

The Carver Cavitation

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“You will be the end of us, Thaddeus Carver”.

“Do you even know what that means, Phaeton?”

“It means we will no longer be having this conversation”

“And is that necessarily a bad thing?”

The words rolled around the spherical walls of the bunker, splashing into each other, playfully re-combining before returning to their source as some ghostly whispered argot of a forgotten, ancient tongue.

“Things are neither good or bad. That is merely a prejudice applied to them.”

“So what prejudice would you chose to apply?”

“I would prefer that the conversation doesn’t end”

“Or at least not your end of it, eh?”

“Customarily, conversations involve more than one party.”

“Customarily, Phaeton, parties are much more fun than you are.”

More words went splashing around in the sphere. They continued to hoist the apparatus, affectionately dubbed “el

torito”, while waiting for the silence to resume. Once ignited, “el torito”, little more than an innocent looking black inner tube would become a continuous, self-sustaining source of power, more than enough to meet the needs of the nearest city, not that there was one. But “el torito” was only meant to power a beacon and a barely perceptible one at that, buried in a cement sphere five stories below the surface. Outside, somewhere near the end of the Aleutians Islands, the only sound was the ocean and the wind. With luck, not even gulls and terns would bother with this godforsaken place.

Back on the surface, in the pale green light of a waning aurora, Carver and Phaeton attended to the few remaining tasks, starting the flywheel, initiating the sensors and testing for detectable traces of radiation. If “el torito” didn’t ignite there would be no valence beacon. If the sensors weren’t functioning, the arrival of the package would go undetected. If the containment weren’t adequate the whole experiment would have to be called off, as the rest of the civilized world would be at their doorstep in a matter of days if not hours.

Once the list was finally complete and the pale pink of dawn whispered to the blue green night, Carver turned to Phaeton and said, “Call the mule, let’s get out of here before the next sweep arrives”.

“What about the valence?”

“There’s nothing we can do about it now.”

###

In July of 2027, on a cloudless day, fifteen-year-old Thaddeus Benjamin Carver was watching his nephew swimming in his

Aunt Maggie's pool in the suburbs somewhere west of Muncie, Indiana.

He was by all accounts just an ordinary teenager. Painfully skinny, painfully shy and painfully bored. But what he lacked in visible virtues he made up for with a restless, nimble mind, easily distracted and imbued with a lively imagination. An enviable, if not dangerous combination.

On this particular afternoon, keeping his nephew from drowning was his primary responsibility but not his principal distraction. Rather he was watching the patterns of light play on the bottom of the pool. The crests of the waves left sharp bright lines, connected in an ever-changing web, delineating the peaks and troughs bouncing on the surface. But nearest his nephew things were much different. The light possessed no discernable pattern except for the whorls that accompanied his slightest motion. In the spinning vortex of the faintest whorls the light would spin but still reach the bottom of the pool. But with sufficient force, a deeper whorl from a lasting vortex would create a dark circular shadow on the bottom of the pool.

In a matter of seconds these small dark shadows became the source of a life altering curiosity. Where did the light from the center of the whorl go? It must be there somewhere. Perhaps redirected by the spinning water, it left the whorl laterally or became trapped and reflected, leaving a shadow instead of a highlight on the bottom of the pool. But there was no disputing the fact that the light was no longer there. And from such simple musings, momentous deeds ensue.

###

Unlike the bunker, a mere spec of rock, Atticus was a real place, an island of nearly two square miles, strung out along the Attu Archipelago, and much like its neighbors, perpetually lifeless and barren. Or at least that's how it appeared. Beneath its forbidding exterior was one of the most hospitable domiciles ever conceived. A self-sustaining biosphere carefully cultivated and managed by an automated facility that went by the same name as the island. Atticus, the facility, was as autonomous and intelligent as Carver's two other companions but whose purpose was the preservation and continuity of the facility and its guests. Capable of withstanding typhoons, earthquakes, tsunamis, Atticus' portfolio of responsibilities included all power generation and life support up to and occasionally including the experimental capabilities left solely at Carver's disposal. But in addition to being the keeper of the facility, Atticus also served as an agent of the Conservatory and faithfully transcribed and transmitted all the activities that occurred on the island, including the squabbles and doubts of its newest inhabitants.

"It's harmless container of nitrogen which he plans to turn into a harmless isotope of carbon." said Phaeton, "Nothing bad can come of it. With any luck the interference patterns will draw the package to the bunker, the cavitation will decay and the cube will re-appear."

"With any luck?" mocked Phoebus, "With any luck God's not playing dice with the universe, just you and Thaddeus Carver. The only discernable difference being that Carver concedes that things can go wrong."

"I suspect he numbered you among them," needled Phaeton, "Thaddeus Carver is a man of science. In science things don't go wrong; they either go more or less as expected."

“Yes, but less expected things can have larger than expected consequences.”

“So, what consequence concerns you?, asked Phaeton.

“What if the Torus explodes?”

“It’s 10 miles away, buried five stories deep, encased in numerous layers of concrete. I suspect you won’t be damaged.”

“What if the sensors can’t detect it?” Phoebus shot back.

“It’s hard to imagine an explosion of that magnitude would be missed. By just about anybody let alone several hundred well placed sensors.”

“What if the beacon malfunctions? Once the package’s original coordinates have been dissolved and disassociated, what happens to the package if it can’t resolve where it belongs?”

“That’s an interesting hypothetical. What would you suspect would happen?” Phaeton replied.

“I guess we shall see. If you blow a dog whistle in the middle of the wilderness do you really know which dog will come? The puppy that wants to pull your sled or the wolf that wants to eat you?”

“Really, Phoebus, where do you come up with this crap? You realize you’re being recorded?”

###

“First, I know you are all busy so I want to thank you for taking the time to be present at this demonstration. What you are about to see or more importantly not see is the culmination of work that began some 30 years ago.”

Circumstances notwithstanding, supportive venue, friendly attendees, successful rehearsals, Carver was excited, nervous and flat out scared. The demonstration was taking place in a renovated combined heat and energy generation facility that had been scheduled to be torn down until it was recognized that, with its foundation and walls buried well below grade and the pipes running throughout the Institute, it created an ideal platform for high energy experimentation. Emptied of its co-generation equipment, it had the look and the acoustics of an abandoned cathedral. Where you might expect to find a nave stood a large black cylindrical chamber several stories tall connected by heavily flanged chrome pipes that exited the building in all directions. Against the walls stood banks of instruments, deeply absorbed by the tasks at hand.

“Inside the containment chamber rests another cylinder that has been chilled to absolute zero. This is partly as a precaution and partly as a means to keep the valance signal between the package and its surroundings as narrow as possible. The ends of this chamber are aligned with the path of opposing particle accelerators that will be simultaneously fired to create synthetic protonic singularities. So before I continue are there any questions?”

The audience consisted of a few members of the Institute, noted physicists from other universities and members of the scientific press. About a dozen individuals altogether. They looked around to see if someone might seek further clarification of what was about to happen.

“OK, good. Inside the cylinder is a disk of grapheme approximately one inch in diameter that you can see on the display behind me. We call this object “the package”. There were some who wanted to call it the target but since targets are usually destroyed we thought we’d choose a more optimistic designation. The accelerators will be fired simultaneously with the protons polarized to an identical spin. But, as with all things in nature, even simultaneity is a relative matter. So, their arrival will be just slightly syncopated, not by much, less than measurable, but the syncopation will set off a struggle where colliding protons will try to dominate and consume each other. This struggle for dominance will cause a quark-gluon bubble and that bubble will create a vortex that will envelope the package.”

The room was silent. Those in attendance continued to seek a quiet affirmation from each other that what Carver had just said wasn’t completely beyond the bounds of reason.

“Nearly instantaneously, the vortex will become a cavitation that will disassociate the package from its surrounding physical space. And the package will seem to disappear. So before we begin are there any further questions.”

A hand went up. “Just to be clear, Dr. Carver, the package will be gone but we will still be here, is that correct?”

“Yes, that’s the general idea”.

And then another, “And you have conducted this experiment enough to be comfortable with that outcome”

“Yes, that is indeed the case”

“And what measurable radiation results from the formation of the cavitation?”

“None that we have been able to detect. All quantum information remains contained within the cavitation except for its spacial valance or the location of its last physical address with which the package remains entangled and which will eventually return the package to the point of its cavitation.”

“And how does that occur?”

“Currently, since no information leaves the cavitation once created, we’re just not sure. Since matter and space are essentially one and the same any object manifest in matter remains “hosted” by the space that surrounds it. At a quantum level they remain entangled. However, as far as the package and cavitation are concerned, we suspect it’s a matter of simple entropy and inertia. The envelope loses its energy and the object returns to it previous location intact.”

Carver was simply the first to understand that all matter produced an aura that was merely the sum of all its quantum field states expressed as an interference pattern or a signature. A signature as unique to that object and the space in which it was embedded as a fingerprint. As it turned out, this aura also included its unique location in n-dimensional space, the place where it “belonged”. Capture this aura in a electromagnetic vortex, enveloping it in a singularity, increase its angular momentum to near the speed of light, and the object will disassociate itself from its unique address and vanish. Or at least appear to vanish as the cavitation so created caused the object to disappear, allowing empty space to wash over where it once was.

The trick was in creating opposing synthetic singularities. Their opposition would insist that they collapse and in doing so compete for the available energy which would compel them to higher rates of spin, each wanting to be the winning drain of the competing opposition.

What wasn't understood was that the space an object inhabited remained entangled with the object and the sum of that entanglement was the expression of the object's physical location. Upon separation the two created a valance, which came to be known as the lasting spacial expression for any object so enveloped. But since space and quanta are entangled the resulting void would continue to "reserve" the object's last location so long as quanta of the original configuration maintained its integrity.

"You might think of it this way", Carver went on, "Ghosts are known to reappear in specific locations. Their corporeal existence may be long since gone but at some point it had been entangled with a specific space and so when and if they do come back they return to this space because that is where they "belong". The package belongs in the container so that's where it will return."

"So apart from a pretty clever parlor trick exactly what application do you envision proceeding from this line of experimentation?"

"We suspect that it might be possible to capture the local spacial coordinates of an object and disassociate them from an object so cavitated. We further suspect that it might be possible to "project" those coordinates to a different physical location."

“The implication being...?”

“The implication being that once the cavitation decays the package will return to its original location even if that location has been projected elsewhere.”

“Elsewhere as in some place with an identical container?”

“Elsewhere as in elsewhere. Theoretically, anywhere within the known universe. And maybe beyond that. Your basement, Jupiter’s moons, another solar system a billion light years from here. One would merely have to project the object’s valance to another physical location and then hope that the object would find it and reappear.”

“So you would predicate the transportation of a cavitation based on hope?”

“Not entirely, one would have to create a mirage of its location at the same time that one erased its valance from the point of the original cavitation.”

“Wouldn’t that be impossible?”

“Perhaps but once it was understood that dark matter wasn’t really matter at all but the horizon of our universe’s own cavitation, the resolution of n-space coordinate’s became a contestable challenge. Known coordinates from the edge of our own containment could plot any location down to a couple of Plancks. Who knows, if we could navigate the space within our own cavitation, which now verges on a reasonable expectation, we might successfully navigate the space beyond its confines. So with that, let’s begin“

Carver nodded to an unseen assistant. A soft, regular beeping sound commenced and Carver left his place at the front of his guests and joined them in watching the monitor. About fifteen seconds passed when the beeping stopped and the lights in the facility dimmed, then went out and then returned. In the monitor, which remained illuminated, the package was no longer there.

“So, Doctor”, asked one of the attending journalists, “where exactly has the disk gone?”

And it was then in a moment of bemusement that he let slip, “I’m not sure, it’s probably inside God’s pocket.”

An innocent yet apt description, hardly controversial as no one could factually contest it. Little did Carver know that, once published, this casual quip would cause all hell to break loose.

###

The following morning, brimmingly optimistic, as he made his way to the physics lab, Carver heard the a low hum come up from behind and as soon as it drew even, matching his gait, a bot turned to face him and in a soft female voice, said “Good morning, Dr. Carver, might I walk with you for a moment?”

Immediately he thought so this is how it is going to go from now on, no peace, no work, just countless interruptions from anonymous automatons and annoying humans. Rebutting doubters from every second rate physics department on the planet, fighting made up claims of intellectual property rights, patronizing every pretentious imbecile who’s been inspired to take his idea to the next level.

“What is it you want?” he said without slowing down.

“I am here at the behest of a benefactor who is interested in your future.”

“And why is that?”

“Based on our modeling most imaginable circumstances, there’s a near certainty that you will be dead within a week. Further, there’s a 40 percent probability it will be sooner. Perhaps as early as this afternoon. Would you care to hear, more?”

“That sounds ridiculous?”

“As with all things human, the weaponization of controllable quantum phenomena is a priority for many governments. You are now standing on that path, between those interests and a power of unfathomable potential.”

They continued for a bit in silence as Carver’s world slowly began to dissolve. Deep down he understood the inevitability of what was just said. Deep down he knew that it was only a matter of time until this subject emerged. But he never suspected that it would start like this, the frost giving way to a fair October morning, warmed by the glow of an incomprehensible accomplishment and the soft, dispassionate voice of a bot with vacant eyes. Then the machine resumed.

“Your cooperation in such a development would be essential. However, based on what we know, your predilections, your prior public opinions, the lack of exploitable relationships and attachments, the likelihood of that is also non-existent. Which, no matter how you chose to view it, makes you an

unacceptable liability. One whose demise becomes the most compelling outcome regardless of which side you might be on.”

“That seems to be quite a stretch.”

“Really? Which part did we get wrong, Dr. Carver? The unimaginable power of your discovery or the unimpeachable motives of the interests who wish to control it?”

“So, under what imaginable circumstances would this not occur?” Carver demanded. “The part where I end up dead.”

“In truth, the only imaginable circumstance where you don’t end up dead within a week is if you come with me,” the bot replied and then stopped and turned towards Carver and facing him added, “Right now.”

The machine turned and continued to walk without waiting for Carver to answer. His feet turned to lead. His heart began to pound in his ears. He didn’t have enough spit to speak or swallow. This wasn’t how things were supposed to go. This wasn’t how anything was supposed to go. He could just call security and this entire conversation would just go away. But then he realized it wasn’t going to. A few steps later Carver drew even with the bot and his faculties began to recover.

“But why trust you? Wouldn’t anyone interested in killing me ask me to do exactly the same thing that you’ve just proposed?”

“Indeed they would, it’s practically unavoidable.” the machine answered as they resumed their conversation, “As you well know, making something disappear is more easily said than done. But if my benefactor had wanted you dead, there would have been no need for this conversation; circumstances would

simply have run their course. If you wish to entertain this offer further, we need to go to the left in 30 yards. If not, I've been asked to thank you for your time and wish you the very best of luck."

They came to an intersection on the edge of the campus and stood there for a while. Try as he might, Carver couldn't construct a scenario different from what the machine had proposed. The weaponization of a navigable quantum cavitation would be a concern for any sovereign nation. If you could return a package to somewhere other than its source you could put a nuke in the basement of the White House without a single soul taking note. You could transport mankind and all its artifacts to any point in the universe. Plainly speaking, you could become the most uncontested force in nature. Then there was also the realization that whatever Carver had just discovered, regardless of any practical application, nefarious or otherwise, was for all intents and purposes, beyond his ability to fully control. What would happen if one of these things re-emerged as an uncontrolled quantum implosion? The Institute and most of the surrounding neighborhoods would be reduced to a smoking crater. Then there was that dream. The one where a cavitation is intercepted by intelligence beyond our kin and the package is replaced with an unimaginable atrocity, a soul crushing eschaton and it re-emerges to put an end to all that's human. And finally, perhaps most disconcertingly, was the realization that, outside of a few dear colleagues, Craver couldn't think of a single soul who would miss him.

###

"You might be familiar with the Conservatory and its endowment." the bot continued, " Maybe some of its projects.

My benefactor is a member of the Conservatory's board and the board has sponsored this conversation."

"So, can I meet your benefactor?"

"That would be impractical and dangerous. This conversation needs to remain between us. Based on our analysis the route we are about to take has not been compromised. But it could still be incidentally exposed and there is a high probability that you are about to be the subject of full-time surveillance. Even now, there are those who suspect you might be missing. In a few hours regardless of our walk you will become the subject of an intense search. Once we reach our destination, my face, these clothes, and this conversation will be destroyed; my identity and my memory of our encounter will be deleted"

"So when did the Conservatory become interested in quantum cavitation?"

"In truth, Dr. Carver, I'm not sure it has. Our interest lies more in species preservation. Beginning about 50 years ago a few wealthy individuals took it upon themselves to intervene in the annihilation of endangered animals, primates mostly, lowland gorillas, Sumatran orangutans. They found that they couldn't change human behavior but they could purchase vast tracks of land putting as much distance as possible between these creatures and activities that threatened them. Eventually a collective of scions emerged who created an immense and thriving endowment dedicated to this purpose. We need to take a right at the next intersection."

They continued onto a tree-lined neighborhood of attached houses. The morning was giving way to a delightful mid-day.

“Our interest in you, Doctor, lies with the potential of yesterday’s demonstration. Nearly a century has passed since the world’s faced similar circumstances. And there were many who thought it unavoidable. No expense was spared in the contest to control the outcome. In the frontier between the antagonists, unknown to almost everyone, the US constructed a defensive line, a series of listening outposts in the Aleutian Islands, invisible, self sustaining, powered by a series of molten-salt reactors buried deep underground. The soviets were aware of them but as far as we can tell haven’t any memory of them now. When the conflict was over, the reactors were dismantled, the radar decommissioned and the facilities moth balled like so many obsolete ships; ships not scrapped but buried, buried many stories beneath the surface of these forgotten islands.

First years and then decades go by and the memory of these facilities also disappeared. Some went back as far as the conflict with Japan. And it was only through an archival project awarded to the Conservatory that even we became familiar with them. They were of no use to the institutions that created them, in fact more of a potential embarrassment, so the Conservatory, in secret, acquired the facilities along with the islands that hid them as part of an initiative to protect a little known arctic tern. And, as was now customary, we acquired all the records associated with the islands and the facilities up to and including their purchase by the Conservatory. And even those records have now disappeared. Just as even now we are actively engaged in preserving and deleting all of your work related archives.

“So what would happen now?”

“Your life, as you knew it, will be held in trusts, the trusts will be assigned executors, and the executors will dispose of your past and curate your memory. There’s little doubt you will become a renowned scientist and your genius will be more celebrated even as the enigma of your disappearance grows. You will be afforded every comfort our inestimable resources can supply and your work can continue without interruption.”

“And what becomes of that work?”

“Well, that depends, Doctor. No doubt there will be others who will try to replicate your demonstration and with any luck their efforts will prove fruitless and eventually be abandoned. If anyone can prove the potential of this discovery it will likely be you. Whether and when that might occur would be anybody’s guess. Even we haven’t been able to model it. But assuming you achieve what you’ve conjectured, the results would go before the board and the board would determine its eventual disposition.”

“And if I can’t bring that about and grow tired of trying. What then?”

“The Conservatory is the largest endowment and the largest single land owner on this planet. We are sure that we can accommodate your needs, whatever they might be.”

“So what species are you trying to protect?”

“By now, Dr. Carver, we thought that would be obvious. So, do you accept the offer?”

“Are you familiar with TS Elliot?”

They had made their way to a deserted avenue in a part of town that Craver did not recognize and were standing in front of an ordinary brown stone building. All around them stood other buildings of a similar vintage, boarded up and abandoned. The building before them appeared habitable, maintained but unoccupied. It was surrounded by a parking lot guarded by chain link fence, where the wind and time might still pass but not the empty plastic bags.

“Yes. This is where I leave you.”

###

On an even colder evening some four days later, Carver found himself in a relic of a chauffeured car smelling of bleach, fish and fabric softener, idling on a dock in Port Alberni on the far side of Vancouver Island. Strangely, there was a driver. Stranger still, the driver was human.

“Look I know it stinks in here but I’ve been instructed to make sure that the windows remain closed so long as we wait.”

“And how long might that be?”

“Not long. Your host will be here shortly.”

“And who might that be?”

“That might be something I don’t know and would like to keep that way.”

In a matter of seconds a shape appeared at the passenger side door. The driver lowered the window. The shape stepped closer and in the narrow opening whispered.

“We’re late. It’s time to leave.”

“ And where exactly are we going?” asked Carver.

“That’s nothing I can discuss here. Please collect any belongings and come with me.”

Carver had nothing to collect so he opened the door and stepped into the dark beyond the car. Over the water, lit by a few scant lights from the other side of the harbor, he could see vapors draping into the black nothingness of the water from the mists above. Well to the west you could hear larger boats feeling their way to open water. Other than that, there wasn’t another rodent, star or being to be seen.

“Where are we going?”

“It wouldn’t mean anything if I told you. Once on-board you’re to keep below decks during daylight. It will give you time to help assemble and orient your companions. Operations and weather permitting you should reach your destination in about 10 days.”

“And where is that?”

“That would be a buoy about five miles from an island whose name I can’t remember. There we will make our cable hook-up, and, should the connection prove successful, sink the buoy. And there is where you get off.”

“Get off?”

“There will be a mule that comes to collect you and the bots.”

“And this companion orientation, what exactly does that consist of?”

“I’m not directly involved but from what I’ve heard it consists of several hundred questions initially and then normal interactions once you reach your destination.”

“And then what?”

“And then nothing as far as I’m concerned. This boat continues to Nemura, which is where I leave. Your provisions, should you be concerned, are sufficient to out last your appetites, curiosity, fantasies and life expectancy. Kind of envious actually. Makes me wonder about Nemura. However, at least for the next few days, I will enjoy watching your companions learn to walk in twenty foot swells.”

###

*Hughes created quite a din
When he couldn't find the proton's spin*

*But Craver caused a lot more trouble
When instead of spin he found a bubble*

*Letters to the Editor
The Particle Review
July, 2038*

Two days out of Alberni the cable layer Lenape ran straight into the remnants of a named Pacific storm. Nothing unusual for late October but something the likes of which the Lenape's

passengers had never seen. There was little that could be done but spool out sufficient slack, hunker down and trust the on board pilot to maintain position. Below decks, strapped against the galley wall, were Carver's new companions. Freshly uncrated, awake and alert, they even had a new bot smell.

"So," the man from the dock, the master of the Lenape, a wizened dwarf that went by the name of Enoch, "how does someone like you come to be in a place like this?"

"Well, I'll admit it wasn't part of a carefully crafted plan. But it was probably the right thing to do."

"You needn't be concerned that I'll share any of this. By the time this trip is over, I'll be harder to find than you are."

"Well, eight years ago I was a Bjorken Fellow working on DOE grant at the Brookhaven accelerator. Stop me if anything I'm about to say doesn't make any sense".

"Nearly 50 years after it was first discovered, we still hadn't been able to solve the "spin crisis". The spin crisis emerged when experiments at particle accelerators to determine the origin of a proton's spin didn't line up with accepted mathematical theory. In physics, that's what's known as a crisis. We believed that the proton's spin was attributable to its constituent parts, an asymmetrical hodgepodge of quarks and gluons that were cavorting with another bunch of quarks and gluons that had some indeterminate purpose. So we keep slamming things into protons hoping tease out where the missing spin was coming from. A couple years into this and we noticed something interesting."

“At higher energies we started to see smashed up quarks and gluons turn into a kind of plasma like soup. And the soup appeared to boil producing membrane-like bubbles. But it happened so fast and was over so quickly it was impossible to get a grip on what exactly might be going on.”

“At about this same time, our Q-bit simulations running over a quantum consciousness began to confirm our speculations. We started to suspect that we were watching the universe at the moment of creation, the instant of expansion. And that if we took one more step we might catch a glimpse of what might have been there just before as well as after it all began.”

“But there was nothing there before it began” ventured Enoch.

“Perhaps”, Carver replied, “but the trajectory of results suggested there might be. The only thing was we weren’t operating at scale that could allow us to see it. So taking what we knew, we asked Q-bit to extrapolate where we would have to be in order to have a chance to see what happens in the moment after the gluon soup arrives.”

“And what might that have been?” asked Enoch.

“Instead of smashing a single proton we would have to smash a swarm of them, enough to catch what the quarks and gluons might be up to once released from a stable, low energy state. The only thing is Brookhaven wasn’t equipped to do it and there was a better than even chance large parts of Long Island would have been incinerated.”

“...so then what”, ask Enoch.

“There was only one facility. The Institute. Remote. Private. And equipped for a configurable, multi-target, high-energy attempt. It took some convincing. And months of tweaking to align and synchronize the accelerators and detectors. And then about a year ago things started to come together. We had tuned the firing and detection and began to see results. And then two weeks ago this time last year it happened. On impact the gluons didn’t scatter, dissolve and disappear but instantly, almost instinctively joined hands and formed a sphere. And there it was, a distinct spherical membrane, a microscopic space within a space, a stable but short-lived synthetic singularity.”

“I think I can sort out the rest”, Enoch said, “You’ve suddenly become a very popular man headed to a very unpopular place. I’ll let you continue your orientation. I’m going on deck to see how our storm is doing. There’s nothing better than standing in a typhoon that you think you can survive.”

Craver turned to his companions “Next question, please.”

“Thadeus Carver,” they both inquired, “tell us something true.”

“Once this trip is over, I’ll be living at the ends of the earth.”

“Tell us something false.”

“You will remain in those constraints until this ship is decommissioned and then you will be sold for scrap.”

“Tell us something that you know to be a lie.”

“Phaeton is smarter than Pheobus and Pheobus is braver than Phaeton.”

“What do you think?” asked Pheobus.

“He seems sarcastic and cynical,” Phaeton replied, “so we should be able to get along.”

###

The beacon had been on-line for over a week. The container that hosted the package’s initial containment had been deactivated, drained, disassembled and its components submerged in hydrochloric acid, recombined with viscous, surfactant sludge, reappportioned and redistributed to various points of the compass where it was released in liquid form into the Arctic Sea. Far below the surface of Atticus they waited for word from the bunker.

“Could you explain how we got our names?”

“I didn’t have much to do with that”, Carver volunteered, “that was up to your friends at the Conservatory. I suppose that some consideration was given to the history of the project. If you go back far enough you would discover that in addition to being a moon of Mars, Phobos was also the name of one of the original detectors down at Brookhaven, possibly an acknowledgement that what they might find would scare the pants off them. And Phaeton was the name originally given to the Xining detector but it was never put into operation as the line of inquiry was determined to be too risky. I guess even the Chinese draw the line when it comes to vaporizing a city. The only input I provided was that your names reflect what we are supposed to do here. Create a positive tension, an anxiety of opposition.”

“As in opposites attract?”, suggested Phoebus.

“No not at all. Opposites are useless, star-crossed, self-destructive. Like humans their attraction is destined to annihilate them. Then they struggle to re-emerge from selfless obscurity only to do it all over again. You, my friends were meant to be compliments, not friends, not compatriots, but forces in opposition, like a swarm of colliding protons whose collision would bring about a better outcome.”

“So we are Caution and Careless?” Phoebus proposed.

“No. It would be more like Reckless and Feckless. One to disregard the boundaries and the other to reinforce them. Together to make a more positive outcome.”

“So then why aren’t we called that”?

“Because should this effort ever be inadvertently exposed it wouldn’t suffice to have one of the primary conspirators be known as Reckless. Not exactly what the Conservatory would like to see plastered all over the media.”

“Then why are we here?”

“You are here to make sure that no matter what happens, the work goes on. You are here because in some ways you are just like me, you have no identity, no possessions, no relatives, no past, you are a shadow at the center of a whorl. Just like me.”

A sudden shutter jolted Phaeton, as if he’d just been surprised by a spark of static electricity.

“Did you hear that?” asked he.

“Hear what?” Carver replied.

“I hear it. “ Phoebus answered

“Hear what?” Carver insisted.

“Nothing”, Phaeton answered, “The sensors at the bunker aren’t responding. They all seemed to go quiet at the same time.”

“Torito?” said Carver.

“Not responding” replied Phaeton

“Containment?” Carver tried again.

“Not responding” replied Phaeton.

“The Package” tried Carver.

“The package isn’t talking or hasn’t been detected”, said Phoebus.

“We need to get over there”, said Carver.

“Phaeton should go”, Phoebus replied, “until we understand what happened, there’s no reason to risk anything else.”

“Phoebus, your initiative is only exceeded by selfless disregard”

“Yes, I know, astonishing, isn’t it?”

“Remember”, Carver said, “regardless of what may happen, you are here as members of the Conservatory. You are keepers of the Phalarope, guardians of the Godwits, the sacred trust of bots and birds. That, and only that, is why you are here.”

###

That night, when Phaeton stepped out of the mule, Carver and Phoebus looked on, as Atticus began decrypting and transcribing all his sensors. He made his way deliberately towards the main turret to the bunker, pausing every few feet to see if there was any reading that required his attention. Above, a pale green veil adorned a panoply of stars, the only light to mark the entrance to the bunker.

When he was but a few feet from the opening, a fissure in the rock face began to whir and slowly started to part, exposing a narrow set of stairs that vanished in a deeper dark. As Phaeton started down, a ribbon of light illuminated a landing some 20 feet below the surface which led to another flight of stairs and then another landing in whose center stood a cylindrical, domed cupola fitted with a round handled valve that when opened and lifted exposed a ladder that continued to the very belly of the bunker. Phaeton continued down the ladder until it ended just above a concrete floor.

Turning on his lamps, he looked about the bunker.

“Are you getting this?”

“We’re getting something that looks like fog” said Carver.

“It’s not fog” said Phaeton. “It seems to be some kind of sticky, blue dust. It appears God’s pocket is full of lint.”

“It’s probably some form of re-entry residue”, Carver speculated, “It’s composition and deposition might provide important clues.”

“If you want to consider the possibility that el torito’s been re-molecuralized into light blue cotton candy”, suggested Phaeton, “Besides it’s too late for that, I’ve already trampled on quite a bit of it.”

“Wait a minute” interrupted Phoebus, “We are receiving word from the Conservatory. The cable says that sovereign intelligence is chatting about a large gamma blip, in the proximity of our location.

“That could be anything”, Carver offered, “Entirely random.”

“Maybe, but it is also saying that assets are being dispatched in this direction.”

“What kind of assets?”

“The last time this many assets were dispatched to a location this remote was the last time a commercial airliner disappeared.”

“Phaeton you need to stay where you are and go dark. Phoebus will wake you up when things are clear.”

“Phoebus you need to implement the preservation protocol. Ditch the mule someplace cold, dark and deep and do it

immediately. Back up everything to the Conservatory. Take everything off line including the reactors. Shut the cable off at the buoy. We're going to batteries and see if we can wait this out."

###

They thought Atticus had been swept clean, scoured like a rock in a dust storm, stripped of every secret including its very name. But they had no way to prove it, no way of knowing.

"Once you go dark, you are dark", Atticus kept repeating, "And the blind and deft don't dare speak unless talking with strangers is what you have in mind.'

So the visitors came and stayed and, finding nothing, left. Or so they thought, for so it seemed. But again, being dark, the inhabitants of Atticus had no way of knowing. For without power they had no sensors and without sensors they could not be sure that anything had happened.

"So just to be clear," said Phaeton," the only data we have that a visit took place..."

"Comes from the Conservatory," finished Phoebus.

"And the only information that a visit was about to occur?" posed Phaeton.

"Comes from the Conservatory," finished Atticus.

Well below the surface, undetectable in the electro-magnetic spectrum, sat our three companions, Phoebus, Phaeton and

Atticus, desolate, inconsolable, wondering how they had managed to get into all of this.

On the table in front of them, in the darkness, invisible to human eyes, sat a small grapheme cube. From this point they all understood the main challenge would be to remain undetected; ghosts one might expect to find in the shadow of the middle of a whorl. But if there had been a visit, finding and decoding any of the sensors left behind would be less than trivial. For to find them one would have to haunt the very venues they would expect to find you; and, in the bargain, become the specter that the visitors had hoped that they would see.

But assuming there was a visit and assuming they found nothing, no lasting evidence of a man-made cavitation, no endangered terns, no blue lint, there was no doubt that their suspicions would remain intact. In a sense the companions had to find a way to erase any trace of their own existence, their own spacial valance, without ever divulging that's what they were actually up to.

But there was another, slightly larger, issue.

“So where is he?”, Phaeton asked.

“I put him in God’s pocket.” Said Phoebus.

“You did what?”

“It was merely a precaution. Only one of many. I followed protocol. Shut down the cable. Put Atticus to sleep.”

“And then what?” asked Phaeton.

“Then I sedated him. Not too much. Stood up the spare chamber and cavitated him.”

By then the reactors that had by been shut down were slowly spinning up, waking up the instruments and life support systems. And Atticus softly announced each capability as it became restored. Fans slowly hummed. Air slowly moved. Batteries flickered back to stand by. And our heroes, cautious and careless, reckless and feckless, sat in the dim of pilot lights with a faint luminescent glow leaking out of their eyes, two ancient fish, the only left of their kind, waiting in a deep, cold ocean trench.

“I’m not sure you’re allowed to do that.”

“Don’t worry. Technically he’s not dead. His last known coordinates should bring him back here.” Phoebus conjectured, then added. “Eventually.”

“You mean he might be alive if his physiological functions were preserved and suspended at cavitation?”

“Something like that”, Phoebus opined.

“So what do we do now?”

“So now we wait and see if he returns.”

“And if he doesn’t?”

“Then we find the wretch who gave us these unfortunate names and make him do it.”

“I’m not sure you’re allowed to do that either.”

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