

Amanda

By E.S. Strout MD

**AMANDA (Antarctic Muon and Neutrino Detection Array), a hunter of ghostly particles, is ready to go to work. It will rely on neutrinos, particles with no charge and almost no mass that barely interact with matter at all. The detector, a massive array of light-sensitive globes buried in the clear Antarctic ice. **
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1.

NASA Research Complex, Cape Canaveral, Florida. Monday September 24, 2012. 0845 hours.

“General Turner on line one, Professor Lynch,” her secretary announced.

Professor Paula Jane Lynch, expert in subatomic particle research, is a 36-year-old woman with curly auburn hair and striking green eyes in an attractive oval face picked up the landline. “What can I do for you, General?” She listened for several seconds and nodded. “Be there in ten, sir.”

A quick brushing to untangle her unruly auburn tresses, then a touch of makeup. She smiled and nodded at her image in the mirror. “Better than mortal man deserves.”

2.

NASA Operational Headquarters,
Cape Canaveral, Florida:

Air Force Major General Raymond Turner, a crusty 50-year-old clean-shaven officer except for a bushy brown mustache, poured coffee in two china cups bearing the NASA Logo, passed one across the desk to Dr. Lynch. He turned pages on her NASA personnel file with no visible reaction.

Professor Lynch said, “Best coffee at NASA, Sir. Most of my graduate students can’t even boil water.”

Turner smiled and continued his perusal. A minute later he snapped the folder shut and looked up. “Are you familiar with the AMANDA project in Antarctica, Dr. Lynch?”

She nodded. “Bunch of physicists set up shop on the Amundsen-Ross ice shelf for

subatomic particle research, some time in the late nineties, I recall. Interesting project. I've followed some of it. They are trying to determine how neutrinos relate to the Big Bang event twenty some-odd billion years ago."

General Turner said. "There's been some recent interference with electronic transmissions from an Air Force satellite in an orbit which includes the South Pole region. It mostly transmits weather patterns but also has some secure communication functions."

"From the AMANDA site?" Paula asked.

"Yes, Professor. GPS confirms its location. The satellite feeds are garbled or go dark every time it passes over the AMANDA site. This phenomenon is of recent onset, first noticed about two weeks ago. Intermittent at first but steadier in the last couple of days. The Air Force and the Pentagon are concerned. We need your expertise in particle physics."

Professor Lynch blinked. "That is very odd, sir."

The General drank coffee, poured more. "Why odd, Dr. Lynch?"

"General Turner, it would be highly unusual if not impossible for neutrinos to interrupt any type of electronic communications. They have been navigating their way through the cosmos ever since the Big Bang and are non reactive

A frown of concern creased Turner's rugged brow. "Of course I defer to your expertise, but the Pentagon wants a closer look."

"Of course I'd be happy to review your data, sir."

The General drank more coffee. "I'm proposing an on-site visit. The Department of Defense has authorized it. The stipend will be one hundred thousand dollars. The Air Force will provide cold weather attire and whatever additional equipment you require."

"Also of interest is this item," the General continued, reading from another document. "The AMANDA project has recently gone ten and a half million dollars over budget. Is there a connection?"

Dr. Lynch held her cup out for a refill. "Sounds intriguing, sir. I accept. May I bring a couple of my lab people along?"

"Negative, Professor. Safety concerns. An Air Force Security officer, Major Louis Raglan will meet you at the AMANDA airstrip. He carries the full authority of the Pentagon and will be responsible for your safety."

Paula blinked. "My safety, sir? Please explain."

“The atmosphere could be hostile. Professor Allan Reichman has vehemently denied every request for even minimal information.”

Another startled blink of her long-lashed green eyes. “Allan Reichman? From Cal Tech?”

“He’s been there for a couple of years. Is he a problem?”

“Professor Reichman has been my competition since we were graduate students. Not always friendly ones, either. He’s brilliant but antisocial, angry and borderline psychotic at times when he skips his lithium dosage.”

“The Air Force will cover your six. That’s Air Force jargon for your six o’clock position. Your tail.”

Paula drummed clear-polished fingernails on the desktop. A faint grin creased her lips. “Am I authorized to carry a sidearm, General?”

He shook his head. “Negative. You’re a noncombatant, Professor.” He pushed a manila envelope across the desk. “Your itinerary. Air New Zealand to Christchurch. Air Force C-130 Hercules to the site, plus what few files we have on Dr. Reichman and the AMANDA project. Your cold weather gear will be on board. Your flight leaves in 12 hours.

3.

Three days later

“Lou Raglan,” the tall, red-faced figure garbed in cold weather attire introduced himself at the AMANDA airstrip. He handed Paula a laminated I.D. badge. “Welcome to our igloo, Dr. Lynch. This grants access to most AMANDA facilities.”

She took the device with a fur-lined mitten, stuffed it in a pocket and nodded thanks. She gave Raglan a curious look. “I understand you are my bodyguard, Major.”

“I have authority to assist you in any and all aspects of your investigation, including protection if needed, Professor.”

”Good. What do you know that I don’t, Lou?” Paula shouted as they leaned into the brisk, numbing wind and swirling ice crystals.

“The satellite glitch you are investigating began about two weeks ago,” Major Raglan said, cupping a hand to her hooded ear.

There was a sudden tremor. Paula scrambled for footing on the icy walkway. “Earthquakes,” Raglan said as he grasped her hand in time to avert a tumble. “Four

already this week, they tell me,” he said as she regained her balance.

“Unusual for Antarctica,” Paula said. “Can you update me on Dr. Reichman’s project? General Turner didn’t have much.”

“Right. The neutrinos. Way over my head, Dr. Lynch.”

She smiled. “And through it too, Major. Several million have traversed our bodies during this conversation.”

Raglan’s eyes grew wide. “You’re kidding. I don’t feel anything.”

“Relax, Lou. These particles are unique subatomic entities. They have been traveling through space since the Big Bang at near light speed. They haven’t run into anybody yet.”

“Could they cause earthquakes?”

There was a sudden gust of frigid wind carrying swirling snow and ice crystals. Paula said, “Can we please get inside now, Lou? I need to count my fingers and toes.”

Major Raglan led the way to a small office with a gray metal desk and a couple of chairs. There was a filing cabinet against one wall and a calendar featuring a tropical lagoon with white sand, palm trees and tanned surfers on another. He set down the duffel bag containing Paula’s gear. “It’s our guest lodgings,” Raglan said. “Two rooms on the other side of that door are sleeping quarters. I’ll show you the mess hall later.”

Dr. Lynch gave the calendar page an approving glance, removed her outer cold weather garments and pulled on a blue NASA sweatshirt. She held her hands up to a heating duct and nodded. “Much better, Major. Now please continue on what you were telling me outside.”

He nodded. “They say the tremors began about the same time as the satellite problem. Could those subatomic particles you mentioned cause earthquakes.”

A green eyed blink from Paula. “Not a chance, Lou. Where did you get such an idea?”

“I just wondered. Dr. Reichman told the ANANDA technicians shifting ice fields are causing the tremors.”

“I’ll be looking into that very soon. Can I rely on you if Dr. Reichman goes crazy on me?”

A troubled frown crossed the Major’s freckled forehead. “Do you mean crazy, like psychotic?”

“He’s always been hyperactive, extremely paranoid and does take lithium. Plus, he doesn’t like me very much. In less lucid moments he has accused me of stealing his ideas.”

“Count on it, Dr. Lynch. General Turner has tasked me with providing you with assistance and total protection, 24/7.”

She smiled. “My six, General Turner said.”

He handed Paula a cell phone. “Press 6, that’s me. Day or night. Sorry I couldn’t give you more info. My orders came in less than 72 hours ago.”

“I appreciate your concern. I’ll deal with Professor Reichman. As I’ve told you, he’s an old nemesis.”

They teetered for balance after another tremor as light fixtures swayed and the calendar fell. “At least Richter 4.” Paula pronounced. She retrieved her cell phone from her gear and punched in General Turner’s saved office number. Waited, punched it in again then hit redial. She gave a headshake of frustration. “Darn it. Can’t get through. Nothing but static. Try on your cell.”

Raglan tried NASA, the Air Force and the Pentagon three times. “I’m getting the same thing, Dr. Lynch.” “Nothing. The cells work locally, the satellite uplink is the problem for distance. What could be causing the interference, Dr. Lynch?”

“I’ll tell you one thing for sure, Lou. It’s not the neutrinos. Let’s try again in the morning.”

“I’ll escort you to Dr. Reichman’s Lab. Is 0900 hours tomorrow okay? Grab some coffee and breakfast first.”

0845 hours the next morning.

Dr. Lynch arrived at the office carrying a Styrofoam cupful of hot black coffee. She blew to cool it, and then took a couple of swallows. “Good morning, Major. I missed you at breakfast.”

He nodded as he began pulling on his cold weather gear. “I had to check the perimeter, so I ate early. Dr. Reichman’s lab is a separate building, so best you wear the hooded parka and ski mask. It’s only minus 40 outside. Did you get through this morning?”

“Our government agencies were still unavailable but I got through briefly to the New Zealand Seismograph Network and asked about earthquakes at our location. They told me they had been getting some unusual readings for a few months from the AMANDA site, 1.5 to 2.5 Richter but they couldn’t distinguish them from ice field shifts. Then they began to get stronger. The tech said the two yesterday were the strongest yet, near 4.7 Richter. Definite tectonic events. Then the transmission was cut off.”

“I’m concerned that Dr. Reichman is working on something that could have unusual effects.”

She continued, “I had breakfast with our pilots. They recalled hearing of unscheduled flights bringing more electronic gear and workers but they were not involved in those.”

“Then I asked some of the AMANDA personnel about Dr. Reichman. The supply department people don’t care for him at all.”

“Why not?” Raglan asked.

“He’s secretive, demanding, intolerant of minor or insignificant paperwork errors. Delays of supply delivery will provoke blistering tirades and accusations of incompetence. The personnel turnover rate here is weeks rather than months, despite the generous stipends. Many of them will be going back with us.”

“Did anyone elaborate on secretive activities?” the officer asked.

“They said there had been construction crews in and out until two months ago, quartered separately and with their own mess facilities. When questioned they were evasive, said they were doing maintenance on the sensor globes.”

“One of the electronics technicians told me later that the sensor globes are permanently implanted and require no maintenance,” Dr. Lynch said. “Perhaps Professor Reichman can enlighten us,” She tucked her quilted pants into insulated boots. “Let’s go ask him.”

3.

The Neutrino Sensor Station, 0915 hours:

Major Raglan opened the storm proof outer door with his key card. The vestibule had lockers where they stowed their cold weather gear. “That’s him, Major,” she whispered as they looked through a small window in the inner door.

Major Raglan pressed an intercom button and explained, “The key card won’t open this door. I was told it could only be opened by a switch from the inside.”

Paula nodded. “By Dr. Reichman’s request, no doubt.”

A terse voice came over the intercom box. “You better have my electronics gear this time,” Seconds later the latch clicked open and they stepped inside.

A thin, pale-faced unshaven young man with deep-set dark eyes sat at a desk. He was engrossed in graphics on a desktop computer screen as Mozart’s *Rondo in A minor* played softly over hidden stereo speakers.

“We are here on official government business, Dr. Reichman,” the Air Force officer announced.

“You are two days late with my shipment of electronic gear,” Dr. Reichman said without looking up. “You have delayed me 48 hours in a crucial step of my study. What’s your lame excuse this time?”

Paula held up a restraining hand, “Let me handle this, Lou,” she whispered.

“Paula Lynch, Allan. I see you’re just as congenial and welcoming as ever.”

Reichman leapt to his feet, upsetting his coffee cup, his face turning an apoplectic crimson. “What in hell are you doing here?”

“Nice to see you too, Paula replied. “I wish you’d answered the Air Force requests. I’d rather be someplace warm.”

Reichman blotted coffee stains from his lab coat with a handful of Kleenex, a dark scowl etched on his face. “I have enough problems here without your interference.”

Paula tucked an unruly strand of auburn hair behind an ear. “I’ll be gone as soon as I know your research isn’t affecting that Air Force satellite.”

Reichman aimed a quivering index finger. “My research is classified. I don’t have to show you a damn thing.”

“Orders from the Pentagon, Doctor,” Major Raglan said in a reasonable tone. “I’d suggest you cooperate.”

A frustrated headshake. “Dr. Lynch has no authority here.”

Paula unclipped her I.D. badge and tossed it on his desk along with the envelope containing General Turner’s directive. “This is my authority. I’d rather be basking on a warm Florida beach. Much better for my attitude than this minus-forty degree skua gull sanctuary.”

“You’re here to steal my data,” he screamed, his face beading with sweat.

Paula exhaled an exasperated sigh. “You’ve skipped your lithium dosage again, Allan. Either something here is screwing with that satellite or it isn’t.”

Dr. Reichman gritted his teeth. “You can’t interfere. This study is entering a critical phase.”

Paula said, “I can’t but my Air Force friend here can.”

Major Raglan released the holster strap of his sidearm and stepped closer. "Please, Dr. Reichman, I'd suggest we conduct this investigation in a civil manner."

Paula said, "The Major is a pretty good shot, Professor."

Reichman brushed cold sweat from his face with the sleeve of his lab coat. "This way. Just you," he stammered as he led her to another door.

"Sorry, Allan. Major Raglan will be covering my six."

4.

Banks of electronic equipment lined the walls of the neutrino sensor lab. Dr. Reichman booted up another computer and brought up an image showing a series of black dots on a pale blue background. "Photomultiplier tubes enclosed in crushproof glass spheres are amplifying neutrino collisions with hydrogen and oxygen atoms in the ice."

"Impressive. How many sensors?"

"Six hundred," Reichman said with an acid-laced mutter. "Embedded two miles deep in the ice shelf. All other subatomic particles except the neutrinos are blocked out by the miles thick ice."

"There's a hit," Paula said as a silvery blip lit the screen. "And there's a bunch more, together. I thought this was a rare occurrence."

"It's within the parameters of my study," Reichman replied with a contemptuous sneer. "You wouldn't understand."

"I understand more than you think, Allan. She nodded at the screen. "These are not neutrinos. The hits are occurring in clusters, not singly if this is an accurate representation of the sensor globes' input. Would you scroll back a ways, please?" she asked.

"None of that old data is relevant," Dr. Reichman insisted.

Paula said, "Please, Allan. I must correlate it with what I'm seeing here."

"I'm in complete agreement with Dr. Lynch's request," Major Raglan added. "She requires your full cooperation."

Dr. Reichman slowly got up and stepped away from the keyboard, uttering an expletive under his breath.

Paula stretched her arms, cracked her knuckles and attacked the keyboard. A complex grid lit the screen seconds later as Reichman glowered.

“This is from eight months ago.” She tapped a clear polished fingernail on the screen.

“Your new particles appeared here. Prior to that, everything was single neutrinos colliding with oxygen molecules in the ice. Then the new guys showed up, their weird clusters and collisions setting off your sensor globes. They must have been attracted by the globes’ reactions to neutrino hits.”

“That is correct. It is my discovery alone. I will name it the Reichman particle. Everything is documented.”

“Have you documented the recent seismic events, Allan?”

Dr. Reichman shook his head as though trying to dissuade an aggressive insect. “Intermittent cooling and warming are causing instability of the ice layers.”

“That’s not what the New Zealand Seismograph Network told me. A lady there said the two quakes yesterday were tectonic slippage events, not ice layer instability.”

“I’ve been with this project for three years,” Dr. Reichman shouted. “How dare you quote unauthorized outside opinions to me?” He grabbed his coffee cup and with a furious toss shattered it on a granite counter top.

Paula ducked, then deftly plucked china fragments from her black NASA sweatshirt. “Skipped your lithium again, Allan? I think your new particle could be doing more than just messing up satellite transmissions.”

“Impossible they are non reactive.”

“I don’t think so,” Paula said.

Reichman slammed his clipboard on a lab bench. “What utter nonsense.”

“No further outbursts please, Dr. Reichman,” Major Raglan warned. “One phone call to the Department of Defense can shut down your project.”

A wide-eyed stare. “You can’t. This project is a civilian enterprise supported by a number of well-known non-government aligned institutions.”

Major Raglan said, “Doesn’t matter. My authority comes from the Pentagon and supersedes all other agreements. If Professor Lynch finds evidence that your AMANDA project is interfering in any way with the Air Force satellite I will make that call.”

“I have rights,” Professor Reichman screamed.

“Not when it involves national security, sir.” The Major placed a hand on the butt of his

sidearm. "I'm a marksman, but I am out of practice. I might blow off a kneecap by accident if you force me to use this, and I've noticed that your medical facilities here are limited. Continue please, Dr. Lynch."

"Thank you Major. I've excluded all other possible causes of satellite interference with a Google search back at NASA. All negative. It is something right here at AMANDA."

"Professor Reichman, I've become particularly intrigued by the increasing population of your unnamed particles. How do you explain this sudden increase with only six hundred sensor globes?"

Reichman hesitated, stuffed his hands in his white lab coat's pockets. "Still under study," he murmured.

"Oh really?" She clicked another page open. "Let's see how your new particle's activities correlate with recent seismic events."

"Not relevant," Reichman screeched. "You are finished here. Please leave and take your hired gun with you."

She said in a soft voice, "We'll see about that. Major Raglan, tell him."

Raglan nodded. "Dr. Reichman, I have authority granted by the Department of Defense to arrest you. Forcefully if necessary."

"For what?" Reichman demanded.

"Obstructing a government investigation, sir," the officer replied. "Conviction would get you ten to twenty at the Fort Leavenworth military prison. Add to that hundreds of thousand dollars in fines."

5.

"Here," Dr. Reichman said in a subdued but acid laced voice as he reached across and clicked another file open.

Paula highlighted a graph. "How interesting, Professor. Says here the electronic and seismic events correspond."

"An unrelated coincidence. Everything will be explained in my Nobel Prize presentation."

Another tremor rattled and they were plunged into darkness except for the spectral glow of the computer screen. "Definitely increased over the ones Major Raglan and I felt yesterday."

She punched up a split image. "On the left, the New Zealand seismograph track of this

event, on the right a huge new cluster of hits of your unusual particles. Identical to the millisecond.”

Dr. Reichman made a grab for the keyboard and unleashed a volley of expletives when restrained by Major Raglan, who unsheathed his sidearm and jacked a round into the chamber with a loud snap.

“Please carry on, Professor Lynch,” the officer said. “I believe Dr. Reichman will cooperate.”

“Listen to me very carefully, Allan,” Paula said as she mopped perspiration from her forehead with the sleeve of her sweatshirt. “The tremors are increasing in intensity as we speak. These events are related and appear to be cyclical. These new particles could be a remnant of the Big Bang event, each with its own microscopic event horizon.”

An annoyed headshake. “That’s nonsense. Pure fantasy. Such a particle would be a superdense entity and go right on through the Earth. My study will prove that the Reichman particle is harmless.”

Paula said. “I do not believe your new particle is inert. If I am correct, each one has its own minute gravitational field. Collectively they could cause a tectonic shift.”

Paula clicked open another file. “Hello,” she said, tapping the screen with a pencil point. “I think this explains the monetary discrepancy General Turner mentioned in the AMANDA financial report he showed me. Just six hundred sensor globes, you said. Here it says you added another six hundred two months ago. That explains the clandestine work crews and the missing millions.”

Reichman took an uneasy glance at the Major’s drawn weapon. “They were essential to my research, and the money came from private sources. None of yours or the Air Force’s concern.”

Paula brushed an errant dark curl from her face. “When you doubled the number of globes, you doubled the number of hits by these attractive particles in your sensor array. You have discovered a new entity never before seen in nature. But now they are congregating by the billions and affecting tectonic stress and the Air Force satellite’s communication systems.”

Reichman paused for a long moment, leaning against a lab bench. His voice became quiet and speculative. “Where do you think they came from, my particles?”

“Allan, studies like yours on glaciers have found nothing like this. The Russians at Lake Vostok have reported nothing similar. There’s no place else on Earth I can think of, and not of Earth as well.”

“We’ve examined old meteorite hits like the big one in Arizona. We’ve recovered ice

from comets. Nothing like this has appeared. Your particles have been sequestered in those miles-deep layers of ice for tens of million years. It certainly merits further study. You must have colleagues . . . “

Dr. Reichman’s paranoia returned with a ferocious outburst. “I trust no colleagues and certainly not you,” he raged,

Paula turned to the Air Force officer. “Lou, please try again to contact your people and apprise them of the situation here. They may wish to send additional security personnel.”

“What the hell does that mean,” Allan Reichman asked, his voice suddenly hesitant.

“They have as great a concern for national security as I do,” Paula said. “They could shut down Project AMANDA.”

“You wouldn’t,” Reichman screamed as Lou punched digits on his cell phone.

“You have left me with no other recourse, Allan. Your doubling of the sensor globes has resulted in a potentially dangerous increase in your highly reactive particles.”

“It’s my choice alone to determine the reactivity of the Reichman particle,” he shrieked. “The final step will ensure me of a Nobel Prize in physics.”

“I still can’t get through, Professor Lynch,” Major Raglan said. “Interference with the satellite. It’s steady now, no longer intermittent.”

Dr. Lynch’s voice took on an urgent tone as she viewed a new computer page. “Look at this, Allan, your new particles are congregating again, filling the entire screen. There will be another major earthquake. Think of what’s happening under that ice. You must deactivate those new sensors now.”

Reichman replied with a crazed grin. “The final step is underway and cannot be stopped. It will run to completion.”

“Power plant. I’ll get it.” Lou yelled as he donned his cold weather gear. The outer door wheezed shut behind him.

6.

Reichman’s face contorted in rage. “I expected approval from a colleague, Dr. Lynch.”

“These particle-induced seismic effects are the prelude to a cataclysmic event of Biblical proportions, Allan.” She tapped computer keys. “Look here.”

Dr. Reichman gave Paula a vicious shove, sending her sliding across the deck along with the chair. “More science fiction? I reject your premise,” he screamed.

He was interrupted by a quake that sent them both sprawling across the deck as frigid Antarctic wind whistled through gaps in the walls and ceiling. Paula scrambled for her cold weather gear as Professor Reichman continued to rage.

“You are correct,” he screamed, saliva dripping from his lower lip. “CERN’s Large Hadron Collider and Fermilabs Tevatron have failed. I will succeed. My discovery will be a miniature Sagittarius-A star.”

A scream of frustration as Paula pulled her fur lined hood tight and kicked aside glass and structural debris. “Allan, if you are right there will be mass destruction involving more than just Antarctica. We will all die.”

Reichman gave a wild-eyed shriek as he drew a semiautomatic pistol from beneath his lab coat. “You will not live to see the culmination of my research.” He fired two errant shots as Dr. Lynch scrambled through the outer doors, pulling on her cold weather gear as she ran.

Outside, Paula punched 6 on Major Raglan’s cell phone. “Professor Reichman’s gone totally psychotic, Lou. Alert the C-130 crew, tell them warm up the engines and hustle the site personnel on board. I had to leave most of my cold weather gear while I was dodging bullets. We have to split, ASAP.”

7.

Back at their office, Paula and Major Raglan scrambled for their gear. “Could you have shut down the power, Lou?” She asked.

“Yes, but the sensor lab has an independent generator. Dr. Reichman has barricaded the access. There’s that steel door without key card entry capability as I showed you. No other entrances. And two 9mm semiautomatic Berettas plus a dozen ammo clips are gone from the armory. There would be casualties if we tried to break in.”

Paula said, “It’s worse than you can imagine, Lou. What Dr. Reichman has unleashed is a confluence of gravitational forces seen only in collapsing neutron stars. A black hole right here in Antarctica. Time, space and dimension will cease to exist in its vicinity. Its effect will be widespread. If we are caught inside its event horizon there is no return. Even light can’t escape. We could end up in another cosmic reality, past or future in this one. It could shred us into spaghetti if we don’t get far away.”

“Damn.” Lou punched up the sensor lab on his cell phone. “Last chance, Dr. Reichman. You’re going to kill us all if you can’t shut down all those sensors’ input now.” A chatter of automatic weapon fire answered and the line went dead.

They raced for the C-130, which began to taxi as soon as they scrambled aboard. She yelled, “We got everybody, Major?”

“Affirmative. We’re outta here.” Another tremor sent a series of crevasses branching across the ice sheet as the C-130 Hercules struggled to gain liftoff speed.

8.

The plane’s four prop engines screamed as it barely cleared a new gaping crevasse bisecting the runway. A crash of thunder and blinding lightning flashes lit the sky and ice field below. Swirling sheets of snow and ice crystals buffeted the plane as the passengers dodged a rain of unsecured gear.

Sudden uncompromising darkness enveloped them as the plane struggled for altitude. The view outside revealed a frozen rock-strewn landscape, lit only by alien star configurations. “What’s this, Dr. Lynch?” Raglan yelled.

“A view into another cosmic reality, Lou,” she answered, gasping with horror. “We’re going to be trapped . . . ‘

“Clearing now!” Major Raglan shouted as sudden sunlight streamed in through the side ports and the plane leveled off. “I think we’re okay . . . Look.”

Paula’s voice was subdued as she viewed the deep defect in the ice expanse below. “We were lucky. The event horizon missed us. The anomaly is gone as well. Too small to sustain itself more than a few seconds.”

A sad sigh as she blew perspiration-moistened curls from her forehead. “Dr. Reichman is somewhere or sometime else, along with station AMANDA.”

“Major Raglan, Professor Lynch. NORAD reports the satellite has resumed normal function,” the pilot informed them.

“Tons of paperwork ahead for us,” Raglan noted with a wry grin.

Paula nodded agreement. She gave a sad shrug. “The Reichman particle, whatever it was, is gone, along with Professor Reichman and his computer files. We can only speculate.”

The End