

## Doppelgangers of Titan

*July 3 2052*

Coughing and retching I awoke from more than five years in hibernation to gaze into the eyes of an impostor.

“Just throw it up,” the impostor said. His face and voice were perfect imitations of Lysander Esonis’, but after thirty months of training together I knew Eso better than the twin sister he left behind on Earth. The impostor might have looked and sounded like Eso, but that didn’t fool me.

Another spasm of vomiting the thick mucus-like hibernation fluid incapacitated me for several moments. Whoever he was, the impostor had already vacuumed the hibernation fluid from of my lungs and now my stomach proceeded to get rid of the rest.

“It’ll pass,” Fake-Eso said.

“Water,” I croaked. My voice sounded thin and wispy, barely above a whisper. Hibernation can keep you alive in suspension for years, but time still passed for the body and mind.

“Sure, Geoff.” The impostor turned away and in the cramped confines of the medical bay of the Crew Transit Vehicle drew a cup of water from the tap. I tried to remember what happened before we

climbed into the hibernation tanks -- Long Duration Crew Capsule in NASA-speak --back at the Kennedy Space Center, but my scrambled memories collided with each other. Fragments from the entire thirty-six months of training played in my mind like a poorly crafted montage.

“Just a bit.” The impostor held the cup to my lips and dribbled a trickle of water across my lips. Fake-Eso set my head back down then proceeded to clean the rest of the hibernation fluid off my naked body.

He moved me about as he chased down each drop of the thick fluid. Not that I could have fought him if I had wanted to. A person’s muscles don’t truly atrophy while in hibernation, it wouldn’t do to have your astronauts physically disabled once they got to their destination, but it generally took a half an hour or more before most people could sit or stand under their own control.

While the impostor continued cleaning me, I tried to order my memories.

Cassini-Huygens may have been the first probes to reach Titan but the Landry-Tyler discovery of the alien artifact on Titan changed everything. Over a thousand meters long and unquestionably artificial, the alien craft shocked the world awake. I’d like to say that mankind put aside their childish differences and united that day, but I’m a terrible liar.

“See if you can turn over.” With a terrible sensation of pins and needles shooting throughout my body, and very little help from me, the impostor flipped me over onto my stomach. Despite the pain I began to feel stronger.

The Titan discovery sparked a space race the like of which the world hadn't seen since Apollo. Bases on the moon and Mars base created the required technological understanding for long duration missions, but it took hibernation to make a trip to Saturn possible. To go from Earth to the Moon is three days one-way, to get to Mars takes more dedication and about six months, but going to Saturn takes six years. I earned my college money in the U.S. Navy serving aboard submarines and even I wouldn't attempt to live in a beer-can of a space ship for a dozen years or more. The Western powers, along with Japan who gets considered Western whether they like or not, pooled resources for the Titan One mission, China, India and Russia tried to build on their shaky alliance of stomping out militant Islamic terrorists in Asia to attempt a Titan mission of their own, but they quickly fell apart due to foolish historic hostilities. The greatest discovery in history and the human race still squabbled like monkeys on the savannas. Even with evidence of a truly advanced species on our doorstep my own species continued to shame me.

Eso's impostor finished cleaning my body and tossed the wipes into the recycle chute. Five Astronautical units from Earth everything is recycled. That sort of distance forced us to be more frugal than any other space mission.

"Come on." Gently he helped me up into a sitting position, my legs dangling off the edge of the plastic exam table. I looked to see if they hung plum, but the Coriolis effect of the Titan One was too small to be seen over the length of my legs.

I wish we had magic technology like I used to see in the videos. The Titan One -- the allied space powers couldn't even agree on a real name for the ship -- was the best ship Earth could build, but as far as spaceships go it's barely a canoe.

If you want to get an impression of what the Titan-One is like grab a broom, a coffee can and toy jet. Put the coffee can on the end of the broom handle and then stick the jet nose first into the coffee can. The bristles of the broom is where the ship's nuclear power-plant and heat radiators are. The nuclear plant generates a lot of heat that has to be dumped so we have enormous radiating fins. The coffee can is the Hab, and docked to the hab is the crew transit vehicle. The CTV has its own nuclear power plant and engines, but the CTV's engines are only for breaking our speed for an orbital capture at Saturn and again when

we get back to Earth. In the center of the boom that forms the spine of the Titan One are the generators for our Mini-Magnetospheric Plasma propulsion drive. In essence we generate a magnetic field around the ship and then inject plasma into the field expanding it like a balloon. The field not only protects us from radiation, it also acts as a sail for the solar wind propelling the Titan One out. Spin the whole thing at just under two revolutions per minute and you have a fair representation of our ship. A good ship, but slow and fragile.

“Okay,” The impostor fixed my attention again. “What’s your name?”

“Geoffrey Sturgill.” Right, this was the post-hibernation check for freezer-burn. Officially Hibernation Induced Neurodegeneration, but outside of official documentation no one called it that.

“Who’s the president?”

“It was Rodigo, I haven’t the foggiest who’s there now.” As I answered I found myself fascinated by the impostor's face. Someone did an excellent job there; it had to be a custom job grown from Eso’s actual cell-line. No surgeon could have pulled off that masterpiece just by cutting and sewing.

“Rodigo’s out’s, but you slept through it,” he answered as he tapped my knees for basic reactions. “Polls have McClanahan leading this year,”

“Representative McClanahan?” I wanted to crawl back into hibernation. The candidates had gotten too extreme for my tastes. The impostor flashed a light in my eyes checking my pupillary reaction. “I don’t believe it.”

“Things change.” Satisfied with what he saw he stepped back. “How long until we get to Jupiter?”

“If you woke me on schedule, seven days.”

“Mission commander?”

“Charles Wilson.”

“What’s the last thing you remember?”

I sighed. My memories were less jumbled, but something about the way he asked put me on guard.

“Getting prepped for the tank,” I stood up from the exam table and the cabin spun around my head. I nearly toppled over, but Fake-Eso quickly grabbed me.

“Don’t rush it,” he said. “Go on.”

I saw it in his eye, he did suspect. Damn it! I’m a biologist; I’m not trained to deal with this sort of crap.

“I remember getting stripped down; it was freezing in the prep-room. I remember the injection and after that ...nothing.”

The man wearing Eso’s face nodded. Of course I didn’t remember anything after that. Hibernation fluid flooding your lungs is too much like drowning for most people. The first hibernation subjects still suffer from nightmares of drowning and Post-Traumatic Stress. Thanks to NASA’s precautions against PTSD by using memory impairing drugs my last twenty minutes before immersion were forever lost.

He asked a few more questions, and checked my perceptions and cognitive functions. I answered as best I could, but Fake-Eso’s impersonation distracted. Charlie and Eso were our prime crew for our nuclear-engine burns as we swung by Jupiter for a gravity assist and again for breaking into Saturn’s orbit.

“Okay, get on up to the hab and grab some sleep.” The impostor ordered. “You need some of the real stuff, not that counterfeit rest from hibernation.”

I nodded and climbed the ladder to the next deck.

The CTV’s stubby lifting-body was the only part of the ship that had been designed with two different axes of acceleration. Attached in the current spinning configuration down was towards the tail and up -- the direction I was climbing -- was toward the nose. I climbed into the

mid-deck and poked my head through the hatch into the flight deck. I needed Charlie's help to deal with this impostor. It seemed incredible that Fake-Eso had fooled Charlie.

"Morning you sleepy dog." He looked and sounded like Charlie Wilson, but I faced another impostor. The impostor captured Charlie's Tarheel accent perfectly, but still the hairs on my neck prickled.

"I'm heading for the hab." I ducked out of the flight deck.

Damn, that left me boxed-in with impostors and enemies five A.U.s from help.

I climbed through the nose hatch of the CTV and via the short connecting airlock into the crew habitation module.

The flight plan called for the bottom level of the hab to store everything we needed to establish a working base on Titan, the bigelow inflatable buildings, equipment to study the derelict, and everything else required. In the imaginary excess space the engineers had squeezed in the watch-standing crew's living space. It was nothing more than a tiny common space for our meals and entertainment, a closet that was our shower, and three tiny cabins separated from the rest of the crew-space by light plastic partitions. I stepped carefully into my cabin and slid the plastic partition closed behind me. I shivered with fear.

# # #

*July 4 2052*

The next morning -- the ship maintained schedule on Greenwich Mean Time -- I showered and readied for breakfast. My years in the navy prepared me well for life aboard Titan One. Take showers for example. Water is a precious consumable aboard any spaceship. Our showers were paragons of hydro-minimalism. The water comes on for twenty seconds, just enough time to get lathered up, then it shuts off. When you're through scrubbing you can turn the water back on to rinse off, but you had better be done in two minutes because that's all the water you're going to have for showers that day .

Charlie and Eso's impostors met me for breakfast. They continued to play their masquerade and I prayed that I had kept my perceptions secret. Breakfast consisted of miniature fruits and cereals from our farm. The mission made vegetarians of us all.

"How are you?" Fake-Eso mimicked Eso's voice with perfection.

"Good," I answered. "Feeling much better, which is surprising since I've done nothing but sleep for five years."

"Hibernation ain't sleep," Psuedo-Charlie said. "Sleep comes from a big comfy bed and plenty of fresh air."

Charlie's double started telling an improbable story about surprising a brown bear after stumbling into a cave with his brothers. The impostor knew his stuff. It was just the type of story that Charlie told. During training he'd spun an endless supply of impossible adventures. Eso's Doppelganger laughed as loudly and as messily as Eso ever did, but in some indefinable manner I saw through their performances. I tried to relax and laugh as well, but being surrounded by these unknown and possibly dangerous men inhibited my sense of humor.

"What's wrong?" Psuedo-Charlie asked. "You look like a man who's lit a cigarette in a room full of dynamite."

"Nothing," I said. "I just want to get up to the farm and get to work."

"Work? It's the fourth of July son, you some kind of communist?" He meant it humorously, but genuine suspicion undercut his tone.

"Come on, Geoff." Fake-Eso took me by the shoulder. "We've got a surprise just for the holiday. Mission control even loosened up our schedule."

"Which was mighty big of them," Psuedo-Charlie offered.

Stifling back a scream I shook his hand from my shoulder. "No offense but I won't be satisfied until I look the farm over."

“Suit yourself,” Psuedo-Charlie waved me away. I climbed the ladder to the next deck of the hab. Glancing back I saw them conspiring.

The farm occupied an entire deck of the hab, but that didn't make it roomy. Racks with shelving from deck to overhead filled the compartment leaving only tiny avenues for the crew to work in. Trays of growing plants filled the racks, busily exchanging carbon dioxide for oxygen and providing the watch-standing crews with both air and food.

I poked and sampled all thirty square meters of the farm verifying a complex and delicate balance precisely recorded in the farm's logs. The task of totaling the carbon dioxide consumed, oxygen produced, and food stuffs created and eventually recycled failed to fully occupy my mind. With access to their cells lines a talented tissue expert would face no insurmountable hurdles in duplicating Eso's and Charlie's faces or voices, but that sort of talent and capability didn't come cheaply. This was much more difficult than just growing new faces from original cell-lines. The security on the mission had been as advanced as any other element of our preparation. Whoever performed this switch had the capabilities of a government's intelligence service. Unfortunately that didn't mean it had to be a government. I would have felt better if I knew that the Indians, the Chinese, or even the Russians were behind

it. The derelict might give a nation tremendous economic or military advantages, but governments are rational. There were too many people out there with nearly the power of governments who lacked any rationality. We barely dodged the Giaists' plague and they certainly possessed the technical talent for this sort of high-tech disguise. I couldn't rule out religious fanatics either. Huge swaths of the globe seemed to be under the spell of that madness. If nut-jobs like that got a hold of really advanced technology there's no telling just how much damage could be done. Extinction wouldn't be hyperbole.

I never felt more alone than standing in the cramped, hot, humid and smelly hydroponic farm. I didn't want this. What the hell was I supposed to do about it? If I told mission control I knew instantly the doctors would say 'freezer burn' and I'd be put back into hibernation. This wasn't freezer-burn; every case of freezer-burn had suffered severe cognitive impairment. This was real and I was the only person who knew it.

No, I could only go to mission control once I had proof. If we were in cis-lunar space this substitution would have been impossible. Astronauts close to Earth wore telemetry monitors that send a continuous signal of their health and bodily systems back to mission control. No impostor could succeed under such close scrutiny.

With a signal delay of nearly forty minutes -- one way -- the Titan One mission sent back no continuous bio-telemetry. Hell, we didn't even have constant contact with mission control. Once per day Titan One communicated back to Earth, uploading new mission profiles, schedules, and software patches for our systems while sending back our logs and reports. The moon bases and the Mars base missions kept the seventy-meter deep space array overloaded even before this rush mission to Titan had started. A second deep space network was being built, but between politics, economics, and terrorism we couldn't count on it being operational before we got home again.

We had extensive cell lines aboard in case of injury or freezer-burn. While the impostors might look and sound like the people that they had replaced, there's no fooling a genetic test. With cell samples I could prove them false. Once that happened mission control would order everyone tested. As soon as that order came though I'd intercept it, get mission control to order a few more people out of hibernation and we'd put the impostors away.

By the end of the day I knew two things. One, I had a plan to deal with the impostors and two, there there was bio-mass missing from the farm.

This was no accounting error. The farm's carbon and oxygen budget was too critical, too finely calibrated to be this much in error. Waste carbon dioxide, nutrient, and water were converted into an endless supply of oxygen, food stuffs, and bulk plant matter. All of this had to balance. I don't mean it was nice if it balanced, it had to balance. If something was failed to be recycled it had to be made up. At least a couple of kilograms of plant material hadn't been accounted for, just bits here and there, nothing in any single episode, but clearly someone was up to something. Checking quickly I saw that the carbon budget started falling out of balance shortly before Charlie and Eso came out of hibernation. Or rather when Charlie and Eso's impostor came out of hibernation. What were they up to?

After finishing my work in the farm I popped in on my two impostors and announced that we had a fungal infection in the farm.

"Newland didn't report anything like that," Fake-Eso countered.

"She's missed it," I lied. "Not surprising as it's very tentative still," I continued. "I just barely caught traces of it. It might have started in just the last few days."

"This ain't a time to have a crop failure." Psuedo-Charlie continued to play his role and I couldn't tell if he saw through my lie or not. No one on the mission was anything less than a Ph.D. and most of

us had more than one, but both Charlie and Eso were engineering and physics types. I had to gamble that I could fast talk them on the biology.

I gave them both a quick description of a anaerobic fungus which if it was on the crops could give us trouble. I didn't have to work hard to sell the fiction. The Russians had encountered all sorts of interesting growths on that tub of a space station they used to have and even though the mini-magnetosphere protected us from the majority of radiation hazards our background count was high enough to encourage mutations in a fast growing species like fungi. When I was through I had convinced them that we needed throat samples to make sure our own DNA hadn't been too damaged. We were already running one hell of a cancer risk with this mission. I hoped that would scare them into letting me get the samples.

The impostors followed me the CTV's medical bay and I collected the samples that would prove them false. They retreated back to the hab while I set up the tests. I setup a PCR test to amplify the DNA I had collected from them. Before I went to sleep I'd have enough DNA to start comparison tests and by morning I'd have the proof to take to Mission Control.

Feeling confident for the first time since I came out of hibernation I climbed back to the hab.

Dinner that night turned into a debate that almost devolved into a shouting match. I should have just played it safe but their surprise truly caught me off guard.

Beer.

After our main course Eso and Charlie's replacements brought out their homemade and very un-regulation brew. That explained the missing biomes from my farm. Until consumed and recycled the beer remained as a hole in my accounting. Of course Mission Control already knew about this -- something like this would not remain a secret. After worrying about it for all of twenty seconds I took a long pull from my glass.

"That's good." The dark ale tasted better than most of the beers I had consumed either in the navy or in college, but I remembered that the purpose of college beer was drunkenness and not flavor.

"Tibalt started it," Psudeo-Charlie explained, his faked accent slaughtering Tibalt's name. "We've kept up the tradition after he went back into the coolers."

"Mission Control?"

“What can they say,” Fake-Eso poured himself another glass. “It’s not like they can fire us. This Mission is in our hands, not theirs.”

We continued on drinking and talking, the beer taking the edge off of my fear. It occurred to me that the beer might help me out in ways beyond giving me liquid courage.

“What do you think we’re going to find on Titan?” I asked the impostors directly.

“Trouble,” Psuedo-Charlie answered. “We’re not king of the hill anymore and unless we’re very very careful we’re going to break our crowns.”

“That’s a mixed metaphor.” I refilled my glass, and both of theirs. “Anyway that’s petty thinking. An advance civilization isn’t going to be concerned about our ‘hills.’”

“Buddy,” Fake-Eso chimed in. “Your head went soft in the tank. Any race...”

“Species.” I corrected.

“Species then.” He wagged a finger sternly in my face. “Any *species* capable of clawing its way off a planet is going to be very competitive. Intelligence ain’t for the nice, it makes winners. It makes them by making’em nasty.”

“Ain’t that the truth,” Psuedo-Charlie agreed. “Evolution will make sure of it.”

“You’re biologists now?” The beer made me snarkier than normal. “I thought that was my field.”

“Then you should know better, *dumkopf*. Evolution is about competition and competition is about making sure numero uno wins, not fuzzy-headed wishful thinking.”

“He’s right,” Psuedo-Charlie leaned in across the table at me. “Every time an advanced civilization's met a less advanced one, it’s meant the destruction of the less advanced one. Almost always physically, but sometimes culturally.”

“That’s not true. The United States and Imperial Japan proves you’re wrong. We had the guns and the means, but we didn’t destroy them at all.”

“Not for about a hundred years,” Fake-Eso said, grinning with enough malice to be frightening.

“That war was between equals.” I replied. “Anyway that proves my case. Look how close we’ve come-- hell we still are -- to destroying ourselves. If nuclear weapons don’t do us in, it’s pollution, or bio-warfare, or some other new weapons just waiting around the corner. Only a species that’s given up war can survive to star travel.”

Psuedo-Charlie let out a low whistle. "You got a giant silver robot to go with that?" he asked.

"All you've got is sarcasm 'cause you know I'm right."

"Geoff," Fake-Eso said. "You've got as much chance of being right as I do of being the Pope. An expansive species is a competitive one, not someone to play tea-time with."

"They don't have to be expansive. There's no economic model that could make interstellar empires work."

"Um hm," Fake-Eso nodded. "Do you think the Easter Islander felt the same way about dugouts and the ocean? I just hope we can pull ourselves up fast enough to compete and not just get squashed."

"That's not the way it's going to be," I insisted.

"Wish in one hand and spit in the other," Psuedo-Charlie said. "Tell me which fills up faster. Just 'cause someone's learned not to kill himself off doesn't mean he feels that way at all about other who aren't his kin."

"Violence is counter productive to an advanced culture."

"Geoffrey," Psuedo-Charlie sadly shook his head. "you are in for one rude shock at Titan."

The conversation carried on for another hour and a half, The impostors insisting that any aliens were likely to be expansionists and

dangerous and me uselessly try to open their eyes to the more likely reality. After conceding that no one was about to change their mind, the impostors retired to their cabins.

Once I was alone, I climbed down into the medical bay inside the CTV. I resisted the temptation to visit the rest of the expedition in hibernation. They couldn't help and frankly I couldn't be sure that a few more spies hadn't been slipped in among them.

The polymerase reaction had amplified the DNA and now I had enough to run the tests I needed. I pulled out three sets of chips, and working carefully to prevent cross-contamination, gave each a sample to process. I used myself as a control, but that hardly seemed necessary. I was looking for gross differences between the DNA samples and the reference data stored in our computers. The impostors might look, sound, and act like Eso and Charlie but on the genetic level they would no more resemble their targets than a sumo wrestler looks like a fashion model.

Each device reflected the very best of labs-on-a-chip. Inside each were over one hundred thousand micro-labs, each dedicating to scanning for nucleotide mutations in a DNA sample. We carried these to monitor the crew for radiation-induced genetic damage. While the mini-Magnetosphere provided outstanding radiation protection, nothing yet

could totally shield us from galactic cosmic rays and the other radiation hazards of deep-space. Even with over a hundred thousand processors, and testing on only a fraction of the three billion base-pairs in human DNA the test needed nine hours to yield results.

I secured the chip sets in their rack and climbed back to the hab. The two impostors were still in their cabins. I only hoped that my luck would hold out until I had the evidence to convince mission control. As I pulled the thin sheet up over my body I worked out a rough timeline. Nine hours for the tests, then another forty-minutes to load the data into a report. My report to Mission Control would have to wait until fourteen-thirty, our regularly scheduled communication. The deep-space array wouldn't point our way until then. Then add another forty plus minutes for the signal to travel from Jupiter to Earth. After that it was out of my hands.

# # #

July 5th 2052

I sped through my work in the farm so that I could get to my results as quickly as possible. Just before lunch I hurried down to the CTV's medical bay and loaded the results into the display.

Numbers scrolled past my eyes in three sets of two columns. Two sets were for the DNA samples I had gotten from the impostors and the

reference data for the real Charlie and Eso. The third set were my own DNA results and reference data as a control.

I stood there dumbfounded while staring at the final results. The DNA results matched with the reference data. The only changes were single nucleotide mutations well within the expected rate for our radiation exposure. I ran the analysis again, but the impossible results repopulated the screen. The DNA samples collected matched the DNA on file with our medical records. As far as the computer and the DNA tests were concerned the impostors were Charlie and Eso.

“Cooked up those results yet?” Psuedo-Charlie called out as he climbed down into the medical bay. Watching him I felt all doubt vanish. His near-perfect performance could have fooled anyone except those who knew Charlie best.

“Yeah,” I answered. “Everything looks good. Nucleotide damage is well within expectations.”

“Glad to hear it.” He leaned against the bulkhead.

“Something on your mind?” I asked, nervous as he locked a bland unreadable stare on my face.

“You beat me to the punch. You’ve been awfully skittish since you climbed out of the tank.”

“Being here isn’t the same as the simulation.” I switched off the display and returned his stare. Hoping my bluff could carry past his suspicions.

“Geoff, you’re telling fibs.” His drummed fingers on each of his crossed arms. “I don’t want to bring Mission control into this. I was never the type to go runnin’ to mama. You’re going to have to tell me what is the matter. I can’t depend on a crew mate who’s gone squirrely.”

“Maybe I’m not the only one telling ‘fibs’.” I snapped.

He just stood there quietly, fixing me with a hard stare. My muscles tensed as I expected him to move at me, or shout for his compatriot. He didn’t do either. With a huff and a look of angry disgust he climbed out of the tiny compartment.

They must have replaced the original data with reference data to match the impostors. Once I thought about it I knew that no other answer fit the facts. Whoever replaced Charlies and Eso couldn’t risk have a routine checked for DNA damage reveal the duplicates, so the data in the memory had to match the impostors’. I’d bet good money that the medical records at Mission Control were similarly corrupted. A double check ground side would just yield the same results.

I still had one trick left to expose the impostors -- phenotypic projection. They might look like Eso and Charlie, the DNA records might have been switched, but their DNA still coded for their phenotype and not Charlie's or Eso's. The computers could build a projection from the DNA of the original organism. Using the DNA as a template the computer could project with a fair amount of accuracy just what the organism would look like. Phenotypic projection had rewritten everything we know about paleontology and evolutionary biology.

I started the project and waited. Even with the truly impressive computers aboard the Titan One the projection took hours. Three hours into the rendering the intercom beeped, but I switched it off.

Fake-Eso did stick his head into the medical bay, once but quickly retreated when I snapped. The game ran towards its end and I had no idea the victory conditions or even the players.

When the projection finished shortly before our scheduled dinner, Charlie and Eso's faces stared back at me from the display.

Oh, it wasn't a perfect match for their faces, a projection never would be. Prenatal development has a huge impact, and environmental exposure is another big factor, but neither of those factors would change the basic phenotype. The truth is that the DNA samples were

blueprints to build people who looked like Charlie and Eso. That much was fact, but it was also a fact that no one had that sort of technology.

No one on Earth.

My heart raced uncontrollably. I felt faint and my vision grayed out. *Aliens?* Just a few years earlier the idea would have been too fantastic to be thought; now I couldn't dismiss the possibility. I struggled to get control of my excitement. I knew I had to work this out step by step. look for anything I missed that would still yield a terrestrial explanation for the doppelgangers.

I sat down in the cramped plastic seat at the terminal clearing my mind of everything except the facts of the matter.

*First Fact: Lysander Esonis and Charles Wilson had been replaced by impostors.*

The doubts I had the first day had long since sublimated away like dry ice in the Mohave. While the impostors were nearly perfect, they were not perfect and I knew they were counterfeit.

*Second Fact: The method of impersonation could not be duplicated by any government or agency on Earth.*

I felt absolute sure about that. No one had even a hint of the biotech skills or capability to replicate people at the genetic level.

*Third Fact: Advanced alien civilizations existed.*

The artifact, whatever it was, on Titan proved mankind was not alone. Clearly artificial and not made by humans. There weren't any others locals to build it, therefore advanced aliens had visited our solar system.

All three facts taken together lead inescapably to one conclusion, my crew mates either were aliens or constructed by aliens. Aliens who had infiltrated our mission with as much impunity as a biologist studying a troop of apes from behind a blind.

The real question remained unanswered.

Why?

If their engineering equaled their biological capabilities then they certainly didn't need our help in getting around the solar system. They could replace any crew members if they merely wanted to observe. It did need to be Charlie and Eso just for that.

Any advanced species simply could not be a violent destructive one. I believed that completely, but doubt gnawed at my conviction. If the aliens were concerned about what we learned, it would have made better sense to replace members of the science team, not the prime flight crew. Replacing Charlie and Eso implied that the aliens need to take control of the flight, not just observe.

I couldn't hide down here forever with no way to prove any of this to Mission Control. I had to force a resolution and I had to do it now.

The impostors waited for me in our communal space. Again it struck me just how closely the duplicates mirrored the real people. Something vague and indefinable continued to spoil the illusion for me.

"Geoff..." Psuedo-Charlie started, I didn't give him a chance.

"I know what's going on." I stood well away from the table. "You're impostors, and I want to know what you've done with the real Charlie and Eso."

A silence descended in the room, broken only by the soft whirl of the fans circulating our air. The silence stretched out as they waited for me to continue.

"Don't bother to deny it. You're almost perfect, but I can tell you are not who you pretend to be."

"Geoffrey," Psuedo-Charlie stood up and I took a step back, running into the bulkhead. "Listen to yourself. You know how looney that has to be."

"Freezer burn." Fake-Eso said. "Your brain's not working right."

"It's not freezer burn." I sidled around the tiny space. "My cognitive functions are just fine." I pointed an accusing finger at Eso's doppelganger. "You tested them!"

“You’re perfect down to the genetic level,” I continued. “No one on Earth can do that. What do you want? I can’t believe you came all this way and played this masquerade just to do us harm. Let us, let me, help you.”

“Geoff..”

“What did you do with Charlie and Eso?” I demanded. “Tell me they’re safe.”

“I’m Eso!” The double stood up and for an instant diverted my attention. Psuedo-Charlie charged me, slamming into my chest and carrying me into the bulkhead. The air exploded from my lungs and I collapsed to the deck. Fake-Eso moved in fast and I struggled as best I could, but they pinned my arms and carried me to my cabin.

“What are we going to do?” Fake-Eso asked.

“Back into hibernation.” Psudeo-Charlie answered as they dropped me onto my bunk. Some of my breath had returned and I tried to fight, but between the two of them they manhandled me to my stomach. They tied my hands and feet. I clenched my teeth and tensed my muscles as until it felt as though my arteries would burst. I’d read somewhere that’s how magicians escaped from ropes. I only hoped I could duplicate the effect.

“What will we tell Mission Control?” Fake-Eso asked.

“Freezer burn.” Psuedo-Charlie and Fake-Eso carefully backed out of my cabin. Just before the partition shut I heard Fake-Eso ask.

“Are we going to report what he said?”

“Of course not.” And the door latched closed.

Despite the anger and fear I closed my eyes and tried to calm myself. Only with my muscles flaccid and relaxed would I have any chance of escaping. We don't have cord just lying around the spacecraft, so I felt even more angry knowing that they had prepared to capture me. Whatever they had planned, cooperation didn't make that list. Once I was back in a hibernation tank there would be no one and no way to stop them.

I tested my bonds, and though loose I couldn't quite slip free. Wishing I had studied yoga instead of fencing I relaxed for another try.

They had spoken more truth than lie the night before. An advanced species didn't have to have any respect for any species other than itself. If they had killed Charlie and Eso I couldn't expect any better for the rest of us, especially me. Someone who knew the truth as much as I did had to be danger to their mission.

My right hand slipped free. Keeping myself calm proved difficult, but eventually I got both hands and then my feet loose.

*Okay, I thought to myself, I'm free, what do I do now?*

It would take them time to prep the tank, that's one thing they couldn't have gotten ready ahead of time. Not with me in the Medical bay most of the day. Once ready the tank would be, at best, my prison and more likely than not my coffin. Whatever I did I had to do it right now.

I had to get a message back and it had to be something that would make them understand. If I could find out what happened to the real Charlie and Eso that might do it. If they were held captive and rescued, that would be best, but decaying bodies would be proof as well. An idea flashed into my mind. I didn't know if I had the courage to run the bluff or worse follow through with it.

I carefully slid open the door to my cabin and peered out. No sign of them. They must still be in the CTV prepping my hibernation tank. I hurried across the tiny space and up the ladder to the next level of the hab.

I kept right on through the farm and into the top level of the hab. There were only two compartments here, the pressure-suit room and the airlock. I pulled a pressure-suit out of storage. I hurriedly opened the hatch on the back of the carapace.

The pressure-suit was a hard-shell affair, much more like deep-sea diving suits than the old fabric suits NASA used to use. They were

heavier, but on Titan that mattered very little. Most importantly for me they worked with a full atmosphere of pressure so I didn't have to waste nearly an hour decompressing before using one.

I slid my legs in first, then my arms and finally I pushed my head up into the clear domed helmet. The suit closed up on my command and began a series of self-checks while I climbed up into the airlock.

Our training screamed in my brain, *You haven't been buddy-checked!* But I had no one to check my seals so I prayed that the suits functioned as designed. I closed the hatch under me and started the airlock cycling. Somewhere alarms rang, but it was too late for them to stop me. By leaving the outer hatch open I ensured nothing could force that inner hatch open as the pressure dropped away and my heartbeat sped up. When the airlock was in vacuum, I pulled open the hatch and climbed outside.

An aurora of blue and green surrounded me as I stood atop the habitation module. The aurora was faint, just a ghostly flicker of green tinted with blue that seemed most visible out of the corner of my eye. The ship and I were in the center of a bubble of magnetic force and ionized plasma more than several thousand kilometers across. Inflated by the ionized plasma the magnetosphere acted as a sail for the solar wind which pressed against the field and pushed us with a low but

steady acceleration. The magnetosphere also protected us in deep space, including Jupiter's intense bands of radiation. They were the key to my plan.

Towering above me, the main strut of the Titan One reached up and away nearly half a kilometer high from my perspective. I could see the nuclear power plant house and the radiating-fins at the far end of the boom, but my destination lay in the middle. Grasping the rungs of a ladder affixed to the boom I began climbing.

The stars were visible through the faint glow of the plasma rotating around the center of the boom just less than twice per minute. I twisted my head around and behind me Jupiter filled the sky. It looked as though we should fall straight into that giant planet. The mini-magneto plasma field could get us all the way to Saturn by itself, but by swinging past Jupiter and stealing a fraction of that planet's orbital velocity we'd arrive at Saturn months faster. Already we were deep inside Jupiter's immense and lethal radiation belts.

I kept going, dropping weight as I climbed closer and closer to the center of the boom. The radio blinked for attention but I ignored it. Once I was ready I would talk with the impostors. I spent the time as I climbed the two hundred and fifty meters to the center of the boom gathering my resolve. I held the power to kill us all but could I do that if

they called my bluff? What would happen if I didn't stop them? If the aliens did mean ill I alone stood in their way.

The stars continued to whirl around us visible through the faint glow of the magnetosphere. The sun was visible as a bright disc, but far dimmer than at home. Before long I reach the center of the boom and the generator of the plasma for our drive. Without the plasma injected into the magnetic field, the magnetosphere would collapse to just meters across. Working quickly with fear and doubt eating at me I opened the access panels to generators. I cutout the automated controls, taking total control over the field.

"Listen to me," I said switching on the radio. "I'm ready to deflate the magnetosphere and kill us all. I want know what happened to Charlie and Eso and I want to know what your mission is. If you don't tell me, and it had better be the truth, you'll be as dead as the rest of us."

My hands trembled inside the generators. What if they didn't answer? What if they continued the masquerade? Could I really pull the switch? Could I not?

"Geoff." Charlie's voice sounded clear in my helmet. "There ain't a thing I can say except that we're as human as you are."

“Charlie!” I jerked my hand back from the generator, thrilled at the sound of his voice. “It’s really you!”

“Of course it’s Charlie, you ass,” Eso’s voice, gruff and direct, sounded like an angel to my ears. “It’s what the hell we’ve been trying to tell you!”

It *was* their voices, I had no doubt about it. For a moment I thought that Charlie and Eso impostor's must have switched places after launch, but I quickly rejected that. You couldn’t hide a hamster aboard the Titan One much less two people.

“I...I...” I stuttered unable to form anything coherent. My mind collapsed into confusion.

“Geoff,” It was Charlie again. “Are you still at the generators?”

“Yes,” I answered weakly, even as I climbed a few meters down the boom. “But I’m moving away.”

“Finally, he’s making sense.”

There was no delay in the conversation, so they had to be on the ship with me. It didn’t make any sense. I knew these voices and they belonged to Charlie and Eso, but every time I saw them I had known -- with certainty-- that they had been impostors.

Like I was taking a quiz, the answer flashed into my mind;  
*Capgras’ Syndrome.*

“I’m coming back inside.” I announced as I started the climb back to the hab. I didn’t know how I would explain all this to Charlie and Eso. They had been right all along. It was freezer burn. Every other case of Hibernation Induced Neurodegeneration had been indicated with pronounced cognitive impairment. Trust my luck to find a new way.

They were waiting for me on the other side of the airlock, the three of us filling up the pressure-suit compartment so completely that we couldn’t have fought if we had wanted to. I explained to them as I removed the pressure-suit.

Capgras’ Syndrome was a rare disorder brought on by brain damage. It left subjects with the delusion that some people, always people close to the patient, were in fact impostors. Charlie and Eso still seemed to be impostors to me as I explained all this to them. I went on to explain that a curious symptom of Capgras’ Syndrome was that patients recognized individuals when they could only hear them. The disorder with entirely cause by visual cues. When I had heard their voices on the radio, it became suddenly and embarrassingly clear.

Of course I’m still going back in the tank. I do have freezer burn, but it’s something we can cure. Hell, even with the limited facilities of

Titan Base we'll be able to cure it, I'll just have to sleep until they're ready for me.

After all this -- an alien derelict will seem boring.