

Lessons from Pluto

A [possibly] fiction novel



Gibraltar Station

1:52 hours

The old fluorescents reflected greenish light off the monitor. The windowless room was the only thing Victor Robles saw for 8 hours a day from 2300 to 700 hours in the morning. His chair gave a protesting squeak as he sipped from the constantly refilled coffee mug. A row of blank metal cabinets filled with backup hard drives were his only company as he stared at the antique flatscreen with breathless anticipation. Normally the job was so uneventful that he would regularly sneak in some time playing fútbol on his phone. But now, as the imagery from the New Horizon probe came in there was nothing that would tear his eyes away from the screen. The blurry crescents sent from thousands of kilometers out were already enough to get scientists from all over the world salivating. But these new images would be humanity's first ever close in views of the Pluto/Churon system. Everyone who remembered the heady days of the Voyager flybys or the Cassini mission, was crowding the bloggosphere, even those in Owen's camp who'd tried to demote Pluto back in '06.

But none of that mattered now. What mattered was that after years of waiting and budget negotiations, they were finally going to get results. This was the final frontier in local planetary science.

“Are you getting anything yet on your monitor?”

The text was from Maria, his boss. She was as excited as a prom girl when they found out that the Gibraltar station would be the first point on Earth to get the signal. He sent back a quick text telling her that it would still be a bit longer.

Roger hadn't even been employed at the Iberian Space Agency when the probe had been launched back in '06. He'd only managed to work up to this position 9 months back. It had taken a lot of late nights doing calculations and staring at seemingly endless streams of data before he'd gotten the promotion. But now as he became the first human to watch the telemetry arrive, he knew beyond the shadow of a doubt that it was worth it.

The first image was still blurry, but even so the sight was one that changed the course of everything humanity knew about the universe. The shock momentarily numbed him, then he literally jumped out of his seat as his coffee cup, which he was sipping from, fell to the floor.

The next instant he was smashing his fingers on the keypad of his phone as if by sheer force he could subdue the satellite network to run faster. Feeling like he would die of old age before the woman answered, he finally got her on the third ring and felt all of the words which he'd been rehearsing tumble across his tongue randomly. “Senora! Senora Robles! The imagery! It's in...and...I don't know how. Have you seen it?!”

If Maria Robles was famous for anything, it was keeping a cool head under both extreme pressure as well as endless drudgery. Since astronomy tended towards the latter, she had a little less practice

in this case. Nonetheless she'd spent most of her life in administration and knew Victor as well as anyone else in the department. She carefully helped him calm down to the point where he could finally speak in complete sentences. "Now Victor. I know that you're very excited. We've all been waiting for the better part of a decade to see these images. So can you please now tell me what has you so flabbergasted?"

Her measured tone and calm voice did its work as well as any therapist could. After a few deep breaths, Victor managed to weave together his jumbled thoughts into one mind-boggling sentence. "Senora. The imagery from Pluto shows a huge structure near the equator that is unmistakably artificial."

There was a long silence and Victor couldn't tell what was going on at the other end. But having been through several moments of deep breathing, he was now just a bit less agitated than the voice at the other end.

"Um. Victor. You...you're certain of this? I mean, you're just getting the data in now, aren't you?"

"Senora. It is not possible to mistake this. I am looking right now at the sunlit side of Pluto and I am seeing a large cylindrical shape. Comparing it to the overall size of the planet, I would guess that it's 300 meters in diameter, and it's nearly long enough to jut above the meager atmosphere."

"Santa Maria! This is the most incredible discovery since ice on Europa!" There was another long pause and he heard her whispering to someone else. "Victor, now listen carefully. I need you to get this data to Madrid right away. We're going to make this announcement ourselves, and to hell with NASA."

Victor knew she was taking a big risk with that. It was their satellite, after all. But sadly, they were beyond the curvature of the Earth, and wouldn't get the signal for another 18 hours or so. Victor sent commands to the craft to take more photos at the highest magnification and sent the whole zipped file off to Maria. But even after that was done, he continued staring at the image. That structure, it was so huge. Even with Pluto's meager gravity, it would have taken a small army to build it. An army of what though?

Chapter Two

As expected there was a huge firestorm over the discovery. Not only the structure itself and what it implied, but the fact that it was so very far away. It seemed impossible that any kind of life could exist at temperatures that would freeze methane. What kind of creature could exist in a place like this?

Not surprisingly, Victor found that he had a new boss once things had calmed down a little. NASA apparently didn't appreciate Spain taking over the limelight, and sadly they had a lot more influence in the scientific community. The images flashed around the globe at the speed of light and everyone from military officials to UFO believers became an instant reporter with opinions, blogs, podcasts, and youtube videos.

The images overshadowed everything else at the time, and theories were as widespread as the

people who developed them. He would turn on the news one day to hear some scientist claim that the Neanderthals had developed space travel. Or someone would send him a link from a blogger who believed that aliens built an outpost to monitor the Earth.

Needless to say, his fame (not to mention his paycheck) grew noticeably. Maria's fiery career plunge, had only fueled the intrigue of the news itself. Victor found himself catapulted to celebrity status as the first human to witness irrefutable proof of extraterrestrial life. And in our own astronomical backyard, so to speak. There were book deals, interviews, promotions, even a cameo on Hollywood's latest Star Wars sequel.

Thus he found himself at a social hosted by some rich Cantelonean businessman. Victor felt enormously out of place in his rented tuxedo and spent more time than he would've liked to admit admiring the rich wall tapestries and avoid trying to fit in with such an alien crowd. As the wine began flowing more liberally and tongues were loosened, people peppered him with many of the same outrageous theories that he was hearing on the internet.

Finally near the balcony, he spotted Natasha, a colleague who did contract work for the Jet Propulsion Laboratory. She was about a decade younger than his mom, and one of the brightest people he knew (at least personally).

“You'd be amazed at some of the crackpot theories floating around over there.” He watched her balancing a plate of cheese and pecking at it absentmindedly.

“Oh I believe it” she said after a bite. “Some of those eggheads are actually trying to devise a way to land the probe.” She laughed genially. “Maybe shoot it straight down that chimney.”

Victor thought about that for a moment. “Well, of course it would be a suicide fall, but the gravity is miniscule...”

“Yes but Victor my dear boy. You realize that thing is speeding along at over 50,000 kilometers per hour. There's no way in the world, any world for that matter, you could slow it enough to descend as anything short of a missile.”

He struggled to not feel embarrassed by her comment. “Of course I do realize that, but JPL has designed spacecraft to do the impossible before. I mean just think of the old Voyager probe, and the...”

“I'm sorry Victor. I don't mean to make you feel bad. But those probes had much more powerful engines. They had the fuel to slow down, plus they were going about half the speed of New Horizons.” She paused while taking a small bite of cheese. “I mean, it's just *so far out*. Over 5 billion kilometers, that they had to push it as fast as possible.”

“Yes of course.”

“Victor. I realize that you got lucky, being the first person to see this...chimney thing. And you really do have a good head on your shoulders...” She glanced over at someone walking towards them and lowered her voice. “Certainly more so than many of these yokels.”

The man smiled widely as he approached. He was shorter and very well dressed, probably a bureaucrat. “Ah Natasha and Senor Robles.” He shook hands with both of them. “I don't mean to

interrupt. I just want to thank you both for being here. Natasha, we truly lost a brilliant comrade to the capitalists. And Senor Robles, if you ever tire of the bickering in the Iberian Space Agency, you can be sure that the Russian Space Agency would be happy to take you.”

Victor took half a second to choose a tactful reply. “Thank you. I am honored. But I must say that I seem to have an allergy to sub-arctic temperatures.”

The man chuckled. “And yet you study the coldest spot in the solar system.”

“Well at least he knows basic astronomy.” he thought to himself.

Chapter Three

Victor and his colleagues around the world watched and studied the video footage night and day looking for any more clues. As New Horizons reached it's closest approach, there were a great many more discoveries to be had. Along with the chimney were a huge number of barely recognizable rectangles dotted all over the surface. These were much smaller than the chimney and seemed to follow irregular lines in random patterns. Based on the shadow angle it was believed that they were no more than 15cm tall. But with so little to work with, it was mainly conjecture. On the opposite side of the planet from the 'chimney' was a small mountain range with a clearly defined gash carved entirely across it. Even some credible scientists agreed that this could have been a road of some sort. One thing that everyone agreed on though, whoever had created all of this had vanished long before the rise of humanity. Like everything else in astronomy, every question that was answered brought new and more complex puzzles. The biggest one, aside from the builders themselves, was what the enormous chimney was built of to have survived so long, and what could have been it's purpose. There'd been so much political wrangling and budget cuts when the probe was being built, that there wasn't much instrumentation for this. After all, who could've expected to find something artificial at the outer edge of the solar system? As such, the community had to be satisfied with the chimney images and maps of the various surface features.

Chapter Four

It was almost a decade later and Victor was at a NASA press conference announcing the proposed launch of a second mission to send a rover to the Pluto/Churon system. The schedule was rushed because the dwarf planet was still heading out of it's perigee and would soon be too far from the sun to reach with any certainty. Victor spotted Antonio, one of his old colleagues from those first heady days.

“Antonio, hey.”

The man clearly hadn't aged well and looked closer to retirement age than Roger would have expected. But his gate was strong as he made his way over and his face was bright and smiling. He stood only a couple of centimeters taller than Victor did and wore his usual button shirt and vest.

“Victor you old dog. The Americans actually let you in? I thought they had better security around here.” He laughed, and Victor joined him and slapped the man on the back.

“Well they'd better. I'm helping to design the transmission dish on this bucket.”

Antonio made a big 'O' and pushed air through it. “Really? They let you on the project after Maria's fiery fall from grace?”

“Didn't have a choice. The Chinese are calling the shots now, these guys are just holding onto the twilight of their influence now.”

“True true. So are you still raking in the pesos from your book?” Victor detected a note of envy in the older man's voice. The book deal had been a no-brainer. His publisher assured him it would be on the best-sellers list, and it stayed there for two years running.

Doing his best to be convincingly humble, he waved his hand. “Oh you know how it is with these cinco minutos of fame. People get all fired up about someone, and then it goes away. It's not me who's important, I'm just the lucky stiff who happened to be at the screen. It's the MIBs that are the real prize.” It was a term that came out just a couple of days after the original announcement. Some blogger called them the Most Improbable Beings, and the term MIB stuck.

“Did you know that a Chinese scientist confirmed that the line cutting through the Wendaleze range really was a road of some sort? The woman theorizes it based on the faint square and rectangular outlines that appear alongside it on both sides. She says that it looks just like an urban map in Beijing.”

Antonio looked thoughtful, trying to grab at the scraps of memory. “Yes, I did hear about that. About three or four years ago I think. They were hoping to find some kind of vehicle, but it's hard to imagine anything surviving these millions of years.”

Chapter Five

Victor was nearing retirement when the rover finally reached Pluto. Since then space-faring technology had advanced by leaps and bounds, mainly driven by the discovery. There was an infrared telescope on the far side of the moon, a manned mission soon to enter the Martian atmosphere, and yes, a much anticipated manned mission planned for Pluto. Of course the latter wouldn't be seen in his lifetime. Even the rover would be trapped on Pluto for another 200 years as it drifted out beyond Neptune's orbit to the Kuiper Belt. But for now Victor was able to watch the rover trundle towards that now-famous cylindrical cone which dwarfed every other feature around. Everyone watched excitedly as the cameras panned back and forth, taking in every possible detail. The images were all black and white, the sun being too weak to provide any color contrast worth noting. There were three large monitors displaying images from each of the cameras. The two forward cameras providing a binocular scene in the visual range, and one rear-facing camera showing an x ray feed in the hopes that some clues could be teased out from below.

The scene looked like horror movie images of a post-apocalyptic land. The ground was nearly barren in every direction with bits of artificial clues here and there. One looked like the twisted truss-like boom of a crane, another was a long flattened cylinder that almost resembled a submarine without a conning tower. But most peculiar of all were the huge rectangular spaces of pure utmost

black. Van Nyen, the rover operator, carefully teased the vehicle to the edge, keeping the speed slower than a snail's pace. It took almost nine hours for signals to travel from the rover to Earth and back. So with almost a billion Yen riding on the mission, everyone was taking it with utmost care. Finally it reached the edge and she directed it to flash a laser rangefinder into it. The cavern was the size of a small island and over 100 meters deep.

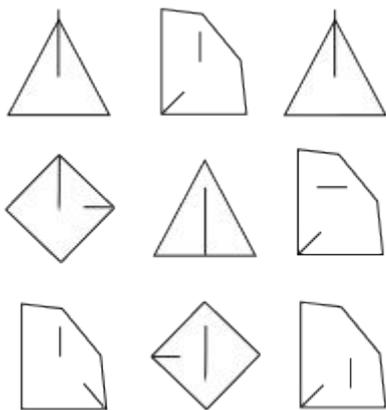
Finally Nyen was ordered to direct the vehicle towards the biggest prize, the chimney itself, as it was dubbed. The cameras panned left, right and up looking at detail on all sides. The surface was perfectly smooth from the ground to as far up as they could see. It was also exactly cylindrical to within a few millimeters. The closest analogy anyone could come up with was the turret of an immense warship. With the same painstaking stoicism, the rover crawled along the perimeter in a wide arc, looking for anything else of note.

It was only after it had traveled almost a complete circle around that Roger heard Li Tang, the director call out "Stop! Pan down." His voice was pregnant with emotion and excitement which was completely out of character for the man. "Right there. Zoom in please."

Then they all saw it. Just above the Plutonian soil was a rectangular shape projecting a few centimeters from the surface.

"Can you remove some of that dust please?"

The operator moved some controls while everyone watched with baited breath. The anticipation in the dead silent room was palpable. As the millimeters of soil fell away, the shape began to grow. It took a long while for people to breathe again after the shock of processing what they were looking



at. There, a billion kilometers from Earth were a series of shapes etched into the surface in three rows of perfectly straight lines.

The shapes were arranged seemingly at random, but all remained precisely within those three rows.

Like Victor's original discovery decades earlier, this new element brought another firestorm of chatter as the first ever extra-terrestrial language was announced. Li Tang was a much more skilled bureaucrat, and gave specific credit both to the rover team, NASA, and Victor's team who had made this mission possible. The news brought a whole new eruption of

podcasts, speculative theories, and experts.

Chapter Six

Na'ima's eyes traced a seemingly endless visual path between the image on the screen and her books. Each book had been published in the hurried days after those first penultimate shots reached Earth. She gave an exasperated sigh and brushed her hand through her tightly curled black hair for the thousandth time.

“No one ever told us this would be easy.” Kwassi patted her shoulder. He was half a head taller than her with a gentle smile, strong arms, and a receding hairline. They'd been friends for a few years, even dated awhile back. But dating co-workers just never seemed to work out in her profession. There were just too many late nights like this, banging on her head to try and tease out some meaning.

“Kwassi, I just don't get the whole trimary thing. But there's no possible way they could have a language this simple and build such grand creations.”

He stared at her again with his kind eyes. “Well sure, there are plenty of people who think that. The question is...what does it translate into?”

Like dozens of other linguists around the world, their team at the University of Accra were going over the images from that plaque with a fine-tooth comb. Most people had theorized in the early days that the writing was a trimary, a language based on three symbols much like the binary code used by early computers. The problem was that binary represented other words in English, Spanish, or Chinese. Whereas this code was, to pardon the pun, totally alien.

Na'ima gave out another exasperated sigh. “They haven't come up with any other examples, have they?”

“Na-di girl, you know they would send us the feed straight from the rover if they could. All we got is the plaque and that snippet from the castle.”

The castle had been so-named because it was the only remains which were non-rectangular. Instead of an exact quadrilateral, the lines terminated at four perfectly equal triangles. By now there was little doubt that the shapes were the remains of buildings worn away over the millenia so that only a dozen centimeters or so could be seen above the surface. It was believed that whoever these aliens were, they couldn't have been very large because the shapes ranged from those as large as an average room, to a half dozen meters across at most. The predominant theories were that the MIBs were less than half a meter tall, based on the size of the writing.

“So what do you think about the talk of sending people out there to explore in real time?” She gave Kwassi a look that said she needed a change of subject to rest her weary brain.

“Well I wish we could see it, but sadly they won't be able to send people out there for well over a century. We'll just have to be satisfied with this junk.” He waved half-heartedly at the monitor.

“What'ya mean?”

“Girl? You do' know 'bout the orbit? That place is almost a comet, goes out to over seven billion kilometers and takes another 100 of our years to go back inside the orbit of Neptune.” His look was almost insultingly superior and she was tempted to get mad, if she didn't know him better.

“Of course I know that, you digrosso, but the Taiwanese have the Ion engine now. They can send somethin out to Neptune in a couple weeks. Shouldn't be that hard to reach Pluto even if it IS at it's Apogee.”

“Yeah, but maybe you forgot that Pluto's atmosphere freezes to the surface when it gets out that far. Everything we're lookin at here,” he waved triumphantly at the books and computer screen, “is

buried under three meters of frozen nitrogen and methane. Honestly girl, for an exo-linguist I thought those teachers of yours back in Camaroon would give you a real education.”

She threw an etching pen at him and he dodged it easily. The game was an old one between them and offered just the kind of mental break that Na'ima had been looking for. She got up and threw half-hearted punches at his shoulder. They wrestled for awhile and she finished it off by giving him a hug.

“Wha's that for?” he asked with mild surprise.

“For being just the friend I need in dis.”

As she glanced at the screen over Kwassi's shoulder, something teased her brain and she slowly edged around him to look closer at the screen.

There it was. Staring at her in plain sight. “I can't believe it! I just can't.”

Kwassi moved to look over her shoulder. “Wha's that Na'di?”

“It's been staring us in the face this whold damn time. How could we all have been so stupid?” she rapped her knuckles against her head.

“Girl. Will you tell me wha' got you so rilled up already?”

Now she was the one to speak with an air of superiority. “Kwassi look at the lines. Not the shapes..... the LINES!” They're not the same!”

“Well I'll be.” He barely whispered as he looked closer.

“The shapes themselves might be a trimary, but the small lines within are slightly different. They must mean something to those...MIBs.”

Chapter Seven

Na'ima's grandchildren were already reaching retirement age when the planet-web sent the news of the Earths' first human mission to Pluto.

Humanity had been waiting over a hundred years for the icy world to be close enough and [relatively] warm enough for the mission. It was so momentous that there was an actual antique ticker-tape parade through Fort Lee (which was the closest available dry land to the old New York city).

Wu Chen had gotten the news only a week before that he'd been selected to take command of the mission. This due to the fact that he'd been the only one to come back alive from Titan. Despite the disastrousness of that trip, he often allowed himself a few minutes of daydreaming for the old days of monkeying around near Saturn. Back then being an astronaut was still a big thing. You had to be brave enough to risk your life separated from cold vacuum by a few inches of metal and foam, but not so brave as to be a psych risk. He remembered wondering at how enormous Saturn looked through the viewport and how much it had humbled him.

With a sigh he yanked himself back to the present evaluation forms. Instead of gazing at the great rings now, he had a slightly larger viewport showing Alpha Centuri. The base under the surface of Montes Agricola at Far Side ran much like the ancient submarines of Earth's oceans. The quarters

were cramped, the colors drab, and the food mediocre. The only good thing about it was the mandatory skylight that he got to enjoy as a lunar resident. He took a few minutes away from the screen to rest his brain. Letting his eyes loose focus, he calmly gazed at the wall screen image of the great stupa at Sanchi. This was the only part of his day that brought him a sense of deep relaxation.

Chen had always been a serious and hard-working pilot, but he still wondered for the thousandth time, what the United Worlds Space Agency saw in him. Sure he was a good pilot, but now he'd be the sole person responsible for a whole crew, and with even more risk involved than the Titan mission. Despite the lunar gravity, he felt the weight of this mission bear as heavily as the gravity pads that he kept stored in the rec space.

Chapter Eight

Chen turned his eyes back to yet another resume and realized with a sigh that the easy part of the screening was long past now. He'd narrowed the list from several thousand to a few dozen files. The final push was going much more slowly than he would have expected. Everyone's file now showed psychological stability, physical training, and a breadth of experience in one or more critical fields. He could tell that the week ahead would be a tough one.

His thoughts were interrupted by a light chime from the door.

"Jinlái." he threw out absentmindedly

The man who entered was tall for a Ugandan and well proportioned. His coffee colored skin shone in the light and his uniform was crisp and well-maintained. He bowed respectfully and smiled warmly.

Knowing everything about the man already, Chen switched to French and greeted him professionally. "Welcome Muogo. I trust that your quarters are acceptable?"

Being a linguist, the man replied in perfect Manderin. "Yes Captain Chen. I'm afraid that the conditions are equally as cramped on a ship as they are here."

Chen gave some halfhearted sympathy and motioned the man into a chair. "I'm afraid that we cannot mimic the wide open spaces of Uganda any more than we can mimic Kunming."

"I understand sir."

"Muogo, your resume shows great promise both for your experience at the ISS-IV as well as your extensive linguistic skills. I would like to know in all full honesty (it was well known that Chen could read the subtle clues on peoples' faces like he was reading a smartpad) if you believe that you could decipher the Plutonian language given a more complete sample."

Muogo knew not to leap to an answer. He thought about all the other obscure languages he'd studied and what his colleagues considered a minimum base to work from. "Sir, I can't be certain, but I believe that with four or five times as many symbols to pull from, we could at least have a rudimentary understanding."

With that, Chen knew he'd picked the right person. Muogo was not too impulsive, but skilled

enough to offer a reasonable guess. He peppered the man with a few dozen more questions about his experience on the International Space Station, his years teaching at MIT, and his latest book. Still analyzing him, Chen noticed that the man's eyes stayed bright and calm. The man had enough confidence from the beginning to believe that he could be selected.

Once Chen was satisfied that there was nothing about the man to raise any alarms, he kindly informed the Ugandan that he would provide the news either way within 48 hours.

The other interviews followed the same pattern. Chen learned more about a person from *HOW* they answered questions, then from the answers themselves. When he finally reached a core group of 3 finalists, he sent them to Mrs. Fu, the director. Mrs. Fu was a well seasoned bureaucrat and understood people on a very deep level. She had given Chen first choice of crew members, but it was still her job to give final approval. She would confirm that among the whole team, there was enough skill in geology, linguistics, astronomy, xenobiology, and astrophysics for the mission to be a success.

Chapter Nine

Yolanda had never struggled so much with meditation in her whole life. But this mission was a dream come true in every way. It was an adventure, it was uncharted territory, and it held the potential to answer thousands of questions brought up by the Robles discovery. She continued to keep pushing the distracting thoughts aside as there was nothing she could do now to change her status. She listened to the calm melody of the flute playing on the rec room speakers as she sat calmly on the mat. The interviewer, a Chinese man named Chen, had showed a poker face during the interview and she wouldn't know if she would be chosen for another day or two. In the meantime, she spent her time either studying mission specs, exercising, or practicing Tai Chi. After a relaxing meditation session, she gave into the urge, and turned on her PDM. The personal data manager downloaded her messages and showed one from a Mrs. Fu. The cryptic message said only that she was invited to join her crewmates for a lunch meeting at 1500 hours. Checking the time she cursed silently and threw on her nicest oversuit.

She nearly collided with Chen as she entered the 'cave-teria' as it was lovingly dubbed. He quickly sidestepped in his usual impassive way and they both half-heartedly pulled a nutrient package from the slots and sat down with the only other people in the room. She saw a tall man with the darkest skin she'd ever seen, another shorter man with an olive complexion and large nose, and an older Chinese matriarch.

“Thank you for joining us Ms. Delgado and Mr. Chen.” The woman smiled warmly at them, a good sign Yolanda told herself.

“As you must know by now, all of you have been selected as finalists for the United Planets Space Administration's first peopled mission to the dwarf-planet Pluto...” For several moments it was impossible for her to continue as the cheers and back-slapping overwhelmed the group. Yolanda herself nearly jumped up and hugged the woman.

“You have all worked incredibly hard to be chosen for this historic mission. But the hard work is in fact just now beginning. You will all be expected to stay in top physical and mental shape as well as becoming intimately familiar with the ship, the latest rover discoveries, and the various equipment which you will be using. During the training, you will be expected to be both student, and teacher to each other. I want to ensure that you know as much as possible about each others' skillset. If any of you become unable to complete your tasks once you leave Ganymede station, it will be important for the rest of your crew to fill in. You have been selected not only for your intelligence, and background, but also for your innovative thinking. Ms. Delgado, I understand that you are a highly credited author of astrophysics, astronomy, and astral-navigation. Isfaheem Al-Jezrai is a well respected professor of extra-terrestrial geology, and archeology. Muogo Ningape has years of experience with the UN as a linguist and has published several scientific journals on ancient languages. Finally Mr. Chen is a decorated pilot and has an extensive background in rocketry, mechanical engineering and emergency medical procedures.

Mr. Chen, I appreciate your request for a fifth addition to the team, but with the enormous risk of this mission and the tight budget we could not in good conscience support it. The whole board has reviewed your files ladies and gentlemen, and we feel completely confident in your skill and experience. Congratulations.” She smiled broadly and looked at each of them directly before shaking their hands.

Despite her years of emotional training, Yolanda lost it and began weeping openly with pure joy. There was nothing on any of the inhabited planets to match this one amazing moment.

After making her announcement, Mrs. Fu took her leave and Yolanda sat with the group learning as much as she could about them all. She felt a stronger sense of comfort with the Ugandan then with the other two. Chen seemed to be rigid and impassive and Al-Jezrai talked about nothing but rocks through the whole conversation. Still, they were all intelligent people and she respected each of them for their devotion to their respective fields.

Chapter Ten

Chen pulled up the ships specifications one more time, determined to understand it backwards and forwards before departure. He especially studied the Taiwanese Hsinchu engine, as he never trusted the rebel islanders, as they were still considered. He was still reviewing the data when his PDA beeped that the crew were going to have lunch.

He grudgingly put the pad down and made his way down the hall to the canteen. He immediately spotted Muogo, Yolanda and Isfaheem at a table. Yolanda was an Argentinian woman with a sturdy build and tightly knotted black hair. He found her to be an enormously capable woman. She likely would've been captain if it wasn't for the preferential treatment Chinese people on the mission.

But for Chen, it was especially interesting for him to be teamed up with Isfaheem. The Egyptian man had been the keynote speaker at the Martian Geological Forum last year and Chen was looking forward to picking his brain on theoretical xenobiology.

“Well hello Mr. Chen.” They all greeted him kindly and he bowed to each of them in turn. Yolanda more than anyone felt the increasing tension as they all began to recognize the gravity of the mission. Like every meal, the food itself was an afterthought to the never-ending work of studying and memorizing each and every piece of machinery that they would be shuttling out with them. Today's discussion centered around the suits they planned to use for the few moments of EVA. The suits would be as bulky and uncomfortable as those of the old moon landing. They would be so heavily insulated that it was, in essence like a miniature spacecraft itself. The environment was so unforgiving that the designers couldn't develop any way for them to use their hands at all. So the suits had extra-long arms with robotic fingers controlled by hands that remained well within the thick arms. The design borrowed from early examples prosthetic technology. But it was assumed that most of the time they would travel in 'the limo' as it was dubbed. This was a squat cylinder connected to six balloon wheels which would take them on longer trips away from the ship.

Chapter Eleven

The final few months were spent at Ganymede station practicing with the actual ship and rover as they underwent final construction. By now the spacecraft were downright luxurious compared to the old 'tin cans' of the twenty-first century. With the Hsinchu engine allowing access to the various moons, mineral resources were once again plentiful. The ship kept a minimal gravity by rotating around it's axis and the length was divided into a pilot's cockpit, a common room, and a small private cabin for each of them.

They went through thousands of drills and mock disasters encompassing anything that the design team could imagine going wrong. The preparations were sobering enough that Isfaheem wondered if he hadn't made a grave mistake in leaving the comparative safety of the university.

Chapter Twelve

As the giant countdown clock ran ever closer to climactic day, tensions continued to mount. Sharp words rang out when a technician found a critical part missing, or if the fiber reinforcement struts were tensioned poorly. For Yolanda, her daily meditation and Tai Chi were more essential than ever. Her brain felt like it was going to explode from the constant barrage of information being repeated with seemingly endless patience by Chen, Mrs. Fu, or any of the dozen mission specialists who were helping to ensure their success.

She was getting a final fitting check on her suit and practicing trying to move in it when she decided to test it out on the surface. She operated the controls that moved the 'fingers' and opened the airlock. The sight as she left was like nothing she had ever experienced. Up till then, she had always been unlucky enough that her surface excursions had occurred when Ganymede was facing away from Jupiter. Now the enormous orb of the planet dominated the sky with a brightly banded

half-circle. It took several minutes before she could even tear her eyes away. It was as clear to her as the red spot itself that this was and would be the most beautiful scene she would ever behold. But of course there was a mission to prepare for and a suit to test out. She spent a few minutes moving on the surface, climbing up the more gradual craters, and doing little jumps in the light gravity. Then out of the corner of her eye she noticed on the heads up display that her O2 levels were draining faster than the specs called for. She left the frozen surface and headed back into the airlock. One of the biggest advantages of the suits, over anything she'd used before, were the dexterity of the external 'fingers' which she was slowly learning to operate efficiently. Though it gave each of them an apelike appearance, the long metal fingers were immune to the cold vacuum and allowed them to operate controls with ease.

Before she checked in with her team, Yolanda spent half an hour looking carefully over her suit. If she could troubleshoot the problem herself, it would give her more confidence that she could do so out on Pluto.

Finally she noticed that the O2 cylinder was the wrong size. This one was likely the one used by astronauts here on Ganymede. The connecting tubes were probably drawing oxygen out faster due to the lower pressure. She brought the issue up with Martin, the lead suit technician who was visibly impressed by her discovery.

Chapter Thirteen

The departure was calmly anti-climatic after the endless preparations and disaster drills up till then. Once they broke orbit, Yolanda set the ship spinning fast enough to mimic a perceptible gravity and she worked out their speed, velocity and trajectory with the captain.

The rapidly spinning cylinder offered enough private space that all four of them could enjoy a respite from each other and avoid the 'cabin fever' of the old days. Chen watched the VR screen with his typical seriousness while Yolanda kept tabs on their position. Isfaheem and Muogo both had little to do during the trip except study, which they both did extensively. Muogo became especially interested in the astral-positioning that Yolanda worked on, and often tried her patience with his endless questions.

True to form, the Hsinchu engine sped them at fantastic velocity towards the icy world shortly after it crossed inside Neptune's orbit. In the olden days, they would likely have stared in wonder at the vacuum of space and the sights of the few planets along their path. By now though, the solar system was becoming as familiar to them as Antarctica for most Earth residents. The ride out now was just a long journey to a much greater adventure.

In a time that would've astounded Yuri Gagarin, they flew above Neptune's orbit and towards the edge of the Kuiper belt. The anticipation was beginning to reach a feverish pitch as they rose high above the ecliptic towards Pluto. The cheers were loud and sincere when Yolanda announced that they would arrive within the next 24 hours.

Despite being intimately familiar with the tiny system, they all watched open-mouthed as the twin

worlds grew steadily larger on the screen. Soon they were able to discern the chimney, and eventually they could even make out the faint rectangles on the surface.

Yolanda worked closely with Chen to put them in a stable orbit while they looked for an appropriate landing spot. This wasn't difficult as there were few craters and the surface bore more resemblance to an Oklahoma plain than to a lunar expanse. The landing was surprisingly smooth given how much energy had been poured into reaching this moment.

The minute their ship was stabilized and the outriggers secured, Chen began delegating tasks for everyone starting with the assembly of the limo. The squat cylinder would be their main defense against the near-zero kelvin temperatures outside. All three of them felt more than a little put off by the constantly repeated safety warnings. Yolanda dealt with it by repeating the mantra 'coldest spot in the inhabited solar system' which in itself awed her.

"I know that everyone feels as excited as me to get out there and see what we can learn from these structures. But I need to insist that nobody remain outside for more than 70 minutes. The suits may have two hours of oxygen, but the insulating systems aren't guaranteed for more than 90 minutes and your lungs will freeze long before you run out of air. Most importantly, I insist that none of you...and I repeat *not one person* leaves this ship alone. If you don't have someone to accompany you, let me know and I'll watch your back. Once the limo is assembled, we'll put together the IEVs and you'll be able to go play.

Of course everyone wanted to go see the plaque in person and take more detailed pictures of it, even though humanity had been poring over the symbols for over a century. Isfaheem and Chen took an ion digger and excavated around the base of the chimney. He found that the perfectly smooth material extended well below the surface, which was to be expected, but the plaque yielded no new information. It was formed out of a material totally unknown and impervious to any impact. This was obviously how such a structure could have survived the countless meteorite impacts and vast temperature changes of the Plutonian surface.

Once the limo was ready, Muogo went out with Yolanda to look for any other linguistic clues. They spent 15 hours exploring before coming back with nothing more than a few samples from the castle and a piece from what had resembled a girder. Isfaheem's analysis of the latter showed that it was made of an iron alloy, though one as yet undiscovered. The material of which the castle and the other rectangles were made of was exactly the same as that used for the chimney. After the cursory look at the girder, Isfaheem's hours of testing on the unknown rock bordered on the obsessive.

Yolanda watched as he and the captain stared at it like children examining a bug.

"Mr. Chen this is without question, the most monumental discovery in the history of geology. This stuff is at least twice as hard as diamond but with a structure more like shale. I cannot for the life of me imagine how they carved something like this."

"Isfaheem, were you able to find any marks on it which could be considered artificial?"

The man turned away briefly from his magnifying lamp. "I'm sorry to say that there isn't a single mark or scratch that I could say is definitively artificial."

“Amazing. And yet they manipulated this strange rock into the largest structure on the whole planet.”

Chapter Fourteen

Chen was in his quarters waiting for a line of site to one of the Jovian relay stations. As soon as it was possible, he sent out a compressed data stream of their findings so far. He'd barely finished typing commands when there was a light knock on his cabin wall. He gave a command to the door to form a porthole and looked out at Muogo.

“Yes Mister Ningape?” His face was always composed and spoke of the comparative strictness of Chinese culture.

Captain Chen. Permission to put together the IEV and take a look in one of the holes.” His face looked hopeful and the captain didn't disappoint.

“Permission granted. See if Yolanda has time to help you, and if not then I'll give you a hand.”

“Very well.” His face disappeared from the window almost before he finished speaking.

It only took another five minutes before there was another knock on the wall. He opened a porthole to again see Muogo's face looking in.

“Captain, Yolanda is busy mapping nearby asteroids with the ships telescope and doesn't want to be disturbed for another three hours. She's worried about the possibility of something big flying our way. Would you be available before that time?”

“It would be my pleasure, to use an English term. Give me 10 minutes to finish the ship's diagnostic and I'll be right with you.”

Though his main duty was to keep tabs of all of the ship's systems and the health of the crew, once planetside his duties took little time outside of verifying the proper functioning of heating and life support systems. His secondary role therefore was to act as a fill-in for any tasks that the rest of the crew needed him for. This was especially true for any excursions outside.

The two of them spent the morning assembling the two IEVs or Independent Exploration Vehicles. These were mainly composed of a triangular lattice supporting a tiny semi-enclosed cabin. At each vertice were three standard rocket motors, ion engines being unsafe at such close proximity. Even though the craft could easily carry a 500 kilo equivalent, they were required to travel in separate vehicles to add an extra margin of safety in case one of the IEVs malfunctioned.

Though Muogo was itching to go and see what the holes were all about, he had to wait until after lunch before everything was ready. They took off and headed out from the plain to the closest hole. It was a huge rectangular cut with what must have been perfectly straight sides before time, erosion, and micrometeorite impacts weathered the edges. Chen and Muogo slowly flew over the edge and descended below the surface.

The rock glowed under the bright exploration lamps and showed precise vertical cuts all the way down. Muogo took measurements and used a manipulator arm to cut out a piece halfway down.

While they descended, he did some superficial analysis but found it to be ordinary rock with layers

of frozen water, and traces of iron, silica, and magnesium.

They reached the bottom and found an even more strange environment. For as far as they could see, which wasn't far despite the immensely bright lamps, the space was perfectly flat and rectilinear. Muogo set a laser tape to measure the angle and found that it was exactly perpendicular to within a fraction of a degree.

“Muogo!” He heard Chen's voice over the radio and for the first time since he'd known the man, there was an element of excitement.

“Yes captain?”

“Please come here at your first convenience.” His voice still crackled with subtle excitement.

“I'll be there momentarily.” He quickly collapsed the laser tape and rocketed over to where the man's lights were shining.

Chapter Fifteen

As he got closer, it was clear what was causing the normally pensive man to be excited. There in the lights of Chen's IEV was a machine of unmistakably alien design. It rode on a dozen tiny wheels and measured no more than three meters long by two meters wide. The body was fully enclosed, with strange protrusions rising out in odd places. At the front was a large pair what looked like manipulator arms and a cylindrical turret-like structure rising above the middle. On the back was a clearly visible row of the same symbols as the plaque.

“Captain. This is amazing. Our first MIB machine! How much do you think it weighs, do you think we could lift it to the surface, I wonder what it's use was.”

With the same barely perceptible excitement he replied. “I have no idea how much it weighs, but it would have to be at least 900 terrestrial kilos. I would guess that it was a machine used in the creation of this cavern though. I'll head back up to the surface, and have Isfaheem prepare to bring the limo up to the edge and we'll use a winch to haul the vehicle up.”

They both took detailed pictures and a 3D scan of it before returning to the surface and back to the ship. When they arrived Isfaheem was ready to explode out of the hatch, though he knew better than to actually go outside. “By the hand of Mohommed! You really found an alien machine?!”

Yolanda was right behind, having temporarily abandoned her survey of asteroids. “Captain, I'd like to look at those images as soon as possible.”

Chen put up his hands and, with smiling eyes replied. “Easy easy now. I'm going to send a compressed stream of these pictures to whichever Jovian base is in line of sight first, then we'll put them on the monitor and we can all oggle them together.

While he was doing that, Muobo and Isfaheem worked to attach a winch motor to the front of the limo. “Isfaheem, you'd be interested to see the geology down in those holes. They must extend fifty to seventy meters below the surface. You can see the whole crust laid out as nicely as Olduvai Gorge.”

“I look forward to it good sir.” he replied flamboyantly.

Everyone was in a good mood, albeit trembling with anticipation. Once the data stream had been sent, Chen came out of his quarters and keyed up the monitor. All eyes were riveted on the screen as the slideshow scrolled through. They all looked closely at the tiny wheels, the manipulator arms, the semitransparent turret, and especially the symbols on the back.

“Well there's no question now. This is definitely their language.” Yolanda cried triumphantly.

“Captain, did you see writing on any other parts of the machine?”

“I'm sorry Muobo. No we didn't.”

“Damn shame. We still need more information if we ever hope to get a grasp of what this all means.” He sounded more than a little disappointed and Yolanda tried to cheer him up by talking about the what they might find *inside* of the machine's turret or control space.

Chapter Sixteen

It took until the next day for them to have all equipment ready for the extraction. This time all of them went to ensure that both Isfaheem on the IEV and Muobo in the Limo had companions. They attached the IEVs to the Limo in order to save fuel and trundled out to the hole.

She was so excited by the discovery, Yolanda sped right towards the edge of the cavern, stopping only when they were within a couple of meters.

“Ms. Delgado, this will be the last time you pilot the Limo. There is absolutely no way that our team would survive that fall and there is no backup for such a disaster.” His rebuke was swift and held almost as much emotion as his original signal to Muobo.

Yolanda hung her head in shame. Making a mistake was one thing. But their entire team was in one vehicle. There was no room for such an egregious error here. “I apologize captain. I let my emotions run away with me.”

She kept herself from crying, but the melancholy held her in it's grip even during such an exciting discovery as this.

Isfaheem and Muobo disconnected the IEVs from the Limo and piloted over the edge. Muobo used the manipulator arm on his craft to retrieve the cable grapppler from the front of the limo and string it out and down.

“Wait Muobo!” Isfaheem spoke excitedly. I found the machine. It's farther down the side. You'll have to maneuver the Limo about 50 meters over on the left.”

“Mr. Isfaheem. Do you mean your left?” It was difficult to give orientation with little semblance of north east west or south.

Isfaheem then appeared above the edge. “Sir, the device is right below me.”

Yolanda didn't dare argue as Chen took over the controls and slowly maneuvered the Limo to the edge closest to Isfaheem.

Muobo again grabbed the grapppler end and slowly pulled it down to the bottom of the hole. After some debate about where they should attach it, Muobo carefully wrapped the end around the arms at the front of the machine. Meanwhile Isfaheem rose to the top and told the captain that he could

start hoisting it.

The front rose slowly, but in the meager Plutonian gravity, its bulk was soon fully airborne and rising towards the top. In no time, the machine which hadn't been graced by the meager rays of the far distant sun for untold millennia, was finally at the surface. Chen slowly backed the limo and dragged the machine over the edge and onto flat ground.

“Well even at Earth's gravity, it couldn't weigh more than half as much as your average streetcar. The Limo should be able to drag it right back to the ship even if the wheels don't spin.”

“Sir, we have plenty of fuel. Why don't we lift it with the IEVs to reduce possible damage to the underside?”

“Mr. Al-Jezrai, I appreciate your respect for these artifacts. However please note that my first priority is your safety. You have permission to carry out the plan, but I want body temperature readings from you and Muobo every 10 minutes. We're at least 40 minutes from base and that's skirting the edge of your suits' safety margins.

Isfaheem hadn't thought of how far out they were. He wasn't too worried about the suits' as they had multiple fail-safes, but he knew about Chan's experience on Titan and he knew better than to protest.

Chapter Seventeen

Though both suits power systems were low, the group made it back with the artifact in one piece. Everyone was almost jumping out of their skin waiting for the power units to recharge before they could go out and examine the machine up close. In the meantime, they had to be satisfied with the telemetry they got from the ship's cameras.

The first discovery was that there did appear to be a type of door in the side of the 'turret,' but it was only 20 centimeters wide, nothing that they would be able to explore with the bulky suits anyway.

Yolanda and Muobo spent hours watching the camera feed and zooming in on different details.

They got so caught up in that Yolanda barely noticed when Chen came into the room smiling as he held aloft a small boxy device about 15cm square with four pegs sticking out at each corner.

“What's that you have there Mr. Chen?”

They watched with awe as Chen set the device on the floor and the four pegs rotated on their servomotors propelling the object forward. At the front and the back were two robotic arms with grapplers at the ends.

“Isfaheem helped me put this together from our spare parts supply. My hope is that it will give us our first glimpse of the cab on our alien machine.”

Muobo was visibly impressed and helped Chen and Isfaheem to calibrate the camera to the ship's computer system. Once they got a readout, it was a simple matter to push it out of the airlock and direct it towards the turret.

Chapter Eighteen

Yolanda sat in her small cubby reviewing the video from their approach near Churon, Pluto's moon when she heard Muobo's distinctive knock.

“Come on in.”

There wasn't quite enough room for him to enter, but he stood in the doorway, filling it with his 180cm frame. “Yolanda, I was wondering if you would like to join me on a survey of the other caverns. I'm hopeful that if there's anything further to be found, it'll be down in one of those.”

She didn't need to be asked twice. Any excuse to explore outside the ship was a welcome one.

“I'd love to Muobo. Let's see what Chan has to say.”

“I already checked. He gave me the usual safety lecture about not being gone for more than 70 minutes unless we take the limo.”

“The limo's useless for delving down into the caverns.”

“Exactly. But we'll have to watch our time carefully with the IEVs. Only half of those holes are close enough for a round trip.”

One thing she liked about working with Muobo was how well their personalities meshed. He was a capable man who echoed her thoughts more often than she cared to admit.

In less than half an hour, they were suited up and heading for the airlock. Each of them took a separate IEV and they took off over the frozen plains.

Dreaming of another momentous discovery, Yolanda followed the heads-up-display towards the next closest hole. Sadly they found nothing but empty rectangular chasms of roughly the same size. The research was hampered by their need to return to the ship every hour or so. Over and over, in an ever widening circle they dived into caverns only to find the perfectly geometrical holes devoid of clues. It took until the next day, after having explored eight holes before they found the *pièce de résistance*.

Chapter Nineteen

Yolanda was scanning her lamps along the base and had gone more than halfway around. “Alright, this one looks as empty as the last half-dozen. You ready to head up?” Muobo's voice sounded sadly resigned given all that they'd discovered so far.

Though she wasn't completely finished, it was feeling like another dead end and she reached for the throttle. But at the edge of the light, there was something that looked a shade darker. It stood out due to it's being the only sight that contrasted with the endless horizontal bands of the cliff.

“One second Muobo. I want to see something.”

She nudged over and the dark space grew to just under two meters across by her estimate. As she angled the lights, it became clear that this was a cave that receded into the rock face. She moved the joystick of the manipulator arm and activated it's exploration light. But as she pointed it into the cavern, there was only more inky blackness.

“Muobo, come over here. I've found something.”

Soon the lights of his IEV joined hers and the combined power showed a long tunnel as black as the

Marianas Trench.

"I'm going in to check it out." She declared with determination as she set the sled in front of the entrance..

"Are you kidding girl?" Who knows what could happen to you in there! Chen would have your ass in a sling."

"Yeah, well the captain isn't in communication range. Why? Do you think there's a bear hibernating in there?"

"Pfft. Oh please, we all know they went extinct a century ago. I'm just saying the rock could cave in on you or something."

"So you can come behind me and watch my back." Yolanda was already disconnecting her safety straps from the IEV and activating the helmet lamp.

"You really know how to play a guy, you know?"

"Of course I do. How do you think us girls rose out of oppression but on the backs of poor blokes like you."

He punched her lightheartedly on the arm. Even in the bulky suits, none of them were willing to risk any play that might put them in danger. Still, he followed suit and put his helmet light on wide spread while she scooted down to the entrance.

"It's too dark to see anything yet, but this tunnel is as rigidly straight as the walls of the hole out there."

Muobo went in with even greater care behind her. He lowered his lights so as not to be blinded by the reflection on her white suit.

"You know, your butt's gotten quite a bit wider lately."

"Watch it you! Before I kick you in the faceplate."

"Aha! You hurt me, and you're trapped in this cave with no way out." He chuckled at his obvious victory.

"Damn you and your Ugandan logic!"

He kept laughing for a long while until his mic caught Yolanda shushing him. "What's up lady?"

"I can see it opening up here. We must be in an entrance tunnel.

Yolanda shifted to the side and Muobo adjusted his lights to find that they were in a larger cavern.

"Jesu Christi!!" Muobo had to turn down the volume on his mic. He knew it was something big if she was willing to invoke the name of her ancient god. He'd been rebuked more than a few times for teasing her about it. Shining his light at the wall he saw what it was.

Chapter Twenty

If he'd been holding a cup of coffee in his hand, it would've dropped to the ground and shattered. There surrounding the entire perimeter of the cave from floor to ceiling were a series of niches in the walls. Shining his light in, he saw that each niche held over a dozen flat plates.

"Muobo! It's got the same writing as the plaque! This is the mother lodde!"

“You said it Yolanda! It's the greatest discover...”

Neither of them knew quite what happened next. Her best guess was that Muobo had tripped over something on the floor. The next thing she saw was a crack in his faceplate and the clear sound of air whistling over the mic.

“Muobo!! Muobo are you alright? Can you speak?!” Terror grabbed her heart as she raced the few meters to his side. There was no answer but the continued sound of air whistling out.

She almost threw him over onto his back and checked the vitals readout on his suit. She hadn't realized that she'd been holding her breath till the pinging alarm of her own suit warned her that she wasn't taking in any air. She let out a ragged breath when she saw that his heartbeat and breathing were still showing on the suit's readout. She activated the emergency balloon that sealed the suit.

He wouldn't be able to see anymore, but at least he'd have an hour or so of air reserve.

“Damn! Of all the places to have an accident. Now she only had half an hour or so to get them out of the cave and onto the EIV, or he'd...” She let the thought trail off, in the hopes of staving off panic. She checked the vital readout again. Breathing was slow, heartbeat was slightly erratic, but still going. She lifted his suit, but somehow he was caught on something and she was too scared to move him any further and risk more damage to the only thing keeping him alive.

Chapter Twenty-One

“Yolanda. I'm cold. And why can't I see anything?”

She really did wrap her arms around him, making her best effort at a hug. “Muobo! You're awake!” Her panicked response must have put him off, she saw his heart rate go rapidly up. “It's okay Muobo. You're fine. Just a little accident to your faceplate. We're going to get you back to the ship.”

“How long have I been out?”

She couldn't tell if he sounded calm or drowsy. In such a situation, the latter would be terribly frightening. In the near absolute zero temperature, the backup system was just enough to keep an occupant alive, it was far from comfortable. The opaque balloon inflated to fill the inside of the suit and had just enough insulation to keep to stave off hypothermia for 30-40 minutes. They'd all been through months of tests to know what it was like. Both oxygen deprivation and hypothermia were stalking him just less than an hour out.

“You've been out for...” She was shocked when she looked at her chronometer. “About 4 minutes. Can you move your limbs?” She spoke carefully to keep the panic from showing and getting Muobo excited.

“Um...well I can, but it's kind of difficult. My limbs feel sluggish.

“It's probably the protection bladder. They said that it would make moving more difficult. But it's keeping you alive right now and that's the important thing. That's when she finally noticed what he was caught on. She was about to give an excited shout when she remembered that she needed Muobo to keep his breathing slow and even. Even so her own heart rate skyrocketed as she panned

her lights over the ornate boxes. Each one was perfectly rectangular with carvings of the geometric patterns and the same four symbols covering the whole surface. At the edge of her lights reach, she saw what looked like a body. She made a painfully quick sweep with her camera for what seemed like the blink of an eye and an eternity.

Then with a force of will she never believed she had, she tore her eyes away from it and again spoke to Muobo. Alright. I'm going to lead you to the tunnel and you're going to hold onto my boot while we crawl back to the IEVs. She got down on her hands and knees after helping Muobo to do the same. It took another painful few minutes to disentangle him from one of the carvings on the boxes. They made their way to the tunnel with what felt like absurd sluggishness.

“At least this time I don't have to stare at your large booty.”

That's two mister! And don't expect me to let you get away with this much when we get back to the ship.”

His laughter was like a song in her heart as they reached the end of the tunnel. But now she had to figure out the best way to get them both back, and quick. If she connected the two IEVs and let him pilot himself, then he would have more protection from the cold, but there was no guarantee that he could operate it. They both knew the controls blind, but if he passed out....well they'd probably both die in that case.

Feeling like she'd taken enough risks for one day, she took the less dangerous route and tied him to the cabin of her own sled.

“Alright, now it's going to pretty cold as we speed back to the ship. But I promise it'll be short and I'll get you to a nice warm cabin as quick as I can.”

“Well it looks like you're the boss now.”

“And don't you forget it.” She said mockingly.

Using 110% throttle, she practically sank to the floor as they shot up to the rim. The second they cleared the edge, she sent out a mayday. First she made sure to turn off her intercom to Muobo.

“Yolanda to Sphinx, Yolanda to Sphinx! We have an emergency return!”

Isfaheem's voice was clear on the radio. “I hear you Yolanda. What's your situation?”

“Damn Muobo has a damaged faceplate. He's conscious but the life-support is on emergency backup. Get some heating pads setup, he may have hypothermia by the time we get him inside.”

His voice sounded edgy, but thank god he didn't sound panicked. “I'll get right on it, what's your ETA?”

Glancing down at her chronometer, she swore. “Um. I'm not sure. We covered a pretty circuitous path out.” She made her best mental calculations and hoped for the best. “Maybe 40 minutes to arrival.”

She heard his whistle and she didn't like it one bit. “Hey. I've got the pedal to the metal as the old folks say.”

“Alright. Do the best you can. And be careful on that landing. We still need you in one piece when you get here.”

“Will do.”

Chapter Twenty-Two

She cut out and re-opened her mic to Muobo. “Hey there buddy. You still hangin in there?”

It took half a second of agony before he replied. “Aaaiinnntt hanggin. Yyou ggot me ssttrapped innn, rememmmemmbbber?”

She was too scared to laugh. His teeth chattering was both good and bad. It was a sign that he hadn't reached the danger point yet and his muscles were all still working. But they still had a ways to go, and she couldn't remember now what temperature the emergency bubble kept you at. Was it 5 degrees Celcius? Or less? And how long would he be alright at near freezing?

She quickly pushed those thoughts away and concentrated on her flying...and on keeping Muobo conscious.

“Hey there. I hear rumors that Chen keeps a bottle of brandy in his cabin. Bet you get some for this little incident, you old dog.”

“Lllliarr. Thhattt cccodddggerrr wwwoulddn'tt bbbeenddd a rule ttto ssssave hisss sssoul.”

His teeth were chattering so voilently she was afraid he'd need to have his enamel regrown when they got back to Earth. *If* they got... She cut that thought off fast.

“Course some people wonder if he even has a soul.” She heard laughter at this and it was a good sign.

“We'eeevve ththoughtttt the ssssame aboutttt yyyou.”

“Hey watch it! I could just drop you off at the chimney and let you do some more research....by feel.”

There was a long pause and she didn't know if he was offended, or unconscious. It couldn't be that bad yet...could it?”

“Nnnoo ressearch. I'm tired. Wake me up when we get there, will ya?”

Now the alarm bells were blaring full force in her brain. She checked her chronometer. They'd only been at it for 20 minutes.

“You are not going to sleep!” she shouted. Heart rate or no. She was going to keep that guy alive if it killed him. Then she glossed over that thought.

“Hey..... Ggive me a warning bbbefore you do that.”

He definitely sounded sluggish. Already going as fast as she dared, she pushed the throttle a pinch more hoping to cut down a couple minutes. The barren Plutonian landscape raced beneath them with the barely visible rectangles flying past in a blur.

“Muobo. Hey. What's the readout on your vitals out there.”

Silence

“Hey. HEY!”

“Wwha? Is that you Yolanda? Hey cut it out. I'm tryin to sleep.”

“Listen! What are the first signs of oncoming hypothermia?”

There was a long pause. “Um...ssshivering. Body trying to keep warm. Um...cold uh extrem...extremities. Cccore temperature drop.”

He definitely sounded groggy. “And what's YOUR core temperature?”

“Um...oh crap. It's 35 degrees Celsius.”

There was little emotion in his voice and she was tempted to try for more power from the motors. But just then she saw a glint of faint light in the distance. This time she didn't care to turn off her inter-mic.

“Yolanda to Sphinx! Yolanda to Sphinx!”

“I read you Dr. Delgado. How far are you?” Chen's voice actually showed emotion for only the second time in the trip.

“We're about one-quarter kilometer and closing fast. He's still conscious, but it's looking dicey.”

“Alright Yolanda. I know this is frightening. But I want you to try to calm down. You wont help Muobo by crashing the IEV into the ship. Wont help the rest of us either. Take it in nice and careful. We've got hot water and blankets all ready on the floor. Just get to the airlock.”

Chapter Twenty-Three

Despite his advice, she kept the throttle just a little too long and almost overshot the ship. She quickly pulled back and the force of deceleration drove her into the control panel. This had the effect of pushing her hand painfully on the motor control and they shot straight up in the air. She quickly pulled the throttle back down to get them on the ground. Unfortunately the panic caused her to overcompensate and they hit the surface hard...too hard.

Expecting some sharp quip about her poor driving skills and getting none was much worse than anything the man could've said to her face.

“Muobo! You answer me dammit!”

silence

“Muobo!” She rocketed out of the cabin and yanked the straps off him.

Shaking him as she dragged him off the sled, she finally heard a slurred mumble

“Sshh...aintmornin...lemmesleep.”

“Muobo Ningape! You get your sorry ass on your feet and march!”

“tirrre..”

Thanking god for the low gravity, she pulled him to the airlock and slammed her 'hand' on the emergency activation sequence. Despite the explosive cylinders, it still seemed to take an eternity for it to cycle.

Finally the inner door opened and they were both dragged into the cabin. Chen immediately took over, activating the emergency release on the bladder sent a blast of wind into the cabin. Then Isfaheem helped him undo the suit and they wrapped him in heating pads. Chen was barking orders at him to swallow something by the time she got her own suit off.

“Mister Ningape. You will swallow this immediately. That's an order.”

She heard some slurred speech and saw Isfaheen slowly pour something into his mouth.

“Core temperature at 27 degrees celcius!”

“Hhh”

“What's he tryin to say?”

Yolanda leaned in closer. “He says it's burning.”

“Too high dammit. We have to raise his temperature slowly.”

Finally she just abandoned thought. “Screw it.”

She got in next to him and wrapped her arms around him in a cuddle. She struggled against panic as she felt the cold of his skin even through the uniform.

“Hhh”

Isfaheen looked up to the captain, no longer able to keep the panic out of his voice. “What's his temp now?”

“Damn. It's still 27.” Chan looked again at the readout. “Pulse is weak.....but still stable.”

Yolanda hugged him closer. It felt like his whole body was made of ice, and still his eyes didn't move. He seemed to be coming into equilibrium with the frozen world around them.

Chapter Twenty-Four

“Twenty-eight. He's warming up!” She didn't know if she was more shocked to hear Chan's excited voice, or more shocked that his temperature was finally rising.

“Twenty-nine point five.”

She looked down to see Muobo's blue lips...why hadn't she noticed how blue they looked. Then she got a lump in her throat when his eyes moved towards her and the corners of his mouth rose just a hair.

“Thirty-one! I think he's gonna be okay.”

It took another couple of minutes before he was able to talk. But as usual, he had to be a smart-alec.

“Yolanda. I've already told you, you're not my type.”

Surprising even herself, she kissed him then. Right on the mouth. Then she punched his arm. They cuddled awhile longer until she was sure that he was gonna be okay.

Finally she let him go and kept him wrapped in blankets while he recovered.

“Yolanda. In my quarters.”

The ice seemed to transfer from Muobo into her heart as she turned to see Chen looking at her with his own icy stare. Thinking that if the cold didn't get them, his eyes certainly could, she slowly followed him.

She barely got the wall opaqued before he started off.

“I expect to hear an explanation so paramount and phenomenal that it justifies the risk you took with this man's life.”

Hanging her head, she told him about the cave, the shelves of artifacts, how Muobo must have

tripped over something. Then, despite the monumentality of the discovery, she kept her head down as she described the ornate boxes (or caskets as she assumed they were) and what she thought might be a preserved body.

“Sir. I don't think that any of this is worth a man's life. I'm willing to accept whatever penalties are deemed necessary for my actions.”

Her whole body crawled as she watched the man's face. He just sat there looking over her shoulder, expressionless as a statue. She didn't know which was worse. The silence, or whatever he might be thinking behind that stony facade.

“It will be up to a board of inquiry to discuss your fate once we return. For now, you will be confined to the ship for the remainder of the mission. You are dismissed.”

Just like that, her career was over. Her life too for that matter. If a board of inquiry deemed it necessary, she could be banished to a station on one of Saturn's moons. The loneliness out there was so severe that some were said to have opened the airlock and simply walked out into vacuum.

Chapter Twenty-Five

It was another five stressful hours before Muobo was on his feet. She gave him a long embrace when he was finally able to stand up. Then he actually bent down and kissed her. It shocked her even more than their landing outside the ship.

“You're still not my type. But thanks for saving my booty.”

There was little that had ever left her speechless, but now she really did find herself with nothing to say. So she just squeezed him a little tighter.

Isfaheen gave him a long squeeze too.

“Hey careful man. I gotta keep some air in these lungs.”

This time they both socked him in the arm and sat down in the common room to discuss the next steps.

“So is Chen gonna can you?” The anxiety erupted on Isfaheen's face when he was finally able to express what they were all thinking.

“If he does, I'll knock him into low Plutonian orbit.” Muobo smacked one fist into another. “You saved my life out there.”

“Besides, it aint your fault that you got teamed up with a klutz like this.” Isfaheem smiled and pointed his finger.

“Hey! You watch yourself dippo. Only I'm allowed to say that.”

They hadn't noticed Chen walk in until he was standing over Yolanda.

“Has anyone looked at the EIV?”

Everyone became instantly silent. During the whole ordeal, it had been the furthest thing from their minds.

“I scanned it with the external cameras and it looks as if two or three struts are broken, possibly one

of the rockets too.” His face looked more unhappy than they'd ever seen him. “I thought it was the Chinese who were supposed to be bad drivers.”

Yolanda whipped her head around to stare at him and caught the barest smile and quick wink.

“What's he talking about?”

“It's an old stereotype. Goes back at least 300 years or so. I'm surprised anyone still remembers it.”

“Well in all seriousness. Not one of us is going back down that hole unless I can be assured, *beyond all doubt*, that it will function perfectly.”

“Right, cause you're lazy ass left the other one at the bottom.” Isfaheen joked

“Hey! I just got cold feet okay?”

It was a great way for them all to let off some steam and relax after the terrifying ordeal. But the levity was short-lived. Chen pulled Isfaheem aside and they got to work with their mini-rover. Chen set the machine in the airlock and Isfaheem directed it to examine the IEV more carefully. Meanwhile Yolanda and Muobo took the time to carefully collect the feed from the suit's camera. As soon as it was set up, the other two stopped their project and everyone stared with rapt attention at the film showing stacks of thin plates filling every wall. Soon there was an image of Muobo's suit and the feed became so jerky that they were getting nauseous just looking at it, so Isfaheen set it to play stills every 5 seconds. They looked carefully at the boxes, the carvings and the motionless form of Muobo's suit. Then the camera sped to a spot just out of sight.

“What's that?” Muobo and Isfaheem exclaimed together.

“Oh. I think that could be an actual alien body.”

“Seriously?! You didn't go get a closer...oh...right.”

Yolanda looked back with fake anger at the man. “Yea. You're clumsy ass got in the way.”

He wasn't kidding anymore as he sighed heavily. “Leave it to me to pass out during the greatest discovery since Victor Robles.”

She patted his hand. “Don't worry. We'll make sure to get the IEV repaired and this time I'll let YOU have first dibs.”

It wasn't an easy task. The crash would've been worse on a higher gravity world. But Chen estimated that they must've fallen from 40 meters and even with the retro-rockets, there was severe structural damage. It definitely wouldn't hold a person safely as it was.

They all spent the better part of the day brainstorming a repair, but it was finally up to Chen to suggest taking some apart the storage rack on the Limo and bolting extra struts around the base. The solution looked like hell, but it was probably stronger than the original. With a replaced fuel line and a few hours of testing, Chen declared that it was safe enough to venture back to the hole.

Chapter Twenty-Six

True to his word, Yolanda was bound to the ship while the other three made the discovery of the

century. They were gone for most of the day and by the time they returned, everyone was talking at once. Even Chen was as excited as a teenager.

“Yolanda it was everything you described and more! It's incredible. An entire civilization concentrated down to that one room.

“What did you see?!” Her frustration must've broken through their excitement because Muobo quickly sobered up and told the whole story.

“Well, we got to the Chasm and Isfaheem went in to retrieve the other sled. Then we both went back down to the cave.” He looked at her not a little severely. “I still can't believe you talked me into going in there. That thing was only a meter wide and not much taller. We barely got through on our hands and knees.”

Chen quickly interrupted. “And if it hadn't been for your footage, I never would have permitted them to do it.”

“Praise Allah for that.”

“Anyway.” Muobo continued. “We got into the cave and it was just otherworldly. The whole room was stacked from floor to ceiling with these plates. Yolanda, the plates were not only covered with the three symbols. There were others as well.”

“And the sarcophagi.” Chen interrupted.

“Yes. And scattered in the middle were the ornate boxes...er sarcophagi. At first we didn't open them. We returned to the surface and told Chen what we found.” He stammered for a second.

“What *you* found.”

Yolanda actually blushed at that. “Well thanks. But after our little fiasco, it's unlikely that I'll be able to fall back on that.”

Nobody said anything for a moment. But soon Isfaheen continued.

“Chen told us to take the laser rangefinder and survey the room. We made a detailed 360 degree 3D representation before any object was moved. When it's set to high detail, this thing is really thorough and recorded every bump and crevice. But the biggest discovery was the one you caught at the edge of your lamp. It was a real alien, or at least the remains.”

Chapter Twenty-Seven

They took a quick, but also agonizingly long break for snacks before continuing.

“They have a light fur over most of their bodies and probably stood about 35 cm tall. Based on superficial scans of the body, we found a surprisingly large brain case in comparison to the mass of their body. They have four long and very delicate fingers and toes and it looks like they could use both for grabbing objects the way chimps used to be able to. Their eyes were quite large and they don't have any other prominent features like ears or noses.”

“We're going to bring an X-ray camera out on the next trip.” Chen said noncommittally.

“That's about all that we had time for before our fuel got too low. But Yolanda. You're gonna love the images!” Muobo was almost jumping up and down. “I spent a long time staring at a few of the

plates. Girl, they've got chemical formulas. I'm not sure yet what that means. Maybe it's a description of their technology, or something else. But there were a whole series with different minerals and elements kind of..embedded into the material. It looked like a sort of periodic table.”
“Yes. We've carefully documented and analyzed each aspect of the cavern. We're going to label each piece....Chen thinks the folks back home are going to recreate this somewhere in the inner solar system.”

“I'm certain that Mrs. Fu will want to do that.”

Chapter Twenty-Eight

Over the next several days, the three of them made at least a dozen trips. They brought back the strange plates by the ton and Yolanda was kept busy developing the 3D model of the cave, creating stills of each sarcophagus, documenting the biology of the creature, and cross-referencing stills of each plate along with it's location. Through the whole of it there was barely time for more than superficial hello's and quick snacks. Chen sent a full description to the base at Ganymede and the news quickly spread throughout the inner solar system.

There was actually a smile on his face as he came out of the cockpit. “I'm sure you wont be surprised by this, but I've been informed that each of us will be receiving medals of commendation from President Sanji at the United-World headquarters on our return.” He looked kindly at Yolanda. “He emphasized Yolanda, that you wouldn't be excluded in spite of what happened.”

“Well I would certainly hope not!” Muobo cut in before she could think of a reply.

Chapter Twenty-Nine

Despite the excitement of the mission, it was clearly reaching it's conclusion. Fuel was running low and there was little left for food or water. Chen made it clear that he wouldn't let them stay so long that they would run out of supplies before the return to Ganymede.

Everyone had a lump in their throats and a heaviness out of sync with Pluto's gravity as the last artifacts were secured to the cargo enclosure that Isfaheem had invented. Cargo space being limited, the best that they could hope for was a handful of plates, one of the sarcophagi, and the body of the lone alien.

They left the gravity well of Pluto with little effort and made the long trip back to the Jovian system. By the time they reached orbit around Ganymede, crews were nearly finished carving a similar, but more shallow gash into the surface and excavating a cave in exact proportion to the scan which Chen had transmitted. They were given the most luxurious quarters on the base, and everyone was promoted. Yolanda heard rumors that her name might become as famous as Victor Robles given the discovery.

With the sarcophagus, a few of the plates, and the body of the alien, placed into the newly created cavern, it was barely distinguishable from the one on Pluto. This one though, had a service entrance which gave easy access for base personnel.

Yolanda had just finished a wonderful steam spray, which was what passed for a shower outside of Earth, when Muobo called excitedly on the intercom.

“Hey Yoli.” normally she had hated the name, but she didn't mind so much from Muobo. “You gotta come to my quarters. You'll never believe this!”

Knowing that he wasn't one to exaggerate, she hurriedly dried her hair and put on a clean pantsuit before heading down the hall. Her fist barely touched the door before it opened and Muobo spun her around and gave her a quick kiss. He must've been really excited.

“I thought you said I wasn't your type.” She shook a finger at him.

They weren't intimate at all, but since the mission, they'd become a little more than just friends. I guess you could say...affectionate friends.

“Oh shush. You gotta see this lady.” He hurried over to the wall screen and punched a few controls.

She wasn't a linguist like him. But she could see the overlaid grid and the blobs of different color next to a series of the strange symbols.

After a brief silence he feigned exasperation and nearly shouted. “It's the rosetta stone!”

“Really? That?” She asked pointing to the screen.

“Yes! Look. They used the periodic table to help us understand the language. We don't have a record of the sounds or shapes of the actual alphabet, but we can make a rough estimate using Mandarin English. So far based on suggestions from my colleagues on the Martian colony, we have a few dozen words and phrases. I've only managed to translate a sentence here and there, we're still a long way off.”

Chapter Thirty

There was of course another mission, again led by Chen, to retrieve the rest of the artifacts before Pluto and Churon sped back out into the Kuiper belt. By the time the artifacts were all back on Europa, even the original team couldn't tell the difference. Excepting of course that the temperature was significantly above 40 kelvin.

Meanwhile linguists from all over the world devoted hours each day to examining the alien plates. There were whole research organizations devoted solely to that purpose. But despite the efforts of so many people, it was another decade before the full language was deciphered. The team that finally took on the task of translating the tablets enjoyed nearly as much fame as Chen and the team. There was information on the dozens of plants and animals which populated the world. The political system, the knowledge of astronomical events (which proved that they lived 80 million years ago), and much more. But it was the last plate, the one which never got placed onto a shelf by it's author. The one that, it was theorized, was the very last writings of the very last member of his species which became the one shock heard throughout the solar system. It told the story of how this tiny planetoid ended up following it's strange elliptical orbit at the edge of the solar system. Many of the words were untranslatable, but the team did it's best to find the closest equivalent so that the

story could be fully appreciated.

Chapter Thirty-One

If you are reading this, then our [archive] has found success where all other efforts have met with failure. We are a most stupid and primitive race, perhaps the most primitive that ever lived. Oh we lived many centuries with the hubris that we alone were the most intelligent life in the known universe. HA. Those few of us who survive now laugh bitterly at such ideas. If we were so brilliant then how is it that we've come to exterminate all life on [untranslatable]. If you are reading this, then you've no doubt seen the remains of our once great cities. The performance halls, the museums, even the vast caverns where the [fuel rock] was mined. It was this last which caused our great fall from grace. It was called [Ostilinum] after the great ancient God who built the sun from dust. For centuries it powered our heat systems, our machines, our [computers] and everything which we came to rely on. How could we have ignored the scientists who theorized, then pleaded, and finally begged us to stop for fear of what it was doing to the world. They warned us and we ignored the warnings. We ignored the higher temperatures, the radiation levels. Soon the ground became so hot that nobody could walk outside without protection. Plants were dying so quickly that we created a [seed bank] out on [Churon] in desperate hopes that we could regrow our crops once we discovered a way to cool the crust.

For a century our declining population [subsisted] on a nutrient slurry which is a most foul [smelling] and tasteless experience. We ate it because it was the only way to avoid starving. But even so, many chose death and the population continued to plummet until only a few thousand of us were left. Seeing little choice, we constructed the great engine. It was the most powerful machine ever conceived. It took the entire population, dedicating more than half of every day to mining the rock and smelting it into its final form. The moment it was finally complete, our last [president or leader] pulled the switch and our world began nudging itself out of orbit. Slowly at first, we drifted farther from the sun and towards the huge gas giants. For awhile the plan appeared to succeed. The increasing heat and radiation from the ground was offset by the decreased heat coming from a more distant sun. But sadly the celebration was [untranslatable]. We found that we couldn't slow our outward progress. The temperatures which were at first too hot for life to be comfortable, quickly grew cold. We began reversing our conservation efforts and using more of the Ostilinum in a futile attempt to keep warm. But there simply wasn't enough of it. People began building shelters like the one I write this in with the hope of keeping a habitable temperature. One group even claimed to have used some of our last Ostilinum to create a primitive ship and launch it towards [the third planet] which is believed to be capable of supporting life. We have no idea if they succeeded, for there was an angry mob bent on killing them for wasting our dwindling Ostilinum supply.

Thus I've devoted my short and pathetic life to cataloging the greatest works of [art] and culture here along with this history in the hopes that others may learn of our race, our culture, and most importantly, our mistakes.

Be wary, you who read this now. No world contains an infinite supply of energy. Take care lest you ruin the future of your own people as my ancestors have ruined mine.

And now, I will open the hatch one last time and submit to the numbing cold rather than etch out a depressing and solitary existence as the last of my kind.

Epilogue

Thank you for reading. I hope this short story touched you in some way.

And please follow the New Horizons mission currently speeding towards Pluto. Maybe it will actually find something like this.