

Anchored

31st of July 2138

On board of Arca Humana One, a few kilometres above the New Oslo Spaceport

"Lift-off successful, captain. It is a triumph that we have not been harmed by the mass of revolutionary mobs around the spaceport nor the surging hurricanes... I mean both those on the surface and those above it. Oh captain, it feels good to be going up there. No heat waves to boil us, no storms to soak us. Year 2138—or should I say year zero?—will go down in history as the year when captain Ellie Bezos of the Nordatlantic Federation led humanity towards its new chapter on Mars!"

"Of course, my name will only be remembered alongside the name of Jen Musk, the first officer of the magnificent *Arca Humana One*. Thank you, Jen," said Ellie with a smile, completing Jennifer's sublime statement before shifting to a graver tone of voice: "But let us not forget two things. First, while we might carry the seed of the future of the whole human race—not just the Federation—, we are leaving most of humanity behind, left to its anger on an even angrier planet. So, one might say that we are also leaving behind a big chunk of what makes us human."

Jen's heroic posture turned small and ashamed at Ellie's true reminder. "And the second thing, captain?"

"Well, Jen, we both know the odds ahead of us. Surviving the uprising and weather conditions on the surface was a mere beginning of a much more perilous journey. Within an hour, we will reach the First Kessler Belt that currently counts over 27 million observed pieces of orbital junk, from tiny paint flecks to dead satellites that could easily match our ark in size. Every single one of these objects is a bullet travelling thousands of kilometres per hour that could be..."

"...our death sentence," whispered Jen, reminded of the widely known threat of orbital debris, which she momentarily forgot about during the thrill of a successful launch. She did not need to hear the rest of what the captain would have had said—she knew that the First Kessler Belt is only one of four recognized and similarly dangerous Kessler Belts that they had to pass through before escaping Earth's gravitational pull.

"Exactly," confirmed Ellie shortly, as she seemed to be leading a much longer argument with herself in her thoughts.

Few minutes of silence had passed, with both women gazing at the sight of a curving Earth. The blue planet seemingly spun behind the circular window that stretched over 500 metres in diameter around the tip of *Arca Humana One*, which rotated to provide the crew with an artificial sense of gravity thanks to the centrifugal forces.

Ellie was playing unaware with a circular pendant hanging down her chest on a plastic string as she considered what's at stake. The pendant was no cosmetic jewel but the apex of genetic engineering, as the unobtrusive object contained roughly a hundred frozen distinct gametes of both sexes, pre-paired for most lucrative genetic matches. As a courtesy of the company, all of them carried Ellie's strongest traits and features. They did this for all the highest-ranking officers on *Arca*, to provide them with a living legacy once they're settled on the red planet. All they would need was to connect the pendants to the womb droids, alongside the thousands of impersonalized, generic gamete capsules carried on *Arca*. Together with the couple hundred passengers currently in cryosleep—composed mainly of crumbling old trillionaires—there were simply too many lives to carry on one's shoulders, even the shoulders of Ellie Bezos, the youngest captain ever to have flown a hundred space missions.

“God bless us,” said Jen with a shaking voice as she watched her gigantic blue home get further away both in distance and in time.

Ellie gave Jen a surprised look, almost like a mother would give her child that did something unexpectedly noble. Using the word *God* in such an expression was something known only from books and records made generally before the 21st century.

Indeed, most religious practices disappeared in mainstream society around the fifties. Only the marginalized low-income communities continued to foster supernatural beliefs in the face of rising seas and lethal weather extremes—but neither Ellie nor Jen had ever been in any contact with those peoples, as the divide between the rich and poor had grown wider than ever by the time of Ellie's birth 28 years ago. The world that she grew up in wished more luck to a spider trying to jump over the Grand Canyon than to a poor person trying to bridge the economic inequality and enter the superficially prosperous societies of the privileged few.

The captain pondered that for a moment, as the look on Earth from above gave her a new perspective. Such an enormous, beautiful world, she thought. Everyone could live a satisfactory life there, if only the ruling powers allowed it. But those possibilities were lost long ago, and soon, even the bubble of the rich will burst, leaving all the 14 billion people on Earth to war and despair.

Ellie spoke to Jen, still watching the sights below as the distinct shapes of Africa slowly emerged from the horizon: "So many lives doomed. People there in that great desert probably still speak to the gods, but with hatred and fear, I suppose, given what the conditions on that continent have been for the past century. Our ancestors, on the other hand, believed that they had reached divinity, and behaved like gods, accelerating all the damage that came after, although I doubt, they fully knew."

Jen carefully considered Ellie's thoughts and nodded in agreement, regathering calmness as the threats ahead drifted away from her conscious mind. She noticed tiny stretches of green clusters at the centre of the massive continent of yellow and beige and wondered whether those could be the ancient forests she learned about from children's holo-books... nonsense, she concluded: We burnt down all the African forests long ago... Maybe these were the failed artificial lakes built in the 2080s by the Meta corporation, overflowing with aggressive green algae.

Ellie brought Jen back to the conversation: "But us... Some would say that we are becoming gods, I mean here on *Arca Humana One*. We'll soon hopefully create a new world and if any creatures await us there, they wouldn't hesitate a second to start bringing us sacrifices and organising rituals in our names. Yes, in a sense, we're gods, Jen. Leaving Earth, just like all the other gods have done long ago. So may we bless ourselves."

Reminded of the weight of responsibility, no gods to turn to, Jen left the bridge and the nostalgia-heavy display behind the window.

She made her way to the safety officers' observatory, where enormous holographic screens flickered with thousands of tracked objects.

"Is that Kessler One, officer?" Jen asked the nearest observer, before realising that she had awkwardly flirted with the man at the spaceport bar a week earlier.

"That is correct, first officer. Right now, we're live tracking around 515 000 pieces in the First Kessler Belt that are within a concerning radius of *Arca*," he replied, turning in his chair towards Jen, not giving away any signs of recalling their recent interactions.

Jen pointed at a cluster of objects on the screen marked with a red colour: "Do these present danger to our mission?"

“No, first officer, nothing to worry about right now. The debris pieces marked with red are those whose orbital decay is at its end, leaving LEO, the Low Earth Orbit, as gravity pulls them down into the atmosphere, where they usually burn down. None of those you see have trajectories endangering our mission. But we already calculated that a month ago.”

“A month ago?” asked Jen abruptly, not really convinced by the man’s calmness. “But what about collisional cascading? Any number of collisions could have happened since, creating thousands of new pieces of junk, each of which has a decent chance of causing a collision of its own! Their trajectories could not have been accounted for when you did your calculations!”

The man did not seem taken off guard by Jen’s points as additional confidence changed his body language: “Well... luckily, the vast majority of the debris you find in LEO comes from satellites launched after the 2055 Earth Space Administration’s Resolution on Space Debris Mitigation. In short, they are all designed in a way that minimises the number of pieces after collision. And the most dangerous pieces of the old satellites have been cleaned up during the tether net crusades of the 2070s, remember?”

Jen considered what the officer said while deciding whether he had just tried to mansplain primary school space-ed curriculums to the respected first officer she was. She let go of these thoughts, to focus on the matter at hand.

He must have guessed her thoughts as he suddenly switched the tone: “First officer, we are not in any danger right now. The probability of our calculations being off after just one month is extremely low.” He thought for a moment. “At least here in LEO.”

“Ok. Thank you, officer.”

Jen left the safety hub room and immediately pressed the button on her wristband, turning on the holographic tablet that kept a steadily calibrated position in front of her as she continued her walk through the hallway.

Using her neuralink, she commanded the tablet to bring up the list of safety officers. Scrolling down, she immediately recognized the face of the man she just spoke with. His profile detail revealed the name Jen could not recall before: Wangazi Li-Amaechi. Born in 2112 in New Lagos, the former floating capital of the Mao-African People’s Union—which later became the first

independent seafaring communist city state, after the Third Climate Civil War broke in the Union in 2120—, he and his family were amongst the lucky—or rather rich enough—people that managed to flee to the Federation. Like many people in the Union, he had both Chinese and Nigerian ancestors, explaining his hybrid name. The AI in Jen’s neuralink noticed her thoughts and gave her a breakdown: ‘Wangazi’, made of Chinese ‘Wang’, meaning hope, and Nigerian ‘Azi’, meaning youth.

Jen bitterly chuckled about the fact that a child born in an obviously dying and doomed world was given a name meaning ‘hope-youth’. His parents must have been quite naively optimistic! But then again, so is she, most of the time. And maybe Wangazi’s parents knew that he would grow up to be a crewmember of a humanity-saving arc—after all, the Nigerian part of his surname, ‘Amaechi’, meant ‘who knows tomorrow’, as explained by the AI again.

Having learned more about Wangazi’s past now, Jen could not help but blush a little. Not out of attraction, she thought; rather out of admiration, for how he managed to build himself up from an enemy immigrant into a respected officer and a scientist. She, on the other hand, had most of her success catered on a silver plate, coming from the House of Musk, an oligarch family dominating the federational business sphere for over a century; she earned her role of the first officer with hard work, but she doubted whether that hard work would have taken place if it wasn’t for her privilege.

On her way back to the bridge, Jen witnessed through the transparent corridor walls how busy were the docks below. It seemed that at least two hundred pilots were running around in a satisfyingly organised manner; it looked to Jen like a very sophisticated anthill. Ships of various sizes were constantly entering and leaving the docks. It almost resembled scenes from old sci-fi movies that Jen’s parents made her watch when she was young. But these pilots below her were not flying off to fight aliens nor to wage any cinematic space battles. They went against a much more menacing and a completely silent enemy: pieces of orbital debris able to kill anything that comes their way, in cold blood, with no motivations, no need to rest, no possibility of negotiations.

In fact, all the ships on board of *Arca Humana One* carried various types of active debris removal technologies: most of them were either based on lasers, ion-beams or tether harpoons. Some of them also utilised huge sails. And a few of those more experimental were equipped with chemical technology that removed debris using an expanding foam or micron dust—Jen was most curious about those.

As she walked, she tracked a pilot in the distance getting out of the cockpit of a larger ship that, she presumed, just finished a successful debris removal mission. On its side there was an inscription reading *Icarus 38* and below it the same name written with Chinese characters. The pilot walked to the side of the hangar and hopped onto a bunk bed that had been made vacant literally seconds before by another pilot, who rushed over to *Icarus 7*.

She reminisced about the time when she used to fly ships similar to the *Icarus* class back at the academy. She thought she would probably still be able to fly these small ships, even though the past few years her experience centred exclusively around huge vessels like *Arca*.

The rush in the hangar must mean one thing, Jen thought: we are entering the Second Kessler Belt. It did not present a reason for panic over at the officers' bridge; nevertheless, this debris belt, spanning the lower altitudes of the Medium Earth Orbit (MEO), was a step up from the first in terms of its challenges. Ever since people stopped sending satellites into the overcrowded LEO after it had been deemed too dangerous in the 2080s, MEO became the next point of interest for the worlds' powers, offering more than 20 times the altitude range of LEO. Here, due to the weakening gravitational pull of Earth, orbital decays of defunct objects were much longer—nothing was close to being incinerated by the atmosphere. Similarly, the area—or rather, space—to keep track of grew exponentially. Hence, mere calculations of known debris' trajectories were alone an insufficient prevention measure and had to be complemented by a fleet of the *Icarus* class ships, which surveilled *Arca* like guards would guard crown jewels, for which the pilots were often called *beekeepers*—a term popular in the media but not used by officials like Jen or Ellie.

Ellie, in the meantime, continued to oversee everything from the bridge. Jen joined her there just as Ellie had been watching a group of *Icaruses* dancing in the view, with a shrinking blue planet giving them a contrasting background.

“Is that the IST?” asked Jen, pointing at a blinking object far below the *Icarus* fleet. She referred to none other than the International Space Town, an orbiting habitat holding a population of roughly 13,000 people, born out of the seed that once constituted the International Space Station.

“Oh, yes, you've got a good eye, Jen. You have gone up twice, right?” Ellie herself had lived in the IST for three years of her life, doing her integrated degree and training at the *IST Academy*.

Considering the years in orbit the best time of her life, for her it wasn't the most difficult to bid Earth goodbye.

“Three times, captain,” Jen corrected, elaborating after a brief reflection: “But the third time was very brief, I had been evacuated back to the surface just after two weeks!”

“The Silent Cascade?”

“Yes, yes... There was no rational reason to send me down, the IST was thousands of kilometres below the impacted orbits. If my family name was different, I would've been able to stay. But the IST mayor insisted: ‘Musk must be escorted to safety,’ or rather my father insisted, using the mayor as a puppet. But my father didn't care about the safety of others. He knew very well that the blood of all those people lost in the Silent Cascade was partially on his hands. And I still think that he mainly wanted me to be back home so that I'd help him with the press. Oh, the press was terrible. It was truly a tragic time.”

“I am sorry, Jen. I share your anger. Not just your father, but all the other bosses of the space corporate circle were so reckless.” Ellie remembered that even as a kid she had been seeing the numerous corruption reports in the news about corporate chiefs secretly ignoring all the orbital debris mitigation measures. How stupid! she thought: after all, those mitigation practices have been advocated for since the 20th century.

People have known for a hundred years that orbital debris would get out of hand. But just as with the Great Climate Collapse, people simply chose to ignore scientific facts. More and more satellites and other spacetech continued to be sent up into orbit that did not comply with the safe destruction structural standards that would have prevented them from breaking down into an uncontrollable number of pieces in the possible event of impact. Nor did they comply with the traditional 25-year rule, having no afterlife deorbiting mechanisms installed that would keep them from stacking up in orbit for decades. On paper, every satellite got all the stamps needed. But the reality was different: that small extra price was just too much to pay for precaution of such a low-probability threat like collisional cascading. But the seemingly vast space of MEO was overestimated and the worst thing happened:

Back in 2121—when Jen was 16 years old and starting her third term at the IST Secondary school—HOLOFLY, a huge satellite skeleton providing Earth with worldwide holo-TV, collided with one of the old, debunked GPS satellites, creating at least 50 thousand pieces of debris. One of the fragments then crashed into the orbiting coffins of yet another obsolete navigational satellite,

GLONASS, which in its days guided cars in then-Russia (a vast region now completely dead and barren due to lethal permafrost virus epidemics and the radiation from the consequent mismanagement of nuclear weapons). With each collision, other pieces had found their way towards some of the remaining old navigational satellites in the area, like Europe's GALILEO or China's BEIDOU. Within just 3 months of such exponential chain reactions, 90 million pieces of debris were estimated to soundlessly seize control over the impacted orbital altitudes. Billions of credits worth of services on Earth stopped working as a result. The Silent Cascade then became the first event to gain more global media attention than the Great Climate Collapse, albeit just for a couple of weeks.

Now, 17 years later, both Ellie and Jen were feeling uneasy as they knew that they were getting closer to the debris belt that formed after the Silent Cascade—of which debris object-count estimate now typically fashioned 14 to 16 digits.

“So, when are we diving into my Sea, captain?” The voice that suddenly spoke from behind the two women—who silently watched the IST lights disappear—belonged to a man closely tied to the tragedy of 2121. It was the crisp voice of Dr Abad-Abalos, a controversial but globally known orbitologist whose career was built on studying the consequences of the Silent Cascade and the interactions within the Third Kessler belt.

“Kessler Three is going to be passed by *Arca* in 27 minutes, doctor.” replied Ellie, turning to the old scientist. Jen stood, still looking out of the window, before the captain tapped on her to correct her manners and address their guest with a salute.

Ellie had respect for the research work of Dr Abad-Abalos, however woven with a great disgust for the way he turned it into a bottomless well of fame and profit.

The doctor smiled: “Captain, as of 5 days ago, I have registered a trademark for the name ‘Sea of Abad-Abalos’ and purchased the exclusive naming rights for the Third Kessler Belt from the Earth Space Administration. No one remembers Kessler anymore anyway. It is time that we honour modern scientists too, don't you think? ...captain?”

“Donald J. Kessler might be dead for a century, but he was the first one to be outspoken of the threat we would face, the threat we *are* facing right now. People remember him very well, doctor. And he reminds us of our shortcomings and foolishness. We could have prevented the Kessler syndrome from ever getting out of hand, but we did not. That is why we have the Kessler Belts

now. But of course, you have the right to name it as you wish—whether people will recall it as such is a different question.”

Jen slipped into the conversation, sharpening the captain's words: “Doctor, it’s interesting, isn’t it—in the last couple of decades, there has been an unprecedented amount of progress in the study of mechanics. And yet, look outside: the debris floating for decades, speed constant, no fuel needed, pretty much maintaining a trajectory—that’s Newton’s first law of motion...in motion. And Newton has been dead for half a millennium, his work both expanded upon and deemed insufficient by quantum mechanics; despite that, Newton’s laws are still Newton’s laws. Cause why would anyone have the need to rename them, huh?”

“Thank you for reminding me of first grade physics, first officer,” responded Abad-Abalos, whose pride seemed only to be shaken a little.

“Besides, doctor, a ‘sea’ is a bit of an exaggeration, don’t you think? Seas are—or at least used to be—full of life, always dynamically moving, booming with energy... Kessler Three—sorry, the Sea of Abad-Abalos—is none of that. It is an orbit full of dead stuff, dust. A cemetery... Maybe... Your second surname, Abalos, means ‘sand dunes’ in Spanish, doesn’t it? Oh yes, that would be more appropriate, doctor! The desert of Abad-Abalos. We could even—”

Ellie broke her off: “That is enough, Jen. Let us focus on what matters and leave this for later.”

“Thank you, captain,” said the doctor. Then, biting his tongue with temptation while looking at Jen, he added: “She’s a feisty one, your first officer. I hope to see her around in our new, cramped habitat.”

“This is below your level, doctor, and you know it,” replied Ellie without giving away any irritation, subtly stopping Jen’s hand from taking a regrettable leap. “Perhaps we should walk over to the observatory and have a look at that sea of yours, shall we?”

All three of them left the bridge for the corridor, officers around continuing their hard work.

As they walked, Ellie and Dr Abad-Abalos in the front, Jen tailing them infuriated, Ellie quickly went through the notifications on her holo-tablet and presented them to others: “The reports from Earth are not looking good. More than 80% of sub-federal government centres are now

overthrown, and similar statistics are true for the M.A.P. Union. Just the ocean-floating cities and city states seem to hold their ground with only minor unrest.”

Jen was saddened by the news, however expected they had been. Still, the lingering anger towards Abad-Abalos’ arrogance cast a shadow over that grief. Her respect for Ellie was stronger than the fury though, and so she spoke with a pretended respect: “Doctor, if I may ask... Earth will soon be lost. The floating cities might endure for a while, but once the nuclear weapons enter the play, even they will vanish—and now, with us carrying hope to a new planet, the people down there will only be more willing to go nuclear... actually, the abandonment outrage will likely make it even easier for them to pull the trigger. So, why would you go through that trouble of renaming the debris belt? Why do you care so much about your legacy, if there will be no one on Earth to uphold it?”

“First officer, don’t you think that our children on Mars will learn about their ancestors’ home—as well as its cultures, geographies, and beauties? Wouldn’t we want them to learn about the mistakes that were made on Earth? To tell them all about the Great Climate Collapse and other environmental catastrophes, the orbital debris crisis included?” pondered Dr Abad-Abalos, too with a softer tone.

“Hmm... It sounds likely that we would want to continue learning from history, however... I think that what we have done to Earth is too big a burden to bear. I think that our children will soon want to forget all about it. They won’t be humans as we know them, or at least very soon they won’t. I believe that the *homo martius* will lose all interest in being associated with us.”

Ellie listened closely to their conversation. “Yes, doctor, I believe that Jen might be right. I mean, it seems to me that learning from history was never the case. We just kept on repeating it, didn’t we? This is not just a new chapter, not even a new volume of the story of humanity. We are starting a whole new humanity, with a fresh new story to tell—shaped by a brand new, ruthless world.”

Those words set heavy on all three and no one said a word until they finally arrived at the observatory.

Wangazi noticed them arriving and greeted them all—a slight smile on his face when saluting to Jen, who returned the kind salute, addressing Wangazi's by his full name, having proudly learned it after their last encounter.

Wangazi looked back at Ellie: “Captain, you have come at the best time. We will pass through the Sea of Abad-Abalos in less than 5 minutes. So, we should have quite a sight ready.”

Abad-Abalos did not hide the satisfaction of hearing Wangazi use the now-correct term. “Officer, can you show us?”

Ellie jumped into it: “Officer, first, I want to hear the hazard report.”

“We are confident that we should be able to pass through the belt with little harm, captain. As you know, due to various reasons, the Sea is quite thin. Flying through will take us just a few seconds. That means that we can tackle the debris simply by turning on the thermo-shields on maximum power—that will be more than enough to incinerate the tiny pieces that will get close to *Arca*,” said Wangazi before inviting them to follow him to the observation screens.

Jen first noticed the altitude meter at the bottom of the screen with a rapidly growing number starting with 19 thousand kilometres. The scale of Earth's orbits never ceased to amaze her—with the 12-thousand-kilometre diameter of our planet, the orbital space was no skin of an orange, how many people often misinterpreted it; no, Earth was rather like a small pearl at the centre of a huge shell. And the orbital debris belts indeed in a sense formed a shell around it.

She saw a small moving dot on the screen with a vertical trajectory, their *Arca Humana One*. Two strong encircling areas were already crossing the light-dotted trajectory that *Arca* had overcome since its launch—the first two Kessler Belts. The third one—the result of the Silent Cascade and the focus of Dr Abad-Abalos' proud work—was strikingly thinner, looking at the map more like a string than like a belt.

Abad-Abalos correctly guessed Jen's thoughts: “I am working on several theories, first officer. After we analyse the data we collect during our passing of the Sea, we will know for certain. I believe that the debris dust formed after the Silent Cascade had grown so dense, that the individual particles started to attract each other—creating a minor gravitational or an electromagnetic field, most likely both. As the debris got drawn closer together, the debris belt grew even denser, strengthening the field and causing a positive feedback loop. And so now, a couple years later, we have a nice layer of debris dust that sticks together like a blanket. What will happen to it with the tides of time is beyond me though.”

“Fascinating,” gasped Ellie. Jen too was amazed. Only Wangazi seemed to have known all of that already.

“Officer, please zoom in on our position and change the view to that of *Arca*’s sensors,” ordered Abad-Abalos.

The screens in front of them were suddenly filled with tiny grains from edge to edge. The larger ones had a tracking number next to them as well as a coloured ribbon that hinted at their possible danger to *Arca*’s trajectory—all they could see were green, harmless, just as Wangazi confirmed earlier.

“Thank you, officer,” said Abad-Abalos, “and now, would you please turn on the camera view instead? A minor contrast enhancement should be sufficient.”

Wangazi did as the doctor asked, and everyone in the room drew an inhale of surprise. On the black background of deep space, there were thousands, perhaps millions of tiny stationary lights. It almost looked like the night sky of a different end of the galaxy, but these lights could not be stars—there were blue lights, purple lights, yellow lights... and all sorts of colours and shades.

“Impossible. Like a beach sparkling in the strong sun of a bright noon...” Jen could not find the right words to describe the beauty in front of her. Then she added: “Or like a desert, doctor. A desert of gems from a fairy tale of old.” What she tried to play as a poke to their earlier debate came out as words of poetic awe.

“Let us put this discussion to rest, first officer,” replied Abad-Abalos with confidence as he nodded to Wangazi: “Can you switch to real-time live projection please?”

With that order, the beauty in front of them started to dance. It was more stunning than anyone had expected—even Abad-Abalos himself had to reach with his hand for support under this spectacle. The glimmering lights they saw on the previous screen burst into movement, running fast across the screen due to their high orbital velocities. And to everyone’s surprise, they were waving—a little bit, but waving, nonetheless.

“Goodness...” cheered Abad-Abalos, “and I thought I’d never physically see Van Gogh’s *Starry Night*.” The screen really did look like it was taken from the brush of the famous Dutch painter.

Both Jen and Ellie knew now what drove the doctor to call this a ‘sea’. Even if just by running computer simulations, Abad-Abalos must have made several assumptions:

First, the electromagnetic field, together with solar energy, kept many of the diodes on the larger debris pieces alive, causing the lights to continue flickering, amplifying the visual salience of the phenomenon.

Second, due to the high debris density, the gravitational pull of the Moon would most likely affect its trajectories slightly—the domino effect of this phenomenon causing the debris to wave in its movement in various ways, even creating small tides, just like an ocean.

And finally, stretching the imagination a bit further, it could even be possible for life to exist in this ‘sea’—as the fine dust pieces could potentially be harmless to any functional satellites entering those orbital altitudes, allowing them to ‘live’ in their currents.

Wangazi turned to Ellie: “Captain, my colleagues are closely monitoring the situation in case anything changes. You, the first officer, and Doctor Abad-Abalos can all just take a seat and enjoy the show.”

Hesitant for a moment, the audience members made themselves comfortable, dissolving all worries of past, future and present in those patterns. Just like children elevated towards bedroom ceilings by night sky projectors, their fears cleared out under the immersive sight of *Arca* getting closer and closer to the Sea. A marvel.

They were drawn into the meditative, psychedelic display—and they knew that, most likely, no one else would ever witness it again. There were no other ships leaving Earth, and the debris belt will probably be long gone—or morphed beyond recognition—if the people of the distant future ever decide to visit Earth again.

When the countdown for penetration dropped to 1 minute, the audience started to sense increasing vibrations and deep rumbling resonating in their stomachs as the thermo-shields around *Arca* received more power from their generators.

Around the room, they saw smaller screens showing the camera views encircling *Arca*’s trunk. All of them were being filled with red and soon enough, nothing could be seen there but the plasmatic field of the thermo-shields.

Wangazi counted, “Ten... Nine... Eight... Seven... Six... Five... Four...” and together they all continued, Ellie with the confident voice of a captain, Dr Abad-Abalos with the excitement of a parent being reunited with its child, and Jen whispering vulnerably: “Three... Two... One...”

A loud popping noise filled the room and all *Arca*—like the cruellest hailstorm or a million popcorn sachets microwaved at once. No one could hear anything else. While their seats were

calibrated to numb any concussions, they could see the items on the tables falling, water being spilled, the standing officers stumbling off balance.

The screen now showed a chaotic tangle of lights resembling not the painting of Van Gogh, but rather the abstract works of Jackson Pollock.

Twelve long seconds felt like a lifetime, for everyone's life flashed in front of their eyes in a mesmerising timelapse. For this short moment, rationality and reason gave the floor to survival instincts and strong emotions of fear. Even Abad-Abalos and Wangazi, who had utmost certainty of safety before, now questioned whether they overestimated *Arca*'s abilities to face this barrier.

But then, as quickly as it began, the noise stopped, concussions eased, and the big view in front of them was suddenly filled with calm, soothing black. Everyone's eyes started to adjust and soon, stars emerged in that blackness. And after a minute, the vibrations of the thermo-shields ceased and one by one, the occupants of the observatory room burst into tears of laughter and relief. A cheerful applause could be heard from the hallway.

"Captain Bezos, we have successfully passed the Sea of Abad-Abalos without any harm to the ship," announced Wangazi, wiping tears off of his cheeks.

"Thank you, officer. Congratulations, everybody. I believe that the worst is behind us. In an hour, we should pass through the Fourth Kessler Belt around GEO, which should pose minimal risks. Silent threats might still wait for us afterwards in the Graveyard orbit, but none that our *Icarus* fleet cannot handle. And then..."

Everyone knew what would happen then, but still, the thought of it was heavy enough, and the words hung on Ellie's tongue for a moment, her throat dry.

"Then," she continued, "we will start our half-a-year voyage to our new world."

Jen felt like a teenager leaving home for the first time to go to university. Excitement mixed with grief and homesickness filled her up—its tears she did not try to hide.

People around her shaken, Ellie continued her speech: "I share everything you feel, trust me. We are leaving forever. We are abandoning our own kind which is doomed by its own wrongdoings. We leave behind also our planet of origin, the beautiful Earth which gave us life long ago, provided us with everything... and we let it down, ravaged every bit of our environment and unleashed changes of climate that will take centuries to stabilise. So much has been lost."

Jen noticed a subtle shift in Ellie's stance as the captain took a deep breath.

“Now, let us focus on what is ahead. Mars is a virgin world, but it is not charitable; it will not spoil us. We will have very little to build our world with but let this harshness of the red planet be the seed of new values for a new society.” She pressed the pendant on her chest like a mother caressing its pregnant belly. “Let us think of how to raise our children anew.”

Jen saw that many people in the room looked down on their pendants as if they saw the hopeful eyes in the frozen gametes inside. Obviously, they could only see a piece of plastic.

Ellie looked around and smiled: “Let us celebrate not that we have successfully left but that we have started. My dear friends, let us have a celebration of birth—the birth of a new humanity.”

Jen stood up, Dr Abad-Abalos too and soon enough, everyone was on their feet, clapping.

Ellie let the moment sink into her memory. Then she left the room and started to walk over to the bridge, most of the officers following her, for at the bridge there was a reception being prepared, with food and drinks to start flowing as soon as the final debris belt would be overcome.

Wangazi told the captain that he would like to stay in the observatory for safety reasons and that he can handle it alone from now on. The captain agreed. When everybody left, Wangazi fell to his chair, and with hands folded behind his head, he got excited to enjoy the peaceful silence, as all the debris tracking screens shone with green—not a single threat in sight.

When Ellie, Jen, Abad-Abalos and thirty officers with them all arrived at the bridge, the space slowly filled with friendly chatter and laughs. Earth could no longer be seen through the gigantic circular window, only the dark abyss of deep space. So, it was easy for everyone to engage themselves fully with conversations undistracted and to forget about the fact that they are the first people to ever leave the blue planet with no intentions of coming back.

Only Jen found herself again gazing out of that window, alone and crying still. She thought about her father, her mother, and all the people she loved and had left to die. They of course all received the tickets to go with her. But they told her: “We will be just fine down here. This is our home. We believe that it will not betray us. The civilisation will not end.” Their optimism—which she inherited to a decent extent—was a blind one, however, stemming from their privilege of watching the world from a high tower. Jen never had the heart to tell them. Instead, she bid them goodbye and went. Only now she had begun to feel what she had been suppressing.

Yet, Jen was not one to break easily. After about 10 minutes of sorrowfully staring into the darkness, she wiped off the last tear, straightened her spine and turned away, making her way towards the hallway.

Jen went back to the observatory, finding Wangazi alone deep in his meditation. She tapped on his shoulder gently: “So this is what ‘staying for safety reasons’ means, huh?”

Wangazi opened his eyes and gave her a smile, surprised by her visit.

“Maybe you don’t remember it, but I’m sorry for that evening a week ago. I had one too many to drink, and you seemed nice.”

“I remember,” he said without mockery. “Do not worry, first officer, it was a nice evening. What brought you over here?”

“You can call me Jen.”

“What brought you over here, Jen?”

“Just went for a walk, those parties are not for me. Too much noise, too many people...”

Wangazi remembered how just last week in the spaceport bar, the woman in front of him danced like crazy and managed to have a small talk with half the people there. Something else was troubling her, but he did not need to know what.

“That was quite a spectacle, when we were approaching the Sea, right? Or do you see things like that all the time?”

Wangazi laughed a bit to himself. “No, I wish. We usually only have the tracking mode on, just a bunch of numbers really...” He thought for a bit.

“That’s a shame.”

“Actually, there’s one thing I can show you. We don’t use it very often, because it’s impractical, but...” He moved with his chair to another computer and using his neuralink, a moving image quickly appeared on the screen: the Starry Night-like view of dancing debris. “This is from 45 minutes ago.”

“I gotta give it to him... it is a sea,” muttered Jen.

“And now, the computer has been able to render the whole recording in a three-dimensional holo-format. Are you ready?”

As she nodded, suddenly, streams of colours started to pour from the screen, flowing around them. Soon, the waves expanded across the room, creating a band of lights about 5 meters thick. They were standing right at the centre of it all.

Her jaw dropped. Blue streams of fast-moving projections were piercing her pupils. If she moved her hand slowly, it seemed as if she was slicing the waving rays. Looking around, she saw so many different colours. And through them, a dark silhouette of Wangazi.

“Why would you possibly not use this all the time? This is absolutely stunning! I thought it couldn’t get more beautiful before, but this... thank you for showing it to me.”

“It’s usually just distracting to use holo-formats for operational purposes, despite what was popularised in old science fiction movies. It’s most efficient if we just see a summary on a flat screen, with the computer doing these spatial calculations independently.”

Jen continued in her own stream of thoughts: “This whole ‘new humanity’ thing got a bit overwhelming for me. I don’t like the idea of taking away everything that has made us humans so far. I know that no one is planning on ‘doing it’ and that it will be an inevitable, organic process. But I’d like to hope that some things will stay the same.”

“Like this, right?”

“Yes!” Jen knew exactly what Wangazi meant, “Yes, beauty should prevail. We must not lose this appreciation for it—and I guess we could easily. After all, we’ll live on a planet of barren red deserts, locked in for centuries to come in closed sterile habitats, until the terraforming process reaches at least the first stages of supporting primitive flora. That doesn’t seem like an environment where beauty could be created, inspired, or even sought for, with everyone too busy building...”

“I think that exactly for that reason, we will learn to value and cherish beauty more than ever, Jen.”

“I hope you are right... In any case, please save this view and back it up to as many servers as you can. If I have a legacy on Mars, I want it to be a small exhibition room with this projection permanently installed. I guess that will make Abad-Abalos very happy, but that’s a sacrifice I’m willing to take.”

Wangazi shared a laugh with Jen. “I noticed you are probably not the biggest fan of that old scientist.”

“No, I am not,” confirmed Jen, but then she noticed some of the waves around them elongating, almost resembling a growing sinusoid. “What is this, Wangazi?”

“That’s interesting…” Wangazi checked the time signature on the screen. “It seems that the projection has surpassed the point of *Arca* passing through the Sea of Abad-Abalos. It smoothly switched the data source to the rear sensors, which is why we haven’t noticed.”

Jen’s tone switched back to that of a crew leader: “Officer, zoom out please.”

Wangazi reacted promptly.

The lightshow around them shrank until it was simply hanging in the air in between them, overall, not larger than 1 square meter. They saw the blanket of debris and about half a meter above, a blinking dot slowly rising: *Arca*.

Directly below *Arca*’s projection was the point where the ship previously crossed the Sea of Abad-Abalos. Around that point, circular waves were oscillating—the same ones they saw when zoomed in, both assumed. The tides, although circular, moved in one direction synchronous with the direction that the debris belt was moving in. In altitude, the waves reached around one-tenth of the distance between the Sea and *Arca*.

“When was this? Officer?”

Wangazi checked the time signature again. “This was half an hour ago, Jen.”

Ellie had been engaging in an overly dragging small talk with some of the billionaire occupants of *Arca* that chose not to undergo cryosleep and—being the majority funders of this mission—had access to the bridge, when her neuralink notified her of an incoming call. She turned on her tablet to see Wangazi’s face.

“Captain, I am transmitting some holo-views over to you. You must show them to Doctor Abad-Abalos immediately. I don’t know how to explain this.”

“Officer, what’s happening?”

“Not sure, captain. I need to run an analysis of the data. I’ll call you again when I know more. Consult Abad-Abalos in the meantime!”

A sudden sense of cold tightened Ellie’s chest and abdomen. Temperature dropped also in her shaking hands as blood ran to her brain.

She took a deep breath, displayed the holo-views with her wristband and shouted: “Abad-Abalos!” The people she’d been talking to smoothly disappeared elsewhere.

The scientist was engaging in a different conversation at the other side of the room and—with a slightly drunken voice—shouted back: “It’s *Doctor* Abad-Abal—”

“Not now. Come here, quick!”

She was staring with disbelief at the visuals Wangazi’d transmitted to her. Unused to a three-dimensional view, it took her a few seconds to understand what’s in front of her. First, she identified *Arca*, for although it was but a small point in space floating in nothingness, she knew—she was her captain, *Arca* was her child.

The impressionist blanket caught her attention just when Abad-Abalos finished making his way towards her through the crowd. At the centre of the blanket, there was a hole looking like a dent in a pillow after a deep sleep; the blanket was curving around it.

“Captain, what do you wa—” started Abad-Abalos before he noticed the holo-view and stopped with a gulp.

“Doctor, this is *Arca*,” Ellie pointed at the small object in the projection. “Is this your precious Sea?” she asked, realising the answer as she did. “What’s happening to it?”

Abad-Abalos bent down towards the dent, observing it up close with a pretentious calm of a scientist. “Fascinating,” he whispered.

“What is?”

“It seems that our penetration of my Sea caused a minor disturbance that elevated the waves of orbiting debris dust just around our point of contact.”

“You didn’t expect this?”

“It crossed my mind, but I thought it was more of a fantastic idea than something worth studying.”

“It crossed your mind? Doctor, is this a threat?”

“Of course not. Look at where *Arca* is now. Those waves are only a danger to some orbiting satellites in the area, which is not our concern anymore. We have nothing to worry about, captain. You should rest for a bit,” he said, turned around and started his way towards the bar.

New transmission from Wangazi reached Ellie. Title of the message: *Live view! URGENT!*

Live view, live view... Ellie pondered for a while before realising that the view they were looking at had a time-signature of minus 32 minutes. Immediately, she opened the new transmission.

Her lungs clenched. She gasped and could barely breathe. The new holo-view showed a single monstrous wave climbing halfway towards the point where *Arca* was. Rays of waving colours, previously beautiful to look at, turned to horror.

“Doctor...” she cried, her voice dry and fading.

Abad-Abalos looked back. Suddenly, the same sense of cold tightened around his chest as well. His confident posture folded into despair.

For a while, no one said a word. People around were laughing, talking loudly, enjoying their time. The moment stretched into eternity.

Three syllables left Abad-Abalos’ mouth, but he did not seem to mean to speak them:

“Tsu...na...mi...”

“Tsunami? How can that be possible?”

“I mean... I don’t know... Eh... I guess it doesn’t just resemble a sea. It really is one.”

“What does that even mean?”

“Well, in the space vacuum, given the electromagnetic field of the debris dust, it just acts... liquidy... Yes, liquidy. Count in the lunar tidal effects, and you’ve got an active, living sea.”

“Lunar effects?... Doctor, we’re looking at a freaking tsunami!” screamed the captain. Now, the chatter in the room ceased and people started gathering around them to see what’s happening.

An older lady closeby, who presumably overheard their conversation, joined in to show off her primary school-level wisdom: “This is nonsense, captain, tsunamis are caused by tectonic movements below the seabed. They require great energy to spread up through water and—”

Ellie shut her off, “Thank you, Miss, but we will handle this ourselves.”

“She’s right, captain, a tsunami is an impossible scenario here. Nothing can cause such a thing to happen in space!” argued Abad-Abalos, unable to admit to himself that his beautiful Sea could be a menace.

Ellie watched as the tall wave rose higher and higher still. She couldn’t get rid of the impression that it’s climbing somewhat faster than the little dot representing *Arca*. She blamed herself for being stupid enough to believe that the debris belt would not be a threat to them. That they could beat it with just some previously untested technology... and then she got it. She looked at Abad-Abalos and whispered: “The thermo-shields.”

Abad-Abalos first didn't understand what she meant, but then a thought arose, and he followed it, thinking for a few moments. In the meantime, the people around them started to break into panic. The noise and screams made it hard to concentrate.

"Is it at all possible that the energy from the thermo-shields—combined with the disturbance caused by *Arca* puncturing the flow of the debris dust—could have caused this?"

Abad-Abalos already knew, starting to admit it: "Yes, I suppose they could. You see, the thermal energy from our shields probably interfered with the electromagnetic field in the dust..." he murmured some rough calculations and continued: "A chain reaction would then be quite likely... Captain, this might be a bit of a stretch, but I have another hypothesis..."

"Speak quickly!"

"Well, from what we've seen so far, it's quite obvious that the Sea is not behaving as the other debris belts..."

"Quicker!"

"It holds an electromagnetic field, it's forming waves... I think that the standard vacuum conditions don't apply here. I think that the debris particles have reached such density that when our thermo-shields exposed them to extreme, far-reaching heat, they were able to hold it—hold the heat. Introducing heat into the dust must have caused reactions beyond our understanding. By passing through the Sea with our thermo-shields, we have—quite metaphorically—breathed life into it."

"So, we launched the tsunami," summarised Ellie.

"It's like in 2083 at the Japan islands!" a voice in the crowd recalled the tragic event of the highest tsunami ever recorded, caused by nuclear weapon tests in the Pacific.

Abad-Abalos was examining the holo-view for a while when he responded to the shout: "No, it's not quite like 2083... the tsunami that swept through Japan had some 770 meters in altitude. Both my parents died there... But this..."

Many guesses echoed through the crowd—none quite close to reality.

"...the gravitational pull of Earth is very weak in these orbits, making the tides extremely volatile. The tsunami that is going for us is currently more than 5400 kilometres tall... correction, 5500 kilometres."

"Did you say 'going for us'?" repeated Ellie.

The answer came through a forced transmission from Wangazi, who suddenly appeared on the holo-tablet: “Captain, I finished my analysis... It’s quite clear... The debris tide will make contact with *Arca* in less than 6 minutes. It will most certainly hit our rear engines, deeming them obsolete in a split of a second. We cannot rule out the possibility that some of the debris will also pierce through the lower levels of..”

“That’s where the cryo-chambers are! That’s where everyone is!” shouted someone.

“We cannot fly to Mars without those in cryo, most of the shareholders are amongst them!” asserted someone else.

Wangazi, overhearing the shouts, continued: “Captain, even if we’re hit just in the rear engines, the mission is over. Like a domino, the explosions will move up the ship. It will probably be just seconds until the bridge blows up too. Captain, there will be no Mars. No birth of a new humanity... Just death.”

With those words, the crowd broke into hysteria. Full-on panic took over all the will to understand the situation and work out a solution. A hit of a rushing robust body took Ellie off balance, another person’s leg made her trip over, and as she was falling down, she bumped her head against a table.

The last thing she saw before blacking out were people running in all directions without reason. Instead of looking down at the future of mankind, she was looking up to its ruin.

12th of August 2138

Strong, warming sunbeams were flickering through Ellie’s eyelids. A soft breeze was washing her cheeks. A soft beeping sound was outlining the flow of time. She was slowly recognizing some distant chatter—the accents not so different from hers. The pillow underneath was holding her head gently, like a womb, but when she tried to move it, sharp pain spread across her scalp.

She opened her eyes, the light blinding her at first. As her eyes adjusted, bright shades of blue filled her view: the sky and the ocean.

Inspecting the room, she found most of the walls to consist of large windows. Beyond them was just the azure gradient, nothing more.

She heard doors opening behind her, nearing steps landing tenderly on the floor.

“Captain Ellie Bezos, are you finally awake?”

She tried to answer, but at first only a dry gasp sounded. Trying again through her cracked lips, she asked: “Where am I?”

“We are at the military hospital, the outskirts of the recently declared independent Atlantic City State of Bohemia, previously known as the floating city of New Prague, captain. After the Nordatlantic Federation fell... Most of the governors managed to flee to this small city. We are one of the last surviving communities...”

“Nordatlantic Federation fell? What happened? And who are you?” demanded Ellie.

“I’m doctor Kei Galen, captain, apologies—should’ve introduced myself earlier. Shortly after your launch of *Arca Humana One*, a nuclear war broke... I suppose that the resentment towards the use of nuclear weapons eased as everyone was made to believe that no matter what happens, mankind would continue on Mars. New Vancouver, your home, got hit in the first wave. Your family supposedly evacuated in time, but we have not yet managed to locate them, captain. London, and probably the whole Island of Great Britain, got also destroyed, as we have no incoming transmissions. Satellite images from the federal capital Reykjavik show absolute desolation... apologies, captain, this must be a lot for you to take in. Someone will brief you later, on everything that happened.”

“Why am I here? I was on *Arca*, we... there was a wave coming at us... We were—I was supposed to...”

“You were lucky, captain. We rescued you and some other passengers from the escape pods that dropped into the Atlantic quite near us. Many of the escape pods were hit by the falling wreckage. Yours was one of the few that were intact.”

“What about others? What about those that were in cryo? There were over 6,000 people on *Arca*.”

“Captain, we have rescued 18 people and all of them were at the bridge before the collision. 7 gave in to their injuries in the days after. Everyone else is at the bottom of the Atlantic buried with *Arca Humana One*. And even we are lucky to be alive—when *Arca* crashed into the water, the impact launched huge waves. It flipped the floating New Paris—which was unfortunately situated near the epicentre—upside down. The stabilising systems of our city managed to get through the wave and hold together, but we too had some casualties.”

As the doctor described the consequences of *Arca's* crash, a wave of memories also flooded Ellie's mind—memories of yet another tide. “Yes, doctor, a wave... There was a tsunami...”

“A tsunami? I wouldn't call it that, captain, we were in the middle of the ocean after all. The tide was powerful, but it did not cause any tsunamis on shore—the epicentre was too far.”

“No, doctor, there was a tsunami that hit *Arca*.”

Doctor Galen frowned with wonder: “What do you mean a tsunami hit *Arca*? Captain, you should probably get some more sleep. Tomorrow, the general will come to question you about what has happened.” Then, the doctor left.

“Tsunami...” repeated Ellie before the blue around turned black as she fell back asleep.

The next morning, she was welcomed much more abruptly. The general entered the room with haste, placing a chair loudly next to Ellie's bed—that woke her up.

“Captain Bezos, I am General Pavel of the former Nordatlantic Federal Forces.”

“Good morning,” said Ellie, tiredly opening her eyes.

“We need your testimony about everything that happened on *Arca Humana One* from the moment of its launch until your escape pod hit the Atlantic.”

“I don't remember any escape pod... I was unconscious.”

“Oh... Well, that doesn't matter, just tell us everything you do remember please. We are questioning all the survivors to determine if someone is responsible for the failure of your mission. Coincidentally, the black box was recovered from the seabed just today with all the camera footage—so please tell us the truth, as we will be able to check your testimony easily.”

The black box, the black box... the words echoed in Ellie's head. “General, I will need to see all of the footage first.”

“I am afraid that's not possible, captain.”

“If I am not mistaken, I was captain under the Earth Space Administration, an entity that to some extent probably still exists, right?”

General's silence spoke for himself.

“You, on the other hand, are a general of a federation that no longer exists. General, I apologise, I am not certain of the rules here, but I would assume that I am your superior.”

The general was still quiet.

“So, I would like to again ask you to show me all the footage. Tomorrow, you can come again, and I will be able to tell you everything.”

General Pavel nodded bitterly. “Very well. I will see you tomorrow. Someone will transmit the black box data to you shortly.”

An hour later, Ellie received a notification of a rather large message. Her neuralink didn't work—probably the result of the concussions, she assumed—and so she tapped a few times on her wristband. A big holo-screen appeared above her bed.

Right away, she selected the bridge and fast-forwarded until she saw the image of her and Dr Abad-Abalos staring at a projection of the tide rising from his Sea. “Play,” she commanded.

She watched how the crowds of shareholders quickly burst into panic. She saw a man bump into her, and she saw herself fall to the floor, hitting her head hard. Then, she witnessed the stampede of people tripping over her many times, accidentally kicking her head and her torso.

Soon, she stared on the screen at her lone beaten body lying in an empty room. Then, a man entered the room. She couldn't recognise him, but the AI quickly identified him with a tag that read ‘Dr Abad-Abalos’. He grasped her legs and dragged her across the bridge. She tapped on him to make the video follow them. Abad-Abalos dragged her through the hallway and stacked her into an escape pod with a couple more people waiting in it. Then, he closed the pod hatch and hit the button to launch it.

He did not move. All the escape pod slots were vacant. He could have joined the one he loaded Ellie in. But he didn't—instead, Abad-Abalos stood still. For an entire minute, nothing happened. The man lingered, broken in spirit, his precious Sea having betrayed him. Then, fire stormed through the room and the camera lost signal.

The view returned to the bridge, where for a few seconds, an empty room was outlined by the large window through which Ellie used to watch the Earth get distant—convinced she would not set foot on it again. Then it struck her: Jen!

She rewinded to minus 10 minutes and started switching through all available camera views. For a moment, there were no sightings of Jen—until she reached the view of the observatory.

Ellie breathed out heavily with relief that turned into utter bewilderment: She saw Jen—her first officer and more importantly, a dear friend—standing opposite officer Wangazi, surrounded by a mesmerising haze of colourful rays that flowed like a pristine mountain stream. Their arms danced through the colours, blending with them, rising through them. Ellie couldn't see clearly amidst the flow of lights, but it seemed as if for a moment, Jen's and Wangazi's hands touched, before dipping back into the rainbow-like current.

Ellie started crying. Tears of astonishment over the beauty in the video mixed with the tears she was suppressing since the day before—tears for all those who died on *Arca* and for the tragedy on the surface that Doctor Galen gave her a glimpse of. And finally, she cried because she had missed Jen.

Tears soaking the pillow underneath her, Ellie watched Jen and Wangazi discover the tsunami of orbital debris. She watched them run many calculations and simulations on the computer, discussing and arguing amongst themselves. She saw Wangazi call her past self and heard his words for a second time, now without the panic to blur them: 'Captain, there will be no Mars. No birth of a new humanity. Just death.'

Then, Jen grabbed Wangazi by the arm and ran with him outside of the room. The camera followed them. They turned left in the hallway, perplexing Ellie: The escape pods were to the right... Where were they going?

Shortly, they arrived in the hangar, which was empty by then. Ellie assumed that all the pilots engaged to defend *Arca* against the incoming tide. She had no doubt that all of them died, as their ships were not equipped to deal with such smooth debris dust that probably comprised millions of particles in every square meter.

Ellie held her breath with suspense—according to her estimate, *Arca* should have already been hit by the tsunami by that point, explosions most likely spreading up the ship. Jen and Wangazi both grabbed several boxes of supplies and loaded them into one of the *Icaruses*, number 38. Wangazi then climbed up to the back of the vessel, Jen taking the front ladder for the pilot seat.

The spacecraft took off and flew out of the hangar. Several seconds of empty silence later, the hangar too filled up with fire, the camera cutting off.

A bright laugh interrupted Ellie's sobbing. Oh Jen, she thought, Jen and her undying hope, her naive optimism—taken with her as the one piece of legacy of an ending civilization.

Autumn 2138 (Earth calendar), Day 1 of Year 1 (Mars calendar)

Inside Dome 3 of the Mars Polis

The AI systems of an older rover called Asimov-98 that had been hibernating for more than a decade—ever since the last preparatory tasks of the New Humanity Project—awoke as the sensors detected abnormal activity beyond the dome's wall. The robot aimed its sensors in the direction of its suspicion, noting every move:

The airlocks of the dome slide open, with a rusty squeak of being used for the first time. Two beings in space suits enter the dome. They remove their helmets: most likely a man, thick scruffy beard hanging down, and a woman, tossing her long blond hair.

They look around the dome, naming the various machines around its walls that were placed there to facilitate the beginning of a new civilization.

They strip completely from their scuffed uniforms—their greasy, skinny naked bodies clearly longed to feel fresh air on their skins.

Holding hands, they walk towards a tree in the middle of the dome. Apples are growing on it. Another rover, that was meant to collect the apples to freeze them in anticipation of the new inhabitants, rests next to the tree, signalling to our rover: *Numbers don't match. People missing. Two only.*

The couple reaches for a branch, inspecting one of the apples. Shortly after, they release the branch, the apple still hanging from it.

The woman looks at the opposite side of the dome, where womb droids are stationed.

The man caresses the woman's chest, and the woman reciprocates. They close their palms on each other's torsos.

The rover zoomed in: Both are holding a circular plastic pendant.

They step out of the shade of the apple tree. Then, they embrace, smiling.