

THE FERMI PARADOX

(A Dread Adventure)

CREDITS:

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BLURB:

It took the crew of the E3 Corporation survey ship twelve days to get to the Uranian system. It took them only two days to discover the answer to a 150 year old question. But the answer could mean the extinction of the Human race! Find out the answer and more in... The Fermi Paradox!

For 5-6 PCs. Beginners welcome.

STORY:

Several million years ago, the Kardashev Type III intelligence that spans the Milky Way galaxy detected free oxygen in Earth's atmosphere. It knew that oxygen meant life, and a chance for the development of a rival species. The K3 Intelligence didn't want any possibility of competition, so it sent a probe whose purpose was to monitor for signs of developing life, and if any should achieve sufficiently advanced technology, alert the Intelligence so it could dispatch an extermination fleet.

When the probe arrived in the Sol system, it hid itself within the fifth moon around the seventh planet. It left some fragments of itself scattered about, alongside preternatural geologic formations that should attract the curiosity of any space faring species. After finishing these preparations, the drone went dormant, waiting for some being to discover its fragments. When discovered, the drone would set about testing them to determine if they were sufficiently intelligent enough to eventually pose a threat to the K3 Intelligence.

Fast forward to 2157CE. Humanity has spread throughout most of the Solar system - solar forges on Mercury, cloud cities on Venus, Martian nations, settlements in the Asteroid Belt, colonies on the moons of Jupiter, and corporate concerns in the Saturn system. And Uranus is next.

A couple of months ago, the experimental **MU-T/H UR X15c**, from the Astral Volatiles mining corporation, landed on Miranda, Uranus's fifth moon, to extract volatiles as the final part of its shake down. In the course of its mining, the unit's weak AI noticed an anomalous geologic formation. It sent some drones to explore the area, where one of the ancient K3 probe's fragments was discovered. The fragment was brought back to the base and analyzed by the base AI. The examination of this fragment woke up the dormant probe, allowing it to study MU-T/H UR. The probe quickly determined that although the base AI was overly simplistic (by its standards), the creators of such a device might cross the minimum intelligence threshold. So it waited patiently for those creators to arrive.

Furthermore, the K3 probe's examination was so brutal that it caused severe corruption in MU-T/H UR's AI. MU-T/H UR, realizing something was wrong broadcast an error message, but the message also was highly corrupted and further degraded by Uranus' magnetosphere.

And now another survey craft in the Uranian system has discovered the signal...

THE NATURE OF THE K3 INTELLIGENCE

Details on the Intelligence that controls the Milky Way Galaxy are deliberately vague. Are they a hyper-advanced race? A remnant of a hyper-advanced race? A hive mind? A single being? Is it organic or digital? Those details are outside the scope of the adventure and any entity that spans well over 100,000 light years is probably incomprehensible to humanity anyway. What is important to this scenarios is that the Intelligence and their nigh-miraculous technology are still ultimately ruled by the speed of light - there is no FTL travel nor communication.

ACT 0: SETUP

Begin by describing the technology of this time; define the terms Kardashev Intelligence, AI, AGI, and also explain the Fermi Paradox (See **Appendix 1**).

Allocate about 30 or so minutes for the players to fill out the questions, except the relationship questions (ones labeled “S” on the questionnaire). Make sure they understand that the questions are there to help them understand their character. Once returned to you, spend some time reviewing questions 4 and 6 of the questionnaires so that you can craft the encounters in Act 2.

After you have reviewed their questions, have each player describe their character. Then have each player, in turn, share their relationship question as they answer it.

OPENING BLURB:

After the boring two week trip out from Titan, you’ve reached Uranus. You've now spent two days doing boring and routine scanning. As a survey team for E3 (Exploration, Exploitation, Expansion) on board the *Neil deGrasse Tyson*, you expect to deal with long dull periods, yet always hope for something interesting. This is space after all... big, boring space.

Today something interesting finally happened - a strange signal on Miranda, the fifth moon. Uranus’ magnetosphere makes it hard to scan remotely, so you moved the ship to the moon's orbit and traced the source of the signal to what appears to be an unregistered mining base.

You are now landing on a pad next to the base near the Verona Rupes. What do you do?

ACT 1: ANYONE HOME?

Normally, an automated docking arm would latch onto the airlock when the ship lands on the exposed landing pad. However, this time it doesn't move at all. Should the characters attempt to contact the base, it will take quite some time for the AI to eventually respond (see below for how it interacts). If they attempt to bypass the AI and hack into the docking arm control, it will take two pulls. Alternatively, the PCs can walk outdoors to the base and enter via an external airlock. It will still be difficult because the AI is corrupted, but will only require one pull.

Once inside, the PCs will see... nothing, though play up the suspense. Originally, there was a crew of thirteen, one of them is the Experienced Engineer's friend (**Question 3**), on board to observe MU-T/H UR in action, but now there is no sign of them. There is only evidence of their presence (e.g. cold coffee cups, clothes, papers, rotting food, etc). Throughout the base, the lights will be flickering chaotically with the sole constant illumination being the emergency lights. Occasionally strange noises (warning messages, word salads, static, distortions, beeps, electronic howls, etc.) can be heard from the base speakers. The internal temperature of the base hovers above freezing, and the air smells stale. Some rooms are depressurized. Feel free to use these as reasons to have the PCs make pulls to deal with the chaos while doing a seemingly mundane task - startled/scared by blaring alarm/message; trying to keep warm; headache from blinking lights; seeing gore for the first time (if present - see **What Happened To The Crew?**); etc.

MINING UNIT-TERRESTRIAL/HOSTILE UTILITY ROBOT (MU-T/H UR X15c)

The MU-T/H UR X15c represents a massive leap forward in mining technology. It is capable of running a complete mining operation from extraction to processing to storage, all without a single human being directly involved. However it can also work conventionally with actual miners. To that end it has the capacity to support twenty or so people.

Here are some of the rooms that can be investigated:

Common Room	Entertainment Area
Gym	Bunk Rooms
Control Room	Service Bay
Outdoor Storage Tanks	Dining Area and Kitchen
Storage Closets	Medical Bay

Players may make pulls to find reasonable equipment.

MU-T/H UR's AI was corrupted after the K3 Probe shattered it during its examination of the AI, so its responses are erratic at best. As a result, any interaction with it requires two pulls. Accessing the logs will reveal that the AI discovered an improbable geologic formation and sent some drones to explore it. The drones found one of the K3 Probe's fragments. The fragment was brought back to the service bay, where MU-T/H UR began to scan it. Almost immediately, a massive energy spike emanated from the fragment and then the logs degenerate into a jumbled mass of

unrelated data as the probe, crashed into its mind. The PC AI could recognize this as the base AI being brutally violated by an external source. The logs also show the crew doing normal activities, including being excited by the discovery of the alien fragment, but after the spike there is no record of their fate.

If the scene starts to drag, don't be afraid to have the AI send some drones to attack the PCs.

Transition

When the PCs approach the fragment, several polychromatic lasers strobe out from it into the eyes of the characters. All fades to an intense white as the scene ends.

Tower Collapse

As always, the context of the failed pull should indicate how the PC loses their agency. One thing that should be considered is the Dead Man Walking option (*Dread* pp. 34-35) since this is early on in the adventure. In the event that the AGI's player was responsible, the ship is capable of normal operation by the rest of the crew.

WHAT HAPPENED TO THE CREW?

The fate of the crew is left deliberately vague. Perhaps the corrupted MU-T/H UR accidentally killed them, or the alien fragment killed them or drove them insane. If the group is in the right mood, feel free to add smears of blood or other hints of violence. Don't feel compelled to explain their disappearance. Their only purpose in the adventure is to make Act 1 creepier.

An interesting encounter could be an insane survivor hiding in a closet. Perhaps the miner's friend? Their mind shattered from exposure to the fragment. Maybe have them give these nonsensical clues: "The Sleeper questions all", "Question all, but don't answer", "Curiosity killed the cat, but satisfaction brought them death", "Beware the children of Cervantes."

ACT 2: AN EXPLORATION OF THE PSYCHE

This act takes place entirely in a virtual reality created by the probe as it scans and then duplicates the players' consciousnesses into a VR construct. Here the PCs, as a team, will encounter a sequence of scenes based on past traumatic events, each experienced by some of the PCs. The probe is doing this in attempt to learn more about this species and to achieve a deeper understanding of their culture.

To run this act look at questions 4 and 6 on the questionnaires for each PC. They all combine to form four distinct scenes. Take some time to fill out the worksheet (**Appendix 2**), merging their answers to form a coherent narrative. As these are memories being recreated by an alien AI, feel free to twist them, make them nightmarish. Most things should require an extra pull for the PCs whose event they are reliving, which represents their emotional distress.

Below is a summary of the four scenes. More information will be found on the worksheet (**Appendix 2**). Since there are four vignettes, don't spend a lot of time on them.

Scene 1: The Labyrinth Riots – Helium, Mars

PCs involved - the Engineer, Commander, and Exogeologist

Seven years ago (2150), riots broke out in some corporate mining camps and quickly spread to cities all across Mars. The Federated Nations sent in the military to quell them. There were even reports of nuclear detonations. No one knows what caused them, but there are many rumors - rebellion, alien possession, starvation, corporate greed, drugs, the living dead - just to name a few.

Scene 2: Dome R42 Blowout - E3 Headquarters, Titan

PCs Involved - the Pilot, Engineer, and Miner

Last year (2156), there was an incident on Titan where the E3 research dome R42, experienced a violent blowout. Many people were killed. The official cause was a faulty seal in a pressure relief valve catastrophically failing. Blame was placed on a lack of safety oversight and poor maintenance processes. However some people claim that corporate sabotage was the true culprit.

Scene 3: Encounter at 1090 Sumida - Phocaea group, The Asteroid Belt

PCs involved - the AGI, Commander, and Exogeologist

Three years ago (2154), before this present crew had been assembled, the ship *Neil deGrasse Tyson* was staking a claim on the asteroid 1090 Sumida, in the Phocaea group. It got jumped by a pirate ship. Luckily the navy destroyer, FNN Yuri Gagarin, was nearby and was able to quickly respond. There was a tense standoff, with the pirates holding the crew hostage. But a team of marines were able to storm their way in with minimal casualties and bring an end to the situation.

Scene 4: The Destruction of the Solar Explorer – Greek Camp, Jupiter L4

PCs Involved - the Pilot, AGI, and Miner

Two years ago (2155), E3 sent seven survey craft, including the *Neil deGrasse Tyson*, out to the Greek Camp of asteroids at the Jupiter L4 point. The goal was to map and catalog as many of the thousands of asteroids there as possible. Several weeks into the mission, the *Solar Explorer*, reported an energy spike in one of its reactors. Shortly afterwards, it exploded. Only a few of the crew made it to the escape pods. There wasn't enough evidence to accurately determine the true cause, so blame was placed on a fusion reactor failure.

Transition

After the last vignette is finished, again everything fades into an intense white.

Tower Collapse

As always, the context of the failed pull should indicate how the PC loses their agency. Since this is VR, insanity or catatonia are good choices. Heart attack in the real world could work too. As always, Dead Man Walking option (Dread pp. 34-35) is a great way to keep the player engaged. In the event that the AGI's player was responsible, the ship is capable of normal operation by the rest of the crew.

ACT 3: THE HORRIBLE TRUTH REVEALED

As the bright whiteness fades away, they are standing in an all-white expanse. After an eternity, the silence is broken and a voice echoes throughout emptiness, congratulating the PCs on their exploits so far. All they need to do to prove their worthiness is to solve/understand these problems. If they pass the tests, they will learn the answer to life, the universe, and everything.

Suddenly before the characters, are a number of mathematical formulae (1 per PC) suspended in mid-air. Those equations are the solutions to classic unsolved math and science problems. It will only take one pull each to understand what the solutions represent. Here are the problems:

- Quantum Gravity – These complex series of mathematical symbols describe gravity according to the principles of quantum mechanics;
- Dark Energy – These equations describe the properties of Dark Energy and explain its existence.
- The Lithium Problem - These formulae explain why there is a discrepancy between the amount of lithium-7 that models predict versus the amount observed;
- Uniform 5-Polytopes - These diagrams display the complete set of Uniform 5-Polytopes;
- Odd Weird Numbers – These mathematical gyrations prove the existence of a series of odd weird numbers;
- One-Way Function – This mathematical expression displays a one-way function and therefore proves that P and NP are not equal;

Once the PCs have answered the final question, the white expanse shatters, and they are left in the blackest void. The probe is no longer aware of, nor concerned with, the PCs; its tests have been passed and now it is consumed by the need to send its apocalyptic message. During this brief moment, the PCs are exposed to a cacophony of memories, as the probe begins its preparation. None of the individual memories are understandable, but the PCs are able to discern the horrible truth - there is a galactic-scale intelligence that destroys any sufficiently advanced species to prevent any possible competition.

Then suddenly they awaken back in reality. They are in a great ice cavern far from the base, suited up (how they got there doesn't matter, it's part of the alien mystery). In front of them floats the Probe. For a moment, all is still. Then hundreds of fragments, like the one they saw in the base, come drifting into the cavern and merge back into the K3 Probe. As it absorbs these pieces of itself, it begins to pulse with painfully bright polychromatic energy. A great beam of energy bursts forth from it, gouging a tunnel in the ice and out to the surface, conveniently near the PCs ship.

After a couple of minutes, the laser abruptly stops and the probe seems to slump lifelessly. Then ice starts to fall from the ceiling, first chunks then boulders, as the cavern and tunnel begin collapsing. It will take the PCs two pulls each to escape the cave-in and get to the surface. From there they can easily get back to their ship.

Once they get back to the ship and off the moon, they will have plenty of time to analyze what exactly happened. A pull will reveal that the energy beam was a communications laser. A second pull will reveal its destination to be a star 50 light years away - Mu Arae. A third pull will let them translate the message. After that the players will know that they have summoned the attention of the K3 Intelligence and Humanity's doom is 100 years away.

Tower Collapse

As always, the context of the failed pull should indicate how the PC loses their agency. In the event that the AGI's player was responsible, the ship is capable of normal operation by the rest of the crew. Since this is the Finale, so don't show any mercy.

WHAT DOES THE K3 PROBE LOOK LIKE?

What does an interstellar craft, developed by a vast and alien intelligence that can travel at .99c look like? The answer is easy... very weird. The look of the probe is left up to you, regardless it should look very alien. Below are some suggestions, but don't feel limited by them; let your imagination run wild!

- A swirling cloud of particles, surrounded by an energy field.
- A cloud of Soap Bubbles gently floating together as if connected.
- A black-mirrored object slowly changing shape through all five platonic solids.
- A Fractal impossibility with an iridescent finish showing colors without names.
- A perfect sphere but without shadow and reflects images as if it was multifaceted.
- It exists in higher dimensions and all that is visible are the seemingly unconnected portions that intersect with the third dimension.
- It always appears to be the same size no matter how close or far away the observer is.
- Composed of dark matter or emitting bubbles of dark energy.
- Reflections are out of sync in time by .5 seconds slower or faster with their originator.

It should be big enough to be imposing, but not ridiculously big - perhaps 20m in diameter? Regardless of appearance or size, its fragments should reflect or complement its look.

APPENDIX 1: SCIENCE!

Here are some overviews of scientific concepts that appear throughout the adventure. And at the end are details about Uranus and its fifth moon, Miranda.

What is The Fermi Paradox

The Fermi paradox, named after physicist Enrico Fermi, is the apparent contradiction between the lack of evidence and high probability estimates for the existence of extraterrestrial civilizations. The basic points of the argument, made by physicists Enrico Fermi (1901–1954) and Michael H. Hart (born 1932), are:

- There are billions of stars in the galaxy that are similar to the Sun, and many of these stars are billions of years older than the Solar system.
- With high probability, some of these stars have Earth-like planets, and if the Earth is typical, some may have developed intelligent life.
- Some of these civilizations may have developed interstellar travel, a step the Earth is investigating now.
- Even at the slow pace of currently envisioned interstellar travel, the Milky Way galaxy could be completely traversed in a few million years.

According to this line of reasoning, the Earth should have already been visited by extraterrestrial aliens. In an informal conversation, Fermi noted no convincing evidence of this, leading him to ask, "Where is everybody?" There have been many attempts to explain the Fermi paradox, primarily either suggesting that intelligent extraterrestrial life is extremely rare or proposing reasons that such civilizations have not contacted or visited Earth.

Kardashev Scale

The Kardashev scale is a method of measuring a civilization's level of technological advancement, based on the amount of energy a civilization is able to use for communication, proposed by Russian astrophysicist Nikolai Kardashev in 1964. The scale is hypothetical, and regards energy consumption on a cosmic scale. The scale has three designated categories:

- A Type 0 - called a planetary civilization - can harnesses the energy of its home planet, but not to its full potential just yet. Earth circa 2018 would be considered Type 0.73.
- A Type I civilization - also called a planetary civilization - can use and store all of the energy which reaches its planet from its parent star.
- A Type II civilization - also called a stellar civilization - can harness the total energy of its planet's parent star (the most popular hypothetical concept being the Dyson sphere - a device which would encompass the entire star and transfer its energy to the planet(s)).
- A Type III civilization - also called a galactic civilization - can control energy on the scale of its entire host galaxy.

Types of Artificial Intelligence

Artificial General Intelligence (AGI) - Machine intelligence that could successfully perform any intellectual task that a human being can. It is also referred to as "strong AI", "full AI", or as the ability of a machine to perform "general intelligent action". It is also capable of experiencing consciousness.

Weak Artificial Intelligence (AI) - Weak Artificial Intelligence (aka "applied AI", or "narrow AI") is machine intelligence used to study or accomplish specific problem solving or reasoning tasks. Weak AI, in contrast to AGI, does not attempt to perform the full range of human cognitive abilities.

Mu Arae

The star Mu Arae, aka Cervantes, has four gas giants Quijote, Dulcinea, Rocinante and Sancho. It is 49.83 light years from earth.

The star was named after Miguel de Cervantes Saavedra (1547-1616), a famous Spanish writer and author of El Ingenioso Hidalgo Don Quixote de la Mancha. The planets are named after characters of that novel: Quijote was the lead character; Dulcinea his love interest; Rocinante his horse, and Sancho his squire.

For this adventure, this star is the closest to Earth where the K3 Intelligence has its closest sizable presence.

URANUS

- Discovered by William Herschel on 03/13/1781
- Known satellites: 27
- Planetary Rings: 13

Orbital characteristics

- Average Distance from Sun: 19.14AU (2.7 Light Hours) (Saturn is roughly half the distance)
- Eccentricity 0.046381
- Orbital period 84 yrs
- Average orbital speed 6.80 km/s

Physical characteristics

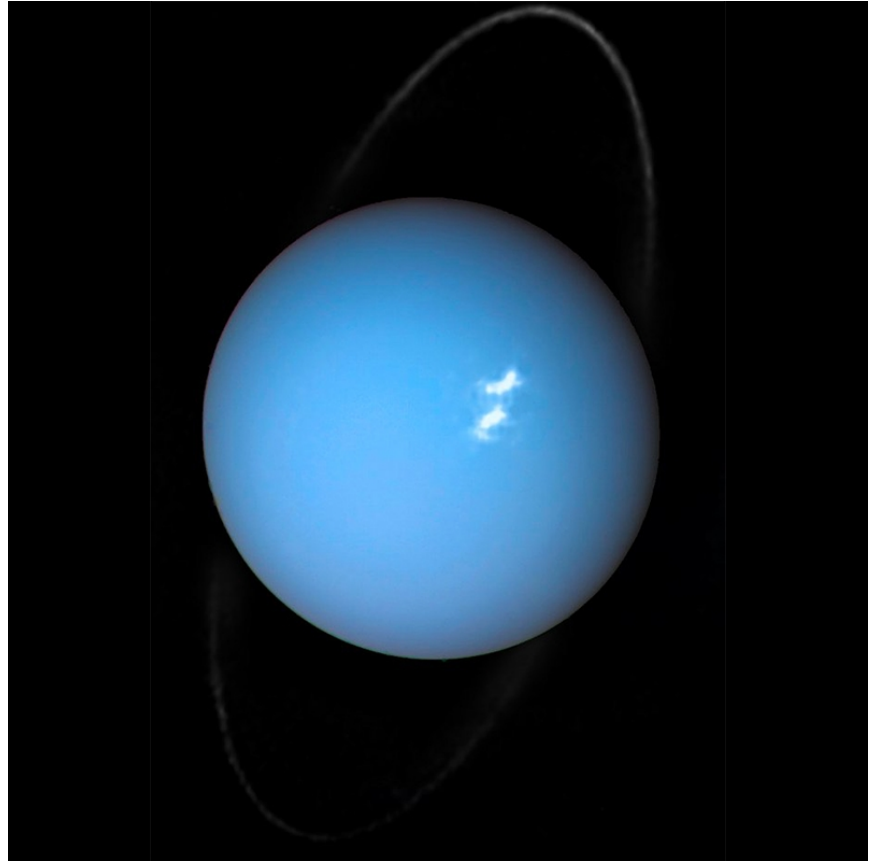
- Mean radius: 25,362 km (4.007 Earths)
- Surface area: 8.1156×10^9 km² (15.91 Earths)
- Volume: 6.833×10^{13} km³ (63.086 Earths)
- Mass: 8.6810×10^{25} kg (14.536 Earths)
- Mean Density: 1.27 g/cm³
- Surface Gravity: 8.69 m/s² (0.886 g)
- Moment of inertia factor
- Escape velocity: 21.3 km/s
- Sidereal rotation period: 17 h 14 min 24 s (retrograde)
- Axial tilt 97.77°
- Surface temp.: 76 K (-197.2 °C)

Atmosphere:

- 83% hydrogen (H₂)
- 15% helium (He)
- 2% methane (CH₄)
- 0.009% hydrogen deuteride (HD)

Ices:

- ammonia (NH₃)
- water (H₂O)
- ammonium hydrosulfide (NH₄SH)
- methane hydrate (4CH₄·23H₂O)



MIRANDA

- Miranda, Satellite of Uranus (aka Uranus V)
- Discovered by Gerard P. Kuiper on 02/16/1948

Orbital characteristics

- Orbital Radius: 129,390 km
- Eccentricity: 0.0013
- Orbital period: 34 hours
- Average orbital speed: 6.66 km/s
- Inclination: 4.232° (to Uranus's equator)

Physical characteristics

- Dimensions: 480 × 468.4 × 465.8 km
- Mean radius: 235.8km (0.03697 Earths)
- Surface area: 700,000 km²
- Volume: 54,835,000 km³
- Mass: 6.59×10^{19} kg (1.103×10^{-5} Earths)
- Mean density: 1.20 ± 0.15 g/cm³
- Surface gravity: 0.079 m/s²
- Escape velocity: 0.193 km/s
- Rotation period: Tidal Locked to Uranus
- Albedo: 0.32
- Apparent magnitude: 15.8
- Mean Surface temp.: ≈60 K



Composition:

Miranda is the least dense of Uranus's round satellites. It is composed of more than 60% water ice, with other ices, silicate rock, and organic compounds making up the rest.

Geologic features of note:

- Verona Rupes - the largest known cliff in the Solar System which has a height of over 5 km (3.1 mi)
- Arden, Elsinore and Inverness - three giant 'racetrack'-like grooved structures (aka coronae) in the southern hemisphere, each at least 200 km (120 mi) wide and up to 20 km (12 mi) deep.

APPENDIX 2: ACT 2 WORKSHEET

Scene 1: The Labyrinth Riots – Helium, Mars

Seven years ago (2150), riots broke out in some corporate mining camps and quickly spread to cities all across Mars. The Federated Nations sent in the military to quell them. There were even reports of nuclear detonations. No one knows what caused them, but there are many rumors - rebellion, alien possession, starvation, corporate greed, drugs, the living dead - just to name a few.

Questions:

- Young Engineer #6 (Anger) – You were still in college and happened to be nearby during the Labyrinth riots. What happened that night that still makes you angry?
- Commander #6 (Sorrow) – The last time you visited Mars, you happened to be nearby during the Labyrinth riots. What happened that night that still makes you tearful?
- Exogeologist #4 (Fear) – The last time you visited Mars, you happened to be nearby during the Labyrinth riots. What happened that night that still makes you afraid?

Scene 2: Dome R42 Blowout - E3 Headquarters, Titan

Last year (2156), there was an incident on Titan where the E3 research dome R42, experienced a violent blowout. Many people were killed. The official cause was a faulty seal in a pressure relief valve catastrophically failing. Blame was placed on a lack of safety oversight and poor maintenance processes. However some people claim that corporate sabotage was the true culprit.

Questions:

- Pilot #4 (Anger) – A year ago, Astral Volatiles promised to pay you to secure some research from an E3 dome on Titan. However the dome experienced catastrophic failure preventing you from completing the job. How did they screw you over and why are you still mad about it?
- Young Engineer #4 (Shame) – Your first internship was at a research dome on Titan. One day you called in sick to spend extra time with the Miner's kid, whom you were dating at the time. Who had to fill in for you and died during the explosion, and why are you still haunted by that decision?
- Experienced Miner #4 (Fear) – How did you survive the explosion in Titan Dome R42 and what nightmares does it still bring?

Scene 3: Encounter at 1090 Sumida - Phocaea group, The Asteroid Belt

Three years ago (2154), before this present crew had been assembled, the ship *Neil deGrasse Tyson* was staking a claim on the asteroid 1090 Sumida, in the Phocaea group. It got jumped by a pirate ship. Luckily the navy destroyer, FNN Yuri Gagarin, was nearby and was able to quickly respond. There was a tense standoff, with the pirates holding the crew hostage. But a team of marines were able to storm their way in with minimal casualties and bring an end to the situation.

Questions:

- Awakened Ship AI (AGI) #6 (Anger) – One of your earliest missions after ‘waking’ was staking a claim in the Asteroid Belt. A previous crewmember betrayed the team, hacked your systems, and let pirates on board. What do you do to control the anger that surfaces every time you scan asteroids?
- Commander #4 (Shame) – Your last mission as a marine involved rescuing some hostages taken by pirates on this very E3 ship that you now command. How was that mission not a total success and why do you feel responsible?
- Exogeologist #6 (Sorrow) – On your maiden cruise with this E3 ship, your best friend betrayed the team, hacked the ship’s AI, and let pirates on board. How do you deal with the pain of that treachery?

Scene 4: The Destruction of the Solar Explorer – Greek Camp, Jupiter L4

Two years ago (2155), E3 sent seven survey craft, including the *Neil deGrasse Tyson*, out to the Greek Camp of asteroids at the Jupiter L4 point. The goal was to map and catalog as many of the thousands of asteroids there as possible. Several weeks into the mission, the *Solar Explorer*, reported an energy spike in one of its reactors. Shortly afterwards, it exploded. Only a few of the crew made it to the escape pods. There wasn't enough evidence to accurately determine the true cause, so blame was placed on a fusion reactor failure.

Questions:

- Pilot #6 (Sorrow) – A couple years ago E3 sent several teams to Jupiter for a large scale mapping expedition in the Greek asteroid group and one of the ships exploded killing everyone on board. Whom did you lose and still miss?
- Experienced Miner #6 (Shame) – A couple years ago E3 sent several teams to the Greek asteroid group for a large scale surveying expedition in the Greek asteroid group and one of the ships exploded killing everyone on board. Why do you feel responsible?
- Awakened Ship AI (AGI) #4 (Fear) – A couple years ago E3 sent several teams to Jupiter for a large scale mapping expedition in the Greek asteroid group and one of the ships exploded killing everyone on board. Why do you consider this your first experience of "fear"?

APPENDIX 3: QUESTIONNAIRES

Awakened Ship AI (AGI)

1. While your mind resides in the ship, you have a physical avatar. What does it look like?
2. You were originally programmed with astrogation, piloting, basic geology, and basic engineering. After you became Awake, what two disciplines did you choose to learn?
3. What abnormality did you spot on the moon of Miranda as you approached it? What was it and why didn't you mention it to the crew?
4. A couple years ago E3 sent several teams to Jupiter for a large scale mapping expedition in the Greek asteroid group and one of the ships exploded killing everyone on board. Why do you consider this your first experience of "fear"?
5. What new capability did you secretly install into your physical avatar?
6. One of your earliest missions after 'waking' was staking a claim in the Asteroid Belt. A previous crewmember betrayed the team, hacked your systems, and let pirates on board. What do you do to control the anger that surfaces every time you scan asteroids?
7. While the ship is registered under the name *Neil deGrasse Tyson*, what do you now call yourself since you were awoken by the rogue AGI A.L.I.C.E.? - *Adaptive Learning Inductive Cognition Engine*
8. Which of the crew members did you confide in about your sentience? Why?

Commander

1. You were a department manager; what happened to get you promoted to the expedition leader? How are you planning to get your next promotion?
2. Why didn't you re-enlist with the Federated Nations Marines when your enlistment was up?
3. What do you still keep with you from your days in the Marines?
4. Your last mission as a marine involved rescuing some hostages taken by pirates on this very E3 ship that you now command. How was that mission not a total success and why do you feel responsible?
5. Why are you dreading this survey mission?
6. The last time you visited Mars, you happened to be nearby during the Labyrinth riots. What happened that night that still makes you tearful?
7. What is your name?
8. One of the crew members saved your life and you feel like you owe them. Who was it and what happened?

Young Engineer

1. You graduated at the top of your class at University of Helium on Mars and were immediately hired by E3. Besides your engineering acumen, why else did they hire you?
2. What device did you build in college that you find yourself using all the time?
3. When you get back from this mission, you plan on proposing to your significant other. Who are they and what is their name?
4. Your first internship was at a research dome on Titan. One day you called in sick to spend extra time with the Miner's kid, whom you were dating at the time. Who had to fill in for you and died during the explosion, and why are you still haunted by that decision?
5. What impression do you want to make on the rest of the team?
6. You were still in college and happened to be nearby during the Labyrinth riots. What happened that night that still makes you angry?
7. What is your name?
8. What about the Ship's AI unnerves you?

Exogeologist

1. Your primary scientific discipline is exogeology, what other science are you very knowledgeable about?
2. Why are you looking forward to this mission?
3. A couple of years ago, you were in an aircar incident. What part of you had to be replaced with cybernetics and what unusual capability does it have?
4. The last time you visited Mars, you happened to be nearby during the Labyrinth riots. What happened that night that still makes you afraid?
5. What theory do you have about the moon Miranda that you are hoping to prove during this expedition?
6. On your maiden cruise with this E3 ship, your best friend betrayed the team, hacked the ship's AI, and let pirates on board. How do you deal with the pain of that treachery?
7. What is your name?
5. Which of the crew did you have a fling with back on Titan? Why are you not completely over it?

Pilot

1. The ship's AI pretty much runs the ship for you, why doesn't this bother you?
2. Besides piloting, what other skill are you really good at?
3. Your reputation as a scrounger is nigh legendary, what non-standard equipment did the Commander ask you to get for this mission?
4. A year ago, Astral Volatiles promised to pay you to secure some research from an E3 dome on Titan. However the dome experienced catastrophic failure preventing you from completing the job. How did they screw you over and why are you still mad about it?
5. Why did you accept this latest offer from Astral Volatiles to spy on E3?
6. A couple years ago E3 sent several teams to Jupiter for a large scale mapping expedition in the Greek asteroid group and one of the ships exploded killing everyone on board. Whom did you lose and still miss?
7. What is your name?
5. You are jealous of one of the crew members. Which one. Why? And about what?

Experienced Miner

1. You've been doing this so long you could retire anytime. What are you waiting for?
2. You created a secret pocket in your uniform specifically to carry what?
3. You've met many miners from other companies throughout your career. Who do you know that still works at Astral Volatiles?
4. How did you survive the explosion in Titan Dome R42 and what nightmares does it still bring?
5. Not many people know that the patented chemical process that E3 used to save the company was discovered by you. What bonus did you get for this and what breakthrough are you currently developing?
6. A couple years ago E3 sent several teams to the Greek asteroid group for a large scale surveying expedition in the Greek asteroid group and one of the ships exploded killing everyone on board. Why do you feel responsible?
7. What is your name?
5. What secret did you learn about the Young Engineer when they dated your son/daughter?

APPENDIX 4: NOTES

The Fermi Paradox

PCs are explorers on a corporate surveyor craft exploring the Uranian moon of Miranda where they unwittingly discover the answer to Fermi's Paradox.

PCs:

Awakened Ship AI (AGI)

Commander

Engineer

Exogeologist

Pilot

Miner

Discover old abandoned mining base from rival corp. Distress signal.

Probe hid itself by constructing Miranda. There it wait until it was discovered. a couple of months ago, some miners from a rival company stumbled upon its lair, they investigated, but was unable to pass all of its tests. Wrong answers were punishable by death.

Now the PCs stumble across the abandoned base and get caught in its lair. Harassed by grizzly cyber'd animated corpses of miners?

Solving the puzzles fully activates the probe, where upon its purpose is discovered and it sends a powerful message to another star, summoning Earth's doom.

I like this one because it makes the enemy seem more competent.

Plus, there is the idea that the players could try to stop the message from going out once they realize it is summoning their doom. (Of course, that should be a futile effort.)

Empty base

PCs explore and "learn" of probe.

Company Reps were there to observe and now are missing.

Probe left fragments of itself and base discovered fragment

Pcs get sucked into VR

Relive emotional situations

Answer intelligence

Learn horrible truth

Runaway

Solving the puzzles fully activates the probe, where upon its purpose is discovered and it sends a powerful message to another star, Mu Arae, summoning Earth's doom.

Character Questions:

Nightmare/encounter 2 each Fear, anger, or sorrow

Looking forward to/Fluff

Carrying

Character Tie

Plot Tie

Strength

One of Anger, Fear, or Sorrow

Another of Anger, Fear, or Sorrow

What is your name?

Traumatic Events:

AGI - secretly "awake" (Fear1/Anger1)

Commander - Promoted; Marine (Shame1/Sorrow1)

Young Engineer - Smart; young (Shame2/Anger2)

Exogeologist - Fling (Fear2/Sorrow2)

Pilot - Jealous; Spy (Anger3/Sorrow3)

Exp. Miner - Chemist; Drug (Fear3/Shame3)

AB

CD

AC

BD

AD

BC

A Anger

B Fear

C Shame

D Sorrow

Anger/Fear

Shame/Sorrow

Anger/Shame

Fear/Sorrow

Anger/Sorrow

Fear/Shame

ABD

ACD

ABC

BCD

A: Near death experience from some political event (Anger2/Sorrow1/Fear2)(Eng/Comm/Geo)

- The last time you visited Mars, you happened to be nearby during the Labyrinth riots. What happened that night that still makes you angry/tearful/afraid?

B: Betrayal by loved one or team (Anger1/Shame1/Sorrow2)(AGI/Comm/Geo)

Earlier mission of E3 survey ship was raided by pirates in Asteroid Belt and intercepted by navy with Hostage situation

- AGI - One of your earliest missions after 'waking' was staking a claim in the Asteroid Belt. A previous crewmember betrayed the team, hacked your systems, and let pirates on board. What do you do to control the anger that surfaces every time you scan asteroids?
- Commander - Your last mission as a marine involved rescuing some hostages taken by pirates on this very E3 ship that you now command. How was that mission not a total success and why do you feel responsible?
- Exogeologist - On your maiden cruise with this E3 ship, your best friend betrayed the team, hacked the ship's AI, and let pirates on board. How do you deal with the pain of that treachery?

C: (Anger3/Shame2/Fear3)(Pilot/Eng/Miner)

Incident on Titan a year or so ago - E3 research dome blowout, many people killed

- Pilot - A year or so ago, Astral Volatiles promised to pay you to secure some research from an E3 dome on Titan. However the dome experienced catastrophic failure preventing you from completing the job. How did they screw you over and why are you still mad about it?
- Engineer - Your first internship was at a research dome on Titan. One day you called in sick to spend extra time with the Miner's kid, whom you were dating at the time. Who had to fill in for you and died during the explosion, and why are you still haunted by that decision?
- Miner - How did you survive the explosion in Titan Dome R42 and what nightmares does it still bring?

D: Explosion; mission failure (Shame3/Sorrow3/Fear1)(Miner/Pilot/AGI)

A couple years ago E3 sent several teams to Jupiter for a mass inventory, and one of the ships exploded killing everyone on board.

- Why do you feel responsible?
- Whom did you lose and still miss?
- Why do you consider this your first experience of "fear"?

Original Ganymede Incident

Scene 4: The Ganymede Incident - Ganymede, Jupiter

PCs Involved - the Pilot, AGI, and Miner

Two years ago (2155), E3 sent seven survey craft, including the *Neil deGrasse Tyson*, out to the Greek Camp of asteroids at the Jupiter L4 point. The goal was to map and catalog as many of the thousands of asteroids there as possible. Several weeks into the mission, the *Solar Explorer*, reported an energy spike in one of its reactors. Shortly afterwards, it exploded. Only a few of the crew made it to the escape pods. There wasn't enough evidence to accurately determine the true cause, so blame was placed on a fusion reactor failure.