

# **TOM SWIFT** and the **Space Battering Ram**

BY

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&

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A Joint

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The characters Damon Swift, Anne Swift and Bashalli Prandit were created by Scott Dickerson and are used through his incredible largess and understanding that they are superior to those they ultimately replaced. He also invented the TeleVoc communications system which our Tom uses in this story. *Multaj dankon!*

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# Tom Swift and the Space Battering Ram

By Thomas Hudson and Leo L. Levesque

What begins as a kidnapping of an employee's family quickly turns into one of Tom Swift's most difficult challenges. The trouble really begins when Harlan Ames is taken hostage by a brother and sister bent on creating their own personal paradise, something that would mean also killing Tom.

But, this is just the beginning of our inventor's troubles. As he works to develop an autonomous group of small spaceships, able to locate and move space debris out of any potential collision path with Earth, an incoming comet is detected. Temporarily trapped in a wobbly orbit around some of the larger asteroids, nobody know that the megalomaniacs are working toward being able to control it, and any other object out there, to be used as weapons.

Now, Tom must double and redouble his efforts to perfect his little tugs before disaster can happen. But, can he also save Harlan who has been spirited off the Earth and is nowhere to be found?

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This book is dedicated to people who don't sit around. Like Tom Swift. It is also dedicated to Leo Levesque who allowed me to be a part of his Thomasina Swift world recently, plus his first "real" Tom Swift novel, and who suggested this dual author approach. It is *anti-dedicated* to the news media for their attempts to force or make their own news rather than reporting events. Oh, it isn't all of them, but the majority don't seem as inclined to just show up and tell us about what they saw, they seem to be looking for that "BIG STORY" that will put them on the map, whatever the heck *that* is. Oh, and to both our wives. "In front of every good woman is a man..."

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# Tom Swift and the *Space Battering Ram*

FOREWORD — Tom Hudson

Beginning way back in 2009 I got involved in writing fan fiction revolving around the world of Tom Swift. I grew up with the Tom Jr. stories and was more than pleasantly surprised to find that a few other authors—mostly near my age—were putting out better novels than the final three series had been under the auspices of Simon and Schuster. They hooked me and I have been adding to the canon ever since. In case you don't immediately recognize my name that may be because I generally write under the pseudonyms of Victor Appleton II and T. Edward Fox.

Late in 2011, Leo Levesque emailed me with an idea for a new sort of Tom Swift story and wondered if I might like to write it. While intriguing, I was so involved in finishing my 6th novel at that time and working simultaneously on novels 7, 8, 9 and 10—plus about a half dozen compact stories (also known as novellas) that I politely passed and suggested that he try to write it himself.

Cue the proverbial feather and then picture me being knocked over with it. What he did write wasn't what I expected, but... His first draft of part one from his proposed five-part *Thomasina Swift* saga was compelling.

Since that first email I have had the pleasure of working behind the scenes on his stories as his impromptu editor and sounding board. It is a real blast and has me looking forward to each new installment.

So, when Leo suggested that either all of the fans out there who love Tom Swift create a "round robin" story—where one person writes a bit then turns it over to someone else who writes a bit, then... well, you get the picture—until someone declared it to be "finished," or to possibly do a tandem book write with just the two of us, I jumped at the chance.

Since so many of the fan authors are off doing their own thing I believed that it would be doable only if we kept it between just we two.

We may live on opposite sides of the country, and communicate exclusively via email, but the process of writing this story has run more smoothly than I might have imagined. It has been a case of two minds meandering down a path and discovering interesting things neither of us anticipated at each turn.

It has been fun as well as challenging, and I mean that last in the most flattering and positive manner.

What you have here is our dual effort; a bit from one of us, a little rewrite from the other so the next part works plus a new little bit, and then repeat until complete. It might sound like a complicated way to write a book, but it certainly was fun.

Enjoy the fruits of our combined labors.

*Thomas Hudson*

# Tom Swift and the Space Battering Ram

FOREWORD — Leo Levesque

The fruit of our combined labors is a misnomer. Tom labored and I just confused the heck out of him. He would get us going down one set of train tracks and I would switch us to another set of rails. He was always heading east toward me and I would corkscrew us to the Pacific or a side trip to Mars or just run a round with my head cut off.

How Tom kept sane and led us to accomplishing this story is beyond me. But he's a good writer and knows where he is at all times. The train finally made it to the station and he is a proud engineer on doing so. For me, I'm in the caboose sleeping away and dreaming of another adventure.

*Leo L. Levesque*

# Tom Swift and the Space Battering Ram

## Chapter One: Imminent Destruction

The ancient comet was nearing perigee... it was seemingly nothing more than a ball of liquid gases and dirty frozen water mixed with primordial matter from the beginning of the solar system. By a freak chance of nature, and for the first time in its 'life,' all the solid particles and rocks congealed together, dense, heavy and weakened by millennia of exposure. As the old comet edged away from the Sun, slower and slower, part of the mass of dirty gray debris was slowly pulled out. At first, nipple-like, then globular, drawing off more and more of the old comet. Finally it snapped off, and then there were two. The mother comet had given birth to a mass of primordial matter with a dollop of the mysterious 'Dark Matter' that was no longer readily found in a developed star system, but still was believed by many scientists be obtainable in deep interstellar space. But it was something more sinister.

Like a baby, it stayed with its mother and followed behind, millennia after millennia. Together, they swung silently around each other, forming their own small orbiting system. Once, the baby broke away and the old comet continued her eternity-long inward and outward swings, delicately balancing between gravity fields of the planets in a celestial ballet that repeated every fifty-three point seven years. And then the baby came back and plunged deep inside the mother.

At least three observatories recorded the collision and the ever-so-slow pivot the comet now made before, seemingly, only the mother headed back toward the center of the solar system. It was an insignificant event in their eyes. Had they been observant—and checked their data—'they' would have known that something was different. Timing was not the same by more than three years. But, anyone trying to observe might be forgiven for missing the event as the glare of the Sun and the baby's small size kept it from being seen.

Later on, as the mother began to worry astronomers, the baby remained unseen; it was assumed by all to now be totally obscured by the mother comet's growing tail.

\* \* \*

Sandra Swift and her best friend Bashalli Prandit—her famous brother's steady girlfriend of about a year—came rushing across the floor of Tom Swift's underground hanger and burst into his small private laboratory. He and his best friend, and Swift Enterprises test pilot, Bud Barclay were bent over Tom's workbench, concentrating on working on one of Tom's newest invention. The young inventor had given it the tentative name of Attractatron, the reverse of his famous Repelatron device.

For his part, Bud had dubbed it the *Electro-Pull*.

Tom's plan was to combine this new device with the atmospheric machines he invented for the planetoid, Nestria. And, while his initial goal was to replace the trillions of ultra-fine particle strands in the atmosphere on the planetoid—the ones that held the air down close to the ground in spite of the extremely low gravity—in the back of his mind was the concept of using it in some way to support a denser atmosphere some day on Earth's neighbor, Mars.

But that all hinged on his ability to find more of the precious gravity-providing substance

only known to exist on Nestria and only in a small vein of it discovered, so far, in the back of the space friends' mysterious cave. Tom was hoping to find more of it out in the asteroid belt or beyond where the solar system seemed to be made of older star dust. Maybe he would have to travel out of the system way out into the Oort Cloud field and its fine partials of leftover dust.

At the sound of Sandy's almost panicked voice, both boys spun around.

"Tom... Bud, turn on the television, quick! The Fox station. It's just horrible." Sandy sobbed as she rushed to Bud and clung to his arm. "Bud, call your parents, now! See if they're all right! There has been a horrible accident in space and a giant asteroid is heading right for California. Everyone will be killed!"

Bashalli came and stood near Tom as he grabbed for the remote and turned on the plasma screen television on the wall. She reached for his hand and squeezed it tight. He could feel her entire body vibrate with fear.

It took a half-minute for the screen to come up and another few seconds before Tom could locate a live news feed.

"Bah! I can't get through," Bud moaned. "The lines must be jammed with calls." He disgustedly put the phone back into his pocket and turned to face the screen that his three companions were watching he found himself looking out at the bay.

"This is Bill Parker of KXSf Two, your Fox affiliate from Oakland, California." The man, artificially graying at the temples and trying to look somber, paused as if attempting to increase the dramatic effect of his report. He put on 'Concerned Reporter face #3' or something like that, before saying, "I am currently standing on the edge of The Presidio in San Francisco overlooking the Golden Gate Bridge. As you can see," and the camera zoomed onto the bridge, "we are not yet seeing any indication of the tremendous damage that is anticipated from this *devastating attack* from outer space. No one knows at this time how many cars and trucks will fall into the bay when the asteroid finally slams into the planet. One thing is certain. When it does, life as we know it may well be snuffed out in an instant! My colleague, Rafael Rodriguez Ramirez is in Livermore at the Lawrence-Livermore Lab..."

Tom flicked the channel selector. They all saw that the TWN network was showing a block of commercials. Tom clicked the remote again.

"...so, if we can believe the reports, everything from the Santa Monica pier out to Palmdale may end up in total ruins. The governor is deciding whether to declare Martial Law..."

*Click...*

"I'm Sara White, NBC correspondent at large, and I'm standing with the leading geophysicist here at Yellowstone National Park. Professor Ford heads the Yellowstone Volcano Observatory team and he believes that this event may just set off the anticipated Super Volcano that is said to be ready to erupt at any time here at the park. Professor, what leads you to believe this?"

The camera swung around showing a disheveled man in an old and ill-fitting suit. He looked decidedly uncomfortable as he cleared his throat to speak.

"Well, Miss White, we *have* been concerned about the super dome of volcanic magna deep under the park for some time now, and in all these years we have never measured so many geophysical changes as we are seeing now. Old Faithful has gone off its standard eruption cycle three times in the past year alone. Last time it was by more than fifteen minutes! Each time it does, the mud beds have gotten so hot that they—"

"Yes, of course. But what can you tell our viewers about this *disaster from space*?"

Tom was really bothered by the inflection the reporter was giving certain words.

The Yellowstone man blinked several times while looking at her as if to say, "I have no idea." Finally, he spoke again. "Well, for one thing I believe that nobody has any evidence that we will



ever be struck by asteroidal debris, even from this unfortunate event that appears to have happen—”

“But all of the *death* and *destruction* heading our way. How can you be so... so... cavalier about it?” She seemed both indignant as well as floundering a bit to keep the interview on the track she seemed to have chosen.

“Listen to me young lady and your audience out there.” Now, the professor was getting irritated. He made a futile attempt to take the microphone, but she was ready for that and pulled it out of the way. He raised his voice. “If, and I said *if* something as large as, say, a football field were to hit right here at Yellowstone, then I predict we will have our super volcano. So far, and this is all simply global warming causing it, we have dried up mud flats, and the ground over the dome has increased in temperature one degree and it has risen about two inches in the past eleven months. But, until we have an actual collision with a giant asteroid or something else, I cannot say that I fear that our nation or our world is doomed. Good day!” He turned and stalked out of camera range.

The reporter seemed shocked at the relaxed attitude of the expert. Obviously, she wanted to report a devastating event that his opinion wasn’t supporting. She took a deep breath, squared herself to the camera that seemed to be slightly shaking now—an off-camera giggle could be heard that was probably her camera operator—so she glared over the lens and then switched her face instant so she could look sadly into the lens. “Well, *when* the super volcano does erupt, life as we now know it will be snuffed out. What the lava and ash don’t immediately destroy the suspended particles in the atmosphere will cause a nuclear winter effect that will be felt worldwide. I’m Sarah White in what may be your last ever look at Yellowstone—”

Tom turned the television off in disgust. He looked at his sister, his girlfriend, and his friend and saw the confusion in their eyes. Bash placed her trembling hands on his chest and with tears in her eyes, pleaded, “Thomas, you must do something. You must save the country, save us, save me and the children I wish to bear with you!”

Tom’s mouth dropped open, he gulped and closed it. He put his arms around Bash, hugged her tight. She could feel his body jiggle a little, so she pulled away only to see him stifling laughter.

“And, what is so humorous about the destruction of our planet, Thomas Swift?” she demanded, now angry.

“Bash. Sandy. Bud? Here’s the deal. Six weeks ago an old comet on its five-decades swing around the Sun turned inward, but it’s a couple years early. It used to have a mini-comet traveling with it, and that’s disappeared. Three weeks ago, there was a collision observed out in the asteroid belt. And, yes, there are several pieces that *seem* to be headed in our general direction, but as of an hour ago there had been no indication of any sort of deadly collision with Earth. I guess the news got out.”

“But—” Sandy began.

“But, until we know more, the only thing that is certain is that we will see a lot of little bits hitting the atmosphere starting in about three weeks. It will look like an unseasonable Perseid Meteor Shower on steroids, but just about everything hitting will burn up miles above the ground. Dad and I discussed the possible panic factor this morning. He agrees that a few reporters will try to froth this all up into a frenzy without really reporting what is going on. Now, having said that, I’ve got the guys up in the Outpost using both their SuperSight scope as well as their Megaspice Space Prober to see what is really going on out there.”

Sandy, now somewhat mollified, screwed up her face in thought. “But, with them up in geosynchronous orbit and all, and staying over just one spot down here, isn’t that going to limit their view time?”

The inventor nodded. “Sure, but because of our winter tilt, they still have about fifteen hours

a day when they have a line of sight out there.”

Bashalli had recovered and was feeling a little ashamed at her panic. “I am sorry, Thomas.”

Tom gave her another hug and kissed her forehead. “Not an issue, Bash,” he told her softly enough that only she could hear. “Besides, I now know that I need to be even more vigilant so that we can someday have those children you mentioned.”

He could feel her entire body get hot from embarrassment, so he held onto her for a minute to hide it from the others.

After turning the TV back on and scanning through several other channels, they came to the conclusion that Tom was correct and that some reporters and stations were trying, almost desperately, to whip up a good old public panic over something none of them had any proof was going to occur.

The girls left five minutes later after Tom promised to spend some extra time looking into any possible signs of trouble.

“Is this going to be a problem?” Bud asked. He had seen Tom looking a little pensive at one point even while trying to calm the girls.

“There will definitely be meteors, Bud,” he confirmed. “And, there might even be some larger pieces that hit the planet surface. But, remember that the surface is over seventy percent water, ten percent of that is ice and more than seventy percent of the land mass is unpopulated. The odds of a strike on, say, Los Angeles or New York or London or any population center is very remote.”

“But, not impossible?”

Tom shook his head. “No. Not impossible.”

“So, what do we do? I mean, if the guys at the Outpost call down with an incoming warning. What can we do?”

Tom thought the matter over a moment before replying. “Scientists and military people and entire governments have pondered that, Bud. While many believe that we should send up rockets with nuclear warheads and just blow anything heading our way into dust, I agree with dad and others who believe that we would end up attracting a bunch of radioactive particles that would come into our atmosphere and cause other problems.”

He looked out the open door of the lab and into the cavernous hangar that was the home of his *Sky Queen* super jet.

“I suppose that I ought to start thinking about some means of either destroying anything heading our way, without the risks of a nuclear solution, or to at least try to steer them away from us.”

Bud grinned. “I remember a great sci-fi movie when I was a kid. Giant asteroid coming towards Earth, so a bunch of astronauts take up a nuclear warhead and land on the rock. They dig into the surface on one side that is down and away from Earth...”

“And then they take off and set it off and it steers the asteroid away and around the Earth, and everyone lives happily ever after, right?” Tom finished Bud’s story.

“Uh, no. They get stuck on the asteroid and sacrifice themselves, now that I think about it, when they blow the nuke. It does miss Earth, but comes close enough that it causes tidal waves that destroy New York. Guess that isn’t such a good story after all, huh? Why do they always destroy New York?”

Tom shrugged and smiled at his friend. “It’s not always New York, sometimes its Paris or Rome. Depends on who is making the movie. Not the best outcome, I’ll admit, but if push comes to shove—only a slight pun intended there—we might have to shove a few larger pieces to one side so they miss us.” He began staring at a point somewhere that Bud couldn’t see, and soon

went into an almost thought trance.

Bud, seeing this more times than he could ever count, knew that Tom would 'be away' for some time, so the flier headed out of the lab, leaving Tom to think the matter over alone.

Without realizing it Tom reached out and touched his TeleVoc pin on his shirt collar. "Ken Horton, Outpost," he sub-vocalized.

"One moment, please." A robotic voice informed him. "Routing call now." Several peeps were heard and then the distinct double ring of the Outpost.

"Ken Horton's administrator office, please hold, his line is busy," and the infernal elevator music started. The transmission was a little scratchy and off sounding. Tom, not noticing it, sighed to himself. Once more he thought that a dedicated line to Ken's office was advisable. But then again how many times did he need to reach him instantly? He gave it a consideration for a second or two before he reached for his computer keyboard and made a note to see that one was to be installed.

The Outpost was becoming a more important addendum to the Swift's expanding science complexes and some day a delay like this could mean life or death. Ken needed the ability to reach out instantly and by TeleVoc like everyone else. An ultra low frequency radio was the way to do it. No static and no one else on it, a perfect solution. Even so, Tom made a note to reprogram the TeleVoc system to allow key employees to request "priority connection" when necessary.

"Tom, Ken here. What can I do for you?" his voice was tinny and far away sounding. Tom noticed the poor sound quality this time.

"First off, Ken, you sound terrible. What's wrong with this connection? It should be crystal clear. Are the communication networks having trouble?" Half of the income for running the Outpost came from radio and television signal relay, and if that was going sour they were in big trouble.

"No Tom, they're in perfect shape and running true to form. It's the new encoder that they have recently installed for our contacts with Enterprises. Data transmissions are fine, the audio is awful."

Tom could just about make out what Ken was saying. It was quickly getting worse! "Who authorized this installation?" Tom wanted to know.

"Why, skipper, you did, and just two days ago. I have all the paper work right here still on my desk. The equipment came up on the last shuttle from Loonau with a technician to install it. It was stamped urgent and a hand written note by you to have it done ASAP. So we let him."

Now alarmed, Tom told him, "Ken, I did no such thing. Get off the horn right away, and have it all disconnected immediately. Restrain the technician and call me back when everything is secured!"

Tom tapped the pin once more, "Security, Harlan Ames." He tapped his fingers on his workbench impatiently.

"Tom, what's up?" Harlan voice come over into Tom's mind as the connection went through.

"Harlan, I think we have a security leak at our Loonau rocket site!" Tom then related what had just happened with Ken.

"I'll get Phil Radnor up there right away. I'd go myself but..."

"Don't even think about it, Harlan. I know how space flight affects you. I'm not even sure there'll be a need to send Phil up either. I'll have Ken sedate the man and send him down unconscious. No mess and no fuss that way."

With a grumble, Harlan agreed. "But if this guy's responsible for anything getting damaged

or live being placed in jeopardy, I might personally send him back up... minus a spacesuit or a rocket!"

"I'll let you know when to meet the rocket with the rogue tech on it, at Fearing Island. Meanwhile have your security counterpart on Loonauai start checking things out at his end. Strange, I don't remember the man's name." Tom was shaking his head in dismay. It was rare that he didn't know the names of all the top people in the Swift organization, no matter where they were stationed.

"I don't blame you there, Tom. He's new to our security force, only been there for a few weeks and we did the hiring through our West Coast branch. He never passed through Shopton. Give me a second; I'm calling up his file... Yep, James Wassermann, Hawaiian born and bred. The file says that his grandfather was one of those World War Two discharge residents. Left the military hospital two months after the war ended and just stayed on. Married a native, had two sons, and so forth and so on... Nothing particular in any of the family records. Wassermann was military M.P. and advanced quickly through the ranks, mostly high security stuff. Joined Home Land Security after his twenty-five year hitch in the service was up. Left that after three years: reason, government bureaucracy. He moved on to the private sector, us!"

"Well," Tom reviewed the facts in his head, "do me a favor; do some checking on who and why he was hired. Tom heard the incoming call note. "I've got another call, Harlan." Tom ended the call and tapped the pin to bring up the other.

"Tom, sorry it took so long," Ken's voice was now coming in crystal clear, "but we had a lot to unscramble. That tech did a lot of unauthorized work while he was at it. We found a dozen power boosters and microburst transmitters. We're not sure we got them all yet. We're still looking."

"What did he have them connected to?" Tom feared the worst.

"Almost everything, Tom, from what we found."

"How long a time span?"

"He came up forty-five hours ago and went right to work. He started at the main communication link with Enterprise, took out the old encoder and replaced it with a new one. Then he started to replace all the secondary and sub links. You know things like power boosters and processor upgrades. What you would expect for a total upgrade." Tom would hear his disbelief that he had fallen for the whole scam.

"Ken, don't kick yourself, it's not your fault. We did this type of thing before. Why should this have been any different?"

"But, Tom, you sent up a team before and just seeing him by himself should have rung a bell or something. I did ask and he told me that this was a real hush-hush job and that 'one person keeps a secret and two people talk.' With his paperwork and all that..." His voice faded, and Tom heard a sigh.

"Tom, I've let you down," he said at last, "and if you want my resignation, I totally understand."

"The only thing I want from you, Ken, is for you to contain that sneak and get all his equipment so we can try to learn something, like who sent him and why? Listen, you didn't hear this from me, take him to an airlock and lock him in it and leave him there, no emergency suit. Pick out a lock next to a bunch of noisy equipment..."

"Sorry to interrupt, Tom, but I can't! He's gone!"

"What? Gone! How?" Tom was stunted by this revelation.

"Beats me, Tom! When we went to find him he was gone. Flew the coup as they used to say. I checked the airlock records and there were several men that went out on various duties, but

they're all accounted for. We counted the spacesuits and we have them all too!"

"Keep looking. He couldn't have gone far, that's for sure. Check behind equipment and in between the hulls, he may have been foolish enough to go hide in there. Set up heat and sound sensors. Find him! As long as he is loose, he is a danger to all of you. If you have to, get all known crew into the hub with fume masks and flood the outpost with laughing gas or pepper spray. Force him out."

"Right Tom, we'll find him. So, why did you call in the first place?"

Tom slapped his forehead, "Gee, I forgot all about that! I was going to ask that Nestria and the Outpost set up some long range RADAR sweeps along with all available visual detection for the next few months to make sure that we're not taken by surprise by one of those renegade meteors that are bouncing around in the asteroid belt."

"Can do, skipper. That is an easy one. If that's it, I've got a rat to trap."

Tom was just about get off the TeleVoc when it beeped again and Harlan's voice came through. "Sorry, Boss, but this is important. Wassermann is gone. Kinova, he's the second banana over there, can't find him. I tried to contact him and Kinova was the only one I could get. No one has seen him for the past several hours. It coincided with you ordering the shutdown of the new encoding equipment. I guess we've found our mole. Right at the top, too." Harlan sounded disgusted over the whole thing. "I ordered the entire security department to lockdown and wait for me to show up. I'm taking the shuttle up from Fearing Island in the next hour and a half and then catching the next crew rocket down to Loonau, I'll be gone for a week at least."

"Why don't you send Phil? He can handle it as well as you. You know how space flight..."

"Can't do, skipper. I'd love to, but Phil is out with the stomach flu for the next couple of days. I'll take some Dramamine or ginger or something. Look, I have to go. I just finished locking my desk—got to talk to the boys for a minute and catch the flight to Fearing. If I find out anything, I'll let you know."

With that, the TeleVoc went dead.

## Chapter Two: Of Asteroids and Rats

Things were back to normal the next day in the world news. A small political uprising in central Africa pushed the meteors out of the limelight as reporters world-wide reacted to the latest massacre of women and children. But at Swift Enterprises and the Outpost things were different.

Damon Swift, Tom and Sandy's father and a great inventor and scientist, sat at his desk watching his son. This large office at Swift Enterprises was officially his, but the two inventors shared it fairly often. Not only did it have more than sufficient space, it featured a large and low coffee and conference table surrounded by eight overstuffed, leather chairs in one corner of the room. It was there they met with important customers, captains of industry, politicians and international dignitaries.

But, for now, Tom was staring intently at the monitor on his desk halfway across the room from his father.

As Damon watched, Tom clicked and read through dozens of incoming reports. At times he sat forward as if seeing something that greatly excited him; at other times he slumped back in his chair, looking like a defeated boxer.

"I would hate to interrupt the flow of pure genius, Son," Mr. Swift said after politely clearing his throat, "but it seems to me that your eyes have become locked onto that screen." He looked at his son with a growing apprehension. "Anything worth sharing?"

Tom looked up, rubbed one hand over his face and tried to focus on his father, just ten feet away. "Well, yes and no, Dad." He told the older inventor of his frustration at how a possible non-story had practically set off panic around the world. "The worst of it was that both Bash and Sandy were in a tizzy over it. Bash was affected harder than Sandy, but it really brought some things close to home, if that makes sense."

Mr. Swift laughed. "Son. I've been married to your mother now going on twenty years, and even when she was young and full of adventure she was slave to an entirely different set of emotional keys than me. In all this time I have come to accept them, but I'm darned if I understand them."

Tom grinned. "Right. Anyway, it got me thinking about what might happen if this does turn out to be an issue. What can we do? There was that near miss a few years back where nobody detected the incoming object until it was just two days out. And, that passed far too close for comfort, but nobody had the time to work up a good panic over it. Heck. Maybe that's best. Just don't tell the world when something bad is going to happen so people can live their lives in relative ignorance—and happiness—as long as possible." He slumped back into his chair.

His father steepled his fingers under his chin and furrowed his brow in thought. "It's sad, really. Here we are a world filled with people all squabbling about insignificant things and ignoring the things that might someday wipe us out. I've toyed with designing an unmanned, hmmm, well a space tug if you will, based on your repelatron. It came to me one night about three months ago that if we kept a small fleet of, say, five or six of them up at the Outpost, we could deploy them to intercept incoming objects, land face down on them and use the repelatron to push it to the side."

He paused looking at Tom, almost as if waiting for his son to register everything. Tom suddenly sat upright and turned his head to look at his father.

"It wouldn't work!" he declared. "Or, at least it would be less that effective in most cases."

Hiding a smile, Damon Swift asked, "And, why would that be, Son?"

“Well, for one, in the case of the last near miss it would have taken far too long to get one or more of your space tugs outbound and then turned back around to match the incoming speed of the object, not to mention the time necessary to dig in and compute the appropriate angle or angles to fire.” He looked at his father in wonder. How had the older scientist missed that obvious— “Ah. You already figured that out, didn’t you?” he asked seeing the twinkle in his father’s eyes.

“Yes. It hit me about ten minutes after the concept did. The only way to make it work would be to have several thousand of them positioned in a blanket stretching from about the orbit of Venus and all the way out past Jupiter. Only then could they be set on an incoming course that would let them land, anchor and nudge before time ran out. Even then, there’s another potential problem.”

“What’s that?”

“Think about it. We nudge one or two away now, but how do we determine—without a lot of positional study—what that might mean in the future? Do we turn a near miss of ten million miles into a direct hit two decades later? Do we cause something to crash into Venus or Mars or any of the other planets that could break something even larger and more dangerous loose?”

Tom nodded. “The only way would seem to be to capture things, ease them out of the way, and then herd them into a slow and final plunge into the Sun.”

With a chuckle, Damon told him. “Exactly what I came up with. But, I had to put that aside when the NASA Mercury Ice Mission landed on my desk. I’ve been so busy with designing the probe’s heat shield and coming up with a drive system that is balanced to be effective that close to the Sun. You remember the first probe the Russians looped around Mercury to try to send it to Saturn. The solar radiation on the facing side gave them such an incredible extra push that the capsule was flung out of the loop some sixty degrees early, and it ended up crashing into Venus a month later.”

Tom recalled the political disaster for the then Soviet Union. It happened just a day after the Apollo One accident that had cost America its first trio of astronauts, and only because of that had it been kept off the front pages of newspapers around the world. The experiment had never been attempted again, with Venus being used instead to help speed several solar system and planetary probes on their outbound paths.

“Do you think you have the drive thing figured, Dad?” Tom asked.

With a tilt of his head and a small shake, Mr. Swift told him, “Not really. The shielding was a snap. A durastress and magnetanium shell coated inside and out with tomasite handles both the heat and radiation—actually a double-hull of that with a vacuum space in between—but the drive thing is still giving me troubles. I’d love to ask you to lend a brain on this but I sense that you are going to be busy tackling the meteor business.”

Tom looked a little guilty. He couldn’t keep track of the number of times his father, deep into some project or another, had taken time to help him. Even if it were just to lend an ear or provide a few “Did you think of...?” prompts, his father rarely let him down.

“Tell you what, Dad. Since whatever I come up with might someday need to travel inside of Venus’ orbital track, I probably will have to come up with something anyway, so why don’t we work together on this whenever possible?”

Damon looked over at his son. Tom had never given him or his wife a moment when they weren’t absolutely proud of him, but he felt a lump in his throat on hearing Tom’s offer. His eyes misted up slightly and he quickly disguised that by taking out his handkerchief and blowing his nose.

“That would be wonderful, Son,” he said. “Even if it is just brainstorming with you, I can only see it helping us both!”

They discussed a number of aspects of the mission, some that Tom had not been aware of before, over the next two hours. Part way through, they both heard the booming voice of their personal chef, Chow Winkler, coming from the outer office. A moment later the door opened and the western cook poked his head inside.

“Ya want some grub?” he asked pushing the door all the way open. “I heard from a little birdy that ya both was in here and prob’ly not comin’ out any time soon. And, speakin’ o’ bird, I got me a new recipe for bird chili.” Chow was well known for his often outlandishly-named dishes but nobody could ever complain about the taste.

“Uh, *bird* chili, Chow?” Tom asked.

Chow pushed his cart into the room and began setting up two places at the conference table as he spoke to them. “Yeah. Ac-shully called Southern Bird Chili. It’s got ground turkey an’ most o’ the stuff you’d expect, ‘cept it’s got no tomater sauce or paste in it, and,” he emphasized by pointing a finger at the large tureen on his cart, “It does have okra and lots o’ mushrooms and *diced* tomatoes. Friend o’ mine down in Atlanta sent me the recipe a month back an’ I just got around to makin’ it fer the first time this morning. Mighty good, if ya ask me!” He smacked his lips.

It was. Tom even dished out a second helping ladling it over the brown rice the cook had also brought in.

The roly-poly chef had left moments after serving them, and the two Swifts spent the rest of the meal continuing their discussion.

“Well,” Tom concluded, “if you’ve dismissed chemical and repelatron drives, and are fairly certain that plasma isn’t going to be adequate to the task, I’m at a bit of a loss what to suggest, Dad. I mean, solar sails would work to get you back, slowly, but probably wouldn’t slow you down going in.”

Damon, now sitting at his desk, dropped the pen he had just picked up. “Say that again, Tom,” he requested. “That last part.”

“Solar sails?” Tom asked. Damon nodded getting a big smile on his face. “You mean this is the first time you’ve considered them? Oh. Sorry. I didn’t word that very well. What I mean is—”

“Son, I really don’t care how you worded it. You’re right. I never considered solar sails. Not, of course, as the primary drive. My goodness, just tacking against that sort of current to meet up with Mercury in two years would be impossible. That would require—” He grabbed a scientific calculator and ran a few equations. “That would take over five years.” He laughed. “But, if we used one as a drogue chute to help slow down at a buffered speed, why that would be perfect!”

“Buffered?”

“Yes. If I tie in something like a repelatron drive with a solar sail and let a computer keep things adjusted, we could control things safely. When a solar wind gust hits the sail we reduce its size as well as turning down the repelatron. It’s all coming to me now. I’ll have to figure out a way to make it stretch to reduce any sudden movement, and find a way to vent excess forces, but, Tom, you’ve done it! Not only have you solved or at least given me ways to solve the power issues for getting between Earth and Mercury, but you’ve also simplified the overall program.”

“How so, Dad?”

“Now I can spec out a smaller ship. There’s no need to add a chemical rocket to get out of orbit and heading toward Mercury; we just use the same repelatron system.” He looked triumphantly at his son.

Tom thought a second, and then suggested, “And, it might be possible to make the solar sail out of the same materials that you could use to collect sunlight to provide power for the repelatrons.”



Damon realized just what this meant and shook his head.

“Something wrong?” Tom asked him.

“No. I was shaking my head in wonder. The student has become the instructor.” He rose from his chair and crossed to Tom’s desk. Motioning the younger man to get up, he wrapped his arms around Tom and gave him a firm squeeze. “Thank you, Son,” he whispered.

Tom left the office twenty minutes later feeling as if he were floating on air. On the way to his underground office and small laboratory he thought to himself, “I hope I can be as good a father as dad is once Bash and I start a family.” Then, he blushed. He hadn’t even gotten as far as proposing to her. Heck, they had only been going out for about ten months and had never even discussed what level of seriousness their relationship had reached.

Her declaration—made in a moment of near panic, Tom had to remind himself—was as close as either of them had come to even proclaiming love for the other out loud.

On arriving at his lab he turned on his computer and called up a file he had begun months earlier. Like his father he had experienced a flash moment when he realized how precarious Earth’s situation in the Galaxy actually was. At that time he made almost thirty pages of notes regarding potential solutions. He now began reviewing them.

Tom’s phone beeped. After picking it up and identifying himself he heard the familiar voice of Munford Trent, the super-efficient assistant and secretary to his father. “Tom. I’ve got a message from Ken Horton. He needs to have you on a visual conference as soon as you are available. I’ve had George Dilling’s people set up a secure connection in Communications, suite C. When can I tell Mr. Horton to expect you?”

“Now,” Tom said immediately. “Well, five minutes. I’ll head right over. Thanks, Trent!” Giving the phone button a tap he cut the connection and raced out the door. The elevator door opened as he reached it and Bud stepped out. Tom grabbed his friend’s jacket and pulled him back in. “You’re coming with me,” he declared.

With a shrug, Bud told him, “Your tug is my command! What’s up?”

Tom quickly explained about the sabotage at the Outpost and the missing man.

“Jetz! Good thing you had to talk to Ken when you did. So, do you think he’s got news now?”

When the elevator door opened at ground level the two teens sprinted around the small upper building and across a parking lot to the Communications building.

The inventor shook his head as they ran. “I hope so, but you don’t see me holding my breath.” They reached the double doors and each yanked one open. George Dilling was standing at the receptionists desk, waiting.

With a nod of his head he led the two down a side hall and into the conference room. “You want me in here?” he asked.

Tom said he could remain if he wished, “...but if you have other things to attend to go ahead. Oh! Can you call Harlan Ames? He’s at Loonau Island, and get him hooked into this conference call, too. He may need to hear this from Ken. It probably has some kind of bearing on what he’s doing at Loonau. Thanks, George.” He and Bud sat down and he reached out to press the **Connect** button. There was a two-second pause while the build-in security system scanned his and Bud’s TeleVoc pics and registered them as “acceptable” for the message. Ken’s face appeared on the large flat panel at the end of the table. He had a tired look on his face.

“Hey, Tom. Oh, and hi, Bud.” They greeted him before he continued. “We’ve performed a complete sweep of the Outpost, and we’ve located our man.”

“Uh, Ken? Can you hold a moment before telling the story please? I’m trying to get Harlan in on this call... Okay, Ken. He’s signaling now. Give me a moment to bring him up to speed.” A minute later Tom gave the go ahead to the Outpost commander.

“Great. Well... great and really not very great at all. Right after I spoke with you, Tom, we began locking down the Outpost. I gave Harlan as much info as I could before we shut down non-Network communications. We mustered all hands in the Hub and broke up into twelve groups. Each group searched a spoke top to bottom and end to end. Any place larger than a pack of playing cards was looked into.”

“Did you find anything. Find him?” Tom asked.

Ken looked down and picked up several items. He held them up so the camera could see them. “We found these. Three more of the phony circuits, this data card we believe he intended to plug in that would have most likely set everything off, and this...” he set the other things on his desk, below their line of sight, and picked up one final item, “...rather nasty C4 explosive device!”

Harlan felt immediate anger. Tom felt a chill like ice running down his spine. Bud muttered an expletive.

“Jim Laymon, one of our fuel handling experts, grew up in a family of explosives experts. He took a look at it. Heck. He made it safe for us. Anyway, he says it is large enough to blow a spoke right off the hub probably killing everyone in the process.” He gave them a minute to let that sink in. “That’s all we found. No tech and no other obvious tampering.”

Harlan leaned forward into the video camera. “No missing suits, Ken?”

Horton shook his head. “Everything accounted for with one exception, and that’s why I wanted to get in touch with Tom. Skipper? We found out how he left the station. He took one of our evacuation balls. Number seven. He pulled the control panel and clipped on a leech circuit that let him disable the alarms and airlock indicators, and as nearly as we can tell it also was designed to give him time to get inside the ball and close up before it would be ejected.”

Eyes wide, Tom demanded, “When did he leave, Ken? Can you get a position on him? He couldn’t have made it down without someone noticing!”

The Outpost commander sadly shook his head. “No need to try to track him. Tom. That leech circuit I mentioned? Either it wasn’t designed to do what he thought it would, or he didn’t set it right. He got the ball open okay and climbed inside, but—” Ken had to stop a moment and take a sip of water before clearing his throat and continuing. “The ball was ejected before he got the thing sealed up. With no suit for protection he was exposed to the vacuum. We found him—what was left of him—in the ball. It hadn’t fired its engines because it didn’t detect a living person inside.”

Bud looked at Tom and then at Harlan on the screen. Both were stunned into silence. He looked at Ken and asked, “How far did it get, Ken?”

“We retrieve it eight hundred feet off from the station. Now we’ll never know why he was doing this or even whom he could have been doing it for. Damn it, Tom. That’s twice I blew it on this. The evac balls should have been right at the top of the list. If nothing else I should have shut down the system so he couldn’t get inside the airlocks!” He looked nothing less than miserable.

“Ken,” Tom said softly. “Who could have anticipated this? Not me, I’ll tell you. He slipped though down here for starters, and,” he looked pointedly at Harlan who was again turning red, “so far we haven’t found anything that we did wrong. This looks like the perfect storm of circumstances, and shows a lot of planning. You go ahead and seal up that evac ball and send it down to Enterprises. We’ll send up a clean one to replace it day after tomorrow. And, while we continue the investigation down here you make one more sweep through the station. Look for anything as small as a memory card or stick. And, if you haven’t done so already, test each and every circuit and piece of equipment, but not before peeking into them for anything hidden.”

The connection was ended three minutes later.

Harlan faced the image of his young boss across the distance of half the Earth. Before any of them could get up from the table and end the call, he spoke up. “Tom. Thank you for not pointing a finger, but this is one crown of thorns that rests on my head. I’ve only been here a few hours and I found out one important thing. The Wassermann that got on the plane in California was not the Wassermann who landed at Loonauai.” Harlan stopped talking. The reaction he was waiting for came in a split second later and in stereo.

“What... Can’t be... Impossible!” came the various reactions.

“Not only did the man we hired disappear, but all his files in all our computers did too! This is the last time we farm out a flight to an outside concern. I’ve got to not only try to find out who he was and what was behind it, I now have to find the real Mr. Wassermann. Especially in light of the fact that this could be the first of many attempts. But first I have to pull the security department back together here in Loonauai—it’s in ruins—and try to find out how he could have slipped through in California! This is showing all the signs of being big, real big.”

## Chapter Three: Revelation

Tom and Bud returned to his underground office and started to discuss the situation at the Outpost. As if he didn't have enough on his mind with the possibility—remote as it was believed to be—of one or more chunks of debris ricocheting out of the asteroid belt and heading toward Earth, Tom felt that he needed to worry about the possibility of sabotage or even an outright attack on the Outpost.

And, as it resided at a point 22,300 miles out in space, it wasn't as if he could just request that the National Guard be assigned to provide protection. It was a privately owned space station and, no matter how vital the services it provided, in truth it was low on the priority lists for Government protection. Also, as a matter of truth, it hadn't needed protection until now.

As they talked, Tom opened a new file on his computer and typed in its file name:

### **Outpost Protection Plan**

For the first time Bud realized that Tom was serious about doing some major fortifications.

Tom highlighted and copied part of the file into a new one. He gave them each new names”

**A: Outpost Defense — Non-lethal — Lethal**

**B: Personnel Safety — Stopping Intruders — Evacuation**

Bud's eyes went wide as he read the “lethal” part. He pointed to it and shook his head ‘no’.

Tom smiled at his friend and asked. “Why not, flyboy?”

“Because it's not us, plain and simple!” Bud was most emphatic about it.

“Good!” Tom replied. “If you feel that way about it, then most of the space crew will too. You always seem to have their pulse at your fingertips. And that reminds me, when is your next flight up to the outpost? You need to give Ken something for me.”

“I'm going up this weekend. Joey Hatoy's wife is due with their first baby and she's already a week late. So I told him I'll take his flight rotation and he can cover for me if I happen to be off gallivanting with you someplace. Or...” he looked sheepishly at Tom, “if I happen to make an unbreakable commitment to your sister! Do you know how many extra flights I've done so I can have coverage for my own absenteeism?” He looked at Tom to see if it registered.

“I always wondered about that! So that's how you do it. And I thought that you were always off with Sandy! Well, color me clueless.” He proceeded to delete the lethal part of the sub-title.

“Okay, we have two readymade defense methods already. The repelatron and the Electronic Capture Device we have in the drones we use to protect Enterprises, Fearing and the Citadel.” Bud nodded his agreement and Tom typed it in. “If we combine the two we should be pretty safe. I'll check to see if we can add eight small repelatron arrays, four along the top and four around the bottom of the hub.”

“If we tie in the solar mirrors we may have a slow way to get intruders either out of their ship or they will have to move off quite a distance to keep from getting over heated.” Tom was getting into it and typed that in.

“Is there a way to laser the sunlight or pinpoint it so it would heat up a spot really fast? If there is a group of space suited men attacking us we could give them all a hot foot and/or temporarily blind them, right?”

Tom gladly added that suggestion to the list.

“Okay. That's out primary defense. Let's start on plan ‘B’ with a complete lockdown on the station with every door and hatch sealed, inside and out.”

Bud mouth dropped open. “Won’t that just make it easier for the attackers to get to them? You know, divided and conquer?”

Tom chuckled, “That’s what I’m hoping will happen. They we need to split up into smaller groups to get into each spoke. When they find them all empty they will be mystified and will have to station men in each one, just in case, to keep watch, as they spread out to search each spoke completely. By then they’ll probably have their suits open and that’s when we gas them.” Tom had a satisfying look on his face.

Perplexed, Bud asked, “And where are our men hiding?”

“Why our own little rat we had yesterday showed us where. In the in-between space in the walls and the evac balls. We make up secret panels in each section and tell no one unless we need to. A space version of panic rooms.”

“Sounds good, skipper, but a bit complicated, if you ask me.”

“So, what would you do, Brainiac?”

“Why, nothing! Just let them in. Our men hit a button sending a distress message down, and in an hour—or even less—an automatic gas release valve opens and everyone goes to sleep and won’t wake up for twenty-four hours. By then we either have a rescue team up and have reclaimed the outpost, or all is lost anyway.”

“Well that just shows me that I need to go ask Harlan and Ken about this list. At least it’s a start and I’ll just save it first and then post it to Ken and my dad. Can’t wait to see their reaction to it.” Tom started to type away. While he was doing that Bud asked him about the item he was to take to Ken.

“Darn, I almost forgot about that. I’m making a special radio transceiver operating through a laser at an ultra low frequency that no one has used yet to be added to the station communication center. That will allow everyone access to the TeleVoc system we have down here. It will free up a lot of our own communication channels and does away with any need to encode a lot of ordinary talk between us and them.”

Bud was flabbergasted. “Why didn’t it happen before now? It sounds so simple, now that you mention it!”

“All good ideas sound simple until you try them out, Bud. I have three days to get it to work—wish me luck!”

\* \* \*

After Bud left the lab to give a flight demonstration of a *Pigeon Special*, Tom called up his original research papers for his repelatron device plus the recent information he added during the Attractatron development. There was something in those notes that caught his interest once and he never had a chance to get back to it. He scanned back to his first few pages and reread his notes. On the second page he found what he needed. The repelatron only worked because the transmission waves did not spread out like ordinary radio waves—they stayed cohesive, more like a laser beam. That was the way he was able to *push* against objects and achieve space flight with very little power wasted.

Tapping his teeth with a pencil, he pondered, “If I take the same principal and apply it to radio broadcast at a frequency minutely higher than what the repelatrons work at, I may have what I need. The only thing I have to worry about is the pinpoint accuracy needed to line everything up. First thing first, though, my boy,” he laughed to himself. “See if it will work, then figure out the alignment problem.”

After turning on his soldering iron, he gathered up all the pre-assembled electronic components he would need and laid them out. He could now see what parts were missing that he would have to cobble together and what ready-made parts that he might have to take out if their functions could be handled elsewhere. Time drifted by and eventually he felt the strain in

his shoulders and back. Finally, he put down his tools, straightened out his back and stretched his muscles. He glanced at the clock on the wall and was surprised to see it was past midnight.

While Tom sat at the kitchen table enjoying a late breakfast of poached eggs on toast that his mother, Anne, had cooked for him, the kitchen phone rang and Mrs. Swift answered it. She listened for a moment and then handed the handset to Tom. She whispered 'Ken Horton'. Tom's mouth formed an 'Oh' of surprise as he took the call.

"Ken, what can I do for you? I hope it's nothing bad?" Tom ran both questions into one in his eagerness.

"Sorry Tom, no disaster this time. But I knew that you would want this information as soon as I got it. We had another multi-meteor collision in the belt. About ten degrees forward rotation this time from the last one. We have two separate sightings on it. One from the Sidney University Observatory in Australia and the other from the Mauna Kea Observatories and they're both sending us time-lapse photos of the event. They're not going to be the best because of the size of the asteroids involved."

"Is there any danger of a hit or near miss to Earth?" Tom hoped this information was available.

"All this is too new to have that kind of detail right now. When I do get it I'll let you know. This is more a 'heads up' call than anything else, Tom." Ken's voice took on a tone that maybe he should not have called so early in the process.

"Ken, thanks for the info. Let me know what the final heading of the debris is this time. It sounds like it's on a heading out beyond Mars if I remember the star charts rightly."

"Tom, you're right! It is only a few degrees retro to the position of Mars. That is why we got the shots in the first place. They were both photographing Mars using a new laser program for overcoming atmospheric distortion. We sure could use a larger telescope than the one we have. Like a super-duper SuperSight. Weren't you looking into a multi-faceted lens system for a new scope layout? What happened to it?"

"Would you believe I lost the bumble bee that was willing to loan me his eyes to experiment with?"

"In other words it's on the back burner along with how many other things, Tom?"

"Too many, my friend, too many!" with that Tom hung up the phone.

Back at his lab at Enterprises, Tom reached the point where he felt that he could construct a running radio device, and that meant that he needed to get a TeleVoc communication computer ready for the outpost. He knew that he did not have the time to make one so he TeleVoc'd the electronic division and spoke to the department manager, Paul McDermott. "Paul, need a favor, if you aren't too busy?" Tom vocalized to himself.

"Tom, when am I not busy?" came Paul's harsh reply. "*What* do you need by tomorrow or by the end of the day, this time?" He was very sharp in his tone of voice.

"Come on, I not *that* bad. Am I?" Tom was taken aback by Paul's tone.

"Skip it, Tom, you are what you are. Now, what can I do for you?" Tom could hear the unspoken heavy sigh.

Ignoring it Tom asked. "Can you whip me up a mini version of the TeleVoc computer link for the Outpost? Let's say to cover two hundred people and all the other paraphernalia with it. A lot of the people may not need the pin because they already have it for when they're dirt side. And this system must be able to merge with ours down here."

"And I suppose you want it by Friday's night launch in two days?"

"Am I that transparent?"

“No, Tom, you’re not. But after we got word of the tampering of the Outpost communication systems I’ve been forced to redirect a third of my people into looking for a better way to secure our transmission signals. Ames gave me an ultimatum and I’m not happy about it! I hope you’ve already tackled the radio frequency jam we have of too much information at once for the existing frequencies to carry.”

“Paul, why don’t you come over to my underground lab and I’ll show you what I have and we’ll go from there. That is if it not too much of a bother?” Tom was a little annoyed at Paul’s tone.

Sensing he had made Tom angry, McDermott’s voice was slightly contrite when he replied, “Be there in five, Tom.”

\* \* \*

“Tom, this is nothing more than a maser. Microwaves can’t handle the load of information we need to send to keep the TeleVoc in multi-usage mode. Especially if video is added. And with your new C-dot camera we’re getting more and more of that.” Paul was not impressed with Tom’s new device.

Tom pointed to a little black box sitting to one side. “Paul, adding that box is like switching from copper cable to fiber-optic. You know of the electromagnetic frequency I use for detecting the different elements for my repelatrions? Well I’m using the same principle but just a fraction of a cycle higher. That frequency cycle is so long that the start reaches the outpost before the completion of one cycle. It has no wave spread to speak of, so we can nestle one wave next to another wave without interference and it all stays crystal clear. We’re talking of thousands of simultaneous waves, each capable of carrying the digital information just like laser light.”

McDermott eyed the black box but said nothing.

“The best part is the dish antenna is only a one-foot wide flat surface covered with a complex fractal antenna pattern. It couldn’t get simpler.”

“Okay then,” Paul was still not totally convinced, “The transmission part is yours, and I just have to supply you with a mini-version of the TeleVoc system for the outpost. That I can do. Can I presume that one will just plug into the other just like our system down here and that I only have to add another channel for the Outpost calls to our main systems?”

“You’ve got it, Paul! But something is bothering you. What is it?” Tom could see his hesitation on this whole project.

“It’s personal Tom. Look, maybe you should give this to someone else. I think I’m going to...” He sighed and then let out a single sob as he tried to hold back tears. Tom was surprised to this show of emotions and took Paul by the arm and led him to a small sitting area in the corner of the lab and sat him down.

Paul rubbed his hands together while looking at them as if trying to find an answer there and was shaking his head. At last he looked at Tom. “I think I must give you and your dad my resignation; it’s the only way.”

“Paul, I know that I’m younger than you, but that doesn’t mean that I can’t be of help. Talk to me.” Tom was sitting at the edge of his chair and speaking softly.

“It’s my brother, Ralph. He’s in money trouble, a bookie or something. They threaten his family and promise bad things are going to be done to them if he does not do what they want.”

“Whoa there, Paul! Your brother Ralph? The brother that’s up at the Outpost in communications right now?” Tom was astounded.

“Yeah, my big brother Ralph. The rock of the family. Master of ‘*I can do no wrong.*’ And now he has his whole family in trouble, including me!” Paul sounded disgusted.

“How were you dragged into this?” Tom wanted to know.

“You’re not going to like this, Tom. But last night I was approached by two men on the way home to my apartment. They convinced me fast enough that they knew my brother and his family and they told me that I either help them or Ralph and his family are ‘no more’ and they mean business. They showed me pictures of his kids at school and of Ralph and Toni at his house leaving for his tour up at the Outpost this month.” He stopped talking and swallowed hard several times.

“What do they want you to do?” Tom was torn between calling Phil Radnor, who was back to work, or continue listening and questioning.

“That’s the tough part. They just want me to do my job as usual and every night I’m to tell them of my day in detail. If they hear what they want to know they say they will all just disappear into the woodwork and be no more. Ha! As if that would ever happen. So I think it will be best that I leave Enterprises. That way I’m no help to them and I don’t betray anyone.” He looked at Tom and with a rueful grin added, “Guess that not the smartest thing to do, is it?”

“No, it’s not, Paul. But I tell you what. Let me call Phil and get him over here and then we can find the best solution for this. I do promise you one thing. No matter what, Ralph’s family is out of here on an extended vacation and we’ll have Ralph come down and join them. Fully on our tab. This is to be coincidental not to be part of our ongoing troubles with the Outpost.” Tom then thought to himself, “God, how big of a spider web are we in?”

Just before Phil arrived, Paul received a TeleVoc call from the switchboard that he had an outside call waiting from him. Tom pointed and nodded to the phone on his desk. As Paul picked it up Phil came into the lab and Tom pointed to an empty chair and to Paul and held up a finger to his communication’s pin. The security man nodded and Tom sub vocalized, “Can you tap that call, right now?” Tom could see that Paul had turned as white as a ghost and was now trembling. Thirty seconds later Paul put the phone down with a shaky hand and slid to the floor with a whimper.

Tom and Phil rushed to his side and Paul, with trembling lips, said, “Ralph’s family. They’ve been kidnapped!”

Phil looked at Tom, “What the heck did I just miss?”

\* \* \*

The Swift cargo rocket belched out tons of hot flaming gases as it strove to reach outer space. Bud, as pilot, was pushed back into his acceleration seat. The underwater launch from Loonau island complex went like clockwork and Captain Barclay was in his element. He enjoyed his space flights almost as much as testing a mach-4-plus transonic jet.

“Captain Barclay to crew,” Bud was giving a status report, “All is Green on the board and final stage cutoff is in thirty seconds. We’ll be several hours before we reach our destination so after separation you may release your seat belts and relax. And Tom, we still don’t have those cute little stewardesses I asked for.”

“I’ll let Sandy know of your request, Bud!” Tom teased back as the pressure of the last stage stopped and a small thump sound could be heard when the upper stage separated from the rest of the rocket and began its slow fall back towards Earth far below. Paul drifted to the back of Bud’s seat and looked out the windshield into the vastness of space with wide opened eyes.

“Your first time up, Paul?” asked Bud with a chuckle in his voice. “If so, don’t be surprised if lots of folk call you Tenderfoot.”

“Yeah, it is. I just wish it was under better circumstances,” he sadly replied.

Tom drifted up over him and touched his shoulder. “If we stick to our plan everything will come out the way we need it too. You have to believe in it, Paul. Our security team has never let us down. We do our part and they will do theirs and when we get back down we’ll have your brother’s family back home!”



“I do hope so, Tom. Ralph is tearing out what little hair he has left and I hope you you’re ready to face him at the Outpost when we get there. You do know that Ken had to stop him from using one of the evac balls to come down, right?” Tom nodded. “He was screaming that it’s his wife and family and that he had to save them. I wish he thought of that before he got into so much debt with that loan shark.”

“Paul,” Bud added, “just hold tight, and one way or another we’ll get them back in one piece. If they are not where the device is going then I’m sure we’ll pick up where Toni and the kids are by eavesdropping on their conversation. Now just try to relax and enjoy the ride. It’s not often that you get a lift up to the Outpost by two of the best space jocks there are.”

“Tom, seriously, do you think that signal capture mechanism you built will fool those kidnapers?”

The inventor nodded. “I do. The wonderful thing is that we’ll hear everything they say and do, while they only receive the messages we feed them.”

Paul had helped Tom make the capture device to supposedly tap into his new TeleVoc system that included a secret built in GPS and sound pickup mic that even an expert could not find in the electronic jumble of micro circuitry. Both Enterprises and the Outpost would receive the two-stage signal using the same frequency waves as the TeleVoc.

Tom and company only had to get the new system on line and tested. Time would trap the criminals. Paul had done as he was told for the last two evenings and on the night before he had to go up to the Outpost to set up the TeleVoc he dropped off the ‘*tap*’ mechanism in a trash receptacle on the train preparing to travel from Shopton to New York City.

By the time the train stopped in Grand Central station the device was gone and so were the instructions on how to use it.

An hour later the first signal had come through indicating that the device had been switched on precisely as the direction page indicated. It provided a constant feed of what was happening at its location while receiving the occasional transmission, carefully constructed by Phil and George Dilling of Communications.

Now, Enterprises’ security team would move in on their prey only when they were sure of a clean raid—they now had time and a spy in the kidnaper’s midst, and they would know when it was safe/best to act.

## Chapter Four: Visit, Avoid or Attack?

Ken greeted everyone as they cycled through the airlock. When Paul came in his brother pushed himself out from behind Ken and reach for his brother, grabbing him by the shoulders as he drifted by in free fall and started to shout at him.

“If my family gets hurt because of you squealing to the Swifts, I’ll kill you with my bare hands.” Ralph was ragged looking and wild eyed.

It took both Ken and Bud to pull him off Paul, a hard thing to do with no gravity holding them down. Tom floated between the brothers and faced Ralph. “Ralph, you need to smarten up and take a look at yourself. It’s your fault that your family is in the trouble they’re in and the faster you admit it the better. Now either get out of our way, and stay out of the way, or go get your tools and help us get this stuff installed and running so we can find your family.” Tom gave Ralph a mighty shove sending the angry and startled man backwards down the corridor ahead of the group of men.

For the third time in less than a week the covers were off the communication consoles and their innards were being torn out and replaced. It was a controlled frenzy with upside down and sideways men drifting and working in positions not possible on Earth.

Bud—usually Tom’s right hand man—was off on a different job for the inventor. He was in the cafeteria and recreation room giving preliminary lessons on how to use the TeleVoc pin to the space hounds and visiting scientists that never had the need to use one before. Even with these lessons it would take several hours for use for each person to finally get the hang of the system and for the computer’s voice recognition protocols to fully integrate with each new user.

He was holding the training in groups of eight to ten people at a time. By the fourth group he could anticipate and answer most of the questions, beginning with, “No, *your* pin is specific to you. You can’t trade them around or use someone else’s. That would set off an alarm.”

He was also tasked with drilling into them that no one, *absolutely no one*, mention that Tom and Bud were up there helping. The consistent story must be that it was only Paul and the Outpost men doing the changeover.

By the end of the first day a much calmer Ralph joined the group in the communication hub and apologize to all, and he asked Tom and his brother for their forgiveness. He promised to seek professional help for his gambling once this was settled. Tom, not wanting to discourage his new found ‘self’ reminded him that it was his family that he needed to apologize to, and make amends to, more than anyone else. With a slow, sad nod of his head and tears glistening in his eyes, he took a deep breath and picked up his tools and asked what he could do to help.

\* \* \*

Ken had Tom and Bud in his cramped office—the job was done and the new system was working well. Only a few glitches had been showing up and it was more speech problems than equipment. With adjustments and practice, that would be overcome in time. Now, they only had to wait for the kidnappers to come on line and initiate a call. Paul had told them in his notes it would take three to four days to set up at his end, not the two and a half that it would really take.

“Tom, I now have more information from the last meteor collision and we discovered a couple of new ones,” Ken remarked. Tom’s eyes lit up from their sleepy, half close position. Even Bud perked up on hearing this.

“I’ll start with the newest one from the other day.” Both boys leaned forward in their vacuum holding chairs. “There is a small rock, or something, heading towards Mars. It’s not very large and if it weren’t for its rapid spin we would never have noticed it. On photos it’s showing up like a flashing light.” Ken handed several pages to the boys from a folder on his desk. “Something

interferes with getting a good focus on it. Those five photos were taken at two second intervals, so you can see how fast it's rotating." Three of the prints featured a flash of reflected light in the pictures.

"Will it hit Mars, or do a loop around and shoot off back into space?" Tom asked.

"Still can't tell right now. There is a slight chance that it might hit Phobos, so we are still watching it closely."

"How much time before possible impact? Tom inquired.

"About eight days and a few hours, I don't have the exact figures in front of me." Ken was shuffling through the papers trying to find the answer.

"I think that I may have to go look into this personally." Tom said after a moment of consideration and rubbing his chin. "I may be jumping at ghosts but we now have two recorded hits, and you said you found more? Tell me about them?" Bud could practically see the wheels turning in Tom's head.

"We found three more small hits on three of the more sizable asteroids out there and a possible couple more in the same general vicinity that register more like disturbances than anything else. We can see positional changes but can't find anything that might have been chipped off."

Tom tilted his head and nodded for Ken to continue.

"Each find is ten to fifteen degrees back in rotation to the asteroid belt and each one gets smaller as you go farther back."

"And the disturbances?" Bud asked.

"Just small movements of asteroids out of their normal orbit, but we just can't see what is causing the shift in their trajectory."

Tom smiled at both of them. "It almost as if someone is testing something and is getting better at it all the time. The start up of a new device, maybe, before they had it running right. You know, Bud, from lab test model to actual working configuration."

"Or," Ken mentioned giving them a knowing look, "like bracket aiming of a weapon."

"Meaning?" Tom asked frowning his brow.

"Well, the ex-military man in me sees things. But in this case, it is like firing a big gun. You take note of where the first shot hits—usually short—then you add powder and adjust the aim and send off the second shot. Depending on where it hits, you split a few differences, adjust some more and by the third or fourth shot you are on target."

"And why would you want to push rocks around?" Bud asked, trying to get away from the whole 'weapon' aspect. Ken and Tom both looked at him in surprise. Bud was never that slow on the uptake.

"Space mining is one good reason," Ken replied.

"Space missiles are another," Tom added sadly. "Like Ken said, each one is about the same distance away, and if I was an old time Mortar Grenade man I would be bracketing in my target. Coming in closer each time and more sure of what I'm doing."

"Come on, skipper, I'm the ex-military not you. I wasn't serious about that conclusion."

"Perhaps I'm jumpy right now. I'm thinking of the sabotage on the outpost. Someone wanted very badly to monitor our conversations and distort what we were saying to each other. Not our hard data traveling up or down to the outpost, but our conversations between Earth and space!" Tom's tone nearly drew a line under the word *space* by the way he said it. "I bet the saboteurs were receiving all our voice crystal clear. It's as if they were listening for something in particular."

“And that was?” Bud asked.

“Talk about asteroid collisions!”

“Tom!” exclaimed Ken. “No one can push asteroids around like that. We would be hard pressed to do it with several *Challengers* and your repelatrons, and then we would have to push all together one at a time and it would be done so slowly that it would be useless on anything of real size. If we swung something wrong they would just hit and tear themselves apart like these are. The astronomers can calculate that much destructive force from the photos.” Ken did not like the way this conversation was going.

With a sigh Tom made up his mind on what he was going to do starting now. “Okay. Bud and I need to get back to Enterprises, and that resupply ship we came up in was supposed to take down four research scientists from Britain that just finished their work. It can’t take all of us down and their equipment, too.” He pondered things for another moment. “We’ll keep the ship here waiting to transport them, instead of us using it to go back down and then needing to bring up another ship to pick them up. Paul can return with them and no one we be the wiser that Bud and I are up here.”

Now Tom had both Ken’s and Bud’s curiosity level up.

“I’m going to have the *Challenger* sent up on what dad will announce as a back side of the Moon research project. We are going to jump ship as it passes by the Outpost. When we get to the back side of the Moon we’ll use it as a shield and skip out to Mars to investigate this new collision area. Maybe, if I have the time, the other ones in the belt as well. I want to keep all of this on the QT. So keep reminding everyone that Bud and I are not up here.”

“Sounds like a plan to me, skipper. I’ll just keep the meteor photos we’re receiving up here and not bother to send them dirtside.”

“No, Ken, please send them down,” Tom informed him. “Our foes will be expecting something coming through on the TeleVoc and if we don’t supply it they may just catch on to us!”

\* \* \*

Following a midnight takeoff, the *Challenger* raced up to the Outpost, slowing down long enough to drop off a “generator” crate that had been part of the media announcement and secretly picking up two passengers. When Tom and Bud had shucked off their spacesuits and left the hangar deck both smiled when they heard the gravelly sounds of Chow Winkler singing at the top of his lungs in his small kitchen on deck two.

Popping their heads into the cramped room—made even more so by the bulk of the large Texan—Tom greeted the man while Bud teased him with, “You planning on serving up any asteroid burgers, Chow?”

Puzzled, the cook stopped stirring the pot of chili he was working on and narrowed his eyes. “What in the heck is that, Buddy boy?”

With a look that spelled out purity and innocence, Bud replied, “Oh, Chow. Your doubtful look hurts me. All you do is take a pound of Lunar llama meat, mix it up good with a half pound of Martian canal gator meat, and then char-broil it over hot asteroids.”

The westerner picked up a spare skillet and swung it in Bud’s direction. “Now, you jest skedaddle an’ stop pokin’ fun at me. If’n ya don’t, I’m gonna spike yer chili with a heapin’ handful o’ habaneros. That’ll give ya *asteroids*! Scoot, ya galoot!”

As the ship raced away from the Outpost Tom and Bud climbed up to the control room. Taking the pilot’s seat, the young inventor set a course that would take them into a low approach to the Moon. Several uneventful hours later they swung around the dark side where he set the controls to keep them in a stationary hover for ten minutes.

During this time he ejected a radio buoy that would orbit the moon and “relay” conversations to and from the Moon, in case anyone was listening in. If they were, it would appear that the ship, along with Tom, were actually on the back side of the Moon.

With that accomplished he retook control and the mighty ship sped off keeping the Moon directly between them and the Earth. He knew he could rely on this ruse only for about half the trip out. At that point it would be mandatory to turn toward the red planet. By that time, however, it was virtually unlikely that anyone would be able to detect the ship.

The ship’s repelatrons were able to find good places to push against both the Earth and the Moon until *Challenger* was more than two-thirds of the way to Mars. It was a fact that Tom was coming to dislike about his invention that as the distance increased between ship and push source, the actual amount of push diminished. So much so that at just twenty million miles, repulsive force was a quarter that of when they were near a planet or moon. And, for each five million miles past that, they lost another ten percent.

\* \* \*

Harlan Ames had just spent the worst eight hours of his life. Train trips for the Secret Service had been bad enough, and he thought that civilian life would put an end to it. Little did he realize that working for the Swift was going to open up a totally new form of travel. Space flight proved to be the worst of all of them. At least, for Harlan. He not only got nauseated by the shake, rattle and roll of the rocket launch, but zero-G gave him a migraine headache and almost total loss of balance and sense of direction. The whole universe just whirled around and around and there was no end to it. He had to spend most of his time strapped into his seat and with a barf bag nearby.

Stumbling out of the rocket on Loonau Island into the bright tropical sun gave him such a sense of relief that he welcomed the intense light instead of shying away from it as his condition dictated on the rocket ship.

Kinova, the second in command on the island’s security force, meet Harlan at the only visitor’s gate in the double fence that surrounded the landing site. His local security man took one look at his boss and gave out a whistle and a small chuckle. He was an island native and a mountain of a man. A Sumo wrestler would have been hard pressed to take him down. He had small dark eyes, long shaggy hair and was on the far side of forty.

“Haole,” he used the Hawaiian term for a white person even though his heritage was more Samoan, “you look like a rat dragged you all the way here. Do you want to see the base doctor or go right to your room and sleep it off for the rest of the day? We can start tomorrow when you feel better.”

“Mr. Kinova, we can’t afford to wait any longer on this investigation. That Wassermann already has a good day’s jump on us... we have to find him!”

“Well, sir, I can tell you one thing for sure,” Kinova replied as Harlan looked at him eagerly, starving for any piece of information, “he’s not on the island. He flew the coop in the jet he came in.”

Harlan’s face dropped. “You mean to tell me that plane was just sitting all the time he was here?”

“Why sure. It was his plane! He piloted it here himself and had it put into one of the spare cargo hangars.”

“But he left on a commercial flight and was supposed to fly in here on a private charter. I’ve seen the itinerary and have the bills for both flights! Why didn’t you tell me when I called the first time?” Harlan angrily asked.

“Heck, how would I have known that when you called? No one informed me of his flight plans! Anyways, I didn’t even know he was missing at that time. It was only when I tried to find

him for you and no one remembered seeing him for a while that I figured out he was gone!” Kinova towered over Harlan by at least six inches, and Harlan was a tall man. Looking up at the man’s perplexed face made him realize that he was still at the starting line and he was antagonizing the one man who could be the best help to him for no reason at all.

“Sorry, you’re right. I’m just not myself.” Looking around and seeing a parked red jeep with oversized wheels on it, Harlan pointed to it and asked in a happier tone of voice. “Your ride?” Kinova held up his keys for an answer. “Would you mind taking me to Wassermann’s office? I assume it’s still in the Security building?”

“That I can do, and yes it’s still at Security. Where’s your luggage, by the way?”

“I travel light, really light. Let’s go!” and Harlan started to walk to the jeep. With a smirk on his face Kinova followed him with a noticeable limp in the right leg.

Harlan was surprised when he walked into the building and found it empty. He looked at Kinova and the big man simply answered, “I only got ten people left and they’re covering all the gates and docks. As matter a fact, they’ve been on duty since you called and ordered the lock down.”

“You’re supposed to have over fifty men. Were the hell are they?”

“Ask Wassermann and his cronies!” Harlan opened his mouth to say something but closed it instead as Kinova stopped at a door in the back of the large partitioned room. They passed by a pair of desks stationed in front of the door. One of the desks had a running computer on it. As he opened the door, Kinova casually mentioned, “That desk with the running computer is my work space, the other one belongs to Wassermann’s secretary.”

Where’s she?” Harlan asked as he stepped into the large office.

“He. And, gone with the rest of the trash, I hope. Never did like the *ipagkanulo*.”

“Ipananlo?” Harlan mispronounced the word.

“Rat, in Tagalog—Filipino.” He grinned.

“Was he Filipino?” Harlan sat behind the big desk and started to turn on the desk’s built-in computer system.

“Yeah, through and through. Don’t bother to turn that pile of junk on. Look in the hardware drawer.” Kinova pointed to the left bottom drawer.

Harlan pulled it open and only smashed bits and pieces remain of the control unit. He slowly closed the drawer and asked. “This the way you found it?”

“Actually no, I took the time to close it, just in case, and then walked out the door and locked it. Nothing else has been touched.”

Harlan nodded his head in approval and stood up and waived Kinova to follow him out, closing the office door. He took a seat in front of Kinova’s desk and motioned the big man down into his desk chair. He settled in with a cracking noise that startled Harlan and Kinova dismissed. “It’s been doing that for the past year and it’s still holding me!” he laughed.

Harlan looked around the empty room and asked the obvious question. “What happened to your men?” He instinctively knew that he was not going to like the answer.

Kinova sadly shook his head. “For a man that only was here for two weeks he sure made a mess of thing.” He was referring to Wassermann. “By the second day he was here he brought in his own crew of men. *Ipagkanulo*, the whole bunch from the start. Within days they bullied all my best men off the force. Every one of my men swore they had reasons for leaving and none would say different.”

“You think threats of one kind or another were used?” interrupted Harlan.

“Couldn’t be anything else, but my men weren’t talking. Still aren’t. This island is too small

for them to hide their family on, so they just gave up and quit. We protect our family first in this part of the world, so I can't blame them. As I lost more and more men, Wassermann just added his friends to the payroll."

Harlan held up his hand to stop Kinova. "Where were these men coming from, and why did you not call the main office at Swift Enterprises when you noticed this happening?" Harlan was to use of being right on the spot in any situation at Enterprises.

"Hey, Wassermann was your hand picked man from what I was told. What was I to do? Call you and complain that the man you hired was not a nice person? For all I knew this was being sanctioned by you over at the mainland! So I just sat back and watched. From what I could tell it was business as usual except for the security force. As for the men, they came off a tramp freighter that arrived at Hometown one day before Wassermann."

The phone on the desk rang and Kinova answered it and in a moment put it on hold. "It's for you Mr. Ames, a George Dilling wants to set up a conference call with you and Tom Swift out at Enterprises. I have him on hold for now and will take you to the teleconference room."

\* \* \*

Harlan stood on the bleachers of the soccer field that was used by the base and the town, just a couple of rows up. Fifty-one men and three women of various ages and cultural background watched him as they stood in a tight semicircle. There was a light breeze blowing in from the sea and the sky was almost perfect blue. This was Harlan's last hour with these hard working people and they made him proud that they were part of his organization.

After the initial phone calls and the shocking news that they had their jobs back—and that Wassermann had left the island—most of them showed up ready for work within the hour of been called by Kinova. The Security office was a mad house for the first twenty-four hours. Four of the hired thugs were rounded up and placed in the town jail to await prosecution for crimes committed against the Swift security force and their families. But these four could provide no information on who hired them. They were just evil-minded know-nothings that got their kicks preying on innocent people—all muscle and no brains. They decided that this island was ripe for the taking and stayed behind on their own.

Harlan explained that he was there to announce who was going to be the new director of the force. Kinova stood quietly outside of circle watching everyone. Most of the people did not like the idea of a new boss, especially after Wassermann. Ames had just finished reading off the accolades of the new director, a man who had a degree in criminal science, had been a decorated policeman on the Hawaiian police force while he worked his way through three years of law school, but then found out he'd rather help keep the peace than prosecute those that didn't. He had been working in the private sector of security for ten years and was well liked by his colleagues.

The small crowd of people were getting visibly disgusted with all this rigmarole and wanted it done with. It was evident they were feeling that Kinova was getting the shaft again and that made them unhappy. But for Kinova's sake they would work and work hard.

Harlan, sensing that he was about to overstay his welcome then called Kinova over and with a firm handshake handed him a name plaque for his new office desk:

**T. KINOVA, SECURITY DIRECTOR.**

## Chapter Five: Investigation and The Wild Ride

Harlan took a Swift transport to Los Angeles International, made a short visit to the security division that watched over flight departures, and received his first disappointment of the day. Somehow, all the recordings for the particular flight Wassermann took were blank, wiped clean. Supposedly, a new trainee had done it by accident.

Not wanting to raise any suspicions by walking across the tarmac, he went out the front door and hailed a taxi, taking the long way around the airport properties to the C terminal. He gave the cabbie a nice tip, picked his luggage up from the sidewalk and checked in at the main desk for a flight that would not depart for more than twelve hours. The woman working behind the desk raised one eyebrow but he explained that the friends he had been visiting had to drop him off early. This apparently satisfied her.

Before heading out on one final errand he checked through the security gate and walked to the departure area of the flight Wassermann had taken. After noting the positions of the three cameras that might have covered the area, he left the building and hopped on a shuttle bus.

After renting a car he drove out of the airport and slowly made his way back to where Wassermann reportedly got out of the taxi. Harlan made note of two traffic cameras that also covered the airport entryway. He would get Phil Radnor to officially request any CCTV footage from those. Back at on the main street he located a nondescript restaurant where he had a grilled cheese sandwich and made a few calls on his cell phone. By the time he made his way to Bakersfield Phil had received the information he wanted from the traffic division and—best of all—and emailed Harlan the photo of the man getting out of the taxi.

He was feeling in a much better frame of mind as he drove into a small, neatly maintained electronics complex. The company name gave no indication that it was the subsidiary of the Swifts. It manufactured a variety of small components that were sold throughout that part of the country. It also acted as a distribution hub for many of the larger Swift products.

Jim Ackerson, a Sales VP, met Harlan at the door and took him right to the personal office that hired people for most of the smaller Swift's locations and subsidiaries. He handed him off to a girl named Victoria and disappeared.

The poor girl, apparently barely out of her teens found herself face-to-face with a man everyone knew by reputation. He supposedly accepted no excuses and was someone who got things done. He was the main subject of water cooler gossip over the last few days. Somehow the word gotten out of his impending arrival. Harlan knew darned well how the "word" had been leaked. He had done it himself. It generally paid dividends when people had a few days to worry about why he might be coming.

"Surprised people are quiet people, while nervous people can't keep from talking," he had explained to Phil and another Enterprises Security man, Gary Bradley, months earlier.

After an hour, Harlan realized it was hopeless to look any farther. Victoria helped all she could but he found out after a few minutes that she was new to the department. Strangely enough, no one else there had been part of the hiring of Wassermann. So even the photo of the man he did manger to pull off a surveillance tape proved to be useless.

Leaving Personnel, he made his way to the Security building and into a back room where he looked in on an old friend who repaired the video cameras and recording machines.

By the time Ackerson caught up with him, Harlan had what he needed... a thumb drive with a video of a man who made several visit before and after Wassermann's interviews and subsequence hiring.

\* \* \*



Ralph was fidgeting in the auxiliary control room where the capture device's GPS and audio pickup were being monitored by Ralph and two other trustworthy men with no one else on the Outpost being the wiser. The somewhat boring job had been going on for a full week.

After the first few hours of activity once the device was picked up on the train and taken to what must have been a houseboat located a few miles up the Hudson River, it stopped moving. The GPS signal was matched to a satellite map told Ken and Ralph on the Outpost and Phil Radnor on the ground where it was. Foreign voices spoken by at least two or three men had been heard in addition to an indistinguishable woman's voice along with the cries of more than one child.

It had been difficult for Ralph at first until Ken took him into his office and asked, "Isn't it better to hear their voices and know they are alive... than the alternative?"

Ralph had nodded, not looking up, but returned to monitor the channel without any further emotional issues.

Now, after seven days, everything on Earth was in order. No one had left the boathouse and no one had shown up. Phil and Harlan were now of a mind that this had turned into a burst, somehow. It was time to save the hostages. Ralph was ecstatic when Phil reported that he and his men were in position on a small hill overlooking the houseboat. "It's dark enough to go. Ready to move in," he radioed in a whispered voice.

But before they could act, a small, converted school bus pulled up next to the houseboat and a group of people from the boathouse climbed in. As it sped away, the signal began to move. Phil spotted a woman and two children with his night vision binoculars but that was all he could see. The other people wore some sort of hood or mask. He sighed as the bus pulled away, and could only recall his men from their various positions. They would have to regroup and wait for another opportunity.

A week later the bus was still on the move. It only stopped three times each day for gas and at one point to change a flat tire. Everyone could hear the woman and kids talking and evidently watching movies and playing games. They appeared to be well taken care of—the converted bus must be providing all the necessities.

As long as the situation stayed that way, Phil kept following them at a discreet distance. His team was the ones that suffered the most. Their car and the security truck were not designed for this type of operation. But they all refused to give up.

What little of the foreign language they heard was identified on the third day as a seldom spoken dialect of a small South Pacific island group that included Palau. What they were doing in New York State was beyond anyone's guess.

Late one night the bus pulled into a rundown ranch far out in the Arizona desert. There was only a ranch house and an oversize barn to be seen and the bus stopped directly between them. The Security team backed up to a small curve that would hide their vehicles and then raised a powerful video camera on the roof of the truck. One look at the setup and Phil knew that the time to save the people had arrived. Turning to his number two man he whispered, "If that barn isn't stuffed with a plane, I'll eat my hat!"

He told the men they either rushed in now or faced the very real possibility of losing them when the plane took off. The kidnappers must have received new instructions somehow. Perhaps via a note passed at a service station stop. Nobody knew. Whatever this new tact was did not bode well for the family.

Phil did the only thing left open to him; he called for assistance.

"Radnor to Citadel Control. We are currently at coordinates North 32.346365 by West 111.009846. I need the fastest jet you have to get out here ready to force down a plane— No. Wait. I have a better idea." He spoke rapidly and shut off the radio with a smile.

Fifteen minutes later a smoke trail could be seen coming in from directly east of them. Seconds after that an object hit the ground next to the east side of the barn and—if it could be described as such—gently exploded. Numerous old boards blew off the building and smoke engulfed everything. From their position a quarter mile away, Phil and his people watched as several figures emerged from the smoke, staggering around.

In seconds everyone was down and, Phil knew, out. The nerve gas put them to sleep on contact and an antidote was needed to awake them. It would arrive by helicopter two hours later. Phil and his men moved in and found two men and a woman with two children.

To their dismay, they did not find Ralph's wife and children.

"What size?" asked one of his men as a Swift medic was giving them shots and oxygen.

Puzzled, Phil asked, "What do you mean, 'What size'?"

With a grin, the man replied, "Hat. As in to eat." He pointed over his shoulder at the partially exposed barn. "No getaway plane in there."

Phil grumbled something he hoped nobody caught. Then he said in a slightly louder voice, "There *would* be a plane in there if this was a TV show!"

It was hours later that the woman's story was heard and it was right out of a cheap novel or a very sappy TV program. Speaking in fairly good English, the woman explained that she had lost her job and her apartment in New York City, and was living on the street with her family. She needed to get to California to her sister who had a job for her. She had no way of getting there so she made up a sign and camped out at Times Square asking for help to get to the West Coast with her kids. On her third day, three men approached her and promise to take her to her destination and give her one thousand dollars if she just went with them and used the names they told her to use and just enjoy the trip.

As crazy as it sounded, she had placed her kids into the waiting bus and off they went, trusting their lives to strangers. Phil was horrified at what she had done. After checking out her story, he arranged to get her to her sister. "God help's fools and drunkards," he muttered, "and also people with zero common sense," he sadly added.

A quick check showed the two men to be in the country illegally, so they were turned over to Immigration for processing. In spite of some people's wishes, they really had not committed a crime. They had just followed orders received by cell phone. Each man had five thousand dollars in their pockets and had been promised another five grand when they finally reach California.

He turned the woman and her kids over to an Arizona State Trooper who promised to get them bus tickets to California.

As for the capture device, it was found sitting on a seat in the back of the bus with a note taped to it.

Nice try—better luck next time.

\* \* \*

"Good thing we don't need to go much farther, Bud," Tom mentioned while moving the repelatron dishes around the outer ring and aiming them at Mars. "At this point we pretty much have to glide along until we get beyond something closer to push against. Some day I'm going to need to finish developing that Attractatron we were working on before all this meteor business started." He grinned. "It's what we really could use at times like this."

"Like how?" Bud asked.

"Well, like we push to a certain point, and then throw a grab 'em lasso ahead and pull ourselves forward. Each time we go past something we switch back to push until we get close enough to grab and pull again."

With a grin, and in a low, conspiratorial tone, Bud said, “Don’t tell Chow that or he’ll be outside looking for a giant lariat!”

They arrived at Mars several hours ahead of the potential collision on Phobos. It didn’t happen... the piece of asteroid passed by with a hundred miles to spare. Tom was able to maneuver close enough to the incoming object to get a good look at it. By reversing their path and matching speed with it, *Challenger* followed the refrigerator-size chunk of rock as it raced toward, and then into, the atmosphere of Mars. With only a single hour before they had to stop following the runaway asteroid, there was no way to try to get someone out to take a sample piece, so Tom had to satisfy himself with using the only two instruments available to them: a spectrographic laser that worked on measuring the reflected light as it burned a small hole into the surface; and his own repeltrons with their ability to instantly determine the molecular makeup of something that might be used to push against.

The piece of flotsam turned out to be just what it was, an asteroid with one exception—it had a minuscule, yet stronger than expected, magnetic field. Tom attributed it to an iron deposit in its center. By careful observation they could see that only about a third of it burned up in the sparse atmosphere.

The impact could be seen through their onboard telescope. It hit practically in the middle of a crater Bud identified as Victoria, sending up a cloud of dust that Tom measured as more than one mile high and several across.

“Well, that’s that. It was just a chunk of asteroid from what we could see. I’m not even certain it is worth going out to the belt for a look at this point,” Tom said a little disappointed.

After getting a night’s sleep, he changed his mind and soon after a meal Chow served of breakfast burritos and spicy hot chocolate, Tom took the necessary measurements and calculated the best course out to the asteroid belt where the most recent impacts had occurred.

“I’m going to try a little experiment,” he called out over the ships intercom. “I need everyone to lock everything down and get into the acceleration couches. No exceptions. We’re going to push off at about three Gs. I want to make certain we have enough speed to get to the asteroids in good time and without having to strain our power systems to run the repeltrons at highest setting. We go in ten minutes. Report when ready, please.”

Seven minutes later everyone had reported readiness. On schedule, Tom pressed the **ACTIVATE** button and *Challenger* leapt forward, racing away from the Sun and Mars. The first ten hours were a little rough and Tom, with an apology to everyone—but he really meant it for Chow—dropped their acceleration down to just under 1-G, and kept it there for the remainder of their trip. At the turnaround point, the location where they needed to decelerate, he kept that at the lower setting as well. I meant a few extra days of travel, but it was easier on everyone.

Tom sent a coded message back to the Moon that was relayed to his father. Basically, it requested the latest position of the largest of the impacted asteroids. At their current distance from Earth it took more than two hours to get the message there and the same back. The answer must have been anticipated as it arrived just three minutes later than an immediate reply would have.

“Good,” he told everyone in the control room. “I need to make a small deviation to our right, but we should be there in six hours.”

While they waited, Tom and Bud discussed the lack of any information about the TeleVoc trap and the mobsters who had kidnapped Ralph’s family.

Sooner than they realized it was time to make the final push against five large objects. Tom had explained to Bud that he wanted to spread out the repelatron pressures so they weren’t responsible for any significant movement of any asteroid.

“The last thing we need to do is to start a cascading collision,” he said. “Who knows what

damage that might eventually lead to?” He stopped and frowned. “I only hope that whoever is playing around with things out here realizes what they could end up doing if they aren’t careful!”

They quickly found the first asteroid and the exact spot where something had been bashed off of it. There was no sign of an explosion or even another object having impacted. Tom was baffled, especially when his test showed up a magnetic field for the second time. All he could think to do was to take copious photos and a video of their examination.

To begin the return trip Tom had to raise the ship above most of the debris belt so he could aim three of their repelatrions at the distant Jupiter. Fortunately it was in a position that it could be used. However, its distance meant that it took three hours before they felt any acceleration. By carefully adding a few bursts against the largest asteroids Tom was able to get their speed up so they could pass by and use Mars for the homeward trip.

Two weeks later the *Challenger* “left the Moon” and headed to Fearing Island. Tom had to slow his decent to the island. The schedule touchdown of the special monthly rocket from the Outpost had priority. Tom’s ship could stop and hover at any time but a gliding rocket did not have that luxury. He took the opportunity to watch his enhanced spaceship land on water with a birds-eye-view.

It was the only practical way down other than by parachute. No ship could carry the fuel necessary to do a tail end landing full of cargo, trash and recyclables. Even with the returning rocket configured into a lifting body, it was a flying brick. Riding the radio beam down was a one shot deal and so far had only failed once—it had been a cargo-only ship with no crew that hit an unexpected wave and broke apart.

Two miles out and only a hundred feet above the ocean the ship fired two small solid nose rockets tilting the tip of the ship upwards, and the last of the liquid fuel was used by the four belly retro rockets and the main engine for a twenty seconds burn. It was one hell of a twenty seconds. The ship went from over six hundred miles an hour to a practical stand still and slid into and across the sea doing just over fifty miles per hour. It rapidly slowed to a stop and began to settle to the ocean bottom.

A recovery barge maneuvered above the ship now resting in the shallow waters just off shore and lowered a trio of super-size clamps onto the spaceship. They raised the ship into a railed undersea cradle. Once back at the special dock the cradle with its cargo rolled to the unloading hangar and eventual refurbished.

Tom had no way of knowing that Ralph McDermott was on that flight and in less than an hour he would be winging his way south in one of the *Pigeon Specials* kept on the island for fun flights. Without a flight plan he would be heading for parts unknown.

\* \* \*

“Harlan, I hate it when you’re right all the time. But, Ralph? How and why?” Phil asked as he turned away from the wall-mounted display showing the entire East coast. A little red blinking dot just south of Fearing Island was slowly moving down the coast.

“There’s was no other answer, Phil. No one, absolutely no one knew of the tracking device except seven of us. The only lose cannons were Ralph and Paul. Paul was down here at Enterprises when this all started. I checked out his life style for the past six months and nothing has changed. But Ralph! Now, that’s another story. We should have checked that first when all this started and not waited until I came back from California. But no, even we in Security have followed the Swift philosophy that if you’re good, you’re always good. And the axiom: If you work for the Swift that makes you upright and honest!

“I’m getting too old for this, too soft minded, and some day that could lead to a bad ending. Hopefully, not this time.” Harlan put his head into his hands, fingers rubbing his eyes. Sighing he dropped his hands, put on a half smile and shook his head for a moment. Phil just watched him a little confused. Harlan was always sure of himself and of what he was doing—this side of

Harlan, Phil did not like at all!

“Where did you have Ken hide the GPS tracker? It can’t be in his clothes?”

“No it’s not. It’s in his stomach.” He laughed.

“No way! How did you get him to gulp that down?”

“He did it willingly. The last few weeks must have been hell on his nerves and he been going to the Outpost doctor for the ulcer medicine he had to take twice a day. So two days ago when he was making ready to ship back home—and since the bust in Arizona there was no reason to keep him at the Outpost—the doc told him he needed an upper GI done to make sure that he was safe to go back down and that he was not bleeding internally. Coincidentally, that morning he started to spit up blood.” A flicker of a smile crossed Harlan’s face. “So he readily agreed. He’s never had one done before and he did not know what the procedure was, so in his groggy state he never noticed the extra capsule being pushed down his throat and clamped to his stomach wall. In about a month it will dissolve and pass through.”

Phil shook his head in again. “And how long have you been planning this little number?”

“You mean the tracker? Doc Simpson and I worked it out a while back, but we never had the opportunity to use it till now.”

Phil shook his head. “How did you get it all up to Ken and worked this out with the doctor upstairs?”

“I sent it up right after Arizona and after I read his current medical report. It was the perfect ploy. I already had Ralph pegged because of our new background search. The amazing thing is we never noticed that Ralph always came down at Loonau Island and stayed for a few extra days before coming home. Ever since the outpost was built!”

Phil whistled “This thing been in the works that long?”

“Probably longer, much longer!”

\* \* \*

Although they were both bushed, Tom and Bud carried through on a promise they had made to Bashalli and Sandy to take them to dinner and dancing the first night back.

The Shopton Yacht Club was holding a private party that evening, so the foursome headed to a restaurant in the downtown area that featured live music along with some of the best seafood in the area.

Everyone ordered, and the girls ate with gusto, but the soon had worried looks on their faces as they realized how tired the boys must be. Finally, with their plates more than half full, both boys pushed their meals away saying that they were full.

“Right, and I’m a flaming redhead,” Sandy replied with a snort. “Face it, Bashi. We should have arranged to let them get a night’s sleep before we made them show us that we are still important to them.”

“Ah, Sandy. You know you’re the most important thing in my life,” Bud protested.

“Okay, then let’s hit the floor!” She instantly regretted making the rash dare. “Sorry. Let’s just sit here and, uhh, digest. Okay?”

With dinner finished, and Bud begging off an extended evening of dancing with the explanation that he had a six a.m. flight test, Tom suggested that the flier head home.

“I’ll drop Bash off at her folks and Sandy and I can head home after that,” he suggested. Trying to disguise his exhaustion, Bud agreed.

He and Sandy walked a little way away from the others and said their goodnights and shared a somewhat lengthy kiss. When she returned to Tom and Bashalli, Sandy’s face was flushed and

she was sporting a goofy grin.

“Is he a good kisser?” Bashalli inquired.

Sandy nodded. “Best I’ve ever had,” she replied before her eyes went wide and she blushed. She stammered out, “That does *not* mean I’ve kissed a lot of other guys. Well, not so many... and not very many at all as far as Bud is concerned. Understand you two?” She was now standing with her hands on her hips.

They all laughed and then climbed into Tom’s sport sedan. With a brief rev of the engine they scooted out of the parking lot and headed south toward the small neighborhood where the beautiful Pakistani girl lived. Once there, Tom hopped from the driver’s side and came around to open the door for his girlfriend. She nodded and accepted his hand to climb out.

They walked slowly to her front door where she gave him a slightly longer kiss than Sandy and Bud had shared. With an even goofier grin on his face, Tom got back into the car. Sandy had already climbed over the seat and was sitting in the front.

“About time. I was getting a little nauseous watching that display.” She giggled at him. “Love ya, brother dear, and I love Bashi. I really hope you two get married some day. I could use a sister.”

They headed toward the Swift home.

About five blocks later Tom noticed a large delivery-style van that was accelerating behind them. In the past two blocks it had made up more than two hundred feet and was closing in uncomfortably fast. “Hang on, San,” he told her. “We have uninvited company!”

He stepped on the accelerator and their car lurched forward, soon putting an additional eighty or ninety feet between them and the van that was obviously trying to get to them. Tom successfully made six sharp corners before the seventh one beat him.

With a shrieking skid, the sedan went sideways. He tried to regain control but only managed to put the car in a series of fishtails. By the time he did get the car straightened, the van was just a few yards behind them. A sickening sound of metal tearing into metal came from behind them and the car shook violently. Then, as suddenly as it began the shaking stopped. The car’s engine raced until he took his foot off the gas pedal.

In a flash he realized that the car was no longer touching the road.

The van had somehow been able to grab onto the car and lift it up. He and Sandy were at the mercy of the unseen occupants of the van.

## Chapter Six: Push It or Pull It... or Both?

“What’s happening to us?” Sandy screamed. She needn’t have yelled as Tom was shutting the engine off, and the only other sounds inside the car was the rubbing of whatever it was that had evidently pierced the back end of the vehicle.

He pulled out his cell phone and dialed an emergency number. The sedan, something he had picked up just two weeks earlier, still did not have a TeleVoc relay transmitter installed. The line rang twice before it was picked up and a worried voice came through.

“What is it, Tom? This is Phil.”

Tom explained their predicament in short and fast sentences. “Somehow, we’re stuck on the front of the van and a couple inches off the ground. Lock onto this signal and get the real-time GPS info. Also, I’m having Sandy activate the emergency beacon in the glove box.” He indicated that she should open the door and take out the device that looked—and acted—just like a small LED flashlight. After pressing the button, she replaced it and closed the door. “There. You should also be receiving that signal.”

“Got ‘em!” Phil called out. “I’m dispatching three Security trucks and calling in the police and the State Troopers. Hang on, skipper. Harlan is calling—”

The line went silent and Tom finally had time to look forward. The van had made several turns that had tossed the two kidnapes around in the car, and now he was having troubles seeing anything he readily recognized. But, a glance at the built-in compass in the rearview mirror showed that they were heading south.

“We must be on the old highway that runs down this side of the lake,” Sandy commented as she also looked at the bearing. She had leaned over and clamped her arms onto Tom’s right forearm. He could feel both the tension and the shaking she was experiencing.

“Calm down, San,” he told her in what he hoped was a soothing tone. “There isn’t much in the way of side roads for a few miles and—” His phone had just beeped telling him of a connection. “Tom here,” he said into it.

“Tom? Harlan. We have you. What are you in?”

This question surprised him, but the inventor answered, “My new StarFire sedan. Why?”

“Because we’re going to try a little James Bond thing. Need to have you in a hard top, that’s all. You and Sandy strap in as tight as you can. The rescue team will be overhead in about one minute.”

“What does he mean,” Sandy asked in a small, frightened voice. Tom had held the phone away from his ear so she could listen.

Tom chuckled. “Well, if I am thinking of the same Bond film Harlan is, I have a good idea that we are about to enjoy a little flying. Do like he said and push yourself back into the seat. Hmmm? Probably best to cross your arms over your chest as well.”

In the distance, and over the sounds of the van’s roaring engine, could be heard a new sound. It was a high-pitched whine Tom recognized as the turbines from one of Enterprises new HLQ line of heavy lifting quiet helicopters. To affirm his thought, the whine soon ebbed away only to be replaced by a subtle vibration. When his sister looked at him, Tom told her, “That’s the rotors. You’d think they were a long way off, but I’ll bet they are right over us. Maybe only fifty feet or so. Hang on...”

Three seconds later they both felt something heavy drop onto the roof of the car. A tingling went through them and Sandy’s hair suddenly stuck out like a Halloween fright wig. With a wrenching sound and several shakes, they were yanked forward and then up, away from their

attackers. As they slowed down and moved off to the side, a second of the HLQ 'copters dropped its own electromagnet onto the roof of the van, quickly lifting it up. In a moment both helicopters and their captive vehicles had made a wide turn and were heading for, as Tom could see from the lights, the southeast wall of Swift Enterprises.

Less than four minutes after they had been plucked from what Tom now saw as a pair of pointed fork-like tines on the front of the van, both his sedan and the mystery van were sitting on the ground near to the Barn, with the van now bathed in a pool of very bright lights.

More than a dozen Enterprises men armed with eGuns—Tom's new variation on his great grandfather's own electric rifle—surrounded the van with two others opening the doors of Tom's car.

"You guys okay?" Gary Bradley, one of Ames' top men, was asking them as the two teens released their seat belts. His assistant walked around to the rear of the car and let out a whistle once he saw the damage.

Sandy, who had held most of her emotions in—but who was still a seventeen-year-old girl—nodded and then began crying. She flung herself into Gary's arms and he wrapped them around her to give her what comfort he could.

"Yeah, we're okay. Thanks, Gary. If you'll take Sandy to the Security building and call dad and mom to come get her—oh, and call Bud or he'll never forgive me—then I'm going to see what is in that van!" He turned and jogged the two hundred feet to where the van was sitting, still surrounded by the Security department men. He arrived just as the doors opened and a pair of Asian men stepped out. One made the mistake of grabbing a gun from his waistband but was struck by five eGun hits at the same time. He crumpled to the ground but not before wildly swinging his arm and squeezing the trigger of his pistol. His companion screamed in pain and also fell to the ground, grabbing at his butt.

As the Enterprises men ran forward, Harlan stepped over to stand next to Tom. "Assuming his friend shot him where I think he did, I approve of the use of firearms in this case!" He grinned at the young inventor. "I suggest that you go home for the night. These two won't be in condition to answer questions until tomorrow. I called your folks and told them to stay home; I'll have a car drive you and Sandy. Bud will meet you at your house." With that, he walked forward to help his team.

Doc Simpson called ahead to tell Tom and Sandy's mother, Anne, to give the girl one of the sedatives he had prescribed for Anne some months earlier when Sandy had gone missing. It worked and the teenager was soon asleep in Bud's arms on the Swift's sofa.

Tom described their brief capture along with a simplified version of their rescue. He could see that his father understood what had happened. His mother, who even though she was a highly educated woman, tended to worry about her family and Tom saw in her eyes that she really didn't want to know more.

The following morning Harlan had little to tell either Tom or Damon.

"No ID, of course, and a complete lack of evidently understanding English. They both did react a little when we tried Spanish and various Asian languages. Tagalog, also called Filipino, made them nervous. We'll keep working on them until the FBI takes them this evening. I'll keep you informed."

With nothing better to do, Tom made a few calls to arrange to have his car trailered down to Albany and to a body shop that advertised that they could fix anything. Silently, he wished them good luck. After explaining what had happened, and hearing in the man's voice an unspoken, "Kids! What sort of lies will they tell their parents next?" tone, he asked for an estimate to be provided by email before the end of the day.

That taken care of he decided the time was right to finish the basic design of the spaceship he hoped might become the first of several manned versions of the little space tug his father had



come up with. Knowing that it needed to be powerful had to be the first consideration. Given the power requirements of his repelatron, Tom realized it would be large. But, the more he thought about it, the more convinced he was that a smaller craft was going to be much more versatile. It didn't need to have long-lasting power; it did need to have the vacuum of space equivalent of torque.

If he designed them correctly, he might even be able to build them so they interlocked for transport using another, larger craft.

"So, you string a bunch of them together, like one of Chow's mule trains, and haul them out behind the *Challenger*?" Bud guess after Tom showed him a few preliminary drawings.

"Perhaps," Tom replied. What he actually had in mind would be to have four or six of the small craft being remotely piloted into the vicinity of anything incoming by an unmanned, repelatron-driven craft. With no people involved, there would be an enormous savings on weight and space... and even power usage. The lighter the load the lower the drain on the batteries, he told the flier.

"Of course, all this keeps bringing me back to the need to complete that darned Attractatron system. The only thing is, I've really no idea how to attract something with enough force, and in a small enough package to make it feasible." He shrugged at Bud.

For his part, Bud Barclay had complete and utter confidence in his best friend. He couldn't begin to count the times when Tom, faced with the seemingly impossible, had been able to come up with the perfect solution. He knew this would be the case with Tom's Attractatron system, although he was determined to find one of his famous pun names for the device and to christen it that before anyone could stop him.

"You'll come up with something, skipper," he told the inventor.

After the flier excused himself to attend to a flight demonstration of the latest model of a Swift favorite, the Pigeon Special, Tom headed to his underground lab and small office. Built into the side of the hangar housing his *Sky Queen*, it was the quietest place in all of Enterprises and Tom's preferred place to ponder difficult projects.

Even with one of the most powerful computer design programs available, he picked up an artist's sketchpad and sat down on the sofa against the side wall. For the next three hours he make a series of small drawings, as many as a dozen per page, until he had filled seven pages with objects that ranged from things that looked like miniature versions of the *Challenger*, to ones that had similarities with Earthbound trucks.

He spent the next hour studying what he had drawn, making the occasional note next to several he thought merited further work, and crossing out almost half of the doodles that now appeared to be either silly or unusable. By the time he finished it was approaching quitting time, but his brain was racing and he did not want to stop,

Tom reached for the phone just as a voice startled him.

"If you think you're going to call Bashi to tell her tonight's date is off, I'll scream, Tom Swift!" came the voice from his sister, Sandy. "You promised to make up for the lack of energy last night. I've already informed Budworth that his attendance is mandatory. I just stopped by to drop something off for daddy; he's heading down to D.C. tonight and mother wanted him to have clean underwear." She rolled her eyes at the idea. "Anyway, I also brought you a pair of slacks, a sports coat and your dancing shoes. They're hanging on the nose wheel of the *Queen*."

Tom looked at his sister helplessly. "Gee, San. I didn't think you girls would call in that rain check so soon. I've got—"

With hands on her hips and a determined look on her face, Sandy interrupted him with, "You, Thomas Swift, have a wonderful girlfriend who was practically in tears when she found out about our wild ride last night. She's been on the phone with me just about every hour today

making sure that we are both safe. Secretly,” she said in a softer tone, “I’m certain that she is desperate to know that you are alright. You haven’t even called her today!”

Tom gulped. “Okay. It’s...” he looked at his watch, “...just about five. I’ll give Bash a call right now and then pick her up at seven. Where are we meeting you and Bud?”

Sandy’s face went from pale to bright red as she realized she had never discussed that small detail with her man. “Get back to you on that in ten,” she stated as she turned around and ran across the hangar floor pulling her cell phone out of her pants pocket as she did.

With a chuckle, Tom picked up the phone and dialed a number he knew by heart. Once it was answered, he said, “And, I’ve missed you too, Bash. All the way since last night... No, I’m fine. I think Sandy might have played up the danger factor a bit. We just went for an unscheduled ride attached to the front of a large van, and then a little, and may I say very safe, flight from the old highway nine... Sure. Bud and I are picking you and Sandy up at seven... Yes. I’m all rested up and ready to dance the night away. See you in about two hours!”

He hung up, suddenly feeling guilty for not having called earlier. He and the beautiful Pakistani girl had been dating for several months and agreed that it felt as if they had known each other for years. In his heart, Tom hoped that she was “the one” for him.

In her mind, Sandy already had Bashalli Prandit-Swift as her sister-in-law.

Tom worked another half hour before retrieving his clothes bag from its hanging spot under the Flying Lab and then showered and dressed in the small apartment behind the office/lab area.

With no special event happening, the Shopton Yacht Club was the perfect place to dine and dance. The foursome met just inside the front door at seven-twenty-five and were immediately shown to a table.

The conversation was lively for the first half of the meal until Bud made the mistake of mentioning the previous evening. Tears brimmed up in Bashalli’s eyes, but she fought them back, trying to smile. She gripped Tom’s hand under the table until the fear she suddenly was feeling had gone away.

“I’m sorry,” Bud apologized. Listen, why don’t you tell the girls about your little space tugs, Tom?”

Tom pursed his lips trying to decide where to begin. “Okay.” He spent the next ten minutes explaining the basic need and some of the ideas that both he and Mr. Swift had come up with. Finally, he got to talking about the one missing piece.

He lowered his voice before continuing, “You see, neither dad nor I believe that simply pushing things around is the answer. In fact, it might prove disastrous if we shoved something and it went off at an unexpected angle. What we really need to do is to grab onto something so it can be maneuvered exactly where we want it to go.”

“So, why do you not take one of your spaceships, like the *Challenger*, land on these space objects and drill some type of anchor into the surface, and then take back off and pull it along?” Bashalli asked.

“Well, there are a couple reasons, Bash, but the three most important ones are that we may not have enough time to do that, the object might not be large enough to land on yet still be a danger, and aiming the repelatrons around something dragging behind might be difficult. Oh, and there’s a fourth one. It probably should be first on the list. Once we got something dragging behind us, how do we maneuver or even slow down without it either yanking us off course, or worse, hitting us from behind.”

Bud added, “There has to be some way to control the speed and action of anything Tom would be moving.”

“Right. And that means we have to lock onto something so tightly that it practically becomes another part of the little craft.”

Bashalli thought about this for a moment before raising one hand. “May I ask the teacher a possibly foolish question?”

Tom leaned over and gave her a peck on the cheek. “Teacher’s favorite can ask anything she likes.”

“Fine. So, if you already have your repelatrions that push, it seems that you also require something to pull. If you can manage to pull and push in equal amounts, you would be able to, as you say, lock onto something. Is that correct?” She looked at the inventor with a mix of hope and worry.

She was rewarded with a second peck. “Exactly. The problem is in coming up with that second piece of the puzzle.” He went on to tell the girls about the recent trip out to Mars and the Asteroids, and the curious finding of unanticipated magnetism in the chunks of rock. He concluded with, “The really odd thing is that I looked at the readouts again today and found something I can’t explain.”

“What?” came a chorus of questions from three others at the table.

Tom motioned them to lean in. “I don’t want this getting around, but the asteroid pieces moved slightly in toward the *Challenger* when we got within a few hundred meters.” He looked into a trio of blank faces. “Which is impossible,” he added, which did nothing to change their expressions. “Because the *Challenger* is coated in tomasite and that makes magnetic attraction *impossible!*”

Now, the others leaned back, eyes wide. Even the very unscientific Bashalli realized that this was a startling find. But, moments later she leaned over to Tom and asked in a low tone, “Then, could you perhaps mine and concentrate whatever that is and use it for your pulling device?”

Tom was about to smile and pat her hand. She did try to be part of things. But his expression changed when the simple truth of her question struck him.

“What?” Bud and Sandy asked, having a more direct view of his face than Bashalli.

“What is it, Thomas?” she now asked, worried that she had said something wrong or foolish.

The inventor’s head turned slowly to the side until he was facing the Pakistani girl. Without thinking he leaned forward and kissed her on the lips. When he pulled back, they both took a deep breath. But where she let hers out in a sigh, Tom used his to explain, “You may have hit it right on the head, Bash. It’s going to take a lot of work to figure it all out, but if we can go up and mine enough, and come up with a way to draw out whatever it is that causes the magnetic— no, it can’t be actual magnetism, can it?” He looked at Bud.

“You mean because of how it ignored the tomasite and reacted to the ship anyway?”

“Right. Oh, boy. There’s so much to do...”

Sandy leaned over to place a hand on the forearm of Tom’s date. “Bashi? I’ve got a feeling that you just set off another period of time where we barely get these two out on dates, much less dancing. You grab yours and I’ll haul the lunkhead out to the floor. At least we can get in one night of dancing!”

\* \* \*

Phil and his Special Ops crew were on the move again. This time by air and with better riding conditions... a lot better conditions. They were in a modified Swift long hauler capable of flying half way around the globe non-stop. The aircraft was maxed out with all the latest surveillance equipment and it was capable of dropping off—parachuting—an all wheel drive truck and a crew of four with all its equipment, day or night. The vehicle with its impact-absorbing seats sat in its cradle in front of the tailgate flanked by several motorcycles ready for ground use that could also

be dropped.

The jet had already zigzagged several times because of its superior airspeed compared to the stolen *Pigeon Special*. The *Pigeon* had already made several refueling stops, Ocala, Florida being the first and Cuba the second. It went in and was out in less than an hour to Phil's utter amazement. After that, it traveled across the gulf into Mexico and back up the West coast into California, landing in Bakersfield.

From there Ralph McDermott slowly made his way to Vancouver B.C. by bus and took a hotel. Two days later he was on a tramp steamer with the whole Pacific Ocean opened in front of him.

\* \* \*

The following morning, still floating on air from the feel of Bashalli in his arms—and the kiss neither of them expected—Tom grabbed a piece of banana bread from the refrigerator and left for Enterprises before seven.

On arriving at the underground office he picked up the sketchpad and leafed through the pages he had covered the day before. There it was. On page six he had drawn a sleek ship. What made it especially intriguing were two features he had not added to any of the other possibilities. The first was a large parabolic array at the front, and the second was what appeared to be a circular hole in the main body, about half way to the back. Next to it he had jotted: *maneuvering repelatron that swings up and down for maximum effect*

Now, he added to that: *back-to-back dishes with individual aim*

Tom Swift had been blessed with an incredible brain, one that could take into consideration a large number of factors and automatically see how they best worked together. Bud called it Tom's "brainbox" while others referred to it as "pure genius." In any case it had just spotted the simple fact that this one design was going to be the one to follow up on.

He turned on his computer, called up both his CAD program and his email. Before he scanned in the small drawing to be used as the basic model for his design he sent a message to Hank Sterling and Arv Hanson asking them to come see him at eleven that morning.

Only then did he input the little sketch and begin the process of turning that into a scale computer model that someday might be used to construct the actual ship.

By the time eleven o'clock rolled around, and he heard the sounds of footsteps walking across the hangar floor, Tom had the preliminary shape and layout for his new space tug designed. He was sitting back trying to decide on any changes when Hank and Arv walked into the room.

"Got another interesting project, skipper?" Hank, the taller of the two, asked.

"Yeah," added Arv. "I've been looking for something other than old inventions to try using that three-D printer you bought for me on. There are only so many *Star Spears* and little Giant Robots that you can make before it gets a little boring." He grinned at Tom knowing that nothing at Enterprises was ever boring.

"Pull up chairs, guys. I do have something, but it isn't close enough to do anything with." As they sat, he gave them a three-minute overview of the issue with space debris, and how both he and his father had come up with the idea to construct some sort of space tugs for the job.

"These are going to need to be unmanned for the most part, but I'd like the first one to have space for Bud and me. Take a look..." he said turning the screen so they could both get a better view. "I'm anticipating that the array up front is going to be collapsible. I don't think it can be drawn up inside the nose; there's no room for that. But, to give us a view of what we're flying toward it will need to either be clear—not a likely thing—or furlled up like an umbrella so it forms an extra long nose."

Pointing at the screen, Hank asked, “What does that do?”

“Glad you asked, Hank,” Tom answered with a grin. “At the very center will be a small but powerful repelatron antenna. I’ve just about finished some improvements that should give it about an extra twenty percent pushing power for the same energy input. The larger area is for the thing I haven’t even begun to invent. I’ve got a name already, but the actual invention is a pipe dream.”

“Does Bud Barclay know about it and has he given it one of his silly names yet?” Arv asked with an innocent smile.

“Well, I believe from a purely logical standpoint it should be named the Attractatron. As in, opposite of repelatron. Bud has so far not provided a name. Either that means he hasn’t figured one out, or he is holding it like a secret ace in a poker game.”

Both Hank and Arv nodded, but Arv asked, “So, how does the Attractatron— oh, geez! Now I’m thinking like Bud. ‘*Attract-a-blond*’ just ran through my mind.” He turned red. “Sorry. So how does it work?”

It was the inventor’s turn to slightly blush. “That, I don’t know.” He told them about the unanticipated force they had encountered emanating from within the asteroid pieces, and finished by telling them how Bashalli had boiled it all down into the single question about refining it.

“Smart lady,” Hank commented. “You ought to marry her before she gets picked up by another team!”

Now, Tom’s face turned bright red. He was so flustered that he had to reach out and grab a bottle of water, taking several gulps as he tried to relax enough to speak.

Seeing his discomfort, Hank sought to change the subject. “So, even if you don’t have the pull part figured out—yet—did you want to jump ahead and build a working model to prove that your in the hole, out of the hole array works?”

Tom looked sheepish as he nodded. “Yeah. Believe it or not, I wasn’t going to ask for one. This meeting was supposed to just let you in on what’s coming, but now that I give it some thought, maybe if we use a few of the smallest repelatrons we have in inventory and put them in a model that’s, oh, perhaps ten feet long—with no nose antenna—we can do some remote-controlled maneuvering exercises up at the Outpost.”

The pattern maker and the modeler agreed.

Arv asked, “When can I have the CAD results for that?”

Tom turned the screen back so he could study it. “Probably by tomorrow afternoon, Arv. I’ll aim for four o’clock. Oh, and Hank? I think it will have a total of five repelatrons... two in the back—both aim-able—the one in the nose that will be stationary, and the aim-able pair on the swing arm in the middle.”

“Okay, but why two of them at the aft end?”

“I’m thinking that these tugs will be working in areas where they may need to aim at more than one object to drive forward, or even to the side. Besides, I did preliminary calculations and they show that two smaller units provide as much push at slightly less power consumption.”

“Got it! I’ll get everything together in the next day or two. Do you mind if I ask the folks up at the Outpost to build a special Solar Battery for this? I have the feeling that we’ll need to make the most of available space.”

Tom gave the go-ahead. The two others left a few minutes later, and he turned back to his design. As he saved things out so he could go grab some lunch another thought came to mind. Unless these were going to be kept sitting in the icy cold of space it would be necessary to launch them from the ground. So, he added stubby control surfaces like wings and a tail assembly.

He next added a pair of small repelatron emitters, facing only downward, to the “wings” to provide additional lift. He knew any added repelatron would strain the power capacity, but he could not see any other way to ensure that the craft, no matter how much they eventually weighed, could safely fly up through and out of the atmosphere.

*Besides, he thought as he walked to the cafeteria to meet Bud, we can coat the outer skin with solar cells to make more electricity!*

When he described his progress to the flier, Bud’s first question was, “When can I fly this sky mule?”

Tom groaned. It had just happened, even before the dark-haired teen had even seen the preliminary drawings!

## Chapter Seven: Test Flight for One

Arv's voice came through Tom's TeleVoc, "Skipper, I think we have a problem. Can you come to my workshop right away?"

Tom looked at the girl that was sitting on the grass with him. The picnic basket was empty and Tom's stomach was full to the brim. Bashalli had surprised Tom with the outdoor lunch. He had been so absorbed in his new ship design that he had barely left Enterprises for the last four days. The food was exotic and not anything he had tasted before. Tom could not stop complimenting her. She had blushed so much that her complexion had turned two shades darker.

From the look on his face, Bashalli knew that Tom was about to leave on some important task. She saw his throat and jaw muscles moving as he "spoke" to the person that called. After a moment he stopped and took her hand. She smiled resignedly, nodded and gave his hand a squeeze. Tom started to stand and pulled her up with him. Unsteady on the grass, with her heels sinking into the soil, she stumbled into him. He grabbed her quickly and drew her into his arms. With their faces now inches apart, her eyes went wide open by the sudden embrace and her lips formed into an irresistible "oh." Tom took the chance and started to move his lips forward.

"Whoa there, Pucker-roo," came a loud voice from behind the tree they were sitting at. A chuckle and a slap on his shoulder caught the inventor by surprise. "This har place is's public as all get-out, not fit'n fer the young lady to be seen doing that, my boy."

Tom turned his head and could see the merriment dancing across Chow's eyes. Bashalli had pulled away also and was hiding her lower face with her hand. Tom couldn't tell if she was embarrassed, or trying to keep from laughing.

Tom was horrified as he looked at her; the one thing he did not want to do was embarrass her. It was a second or two later that he heard a small chuckle, then, with her shoulders rising and falling, it grew louder and louder. He looked at Chow and then back at Bashalli. Tears were streaming down her face and now she was laughing so much that she had to grab Tom's arms to keep on her feet as she stepped out of her heels that were stuck firmly in the ground.

Once more he found her in his embrace and he reached up and wiped the tears of laughter away. When she looked up at him he kissed her just under her eye and without thinking commented, "Hmm, salty."

With that Chow bent over and slapped his knees and hooted like all get out. Bashalli buried her head into his shoulder and pounded his chest with her small fist, a new round of laughter taking her breath away. Tom just stood there, not knowing what to do.

Chow looked at the befuddled Tom and winked at Bashalli. He turned and walked away whistling an old love song. Bashalli reached down, pulled her shoes out of the ground, tip toed to the walkway and put them back on. The spell was broken and Tom hurriedly picked up the remains of their picnic and joined her.

She touched near the TeleVoc pin on his collar and, tilting her head, looked at him questioningly.

"Oh, that," Tom chuckled, "was Arv saying he has something to show me. Want to come along?" Taking her hand, he started to walk before she could reply. Swinging the basket in one hand and hers with his other, he soon forgot about Chow and the interrupted kiss.

Before they even got to the double doors at the back of Arv's workshop, they could hear Bud's bellowing voice. "Get me out of here, you... you... get me out!"

Bashalli stopped, afraid of what she was about to see, while Tom, with a twinkle in his eyes, stepped forward and pushed both doors open. Now illuminated by the stream of sunlight sat Arv's model of Tom's new repelatron drive ship. Bud stood in the middle of the ship's twelve-

foot-long fuselage, seemingly wedged in the hole that was left on top, waiting for the dual repelatron device Tom had yet to build.

Hearing the door open and seeing the sunlight flooding the workspace, Bud turned away from yelling at Arv and looked to the new arrivals, hoping for help.

“Tom... Bash... Thank God! Help me, please-e-e-e-e-s!” he pleaded.

The young couple walked over to Bud and Tom stopped them a few feet away. He looked this way and that way around Bud. “Old man,” he asked with a straight face, “what are you doing in that hole?”

“That’s for my Attractatron and once it’s placed in that hole there will be no way to get it out.” He looked innocently at his friend. “Standard mounting brackets won’t be enough. The floor material and sides are coated with a new type of contact glue that is almost indestructible! I *really* hope you haven’t touched the sides!” As Bud tried to turn, Tom gave his model maker a quick wink. Tom could hear Bashalli gasp in horror.

“Tom, do something, I can’t move at all. My feet are stuck to the floor, my back to the wall, my arms and hands to the sides. Now I know what a fly feels like when it hits flypaper. I’ll die if you don’t get me out!”

“Well, flyboy, if you didn’t go sticking your nose where it doesn’t belong you wouldn’t be in this mess.”

Bud turned red and tried to say sometime, but couldn’t. His mouth gaped open and closed like a fish out of water.

“Look Bud, its only your clothes that are stuck. So if you just get out of your outfit you should be free. But I warn you, if any place on your body touches the walls, well...” Tom did not finish the sentence.

Bud looked at him and growled. He turned to Arv, “Well, just don’t stand there, help me get out of these clothes!”

Arv looked at him and laughed. “You’re asking the wrong man. It sounds like a job for Tom. He’s your *numero uno*.”

Bud turned back to Tom with a helpless look.

Tom just held up his hands and shook his head “no.”

“Bashalli?” he managed to whisper in a panicked voice.

She blushed and took two quick steps back.

“Guys! Help me or I’ll... I’ll...”

“Or I’ll what?” came a voice from above him, a voice that sounded like Hank.

Bud’s face shot up and he spotted Hank leaning over the guard rails of the catwalk pointing a small repelatron dish at him with a thin cable running across to and down a nearby wall and finally over to the rest of the unit that sat on a workbench. Bud just stood there; he could do nothing else. Words were useless in this particular situation. Instead, he started to laugh and in a few moments they all were laughing. Tom and Arv then walked over to the ship, stepped onto the wings, one on each side, reached over and helped their friend up and out of the space vehicle.

“Okay, Arv, why for did you do that to me?” His arms crossed over his chest as they all gathered around him.

“For three days we’ve slaved to build this machine and not once did you come over to see or help us. Then, out of the blue you come strutting in, walk around the ship once, hop up on it and jump into the hole and yelled out, ‘Guys, you really blew it this time! This cockpit is useless. There not enough room in here to do a thing. Where is the seat? What’s a man suppose to do? Stand all the time?’”



The flier had the decency to blush at the almost perfect imitation of his voice by Hank.

“That’s when Hank let you have it!” Arv added.

Bud looked at Hank. “Why were you up there with that ray-gun?” he asked next.

“I was up there trying to test its long range efficacy. If you look over at the far side of the shop you’ll find the target and force meter.”

Tom walked over to the model and hopped up and knelt down and looked into the hole—it was three feet round and three and a half feet deep, the thickness of the model. Looking back at Arv he asked. “Are all the electronic in? Remote control units, transceivers and all that. And this is just empty space?”

Both Arv and Hank knew the sound of that voice.

“Yeah, everything’s in but the batteries. They come down on tomorrow’s rocket.”

“What do the remotes and servos weigh in at?”

“Less the five pounds,” Arv answered. “We only need at radio and small computer relay unit. The servos are part of the repelatron arming mechanism.”

“Hmmm, still can’t fit a pilot in there, can we?” Tom was looking at the hole, the only unused space in the fuselage, and trying to imaging where he—as test pilot—was going to sit.

“Thomas, does the pilot have to be inside of the ship?” Bashalli asked.

Tom and the others looked at her. “Explain, please?” Tom replied with a slight frown.

“Can you sort of dimple the top forming a shallow depression that you cushion, making a bed or a long recumbent seat for the pilot? I have seen those high speed solar powered bicycles and the drivers in them have no room at all and they are only a couple of feet high.”

Tom grabbed her and twirled her around and around saying, “My wonderful, wonderful, Bash!”

Arv looked at Hank and handed him a folded twenty-dollar bill from his front pocket. “Like taking candy from a baby.” Hank murmured as he stuffed the cash in his khakis. Seeing the perplexed look on Tom’s face, he added, “We bet each other that you would or wouldn’t add a pilot before we even got this toy out of the shop. I won!”

\* \* \*

It took close to three more days of work to cut, add fourteen inches to the top and bottom of the ship’s hull and reconfigure the internal equipment. Tom added a two-tier rise for the pilot area. The first tier was the pilot’s bed. It was only twenty-eight inches wide. Just enough room for a man in a thin skin space suit. The second tier was the canopy. The front half slid down over the back half to let the astronaut wiggle in.

The only thing extra that Tom added were oxygen tanks and a small air scrubber unit that would last for three days. Tom elected that the pilot would fly the ship in a space suit minus the suit’s air tanks. That was more than adequate for this test model. The bonus was space around the pilot for over nine square feet of extra solar batteries, which almost doubled the repelatrons power availability.

Bud felt funny wearing a spacesuit on a “maiden flight” that would not even get him out of the Barn were the Test-Mule had been moved to. He had spent the last ten work hours on the computer simulation of the Mule’s controls and theoretical handling of the craft, both atmospheric and in space. He felt confident that he could fly the little ship even though it was missing a lot of the computer assistance he had become used to. *After all, I fly the Challenger that is definitely a more complicated vehicle*, he told himself.

“Skipper, do I have to wear this now?” he asked Tom as he opened and closed the visor of his helmet that he was carrying.

Mr. Swift looked at him and commented, “It for your own safety, Bud. We all realized that

you're not going to leave the building and this is more a test of the sensitivity of the fly-by-wire systems while it's in the air, rather than on the ground. But we also want to make sure that you can handle the controls while in a spacesuit, hooked up to the ship's air recycling systems.

Bud nodded his understanding and started to slip on the helmet. "Gotcha!"

"Besides Bud," added Tom, "we want to see if you'll fall asleep. You never have flown an aircraft lying on your stomach before. You haven't eaten too much, have you? Hate to have to squished up against the canopy," Tom kidded.

There were only five people in the Barn for this test. Arv and Hank were there as ground crew. Mr. Swift and Tom would be busy watching the small flight console that was the twin of Bud's controls and could cut into the Mule's flight computer as an emergency backup unit. Tom had opted to keep the remote aspect of the craft since he was still not sure that, for the first descent from an Earth orbit, he wanted a live person in the craft.

The bottom of the vehicle was fitted with one of the solar converters that helped power the *Challenger*. That was a necessary item if the intended Sky Mule was to become a reality. Because of that, no heat shield could be added to help protect the ship on reentry. A slow steady decent over an extremely hot and rapid one had more advantages and less wear and tear on the vessel.

This would be partly made a moot point in the final, full-sized Mules, to be almost twice the size of this initial test model. They would contain one of Tom's amazing atomic power pods capable of providing most of the ship's needs and would only unfurl a small pair of modified converters from the sides in cases where additional or long-term power drain made it necessary.

Tom helped Bud wiggle into the cockpit and hooked up the two air lines as well as the electrical and optical lines to operate the suit's environmental systems and the helmet visual display. By using the helmet's virtually displayed systems it eliminated the need for a control board and monitors in the ship. The only actual controls were the two joysticks.

Bud powered up the vehicle by pushing down the red button on top of the right joystick. The computer sensed the connection to the helmet and sent its prompt to his visor. Bud spoke a command and verbally turned the ship on. The spacesuit's information display seemed to shrink and get pushed into the lower left corner and the ship's visuals and view screen replaced them. If needed one display could be 'ghosted' over the other using another color, and by looking at it with only the right or left eye only to see one view over the other.

Tom tapped Bud's shoulder and the suited pilot held up his fist with its thumb up. He slid the clear cockpit cover closed and it locked into place. The cover was to protect the pilot from the extreme atmospheric condition and air speed, not for life support.

The inventor hopped off the stubby left wing and joined his father by the control bench. Arv and Hank joined them and hoped they would not be needed for anything else. They all donned headsets and checked that Bud could talk and hear each of them.

Tom had set up a routine with Bud to check out the various repelatron drive systems to check out their power output and swiveling capacities. Mostly, Bud was to use one set of repelatrons to work against another. That way he would be able to use higher power rating than usual inside the somewhat enclosed Barn.

The power limits were set to reflect the materials of the building they were in. Bud had to carefully aim the drive units at the iron support beams and not the more flimsy metal wall sheathing. This was part of the test also to see if the new multi-targeting logarithms for the computer worked as expected. It was an important upgrade to the computer and a necessary one if the Sky Mules were to function in or near the asteroid belt.

The small ship lifted off the ground and hovered for a minute, then it slowly rotated to the right all the way around, and then repeated the maneuver to its left. The nose tilted upward until it was vertical and then proceeded to spin slowly on its axis. The ship rose a full sixty feet—limited by the ceiling of the Barn—and back down, landing where it started.

“Well, Mr. Swift,” asked Bud with a wide smile on his face that no one could see, “do I take her outside and see if it can stretch its legs?”

“Can you keep her under one hundred feet and no faster than one hundred miles per hour along the outer perimeter of the fence?” Mr. Swift looked at Tom, who nodded.

“Piece of cake, sir.” Bud’s voice bubbled with enthusiasm. “I promise I won’t put the spurs to her!”

Tom spoke up. “Give us a moment to clear it with the air traffic tower first, and then let us get over to the tower itself so we can watch you. Arv and Hank? Can you take the remote unit up with you? I want Bud to land and walk around for a few minutes before he does this. Bud, do you copy?”

“Your wish is my command. Shutting down systems.” With that said Bud tapped the start button just as the overheat indicator for the servo computer blinked on. Bud did not notice it for he had already flipped his visor open and took in a gulp of fresh clean air as he slipped the canopy open, instead of stale tank mix.

\* \* \*

Forty minutes later Bud flashed by the back of the tower finishing his second run. This time he was going just under one hundred miles per hour. The first time he crawled by doing sixty. Now, with the third and final run approaching, he radioed, “Permission to go faster and higher, Mr. Swift? She’s flying like a—damn...” The little ship wobbled and suddenly shot up into the sky.

“Daddy!” Sandy’s voice rang through the room in dread and coming from the direction of the tower’s elevator. The group of men turned to see Sandy and Bashalli standing together, sharing a look of alarm.

Tom did not have time for them; he turned back to the control console. “Bud, Bud, do you copy? Over!” Tom spoke intensely in the his mic as his fingers danced over various touch icons on the computer screen, trying to find out what had gone wrong...and that Bud was alright.

“Skipper, I’m A-Okay. The control servos are frozen. I managed to get a little upward tilt before they totally pooped out. Can’t rotate any of them. Heading out into low orbit, I hope, before cutting the drive. It looks as if I still have that level of control. There’s no other option that I can think of, over.” Bud voice was cool and under control.

Mr. Swift turned to the RADAR operator. “You still have him on the scope?” he asked.

“Yes sir, heading south and climbing at... wait one, please... at about a ten degree inclination. It will be eight minutes before he’s out of the atmosphere. Even longer if he slows down!”

“Bud, put her on hover. Just hold her there and we’ll come get you,” Tom informed his friend.

“No can do, skipper. I have to reach low orbit velocity. I have no other repelatrns except the main drive. Accelerating to eight Gs until I reach twenty thousand MPH. That should but me into a long outward apogee and give you time to save my six.” He chuckled and added, “Besides, I’m afraid to shut down the drive right now. What if it doesn’t restart? I’ll be safer in orbit.”

“Roger that, flyboy. I’m not getting a thing on the console down here. What it’s like on your visor?” Tom wanted to know.

“Well... between the bursts of static and a rolling visual—which, by the way is making me a little dizzy—most of it is dead. I have power on the main repelatrns and in the suit and for this radio, but everything else is dead. I’ll need you to tell me when to power down. I have no speed or altitude readings.”

“Bud, I’ll have to get the Outpost to contact you. You’re almost out of our radio range, over!” He was angry with himself for putting in such a low-power system for the test.

“Tom...” and the rest of it was lost as the weak signal disappeared. Tom was reaching for his

TeleVoc pin when his father's hand stopped him and he said. "Already done, Son. Ken should be online any second now and we'll hear both side of the conversation."

"I'll have to..."

"That's done as well, Tom." Arv cut in as he stepped forward. "Fearing is prepping the *Challenger* as we speak."

"I having a jet readied to take *all of us* to Fearing," added Hank from his position near the two girls, and nodding towards them to show that he included them on the list.

"*Test Mule*, do you copy?" Ken Horton's voice filled their ear buds. "We have you on the RADAR scope and you're approaching sixteen thousands MPH and four hundred thousand feet in altitude. Repeat, sixteen thousands MPH and four hundred thousand feet and climbing."

"Roger that, Outpost. Glad to see that I still have a guardian angel up here. I was concerned that I left her back in Shopton." He might have been joking but his voice sounded strained. "Cutting back on power—these Gs are getting to me. Don't want to pass out and wake up with Pluto in front of me, over."

"Copy that, Mule. You can cut off power anytime you want. You are now over seventeen thousand MPH. At the angle you left Earth you'll be five hours before you reach apogee and start to swing back in. The *Challenger* will be wanting for your return. Just hang lose and count the stars!"

## Chapter Eight: First “Real” Flight

In order to save at least an hour, Mr. Swift directed that the *Challenger* make one of its infrequent landings right at Enterprises. “That way,” he informed everyone in the tower, we can be taking off to rescue Bud in an hour instead of only being half way to Fearing Island.”

Tom looked at his father with admiration and thanks. Mr. Swift simply nodded and winked at his son.

“Daddy? Promise me that Bud is going to be okay!” Sandy practically demanded. But, her seeming bravado disappeared as she stepped forward into his waiting arms. She began sobbing softly while he stroked her head.

“He will be as right as rain, honey. Promise!” It was a vow he desperately hoped he could make come true.

“Hey, Ken?” Bud’s voice came through the radio. “Can you ask the folks back home to bring me a cheese sandwich, please? At the skipper’s request I didn’t have anything to eat this morning so I would fit into this little space hopper.”

The tension in the tower began to ease up.

“Brie or Swiss?” the Outpost manager inquired. “Today’s blue plate special is cold formerly grilled cheddar on whole wheat with a side of water.”

“Cheddar, brie and Swiss all combined, please,” came back the stranded astronaut’s reply. “Hold the water and bring up a cute, blonde waitress.”

The report came in minutes later that *Challenger* had taken off and could be expected to land in twenty-two minutes. As everyone hastened to get down to the landing point—the former heat-proofed area that the *Sky Queen* used when she was still outfitted with scotching-hot atomic lifters—Tom made a TeleVoc call.

Ten minutes later a waddling figure could be spotted coming out from the Administration building’s side doors. It was Chow, and he had a canvas tote bag in one hand. As he approached the waiting people he called out, “Don’t know what all the hurry is ‘bout, but I gotcha that mixed cheesy san’wich ya asked fer, Tom.” He held out the bag.

As the inventor took the bag, Mr. Swift took the cook aside and explained the situation. A moment later a more quiet and somber Chow came over to his young boss. “Say son. Sorry fer the jokin’ attitude. I didn’t know ‘bout ole Buddy boy.”

Tom placed a hand on the westerner’s shoulder. “It’s okay, Chow. The important thing is that you are here and that shirt of yours is going to brighten fly boy’s heart almost as much as seeing my sister!” He referred to Chow’s latest and exceptionally gaudy shirt. Where a lot of the cook’s attire featured western themes—including the occasional neon green coyote or bright orange cactus—this one harkened back to the tie-dyed shirts Tom remembered seeing in books back in school.

“She’s a beaut, ain’t she?” Chow beamed. “Got her at one o’ them second hand shops last time I went down ta Boston. I kinda like the way the purple an’ the orange an’ the yellor an’ the pink all swirl around.” He turned serious, adding in a low tone, “Is Buddy gonna be okay?” He seemed to be searching for some answer in Tom’s eyes.

“Yes. He just let one of my inventions get the better of him, that’s all. Now we have to go pull his toes out of the fire and take him a care package of your sandwich.”

A brief alarm signal sounded from the company’s P.A. system followed by the notice, “Incoming craft. The *Challenger* will be landing at the hot plate in three minutes. All Enterprises employees stay clear of that area.” It was repeated twice more.

Right on schedule the large ship appeared out of the clouds and came around in a gentle arc to a perfect and noiseless landing. In the distance a car horn could be heard indicating that a driver out on the main road must have slowed down or stopped to watch the incredible sight. As there was no corresponding crash sound, everyone assumed that the driver of the car behind was irritated and was “voicing” his or her displeasure.

“What do you think, Son? Five minutes before one of those drivers makes the obligatory, ‘How dare those Swifts fly their contraptions and cause uncontrolled mayhem?’ calls?” In spite of the situation, Mr. Swift grinned at his son. Tom returned the grin.

“I give it eight minutes,” he said checking his watch. “We’ll ask George when we get back.”

Everyone climbed up the ladder and entered the ship. Five minutes after it landed, it lifted off the ground and raced skyward. Tom made a quick call to the Outpost for an update on Bud and a position report.

“Well, he’s been a bit of a complainer about the whole food thing, and say’s that you need to do something to make the air supply smell a bit better. I believe he called it ‘stale socks and dried leaves,’ but overall he reports that he can’t complain. Oh, except that the thin suit he’s wearing doesn’t have a good thermal barrier, and the sun is shining on his back making him sweat!”

“Ask him if he has any control over his yaw. If he can give it a tiny bit of spin he should be able to put the Mule in a belly-to-the-sun orientation. Tell him we’ll be there in about thirty-nine minutes.”

It required thirty-one of those minutes to get within range of Bud’s radio. At least in space the weak signal traveled farther than it could inside the atmosphere.

“We’re almost with you, Bud,” Tom radioed. “And, you’ll be happy to know that we brought you a special sandwich server up just to serve you,” he said motioning Chow over to the control board. “Say something to the nice stranded man,” he suggested.

Bud’s huge grin immediately sank as he heard Chow’s booming voice bellow out, “Come an’ get it, buckaroo! I gotcha cheese san’wich and a thermos o’ iced tea. Ya hang in thar, Buddy. We’ll be with ya in a couple!”

Hank and Arv had already gone below to suit up. With no control over the little test ship, it was decided that it needed to be brought into the hangar manually. They opened the outer door and stood at the safety railing as *Challenger* made its approach to the Mule. Both men could see Bud’s back under the canopy and could tell that he was wiggling around, trying to find some comfort from the burning rays of the sun.

It took them less than two minutes to jet out and secure lines to the small ship, plus another three to get back to *Challenger* and pull it into the hangar. That finished, Arv hit the button to lower the outer door and soon the space had been filled with breathable atmosphere. A quick press of the emergency release and the canopy popped up letting Hank shove it to the back and for Arv to help Bud get up and out.

As the flier unlatched his visor and pushed it up he remarked, “You both will never know how happy I am to see you, but I’d really rather be looking at Sandy right now. No offense! Well, Sandy and that sandwich of Chow’s. Help me get shed of this suit and I’ll race you to the control deck!” With their help he was out of the suit and into a light blue overall in under two minutes. He quickly made for the inner hatch.

As it opened he was knocked backward and went sprawling as a one-hundred twenty pound blonde hit him squarely in the upper body, wrapping her legs around him and driving them both half way across the hangar space.

When everyone finally got to the control room Bud had a goofy look on his face and Sandy’s face was flush and she was panting.

“Still hungry?” Tom inquired, “or was that kiss we all saw on the monitor enough to keep you for a few more hours?”

But looked at Sandy, and then over to Chow. The cook held out a plate with two large sandwiched on it. He jiggled it a little and smiled at Bud. Bud looked back at Sandy. She was now standing there with her hands on her hips, looking at him as if to say, “You can’t seriously tell me that a silly little sandwich is more important to you than I am! Can you?” But, seconds later her face broke into a huge smile and she gave him a little push toward Chow.

“Eat now and regain strength for another kiss,” she ordered.

After eating the first sandwich Tom came over and sat next to his friend. “What happened?” he asked.

Bud swallowed his most recent bits and shrugged. “Everything went fine on the first two runs. Then, as I was talking to your dad a red light flashed for just a split second on my readouts. By the time I looked I couldn’t tell what it was. It never came back. But... well, you saw what happened. I wasn’t even touching the controls when the readout showed a massive build-up in the main repeltrons. All I had time for was to point the nose up and curse.”

After hearing a little more about the situation, Tom commented, “It’s a good thing you got the nose up. I looked at the telemetry on the way up here and your attitude and course would have had you slamming into the hills across the other side of Lake Carlopa in something like eight seconds! Good job of piloting a wounded goose!”

Mr. Swift, who had positioned himself nearby, commented, “I agree. I would love to know just what that red light was indicating, but as I understand it, there was no thought, or reason, to put in a black box. Until Tom can tear things apart we might not know anything.”

“Yeah,” Tom said ruefully. “Dad? I’d like to head for the Outpost and see if I can figure out things. If I can, then we can do the rest of the ‘in vacuum’ tests. I’m not sure I’d trust things for a manned re-entry, but we could get a lot better idea of how this mule kicks, so to speak.”

Mr. Swift appeared to ponder the situation. In truth, he had been expecting just this request and already knew that he would agree to his son’s inquiry. “Well,” he started slowly, “I suppose we could spend a few hours up here. That ought to give me enough time to let your mother know where we all are. I forgot to call her before we rushed up here.” He turned to Bud. “If she is angry I’m going to have you explain it all to her!” He added a wink that the flier caught.

Grinning, Bud replied, “I’ll do my level best to make Mrs. Swift understand at what a high level of regard I hold her understanding and patient heart, Mr. Swift. And, if you can tell me what she’s wearing today, I can work up a nice compliment about how lovely she looks, as well!”

An hour later the Mule had been pulled back out of the hangar and shoved inside the cargo hatch at the Outpost. The cargo staging area had been cleared by the crew so that Tom could begin opening and disassembling parts of the ship. It only took five minutes to see what had gone wrong.

He motioned Hank and Arv over and pointed inside one of the access hatches.

“Ah-h-h-h-h, Bud!” Hank groaned.

“What? What-did-I-do?” He stepped over and took a look at what the big engineer was pointing at. “Oops!”

Tom began to laugh. “You lug. You stretched your left foot out and knocked the plug to the right bank of batteries out!” He then sighed. “Probably my fault for not fashioning some sort of cover. I just never figured that you would want to stretch. Besides, that’s one of the reasons I had you out and moving around while we all went to the tower. Oh, well.”

Twenty minutes later he had the Mule back in fully assembled condition. Fresh batteries were pulled from inventory while the partially spent ones went back to the line for recharging.

“Looks like it’s my turn in the saddle,” Tom admitted. After seeing Bud’s hurt look he added, “It has nothing to do with the accident, fly boy. It does have something to do with you being overheated under that canopy. Until we can get Doc to say you are hydrated properly I’m afraid that you are grounded.”

“Yeah. Just as long as you aren’t going for the re-entry thing, skipper,” Bud told him. “A couple hours outside and a few turns around the block, but your ever-faithful pal, chum and buddy insists that you leave the real test piloting to the real test pilot.” He looked to Mr. Swift for verification.

“Bud’s right, Son. I suggest a one-hour rest while you and I go talk with Ken, and then you can have a couple hours in the Mule. As long as we can get back down and home to your mother before eight she says that she will let us live!”

As Mr. Swift stuck his head into Ken’s office he noticed the station chief had a pile of photos on his desk and was concentrating on something on his computer that was causing him to smile.

“Glad to see you have time to smile once in awhile, Ken. You do take your work way too seriously.”

“Oh, hi, Damon, come on in. Skipper!” he exclaimed as Tom peeked around his father.” I didn’t see you behind your dad. You’ll be interested in this, too.” Ken swiveled the computer screen around. “I just received an update on Phil Radnor’s adventures following Ralph McDermott and it’s a doozy. Harlan wants me to pass it on to you. He did not know if you were returning to Earth today.”

“As I understand it, Phil has been at this for weeks now and still no end in sight?” Mr. Swift asked.

Ken shrugged. “Well they’re still prowling the Pacific Ocean if that’s what you mean. They’ve visited more than a dozen islands. Right now they are being released from jail on the French Polynesian island of Tahiti.” He was smiling again, and quickly broke into laughter.

“Cut to the chase and tell us what happened?” Tom wanted to know not hearing anything funny so far.

“It seemed that our esteemed Phil and crew tried to get into a seedy seaman’s hotel and bar while following Ralph. It is located off the harbor at the international Port of Papeete, and their presence was taken exception to. After the insuring fight and carnage at the bar, first with the local seamen and then with the police—who for some reason thought that they were modern slave traders—resulting in a week in jail and a very slow moving legal system. It took three days just to get a call to the American authorities on the island and four more to pay the fines and get them back to their plane. I can tell you that none of them are welcome back to that island, ever!”

“And this cost us how much?” Mr. Swift wanted to know slightly peeved over this newest incident, first the old barn to pay for, now this.

“So far, slightly over fifty thousand dollars and counting, by Harlan’s estimate. We don’t have storage and impoundment fees for the plane yet. Harlan wants to know if they should continue with the surveillance or call it quits as a lost cause.”

“Do they still have a track on him?”

“They sure do. If that fight was instigated to stop them cold, it didn’t work. Ralph probably knew that he was being tailed but apparently not how or by who.”

“And where is McDermott now?”

“The Philippines, by the looks of it. Small town called Olangapo City on the northern island. Used to be a U.S. Navy ship and air base there. Do you want to see the location; I can call it up?”

“No, don’t bother right now. When we get back down I’ll talk to Harlan. Right now just tell him to continue with it but that I think it is about time to consider calling in the government. We



can't afford an international incident. Anything else we should know before we continue our test on the Mule?"

"Just reviewing the photos of the last two asteroids hits and comparing them to that comet change months ago. We are now certain that there is something funny going on with the comet."

Ken picked up his tablet computer with the first picture visible and handed it over. "Take a scan through the latest photos."

They showed the comet heading toward the sun with its fuzzy tail reaching out behind it and a slight discolored bulge—what could have been a separate object—on the main body. At the current distance, the comet had no firm outline and that helped obscure the object.

"This is far from being normal, Ken," Mr. Swift stated and Tom nodded his agreement. "Is it possible that a gas bubble of some type is trapped in the sluggish envelope that has not dissolved yet?"

Both inventors realized how impossible that sounded.

"No, Dad," Tom spoke up, "I think it's more a solid that floating in the warming sludge of the comet and when the surface turns totally to gas it will just disappear into the center. I bet somehow a collision forced something deep inside to the surface and it's the first time anyone has ever seen the 'heart' of a comet before. It could even be the smaller comet that used to accompany this larger one."

Damon shook his head. "Son, that disappeared months ago. I can't fathom how it might now be inside, but even if it is you can't think that anything solid has not sunk quickly to the center." He regarded his son and then something dawned on him. He spun back to face the Outpost commander. "Ken, this is the comet that was supposed to be heading out of the system but turned around very early?"

"Yes."

"Is there any way to determine if that bulge is about the same size as the smaller comet that used to tag along?"

"Ah. You came to the same conclusion we did! The short answer right now is no. But there is something else that you would not have noticed by looking at those photos." Ken added, "Let me ask you both something first. Do know that an object can orbit a comet?"

Both father and son looked at each other and shook their heads 'no' with Tom saying, "I suppose in theory, but nobody has ever seen that."

"Well this comet has a new companion and its orbit is in sync with the movement of the object on or inside the comet. It's too small to see in the photos but we detected it because it's blocking out starlight at specific intervals. It took us a week to figure that out. Whatever it is appears to be vaguely dumbbell-shaped and has been exerting an effect on the comet's path. And if I can make a recommendation, we need to visit it before it gets too much closer."

"What a minute!" Tom exclaimed. "A comet can't change course that much; it would take a much larger or incredibly more dense object nearby to do that."

"And yet, it appears to be doing just that... which is also a problem," Ken replied, calmly. "It's no longer following its natural orbital trajectory. It used to come in fairly high over the asteroid belt and miss both the Mars orbital plane as well as ours by some thirty million miles. Now it has slowed down and looks like it will collide with several of the larger asteroids in the belt. We have no idea what will happen after that. If it isn't broken to pieces, it might be slowed down so much that it will fall slowly into the Sun. But this course change is the big puzzle. It's as if someone had attached retro-rockets to it and deliberately slowed it down and is redirecting it."

"When did that actually start to happen?" Tom asked.

"We noticed it after the Mars hit you witnessed and when you asked us to revisit the other

collisions.”

“You have told no one about this?” Mr. Swift wanted to know.

“Not yet. But it will be detected by other observatories and the more clever of amateur astronomers any time now. After that words like ‘bag,’ ‘cat’ and ‘out of’ come to mind.”

“What is its precise trajectory?” Tom asked.

“Unstable—we can’t calculate it. But it’s still well out beyond the asteroids. Problem is, it will not be for much longer. And, it’s growing!”

The Swifts stared at him in disbelief.

“I know, I know... comets shed material inbound, but it’s the truth! Something we cannot see is multiplying it.”

“That must be related to what’s inside bumping around. But I’m interested in finding out what is causing all the asteroid collisions. If those are from a Terrestrial source, this may be the final result they are aiming for—to control the comet!” Tom exclaimed.

“It could be, Son, and this gives us more reason than ever to finish your Mule tests and start construction on a full size ship or two. Or, even three. But first you must go out there and size up the situation and do your best to find out why this is happening!”

\* \* \*

Tom was overjoyed at the success of the three hours of testing he put the Mule through. Everything worked as he expected it to, even the test that involved grabbing onto the *Challenger* and the Outpost simultaneously and using them as points from which to swing the Mule.

Although all repelatron aiming needed to be accomplished manually, he was satisfied that both the placement and the range of motion for the emitters was correct.

As he climbed out of the tiny cockpit once he had flown back into the hangar of the ship, he remarked to Bud, “I’ve got three changes I want to make, plus I need to get working on the Attractatron, but I think I might send you back up here next week for a series of extended tests. Up to it?”

Bud’s grin told him all he needed to know.

“Good. Let’s get back over to the Outpost and bring everyone back. It’s time to head home!” He changed out of the thin-skin suit and into a proper vacuum suit before they both left the ship and floated over to the waiting airlock on spoke three.

They found everyone just starting to sit down at one of the auto-rising tables in the central area of the hub. Chow was standing there with a large tray filled with mugs of hot cocoa, coffee and a tea for the station commander.

“Pull us a seat, fellers,” Chow directed them. “We figger’d it would be a nice way to end the day up here with a little sip o’ somethin’.”

As Tom watched, Bashalli reached under the front of her seat and pressed a small lever enabling her to slide the seat forward a few inches closer to the table. He was surprised when her eyes went wide.

“What is this?” she asked pulling out a rectangular object, about five inches long and two inches wide. “Oooohhh. Ick! It is sticking to my fingers,” she exclaimed raising her arm as if to try to shake the box off.

“Don’t!” Tom yelled, causing her to freeze in mid-action. “*It might be a bomb!*”

## Chapter Nine: Meanwhile, Back on Earth...

Bashalli suddenly couldn't seem to move, but her mouth gaped open and her entire body began to shake as she panicked about what might happen. "Help me, Thomas," she squeaked. Her entire face was now turned away from the object and she sought Tom's eyes with hers.

"Just hold as steady as you can, Bash," he told her in as soothing a voice as he could manage at the moment. "San? You help steady her arm, okay?" he asked as he quickly stepped over to stand just behind the frightened girls. "Ken, I'll assume that you have access to a strong tomasite or durastress box. Get it."

The station commander shot up from his seat and headed toward the number five spoke where most of the storage for the station was located. He was back in under a minute with a two-foot square box. He eased it past Tom and set it on the table in front of Bashalli. In the meantime, Tom had taken the small towel that Chow had tucked into his apron and was now holding onto Bashalli's hand and to the box.

"Ken," he said as the commander started to back away, "help Sandy steady Bash's arm please." Horton moved to the other side of the inventor and reached over to hold the girl's arm. "Okay. Everyone else out of the hub, please," Tom ordered. "No questions, just go."

The group around the table got up and headed out to two of the spokes.

"Okay, Bash. Just let me gently pull that box off your hand. Tell me if I'm hurting you and we'll get some sort of solvent out here." He could feel her entire body shaking with the fear she felt, but she bravely nodded. "Good. Here goes—"

The mystery box came away fairly easily. Once off, Ken slid the box into position where Tom could lay the object inside. In seconds it was closed and locked. Ken picked it up and told them, "I'm going to put this into a larger box."

The young inventor leaned down and kissed Bashalli on the cheek. "It's over," he said tenderly. "You were very brave."

She reached up and took hold of his arm, pulling it around her chest. Tom stood there for a moment before she released him, stood up, and gave him a kiss. "You have saved my life, Thomas."

He shook his head. "We don't know that, yet. But, what I said stands. You were very brave. You too, Sandy."

"Yeah, yeah... couldn't have done it without me, et cetera. I'm just happy that you got that box off, Bashi. The gray color did absolutely nothing for you! Now, if it had been bright red—" She left the sentence there as Ken came back into the room.

"Well," he said. "It wasn't a bomb. As I was taking it past the auxiliary radio room the tech in there shouted out that he had just detected a microburst." He looked pointedly at the inventor.

"A recorder and radio?" he asked.

Ken nodded. "Yeah. We pulled the top off. Pretty sophisticated device. Appears to digitally record all sounds around it, and then pumps out the microburst perhaps just once a day. Probably been up here since our recent problems. The only good thing is that I can't think of many conversations in the hub recently that have had any secure information discussed. Certainly not at meal times; that's a station no-no."

Tom asked that the device be brought back out so he could take it to Harlan Ames for investigation. Soon after, the Enterprises crew floated back to the *Challenger* and headed Earthward.

Even Tom and Sandy's mother understood their tardiness once she heard about the little

scare.

“Is Bashalli going to be all right?” she asked.

“I’m going over to pick her up in ten minutes,” Tom said. She’s staying with us tonight if you don’t have any objection, Momsie.”

She had none, and Tom soon returned with her.

By the next morning all her fears had disappeared. She and Sandy had spent several hours plotting how they might each get more dating and personal time with their guys.

Tom dropped her off at work before heading to Enterprises, and a meeting with his Security chief and with his father. Mr. Swift had delayed his meeting with Harlan because of their late arrival back to Shopton.

The map of the island of Luzon, northern most of the Philippine island group, was on the wall-mounted viewing screen. A red dot was slowly blinking in the northern region of that island. This area was called the Cordillera Central, a massive mountain range situated in the northern central part of the island and was totally surrounded by mountains. Hard to get to, it was the mountain home of several fierce loosely-connected federation of tribes that were constantly harassed by mining corporations that held no regards for tribal rights. Those tribes are in constant turmoil with the outer world and hate strangers, especially white ones.

Mr. Swift and Tom finished reading the summary of the area and situation that Phil Radnor and company were heading into.

“You have to pull them back, Harlan.” Mr. Swift stood up suddenly with determination on his face. “If Ralph McDermott is actually somewhere in that area we cannot follow him in. I cannot allow our men to walk into that type of situation!” He almost slammed his fist on the table, but settled for slamming the information packet onto the table instead.

“Too late for that Damon, I gave them the go ahead two hours ago to scrutinize the area around the mountaintop castle on that one peak.” Harlan sat there as calmly as he could.

“How could you? I trusted you with those people lives. They are not a trained mercenary force!”

“Actually, they are and they did not go in alone. I’ve made calls and pulled every string that I could. According to the Philippine government, that castle has no right to being there. Yet...” Harlan clicked a fob in his hand and the wall image changed to an aerial video footage of the fortress. “This is the video that Phil sent to us from their fly over.”

It showed a medieval castle clinging to the edge of a mountain plateau. The whole flat mountaintop was surrounded by a stone wall several feet high and at least as thick. Where the castle wall opened onto the plateau was a large radio telescope of over one hundred feet across and a landing strip for planes ran along the longest wall. On top of three of the four corner turrets were what looked like RADAR dishes, and the fourth tower held a satellite communication rig. They could not see into the courtyard of the fortress.

“This is supposed to be the summer home of a financial tycoon who runs a company known as SunFlare Industries throughout the area.” Harlan added. He handed out leaflets to both Toms.

“SunFlare has more tentacles grasping more international companies than anyone could imagine. Automobiles, computers, weapons systems, medicines and even food,” Harlan told Tom and Damon summarizing the paperwork. “And, we can’t even be certain that our Mr. X is actually a man or a woman. *He*—until we know different—may not even be the top dog. We have two long range photos purporting to be of him and they show two different people, a man in one and a woman in the other.” Harlan could see the amazement and disbelief on their faces. “Computer analysis of the pictures show that they are brother and sister, identical twins.”

“Okay Harlan, let me get this straight!” Tom spoke up at his father’s side. “Our Ralph finally comes to roost in this nowhere land hideaway and you want our men to do... what? Go get him or them out? Why, we can’t prove he did anything but fly off with one of our planes. And do we even know that his family is there? But most of all, why did he finally go there? Especially if he’s known that he was being followed, and according to you... he did!”

“Tom, I don’t have those answers and that is why Phil is on the ground,” he coolly replied to Tom.

“For starters Harlan, who is with Phil?” Damon asked.

Harlan laughed, “Kinova and the mountain tribes of the Cordillera.” He watched for the reactions from the Swifts. They both just sat there and stared at him and slowly shook their heads.

Harlan loved it when he could pull the unexpected on the Swift. “Kinova may be Loonau born and bred but his family is Samoan on his mother’s side and his father’s brother was one of the founding members of the Cordillera Peoples’ Alliance (CPA), which is a federation of organizations of the indigenous peoples of the Cordillera. They are the government, of sorts, and that part of the family does not like the ‘High Castle’ as they refer to it. So if we can do something about it they are more than willing to help us out. Eager, even.”

“How did SunFlare build the thing in the first place?” Tom asked.

“The best way to sum that up would be a military takeover of the plateau. One day they just showed up in ten heavy-lift military helicopters—those sky cranes made out in Oregon they purchased through a holding company in Mexico—unloaded multiple tons of supplies and equipment and fifty men. The ‘copters’ flew off and the strangers forcibly moved everyone within a half mile out, and they started to build the structure. The helicopters returned like clockwork twice a day, and thirty days later they were done. A no man’s land was established around the top of the mountain and the road to the top of the mountain was dynamited closed. As long as no one goes near it no one is killed. It’s that cut and dry.” Harlan sat back in his chair and looked at his employers.

“And the Luzon or the main Philippine government? What did they do?” Mr. Swift asked.

“They deny the existence of the castle. Lots of free flowing money is keeping that a big dark secret.”

“But, satellite photos?” Tom asked. “Anyone with access to the Internet can prove it’s up there!”

The fob clicked in Harlan’s hand. The wall monitor blinked and a stone summer home with extensive grounds, a trio of pools, stables, trails and a small landing strip and airplane hangar appeared.

Tom stared, open-mouthed at what was being shown. “That’s impossible!”

“You can think so all you want, Tom,” Harlan insured him, “But that is a photo from the nearest available satellite over the region taken just ten minutes ago. How it is done is beyond me, but that house is all that is on that mountain as far as the world is concern.” He placed the fob on the table; he had nothing else to show them.

They sat there in silence for three minutes. Mr. Swift cleared his throat as he stood up. “Our men are safe?” It was both a question as well as an order.

“As safe as they can be. They are not going to move any closer or attack, neither will they do anything else stupid. They are setting up surveillance equipment and monitoring all they can. But they are being hindered by a queer fog that the tribes people say started six months ago... about the same time a strange lighting-like flash started that goes to and from the sky. The fog encompasses the mountain top for days at a time and makes it very hard to see and move around. A few tribesmen who have tried moving closer have not returned. Phil says night vision

goggles don't seem to help in the fog, and hopes maybe you can come up with something that will penetrate it?" Harlan looked at Tom expectantly.

"Subtle, Harlan. Real subtle! Now I'll have to. Will tomorrow be fast enough?" Tom replied with a half smile on his face.

"Thanks, Tom. I knew that I could count on you!"

"You can count on Tom, Harlan," Damon spoke up, "And we are counting on you to keep our men safe!"

Harlan stood up. "I'm going to see to it personally, Damon. Tom, please send that new night vision device to Ken at the Outpost. I'm on my way up there now and will be taking it to them in an emergency ball ride down to Phil in the Cordillera Mountains. You can't talk me out of it; don't even open your mouth right now. This tramping around has to stop and I'm going to stop it. SunFlare may have the expertise to cause those asteroids collisions and if they are involved, a ground approach may be the only way to keep all of us safe, both here on Earth and in space. Talk to you both when I can." He turned and walked out the back door of his office before the Swifts could open their mouths to protest.

Father looked at son. "Could not expect less from him, could we?"

"No, Dad, we could not!" They both left the now abandoned office.

\* \* \*

As they returned to their shared office Mr. Swift asked his son, "How are you going to beat a fog that you know nothing about? If it stops thermal imagines then I do not see a way around it."

"The fog itself must have thermal properties that scatter the heat waves and blur them out. So if we just go slightly higher in the frequency range we should cut through the interference. The middle range frequency of Ultra Violet rays can break chemical bonds and that will disrupt the fog and disperse it, letting the thermal image through. As a side effect it should also minutely raise the temperature of the object that it hits, highlighting its thermal properties. That should do it, dad." Tom nodded, satisfied with his theory.

"Sounds simple enough, son. Are you sending a working devices or just blueprints?"

"That depends on the availability of the components. Once I have one built and Ken sends it down to test it, I'll go from there. I think I'll call Hank and Arv to see if they can help me with this. We could have it working by tonight if we all gang up on it. Maybe Harlan won't have to wait very long at the Outpost. I might be able to send it up in one of the SwiftProbe mini rockets tomorrow morning."

"You go and contact Hank and Arv and get to work, I will talk to Harlan and see what he wants to do. He must still be on the ground or he just took off for Fearing. I will find him. Call me when you have something."

In twenty minutes both Hank and Arv stood near Tom in his larger lab as he explained what he needed to do.

"Skipper, we don't need to build a thing," Hank informed Tom as he went to the computer to call up several sub-component files from a previous project.

Tom recognized the project as being the security jet Phil was using. "How does that help us?" Tom asked.

Hank laughed and replied, "I helped build most of the stuff that went into that plane. It's equipped with the override circuitry from your drones, and as an extra precaution, since we don't carry offensive weapons, that includes an electronic interrupt transmitter in the terahertz high frequency range to incapacitate electronic equipment. That is what you want to cut the fog, right?"

Tom was slightly bemused. “Hank, are you suggesting that they pull that equipment from the jet and rework it to be portable vision unit?” Tom looked at him in amazement.

“Why not? They have two electronics men on the team. If we send them the ‘*how too*’ it should take a couple of hours and it will be done and tested by the time Harlan reaches them.”

After pondering it for a full minute Tom gave an emphatic nod. “That is a good plan. If it works we can build smaller, wearable units quickly and maybe even get permission to outfit a recon satellite with it so the world can get a real look at what’s up there!” Tom smiled and reached for his TeleVoc pin, “I’ll call Dad now and tell him of the change of plans and then I’ll get Ken to open tight radio bean to Phil and company.”

\* \* \*

“God, I wish Doc Simpson would develop a space sickness pill... I need one,” Harlan thought to himself several times as he had been subjected to hours of acceleration, free fall and deceleration. It was a whirlwind affair from the start. First, flying to Fearing, then rocketing to the Outpost and a twenty-minute stop to shower and change his clothes. He felt sorry for whoever had to clean the passenger compartment of the cargo ship. But, he’d been caught without an emergency bag when his stomach let loose. Luckily, he was the only passenger and he did manage to aim it somewhat at the air intake filters, if that helped or not. At least it kept things from floating around all over the place.

Now he was riding the emergency ball down to Luzon Island and hopefully to a landing near Phil’s surveillance aircraft in one of the Cordillera valleys. The parachutes had opened and he was being buffeted by high-speed winds that played around the mountains tops at night.

He looked at the positioning screen once more and was not happy with what he saw. He was off course by more than a mile. Actually, he was on the opposite side of the mountain plateau and landing near a place where even the wild tribes do not go.

As the ball struck a precipice on the mountain, one of the parachutes collapsed, got hung on jagged rocks and was torn to shreds. The wind caught the other two chutes and yanked the ball away from the cliff. He was in the clear, but without the third chute, the ball was falling without much steering control.

Harlan knew he was in trouble when he hit the wall a second and then a third time. The electronics blinked and then went out. Two seconds later a small emergency light flickered on and the ball jerked up and down several times. It all came to an abrupt end as the ball hit the wall of the mountain one last time. A jagged, pointed rock formation actually penetrated the evac ball’s outer hull and hung it up. Harlan regarded the pointed rock tip now just a foot away from his face.

The remaining two parachutes flapped and tugged in the wind, threatening to pull the evac ball off its precarious perch. Swearing, and not under his breath, Ames reached up over his head and armed the manual emergency release. He didn’t know how far he had to fall before reaching the base of the chasm, but he was hung up now and that was better than chancing an unknown fall. He took a breath, pulled the release and heard the ‘bang’ of the chute release go off. And as luck would have it, the rock projectile snapped with its own crumbling sound and the ball started it downward plug again. For a split second he felt the icy blast of air coming into the ball. Then...

...the lights went out a second time, this time because of human system failure. A sudden stop of a thirty-foot fall could do that to a person.

\* \* \*

With things progressing quickly on the “Ralph” front—he had no notion that there might be any problems occurring—Tom returned to his small underground lab and called up the designs for the Mule. By taking Bud’s experience and his own testing into account, he quickly adapted the design, enlarging it to what he hoped would be the final size.

But a thought came to mind. *I don't even have the whole Attractatron thing figured out yet. What if it needs an incredible amount of space?*

He saved his work and accessed a set of notes he had made weeks earlier regarding the new device. Bud arrived a few minutes later and quietly found his favorite perch on a lab stool near the workbench behind Tom's desk. It took five minutes before he noticed the dark haired flier and acknowledged his presence.

"Hey, Bud. What brings you by?" he asked.

"Well, I was hoping to see if I was going to take the Mini Mule back up for more tests, but it looks like you've got more on your mind right now. Why the creased forehead?"

Tom let his face relax. "Yeah. I've... we've got some pretty bad troubles brewing." he explained the comet situation to his friend and the fact that the Attractatron was seriously lagging behind the development of the ship it was to be installed in.

"Not a great place to be, is it?" Bud suggested. "I've officially got nothing on my plate for the next week, so tell me what you need. If I can do it, or learn how to, I'm at your disposal." He offered an encouraging grin that Tom finally returned.

"Okay. For starters I need to describe the entire process we need to understand in order to build this thing. Start by considering what you know about the repelatron."

"Okay. It sends out a special wave that bounces back at the speed of light giving the computer a readout of all the elements found in the area of the beam. Uh, I'm not certain if that's just what's on the surface, or how deep it goes."

"About fifty feet," the blond inventor answered.

"Fine. So the computer now knows what it's pointing at and then does the standard computations to decide what the main composition of the area is. Right so far?" Tom smiled. "Whew! Had myself sweating that one. So, in the original repelatrons the computer focused on creating the 'push me away from that!' wave for just the main element, but your newer ones can push against the top, uh... is it three or four?"

"Three for now. Five in the r'tron mark three."

Bud's forehead crinkled. "Are tron?"

Laughing, Tom explained. "No. The letter 'r' and maybe an apostrophe and 'tron. I'm trying to out 'Bud' you in the naming department." He sighed. "Okay, forget that. The repelatron mark three. But, we digress. Go on."

Bud tilted his head to the side, but soon started back with his explanation. "The r'tron then creates the pushing force to repel that mix of elements, three or five or whatever. And, up we go!"

"Good. Now, that has been fine for pushing the *Challenger* or other craft along, and we use it exclusively now in our aircraft that can hover, and you'll remember how we have used it to either hold things up or even push them away. The problem we, all that only works when you have something to push against. In the case of anything incoming like the comet, we won't be close enough to have something to push back on while we push forward against the comet. We need to be firmly between two object for just repelatron energy to be effective."

"Ah," Bud interrupted. "So, the Mule needs to do it all just using the one object out there. The comet."

"Right."

"How?"

Tom shook his head. "That is the thing I or we need to come up with. In theory, we need something that works just about opposite from a repelatron."



“And, that’s why you keep talking about this Attractatron.”

“Exactly. But, there is one inherent problem with just a pulling force. Can you spot it?”

Bud rubbed his chin. It was a motion he had picked up from Tom, who in turn had picked up from his father whenever the elder scientist was thinking hard on a problem. “Well...” he began, but went silent for a moment. “Ummm, if all you do is pull on something, you eventually either pull it up to you, or you pull yourself closer until bump!” He smacked his palms together. “Is that it?”

Giving another sigh, Tom nodded. “Yes. That is it. So, what needs to happen is that we send out two beams. One pulls the materials toward us while the other pushes against it. If it is all balanced the ship remains the same distance from the object and is basically locked onto it. Then, we use the other repelatron or even solid or chemical engines to move the object. In the case of the Mule, that will be repelatrons, but we might need to build them with points to attach these other means of propulsion.”

Tom sat back and steepled his fingers in front of his face, looking over them at Bud.

“And, if you don’t get the balance right?” Bud inquired.

Tom looked at him and simply moved his hands apart and then brought them together in a resounding *smack!*

## Chapter Ten: Just Like Old Times

“Little Lost Lambs to Outpost—we have lost contact with the package. Repeat, we have no contact. It drifted over the top of the mountain ridge and we presume that it has landed on top of said location, or has continued to drift to the far side and over. Do you still have telemetry readings, over?” Phil Radnor’s voice may have sounded rock solid —like this was an every day happening—but inside his gut, it was another matter!

“Outpost to Little Lost Lambs—we are still in contact and we can confirm that it is over the top and descending at increased speed down the other side. We surmise that it will not be a soft landing at this time. Repeat, *not* a soft landing. Suggest all possible haste to following GPS location and execute a search and rescue operation.

\* \* \*

The following day Tom felt that he was beginning to make some headway into designing his Attractatron. When lunchtime rolled around, so did Chow and his cart.

“Gotcha a big slice o’ la-zag-na with that meat sauce ya love, Buckaroo!” he sang out as he pushed the cart into the underground lab. “I hear from Miss Bashalli how’s you missed out on a great dinner t’other night at your house. She and Sandy were a-ravin’ ‘bout your mama’s pot roast. So, I promised ‘em all to make you a good, hearty lunch today. So, scoot on over here and eat up!” he commanded with a hopeful look on his face.

In spite of how hard he had been working and how hesitant he was to take even a small break, Tom had to smile. The old westerner had just administered an admonition and an order that both sounded like a pleasant invitation.

“Okay, Chow. You got me. What’s under the second cover?” he asked pointing to a shiny metal dome on the cart.

“That, Tom, is fer dessert. What’s yer fav-o-rite kind o’ pie?”

Without even thinking Tom replied, “Cherry!”

Chow swept the top off a smaller plate on which sat a large slice of cherry pie. “Ta-da-a-a-a!”

As Tom ate, Chow—who typically left only to return an hour later to take away the, hopefully, empty dishes—remained, taking a seat on the small sofa against the side wall. As Tom finished his lasagna and reached for the pie plate, the older man cleared his throat. Tom stopped in mid reach and turned his head to look. Chow had a concerned look on his face.

“What’s on your mind, old-timer?” Tom asked.

“Wahl, I hear tell how’s yer gonna be takin’ a mule train up into space, an’ I was wonderin’ who yer gonna have ridin’ heard on ‘em.” The look on his face was so earnest that Tom had to bite his inner lip to keep from laughing out loud.

“Can I assume that one Budworth Barclay told you about that?” he asked. When Chow nodded, Tom let himself smile. “He’s pulling that size eleven custom-made cowboy boot of yours, Chow.” He went on to explain the concept of the Mules.

The cook took off his ever-present 10-gallon hat a few minutes into Tom’s explanation and began fanning himself with it. Moments later he took out his bandana handkerchief and wiped a few beads of sweat from his bald dome. Finally, when Tom stopped speaking he peered intently at his young boss trying to decide if Tom were finished or simply taking a breather. Deciding of the former, he spoke up.

“That sounds as if ya got most o’ the bits an’ pieces o’ things needed, but cain’t figger out how ta put ‘em all together, huh?”

Tom began to nod, but soon changed to shaking his head. "Yes and no, Chow. A bit more of the 'no' than 'yes,' however. The real problem for me is the pull part of it all."

"Well, then, I guess ya need a giant magnet thing. Jest mount it on top o' this ornery mule thing and point it. I mean, ain't most o' those ast-are-oidy things made o' iron?" When Tom shook his head and opened his mouth, Chow added, "I'm joshin' ya, son. I know the repeler-a-trons work down at that elemental level, figurin' out the vibrations or whatever of the atoms an' puttin' out a beam the opposite. Ain't that right?"

Tom nodded. "Yes. That is pretty much it, Chow. I have to admit I'm impressed that you know all that. Even Bud has a bit of a problem with the concept."

Chow beamed as he stood up and dropped his hat back on his head. "Think nothin' of it, son. Most anyone stickin' close to you fer a bit ought ta have somethin' rub off on 'em! But, say... if the repeler-a-tron works that way, cain't ya jest reverse it?"

Now, Tom had to sadly shake his head. "It isn't quite that easy. It ought to work like that, but for some reason pushing is much easier to accomplish than pulling. Don't worry, though. I'm onto a few possibilities. One ought to pan out."

By quitting time that evening he had set aside two of those possibilities and was concentrating on the third. It involved a pair of repelatron beams. The first was a very low power beam that not only sent out the elemental test waves, it also provided a "positive" energy beam to repel the indicated set of elements. This, in turn, gave him something to actually reverse. Without what he decided to call the Carrier Repelatron, the system could not work.

In much the way sound-deadening circuitry could produce an exact counter wave of audio vibrations, effectively canceling out the undesired sounds, his Carrier Repelatron wave gave the controlling computer a specific pattern from which it could build the opposing wavelengths. These, he strongly believed, could be radiated in a cone around the Carrier Repelatron beam providing the pulling force.

As he turned things off he thought about how wonderful it would be if the initial repelatron could be ramped up in power to balance out push and pull, but he knew that would be close to impossible. The repelatron push would need to be separate so that it could be positioned outside of the Attractatron emitter. Otherwise, the increase in push power would force the computer to create a higher level of pull. No matter what, things would be difficult to balance.

The dual-repelatron approach seemed to be the way to go. But, he had a date that evening with Bashalli, so the work would need to wait until the following day.

\* \* \*

Light flickered into the ball through a jagged hole in the shell. It was so badly torn that it flapped in the wind and caused an irritating flashing of light onto Harlan's face that made him twist his head one way and then another to keep the intense light from his eyes. He tried to shielded them with is right hand but couldn't—the arm movement resulted in pain.

Kicking his feet about he found purchase for them and forced his body into a better position, one that kept the light off his face so he could look around. Nothing, absolutely nothing was where it was suppose to be. Even the flight couch was partly ripped from its bolted position in the center of the ball. He knew that he was lucky to be alive.

"Hurrah for Swift engineering," he thought to himself as he forced himself into a seating position while trying to not move his broken arm. He knew that it was broken, and not for the first time in his life. A small shrug told him at least his shoulder was not busted as well this time!

Using one hand he pulled out the emergency medical kit and found the one thing he needed right now, a painkiller in a one shot injector pen. He pulled off the cap with his teeth and injected the serum into his right forearm right through his sleeve. Next he took a scalpel and cut away the sleeve the best he could, only nicking himself twice in the process.

He could clearly see the compound fracture where the radius bone had punctured his arm and slipped back in. Gingerly he felt around the wound to see if it had reset itself or that it was still out of alignment with the rest of the bone. With small winches of pain he found it to be in place; all he had to do was stabilize it. One of Tom's inflatable arm casts did it in no time at all and the built-in sling held it in place against his chest and—hopefully—out of harm's way. By the time he finished he was exhausted and the pain was a dull roar. The shot was going into full effect now and he closed his eyes against his will and fell into a troubled slumber.

Strange voices registered in his mind and woke him. He did not like the sound of the yelling closing in on him. He had no place to hide and no time to do it, so he sat and waited for the inevitable. A dirty face peeked into the ball through the tear in the wall and a command was shouted out to him. Harlan just smiled back and raised his one good arm up into the air. This did not seem to satisfy the man and another command was given and a gun barrel replaced the face in the hole and aimed at him. It was then that Harlan noticed the banging on the hatch and realized that they did not know how to open it or dare not try it themselves afraid of some kind of booby-trap.

It took him a few tries to turn to face the hatch and single handedly rotate the flywheel that released the clamps that locked it closed. Once unsealed, it swung open toward the ground since it was tilted at an odd angle. A man dropped into the doorway and blocked it with his body. A gun was in his hand and he swept the interior with it muzzle. It finally settled on Harlan and beckoned him forward and out of the cramped ball.

Once out of the ball he tried to stand up but was thrown to the ground and then kicked, and a foot landed on his stomach and held there, pinning him to the ground. A shadow crossed his face and he was forced to look at an outline of a person standing over his head. It moved and bent downward to the ground and knelt there. Harlan then could make out the face.

"Ralph, we meet again." Harlan smiled, showing all his teeth. It was not a friendly smile.

"So, Radnor threw in the towel and you had to pick up the pieces. Was Tahiti too much for the poor boy and his gang of girl scouts?" He didn't wait for a reply but stood up and signaled the man with his foot on Harlan to step aside. Ralph said sometime in a foreign tongue and two other men stepped beside Harlan and pulled him up to his feet, not paying an attention to his broken arm. He shouted out in pain and Ralph stepped up to him and tapped the arm. "Behave or that won't be the only thing broken before we get to where we're going."

He turned around and started to walk away. Harlan was pushed into the same direction. They had gone no more than two hundred feet down the trail when an explosion shook the landscape. Turning his head around Harlan just caught the fireball reaching up into the sky and the evac ball disappearing in the flames of the thermal explosion. Inwardly, he smiled.

He was shoved forward as he had almost stopped walking. He stumbled for a step or two and gained his footing once more, sighing to himself he fell into the rhythm of the walk and kept his eyes and ears open, marking the trail mentally so if necessary he could find his way back. He knew that if rescue came it would be to this area or not at all.

It was only an hour's hike following the base of the mountain before the trail started to wind down into a flat long valley. For an unknown reason a gray mist was swirling along the ground and they headed right into it. Harlan took a double step when he realized they were actually going under the mist.

After a few more steps he had all the answers he needed. Above him was an enormous canvas held up by a series of poles scattered all over the place in random placement. He surmised it was so the top would look more like rock formations and the mist more like ground from the air by a passing plane. Underneath, it was well lit and it continued farther than he could see. The sight had stopped him once more and this time Ralph came and stood by his side.

"Don't let *this* amaze you, Harlan... the best is yet to come. Come along then, we've a little

ways to go and what you will see will make anything your Tom Swift can conjure up seem like kids toys!”

The height of the canvas increased as well as the width of the valley. Before long Harlan forgot that he was under a cover. Voices and sounds became louder and rough-made building became visible. Guards with guns walked around in sets of four or five, and never smaller than groups of three.

Natives and the occasional Caucasian men were everywhere working on or moving machinery around in no set pattern. Most of the natives wore torn, dirty overalls and looked more like death warmed over than real people. If one of them stopped working or simply fell from exhaustion they were prodded back to work or just dragged him to the side and left. It was a total nightmare to Harlan’s eyes, and it made no sense to him. How could people do this to people!

At last they reached an open flatbed truck sitting on a heavy set of steel tracks that were twenty feet apart. At ground level it looked much like a giant’s railroad but the main different was the countless number of hoops coming out of the ground, arching over the top, and back into the surface. The hoops were thirty feet across and just as high. Each one was wrapped in a coil of what looked like tightly wound wire, as would be found in a motor aperture. The ground beneath the rails was roughly finished poured concrete and it ran as straight as an arrow right to the mountain on the far end of the covered valley.

Harlan looked at the massive rail system and then at Ralph before raising his eyebrow.

Ralph laughed at him. “No hints! You’ll find out soon enough. Believe me.” As they walked passed one of the arches, Harlan could hear a humming noise coming from it. Ralph looked at him and the questioning look on his face.

“Fine, I’ll tell you one thing about the arches. You notice that vapor-like substances that was wafting above the canvas? I don’t understand the principle behind it but when a strong magnetic field is generated by the arches the gasses sort of crystallize and form rock-like formations. From the air or even a hundred feet away they look like genuine rocks. The perfect cover for our... cover, ha, ha!” Ralph was absolutely amused by his own wit.

He climbed onboard the flatbed and Harlan’s two guards rough-armed him up onto it. He could not help but shout out as his arm got twisted. Given that his pain held no objection to them, they even laughed about it.

The flat bed was larger than Harlan realized. He was forced down an aisle that led to the front of the flatbed. The forward half held several bench seats with an open truck bed in the back half. A simple set of controls were located at the front row of seats that had a ten feet separation from the first set of benches. A chain link fence ran across the back of the driver’s seat and only a small narrow door at the far side led into the caged area. The fence extended past the flatbed floor by three feet on each side so no one could jump around the sides. You could fit five people in each bench type seat on each side of the center aisle of the coach section.

Harlan was brought to the very front and forced to sit in the first seat by the door. He was shackled to the floor by ankle clamps and his free arm handcuffed to the cage door frame. There he sat in silences for over two hours. His arm hurt like hell, he knew that he was running a fever and that if he did not receive medical attention soon he was a goner. But he was determined not to say a thing, especially to Ralph.

Food and drink were passed out to the party of men that had seized Harlan, but he was offered none. Time passed in a daze, and Harlan was glad of it. When they finally stopped, a whistle sounded and a group of workers were loaded back onto the car. They were forced to sit crowd together and each man had to attach a chain to their wrist. They did it in slow agonizing movements and with great despair.

This was the first time that Harlan got a good look at both his guards and the slaves—for that

was what they were, slaves. He could see no real difference between them. But he could see the palpable hatred between the two groups of people. This unmistakable fact lead him to only one conclusion: the guards were of the only tribe not in the Cordillera Peoples' Alliance (CPA), the Balangan.

\* \* \*

Tom and Bashalli had a wonderful date. For once it was just the two of them and not a double date with Bud and Sandy. Following a quiet meal at her favorite French restaurant over in the small city of Oswego, they had walked along the waterfront of Lake Ontario for more than two hours.

“Did you know there is another Oswego, Thomas? One right next to a lake but on the opposite side of the country?” she asked him as they walked along a path inside Fort Ontario Park.

He had nodded. “So I’ve heard. Or, at least I think I’ve heard. Where is it?”

She stopped and leaned over, giving him a warm kiss on the cheek. “It is in Oregon and is not nearly as impressive. From what a friend has told me, the ‘lake’ is actually a man-made giant puddle, barely ten feet deep and only a hundred feet or so across. Nothing like being next to a great lake like that one.” She pointed toward the nearby water.

By ten o’clock they were heading back to the small airport where Tom helped her get into the low-slung cockpit of a small seaplane. With no nearby airport, any air traffic either had to be helicopters, or planes capable of landing on and taking off from water. Moments later they received permission to taxi down the ramp for immediate take-off.

He had her at her front door an hour later. Their goodnight kiss lingered until there came a rapping at the window in the front door. They both looked only to see the slightly disapproving face of her father staring at them. Tom backed away, doffed an imaginary hat to her father, and bowed before turning to go back to his car. He turned and blew her a kiss that she caught before going inside.

\* \* \*

On their flight back to Shopton, as Bashalli drowsed, Tom’s mind had turned to thoughts about his Attractatron device. There were so many things that had sprung to mind that he decided to head to Enterprises for an hour or so to get them down on paper.

He greeted the night guard as the man checked his screen. “Evening, Tom,” the man replied. His screen showed an indicator of Tom’s TeleVoc pin—the combination security and communication device—and also looked for unintended “visitors.”

Tom became immediately alarmed as the man’s face registered concern first, and then shook slowly from side to side. The guard reached up and tapped his own TeleVoc. Tom’s beeped in his head and he tapped his own pin.

“Tom. You’ve got a warm body in the trunk of your car,” the man cautioned him. Aloud, in case their would-be intruder could hear them, he added, “Sorry for the delay, but I was told by the early shift there is a message waiting for you. Give me a sec and I’ll see if it’s in the computer.”

“Fine,” the inventor replied. The guard tapped his pin a second time and Tom realized he was sending out an alert. Seconds later the man nodded and winked. Tom suggested, “You know, Doug, I need a quick drink of water. I’m going to run into your visitor’s room for a minute. Can you spare me?”

Cautiously the guard nodded. “Sure, Tom. No need to move the car. Nobody’s coming in or out for a while.” He seemed to be listening to an invisible voice for a few seconds before adding, “Give me about a minute and I’ll have that message for you.”

They both nodded. They understood that the night Security team would be at the gate within sixty seconds. Tom got out of the car and headed to the Visitor Room, one of the many “safe” places scattered around Enterprises. Executives were instructed to head for the closest such room whenever there was a threat.

He walked inside and closed the door behind him, keying in a four-digit code to lock the door. As it would do no good to stand or pace, he took a seat and waited. Less than a minute later he heard some shouting and the sound of one of the e-guns now carried by the Security men and women of Enterprises. A special knock came on the door and he re-entered the code.

Gary Bradley stood on the other side. Over his shoulder, Tom spotted three other Security men, two sitting on top of a scrawny, dark-skinned man they had obviously pulled from the trunk. “Safe, skipper. Looks like another Filipino. At least, he let out a couple of good swear words in Tagalog when we surprised him. No weapons, but he does seem to have an assortment of listening devices in a satchel. Probably sent here to plant them. We’ll process him and get him to the FBI in the morning. Have a nice... uh, *nicer* night!”

Minutes later Tom had parked next to the Administration building and let himself in through the side door. He passed by the shared office and headed for his large lab room just down the second floor hallway.

After bringing up a special note-taking program on the computer he picked up a headset and put it on. Sometimes it was better to voice in random thoughts rather than to try to organize them in his head and type them in. He tended to get so caught up in the organization that he knew he missed getting some points down.

An hour later he took the headset off, scanned through the text that resulted from his verbal meanderings, and smiled. One point, spoken about halfway into his session, made him smile. It might just be the solution to one problem he felt would be encountered in any practical application of his Attractatron.

Proximity of the outgoing repelatron energy to the incoming attraction beam would probably be a problem. He was loathe to simplify the issue, but in his head he contemplated what he thought of as “beam friction” which could easily lead to catastrophic heat build-up.

But, his potential solution would solve that. Of course, it would mean a redesign of the Mule—or at least an increase in size—to accommodate it, but if it had to be, it had to be.

## Chapter Eleven: Surprises

When Tom arrived back at work eight hours later, there was a voice message from Gary Bradley regarding their nighttime intruder.

“Skipper. Gary. Our little man didn’t say much but what he did only made sense given what’s been going on in the Philippines. He spoke a few low words in a dialect we traced to a tribe living in the same area of the mystery fortress. He is evidently Balangan, and that is one of the only tribes not associated with the resistance efforts over there. In fact, from what I gather the Balangan tribe are actively working for our possible bad guys.”

Tom let out a low whistle.

“In case your next question is ‘have we turned him over to the FBI, the answer is not yet. The local agents are on the way here. I plan to fill them in on some of what we know. Harlan left an ‘in case the Feds come asking for info’ letter, so I’ll tell them only what they need to know.”

Tom saved the message and then forwarded it to his father’s number.

He then spent another two hours organizing all of the text from his midnight recording session. By eleven he had a comprehensive set of notes, added to in many places, with new and additional thoughts. As he was beginning to design some of the circuitry that would go into his new invention, Bud knocked on the door.

“Come on in, flyboy, you don’t generally knock. Something special?” he asked his friend as Bud entered the room.

“Naw, but Trent stopped me as I was about to go into your office and said you were down here. Also said you hadn’t answered a phone page an hour ago so you might be really involved in something. Making progress?” he asked walking across to stand next to Tom.

The inventor described the thoughts he had come up with as well as answering a few questions about the evening’s capture.

“Glad the bad guy got caught and *really* glad to hear you’ve got a handle on your Carp-a-tron!”

Tom groaned. “My what?”

Bud laughed. “Well, Carrier Repelatron. I just left out a few of the unnecessary letters and *viola!* Carp-a-tron. Listen. I could have gone all Dr. Doolittle on you and dubbed it Push-Me Pull-You, you know!”

With a chuckle, Tom threw up his hands. “I surrender, but I have a suspicion that somebody might rearrange a couple of the first letters and make this into some smutty joke name. Can’t you come up with a safer pun?”

“Gimme a few days,” Bud requested. “I see your point about the letters! So, what’s got the brainchild not answering his phone? Just the push and pull stuff?”

“Well, that plus how to accomplish what needs to happen. I think I’ve come up with a solution. Now, if these Mules were only going to be hovering around in space I might take another tack, but as they will come down and go up from Fearing Island they need to be aerodynamic. And that means the Attractatron array must be fully retractable, which leads me to the notion that there will never be a human pilot in one of these. Sorry, perhaps a larger, Super Mule—a master controller version—but not the first few.”

He began to describe how the entire array would be mounted on an extendible shaft with a circular array opening like petals on a flower.

“At the very center will be the sampling probe, the Carrier Repelatron. Arranged around that



will be a ring emitter that will beam out the Attractatron beam. It will surround the Carrier Repelatron—”

“Like a tasty chocolate shell around a delicious nougat center—”

“Like a ring of pure pulling power...” Tom said in an emphatic tone, “and around the outer perimeter of the opened dish will be a ring of small yet powerful repelatrons. Their total power will equal the pulling power of the Attractatron emitter.”

“And, as you have already told me, the push and the pull will be balanced so finely that when you lock on at— uhh, what distance do you lock on at?” Bud asked, his face now a mix of concern and curiosity.

“I’m not certain. Yet,” Tom answered. “But I’m fairly sure that it will need to be pretty close. Maybe even within a hundred feet or so!”

“Jetz!” Bud exclaimed.

“Jetz, indeed,” came a voice from behind them. Both boys turned to see Mr. Swift walking into the room. “Sorry if I eavesdropped, but the door was open and I am quite interested in the success of this project, you know.”

“Hey, Mr. Swift.”

“Hi, Dad,” Tom added. “And, yes, it will need to be close. The shorter the distance between the Mule and whatever it locks onto, the less strain on the link. And, since we need to be able to grab and tow or push things away, and perhaps quite quickly, the less strain the easier it will be.”

Nodding thoughtfully, Damon asked, “When will you be ready to build a test rig? The reason I ask is also the reason behind my coming in here. I just got off the radio with Ken. He and his people believe that we may have less than a month before we will be in imminent danger from a collision with that comet! It is close to breaking out of its orbit and heading toward the sun... and us.”

After taking a moment to let that sink in, he continued. “Whatever that internal bulge is, it is moving with greater frequency.”

“Frequency, Mr. Swift?”

“That’s right, Bud. They’ve managed to detect a pattern to it, and believe that it is in motion to some frequency. In fact, if they extrapolate it into the audio range, it is about thirteen hertz.”

Tom, a rueful look on his face, commented, “Great. Lucky thirteen!”

\* \* \*

Harlan was being shaken awake, looking up he could barely make out Ralph’s face.

“Open your mouth Harlan and take these pills; it will make you feel better.” With that said Ralph plopped the pills into his opened mouth and sloppily gave him some water to drink.

It was amazing; within ten minutes he *was* feeling better. He looked over to Ralph who was watching him and nodded his thanks.

“Don’t thank me, the Carvers wants you alive and kicking. What for, is beyond me!” He almost spat it out like it was something foul in his mouth.

“Now that you bring that up, Ralph, what did Swift Enterprises ever do to deserve this animosity that you seem to hold against it, or is it just me that you personally hate?”

“Ha! The great Harlan Ames doesn’t have the answer to such a simple question. Well, I’ll give you the benefit of the doubt since it was before your time, but not by much. You see—actually you don’t see—the company that my great-grandfather was hoping to build. He had all he needed to start a global engineering, procurement, construction and installation firm focused on designing and building offshore oil and gas projects around the world.

“He only needed one more item to create this empire, and old Tom Swift refused to sell him his ocean airport. It was obsolete and had no real use anymore. It floated around the ocean being a hindrance to all seagoing travel. Old Tom had been willing to sell it to him until he heard what he wanted it for. Then, it was no longer for sale. They had already drawn up papers and granddad had invested lots of time and money into buying the platform. He even paid to have it towed into Virginia’s Newport News shipyard to be refurbished.”

Harlan shook his head. “I’ve never heard any of this. Nobody in the Swift family or organization is still alive from back then.”

“Nobody *wants* to remember!” Ralph shouted, balling his fists for a second. “A big court battle ensued and before it was over the ocean airport mysteriously caught fire one night and burned to the waterline. Now a useless hulk, your esteemed Tom Swift gave it to my grandfather as a parting gift. It ruined him and he committed suicide five months later. His death left the family in poverty.” Ralph spat onto the floor of the flatcar.

Glaring at Harlan he continued. “As far as I am concerned Paul and I should have been the heirs of an empire that would have made Swift Enterprises seem like a rat-infested one ring circus with a clown as its boss. Is that good enough for you, Mr. Harlan Ames?”

“Hell, Ralph that was what... seventy-five years ago, if not longer. Isn’t it time to give up old half-remembered, probably, missed-remembered family history?”

“No, Harlan, there is no *missed* or *distorted* memories. My family has kept its paper records locked and safe and it will stay that way. Your people will not be able to worm their way out of the truth, this time. Vengeance will be mine!” he shouted to Harlan.

Harlan didn’t know what to say. If what Ralph had said was true perhaps the Swift’s did own him something, but what, he did not know. In the light of what was happening right now continuing to make Ralph angry was not the right thing to be doing. Looking at the slaves behind him he knew that nothing justified this type of inhuman behavior. Nothing! It was going to be stopped if it was the last thing he ever did on this Earth. That he swore to God and all he held holy.

The flatbed made its way down to the far end of the valley, slowly at first then with ever increasing speed. The angle of the tracks seemed to be slowly rising. Harlan noticed that they were now going up a hill that was part of the valley wall. Almost at the end of the line now they were not slowing down or attempting to stop!

“Ralph!” Harlan shouted out and only was laugh at for his concerns. From fifty feet away the wall dissolved into nothingness and a tunnel mouth formed and they zoomed right in.

\* \* \*

The Swift reconnaissance jet was circling tightly far above the opposite end of the valley. “You’re sure, Sparks, that that burnt out spot was the evac ball?”

“Sorry Phil, I’m sure. The element spectrograph reading is right on the mark. But the good news is no human trace elements are present. That should mean the Harlan got out before the ball went up in flames.”

“Then where is he? He’s not answering the TeleVoc ping and most of this area is within its range even without a repeater.”

“Just got a hit Phil, but it’s not the TeleVoc itself but from the visual eye lens. It’s beeping the *‘I’m lost and I can’t find my human’* signal. I know that those little contact lens were expensive and all that, but I did not think they were programmable and could operate independent of the wearer. How are we detecting that signal this far up?”

“Normally we couldn’t, Harlan must have changed its power output perimeters. We’re luckily that we did find it. I doubt it would have lasted much longer. It must have been a last ditch effort on his part a leave us a message. Is it broadcasting an image with the beep?” Phil as

standing behind the radio man's shoulders looking at the readouts.

"Didn't think to look—give me a sec—yep, there is, digitizing it on monitor two." Square pixels blocks started to form on the monitor, and within seconds a face was fully rendered and glaring back at them.

Out of the silence came one word, "Damn!"

"Not yet," replied Phil, "but he will be if I get my hands on him." They were staring at the downward-looking face of Ralph McDermott as he stood over Harlan who must have been laying flat on the ground looking up at him.

"Kirby," Phil called out to the chief pilot, "get us back to Kinova and the CPA tribes. We have to plan a hit and run mission to try to get Harlan out—my bet he is or will be in that castle—tonight, before anything happens to him and it becomes too late."

The pilot slipped back into the pilot's seat and started to release the auto-pilot control units.

"Gentlemen, one thing more to think about until we land. The Swift's mandate that we don't use lethal weapons. I, for one, don't see that happening in this situation. So I will be handing in my resignation in as soon as we land. I can't tell you men to do the same thing, but no unarmed man is going on this raid. I do need three of you not to resign so this aircraft can be manned and ready for any eventuality. Let your conscience be your guide."

\* \* \*

The pressure now on Harlan's back told him they were now moving nearly vertically. He surmised that they were going to end up near or at the castle. A dot of light above them was growing by the second. When he estimated that they were a few hundred feet from the tunnel's mouth a *swish, bang* sound was heard and felt, and the flatbed flipped ninety degrees with a bone jarring *thump* and they were back horizontal.

Sports arena-type lights flashed on for a moment, dimmed, and then slowly brightened to full power. They had arrived at a deep underground train station with long wide platforms on both sides of the flatcar. The guards unshackled the slaves and they moved out of the car, down the platforms and through a pair of large, oversized double doors.

Ralph marshaled Harlan out and to a bank of industrial-size elevators. "You're in luck. I just received noticed that the Carvers want to see you right away. So you're getting the VIP treatment and get to ride up for the last two hundred feet to the surface instead of the stairs. Enjoy it; it may be your last free ride!" A wide smile spread across Ralph's face followed by outright laughter as the elevator doors closed upon the group of men.

When the elevator doors opened and Harlan stepped out he found himself at the base of the corner tower on the same wall as the outer gate that lead to the rest of the plateau. As they walked forward he looked back and could see that the castle's main gate was closed with a metal portcullis. He could just see a drawbridge and a moat filled with water. Turning back he noticed that it was a good one hundred yards across the courtyard to the Keep that seemed to be poised at the very edge of the plateau. Since this one was larger than most, Harlan considered that it was better named as the Main Hall. A radio telescope dish was to one side of the front of the castle.

As they walked to the hall they had to go around an oubliette, or prisoner hold, in the middle of the area. Harlan was taken aback by the size of it. If it was the prisoner hold then it was the biggest he had ever seen. He estimated it to be a good sixty feet across with what looked like four interlocking doors covering it. He wondered if the "slaves" were kept there at night, something that might account for its size.

Before they reached the hall's massive double doors two people stepped out. Harlan almost laughed but contained himself. He knew that he was in no position to offend anyone, especially if one of them was "the Carvers" that Ralph seemed to hold in high esteem.

Each of them was robed in a white kimono with delicately embroidered sleeves and hems. They wore white gloves, and a loosely fitted hood was pulled up over their heads and kept their faces in the dark.

Everyone around him dropped to one knee and pounded their chest with their left fist. Harlan was yanked to the ground.

“Show respect to the mighty Lord and Lady Carver,” Ralph hiss out in anger.

“I bow to no man!” Harlan fiercely returned as he fought to regain his feet. He was knocked down once more for his efforts.

“Hold!” called out one of the robed individuals in a voice that had an effeminate tone to it. “We do not have time to play with our new *toy*. Our enemies are making plans to attack us tonight and we must make ready. Call in all the men and put into operation *Plan Alpha-9*. Take the toy to the holding cell on the ship. Strip him first of all his clothes and wash him thoroughly and pass him through the Magnetic Inducer Field. That will make him tell us where all his gadgets are hidden on him or he’ll burn like hell when the electronics fry. Go, we don’t have time to waste.”

\* \* \*

“You gonna start makin’ them tropical drinks, Tom?” Chow asked as he began setting out the lunch dishes for Tom and Bud two days later. “I found that I kinda like all that rum and piney apple juice ever now and again. And, those little umber-ellers like that one ya got on the table always impress the ladies. Leastwise, they smile and laugh a bit,” he said, now thinking that he might have misinterpreted their looks and hidden smiles.

Tom had his own smile now. “Not really, Chow. This is a tiny model of my new lock on device for the Mules.” He reminded the cook about the purpose of the system.

“Yeah. Right. I remember. So, ya got it workin’?” he inquired.

“I was about to give it the first test when you walked in. Say, why two sets of dishes?”

“Buddy boy is comin’ over in a minute or two. He called ta tell me it’d be lunch fer the pair o’ you. That’s okey-dokey with you, ain’t it?”

Tom laughed. “It is, indeed. I can use him to help with the test. You ought to come back and watch as well. You see, I’m going to play a little trick on Bud. I’ll have him wear a special vest with a few different metals in it and lock onto him. He won’t be able to move if all goes right!”

They were sharing a laugh about the image that came to both their minds when the dark haired flier walked in. “What’s funny?” he asked.

Thinking quickly, Chow answered, “I was tellin’ Tom, here, ‘bout some wimmen I saw at a rest-o-raunt the other night, an’ how they was a laughin’ at the drink I had with one o’ them umber-ellers in it.” he pointed to Tom’s test rig.

Bud didn’t see an obvious joke, but he smiled anyway as he took a seat at the small table where the lunch plates sat. “Hope it’s good and filling, Chow,” he stated, picking up the metal cover and setting it on Chows cart. “Yum! Grilled sausages and mashed potatoes! Hope there’s seconds.”

After a quick lunch, Tom buzzed Chow in his small kitchen down the hall. “If you want, you can come watch the first test,” he told the older man.

When the westerner walked into the lab he let out a gasp and began laughing. Bud, turning a few shades of red, stood there with what appeared to be a very bulky hunter’s vest covered in a fine mesh.

“Ya look right purty, Buddy boy!” he told Bud as he eased his bulky backside up onto a stool nearby.

Tom finished the hookup of the system to a power supply. “Okay. As you can see I’ve bolted the emitter array to the bench and mounted it on a power gimbal. My hope is that it can grab onto Bud’s vest and the gimbal can then pick him a few inches off the floor.”

With a hidden wink at Chow, Tom aimed the small dish at Bud and slid the power control lever up. Bud’s body was pushed back and then jerked forward a few inches, and Tom immediately slammed his hand down on the power cut-off button.

“No, skipper. It’s okay. It grabbed me a bit and I guess the repelatron test gizmo shoved a little before the Attract-a-blond thing started pulling. I thought that is what you want.”

Tom nodded. “I guess I was a bit too quick on the cut-off. Let’s give it a second try.”

This time, Bud’s body did the same thing, but ended up almost exactly where it had begun. Tom turned the power up a bit. “Still doing okay, Bud?” he asked.

“Yeah,” Bud said through gritted teeth. “It seems to be giving me a bit of a squeeze, though. Maybe before the next tests you can take the metal out of the back. I think it is being affected.”

Tom nodded. He was about to try giving his friend a little lift, but Bud shouted out, “Youch! Hey, what hit me?” He began howling in pain, trying to turn around to fend off something.

Tom and Chow looked at Bud in time to see something streak from the far side of the lab and hit him in the back. The scream of pain and the look on Bud’s face made the blood drain from Tom’s face. As quickly as he could he turned the system off.

His face contorted in pain, *Bud slumped to the floor.*

## Chapter Twelve: Pinning All Hope

“Chow! Call for Doc Simpson! Pronto!” Tom ordered as he raced around the workbench and knelt at his stricken friend’s side.

Bud was moaning, but he was conscious. His eyes flickered open and he looked into Tom’s worried face. “I believe the obligatory question is ‘what the dickens just hit me?’ ”

The blond inventor shook his head. “Aw, Bud. It was definitely my bad this time. I never considered that anything behind you might be affected by the Attractatron. The system detected the chromium I packed inside your vest, but I forgot that a lot of the smaller instruments I keep on the bench over there are chrome plated. From the looks of things I’d say you took the best part of my small tools kit right in the middle of your back. Lay still until Doc gets here to check you over.”

He put his hand in the middle of the flier’s chest to keep Bud from trying to get up.

Three minutes later the young medico arrived along with one of his Physician’s Assistants. The carefully checked Bud’s body and soon declared him to be puncture free, “But he’s going to be mighty sore for a few days. What have you been beating him with?” Doc asked. Once Tom filled him in on what had happened, Doc smiled. “At least you didn’t aim that thing at his head. I’d hate to think how much time it would take to pull all those pliers and screwdrivers out of the back of his hard head!”

“Will I ever dance again, Doc?” the dark haired young man inquired with a slightly goofy grin.

“With all the grace and style of a flailing old man... same as usual!” Doc informed him. “Let’s get you standing up before I leave you and the skipper to get back to whatever it was that got you clobbered.” With Tom and his P.A. helping, Bud was quickly on his feet, stretching and twisting to see if there was any specific pain.

“Nope!” Bud declared. “Bet I’m gonna feel it all tomorrow, but other than a couple spots, like my left shoulder blade where I think I took a screwdriver handle, I feel okay.”

Pulling a small envelope out of his medical bag and handing it to the now upright and smiling boy, Doc Simpson told him, “While I generally don’t like to just hand out pain pills, I have a notion that you are going to need one or two of these.” He described the combination muscle relaxer and painkiller, adding, “I’m only giving you four of them. Just one tonight a half hour before bed and then another when you get up. After that, only if you absolutely need it, take one tomorrow with dinner and the last one the next morning. But,” he held up a warning finger, “only if absolutely needed. And if you do, you call me!” He was about to turn away when he added, “No flying until twelve hours after your last pill!”

The last was delivered with a smile and a pointed poke into the flyer’s chest. Bud’s smile disappeared and he nodded his agreement. He would never consider flying while medicated by anything stronger than an aspirin.

After Doc and his assistant had gone Tom suggested they postpone any further tests until at least the following day.

“Naw! For now, and I’m assuming that you’re going to clear out everything behind me, I can take it. Besides, from the first try I can tell you that I only felt the main tug in the front of the vest. Until... well—” he left the rest unsaid.

This was good news to the inventor. Although his theory and calculations showed that this would be the case, he had been slightly unsure what would actually happen once the equipment was turned on. His only earlier test had been on a small disc of chrome-plate aluminum that had

no way to tell him how it was being affected.

“If you really feel up to it,” he told his friend. “Just give me a few minutes to rig up a kill switch for you to hold. That is, if you feel anything other than what’s going on in the vest, you release the button and it all shuts off. Okay?”

Bud nodded and his grin reappeared.

Soon, and with a small spring-loaded button pressed under his right thumb, Bud stood in front of the completely-cleared bench while Tom’s fingers raced over the small control board for his test Attractatron-repelatron setup. He took a glance up at his friend and gave him an “Are you ready?” nod that was immediately returned.

As power was sent into the mechanism Bud felt the same slight push of the sampling repelatron followed by the gentle balancing tug of the Attractatron. In less than one second he reported that he was locked into place. “I can’t lean back or forward, skipper. It’s kind of a strange sensation. Say— this might make a great law enforcement tool. Point it at a fleeing criminal and they stop right in their tracks!”

“Yeah. Maybe some day and probably only to stop cars, but you keep those ideas coming, flyboy. Ready for the next step?”

“Sure. Uhh, remind me what that is,” Tom’s test subject requested.

“I’m going to move you around,” came the reply. “I hope the servos are strong enough to hoist your bulk into the air a little.” Saying that, he made a small control adjustment.

With a whoop of excitement, Bud’s feet left the ground by a few inches. “Wow! Jetz! and, neat, skipper!” he exclaimed as he wiggled his legs back and forth. “But, I think I need to be put down and tighten the vest, It’s starting to—” and with that he plunked back to the ground, the vest having suddenly ridden up under his arms and around his throat.

Tom smiled as he turned the equipment off and came over to assist his friend. “That’s enough of a test to prove the theory, Bud.” He unbuttoned a few of the buttons and slipped the vest up and over Bud’s head and arms. As the flyer raised his arms he winced a little.

“Guess I will be taking one or Doc’s little pain pills tonight after all,” he admitted, picking the envelope up from the side table where he had originally intended to leave them.

They went down the hall to the big, shared office where Damon Swift eagerly listened to their report on the success of the new device.

“That is great news, Son, And, Bud. Although, I am sorry to hear about the little meteor shower in your back. Doc dropped by on his way out and told me. Are you okay?”

Bud nodded and told him that he was feeling a little stiff in the places where instruments impacted, “but overall I’m fine. I’m more excited about Tom’s Attract-a-blon—uhhh, *Attractatron* rig.”

Mr. Swift hid a smile behind his right hand. “Well, that’s good. But now, I need to ask my brilliant son about any chance of assistance in developing the solar sail we discussed many weeks ago. The one for my Mercury approach mission.”

Tom picked up the narrative so Bud could understand what was being discussed. He explained about his own desire to have a large solar collector to provide extra power for the Mules as well as the need to assist the forthcoming probe with both its acceleration and deceleration.

“Now, I’m not sailing expert,” Bud admitted, “But if you’re going to use a sail to get there, and something in the back of my head is telling me that the sail uses rays or particles coming out from the sun, then you’re going to have to figure out how to tack back and forth like a sailboat in a headwind to use that power, aren’t you?”

Damon laughed. “Well, if we were trying to make a direct shot at the planet, that would be the case. But, I want you to think back to some of mankind’s planetary probes. They all went to planets beyond our orbit, but many used the planet Venus as a sort of slingshot to give them greater speed than we could impart using rockets.” Bud smiled. “Fine. Well, for this Mercurial probe we are going to do a reverse slingshot. We send the probe out to loop around Mars before it shoots back in. To get this bulky probe to Mars we need more push than NASA can figure how to deliver, so back when Tom told me of his solar sail and collector idea I jumped at it.

“If we can come up with a few things needed to make this feasible, then we launch heading outbound, unfurl the sail and use it to speed us going out and then, just before getting to the red planet, we draw the sail in and use gravity to swing around and shoot inward about seventy percent faster than if we just aimed at the point where Mercury would be when the probe gets there.”

Tom added, “It kind of has to be that way, Bud, because as nicely as Mars and Mercury will be in positions to make this happen, there is no way in the next thirty-nine years to make a direct shot work as well. Anyway, Dad’s plan is to be aiming for a spot in Mercury’s orbit that will actually be traveling around and away by the time the probe gets there, but the probe would overshoot the planet. Radically.”

“Right,” picked back up the senior Swift. “So at the appropriate point we use the leftover fuel to make the final course adjustment and then unfurl the solar sail again.”

“Oh! I see,” Bud stated. “Then you use it to slow down, right?”

Both Tom and his father nodded. Tom stated, “Dad will use the solar sail to ease the probe into orbit using the remaining speed along with Mercury’s gravitation to put it into a precise orbit.”

“Sounds like a great idea. But... umm, what’s the problem?”

“Getting the genie back into the bottle,” Mr. Swift told them both. “With very limited space for the tightly rolled package, it is the need to reel the solar sail back into the probe and stow it so that it isn’t providing any drag as the probe comes back in. Not until it is needed, that is.”

The three men stood there contemplating the situation. Bud’s mind was thinking about some way to eject the original solar sail and to rendezvous on the way back past Earth’s orbit with a new one, while both Tom and his father mulled over methods to both expand and contract—as tightly as it was when it was launched—effectively and quickly.

Bud spoke first, telling them about his idea. “Is it a stupid idea?” he inquired.

Damon shook his head. “No, and as an absolute fall back it might be worth pursuing, but it is far from ideal. If that rendezvous is missed, the mission is doomed. As in one-point-eight billion dollars worth of doomed!”

“I think I can help,” Tom told them. “For the Mules I’m obviously looking at a smaller collector and sail—more of just a collector, actually—about half the size of the one Dad needs. So, using my original solar collectors we carry on the *Challenger*, I can devise a mesh of the small metal strips we energize to spread out the collectors and de-energize to bring them back in.”

“Like a party blow-tickler,” Bud stated.

“Like that.”

But, Mr. Swift was scowling slightly. “The problem there is that as tightly as your collectors are packed when the ship is on the ground, you still have to allow for about a thirty percent larger pod for them to be drawn back into.”

Tom nodded. “True, but that’s using the old bi-metal strips with everything powered from the point where the collectors attach to the ship. I’ve been fooling around with a tri-metal strip—



half the diameter and one-sixth the thickness—that can roll twice as strongly as the old ones. Of course, it also requires an array of tiny computers to work in sequence to make it all work right.”

He went on to explain how the computers, no larger than a small wristwatch body, featured their own tiny solar cells for power, and that they could be set to work together directing power from a main source so that each section of the collector could be more effectively managed. It would allow only a portion or even the entire collector to unroll in seconds, and then re-roll back as tightly as before, also in seconds. This differed from the old system where, like the blow-tickler Bud had mentioned, the electrical charge forced the entire strip of metal—hundreds of meters long—to try to flatten out, forcing the panel to unroll. It was a usable solution, but as pointed out, it had the disadvantage of not rolling back up effectively.

“How large of an area can each of your *micro* micro computers deal with, Son?”

“Well, the computer simulations I’ve performed show that they easily work on a strip of up to two-hundred and ninety feet. So, if you need a sail of... what size *do* you need?” he asked.

“About two-thousand feet wide by the same dimension top to bottom.”

“So, you would need about seven controllers per length and seven lengths across. Forty-nine! And those together would weigh about six pounds. That’s at just under two ounces each, by the way. Can the allotted space handle something about the length and width of the tube from a roll of paper towels, weighing that much?”

“I’ve got an allowance of weight that can almost handle about that in addition to the weight of the actual sail and the metal strips.”

Bud raised one hand and they turned to him. “Umm, if the skipper’s new triple metal bits are narrower and thinner, how much do they weigh?”

Tom let out a laugh. “Oh, Bud! You’ve come through, again!” His fingers danced over the calculator application on his ever-present touch tablet computer. Moments later he looked up with a big smile. “The necessary strips for your sail size will come in at twenty pounds less than the originals would have. You’re going to be *under* your weight limit.”

With semi-seriousness, Mr. Swift shook the flyer’s hand. “Do we pay you enough, Bud? I mean, I know we pay you to fly and all that, but do we give you anything for being the only one in the room bright enough to figure out the obvious for us?” He laughed and slapped the youth on the shoulder, causing the flyer to wince. “Well done, Bud. And I apologize for forgetting about your back just now. And, thanks! Tell my daughter she can give you a thank you and feel better soon kiss!”

Tom and Bud left the office minutes later with the flyer heading toward his small office in one of the hangars on the Enterprises property—to call Sandy Swift—and Tom heading back down the hall to his large lab. It was there, fifteen minutes later, that Chow found him.

“Hey-ho, buckaroo!” the cook cheerfully called out as he wheeled in his lunch cart. Months ago Tom had wondered how the cook always knew where to bring his food, until his father informed him that Chow, along with most of the executive staff of Enterprises, had access to the pinpoint positioning that the TeleVoc pin provided to the Security department.

“Well, howdy to you, too, Chow!” Tom replied, not looking around from the work he was presently involved in.

The cook’s voice next came from right beside him. “What’cha doin’ ?”

Tom gave him a quick rundown on the status of the Attractatron/repelatron setup. He ended with, “I’ve been cleaning up a thin layer of some sort of metal that collected under the dish,” he said. “I’ve got to analyze it. Hopefully, it isn’t any part of the antenna array. If it is, then my Attractatron is doomed to failure. At least in its current form. Can’t have bits of the antenna dissolving off!”

“Them sparkly bits?” asked Chow.

“That’s the stuff,” Tom told him, setting the small petri dish he had brushed most of the micro-rile particles into aside. “What have you got for lunch? It smells great!”

Chow looked at his young boss and wrinkled his forehead a little. “Wahl... see I got me an idea ta try an’ make some healthy versions o’ what I normally serve. See—” he paused and looked at Tom as if sizing him up. “Oh, shoot. Yer momma called me t’other day an’ told me that ya cain’t fit into some o’ your older shirts, an’ that you recently bought a new belt... a *larger* belt, than you’ve been wearing’. Please don’t tell her I squealed on her, but she’s worried that yer gainin’ a bit o’ heft ‘round the midsection.”

Tom patted his stomach. It was true. He had gained almost ten pounds in the previous six months. Even Bashalli had mentioned it to him.

“Don’t worry, old timer. I won’t give it away. I sort of wondered why she’s been serving me more vegetables and smaller portions recently. Anyway, what do I get today?”

“Lasagna!” Chow beamed as he uncovered Tom’s plate.

Tom did a double take. “But, that’s a huge portion,” he declared.

The cook nodded, proudly. “Yep! But it ain’t made with meat. I browned up some o’ that toe-foeey stuff after I crumbled it. Made it look a lot like ground turkey meat. Then, I used some low fat cheeses. All total that hunk of pasta comes in at a skinny little three huner’t and ten cal-o-rees!”

Tom sat down and took a bite. His face lit up. “Hey. It’s great, too!” he told the chef.

“Yeah,” Chow explained as Tom dug into his food. “An’ I replaced half o’ the noodles in thar as well. Tell me if’n ya can figger it out.” After several more bites the inventor shook his head. “Okey-dokey then. I’ll tell ya. Zoo-keen-ee. I used that slicer gadget I got and made thin slices o’ a couple young zoo-keen-ees an’ layered ‘em inside.”

“Well,” Tom said appreciatively, “It’s great. If this is the sort of stuff I’m going to get until I drop those pounds, I say bring it on!”

They passed the next few minutes in pleasant conversation with the cook talking about his newest lady friend. When Tom finished, Chow brought out a dishcloth and wiped the table after picking up Tom’s plate. Something tried to register in the young inventor’s mind, but he was more interested in determining what the metallic particles might be, so he shook his head and thought nothing more about it.

An hour after lunch he had his answer.

“Little flecks of chromium and other metals that included chrome in their makeup,” he explained to his father at dinner that evening.

“But, where did they come from? Is your antenna array particularly chrome heavy?”

“None at all,” Tom told him between bites of his turkey burger. “By the way, Mom. Great burger. No red meat. Like the wonderful lasagna Chow served me for lunch.” He grinned at her, watching her face blush slightly.

She said nothing but he knew that she now knew he was on to her. He nodded and winked at her as if to tell her it was fine with him.

Turning back to his father he said, “After I did the analysis on the particles and found out what they were, I looked around my lab. Now, several months ago I recall doing some fine filing and drilling on a block of ferro-chromate material. My guess is that most, if not all, of what I got today was that.”

“So, how did it get over to your new antenna,” Sandy asked.

“I’m working on the assumption that the Attractatron, set for chrome if you remember,

pulled it over. I just hope that none of it hit flyboy in the process.”

“Don’t you dare hurt my Bud!” Sandy ordered. “Unless you can implant some sort of ‘I want to marry Sandy Swift’ thing in that thick head of his, you just do your future experiments on some other dummy!”

Late the next morning Bud dragged himself into Tom’s lab. “Doc was right. That beating I took has made my back really stiff and sore,” he said easing himself onto one of the stools near Tom. “I heard something from old Chow about you cleaning up a pile of metal. What’s all that?”

Tom told his friend about the chrome filings. They were discussing possible implications when they both heard the lunch cart approaching.

“Hope you don’t mind but I asked Chow to bring my lunch in here,” Bud said.

The door opened and Chow, wearing a white apron around his waist and a brilliantly-colored orange, red and purple western shirt, wheeled inside.

“Ouch!” exclaimed Bud, shielding his eyes with his left hand. This caused him to exclaim, “And, ouch, ouch, ouch! Shouldn’t have raised the arm so fast.”

“Like the shirt, do ya’, Buddy boy? It’s jest a little number I had made fer me by a lady down in Albany. Right purty, I think. Brightens ever’body’s day.”

“And, sends them running to the sunglasses store! Hey, whatever you’ve got on those plates smells wonderful. What is it?”

“Wahl, Tom here is gettin’ a special chicken pic-otter over brown rice. Fer yer little snide remark, I’m thinkin’ I’ll take yer’s back and bring ya a bowl o’ mush!” But, he relented and served them both steaming plates of the slightly tangy dish. They ate in near silence with the cook leaving them for a brief period.

Finally, Bud asked, “So, if the Attractatron is dragging in any stray chrome particles, will it have that same effect up in space when it locks onto an asteroid or whatever?”

“Yes. I think it will. Actually, the more I think about it, the more I’m convinced that with the Attractatron and repelatron doing their balancing act on the large piece, smaller bits are naturally going to come into the area of influence and will get dragged toward the dish.”

“Wha-cha gonna do ‘bout that? Cain’t ya jest turn off the bid gizmo and let the dust stuff fall away?” Chow’s voice came from behind them. He had entered the room just in time to hear Tom’s last statement. As Tom thought about an answer, the cook picked up the two plates and brought out his wiping cloth.

Tom watched him wipe, as he replied, “No. Remember that there’s no gravity in space. Nothing to make the bits fall away. Besides I don’t think it would work if we periodically turned the unit off...” his voice trailed away as he watched the circular motion of Chow’s cloth. Then, the solution hit him.

Jumping up he wrapped his arms around the cook, declaring, “Chow. You are a class A genius! I’ll just wipe the stuff away!”

## Chapter Thirteen: Victory Beyond Their Reach

The Swift jet was coming in as slow and as stealthily as it could. It was flying one thousand feet above the castle and the tail ramp was open. Four men were ready to jump into the darkness when the jump light above them turned green. Phil was leading the air drop assault team that was to open the main gate in the castle wall to let in the rest of the ground forces. Four of his men were with the native forces acting as communication officers. They would be using their TeleVoc units to maintain contact.

Phil had the two jeeps mounted with 50 caliber machine guns and those were to be dropped right after the first group out had landed on the plateau itself. The courtyard of the castle was deemed too small a target for the jeeps to land in. Kinova and three of his men, also equipped with TeleVoc pins, were to ride down with the jeeps and were to be fast moving gunships to help protect the ground forces. In all, over fifty men were willing to risk their lives to rid the mountaintop of this enemy and free their people that they knew were being held prisoners.

To anyone watching, their timing appeared to be causal but the sun would rise at five thirty in this area of the world and the incursion was scheduled for five. This gave them a half hour of darkness in which to move and then daylight when they would either finish the mission or run for cover, depending on the outcome.

The light turned green and the four men slipped silently into the night one after the other. Their parachutes deployed at low altitude with a snap giving the men mere seconds to orient themselves and hit their landing spot. As they glided to the ground men poured over the plateau at places that had been scouted out earlier and defined as weak points in the surrounding walls.

Four chutes flared out as the men touched the ground without a sound. Harnesses were unbuckled and dropped to the ground. Small compact machine guns were slipped from chest tie-downs and made ready for action. They spaced out as they ran to the gatehouse. Grant, the heaviest man of the group, jumped into the air and hit the door with his feet at a full run sliding/falling into the room with his gun in the ready. Phil followed going left and Tony took the right. Hardy hit the ground in front of the door and covered the courtyard.

No one was in the room. Monitors were on and nobody was visible on the screens. The main screen had numbers counting down on it. It read 4:05 and dropped to 4:04 as Phil looked at it. "Hell," he murmured to himself. "All forces abandon attack. Get the hell off the mountain. Kinova, get the jeeps to the gate, pronto. We've got four minutes to clear the hell out. Move it!"

Normally, pandemonium would have broken out at such a reversal of plans, but Kinova shouted out in Tagalog and the Cordillera natives scrambled to leave the way they came. Phil gathered his men and led them up the stairs to the battlements and started to uncoil a rope from his waist; his men followed suit. They knew what to do when they reached the top of the castle wall. Tying off the ropes they repelled down the wall to the waiting jeeps and climbed in.

Two and a half minutes was left on the clock.

"Were to," asked the driver of the jeep that Phil got into.

"Go down the old road as far as we can go and then we run for it as fast as we can." Phil could not see the nod of the driver as he was hanging on for dear life with the three other people crowded into the vehicle.

"Everyone, be prepared for any number of explosions," Phil TeleVoc everyone. "The Encampment has bugged out and it is wired to explode five minutes after we hit the place. Luckily some fool left the countdown on the monitor."

Just then, an almost sub-sonic rumbling sound overwhelmed them. Looking back at the castle everyone was astounded as some sort of a rocket appeared over the fortress. Already traveling at great speed, it was surrounded by enormous balls of lighting that were streaking

down to the three dishes on the towers. The spaceship gathered more speed as it rose, the lightning show only lasting a few seconds, and the ship disappeared into the dawn sky.

It was suddenly quiet, almost too quiet. Everyone was still staring upward in disbelief.

What held everyone's attention was the fact that no rocket flames were seen. The cigar-shaped object rose into the sky on no visible means. Phil knew of only one way for that to happen, and that ship did not look like it had any repelatrions on it at all.

"Anyway," he thought as he motioned for everyone to continue departing the area, "only the Swift have repelatrions! *Don't they?*"

\* \* \*

Tom answered his father's TeleVoc page and ran out of the lab with Bud close on his heels. They raced past Munford Trent's desk and through the open door.

"What's the emergency?" Tom asked as the boys skidded to a halt in front of Damon's desk.

"You'll want to be sitting for this," the older inventor stated indicating the two chairs at the front of his desk. As they took their seats, he continued. "I've been keeping a few things from you, hoping that we could get them settled before I made any announcements. For starters, Harlan Ames has disappeared!"

He told them all he knew about the Security man's descent in one of the Outpost's one-man evacuation balls, about the apparent crash and the sighting of Ralph McDermott standing over the now missing Enterprises man. Before Tom or Bud could put in a question, he held up one hand and continued filling them in on Phil Radnor's team and the aborted rescue mission.

It wasn't until he came to the mysterious rocket—if indeed that is what it was—that Tom got a word in.

"But, that's impossible without repelatrions, and we are still under strict Government agreement to not supply those to anyone outside of our own company!" He looked to his friend who was nodding in agreement. "Something else must be powering that ship. Do we know for certain that Harlan was in it?"

Mr. Swift looked visible strained. "I needed to show you something first." He tapped a few keys on the inlaid keyboard in his desktop and the framed photo behind him on the wall changed to another picture.

It showed a few small pieces of electronics connected to each other by fine wires on a stainless steel tabletop. "This is Harlan's TeleVoc system. They found it in the castle in what would be considered an infirmary by what was left in it. The serial numbers check out—it's his unit. They must have surgically removed it. Harlan had his put in under the skin behind his ear so no one would find it. Most of the high risk Security personal have it that way."

Tom and Bud nodded their understanding of that as the older inventor looked up at them.

"It was deliberately left so it would be found and for us to know we had no longer a way of contacting or finding him anymore. They definitely took him with them or why bother to blatantly leave the TeleVoc?" They had to agree with him. He then showed another picture of a little oval-shape pill with a tiny clamp device on it. "This is Ralph's locator device from his stomach. They must have pulled that out to and left it with Harlan's TeleVoc. Just to show us up, I'm sure."

"So we have no way to track either of them?" Tom asked with a sour look on his face.

"For now, we have lost them." Mr. Swift shook his head in regret.

"When did this happen?" Bud asked, his voice sounding hard and determined.

"Two days ago." Mr. Swift answered back meekly.

"What! Two days ago! And you're only telling us now!" Bud could not believe that Mr. Swift

held back this information so long. His red face told of his anger over hearing this.

“Bud, you must understand,” Mr. Swift apologized, “Phil Radnor did not find the TeleVoc until three hours ago. After that ship took off things started to explode all over the place and they had to run for their lives. Luckily no one was hurt, only a few bruises and cuts. Those fifty men were extremely fortunate!

“It was not only the castle on the plateau that was exploding, the valley where Harlan landed also went up in smoke. That was a total surprise. When Phil did his flyover looking for Harlan there was nothing to be seen but rocks. Now there is a mile long trench full of twisted metal and concrete.”

A short video replaced the picture on the wall. It had been taken by the circling Swift jet seconds after the explosions. Tom and Bud could still see things flying through the smoke and dust. They noticed that some sort of a cover billowed and tore away as the explosions happened. As the plane turned back to the castle they had the opportunity to see one of the towers go up in flames and the plane had to veering off to avoid flying fragments.

“It took Phil a few hours to reorganize his men and then they had to proceed with caution in case of booby traps. Once the grounds were cleared the plane could land and unload its equipment to help find explosives and people. In all this time no one was seen alive or dead. And that is all I can tell you for now boys, I am waiting for Phil to call back with an update.”

\* \* \*

Tom and Bud left the office moments later. The young inventor had a few matters to take care of regarding the rebuilding of the test Mule, and Bud had promised to give a new employee flying lessons.

The Mule had been mostly stripped by the build team, managed by Hank Sterling. Gone was the space previously occupied by Bud. That area now sported a bulging cover that made the craft a full three feet thicker. As he approached, Tom also could see the extension that was being added to the nose.

Pointing at the new front piece, he asked, “Did you borrow that from Pinocchio, Hank? It sort of sticks out... no, it really sticks out!”

Hank turned around to face his young boss. “Yeah, but we needed the space to put in your Attractatron dish. It’ll be installed before quitting time. That’s it, over by my design station,” he said indicating a device looking more like an inverted vegetable steamer basket than anything else. “Even though this Mule is half size, that array is only about one-third scale. Ought to give you a good test, though.”

Tom agreed. “When can I take it up?” he inquired. He was anxious to test his new invention in space. It was only there where he would be able to determine if the Attractatron set-up was viable for what he had in mind. He finished by telling the engineer and pattern maker about his idea for a system to wipe the antenna periodically.

“As for flight? Two days if everything goes right in here,” came the response. “But... if you can give us three, we get some extra time for a more complete systems check.” He looked at Tom, hopefully. In spite of the pressure Tom was feeling over Harlan’s disappearance, he grinned and nodded. “Your antenna squeegee will take another week of so. It’ll go into the finished version if that’s okay.”

“Sure. It’s Wednesday, so I’ll notify the folks at Fearing to have the *Challenger* ready for a Saturday test. You want to come along?”

With hands now firmly planted on his hips, Hank replied, “You going to try to keep me from it?” They both laughed. Although Tom was a six-footer, Hank stood several inches taller and outweighed him by at least seventy pounds—of pure muscle!

“Oh, no-no-no!” Tom told him. “Besides, I’ll want to be able to turn and stare at you if

anything goes wrong. But, seriously, that array needs to be so firmly mounted to the Mule that it can't move a millimeter. It's going to be under a lot of stress."

Hank nodded. "Right. That is why we are running the stem end—magnetanium reinforced durastress, by the way—all the way through the Mule. It will be bracketed inside every four inches. In production models it will most likely be sonically welded right to the inner support structure. They'll become all one piece."

"Good. So, I'll drop back by on Friday and we can do any final fiddling with you guys then. Oh," he put one finger up onto his chin in thought, "I suppose that I can get them to bring the *Challenger* over here. That'll make loading it and getting up to the Outpost just a little easier."

He left promising to be available to drop anything else and help out if necessary.

Back at the shared office, Tom and Damon Swift were discussing the events with a little knock came on the door, and Jake Aturian, the Manager and President of the old Swift Construction Company stuck his head in. "Hey. Am I late?"

Tom looked at his father. "Uhh... late for what?"

"We three have a video conference over in the Security building in ten minutes. So, no, Jake. You are actually right on time. I'll fill Tom in while we walk over."

By the time they arrived, the young inventor understood that they would be speaking with Phil Radnor from the temporary base he and his team set up in the Philippine jungle.

"Sorry guys for calling so late and having to keep you all at work but the time difference is a killer." Phil Radnor's face filled the wall screen on Harlan's office. Jake, Damon and Tom sat in the office with Gary Bradley, Swift Security's number three man. Usually, it was Gary who was in command evenings, but since both of his bosses were absent, he seemed to be at his desk twenty hours a day!

Harlan's office was the most secure and the best place to have this impromptu conference. When the call came through, they all saw the strained face of Phil Radnor, now looking ten years older. "I feel that it's best that you get a live feed on what is left at this mountain castle and what we should do next." He sat back in his chair at the communication console on the jet plane that was now on the plateau landing strip. He looked on the expected faces of the three top men of the Swift organization.

"I realized it's been four day since we tried our rescue operation to get Harlan and the captive people of the Cordillera tribes out, but it took that much time to dig through the ruins and collapsed tunnels of this place."

The men at Enterprises saw and heard Phil taking a deep breath before he continued.

"First of all I would like to let you know that we found and freed almost seventy captives out of the hundred or so people most recently reported missing from the tribes. We unfortunately found twenty people dead in tunnels that had caved in and a few more in the power installation. They must have been caught in the destructive blast that destroyed the base right after that spaceship took off. By the way these people were dressed we feel that they were the techs responsible for keeping the launch systems running. I doubt they knew that they were conceded expendable. Of course, that leaves several hundred unaccounted for." He stopped talking for a second as he saw the horror on the faces in Shopton.

"Damon, I know what you are thinking, but you're wrong. The CPA tribe's can't thank us enough for freeing the people that we have. For them it's seventy people who they believed dead, but are once more alive. You must see it their way—no one has been found alive that was taken."

Phil waited as the understanding of the situation eased the look on their faces; in a moment, he felt that he could continue.

"I have men stationed at key points around the installation ready to transmit live coverage of

what we've found. We will be using the Video-Oculens capability of the TeleVoc system since we don't have enough hand held video equipment otherwise. We'll send the signal on channel two—you will be receiving a split screen image. I will also narrate what you are seeing and my men will move about as you instruct them to if need be. First, is the courtyard and the launch point of the spaceship." The screen on the office wall split into two with Phil on one side of the screen. The other side showed a blackened pit, now partially collapsed, with twisted metal panels thrown about.

The image was a little disconcerting in that it bobbed and weaved as the man moved about. His eye blinking, opening and closing, as it normally did also was a distraction. Tom shook his head at the poor quality of it and knew that he had to redesign the wearable system, even though it was a joint effort between two of his engineering departments and not something he was involved in.

"Kirby," instructed Phil, "please move in closer and take a good, slow look at the inside walls." Kirby, the jet pilot, did as he was told. His visual moved forward past one of the panels that had seemingly blown off the top of the pit. Twisted hinges and parts of the gearing mechanism to operate the doors were still attached.

The edge of the opening came into closer view and they could see that part of it had fallen in, and looking down they could see massive rings still bolted to the wall. These ranged downward as far as the eye could follow them. "As you can see the rings were so solidly in placed that even the C-4 explosive did not collapse this part of the tunnel. Lucky for us, because this proved to be the only way down and it's a two thousand foot drop!"

Tom whistled. "Brutal."

"Yeah, it is. I don't know if you noticed—Kirby, get closer to that top ring, please— it's finely wrapped in some kind of wire. Our best guess is it must be a magnetic field generator. Like I said this goes down two thousand feet and then levels out in the valley on the other side of this mountaintop. From that point it is two miles of nothing but a twisted ruin."

The image changed on the screen and the four Enterprises men were looking down a long valley. A twisted line of rails and metal hoops were scatted about or poking out of a caved in pit. "This is still part of the ring system that I first showed you. Those hoops encircled the rails and the pit was covered with concert slabs. We found remnants of power lines of *enormous* size below the rails and they were wired and controlled by a very elaborate computer system. At first I thought that it was a mag-lev track but that did not make sense with the loops. Sparks finely figured it out. It's a rail gun, and that how they launched their spaceship."

"Phil," cut in Tom, "that can't be. First of all, the track is not long enough, and second, the G force of such a launch would crush and kill a person. That is why no one launches that way."

"That may be true Tom," Phil replied, "but these people did and I'll show you how next." The screen switched once more. It was Kirby in the courtyard again looking at one of the corner towers.

"On our original flyover three of the towers featured some type of dish antennas on them." The scene changed, this time they could see that it was from the top of one of the towers. It showed only a melted blob of metal. "That is what is left of those installations, except for the one on the next tower."

The view changed again, but this time most of the dish antenna was still intact and so was most of the electronic equipment. "Grant. Please step closer to the dish and let Tom take a good look at it."

Tom's eyes widened as he recognized the configuration. It was a repelatron dish, not quite like his, but similar enough. "Phil, this is the first reverse-engineered repelatron I've seen. You must bring it with you when you leave!"

"Can do, skipper, and it was nice to see that not all of what they do is infallible. Someone



messed up on the explosive on this tower. So, can you now figure out how this system worked—anyone?” Phil asked.

Jake Aturian laughed, “Even I can do that. It’s like the underwater slingshot Tom uses to launch his rockets to space from Loonau. They must use the rail gun to get their rocket moving and into the air. Once above the ground the repelatrns take over and finish the launch. By keeping the repelatrns on the ground they save tons of weight and cut their power consumption tremendously. That is a lot of savings on fuel and rocket motors.”

The other three men in the office nodded.

“I wonder how they kept the three beams small enough to be effective.” Tom speculated out loud. “That is why I never tied it. The spread of the beam is counterproductive on such a small area as the bottom of a spaceship.”

“Well, Son,” Mr. Swift spoke up, “they seemed to have solved that technology glitch.”

“Well, *sir*,” Tom grinned back at his father, “now that I know it can be done, I’ll do it too, just watch. That plus the water launch could take off most of our weight and fuel, just like it did for them!”

“What of the G force you mentioned before Tom?” Jake asked.

“I would think that they never reached above three Gs while on that track, and exited the tunnel doing no more than three hundred miles per hour. That would be enough to get it above the repelatrns.”

“That leads to one question, Phil.” Mr. Swift asked. “How long after the launch of the spaceship was it before the repelatrns units exploded?”

“God, Damon, It must have been ten minutes at least. We were kind of busy ducking to keep track of that! I’ve got a few more things to show you—”

“Phil,” Mr. Swift said staring straight into the camera. “All this moving video is making me a bit queasy. Is there anything else that we absolutely need to know right this minute?”

Radnor sucked in a breath through his front teeth as he thought. “Probably nothing that can’t wait for a little video stabilization. Except maybe a report from one of our field people.”

Damon nodded. “Right. I suggest that you pack him up with everybody else. Finish up and pull your people out. Take what you think looks interesting and asked your local contact to see if the CPA wants us to completely destroy the base so no one could ever use it again. If they want it done, we will send in miners and demolition experts to do the job. Let me know. “Jake, Tom, do you want to add anything?” He looked at both men that slowly shook their heads ‘no’. “Then Phil, come home!” With that Mr. Swift cut the connection.

## Chapter Fourteen: Coming to Grips

Right on schedule, on Saturday morning, the *Challenger* rose from its temporary landing pad. Tightly strapped to the "patio" deck outside of the hangar was the newly reconfigured Mule, now dubbed the Chubby Mule by Bud. His original declaration that it should be called the Fat Ass—well, Sandy had glowered at him over the off-color name and that had put an end to *that!*

The trip up to the Outpost went smoothly and quickly. It always did. When they arrived Tom opted to have the *Challenger's* crew remain onboard to get ready for the test that afternoon, rather than to go to the geostationary wheel in space to pay respects to Ken and his crew. Other than one of the straps that had come loose in the rapid ascension through the atmosphere—of little to no consequence—everything was fine with the small ship.

As Hank and his two assistants detached the Mule and moved it to the side, Tom and Bud, along with three other crew members, pulled out the four five-foot by five-foot sheets of ferro-aluminum and attached them to the mounting points that had been added to the outer frame of the giant ship. These would be the target area for the Attractatron. If all went well, the combined repelatron/Attractatron beams would firmly grab onto the area and allow the Mule to perform several maneuvering tests.

"We're ready to move off, Ken," Tom radioed two hours later. "We'll be partially blinded here due to the panels, so can you have a pair of laser detectors aimed at us? One at the Mule and the other at *Challenger*?"

"Roger that, skipper," came the reply. "Anything else? Oh, and about how far off are you moving?"

"Well, I think roughly a kilometer or so. Yes, that ought to be a good margin for us all."

With that, he set the controls and the ship began to move. With Bud at the remote controls, the Mule shortly tagged along behind them.

"Let's try bringing the Mule in from the outbound side and stopping it about five hundred feet away," Tom suggested. "I want to see if it can get a good grip at that distance."

Bud complied with the request and soon had the small ship in position. "Ready," he called out, not taking his eyes from the control station monitor. "Say when."

Without pausing, Tom told him, "When, Bud."

The flier's fingers moved over several slide controls and then he pressed the Activate button. With no visible beam to indicate that the Attractatron was working, everyone crowded around the control station.

"Got it!" Bud cried out. "We're attached. Yippee!"

Inwardly, Tom let out a sigh of relief. He had worried that the real world range might fall short of the theoretical range. "Good. Now, lock the anchor repelatrons on the Moon and the Earth. Let me know when you are attached."

A moment later, Bud indicated that he had good locks on both bodies. "Ready when you are, Tom," he said.

"Okay. Everybody? We're going to use the Mule to swing us around a little. So, just in case things get a little rough, I want everybody in their acceleration chairs."

As the eight other people scrambled to their seats, Bud punched in the first test program. On Tom's signal he sent the command to the Mule. Immediately, everybody onboard the larger ship felt a small shudder. It lasted a few seconds before settling down.

"Skipper?" Hank asked from his seat behind the inventor. "What was that and why did it

stop, not that I'm not glad that it did."

Tom let out a small laugh. "I'm pretty sure that it was an imbalance due to the difference in time it took the repelatrons aimed at the Earth and the ones at the Moon to reach their goals. We sort of got shoved a little one way and then the other, until the onboard computer synchronized things. I never thought to worry about that since the Mules won't be dealing with things containing humans. Sorry, folks."

Everyone agreed that it was not a big issue.

"She's ready for swing maneuver number one, skipper," Bud said. "In three, two, one—"

With another slight shudder, the large ship began to move to the right. The view out that part of the large view panes not covered by the target plates began to change. The entire star field, slowly at first and then with increasing speed, began to move to the left. A minute later the shape of the Outpost that had been directly behind them at the start of the test—came into view.

"Jetz!" Bud exclaimed finally looking up from his monitor. At that moment the radio came to life, cutting off anything else he might have wanted to say.

"Outpost to *Challenger*. Ken here."

"Go," Tom told him.

"We have measurements for you. You might want to slow things down a little, the two ships are drifting apart. Seven feet right now from the start positioning, but it's increasing, Tom." the station manager's voice sounded slightly worried.

"Right. We're calling off—" but Tom's voice halted as Bud shouted:

"We're loose, skipper! Loss of attachment!" He calmed down a little and added, "Well, *Challenger* is okay. The autopilot stabilized us. But, the Mule—"

And he was also cut off by the message coming from Ken.

"Skipper! You've got to stop that ship. She's heading right for us!"

"Bring her around!" Tom ordered as everyone scrambled to their stations. In seconds the *Challenger* had spun around and was racing to get ahead of the Mule. He silently cursed himself for not insisting that the set of plates be outfitted with quick ejection bolts as they were hampering visibility. As desperate as the situation was, his mind cataloged a plan to place additional outside cameras around the circular railing of the ship for instances just like this.

And, as quickly as the thoughts came, he switched mental gears and concentrated on the situation at hand.

"Do we ram it?" Bud asked as he sought to regain some control over the errant small ship.

"No. Give me five more seconds and I think we can bump it out of its collision course." Good to his word, Tom quickly tapped one horizontal control and the left side of the *Challenger's* central cube bumped into the spinning Mule. The results were immediate and dramatic. The Mule bounced away, now spinning not only on its horizontal axis but also partly end-over-end. It was obvious the bump had done the trick. This was confirmed by Ken a moment later.

"We show it is going to miss us by a couple hundred yards. Good job, skipper... and what the heck went wrong?"

"Hang on a sec, Ken. I want to set a course to go pick up the Mule." It required about two minutes but he soon had the ship on a trajectory to intercept the crazily-tumbling ship in ten minutes time. He keyed his microphone.

"Ken? Tom. Okay. Given that your measurements showed us drifting apart as the rotation speed increased. My best guess is that we just didn't have enough holding power. And, since that Mule has both one of our most advanced atomic power pods as well as my latest CoilCaps to give us maximum power, I'd have to call this version of the Attractatron mostly a failure. Just

reversing the process of the repelatron doesn't seem to give us the holding power."

Tom's CoilCap—or coiled capacitor—was a compact, funnel-shaped device capable of increasing, and steadily outputting, a high-power stream from a relatively small input. He had first developed it for his revolutionary plasma headlight system, but it had found many uses where carrying large capacity power sources just was not practical. This newest version, although only a foot across at the open upper end and nine inches tall could take the 440-volt power from the power pod and output it at more than 30,000-volts.

"Roger. Well, sorry it didn't work, Tom. Or at least not as well as you'd hoped. At least it held a bit. Is that something to build on?"

After considering things for a moment, the inventor replied, "Possibly, but possibly not. Although—" he went quiet for more than a minute. Ken knew his young boss well enough to know that Tom only went silent like this when thinking. To him, such mental time overrode all sense of time. But, to Ken's delight, Tom continued, "I've just had a little brainstorm. Do you recall that we found a substance on Little Luna that acted as a gravity concentrator? That I first thought might be the core materials within the planetoid itself?"

"I sure do. But, didn't you mine what you considered to be the maximum safe amount?" Ken asked.

"Yeah," Tom's less than enthusiastic response indicated that he recalled that fact. "We have the last of that sitting in the cave on Little Luna, where Bud and I found the rune stone and all the symbols. I think that I can use it without altering it significantly and then return it once I have completed tests. Hey! Good idea, Ken! Thanks! We'll head there right after we capture our little friend. Tom, out."

Ken laughed as he took off his headset. He knew full well that it had been Tom's idea and not his, but the young inventor's excitement had him mixing up the facts.

The Mule was brought back onto the hangar's patio once Bud, Hank and three of the technicians suited up and managed to get a small rocket pack attached. The onboard computer and accelerometers determined the precise firing pattern and sequence to slow the dizzying tumble and then to bring it to a complete stop. It took eight minutes but they finally were able to take hold and manually coax it back to the *Challenger*.

Thirty minutes later they left their 22,300-mile orbit and headed for a rendezvous with Little Luna, the Phantom Satellite their space friends had put into Earth orbit nearly a year earlier. Too small to have much gravity, everyone had been shocked when they encountered a much-larger-than-expected gravity field. Tom had been able to establish a breathable atmosphere that was constantly renewed by a pair of special machines located at the "poles" of the small moonlet. Over the months a team of scientists had made Little Luna their new home and had been working on Terraforming it to a small degree. Currently, the little moon had enough atmospheric and ground water—discovered about a month after the moon had been moved into orbit as a layer of frozen ice more than twenty feet below the surface—to bring a daily rain running for five minutes.

But, it wasn't the rain that held any interest to the inventor. As he had discussed, a rock-like substance had been discovered that provided much of the available gravity for the planet. Through careful calculations both Tom and his father believed they could harvest about fifty of the nearly seven hundred pounds of this substance without negatively affecting anything. Of that fifty, only eight pounds remained.

After notifying the inhabitants that the *Challenger* was coming, Tom approached the planetoid with care. The atmosphere was held in place by a network of loose fibers that acted like a cap keeping in the vital air. It could be moved aside whenever a ship arrived or took off, but it had quickly been understood that only slow and steady travel through this thin layer would keep it from scattering, to detrimental effect.

They were met by Dr. Violet Wohl, one of the first scientists to come to live there. She gave Tom and Bud warm hugs and firm handshakes to the others. Over a simple lunch prepared from their locally-grown crops—including a spaghetti sauce over vegetables that Bud later swore must have had meat in it, but had been told it was a vegetable protein product—Tom explained the purpose of their visit.

“Well, Tom. I and all of us here, owe you so much. Of course, if you believe it will be necessary to take the gravity stone, go ahead. Especially if you think there is something out there that might be coming this way. We love this little rock and would hate to have to abandon it. But, perhaps even the Earth won’t be so safe, huh? Just promise me that we can have it back if you get to the point you no longer require it.”

Tom readily agreed.

An hour later *Challenger* took off, heading down to Enterprises, with the gravity stone material packed away in the hangar. Its effect was felt in the control room where everyone felt at least twenty percent heavier.

On Monday morning, while Hank and his team were dissecting the Mule, to find out if some sort of problem had caused the loss of grip and Bud’s lack of control, Tom was in his underground lab with the gravity stone material. The effect of the gravity pull was slight due to the small amount of materials, but could be felt as far away the half-way point between Enterprises and the city limits of Shopton, and had been the cause of three concerned phone calls.

It wasn’t until the afternoon paper arrived that Tom knew he had to take some sort of action. The headline on the Shopton bulletin read:

**ARE SWIFTS BUILDING A  
DEADLY BLACK HOLE?  
INCREASED PULL  
MAY BE SICKENING OUR CHILDREN!  
WHAT IS TO BE DONE?  
YOUR VOICES MUST BE HEARD!**

Tom took a deep breath and blew it out through puckered lips. He had been afraid of this. In actuality, he couldn’t blame people from being concerned. It was just that the approach taken—more often than not—by the *Bulletin* and its editor, Dan Perkins, was that of a rabble-rouser. Why report on the dull facts when you might sell a few more papers by sensationalizing.

Picking up his phone, he dialed the newspaperman’s private number. There was no answer, most probably because Perkins could see who the caller was and wished to avoid being yelled at. When the voice mail system announced itself, Tom cleared his throat and began.

“Dan. I wanted to call you before I get our lawyers on this. And, it won’t help you to play dumb. You know what today’s paper says. Listen. Here is the deal. We are working with a substance you have already reported on, more than nine months ago. The gravity rock from Little Luna. I was hoping the effect wouldn’t be as pronounced as it is. In fact, it really isn’t but you’re up to your old ‘if the cloud is only slightly dark, let’s tell everyone we’re about to all die in a typhoon’ style of reporting. I’m taking it all out to Fearing Island tonight. By tomorrow’s paper there will be a big retraction and a small explanation of what this was. If not—” Tom paused for dramatic effect. “As the ads say, ‘Lawyers are standing by!’ Speaking of that, bye, Dan!” He hung up.

The next call was to arrange for a small transport jet to be prepped and taxied over to a spot just to the side of the underground hangar. By four it was ready and by five he was winging across the eastern seaboard and out over the ocean. At six nineteen he landed at Fearing Island

where a team off-loaded the crate with the gravity rocks plus the dismantled Attractatron unit from the Mule. He gave instructions that everyone on the island was to be notified about the increased gravity. "Tell them it amounts to about five percent except right next to the stuff. It won't be until I need to energize it that it will be felt more, but that won't be until two or three days."

\* \* \*

A very weary Phil Radnor and his team piled out of the large Swift cargo jet and into three of the small buses waiting for them. It had been an exhausting week for them, and nobody had been able to totally relax during the seventeen-hour flight back to Shopton. Least of all Phil, who was both miserable and was dreading what might be awaiting him in the form of a dressing down from Damon Swift.

He was caught completely off guard when the man who owned the company, signed his paycheck, and held his employment fate in his hands warmly wrapped his arms around his Security man before stepping back to give him an equally warm handshake.

"I'm glad you're back," he said in a subdued voice.

"Mr. Swift, I'm—"

Placing a hand on his Security man's forearm, Damon shook his head. "Don't say it, Phil. I've had a lot of time to think about things and how everything came down. We are not an international government; we do not have an intelligence service that might have told us something might have been going on over there. We had a missing Harlan and a rescue mission that ran into more surprises than anyone could have anticipated. You did a great job and I look forward to meeting with you and your local expert tomorrow, but for now head home and rest. I'm proud of what you managed to get through, and that's what is important right now." He looked deep into the exhausted man's eyes.

In almost a whisper and with a single tear running down his right cheek, Phil responded, "Thank you, Damon. I've been feeling pretty low about this. I promise to give you absolutely everything we know before noon tomorrow." Having said that, he turned and climbed into the waiting mini bus.

\* \* \*

Before heading to the commissary for dinner, Tom placed two calls; the first was to Bashalli. He explained that he was on the island and asked if she wanted to come out the following day.

"Oh, Thomas, I would love to do just that, but I have an assignment here at work and must prepare five possible graphics for an advertisement due to go into the *Bulletin* next week. Can you live without me?" she asked in a voice that sounded to the tired young man like a 'do you love me' challenge.

"Well, Bash. It won't be easy, but I guess your work comes first. Maybe on Saturday? Or, if I'm ahead of schedule I'll try to hop home for the afternoon and evening tomorrow and we can go to dinner. Okay?"

"That will be fine. I will miss you, but perhaps some day I will not have to work so that I can live all alone in my small apartment. Well, bye, Thomas!" and the line went dead.

A chill ran down his spine as he realized exactly what she meant by her last remark. Almost two years his senior, it was not a secret that she was in love with him—and he with her—and was ready for him to "pop the question." The issue was that the inventor wasn't certain he was mature enough for that sort of role. He took a deep breath and made his second call, this one to his father.

They spoke about Tom's plans for trying to create an enhanced Attractatron field using the gravity enhancing materials.

“If you discover that it does the trick, Son, then I may have some good news for you. Interesting at the very least. Doctor-Professor Kincaid at the Keck Observatory contacted me this morning. He has been taking careful observations and measurements of that incoming comet. And, by the way, as it passed above the asteroid belt it dramatically slowed down and changed course. It arced over the top and then took a sudden downturn. He believes it is going into some odd orbit around the belt. From that and a few other things, he believes that the object has in his words, ‘unusual enhanced gravity characteristics not consistent with an object of that size and assumed mass, unless it is made from spent solar materials,’ which he assures me it cannot be. Does that give you any ideas?” he asked in a cheerful tone.

“You bet! If this is a natural occurrence, the comet *must* be made from something like our gravity stone. Right? I mean, if it grabbed out and let itself be slowed down and redirected, it practically has to be!”

“My interpretation as well. I’m glad we concur. Anyway, If your experiments are successful, you may want to take a trip out there to see if you can mine some of that... uhhh, I suppose we ought to give it some name, don’t you think?”

Tom agreed. “Just don’t tell Bud or it will get dubbed ‘SuckStone’ or something else just as bad. Maybe something like VaritaStone?” He spelled it for his father. “I think I remember the Greek for gravity being something like *varitita*. What do you think, Dad?”

“I think it is a good combination of words. VaritaStone it shall be! Oh, I wanted to let you know that I received a strange phone call from Dan Perkins about an hour ago. He was in a panic and extremely apologetic. Something about ‘it will be on the front page.’ Does that make sense to you?”

Tom told his father about the headline.

“Ahhh. Well, I wouldn’t be seeing that until I get home, and now I don’t have to worry about it. Speaking of which, I need to get there, pronto, for dinner and to prepare for Phil and his team to report tomorrow. They arrived just after you flew out but were dead tired so I sent everyone home. Sorry you can’t be here, but I’ll keep you fully informed.”

Tom thanked his father, asked him to give his mother and sister, Sandy, his love and hung up.

After a good meal he went to his small apartment and undressed for bed. Feeling a little overstuffed and heavy, it wasn’t until after he had taken a fizzy ant-acid that he realized the feeling was the increased gravity.

With a chuckle at himself, Tom tumbled into bed and was asleep before nine.

## Chapter Fifteen: The Old Heave Ho!

At eight o'clock the following morning two things occurred. Tom began his first experiments with adding the power of his VaritaStone to his Attractatron, and Phil, along with his three top men from the failed mission, knocked on the door of Damon Swift's office.

"Before I actually went home last night I stopped by the Communications building and dropped off all of the digitized video we shot. They worked overnight to process and stabilize it. I think you'll find it a little easier to watch. I hadn't realized just how bouncy it was. Sorry for that."

He shoved a memory stick into the side of the computer used for displaying things on a large screen over by the conference area and typed in a command.

"This is what you've already seen, but I wanted to refresh your memory." he narrated what they were seeing and added a few new pieces of information he had neglected before. When that part of the presentation concluded, he turned to face Damon.

A regretful grin spread across his face. "First, I had to let my local expert remain behind. He is working to repair a sense of faith and trust between the tribespeople and we westerners. But, he did provide commentary that you ought to hear. And, I've got him standing by to talk with us. He'll be seeing what we see."

Damon nodded his understanding of the situation.

"Good. Now I have two more things to show you. I'll warn you first that you may find this repulsive. Kinova was down where we found the prisoners."

Damon looked at Phil but said nothing.

"So, one of the things I forgot to mention the other day is that two hundred feet down and under the courtyard is a sort of moveable loading platform connected to the rails by track switches... like in a train station. There is an elevator also but it was totally demolished so we couldn't go that way. We had to repel down to the platform level and we only found it because we first sent in a probe to see how far the hole went down and to see if it was blocked anywhere. The captives were kept on that level and there, too, the C-4 was badly wired."

"Sloppy workmanship?"

Phil shook his head. "No. Clean work but not fully complete. I think we have a sympathizer in the group. Let me turn you over to the tunnel team manager."

"Mr. Swift, I'm Kinova," the sorrowful voice of the big Loonai security chief filled the speakers and his face appeared on the screen. "We've met just once out on Loonai where I'm Security Chief. I have to tell you personally that you helped save a lot of my family's people and I want you to understand that any loss of life caused by this operation is not your fault. It's the Balangan's and their masters and I swear they will pay if I have anything to do with it."

"Kinova, I can't condone violent revenge on the Balangan tribe..." Mr. Swift began.

"I *do* understand you, Mr. Swift," Kinova cut in, "and we shall not take it out on the Balangan's that were left here in the Cordillera Mountains. What are left of the tribe that we have been able to find are mostly old men and women, a few injured and sick adults, and a few young people with babies. We will not seek revenge on them. They will be taken in and cared for the best way we can... if they will allow us to; that I promise. But the one's that run willingly with the 'Dogs' who did this will not be treated kindly."

"That *I* can understand, Mr. Kinova, as long as it's done within the law. But Swift Enterprises must not be part of it. If you see fit to pursue this matter yourself then I must ask you to resign your post with us. I do hope you understand?" Mr. Swift heavily sighed.



“That I do, sir, but for now I ask for Phil to help me show you the inhumane conditions my mountain people had to endure.” His face shrank and moved in a smaller frame to the upper-right of the screen. In the main screen area, lights turned on and the holding area was fully lit. The cavern was thirty feet wide and a hundred long. Rusty iron cages of ten by ten feet in size were crammed along both walls. In the jails were two sets of bunk beds, three tiers high. A bucket with a lid was in the middle of the cage and that was evidently the toilet. There was nothing on the bunks but one thin ragged blanket each. The floor looked slimy and filthy. The only light fixtures ran down the middle of the aisle outside the cages at ten-foot intervals.

“This was the men’s holding cave; the women’s is just as bad. We found no running water and no way to feed the people in here. We did not come across a kitchen or food storage area, at least not in the accessible regions. Where or how they were fed is unknown to us. The slaves were underfed but not starved, so it must be in the valley somewhere. There were huts in the far end so we can only hope—” Kinova’s voice fell away in despair. “I am sorry. Even now that they are safe I hurt for their pain.”

Mr. Swift cleared his voice and it took him two tries to speak—he was emotionally stunned. “Gentlemen, we have seen enough. I thank you for your time and effort. Mr. Kinova, please tell your leaders of the CPA that anything we can do to help relieve the pain and suffering of the captives let us know. Food. Medicines. Shelters. I can have them on a transport in three hours.”

Kinova nodded. “All will be of great help. They can not speak for themselves, so I will. *Salamat*. That is Tagalog for thank you. And, if we have opportunity to speak again, I am simply Kinova. I do not feel that I deserve the title of ‘mister.’”

Damon Swift was floored by this final statement, but nodded his head. Kinova stepped back from his camera and stood, waiting. “Now, Phil, I must talk to you in private. Good-bye, Kinova. I hope we do speak again.”

The split screen dissolved and the monitor went black.

\* \* \*

Tom’s very first experiment met with success. After carefully pulverizing the VaritaStone he mixed it with a compound that would set as hard as steel when a specific electrical charge was passed through it, and would immediately soften and be removable from the crushed gravity rock once power was shut off.

He lined the curved emitter antenna with it. He played it smart and attached the heavy bracket at the back of the antenna to a steel I-beam sticking up from the ground so the actual array would keep it from flying forward. It had all been set up outside next to the building that housed his lab and the island’s chemical analysis team. One hundred feet away sat a three-foot square of aluminum. It was mounted using about a dozen aircraft-grade bolts to a steel framework that featured equipment to measure the pulling forces and that, in turn, was permanently mounted to the ground using thirty-foot steel pilings. It normally acted as a RADAR reflector for any ships navigating past the island.

Picking up a megaphone, he keyed the button and called out, “Stand by for gravity experiment. All personnel within hearing range either take cover or drop to the ground.” he repeated the call in all four directions around him. Finally, with his finger poised above the power button he called out, “Starting test in five... four–three... two... and now!”

Not expecting much as he would need to ramp up the power, he pressed the button. The result was that the aluminum plate bulged outwardly rapidly snapping all twelve bolts and flying straight at the emitter antenna.

Tom was off to one side but instinctively ducked as the plate smashed into the array and stuck there.

He shut off the power and the plate dropped to the ground as a small round of applause broke out among those close enough to witness what had just happened. Turning, Tom could see

that the steel reflector had bent toward the enhanced Attractatron array by about thirty degrees. With a little laugh of disbelief he turned back to look at the array.

It was bent and puckered in places, and he could plainly see that the VaritaStone dust had come unbound and was drifting to the ground now that power had been interrupted, and that the actual array which had been anchored using the steel I-beam and back to the cement bollards that surrounded the building had pulled them out and moved about ten feet toward the reflector, but it was evident what had happened.

It worked!

\* \* \*

Once more Harlan was sick as a dog. When they said they were to take him to the ship he thought that meant an airplane, not a spaceship. He was still too groggy to notice the difference when they lugged him onboard after they stripped him of all his electronics. They used a local anesthetic to deaden the pain, but not nearly enough of it. Finally, his constant groans got to them and they gave him a double dose. His head spun in many directions at once and he nearly passed out. Squeezing his eyes did something for the dizziness, but nothing for his stomach.

He could not remember much of the next ten hours waiting in a three-sided wire cage in a modern-looking storage room that they used as his jail. But that ended when the ship—as he later found out—rocketed down the magnetic tracks and into space. He was given no warning, pushed into the hot, back wall and held there as the G forces built up and then dwindled down to nothing. He drifted to the middle of the cell and soon started to have the dry heaves. Harlan coiled into a fetal position and suffered in teeth-clenched silence as much as he could.

“Mr. Ames,” a Cordillera-accented voice called out to him from beyond the bars. Harlan just barely looked at the man in his misery. The middle-aged man had his hand extended and he was holding something. “I am Saclolo and a friend, take these pills... they will help... at least they do for me. The Masters has made them for us that do not take kindly to space.”

Harlan just shook his head no.

“Please, take them. I do not have much time. The Masters does not know that I’ve come; not all of us follow them willingly. They hold our families in their grasp and we must do as they say.” The stranger came closer to the cage and put his hand in. “Take them. Sorry I could not bring you water, you must swallow them dry.”

The man nodded his head toward the pills. Harlan, feeling he had nothing to lose and potentially something to gain reached out his open hand and received the two golden pills. He plopped them in his mouth; it took him a few seconds to get them down without the use of gravity. The man left without a further word. No one came back for another six hours and that was only after the ship did some fast, sharp maneuvering.

A clanging of metal against metal told him that they had docked with another ship. In minutes a low gravity force could be felt and he settled onto the floor. Harlan made himself as comfortable as he could in the stark cell and waited, leaning against the cell wire side rather than the hot back wall. Much to his relief the pills had worked and he felt like a new man. He now took a closer look at his surroundings.

The jail was in the back of a storage area packed tightly from floor to ceiling with large and small plastic cases and a few barrels. Only a small center aisle was left clear.

At last, the same man, Saclolo, came into the room and unlocked the cell door.

“Mr. Ames, please don’t give me away to the Masters. I am a friend and hope to convince you of it. If you ever want a chance to escape it will only come if I help you.”

“Do I have a choice?” Harlan asked suspiciously as he slowly got to his feet.

The man shook his head. “If you wish to live to see your people again, no you don’t.” He

pulled a Taser from a holster on his belt and pointed it at Harlan, “Once out of this room and this ship, try nothing stupid. There is no escape from the *Genghis Khan*.”

Harlan was marched through the storeroom and into the next section that appeared to be a combination crew quarters, lab and food area all in one. In the middle of the room was an airlock and lockers for spacesuits to be stored and the suit maintenance workbench. The two doors of the airlock were open and a half dozen men flanked by what were evidently two guards were waiting on the other side.

Harlan got only a glimpse of the workers and did not like what he saw. All of them had thick, heavy metal bracelets clamped above their ankles and on their wrists. A small LED could be seen blinking on all of them and that told Harlan that the rings were more than just the shackles they appeared.

He felt very light and bounced somewhat as he was told which corridors and stairwells to use. He counted five flights of stairs; the corridors were eight feet high and deserted of other people.

“Where are—” he started to asked.

“Silence, and do not talk until you are told to or you will be punished!” his guard hissed out and he jabbed the gun into Harlan’s back.

He jerked his head around and looked at the guard who just a little while ago told him he was a friend. He could see that the man was sweating and under great emotional stress. Wide-eyed and almost imploring, he nudged his “prisoner” forward.

Harlan stumbled for a step or two and then fell back into the rhythm of light gravity walking... more of a tiptoe shuffling. He found it hard to believe he was in a spaceship and not a large structure like a space station. The weak gravity had him stumped. He was not being pulled slightly to one side as he would have if it was created by centrifugal force, and he could not hear any rocket engines thrusting away. He made a mental note to tell Tom about it when—

At last he was guided through a circular stairway in back of a room that turned out to be the incredible control center. To his left was an elevator—on the other side of that was another stairway that looked just like the one he came up in. He stepped out onto a balcony that was four feet wide and completely circled the dome-shaped room. The walkway looked to provide access to computer banks and automatic control units that only had to be attended and check occasionally. Lights, gauges and monitors of all types spewed out information and equipment readiness status in a chaotic display of colors and muted sounds.

Two more sets of stairs lead from the middle of the balcony arching down to the main area. Harlan knew that he had been brought in the back way to impress him with the size of the control room. Looking down onto the myriad of control stations along the wall and the free standing consoles in the room reminded him of the Combat Information Center of an aircraft carrier or a command bridge from some unbelievable science fiction movie.

His gut told him this definitely was no movie.

A theater-sized screen dominated the central portion of the front wall and it was divided in one large central screen and six smaller one, three on each side of the main one. On the main screen was a dark, pockmarked planet—the Moon?—as viewed from far away. Harlan did not recognize the surface, so he assumed that it was the far side that he was not familiar with.

After a few moments a female voice called out. “Bring the toy down to us so he may see and learn what his new Masters expect from him.”

Harlan was prodded forward once more and he slowly walked down the stairs. It was then that he noticed he was being displayed on one of the smaller video areas and that the camera followed him down. He now understood why his guard/friend had not said anything to him. He had been monitored from the moment he left the Earth ship, and maybe even before that.

Once on the main floor he was grabbed by Ralph McDermott and pushed and turned around to face toward the back of the room. Under the balcony, between the stairs, was a raised dais that held two massive and—elaborately encrusted with gems—golden thrones.

The two figures on the thrones rose to their feet. They were dressed in plain white kimono robes with no hoods and their long fingernails were painted bright red. Their pale white faces were marked with light blue veins on forehead, cheeks and necks. The visible skin was flawless and colorless. Their twin hairless heads and tiny red, almost beady rat-like eyes focused on him. Their macabre faces sent chills down Harlan's back. He had seen albinos before but never twins and never with such transparent skin that let the veins showed through.

"No wonder there were no photos of them," he thought to himself as he mentally braced himself for the worst possible outcome with these two strange people.

"Kneel before your Masters, toy!" their wispy voices intoned together.

\* \* \*

Tom was full of glee. The few instruments he had added to the new Attractatron rig showed him that the pulling force had multiplied at least by a factor of five. It was so strong that the repelatron components had been unable to adjust in time to provide an equal amount of push. The result was a ruined dish antenna array, and a loss of about one tenth of the VaritaStone powder that had been blown away by an unexpected gust of wind.

The loss of the array was easily overcome; the loss of the irreplaceable mineral not so.

With a sigh he picked up his phone and began making all the necessary calls to set up a long distance voyage in space.

He was going to go out to see if the asteroid belt or the comet orbiting it had what he needed. He was going to see if he could mine the needed VaritaStone.

\* \* \*

Harlan's feet were swept away from under him by Ralph, and he slowly fell onto the floor. Even though it made him sick he was glad of the reduced gravity. His guard picked him up by the scruff of his neck and set him on his knees. As the man's face passed by Harlan's ear and he whispered, "Remember: escape."

Those two words had the same effect on him as a bucket of cold water thrown into his face. He gritted his teeth and stayed on his knees with his head bowed.

"Oh look, brother dear," and the female reached out and touched the other's arm with her foot long nails, "the toy thinks he can placate us. Isn't he cute? Do you think he'll roll over and let us scratch his tummy?"

"Sister, I'll rather play with a cobra than try that with this one right now. He knows when to smile and when to bite. He is not like the others here." He nodded toward the front of the control room and the rigidly standing men stationed there.

He clapped his hands twice and called out, "Put restraints on this toy and place him with the other peasants for now. They can answer his silly questions. He's boring me. I wanted a fight out of him and he just kneels there like all the rest!" Disgust and disappointment could be heard in his voice. He drew a samurai sword from the folds of his robe and with a quick flick of his wrist he put a thin, shallow cut down Harlan's cheek from below his eye to his jaw.

Harlan never had a chance to move and afterward he dare not too, so he just knelt there and bled. He had no way of knowing what to expect next. The female stepped down from the dais and waived the two men away from Harlan's side. She then walked around him in small measured steps. When she stopped in front of him she reached down and touched his bleeding cheek with one of her long fingernails. She withdrew the blood-covered nail and placed it on his lips, smearing it across his mouth.

“Toy, your body and blood is ours; soon your mind will be as well. Guards, take him away.”

\* \* \*

Preparations required a full five days. For a long voyage such as this one it had been necessary to reinstall the giant, roll-out solar collector array's that would give *Challenger* much of its needed power once she left the vicinity of Earth. Even as powerful as she was, the ship could not carry enough nuclear power to make the high-acceleration trip out and back.

With the arrays, it would take eleven days to get out to the site of the comet at the very best possible speed of acceleration and deceleration and the same to return to Earth. He hoped to conclude his exploration and mining all within one day, so they would be gone about three-and-a-half weeks.

If they relied on the nuclear power generator built into the ship, the best they could manage would be a two-month trip.

And, Tom knew that would make it too late.

Every measurement he had seen, from the Outpost to the several observatories who were feeding their information directly to Enterprises, said that the comet would most likely break free of its temporary hold onto the asteroid belt and would recommence its trip toward the sun.

And the Earth would still be in its direct path!

He tried to spend as much time with Bashalli as he could knowing that she desperately wanted him to either stay at home or take her with him. Neither choice would be viable. It would take far too long to train anyone to replace his expertise for the mission, and he did not want to take any chances with the woman he was in love with. Besides, she had her position at the advertising agency in town and could not take the time off.

They stood in the shadow of the mighty ship as the final loading of food took place—much of it courtesy of Chow who insisted on accompanying his young boss—holding onto each other and whispering their devotion for one another.

A few yards away the same scene was being played by another couple, Bud and Sandy. But, while Bashalli was gently tearing up and shivering against Tom's chest, Sandy was informing her man that he had only one option. Come back in one piece!

“Now that I've got you hooked and reeled in, fishboy, I'm not about to lose you. And, there will be no catch and release. Understand?”

He grinned down at her upturned face. “Gotcha, Captain Birdseye.” Then in a quieter voice, he said, “You do know that I have always loved you, don't you?”

Now, Sandy began to shake as she fought to remain in control of her emotions. It might have lasted except...

A short alarm blast announced the five-minute mark, the time when all crew had to get onboard and all observers needed to move back by a few hundred yards. This was a precaution to protect them from any flying debris kicked up by the repeltrons and not because they might be affected by them directly.

Sandy kissed Bud with trembling lips and then walked away. She stood holding hands with Bashalli.

The mighty ship lifted off right on time with nobody on board seeing the two young women who clung onto each other for emotional support.

Once in space and past all orbiting objects and junk, Tom unfurled the collectors and began slowly feeding their energy into the ship's power system. They raced outward and skimmed past the Moon barely an hour later.

From his acceleration couch, Bud asked, “Hey, skipper. What was that?” He inclined his head

toward the rear-facing camera's monitor.

Tom could see nothing. "Uh, I'm not sure what you saw, Bud. It isn't there now."

"That's funny. For a split second I thought I saw an array of lights down there on the back side of old Luna. But it blinked out just as I asked about it. Huh! Wonder what that was?"

None of them realized how close they had just come to discovering where Harlan Ames was currently being held as a prisoner.

## Chapter Sixteen: “I Don’t Like the Looks of That!”

The *Challenger* raced on. Using a series of high acceleration periods separated by two-hours of coasting to allow the crew a bit of recovery time—and for Chow to feed them—the ship continued its race to the “turn-over” point where thrust would be reversed and the ship would slow down at the same crazy rate as it had been speeding up. Of course, with the *Challenger* it wasn’t necessary to actually flip the ship over. The repelatron arrays could be moved around the outer railings so they could point at a distant object to be used to push against.

Because of the distances involved, and the diminishing efficiency of the repelatrons at such distances, it was actually necessary to begin slowing about half a day earlier than the actual midpoint of their voyage.

But, right on schedule the ship came within visual sighting of the closest asteroids and the comet.

“Jetz!” Bud exclaimed. “That’s just not right!” He was now pointing at the close-up view of the comet and at whatever it might be under the slightly blurry surface. Whatever it was in there, it was visibly moving around. It was almost as if either something was alive under the surface, or some part of the comet was tightly orbiting the main chunk inside the photosphere.

“I second that,” stated Hank Sterling who had come along as their main engineer and one of the men who had some small experience with mining operations both on and off the Earth. “What do you suppose that is, skipper?”

Tom was stumped for an answer. “Hank. Bud. I don’t know. I mean, that is what I would call an textbook comet—one mile wide icy mass with...” he checked their instruments, especially the one based on his repelatron that could be used to determine various elements even at great distances, “a lot of nickel and iron in there, but there is something else, and I don’t mean that wiggling whatever-it-is. There is a layer of another something not too deep. It isn’t just mineral and it isn’t a recognizable element. My guess is that it’s our VaritaStone.”

“How can you be sure, skipper?” Bud asked.

“Well, even though it doesn’t register as a specific element—after all, it isn’t anything we have ever discovered on Earth so it isn’t in our table of elements—it has several characteristics that do appear on the readouts. In fact, if you look at that spike in the remote spectro-analyzer’s breakdown, that one way off to the right of the screen, that is exactly what registers from direct measurement of the gravity stone we’ve taken from Little Luna.”

“How much do you think is out there?”

“Well, Hank, once we take laser measurements of the entire comet I can come up with something a lot more precise than a guess, but my guess is that at least a tenth of the mass is VaritaStone. No, let me correct myself. We don’t know the actual mass. So, about ten percent of the volume inside that icy surface could be VaritaStone.”

The next hour was spent circling the comet at a set distance and taking a complete laser map of the surface. Once the final measurement had been fed into the computer the readout told them that the comet’s photosphere was about one thousand feet thick. Taking into consideration the vibrational measurement made by a small probe that was launched into the surface ice, almost half its diameter was solid material, and some of that seemed to be VaritaStone.

“Fellows? I don’t like the looks of what I’m seeing. If we take the known weight of our VaritaStone and use all these measurements, that means a mass of nearly two thousand fifty-five point one metric tons of VaritaStone inside that. It’s no wonder that it sort of hung up on the asteroid belt. With that much pull, it’s a wonder that we aren’t being dragged down onto it ourselves—” Tom stopped as that notion struck him like a thunderbolt. Why *weren’t* they being slammed down into the surface by all that potential gravity?

“What is it?” Bud asked, seeing Tom’s now pale face.

The inventor told him about his new thoughts.

“But you said it all measures up like the VaritaStone. Does that mean we came all the way out here for nothing?”

“Oh, Bud, I hope not.” Tom felt miserable. While he had believed they would find VaritaStone in some abundance and would need to keep themselves in a fast orbit to avoid being drawn down to the comet’s surface, he had never considered that there would be only a moderate pull coming from the comet. He did a few computations.

“Well, the good news is that the comet is exhibiting at least a five-fold level of gravity than its size would suggest possible. The bad news is that is about five-fold less than it ought to be if the core is actually VaritaStone.” He shrugged at the two other men. “I don’t know what else to say.”

Bud’s face was scrunched inward as he concentrated on something that was hovering around his conscious thought level. A moment later he brightened up. “Say! What if the core is VertiaStone, but it’s being shielded by all that nickel and dime stuff?”

Tom, who had been studying the readouts looking for some sign of hope, suddenly spun around. “Say that again!”

Bud did.

Tom reached out and set his right hand on Bud’s left shoulder. “I hereby dub thee the Sage of Enterprises.” He smiled at his best friend and explained. “There have been many times that you’ve seen things that I miss or haven’t thought of looking for, and this is one of those, Bud. We need to get our core robot down there to dig in. Luckily, we brought enough collapsible bore tubing to get to within a few hundred feet or so of the center. Let’s get going!”

\* \* \*

Solitude! You would think that solitude would not be hard to find on the back side of the Moon where the only view is toward the universe and the Earth is never seen. But for the past several weeks Harlan had a hard time finding it. Even in a colony of this large size it was difficult to be out of sight of another person. He considered what had happened since his encounter with the freaky brother and sister.

Being put into the slave dome and left at the closed and locked door, still bleeding from his cut cheek and with blood dripping onto his shirt, had not made him very appealing to the people there. He found himself in a large courtyard, obviously used as a public gathering place. A few children were playing in the wide-open space but they ran away when they saw him.

At the far side was an outdoor kitchen, equipped with stoves, refrigerators, sinks, storage units and a dozen long tables in four precise groupings of three. Old people and young mothers with babies sat at two such table groups and half dozen women were preparing food to cook. They all fell silent as Harlan approached and sank into the seat at the farthest table out. He looked at them and held out his hand to show he meant no harm. No one moved. After a moment they turned from him and resumed what they were doing in silence.

Harlan, totally exhausted and in pain, laid his head on his folded arms on the table top. After a few minutes a gentle touch on his shoulder told him he was no longer alone. Looking up he saw a Filipino woman with a bowl in her hands and a toddler hugging her leg standing beside him. She sat down and reached into the bowl. She took out a cloth and started to clean his wound.

After dabbing at his wound for a few seconds she spoke. “Do not mind the people,” she told him with a small smile on her face and in very good English. “They find it hard to trust anyone nowadays after what they have been forced to live through.”

Harlan could not help smile back even though it hurt and it caused his cheek to bleed lightly



again. She pressed a new cloth onto the cut that she took out of her dress pocket.

“Hold it there while I’ll go get some proper bandages and ointment.” Before Harlan could say a thing she was gone and back again carrying a medicine box and a bowl of hot soup on a tray. The child was no longer with her.

After she attended to the cut she told him as he started to eat the soup, “It would be best if you stay on the outside of the food area until the men return from work and supper is served. A few hours is all. After that I will ensure that the people invite you to join us, and decided what to do. We never had an outsider before in our midst and it—well, your white skin—could prove to be a problem.”

Resentment by the island people was only short lived; language was a problem, but a few of the younger man knew English from school so Harlan had people that he could explain to how he had been brought here. They, in return, spread the word to the rest of the people.

“He is a prisoner like us.”

There were well over two hundred of them and Harlan discovered most of them were forced to do the manual labor for the colony. If they did not, they were not given their food allotment for the week.

The underground dome they lived in was divided into three floors filled of one-room units. No matter how large or small the family, one room was all they got. Single people did not benefit as they had to find room with smaller families or sleep in the courtyard with nothing but a blanket to call their own. Restrooms and two public showers could be found behind the kitchen area and everyone had to share them.

The woman, Magadia, who helped Harlan earlier, took him into her room with her child, as her husband was only allowed to visit once in a while. He was a tech-guard and helped maintain the guard’s electronic equipment. He was one of the native people that had moved to the outside world when he was young, got an education and—after a few years of living in the cities—returned to the mountain people and the simpler life.

In the morning when most of the men and over half of the woman were called to go to work, Harlan went with the men that could speak English and worked in the food fields as they did. They looked at him strangely when he followed them, but they only shrugged and shook their heads in disbelief.

It was strange working fields that were only ten feet high and under intense lights. The air was somewhat humid, but there were no bugs. And for that reason the plants had to be pollinated by hand, thinned out as needed and picked when ready. Countless numbers of crops were in all stages of growth, and the soil had to be attended to and amended as need. A dozen agriculturalists watched over the operation and told everyone what to do. Atrocious guards—armed with a type of stun gun they used without mercy—stood watch and yelled and punished those that they felt were not working hard enough.

One guard started to prod and threatened an older woman who was starting to fall behind the others after several hours of work so Harlan stepped in and hit the man. He landed on his back a few feet away and did not move. Immediately other guards moved in taking their Taser out and aiming them at Harlan. One fired at him but Harlan was able to side step the shot.

“Stand down,” a stern female voice filled the air. “The toy must not be touched, he is mine! Bring him to me... I am in the watchtower. Take that fool of a guard away and strip him of his duties. Place him with the field hands. Let them do as they will to him. Everyone resume work.” The voice echoed throughout the dome and Harlan was led away. He could hear the ex-guard pleading as he walked out of the field room.

The watch tower was located in the highest peak of the main meteorite crater that the Masters were using for their settlement. Five craters so far have been domed and covered with regolith and two more were nearing completion. They were a mile from the main group of

domes and twice as large as the five already constructed.

One was to be an industrial complex and the other was to be the new science dome. They were completely self-contained except for food. When completed within the next two weeks the old dome spaces would be converted into more living quarters. In four more weeks a mass exodus from Earth would begin and another two thousand people would be added to the settlement, bringing the total population of the colony to just less than ten thousand.

Harlan rose to the top of the tower in a pneumatic vacuum elevator over two hundred feet tall. The dark tower was enclosed with one-way glass, and the exterior surface was camouflaged to match the surrounding ridges. He was astounded by the view of the crater-filled plains before him and the series of sharp rugged mountains behind him. A light flashed occasionally from between two of the peaks.

The female Master stood before a control panel and was directing some type of operations in the mountains. "Sam, shut down all light and cease drilling for the next six minutes as the Chinese photo-mapping satellite passes over. It has now come in range of our RADAR."

She turned her head toward Harlan as he stepped out of the clear-walled lift and waved him over to her side. She continued to talk to the man in the mountains. Her back was to Harlan and she showed no particular worry over it.

"It's directly overhead now," She informed the drilling team and at the same time pointed it out to Harlan as it raced overhead. He watched as its blinking red and green lights moved toward the horizon and disappeared below it. "Clear to resume drilling, Sam. Will that section done on time?"

"Aye, Master, it will be done on schedule. The new earth blaster is working better than expected." He sounded very happy to report that information.

"Then I shall see you back at base in ten hours... out." She powered down the electronics and the tower went almost completely dark except for small LEDs spaced around the wall at chair rail height.

She rested her hands on the edge of the control board with her long red nails spread out, drumming lightly on the controls. Her eyes roamed over the grand vista before them. "So desolate and frightful looking, is it not?" she asked Harlan as she wrapped her arms around her shoulders and rubbed them. It was close to being a show of emotions Harlan had not expected from her. Cool and heartless, yes, a sense of awe, no.

She laughed at the look on his face. "I am human and I can love as well as hate. But that world we come from has only taught me hatred and the need of discipline and power. This will change shortly and I'll be free to be myself."

Harlan could not believe in what she was saying. It had to be a trick of some kind. He would wait and see the truth come out eventually—painfully, he feared.

"I noticed that you have taken a liking to the peasants and that you have attempted to protect them even though you have no means to do so. Your protective side runs deep in you and your sense of justice is for all people and not just for some." She sounded as if this were a foreign concept to her.

He had to agree with her assessment.

"As I said, things are about to change and the usefulness for the Balangan guards is coming to a close. The intelligent ones will be allowed to join our ranks as low class citizens. The rest will be placed in with the mountain people who hold great animosity towards them. Not only the guards," She now empathized, "but their wives and children as well. Their deaths will probably result from this unless..." she trailed off and smiled at Harlan.

There it was, he thought, the carrot... the bait, to make him want to join the Masters by dropping the welfare of the CPA mountain people onto his shoulders. Harlan's mind went into

overdrive. She expected him to take that bait. She knew he would. Should he, he considered, and would it mess up their plans if he did not. No, he knew that it made little difference to them if he accepted it or not. But the CPA people, what would it do to them when the despised guards was thrown in with them with their families? No, he could not allow that to happen; if he could stop the violence then he must!

Hopefully he could turn things around to help them all escape. He knew that if he could get a message to Enterprises that Tom would do everything in his power to get him back. And to be in a position to send a message he had to get to a communication device, a radio, a rocket, anything...

Harlan laughed at her. She frowned back at him. "You do not believe me, is that it?" she spat back at him. She was fuming; no one had dared to laugh at her in years. Even her twin brother feared her wrath should he mock her.

"So you plan to cut yourself off from humanity and start your own kingdom here on the Moon, or is it to be a *dynasty*, as you seem to love Japanese or Chinese culture. Is that it?" Harlan retorted. "What do you plan to call this kingdom of yours and what do we call you by then?" His eyes dancing merrily in her frustration at his attitude.

"Shangri-La will be our lands here on the Moon," she told him through gritted teeth. "And we shall be the Emperor and Empress Shangri-La. No, the Empress and Emperor. Yes, that is what it shall be. This will be our final name change. The names Carver and Masters shall never be mentioned again, that is *if you want to live!*"

"And that, Master, is why you shall always be hated and feared. No one will respect you. You will be reviled by all, and when you eventually die there will be celebrations and dancing. Is that what you hoped for when you began this... this travesty?"

"Better hated and feared than pushed into the earth like so much nothing!" She screamed back losing her temper. "And, there will be future generations."

"What? From you and your brother? That is disgusting!" Harlan told her. "Cloning? Clones might go mad, and if you make them too soon, they might try to usurp your power."

"Shut up!" she ordered. "We will rule for decades. Our power will ensure order and cooperation. And, the people will come to rely on us, even love us."

"But you gladly are willing to do the pushing, the forcing and the punishing. You can't have it both ways. You must choose one or the other." He turned away from her and looked out at the Moonscape. He watched her reflection on the glass and he could see that he had pushed her to her limits.

Sighing he returned to the original subject. "Yes, I'll watch over the CPA mountain people and I'll take in the families of the guards when I think it's safe to do so and not before, but not the guards. You must be willing to place them elsewhere until I say so. Even then, I want them working in the factories and not at the fields or with the animals."

Harlan moved a few feet to stand next to her, letting her absorb what he wanted.

"And if we have no jobs for them at the factories?" she asked at last.

"Machines must be cleaned, floors sweep, bulk materials moved about. They can do that I'm sure. Them living in the same dome will be bad enough. Are you sure you can't place them elsewhere to live?" He turned to face her as he asked.

"Harlan," She turned to face him also, and in a firm yet softer voice told him, "we will be overcrowded as it is when we leave Earth for good. So don't push it. Just make sure *your* people do their jobs! Go. You are dismissed." And once more she turned from him to looked out onto the Moon surface.

Harlan bowed slightly as he backed away and onto the lift. He pushed the descent button

and as he dropped from sight he caught one last look of her face in the window—she was smiling, and that disturbed him.

\* \* \*

In a little under three hours the self-operating boring machine had been unloaded, eased down onto the surface of the icy outer shell of the comet, and disappeared as it tore through all materials. Based on Tom's atomic earth blaster, it used a set of incredibly sharp and durable blades to dig into and grind materials, and then vaporized them, ejecting that material back up through a trailing tube.

A steady stream of rocks and slush came out only to be thrown to one side where they began forming a small, dirty hill. Also coming up every second was a running analysis of the composition of the materials.

Nine hours later Tom stopped the drill. They had found what they came for. He set the machine to grind, but not vaporize, a two-kilogram sample. Once it had been brought to the *Challenger* using a remote sample rocket Tom did a more complete analysis on it. For starters, it had nearly the same composition as VaritaStone with the exception of traces of rhodium and, to Tom's amazement, non-radioactive isotopes of neodymium and cesium.

"Somehow, those traces keep the VaritaStone from acting like the stuff from Little Luna," Tom told the assembled crew as they headed back to Earth with a sealed container holding more than two tons of the mined mineral. "An electrical charge, even a small one, nullifies those effects, and then this stuff acts just like our VaritaStone." The pleased look on his face told them all the rest of the story.

Tom had his solution so he could build one or more Mules—he told them they now had enough to both resupply Little Luna for what had been taken, with enough to build a fleet of several dozen Mules.

The trip back took slightly less time as the gravitation on the Sun added to their acceleration... slightly.

Four days later Bud brought up one question causing Tom to wonder about his own intelligence at times. "Did anyone bother to find out what the far out orbiting object was? The one your dad said was dumbbell-shaped?"

"Bud," Tom laughed, "I do wish at times you would ask these questions a little earlier. Or, that I start writing them down. I forgot all about it and now we'll have to wait until our next visit."

On schedule they neared the Moon. It was now in such a position that they had the choice to skim within three miles of the surface on a straight trajectory, or to veer slightly and miss the lifeless body by the more normal fifty-plus miles.

Tom chose the latter.

For the second time everyone in the *Challenger* failed to notice the patch of lights on the back of the Moon. By the time they had approached near enough, those lights had already been extinguished.

For the second time, Tom Swift missed an opportunity to rescue Harlan Ames.

## Chapter Seventeen: The Reluctant Astronaut

The men that knew English asked Harlan what happened. Almost nobody who was taken to the Masters ever returned to them. He told them that he needed to speak to the elders and anyone else who had been leaders of the CPA people. That night after supper the guard, Saclolo, was allowed to visit his wife and son. That was one of the rewards the Masters passed out for his obedience.

When Magadia rush up to greet him, Harlan finally made the connection between the two. Saclolo greeted Harlan with the tribes' traditional hand clasp of the forearms and told him, "I have been given a new job besides my technical one and a promise of citizenship if I carry it out correctly." A wide smile crossed the man's face. Harlan looked at him and the people crowded in closer to hear this news.

"I'm to be your go-between man with the guards. You are going to be their new boss and Baccay is to be removed."

A wail of relief filled the air and the people danced and shouted for joy. No better news could fill the CPA people with joy other than that they would be free of the cruel island man the next day.

After awhile the leaders called a halt to the celebration and reminded them that the old guards would still be there and the Masters would still be watching them. This had a sobering effect on everyone, but they still went to their rooms happier than they had been since their capture back on Earth.

It was near morning before the elders and leaders went to bed. Before that, Harlan laid out his plans to help them and told them of the coming independence with Earth. He warned them of the plans of what was to happen to the guards. Tired of the tyranny meted out by their fellow Filipino's who relished inflicting pain, most of the people wanted nothing to do with them.

"If the Masters want them to die, they should. They have no place in our community, or in our tribes."

Harlan pointed out that they, too, were nothing more than slaves to the Masters and that if they wanted to live and ever have a chance to escape they had to do their work and blend into the background, to become invisible to the Masters and their elite people. That included causing no trouble and having a constant ear open for what was happening in the domes.

The people's leaders resisted this notion until Saclolo spoke out on Harlan's side. In the end it was agreed to try it for a time. Magadia took it upon herself to get the women behind Harlan's plan—for the safety of the children, if nothing else.

Harlan went up to the tower whenever he needed to think. He never met either of the Masters up there again and that suited him. Once in awhile he would see the Chinese satellite crossing the sky and that made him feel better. That reminded him that there was still another world waiting for him just beyond the horizon.

One day he spotted something coming from the direction of the outer planets, but it was too far away to really see more than a point of reflected sunlight. He shrugged it off and went back to contemplating what he might do to escape.

\* \* \*

Work began at a feverish pace on the first full-sized Mule. It looked primarily like the model with the addition of a new bulge along the back. This held the twin solar collector arrays that could be unfurled, almost like long, wide wings, to soak up the rays of the Sun and provide additional power whenever needed. Using his new thin strips of the electrically controlled metal, Tom was able to roll out the array in under fifteen seconds and roll in back in, in under

twice that time.

Mr. Swift was ecstatic about that. It meant that everything he needed to accomplish with the Venus probe could be done just as he planned. His solar sail would be made of a thinner material and would be about three times as large as the combined Mule arrays, but it could be managed at nearly the same rate.

“You have uncomplicated my life more than I think you can appreciate,” he told Tom at dinner that evening.

Since the *Challenger’s* return, Bashalli had been a fixture at the Swift dinner table sitting as close to Tom as she could without impeding either of their abilities to eat. It was a quiet source of amusement to Anne Swift who had come to realize that her son would be marrying the girl who sat next to him, and probably sooner than anyone expected.

She also was fully aware that her daughter was becoming jealous of the relationship between her brother and her best friend. Sandy said nothing, but her occasional resigned sigh said more than words.

“I am also very proud of Thomas, Mr. Swift,” Bashalli declared. She glanced at Sandy and added, “And, of course, Bud. Our two men have worked wonders. We are fortunate to have them in our lives.”

Sandy raised her water glass and with an almost happy smile declared, “Here, here!”

The following morning brought some news from the Outpost.

“Skipper. Ken here. We’ve been keeping an exceptionally close eye on that comet and that wobbly part inside. It slowed down after you took out a little chunk and stayed that way for a couple weeks, but from three days ago to today the wobbling bit is not simply back to its former speed and pattern, it is moving about three percent faster. I just thought you’d like to know.”

“Right. Thanks, Ken. How about the overall position of the comet?”

“Just like before. Still in a sort of holding pattern out there, but its distance from the set of asteroids that seem to be influencing it the most is increasing, also just like before.”

“What’s your best guess about how long before it breaks free?” Tom hated the question but had to ask it.

“Between five and seven weeks at most, skipper. We just don’t know enough about everything going on up there. Sorry.”

Tom thanked him and closed the connection.

The next two days saw him practically locked into his large lab working on the final control circuitry for the Attractatron. Work the previous week had centered around finding the best way to use the new VaritaStone. An effort to refine some of the mineral had totally destroyed any effects it had before, so he knew he had to live with the variations.

Two very positive things he had discovered were that this VaritaStone could be worked with right at Enterprises and was unnoticed by anyone in the surrounding area, plus it had an even higher level of gravity force than the original materials but only when energized with a precise electrical current. This meant it was almost inert until zapped with electricity.

He worked with Enterprises’ Polymers and Plastics department to develop a new compound to hold the VaritaStone solidly and permanently to the array. The added stiffness of the substance they came up with meant the array had to be rebuilt to allow for a one-sixteenth-inch layer of new materials, and that meant that the bay in which the array was stowed when not in use had to be made about ten percent wider.

In all, forty-three internal changes were made to the Mule to accommodate everything

new, but Hank, Arv Hanson—who was helping him—and the folks at the Construction Company who were gearing up to produce an eventual run of them kept right up with everything.

He and Bud managed several dates with their ladies in the three weeks after the *Challenger* returned from its mission.

On the twenty-second day, Tom sat back, looked at the checklist on his computer screen—with everything ticked off—and smiled.

In another few weeks the first Mule would be completed and they would be ready—in plenty of time—for any sign of the incoming comet.

\* \* \*

“Mr. Harlan,” Saclolo called out from the far side of the farmer’s dome. Harlan looked up and watched him hop and skim between the ground and the low ceiling at a distance-eating pace. He took a moment to stretch his back and work the kinks out of his arms and legs. Even in the low lunar gravity, field work was back breaking. Hand picking row upon row of green beans and soybean pods took a lot out of someone not accustomed to it. Harlan was determined to prove to the CPA tribespeople that he was more than just a supervisor, he was one of them.

As Saclolo reached Harlan he waved to his wife who was three rows over. She waved back but kept working. You never knew when the Emperor or Empress might have their eyes or ears watching or listening. Saclolo looked comical in his one-piece plastic jumpsuit and face mask.

“Mr. Harlan, the Emperor wants you at the *Genghis Khan* right away!” Saclolo heaved out between gulps for air. “He is going asteroids hunting and I think he does not want you to be here alone with the Empress. The palace servants reported the other day that they were fighting about you. The Emperor thinks that his sister has giving you way too much latitudes.”

Ames had quickly gotten used to the man’s not-quite-perfect English over the past weeks. He no longer felt compelled to correct Saclolo.

As they walked toward the entrance of the dome Saclolo laughed and continued. “He wants me to take over while you’re gone. I think he still does not trust you and wants to see if I can take over. Mr. Harlan, I think you should don’t stand next to an airlock with the Emperor next to you, or you might find yourself on the wrong side of it.”

“Damn... what do you think he suspects?”

“Suspects? Why, everything. First off the acceptance of the family of the guards and then the guards themselves with so little difficulties and no bloodsheds to speak off must have him amazed.” Harlan nodded his head in agreement. “And perhaps even *kaunti takot*. A little frightened of you.”

In spite of the seriousness of his situation, Harlan couldn’t help but smile a little. It was his intent to either get their captors off balance a little or to even set them against each other.

“It is maybe better for us, but I think we made a biggest mistake in not making a ruckus out of it. He must be wondering what kind of deal we make with each other. Just because *you* told us not to kill them could not carry enough force in his mind and you working the fields four hours a day does not do it either.”

“God, Saclolo, why did you not speak up earlier? We might have been able to throw him off.”

“Hindsight, Mr. Harlan, hindsight. It does you absolutely no good for the present or future. It only points out your mistakes waiting to bite you from behind.”

They were about to reach the front of the dome and the worker’s showers and changing rooms. No one was allowed to enter or leave the field dome without a shower and a change of

clothes.

“You’re turning into quite a philosopher,” Harlan laughed, and placed one arm over the Filipino’s shoulders bringing their heads close together. He now spoke in a very low and soft tone. “Look, if I don’t make it back, you finish that radio and use the Chinese satellite as a relay station. I’ve written the schedule down and it is inside the layers of my blanket. You *have* managed to scrounge all the parts, correct?”

“Yes, sir, I have and they are hidden until we need them. You, Mr. Harlan, just *have* to come back. Your plans will all fall apart if you don’t. I am maybe a good assistant but I am not manager stuff like you.”

“Son, I have all the intention in the world to make it back. The alternative—like being dragged back out into a spaceship—is not something I’m looking forward to!”

\* \* \*

It was an incredible four weeks, filled with eighteen hour days, many nights spent sleeping at Enterprises and threats from both Bashalli and Sandy that they might be entertaining offers from “alternates,” but at last the full-size Mule was finished. And, other than the near exhaustion he had driven himself to, Tom was elated at the end result.

The shape was basically the same as he had originally designed, however it was a bit wider, eighteen percent longer and four feet thicker. All of that new space was crammed with electronics, energy sources and conduits, emitters and computers.

The one thing he had not been able to accomplish was to make it fully autonomous. It was going to be necessary to accompany it on its first real mission and provide both an element of manual control as well as human judgment.

“But,” he told his father as they sat in their shared office sipping a late afternoon cup of tea, “I have the gang in Microelectronics working on an even more powerful computer while I will be hammering away at the necessary programming. By this time in two months we should have the option of sending one or more of these out on their own.”

Damon Swift looked bemused. “Completely on their own, Son?”

“They will soon be able to patrol independently, call on each other for back-up or when more than a single Mule is required, and know when to ask for human assistance,” the younger man replied. “All in all, I feel confident that for any ten instances where they are used to move something out of a trajectory that might involve Earth or near-Earth, only one will need intervention from us. And, since Ken and his people have the unobstructed view using the Megascope, I’ll train them to handle everything.”

“So, no more ‘gloom and doom’ news stories because somebody wants to try to make a tempest out of a tea pot?”

Tom smiled and nodded. “Right. And though I don’t think it would be prudent, it would give me pleasure to announce to the news media at large that they are going to have to try creating panic stories about other things.”

They both laughed. Between those types of nonsense stories and the occasional “Are The Swifts Endangering Us?” reporting that were generally based on nothing more solid than a vague rumor—and *that* frequently turning out to have come from an enemy or competitor of the Swifts—both men often wished to wipe the smug looks off of various reporters’ faces. Poor George Dilling, head of Communications, now had three people working for him simply keeping the media in line and fed with just enough to keep them from making things up.

Bud came along with Tom as he headed to the Outpost with the Mule flying under its own power and control. The small ship raced upward in formation with the *Challenger*.

This time, and standing off from the space wheel by more than two hundred miles, the Mule



was able to determine whether the incoming *Challenger* was on a course that might be a threat to the Outpost—in which case it took action to grab onto and fling to one side the much larger ship—or whether Tom and Bud would pass by at a harmless angle.

In all, they made ten passes and the Mule responded perfectly and appropriately each time.

“You know, skipper,” Bud told him as they headed back to Fearing Island, the Mule training behind them like a dutiful dog, “I think calling our little beast of burden just plain old Mule is a disservice to her. It.”

Tom narrowed his eyes and looked at his friend. “What did you have in mind?” he said more as a statement than a question.

“Well, there’s Francis the talking mule from those movies, but ours doesn’t exactly talk, does it?”

Tom agreed that it only spoke in pure electronic digital data, not with a human voice.

“So, I just let my mind sort of go slack and tried to picture famous mules. I kept seeing a grizzled old face standing next to a jackass. Couldn’t get that image out of my mind.”

“That’s the way I feel about you sometimes, Bud,” Tom said trying to look innocent.

“I choose to take that as a compliment. I think. Anyway, once I discounted it being Chow, it took a few days before I figured out who that was next to the jackass. Gabby Hayes. The old prospector character and sidekick to Gene Autry. So, unless you have an objection, can we name it the *Gabby Hayes*?”

Tom let out a sigh of relief. “Good. Keep with that one, Bud. For a second you had me worried you wanted to name it *Blossom*. That, by the way, was Gabby’s mule’s name. Or, worse yet, the *Eyeore*!”

“Ah, man! I never thought of *Eyeore*! Rats!” Bud genuinely looked disappointed until Tom said to him:

“We’re going to build at least a dozen of these in the coming year. Probably two dozen. I’ll let you name one other. If you want it to be the *Eyeore*, then by all means, you may have that privilege.”

They landed ten minutes later with the newly christened *Gabby Hayes* touching lightly down just fifty feet away. A team of workers swarmed out from the control house and surrounded the Mule.

“Go ahead and get it back into the *Sky Queen*, guys. Bud and I will be heading for Enterprises in half an hour, but for now we need to grab a bite to eat!”

Rubbing his hands together and grinning from ear to ear, Bud followed as they strode to a waiting jeep and drove off.

On schedule and with warm roast beef sandwiches inside, they sat in the control seats of the giant jet leaving the island behind them a few minutes later.

Tom was so happy about the success that he radioed to Enterprises and asked the operator to patch him to a land line and to call Bashalli.

“Oh, Thomas,” she said sounding a little surprised that he was calling. Her plans were to meet him at Enterprises, but that wasn’t supposed to be for more than an hour. “Is something not right?” Now, her voice took on a worried tone.

“No, Bash. I just wanted to call to tell you that we have left Fearing and will touch down ten minutes ahead of schedule, and when the door opens two very ashamed young men will climb out hoping upon hope that you and my sister will greet us with open arms. And with more than a little forgiveness than we deserve.”

There was a moment of silence on the line and Tom was about to ask if she had heard him

when he detected the sound of light sniffing. “Of course we will be there. How could you ever believe we would not be? You know that I... that I love you, Tom Swift. Do you not?”

“Sure I do, Bash, but the way you and Sandy fussed the other week about looking for other guys, I wasn’t any too certain where we really stood.”

She sniffled again and then told him, “Just as long as you come home and we spend the evening together, with or without Budworth and Sandra’s company, I will never mention anything cruel like that again.”

When they touched down and stepped onto the tarmac, both young men suddenly had their arms full of soft and wonderfully scented young women and were receiving kisses as if they had just come back from a ‘round the universe exploration.

\* \* \*

Space always looked so empty and foreboding. Even in most sections of the asteroid belt objects could be far apart. Hundred of thousands of miles. Even millions. At certain angles it was possible to not see anything in your vicinity at all. But what Harlan could see out of the port window, and the many more chunks of rock showing up on the RADAR screen, made him nervous.

The *Genghis Khan* was hours away, shadowing them on the sun side of the asteroid belt. The *Selectertron* reader was picking out large iron-laden rocks with a good mix of other elements that were moving in the same relative direction and speed. With each passing minute more and more green dots appeared on the screen, superimposed over each identified contact.

With Emperor Shangri-La at the controls of the ship—and Harlan close by in the deactivated copilot’s station—he searched for and found a formation of two asteroids that he liked. He maneuvered the *Rock Hound* in between them—it was the same ship that had spirited Harlan away from the Earth—and uncoupled the repelatron umbrella from the aft portion of the ship. Jets firing in small bursts, he moved the ship slightly forward and then rotated the vessel one hundred and eighty degrees so he could clamp the folded shield to the nose of the ship with the closed umbrella facing rearward.

“I don’t suppose you will tell me how you managed to get hold of repelatron technology,” Harlan said bitterly. There were several things that Enterprises and the Swifts did not share with the world except in controlled products—and repelatrons powerful enough for space use were near the top of the list.

The man next to him sneered. “Your security is a joke!” he declared and smiled to himself when he saw that barb hit home with Ames. “I will tell you that in this case we managed to successfully purchase one of your jet engines that use your precious repelatrons inside. It was a simple matter to reverse engineer them. In fact, simple to improve them. Mine provide almost nine percent greater power, size for size. But, enough talk. It is time for action.”

Powering up the shield’s motor units he then extended the length of the umbrella without opening it. It slowly moved out until it reached the end of the ship and stopped. The end tightly sealed around a rear-clamping ring. It was now a second skin over the electromagnetic coils of the ship.

Mega-volt capacitors were powered up and made ready for several quick, high-powered discharges. The Emperor rechecked the speed and location of the *Rock Hound* and set a timer to fire off nose and stern-end maneuvering jets.

“*Genghis Khan*,” the radioman reported to the mother ship at the emperor’s signal, “we are about to shut down and start EMP sequence. *Rock Hound* powering down.”

A total power shut down of the ship was done to protect the electronics. The fully charged capacitors were discharged into the magnetic coils in fast, short pulses around the ship’s outer skin. Harlan had seen these giant canisters and had taken some satisfaction that they were

nowhere as capable as ones Tom had designed a year earlier.

The resulting magnetic waves were trapped between the outer hull and the tomasite material of the umbrella that would not transmit electromagnetic waves. Instead, they started to bounce back and forth between the two ends of the ship building up into an equivalent force of an atomic bomb's electromagnetic pulse.

It was, as near as Ames could tell, like the build-up of light energies in certain lasers.

The pulse timer used modern vacuum tube equivalents and was not affected by the magnetic force currently building up. While complex computer systems were not practical applications for vacuum tubes, simple timers and jet ignition devices were quite feasible.

After twenty seconds both ends of the shield opened releasing the laser-like magnetic rays onto both asteroids.

In an instant the iron in the asteroids turned into super mono-pole magnets. One asteroid became completely positive while the other became negative. They were so highly charged that the rocks rushed toward each other in ever increasing show of speed. Through this simple process nature had been persuaded to give up one of its secrets—magnets with a single magnetic pole *were* possible! Such magnetic forces were totally unstable but they lasted long enough to do the job that was needed to pull the asteroids toward each other at a tremendous rate.

The side jets fired on schedule and the *Rock Hound* was accelerated sideways out of the path of the income rocks. Within seconds they smashed into each other, crushing and ripping the asteroids wide open, revealing each one's treasures for easy mining.

## Chapter Eighteen: Incoming

Over the next two days Tom made a few improvements to the *Gabby Hayes*, but he was overall satisfied with its performance. At least, he told himself as he sealed the fuselage up at the end of the day, in testing. The real test would be when it was required to perform far out in space and with something much larger than the *Challenger*.

His TeleVoc beeped inside his head. Tapping the pin on his collar, he answered, “Tom here.”

“Tom, it’s dad. I need you to get back to our office. We have a problem!”

Tom dropped the octagonal screwdriver he had been using on the workbench and raced out of the Barn where he had been working on the Mule. “On my way,” he said. “Can you give me anything before I get there?”

After a short pause, his father’s voice came into his head, “I’d rather speak to you in person.”

Two minutes later and a little out of breath, Tom jumped into the elevator in the Administration building and pressed the button to go up. He took several deep breaths before the door opened again and he jogged out and onto the ride/walk belt that ran down the middle of the wide corridor.

In a few seconds he hopped off and walked into the large office.

“I’m here,” he announced a little needlessly as his father was facing the door awaiting his arrival.

“Have a seat,” Damon told him. As Tom settled into one of the overstuffed leather chairs, his father continued. “Ken radioed down that there is some sort of activity going on in the asteroid belt. He aimed the space prober out there and spotted a strange spaceship.”

Tom’s jaw went slack. “What? Where?” he asked. “We’ve had no reports and anything taking off from Earth.”

His father nodded. “That’s right, except that you forget the spaceship that launched weeks ago from the Philippines. Now, before you say or ask anything, let me tell you that Ken is convinced that part of what they are seeing out there seems to be very much like what was reported heading out with, what we hope and pray, included Harlan Ames in it. Take a look at the video feed.”

He picked up the remote and pointed it at the large flat screen on the wall. Instantly the live video coming down from the Outpost came up. In the middle of the screen was a strange vehicle, a little too bulky looking at first; they soon could see that it was actually two objects in very close proximity.

“My god, Dad. You’re right. That right end does look like the ship that was launched by that rail gun system. The other is an optical illusion. My bet is that it is at least a million miles closer to us. And very large. What are they doing out there?”

Neither spoke for a few moments as they watched the screen. Nothing much appeared to be happening out there at the moment. Then, as they watched in both fascination and a little horror, something opened up from one end of the assembly of ships. Seconds later an asteroid nearby could be seen one moment and then was just gone the next. Even with the amazing capabilities of the Megascopé space prober, it had been unable to spot that two asteroids had simply been shattered into small pieces.

“Whatever it is can’t be good, Son,” Mr. Swift said. “I hate to even suggest—”

“You don’t have to, Dad. I’m already on the way!” Tom declared as he launched himself up from the chair. “If you can ask Fearing to shuttle the *Challenger* over here—fully equipped with the new solar collector array, please—then I’ll get the Mule ready and the crew assembled.”

With that, and not waiting for a response from his father, Tom ran out of the office.

One hour later the giant ship took off with the *Gabby Hayes* racing along next to it. As they reached a distance of about fifteen thousand miles above Earth, both ships unfurled their solar collectors so that they might accelerate at top speed for a very fast trip to the asteroids.

\* \* \*

In the five minutes it took the *Rock Hound* to power up again, the mining crew made ready its equipment and hauling nets. The Emperor reversed the umbrella to its original position, and the ship's crew could now see the destruction that had been caused. Within minutes they were out in specially hardened armored spacesuits that were more like mini articulate mining tanks than spacesuits.

"*Rock Hound*," an excited voice came over the radio as it came back on line, "I have an urgent communication from Empress Shangri-La. Please respond immediately!"

Before the Emperor keyed the radio, he called out to the rest of the ship to hold operations. "Report, *Genghis Khan*!" was all he said.

"Message from Empress Shangri-La is as follow: 'Tom Swift has left Earth orbit and projected trajectory is for an intercept with the comet. He has a new vessel traveling with him. I will pursue him in the *Samurai Warrior* and stop him. Please come with all available haste.' End of message, Emperor" and the radio fell silent.

The inner rage he suddenly felt turned his face red and his right hand started to shake. He made a fist of it and slammed it down onto the control board. Grinding his teeth for a second he spoke with an even measured voice into the radio.

"*Genghis Khan*, transmit with top priority—Empress Shangri-La, do not pursue, repeat, do not pursue. Will handle it from *Genghis Khan*. *Samurai Warrior* has not been long ranged tested. Stand down. End of message.

"Keep repeating that communication until you receive a positive reply. Contact me when you do. Standby to receive pick up coordinates with the *Rock Hound*. Start heading toward us now! Make top speed."

"Emperor Shangri-La, this is Commander Andrei. Do you really want us to enter the asteroid belt to pick you up at all available speed. We will not be able to maneuver around all the space debris if we do. We will take hits and damage!"

"Commander Andrei, *you will do it*," hissed the Emperor, "or when I do get to you I will personally nail your hide to the outside of the ship. If you still don't have the guts to do this then get someone that will and you better not be on board when I get there. End communication." Once more he pounded the control board.

Flicking on the ship's intercom he started to give orders. "Emperor Shangri-La to all personal, you have two minutes to come back onboard and strip down. Leave all equipment and dump all that is in the way. Two minutes, that is all, out!"

Harlan was in shock. There was no way that all the men could make it back on board in time. "Emperor," Harlan started to address the Emperor who was turning on power systems and running a course trajectory on the navigation computer for a rendezvous with the *Genghis Khan*.

"Don't interrupt me, Ames. You know that my sister is out there and if anything happens to her you will all pay. Your Tom Swift will be the first and you will be the last!" he spat out and at the same time activated the ankle and wrist bracelets fob that he had on his person.

Immediately Harlan's wrist and ankles were yanked together and an electrical shock jolted through his body, rendering him unconscious.

\* \* \*

This time as the *Challenger* raced past the Moon, Bud made certain that he trained one of their cameras back toward the dark surface.

“I knew it, I knew it, I knew it!” he sang out. “Skipper, take a look at that!” He was pointing at the screen where the lights—not turned off for some reason—of the surface installations for the lunar base shone out like dozens of beacons. “What the heck do you think that is?”

Tom could barely catch his breath. “That,” he managed to get out, “must be the base of the people who built that mountain-top castle and the spaceship in the Philippines. And that, I’m hoping, is where we will come back and rescue Harlan from!”

“Why not now?” Bud asked.

“If we can see them, they can probably see us. No. I believe that any rescue mission will have to sneak up from the front side of the Moon and then quickly strike without warning. For now, we need to get out to those asteroids and find out what’s going on.”

Onward the dual team of the *Challenger* and the *Gabby Hayes* raced, picking up speed with each passing minute. At nearly three-G acceleration they were not yet traveling at normal top speed, but they would reach that in about a half hour and then go beyond it. And while the forces had no effect on the unmanned Mule, those on the larger ship were strapped into their couches where a gel-filled system of tubes helped them manage the sensation of having something their own weight sitting right on top of them. They would remain under acceleration for about four hours and then coast for a half hour to let everyone recover. In this manner, they would reach the midpoint of their journey as quickly as possible and then begin the slowdown.

Tom was thankful he had insisted that Chow remain behind. The stress might have killed him.

He considered letting the Mule continue on at high acceleration and then perform an even higher deceleration, but decided against it. He didn’t want whoever—or whatever—it was out there to have time to attack the defenseless Mule.

\* \* \*

“Brother dear,” the slightly worried voice of Empress Shangri-La came over the narrow beam communication unit in the *Genghis Khan*. The giant spaceship was racing toward an unexpected rendezvous with Tom Swift. “I know you won’t hear this for another five minutes, but I am in trouble. You may have noticed this by now, and I do hope you’ll forgive my slight miscalculations on my flight trajectory, but in my haste to refine my original course I have made things worst. You see I have used up all my Helium-3 for the reactor and the repelatron technology you so cleverly stole is now useless. Emergency power will be fine for days and days, but I am stuck in the middle of nowhere. So, please be a dear and pick me up. Sorry I used your shiny new ship without checking the gas gauge. Oops! End transmission.”

Ten minutes later the return message came: “Sister, I imagine that Ferrari of yours is still on the mountain side road were you left it after running out of gas in Italy. You looked quite amusing perched on on that donkey in high heels and your mink stole, with that ten-year-old boy leading you into the village. You paid him ten lira, an incredible insult. So, what will you pay me? I will pick you up after I take care of our little friend. Hope you have a deck of cards. End transmission.”

\* \* \*

Several days later after Tom had flipped the *Challenger’s* repelatrons into position so that they could begin the slow down process, a call came through.

“Outpost to *Challenger*, I just received news from our friends at NASA. An old Chinese satellite in orbit around the Moon picked up a scrambled tight beam signal that skimmed by at

just a half a degree above the Moon's disc. It was also picked up by the folks down in Australia who happened to be facing that way at that moment. It was aimed at the Moon's back side and came from out beyond you folks, give or take a few degrees. The senders must have thought that the Moon was higher in the sky than it was. When we traced it back to its origin it was at another asteroid collision site that was just starting by the looks of it. An hour later the comet started to move. It appears to have broken free of the gravity field of what it was circling and is heading out of the asteroid belt.

"Do we have any indication of a course yet?" Tom asked.

"Yeah. It doesn't look good. Seems to be making a beeline towards Earth. It may be a coincidence and we also now know from our own observation that something like a tightly packed debris field of smaller rocky bits is between the comet and us. It's pretty fuzzy. Not certain exactly what that orbital bit of flotsam is, but somehow it's leading the comet. I thought you would like to know. Ken out."

A few moments later Tom's long range RADAR showed to truth of Ken's statement. The comet was plainly visible simply using Tom's SuperSight system, a combination of ultra-high definition camera and computer enhancement. But it wasn't until they turned their own small Megascoppe toward the incoming object that they could see something in front. Even then it was impossible to determine what it was and at what distance. However, like a ghost from the past, it appeared vaguely dumbbell-shaped.

What the RADAR, space prober and SuperSight could not detect were the series of pulses coming from the small object that pulled the comet toward it or how such a small item could achieve such a feat.

"Bud, are you sure that there is no other vessel out there? I'm seeing gravity fluctuation that say there is." Tom looked up at Bud from the main control board. In an attempt to get his screen to change and match Tom's readings he hit the side panel of the RADAR unit with the palm of his hand. It made no change.

"Sorry, skipper, no dice. Still not seeing anything. Maybe it has a tomasite coating like the *Challenger* and our other ships?"

"If that's the case Bud, we should cut our outside lights and the RADAR. Go to SuperSight visuals only. Rig for stealth running. I'm changing our flight course and will be approaching the comet from another angle."

"Oh!" was all Bud could say, as he cocked his head and looked at his friend.

Keying his headset, Tom announced to the rest of the crew, "Strap in. We're going to do some sharp maneuvers followed by an emergency four-G deceleration so we won't shoot past the incoming comet. One minute warning everyone. Strap in and get comfortable because we're all in for about five hours of major discomfort."

It was a rough five hours for everyone, but they all came through it. Most had gotten up and were stretching now. During the time the ships had changed course so both could come around in a sweeping maneuver to match speed with the comet and whatever it was in front.

Scanning his instruments, the inventor stated to Bud, "I do believe that we have visitors coming our way." He again turned on the ship's public address system. "All personal to your stations and please put on your spacesuits. I am certain that this isn't a natural phenomenon. It must be the precursor to an attack by the same people who kidnapped Harlan. The time has come to settle with the Masters and to stop this run away comet."

As they watched, a large chunk of a former asteroid came tumbling toward them. "False alarm, guys. It's just a chunk of rock," Tom announced.

Minutes later the two ships were nearing the point where they would start back toward the

Sun several thousand miles in front of the comet.

He swiveled the control panel for the Mule over to his station and sent out the command for the robot ship to perform a self check. As the crew made ready, Bud leaned over to his friend and clasped his hand on Tom's forearm.

"Tom, I've done mock combat flights with the Air Force, and have the most operating experience with old *Gabby* out there. Are you sure you don't want me to man the Mule for this?"

"Bud, I know the operation of the new repelatron and the solar array the best, and you know the *Challenger's* abilities practically better than I do, so let's stick to the plan and finish this up. Too much is at stake for us to start double guessing what we need to do."

The flyer nodded his understanding and when Hank and Red Jones—one of the other Swift pilots on board for the lengthy flight—came over to man the controls, both boys went to get changed into their suits.

Before Tom returned to the control room he launched a small reconnaissance satellite that was programmed to go into a stationary position way "above" the comet and stay there, no matter which way the comet moved. Once in place it started spinning to stabilize itself.

\* \* \*

"Emperor, the Swift's ship has launched a probe of some type; do you want me to fire upon it?"

When the previous commander had failed to get the ship under way according to the Emperor's wishes—he had hesitated to give more men time to get back to the ship—the Emperor had casually pulled a knife from within his suit and stabbed the man in the chest. More men had been able to come aboard while the old captain's body had been ejected into space. Not all of them, but a number who realized how little value the mad man in command felt they had.

The new captain was sweating under the pressure of his sudden rise to command.

"No, keep track of it and ready a missile to take it out if it proves necessary. I do not want to give away our position as yet. When we reach the back side of the comet let me know and I will then disengage the *Rock Hound* and we will proceed with our coordinated attack."

\* \* \*

The duo of *Challenger* and *Gabby Hayes* had finally come about and were picking up speed at just the right rate to match the comet well before they reached the orbit of Mars.

Because Tom had slowed them down and turned around before the comet passed they could not see the spaceship now approaching from behind, and so they did not know that the Emperor Shangri-La and his crew—including the imprisoned Harlan Ames—were actually behind and effectively steering the comet.

However, this also played to his advantage as the Emperor could not directly see the *Challenger* or the Mule, and so his options were limited to studying the probe that was at an angle allowing direct observation. At first he had been worried that the probe would detect the *Genghis Kahn* and the *Rock Hound*, but soon realized that all of its sensors were turned toward the comet and the leading mystery object now providing most of the necessary pull to keep the comet on its intended path.

"What are we going to do now, skipper?" Bud asked. Hank, sitting in the next seat over echoed the question.

"For now I need to study that thing. My gauges are going haywire whenever I point the sensors at that clump of stuff out in front of the comet."

"What could it be?" Hank inquired.



“Well,” Tom said giving a rueful chuckle. “You know how we traveled out to the comet and mined up a good supply of VaritaStone?” Those within earshot all nodded. Most had been on that mission. “Well, somehow, someone seems to have done the same thing and has managed to clump it together and figured out how to aim it. Probably magnetically, or at least that’s what I’d do. Anyway, I believe that is a ball of almost pure VaritaStone leading the comet. Yanking it along if you will. Until we get a visual, that’s my theory.”

“But, why, Tom?” Red asked.

“Well, Red, and everyone else. We don’t know a lot about our enemy, and I am considering them to be a very dangerous enemy, but from what Bud spotted on the back side of the Moon, and what we were able to learn from the things they left behind in the Philippines, I’d say they must have a self-sustaining colony on the Moon and intend on braking all ties with the Earth. The hard way! I believe they intend to crash that comet into the Earth!”

There was a stunned silence in the control room. Nobody seemed to be breathing. It may have been in the backs of their minds, but now that Tom had stated it out loud, it hit them like a ton of bricks.

A quiet voice from next to the inventor simply stated, “Then, we have to stop them.”

Turning his head, Tom saw the grim smile on Bud’s face. He nodded his agreement.

“Right, and that’s going to mean that we need to disable to remove that VaritaStone tug they have out there. I wish we had more time to study it, though, I’d love to know how it is remaining out in front and exerting the pull, without simply crashing backwards into the larger comet.” This led to several minutes of discussion about possibilities, none of which made any sense.

“Fine. So we don’t know and may never know. Let’s concentrate on what it might take to get rid of it,” Tom declared with determination.

\* \* \*

Harlan could tell that something was about to happen. Even in his locked room in the *Genghis Khan* he could hear the different sounds and feel the maneuvering of the ship.

Now or never, he thought to himself as he reached to take off his left shoe. But the buzzing of the electronic lock stopped him short. The door open and the frightened face of one of the several miners that survived the hasty asteroid retreat came in with a Taser in his hand.

Harlan raised his hands up over his head and waited. The man took a hasty look outside of the door and turned back to Harlan, motioning for him to put his arms down.

“If I help you get out of this cabin, will you save us and let us go free?” he hastily asked in a voice shaking with the fear he obviously felt. “I... we that is, feel that the Emperor has gone totally mad!” With that said three other men came into the room and the man with the Taser handed it over to Harlan.

“How many will follow me?” Harlan asked in near disbelief as he checked to see if the weapon was powered. He feared a trick and a trap, but the gauge showed a full charge. He stepped out of the room into the corridor filled with a dozen or so people. They were totally silent and the first man stepped forward.

“We cannot help you against our own people. But we won’t stop you against the Emperor. He has gone to the *Rock Hound* and plans to use it and the *Genghis Khan* to attack your Tom Swift who is now as near the comet as we are.”

“If you won’t help me, then what do you expect me to do?” Harlan was confused.

“We can get you onboard the *Rock Hound* before he launches and then it is up to you to stop him. We will leave this area with the *Genghis Khan* and go back to the Moon base and our families to wait out the final outcome. If we must die, it will be with them.”

“What of the Empress?” he asked.

“That she-devil is on her own. She cannot interfere. Her ship is stranded in space without power. To us she can rot in space forever, for what she has done to our lives is unforgivable!”

## Chapter Nineteen: The Space Battering Ram

“We are receiving indications of severe laser distortions from the satellite,” Hank called out looking at the auxiliary screen at the RADAR station next to Bud. “Switching imagine signal. Both you and Tom should have it on your monitors.” The screens blinked and were replaced with a new one. The comet was in the center of the screen, the *Challenger* and the Mule were in the bottom left corner moving away from each other and a large cigar-shaped object trailing behind the comet in relationship to the Swift’s ships.

The space object leading the comet was not visible on the monitor. Tom enlarged the range of his laser-based RADAR by over a thousand miles and the object came back within viewing range. His instruments flicked as an intense magnetic beam swung past the Mule and into the comet. The comet’s speed increased significantly and Tom had to adjust their own speeds accordingly.

“What was that?” Bud called out to everyone.

Tom answered. “It’s an unheard off mono-magnetic wave pulse, if that helps you any. Catch you up on that theory later. At least I now know what is powering and moving the comet. It isn’t VaritaStone after all. I’m hoping that’s a good thing! It also explains why it got through our tomasite layer. Just think of it as a magnetic laser instead of one based on light, but with just a single pole of magnetism. Regular magnetic waves won’t penetrate, but this mono-pole stuff can. Guess I’ve got a lot of work to do on the basic tomasite formula! Getting the Mule in visual range of that object. Bud, please stand by for it.”

As Tom maneuvered closer to the object it grew in size on their monitors. It soon resolved itself from its small dumbbell shape; it turned out to be nearly two large freight cars in size and shape connected by a snake that appeared to have swallowed a basketball. The far ends of each freight car spouted a satellite dish antenna. Whistling to himself, Tom had not previously guessed that it would be so big an object. Something in its magnetic nature must have obscured previous measurements and observations.

“I suppose this is that strange object people kept seeing out here.”

As he circled the Mule to the far side of it the small ship was suddenly pushed aside by an unseen hand. Taken by total surprise by this Tom regained control and had the *Gabby Hayes* approach again... and it was pushed aside again.

“Bud, this thing has its own protective screen. I’m registering it as a repelatron field, but it doesn’t quite match our standard frequency. It resembles what we found in the Cordillera Mountains, so this is definitely from the Masters. Stand by to render assistance with our own array if I need it. I’m going to give it a push of my own.”

Tom pressed the button to unfurl the Mule’s solar array. Within seconds it had expanded out and his instruments showed a high level of electricity being produced to augment the onboard power pod.

The two repelatrons on the stubby wings of the Mule rotated forward and aimed at the “freight cars.” He already had set the rear repelatrons to push back against the distant Earth, and they showed that connection had been made. Tom powered them all up and released their combined energy.

He *had* expected to see the odd assembly move slightly. He had *not* expected the *Gabby Hayes* to shoot backwards nearly a mile in spite of the compensating recoil force of its own. The twin freight cars were not affected at all.

Not giving up Tom tried the new Attractatron beam. It locked onto the device without problem. Giving his friend a grim grin, Tom pressed the button to activate the beam. It was to no avail, other than this time the Mule was not flung backwards but remained locked close to the

“freight cars.”

“Flyboy, I think I need you to give me some help from *Challenger’s* repelatrons,” Tom said out of the side of his mouth to his friend who was already moving the big ship forward.

\* \* \*

“Emperor, release now!” came the command over the radio. Harlan heard it throughout the *Rock Hound*. He crouched in the rear control hatchway to the umbrella couplings, staring at the maze of wiring that went in and out of the control unit. There were four separate grappling clamps and associated controls for both the front and back of the vessel to lock down the umbrella for magnetic confinement. He figured if he put that system out of commission the device could not be used as a weapon against Tom.

He was unexpectedly knocked off his feet as the ship was ejected out of the *Genghis Khan*.

“I will be entering comet’s photosphere in five minutes... reversing umbrella shield, now,” reported the Emperor to the mother ship, a transmission that also broadcast on the ship’s intercom system. “Commence attack run on the *Challenger* in twelve minutes.”

By the time Harlan regained his feet, the umbrella coupling were disengaged and once more the ship was moving in sharp jolts to reverse its position with the umbrella. A brief thought ran through the Security man’s mind: “Great evil genius but lousy space pilot!”

Almost in a panic to do something, Harlan grabbed a bunch of wires with both hand and—bracing his feet against the wall—he pulled with all his might. With an electrical tingle that bit into his hands and a spray of sparks the wires pulled away from the wall unit and alarms started to howl.

He could hear the Emperor’s screams of rage over the alarms as he made his way out of the confined space he was in. He was drifting past a maze of pumps and fuel tanks that were part of the lower section of the ship.

“I’ll find you, Ames. You can’t hide from my security cameras. You have saved no one, only delayed their deaths! And, made yours all the more painful!”

“*Rock Hound*, there has been a delay.” Harlan could hear the call come in as he continued to move forward past some oxygen tanks. It was the nervous voice of the man who had given him the Taser.

“*Genghis Khan*, cease moving off? Delay operations! *Genghis Khan*, stop! Turn about! Come back immediately and get me! *I ORDER YOU!*” The Emperor was screaming into the radio as he watched the *Genghis Khan* pick up speed and disappeared into space.

“No, Emperor. We are returning to our families. You can rot in hell!” The radio must have cut off after that.

“HARL-A-A-A-A-AN!” was the last Ames heard over the ship’s intercom system.

Ames now knew that the Emperor was on the move, seeking him out. He located and picked up a length of pipe to add to his arsenal. He just made it into the mining storage area, mostly empty except for three widely spaced armored mining suits. Emergency lights provided dim illumination in the area and lots of deep shadows fell between the empty cargo bins. The clanging of a distant door told Harlan that the Emperor was in the hold with him.

But, did the Emperor know that Harlan was there also?

\* \* \*

Tom watched over the Mule as Bud maneuvered the *Challenger* on the far side of the freight cars. “Skipper, you don’t think he used real box cars, do you?” Although covered with dust and debris, Bud could swear he could see where the wheel assemblies were cut off and where doors had been. “And what is that ball in the middle of the spindle?”

“That, flyboy, is a reactor by what I can tell by the radiation readings. Glad were behind

tomasite shielding. The thing is leaking like a sieve,” Tom said.

“Intentionally, skipper?” Arv waited to know.

Laughing, Tom replied, “Hoped so, or if this is the kind of work they’re doing out here in space no one is going to live for long! Now Bud, listen up. I don’t think that that thing can handle two types of ‘tron’ rays at the same time. So you hit the left one with all you’ve got at the far end on my say so and I’ll hit it near the connector with an Attractatron ray. The off balance of our combined rays should do something. Reposition us about a mile out just in case. I’ll give a short countdown after you’re ready.”

On zero Bud hit the top outer corner of freight car with two of the main repelatron beams and Tom did the same with the Mule’s Attractatron beam on the bulging spindle. This time the Mule was not pushed back but it started to buck back and forth.

With the *Challenger* rattling but holding its own, Bud inquired, “How long do we keep this up, skipper?”

“As long as we can, Bud. Something has to give and I hope it’s not us.” Tom fed the last of his power into the Attractatron array. He knew that the *Challenger* had more power available than he did. If this didn’t do something very soon, he would have to allow the Mule’s solar array at least three hours to recharge things.

If the Mule ran out of power now, about the only other thing Tom considered he might do was to back it off, let it recharge a bit and then slam it into the comet like a battering ram. It was something he knew would only be a last resort, but it had to be considered as a distinct possibility.

The vibrations were picking up speed and it was harder to read the visual displays. They almost did not see the start of the break-up of the spindle, it happened so fast.

The top car began to twist one way and the other car the other way. Before Tom could call out to Bud to stop his repelatrons it all came completely apart. Actually the power ball exploded, tearing the spindled open. The top freight car hurled off into space at an odd angle because of the explosion while the bottom car was pulled toward the Space Mule by the Attractatron beam.

At almost the same moment Hank called out. “Look!” and he pointed at the large screen above their stations that was showing the wide view of the comet. Some sort of ship, large and man-made, came up over the top of the comet and sped above and past them, heading sunward.

“What the—” Bud said.

“That must have been coincidental,” Tom said. “Nobody could react that quickly to our destroying their tug device. I think we’ve just seen our enemy’s ship abandoning the comet, and that ought to give us a great boost in our efforts to shove this thing out of harm’s way!”

\* \* \*

Harlan drifted cautiously past an empty cargo bin. A flash of light caught his eye from above and he shot out his arm and halted his forward motion by grabbing the edge of the bin. It caused him to rotate into the outside wall but he was now flat against the side of the container, which put him into a protected position. He only had to guard his front. He hung suspended several feet above the floor looking from side to side. There was no motion and no sound. He patted the Taser tucked into his belt.

The swish of a sword blade that passed in front of him followed by a slowly moving body was incredibly startling, but Harlan Ames had been trained as a Secret Service agent and was primed for instant action.

He swung out with his pipe in the direction of the thicker end of the blade where it thudded into something slightly giving and bounced back with a satisfying rebound. The deep exhalation and pained grunt that he heard told him even more. He pushed off the wall as hard as he could and slammed into the Emperor. The pipe went spinning away as he grabbed out.

But instead of his arms wrapping around a chest they clung to the man's legs. *Now what to do?* he thought. He had just let go of his one physical weapon for this precarious position and could not reach the Taser without letting go, something he did not wish to do.

Their spinning bodies hit the side of a discarded mining suit and Harlan slammed his head against the heavy suit and that caused him to lose his grip on the Emperor. The Emperor took advantage of this momentary loss and pushed off into a dark recess.

He took a second to look around and then shoved off toward the same front hatch the Emperor used to come into the storage area. He quickly stepped into the other side, slammed the door closed and dogged it shut and locked it. He turned around and found himself in the main electronics bay and with open ceiling hatch to the flight deck and command center above him.

Once up there he locked that's deck access hatch. He was now in command of the ship. What could he do with it in the time he had before the Emperor counterattacked?

\* \* \*

"Hank! Give me a status on both halves of that device. Where are they and what are they going to be doing in the next hour or so?"

While Sterling worked on getting Tom the information, the inventor maneuvered the Mule back to a position close to the *Challenger*. In many ways things had gone better than he had hoped and in others it looked a little disastrous. Before he let anything bother him, though, he wanted to know all the facts.

Presently, Hank scooted over to between Tom and Bud. "Looks as if the piece that was to the device's right side has begun to break up as it hurtles sunward. Unless something happens it is on a course that will see it miss Earth by about three million miles. Even at that, I calculate that there will be nothing large enough left to make it through the atmosphere."

"What about the other half?"

"That one is tumbling away almost perpendicular to our direction of travel. It didn't have a great deal of speed as it is, so it's slowing down. Eventually either we will leave it behind or the comet's own small gravity will pull it in. Not for a day at the least," he assured them.

"Unless it didn't get destroyed and somebody or some programming starts it back up," Bud added, generally the pessimistic voice in any crowd of Swift employees.

"We'll handle that if it come back," Tom stated. "For now I want to just drift here and let the Mule recover. She's down to just five percent power. We're a little better at fifty-nine percent, but both ships can use a rest."

"Speaking of which, we went into action right after that sudden braking job, so I vote for a two-hour period of shut-eye." Bud said. "I'm tuckered!"

"I'd like to keep on the alert, just in case," Tom said, "but I see no reason why half of us can't take, oh, ninety minutes and then spell the rest of us for that same time."

Everyone settled down in their couches and Tom dimmed the lights except at the control stations. Soon, Bud's snoring could be heard throughout the room.

"I hope Sandy can put up with that racket," he muttered with a grin. "She wants to marry that, so maybe I'll buy her a good pair of earplugs for a wedding present!"

When the first rest period was over, Tom checked the Mule's status and was pleased to find that charge in both the storage batteries as well as the power pod itself had risen to nearly eighty percent. He took it as a good omen as he closed his eyes.

Seconds later, he was sound asleep.

\* \* \*

Several of the instruments on the control board were blinking red but Harlan ignored them. The radio looked tempting but he left that alone as well. On the top left of the panel he found something interesting labeled:

### ***Automatic Magnetic Firing Sequencer***

It had only one power dial and switch. Satisfied, he turned it on and was rewarded by seeing the dial's needle start climbing up the numbers toward the final marking of *discharge*. By the speed it was rising he had only a couple of minute to leave the ship. He was not sure what was going to happen when it discharged without the umbrella extended, but he did not want to be on the ship to find out when it did.

He quickly made his way back to the electronic compartment and un-dogged the hatch. Now came the risky part, He took a look around the room and found the emergency light switches... and turned them off. The room was not completely dark but it was better than before. Taking a deep breath he swung the hatch open and launched himself forward into the darkness. From memory he knew that it was a straight shot the fifty feet back before he would reach the rear hatch. Hopefully he could turn around in mid-flight without changing course and use his feet to stop.

He had only gone a few yards when he struck something with his right shoulder. Hard. Whatever it was gave way into his direction of travel. By luck he had tackled the Emperor and knocked the wind out of him. He hung on to him as he started to drift past one of the empty mining suits. Making a snap decision he tugged the body toward himself, spun as best he could and then flung the Emperor away from him in the opposite direction of the mining suit. Just before he heard the sounds of the Emperor crashing into what was probably a rack of equipment he found himself moving in the opposite direction, albeit at a much slower rate. He was rewarded by making a direct hit into the front of the armored mining suit.

Grabbing what hand holds he could he make his way up to the open top of the suit and push his way in feet first. As he entered the hard body suit a sensor detected him and turned on a ring of LEDs under the neck ring. Looking down he found the saddle seat with ease. He was amazed by how much the interior look like one of Tom's underwater Fat Man diving devices. After finding the hatch-closing toggle with ease it only took Harlan a few seconds to get the suit operational.

Instead of water jets for mobility it was equipped with small air jets that scooted the suit along in space. The pressure gauge showed a full tank—whatever *that* might mean—and he slipped his arms and legs into the operator's gloves and leggings. A second later he had the suit un-bracket itself and he moved forward. The starboard side exit door from the cargo hold was right in front of him and he headed to it.

Wasting no time he hit the emergency door release—he could barely hear a horn sounding outside—and a ten second countdown above the door started with a warning of immediate decompression. He pressed the suit up against the hatch knowing it would be the safest position for him.

When the hatch blew outward seconds later, Harlan's suit was forced out with all the air.

He was flung into the darkness of space as the explosive decompression gave the ship a small shove, pushing ever so lightly toward the comet's photosphere and the gases it was made of.

He did not want to be in the vicinity when they collided, so Harlan turned the suit and sent it hurrying away in the opposite direction.

The vessel disappeared from Harlan's sight, and he was left alone to drift in space.

\* \* \*

Tom had turned away from the big screen and was concentrating on bringing the *Gabby Hayes* back up into operational mode. There was a short, almost strangled shout from Hank. Tom had just enough time to take a look back up at the monitor when it happened.

The comet burst into an every expanding ball of light and all sizes and shapes of ice and rock debris.

“What happened?” Tom called out as the *Challenger* rocked in the battering the ship was receiving from the disintegrating comet.

“Tom, you won’t believe it,” Hank jumped up from his seat. “But the freight car that didn’t break up took a sudden turn and accelerated at extremely high speed back in. I didn’t have time to call out before our satellite spotted a smaller spaceship, I guess one left by that ‘Master’s’ giant spacecraft, accelerating in from the back side. I thought maybe it might be moving off and headed toward Earth.”

“The little ship was visible for about five seconds, “Arv took over telling the story, “and then a small object was ejected from it and the ship raced into the comet’s photosphere. Well, that explosion happened a few tenths of a second afterwards.”

“Did the two objects collide?” Tom asked. “Did they actually hit the comet?”

“I suppose they might have, but once they both got into the photosphere it was just a matter of a split second before the big boom. If they hit each other in there and caused the destruction of the comet, one or both must have been packing a heck of a lot of explosive power.”

Still slightly stunned at the sudden turn of events, Tom finally asked, “Any radiation?”

“A little, but a lot of that probably got left behind when that power bulge gave way.”

“And Tom,” Bud butted in as he studied his instruments, “that isn’t the worst of it. It was only the outer shell of the comet that was blown away. Perhaps ten percent. Most of the heavier part of the comet is still heading right toward Earth!”



## Chapter Twenty: When Push Comes to Shove...

As they watched, thousands of chunks of what appeared to be the icy crust of the comet flew off in all directions. A RADAR check showed that most were small—the largest perhaps the size of a subcompact car—and had sufficient velocity to keep moving out of the comet's gravitational field. They would all soon be just so much random space debris and no threat to any planet.

"Status check," Tom called out. "All stations report. I'll lead. The Mule is showing one hundred percent functionality and no damage. None of the debris hit it."

One by one the reports came in.

"Some damage to the ship's solar array, skipper. We have about fifty holes of varying sizes. Power output down to forty percent of max expected at this distance to the sun."

"Repelatron arrays report full function."

"Ship took hundreds of small impacts but no hull breach. Camera five hit and out of commission. Camera two shows the rail outside the hangar got ripped part way off."

"One comms antenna gone. Low-gain only. Standard high-gain on line and functioning normally. All other communications on line."

"Space probe outer sensor cracked. Don't count on any long-range pictures until we get back home. SuperSight seems normal."

"Chow is gonna get really fussy, skipper. His galley is a mess. Cold storage door is wrenched ajar and some big cans made a nasty dent in his cook top." In spite of the seriousness of the situation, this caused a ripple of laughter to run throughout the ship.

"Okay, everyone. Here's what we have to do," Tom said once all stations had reported. "First, I want a running intercept course-and-speed plotted to get us within five hundred feet of what's left of the comet. Next, haul in the solar array. If we have any spare squares on board I want everybody not involved in flight ops to lend a hand. If nothing else, cannibalize everything and build the largest array you can from what's left and working."

Tom was now thankful that he had heeded his father's advice and made this latest version of the array modular. Each section was fifty-by-fifty feet and attached to surrounding sheets with just four power connectors. The actual edges held to one another by a micro loop-and-hook system that was barely one millimeter wide and half that thick.

He hoped that at least three-quarters of the panel sheets could still be used to give him the power he knew was going to be necessary if they were to move that comet.

While the pair of ships got ready to race along to catch up with the comet, Tom took the time to send a call out to his father. After apprising the older inventor of the most recent events he was shocked to hear two pieces of news.

"Son. Harlan is alive and it seems that he is out there where you are. We received a weak signal from him just five minutes ago. He says to look for an asteroid mining suit coming your way. He estimates he will be within RADAR range of you in about ten minutes."

"That great!" Tom practically shouted into the microphone. "Wow! Hang on a second, Dad." He passed on the information and told everyone to be alert. "He might be coming in fast so be prepared to back away and match his speed. Red? Get on the frequency I've just sent to your station and see if you can raise him. Dad? I'm back. What was the other thing?"

"I'm sure you recall the brouhaha a few months back when we had the first 'asteroid crashing into the Earth' scare all over the news?"

Tom radioed back that he did, indeed, remember that.

“Well, the word got out that the comet has broken away from the asteroid belt and is coming to Earth. There is some panic going on and a lot of finger pointing. One faction says it’s a big plot to subjugate third world countries. Some accuse Enterprises of having a hand in this... as usual! Another insists it is we devil dog Americans. Yet another is proclaiming that this is god or several gods getting back at us for who knows what. About the only faction not chiming in is the Brussels Sprouts Advisory Board with ‘If you only ate more sprouts this would not be happening!’ It’s both laughable and a bit scary. Fortunately for us in Shopton, it is mostly confined to large cities for now. Just be certain to pull this one out of your hat, Son. I do not want to validate the scare mongers!”

“Will do, Dad. Love to Bash, mom and Sandy. Oh, and Bud is waiving his arms all around. I think he would like you to give his kind regards to my sister.”

As he was signing off, Red Jones called out. “Got Harlan, Skipper. You are right. He’s coming in hot and didn’t leave himself enough fuel or whatever for a braking maneuver. He’ll reach us in eight minutes.”

Tom pondered what to do. They could obviously begin moving back toward Earth, almost matching his speed. That would do two good things: let them “catch” Harlan’s suit and get them on track for the comet. But, Tom had an inspiration.

“Bud. Take the controls. You get us heading for the comet on the course Hank can provide and I’m going to get *Gabby Hayes* to go bring Harlan in. Red? Help me on this.”

As the *Challenger* began to move, so did the Mule. Tom made a quick request for Bud to take them about a half mile to the side while he maneuvered the Mule directly into the path of the incoming man. Because they were speeding up, the eight minutes turned out to be almost an hour, but finally they had a visual on their missing Security man. Radio contact was now strong and immediate, so Tom explained what was about to happen.

“Fine, skipper. Just get that donkey under me and I’ll clamp these leg on real tight!”

Tom laughed. “Not too tight, Harlan. We need her fully functional to go after that comet.”

Two minutes later man and machine became one. “Nice catch, Tom,” Harlan radioed. “Now, get me inside before my bladder bursts!”

With Red volunteering to man the controls, everyone went down to the hangar to greet their long-lost friend. Once the outer door closed and the compartment was flooded with air, Harlan hit the switch and the top of the suit popped back allowing him to climb out. Tom was first to shake his hand and to give him a hug.

“Not too tight, skipper,” Harlan whispered. “I wasn’t kidding about the bladder.”

Seven minutes later, and now changed into an Enterprises jumpsuit, Harlan Ames strode into the control room to a round of applause and cheers from everyone on board. He acknowledged the ovation and shouts of welcome but soon used his hands to ask for quiet.

“Listen. There are a lot of stories I need to tell, but that has to wait. We’ve got a comet to catch. Okay?”

With that, everybody returned to their stations and the chase was on.

\* \* \*

“Hello? Is there anyone out there?” She had been sending out radio calls for more than a week, none of which had been answered. If her detestable brother wasn’t in such a snit, he ought to answer her. After all, they were destined to rule together... weren’t they?

She tried again, her voice like a scared little girl’s.

“Hello? Mayday? This is Empress, Shang— I mean this is Eloise Carver. I am in a ship somewhere beyond the Moon and have no reactor power any more. Life support is fine for now, but I really want to have someone come get me. Mayday? Please?”

\* \* \*

A day later the *Challenger* and *Gabby Hayes* crossed the path of Mars, a planet currently about one third of an orbit away. They had caught up to the comet hours earlier but had been biding their time as Tom assessed the situation.

This close, everybody could see the slight pulsating bulge that seemed to be moving around inside of the comet. It generally remained to the side of the comet facing away from the line of travel, but when it moved forward it presented an eerie sight, like a wild animal moving around inside of a bag, trying to get out.

Or worse, as Bud helpfully pointed out, like the infant being in the old movie *Alien* before it burst from the abdomen of one of the astronauts.

“Thanks for that image, Bud,” Arv Hanson told him with a slightly green look on his face. “Couldn’t you have waited until we were all eating for that?” he added sarcastically.

The time arrived the following day when Tom said he was ready.

“We are going in. Our solar array is now repaired and we have topped off our power. The Mule is running fine and with full power available. So, we’ll remain safely behind everything while I maneuver the Mule into position just to this side of the comet. The plan is to grab hold of it. Once we are sure we have a good grip I’ll use the *Challenger*’s repelatron to give everything a little spin so the Mule can lock onto Earth. After that, it ought to be a matter of giving everything a steady twist and tossing the comet to one side. Remember. At this distance even a one-degree movement off its present course will mean a distance off collision course of at least three hundred fifty thousand miles. I’d like to make that at least a million or more. Let’s go!”

Since Tom had not managed to complete the autonomous programming for *Gabby Hayes* before they headed out he again took the command seat and controls for the Mule. Both ships were standing off almost five miles from the comet, so Tom’s first order of business was to get the small ship to within about three hundred feet of the target. This was accomplished six minutes later.

He knew it was time to extend the Attractatron array, so he pressed the appropriate button on his panel. As they all watched the giant array pushed out and spread open like a metal flower and pulsed the first waves of energy toward the onrushing object. In seconds Tom’s board indicated the composition of the surface. It was mostly nickel, iron and bauxite. He typed in the commands to use those for the repelatron part of the array.

A green light told the story seconds later. “Got it!” he cried out. Carefully, he activated the Attractatron and watched as the system balanced out, with the Mule finally coming to a solid grip and holding position a few seconds later.

“Okay. Hank? Aim our upper repelatron at the left side of the comet and give it a one-second nudge. I want to see how it reacts.”

They all knew a moment later when the comet began a very slight but measurable rotation in the direction of the push.

“Other side now and stop it on my command... three... two... now!” and another pulse of repelatron energy raced out and struck the opposite side of the comet. Of course, in both instances the *Challenger* had shuddered but the results were exactly what Tom wanted. The comet stopped with the Mule now in a position where her repeltrons could be aimed at the Earth as well as the Moon. Once it reported contact and lock on to both heavenly bodies, Tom took a deep breath, counted to three and activated part of the programming on the *Gabby Hayes* that he *had* completed, that being the twist-and-toss maneuvers.

It took five minutes and he finally extended out the Mule’s solar array to give it more power, but the comet could be seen moving. When they had visual contact with the oncoming globe of the Earth—at least one-fifth of the planet had been visible—the remaining planet remained

hidden by the comet. Soon, the Mule's computer "asked" for permission to complete the maneuver.

Tom checked the figures and grinned. Assuming things went as expected the new path of the comet would take it more than a million and three-quarters miles off its path toward Earth. He acknowledged permission and they all saw the sudden detachment of the Mule from the comet, with the *Gabby Hayes* spinning off crazily to the right while the comet lumbered off to the left.

The cheering was intense, and might have continued except that Tom and Bud both noticed something that took their breaths away. The comet was now spinning and they saw the large hole in what had been the Earth-facing side before the "toss" maneuver. And, now that the comet was moving off they also saw what had come out of that hole.

"Quiet, everyone!" Bud shouted. "We've got troubles!"

"Double troubles, Bud," Tom told him with a trace of sadness in his voice. "We've lost the Mule!"

It was true. The final maneuver had not just sent the small ship tumbling away, it had managed to wrap the solar array all around the Mule effectively cutting off its ability to do anything. Tom tried to contact it several times but received only red lights on every circuit on his control board.

"There's no time to go after it," he told them. "We have to go after that comet core or whatever it is ourselves. Give me a scan and tell me what that is."

Seconds later the repelatrons gave him an answer he was not expecting.

"The entire surface, and probably the whole thing, registers as pure Polonium!"

That very heavy elemental metal was going to be difficult and dangerous to shift.

"All that weight is probably what was banging around inside, and once we tossed the comet sideways, inertia just kept it moving forward," Tom told those around him. "It's going to take everything we've got plus a lot of luck, but we just might pull this off."

The big ship moved forward and soon caught up to its new target. With both the Earth and Moon getting closer by the minute Tom found ample spots to aim all but two of his repelatrons to get and anchor from which to push against. The other two units were aimed at, and programmed for, the cometary core material.

"What happens if we can't shift it far enough off course?" Bud asked quietly as Tom was readying everything.

"Then we will have failed a lot of good people, Bud. Polonium is highly radioactive. If any of that core skips through the upper atmosphere it will release enough radioactivity to do any number of very bad things down on the surface. If we are lucky, it will amount to the most brilliant borealis show ever seen by man high in the sky. If we aren't lucky, poisoned air, poisoned rain, dead plants animals and even people on the surface."

"Sorry I asked. Should we tell them what's coming?"

Tom shook his head. "If we succeed then we can let it be known at some later date that data was finally crunched and now shows, et cetera... if not, I don't want to cause any more panic than dad says is already going on down there. I don't even think I want to tell anybody we got the main part of the comet moving away. Not yet."

They all worked in silence. Hours went past, then two days. They were now more than half way between Martian orbit and the Earth and still the ultra heavy core was not responding very much. A fraction of a degree had been managed, but the *Challenger* had never been imagined as a rock mover. Its repelatrons were fine for space travel, but not up to the present task.

On the third day, Tom sat in his seat, dejectedly watching as the positional readouts showed

no appreciable change. Oh, the core now would not make a direct hit on Earth, but it would skim low enough in the atmosphere to possibly even explode, spreading radiation and death.

He was ripped from his reverie by Bud's insistent shouting.

"Look! Look! Something's coming up from Earth. Look at it, skipper. It's another Mule! No, it's three of them! Whoopee!!"

Sure enough. On the SuperSight screen Tom could see the three identical craft, in tight formation, racing out past the Moon and heading their way. And, as they all watched over the coming hours, the formation split with one ship continuing to head out and the other two making tight sweeping maneuvers to come in on either side of the core.

Within a day all three were sending automatic reports to the *Challenger* announcing lock on to the core and provided a countdown to action.

As the counter reached zero, they watched as the trio of fully automated Mules extended their Attractatron radiators, grabbed onto the heavy core and began to tug it to the side. In fewer than three minutes Tom's instruments showed that they had drawn it off course by almost fifteen degrees, enough even at this close range to Earth to provide for a miss of nearly a million miles.

The radio crackled to life. "Damon calling Tom. Are you there, Son?"

"I sure am, Dad. Wow. What a nice surprise. How... I mean, who... no, I *do* mean how?"

"That's easy. As soon as you left Earth I decided to put everything else on hold at the Construction Company and to get as many of your Mules built as I could. The folks in software development finished your programming yesterday morning. We managed to complete those three with more coming at about one per week for the next few weeks, then we scale down and get back to real business. Uh, I'm guessing they did the trick?"

"And how!" Tom joyfully reported. "He told his father how the *Gabby Hayes* had been lost and the older inventor promised to direct one of the new Mules out on a rescue and recovery mission.

Good to his word, the day after they landed Tom received a message from the Outpost saying that they had just taken delivery of a package "all wrapped up in solar array" and wanted to know what to do with it.

"Please open the package carefully, and give it lots of tender loving care," Tom requested. "After what it's been through, it's the least we can do!"

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"Any idea where that comet core is going to end up?" Tom asked as they sat in their shared office one afternoon. It had taken four days to get back into the swing of things at Enterprises. And that had to take second place to the time he needed to spend with Bashalli. Bud fared no better with Sandy and had not been seen at Enterprises for at least two of those days.

"Your notion to herd objects into safe trajectories was a good one. The programming in the Mules sent the core into a course that will let the Sun grab it and swing it into an orbit between Mercury and Venus. It should remain there forever. The rest of the comet appears to be heading back out, or will be once it passes the Sun. Measurements say it will probably get caught in the gravity sphere of Uranus and become a small moon in about thirty years."

"Good. Now, what are we going to do about all those people on the Moon, Dad?"

"I've been discussing that with Harlan. Did you know the man won't take a week's vacation, even after all he's been through? Amazing." Damon shook his head. "Anyway, he would like to lead a mission up to the colony and offer them a way to get home. It may take us months to get them all back—even if we pack 'em in like sardines in the *Challenger*—but he believes that now they are not under the dictatorial thumbs of those megalomaniac twins, many of them might even want to remain up there. He tells me their lives are actually better than when they were

tribespeople in the Philippines. After all, the colony is self-sufficient and has even been operating successfully for several weeks without their overlords in command.”

“I’ve never seen their original home conditions, but he did describe the basic conditions up there. It’s amazing how those twins were able to get things up to the Moon and set up that colony.”

“Mostly with stolen Swift technology from what I can determine. Repelatrions... high-polarity electromagnets... an older formula for tomasite. Quite a lot of things from us actually. All thanks to one bad employee.” He shook his head again, this time in disgust.

“What about that phony Security hire on Loonau? Wassermann, wasn’t it?” Tom inquired.

“According to Phil the fake James Wassermann was one of the dead people they found at that castle. Oh, and that reminds me. Ralph McDermott’s wife and kids and the kidnapping? Also faked. She left McDermott a few weeks earlier heading for France where they are now living. She doesn’t seem too bothered that Ralph is never coming back. It was just one more thing he blamed the Swift family for doing to him.”

Tom grinned. “And, are we certain that his brother Paul is still one of the good guys?”

Damon nodded. “He was disgusted by his brother’s actions and wants nothing more to do with the man. Now I have one for you. Have you figured out why that Polonium core broke free of the comet?”

Tom’s grin turned to a grimace. “Yes. I’m pretty sure that our little mining work on the comet made a weak spot in the crust that the core hit and broke through.” They sat in silence for a few minutes before Tom asked, “What about using that giant ship the Masters built. What do they call it—the *Genghis Kahn*? Can’t they pack everyone into that and come home?”

“It was never built to come back. It would break up as it tried to re-enter the atmosphere. I was thinking that we might want to bring back some of the key people to be tried for their crimes, but it might be a moot point. Following a few radio contacts with them, Harlan is pretty sure that the majority of the, uh, residents up there will have already taken care of any problems with their old guards and any would-be successors to the months or years of terror they have endured. Oh, that includes our employee turned turncoat. So, no Earth justice for Ralph.”

Never one to accept loss of life with anything other than sadness, Tom could only nod. “Well, count me in for whatever I can do,” he said. “In the meantime, Bash and Bud and Sandy and I are all going to fly over to Oswego for dinner tonight, and then we’ll stay at that resort up on Henderson Bay for a day or two.”

Damon Swift raised one eyebrow at his son at the notion of an overnight date, a look that Tom returned with a grin and without a trace of embarrassment. He knew that his son was a man and could make his own decisions about such things.

But, how was he going to handle the forthcoming discussion with Sandy’s mother?

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