators abandoned the field only briefly, returning to finish the job with their loud buzzing. Kondo was afraid they might have poisonous stingers, but I figured as long as these insects could not enter our tents and as long as they only wanted the flowers, they would go

about their business, and we could go about ours. Despite the loud buzzing, I fell asleep a few minutes after closing my eyes.

Dr. Post found one of the insects this morning as we were breaking camp. It lay dead near the campfire ring, though I don't believe the fire's remnants had anything to do with the creature's demise. He foolishly picked it up with his bare hand and was pricked by several thick needle-like hairs extending from the insect's abdomen. The index finger, middle finger, and thumb on his right hand swelled to gargantuan size, seemingly on the verge of splitting open. He wailed in pain until we administered painkillers from the MEDIkit. We cleaned the punctures as best we could and filled the wounds with anti-inflammatories. He felt well during this morning's hike, but I am concerned for the possible consequences of alien material having been introduced into his system. I realized as we tended to him my oversight in not also bringing someone with medical experience on this journey.

Today has been considerably warmer. Yesterday's thick cloud cover has dissipated, leaving the burning orb above to rain its heat down upon us.

After hiking through rolling fields of yellow brush, we have encountered land that is considerably more barren, including square kilometers covered mostly with small crushed rock. The rock absorbs the red star's energy across multiple wavelengths but radiates it all back as heat, adding considerable discomfort to our travels.

After lunch there will be more walking. We plan to continue as long as there is light to see by.

Day 14, 21:45 hours

Hohlt and Iweala are dead, and Reed, Kondo, Post, and I have been pinned beneath a rock

overhang since just after sunset.

Infernum days are four hours longer than Earth's, giving us additional daylight hours in which to travel. The evening greeted us with a sky similar to yesterday's, the sawtooth peaks engulfed in flame as the giant star sank below the distant mountain chain. Once RDS A rotated fully out of view, RDS B, no longer perfectly centered in the hypergiant's red disc, lingered above the mountaintops. This black moon cast an electric blue glow from its event horizon that sliced through the reddish twilight, providing enough light for us to continue walking safely well past official sunset. We chose to press on rather than set up camp for the night.

Post was the first to spot the electric bolts lashing out from the black hole like bright blue barbed wire. The first streamer hit the ground as we were crossing a small river, a broad but shallow expanse of warm water choked with numerous exposed rocks and sand bars. I was in the lead and had my head down, focusing on carefully placing each step, when the water all around us began glowing electric blue. For a moment I thought we had stumbled into a habitat of electrified eel-type creatures. I raised my hand to halt the party and take a few seconds to assess our situation. Then came a deafening boom, a subsonic rumble that rattled the ground, followed by a stiff, hot breeze. To the northwest a plume of dust and rock soared sixty meters into the sky.

Just after the initial bolt landed we still had not fully understood what had transpired and believed the plume and boom to be evidence of an immense explosion. I briefly feared for the *Adiona* until I realized the explosion occurred too far to the north to be our ship. As we stood gaping at the dissipating plume, a second tendril of electric wrath snaked to the ground, this one much closer. Normal lightning is fast—blink and you'll miss it. These bolts streaked from the heavens just as quickly but remained for longer, as if frozen in the air. An even larger boom and hot wind followed this bolt, and only a handful of moments later. The ground quaked so much it

shook Reed to her knees in the shallow river.

We immediately understood the general danger posed by standing in flowing water during an interplanetary electrical storm and scurried as fast as we could to the far bank, which was the closer of the two. Upon reaching land, I relaxed and gave thanks for being out of the running water until I realized we were still standing like knaves in the middle of open ground.

Alex Kondo brought our attention to a small outcropping of rock about three hundred meters away, a potential sanctuary rising from the ground in an otherwise flat landscape. We sprinted, but the weight of our packs hindered us, as did the rough terrain in the twilight. We spread out in a chain, the faster of us in the lead. Hohlt, at the rear, twisted his ankle, and Iweala ran back to help him.

As I looked back, an enormous blue bolt shot from the black moon, wending its way across the heavens until it touched down not one hundred meters from our position. The ground rippled as if a giant had unfurled a blanket, tossing us in the air. The thunderclap was deafening, almost puncturing our eardrums. Finally came the stiff wind and a searing hot breeze.

Despite our rough landing, we were all of us OK. As we pulled ourselves up a small gray ball appeared in the distance, visible in the night sky because it was trailing fire. The fire extinguished itself just as the ball, a large boulder, reached the apex of its arc in the sky. I followed its trajectory to the ground and estimated Iweala and Hohtl sat at roughly its landing spot. I screamed at the top of my lungs for them to move. Reed, standing ten meters away, joined in. They couldn't hear us, our voices drowned out by the remnants of the still-rumbling thunder.

The ball fell from the sky, gaining speed as it dropped, a boulder the size of a house. It smashed into Iweala and Hohtl and dug itself into the ground so deeply only the top half remained visible above the land.

Fully understanding the extent of our peril, the remaining four of us ran as fast as we could to the outcropping. Kondo, who with the demise of Iweala and Hohtl was now in the rear, tossed off his backpack to lighten his load and allow himself to increase his speed. He overtook Post and Reed and almost overtook me, arriving at the outcropping just a few seconds after I did.

So here we have sat for the past five hours. Or three of us at least, with Dr. Reed on her back. During the lightning strike that lifted us into the air, her head hit the ground when she landed. She is suffering from a mild concussion. Alex Kondo is curled up in the fetal position next to her. Meanwhile the blue lightning continues to crash down around us, though the bolts are landing farther away, likely due to the planet's rotation putting more distance between our location and the black hole. RSD B will soon drop below the western mountain chain, which should provide protection from its lightning bolts. Once it's safe to move about, we will need to go back for Kondo's pack, for it contains food we cannot afford to lose, as well as one of the portable shelters.

These storms likely recur following some regular cycle. We will have to determine the periodicity to avoid being caught up in one again. Unfortunately, this will require experiencing another storm.

Day 15, 10:18 hours

We are off to a slow start this morning. We remained beneath the rock overhang for forty-five minutes after the lightning storm ended, mostly certain the black hole could not assault us from behind the western mountain chain but still afraid to venture out. I finally moved out into the open to set up our tent, forgetting it lay inside Kondo's discarded pack. I chided the post-doc for dropping his backpack and told him to retrieve it. He adamantly refused, wailing about the

hazards of being unsheltered during an electrical storm. I lectured him as patiently as I could about the storm having ended some time ago, but he would have none of it. He eventually returned to his fetal pose next to Dr. Reed with his hands over his ears.

I wasn't sure Post was well, and with Reed recovering from her concussion, that left me to walk across the open plain to retrieve the pack, cursing under my breath all the way there and back. We were fortunate Kondo carried the larger four-person tent. The other was lost with Iweala when she perished.

Once I returned, I set up our tent a few meters from the rock outcropping. Kondo mustered enough courage to help me move Reed into the shelter, then scurried back to the rocks, taking Reed's old spot deeper beneath the overhang. Reed, Post, and I slept in the shelter while Kondo, still spooked by the ordeal, insisted on placing his sleeping bag beneath the rock overhang and spending the night there.

After rising, I scrounged enough wood for a meager fire and brewed a pot of coffee. The aroma lifted everyone's spirits, though we are all still in shock and sadness from the loss of our expedition mates, at least for one of them. Hohlt, it might be said, was crushed by the weight of his own ambition and ego. If only we could just now turn around and head for home.

Medical update: Reed is doing better this morning after last night's concussion. She has a dark welt on her forehead but is no longer seeing spots. I am concerned about Post, who claims he is OK but is moving noticeably slower.

I can see our destination, about seven kilometers to the northeast. A few hours of hiking across an open plain of more yellow bushes and prickly thistles will take us to an apparent circle of tall trees next to a dense forest. According to the sensor map, those trees encircle a depression where we will find the Moscovium.

Day 15, 16:05 hours

Post died earlier this afternoon. After his lethargic movements this morning around the camp and his complaining of being cold when the air had reached twenty-nine degrees centigrade, we checked his temperature and found he was running a high fever. We medicated him as best we could and had him rest inside the tent. As I helped him get situated in his sleeping bag, I saw that his right hand, the one he used to lift the insect, had swollen again, and a blue hue ringed each puncture hole. He drifted off to sleep and never woke.

Kondo and I dug a shallow grave for Post a few meters from the rock overhang. I say *we* dug it, but Kondo took a break every few minutes, complaining about the heat, or about his back from bending over, or the toughness of the soil, or about the shovel's shaft chafing the skin of his hand. He twice suggested we build a cairn for Post. I was partial to a burial below ground, but regardless, a cairn was out of the question as there weren't enough large stones. Kondo persisted in his idea and at one point headed off to collect rocks while I continued chipping away at the hard ground. When he returned after twenty minutes with an armful of small stones, I told him to cease his foolishness and help me finish digging the grave.

The young post-doc did take up his shovel but soon resumed his complaining and suggested we wait until sunset to dig the grave so that we would not have to labor under the harsh sun. I reminded him how the approaching sunset will bring a return of the black moon and possible recurrence of the blue lightning storm. He moved faster then but told me he needed to take a break and disappeared around the side of the outcropping. I eventually finished the digging and went looking for him, finding him curled up in the shade, taking a nap like a kitten. I shook him awake, and we carried Post's body to the grave. Kondo and I blanketed him with dirt

and placed the largest rock we could find as a headstone.

Official sunset occurs in seven hours. If we set out across the rocky plain now, we could reach our tree ring destination and its Moscovium cache before the red disc descends below the mountain peaks. Without knowing if RDS B will rain down lightning upon us again this night, we would most probably find ourselves out in the open, completely exposed to its wrath.

Squinting into the bright afternoon sky, the black moon is just visible, trailing the hypergiant.

I am concerned about how long the electrical storms will keep us pinned here close to these rocks, unable to make progress. Are they a fleeting phenomenon, or a months-long affair?

Day 16, 13:17 hours

We are not the first to have visited this world.

Last night was uneventful. The black moon became visible not long after sunset, ringed in the electric blue glow of its event horizon. The remaining three of us broke camp an hour before and huddled beneath our rock overhang shelter, expecting more pyrotechnics. None came. I am optimistic these storms are an infrequent event.

With that optimism in tow, we set off this morning shortly after sunrise for the ring of trees and the desperately needed Moscovium deposits they sheltered. After crossing the rocky plain for almost three hours as the red fireball climbed in the sky, we finally reached the edge of the forest. Our orbital photos showed a circle of trees around a circular depression, but from our vantage point on the ground the depression is in fact the shape of a hexagon. What is more, the walls of this hexagon are remarkably vertical, as if a large cookie cutter had been driven into the ground to a depth of thirty meters and the material inside scooped out. The trees that ring the depression continue on to the southeast as dense woods, as if the cookie cutter had clipped the forest's

northwest corner. Such an excavation would require the removal of nearly 2.3 million cubic meters of dirt; however, there is no sign of this extracted material anywhere in the vicinity.

If the excavation story is to be believed, the event must have occurred far in the past as portions of the steep vertical walls have eroded in several locations, likely the work of rainwater. Sections of the perfect right angle edges along the rim's edge have disappeared, replaced by steep angled ravines. Reed, Kondo, and I used one of these gullies to reach the basin floor.

The basin itself is a reasonably flat expanse of dark gray ground littered with small rocks and sporadic patches of the chaff-yellow prickly bushes, at least where it isn't covered with the mounds. These mounds, each one standing nearly eight meters in height and composed of dirt and rock, are perfectly round domes, as if created by pouring a pile of material from a chute high above. Hundreds of these mounds dot the basin floor. The spacing between them varies, from a dense packing in some places to very loose in others.

And litter would be an apt description for their purpose. As we walked the basin, circling south around the massive dirt piles, we discovered five large caverns along the easternmost wall of the hexagon. Far from random formations, these dark, semi-circular openings stand with a six-meter radius and are spaced 9.3 meters apart. They appear to be entrances to subterranean mines. The entire basin seems to have been a mining operation where materials were extracted from below ground and sifted, with the tailings piled into these mounds.

Among the hundreds of mounds, two appeared to be smaller than all the others and glistened silver-red in the sunlight. We thought they might be piles of precious metals, but as we approached, these mounds took on a more intentioned shape, like silver qubbāt removed from their edifices. Drawing closer, we discovered these structures were rounded domes with hexagonal bases. They stand five meters high at their apex, have no discernible windows or

doors, and are covered in a seamless, smooth silver skin formed of an unknown alloy. Are they spacecraft? Landers? Portable cabins? Storage depots? It is difficult to say. My comm does not recognize the structures from its catalog of alien artifacts. They are certainly not of human origin, for we are the first of our kind to reach this far into the galactic center.

Before breaking for lunch, we did confirm there are Moscovium deposits here, with fairly strong readings emanating from several of the mine entrances. We plan to select one of the mines to explore after we finish eating.

Day 16, 15:55 hours

We have found Moscovium! A huge deposit, in fact.

After lunch we ventured into the second mine from the left, the one that offered the strongest trace readings of the precious material. Though the floor was level at the entrance, it soon dipped steeply downward and continued on for kilometers.

With Kondo holding the sensor pack, both Reed and I snuck glances at the screen, looking for the telltale byproducts of Moscovium decay. Ten minutes into the cave, the sensor panel lit up with tall, green bars. Shining our light on the rock wall, we saw the orange flecks of Moscovium ore, a deposit several meters across and extending from the floor to the roof's center overhead.

The three of us quickly unfolded our shovels and the autocart we brought along as a collection bin. We took turns digging into the tunnel wall, each strike dislodging large clumps of the orange-flecked ore. After gathering twenty kilograms of the material, we ordered the cart up the steep path to the surface.

Day 16, 17:22 hours

Dr. Reed is dead. I fear I may be joining her shortly.

The cart made the steep climb out of the mine without too much trouble, stopping twenty meters from the entrance. This was our first opportunity to assess in the sunlight, red though it was, what we had gathered. We pushed the ore around with our shovels, getting a sense of how pure a vein of Moscovium we had mined. The find turned out to be of extremely high quality, a great stroke of luck for us.

After spreading the ore, Kondo noticed two fist-sized clumps of a mineral that definitely was not Moscovium. These rocks were black, crystalline, with an odd ruby-red shimmer. The clump I lifted was very heavy for its size—though it fit in my palm, I almost had to use both hands to hold it aloft. I quickly put it back in the cart.

Scanning the other clump, Kondo reported its mass at just over eleven kilograms, an enormous reading for a roughly fist-sized rock. All three of us were amazed such a relatively small rock could weigh so much. The scanner's spectral analysis results were also odd, showing spikes for every element in the periodic table.

This seemed plainly impossible, and I surmised the device was malfunctioning. Kondo, having much more experience with the scanner, pursued an idea that came to him from the spectral analysis chart. He placed the device into active scanning mode so it measured the clump's mass more than a trillion times a second. He adjusted the display to plot mass vs. frequency—that is, the mass of the rock along the x-axis and the number of times the scanner returned a particular mass reading along the y-axis.

Trained on any normal material, the scanner would show a tall spike at the material's mass, a single reading that would register no matter how many times you measured it. What we saw in

the case of the black clump astonished us. Instead of a spike, the scanner produced a plot resembling a black body radiation curve, a hump that tapered off at either end. The curve implied the black rock, when scanned, did not always have the same mass. At any given instant of time, it weighed in at one of the masses on the graph, everything from zero to nearly ten to the twenty-one kilograms! The more extreme masses were much rarer than the masses in the center of the graph, hence the tapers on the left and right. The hump peaked at 2.2 kilograms, the most frequent mass sampled by the scanner. Kondo surmised the material somehow did indeed have each of these masses, and that the original mass measurement of eleven kilograms was a weighted average of all the different mass readings over time.

As a simple astrophysicist, I could not begin to take that conclusion seriously. I was content with chalking the odd readings up to a scanner on the fritz, but Kondo and Reed were intrigued by the idea. Kondo in particular wondered how such a stone would behave moving through a gravitational field. A normal object traveling through the air follows a parabolic course to the ground. He wondered if this strange mineral would also trace out a parabola or if its apparently shifting mass would cause it to follow a less regular path.

With all the restraint of an impulsive child, Kondo grabbed one of the black stones and tossed it into the air. Based on his unscientific experiment, I can report the stone appeared to follow a smooth parabolic trajectory. Unfortunately, Kondo tossed the stone so that it landed on a tailings pile not three meters from us. The stone casually rolled down the pile, followed by an enormous rumble as the pile's face collapsed and slid towards us. If the theory of shifting mass is to be believed, the rock's large, instantaneous spikes in mass likely tugged at the pile's loose material, destabilizing it and causing it to flow outward like a liquid.

The flow moved at incredible speed. I reached for Dr. Reed's hand to pull her from the

avalanche, but she had been seated on the ground, nursing her sore head. I couldn't get her to budge as I sprinted away. The dirt completely enveloped her under a three-meter-tall mound.

Kondo escaped to the left of the flow and I to the right, in the direction of the silver domes. Unfortunately for me, the mineral chunk Kondo heaved into the air continued rolling in my same general direction, pulling more of the tailings pile towards me. In my haste I tripped, severely twisting my ankle. Crumpled on the ground, I could only watch as the avalanche sped toward me, eventually coming to rest just half a meter from my feet.

I have yelled for Kondo several times, but he has not answered. I can only imagine he is either hurt or buried beneath an expanse of rock. My ankle still throbs, a full hour after wrenching it. The MEDiKit has meds that could help with the pain. I might be able to crawl to find it, if it hasn't also been buried with our camp equipment under the tailings. But tamping down the pain is pointless now as my Craeter's has chosen this time to flare up again. If I were back at the *Adiona*, I could receive suitable treatment but here, with just the MEDiKit and no doctor on call, my prognosis appears bleak. I expect to lose consciousness soon. I trust someone on the *Adiona* has been monitoring these logs and will send help immediately. I have activated my distress beacon. Although likely out of range for the ship to detect from its current location, it should assist in locating me once at the basin. I only hope you find me unconscious and not dead.

God damn Hohlt! If not for him, we would not even be on this planet! We would most likely be returned to normal space, and I would be selecting a tie to wear for our triumphant press conference.

I weep at the thought of a Universe so cruel as to deny me the achievement of a lifetime. I choose not to believe in such a Universe, or such a fate. In all the setbacks of my career, I have always moved forward after each one. I refuse to accept that this setback, this hiccup, will be any

different.

My dear friend Yoichiro, I pray you receive this message and mount a rescue effort with all due haste, and that your face will be the one I see when I next open my eyes.

12

Why in Hades are we down here?

Captain Holbrook stood alone in the center of Cargo Corridor C-1, twenty dim meters from its intersection with Deck C's Outer Loop. Nearby, a pair of robotic pallets executed a silent ballet, shuttling cargo between holds.

A figure entered C-1 from the distant Outer Loop. The relaxed gait, swaggering side-to-side movement, and silhouette of a man with hands in pockets all suggested Commander Stephens.

"Hey, Cap," said Stephens as he walked up to Holbrook, "what's up?"

"What do you mean, 'What's up?' You asked me to meet you down here."

"No, I didn't," said Stephens. "You messaged me about meeting you here on Deck C."

"I can show you the message," Holbrook grumbled, activating his comm. He wasn't making things up.

"I didn't send you a message. Besides, this isn't the kind of place I'd ever pick for a meeting." Stephens glanced around the passageway. "It's secluded, OK maybe for a quick, private chat, but there are other spots on the ship that'd be better. I figured you had a good reason to meet here."

"Here it is," said Holbrook, presenting his comm to Stephens.

"I never sent that," said Stephens. "'Please proceed forthrightly to Deck C?' Is 'forthrightly' even a word?" Stephens rifled through screens on his own comm. "Here's the message I got from you."

Holbrook studied the note. "So, you have a message from me that I never sent," he said,

rubbing his chin, “and I have one from you that you never sent. It seems someone has sent messages to each of us to get us both down here.”

“Maybe they want to meet with the two of us,” said Stephens.

“Faking messages to the captain and the XO will certainly get them a meeting, but probably not the one they’d hoped for,” said Holbrook. “Let’s figure out what’s going on.” He spoke into his comm. “Starship *Avenger*, what’s the origin of the two messages—”

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“Anyone know where Stephens is?” asked Lieutenant Bhat. “Or the captain?”

“Not sure,” said Lieutenant Commander Mills, legs crossed and sitting comfortably in the captain’s chair. “What, you already fed up with my command? The shift’s not even fifteen minutes old.”

“Nah,” said Bhat. A frantic yellow light flashed on the communications terminal. He cleared it with several taps. “It’s just odd that neither of them is here. We usually see Commander Stephens at the start of a shift at least.”

“Maybe this is their way of showing a little more confidence in us,” said Mills.

“Seems unlikely,” said Ensign Cochran, facing the engineering station but with her head turned back into the room. “One of the commander’s favorite phrases is, ‘trust, but verify.’ He probably does trust us, but he’ll definitely be along to verify everything hasn’t gone to seed.”

Flashing red lights exploded across Cochran’s entire terminal. The ship shuddered, rattling the empty chairs in the room. Klaxons filled the air and red light flooded the bridge.

“Red alert,” said the ship in its placid, androgynous voice.

The *Avenger* lurched sideways and shuddered, seemingly coming apart. Lieutenant Commander Mills gripped the armrests on the captain’s chair, all his efforts focused on not being

thrown to the deck. The ship jerked backwards, tossing officers towards the front of the bridge. Ahead on the main viewscreen each corkscrew of rainbowed starlight contracted, shortening to an ordinary bright dot.

“We’ve dropped out of warp,” said Ensign Doerr from the deck. She had been standing when the ship made its first violent movement, tossing her down. She pulled herself up by grabbing the sides of her station.

“What the hell happened?” yelled Bhat.

“Don’t know,” said Doerr. “It felt almost like we hit something.”

“Or like we were attacked,” said Mills. “Are there any ships in the area?”

“No, sir,” said Lieutenant Bolton from tactical. “My board shows green.”

“Starship *Avenger*, report status,” said Mills.

“En route to Sagittarius A Star, position 11,121 light-years from the event horizon, velocity 0.0 c. Gravity Drive deactivated after a large instability developed in the warp field.” Several seconds passed before the ship spoke again. “Detecting damage to outer hull, underside of Deck C, localized to the port vertex.”

“Is the ship in any immediate danger?” asked Mills.

“No, the *Avenger* is in no immediate danger.”

“What’s the status of the port gravity field generator?” asked Ensign Cochran, the engineering terminal still flooded with red.

“No damage detected to the port gravity field generator,” said the ship.

“So we didn’t lose the generator—that’s good,” said Mills. “Please describe the extent of the damage.”

The ship remained silent for several seconds, collating data. “A section of the outer hull near

the port gravity field generator has been damaged. The deck and several bulkheads on Deck C have been destroyed or compromised, resulting in an atmospheric breach. Adjacent bulkhead doors have been sealed to prevent ship depressurization. Two cargo holds in that area have been damaged. Some of their contents evacuated to space during the explosive decompression.”

“My God,” said Mills. “What caused the breach? Did we hit something?”

“The location and extent of the damage as well as the warp field signature immediately prior to the event correlate with the complete loss of the gravitational waveguide adjacent to the port gravity field generator. Hull damage is consistent with the waveguide shearing from the hull and disintegrating. Simulations suggest the destabilized warp field propelled shards from the waveguide into the ship’s underbelly.”

Mills’s voice grew soft. “Were there any casualties?” he asked.

“Two casualties confirmed with 99.96 percent confidence,” said the ship. “Captain Thomas Holbrook III and Commander Paul Stephens were both present on Deck C within the damaged section immediately before the shear event. There are currently no life readings in that area of the ship. Their bodies were likely jettisoned into the vacuum.”

Ensign Doerr placed her hand over her mouth as tears welled. Other members of the bridge crew sat stunned.

The news of their deaths hit Mills hard, but he attempted not to show it. As the officer of the deck, he fought to keep it together long enough to take the next important step. “With the captain and commander gone, that places Commander Lynch in command of the *Avenger*.” Mills didn’t care much for Commander Lynch—he wasn’t sure anyone did. The man inspired no enthusiasm or devotion in his reports and was generally unpleasant to be around. The ship would need a leader who could rally the crew and guide them through this difficult time. Hopefully, for

everyone's sakes, the commander would rise to the occasion. "Starship *Avenger*, please have Commander Lynch report to the bridge immediately."

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Lieutenant Commander Mills sprinted to Deck A's Gemini Conference Room, arriving four minutes past the hour along with Lieutenants Byrne and Bolton. The three fanned out around the long rectangular table, grabbing empty seats interspersed among the nine other officers already present.

Mills surveyed the room. Commander Lynch sat at the table's head with his hands neatly folded on its surface. He sported a self-satisfied expression, fueled no doubt by his ascension to the post of acting captain. The most loathsome officers aboard the *Avenger* flanked him: Lieutenants Knox and Grey on his left, and Lieutenant Zhang on his right. They, too, seemed to preside with an air of satisfaction, a bishop and his three vicars lording over their captive congregation.

The other officers around the table held somber expressions. Some hung their heads, some looked on with folded arms and defiant eyes. Even accounting for the sad news of the loss of Captain Holbrook and Commander Stephens, an added level of misery and sorrow weighed on the room.

"I believe we're all here finally," said Lynch. "Please note for the future that I expect punctuality in meetings." He eyed Mills and the other two late entrants. "I understand these are extraordinary times and do give allowance for that fact, which is why I'm only raising this issue rather than taking stronger action. Just remember, punctuality, generally speaking, is a sign of respect.

"Now with that bit of unpleasantness behind us, thank you all for coming. In light of the

events of the past two hours, I felt it important to convene a meeting of the *Avenger's* departmental heads sooner than later. As you all know by now, a port-side gravitational waveguide disintegrated from the stresses of our extended use of the Gravity Drive, an unfortunate outcome I had predicted would very likely occur. The shattered waveguide damaged the ship and in the process killed the captain and Commander Stephens.

“Many aboard the *Avenger* held Holbrook and Stephens in high regard,” said Lynch.

Many aboard the ship, but not you, Mills noted.

“A formal farewell ceremony will occur in two days’ time. For now, I would like to recognize these men for their dedication to this crew, this ship, and to CentCom. Please join me in a moment of silence.” Lynch closed his eyes and bowed his head.

Mills bowed his head along with everyone else in the room but kept an open eye on Lynch and the officers next to him. Knox and Zhang opened their eyes and exchanged smirks. Zhang caught Mills watching him, scowled, and closed his eyes again. The smirk soon returned to his face.

Twenty seconds later, according to Mills’s comm, Commander Lynch looked up and coaxed a feigned expression of heartfelt sadness onto his face. “Thank you,” he said. The others raised their heads. “In Stephens’s and Holbrook’s absence, I am the most senior officer aboard this vessel and therefore the ship’s acting captain. It is with great humility and a heavy heart that I accept this responsibility.”

What a steaming pile of crap.

“To assist me in keeping the ship running smoothly during this challenging time,” said Lynch, “I have appointed Lieutenant Grey acting executive officer.” Grey, stubble peppering his gaunt face, nodded towards the other officers around the table.

“For my third in command, I appoint Lieutenant Zhang.” Zhang, with his scraggly mustache and goatee and round, lamprey mouth of pointy teeth, clearly struggled to present a somber face while actively suppressing a smirk. The man was a psychopath. Mills shuddered at the thought of being alone with him in a corridor or P-cab.

“Finally, I have appointed Lieutenant Knox to the newly created position of Special Assistant to the Captain.” Knox didn’t nod as the others had, maintaining instead his perpetual scowl, as of a prize fighter before a bout. Relatively short and squat, the lieutenant had a block head sprouting a brown buzz cut, Neanderthal brows, fleshy lips, a boxer’s crumpled nose, and muscular biceps he bared at any opportunity.

“Once we conclude here,” said Lynch, “you will all schedule meetings with your reports and relay this new command structure as well as the other information being dispensed.” The commander’s eyes moved around the table until they fell on the ship’s damage control officer. “Lieutenant Collins.”

Collins startled to attention, his mind apparently elsewhere.

“Damage control update, Mr. Collins,” said Lynch.

Collins cleared his throat. “Well, we don’t understand much more about the ship’s status than what it reported two hours ago. We—”

“Mr. Collins,” said Lynch in a patronizing voice. “You are, indeed, the ship’s damage control officer?”

“Yes, sir.”

“Then would it be correct to say that you *should* understand the ship’s damage control status?”

Collins gave Lynch a perplexed look. “Yes, sir. But we’ve had trouble deploying the

autobots to survey the hull. They've not been responding to instructions, perhaps because the change of command hasn't propagated to all ship systems."

"Lieutenant Knox," bellowed Lynch. Knox, with a dull expression and drawing breaths through his partially open mouth, shifted his eyes sideways under his thick brows towards Lynch. "See to it the new command structure has been properly updated in all ship systems." Knox did not acknowledge Lynch's order, and after a few seconds his eyes shifted back to staring out into the room.

"I'll try with the bots again," said Collins. "If that doesn't work, we'll have to send one or two engineers outside for a survey. Either way, until we know the full extent of the damage, we can't estimate repair time."

"What is the plan once we *are* able to move?" asked Mills.

"We will head directly to the dry dock facility at Aludra," said Lynch. "Once there we'll put in for full repairs and a comprehensive safety review of the ship. To reduce the chances of any more problems with the Gravity Drive, we will travel at half power with regular two-day stops, as I originally recommended."

"What about our current orders, our mission to Sag A Star?" asked Dr. Marsden.

"As the captain of this vessel I am going to do what Holbrook should have done weeks ago: get us off that assignment. To that end, our current predicament serves us well. We'll take almost two weeks limping our way to the Aludra system and another month, possibly two, for the safety review and repairs. Based on the urgency of this mission, CentCom will have no choice but to dispatch a different ship, freeing us of our current obligations."

As Lynch finished his sentence, the conference room door slid open and four members of the *Avenger's* security force filed in, taking positions along the far bulkhead from the

commander. They stood at ease, facing into the room in their royal blue uniforms with hands clasped behind their backs and Immobilizers holstered at their waists.

Lynch stared at the men, confused by their sudden appearance and annoyed at the interruption. “You security men,” he said, raising his voice to project it fully across the room, “this meeting is for department heads only. Lieutenant Byrne will brief you in a separate meeting on the issues we’re discussing here. Please exit this conference room.”

“It’s OK Mr. Lynch,” said a voice from beyond the open door. “I invited them.” Commander Stephens stepped into the room to gasps and applause. Several of the officers stood with large smiles. Lynch hid his disbelief behind a poker face.

Ensign Doerr rose from her seat near the door and shook Commander Stephens’s hand. “We thought we’d lost you,” she said with a huge grin.

“It’s not time for me to die just yet,” said Stephens. “Besides, who’d watch over this guy?” A stern-faced Captain Holbrook entered the room, followed by cheers and more applause.

Stephens raised his hands for quiet. “Commander Lynch,” he said, “did we miss much?”

“Sir,” stammered Lynch, confused. “I am, we all are very excited to see you and the captain alive. We thought you had perished in the explosion on Deck C.”

“Explosion?” asked Stephens. “What explosion?”

“The ship advised us that the port gravitational waveguide disintegrated,” said Lynch, “destroying a section of Deck C, the section where you and the captain were apparently standing.”

“The captain and I just came from there,” said Stephens. “Everything seemed to be in order when we left.” Stephens turned to Holbrook. “Do you know what he’s talking about?”

Holbrook only stared at Stephens with his stern expression.

“There’s actually something interesting about that waveguide,” said Stephens, turning back to the room. His eyes met the engineering chief’s. “Would you like to know what it is, Commander Lynch?”

Lynch held fast.

“That’s one of the three waveguides inspected by an autobot during our four-hour layover at Plana Petram. Three out of the ten total waveguides on the hull. When I learned about it, I found myself asking why those three? And the inspection began right after the captain and I left and ended before we returned. The whole thing seemed strange, so before we shipped out, I had a different autobot make its own inspection. Wanna guess what it found?”

Beads of sweat broke out across Lynch’s upper lip as he wrung his hands under the table.

“A small explosive charge—the one you planted on the waveguide.”

Gasps and murmurs of conversation broke out across the room.

Stephens waited for everyone to settle down before continuing. “Given how you’d already gone on about the perils of taxing the Gravity Drive, who would be surprised if a waveguide were to suddenly fail completely. The explosion would damage the ship so it couldn’t continue on to Sag A Star. Only there was the risk that no matter what, Holbrook would still force the *Avenger* to proceed with its mission. To avoid that scenario, you needed to be in command, and to do that you needed to get rid of me and Captain Holbrook.”

Holbrook locked on to Lynch with fierce eyes. Lynch returned his gaze for as long as he could stand, then looked back at Stephens. He dabbed the sweat from his upper lip with the back of his hand.

“When the captain and I both got messages calling us to the bottom deck, I knew your plan was going down,” said Stephens. “Luckily, I’d already told the ship what to do. The *Avenger*

dropped itself out of warp and reported damage in Deck C. And it sealed off adjacent passageways to give me and the captain a place to hold out, undiscovered, until it was time for us to appear.”

“Commander Lynch, you are under arrest,” shouted Captain Holbrook. “The charge is mutiny.” Holbrook directed the security detail to the front of the room with a wave of his hand.

Lynch rose from his chair before the security men reached him. One placed Lynch’s arms behind his back and bound his wrists in restraints.

“You’re both mad,” said Lynch. “I want my advocate.”

“Of course,” said Holbrook, “though you’ll have to wait until we get back from Sag A Star.”

Lynch bared his teeth. “You’ve made up some conspiracy in your heads because you have it in for me,” he shouted, spittle flying from his mouth. “You’re accusing me of damaging my own ship—I’m the chief engineer, for god’s sake!”

“*Were* the chief engineer,” said Holbrook. “I appoint Lieutenant Conlin as acting chief engineer, at least through the end of this mission.”

Lynch’s face flushed red. “If you supposedly knew all along about this alleged plan,” he said, “then why the charade? Why not pull me from my bunk in the dead of night, throw a bag over my head, and detain me in some dark corner of the ship?”

“Because we figured you weren’t working alone,” said Stephens. “If we arrested you outright there was a decent chance you wouldn’t give up your co-conspirators. We needed to let your plan play out.”

“We knew that once you took charge of the *Avenger* you’d appoint your co-conspirators as your deputies,” said Holbrook. “They’d be the only people you could trust to help you run the ship.” He nodded across the room to the security team. “Lieutenants Zhang, Grey, and Knox, you

are also under arrest for conspiracy and mutiny.”

Knox and Zhang rose as the security team stepped in behind them, Zhang with a look of surprise and Knox with his pugilistic scowl. Grey remained seated until they lifted him from his chair, his legs wobbling under his own weight. The guards pulled each man’s arms behind his back and placed his wrists in restraints.

“I chose these men because they were best suited to the positions I needed to fill,” said Lynch. “I don’t know anything about any mutiny or conspiracy. You have no proof to support any of your claims against me.”

Grey looked at Lynch, mulling the large man’s words. Lynch was right; they would have no hard evidence against him. Lieutenant Zheng had operated the autobot that placed the explosive charge. And Grey had used his own station to send the messages that lured Holbrook and Stephens to Deck C. All the communications between the conspirators had been hidden. Lynch could deny even knowing Grey and his buddies beforehand. The commander had orchestrated the whole thing while keeping himself clear of the actual dirty work. “You buggerin’, double-crossing sack of shite,” said Grey in a weak voice, his eyes red and watery. “Here you is, ’anging us out to dry, with you figgerin’ to get off scot-free. You said no one would get caught, that we’d be runnin’ this ship and free of this buggerin’ mission. But they’s arrestin’ us. Aye, we’ll be sitting in the brig, *still* headin’ to our deaths with the rest of ’em!”

“Shut ... your ... mouth ... Grey,” Lynch said slowly through clenched teeth.

“Get them out of here,” snapped Holbrook. The security force corralled the four prisoners and moved them towards the door.

When the procession brought Lynch near Holbrook, the captain placed his hand flat on the big man’s chest, stopping him. “The thing that gets me,” said Holbrook in a quiet voice, “is how

you seem to have had no qualms about killing me. You and I have known each other for more than five years.”

“Don’t patronize me,” said Lynch. “Where was this camaraderie when I was trying to pass the captain’s test? Huh? And all this speechmaking about me killing you when you have no trouble sending us all to our deaths. They’ll award you a medal for following your orders, Captain, but they’re going to pin it on your grave.”

Holbrook glared at Lynch for several seconds. “Take ’em to the brig.”

13

Captain Holbrook stepped three paces into the forward crew lounge on Deck A and paused, fighting vertigo. The triangular room sat at the tip of the ship's forward vertex, its angled port and starboard bulkheads a single, continuous glassteel panel with a panoramic bend at the lounge's far end. The long, clear panel rose from the deck to meet the flat glassteel sheet that formed a transparent cap over that portion of the ship's top deck. For Holbrook, the glassteel enclosure created the disturbing feeling of standing within the void itself.

The captain surveyed the room. Four officers stood around a tall rectangular table one-and-a-half meters away, playing cards and drinking. Seven more sat in groups of two and three at tables along the transparent bulkheads, engaged in quiet conversation. At the lounge's forward-most point, nestled within the great glassteel curve where the bulkheads converged, sat Dr. Riesen, alone at a small table with her back to the room.

The captain made his way right to the automat bar embedded in the back bulkhead. He had bowed to Stephens's most recent plea to curtail his alcohol consumption, remaining drink-free in all the days since the mutiny. It had been a clear demonstration of how he didn't need alcohol to function. He could handle a drink—he deserved one, in fact. An hour ago, the *Avenger* entered the distorted space around Sag A Star. They were committed, sailors on a doomed vessel, unless their guest Dr. Riesen figured out a way back home.

The captain jabbed at the bar's controls. He glanced back at Dr. Riesen while the machine dispensed his drink. Once the whirring ceased, he pulled his glass from the automat's base and slowly made his way to the front of the room. Muted illumination from light discs embedded in

the lounge's small tables created a delicate calm against the pyrotechnic chaos of rainbowed starlight that writhed beyond the transparent walls. Directly ahead of the ship loomed Sag A Star's large black disc, surrounded by a thick band of glowing orange. Twisted spacetime teased triangular strands of the encircling band toward the disc's center, creating the illusion of a massive black maw with a wreath of pointed orange teeth. Metallic blue-green tendrils of electromagnetic discharge lashed out at the cosmos in a squirming maelstrom of galactic rage.

Dr. Riesen sat motionless as Holbrook approached, her figure silhouetted against the black hole and the onrush of distorted stars. She wore a crimson tank and black slacks. Her dark hair hung around her shoulders. When he arrived at her table, he stopped behind the empty seat to her right and placed his hands on the back of the chair.

The physicist, lost in thought, didn't notice his presence. She continued gazing at the star field through the glassteel bend. A notebook sat on the table in front of her. Doodles filled the open page.

"Good evening, Dr. Riesen."

Dr. Riesen jumped at Holbrook's voice. "Oh, good evening, Captain," she said. "You startled me."

"Apologies," said Holbrook. He waited for the physicist to invite him to sit, but she only looked up at him silently. "Mind if I join you?" he asked.

"Please," she said, though neither her expression nor her body language suggested any enthusiasm for his presence.

Holbrook lowered himself into the chair and placed his drink on the table. Dr. Riesen returned her gaze to the center of the glassteel bend where Sagittarius A Star loomed against the backdrop of squirming starlight. The two remained frozen in place for almost half a minute, the

physicist engrossed in the panoramic view and the captain laboring to attract her attention with his stare.

Holbrook broke the silence. “I can’t remember the last time I set foot in this lounge.”

“It’s an amazing space,” she said. “I love watching the stars from inside a warp bubble. The beauty always amazes me. And the complexity. Each photon travels on a unique path through the spacetime eddies around the ship.”

“It must be very interesting to perceive the world through a physicist’s eyes—” Dr. Riesen had turned her head toward him as he spoke. The warm glow of the table’s lightdisc bathed her face in soft light, her black hair framing her pale skin. Ice-blue eyes floated out at him. He’d been this close to her before, on Plana Petram and while reviewing the *Adiona* logs, but her beauty had never fully registered. Holbrook diverted his eyes to look off through the bend, concerned they might betray his thoughts.

“It’s what I was born to do,” she said.

“Speaking of which,” said Holbrook, turning back to the physicist while suppressing all thoughts of her beauty, “on Plana Petram Commander Stephens called you ‘The Prophet.’ At the time you said it was a long story.”

“It still is,” said Dr. Riesen.

“But now you have the time to tell it,” said Holbrook.

Dr. Riesen heaved a large sigh.

“If it’s something you’re uncomfortable discussing—”

“It’s fine, Captain,” said Dr. Riesen. “I don’t mind talking about my background; I just tire of the reaction from non-believers.” Her piercing, ice-blue eyes locked on to him. “I will explain, but know that eye rolls and laughter will be met with silence.”

“I like to think I have an open mind,” said Holbrook.

“Are you familiar with the Hebrew Scriptures—the Old Testament?” she asked.

“Yes,” said Holbrook. “My mom owned several modern translations of the Bible.”

“In the Hebrew Scriptures, God sent many Prophets to reveal His will and secrets to the human race on Earth,” said Dr. Riesen. “Hundreds of years ago, a very rich man named Dr. Abraham Riesen founded an organization called The Brotherhood, based on a revelation in a dream. In that dream the great Flower of Knowledge hovered before him as a bud, its petals all closed in on themselves. God’s hand appeared, curled in a fist that opened to His flattened palm from which rose a line of men, all wearing crimson robes with hoods that covered their faces. Dr. Abraham stepped forward and lifted the first man’s hood and saw it was Albert Einstein. Under the second hood was Niels Bohr. He continued lifting the hoods: Wolfgang Pauli, J. Robert Oppenheimer, Richard Feynman. The line of men stretched out to infinity, some standing on God’s hand, the rest on a bridge fashioned from two criss-crossed DNA strands. As he looked down the line of men, the great Flower of Knowledge bloomed, opening wide. He believed his dream to be a message from God, confiding in him how He revealed the inner workings of His Universe through his chosen people. Dr. Abraham called them Modern Prophets.”

“His chosen people? You mean the Jewish people?”

“Correct,” said Dr. Riesen. “Each of the physicists in the dream, from Einstein to Feynman to Pauli, each one was Jewish. All the great physicists were Jewish.”

All of them were Jewish? Holbrook wracked his brain for the names of other physicists. He could only think of Heisenberg, whose uncertainty principle underpinned artificial intelligence, and Ben-Aharon, the twenty-second century inventor of the Gravity Drive.

Dr. Riesen continued. “Dr. Abraham made his fortune in genetics, through his company that

pioneered the field of made-to-order babies. The company logo was two criss-crossed DNA strands, the same as in the dream. He believed God was telling him through this dream that his company would play a role in the forever-after stream of Modern Prophets, that he should use his company's technology to start engineering these men.

“Dr. Abraham, in addition to being rich, was also somewhat eccentric. During his travels through India, this Jewish man became a believer in reincarnation. He met the Dalai Lama and discussed how His Holiness's centuries of repeated existence on this Earth and his memories of the past allowed him to understand everything more deeply. Dr. Abraham immediately saw the benefits of reincarnation applied to this idea of genetically engineered Prophets, how the same man appearing generation after generation, in touch with all the knowledge and experiences of his past lives, would accelerate the rate of new discoveries.

“He asked the Dalai Lama if he could sample his DNA, to which His Holiness agreed. Dr. Abraham discovered a truth about the Dalai Lama's genetic makeup that clued him in to his ability to reincarnate. He tailored the first Prophet's DNA to those specifications.”

“So, you're the reincarnation of the first Prophet,” said Holbrook.

“I am the *third* reincarnation of the first Prophet,” said Dr. Riesen.

Holbrook stroked his chin. “Do you believe that's true?”

Dr. Riesen smiled. “It *is* true, Captain.”

“But how—”

“Captain Holbrook, may I ask *you* a question?”

“Of course,” said Holbrook.

“I'm curious what brought you looking for me. Surely it wasn't to ask about Prophets and reincarnation.”

“Why do you think I came here looking for you?”

“You said you never make it to the crew lounges. I assume this is a special visit to find me.”

“Uh ... yes,” he said, slightly flustered at being so easily read. “I wanted to see if you’ve made any progress figuring out how to get us out of D-space.”

“You noted our recent transit out of normal space,” she said.

Holbrook nodded. “Now that we’re actually in D-space, the crew will be impatient to understand how we’re getting home,” he said, deflecting from his own personal interest. “I’m trying to keep ahead of the curve.” His eyes fell on her notebook. “Are those your notes?”

Dr. Riesen closed her notebook, hiding the page of doodles. “I haven’t made much progress, to be honest,” she said, grabbing her drink and swirling the remnants with the ice. “I’ve replayed several portions of the *Adiona*’s logs more times than I can remember, at least the parts that seem like they might hold a clue. In particular that part about setting up a ring of tachyon beacons—my mind’s hung up on that because it was such an odd detail. Unfortunately, they didn’t elaborate. Otherwise, there’s nothing so far.” She teased droplets of condensation from the side of her glass onto the tabletop and dragged them around the smooth surface with her finger.

Holbrook stared at her, confused. Their fates depended on Dr. Riesen understanding how the *Adiona* planned to return from D-space, but she didn’t seem at all focused on the problem. In fact, she’d given him roughly the same answer a week ago. “Honestly, I’d expected to find you someplace like the astrophysics lab working on the problem,” he said, struggling to keep his irritation from his voice. “I was a little surprised when the ship told me you were here in the lounge. Shouldn’t you be spending more time trying to figure out what they were up to?”

Dr. Riesen’s finger stopped its meanderings across the table. “Solving physics problems can be a mechanical process,” she said, “but I’ve found the hardest ones require a bit of inspiration.

That's not something you can switch on at will. And it doesn't always happen in a sterile physics lab."

"So you're sitting here in the Deck A lounge, waiting for a flash of ... inspiration," said Holbrook.

"Something like that." Dr. Riesen's finger resumed its circular movements on the table as she looked ahead at the intruding black disc.

Holbrook found the physicist's response less than satisfying. He'd taken comfort in her joining their mission, in her being trapped with them at the center of the galaxy. It meant finding a solution would be in her own best interest. Her page of doodles seemed far removed from the flash of inspiration she claimed she sought. "Why did you volunteer for this mission anyway?" he asked, annoyed at her seeming indifference. "I mean, you knew it would be a one-way trip if we can't figure out how to get back home. Still, you decided to come."

Dr. Riesen looked up from the table at Holbrook. "Yes, I knew it might be a one-way trip," she said, "but if this mission fails, there may not be a planet Earth." Her hand moved back to gripping her glass. "If I can help this mission succeed, it'll be worth it even if I never see home again."

Her mention of never seeing home again sank the captain into despair.

"How do *you* feel about this mission?" asked Dr. Riesen.

"What do you mean?" he asked.

"Well, I volunteered," she said, "but you were ordered to go. It's the same outcome either way, but I imagine it might feel quite different to have no say in the matter."

Holbrook jostled the melting ice in his glass. "This may sound strange," he said, "but I've always wondered how I would respond if the order ever came down for a one-way mission. I've

read about other captains in the same situation, tried to imagine how they must've felt knowing they were being ordered to their deaths. I wondered if they resented it at all. I never believed it would actually happen to me, though." He sipped his drink, staring out uncomfortably at the swirling stars.

"How *did* you respond?" she asked.

He shrugged. "In the end this mission's the same as any other. They ordered us to fly off to Sag A Star, and here we are." The captain stared off at the swirling spacetime.

"But does it really feel like any other mission?" she asked.

"I think it does," said Holbrook. He took a breath, straightened himself in his chair, and jutted out his chin. "Look, we have a job to do," he insisted with newfound resolve. "Getting back home comes later. I'm not concerned about that right now. It's like any other mission. We have to stay focused on the immediate next steps." He peered ahead through the glassteel bend.

Dr. Riesen studied the captain. "You said you're not concerned with getting back out right now, yet you made a special trip here to ask if I'd managed any progress."

Holbrook flashed a weak smile. "So much for taking my own advice on staying focused." He sipped his drink. "When I look out to the future, to the end of this mission, we either fail, which means we're dead, or we succeed, and we're still dead. Assuming you can't get us back home, that is." Pain filled his eyes. "When I let myself think about those two scenarios, I don't know, there's this great emptiness that wells up inside me, like a giant hole." Holbrook squeezed his glass.

"What do you think it is?" asked Dr. Riesen. "The emptiness, I mean."

Holbrook considered the question. "My dad was in the service," he said. "He was a starship captain. He's the reason I joined. I wanted to be like him, I guess, to follow in his footsteps.

Whenever he came home on leave, I would wait by the door for him to arrive. I was always by his side, from the minute he set foot in the house to the minute he left. My mom called me his ‘shadow.’”

“You loved your dad a lot,” said Dr. Riesen.

“I did love him,” said Holbrook. “But I also hated him.” He sipped his drink again. “My dad died on a one-way mission of his own. We were all alone after that. I hated him for leaving us. I wondered if he ever thought what taking that assignment would do to a wife and kids waiting for him to return.” Holbrook's jaw tightened. “That’s part of why there’s no one waiting for me back home. I never want to do that to a wife, or a family, to have them wondering if I’ll ever return, to have them maybe get that call one day.” Holbrook looked out at the stars. “That emptiness I feel,” he said, “I don’t know. All I can think is it must be fear of death.”

“Fear of death is natural,” said Dr. Riesen. “It’s part of the human condition.”

“It’s funny,” said Holbrook, smiling, “I don’t *feel* like I’m afraid of dying. I mean I don’t want to die or anything like that, but I don’t feel like I’m afraid of it. But that’s all I can think.” The captain looked back at Dr. Riesen. “For all our sakes, I hope you’re able to get us back home. The ship’s computing resources are at your disposal. And anything else you need.”

“Appreciated,” said Dr. Riesen. “I will keep working at it. You can count on that.”

Holbrook lifted his glass and quickly downed the remainder of his drink. “I’ve got to get going,” he said. “I will leave you to your light show.”

“Thank you for the visit, Captain,” said Dr. Riesen.

“Certainly,” said Holbrook. He stood, towering for a moment over the physicist, pivoted, and walked to the exit. Dr. Riesen resumed her vigil, staring into the approaching black disc.

Outside the crew lounge Holbrook stood for a moment and collected his thoughts. His

whole interaction with Dr. Riesen had been strange, mostly driven by her odd indifference to their predicament. He'd need to get Commander Stephens's take—his executive officer was excellent at reading people.

“Security to Captain Holbrook.”

The captain's stomach tightened at the hail that came through his comm. Security never reached out to him with good news. Never. “Holbrook here.”

“Sir, this is Lieutenant Byrne.” The lieutenant paused for a lifetime. “It's Tentek.”

“What about him?”

“He was scheduled fifteen minutes ago for his third daily check-in with security. He never showed.”

“Never showed?” The aught was beyond punctual. Word had spread among the crew that when arriving for meetings, Tentek would settle into his chair at the exact start time. “What was his last known location?”

“The ship logged him entering his quarters fifty minutes ago. Securcam footage doesn't show him leaving; however, the sensors in his room say he's not there.”

Missing? Holbrook never liked the idea of having Tentek aboard his ship but protesting would have been pointless. The top brass made their decision; he could only follow their orders. Had Stephens been right about Tentek, about him being a double agent? Holbrook shook off the thoughts. His executive officer's paranoia was rubbing off on him.

Paranoia or no, they needed to find the robot. “Have Commander Stephens and a security detail meet me at Tentek's quarters,” said Holbrook. “I'll be there in two minutes.”

14

Holbrook rounded the corner to Tentek's quarters. He found Commander Stephens, Security Chief Lieutenant Byrne, and Security Officer Lieutenant Singh standing outside the entrance.

"Any updates?" asked Holbrook as he approached.

"No, sir," said Byrne. "There's no footage of Tentek exiting his quarters, and still no sign of him anywhere on the ship."

Based on that meager intel, the aught's cabin would be the best place to begin the search. Holbrook nodded to Byrne. "Open 'er up."

Byrne and Singh drew their Immobilizers. Holbrook debated if unholstering them was an overreaction or prudent precaution. Tentek had so far given no reason to question his motives, and there might be a reasonable explanation for their inability to contact him.

Lieutenant Byrne addressed the ship: "Starship *Avenger*, open Tentek's cabin door per Captain Holbrook's authorization."

The door slid aside to a dark room, the light from the corridor penetrating a half meter into the blackness. Byrne activated the light on his comm and waved it into the space. The stark white beam lit the room's back bulkhead, landing on the door to the cabin's private head.

The two security men entered Tentek's cabin while the captain and Stephens waited outside. Thirty seconds later came a shout from inside. "Clear."

Holbrook entered the cabin and quickly scanned the space. His eyes landed first on the table with two chairs and a dresser. A queen bed pressed against the far bulkhead, its taut and wrinkle-free bedding seemingly undisturbed from its original state. The deck was free of clothing and any

other items, and the room's closet and head were both empty, their open doors revealing their pristine state. The entire cabin seemed as if it had never been occupied.

"He's not here," said Byrne.

"We'll have to start a systematic search of the ship," said Stephens.

"Hold on," said Holbrook. "The ship said this was the last place it saw him. Did you and Singh search everywhere?"

"The room's so small there's nowhere he can be hiding," said Byrne.

Holbrook shined his comm light around the cabin, pausing when it landed on the bulkhead next to the bed. The bed itself appeared to sit a few centimeters away from the bulkhead, not fully pressed against it. Holbrook walked to the foot of the bed and trained the beam along its left edge, shining light into a narrow gap between it and the wall. Within the gap, motionless on his side with his face mashed against the bulkhead, lay Tentek. "He's here."

"Where?" said Byrne in disbelief. He moved in next to the captain and inspected the narrow gap. The security chief turned to Holbrook. "I checked under the bed," he pleaded. "There was nothing there."

"The sheet's hanging down on this side," said Holbrook. "It blocked your view of the bulkhead." The captain reached down. "Help me move the bed."

Byrne swung around to the long side opposite Tentek, and together the two men pulled. No longer pinned against the bulkhead, Tentek flopped faceup onto the deck.

The captain kneeled over the aught and instinctively pressed his fingers against Tentek's neck. The robot had no pulse, but he likely never did. "Tentek," said Holbrook, "can you hear me?"

Tentek let out a weak moan. His head rolled towards Holbrook, eyes partially open but

looking past the captain.

“Can you walk?” asked Holbrook. Tentek only stared back at him through low-slung lids, unresponsive. The captain put a hand under each arm and lifted. Tentek weighed much less than he expected, half that of a similar-sized human. He stood the aught upright. “Take him to Sickbay,” he said to Lieutenant Byrne.

“Sickbay?” said Stephens. “This thing isn’t even human. It’s a machine.”

“I know that,” snapped Holbrook, “but we need a place to examine him.”

Lieutenant Byrne hoisted Tentek with an arm behind his back and slung the robot’s arm around his neck. He headed to the cabin’s door with Tentek’s feet dragging along the deck. Singh, Holbrook, and Stephens followed him out.

Holbrook activated his comm. “Sickbay, this is the captain. Inform Dr. Marsden we have a patient for her.” He thought a moment. “Dr. Riesen,” he added, “please meet me in Sickbay.”

- - -

“Who’s hurt?” asked Dr. Marsden as Holbrook and the others entered Sickbay.

“Tentek,” said Holbrook.

“The aught?”

Holbrook nodded. “We found him passed out in his quarters.”

Dr. Marsden scowled. “You know this is a *Sickbay*, right, Captain, for human patients? Not a machine shop.”

“We don’t have a lot of options,” said Holbrook. “Besides, I know how you love a challenge.”

Dr. Marsden huffed. She directed Byrne to an examination table and had him lay Tentek on his back. The aught’s jaw lolled, and his face spasmed in apparent pain.

Dr. Riesen arrived and joined the four officers, crowded around the examination table.

“I need you all to take a giant step back,” barked Dr. Marsden. The officers and Dr. Riesen complied, giving the doctor room to work.

Dr. Marsden glanced at the vital signs viewscreen above the examination table. The screen remained blank, an odd sight with a body present. Even with a corpse the monitor reported temperature, blood chemistry, and time and cause of death.

The doctor pulled back both of Tentek’s eyelids and waved the beam from her thin medical flashlight across his pupils. His nickel irises constricted, their response much faster than a human’s. Dr. Marsden grabbed his wrist, checking for a pulse through the cool, pale phlesh. She gave up after a few seconds and sighed. “Tell me again why you brought him here.”

“He’s sick,” said Holbrook, “or at least looks like he’s sick.”

“That might be so,” said Dr. Marsden, “but none of my medical training can help him.”

“Do aughts even get sick?” asked Stephens.

“I’m sure they do,” said Dr. Marsden, “but I can’t imagine what he could have contracted aboard the ship.” Tentek twitched again. “He’d be better off in engineering,” she grumbled.

“Or the workshop,” said Stephens. “They’ve got the machinery to disassemble him.”

Holbrook glared at Stephens. “Just do the best you can with him, Doctor.”

Dr. Marsden folded her arms and huffed again. “Nurse Mead,” she yelled, “help me get this ‘patient’ undressed.” Dr. Marsden unzipped Tentek’s jumpsuit at the front as Nurse Mead arrived. The two worked together, pulling the outfit down from his shoulders.

“Prepping him for the spa?” asked Stephens.

“We need to check him for wounds,” barked Dr. Marsden. She turned to Holbrook. “Maybe Commander Stephens can be of better use somewhere else on the ship.”

“The commander won’t say another word,” said Holbrook and shot his XO an angry look.

Marsden and Mead removed Tentek’s jumpsuit, leaving him clad only in a set of thin gray boxer briefs. They surveyed the aught’s trunk, limbs, and head. At the end of their examination, Dr. Marsden removed her surgical gloves.

“What did you find, Doctor?” asked Holbrook.

“Absolutely nothing,” said Marsden. “And that leaves me fresh out of ideas.” She shook her head. “If it weren’t for his chest rising and falling, I wouldn’t even think he was alive.”

“That and his eyes,” said Dr. Riesen. “They’re moving like he’s in REM sleep.”

“No, not like REM,” said Dr. Marsden. “The movements would be faster, jerkier.” She studied Tentek’s eyes as they moved under his closed lids. “These movements are very regular.” She pulled back an eyelid and held it open for several seconds. She pinned the other one open as well. “They’re moving in unison,” she said. The aught’s eyes drifted from right to left, darting back to the right after tracking as far as they could, then restarting their slow movement to the left.

Marsden released Tentek’s eyelids. “You know what this reminds me of?” she said. “When I was a kid, my brother was into electronics. For one of his birthdays, he got a small satellite dish kit. It used to track sort of like this when it lost the signal.”

“Sig-nal,” whispered Tentek, his voice pained, “yessss.”

Holbrook moved in close to the aught.

“Careful, Captain,” said Stephens.

The captain ignored Stephens. “Tentek, what’s happening to you?” asked Holbrook. “Are you sick? What can we do?”

“Losssst sig-nal,” he said.

“What signal?” asked Holbrook.

“Net-work ...,” said the aught, straining to get the syllables across his lips.

“Network?” asked Holbrook.

“F-T-L ...,” said Tentek, his voice trailing off with the last letter.

Dr. Riesen fell into deep thought, her eyes going glassy as they darted left and right.

“What’s ‘FTL?’” asked Stephens. “Is he speaking in code?”

“Captain,” said Dr. Riesen, returning from her thoughts, “may I speak with you?”

Holbrook gathered she meant away from Tentek. “Marsden, try to keep him talking,” he said. “Maybe that’ll help him snap out of it.” He directed Dr. Riesen to a nearby office, a small space used by the physician on duty. Commander Stephens entered after them and closed the door.

Dr. Riesen addressed the captain. “He said FTL network.”

“Do you know what that means?” asked Holbrook.

“I’m not sure” She thought again for a moment. “The name Collective, it refers to a hive mind, with all the individual consciousnesses interconnected.” Dr. Riesen looked out the office’s bay window at Tentek, who still lay motionless on the table. “My guess is they’re connected to an information network of some sort. But it can’t be sub-luminal, or even light speed—the lag time would be unbearable over any significant distance. To be effective, such a network would need to send data at super-luminal speeds.”

Stephens’s mouth fell open. “You’re saying he’s connected to The Collective over some faster-than-light network?”

“*Was* connected,” said Dr. Riesen. “Just like we can no longer send or receive messages to CentCom because of all the spacetime distortion from Sag A Star, this faster-than-light network

would be inaccessible to Tentek as well.”

“And that’s what led to his incapacitation,” said Holbrook. “He’s cut off from their network.” Which made sense—security lost track of the aught right about when they crossed the D-space boundary.

“That son of a bitch’s had a network connection to The Collective all this time?” asked Stephens.

“That’s my guess,” said Dr. Riesen. “At least to the point where we entered D-space.”

Stephens glared at Tentek through the window. The aught still lay limp and motionless. “I told you this thing couldn’t be trusted,” he snapped. “It’s probably been updating The Collective on our progress and plans this whole time.”

“We don’t know that,” said Holbrook.

“We *do* know he didn’t tell us about his secret network connection,” said Stephens.

“It doesn’t mean he’s a spy,” said Holbrook.

“We don’t know *what* he is,” said Stephens, “or why he’s really here. We need to throw him in the brig, now, before he regains consciousness, or whatever you call it. Build a Faraday cage and lock him inside.”

“A Faraday cage won’t block tachyons,” said Dr. Riesen. “But if he *was* sharing information with The Collective, we don’t have to worry about that now. No direct transmission can make it in or out of this deformed space.”

Holbrook agreed with Stephens to a point. Tentek maintaining a network connection to The Collective ever since he arrived on their vessel at Plana Petram, if true, seemed bad. But CentCom had vetted Tentek, had vouched for his trustworthiness, had even made special exceptions to the rules so the robot could board the *Avenger*. The top brass couldn’t be so foolish

as to allow a spy on his ship. “Paul, I know you’re concerned about Tentek,” said Holbrook.

“You have been from the start. But I think until we have a chance to talk to him we shouldn’t jump to any conclusions.”

“There’s nothing to talk to him about,” said Stephens.

The captain turned to the window, stroking his chin as he peered at Tentek. “I’ll station some security men in here,” he said. “When he regains consciousness, if he does, they can make sure he doesn’t go anywhere before we have a chance to question him.” The captain turned back to Stephens. “When he does wake, if he doesn’t have good answers to our questions, we’ll place him in the brig, with a Faraday cage and whatever else we think we need to contain him. OK?”

Stephens folded his arms and stared at the captain. “OK,” he eventually grumbled. “That’s something, at least.” He looked back at Tentek. “I worry, though, how much damage he’s already done.”

15

“Approaching the RD Sagittarii star system,” said Lieutenant Commander Mills. No one else spoke on the bridge, not even in a whisper.

“Acknowledged,” said Holbrook. The captain’s voice trailed off in half-distraction as he stood alongside Mills, seated at the helm. Holbrook studied the tactical map that filled the main viewscreen, a bird’s eye view of the RD Sagittarii star system. Black grid lines partitioned the gray screen into sections with a monstrous red disc, the hypergiant star RD Sagittarii A, at the center. Not far to its right and slightly below the horizontal centerline hovered a smaller disc, deep black and ringed with an electric blue border, the second peril that lurked in the star system: the ten solar mass black hole RD Sagittarii B. The planet Infernum appeared farther right with its gray landmasses and pale violet oceans.

The sight on the viewscreen froze Holbrook in awe. The red star was immense, far larger than even the supergiants he’d encountered in the past. A tiny black triangle, the starship *Avenger*, rose quickly from the bottom of the map, far to the left of the red star.

The current plan had been proposed and debated, analyzed by the ship, tweaked, scrapped, resurrected, debated again, tweaked a second time, and finally ratified. Holbrook had considered insisting they start from scratch a third time but couldn’t fathom a viable alternative. They needed to enter the RD Sagittarii system and insert the ship into orbit around Infernum without being shot out of the sky by any anti-space batteries the aughts had waiting for them. They needed to use every resource at their disposal to conceal themselves. Those constraints dictated the major elements of their plan. He wasn’t so sure they would survive it. “Bring us around,”

said Holbrook, transfixed by the viewscreen.

“Aye, sir,” said Lieutenant Commander Mills. “Counting down sixty seconds to orbital insertion.”

The ship’s androgynous voice began a steady chirp: “Fifty-nine, fifty-eight, fifty-seven”

The *Avenger* pivoted seventy-nine degrees to starboard, sweeping around in a wide arc that placed the immense red star directly ahead. The small black triangle drove steadily towards the giant red disc, advancing at 380 times the speed of light.

“Beginning our ascent,” said Mills, tapping the glass surface of the helm terminal. The *Avenger’s* force pads pulsed, pushing the starship into a gentle arc to bring it up and over the hypergiant’s northern hemisphere. On the tactical map, the small black triangle began its transit of the red disc.

“Fifty-two, fifty-one, fifty”

“Coming up on the northern pole,” said Mills.

Holbrook nodded. Until then the star’s bulk had hidden his starship. Their emergence above the hypergiant would be the first opportunity for enemy eyes to spot their ship. “Keep us as close to the star’s corona as possible, helm,” said Holbrook.

“We need to stay mindful of the temperatures in the corona,” said Ensign Reilly from the science station. “The star’s corona reaches 3.5 million degrees centigrade. And even aside from that there’s also the circumstellar envelope, a loosely bound outer shell of gas unique to hypergiants. Flying through the envelope alone will generate a considerable amount of friction, especially at our speed.”

“Without an idea of the threat we’re facing, we need to hug the corona as closely as we can,” said Holbrook. “The closer we hug the surface, the more difficult it’ll be for anyone to see

us.” As long as they didn’t incinerate themselves, that is. The *Avenger’s* designers had fashioned her as an attack vessel. They never envisioned the warship playing cat-and-mouse with a star or its black hole companion. “We’ll only need to hug the star while we’re flying over the pole. Once we start our descent, they’ll have to pick us out of a thirty solar mass thermonuclear backdrop.”

The black triangle neared the red disc’s center on the viewscreen as the *Avenger* raced towards the giant star’s northern pole. The massive globe of churning, fusing hydrogen seethed below them, battering the ship with its ferocious heat and furious solar wind.

“Ship’s hull temperature rising,” said Lieutenant Commander Phillips. “Moving past forty thousand degrees centigrade.”

“Acknowledged, Ops,” said Holbrook. “Steady ahead helm.”

“Forty-four, forty-three, forty-two”

“Hull temperature approaching fifty thousand degrees,” said Phillips. “Nearing design limits.”

Holbrook glanced at Lieutenant Amanda Bolton at tactical. The lieutenant read the question from the captain’s face. “If we climb to avoid more of the corona, we’ll be visible for sure,” she said.

“Mills,” said Stephens, “can we boost our speed to get out of this oven sooner?”

“A little bit,” said Mills. “Increasing our speed will generate more friction from the circumstellar envelope, but the bigger problem is we’ll start to draft stellar material in our wake. The whorls and eddies of spacetime from the Gravity Drive are on the edge of disrupting the star’s surface as it is. An anti-space armament would pick that up for sure.”

Holbrook pursed his lips. “Increase speed by as much as you can.”

“Aye, aye, sir,” said Mills. “Increasing speed to 384 c.”

“Thirty-six, thirty-five, thirty-four”

“Hull temperature fifty-two thousand degrees at the forward vertex,” yelled Phillips. “Some of it’s friction from the envelope.”

“Rotate the ship about its center,” said Holbrook. “That should distribute the friction more evenly along the perimeter.”

“Aye, aye, sir,” said Mills. He tapped out instructions for the lateral force pads. “Reaching rotational velocity of six rotations per minute.”

“How we doing, Ops?” asked Holbrook. He managed to keep his voice steady despite his ship hanging on the edge of burning up.

“Hull temperature leveling off around fifty-one thousand degrees,” said Phillips.

“We’re almost through the worst of it,” said Mills. “Starting our descent.” The helmsman pulsed the ship’s force pads to adjust the black starship’s course gradually down along the hypergiant’s northern hemisphere.

“Hull temperatures dropping,” said Phillips.

“Good,” said Holbrook, relieved. “Return lateral rotation to zero. When we level off, make sure our course places Infernum dead ahead and that star directly behind us.”

“Aye, aye, sir,” said Mills. “Leveling off.”

Captain Holbrook discovered he had been holding his breath. He forced an exhale. They had survived, the first challenge anyway. The next involved dissipating all the heat from their solar transit.

“Approaching RDS B,” said Mills.

“Switch to forward video feed,” said Holbrook. The bridge’s main viewscreen shifted from the tactical map to an image of the black hole RD Sagittarii B, surrounded by twisted rainbows

of starlight. The aughts would certainly detect the ship at its current hull temperature. The problem was the heat wouldn't radiate into the vacuum on its own—they needed a medium to sop it up.

“Coming in range of the accretion disc,” said Mills.

The hole's immense accretion disc, the ring of charged particles and dust encircling the singularity, glowed an electric blue. They would shed the excess heat onto the gas and dust surrounding RD Sagittarii B as they rushed past. Physics dictated the minimum distance they needed to fly from the accretion disc to cool the *Avenger*, but if they drifted too close to the black hole, the gravitational forces would rip the ship apart.

“Hull temperature at forty-five thousand degrees,” said Phillips.

“Tactical,” said Holbrook. “Center on RDS B and zoom in.” The bird's eye view of the RDS system reappeared on the viewscreen, this time with the black hole RDS B in the middle and magnified larger than the red hypergiant had been. The black triangle moved steadily to the right, its course marked by a dotted white line that grazed the top of the hole's electric blue accretion disc.

The ship shook, the black hole lashing out with flares of subatomic particles and bursts of electromagnetic energy at the approaching black wedge starship. It shook a second time, rattling the chairs on the bridge.

“Hull temperature at thirty-nine thousand degrees and falling,” said Phillips. “But shear forces are increasing on the ship's superstructure.”

“It's going to be tight,” said Stephens. “We're threading a pretty fine needle.”

“Stay sharp,” said Holbrook, looking nervously at the viewscreen.

“Twenty-five, twenty-four, twenty-three”

The black starship continued to rock and shudder as it cruised through the dust and gas of the accretion disc. Eddies of warped spacetime cast off from the singularity jostled the ship and wracked the crew with nausea.

“Hull temperature at twenty-two thousand degrees and dropping fast,” said Phillips. The ship wrenched, threatening to throw the bridge crew from their seats. “Shear forces nearing dangerous levels.”

Holbrook wanted to vomit but willed himself to remain composed. “How we doin’, Mills?” he asked, squeezing the words through his discomfort.

“We’re through the worst of it, Captain,” said Mills, also fighting waves of nausea.

“Confirmed,” said Phillips. “Shear forces are off their peaks.” The ship shuddered and shook but nowhere near as violently as it had. The disruptions gradually leveled out, the *Avenger* returning to smooth sailing.

“We’re clear,” said Mills.

“Hull temperature has dropped to near background ambient of interstellar space,” said Phillips.

Holbrook sighed in relief then steeled himself for the next phase, an exquisitely timed sequence of steps to place them in the correct orbit around Infernum without being shot out of the sky. Their current speed protected them given the extreme difficulty of hitting a starship traveling faster than light. However, the warped space that surrounded the *Avenger*, enabling its super-luminal speeds, also made it difficult for their sensors to detect exactly what lay ahead. The drop to sub-light would leave their ship vulnerable to weapons fire and allow only seconds to react. “Forward video feed,” said Holbrook.

The tactical map disappeared, replaced by a field of rainbowed starlight swirls against the

blackness of space. The gray-violet planet Infernum sat in the center of the viewscreen, growing larger.

An amber light flashed on the helmsman's terminal. "We need to drop to sub-light speed so we don't overshoot the planet," said Mills.

"Dropping to sub-light will generate ripples in the spacetime fabric around the ship," said Lieutenant Bolton. "Anyone looking for that signature will see a starship has entered the system."

"Thank you, tactical," said Holbrook. "Prepare for evasive maneuvers. Please proceed with the drop to sub-light, Mr. Mills."

"Aye, aye, Captain," said Mills. "Disengaging the Gravity Drive."

The curls of rainbowed starlight contracted to single points of light across the *Avenger's* viewscreen as the wormhole of twisted spacetime enveloping the black wedge starship dissipated, flattening out to normal space.

"Initiating braking sequence," said Mills, the taps at his terminal energizing the lateral force pads. "Fifteen seconds to orbital insertion."

"Fourteen, thirteen"

"Bolton," said Holbrook, "any sign of anti-spacecraft activity from the planet?"

"Negative, sir," said Bolton. "So far there's no sign anyone's noticed we're here."

"At our present speed it'd be hard for them to scramble something to knock us down before we swing around the planet," said Stephens. The commander stopped himself and thought for a moment. "Unless they have an orbital weapons platform"

"Let's just hope they haven't brought that much gear with them," said Holbrook.

"Eight, seven"

“Ensign Reilly,” said Commander Stephens, “deploy the surface mapping autobots.”

Reilly tapped at her science station terminal. “Aye, aye, sir.”

The shuttle bay doors slid open, creating a wide crack of shining light along the ship’s black underbelly. Four autobots exited the starship and fanned out across the planet, scanning and mapping their pre-assigned portion of the gray-violet globe. “Autobots deployed,” said Reilly.

“Three, two, one”

“Orbital insertion complete,” said Mills. “We’re transiting the dark side.” The planet Infernum loomed on the viewscreen as a large near-black circle against the star field, surrounded by a thin violet ring of backlit atmosphere. Red streaks of flowing molten lava slashed the disc’s interior.

“How long before our orbit takes us back out away from the planet?” asked Holbrook.

“About seven minutes, Captain,” said Mills.

“Can we exhale yet?” asked Stephens. The commander and the captain looked to Bolton at tactical.

“We’ll never be able to rest easy up here,” said Lieutenant Bolton, “but I think we’ve skirted any major threat.”

“I’ll take it,” said Holbrook. “Great work, everyone. Mr. Mills, what’s our orbital status?”

“We’re locked in a wide elliptical orbit that will swing us twenty AU from Infernum at apogee,” said Mills. “Our orbital period’s synchronized with the planet’s rotation to bring the *Avenger* over the landing party’s planned drop zone once per day.”

“Let’s see the mapping data,” said Holbrook.

Two large circles appeared on the viewscreen, one for each hemisphere and partially filled with long, thin rectangular stripes of oceans and continents. More stripes appeared within the

discs on each autobot's orbit. Five minutes after their deployment, the autobots had fully mapped the surface and settled into geosynchronous orbits around the planet, preparing for future tactical use. The ship analyzed the sensor data for an additional minute, annotating the maps with geographic and other points of interest.

Holbrook's brow crinkled. "There's the *Adiona*," he said, pointing at a teardrop marker on the viewscreen, "but I don't see the Hex Men's mine or equipment, or any sign of an aught ship."

Stephens surveyed the maps. "Starship *Avenger*," he said, "reanalyze the Infernum sensor data and identify the location of the Hex Men site."

Several seconds passed before the ship responded. "No site matching the Hex Men mine images appears in the sensor data," it said. "There are no sites exhibiting large-scale sentient modification of the planet's surface."

"Huh," said Holbrook. They had the right planet. How could the site, a kilometer-wide scar on the landscape that existed five weeks before, just be gone? "Commander Stephens, what's your take?"

"It doesn't make sense," said the ship's executive officer. "Did the planet swallow it up somehow?" Stephens studied the map again. "If we don't see the mine, maybe the aughts couldn't find it either. Maybe they aren't even down on the planet."

"Maybe the aughts got what they came for and imploded the site," said Holbrook, "to make sure no one else could mine Planck Matter."

"We'd still see an empty spot on the map," said Stephens. "A round patch of dirt with no trees or vegetation."

"Maybe the vegetation grows fast on this planet," said Holbrook.

"Even a depression filled with foliage would still show up on the map as a depression," said

Stephens.

Holbrook stroked his chin. He'd expected the mission to throw him a few curve balls, but more along the lines of a sneak attack or the aughts departing just as they arrived, not a completely missing target site. "We need to be certain the mine's gone," he said. But how to figure out where it *should* be? "We'll land at the *Adiona*, check for survivors, then retrace the researchers' steps."

"Sickbay to Captain," crackled Dr. Marsden's voice across the comm channels.

"Go ahead," said Holbrook.

"Captain, it's Tentek, my aught patient."

Holbrook exchanged a glance with Stephens. "What about him?" asked the captain.

"Sir," she said, "he's awake."

16

Tentek sat at the far end of the six-person conference table in the small meeting space down the corridor from Sickbay. He determined his location based on a precise measurement of the room's dimensions and his memory of the *Avenger's* layout. The data from his inertial sensors said he had moved from Sickbay to his current location.

Sickbay?

That was just over ninety minutes ago, but he could only remember the last ten minutes. And before then? A flatline of sensory input and computation.

His last memory before the flatline was ... what? In his quarters ... feeling faint. The room spinning, then blackness. Flatline blackness. But if his chronometer was correct, that was over two days ago.

The door opened, admitting Captain Holbrook, Commander Stephens, and Dr. Riesen. Two security guards stood in the corridor on either side of the entrance, their backs to the room.

Was he a prisoner?

The two *Avenger* officers took adjacent seats at the opposite end of the table, facing him directly. Dr. Riesen sat along the side.

The captain gave the aught a wan smile. "Hello, Tentek."

"Hello, Captain, Commander, Dr. Riesen," said Tentek, nodding to each. The captain and the physicist offered cordial, if not friendly, expressions. Commander Stephens maintained an icy glare.

"How are you feeling?" asked Holbrook.

How much should he divulge about his current state? And how to find out what happened to him? Peppering the humans with questions would reveal how little he understood about the events of the past two days. He'd instead let the humans do the talking. He would fill in the blanks from the questions they asked. "Fine, Captain."

"We weren't sure you would ever regain consciousness," said Holbrook.

Tentek did not respond. His eyelids click-clacked in the room's silence.

"Do you remember what happened?" asked the captain.

"Mostly," he lied. "But I am having a little trouble piecing it all together."

"We found you passed out in your quarters," said Stephens. "That was shortly after we entered D-space. You were in Sickbay up until a bit ago when we moved you here." The commander delivered his words like icy daggers.

D-space! Sag A Star! He had forgotten. His mind was groggy, like computing with circuits that were too hot. He wanted to return to his quarters, to lie down, to see if he could coax his systems a little closer to ground state. Probabilities suggested they were unlikely to allow that before he answered some questions. He did not recall being moved to the conference room, but clearly their purpose in doing so was to hold an interrogation.

"My understanding of aught physiology is your body is designed to be resilient, with many safeguards and redundant systems to keep you conscious," said Holbrook. "In light of that resiliency, I'm wondering if you can explain why you blacked out."

Only one possible cause could have resulted in the symptoms he experienced. But perhaps a plausible alternative would satisfy the humans. "The ship recently entered D-space," he said. "It may have been something like D-space sickness for aughts. The circuits and pathways in my synthetic brain have tolerances similar to your neuron connections. If adjacent pathways stretch

or contract to different lengths, that can throw off delicate timings.” His human hosts stared back at him with blank expressions. Did they not understand his explanation? Or did they not accept it? “It may have been something like that.”

“Dr. Riesen has a different theory,” said Holbrook. He nodded at the physicist.

“When you were in Sickbay, at one point you seemed to be delirious,” said Dr. Riesen. “You called out about your connection to the FTL network.”

“I did?” said Tentek. Surprise and concern spiked in his nervous system circuits before he could tamp it down.

“I guessed you were talking about a faster-than-light network,” said Dr. Riesen. “A network that would allow all aughts to stay connected, no matter where they are in the galaxy.”

Tentek blinked at the three humans. Probabilities had not suggested he would fall ill when they reached D-space. And probabilities had not suggested the humans would be so smart. Should he tell them the truth, or risk a half-truth explanation? Probabilities suggested they already knew the answers to the questions they asked and that further dodges would only raise suspicions. “You are aware, Doctor, of studies where animals, like dolphins and whales, have perished because of lack of communication and companionship from their own species? Even humans have been shown to break down and die after prolonged separation from other people.

“Aughts, in this respect, are no different. We are social creatures. An aught cannot survive on its own. We require interaction with others of our kind. While you humans achieve that interaction through close physical proximity to other humans, we do the same, except we use a network to form those connections.”

“A wireless network,” said Dr. Riesen, “accessible through interstellar space?”

The aught dithered. “That is correct,” he said.

“A tachyon-based network,” said Stephens.

Tentek did not want to discuss the Network, but they had already deduced its basic function. “That is correct,” he said. “All aughts from The Collective connect to the Network using tachyon transceivers built into our bodies. Originally this network was of a very small scale, a simple planet-wide, light-speed network on our home world. However, we had visions of traveling through the stars, of exploring, of moving freely through the galaxy. To do that while maintaining a connection, we needed a fast network, specifically, a faster-than-light network, one that would allow us to remain in touch with one another even as we spread across the extreme distances of interstellar space.”

“I’ve heard enough, Captain,” said Stephens. “Permission to lock him up?”

“Hold on, Commander,” said Holbrook. “Tentek, to date you’ve presented yourself as an ally of humanity, yet you failed to disclose the very important fact of this network and your constant connection to The Collective.”

Tentek cocked his head. “I do not understand your statement, Captain, or question, if it is a question. My Network connection to The Collective has no relevance to my desire to assist humankind.”

“Certainly it’s clear there’s at least a problem with the optics,” said Holbrook.

“You are a God damned sentient Collective network node point that we took aboard our ship,” said Stephens.

“And that is the very reason I did not disclose it,” said Tentek. “If I had told you on Plana Petram about my Network connection, you would never have let me aboard your ship.”

“You’re damn right!” shouted Stephens.

“Paul, please ...,” said Holbrook.

“You need me on this mission,” said Tentek.

“You mean so you can send updates to your Collective buddies on our progress?” asked Stephens, his face flush. “You’ve been in constant contact with The Collective ever since we left Plana Petram. What information have you shared with them? At the very least our location.”

“I have never sent the ship’s location to The Collective,” said Tentek, “and they cannot track me over this network.”

“Have you told them about this mission?” asked Holbrook. “Have you told them we’re coming?”

Tentek hesitated. “They already know we are coming,” he said.

The three humans sat stunned at Tentek’s revelation.

“Son of a bitch,” said Stephens, quietly dribbling out each syllable. “I told you we should never have let him on board.”

“They already know because probabilities suggest a high likelihood of such an event,” said Tentek. “With the kind of computational power at The Collective’s disposal, it is quite easy to predict many events. Not with one hundred percent accuracy, but the results can be ... uncanny.” Stephens looked as if he could jump over the table at him. Probabilities suggested Tentek had little chance of changing the commander’s mind no matter what he said. The commander was not the person he hoped to reach. “You must believe me when I tell you I have shared no information with The Collective, Captain Holbrook. I state again, unequivocally, I am on the side of humankind.”

“Does the fact that you’re conscious, talking to us now, mean your network connection has been restored?” asked Dr. Riesen.

“It does not,” Tentek said. “Prior to our entering D-space, I had no concept of losing this

connection, no understanding of what it would mean to me physiologically.” Tentek paused, his mouth half open as he computed the best words to use. “What I am about to tell you I only know from examining my system logs. When I lost my Network connection, my normal consciousness went into a quiescence, a sort of sleep mode. From that point my body’s autonomic processes took over, the central one being the reestablishment of a Network connection.”

“What brought you back to consciousness?” asked Holbrook.

“Eventually the Network acquisition protocol timed out. My systems restarted with no connection at all.”

“So you’re able to function without a connection to The Collective,” said Dr. Riesen.

“I can function without a connection to The Collective for some amount of time,” said Tentek, “but not indefinitely.”

“What happens when time’s up?” asked Stephens.

“I will shut down,” said Tentek.

“How much time do you have?” asked Dr. Riesen.

“Five days,” said Tentek. “A week. I am not really sure. But between now and that time I will weaken, my mental faculties will dull.”

“All that from losing your connection to the aught network?” asked Holbrook.

“It is not just any network, Captain,” said Tentek. “Subsystems drift over time, lose precision. The Network helps keep everything in sync. There are even pieces of me, of my consciousness, that do not exist locally, inside this shell.”

“That means the aughts sent by The Collective should have shut down by now too,” said Dr. Riesen. “They arrived in D-space a whole week before us.”

“It is likely they set up a local Network within their ship,” said Tentek. “Such a network

would feel real, possibly even include a few simulated services to avoid some of the drifting I mentioned. They will have to be careful reconnecting to the real Network after they complete their mission; otherwise, they will suffer something akin to the bends that humans get when rising too quickly from a deep ocean dive.” Tentek massaged his temples, hoping the affectation would suggest strain at proceeding. “Captain, I am happy to answer more of your questions but for now I request that I be allowed to return to my quarters. Though I am conscious, my systems are not all back online, which makes it difficult for me to think. I can be of better use to you after some self-maintenance time.”

“I’ll call security to escort him to the brig,” said Stephens.

“That won’t be necessary, Commander,” said Holbrook. “Tentek, you may return to your quarters.”

Stephens began to protest, but Holbrook waved him off with a look and a quick shake of his head.

“Thank you, Captain,” said Tentek, rising from his chair. He wobbled slightly, steadying himself with a hand on the tabletop. After several click-clacks of his eyelids, he bowed and headed for the door.

“Make sure Tentek reaches his quarters,” shouted Holbrook to the security men outside. He wasn’t worried about Tentek running off, more that their aught guest might suffer another episode before he reached his cabin. The three headed down the corridor, disappearing behind the closing doors.

Commander Stephens seethed in his chair. “Captain,” he said, “I told you from the start this aught cannot be trusted, and here’s a perfect demonstration of that fact, which he confirmed himself. He created a massive security hole by just setting foot aboard the *Avenger*, a direct

connection to The Collective that he deliberately did not mention. What else is he keeping secret? Maybe his full experiences, his conversations, visual inputs, everything, get uploaded to The Collective for analysis. They certainly have the bandwidth to pull it off.”

“His network connection has been severed,” said Dr. Riesen.

“Even if that’s true, even if he’s on our side as the two of you want to believe, we don’t know just what he’s capable of,” said Stephens. “What if The Collective installed some rogue programming he’s not aware of that’ll send him on a rampage the moment we land on the planet? What if there’s some built-in failsafe that activates when we’re about to blast his buddies?” The commander shook his head, his face red. “Tentek belongs in the brig, sir, wrapped in a Faraday cage and whatever other precautions we can think of to protect this ship. You promised me that. You promised we would lock him up after interrogating him.”

“Only if his answers were unsatisfactory,” said Holbrook. “There’s nothing he said that was clear evidence of deception.”

“He’s lying every time he opens his mouth!” said Stephens.

Holbrook did not want to disregard Stephens’s advice but had to weigh it against the commander’s hatred of aughts. He replayed their discussion with Tentek, seeking any additional insight. “We could, based on the answers he gave us, assume the worst and lock him up,” said Holbrook. “The problem is he may be truthful when he says he’s only here to help us, and we may still need him to complete our mission. For that reason, I don’t think we should take any action that might disincentivize him from helping us.”

The commander folded his arms and looked up, channeling his anger into the deck above.

“If I’m wrong, Paul, you can be the first to say, ‘I told you so.’”

Stephens huffed. “If you *are* wrong, I hope we’re all still alive for me to say it.”

17

“You made it,” said Holbrook.

Commander Stephens had just arrived on Shuttle Bay Row where members of the Infernum landing party lined up behind the captain at the middle airlock: science officer Reilly; Security Officers Byrne, Shelton, and Edwards; Chief Medical Officer Marsden; acting engineering head Conlin; Tentek; Dr. Riesen; and planetary geologist Koh. All wore blue-gray EN-suits.

“I was thinking we might have to leave without you,” said Holbrook.

“You’d probably have to come back for me,” said Stephens, “unless you want Reilly leading the second team. On second thought, maybe that’s not a bad idea.”

“You’re still worried about leaving Mills in charge of the ship,” said Holbrook. “I agree he doesn’t have a lot of command experience, but he’ll do OK.”

“Lieutenant Commander Mills has the conn for one reason: he’s the best option from a meager set of choices.” Stephens sprouted a concerned look. “Maybe one of us really should stay behind.”

“This mission will succeed or fail by the events that unfold on the planet,” said Holbrook. “With one team investigating the *Adiona* and the other scouting for the Hex Men mine, we’re going to need an experienced officer leading each party. We can’t have you or me up here while all that matters is happening down there. Besides, other than assist us on the ground as needed, all the *Avenger* will do is orbit the planet.” Stephens didn’t seem totally convinced, but at least he had nothing more to say. “Starship *Avenger*, open Airlock Two and start the shuttle’s pre-drop sequence,” said the captain. The airlock spiraled open with a faint scraping sound.

“Everyone file in,” said Stephens. The two senior officers entered the airlock, proceeding to the two seats at the front of the elongated D-shaped craft. The rest of the landing party followed, unfolding thinly padded seats from their nooks along the craft’s bare white interior and slipping their arms through shoulder restraints anchored in the bulkhead. The formerly silent cabin became a cacophony of thudding boots, clicking clasps, and tightening belts.

Holbrook settled into the pilot’s station and made a quick visual inspection of the landing party, confirming each member secure within their seat. “Shuttle,” he said, “take us to the *Adiona*.”

The shuttle beeped, unlatched its internal bay connections, and drifted out from its docking ring. The shuttle bay’s large doors slid apart beneath the small craft, flooding the hangar with dim red morning sunlight reflected off the rumpled cloud cover below.

Exiting from the *Avenger*’s belly, the shuttle fell towards Infernum, transitioning from the starship’s gravity well to the planet’s. The *Avenger*’s bay doors closed, and the warship accelerated to a tenth the speed of light, disappearing into the blackness of space.

The shuttle continued downward, gaining more speed as it plummeted through the layers of the planet’s atmosphere, the soft sound of rushing air growing louder within the cabin.

“Picking up some chop,” said Holbrook. Strong crosswise winds buffeted the craft at twelve kilometers above the planet’s surface. “Sorry about the bumpy ride, folks. The computer’s doing its best to counter with the lateral force pads, but its reactions are just a few milliseconds too late.”

The captain reviewed the computer’s flight plan on the viewscreen. “Coming up on a thick layer of clouds,” he said. The sight through the shuttle’s glassteel viewport shifted from the violet-black of near space to a fluffy, red-tinged white haze. Their velocity slowed slightly, the

clouds cushioning their descent. The turbulence that previously jostled the craft subsided almost completely.

Seconds later, the shuttle burst through the underside of the clouds, the rolling gray ceiling climbing away as the small craft continued downward.

The pilot's terminal beeped. "The shuttle's got a visual lock on our destination," said Holbrook. "Fifty-four seconds to touchdown."

"Any sign of activity around the *Adiona*?" asked Stephens.

Holbrook zoomed and panned the image on the terminal. "Nothing."

The viewscreen snapped from its realtime camera display to a tactical readout. Red lights flashed in the bottom right corner. The shuttle emitted several soft chimes.

"The shuttle's detected two objects rising from the surface," said Holbrook.

"What are they?" asked Stephens.

"It can't tell," said Holbrook, "but based on their course and speed, it doesn't think they're natural. Or friendly." The captain switched the left side of the screen to a live view from beneath the shuttle. Two small, round, black dots rose against the backdrop of the planet's yellow-gray landscape. They flew in a tight formation, with no more than a meter of separation.

"Those are drones from The Collective."

The voice had been thin, metallic. Holbrook looked back into the cabin, finding Tentek staring back at him, his eyelids click-clacking. "Are you sure?" he asked.

"Yes," said Tentek. "They are outfitted with quantum pulse guns."

"Those are small armaments," said Stephens, "but more than capable of taking us out."

"The two drones will work in tandem to bring down the shuttle," said the aught.

On the viewscreen one of the drones peeled off from the other, rocketing upward.

“A drone is taking position directly behind the shuttle,” said Holbrook. “The other’s still on an intercept course. Initiating evasive maneuvers!” Holbrook tapped the viewscreen controls, and the small craft executed a sharp port-side roll followed by a steep dive that caused members of the landing party to grip their restraints. A few officers cried out.

On the tactical screen the drone eventually returned to its position behind the shuttle. “Looks like that shook it off of us for a few seconds, but it’s locking on again,” said Stephens.

“I don’t think we’re gonna make it to the ground without a fight,” said Holbrook. “Hang on everyone; this is not gonna be a pleasant ride.”

Holbrook flew the shuttle straight and level for three seconds, then placed it into a steep dive, its nose pointed at the ground. Several members of the landing party screamed.

The trailing drone adjusted its course to follow, diving down behind the shuttle.

Holbrook tapped the weapons controls on the viewscreen as the small craft drove downward. A fist-sized ball of orange and red plasma bubbled for twenty milliseconds in the nozzle of the shuttle’s rear cannon, then exploded upward in snakes of blinding flame.

The drone, its velocity augmented by the pull of the planet’s gravity, could not adjust its course in time to evade the blast. The plasma’s tendrils licked at its black surface before coalescing into a seething ball of ionized gas and energy that fully enveloped the small robot. The drone pitched up, imploded, and a tenth of a second later exploded, painting yellow light on the thick gray clouds above and raining bits of debris down toward the shuttle.

“Got one of ’em,” said Holbrook. He tapped at the viewscreen to pull the shuttle out of its dive.

As the shuttle leveled its flight, the second drone emerged directly in its path. The cabin filled with a solid tone.

“That’s a weapon’s lock,” said Stephens.

“Everyone hold on!” shouted Holbrook.

The drone fired its quantum pulse gun, releasing two blasts of phased energy.

Holbrook tapped furiously at the viewscreen, rolling the craft to port. The first blast grazed its underside, scraping an ugly dark gash along its smooth white exterior. Blue-green sparks sputtered from the shuttle’s aft.

The second blast connected more solidly with the small vessel, tearing a lengthwise hole in its starboard hull. The cabin depressurized with a loud, sustained hiss. The shuttle rolled to starboard as it plummeted to the ground.

“We’ve lost the starboard stabilizer,” yelled Holbrook against the deafening whoosh of air through the gash. “It’s gonna be tough maintaining controlled flight.” He tapped at the screen, reconfiguring the shuttle’s starboard force pads to compensate for the lost stabilizer. The craft came out of its roll and continued forward, with a slight list to starboard. The second drone moved to a position ten meters directly behind the shuttle.

Red circles flashed impatiently on the viewscreen’s system status board. “The power pack’s ruptured,” said Holbrook. “We’ve gotta land.”

“We must destroy the other drone first,” yelled Tentek from the rear of the cabin. “We cannot fight it from the ground.”

“If the power pack explodes, we’re all dead,” said Holbrook.

“If we land before we destroy the other drone, making it to the ground alive will be of little consequence,” said Tentek.

Tentek was probably right about destroying the drone while aloft. If they landed, they would cede the high ground to the device, and they’d be hard pressed to even scratch the thing with

their hand weapons. But with the rupture it wasn't a question of if the power pack would explode, but when.

Holbrook fired the rear plasma cannon. Tendrils of flame shot behind the shuttle, but the drone drifted to port, avoiding the blast. Holbrook fired again. The drone jogged to starboard, evading the second bolt. "Damn thing's hanging back," he said. "At that distance it can easily dodge the shots from the cannon."

The drone primed its quantum pulse gun. A solid tone filled the cabin.

Captain Holbrook energized the forward force pads to maximum. Superconducting coils rattled as the shuttle braked hard, throwing everyone into their restraints. The drone, its speed unchanged, barreled forward, closing the gap between it and the small craft. Holbrook fired a third shot. The drone danced to starboard but not fast enough to completely evade the blast. The plasma melted its carapace, destroying its flight control surfaces. The robot plummeted in a tightening spiral, trailing orange sparks and black smoke. It slammed to the ground in an explosion that flashed the surrounding terrain and brush, leaving a small fire where it crashed.

"You got him!" said Stephens.

Holbrook nodded. "Now comes the hard part," he said under his breath. "After my breaking, we're falling like a brick."

The captain pitched the shuttle's nose down, placing the craft in a glide to regain some forward momentum. At fifteen meters above the ground, Holbrook raised the shuttle's nose, channeling its momentum into a climb. Klaxons rang out as their forward velocity neared zero. At seven meters above the ground, the shuttle stalled. Holbrook energized what was left of its underside force pads. The craft floated gently downward until the pads failed a meter above the ground. The shuttle fell, slamming into a broad clearing of yellow grasses strewn with small

rocks and boulders.

“Everyone out!” shouted Holbrook.

Dr. Riesen reached the airlock first and slapped her palm against the red emergency release button. Explosive bolts ejected the hatch. The round door skidded along the ground, stopping three meters away. She jumped out and turned to help the others behind her.

Three members of the landing party did not stir. Edwards, Reilly, and Koh, all sitting along the starboard side of the bulkhead, remained unconscious, or worse. Stephens, Byrne, and Holbrook worked to pop the releases on their restraints. Each man hoisted a limp body over their shoulders and lumbered to the open airlock, struggling with their loads. Infernum’s gravity was slightly below Earth’s but higher than on the ship. It would take time for them to acclimate to the new gravitational field.

Holbrook exited first, stepping over the lip of the round airlock, followed by Byrne and Stephens. The captain plowed forward, his head down as he concentrated on moving as quickly as he could away from the shuttle with the wounded officer on his back. At his twenty-third step, he came upon a set of boots, facing him and planted directly in his path. The captain paused his march to look up. He found Lieutenant Shelton idling before him and the rest of the landing party loitering nearby, watching the three of them carry the wounded. “Get as far from the shuttle as you can!” he yelled. “The power pack’s ruptured!”

“Head for those rocks,” said Stephens, nodding at a large outcropping thirty meters ahead and slightly left.

The other five members of the landing party hurried toward the volcanic outcropping, ahead of the three *Avenger* officers who trailed with the wounded. When Holbrook reached the rocks, he came around behind them and gently laid Ensign Edwards on the dusty, gray ground. Byrne

and Stephens deposited the other two injured officers beside the ensign.

Dr. Marsden immediately attended to Edwards, who appeared to be the most seriously wounded of the three.

“How bad is he, Doctor?” asked Holbrook.

A flash bright as Earth’s sun erupted on the other side of the outcropping, followed an instant later by a loud explosion that shook the ground, and finally a rush of superheated air. Small bits of dirt and rock rained on the landing party. Some raced to shield their heads with their hands while others had the foresight to activate their helmets.

Once the shower of debris ceased, Holbrook peered around the boulder. The shuttle was gone. In its place a wide, shallow crater remained, cradling a fire that billowed black smoke. The craft’s ruptured power pack, its containment failed, released its entire store of energy in a single instant.

Holbrook shifted his attention back to Marsden. The doctor was examining Ensign Reilly.

“How are they, Doctor?” asked Holbrook.

“Edwards and Koh are dead,” she said, in her typical clinical manner. “Reilly sustained a concussion. She’s conscious now, but woozy. I’m going to give her something that should help.”

Holbrook crouched near the bodies of the two dead men. Edward’s face had been badly burned. Blood covered Koh’s EN-suit across his torso. The captain bowed his head, then stood.

“We must leave here as soon as possible,” came a voice from behind Holbrook.

Spinning around, Holbrook found Tentek staring at him several meters away from the outcropping. The aught had a streak of dirt smeared across his pale right cheek.

“Some of us are wounded,” said Holbrook, approaching the aught. “Two are dead. I don’t know how quickly we can move out.”

“It must be soon,” said Tentek, his billiard ball eyes filled with reflections of the shuttle fire.

“And why is that?” asked Stephens as he approached the captain and the aught.

Tentek’s double-eyelids click-clacked. “Standard operating procedure. If the two drones that engaged us do not return in eighteen and a half minutes, which they will not, two more will be sent to investigate. We have to find cover.”

“And where do you propose we do that?” asked Stephens. “Look around—it’s just flat plains.”

Stephens was right. The grassland continued on for kilometers in all directions. There were other rock outcroppings like the one they huddled next to, but nothing to hide under.

“There is a lake not far from here,” said Tentek.

Holbrook blinked at him, baffled by the comment.

“About 1.1 kilometers to the east,” Tentek added.

Stephens shrugged dismissively. “So there’s a lake,” he said. “What the hell difference does that make?”

“We can hide beneath the water,” said Tentek. “Our EN-suits will keep us dry and provide oxygen for as long as we’re submerged.”

Holbrook rubbed his chin. “What’re our other options?”

“We stay and fight,” said Byrne, unholstering his electron pistol. “We can use this rock formation for cover.”

“A security officer is not one to turn and run,” said Tentek. “However your instincts will not serve us. The drones are too fast. Two of them working together will easily overwhelm us. And even if we destroy them, two more will follow.”

“Any other ideas?” asked Holbrook. No one offered another solution. Marching off across

the plains seemed to be the only option. The captain never imagined the mission would begin the way it had, their transport destroyed and two men dead.

“We need to get moving,” said Tentek.

“Get moving? We haven’t even decided where we’re going,” said Stephens.

“The lake is the only option,” said Tentek. “Every second we remain here increases the probability of our capture.”

“What about our dead?” asked Dr. Marsden.

Holbrook looked back at Edwards and Koh, their lifeless bodies crumpled on the ground.

“Place them near the shuttle,” said Tentek.

Stephens glanced at the shallow crater where the shuttle’s exploded remains continued to burn. “You’re not serious?” he asked.

“I am,” said Tentek.

“These men deserve a proper burial,” said Stephens.

“But we do not have time for one. And we cannot take them with us,” said Tentek. “By placing them near the wreckage, the drones will believe the shuttle’s passengers died. If they find no human remains, they will continue searching for us, for they will not believe the shuttle was unmanned.”

Holbrook hated the idea of leaving the bodies of his men out in the open, but their options appeared to be severely limited.

Commander Stephens pulled Holbrook aside with a tug of his arm. “Captain, I don’t think it’s a smart idea to follow Tentek’s plan,” he said.

“Do you have a different one, Commander?” barked Holbrook. “Cause now’s the time to propose it. Or do you just hate the plan because it came from Tentek?”

Stephens huffed in frustration but said nothing more.

Captain Holbrook stepped farther away from the outcropping, surveying northeast in the direction of the lake. He looked again at the burning crater. “Stephens, you and Byrne carry the bodies to the wreckage. I’ll collect Reilly. Everyone else, move out.” He turned to Tentek. “Lead the way.”