

TREVOR B. WILLIAMS

ETERNAL  
SHADOW

FALL OF GODS

BOOK  
ONE



# ETERNAL SHADOW

FALL OF GODS



TREVOR B. WILLIAMS



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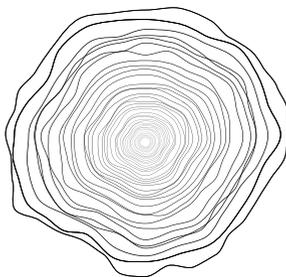
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*Dedicated to my loving wife—my unending  
source of inspiration—and to my daughter who  
I hope will explore the stars*





PART ONE

DISCOVERY



# 1.0

JUNE 20, 2014

A soft but piercing tone cut through the white noise of the humming computers.

“What the hell!” Samantha Monroe, a research scientist, winced as the tone blended with the 90s music streaming from her MP3 player. She yanked the earbuds out of her ears, her eyes wide. She’d worked at the Search for Extraterrestrial Intelligence Institute for six years, but she hadn’t heard that particular 400Hz triangle wave tone in years. Not until now.

She pushed away from her desk and craned her head around the wall of her cubicle so she had a clear line of sight to the back corner. The Very Large Monitor Database, a suite of computers hooked up to four 40-inch monitors that had live data continually fed from the Allen Telescope Array, was the source of the tone. The lower-left monitor was lit up with a red-outlined alert window with “SIGNAL DETECTED” flashing in the center.

Almost falling out of her seat, she ran to the VLM. Without taking her eyes off the alert window, her mind ran through the possibilities as *Groove Is In The Heart* started to play. Sliding the earbuds back into her ears, she took a deep breath as she sat in front of the four monitors. They displayed spectrographic data that should’ve been impossible.

*Okay, okay, okay, is this real? This can’t be real, but is it?*

“Time to confirm,” she said out loud as the tone fell silent upon

her clearing the alert. *Time to see from what area of space the detected signal originated.*

As the main riff of the song played, Sam's mind and energy honed on this signal, her fingers typing while scanning local wide-band and narrow-band frequencies. Her first goal was to rule out any Earth-born signals that could've bounced off a satellite and hit the radio dishes at ATA.

"Holy shit," she whispered as the data in front of her confirmed the space-born nature of the signal. Twice. Three times.

*No. This can't be real.*

Sam chewed on her lip, scrutinizing the formulas on the monitor in front of her that broke down the narrow-band frequency into several distinct sections. She looked for common errors in the software that could've triggered the alert, then looked for modulations in the signal that would indicate a spinning pulsar or a late-type star generating the signal.

The analysis software worked as intended—no stars or pulsars existed in the direction that the signal emanated from.

*This just can't.*

She glanced at the desk phone to the left of the keyboard. *No way I'm calling anyone*, she thought. *Have to confirm everything.* She knew better than to cry wolf when there were false-positives in the past. Calling in the entire brigade would result in her being in hot water if it turned out to be anything other than extraterrestrial in origin—something that seemed more and more likely.

She sucked in a large breath of air as she leaned closer to the monitor which displayed the source of the signal: Pluto. Pluto! At least, all indicators said that approximately seven hours ago the downgraded planet was the source of a possible extraterrestrial beacon.

She typed several commands to process the fresh data even further, triangulating the approximate location on or near Pluto that the frequency originated. After mashing the ENTER key, the displayed dataset made her blink rapidly with a slackened mouth, as if the data was a mirage and blinking would correct it. The signal originated fifteen thousand kilometers over the surface of Pluto and not beyond the planet. With every false-positive in the past, the signals originated from

other stars. Detecting one just 7.5 billion kilometers away from Earth was a first. She had to make sure every decibel, every frequency, every number that had to be carried over another number—that everything was correct. And she checked again. And again.

As *Groove Is In The Heart* came to a close, Sam glanced at the date and time in the corner of the monitor. The signal was broadcasting itself for at least seven hours, the amount of time needed for it to reach Earth from Pluto. Everything pointed to this not being a fluke.

“Holy shit,” she proclaimed again, her right leg rapidly bobbing under the desk. “I need to call Jennifer. Get more people here now.”

She reached for the desk phone and dialed Jennifer Epstein’s cell, one of the Senior Research Scientists at SETI and Sam’s superior. She rarely called her outside of regular work hours unless it was an emergency or critically important—this signal classified as both. Her heart pounded as she kept staring at the spread of information on the four monitors. The sound of Jennifer’s phone ringing from the desk phone speaker was loud, but not enough to drown out the thoughts running through her head.

*This is real.*



Covered by an open magazine that contained articles on current world events, a smartphone began playing the first six seconds of *Beethoven’s 5th Symphony*, a ringtone selected for all stored SETI contacts. The sound from the phone’s speakers were loud enough to cause Jennifer to shift under her cotton bedding. It took three rings before Jennifer flung her hand over to the phone, knocking the magazine and her reading glasses onto the floor from the nightstand.

As she mentally ran through the short list of people that had her cell number, Jennifer, now resting on her side, brought the now-muted phone at eye level. Though everything was blurry and some of her shoulder-length black hair further obscured her vision, the name on the phone’s screen was unmistakable.

Jennifer exhaled as she slid her thumb across the screen, answering the call while she pressed the speaker button, amplifying the excited voice of Sam. “Dr. Epstein! Get here quick!”

“What happened, Sam?” Jennifer queried, her mind still hazy from the abrupt wake-up call.

“I was just, you know, doing my usual graveyard shift, running some algorithms through the latest batch of spectral modulations from Allen—data mining and all that—”

“Please, cut to the chase,” Jennifer interrupted, her head now firmly planted back in her pillow and eyes closed.

“Signal detected, doc. Signal detected!”

*Ah, this again.* Jennifer had participated in dozens of events like this, all of which ended with false positives or were new astronomical discoveries that happened to emanate radio waves. One more such event, though exciting, shouldn’t get her protégé so frantic.

“Have you run the frequency through normal detection procedures?” Jennifer continued to make herself comfortable in her warm bed, not reacting too much to this news.

“I’ve triple-checked everything. This is real and coming from Pluto!”

“What?” Jennifer pushed herself into a sitting position against the back of her bed. Her brow raised slightly at the mention of Pluto—a signal coming from one of Earth’s own planetary neighbors was a twist.

“We need to bring in the rest of the team pronto, doc,” Sam said. “Gordan, Nic, the whole team! Alert the director, too.”

Jennifer leaned over the side of her bed to scoop her glasses off the carpeted floor. She opened the drawer to her nightstand and grabbed the thin, black slab that was her SETI-provided smartphone. Unlike her personal phone, this had secured access to SETI’s servers which included an app designed to push the same alerts the VRM received. After the screen turned on, she tapped her password.

“Dr. Epstein? Doctor?” Sam impatiently waited for a response as Jennifer swiped down on her phone screen to see the signal notification that was pushed to her phone at 4:39am. It included the signal origin coordinates and its frequency: *Right Asc: 18h 52m 57.7s Decl: -20° 14’ 37.1” ; Freq: 5106.82MHz.*

The numbers all came into focus as she slid her glasses on. She cocked her head as she scratched the side of her jaw. The frequency presented was far higher than anything they've detected in space before outside of pulsars—except this originated from Pluto.

“Why would there be a signal from Pluto?” Jennifer asked herself rather than to Sam.

“That’s what I can’t wait to find out,” Sam said. “Shall I call in the rest?”

Jennifer shook her head, despite Sam not being able to see the gesture. *Stay composed.* “Once I review the data, we’ll decide if having the team on-site at six in the morning will be better than at nine,” Jennifer said. She dropped the smart phone onto her bed while she slung her legs onto the floor and started toward her closet. She eyeballed a button-down shirt and pants that she could quickly throw on for her twenty-minute drive to the office. “However, I’ll be there immediately.”



Despite it being a weekday, the drive along Route 237 West was uneventful and fast. Jennifer knew the highways around her home well, though she was never a fan of waking up early enough to beat rush-hour traffic. Her work phone, loosely nestled in the cup holder in front of the unused CD player, dinged with text messages from Sam. She picked up her phone and scanned the first message before she placed the phone back down: “Still can’t believe it. Nicolas is on the way.”

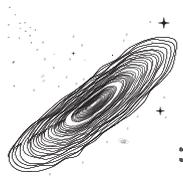
*Of course Nic’s on the way,* Jennifer thought—he’s one of the most obsessed support scientists on her team. Even the slightest variance in a star’s brightness would send him into a researcher frenzy to understand everything there was to know about that star. Where his bursts of energy came from, she might never know, but his contributions to the team couldn’t be denied.

As she left behind the suburban blocks of Milpitas and looked at the water-starved fields just beyond the Los Esteros Energy Center, thoughts of both the past and future filled her mind.

Though she'd been working at SETI for over twenty years, every "signal found" message always found a way to send chills down her spine.

*If this is really happening, everything will change,* Jennifer thought to herself as the dried fields gave way to vast corporate parks and the large set of runways that sat behind the NASA Ames Research Center. Her personal phone vibrated atop her work phone. The predicted text message from Grace, her mother, arrived on schedule: a verse from the Bible that she likely felt was appropriate for the week.

*Hopefully,* Jennifer thought as she looked at the message from her mother while hearing her work phone chime once more. *Hopefully this signal could bring the change we all need.*



## 1.1

Nic's hybrid, a dark blue sedan from 2009 that'd spent way more time in direct sunlight than the paint could handle, was already in the parking lot. Bringing her car to a halt next to his, Jennifer went through the motions of turning the car off with one hand while smoothing down her shirt with the other, aiming to keep composure. Nevertheless, her heart raced faster than usual as she took long strides to the front of SETI.

At minimum, she allowed herself a brisk pace from her car to her team's corner of the building where Vern—her pet name for the Very Large Monitor Database system—churned through data. She passed through the automatic doors as her ID badge reeled itself back against her waist after being swiped. As she got closer, an odd warbling sound filled the air. A sound that emanated from where she worked. When Jennifer swiped her card and entered the office, Nic's voice was just over the pitched warbling sound that pulsed every second from the VLM speakers.

"The amplitude of this section is incredible!" Nic said as he adjusted his glasses.

Jennifer started her way toward Nic and Sam, both of which sat in front of Vern. They were both fixated on the monitors in front of them.

"What is going on..." Jennifer began, but trailed off when she saw the very focused, strong spike of the signal on the bottom monitors. On one screen was a live feed of the warbling pulse, each second turning the center of the frequency medium into a jagged spike just past the five-gigahertz level. The screen Nic and Sam were looking over had parts of the signal broken out into static screenshots for analysis.

Above them were the remaining two monitors. The right displayed a graphical representation of Earth along with the sea of satellites that orbit it in the form of red, green and blue dots, while the left had a scrolling text-based feed of the signal's location and frequency, with the initial capture of it pinned at the top.

Just seeing and hearing this warbling blast of audio made her skin tingle as blood rushed through her in response.

Sam had one leg extended away from the VLM, as if she wanted to run over to her own computer, but was glued to the screen in front of her. "Doc, I've been running this through every spectrum analyzer and pulse reader we have."

"Have you checked all civilian and military sources?" Jennifer asked as she ran to her computer a few desks down on the same wall as Vern, dropping herself into her chair.

"Yes, ma'am," Sam affirmed as she continued swiping through frequency analyzer programs. "So far, AWAC reported back negative. Nic, what's the status on spacecraft activity, NORAD sats?"

"No unusual activity in our neck of the woods," Nic pulled up another window that flashed in the task bar. "Got confirmation on ATA status."

Nic turned toward Jennifer, his eyes beaming through his glasses. "All forty-two dishes reporting green operations, and all are picking up the signal."

As Jennifer's computer awoke from sleep mode, she glanced at her smartphone, which still had the original signal notification on display. "Is there any possibility that our software or hardware is malfunctioning?" she said aloud to nobody in particular, but knew she would get a response.

"Looking into that now," Nic stepped back from the main VLM console and pulled out his sticker-covered laptop to start diagnostics.

"Doc, I have confirmation on sidereal motion for the signal," Sam stated, her excitement palpable as she kept her focus on the monitors in front of her. "Interferometric positioning still places the signal origin fifteen thousand kilometers over Pluto."

"But that doesn't make sense," Jennifer darted her eyes toward Sam as she brought up astronomical mapping displays on her screen.

“Can you confirm when we first received the signal, and confirm again right ascension eighteen hours, fifty-two minutes, fifty-seven-point-seven seconds; declination minus twenty degrees, fourteen minutes?”

“I’ll run the numbers again, Doc,” Sam said.

Nic’s laptop snapped shut as he started for the server room. “So far diagnostics are coming in clean. Gonna directly access the servers.”

Jennifer looked at Nic with urgent concern. “Do you think someone could be spoofing this?”

“It wouldn’t be the first time,” Nic said as he swiped his card on the security panel, causing the lock on the heavy door to open with a click. “But we now have dozens of safeguards and detection criteria in place that would make such a hack significantly more challenging today. In the past, yes, we had several false-positives thanks to backdoor attacks, but I’m certain this is not one of those events.”

Just as the doors to the server room closed, the office door swung open, the wall groaning as the door arched to the fullest extent on its hinges. Jennifer turned to see Gordan Ivanovic, another research scientist who worked alongside Jennifer, marching toward his desk. Like Jennifer and Nic before him, he paused when he saw the signal data on the VLM.

“Holy Christ,” he said as he ran his fingers through his gray hair. “Where are we with signal confirmation?”

“You’re missing the action, Gordan,” Sam quipped. “I can use your help analyzing the signal pattern. Did you see the ascension and declination positions?”

“Yes, and I still don’t believe it,” Gordan regained his composure and threw his messenger bag into his cubicle before walking over to Jennifer. “What are your thoughts, Jennifer?”

“Well, Nic is checking the servers for possible online tampering while Sam could use you over at Vern,” Jennifer said while pointing at one of the spectrum breakout charts on her screen. She allowed herself a quick chuckle. “It would be nice, though, if it weren’t another false reading!”

“Agreed,” said Gordan as he lightly patted Jennifer on the shoulder before walking to his desk. “Perhaps we can get Kabir on the line to run a check for us.”

“Yes, go for it,” Jennifer said. Kabir Reddy worked out of Pune, India, home of the Giant Metrewave Radio Telescope which was operated by the Tata Institute. Though Tata drove the goals for the radio telescopes—most of which didn’t align with SETI’s objectives—Kabir, being one of the few people staffed at the GMRT, used his position to redirect some of the dishes to aid in SETI research. Jennifer didn’t even hesitate with Gordan’s suggestion. It made perfect sense: Pluto rose right about now over India, and Kabir was manning one of the few radio telescope arrays for thousands of miles.

She heard the server room doors unlock, which prompted her to rotate her chair toward the door as Nic exited. “Give me some good news.”

“No unauthorized activity or login attempts over the last four weeks.” Nic noticed Jennifer’s raised eyebrow in response. “I just wanted to be thorough. But yes, the only thing my audits found was a three gigabyte download of music, which I traced back to Sam’s laptop.”

Sam turned toward Nic and Jennifer, both of which looked over at her. “Hey, if you want this girl to code, she needs her weekly dose of number one, two, and three hits from the greatest decade for the ears!”

“Oh, not that conversation again,” Gordan rolled his eyes, something that Sam could sense despite not seeing him. They’ve had way too many debates about which decade in the twentieth century produced the most culturally significant musical works.

“Don’t worry, I think we may have the greatest song singing from Vern’s mouth right now,” Sam added as she brought her right ear to one of the speakers, letting the warbling sound flow into her body.

“Hold that thought—just got Kabir,” Gordan leaned toward his computer monitor, a habit of his, despite the webcam being mounted above his head. Jennifer, Nic and Sam all dropped what they were doing and crowded around Gordan as Kabir’s face and office filled the screen. “Hello my friend!”

“Good morning to you, too,” Kabir greeted Gordan with a smile. “Why do I have the pleasure of speaking with you on such short notice?”

“I just sent you an email with a signal I’d like you to turn your dishes toward.”

Kabir shifted in his seat as he reached behind his head to scratch an itch. “Oh, you know our telescope is currently in use right now for studying relativistic electron emissions—”

“I know, you guys are slammed,” Gordan politely interrupted, “But this is something you will want to listen to. We just need confirmation from another site before we consider going public.”

“Not a problem, Gordan,” Kabir nodded. “I’ll realign dishes six through twelve now and see what we have...”

Kabir rolled away from his desk and turned his back to his webcam as he pulled out a keyboard drawer from the servers behind him.

“Come on,” Sam whispered, her leg trembling as she and the rest of them waited for Kabir’s feedback. After a few minutes, the warbling pulse passed through a sound system near Kabir.

He returned to the camera after he ambled off-screen to the unseen speakers on his end. “What is this?” Kabir asked with a confused look on his face.

Gordan looked up at Jennifer, who looked over at an exhilarated Sam. He shot Kamir a broad grin. “Possibly the greatest discovery in the history of mankind.”

“Holy shit!” Sam jumped and grabbed her hair, disheveling the bun that kept it together.

“Keep on tracking the signal, Kabir,” Jennifer leaned closer to the webcam. “Log everything that you can. Jump into chat with Gordan and keep him apprised of any findings—you’ll be in the loop.”

“I, too, hope this is what you all are thinking,” Kabir stretched an arm off-screen, an increase in the signal’s volume following his motion.

“Finger’s crossed, my friend,” Gordan nodded and disconnected the video feed.

While Sam rushed back to Vern to scan the latest batch of received data, Nic rested against one of the nearby cubicle walls, his legs feeling shaky from this overseas signal confirmation. For the first time, a signal of unknown origin was being easily picked up by another radio array, and from across the world, no less.

Jennifer patted Gordan on the shoulder and started into a slow pace, her mind recalling SETI protocol. “Kabir was a great start, but we need more confirmations. Gordan and Nic, start pinging every

station around the world and get everyone tuned in—we want to track this signal twenty-four-seven. And double-check with our boys at the Jansky Array in New Mexico—it’s possible they recorded the signal like we did.”

“I’ll tally up stations in East Asia that should have full visibility to Pluto,” Nic began as he ran for his desk. He collided into one cubicle corner on the way, which sent some loose papers and a poster of the solar system onto the floor. He didn’t feel the jolt, though. He was way too excited to care.

“Sam, put on your music and try to learn more about the signal—maybe we can figure out what exactly is being transmitted.”

“Yes, captain!” Sam beamed while she saluted Jennifer. “Expect results faster than—”

The warbling sound stopped pulsing through their speakers. Sam froze in her tracks, her hands in front of her as if she balanced herself on a gymnastics bar. Nic and Gordan both stood up from their desks. Jennifer turned toward the VLM, her face almost crestfallen.

“No,” she said as she pointed to Sam. “Sam, talk to me.”

“Uhhhhh...” Sam rushed over to the main console for Vern, now with a somewhat different mission in mind. She looked over the various livestream analysis windows that graphically displayed the signal—they all flatlined, with only the common background noise of space making the lines move. “Give me a moment.”

“Nic, are you sure we haven’t been compromised?” Jennifer asked. Back at her desk, she brought up a screen capture of the signal and looked over its range, wavelength and other metrics to see if there was any possibility that this was a fluke or an unidentified natural phenomenon.

Nic glanced at Jennifer before he scooped his laptop from his desk and ran for the server room. “I haven’t been wrong about this sort of thing before, but I’ll double-check the logs again.”

The speakers remained silent, the remaining sounds being Sam typing away vigorously on the keyboard with a seeming intention on making the keys clack. Gordan sighed as he slumped into his chair and rested his head on its back, his hair draping over. Jennifer stopped trying to will the signal back into existence and just listened as normalcy

tried its best to settle over the office. Sam soon stopped typing as well, letting the hum of the many computers in the room become the dominant sound.

Sam ran her fingers through her brunette hair as she released it from the disheveled bun and looked over toward Jennifer. “Doc... what’s the next step?”

Jennifer ran her finger over her smartphone that was on her desk, bringing up the time. It’s been ten minutes since the signal dropped like a rock into the abyss. Though the signal ceased, she knew their computers and Vern had collected everything on it. The data wasn’t going anywhere—they just had to parse it, break it into as many components as possible and see what it meant. Even if the signal never came back, there were so many questions already, especially if it turned out it was genuine. She looked at Sam before scanning the mostly empty office.

“We need more people.”



## 1.2

The quartet that listened to the signal live now played the sound back from recordings for the benefit of the rest of the staff that streamed in after they contacted every scientist that worked in the region. That was almost six hours ago. As the afternoon sun bled through the half-opened window blinds, lots of commotion filled the office as other research scientists pored over the captured data. Gordan sat at his desk with two research assistants flanking him as he debated with Kabir regarding the potential source of the signal. Nic and two others sat next to Sam as they geeked out over the strength of the signal, not letting go of the possibility of its extraterrestrial origins. Sam, however, held a bitter smile following her brief call with the Lick Observatory, whose telescope pointed toward the Andromeda galaxy, the complete opposite direction from where Pluto was in the sky.

Jennifer, meanwhile, stood alongside Vern, its monitors displaying the signal frozen in time with various modulation details, along with a small window dedicated to information on Pluto. And standing across from her was Brian Ethans, the Director of SETI. He was a tall, but stocky individual who commonly wore navy blue slacks and a light-colored button-down shirt—usually blue or white and with a necktie. Today, he bucked the expected trend by foregoing the tie, the top button left undone, but then again, nothing about this day was ordinary. And seemingly as a nod to Sam’s inappropriate jokes, the fluorescent lighting amplified that he had a smooth, hairless head. He looked at Jennifer through his thin-rimmed glasses with a fair amount of skepticism, his arms crossed, since the signal stopped broadcasting.

Brian spoke. “Look, this data is rather unusual and even

reminiscent of the famous ‘WOW! Signal’, but so far all I see reminds me of the astronomers in the 1970s—they spent months trying to wrap their hands and heads around it before realizing the trail ran cold.”

The astronomer, Jerry Ehman, was well-known amongst those at SETI. He worked at Big Ear Telescope that made the discovery of the now-famous signal in 1977 that was surnamed from his one-word description of it: “Wow!” It lasted seventy-two seconds, but never repeated itself after that fateful night despite several consecutive months of active searching and listening.

It made sense why Brian would compare it to this event, but Jennifer still clenched her jaw at his seemingly jumping to conclusions. She summoned all her will to not raise her voice, her feelings of annoyance kept at bay. “I know where you are coming from, but our signal not only repeated itself every second for over two hours, but it was also picked up by other observatories.”

Brian didn’t immediately respond—he was listening for a change.

“Give us a week to analyze what we have. At the very least, we’ll have discovered a new kind of star, pulsar...”

“Or maybe little green men?” Brian asked, with nary a hint of sarcasm in sight.

“I’ll keep you posted, Brian,” Jennifer ended their conversation before she got wrapped into another debate about false flags and protocol. She feigned a smile before she walked over to Gordon’s desk. Brian stood in place for a moment before turning away and headed for his corner office.

Despite the surrounding activity, Jennifer tuned it out as she ran through everything that happened so far on this very unusual day. Everything pointed to the signal, which was not only picked up by at least two radio telescopes across the world from each other but, for a short time, repeated itself. *Ethan may have a point, but this is much bigger than the WOW Signal*, she thought.

“Give me an update, Gordan,” she asked as she closed the gap between their desks. The other two research scientists buried their heads in their laptops, one having an online chat with another peer in the UK, while the other stared at live frequency spectrum data.

“Kabir got permission to redirect all observation capabilities on his

end to the signal,” Gordan began with what almost looked like a smile on his usually stoic face. “In addition, we got confirmation from eight additional radio telescopes that picked up the signal.”

“Eight...” Jennifer repeated that number to herself. “Eight... keep it up—there has to be more confirmations. Any word from Arecibo or SALT?”

The Arecibo Observatory, in Puerto Rico, and the Southern African Large Telescope, in South Africa, were the two largest observatories in the world—if there were any locations that would have received the signal, it would’ve been them.

“We are getting telemetry from Arecibo now,” Gordan confirmed, nodding as he pulled up browser windows on his monitor. “No word from SALT just yet, though I’m sure the Arecibo of the East will come through—”

“They always do,” Gordan and Jennifer said at the same time, Gordan with some disdain and Jennifer with friendly mockery.

“What is it about SALT that you don’t like?” Jennifer asked.

“You know I’m not a fan of Khulu Global or their foundation,” Gordan said, placing his webcam microphone on mute as he continued. “Even if their founder proved that he wasn’t associated with blood diamond trades, the corporation is responsible for a lot of trauma in this world.”

She knew this argument well enough due to the occasional debates that Gordan spearheaded whenever Khulu Global came up. Despite the many pots that the multinational corporation had its hands in, they still birthed one of the most well-funded foundations in the world, the Unity Foundation. Thanks to one of the core missions of Unity being a focus on advancing the sciences and supporting the kind of work the SETI program lives and breathes, the foundation’s received a lot of admiration and esteem in the scientific community. Some people however, like Gordan, still viewed the organization as one that profits on the suffering of others, even if they aren’t directly causing that suffering.

“Nevertheless, SALT is an invaluable resource, along with any telescope and observatory,” Jennifer said, refocusing the discussion.

“Indeed,” Gordan conceded. “I’ll wave you down when I have more updates, including from SALT...” He trailed off as he noticed

Kabir miming knocking on his monitor, trying to get his attention. Jennifer rounded the corner to have a better view of Gordan's monitor. She brought a hand to her lips when she saw the live feed of the signal pulsing—a feed that originated from India. The alien sound sent a flush of adrenaline through her body.

She wasn't the only one—almost all the surrounding conversations ended in gasps as Gordan turned up the volume on his desktop speakers. He, too, looked to be breathing harder at the return of the alien sound.

“When did the signal restart?” Gordan asked.

“A few seconds ago,” Kabir said, now seated at his desk, though he rolled just off-screen as he spoke to someone else in Hindi. Despite it being almost two in the morning, Kabir's surroundings were buzzing with activity.

“Are you sure?” Jennifer asked as she squeezed in front of another assistant to get a closer look at the screen. She had to get confirmation.

“I haven't been more sure about anything,” Kabir said. “The signal frequency is exactly the same, down to the thousandth hertz.”

“From Pluto?” she asked.

“Coming,” Kabir instant messaged, the clacking of the keys audible through the speakers. The commotion on Kabir's side seemed to have quieted for a moment as the people there congregated around select monitors. Jennifer glanced behind her and found Sam and Nic behind her. Most of the activity at SETI ground to a halt soon after Jennifer's unintended announcement about the signal's return spread.

“Location, Kabir!”

Kabir's face grimaced as he muttered, “This can't be right.” Then in Hindi, “Rupak, this can't be right—double-check the equipment again!”

“What is it?” Gordan asked, shifting in his chair as if it became uncomfortable.

“Gordan,” Kabir said in English, “The signal is coming from Neptune.”

Jennifer looked at Gordan, then at Kabir, arms crossed. “Wait, wait... Can you repeat that?”

“He said Neptune,” Sam murmured.

“Neptune,” Kabir said before being interrupted by another researcher that gave him a sheet of paper. He spoke in as clear an English as he could while he scanned the paper in front of him with narrowed eyes. “Yes—right ascension twenty-two hours, thirty-seven minutes, twenty-point-six-seven seconds; declination minus nine degrees, twenty-eight minutes. We are confirmed.”

Nic grabbed a notepad and vigorously wrote astronomical equations. “That’s nearly 30AU from Pluto,” he said in amazement.

Jennifer slid Gordan aside as, while kneeling, opened SETI’s stellar observatory software to view the exact location of the coordinates shared.

“I could’ve done that, you know,” Gordan said, though Jennifer was too focused on what appeared on-screen to acknowledge him. As the numerous statistics listed themselves to the left of the focal point, Jennifer raised her eyebrows as she reviewed the stats from GMRT—all the data looked undeniably accurate.

“This is just off to the side of Neptune, look at this,” Jennifer pointed to a spot near the orbit of Proteus, one of Neptune’s larger moons. “About one-hundred-and-ten-thousand kilometers away from the planet.”

“There’s more,” Kabir said. He focused not on Gordan and Jennifer, but what he pulled up on-screen. Some men came into view, walking just behind Kabir—one of them leaned forward and pointed at what he was about to share. “We’re tracking the signal’s location live, and it appears to be moving.”



The conference room that sat at the front of the building contained six heavy rectangular tables that combined to make one big table. Floor to ceiling windows spanned the length of the room that faced the office, though most of the blinds hung at random heights, resulting in not providing much in the way of privacy. A large circular speaker phone sat slightly off-center, its cables meeting a batch of additional

computer and power cables and cords that were wrapped together on the floor. Above the table was a projector, mounted on the ceiling with a thick steel rod, that cost more than everything else in the room combined. The fans whirring as they flushed the heat from the active unit, it displayed on a wall-length projector screen the planet Neptune, signal statistics, and a single, fat, red dot that represented the signal's current location in relation to Neptune and some of its larger moons.

Around the table was Jennifer's team with each person, save for her, with their laptops and some papers. Jennifer sat two chairs away from Brian at the long end of the table, facing the screen.

"We need to go public with this," Nic said, his level of excitement palpable.

"Before we do anything with the media, we have to have our facts straight," Brian raised his hand to calm everyone down, with limited success. "Believe it or not, there are protocols in place to ensure we don't disseminate any false information."

He looked over to Jennifer. "You've already started the process of confirming signal data with other SETI programs. Where are we on that front?"

Jennifer observed everyone at the table, each person waiting for her to fan the flames ignited by this otherworldly ping. Except for Sam, who was deeply focused on her laptop. "We have four radio telescopes between India and Russia tracking the signal. It was confirmed that the signal is definitely originating less than one hundred thousand kilometers from Neptune and not from a star beyond our solar system."

"What happened to the signal from Pluto?" Brian asked.

There was a pause before Jennifer responded. "We don't know. It seemed to have just stopped."

"And started again, but now at Neptune," Gordan said as he gestured to the screen.

"This has to be broadcasting from an alien ship," Sam said as she continued typing.

"Okay, we don't have to dive into hypotheticals, Sam," Brian said.

Sam smiled as she finished typing, lifting one hand off the keyboard with dramatic flair while she used her other hand to turn her laptop around to face the team.

“Check this out: We received the signal for the first time from Pluto around 4:45am today, and barely an hour passes before the signal disappeared. Then, a little over eight hours later, we—as in Earth—are hit with the signal again. But now it’s at Neptune.”

“Brevity, Sam,” Jennifer said, knowing Sam could easily consume the rest of the day diving into the numbers she’s shared.

“Oh, sure. So. We have an alien craft—”

“We don’t know that,” Brian jumped in, but Sam continued.

“—that traversed over 4.5 billion kilometers in just over 4.6 hours!”

“Do you know what you’re saying?” Brian said sharply. “Even if this were a ship, you’re saying it traveled at, what, ninety percent the speed of light?”

“Yes, that’s exactly what I’m saying!” Sam nudged her laptop further in Brian’s direction. “All the numbers check out.”

“If we assume you’re correct in that this is a space craft, why didn’t we pick up the signal while it moved?” Brian asked. “And if it were a ship, why didn’t we pick up the signal much, much earlier than today?”

Sam’s shoulders slumped, looking slightly deflated from Brian’s prodding. “Fair points. That will be something to dig deeper into...”

“If the ship were traveling ninety percent the speed of light, any radio frequencies it would broadcast would be heavily red-shifted to the point of the frequency being non-existent,” Jennifer said. “Especially if it were moving toward us, even if indirectly.”

Brian sighed. “Okay, but that doesn’t explain the signal’s sudden appearance.”

“You are right,” Jennifer agreed, “The origin of it is an unknown right now. With what’s in front of us, there’s still a lot we can do.”

Nic raised his hand, waving it in the air, much like an eager college student confident in the answer they were about to give to a question. “We have a database full of radio data. We could take what we currently know about the signal and compare it with what’s been collected over the course of SETI’s history. See if there are any potential matches.”

“Sounds like a good place to start,” Jennifer said. “Maybe even go back to the days of the ‘WOW’ signal to see if there are any hints that were missed.”

“We can also get some observatories that are already pointing

toward that patch of space to share images of Neptune and Pluto,” Gordan suggested.

“That’s what I was trying to do earlier,” Sam said. “Lick Observatory would likely take twenty minutes to realign, but I bet you my media player we’ll find a handful in the Far East ready to report in!”

Jennifer nodded at Sam, then looked to Brian. “I’m for this idea— if this is an alien craft, we’ll likely be able to see it. The radio frequencies are live once again, so any observatory facing Neptune should be able to pick up its physical presence.”

Brian eyed Jennifer, then Gordan, then Jennifer again. “Do it. Gordan, I think one of our contacts in India could help us.”

“I just had Kabir on the horn,” Gordan said. “I’ll call him back now.”

“Good. Meanwhile, any useful information about the signal itself?”

“Nothing as yet,” Sam said. “Though the recorded frequency is consistent, our software didn’t seem to pick up anything anomalous.”

“Give it time,” Jennifer added. “Keep recording whatever comes in.”

Brian pressed a button under the signal, separating the densely packed frequency peaks into four additional segments. He used the mouse cursor to circle one of them. “It’s possible there’s more embedded in the signal than meets the eye. This section may suggest that imagery could be encoded.”

“Another signal buried in the core signal?” asked Gordan.

“Perhaps,” Brian said as he passed a free hand along his hairless head.

“I’ll bring up CASA and see what we got,” Nic said. CASA was one program, used by organizations that ran radio astronomical telescopes, that required a lot of hardware horsepower and required a desktop computer as part of its minimum requirements. A handful of the computers at SETI had computers with CASA installed, having the dozen terabytes of hard drive space and more than enough memory needed for maximum performance.

Brian, with the look of satisfaction on his face, stood up from his seat. “Okay, it sounds like we have the next few immediate, if not large, goals to tackle.”

“It’s a good start, I agree,” said Jennifer. “Now let’s get back to work. Hopefully we can avoid any more conferences like this while in the midst of this historic event.” When she stood up, everyone else collected their laptops and papers from the table. She noticed that Sam stayed in her seat, though she kept her laptop open, her eyes focused on it in contemplation.

Jennifer walked over to Sam’s side of the table and sat in one of the nearby swivel chairs. “What’s on your mind?”

“You know what’s one thing that doesn’t make sense?” Sam began as she drew a circle with her finger around the signal on her screen. “Why is this object moving—at increasing speed—towards Neptune?”



The Girawali Observatory in Pune, India was Gordan’s first choice for opening a line of communication. If their infrastructure allowed, he could establish a live feed into what their telescope could see. The location was ideal for two reasons: It was just an hour away from the Giant Meterwave Radio Telescope—Kabir’s domain—and Kabir knew the two scientists that worked the graveyard shift.

Jennifer was still in the conference room when Sam jumped out of her seat at the sight of Gordan waving them down to join him. As Jennifer walked to his desk, with Sam following behind, she heard the banter he had with Kabir. His animated face was in a video window on Gordan’s second monitor. On Gordan’s primary, larger monitor was an email marked as high priority which had a file attached. The body read: Please review the initial images. We will try to establish a live connection between us and SETI. भगवान हमारी आत्माओं पर दया कर सकते हैं

“I don’t normally get Hindi in my emails, especially not translated by the sender,” Gordan said to Kabir. A new window appeared over the email when he double-clicked the attached ZIP file, listing five separate image files, ready for extraction and viewing.

Kabir scratched the back of his head as he read the email and translated the Hindi. "It says 'May God have mercy on our souls.'"

Just as he opened one of the images, Jennifer spoke. "Did you get anything use...ful..." she brought her hand to her lips, cutting her trailing question off.

"What... the fuck," Sam said.

The image opened had Neptune in the center of an all-black background with Triton, its most prominent moon, in the upper-left side. However, to the left of Neptune was a white streak that looked like a fuzzy stemless champagne glass on its side. And Neptune, a blue-white orb in most pictures of it taken from ground level on Earth, looked faintly elongated on the side facing the object in the image. The planet stretched into a wide cone that met with the object.

Some whispers from scientists behind Jennifer were audible, but she ignored them. The signal pulsed in her mind ever louder as she focused increasingly on this object almost nestled within Neptune's upper atmosphere. Silence gradually filled the office as word of the image spread. It hung in the air, unwanted, as those with immediate access to the files ran through possible scenarios in their minds on what they could do with this information.

Gordan opened the other files in sequential order, allowing Jennifer and him to see a broken timelapse going from the present to a little over an hour ago. As he cycled through the pictures, a chunky animation of the object depicted it backing away from Neptune and then, in the final image, not be present at all.

"Is this the signal source?" Gordan asked, breaking the silence.

"It has to be," Sam said. "But what is going on with Neptune in the latest picture?"

Jennifer closed her eyes and snapped out of the daze she was in, the signal no longer substituting her hearing for what was around her. With her eyes closed, however, her mind merged the five images into a fluid animation of what should have been impossible. An object appeared and was destroying the eighth planet in the solar system.

"More like, what is this thing doing to Neptune?" she said as her eyes opened.

They looked at each other just as Brian approached. He stopped

himself at the foot of Gordan's desk at the sight of the Neptune snapshots. He opened his mouth, as if to say something, but stopped himself, unsure of what to say—a rare moment for him.

Gordan stopped clicking through the images and looked to Jennifer, uncertainty in his eyes. “What do we do?”

Jennifer stood up and looked at those around her. There was something very close to Neptune, and that something was irrecoverably altering the planet just by its presence. Something like this was far bigger than simply picking up an extraterrestrial signal. Her eyes met Brian who, with tightened lips, gave a slight nod, knowing what she would say. More important, he would agree. His affirmation of not just her positions around the events of the last couple of hours gave her a swell of authority she hadn't held in years.

“Get every observatory, space telescope, and radio telescope on that object. We must connect with NASA, too—if NASA isn't already aware of this, they will be in the next few minutes.” She got up and started for her desk, but continued speaking with gusto. She wasn't looking at anyone in particular, but others took notice and paid close attention. “Get on internal chat and coordinate calls and email sends so nobody doubles up on communication—pick an observatory and share that decision with everyone. The directors will target the big guys: NASA, the Russian Space Agency, the European Space Agency.” Jennifer counted the agencies on one hand as she came to a halt by her desk, looking over the office that just a few moments ago froze with fear because of images of the object by Neptune. People now funneled back to their desks, some in groups, as they picked up phones and logging into the SETI internal chat platform.

Jennifer, guided by the drive to get more people in front of this, turned to Brian. He just reached the door to his office. She almost ran over to join him. “Brian, let's get NASA on the line.”



Sam stayed beside Gordan, who still held his gaze on the images

he continued cycling through. She leaned in and looked at Kabir. “Hey Kabir, can you get the folks at Girawali to pull snapshots of Pluto as well? The signal originated there,” she paused and thought about what she would say next. “Given what we’re seeing with Neptune, I wonder if Pluto will give us an idea on what to expect.”

Kabir un-muted himself, interrupting a conversation he had with a colleague. “Yes Sam, I’ll contact them immediately. We’re still trying to make sense of these images, too.”

“What do you expect to see with Pluto?” Gordan sounded deadpan, but it hinted at knowing the possible answers that waited for them.

“I don’t know, but I want to be wrong,” Sam said, her tone taking on that of someone that expected a death in the family.

It didn’t take long for Kabir to forward an email with another file attachment, though this time it was just a single image. The email body read: We double-and triple-checked everything. Telescope fully operational. No glitches or bugs. RA: 18h 53m 1.89s DEC: -20° 14' 28.9"

Gordan opened the email and double-clicked the image, which filled his monitor once more. Sam gasped while Gordan’s face sank into his hands.

The image was completely black.

