TOM SWIFT
And The
Chaos World

BY

Victor Appleton II

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THE NEW TOM SWIFT INVENTION SERIES

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and the Chaos World

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There are many things that puzzle Tom Swift. But among the most vexing in recent times is the discovery of an impossible planet, and one that has existed within the solar system for possibly as long as the Earth. Yet, it has gone completely overlooked and undetected.

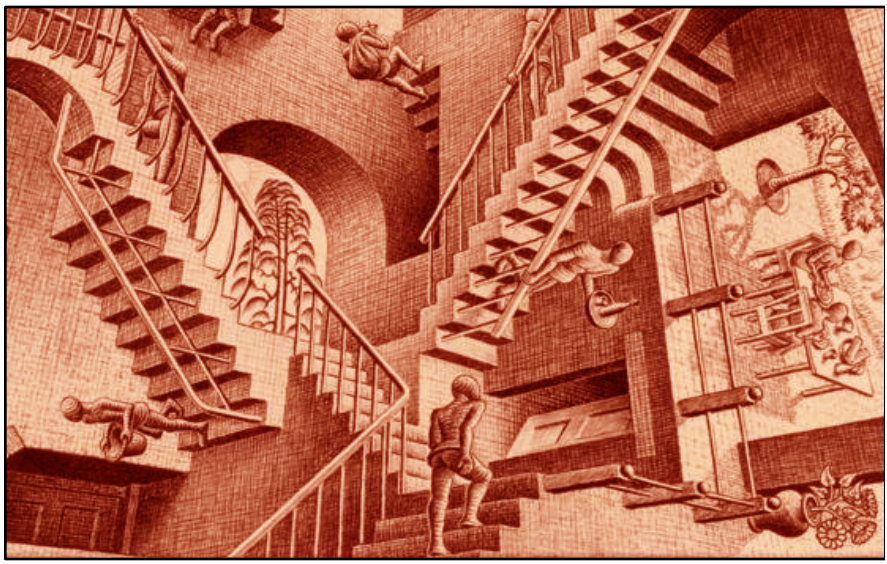
Now, as Tom supervises a mining operation in the asteroid belt remotely from Shopton, a mysterious something crosses a million miles in front of his ship, the *Sutter*. Like a ghost in the corner of a dark room, it is vaguely there and yet it is not. And so, he decides to find out just what it is.

What Tom and his crew find is a planet that is not the ordinary spherical shape. It isn't even a rough piece of rock as with almost every asteroid other than Ceres. It most certainly is *not* Ceres.

How it manages to remain together is one mystery to solve, but when he attempts to land on this invisible planet, all he finds is a type of chaos that is enough to make even the most sane man think he is crazy!

Join Tom as he finds out the truths about the mystery planet that has been "out there" practically forever.

M.C. (Maurits Cornelis) Esher gave the world an intriguing look into what the *art* of art mixed with geometry and a little dash of personal chaos might look like. His sketches, woodcuts, lithographs and other works show a world where gravity doesn't have a chance against the builders or inhabitants. Stairways go up, down and sideways. Water runs in endless loops that have both a beginning and an end. Except, they don't. His is a world from an imagination that decided at some point to say the hell with convention. Goodbye to logic. Farewell to immediate recognition. I have loved his work since I was very young and a grade school teacher had a calendar with some of his works. The piece I use for the frontis is one of his and I believe it was from my birth month of March. Not sure what year. M.C.; you left us in 1972 wanting more and we still need your vision today.



The world was as topsy-turvy as anything Tom had ever seen, and more complex as a very detailed Escher sketch, only hundreds of times more colorful and vivid… and confusing! **CHAPTER 16**

The above graphic is an M.C. Escher reproduction found on the Internet. No intent to claim copyright is intended.

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AUTHOR'S NOTE

In looking for a title and subject for this 32nd novel I turned to my youth and tried to recall what gave me a sense our world was a stranger place than my family and teachers ever represented it to be. A young president had been assassinated (and yes, I do remember *exactly* what I was doing when I heard the news) and a war was quietly brewing half a world away. Man, and woman, had reached for and achieved the heavens, and I'd found that space and science fiction were starting to be a great love. I now understand that is a lifelong affair.

A teacher had a simple calendar on the wall next to her blackboard (and this was before green *black*boards). Once I looked at it, I realized it was not a simple calendar. It was one filled with the works of Dutch artist M.C. Escher, and boy did it change my viewpoint on art.

My own mother was an accomplished artist but lacked the logic and understanding of mathematics Escher did. She was a landscape, still life (bowls of fruit and such) and portrait artist; he was a pioneer of the strange yet logically odd.

I decided to put a version of his viewpoint to work but on a planetary level. Of course, I've had Tom exploring planets and even seeing a few that were potential dangers to the Earth. What if, I thought, there was already a planet close to Earth we could not see? If it sounds like I was influenced by Eleanor Cameron's *Mushroom Planet* books, you might be onto something. (I read those books every five years or so, and I'm 65.)

So, I came up with the premise more than year ago and it took me this long to find a way to write the story.

I am happy with the results even if they are a bit of a departure for a Tom Swift novel. After all, Tom only gets waylaid once in the story, is never in any great danger, and is only scheduled to be away from his wife and children for two weeks.

What, as the famous "last" words ask, could *possibly* go wrong?

Tom Swift and The Chaos Planet

FOREWORD

I cannot tell you how long I have been a fan of our hero, Tom Swift, because that would give you the idea I have discovered a way to live longer than everyone, and have maintained both my memory and sanity and health.

Wait, that's three things. Hmmmm, perhaps the memory thing is a stretch.

Anyway, Tom has been one of the most important drivers in my life as an author.* Just as the very first generation of Toms was a vital part of my father's life. And I shall assume that another Victor Appleton (the Third? III?) will pop up some time in the future to carry on the family tradition.

I will endeavor to make this Foreword shorter than normal because I want to get into the actual story.

So, I shall tell you that Tom will still be around for years to come. He will continue to have adventures but more and more of them will see him remain on the planet of his birth. He will start to assume more responsibilities at Swift Enterprises as his father's desire to pursue some adventures of his own see that man taking a leave of absence.

But, that is for a later book.

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A little side story: I wrote all but one chapter five weeks before finishing the book and nearly put, "**This Chapter Intentionally Left Blank!**" on the one and only page, but then I did some other stuff and added the words.

Hurray!

Victor Appleton II

* The other author who influenced me the most is Ron Goulart. He has been one of the most prolific people at the typewriter and word processor since the late 1950s, and is a very nice man! If you are old enough to recall The Chex Press on the back of cereal boxes, that was him!

CHAPTER 1 /
A FAMILY (SPACE) OUTING

TOM SWIFT, who was going to turn thirty-three on his next birthday, one month away, and had been an inventor since turning about eight with a lot of great work already to his credit. His father was Damon Swift who had been running the family businesses since Tom was about five. Damon had been an engineer on the second Space Shuttle program at NASA but left after a problem he'd warned his superiors about—but his warnings were ignored until a shuttle exploded—and moved back to the small town of Shopton, New York, in the upper lakes part of the state.

Originally, Damon ran the Swift Company but as business outgrew that facility's ability he planned for and built the much larger Swift Enterprises in a large tract of unused land to the south of Shopton. The town was situated next to a long and moderately narrow body of water, Lake Carlopa, used by hundreds of pleasure craft from all around the area.

Swift Enterprises stretched four miles on each side with criss-crossed runways, a central cluster of buildings and more than a dozen construction buildings and hangars situated near the eastern perimeter. Even with all that, only about half the available land was in use. Lots of that was *sparse* use.

In the past two decades, the original company had been renamed as The Construction Company, Enterprises had been joined by Fearing Island, the Citadel, and the Swift MotorCar Company.

Just about everything in the early years at Enterprises had been firmly rooted on the Earth, even if a lot of that was in the air. That was to suddenly change.

Within weeks after Tom turned eighteen, an event occurred that shattered any preconceptions either Swift had regarding aliens from outer space.

It was at that time Tom was nearing the completion of his first large-scale invention, his enormous *Sky Queen* Flying Laboratory jet. The completion had led to his first major adventure when his father and a number of scientists had been kidnapped, and Tom had to fly to South America to rescue him and the other men.

The taste for adventure had never left the younger Swift, but had recently been slightly tempered by two important realizations:

1—Tom now had a wife, Bashalli, and three children, so his level

of responsibility had been amplified a great many times, and…

2—He finally got over the "I am invincible and immortal" feeling most teens have before something happened to them to either kill them or teach them an important life lesson.

Hopefully, that lesson didn't kill them.

Tom had been knocked unconscious, kidnapped, shot, stabbed, stranded in space and also underwater… and more than one time each. Instinctively he had known he'd managed to luck out in all these incidents, and both his parents and lately his wife had kept telling him he had to be more careful.

He knew they were right and had tried to remain Earthbound in the past several years, but things had conspired against him. Things had come hurtling in from deep space, or had attacked him as he sought to just do a job or finish a project. Often he minimized what had happened when telling his family about these parts of his life.

If he felt that he was heading back to the "I can't get really hurt" line of thought, all he needed to do was look into the eyes of his beautiful wife, Bashalli.

That *invincible* idea was, he believed, in the past and he now was looking forward to some more sedate adventures with his feet planted on the ground. *Earth* ground. He had more than his fair share of Mars ground and Moon ground and even the liquid ground of Neptune!

His recent foray into the creation of an entirely new form of power generation had been fun, adventurous, and frustrating at the same time. But, as mostly was the case, he succeeded. In fact, he had succeeded in the real world creation of some things during his adult life that had been the stuff of science fiction just a few years before.

His mouth twitched into a grin, something his face seemed particularly built to do. It was the same grin Bashalli Prandit had noticed on their first meeting and that had been in her mind for the several months it took Tom to realize he really, really liked the girl who had grown up in Pakistan, but moved to the U.S. when she was ten.

For Tom, her beautiful face and bright smile had stuck like permanent glue in his mind and as he got over his shyness—and to his mother's way of thinking, "That darned Swift men lack of forcefulness with women"—he'd admitted to her he was falling in love.

And, in spite of her parents and older brother, Moshan's, insistence they would find her a "nice Pakistani man" to marry, she

had fallen deeply in love with Tom and made certain they all knew it. Once her family realized her future and her happiness was with Tom, they gave in and accepted him as their son and brother.

This past five weeks Tom had been able to go home before five each evening—plus no weekend work—and to spend a lot of quality time with his family and their nanny, Amanda. Since both Tom and Bashalli worked, and neither wanted their kids to have a succession of baby sitters or impersonal daycare, Amanda had been found and was now part of the family.

Bart and his sister, Mary, called her Amanda, but little Anne liked to call her "Nanna Manda." Amanda liked that even though she tried to correct the youngster several times.

Today, Tom headed home at 4:50 and was in the driveway when he received a call on his TeleVoc, a personal communication and security device he'd built some decade earlier.

He reached up tapping the pin and intoned, silently, "Answer."

"Skipper? It's Hank. I wanted to let you know we've had a small problem on the *Sutter* and I'm not going to be able to make our meeting tomorrow morning. Red Jones is taking me up to the *Space Queen* so I can see what I can do. Not to worry; it's nothing dire. Just a small failure in one of the plasma drive unit containment shields."

"Okay, Hank. Thanks for letting me know. See you in… what. Two days?"

"Sounds about right. Have a nice evening."

And with that the conversation that had taken place in silence was finished.

As he related the conversation to Bashalli, she looked at him with a glimmer in her eyes.

"Do you think Anne is old enough to understand what being in space and up at the *Space Queen* station is all about?"

Tom thought a few seconds. "I don't know about Anne, but I know Bart is rarin' to go back up. He loves the place. Even Mary has asked me on the sly if she could go up there and fly around a little again. You in the mood?"

She looked at him a second with a smile, but then nodded. "Sort of a Swift Family in Space day out? Sure."

Tom had to grin. Bashalli had recently embarked on a little project of her own, and that was to read many of the classics of literature to Anne and also for her own education. She had skipped some of the classes in high school dealing with literature in favor of

taking more art classes.

On more than one occasion she had asked Tom if he thought she was crazy, or if it were a cultural thing, but there were books that seemed to be on every teacher's reading list she thought were terrible.

"*Moby Dick* should be allowed to go out of print," she'd declared after completing the read, a story that even Anne did not enjoy. The woman had also found no joy in three other novels that had been kept in publication for decades and even centuries. They both had enjoyed The Swiss Family Robinson, though.

Then again, she did not particularly like teenage fiction where precocious teens were portrayed as being smarter than the general adult population of their small town, even to the point where they misbehaved even when a parent told them to not do something, they went ahead and did just that.

Tom had to remind her that he had been one of those teens. "Even at times when Dad and Mom said I needed to… oh, do something that was safe, I tended to just go forward with what I wanted to do. Do you dislike me for that?"

Now she relented. "Okay, Tom. Point made and taken. It is just that some of those characters are so goody goody and come off tasting of artificial sweetener!" Bashalli hated artificial sweeteners!

She did not, however, stop her reading to Anne program.

It required a few days to arrange the trip, but with school not in session there were to be no missed days or assignments, and Bashalli had several weeks of unused vacation coming. Even so, the trip was planned for a Saturday and perhaps a stay over until Sunday. That remained to be decided, and a lot depended on their youngest.

Of course, Bart jumped into the Toad and into the copilot's seat without so much as a "May I." Tom hid his smile behind his hand and Bashalli turned away and busied herself getting Anne lifted up and into one of the rear seats. They had already arranged a booster seat for her.

"Are you ready?" Tom asked his short fellow flyer.

"Yep! Can I fly?"

"Once we get into to the air you can take the control stick. I'll have to do the pedals for you another few years. But, you are getting to be very good about flying straight and level. Just remember to keep your eyes on the artificial horizon, and also that your mother is

a very highly qualified pilot and will call you on anything you do that is wrong!"

Bart turned around to look at his mother. "I promise I'll be good, just like Aunt Sandy and Uncle Bud."

"Okay. But, if you get tired we change places and you can look out after your little sister. You might need to read to her."

The young boy shook his head. While he loved reading and his level of comprehension was easily four years greater than his age, he had quickly tired of trying to read to Anne. She squirmed and asked too many question.

That was something Bashalli had learned to ignore because once she did not let herself get interrupted, the little girl soon grew tired and just lay in her bed and listened.

At his wife's insistence, Tom got the Toad to their flight altitude of 34,000 feet before telling Bart he could fly them. "Tell me when you have the controls," he requested.

Bart rolled his eyes. "I know, Dad. You say that every time. And, I have the controls!"

"Take the controls back, Tom. And, you, Barton Swift, get over that attitude! I mean right now!"

The boy knew he'd pushed it too far. He waited for Tom to put his hands back on the side stick and said, "Sorry, Momma. You have the controls, Dad." He slid back in the seat and pondered when he might get back into his mother's good graces.

That happened fifty minutes later when Tom told him he could take ten minutes at the stick.

The boy spun his head around to ask his mother if that was okay only to find she was asleep.

"I have the controls," he said in a low voice.

All too soon for Bart's liking, it was time to begin their descent toward Fearing Island, the Swift's rocket and submersibles island base off the coast of -----+Georgia.

Bashalli and the two girls woke once the landing gear touched down and the jets roared into reverse thrust.

"Here so soon?"

Tom told them all they were a minute from parking near the terminal and Administration building. "Don't undo those seat belts yet," he advised them as he could see Mary's hand starting toward the buckle.

"Daddy?" she asked. "Why don't we fly over to the big ship?"

“Well, and that is a good question for which I do have an answer. We need to leave this jet far enough away so that nobody else has to come out and taxi it back to here. So, here is where we park it,” and he braked to a halt, “so it will be waiting for us when we come back. Besides, we all need to get out and walk around a little before climbing into the *Challenger*. Okay?”

“Yes,” she and Bart chorused. Anne nodded after looking to her mother for a hint as to the correct way to answer her father’s question.

With the engines stopped and the top open, he helped Bashalli get out before turning to the kids. Experience told them that one or both of them needed to be on the tarmac to keep the children from just running off or all around getting into possible troubles.

A small van pulled up near them and Zimby Cox climbed out.

“Taxi to the spaceship?” he called out with a smile.

“Yes, please,” Bashalli replied. “Can you take three children or will they need to run along behind us?” She gave the pilot a wink.

“Wellllll,” he said slowly, eyeing the kids but especially Bart, “I guess we can cram them all in. Can the girls sit on Bart’s lap?”

“Not fair!” the boy protested. “I barely got to—” and he stopped realizing his mother may have not known Tom let him fly a little. “Okay.”

“Naw! Everyone gets their own seat. Say, Bashalli? I’m sorry but I couldn’t find a booster seat for Anne. Can you manager her in your lap if I promise to drive slow and not bump into anything?”

Four minutes later they arrived in the shadow of the giant box-in-rails ship that had been the second spacecraft designed and built by Tom.

Knowing his youngest could not climb the twenty feet up to the lowest level, Tom had brought along a harness he pulled on and then strapped the little girl to his front.

They allowed Bart to go up first, followed by Bashalli, then Mary with Tom right behind to lend a hand if needed—it wasn’t—and finally Zimby who was coming along as second pilot.

Fully capable and certified to fly every vehicle in the Swift flying fleet, Bashalli preferred to watch the children so she would not be able to take that second seat at the control panel.

Even Bart knew the spaceship was too complicated for him to understand, so he just walked over to take one of the four seats that could be swiveled to face the floor-to-ceiling clear tomasite view windows, one of the unique features of the ship.

He helped Mary get strapped in tight, and retightened her three-point belt when she loosened it as he turned to attend to his own.

Tom and Bashalli checked all three kids' straps and the special seat in Anne's chair. Satisfied, Tom went back to the controls while Bashalli got into one of seats that sat between Anne and Mary.

While it was not necessary, Zimby knew the kids enjoyed hearing a good countdown, so beginning at thirty seconds, and every five until he reached 5, he counted, "4... 3... 2... 1... and, we're off!"

Everybody felt the slight downward shove into their seats, but Bart let out a particularly satisfied mumble that sounded to his mother like, "Finally."

Up the ship headed with the outside brightness of day soon replaced by twilight and then the darkness of space. Until then, Tom had asked them to keep their seats pointed away from the windows. Now, they could turn around and admire the view without the disorientation of lower altitudes.

"Where is the *Space Queen* now?" Bashalli asked.

Zimby answered having done the necessary research before the Swifts landed on the island.

"She is coming over the western horizon near the equator today. We ought to catch up to her about the time she passes over the old Outpost. Uhhh," and he looked to Tom for approval before saying anything more. He got a nod. "We could, you know, sort of pass near enough to the old wheel, and even slow enough, so you can all get a good look at her. Any takers?"

Bart's hand shot into the air, with Mary seeing this and raising hers as well. She wasn't about to be outdone by her brother!

Not wanting to be left behind, whatever was happening, Anne put her hand up as well.

A small course correction was set and twenty-five minutes later they slowed down. Tom spun the ship so the windows faced the upcoming wheel in space, once known as the Outpost in Space as Zimby slowed them even more. The three kids, and even Bashalli, let out appreciative ooohhhs and ahhhhs at the sight.

They slowed to a relative halt for five minutes before Zimby said they needed to speed up and head out for their rendezvous with the giant tubular space station, the *Space Queen*.

"We ought to be there in forty minutes so keep an eye out for it. She'll be coming in from about the upper-right side."

Bart wanted to release himself to go press his face against the window, but a cough from his father stopped his hand where it was

reaching for the buckle. Instead, they all leaned forward and made more appreciative sounds as the giant tube of a space station came into view. Parked nearby was the golden cone of the *Sutter* along with two of its work modules; Tom explained the one on the left was the mining equipment while the other was the plasma drive.

Another five thousand feet out sat the rather odd-looking combination spaceship and submarine, the *Yamato II*, the vessel in which Tom and a crew flew to and circumnavigated—under the liquid atmosphere—Neptune.

The closer they came to the station the more activity they could all see. At least twenty people in spacesuits and possibly an equal number of what looked to be small robots or even tiny spaceships were in constant motion around both the upcoming end and the actual curving surface around the station.

When the station had first been built up here in orbit, Tom would never have considered bringing anyone other than a qualified astronaut up. The only way into the station back then had been to suit up and float over.

That was something he did not want his children to do for a number of years.

However, a few years earlier he'd supervised the installation of an accordion-like tube and dock that attached to the absolute middle of the end disc and could maneuver out over two hundred feet and attach to another ship.

Enterprises, via the talented people at Fearing Island, outfitted every ship with a hatch that would accept and seal, tightly, to the dock mechanism.

Once he and Zimby stopped all momentum of the *Challenger* and set the computer to keep them at an exact distance and position, he stood up.

"Time to unstrap yourselves and come with me to the lower deck. We are going into the big station over there."

He explained that under nearly all conditions they might just go through in their street clothes. However, because he wanted them to get used to wearing protective gear—and because Marjorie Morning-Eagle and her Uniforms team had made them—he told them they would be in special spacesuits.

Bart went wide-eyed with wonder and eagerness. Mary took it in stride, but Anne clung to her mother.

"No wanna go!" she exclaimed, on the verge of tears.

"Nonsense, Anne. We are all going over. You don't want to stay

here all by yourself, do you?" The girl thought about that and shook her head, sticking her thumb into her mouth. Bart was a great older brother. He reached up and took Anne from Bashalli and hugged her. "Watch, Anne. I'm going to get into *my* suit. It's really easy. You'll like it!"

Bashalli looked at Tom. Since the boy had never been in a spacesuit before, she was surprised. Tom only beamed at the boy being brave and trying to help the little sister in his arms.

Once he was in his and so was Tom, Bashalli helped Mary get into hers, sealing the lower portion and checking that the clear helmet would swing freely up and over. She tucked a little of Mary's hair into the neck of the suit and stood up.

"Looks very professional. You as well, Bart. And, thank you very much for helping Anne. I'll get her zipped up."

Two minutes later the family was standing almost at attention as Zimby helped check each of their suits and the backpacks that provided air to them.

"Nifty keeno," he proclaimed as he pulled his helmet up and sealed it.

The small hiss told Tom some of the air was being pumped out to equalize pressure with the station norm, or about three-quarters that of on the planet at sea level. A second later the big door of the hangar slid up and the tunnel lay before them.

Everyone moved into it in an orderly fashion. Even Anne seemed to be more fascinated than scared now. Because the *Challenger* had been able to park just fifty feet out, the floating trip took sixteen seconds before they were going in through the airlock. Zimby was one person too many so he bowed and pointed to the door. "After you."

With no air pressure to equalize, once the outer door closed the inner door popped open and the Swifts stepped out onto the overlook to the entire station.

Bashalli, who had been holding onto the hands of both Anne and Mary, let her older daughter go so she could reach the elevator call button. Mary stared at the incredible vista in front of her and moved to the rail, climbing up onto it to lean out and look down.

With her enthusiasm overcoming her sense of caution, Mary more tipped forward than jumped and was up and across the railing. In seconds she was floating away from them*, out of everyone's reach!*

CHAPTER 2 /

BACK TO WORK

TOM JUMPED over the rails without a second thought. He knew that up here, at the rotational center of the station, there was no real gravitational influence so they could float above everything for quite a while before beginning to drift downward.

He reached up to tap his TeleVoc pin asking for a connection to "Station Safety!"

"Yes, skipper? We have you and one other floating on surveillance. Do you need a rescue?"

Tom breathed silent sigh of relief. He was never so glad about the constant camera monitoring that went on inside the station as he was at that moment.

"Yes. Just a belt man, please. We need to be pushed back. Thanks!"

Trying to spin around he called back to his frantic wife, "Help is on the way. We're fine out here for a few minutes. Get the kids down to the ground and we'll join you after I give our daughter, here, a little lecture!"

Mary had been mostly unfazed by her experience, but on hearing she was going to get a talking to, she shivered. She knew she'd done a foolish thing and her daddy was going to make certain she never thought about doing it again.

He had been able to reach out to grab hold of her shirt sleeve and was holding tight when he glanced down at the sound of something giving out a little shriek. It was one of the station personnel wearing what was known as a "Hisser," a compressed air backpack they used to get into the air quickly and to any point within the station in seconds.

As it neared them, the reverse valves opened and the man, someone Tom well recognized, came to a halt right next to them.

"Welcome, Tom, and Mary," greeted Ken Horton, the station's commander. "I'm afraid you have to go back to the elevator, Mary, as I don't have enough oomph in this thing to take you all the way back down with me." He smiled at the girl he could see was nervous about something. He guessed it had little to do with her current position floating above the curved surface below.

Once he'd delivered father and daughter back to the safety of the railed in area where they would take the elevator, he saluted Tom

and was about to caution the girl when he saw she was crying, silently, holding her father's hand tightly. He nodded to Mary and dropped from view.

Tom crouched down, something that with almost no gravity, took some effort.

"Mary. Do you understand what you did was wrong?"

When she looked a little confused, he sat down and pulled her into his lap. She more floated there than sat in the cushion of his legs, but she was easy to turn so she faced him.

He explained, in words the girl who was going to enter the first grade soon could understand, about how the place they were was not like at home.

"You know you cannot just float in our house. Right?"

She nodded, solemnly.

"Good. The reason you can float here is because up here in the middle of the end is a place where the thing that makes us stick to the ground is not available. That is gravity. But, a little lower down, toward the surface you were trying to see, there is a lot. Enough so that if you fell all the way, you would be hurt so much you might die. Your mommy and I *do not want that*, so you have to promise me you will be very careful from now on. If we hold your hand and take you some place, it will be safe, but you can't just do things without us. Okay?"

She looked as if she were expecting something bad to be following what sounded like daddy being very calm and reasonable. When nothing more came, she put her arms around his neck and kissed him.

"I'll be good, Daddy. I promise! I'm sorry I almost floated away and fell down to the ground."

He gave her another kiss and then pulled them both up to stand, as much as they could, on the deck. The elevator door opened about that time.

"Your mommy was being a very clever woman and sent this to come get us. Let's go." He took her hand and they moved into the elevator where he showed her how to hold her feet to the floor so that as gravity returned, she would be safe.

When the door opened one worried mother sailed in knocking Tom aside in an effort to comfort the daughter she was certain would be terrified nearly to death.

"I love you, too," the inventor said as he got back up.

Mary was in her mother's arms telling her how she had done

something wrong and would never do it again. This brought on a whole new flood of mommy tears Bashalli had to explain were from her being happy they were all together and safe.

Tom thought, *Speak for yourself, Bash. I'm going to have a bruise where you pushed me aside.* But, he smiled at two of the most important women in his life.

Bart, who'd been standing to the side holding one of Anne's hands, came forward pulling her along. "Here. Somebody take her so I can go look at the trees."

He swore he would not go running too far off and would not bother any of the station's inhabitants.

Zimby, who had come down with Bashalli, came over offering to go along with the boy. As they walked off, with the pilot explaining why Bart felt lighter was because the station had less gravity than at home, Ken Horton approached, sans his backpack.

"Well, a spot of excitement for the day behind us all, how are you, skipper?"

Tom looked to where Bashalli and two of his children were strolling across the open area heading for one of the public restrooms.

He smiled. "Fine, Ken. Just one of life's little lessons I keep forgetting I need to teach my kids. Not the sort of thing I can expect kindergarten or public schools to teach. How was your last rotation down? We never saw you at Enterprises."

With the apparent gravity imparted by the slow spin of the station, it wasn't as important to spend one month of each three "dirtside," as in the old days, but Tom liked the station's personnel to get back to Earth two or three times a year. If for no other reason, to keep friendships and relationships with family alive.

Ken had a bright smile on his face telling Tom there was something that was good that had happened.

"Met someone," he stated. "A lovely young lady, and yeah, she's at least ten years younger than I am… maybe even fifteen years if I am truthful, but she is a really nice person and we hit it off right away." As they walked over to meet up with Bashalli, Ken told his young boss more about the woman.

Like him, she was ex-military, only she'd been in the Air Force. She had left the service after a dozen years—where he had retired after twenty—because both her parents had been killed in a boating accident.

"She had to take care of a teenage sister for three years. Now,

that girl is off at college and doing very well. Might even go Air Force after graduation and hit the Officer Trail. We'll see. Anyway, Stacey and I had a really great month and she is going to come up here in another week."

Because personnel at the station were all qualified in something needed, and it was only a few of the Enterprises' people who could come up whenever they wished, Tom had to ask about how she would do that.

"Stacey is a qualified Physician's Assistant. Good, honest military training with a finishing year at Boston General on a year off program. She will be coming up for a one-month rotation allowing one of our regulars to head home to get married."

Bashalli and the two girls came back to say hello to Ken.

Mary tugged his pants leg and when he leaned down to ask her if she had a question, she shook her head. Then, she apologized to him for what she had done and thanked him for saving her life.

Her mother looked on in wonder. She had said nothing to the girl nor suggested she make the apology.

Ken reached out his big hand and took hers, gently, when she extended it. He gave it a small shake and told her it had been his pleasure to come to the rescue. Then, he told her that her own father probably could have helped them both if he, Ken, had not rushed up.

"He's a pretty neat guy," Ken told her.

She smiled. "He's my daddy!"

He stood, patted her lightly on the head and leaned over to kiss Bashalli on the cheek. "And, she has a really wonderful mom. Ask Tom to tell you about my new love. I have to go." He pointed to his TeleVoc pin. "Just got a page. See you."

As the station chief trotted away, She stood there, mouth open wanting to ask more. She turned to Tom, mouth still open and he reached over to gently close it.

"Ken has a lady friend." He told her what Ken had said about her before admitting that was about all he knew.

Once they had called Zimby to bring Bart back, the Swifts took a walk from the one end of the station to the other, meandering through the trees, flowers and grain crops that provided much of the oxygen used in the station. These also provided beauty rather than the starkness of white halls and gray equipment racks of the old Outpost.

People on the *Space Queen* had been evaluated by a Psychologist

who told Tom and Damon the residents were nearly twice as happy in the big station as they had been in the wheel.

"Heck, and I'm a certified ground hugger, I was happy for the three weeks I was there. Other than getting used to the curvature, I honestly could imagine I was just in a foreign town and not a huge tube!"

They ate in one of the residential cafeterias before the youngest kids needed to take naps. Tom checked them into a Transient's Room and they all headed for a little rest. Tom spent the time looking at some notes from his previous project, the Antimatter PowerGrid generators. He was pleased to see that four states had expressed great interest in having installations built to supply their growing populations along with Japan and Taiwan.

Bashalli had brought along several books on her tablet, so she sat in the other big chair, quite comfortable from the lower gravity, and began reading. Ten minutes later she had dropped off.

From getting up at six and getting everyone ready—Amanda had been given the weekend off—to the trip to the "incident" with Mary, she was bushed.

Tom let them sleep. Even Bart, who started reading one of his favorite science fiction novels. *Mr. Bass' Planetoid*, eventually succumbed to the light feeling that eased almost everyone to sleep.

The inventor wasn't tired in the least so he didn't disturb them for about two hours. At that time, Bashalli opened one eye and smiled at him.

"Hey, Bash," he whispered to her. "Ready to get up or just checking to see I haven't run off?"

"Just looking at your pretty face and wondering how we are all going to sleep in this one room if we stay the night."

"Actually, I don't have anything to keep me up here until tomorrow, so I thought we'd do a light and early dinner in the *Challenger* so we don't seem to be sponging off the locals, then head for home. Kids get to bed before nine and everything!"

"Sign me up for that!" she responded pushing herself upright. Even with the light gravity her body had slid down and into the upholstery.

They got the kids up, wiped off a little, and then went back outside to take another walk, this time around the perimeter of the station to give them all a perspective they could not get at home.

When they arrived back at the starting point, Mary was in disbelief. "We got back where we started," she said to her mother.

“We walked up all that hill but it didn’t feel like a hill.” She looked puzzled now.

“I know, and daddy will explain how that is possible once we are back inside the ship. Now, let’s go say goodbye to Commander Horton, the nice man who flew up to help you and your daddy get back to the elevator.”

Ken was troubleshooting a problem at the other end of the station, so his assistant said she would pass along the Swifts’ thanks and to tell him they wanted to catch up more as soon as possible.

“He’ll know what that means,” Tom said with a smile.

Challenger usually had a selection of ready-to-heat meals made by Chow Winkler, the Swift’s chef and a man Tom had taken on a number of his adventures. Today, there were several helpings of his special lasagna—meatless with crumbled fried tofu pieces substituting for beef or even turkey—along with chicken and mashed potatoes with snow peas, and two packs of chicken noodle casserole.

After they ate and Zimby got the ship ready while Tom cleared their dinner things, the ship pulled away from the station, turned to face the Earth, and headed home.

They arrived at their house at 8:52 that evening, just in time to get Anne bathed and in bed followed by her sister. Bart took care of washing himself these days and used the guest bathroom so he was in his bed ten minutes before Mary was tucked into hers.

“Other than the little bit of excitement—and thank you for handling that so gently because I know Mary remembers kindness more than she does scolding—it was a nice day.” She gave her husband several very nice kisses as a reward before they went to sleep.

By the time four more work days had passed, Tom was certain he had noted and logged everything possible to do with his antimatter power generators. And, other than one fast trip to Portland, Oregon, to speak to the head of the power company about what they might do to prepare their existing land to accept one of Tom’s installations, he had little more to do.

So, as was generally the case, he started to fidget with boredom. Even if it was imagined boredom, he truly disliked not having something solid and tangible to do.

When asked, Damon suggested revisiting something that had not only given his son something to do, it had brought in a lot of money to the Swift organizations. In fact, Tom had done this on more than

three occasions. The thing different about now was it was not about to come to him.

"Mine the asteroid belt, huh?" he replied to the suggestion.

It wasn't beyond reason for his father to suggest that. The older inventor knew Tom was capable of mining just about anywhere his *Sutter* could reach; the asteroid belt was within three weeks of travel.

To date, the mining module that tucked up in the front of the ship had mined things from Pluto, from several small asteroids Tom had brought into Earth orbit so he might secure the metals and other minerals he needed to create the *Space Queen*, and had even mined for a rather rare metal on the Moon.

Certainly, a lot of other factors and inventions had gone into those, but the fact was Tom Swift knew how to do it.

With a grin, he asked, "Anything in particular you need me to look for?"

"We can always find uses for most rare earth metals such as neodymium and ytterbium, but I can't recall you running into that last one when you did previous mining. I suppose we should be thankful for more antimony and selenium you found in good supply. Uhh, hate to ask this one, but will you have trouble with leaving Bashalli and the kids behind?"

Tom blanched a little. He had promised her that he would stay around for quite some time. And, while she was used to him having to head off to save the world, or some other thing, she felt the need for him to be "there" more and more.

"The kids still have two months before school starts. I suppose I could ask her to come along…" he began but seeing his father slowly shaking his head, he stopped.

"Or," he picked up a moment later, "I could devise some sort of strategy and even a search route and send some of the others out to see what is what."

Now, his father nodded and smiled.

Bashalli also nodded and smiled when he told her of the forthcoming project and that he was staying home this time. She wasn't sure she could fully believe him, but his conviction seemed to rest in her favor.

Even if he wanted to go, it wasn't going to happen for a few weeks.

"Don't you remember calling for an overhaul of the plasma drives, skipper? Said it was important because of impurities in a

batch of methane they picked up the last time she did a partial refuel out on Titan."

It was true. The *Sutter* had been trying to study the ebb and flow of the big red spot on Jupiter's surface and had used more fuel for an emergency avoidance maneuver than she could overcome. The giant ship used her repelatrons to go nose down and ease up against one of the many methane lakes on the moon, but had taken something into their tanks that clogged two of the fine mist nozzles needed to spray the now gaseous fuel into the five plasma drive converters.

Red Jones, Swift pilot, managed to get everything shut down and they came back using only repelatron power, but the damage had been done.

"Right," Tom responded. "I should have recalled that. Heck, I was up there less than ten days ago and saw the crew swarming around the drive unit. Okay. Guess that gives me a few weeks to come up with my brilliant plan."

"Give us five weeks, please."

Tom agreed to that timeframe.

With this amount of time, he was going to be able to work out a definitive search pattern plus he might do some refinements on the long-range version of his Damonscope; this one could detect specific elements from a range of a million miles in the vacuum of space.

With most asteroids about that distance from each other, minimums, it would come in handy.

It would also be advisable to stick within less that two-thirds of that and to reverse course and scan in the opposite direction for best coverage.

He called up the best resource available on placement of the various asteroids. It came from the Jet Propulsion Laboratory and was in their searchable database. Not that it was fully accurate or up-to-date, but you could search for most known small solar bodies out there and discover where they were at most times.

Another database claimed to have information on the placement of over six hundred thousand bodies, large and small.

He consulted both along with information from a company that claimed they had solid information ready to support any mining effort by "any legitimate organization." This, he knew, meant anyone with the money to buy their services, provable or not. Tom Swift was not in the mood to consider any sort of payment for information he could better gather himself with a simple visit than

such companies could never hope to achieve.

The one fairly accurate map of the asteroids showed him there were nearly fifty of good size in an orbital position roughly twenty degrees retrograde to Earth's current position. That meant it would be a slightly longer trip out but less of one back, and all very manageable by *Sutter* with her combination repelatron and plasma drives.

The nice thing is he could make a call to have a few things moved around so both systems could co-locate easily and either one used with little or no adjustment of the internal workings within the ship.

He made that call and received an answer he had expected.

"Sure, skipper. Can do, except it will take an extra two weeks to get that all fixed for you. Is that still okay? Otherwise I can have the repelatron units hinged so the entire set can swing out and away from the plasma ones… except, now I think about it, we could have problems when we swing the plasma jets around for braking. Let me check."

When he heard back it was almost good news.

"Skipper? Okay, here's what the guys say we can do. If you can give us two additional shifts at the Construction Company to make new wiring harnesses from the power distribution point to the repelatron antennas, longer by about fifty feet each, we can move them to commingle with the plasmas. Inset a little to keep them safe from plasma blow-around, and still a hundred percent useable. Sound okay?"

Tom said it sounded like a good, winning compromise and promised to have the approval for the extra work finished by the following day.

CHAPTER 3 /
MINING OPERATIONS - PART 1

WITH ANY number of materials that might be found on the various asteroids—or, all the same things scattered around everything if Tom's theories of most of those objects having come from a single, destroyed planet somewhere in the solar system's distant past were true—the inventor had to compile a short list of what to attempt finding. What might be the most beneficial?

"It won't do to have them bring back a tiny amount of fifteen different things," he explained to Bashalli one evening. "*Sutter* only has five major storage bins and I'd like to keep those filling with just one thing each."

She nodded. "I seem to recall that you built the ship to separate things out and to get rid of what is not pure or that you do not wish. Won't it be fairly easy to get only five different things?"

He explained that it was possible some of the more difficult to locate items could be in such tiny quantities that the smelting equipment in the mining module could not get just those. It could be a case of getting the really useless stuff removed and dealing with purifying what they wanted once things got back to Earth.

She placed a hand on his and told him it didn't seem fair.

"Fair or not, Bash," he said with a slightly rueful chuckle, "it has been like that for mining since man first dug something hard and shiny from the ground and hit it many times to make a sword. My guess is the first ones were filled with a lot of dirt and other stuff. It was only over years or centuries we learned to melt it all and then skim off the bad stuff before hammering it into swords. Some progress!"

Over the next several days he worked and reworked his list. Some of it was based on hope, and a lot of it based on what they had been able to extract from the medium asteroid that had been brought into orbit so it could provide materials for the *Space Queen*.

It had also provided an anchor point for Tom's High Space L-Evator used to transport materials down and up.

Much of what had been mined was not directly useful, but it had great commercial value and that had funded the giant station's building costs. Tom knew he might have to be thankful for just getting more of those sort of materials and selling them on the open market.

The only issue he knew of was that some materials had been brought down in such quantities that the demand had been satisfied and sales had become slack. But, he would take on that challenge once he had a detailing of what might be mined out there.

Work on *Sutter* managed to gain one of the anticipated delay days so rather than take off on a Wednesday, plans were finalized for the crew to head up on Monday afternoon, check all the ship's systems that evening and following morning, and to leave orbit close to noon on Tuesday.

An old saying—that Sandy Swift-Barclay made up—said that where Tom went, Bud generally went, and where Tom did not go, Bud stayed home with her! So, it was not with any surprise that when he volunteered to either head the project or at least to be a pilot for it, she quickly told Tom that Bud was most definitely NOT going on that trip. If Tom was staying with Bashi, Bud was staying with her.

"That is non-negotiable, Tomonomo. You tell him he isn't going. Got it?"

She had been so in earnest that he could not laugh at the ridiculousness of her seeming anger. He did dare to ask what her answer would have been if she knew he was going on this trip?

"Or, the next one?"

Sandy moved closer to her brother and placed her face on his chest.

"My darling brother. *If* you go, and Bashi will have something to say about *that*, then of course Bud goes. You two are like Hope and Crosby. If you go to Morocco, he goes to Morocco. If you go to, oh heck; I can't think of another of their buddy movies. But, you get the point." She took her head off her brother and stepped back looking into his eyes.

"Bud and Sammy are the two most important things in my life with you as a very close third. I know in my head I can't protect all of you all the time, but in my heart that is about all I want to do. Do you understand?"

He nodded. He did understand. He also understood that although such a trip would be long, that it would be safe. That went especially for any of Tom's larger ships. Each had been outfitted with an Attractatron system for grabbing and tossing aside anything that might be inbound toward that ship. It was a good, fast and accurate system and had been for the more than six years he had invented it and refined it.

The most modern version was twice as powerful and half the

overall size. The important thing was it had been added to *Sutter*'s equipment three months earlier at both the front and the rear of the craft.

Sandy Swift had been his sister since the day she was born, nearly thirty-two years ago, and if anything was true, she knew how her brother's mind worked. Holding up a hand to forestall him making a comment, she said, "Do not tell me about how safe things are with the Attractatron. I know that. I truly do. It is just that not all things behave the way Tom Swift wants them to in that big universe thing out there."

Sutter's crew consisted of Red Jones and Zimby Cox as lead pilots, and Slim Jones and Art Wiltessa as backups. Art had, years earlier, suffered an internal ear rupture and had not been allowed to do more than fly in commercial aircraft for about nine years. In the past three he had undergone two operations that restored all his hearing and equilibrium. It was the latter that had disqualified him from piloting duties, so he'd transferred over to work with Arv Hanson, the chief model maker at Enterprises.

Now, he was back in full fitness and Tom felt great about giving him this long-distance chance.

Accompanying the pilots would be a team of geologists and mining experts, all of whom had been in *Sutter* before; four of the five had been on the Pluto mining expeditions and one had helped with a brief mining run to one of the moons of Jupiter.

All were ready to go days before the scheduled time, and all of them asking about whether Chow might be coming along.

"We're gonna miss his cooking!" Slim said in his slightly Southern drawl.

"Unfortunately, Chow is not coming with you. He has assured me that *Sutter* will be fully stocked with enough of his ready meals to get you through the time away with a margin of three weeks. Just don't come back with no food and needing larger pants!"

The flight team went away grumbling but in good spirits. Chow would have been icing on what was going to be a nice cake.

After asking Bashalli and Sandy to accompany them, just to ensure themselves their men were not going to sneak onto the ship and leave—and both saying that, no, they trusted their husbands—everyone piled into the *Sky Queen* for the eighty-nine minute trip down the coast.

Because he would be taking the jet back very soon after takeoff, Tom chose to taxi over to a position close to the *Challenger*; that

would be the shuttle getting everyone up to *Sutter* before coming back to land. There was no use in its remaining in orbit as the crew would be gone for at least seven weeks.

With a wave, Red was the last man to disappear inside the hatch to the right of the large hangar door. As it closed, Tom began pulling in a tight circle and heading back for the parking apron in front of the Administration building. They could all watch the takeoff—*all* consisting of him and Bud and Deke Bodack, who'd come along just as an observer—from that position.

"Kinda wish I were going along," the tall man said to Tom. "Of course, the squirt would have a wobbly fit if I did that and didn't take her along." He referred to his wife, Stefanie Brooks-Bodack, a woman with a type of dwarfism that had left her normal in every way other than the abbreviated shins that kept her height well under five feet.

"Not sure what sort of mischief she believes I might get into on my own, but she is a real clinger."

He grinned knowing both Tom and Bud understood the demonstrative nature of Stefanie. Whenever possible she would charge at them, fling herself into the air and latch onto their necks. Often, this was accompanied by bright red lipstick marks on their necks she hoped would cause embarrassment.

In hindsight, she might make a good addition to this crew with her experience in volcanology and tectonics. On further thought, he shook his head; she possibly would never see anything within her scope going on on any of the asteroids.

"Sayonara, kids," Bud called softly out as the large ship lifted from the tarmac.

Five minutes later, and with permissions and clearance for a direct to Shopton course, the *Queen* headed down the runway and was soon turning and disappearing.

For the *Sutter's* crew, the trip out was strenuous. Periods of nearly 1.5-G were interspersed with 1.2-G and even 1.0-G "rest breaks." This kept up in the outbound direction until they were slightly more than half way to their first stop. After that the entire upper sail of the ship turned 180-degrees so their backs would be to the slowing down position.

Red asked his team if they could stand a slightly longer higher gravity run so they could coast for a few extra hours. Everyone agreed it was just fine with them.

Their first stop was to be one of the larger bodies in the entire

belt of objects between Mars and Jupiter: Pallas.

"It is approximately five hundred thirty kilometers across, or three hundred twenty-eight miles for you non-metric types. Most astronomers and planeticians think it has a shell of something like glass." He looked at the men sitting around him in the expanse, that large multipurpose room atop the body of the ship.

"Planeticians?" asked Art.

"Yeah, well, whatever they are called. You know, there are statisticians and—" he sought to find another one.

"Opticians?" Arv asked trying to be helpful.

"Not exactly like *that* one. People who have nothing better to do than look out here for things. Anyway, right now it is almost straight out from the Earth and past Mars. The other big boys are scattered all along their orbits, and this might be the only sizable body we get to this trip."

He told them Tom had plotted fifteen asteroids to visit, and that he would be satisfied if they managed to get to an even dozen of them.

"Tom believes, as does Damon, the inner part of Pallas might have a good region of both olivine and pyroxene, a couple of minerals that are less than easy to extract down home."

He told them the first was a magnesium-rich mineral that included a lot of iron.

"We should be able to smelt that iron out." He was going to say more but could see his mining team all had looks of, "Yeah, we know all that!" on their faces.

Slim asked a reasonable question. "Does it have any special look so we'll recognize it?"

Red looked to Jeremy Powers, the lead mining expert.

He said, "Some of the chunks we have on Earth are almost jade-like and some are pretty clear. Most are green with a few rarer ones in the browns and reds. Just don't expect it to be lying around on the surface. Our best guess is we'll be digging at least five hundred meters down. Even then, it might be so hard to get we have to go someplace else."

Soon, it was time to go back, strap in and decelerate enough to bleed off a third of their velocity.

* * * * *

Every time the *Sutter* slowed to a 1-G flight rate, Red, or whoever was in command of the ship at that time, made a radio call with

status back to Earth. A few times the messages had to be relayed from either the *Space Queen* or the old Outpost and around the globe to Shopton due to the rotation of the planet.

Tom had left word that he wanted a data recap each morning and to only call him if there was any indication of troubles.

There had been none.

And, there was not a lot else on the inventor's agenda requiring much of his time and attention.

He and Bashalli were discussing this one evening as the nanny got the kids to bed. She was coming close to asking him if he regretted not having gone out with the rest of the men in the *Sutter*. He seemed so… well, she couldn't put a name to it just now.

It came to her a moment later. "You are very restless these past two weeks," she told him. Seeing that this proclamation did not surprise her husband, she reached over and touched his knee. "I am sorry I did not want you to go on another adventure."

Tom put his hand over hers and squeezed it. "Nonsense. I am reaching that point where I need to hand off a lot of the day-to-day responsibilities and concentrate on the things I can do here. This is good for me. Don't worry; I am fine with this. I'm just a little at loose ends these past few days. Something will come up."

Nothing "came up" over the next two days and with the weekend, Tom made a decision to just do anything to stave off approaching boredom.

"Pallas, dead ahead," called out Zimby. "Five-point-four million miles. We are on slowdown to orbit and will arrive in seventeen hours." He glanced over to Art and smiled. "Easy as pie. But, hey… look at that!"

He was pointing to the SuperSight screen. On it, Pallas was coming into almost crystal clarity… and that is what it looked to be constructed of; sort of a crystal or even a milky glass.

And, it was not a complete sphere—something they had been told to expect—but featured several flatter places and a lot of craters. Older photos taken with telescopes made it look shiny and bumpy. The Swift Observatory team, who had briefed all members of the flight crew and their mining folks, had shown them an image taken by the megascope prober up on the *Space Queen*. Even from the great distance, the picture had been clear enough to see about six craters of fair size and more than a hundred smaller ones. A few could be measured even at this distance and had been shown to be shallower than twenty feet wide and about the same depth.

“Will you look at that!” Art said pointing to the lower left of the middle where more than a dozen smaller craters could be seen inside a much larger and shallow crater. But, something about the glassy covering made everything seem softer with rolling areas instead of sharp outlines of impacts.

“It’s kinda white, isn’t it?” Art asked. “I mean, compared to the gray of the Moon and all.”

They agreed it likely had something to do with the composition of the glassy outer shell. A quick call to have Jeremy come up for a look confirmed their thoughts.

“Ah. Yes. That is caused by the long-term exposure to the solar radiation that gets out this far. Mix that up with what that shell is made from and you get white from this distance. My bet, and I’ll take any ten-dollars you care to wager, is that up close it will be striated with grays and perhaps light blues.”

Two work shifts later, when Red called for all hands to return to their acceleration couches for the final maneuver to put them in a close orbit of Pallas, even the SuperSight was not needed to see the light striping effect different minerals mixed with the silicates in the outer shell was showing them.

“Inserting into sixteen mile orbit,” he announced, “in three minutes. If you are looking out, do not be alarmed by our close approach. With this large a ship and that tiny an asteroid, we need the proximity to get the gravity.”

It was just eighteen minutes later he announced they had settled into an orbit that, because of the irregular shape of Pallas, would run from as near as fifteen and two-thirds miles out to twenty-six miles.

“It’s circular to us and not that rock below,” Red told everyone once they assembled back in the expanse. Only Slim had remained in the control room to act as a safety in case of difficulties.

Even his attention was deemed unnecessary an hour later when Red called for a mandatory rest period.

“I’ll sleep up in Control and the rest of you hit your bunks. Six hours from now I’m sounding reveille and we go to work. Also, I’m going to call home to tell Tom and Damon we got here. Anyone have any urgent messages other than ‘We are fine and all is well’?”

Nobody could think of anything they would not take care of themselves when their daily turn at the radio came up.

Everyone got up on their own and were gathered in the expanse half an hour early, all hungrily eating some of Chow’s excellent meals. *Sutter* offered them artificial gravity as long as they wore the

special neck-to-toe body stocking with special fibers that reacted to a series of low-powered specialty repelatrons. The same could not be said for food or drink, so foods were universally sticky—lasagnas, creamy casseroles and such—while fluids were served in either adult-sized sippy cups or squeeze containers.

Once they had placed all used items into the recycles bins, they split up into their work groups.

The pilots would be kept busy maneuvering and holding positions in various locations around the asteroid. *Sutter* had an excellent mining and sampling module sticking out of its nose, and that needed to be aimed downward and pressed in.

The pressing would be courtesy of repelatrons aimed at a variety of other asteroidal objects.

Jeremy had an entire schedule complete with timings he wanted to adhere to. For the initial two-hour test drill, that was easy. It was only after he and his team sorted through the core sample that had gone down over four hundred feet he made his report.

"For starters, the drill went down too fast for my liking. That tells me, at least right here, nothing below that fifteen foot crust is very solid."

"Can we get Red and his guys to move us a mile of so away?" his second man asked.

"Okay, Rob. You head up with this small sample I'm putting in a tube and explain how this crumbly stuff is not going to do us much good. We can dig it up but a lot will just fall through the equipment and back into the hole."

When Rob came back to the control room for the mining module, he was nodding.

"Red says to tell you to strap in. We are moving in five minutes."

Once they had repositioned, the test drilling was repeated. This time, and to everyone's relief, they hit solid materials. This test drill only achieved one hundred twenty nine feet in the same period of time as the first.

When the mining team fed twenty samples into the special spectroscope analysis unit—one taken from every four feet of the samples—they took a break as it measured and mapped everything. It would be more than an hour before the first set of results came in; time for a good, old cup of sippy coffee!

The initial results told them what Tom and many in the astronomical community believed; like many of the asteroids sampled in past years, Pallas almost certainly came from a once-

destroyed extra planet within the solar system.

Containing what was believed to be about 6-7 percent of the total mass of the belt between Mars and Jupiter, it was yielding a nice variety of minerals and even two things on the Periodic Table of Elements.

In the mineral category were the silicates of the crust, the other expected layer of ancient meteorites under the crust that most all asteroids seemed to feature, plus the olivine they'd expected.

What had not been expected was a three-foot-thick layer of gallium and about forty feet of a crystalline mineral with many characteristics of asbestos.

"It's a lot more fruitful than old image and scans out here showing what looked like a badly beaten up golf ball," Slim said with a smile as he and Art sat in the expanse with Jeremy reviewing the printouts.

Suddenly, an alarm sounded.

"Fast incoming object detected. Probable collision with Pallas in one hour. It'll be close to our position. All hands, get to those couches; we're pulling off as fast as possible!"

CHAPTER 4 /

"WE NEED A PHASE 2"

"BUT, MR. Swift. The U.S. Astronomical Research Society, Incorporated can't just *give out* information. That is our entire reason for existence. We do the research and companies such as yours pay us for that. What you are asking for is, frankly, an impossibility. I wish it were not so as we hold you and your company in the highest of regards. Try to understand our position; if we just gave away our information we would not be here to provide you and the world with anything for very much longer. Please call back if we can reach a… well, that is a business deal."

The phone in his hand clicked and the dial tone came back.

Tom set it down a bit put out by the man's attitude. After all, the Swift Observatory had been one of the organizations providing their data for free for a couple years.

Tom was not normally a spiteful man, but this was too much. Picking up the phone he dialed the four digit inter-company number.

Bob Jeffers, a man who had started working for Enterprises when it opened but had taken a transfer to the Observatory several years back—to pursue his love and training—answered on the second ring.

"Well, I see this is an Enterprises line, so this is Bob. Who is there?"

"Hey, Bob. It's Tom. Got a minute for me to crab and grouse a little?"

"With it being daylight all around us, I have several long and tedious hours ahead of me. So, yeah."

Tom told him about trying to get a little payback on the information that had been fed to various outside organizations.

Bob groaned. "Oh, *those* leaches! Tell me who you spoke with and I'll tell you what we are going to now do."

"Someone calling himself Constantinople Diapolis. Perhaps a little Greek?"

Another groan came from the earpiece. "Connie? Why, that son of— sorry, skipper. I have a long-standing hate-hate relationship with that… *individual*. Oh, and he is not Greek. He claims to be a Cypriot He isn't; he's a Turk. The truth is his name is Connor Nash,

born Nakali. His great grandfather or something was one of the people responsible for Turkey's surname change law back in the nineteen twenties. He dropped the family name and became a real pain in the—"

"So," Tom interrupted, "what can you do for me?"

"First, his company is officially shut off from Observatory records. We pre-cleared that with Legal after the last couple of times they have not been cooperative. This isn't the first time they have refused to play nice with others, including this very observatory; it is something like the eighth time. We lost a computer file we had provided to them, oh, two years ago. They flat refused to send us a copy unless we paid them a couple grand 'for their time and energy.' So, with this slight to us now going on record, they cease to exist as far as we are concerned.

"By the way, what information were you hoping to get?"

Tom stated he had wanted the latest relative distances and angles of targets and what might be in between to feed up to *Sutter* once they began traversing to their second asteroid.

"Oh. Just that? Not something hard like what does the inside of Titan look like?"

Tom laughed. "Nope. It's something mundane that I do not have time to go hunting for. Any info for me?"

"You will have it in your email box in five minutes. Good to hear from you, Tom. As they say in… hmmmm, *some* place or another, don't be a stranger."

As *Sutter* began its traverse toward their third target asteroid, this one currently unnamed but catalogued by a numeric designator, Zimby called out:

"Unexpected gravity well to port about eighteen degrees. Seems to be pretty heavy. I'm detecting a two-degree veer in that direction. Suggest we turn right fifteen degrees or more!"

Red said nothing but adjusted their course before asking for more information.

"We are getting closer but it looks like our point of closest approach will not get any nearer than we are… now. Uhh, Red? There is absolutely nothing out there. I mean zilch. Nothing on the Prober, nothing on the SuperSight, and nothing on the energy scanner. Just the gravity pull. Do you think we might have found another of those micro black holes like we use in the *TranSpace Dart*?"

“Gosh, I have no idea. You say you see nothing out there? Not even a black spot with no light inside or out?”

“Something like that. But it seems to be taller than it is wide and there’s no way to tell if it another hole without getting closer. Too close for my liking. I’m marking the position and we can tell the skipper about it.”

Tom’s tall and not surprisingly *dart*-shaped spaceship used a mini black hole he had discovered inside the asteroid belt a few years earlier. When perched near the nose of the craft, the natural draw was overcome by Tom’s repelatrons and Attractatrons, and the result was the entire set—ship and hole—began moving forward. It worked in spite of what many people had believed, and even had the ship and crew traveling once at near light speed.

The one thing keeping Tom from creating a second fast ship was unavailability of another black hole. This could be an incredible discovery!

Zimby kept as close an eye as possible given there was nothing to see over the following hour before he announced their instruments were getting less and less feedback gravity readings and nearly minute indication of anything other than the usual. Asteroid number two had been a lot smaller and less fruitful than Pallas. So much less that Red called Tom and the two decided to forego drilling down farther than the one hundred fifty feet they reached.

“Gee, Tom, but you’d think all the pieces on this side of the orbit path came from just one source. Except, this little one was a lot like the first core we did on Pallas. Loose and crumbly and would be hard to mine.”

“Remember, even on Earth minerals are scattered all over the globe and many are not available everywhere.”

Now, with the information Bob had sent to Tom, they were making a good course toward an asteroid some fifty million miles in the distance, but one that all reflective spectrography from Earth or Earth orbit said should be made of metals like scandium. Rhodium was also likely to be found in significant enough quantities to be worthwhile.

What appeared to be a bright streak of gold crossing at a diagonal could, of course, *be* gold. Not rare but precious enough to warrant filling one of the multi-ton bins if they could find enough to mine and refine.

At their rate of two asteroids from their list visited each three days, they would not get to the dozen Tom hoped for within their allotted time. They would come in at only about eight. But, if they could do some meaningful mining from this third target and more

from a couple others, the trip would have been worth it.

* * * * *

Tom spent three days and one night up at the Swift Observatory working with Bob and the other astronomers. They were trying to locate a few more promising asteroids that were closer to one another so *Sutter*'s time out there could be maximized.

Currently, for every hour on or orbiting over an asteroid she was travelling for three hours and eleven minutes. It was not, to everyone's minds, a good use of time.

"I think if you can get Red and his crew to take a break from your list and try this one," he indicated an asteroid within four million miles of their projected position, "it is about a kilometer wide, has enough influence on its neighbors we believe it is a heavy piece of rock. Might just be iron or nickel, or it could hold a few of the higher numbered elements. You know… the heavy ones that are so rare down here they have to be made inside a reactor and then only last a brief time. Imagine what might be accomplished if we had even fifty pounds of something along the lines of Lawrencium or even Einsteinium?"

Tom chuckled. "Dad would love to have even a pound of Californium or Berkelium; so would many scientists around the world. So, I have to get on the radio and redirect the *Sutter*. While I'm working with Communications on a link, can you compute an intercept course based on where they ought to be in ten minutes?"

Jeffers said he would do that and could even pull up a sliding scale of vectors should the maneuver take longer because of something out there nobody down on Earth could see.

Tom came back to the astronomer three minutes later with the handset of one of the observatory's land line phones.

"Okay, George. Call me at this number when you get them. I'll stand by."

When the link was established, Tom had to apologize for waking the ship's commander.

"I just realized you were likely to have been in bed for an hour, Red. This is important and so I hope you can forgive me."

"Just reading a little before closing down for the night, skipper. What have you got for me?"

"Basically, I need to have you skip the rest of your visit list in favor of two locations that look more promising. One is nearly on your trajectory, just a little farther out. The other one will bring you around, and if we can do it right, post visit and drill, you will be in

good position for a straight shot back to Earth.

“Let me grab a pad and pencil and get these positions down. Also, what should we be looking to find?”

Tom gave him the two coordinates and the target metals. Red let out a couple low whistles.

“Okay. Number one is very doable. We have the fuel and time. Number two might be a stretch for us. Unless we try going out for another take up from Titan, and we both know how badly that ended up. Of course we can come home on repelatrons, just that it’ll take a week or so longer. I suppose the finds will be worth it, though. Let me get us to point one and we’ll talk.”

By the next morning Red reported they were close to the new target asteroid.

“We’ll do our approach, but we can’t find enough mass to draw us around in any sort of orbit. This might be another case of nose in and use the anchors to get anything. I’ll let you know in about three hours.”

On *Sutter*, Red ordered the mining team down to the forward module while he and the flight crew got the ship oriented in a nose down angle and three of the repelatrons pointing and locked onto other asteroids to help them get closer.

It looked as if it were going to take a little longer as the amount of push they could exert on the nearby asteroids was slight. One things Tom warned them against was accidentally pushing asteroids that had maintained specific positions for millennia around and out of place.

“Nose within five hundred meters,” Slim called out to the ship sitting in the navigator's seat. “Rate of forward motion, two meters per ten seconds.” He turned to Red and added, “We’ll need to start slowing that rate in about twenty-one minutes. I’ll give you callouts at two minutes, one minute and every five seconds from thirty.”

During that time everyone onboard readied their systems and themselves for what would likely be a ten-hour non-stop job of getting anchored to the surface and then running the drill in at least one hundred feet. If they could manage more or if they were hitting interesting materials, they would continue.

Red stopped all forward (downward) motion at an altitude of twenty feet. The gravity coming from the low mass of this one kilometer piece of irregular rock would inch them forward over the next thirteen minutes until a tiny push down against the asteroid would stop them inches above the surface.

When that time happened, the mining crew was ready to lower

the six long and thin anchors down from the nose to the surface. Jeremy called to Red for a little downward press, "…until we get the anchors seated," before ordering the process to begin.

"We're getting a little crumble," he let the control room know, "but I'm seeing at least numbers one, three and four digging in. Wait… now two has a good purchase." Twenty seconds went past before he told them anchor six was not digging into something solid enough to hold them. Five stubbornly refused to find anything to dig into. This surprised everyone as the anchors were only spaced about forty feet apart.

"Can we do this with just the five anchors?" Red asked his mining expert.

"Can you give us a tiny bit of down pressure to compensate? Something like putting a short stack of books on a point to amplify the downward pressure?"

Slim indicated with a thumbs-up sign he could do that.

"Sure. Coming up in fifteen seconds or thereabouts."

Nineteen minutes later Jeremy and his mining crew called to say they were ready to lower the core drill. He suggested it would be about forty minutes before they had meaningful samples to begin testing.

He was incorrect in his assumption.

First, anchor five finally reached a point where it attached to something solid.

"I thought we'd shut that off," Jeremy complained to the man who should have taken care of that.

"Sorry. It seemed like it was doing something so I let it run. Now it is off and holding solid."

Red was told they could back off the repelatron pressure now.

He made a call to Enterprises, hoping to catch either Tom or Damon before they went home for the evening.

Both Swifts were in the office so he gave them his report omitting the anchor not being deactivated issue. That was something Jeremy could handle.

"We have a crumble for a surface," he told them. "But, and depending on as little as a dozen of so meters, we get into something more solid. I'm thinking we will get a good core sample from our location. If not, I intend to raise ship and go to the other side of the rock."

Damon was curious about something. "We haven't heard much

about your trips from point to point, Any excitement? Any small things to dodge and weave around?"

Red's hesitation gave the older man a momentary chill down his spine.

"I wasn't going to make much of this, and I'm not sure it deserves anything other than a fast mention, but we flew past something with a very high gravitational field on the way over here. Now, before either of you start hammering me with questions I can't answer, I'll tell you it registered as gravity, but there was nothing visible out there on any instrument or visually."

Tom got excited. He was about to ask about the possibility of it being another black hole, he paused. "It isn't anything like a black hole, is it?"

"Nope. If it were everything in the vicinity would be shooing into it. So far, we have noted nothing moving toward it. For one thing, that ain't right! Gravity sucks, as the old saying goes. Yet, nothing seems to be getting sucked into anything or down onto something we can't see. I'm stumped so I thought we could all worry about other things for now and try a bunch of theories on for size once we get back.

"Unless you want us to pull out after this asteroid and go fly by that area again."

The Swifts looked at each other. Damon shook his head, so Tom spoke up.

"We think you proceed with the current drill and possible mining and then I'll see of there is anything in that same basic direction you could visit before coming home. Let us know as soon as the results from the core start coming in."

It was just a few minutes before ten when Tom got a call from Communications. "We're routing a call from *Sutter*, skipper. It's Zimby. Evidently Red and Slim headed to bed. Hang on a sec…" there were two clicks and the background tone changed.

"Zim? It's Tom. What's going on?"

"Well," came the almost instantaneous response—thanks to the Space Friends' instant radios—"we were getting up a lot of common stuff like calcium and a silicate or two, so Red decided to hit the rack. I'd call him back but the man is beat. Hope you don't mind me making that decision."

Tom laughed. He trusted each and every man on that crew to make sound decisions.

“Nope. So, anything other than ‘we got nothing’ to report?”

“I would have to say that depends on whether you can do with a load of something the spectro-thing says is Promethium.” Any thoughts on that?”

Tom sat stunned for ten seconds before asking his pilot to repeat that information.

“Promethium. Readout says it is element sixty-one. The core sample has about a seven-inch band of it. Not sure, of course, but likely to be several ounces when separated from the dirt and other stuff. The flashing yellow indicator on the screen makes it seem important.”

Tom told him how there might be a pound and a half available on Earth.

“It is very important. Do not let a single gram of that sample go unclaimed. It might be worth a full dig in to find more. Oh, and as it is radioactive in concentration, use caution.”

“Okay. The only other thing of any note is a wider and more concentrated layer of Terbium. Even I know that has some uses back home. So… what do you think about us doing a full day or two of digging this stuff up?”

He mentioned the mining people were going nuts wanting to do some real mining.

“If there is nothing else more interesting, tell the teams to take a rest break before going ahead with a full mining dig.

Jeremy called after the break and nine hours into their mining run, and about the time Tom was getting ready to head home from work, with some other news.

“We might be leaving the Promethium behind this trip, skipper. First, we did manage to get down to the pocket, and that seems to be all there is to it, and maybe found two pounds. Not enough to my thinking to dedicate an entire bin to it. What we did find in a surprisingly thick layer about fifteen feet below where we stopped the coring was a nice layer of Actinium. Now, I haven’t talked this over with Red, but I’d like to go for a wide field sweep for that. I believe we can get up as much as three tons of the stuff.”

“You have measured the radiation levels and they are within what you can handle?”

“Sure. Perhaps a small degree less than the stuff separated from Uranium ores of various types, and still definitely there, but the tomasite of the bins and our crushers can handle that.”

“Okay,” the inventor began as he quickly did a search for

Actinium online, “I’m seeing a lot of medical uses and reasons for bringing that back. Tell Red I’ve okayed the mining. Oh, do you have an idea how long this is going to take?”

“Best guess is twenty-six to twenty-eight hours, Tom.”

“Okay. Also tell Red I am going to give him a vector for home once you get loaded and closed up. That asteroid will have to do for now. Let me know if you get any other surprises.”

Sitting together in the shared office, Tom proposed something to his father.

“I am thinking that we definitely are going to need a phase two flight and mining expedition. They might need to limit what they bring back on this one. I have to come up with a way to seal partial tanks of materials so we can pack something else on top.”

“So, Son. Do you believe Red and the mining team found enough to make a second trip scientifically interesting and profitable?”

Tom nodded. “It can be so profitable I am thinking of outfitting a second fuel ship so *Sutter* can manage twice the distances between asteroids.”

“I see.” Damon Swift sounded dubious. “What if you can get full loads of your five best target materials within a few of the locations? Would it be necessary or even advisable to remain out there longer than necessary?”

Now, Tom had to think about how to answer this line of inquiry. In his heart he believed the more places they might test and catalog for future visits the more any other trips out would be successes and fruitful.

When he told his father this, the older inventor made a suggestion Tom knew might be coming, but had not wished to hear it.

“I cannot think of a positive scenario to be gleaned by oversupplying our planet with some of those rare minerals. Eventually, supply and demand will drop the bottom from those markets. But, here is the biggest reason I’ll suggest not doing what you propose; mankind is basically lazy. Give us ten pounds of something and we are likely to fritter away eight pounds of it with the thought that if getting the first bit was *that* easy, why concentrate on making a little of it last?”

CHAPTER 5 /

PAUSE FOR THOUGHT

THAT STATEMENT made Tom pause to think the situation over. Right off the top of his head he could not find a good come back reason to tell his father.

"Oh," was all he could get out.

"I know that sounds like a disappointment and maybe even a rebuke of your ideas, but I put it out there to give you something else to consider other than just the adventure aspect. Give it a couple days and we will get back together and revisit this. I promise you my mind is not made up; I just like to get as many cards on the table up front."

Tom nodded. It was true. Damon Swift was one of the most fair and common sense men he knew. If it weren't for the fact Damon preferred to invent and manage his companies, Tom had—in his early teens—wondered why the man had not gone into politics. He might have made great things happen.

Now, of course, he understood the sheer level of frustrations to be had in that line of work. Even their very good friend, Peter Quintana, had chucked it all in at one point. He'd fought so many useless battles that his energy to face more failed.

But, with the death of his Senatorial replacement and his own Governor pleading with him to "just finish the term," he had returned to Washington. The only difference is he had taken a few months to rejuvenate his brain and body. He also admitted, privately to Tom and Damon, he had missed the level of action and debate to be had in the nation's capital.

"Just like working with you way back when on the Citadel, I felt the sense of true accomplishment on numerous occasions, and realize the good *does* outweigh the bad."

Tom had a lot to process, and even more to research, so he excused himself to go to his underground office.

Even as the office door closed, Damon was pulling over his keyboard and getting ready to make a list of all the reasons he ought to be behind his son's desire to go back to the asteroid belt.

Coming out the door at the side of the Administration building, Tom nearly ran into—in the most literal sense—Artie Johnson. The one-time intern in Propulsion Engineering, and a man who had so distinguished himself and his ability to reason out an engineering

issue that he had been offered a full-time position upon graduation (and that offer had come just two weeks into his two-month internship).

"Oh! Tom!" he squeaked as he jumped back. "Sorry."

"Whoa, Artie. We didn't collide so no harm and no foul. Can I ask what your hurry is?"

Slightly flustered, it took the younger man a few seconds to collect himself. Finally, he admitted he was coming to find the young inventor.

"Dianne had me going through the list of everything the *Sutter* is bringing back. She wants to see if we can grab a few things for our engine research." He looked at Tom with a hint of hope in his eyes.

"Go on."

"Oh. Well, it was more what we didn't see on the list that had her tell me to come over to see you. Umm, you probably want to know what that is. Right?"

Tom nodded. "It'd be a help, Artie."

"Mostly I think it comes down to Palladium. Lots of the other stuff we can get from the recycle market. Platinum, Titanium and even the gold we use to coat injector nozzles. It's just that she… I mean *we*, want to do more with improvements to fuel manifolds and Tobi Ducts."

Tom didn't have to ask about that last one; he understood just about everything going into a jet engine. Tobi Ducts were parts of the compressor portion of a turbine engine. They needed to be exceptionally strong, hence the inclusion of Palladium in their makeup.

"I see. And, we never located a source of that, did we?"

"Not according to the list. Because of chemical and radioactive leeching processes used to recover metals from obsolete engines, I think the loss rate is about thirty percent. Here's the bad part. Enterprises isn't even in the top ten companies to get preferential purchasing power for Palladium and Titanium. Titanium we got in abundance."

"Just not the Palladium," Tom finished. He explained how he was in the process of putting a list of new things to go look for and promised the engineer he would add the needed metallic element to that list.

The first thing he did on reaching the office was to pull over a pad of sticky note papers and write down the requested metal. He also wrote the number "1" in the upper-left corner and circled it to

remind himself if was going to be a priority for Enterprises to get some…

Oh, he thought. *I never asked how much we need.* He reached for his phone and called over to see if Dianne could fill that gap of information.

"Well, hi, Tom. I guess I forgot to tell Artie that little detail. Honestly, if we never got another source than what we use, it would not cripple us. But, if we had a ready source of a couple tons of it, I could increase the strengths on a couple components in the Series 6 and Series 7 jet turbines."

"Does that give them higher power ratios, or longer life or what?"

"Might give us as much as a thirty percent longer lifespan between replacement cycles. That could either give us a moderately higher price tag per engine, and likely some loss on parts sales, but I believe a combination of the good will that brings in, plus a new market for older engines by other manufacturers could easily surpass any loss."

He told her it was on his list, but also said the next trip could be a few years out.

Dianne was philosophical about it. "Okay. If it happens, it happens. If not, we soldier on."

It took him through the weekend before Tom believed he had ample reasons to convince his father another trip to the belt was called for.

During Thursday and Friday he had spoken with seven department heads about anything they might have on a needs or wish list. Eleven of the nineteen items were actually available from several earlier mining missions including the Pluto ones and the *Space Queen* construction asteroid mining. These included Manganese, Titanium, Platinum and even Vanadium.

Left to be fulfilled for the different manufacturing and development groups were Niobium, Scandium and one request for a fifty-gram supply of Curium. When Tom's eyebrow shot up at the mention of the radioactive element, Charles Brandiwine of the Medical Equipment development team looked at his notes carefully.

"I have two requests from our scientists to be able to use minute amounts in a new type of artificial heart they are designing. It says here they want to use quarter gram amounts to generate electricity in a totally enclosed system." He shrugged as if to tell everyone they had asked and he had answered.

"Well, not certain we can find that in any sort of native form as it has been a byproduct of bombardment of Plutonium. I may have to disappoint them, but I will keep it on the list."

When Tom read out the list to his father, even the older inventor had to question the Curium.

"I will need to go talk to that department. It would appear they are trying to get a little too exotic. What tiny experience I had back in the NASA days says that enough to generate electricity through decay is enough to create so much heat it could scorch tissue in or around any other heart muscle inside a person." He thought a moment, then added, "I would be at a loss to provide them with an alternate to investigate."

It was only when Tom reminded his father of the unexpected gravity influence Red and his crew flew through the older man perked up.

"I'd let that slip from memory," he admitted. "What with the badgering I'm getting from your sister, it would seem quite a few things should have been written down."

This made Tom curious enough to ask what was going on.

With a little sigh, Damon responded, "Your sister loves—and I mean with a passion I haven't seen in her since she declared at fifteen years of age she was going to marry Bud Barclay—the experience of flying. She has been after me to have her transferred on a permanent basis to the pilot team."

"Communications work not stimulating enough?" Tom took a guess. "Have you reminded her that as a mother of a small child she has additional responsibilities that might not mesh with the inherent dangers of being a test pilot?"

"The subject has come up and been scoffed at. She is of the very firm belief she is practically invincible." He looked at his son. "Didn't you get over that about the time you turned twenty or twenty-one?"

"Twenty-one and about the time I asked Bash to marry me. There was a sudden opening of the heavens, choirs of angelic voices singing down at me, and something like a hammer between the eyes telling me it was about, pardon the swearing, but about *damn* time I straightened up and became an adult."

They talked about Sandy and how she had averted a disaster when she managed to get an unpowered plane to the ground—with only slight damage to the wingtip and a road sign—when she was going for her solo flight to get her license. At the age of 16!

"Right," Tom said recalling how she had let the experience go to

her head a bit.

Damon chuckled. "A *bit*?"

They both laughed at the idea of Sandra Helene Swift-Barclay and 'a bit' of anything. She was an all-in woman who had been an all-or-nothing child.

"Do you have any idea what Bud thinks?" Tom asked.

"Sad to say I believe my one and only daughter has him a little gun shy on telling her she might not be totally correct about… *anything*."

Tom agreed to have a heart-to-heart with his brother-in-law that very afternoon.

"Wonderful! In the mean time, I suppose I find your case for a second *Sutter* visit to the asteroid belt, minus trying for anything radioactive, has merit. Go ahead and plan for something in a month or so. As I recall from a conversation with Professor Heller, a couple good sized chunks ought to be just outside the Orbit of Mars about then."

When Tom called the flyer to arrange for an afternoon snack for them both in the office, Bud stammered a little as he asked if this were going to be about Sandy.

"I won't even ask how you could guess that, Bud, but… yeah. Dad thinks, and I believe I do as well, that she is being a bit unreasonable. Nobody wants to limit her, or anyone here, but I think you have the same ideas we do. So, come over at three and bring your appetite."

"Not that I'll have much of one today…"

"Then, skip lunch and I'll have Chow bring in some of his apple fritters you always wolf down. Okay?"

He sounded a little like a kid who knew he was going to get a scolding when he got home, but the flyer agreed to be there.

"I'll make a guess and say you don't want or need me to be here," Damon stated.

Tom shrugged. This was a bit of new territory for him, and it was another in a long history of things he knew needed attending to when it came to his sister.

"Probably would not be as knuckle biting for Bud if it's just the two of us. We can go next door or down to the *Sky Queen's* hangar office if you need to stay here."

"No. I can use this as an excuse to go visit a couple departments and do the handshake and smile thing. He's coming at three did I

hear you say?"

"Yes."

"Then consider me out of here at two-forty-five and for a least ninety minutes. Perhaps two hours. Leave a signal if I need to keep walking."

Although never having been to college, Tom had heard "tales."

"So, do I leave a necktie hanging on the doorknob telling you I need you to stay away longer?"

Damon laughed mostly because his roommate at MIT had tried using that trick in order to make his housemates at the fraternity believe he was up to something.

He never was.

Tom, a plate of fresh and still warm apple fritters, a pot of coffee and a smile greeted Bud when he poked his head through the door a minute before three.

"I see nothing better came up. Should I sit or stand for this?"

"Bud! Get over here and relax. All I want to do is find out your side of the story about Sandy and her campaign to move to the test pilot ranks. I kind of thought her Friday flights plus the deliveries every couple of weeks might satisfy her." His face said to the flyer that was really the only reason for this meeting, so Bud came over and plopped into one of the comfortable chairs.

"Guess I don't need to tell you Sandy loves flying."

Tom shook his head but said nothing.

"And, you know her better and understand that she gets more than a bee in her bonnet, she shoves the entire hive up there and refuses to consider she might do better without all the stinging. Right?"

Tom smiled. "Do you know who Boomerang was?"

"Umm, a bush kangaroo on Australian television? No, not really although the name sounds familiar somehow."

Tom told his best friend about the original Tom Swift and the colored gentleman and all-around worker-for-hire that Tom's father, Barton Swift, paid to do odd jobs around the old Swift property.

"That man was Eradicate Sampson—known to all as Rad—and Boomerang was his mule."

"Wait. Sampson as in the Swift Sampson rocket series?"

"Yep. And, like the rockets Rad was a real workhorse for those

Swifts. Evidently he liked people to believe he was a lazy man who shuffled from place to place, but he knew the value of money and how to make it. When Barton's wife was ill near the end of her life, Rad would take his cart, hitch Boomerang up and head to town to do shopping. Then, when the housekeeper, Mrs. Baggert, got too old, he went back to trips into town every other day."

"Sounds like he got a lot of good service from that Boomerang."

Tom shook his head. "To hear the tales, Boomerang was a cantankerous, stubborn and often lazy animal."

They sat in silence a moment.

"Sort of like Sandy, but without the lazy part?" Bud offered.

"Stubborn to be sure, and she can be cantankerous, but nobody can ever say Sandy is a lazy woman. Even when she was little, she expended a lot more energy than a lazy girl would ever do. The stomping up and down stairs and the glares she made could burn off two hundred calories in minutes."

They both laughed. Bud had never personally witnessed the actual stomping episodes, but Anne Swift had surreptitiously takes several videos using her cell phone and had transferred them to her computer. When Bud started officially dating Sandy, Anne took him aside one day and showed the videos to him.

"I just wanted to show you what you might be getting into," she said. "I love my daughter but hope she is finally over that sort of nonsense!"

Bud sobered a moment later and looked at Tom. "I just wish she could see how all her protests about me taking chances and her crabbing about me being gone and even a few near misses flying wise are the very same that can be applied to her. Especially if she takes on more test flying. I'm at a loss, Tom, to talk to her about thing like this. She just crosses her arm under her chest and jiggles a little and then get up and walks out of the room."

"Does she still make the exaggerated 'harrumph' sound?"

"Not most of the time, but she does made a little growl of frustration when I don't agree with her one hundred percent." Now, the flyer looked sad. "What do I do? Ignore things until she gets hurt or—" and he choked on the though the might be worse than *injured* at some time.

"Bash has had some good influence on her in the past. A few statements here or there have sent my sister's brain on a different trajectory than she was on. How about if she casually… very casually, mentions she has heard Sandy looking to do more test piloting, and could never fathom that herself because of her

devotion to the kids. Maybe not play it up too much, though."

Bud asked if they could both talk to Tom's wife and get her views.

The inventor pulled over the phone on the conference table and dialed her work number. The secretary at Shopton Advertising told them Bashalli was just finishing a meeting and if they could hold for "just two minutes, Mr. Swift," she would be with them shortly.

As they were placed on hold Bud grinned, "Think shortly means those same two minutes for her call to end?"

"Usually, the secretary goes into the meeting room and puts a small note in front of whoever has an important call. I just hope she doesn't get Bash out of the room before she is really finished."

The wait stretch into four minutes before the secretary came back.

"She is shaking their hands and looks really happy, so I think she'll be thrilled to talk to you. Oh, here she comes."

They went back to hold and likely for the time it took Bashalli to get to her office and pick up the receiver.

"Hello, my wonderful, talented and handsome husband."

Bud placed a hand on Tom's arm. "Hey, Bash. It's your wonderful, handsome and talented brother-in-law."

Both men heard a surprised gasp coming from the speaker and Tom put an end to her possible suffering or embarrassment.

"And, it's me, too, Bash. Sorry for Bud's behavior, but we have a real poser and I think you might be just the woman to help us get this figured out."

He told her about Sandy's recent push to change jobs and how she and Bud really could not discuss it because of Sandy's forceful way of trying to handle situations.

She fully understood. She had known Sandy for about three months longer than she'd known Tom, and had experienced Sandy's bull in a china shop approach to getting her way. Tom's meeting with the Pakistani woman had been the result of such a hard press.

Not that Tom had any regrets. In fact, he had applauded his sister for her efforts.

"Yeah, Bash. For whatever *Sandy* reason she can't or won't see that her doing exactly what Bud does, and the things she hates about his job, are the exact things she will be facing. Even more so than what she does today. Can you think of some way to redirect her energies or her full steam ahead approach to this?"

Bashalli asked for a moment to ponder things. She did not place

them on hold so Tom and Bud did not talk. When she spoke again, she began with a sigh. “I suppose that I need to do the verbal tiptoe like I did when she was about to have a breakdown over not getting pregnant. At least I had experience to fall back on then. I could even show her the stretch marks. This time, I believe I need to talk to you, or you both, about just what she could do or get into. Can we meet at Moshan’s coffee shop in half an hour?”

Tom said that would be great and they all hung up.

After telling Trent they had a meeting in town, the young men walked down the hall, downstairs and out to the parking lot where they got into Tom’s sedan.

Bashalli was waiting for them, and continued to wait while they ordered coffees before coming to sit.

“Before you two say anything, I have had an idea. How about if I casually mention Father Swift was talking about Sandra the last time I visited the office? As in, this morning before my meeting with a new client. I was, naturally, horrified and could not grasp how she might want to place herself in the way of harm right now. What do you think?”

Tom leaned over and kissed her on the left side of her mouth. “It’s a great idea, Bash. I say do it!”

The following day was Saturday so Bashalli called Sandy to ask if she might like to do some window shopping.

“I don’t really need any windows, Bashi, but sure. I need to get out of the house. Half hour at your place?”

When she arrived, Sandy told her sister-in-law she really did not feel like shopping. “Maybe just a coffee?”

“Of course. One Sandra special coffee with sweetened condensed milk coming right up.”

When she came back with their beverages, Bashalli sat down and began the conversation by telling Sandy of her visit the day before and overhearing Mr. Swift talking to Tom.

“Did I hear this incorrectly? Do you want to go up into the dangerous unknown all for the sake of a change in your job? I mean, if it were me, and it is *not*, I could not consider anything dangerous because of the children. I know I sometimes complain about Tom going on trips, but… well. I don’t know what he would do for them if I were not…” and she pretended to have a catch in her voice. A few seconds later she cleared her throat and went on. “Perhaps it is not my place to say anything to you.” She looked carefully at Sandy who

has started to tear up when Bashalli mentioned the children.

Sandy looked at her best friend and sister-in-law with sadness on her face.

“Oh, Bashi. I never thought about it like that. I didn’t think about Sammy. Or, even how unfair this is to shove onto Bud's shoulders. Poot! What am I going to do?”

CHAPTER 6 /
MINING OPERATIONS - PART 2

BASHALLI GAVE her best friend the sort of advice she knew the woman needed. No lectures and no recriminations; she just told Sandy how horrible she might feel if the rolls were reversed. How she would always worry and that was definitely not what a test pilot was supposed to do. It should all be, "Why is this plane doing that?" and not, "What happens to Sammy if I crash?" She almost felt guilty for taking such a low swipe at her sister-in-law's emotions.

The clincher was, "Now, if you go ahead with this and do get… ummm… *hurt*, then of course Tom and I will help take care of your son. And, Bud."

Now in full cry mode, Sandy hugged and sobbed with Bashalli for fifteen minutes.

Tom had been remaining upstairs in the bedroom and Amanda had taken the children for a long walk to the park six blocks away. Both waited for Bashalli to call them to say things had worked out, or to stay away longer.

Little more than an hour after she arrived, Sandy kissed Bashalli on the cheek, thanked her for the wisdom she'd shown, and also for a couple ideas they'd share on how to approach Bud to apologize.

"Don't forget to tell Father Swift about your change of mind."

The blonde nodded and her ponytail bobbed up and down as she turned to head for her car.

The front door closed and she called out to Tom. "The coast is clear! Although I still do not understand that saying," she added in a lower voice.

Tom came down the stairs two at a time and came over to kiss her.

"I'll assume the little Sandy session went well?"

She nodded and smiled. "She can be a little narrow-visioned and it takes a little to find the right path to take a conversation, but I evidently hit it right off. Thanks for giving me a few hints. Did you want to go out for a late breakfast? I can tell Amanda to come home with the kids and that we'll be back in an hour or two?"

Her hopeful look told him it would be the very best path to trod down to agree. "Sure. That Biscuits 'n Gravy place?"

The breakfast-only spot was only ten minutes away and served

typical American diner fare: omelets, waffles or pancakes, various scrambles, corned beef hash and even something they called the Hangover Platter. That was a three-egg omelet, five "dollar" pancakes (plain or blueberry and with or without mashed strawberries over the top), corned beef hash, fried red potatoes, a bowl of fresh fruit, three sausage links (or patties), three strips of bacon, and all the coffee or tea you cared to drink.

Tom took the menu from their waitress even though he already knew he was having the bacon, cheese and tomato omelet with five-grain toast.

Bashalli perused the menu for three minutes as if trying to decipher ancient scrolls, but when the waitress came back with a tea pot for her and a coffee mug for Tom, she ordered the special platter, but asked if she could have an extra strip of bacon and no sausage.

The waitress, a young woman they both knew lived in an apartment building a few blocks away, looked at her as if trying to come to grips with such an odd food order. When she finally processed the request, she gave them a nod, took the menus, and headed away to the kitchen.

As they waited, she filled him in on how the conversation had gone and how quickly Sandy had realized how unreasonable she had been.

"I told her she was not unreasonable, just that she had not considered everything and everybody. She usually doesn't agree so quickly. Do you know why?"

Tom shook his head. "Nope. Sandy and the way she sees the world and thinks about things have been a mystery in the Swift household since her first word. The very first recognizable word she uttered was 'Me!' With great emphasis. Perhaps even with a verbal exclamation mark."

Bashalli laughed. "Your mother told me about that two years ago. It explained a lot about my best friend. She also said your first three-syllable wordword was, 'Sepeller.' She said you were trying to say propeller. Is that correct?"

Tom smiled. "Called them sepellers until I was about five. Even after I knew the real word."

Their meals came a minute later and both realized how hungry they were. Neither had any breakfast in their nervousness about how Sandy might handle the conversation. Now it was likely to be over, the stress disappeared and hunger pangs had hit.

It totally amazed the inventor how much food his beloved wife

could put away when she was determined. She did pause a few times, and shared a piece of bacon and one of her blueberry-smothered-with-strawberries pancakes, but her plate was clean when the bill came.

On the way home she complained that he should not have allowed her to eat so much. “I won’t have any room for dinner!”

With a grin, he suggested that he make from scratch macaroni and cheese.

“Will you put little chunks of ham in it?” she asked placing her left hand on his right knee.

“Ohhhh…” and she squeezed the knee twice. “Sure! Okay. Ham it is. Do we have any in the house?”

Instead of speaking she pointed to the next left turn and said a single word. “Store.”

When they got home a single message was waiting on the answering machine. It was Bud.

“Tom and Bash? I owe you two so much I… well, I… oh, heck. Love the two of you more than I can say. Thank you!”

The remainder of the weekend was a very pleasant one with all family members watching a couple movies and having great conversations. It was interrupted once by a call from Anne Swift asking to speak to Bashalli.

“I want to tell you I believe you to be a sorceress or at the very least a natural psychologist. Sandy and I spent the last four hours talking about what you two discussed. And she told me she needed my help telling you she had been, and I quote, ‘A total butthead!’ End of quote. She asked me to come back to their house and take Sammy back here so she and Bud could be alone.” She giggled. “I might be a bit of a prude, but I do understand what that means, and in this case, I wholeheartedly agree they needed some alone time.”

Come Monday, Tom arrived in the office to find Bud waiting with some coffee and a pink box of pastries he’d picked up at Moshan Prandit’s shop. He held the box open to show the inventor it held a selection of Tom’s favorites.

Reaching in for a vanilla custard-filled delight called a long john, he requested, “Just don’t tell Chow I didn’t get these from him,” Bud said.

Around his first bite, Tom told him the cook was in Texas with Wanda showing her the first ranch where he honed his cooking skills.

“We ought to have these eaten by the time he gets back on

Wednesday," Tom said, but looked at the box that still held about nineteen assorted pastries. "Well, as long as I get a little help."

Bud helped himself to a raspberry-filled doughnut.

Once they sat down the conversation got quickly to Sandy's change of temperament.

"I can only guess what Bash told her, but whatever it was worked some sort of magic. Don't get me wrong; she still wants to do more flying, but she agrees that taking chances for both of us is foolish. She kept tearing up when she said Sammy's name."

Ten minutes later the subject had changed to a forthcoming return trip to the asteroid belt.

"Are you and I going?" the flyer asked.

"Not sure. Both our ladies might take exception, and can you imagine if Sandy suddenly changed her mind on the test pilot thing and you weren't here to smooth that out?"

Bud's face fell. He understood his wife's desire to do lots of flying. If he weren't married and had a son now, he would be trying to fly five days a week. These days Enterprises had a few other, young pilots to do the ferry services bringing the mostly finished aircraft over from the Construction Company—at least the four models built over at the older facility—so that daily task was nearly off his plate.

In recent months, or at least the last year, Bud's flying time generally came in two or three hour flights to give some potential aircraft, or a new design or update to something they'd had for years, a real tryout. Sometimes he still did initial testing flights. Sometimes he and another Swift pilot would make a special aircraft delivery, and sometimes that other pilot was Sandy.

Whether it was individual aircraft—the one she flew was generally the jet they would travel home in—or one of the large cargo jets hauling several small aircraft where she acted as his copilot, it was good flying for them both.

It appeared that now she had the child they had been trying for for more than ten years, her mind had turned to the next great item on her list. In typical Sandy fashion, she had thrown a lot of mental and emotional energy into achieving the flying dream just as she had having a baby.

That night, and with great, racking sobs coming from her, Sandy Swift-Barclay told the man of her dreams something neither of them wanted to hear.

* * * * *

Plans for the next asteroid trip were going smoothly. Nearly the same crew volunteered, however Red had to beg off as his daughter, someone he had once needed to quit in order to see her back to health, was engaged to a man everyone thought the world of, and her wedding would be smack dab in the middle of the planned flight.

Hank would be "kicked" up the ladder to mission Commander with Zimby as his second-in-command. Coming along as a second pair of pilots were still gong to be Art Wiltessa and Slim Davis. But, Tom had decided a fifth pilot, someone who could rotate and do a lot of the non-emergency shifts, would be coming. That man was Duanne Dimmock.

Never in his life had Duanne thought of himself as an aircraft pilot, much less a space pilot, but time and again he had proven to be a quick study and a man Tom trusted.

He'd been practically indispensable when Tom and crew headed outside the solar system to try to rebuild a planet that had taken a broadside hit from its own moon, and that had been caused by a direct collision with the former Halley's Comet.

Duanne had spent many, many hours of most days sitting in the cockpit watching the instruments and making minute adjustments to the ship's position. Then, on the trip home, Tom had him sit in as copilot for five of the six-hour shifts during the return trip.

The young, African American man was thrilled to be asked on this trip. So, during the three weeks of planning and preparation, he studied all the information available on the *Sutter*. By the time the day came to head down to Fearing Island, Duanne knew where every instrument was, how to manage both the repelatrons and plasma engines, and even watch and manage communications between the cockpit and the mining control center; he was certain he could handle just about anything.

Hank and crew climbed into the *Sky Queen* along with Tom, Bud, Bashalli and Sandy. Tom offered his sister the pilot's seat but she declined.

"I have to train myself to not always want to be in the left seat, Tom. Thanks, and I *do* appreciate it, but you and Bud get us down there. If it happens that Bashi and I can come up front and slip into the seats for a bit, we will be ready." Her look told Tom she was in earnest about this, but there was still something looking a little like sadness mixed in.

He reached out and took her right hand. "I am very serious when I ask you this, San, but *are* you okay? Not the, 'Yeah… sure,' way but truly and honestly okay."

Taking a firmer grip on his hand, she slowly shook her head and lowered her voice. “Honestly? And family swear? Then, not really. I may not want you to let me come back up to do any flying. It could be a not good thing. I might have had a little breakdown last week. I have an appointment with Doc Simpson when we get back and he has already told me he probably is going to send me to see an expert. Please, don’t tell daddy or mother, yet. I need to face this—with Bud’s help of course—on my own. Please?”

Tom pulled her closer, something he had not done for several years, and hugged her tightly. He then kissed her cheek lightly and whispered, “Pinky swear, San. Our secret until you say otherwise.”

Sandy did something she hadn’t done for a long time, she leaned forward and kissed Tom, chastely, on his lips, saying, “I love you, Tom. I could never imagine a better man to be my brother.”

Tom grinned. “I feel the same way about you, Sandy. Just remember that I will always try to be on your side. Bash as well.”

She nodded, turned and headed back down the corridor as Bud approached from the lounge. As they passed he received a kiss before she walked away. He had seen them talking, noticed how serious they both looked, and had gone back to have a sit and chat with Bashalli.

His first words once he came into the cockpit were, “Bash and I were just comparing notes on raising a boy at the age the Samster is. It would appear it is easier than raising a girl who is turning into a teenager, but harder on clothes, knees, and things they can take apart. How did you get Bart through this stage?”

Tom laughed and told his friend it was a trial and error process, but his parents had given him some sage advice.

“Look for things he seems interested in and not just the stuff teachers or people who have nothing better to do than write books tell you. Find something like we found with Bart—he was almost unstoppable with learning to read so he could look through the same stuff I was—and embrace that. Other than,” he said with a hint of caution, “if he starts getting interested in guns, screaming instead of talking, or playing the drums! Also, dissuade him from the pots, pans and metal utensils thing.”

They had the jet ready to go six minutes later so the copilot called back to the passengers announcing their almost immediate takeoff.

Chow, back from his Texas trip, had come along to ensure all of his prepackaged meals were properly stored onboard *Sutter*—he’d been suspicious when the ship returned the previous time with absolutely no pasta dishes at all; he had packed enough of those to last everyone at least nine or ten extra days and would not take

Slim's word that, "It just tasted so good and we needed the carbohydrates, Chow."

"So, not many takers on the Salisbury steaks and the ham and rice dish?"

Slim had shrugged. Chow had re-planned his menu to remove some things people had not gone for and to increase lasagnas, noodle casseroles and spaghetti with sauce.

"Can someone give me a hand?" the chef asked as they were heading to the stairs down.

"Bud Barclay at your service, sir!" the flyer told him as they both walked back to the storage area near the *Queen's* kitchen. Moments later they joined everyone at the back hangar to help unload nine crates of food trays.

Tom was curious. "So, if we have all that back here, what did you and the flyboy bring down?"

"Desserts 'n ice cream 'n fresh fruit. Gotta have fresh fruit fer a trip like this'n."

In little more than an hour after landing, those who would be heading back to Shopton waved goodbye to the men entering the *Challenger*. In about three hours they would be in *Sutter* with their supplies and heading outbound.

Sutter traveled at a slightly faster rate on this trip in the hopes of shortening everything by two or three days. Part of the change was a route adjustment so they would approach the first target asteroid at an angle appropriate for immediately slowing down and swinging into orbit.

That would, Tom understood, take them within about nine hundred thousand miles of the place where the ship encountered the gravity phenomenon. He hoped they could avoid having to maneuver against it—assuming it was still there—but be close enough to make a few more measurements.

For this trip, a pointable gravimeter had been added to the sensor pack. It ought to detect and give a relative strength of any source of gravity within a certain range. On Earth that range was about two hundred and fifty miles. Out in space… nobody was totally certain other than some earlier probes, like the Voyagers, had an early version and had been able to track gravitational pull from Jupiter moons like Titan and Ganymede from at least one million miles.

It had not been an accurate way to measure gravity, just to tell

scientists back home those bodies had their own gravity and that it was many hundreds of times weaker than the giant planet below.

Now, as they came to within a proximity of two million miles, the device sounded an alarm.

"What's that reading," Hank asked from his seat in the cockpit. At the time, Duanne was manning that station so he leaned forward to look closely at the screen.

"Uhh, it's saying… What? This thing says whatever that is has just about the same gravity as the Earth!"

Hank swung around. "I can't have heard that right. Earth type gravity? In the middle of nowhere out in space?"

Duanne nodded.

"Okay. But we are both seeing absolutely nothing out there, correct?"

Duanne checked out the view screen in front of them. "I'm seeing nothing, Hank. Not out there, not on the monitor, but that gravity meter is saying there is something out there."

Three minutes later the instrument suddenly dipped down to registering measurable gravity from little more than a few distant asteroids. As a test Hank swung them slightly side-to-side and they watched as the gauge changed depending on exactly where they were pointing.

"Weird." Duanne proclaimed.

Hank nodded. "Double that for me, Duanne. Make a good note of when we hit that and then sped out of its influence. Want to get a call back to the skipper to let him know the whatever-it-is, is still going, and pulling strong."

Within a day most of the odd gravity event was put to the back of people's minds as they went into a tight orbit of a two kilometer asteroid that had been identified as a possible source of at least two of the target materials.

Once they checked this one out thoroughly—and did at least one dig—their next stop would be at the second of the asteroids that provided a rich source of Actinium the first trip out.

Tom had specified that he would like to have at least five tons of the element brought back. Between loads one and two, that would, he knew, suffice for the world's anticipated needs over the following ten years.

"I may need to step in on this and lay down an edict," Damon

said the day his son announced the hoped for amount of the element, “and strongly suggest or even demand we hold all the new supply back from public knowledge, and from sales. A bit of research from our Marketing folks tells me we have already introduced too much of that to the supply chain.”

Tom understood. The problem was, it was becoming so easy to get what they needed he allowed that eagerness to prevail over his common sense. It was at times such as this he wondered if he would be ready for taking over the company; his mind did not seem to function the same as his father’s.

But, he fully understood the stated reasons and hoped for response.

He made the necessary radio call to tell Hank the mission profile was changing a little.

“Go ahead with the current dig, but stop when you get to two tons of Actinium. By tomorrow I’ll have a new vector for you to take to go find what we really do need.”

Hank paused long enough Tom thought the connection may have been cut. But, before he could ask, the engineer came back on.

“Just as long as you have us skirting that gravity area. None of us have particularly enjoyed it. In fact, two of our mining experts got rather motion sick this last time through.”

“Right. This is telling me I need to send out a couple probes to see if we can map out just how large that is, and just how much gravity is close to the center of it all.”

CHAPTER 7 /
LOSING ONE OF THE FAMILY

BUD MADE the decision that his forthcoming delivery trip to Paris was going to be a short one even though Damon Swift had told the flyer he was welcome to take a couple days in the city at company expense.

The truth of the matter was he had been feeling a little neglectful of his young son, Sammy. The boy was about to turn four and had become a little moody as of late.

Sandy had mentioned this and Bud spent one evening just watching his boy.

Finally, as he rose to take Sammy up for bed, he asked, "Samster? Have I been paying enough attention to you?"

Sammy's eyes dropped so he did not have to look at his father's face as he mumbled, "Yes."

Bud gave him a big but gentle hug and told him how much he loved him, and that he felt terrible about not being a good daddy.

Sammy looked up. "You a good Daddy." He spun a little in Bud's arms to look at Sandy. "You a good Mommy." Then, he hugged the flyer around the neck tightly and whispered, "Just wanna be with you more." At that proclamation, Bud felt stinging tears come to his eyes. He held the boy another moment while Sandy, seeing his wet cheeks, came over to quietly wipe the tears away.

When he held the boy out and smiled, Sammy also smiled and held one arm out to Bud and one to Sandy. "Gave a hug to me?"

They could not resist his request and soon all three were standing in a tight bundle of love.

Once the boy was in bed, Bud mentioned his forthcoming trip. "I'm supposed to leave tomorrow morning at 7:00 and then get back to Shopton about 6:00 tomorrow night. Both your brother and father said I can take another day or so to enjoy Paris, but now I believe I'll stick to my original plan."

"Or…" she began slowly, "you might think about taking us along. Sammy is very mobile and we could just walk around, perhaps even at the airport while you are unloading the aircraft. You know he loves airplanes and doesn't have troubles with crowds."

He looked at her before asking, "Can you get the day off?"

Sandy had taken more vacation time than she had earned in the

past seven or more years, but her boss, George Dilling, had been nice and allowed her a little leeway. She generally worked a few more hours a week to make up for the lost time.

"I think so, and he did ask me if I could make a delivery run to Brussels to upgrade the communications center at their airport. You know they have a semi-unannounced military part of the airport proper and they have one of the Swift MultiCom radio setups. They need a new encoding module and someone was going to need to hand deliver it. If I could tell him—"

"That you want to do it as soon as possible, like tomorrow, and that you have a great copilot already selected and ready to go…"

She smiled and wrapped her arms around his neck giving him a very large kiss.

While she went off to give George a call at home to ask, Bud checked his computer for status on the Swift Cargo Jet they would take. As he suspected, it was fully loaded with the four Whirling Duck helicopters and two Wasp helos that made up the order.

He also took a look at a satellite-imaging site at the Brussels Airport. It was evident that someone did not want people to get a good view of the military part of the airfield. That area was slightly blurred so all he could tell was there were about nine aircraft on their parking apron, but could not see enough detail to know what they were.

When Sandy came back into the room, she had a big smile on her face. "George is having the module added up in the cockpit of the jet so it'll be there when we climb in. He'll also notify the right people in Brussels we should be there between about 3:00 and 4:00 their time tomorrow afternoon."

For the past week since coming back from a trip out to Nevada to visit her grandmother, Amanda had been almost walking through her days like a zombie. She was keeping up with her duties taking care of the three children, but it was obvious to both Bashalli and Tom her mind was elsewhere.

For two days she refused to tell them. "It isn't my place to burden you with something that is on me, and it isn't right for me to slack off on my duties. I am so sorry." Her eyes brimmed with tears but she did not cry.

Bashalli could not help let a single sob out and her tears did run down her cheeks.

Amanda now felt horrible for making her employer cry and she, too, began.

Tom stood to one side not quite knowing what to do, but he instinctively felt the two women had to come to a point they were both not feeling so sad. He knew this needed to be without his interference.

When that came, five minutes later, he turned to the nanny.

“Amanda. You are not only the kids’ nanny, you are an important part of this family. Heck, you *are* family! Now, it might not be any of our business, but when family is sad or distracted by something, family shares. At least, family lets the other person share when they feel like it.”

With tears in her eyes, Amanda announced that she must leave the Swifts. Her mother has suffered a stroke weeks earlier and was in a convalescent hospital in Reno.

“She has limited use of her left side and cannot take care of herself. I have no siblings to help her so it is sort of up to me to help the woman who gave birth to me. Can you understand that?”

She asked for a week to go out to get everything set up while her relative was still in the hospital. “I need to go soon because her medical insurance is going to run out in another three weeks. There’s just so much to do to get her house ready for her. Ramps in the front and back, getting a couple of the narrower doors widened. Tons!”

When Tom and Bashalli both asked, at the same time, “What can we do to help?” it struck the younger woman as funny and she laughed until the tears came once more; they lasted only a minute this time.

"I should drive out but my car needs to be in the shop a few days to make it road worthy," she explained dabbing at her eyes and running makeup with a tissue. "I have the money, so if I can get a ride out to Shopton Regional tomorrow morning I can be there to get things started and then come back to give you two more weeks. Is that okay?"

"Well, of course we'll take you out there. And, Tom and Bud can take care of getting your car to the repair shop and back out again."

"Well, thanks, Bashi, but I'll need to arrange for payment to them first."

"Nonsense. You go and we'll see it all comes out right."

Once the young woman was upstairs in her bedroom starting to pack, Bashalli turned to Tom.

"You do know we have to get her a new car, don't you?"

Tom grinned and nodded. It had coincidentally been a subject of

discussion with his father that morning. The result of that was Damon authorizing Tom to purchase a new, right off-the-line S-100 car to give to Amanda as an employment bonus. This would only change the nature of the gift.

"Of course," the older Swift had stated in a serious tone, "you will need to pay the basic cost of goods for that, but I believe Charlie Van deGroot can give you pretty good terms!" Then, Damon had laughed. As a grandparent to the three children she'd taken exemplary care of, he and his wife, Anne, had agreed to split the costs of a new car for her. Everyone in the family knew that she'd run her own car into the ground taking care of the children for nearly six years.

Tom took his wife in his arms. “Not only are we giving her a new car, but I’m going to suggest we take her out to Reno in the *Sky Queen* when she leaves for good. That way, the car goes with us. In fact, I can have Zimby or Slim take her out tomorrow and she can cash in her airline ticket so she has a bit more.”

“Umm, Tom? Can she do that at this late time?”

He laughed. “Yes, and the reason is because the regional airline that services us has just taken delivery of about a dozen of our Toads, and their President told Dad if we needed any favors from the line, just call. I’ll do that first thing in the morning.”

The nanny came back downstairs ten minutes later and asked if she could get them anything.”

When they told her of the car and the offered flights, Amanda shook her head. “You’ve been too nice to me all these years. Honestly.”

Tom took her right hand in his. “Amanda. Over those years you have used your car to transport our children, go shopping for the house, and any number of things. We are partially responsible for the wear and tear on the car. So, and if it works better for you, think of it as a leaving bonus.”

“But… you’ve bought me a new set of tires when the old ones started to wear out, paid for the couple of times it had to be serviced, oil changes…”

“And, we could have insisted you use one of our cars all along,” Bashalli stated, “but you said you would be more comfortable in your own car so we agreed long ago to pay for maintenance. No arguments now, Amanda, we really want you to have a great car so you and your mother can get around. Maybe even drive this direction some day for a visit. The kids—” and she suddenly lost her voice.

Amanda came over to hug her employer and then headed for the stairs.

"I need to explain all this to Bart and Mary. Maybe Anne as well. We'll see how it goes with the older two."

She decided to talk to Bart alone. Sitting in his room she told him about her mother and how ill she was and that she hoped if his own mother was ever sick he would understand how she needed to help.

"So, are you going away forever?" he asked.

"I don't know, Bart. All I do know is she has had something they call a *stroke* and cannot walk or do things like get herself dressed."

Bart smiled. "Sort of like Anne for the first couple years, huh?" He laughed and so did Amanda. Next, the boy surprised her by asking what part of the brain had been most affected.

"Was hers hemorrhagic or ischemic?" the boy asked, looking seriously at her.

Her eyes widened. "Uhh, how do you know about those?" she inquired almost whispering.

Bart lowered his voice as well. "Because I read about them for a science report for school a few months ago. I was real interested because of the brain problem Grandpa Swift had that dad fixed. I wanted to find out if those tiny robots could help stroke people." He shook his head. "Not so much because the damage is already done." He paused. "And, the reason I know so much is because I read and you were the one who helped me a lot!"

Amanda gave the boy a tight hug and a kiss on his right cheek. "You are like my little rock, Barton Swift. I think I've been able to talk to you about many things over the years. Thank you."

"You are welcome, and you did not answer me about the kind of stroke she had." He had an expectant look on his face.

"Okay… then it was hemorrhagic. She had a blood vessel in her brain rupture and she bled inside. Her doctors say that they got that fixed along with another one close to it that could have also broken, and that she needs a year of more for her brain to get back to mostly normal."

When she finally excused herself to go talk to Mary Swift, Bart reached over and shook her hand.

"I've only ever had you for my nanny, but you have been the absolute best one ever in the whole wide world!"

Mary, being a few years younger and not with her brother's level of knowledge, asked if *she* had done something wrong.

Amanda hugged her and told her there was nothing at all any of the Swifts had done, but that her mother needed her so very much. She explained again how the trouble was inside her mother's head and that it might get better, but for now the older woman needed a lot of help.

Mary came to a decision. "Then, you have to go to help her. I hope you can come back to help us some day, but you have always told us that family is first. Right?"

All Amanda could tell little Anne as she tucked the girl into bed was that she had to take a trip the next morning and would be gone for a little time, but that she loved all the people in the house and would try to come back.

Anne nodded as she closed her eyes and fell asleep.

The next morning she was surprised to find Zimby Cox sitting in the living room, a smile on his face.

"Well, hello, Mr. Cox."

"Hello right back at you and can you please just call me Zimby? After all, we are going to be sitting next to each other for a few hours today." He smiled at her again.

"Uhh, I don't understand…"

"Well, then," Tom said as he came from the kitchen, "let me tell you that we are flying you home to Reno. I need a small box of parts a company just outside the town produces, and so Zim is flying there and we all figured it would be faster and more relaxing to not be herded aboard at least three different aircraft to get there." He explained that her ticket price was being refunded and it would be back on her credit card late that afternoon.

She was at a total loss for words but nodded, hugged him and Bashalli who also came from the kitchen before going over to hug Zimby.

"Thank you, everyone!"

"Tom," Bashalli started as she came over to sit next to him on the sofa. "What with Amanda going away permanently about a week after she comes back, I was thinking I might go ahead and retire again from the agency. That way I can stay home with Anne and also the other kids once they come home from school." She was looking at him trying to decide if he was happy or not hearing about this possibility.

"Do you think you will be okay without having that daily interaction with the people you work with?"

She shrugged. “I don’t know,” she told him and he knew she was being truthful.

“We can always get a nanny for the couple years and let you sort of ease out of work. Or,” he said on seeing her look of apprehension, “you can do this in one jump and sort of step away. Just as long as you don’t get too bored sitting around and want to start selling water heaters door to door.”

She grinned at him and he returned it.

“Perhaps I can talk them into just mornings?” she suggested.

Tom cocked his head to the right, “You might want to speak to your mother-in-law about working on things that might not go to specific hours in a day and having to get home or to a school in a hurry.”

Anne Swift, Tom’s mother, had been secretly working for the FBI for years when he and Sandy were growing up. And, the strain of keeping to her family schedule often caused a few problems with her secret work. In the end she had retired and had felt an immediate sense of relief.

Bashalli nodded. “I have done that, Tom. And, she was immensely helpful. She believes, and so do I, that I might do this if I can talk my manager into setting me up with a virtual presence at the office. You know what that needs, right?”

Tom nodded. “Something like a 3D telejector set up that can either be portable so you can virtually be in your office or a conference room when necessary?”

Her tentative smile told him she was worried he would say it was too expensive because it would also require another unit in their home. But, as she thought about that, she realized Tom already had a mostly portable unit in his downstairs office room.

“Could I use your office space?”

He readily agreed that it was going mostly unused except for a few evenings and since her work would be by day, it might as well be open to her.

Her boss required a demonstration, but agreed that it almost looked and felt like Bashalli was in the office whenever they needed her. All that would be needed was a small schedule change so she could head to the schools to pick up the kids—Bart and Mary for now—which could take about twenty-five minutes each weekday.

* * * * *

By the time Amanda returned—this time it could only be eight days as her mother was being released from the therapy hospital at

that time—it was to a new Swift household. Bashalli had already transferred from office to home office and was in a conference with three of her coworkers and the five people from one of her accounts who were all in the large conference room at the agency.

“If you all will excuse me for about sixty seconds,” she explained to the people on the other end of the 3D call, “I must go say hello to a cherished family member. Please, talk among yourselves and I shall be right back.”

After cutting the audio, she got up and wrapped her arms around Amanda giving her a warm hug. “I will want to catch up but in about forty minutes. Work calls!” and she returned to the office room.

It was late enough in the day the kids were all home and in the TV room off the kitchen. When she opened the door and said hello to them, it was a virtual stampede to see who could get to her first and hug her the most.

Technically Bart won, but he gladly stepped aside to allow Anne to get close. She had taken the loss of their nanny the hardest and probably needed attention more than he or Mary did.

Once his time came, she was already siting on the floor with the trio of children around her. "Bart? Just in case you are still interested, it was hemorrhagic *and* ischemic. Unfortunately, that means she will probably never be able to lift her left arm more than partway up, and gripping things is hard for her, but she is adapting."

“I knew it!” he declared, and she believed that he was right.

On the day before her leaving the house for good, Tom and Bashalli drove with her to the Swift MotorCar Company where she was given her choice of any of the seven colors the model came in. She chose—as Bashalli predicted—the dark green, which was close to the color of her old car.

Amanda was fine until it came time for Charlie Van deGroot to hand her the keys. Then, she broke down sobbing with the incredible joy she felt, and the sadness that was making it hard for her to actually leave. To her, accepting those keys would be like taking the final step.

She clung onto Bashalli while Tom described how great the car was and how safe she and her mother would be in it.

“Unless you drive like my brother-in-law does, you should get more than ninety miles per gallon, and the engine only requires maintenance, like an oil change, every five thousand miles!”

She almost seemed reluctant to take the offered keys from his hand. When she did he could tell she was shaking.

“Tell you what,” he offered, “why don’t either I or even Bash take you for a quick spin or two around the factory? We have that nifty test track surrounding things and it will give you the opportunity to get yourself prepared for taking the wheel.”

He knew she had borrowed the two Swift cars at their house on several occasions and had no difficulties in driving something other than her own vehicle, so he wasn’t certain he understood her reluctance.

Bashalli did and took Amanda's left hand in her right and led her, slowly, to the car. After opening the passenger door and making sure Amanda was in and was buckling her seatbelt, Tom’s wife walked around the front and climbed in.

“You’ll probably like this,” she stated as she placed her thumbs up on two silver sensor pads at the top of the wheel.

Her own voice came from the stereo system. “I sense a new driver with no registered driver in my files. Please keep your thumbs on the sensors and respond to the following questions.”

There were three that she answered and then told the car she was only a temporary driver and that the registered owner would log in in a short time.

The car started but was so quiet Amanda had to cock her head to listen to be certain it was running

Eight minutes later and after one entire circuit of the MotorCar Company grounds, Bashalli pulled to the side, they traded places and Amanda logged into her brand new car.

CHAPTER 8 /

IT'S ALL FUN AND GAMES UNTIL SOMEONE POKES A HORNET'S NEST

WITH AMANDA gone, Bashalli seemed to be working twice as hard all the while Tom felt as if he were doing half of what he thought was right and proper. But, she seemed to be prospering with being near little Anne nearly all the time she was home. The same with the two older kids.

But, she had to admit the nanny had done an incredible job of helping raise three well-centered and bright children. It made her proud to be their mother when one of them did something nice for the others, or even for one of them.

Generally, that was Bart and his desire to see that his little sisters were well protected and—especially the youngest who had taken Mary's place for this duty—that faces were wiped and hands were cleaned after every meal at home.

Often, it was a thankless job, but he seemed to like it. Even Anne once told him she was "All clean!" and laughed with glee.

For the first week without nanny, Tom asked Bashalli every night if he ought to be doing more, and every night she told him he was doing just what was necessary, and that was staying put on the planet, not off outside of Shopton, and at home for nearly all dinners and breakfasts.

Then, on about night nine she turned to him, took his face gently in her hands, and leaned forward.

"Shut the heck up about your guilt!" she admonished him. "We are fine and I mean all of us."

After that he didn't voice his guilt too many times in the next two weeks.

During that time he had been working hard on a pair of small probes he wanted to send out to "look" into the gravity phenomenon *Sutter* had found and mapped. At least the basic location, just not the dimensions and any movement and such. They were really compact and had many instruments. So many, in fact, there was no room for anything to maneuver them around.

These would be point-and-shoot probes he hoped would only encounter the estimated sides of the likely spherical gravity force.

"My hope is they slide around the sides and send us back even more information," he was telling her in bed one night. She'd asked

him about what was going on at work, and he told her about the various finds made by *Sutter* along with the chance encounter with the invisible source of some increased gravity.

"Oh, dear," she'd replied. "Does that mean something bad? I ask because when you have discovered things out there in space, they have not always been nice and friendly."

Tom pulled her into his arms and gave her a hug. "We don't know. That's why the probes. If they behave, then they will be able to tell us a lot of things, including whether the *whatever* it is out there might be traveling. I wish we knew how long it has been there, but what with it never having been spotted from Earth or even the space stations, well—" and he shrugged.

She asked how large it might be.

"Hmmm? The very center might be as small, relatively small that is, as a couple hundred miles across. Why?"

"Well, if it is that large, why can't it be seen?"

He chuckled lightly. "Ahhh. The main reason is that we only how far the gravity *seems* to extend based on a few measurements. There is a lack of visual information but it possibly goes out a lot farther than we can measure from a distance. We have no idea what might be in the middle of that. Could be as small as our little black hole we use with the *TranSpace Dart*. That one has an opening that is just a few feet wide. And, even though it has a gravity field around it, it is so small it can hardly take in anything in the places we park it. It has sort of choked on the larger stuff over the years or centuries or even millennia."

That seemed to calm her fears. She sighed, kissed the inside of his right arm and closed her eyes.

Building the probes was not a difficult thing. Swift Enterprises had been building various space probes for nearly two decades in one form or another. Swift probes had visited Venus, Mars, Jupiter and even were in perpetual orbit around Mercury and one studying a tiny object discovered to be orbiting Venus two years before.

What was becoming difficult for Tom was both in deciding what instrumentation absolutely needed to be inside them, what honestly did not, and to keep from upscaling them to include maneuvering capabilities.

It was the lack of the final item that made building the two beachball-sized (a medium one about two feet across, that is) fast and having them ready to go in under three weeks. All that remained was for him to come up with the best method of getting

them out to the area in the least problematical and cheapest manner possible.

That is where Tom believed it was a great thing to have his father occasionally poking his nose into things and making suggestions.

"If you will recall, we sent the *Jupiter Skimmer* probe out a number of years ago." Tom nodded. He well recalled the NASA mission that Enterprises had been forced to take on single-handedly even though it started out as a multi-company project. "Okay. Well, that launched from the ground and accelerated constantly until it had to slow down. We know it can hold enough power even if you might need to replace a battery or two."

Tom slowly nodded again. "Okay. Right?"

"To answer the unspoken, 'And…' in there, I computed all that time ago that if we could have boosted it into a position passing the Moon and at about three hundred fifty thousand miles per hour, it could have made the trip in under eleven days and not a couple weeks. I mention that because it so happens we are coming into favorable alignment with your target area in another two weeks."

Tom picked up on what his father was telling him.

"So, if I can get my probes attached to the *Skimmer* and get that heading at top speed past the Moon in that time, they should get to the asteroid belt in under, what? Ten days?"

"Perhaps less if you can mount a small retro package on each of them and have the *Skimmer* drop them off half way between Mars and the gravity area. Maybe a day earlier because the larger ship does not need to slow itself down starting at the half-way point."

They discussed how the Skimmer could then slow itself and perhaps insert itself into a position where it could swing around in another day and head for home.

Tom thanked him for his insight and asked Trent to arrange for the *Jupiter Skimmer* to be brought from its storage hangar and to the Barn so he could work on it. Next he called the manager of the Solar Materials department, John English.

"John? If you remember the *Jupiter Skimmer*, I am going to be using it again. Could you and some of your ladies come to the Barn to check out the power systems for me? Maybe late this afternoon or tomorrow morning?"

"Can it be after three?"

Tom said it could be any time after about 2:00. "See you then."

By the time John and his lead "solar girl," Dianna arrived, the inventor had already decided just where and how the two gravity

probes would be mounted to the underside. He told the two about the basic mission and pointed to the dual locations nestled in the central indentation under the craft.

“Are we going to be in danger of interrupting all that glorious power your solar skin is making for us if I put in mounting brackets?”

“Not if you are going to sacrifice the two cameras under there. And, do not puncture any farther than about four inches inside the skin. If you must, then we can rig something up to pull the batteries in there away and give you the room.”

Right as John and Dianna were leaving, Bud arrived in one of the small electric runabouts kept at Enterprises. “I called the office and Trent said you’d be here and could explain what is going on. I thought we had an afternoon coffee meeting to talk about how we owe our ladies a night out.”

Tom groaned. “Sorry Bud. Slipped my mind.” He told his brother-in-law about what Damon Swift had said and also how important it was to get the probes out to the target area as quickly as possible.

Bud enthusiastically nodded and suggested he make dinner arrangements at their favorite Italian restaurant in Shopton for that coming Saturday evening.

“I’ll even see if your mom can take all four kids of if Bash’s mom can take two and yours the others. I just don’t think it would be fair to drop Sammy off with her by himself.”

"Sounds like a plan."

When Bud left, Tom turned to opening the lower access hatch to check for what sort of clearance he had inside. As this had been a Damon Swift project, and Tom's involvement had only been in the flat and shapeable battery inside both levels of the equipment bays, he actually had no clear idea.

Fortunately, and because of the need for some internal wiring to bridge over between two drive modules, he found at least five inches of clearance right where he needed it. Both locations fore and aft of the balance point.

Two days later, and with a lot of help from both Hank and Arv Hanson, Tom had the two remote release mounts built and was in the process of installing them when he was paged by Trent.

“Tom. You have a call from an astronomer who spent the last month up on the *Space Queen* studying… things, as he put it. He believes he needs to speak to you about one thing he says he detected. Can you take it?”

“Sure.” Tom was used to receiving a number of calls from a wide variety of people proclaiming they had Earth-shattering news or observations, and could generally figure out how serious they were in the first minute. He waited for the tell-take double click indication of a call connected to the telephone system.

“This is Tom Swift. Whom am I speaking to?”

“Tom. You really do not know me even though we met two years ago up at the old Outpost when I was on a rotation to study Ceres. Oliver Mitchell Moore. I hope I haven’t caught you at a bad time.”

Tom had a vague recollection of a heavyset man in his early fifties with a rather massive and unflattering beard.

“Now is fine, at least for the next six or seven minutes. What can I do for you? And, if I am correct, it is Doctor Moore?”

“Yes. Kind of you to remember a brief meeting. I hope to convey my message in about two minutes. You see, I have detected an anomaly in the asteroid belt, and surprisingly nowhere close to my baby Ceres. About a quarter way retrograde in fact.”

Tom believed the pause was an indication the man wished to be asked about the anomaly. He did.

“Okay. I was actually looking at a trio of asteroids near the Jupiter boundary of the field when something closer to us blurred my ability to discern much of anything. It was very strange. All I can ascribe it to, and this is a wild guess, is some sort of gaseous field—moderately unlikely—or a gravity distortion. I would value your opinion.”

Tom really did not wish to announce anything, even to one individual, so he gave a vague answer. “We have seen several odd things out there and I am in the process of trying to put several probes together. Would it be possible for you to send me the specific location details? It could help me better direct these probes to find out what you may have spotted.”

The man was grateful for the suggestion and told Tom he would have an electronic package ready to send by morning. In return, Tom gave him a general email address to which he could upload as much data as he wanted.

“With the series of still images I have, it will not exceed thirty-nine megabytes, Tom. My sincere thanks to you and I hope once you get back some data you might be able to share it with me. If I might press my luck a small amount?”

Now a little wary Tom told him to go ahead.

“Fine. Then it will be my hope you do not intend to make a direct

dive into the middle of this anomaly. Poking a hornet's nest and all that. If you get my meaning."

"I know the saying, and can only tell you we have a vague notion of the limits or boundaries, and your information should allow us to be more precise, but I make no promises about what we hit or disturb because we just don't know what is there to get disturbed." Before saying goodbye he told the man it was not his intent to make what could be deemed an attack, just a survey.

By the time Tom went to the Electronics and Sensors department at the end of the week, that team had both probes essentially finished and in testing. Tom stopped near the door to admire the pair of objects sitting inside a nearby clean room.

Unlike what Bud had mentioned about his imagined probes, these were not smooth and round, like balls. Neither did they sport trailing antennae as with early satellites like Sputnik. His internal design allowed the techs to build in any sort of additional areas to fit the workings rather than having to cram things inside a predetermined space.

The result was a basic shape of a sphere as if realized using square and rectangular building blocks. Perhaps if you stood a hundred or more feet away they would appear to be round, but not when viewed close up.

On a very short boom of some three inches was a small antenna dish. Even Damon had asked, on seeing the image on Tom's monitor, if the younger man had decided to add a repelatron to the final probe.

"No. That is the small antenna to send back real-time data and images, Dad. It is output only because there is no need to receive anything from us. All sensors start working at a predetermined point after these separate from the *Skimmer* and continue sending what they collect until the probes either run out of power—about thirty hours—or…" and he left the rest unspoken.

Alan Whitehouse, lead technician for the probe build, came walking over.

"Looking a little like Frankenstein's Probes, huh?"

Tom smiled. "Well, in a way, but they have a utilitarian look to them. Good job, by the way, with getting everything inside and not having to up size much at all."

From behind the inventor came Bud's voice.

"Frankenstein, huh? So, are these going to toss some little space

girl in the gravity well out there?"

Tom and Alan turned. "Uh, Bud? You do recall that Frankenstein is the name of the man who built the monster, and the monster is only called the monster. Right? And, that gravity well pun hurts my head."

All they got in return from the flyer was a silly grin.

Tom turned back to the technician. "When will you finish the testing?"

"Electronic or durability?" I ask because the electronics finished at three this morning and we have another two days to go in the weathering the rigors of outer space tests. Electronics passed at one hundred percent perfect, in case there was any doubt."

His boss' laugh told him Tom never had a doubt.

This was Friday so Tom asked if things might be ready to mount come Monday morning.

"Absolutely. That is, unless we find a pinhole leak anywhere. To keep these from freezing up, we've had to fill them with good old air and add a small heater pad, like you have in the Attractatron Mules. Just enough heat and just enough air to propagate that heat to keep things at a toasty forty-one degrees inside."

"Okay," Tom said taking Bud's left shoulder and turning the man around, "Monday it is. If you can have them delivered to the Barn we can mount and send them on their merry way!"

The two men walked out after Tom thanked Alan again.

"So, how is the *Skimmer* going to get up to the high speed you mentioned the other day and all before it crosses the Moon's orbit?"

"We, meaning you, probably Hank and I will be taking a fast trip up in *Goliath* with the *Skimmer* poised on the cargo deck. As soon as we can get out of the atmosphere, we hit the throttle and race out, releasing the *Skimmer* with her packages. And, even though we will be going slightly slower than Dad's suggested speed, I just want them to get on the way quickly and get us back down here."

Because Tom always insisted things be pre-checked, the mounts for the two probes exactly fit the attachment points on those probe cases. The only two things needing to be done before a push-and-click into position was to connect the two cables. One provided power to the probes so they did not use their internal supplies on the trip pout, The other was the arming connection to turn them on just before release.

Damon came out to the old *Sky Queen's* landing pad for the

takeoff. That pad featured heat resistant tiles that were no longer required since the transition to repelatrons, but it had the advantage of being reinforced so it could hold the *Goliath* that now waited for permission to head up.

Tom, Bud, Hank, and as a last minute addition Alan Whitehouse, shook hands with at least ten of the thirty or more people assembled outside before entering the elevator at the base of the giant lifting ship.

"Did you tell your wonderful wife you would be right back?" the older Swift asked his son.

"Told her this was a 1:00 pm takeoff and a 5:30 landing." And, I promised to pick up some take-out from the sushi place this edge of downtown. Dinner will be at 6:15. You and Momsie want to come over? I can pick up more."

"No. You go have a little fun and come right back. I'll hear about this tomorrow morning."

Getting to the top of *Goliath* was a two part affair with elevators under the cargo deck and another one up inside the spire that held the control and living spaces above that disc.

Ten minutes later a loudspeaker announced imminent take-off and anyone who was within about two hundred yards were warned now was the time to move.

Then, with nothing to hear but a slight sucking in of air to fill where the ship had been seconds earlier, she lifted into the sky.

And, since word had gotten out the giant ship had come in to land that morning, a crowd of about eighty stood outside the walls of Enterprises watching as Goliath rose, some would call it "Majestically," into the air.

Among them was Dan Perkins of the *Shopton Bulletin*. He pulled out his cell phone and dialed a number. Once he was connected he stated that he had the shots and would be sending them over in fifteen minutes. Then, he casually walked to his car and drove back into town.

When the ship landed that afternoon, five minutes behind schedule because they had to dodge a few extra pieces of space junk on the way inbound, a small team who had brought the ship over that morning remained on board to fly her back to Fearing.

Tom and the others parted ways with Alan particularly thrilled at the experience of seeing some of his work actually being sent off.

The sushi dinner was a rousing success with even little Anne trying her very first piece of salmon roll. Her eyes went wide as she

chewed, reluctantly at first and more eagerly as she found the taste to be very much to her liking. She had three of them.

* * * * *

Right on time the two probes arrived on opposite sides of the anticipated field of gravity. With the data provided by Dr. Moore it had been an easier task to compute where those places ought to be.

Since separation from the *Jupiter Skimmer* both probes had followed their individual trajectories that now ended with them being some five hundred thousand miles apart.

Using rings of externally mounted nitrogen attitude jets, both had turned themselves on at the appropriate time, roughly an hour earlier, and were sending back significant data, but the images coming in showed absolutely nothing.

Within the following hour it was apparent something was pulling at them and at nearly the same rate of speed; they headed inbound for the gravity field's center.

Indications of the strength of the field grew by the hour until five hours after entering the field, the probes had traveled an estimated three hundred thousand miles and each ceased sending information within ten seconds.

Tom turned to his father. "I guess that tells us there is something definitely out there, and from the internal pressure readings we got at the end," and he pointed to the monitor showing internal pressure had risen to about 100 atmospheres, "I'd have to say they got crushed!"

CHAPTER 9 /

ANOTHER GO

ALTHOUGH IN his younger years Tom might have immediately considered, and suggested, that he head right out to see if the probes might be found and then brought back for study, time, age and maturity of thought now told him that would be slightly less than a good idea. In fact, he considered it to be stupid!

When he mentioned this thought to his father, Damon laughed. "Yes, I can see how times and you have changed. I congratulate you on the insight. But, we are left with a lot of questions now. Such as, is it moving? Is that position for the loss of both probes an absolute as in some sort of protective shield or just the point where pressure became too much for them to withstand?" He gave Tom a significant look.

The younger inventor pursed his lips and had to agree.

"I am going to need to closely map out the data, but especially the internal pressure to see how quickly it built to the destructive level. I might even need to build another probe or two." If he was waiting for his father to deny this idea, he was going to need to wait a considerable period of time. Damon agreed with his son.

When he excused himself to head for the large lab down the hall to begin looking through the mountain of data and images, Damon asked if there was anything he might do to assist.

Tom stopped at the office door. "You know… it's been awhile since we worked closely together. I'd value your eyes and brain on this if you have the time."

"I have a couple hours right now and most of tomorrow to give you, Son. Let's go."

Everything was in the Enterprises computer server "farm" but needed to be categorized and indexed. Damon offered to do that, first by timecode and them category of information.

"Did you want the associated images within that mix, or want them as a separate timeline?"

After letting out a huff of air, Tom suggested they be separate but asked if notations for each one be made within the other data.

"Absolutely! Consider it done, Tom."

By the time Damon had to disappear for a meeting, he had all the images in a separate database and labeled such that he could

"attach" them to the remaining data the following day.

"Why don't you concentrate on just the internal pressure and maybe graph that against both a timeline and positionally?" he suggested.

"Good idea, Dad. That's of the most interest to me right now. Well, that plus the gravitational data of the position of the probes relative to each other. But, I'll start with the pressure and how it built as the probes moved inward."

The more he looked at the data, the more certain he was that about the outer ninety thousand miles within the gravity influence there was very little pressure buildup. He made a note about this in case he did build a new probe or probes. It might be beneficial to put some sort of propulsion mechanism inside to hold the probes outside of what could be considered the "danger zone."

A rather telling notion came to him the more he studied the pressures. Because there were three internal sensors, he checked them against each other only to find that the one in the center of the case built up steadily while the two attached or near the outer case suffered several spikes.

An examination of the design files, and especially for the case, pointed out a small issue. Or, rather a large issue if he were truthful with himself.

It seemed the case had suffered a progressive failure along several of the seams in the uneven case components.

Now, he had to uncover whether this had been due to the nature of the case being built in about eighty-seven pieces with multiple areas where stress fractures might have occurred, or whether it was just the nature of a non-spherical object—case—to experience uneven stress?

A call to Alan regarding the case build did not shed any real light on the matter.

"Well, Tom. When we tested the case we never thought it possible to exert gravity pressures on it. I suppose we could rig something for you. Ummm, do you have any ideas how we might go about that?"

Tom did.

"I'd suggest perhaps making another case, just as you did, then allowing me to test that by shoving against it using a repelatron rig. That can exert more pressure than we had with the gravity field. If something is going to give out, we should find where that is. Otherwise, we are going to need to build a case in just two pieces shaped exactly as the first ones were."

Having never asked about the first cases, Tom was a bit surprised to find out each plane or semi-box had been 3D printed for the probes. And, while the materials used might have been strong polycarbonates with a Durastress inner coating adhered using one of the strongest adhesives in the Swift arsenal, it was never going to be as strong, in his opinion, as preformed shells possibly made in one of the company's vacuu-form units.

As the test shell was being produced, Tom made a visit to both Hank Sterling and Art Hanson. They were both in Hank's large workshop.

Once the problem was presented to them, both men agreed with the inventor.

"I loaned them one of my 3D printers to make those pieces, but never had a full understanding of what they were going to be doing. I knew it was for a probe case, but not for that gravity thing out in the belt."

"Not to worry, Art. I suppose I never really made it clear about how strong things needed to be. So," and he turned to Hank, "can you use one of the vacuu-formers to make a two-part shell that meets the dimensional needs of the internal components?"

"Piece of cake. Either give me the finished test case they are making over there, or a good CAD file."

Tom admitted it was likely to be the actual case as he did not know of a single combined file of the complete design.

"I think it was sort of an ad hoc development."

The next afternoon, and once he took delivery of the new case made from 3D printed pieces, and after a quick stop, Tom took it to the Propulsion Engineering people. Dianne Duquesne and her team had a rig set up close to the southwest wall of the grounds, very close to the secure "pen" into which the remote drones could lower anything they grabbed onto.

Dianne's rig consisted of a mount onto which repelatrons of varying sizes could be mounted and a target pressure plate with measurement capabilities to check the strength of any drive unit. Today, she had a unit that was similar to those used on the *Challenger*.

"It probably is overkill, but it was the best one we have in inventory with a chance of having enough power to run this to destruct. I believe that is what you asked for."

Tom agreed that was exactly what he wanted. "That, plus ultra-high-speed video so I can see what goes wrong and in what order."

Three cameras were part of the test equipment so he was going to get views from two sides and one from nearly directly above the dish looking at the case.

Nothing surprised Tom when the case all but shattered at just fifteen percent power. As he assumed, it split across several of the seams almost simultaneously.

He was thankful he'd stopped by Hank's workshop to allow the Engineer to make a 3D scan of the entire thing. That would have to do as the case was now in about nine pieces with a few large cracks on some of them.

Hank took Tom's call about the demise of the "many pieces case" with only an acknowledgement his formed two-piece case would be created that evening, cured overnight, and would be ready to be seamed together upon the inventor's inspection that next morning.

As, and when, promised, Hank carried the shell over to the test site the next day meeting Tom, Dianne and one of her key people, Artie Johnson. The new shell had been heat seamed with a band of Durastress around it for additional strength. Tom had agreed it would be best to see the single seam was not a weak point and they gave the rest of the case a very good test.

With cameras getting the needed shots, Tom signaled the test to begin.

Slowly but steadily the repelatron pressure was increased. As it was set only to repel the basic polymer, all pressure was directed to the case. Of course, the case eventually collapsed, but it was under about twice the measured pressure as the gravity field had placed on the first set of probes.

Tom declared it to be a successful test and asked Hank to work with Alan's team to create one additional probe in the same design as the first.

"Just one thing, though," he added. "I want to add a small maneuvering pack on this one so we can steer it a little more than with the nitrogen puffs. I think I can use that seam around the middle and just build what I am certain Bud would call a power girdle. They need to be more powerful and steerable than just attitude gas points."

Which is what the flyer proclaimed it to be two days later when he walked into the Barn to find Tom at work on the circular piece. Featuring a trio of small repelatrons and an area between for both electronics and batteries, those dishes could be swung about two hundred degrees up or down. It could speed up or slow itself and, depending on how many and which ones were running, steer the probe to some degree. It could even spin around so the thruster

pack could slow the probe, and even—possibly—let it escape.

"When do you stuff that thing with probe?"

"I've been told two days from this afternoon, flyboy. This time, just to keep you from asking, we are flying the probe out to Fearing in the *Sky Queen*. The *Jupiter Skimmer* is already out there waiting and mounted on *Goliath*."

"Going…?" Bud wished to know.

"The day after that. Thursday. We'll leave here at seven and take off from Fearing at nine. Assuming all things go as well as the last time, we are home by four-forty-five."

The takeoff was delayed by about one hour when the connector for the power lead had a single contact point bend. Rather than take the chance of bending it back, and possibly having it fail, Tom chose to have someone bring a new one from the base stores, along with a soldering iron and a portable work surface.

It was either that or, with prevailing winds of some eleven-to-thirteen knots coming over the cargo disc, he would need to have a shelter or risk performing the five solder joins incorrectly.

He was pleased to see the tech arriving on a Straddler with a foldable table that featured a small electronics vice to hold the connector steady. Bud provided the stabilization services for the actual cable, and Tom had everything repaired in four minutes.

It was the complete suite of testing that took most of the extra time before the inventor declared they were good to go.

As before, the release of the *Jupiter Skimmer* went smoothly and at the same point allowing the large ship to spin around and use its giant repelatron to slow down enough to swing around the Moon and head back to Fearing Island.

Just as smoothly went the probe release a few days later. Rather than having the larger ship do a small bump down to separate the probe from the bottom, Tom had programmed the release to be made and the new maneuvering ring employed to give it a tiny bit of force away. So, as the *Skimmer* began to slow and made a very wide arc for its return, the new probe turned its repelatrons to its front and started its own slowdown maneuver.

Four hours after that—plus the thirty-three minutes of signal time—Tom and Damon watched as the readouts for all data started to come back to the control room in Communications. It was the same room used when Tom and a team of "game players" had operated on Damon's brain tumor. With all the available monitors,

it had seen other uses, and today it was the ability to place individual measurements on individual screens that helped them see and digest what was happening.

Similar to the first probes, measurements of the gravitational pull came through, but with just the single probe it had been deemed advantageous to aim it right at the supposed heart of the gravity generation.

Minute-by-minute the probe got closer and closer and the internal pressure rose, but not by as much as it had on the first two probes.

"Think that is a byproduct of the stronger shell approach?"

Tom nodded. "Yes I do. The actual shell is no thicker even though Hank suggested doing that. I believe we need apples to apples measurements and data, not something skewed by more plastic."

Damon agreed with his son.

As the time approached when the probe would be about to the point the others failed. They both sat forward watching. Of course, if it had happened, it happened almost a half hour earlier.

And then… it did not happen.

The probe continued heading inbound and Tom now had the notion they ought to try to slow it down a little.

The signal was sent as he described what he was doing to his father. It would take over an hour to get the signal there and get signals back about the effectiveness, so they called over a technician and took a break for some coffee.

By the time they returned from both the break room and a visit to George Dilling, the moment of truth was just three minutes away.

George had slipped into the room as curious as the others about what was going on or about to happen.

"About ten seconds," Tom announced. He tried to breath but found that he was holding his breath.

"2… 1… and… okay. We are evidently still in one piece, forty thousand miles closer and the speed is starting to drop. Oh. It obviously is not going to drop enough to avoid hitting the center point. Although, I do have another idea."

He quickly typed in a new string of commands and sent it.

"I'm trying to see if we can veer to one side and then use the repelatrons to power us past a collision."

Two hours, nineteen minutes passed before Damon stood and

touched Tom's shoulder. "Well, you did a good job and tried, but we have to face it; that gravity field is too strong for something that small. And," he said giving the shoulder a squeeze, "do not consider that it might need a human visit. Not yet. I'm going to see if Peter Quintana is willing to sponsor us with some funding to build a larger, very powerful probe to get in, take measurements and get the heck out of there in one piece."

Knowing the New Mexico Senator as well as they did, Tom would not doubt that his father could get the politician on their side. However, seeking to add caution to the communication, Damon told Tom he was not going to play the "might come crashing to Earth" card. Both because it was unlikely, and might play against a certain number of people within the Government giving the Swifts more money to "protect the planet… yet again!"

The younger man nodded and said it sounded like the proper approach.

An hour later Tom received a TeleVoc call from his father.

"Son? Pete says to tell you he needs to have us both come down tomorrow. He would like to see and have some of the data, especially both the gravity sphere diameter, as far as we know it today, along with the crush data. He suggested we have lunch with him. You're available I hope."

"Of course. And, I can bring all the data or just some selected printouts. What do you think?"

The older inventor suggested just what he'd already mentioned.

The Senator greeted them warmly as soon as they walked into the outer office.

"Sorry I could not swing a limo for this," he told them. "And, don't read anything into this, but there are a few cutbacks going on and limousines for non-governmental visitors except for Senate or House Committee Meetings have been curtailed for the near future."

"That's okay. We had a nice taxi ride that only started to go about the completely wrong direction right out of the airport until I mentioned that I know DC *very well*. The driver made an illegal u-turn and we raced here in record time."

Inside his office was a table with three covered dishes, linen napkins and salads plus cold drinks. While they ate, Damon and Tom tag teamed giving the Senator a lot of their information.

Peter Quintana was a technically savvy man and understood about 95% of what they were telling him, but he had to admit the people he needed to convince to cough up the money to mount a

full-sized probe were among, “Washington’s finest examples of the ill-prepared and clueless.”

“Par for this course?” Damon asked.

With a nod, Peter stated, “Only if you know how to golf this variety of sand traps and water hazards. So, show me the details and pretty pictures.”

They moved over to his desk and sat. Tom pulled a folder out and separated the eight photos from the thirteen pages of data.

“As you can see from these stills, taken at twenty minute intervals, there is absolutely nothing to see,” Tom explained as Peter flipped through the entire stack three times.

“Oh boy,” he said sounding a little sarcastic, “another invisible menace from space for me to tell the clown brigade about. Hopefully, your words do better justice than the pictures.”

They did.

As his reading showed the gravity rising, so did his eyebrows until he looked like someone who’d undergone a facelift that had been rather poorly done.

“This ain’t good!” he declared. “Is it?”

Both Swifts shook their heads but it was Tom who spoke.

“To be absolutely honest, we have no idea what to think. Or, if we need worry. Which is why dad and I came down to talk about some funding. We feel it is imperative to understand this phenomenon to a high degree, and to that notion we need to construct a larger and more capable automated probe.”

Damon spoke up. “That is where you and this Government of our comes in. So far we have spent about three-point-six million of our own monies and really do not feel we should fund everything.”

“Hmmm. I see. Can you reuse any of the components in a new probe?”

Damon stared at the man a few seconds. “That’s the whole point, Pete. There is nothing to reuse. The probes, all three of them, were destroyed!”

“Oh. And, as it sinks into the thick head of the man sitting opposite the two Swifts, he must lower his eye in shame for being so dense. Sorry, guys.” He did look ashamed so neither Tom nor Damon said anything about the momentary lapse in logic.

After thinking about something, picking the phone up, hanging up and staring at the Swifts, Peter Quintana had to tell them something he hated saying.

“I am not sure what to do.”

While Tom had a very definite idea of what the good man should do, Damon was the diplomat of the two of them. He said, “Then, ask us anything that might help you. And us.” He leaned forward trying to convey his willingness to assist.

After a few seconds, Peter asked them a question.

“Are there any other, and I mean less expensive and faster ways to look at what is out there?”

Tom was about to remind him of the photos he’d already seen, when the man amended his question.

“By that I mean something like a laser or any of the deep space telescopes?”

Damon and Tom shook their heads.

“For the same reason those photos show nothing and that is from inside a million miles where we on Earth and even up at our station about one hundred eighty million miles from that point, there is seemingly nothing to be seen. Now…” and Tom had to pause a moment while he thought about this, “… I don’t think we had considered a laser probe. It would be possible to do that even the day after tomorrow, or night after tomorrow, as our Observatory has the necessary laser equipment and we’ll be in alignment then.”

Damon looked at Tom. “What if our doing that gets unwanted attention from, well, someone out there and they take exception?” His wink away from their friend told Tom he was just teasing the other man.

But, Peter took note of the possible threat and started to retract his suggestion.

Neither of the Swifts could resist laughing and Peter finally understood they were poking fun at him.

“Not directed at you specifically, Peter, but something you can borrow when talking to others of a less scientifically-oriented nature.”

He got a little of an impish grin on his face as he stated, “Probably serve them right!”

CHAPTER 10 /
THE RIGHT METHOD... AND STUFF

TOM DID arrange for the Swift Observatory to send out a slightly sweeping laser "shot" just after midnight on the appropriate night. He wanted a seven-degree arc from one side of the presumed energy point to the opposite side. Their primary telescope turned to the supposed target area, and that of the *Space Queen* along with her Megascope Space Prober and even one of Tom's SuperSight devices. The shot blasted out for precisely fifteen seconds.

All operators reported getting great images of the laser passing into the gravity zone before becoming fuzzy and indistinct. It did not visibly come back out at the other side.

"All we can consider," Professor Heller at the Observatory told Tom the next morning, "is that we have such a gravity force that is unseeable and that directs us to believe it is another black hole out there. Like large ones in other galaxies, light just goes in and does not pass through. We do not like to say, but that is our *guess*."

Tom thanked the man for the work he and his colleagues had performed and said he now had to find another avenue of discovering the truth.

"And, I wish you the best of fortunes in that, Tom."

Once he'd hung up, Tom told his father about the results.

"Ahhh," was all the older man said.

"Just 'ahhh'?" Tom inquired.

"Sure. Take a look in the upper left drawer of your desk. There you ought to find an envelope." Tom slid the drawer open and looked astonished when he found the suggested item.

"Now," Damon continues, "please open it and take out the card inside. Then, read the words."

Tom did and nearly choked when he read:

> "I predict the light from the laser will disappear and that the Observatory people will say it's a possible black hole. This I do not believe!"

Tom looked to his father in wonder. "How?"

Damon smiled. "It only makes sense when you consider it. Nothing is visible out there, light disappears and as you said got fuzzy, so they say what they believe they know and that had to be a

black hole."

Tom picked up on what his father was telling him. "And, because whatever it is, is not rushing around nor is it eating asteroids in the vicinity, it almost for certain is not a black hole!"

Damon clapped a few times. "Bravo! That is my interpretation as well."

This continued to leave the question of what it was in the air, but it also narrowed that down a little. To Tom's mind to generate that level of gravitational pull, the source had to be either a super dense asteroid, an invisible planet, or something of alien nature.

He wasn't certain he liked the implications of the final one.

His next call was back to the observatory to ask if they could perform a detailed mapping of the vicinity of the anomaly. "If you have the ability I would like to have things around that location color coded as to size."

When Bob Jeffers inquired about the inventor's reasoning, Tom explained, "In the absence of any direct spotting of an actual object, I need to know how large things are around there so I can try to determine if something massive is drawing in things under a certain size. Quite frankly, Bob, and this is not for discussion with anybody up there, if there is not a massively dense asteroid in that spot, I am worried about the other small number of options."

"Do I want to know what any of those are?"

"All I can say is in the form of a question. What material does not reflect light so it cannot be seen in any of our current imaging technologies? One that would account for the disappearance of the laser light? To my mind, that means possibly an entirely new mineral, element or something else, and because of the intense gravitational pull it has, we may never get a chance to go out and find what it is."

Tom did not want to get into a discussion of anything alien at the moment.

Bob agreed to get the study underway that evening. Other things could wait the few days it would take to do a good job.

"The fortunate thing is we already have excellent software that categorizes what we find and gives them color codes according to about nine criteria. I can set that for size. Uhh, would distance also help you?"

"If we are talking about an area of only five or ten million miles deep and wide, then not this go around. But, can you rerun your findings or data a second time with that as the main factor?"

Bob told him it was very possible to run the data using each of, or combination of many of the criteria the software engineers had programmed in.

After the call, and telling Trent where he was heading, Tom walked from the office and the building over to where Hank's workshop was located. Stepping inside he looked at a very odd piece of equipment, or at least a case for something strange.

More like one of the bad guy s[ace fighters in the movie *Star Wars*, with a roundish central ball and two flat planes on the sides—these pointing partially to what he assumed to be the front and not straight to the right or left—this thing was more than ten feet tall and about eighteen feet wide.

It was only after about thirty seconds he noticed Bud and Arv standing to his right near one of the computer workstations. The flyer motioned him over.

"Get a load of the Garth Invader set up. Oh, and I'm not chancing a copyright infringement so the slight name change!" He grinned.

Tom attempted to ignore Bud's joke, but it struck him as quite funny, and it made him chuckle. Finally, he sobered.

"Do we know what Hank is building?"

Bud shook his head, but Arv nodded.

"He told me yesterday he is bothered by the crushing and disappearance of the probe he formed the shell for. He said, and I agree, that it was too small to hold anything like the power and repelatrons necessary to get in and get back out—that being the most important part—and that he'd heard from your dad the Feds are coming up with some good funding to see something else built. This is basically a *papier maché* shell over balsa wood stick frame mock-up. Oh, here he comes now."

Hank came over with a look Tom decided was no guilt, shame or anything other than a little pride on his face.

"What do you think?" he asked sweeping his right arm back indicating the off-white shell.

Since he was looking at Tom, the inventor answered. "Well, for starters, and I just heard we have funding for something larger than before, I have to say it is impressive. Not certain about how utile it might be, but as long as it isn't costing us a million bucks just to do that, I'm impressed."

"Only about fifty bucks and twenty man hours of time, but I do have a reason for what you see. If you three will join me for a coffee over on the other side, I'll tell all."

When they were seated and had mugs in front of them, he began.

"What you do not see because I have not yet made them are the repelatron emitters that will go on the outer faces of those two vertical planes. I'm seeing five on each with enough total power to equal the largest of the emitter antennas we have on *Challenger*. So, pound for pound of mass, that gives this little thing thirty-seven times the push as our favorite rails and box ship."

He explained that the vertical planes could be swiveled from positions pointing about up seventy degrees from normal, moved down to that same angle with the same forward and backward aiming. Theoretically, it could spin practically within its own width and accelerate in space from zero to top speed inside of two minutes. That speed was likely to be about one hundred and ninety thousand miles per hour!

"My hope is, the real thing can be released moderately close to the edge of the gravity field, speed in a whole lot faster than the other probes and sort of skirt over or under the middle. If it flies as I want it to, then we send it through far enough away to get readings but not to endanger it. Then, we turn around or arc around and try going deeper and deeper until we have a good map of the field.

"Then, I want to be able to recover it."

Tom asked if the shell of the body would hold what they needed.

"Were you thinking of adding anything not in the previous probes?"

The inventor had to shake his head. "Well, nothing more other than some higher powered computing equipment and some mapping software. Although, that might be back inside the delivery ship."

"The internal capacity of that shell is three-point-nine times what was inside the small probes. I think a lot of that will be battery, but we certainly can cram in more computing capacity."

As they had been discussing things, one of Hank's people had climbed a ladder at the end farthest from them and glued the first two of that end's five repelatron emitters. Formed cardboard versions of them at least. She was just holding the third one when the four men walked over to admire the new additions.

"Looking very nice, Sian," Tom complimented her. He had pronounced her name as in Sean or Shawn. "Can I come back in an hour or two with dad and show him?"

Over her shoulder as she continued holding the piece in place until the hot glue she was using completely cooled, she told him, "I should have these on both ends in twenty minutes, Tom. So, come

on over unless Hank has some reason you shouldn't."

The Engineer was shaking his head. "If you hadn't shown up when you did you would have received a call in a half hour anyway. So, I'd love to have Damon see what his fifty buck approval got us all."

When the two Swift men came back it was with Sandy Swift-Barclay. She had been in the big office delivering some reports from Communications when Tom returned and asked if she could be included.

"*Merrier* and *more* are the words that spring to my mind," her father told her.

Now, standing inside the doors, she had stopped with her mouth agape while Damon and Tom approached the large model.

"Well, Hank, I have to say this is quite a bit more than I expected. Tom wouldn't tell me anything other than it serves me right for not telling him about the Governmental funding when I found out yesterday. And, you did all this in just that short time?"

Hank nodded and pointed to three of his people standing to one side. "Yep. And, no cheating for once." He lightly slapped his hand over his mouth. "Not that we cheat on *any* of these things, you understand."

He gave them a tour, including Sandy who had recovered enough to walk over, but her mouth was still not totally shut. After tapping his TeleVoc pin and asking someone something, he told them Linda Ming was coming over to see them. "She's the one who will be making the repelatron sets. I think she has some sort of amplification system figured out, at least on paper. But, I'll let her have that thunder."

The diminutive Asian arrived two minutes later from the next building where she worked with Arv and came over to hug Damon, who she though of as a replacement for her late father.

She cheek kissed Tom and Sandy and then stood back pointing at the model.

"Don't you think Hank and the others did a magnificent job on that?"

Everyone had to agree.

"Tell them about your idea for the 'trons."

She gave them a hopeful smile. Tom and Damon knew she generally underestimated her abilities and often over delivered on requests.

"Okay. On each end, as you can see, will be five emitter antennas.

They are identical. I believe we plan on mounting one more on the very back of the central egg." She looked at Hank, who nodded. "Yes. And, that one is for emergencies only. It will have its own battery pack and should be capable of running at four times the output of any of these for about seven minutes. As I said, it will be for emergencies only. But, the best thing is I think I found a way to pump up the power from all the dishes."

She proceeded to tell them about a scheme "...that will use a variation on Tom's pretty incredible coil capacitor."

Even Sandy knew the coil cap was a funnel-shaped power amplifier that featured multiple circular levels flowing up a funnel-shaped outer set of tubes. The farther it traveled the more the power increased. But, it had been electrical power to Tom's mind.

"It is the build-up and slight back-pressure of power than intrigued me. Tom can verify this, but even the best repelatron runs in a set number of cycles per second. That is, about two hundred and forty on and offs each second. By using two small repeaters and forcing the repelling power up through the new... well, Bud will have to give it some silly name, but by doing that it means the power that comes out the end and through the emitter antenna is much amplified and smoothed out to be nearly continuous with no breaking of the signal between cycles."

Tom stared at Linda while Damon stared at his son. Sandy was staring at them both trying to decide who to focus on. She chose her brother.

When he could speak, ten seconds later, the inventor slowly shook his head and muttered, "Incredible!"

Linda beamed. When he repeated that, she smiled even more brightly.

"I think what Tom is trying to articulate is the question of how in the world did you manage that, or even think to try that method?" Damon said to her.

"Okay. The why did I even think about using a coil capacitor for this came from a desire to simply up the voltage from a limited source, the batteries that will go into that," and she pointed to the model, "but that led me to making a huge mistake. I was connecting some things in my test chamber when I got a call from an old friend. By the time I got back, I sort of forgot where I was and misconnected the input to the output. So, when I tried to turn it on I got nothing."

Tom nodded. That is what he'd expected her to say. It was her next he hadn't anticipated.

"It was when I thought I might have a bad battery pack that I connected an outside power source and the small rig slammed its way down through the table I was working on!"

"Super push?" Sandy guessed.

"Really super push," Linda told them all.

She went on to say she'd then performed several experiments and measurements—always on a more solid surface—and finally had come to the conclusion that the coil capacitor was acting as a repelatron amplifier.

"I honestly can't say that it would not work with any other sort of radiation from radio to **RADAR**."

When Damon suggested a small test unit, with a single emitter, be created and taken to Fearing to mount on one of their smallest rockets, she purse her lips and looked to Hank.

"I gave her permission yesterday to do just that," he admitted. "The truth is I only spent forty-six dollars and a few pennies of the fifty you said I could, so I thought, 'What the heck!' and told her she could use the rest. I just never told her how much the rest was."

Hiding an oncoming smile, Damon said, "Or, how little."

"Okay. So I guess I buy my department's coffee supplies until I get this paid off. At least we might be onto a winner."

Tom was still slightly shaking his head. "Hank? If this pans out, even if only for this probe, *I'll* buy the very best coffee for your department for the next year!"

Linda, with assistance from Hank, Arv and a small team in Electronics she had previously worked closely with, completed the first test unit of what she was calling the Test Repelatron 2, but Bud had heard about it and almost immediately dubbed it SuperTron.

"So," he was asking Tom as they sat in the large lab two days later, "when do we take it down and fly it up?"

Tom suggested they give the miniaturization expert a call to see what her status was.

"I am about one full day of work from completing it, Tom. Testing should take another day because I not only want to test the power, I want to test the circuitry for durability."

He requested that she call when she believed the unit was ready for public viewing. She agreed to do that, or to call if anything did not check out.

"In case you could not hear around my ear," he told the flyer,

“Linda says you can come over with me tomorrow as long as you promise to not talk to the new unit and tell it what its name supposedly is.”

Bud looked shocked. “She never said that! Did she?” he finished somewhat meekly.

Tom laughed. “Not exactly, but you will behave. She really doesn’t want to play up the unit’s strength and capabilities until it passes a lot of tests. For now, let’s agree to just call it what she does.” His one raised eyebrow had Bud agreeing to say nothing.

“I do have a question that I think is a pretty good one,” he told the inventor. “When we do shoot this upward, is it going to get a more traditional boost or will it need to fly on its own?”

“My hope and desire is that it is the only thing powering this small rocket, which will be a Sampson Mini, that twenty-three foot single stager.”

Bud said that sounded like what he would do. “A follow up?”

“Sure.”

“Does it only go up, or do you want to retrieve it. Dibs on piloting the *Challenger* if we need to go snag it.”

Tom held up a finger to forestall any more questions as he thought that last one over. When he brought the finger down, he stated, “I want it back, but I believe a really good test will be to send in on a trajectory to carry it around the Moon and then give it a little goose to just swing it around and come back. Of course, that means heat shielding an all that in case we can’t catch it…”

“Still dibs on *Challenger*!”

When Linda called the following late morning to report everything looked really good, Tom said he would come over and pick the unit up. “How much weight am I going to have to carry? Should I bring a cart?”

Linda’s light laugh was like a wind chime in a soft breeze. “Tom. Without the battery it weighs seven pounds. With battery pack, at least my test pack that can run it nearly a full hour, sixteen pounds, fourteen ounces give or take three grams.”

By the next mid afternoon Tom, Bud, Linda and Arv—Hank could not come, neither could Damon nor Sandy—stood behind the Plexiglas barrier of the launch viewing platform near the smallest of the launching pads at Fearing Island as the rocket jumped from its position on the ground and went racing up into the sky. The only noise came from the air moving in to fill where the rocket had been.

The telemetry readings being displayed on the monitor to their left showed the rocket was exceeding both the acceleration and speed of any other of the Swift space vehicles, even those powered by multiple repelatrons.

"Looks like we're picking up some wobble in the tail area and a little more than normal friction on the nose," Tom said as the rocket climbed past thirty-six miles, "but that's coming down now. What's your reading on the batteries, Linda?"

She checked her tablet computer that was receiving a signal directly from the rocket via a special radio link. "It is consuming about the level of power I believed from my tests, although… no, it is about five percent high. Must be the weight of the rocket. I only tested it against a theoretical two hundred pounds. What's the MiniSam weigh?"

Tom had to think. "Three hundred and five without your package. I never had them remove things like mounting hardware for tanks or brackets for solid engines, and I left the payload detach bolts in there as well"

They both tried to compute things in their heads and ended looking at each other. "Sounds about right," Tom said before Arv could say just about the same thing.

Bud, whose gaze came down now the rocket was invisible and passing the sixty-five mile mark, told them all, "Seems like Linda's new Test Repelatron, or whatever she is calling it, is a hit. Now, when you go to send up that new probe, you'll have the right equipment. The right stuff, if you will."

Linda nodded to the flyer. "Go ahead, Bud. Give it a nice name."

He mentioned his idea of 'SuperTron' and she laughed.

"Fine. Now all that is needed is the right method of sending Hank's monstrosity out there, because I do not believe it can ever carry enough battery power to do the entire mission on its own."

Out of the side of his mouth, Arv asked, "Isn't it wonderful when the kids play nicely with each other, skipper?

"Yeah, Arv. And, Linda has made me a great, new toy so now I get to play."

CHAPTER 11 /

PROBE ONE AWAY

LESS THAN three hours later the *Challenger* climbed into an orbit where the rocket would wait for pick up service. Of course, Tom had let Bud "beat him" to the pilot's seat. As much as the inventor loved his first non-petroleum fueled spaceship, he knew she would be forever his so allowing his best friend the opportunity to fly her was an easy decision to make.

As the flyer got them up to the proper orbit and began the approach—they would be, in effect, sneaking up from behind the now spent rocket—Deke Bodack, who'd come along as their third man, called over to Tom.

"Hey, Tom? You might want to come see what I have on the SuperSight." When the inventor was standing over the tall man's shoulder, Deke pointed to a speck in the center of the screen as he slid his fingers up a scale of numbers on the right side of the monitor. The speck quickly grew.

"Oh. Now I see. Looks like the repelatron was much more powerful than we thought. Now, I'll need to find out if that little bit of collapse of the body tube happened in the atmosphere, like at Maximum Dynamic Pressure, or perhaps some other force or even an impact." Turning to Bud, Tom called over, "Call up Deke's image. It might change how we treat our little rocket when we get close."

Bud let out a whistle of surprise on seeing how a portion of the rocket's body had crumpled and slightly twisted about thirty percent of the way from the tail and for another four or so feet.

"That sure looks like Max-Q compression," he stated referring to the more common terminology for that highest of stress pressures placed on accelerating rockets.

Tom had to agree even though he knew it would have taken a *lot* of stress and pressure to do that.

"The fortunate thing is the durastress may have compressed down but it did not rupture or fail. And, having Linda's package being as small as it is, placed it below that crumple zone. Go ahead and bring it onto the porch, please."

The flyer smiled over at the inventor. "One slightly torqued rocket coming right in."

It required less than two minutes before Tom was heading down to suit up so he could go out and tie the rocket down. First, however,

he worked to remove the repelatron package. That he placed inside the hangar in a packing case with some padding added around it.

The landing back at Fearing was uneventful with the trio setting the repelatron case in the back of the Toad they'd flown down in that morning. The rocket would be heading back with that evening's supply jet.

On the way to Shopton Deke wondered aloud why Durastress would bend like it had.

"It should not have done that, Deke," Tom stated. "The fact it did tells me one of two things happened. Either we had a rocket tube with a defect, or we have a repelatron that has too much push for that thickness of tube. Likely, it was a combination of both."

That was something that was proved the following morning as the inventor scanned the now empty tube with a device he'd first made to check for stress fractures on aircraft. In turn, that was based on his SimpsonScope device for viewing inside the human body as an aid to surgeons.

Bud was hanging out a few feet behind him in the Barn so when Tom turned and smiled the flyer just nodded and said, "Too much oomph."

"Yes. That is both good and not great, but the good far outweighs the not so. Now, I have a good notion we will have the power to get the probe Hank is working on, Probe One, into and back out of that gravity field.

"Why the heck call it Probe One when it is about number four to go out there?" Bud asked.

With a tiny smirk, Tom responded, "Because it is likely to be the first one to actually get in there and come home. The first three were destroyed, probably from being crushed. I've re-listed those others as Test Prototypes 1, 2 and 3."

It was decided the launch of this larger probe could not utilize the *Jupiter Skimmer*, and so Tom had a special mounting bracket added to the top of his *Challenger* ship.

Many times in the past, the ship had received a cargo platform—basically a sturdy grid with room for air to pass through but enough space for anything up to about twenty-four feet by twenty-five to be lashed onto it.

For this use with Probe One, he would have the cargo loading team cover the probe with a strong Durastress blanket so no friction could damage the craft.

"And," his father was asking as they talked about the forthcoming mission, "do you suppose that the same team that took *Sutter* out twice can handle this?"

Seeing the look in Damon's eyes, Tom knew he was really asking the younger man if he understood he might not be going out with the probe.

Tom answered carefully. "I do understand what you are telling me, and note I did not say *asking*. And, the answer is both a solid yes, as well as being a cautious no."

"No?" Damon sounded startled by that.

"No, because if I get things correct, and I am fairly certain we know the almost absolute limits of that field, I believe *Challenger* can be programmed to get itself out there—faster than if it has to carry people—and we can remote control the release. This time, since we are reasonably sure to get everything back, I want to have the Space Friends' manufacturing box build another of their instantaneous radios so we not only can get data and images back, immediately, we can direct the probe's movements in real time."

If asked about it, the older inventor would have to admit he had not foreseen that possibility. Somewhere in the back of his mind was the historical possession of only six of those miraculous radios that used some method to pierce "normal space" and to slip its inputs and outputs through a back door to reality.

While the Swifts had not yet figured out that ability, Tom had used the large box on several occasions to make things like the radio units.

Tom spotted the smile coming to his father's face and he, too, smiled.

"Yeah," he admitted to the silent inquiry, "I am starting to slow down on the 'Tom jumps up and rushes from the room' stuff. At least, for now. I can't promise I won't be in on something else happening out there, but for now I have a lot of faith in what we can and will be sending out there."

What he did not say, and what Damon did not ask about, was how happy this change was making Tom's wife and children.

He knew it was likely to be *significantly* happier.

Tom headed for Hank's workshop at least twice a day. He was not trying to hurry things because he had ultimate faith in his Engineer and the man's team, but he wanted to be able to do something to help. If that were possible in any form.

Four days after telling Damon of his decision to not be part of any manned launch of the probe, Hank watched in amusement as Tom casually sauntered into the workshop taking an even more casual glance around.

"Just out on a stroll?" he inquired from twenty feet away.

Tom stopped and blushed. "Am I that obvious, Hank?" He walked over to where the Engineer and Linda Ming were installing the first of her new repelatrons on one end plane that was sitting flat out on the bench.

"Only in the slight way an expectant father used to be portrayed as a cigarette-smoking nervous wreck pacing like a caged animal. So, not much to give an indication, skipper. And, you are just in time to help Linda. I am supposed to head to the MotorCar company to check on a stuck release mechanism on the S-250 Sedan line. Seems it doesn't want to let the right, rear doors come down to the assembly line without a lot of tugging and swearing."

He showed Tom just where he was holding the edge of the current small dish the woman was bolting down. Tom took it and Hank walked away.

"Am I doing this right?"

"Perfectly, Tom. Hank was starting to sweat thinking he was going to be late so your timing was perfect. Just… uhhh, let me get this wrench under the heel of you hand and… there! Got it." She pulled back with a smile.

"Those little bolts are a wonder at holding things, but I sort of forgot about the lack of clearance for using them here. Now, if we can shift to your left and my right I can get numbers two and three in, then we swap places and repeat for four and five."

The bolts were, as Linda stated, little marvels. With only three-sixteenths inch of threads they held with the tenacity of a bulldog thanks to an internal piece that effectively spread each level of threads outward fractionally as it was turned into its hole. Along with a pressure-activated adhesive, they would never vibrate out and gave as much overall holding power as a full inch of any other bolt if given the proper material strength of the target hole.

They had only come about when one of the assembly people building the Swift 2-man supersonic sport jets noticed there was too little clearance where the horizontal tail pieces fit to get a longer—and therefore stronger—bolt inserted. She'd looked long and hard at the problem, even asking Jake Aturian to authorize a one-day stoppage of the line while she worked with a structural engineer on overcoming what she believed might some day be a real problem.

So far, it had not, but now it had been pointed out, some believed it could become a ticking bomb.

The two people came up with a way to expand the slightly split shaft as it was torqued into the hole.

The adhesive had always been there.

Tests on the dual solution proved it had four times the holding strength with no reduction in any other aspect. It had become the de facto bolt type, in varying lengths, for all aircraft using bolts rather than rivets.

Linda was smiling. “I never cease to marvel at how incredibly handy those bolts have become, Tom.”

Together, they bolted on the other repelatron units on that vertical piece over the following twenty minutes. Ones for the other end would be attached the following day.

Tom looked at the petite Asian woman. “Linda? Can I assume these have enough power to lift the entire probe up and into orbit on their own?”

“Of course, Tom. They probably can lift another three or four tons, easily. Why?”

“I was only wondering if we could dispense with the bolting things to the top of *Challenger* down here and the slow ride up. Now I think about it, though, that is probably better.”

“Hmmm? If you are thinking about power expenditure, this will be plugged into the ship until just before release so any power used from the batteries will be replaced. Was that it?”

“Not exactly. I’m not certain I understand why I was thinking about that. So,” and he grinned, “forget it. Will you require my expert assistance tomorrow? I can be here any time after my 8:30 to 9:00 meeting with dad.”

She laughed. “No. I think it is time Hank was put to work and not relying on the kindness and help of others.”

Word came to Tom about the results of the tests made on the crumpled rocket tube.

“It turns out it was a combination of two factors,” he was told. “First, we found some microscopic air bubbles in the Durastress fibers. Something went wrong in the extraction process and not all air was sucked out. We have completely checked out the vacuu-form system and found one small hose in the vacuum system that had developed a small hole that prevented the necessary total extraction.”

"And, has that impacted any other tubes?"

"We have checked the other five in that series and find no others with the issue. This one was the last in that set, so the thought is the hole happened between that and the previous tube. We're really sorry, Tom. Kind of feel we let you down."

Tom thought a second before asking, "Do you think it was sabotage, or is it something that just gave out?"

"It is likely to be something that gave out that we need to check more often. The specs call for integrity checks after about nine hundred hours of use. I'm suggesting to the Quality Assurance folks that be reduced to seven hundred and fifty hours."

Tom agreed. "You said two factors. What was the other one?"

"Just too darned much push pressure from that drive unit. We all believe a heavier gauge tube, perhaps as little as one millimeter more, would have avoided that crumple even with the manufacturing defect."

Tom thanked him and went to tell his father the results.

"Then, it is probably a good thing we are the only users of that lightweight rocket body. Our customers get one with double that wall thickness."

Now, turning to another matter, the older man asked, "What is the status of your newest gravity probe?"

Tom told him how between Linda, Hank and his small assistance, the ten super repelatron emitters had been mounted and the extra one for the "backpack" unit was nearing completion.

"That one will be upsized by twenty percent and will have as much push as nearly four of the others. To power it, she is hand-building a mini trio of coil caps that will give the available battery storage at least fifteen minutes of runtime at full output."

"Versus what?"

"She tells me that is versus about seven minutes before. I would hope the original time would have been sufficient, but she wants to give the probe even more in case of an emergency departure."

Damon agreed. So did Tom.

Then, the younger man mentioned how Hank and Linda had begun adding more battery packs into the vertical planes to give several additional hours of operation.

Although Damon smiled, there was something he believed he could detect in his father's eyes, so Tom asked him what it was.

"Oh, I had a small thought but it is hardly worth mentioning." He

looked at his son and wondered if interference at this point was wise. But, he believed this small point might make a small difference.

“What I had come to mind last night as I was helping your mother rinse off the dinner dishes, is that once you start running everything in that probe, and especially once you need to hit the repelatrons to get it back out, things are going to heat up very quickly.”

Tom nodded. That thought had come to him days earlier but he hoped the icy cold of space would help dissipate that heat from the shell. He told Damon his thoughts.

“I can just about agree with that. But I wondered if something a little more might be in order? Something like a CO2 cartridge to release its load when internal temperatures get to a certain point.”

A moment later another idea came to Tom.

“What would you say to a small external radiator that is only open to a circulating liquid jacket or series of plates inside once they hit the magical high temperature?”

Damon could picture what his son meant. If it wasn't to late to drill an input and output hole in the probe’s shell, and that did not compromise strength, it might work. When he mentioned shell integrity, Tom’s face turned sour.

“No. That would mean having to do some reengineering to accommodate that. Perhaps your CO2 method is best.” He would need to study this more carefully.

By the following day, and after two discussions with Hank and another Structural Dynamics expert, Tom abandoned his radiator idea. But, he was also dissuaded from Damon’s approach as well.

“Well, the main reason is that of ambient pressure inside the probe. In order for the small heating plate inside to do its job while things are, idling, I suppose, needs about fifteen psi already. To get enough cooling from CO2 that would likely rise to about thirty psi. Can the case take that pressure pushing out?”

Hank had to say it likely could, but if it all hit within a second or so that shock, along with the coldness of the outside of the shell, might cause cracks or even blowouts to occur.

In the end it was agreed that having the internal heat source turned off whenever things started to heat up on their own might be best and would almost certainly do the trick.

Tom realized he ought to test for something this important, so he did the computations to find just how thin a scaled down shell

might need to be to accurately predict its physical reaction to several heating and cooling methods.

He came up with a test sphere of eighteen inches outside diameter that could hold three possibilities. One would not be his radiator concept. But, it would include the heating plates that could be shut off, Damon's CO2 system, and also simply encasing the electronics in thin plastic and submerging them in an ethanol bath.

Since that remained liquid to about -173.5°F, it should be able to handle the anticipated internal temperatures with ease.

Three days later he decided to take his test sphere into space. Damon had suggested going all the way to the *Space Queen*, but Tom thought a trip and drop off in a safe orbit of about four hundred miles would give him the same results.

"For safety we'll take the ball up attached to the top of one of the flying saucers and let it drift while we retreat. Everything will be on automatic. I've programmed a small computer board with everything it requires, plus I've put in a heat source to simulate the highest temperatures I anticipate in case of an emergency departure situation."

When Bud was told of the trip coming in a day, he smiled and agreed it would be fun.

"But, if you can wait one more day that will make it Saturday and we can take Sandy and Bash. Make it a picnic in space outing. I think they'd like it and it's only going to take an hour or so, right?"

Tom agreed to both the timing and the idea of the invitation.

Both their wives jumped at the chance to go and Anne Swift agreed to take all four of the kids for the day.

Saturday morning Tom made certain the internal battery pack was fully charged, that the computer programming was running as it should, and that the various cooling systems were ready to go.

Bud drove his convertible up to the hangar where the saucers were normally housed. With him in the back seat were the two ladies. And, as Tom found out, a picnic hamper with a small ice pack for drinks was in the trunk.

Minutes later they were loaded and takeoff permission granted. The saucer soared into the sky.

The test ball drifted about a mile from the ship. Once released they'd moved back and Tom had made a final systems check. Everything was looking good.

All three tests were run, and of them, one turned out to have the

best results. That had been the fully enclosed circuit board in an ethanol bath. It maintained nearly the same temperature when not running hot as it did when the overload power hit it.

“I do believe we have a winner and it will only take us an extra two days to incorporate, he told the others.

They decided to let the ball drift a bit longer while they all had their space picnic.

Over the sandwiches, Sandy asked how the probe was getting out there. Bashalli had asked that a few nights earlier when it hit her that Tom might want to go out there with it.

“We’re sending it out on top of *Challenger* and that will be unmanned. We have a perfectly good remote control system that runs through one of the instantaneous radios so we can react in real time. Plus, the ship and cargo can fly out there at a higher speed than if we are inside. Then, because it will need a day to recover from the power drain, it will sit and report back everything the probe does and sees.”

Eleven days later, *Challenger* released the large probe from her upper carrier deck and the cameras caught the device as it began drifting toward the large nothing that was registering outside the ship. *Nothing* was visible and *nothing* was reflecting light. And yet, a gravity field coming from that same direction was pulling on the probe.

For now, it was only a slight pull that was not affecting the larger ship as it stood still some two hundred thirty thousand miles outside the gravity field.

Back at Enterprises, and with the instantaneous nature of the Earth to ship communications, Tom, Damon and several technicians sat in the control room in the Communications building.

The probe picked up a little speed as they watch from the safety and comfort of their room as it headed for the nothingness until Tom believed he had waited more than long enough.

"Record a full scan on all instruments and tell me if there is anything actually out there.”

“Only the gravity and its source seems centered pretty much right in front of the probe.”

“Reverse repelatrons on full,” he called out.

It took less than a minute for the inventor to realize the repelatrons were finding nothing against which to press out in the larger nothingness of the gravity well until they were fine-tuned to

the exact center. It slowed them down back to a crawl.

Bud reached over and rotated the left of the planes of repelatron units so they pointed to a grouping of five asteroids on their left side. Matching the slide of his fingers into the higher settings, the ship took a slight lurch to the right. He shoved the controls all the way to their top setting and the ship lurched once again, and headed farther to the right.

Seeing how effective Bud's move had been, Tom quickly found a pair of asteroids just two million miles away. Singularly they were not going to be big enough, but their position of one behind the other and only half overlapped in position right now more than doubled what he'd be able to press against.

But, it wasn't working and he knew why.

In his mind the inventor was cursing himself. One totally boneheaded move on his part was likely to doom them. He had never turned off the autonomous program causing them to approach whatever it was out there.

Worst of all? The *Challenger* was being dragged in now!

CHAPTER 12 /
NO BLACK HOLE HERE

WITH A shout, Tom stabbed his finger down on the button that would abort the probe's approach.

Far out in space, *Challenger* gave a heavy shudder and a shake before the indicators on Earth told the inventor and Bud it had turned from whatever it was dragging it in. Tom stared at the readouts now showing him the repelatrons were set to press against the nothingness that was in front of the ship. Yet, they *were* pressing against something.

A fast scan of the vicinity showed nothing of significance close enough to use for their push, so he turned two of the dishes to press against distant Mars to shove the ship on a tangent. Jupiter might have been nominally better but it was too far away behind them along its orbital path.

Three minutes later the ship stopped and began to move back at an increasing rate now almost as if it had never encountered that gravity well.

Bud, his face bathed in sweat, let his breath out it a loud *whoosh*! He flexed his neck around to ward off the cramp that had been setting in before turning to Tom.

"I was watching the screens pretty closely, Tom. That was no black hole out there, was it?" He said this because he realized the gravity had been "turned up" somehow and that was not a natural thing.

"I don't think it was, flyboy. For one, there is just too large an area where it might be centered for it to be a black hole of the sort we've run up against. As widespread as that gravity force is, a black hole of that same dimension would have swallowed this solar system and our sun within a few months. There's no way we'd have gotten the probe away from something like that! Then, a natural object would not get set to a higher power all of a sudden."

The flyer posed a good question making Tom pause to think about it.

"Since we both have seen a backward-running black hole, what's to say this isn't some other unseen black hole type? A weaker one that is more tightly contained? Or, did we just happen to get the probe out there in time for some natural fluctuation?"

His friend was taken aback for a moment.

He finally gathered his thoughts. “You know, Bud? I’m going to hold to my statement this is not a black hole. But—! That isn’t to say it is not some other phenomenon. It just doesn’t fit into what black holes do. Gravity, for sure. Over a much wider field of influence is a most definite yes. This one is very gentle compared to any black hole seen, remotely observed or postulated other than our tiny one.”

"Why couldn't we push against more than what seems to be a tiny spot in there like we do with the small black hole?"

"My best guess is that if it is a black hole, it is large enough to not gather any stuck debris around the mouth. That is another reason to doubt it is a black hole, Bud."

“Okay. I’ll buy that. What is it, then?”

Tom looked at his best friend almost as if begging for *that* question to be taken back. When it was not, he shrugged.

“I am not sure, flyboy. I am just at a total loss to explain what it is, even if I have declared what it is not!”

As they had been talking, Tom took full control of the probe and was heading it closer to *Challenger* and to get both of them out of the pull of whatever it was out there.

His first step was to reposition *Challenger* at a farther point and to give it some autonomy over moving away if it sensed a gravitational increase.

Next, Tom sent up a revised navigation program, minus the “stick with the approach” code for Probe One, and set it to head into the very edge of the field at an acute angle. It would traverse the field for about two hours and then curve back out using another set of asteroids that would be visible to it.

The two men decided to table the discussion until more people, among them Bob Jeffers and Damon Swift, might be brought in. Tom called the astronomer before TeleVocing his father. To both he explained that the results of the probe’s attempted fly-by had come in and it was astounding, to say the very least.

Damon said he could be in the control suite in a half hour after his meeting with Charlie Van deGroot at the MotorCar Company. Bob explained he was about to leave his apartment for work but would arrange to go in later so he might attend the meeting.

He arrived before Damon and wanted to press Tom for some hint, but the inventor asked him to wait.

“At least for now, the probe is keeping on a mostly straight line and will be hitting the heavier gravity area in twenty minutes.”

Bob asked about the quality of the data coming in. Tom said it

was significantly the same as with the lost probes, but hoped closer and closer flights might give them more.

"In the meantime, how about if we discuss what we've found out in the sixteen asteroids we have performed core samplings or outright mining excursions. I would be interested in your thoughts about dispersal of what we have found."

Bob looked askance at Tom for a second before nodding. "Oh. Do you mean why close proximity asteroids don't seem to have much the same materials inside as their neighbors?"

"Yes." Tom was only slightly surprised at the question.

Bob took a deep breath and started giving his answer. "According to who it is you interview or the materials you read, the age of the asteroid belt is widely discussed and about as widely disagreed on. Some believe the bits and pieces are what wanted to collect into another planet, but that the formation of Jupiter kept that from happening with its increasing gravitation affects. I am not one of those.

"As we have discussed before, I believe, or want to believe, the asteroids were an actual planet that either didn't quite fuse into a solid lump—nor did it have the opportunity to round off much—but that collection took a direct hit by something incoming or outgoing. That blew things apart in all directions."

"How hard did that hit?" Bud asked.

Now, Bob looked at a loss. "I would have to say not all that hard, but hard *enough*. The only thing I can point to are the giant craters on the Moon. Obviously something big hit, but it did not hit with enough force to break the Moon apart. So, imagine something like that, only it hit at a very bad time in the development of that planet. I suppose you can think of it like Eris. That took a rather soft hit in the side from its own moon, and then slowly broke apart."

They were discussing how things flew away, many influenced possibly by Jupiter immediately, with many following the gas giant as it continued on it its orbit. It explained how things got spread all around the sun. They kept dropping off as they slowed down a little.

Damon had stepped inside the door a moment earlier and now came over to sit.

"I agree with Bob. At least on how things out there spread all around. What else were you discussing to kill time before I could get here?"

Bob raised a hand. "I have this one. We were going to talk about how pieces that are close to each other can have such a widely scattered makeup."

Damon nodded. “And, were you going to ascribe that to the same dispersal of pieces courtesy of Jupiter, probably Mars, and even passing comets?”

Bob smiled. “Words from my mouth, Damon. That was going to be my basic answer. I suppose, with that, we can get to why your son called us in to the Principal’s office!”

Tom wanted to protest, but he saw the smile on the astronomer’s lips so he decided to press forward. Over the next nine minutes he talked about, and even showed the others, data from the probe and the still unexplained gravity area.

“Still of the belief this is not a black hole?” Damon asked.

His son’s head shake had him even more curious. “Think about what we know about black holes. Add to that what is still relatively close by and I have to say it doesn’t sound like any black hole. I kind of wish it were another small one because I’d like to use one to drag something larger that the *TranSpace Dart* along at top speeds. The *Goliath* comes immediately to mind.”

“Certainly a future possibility,” Damon stated, “but for now you have your probe. What is it doing?”

Tom described his first nearly failed flight into the field at likely to be too steep an angle and how the probe was now making a wide sweep to get back close to the *Challenger*.

“We’ll send it back in tomorrow morning. For now, I think both Bud and I are getting too stiff and maybe even a little lax from sitting here for nine hours.”

He admitted to nearly allowing the probe to fight his directives and to get itself into trouble.

“Perhaps, you might give it another day to sit out there while you see if there is anything you can do to program in a survival algorithm.” Damon gave both younger men a look that spoke of his belief such a thing was more than possible; it could be nearly mandatory.

Tom picked up on his father’s unspoken request. “Right. I’ll start first thing in the morning and Bud and I ought to get the probe back inbound before the day after that. Thanks, Dad.”

He spent three additional hours staring at the indictors for both *Challenger* and *Probe One*. Both sets of instruments now told him the gravity strength had reduced to its former levels so the larger ship was safe and the smaller one was hooked up and floating a few yards off the porch taking on additional electrical power for its

coming next flight.

That would not be until the following day and not until he could come up with something to get it turning and running at full capacity if the pull inward was to be increased again. The last thing he wanted to do was to lose this probe to an oversight.

Fortunately, with both the sets of the super repelatrons and the emergency one on the back of the probe, he knew he had the power to escape the field even should it increase by about fifty percent.

This recent jump had only been around eighteen percent.

Tom hoped it was not a "tip of the iceberg" thing and that the previous sudden increase was the top power that he might expect.

In spite of not coming to any decision while at Enterprises, Tom arrived home n good spirits before 5:45 and got his usual array of hugs and kisses from the kids preceded by a rather ardent hug and kiss from Bashalli.

Once he was released and the kids had raced back to the side room where they watched TV after homework was finished—Bart rarely had any and Mary seemed to be very good and motivated to get hers finished so she might watch a favorite afternoon cooking program—Bashalli took his face in her hands and gave him another kiss.

"Not that I mind that at all, but what's the occasion?"

"That, Tom, is because your father called here this afternoon to tell me you have been having a stressful day and that I ought to do something." She giggled. "I think he only meant a nice dinner."

He got a reasonable night's sleep and was back at his desk by seven the next morning. Bashalli had understood his desire to get the probe back into action so she'd packed him a take-along breakfast of a home-made ham, egg and smoked gouda cheese on English muffin sandwich. She had packed a pair of them in case he got so involved he "neglected" to grab anything for lunch.

Of course, she forgot to factor in Chow, and so Tom had his first sandwich on the drive in, absently ate the second one at about nine-fifteen as he struggled to come to terms with a tricky part of the programming, and then agreed to "Come sit at the durned table, Tom," when Chow brought in a lunch of roasted cauliflower and potato soup along with a piece of ham and asparagus quiche.

As the inventor was putting his fork with the final piece of the eggy item almost to his mouth, it dropped from his fingers. "Got it!" he declared with both the clatter and the near shout startling the chef and getting Trent racing into the office to see if Tom was okay.

“I know what to do for the probe,” he told them as he cleaned up the spilled food from the conference table. “And, it’ll be a cinch. I might even have it all finished in the next two hours. Uhh, Trent, can you please call Bud and tell him I’d like him to stand by for another run with the probe at three?”

“On it in a second, Tom,” and the secretary left for his own desk.

The inventor had to stop part way down the hall to the stairs he generally took. He was trying to decide if the underground office and lab would be better than the one back down the hallway.

Turning around he jogged back and past Trent, waving lightly and smiling as he headed for the lab next door. “Had a better idea,” he explained as he disappeared.

As soon as he sat down Tom turned his computer monitor on. It was already running with the last piece of research he’d performed. That was something that had led to the “keep on going” subroutine that nearly cost him the probe, so he closed that out and opened a new web browser window.

His search was on ‘variable gravity generation in natural objects.’ There were only fifteen results and five of them were for online selling sites that told him, “We have variable gravity generation on natural objects for sale!’

“Yeah, I’ll just bet you do!” he ignored them and opened the others one by one looking to see what they might hold. Three simply had one or two of his search string as words to be found in one or more paragraphs.

Only two turned out to have lengthy and detailed descriptions from reputable scientists regarding his search.

Of the two, the first one came from a man he had known years ago when that Professor of Physics at a relatively nearby university had been alive. Professor Brainard had been a brilliant man and a tireless researcher, so Tom had high hopes for his paper.

He was a little puzzled when all he found was a denial that solid objects of known size and mass could have anything other than a steady gravitational pull. And that was almost certainly due to the mass and not so much the dimensions of the object.

His conclusion was followed by a series of computations he used that could be followed to find the gravity of any mass in space of larger than about fifty feet in diameter. His theory was that something had to be at least that diameter to register mass and exert pull.

Not what he’d hoped to find, Tom marked the page and turned to the other finding.

Tom had to sit back and collect his thoughts on seeing the author of the paper on his screen.

On The Varying Gravity Attributed to Outside Forces on the Space Object Known as Nestria,

by Dr. Cyrus Arbuthnot, PhD.

Dr. Arbuthnot had been among the good men lost when Nestria was ripped from its orbit by the Space Friends' "Master" as it threw a tantrum during its too long visit to Earth. He, like the others, had refused to evacuate even when asked by The President because they did not believe there was a provable threat other than by someone who just wanted to get them off the planetoid so they might take it over.

All perished within seconds of the small second moon shooting out into the depths of space.

Tom had to wipe a tear from his right eye, and to take several deep breaths before he could read the paper.

There were many facts, figures and references to both his own data and to that of others along with a description of the gravity stone that had been found in a small cave on Nestria (or Little Luna as he co-listed it).

> Obviously provided by a non-Earthly technology, the stone sits in the cave, exactly 93 centimeters tall (floor to tip with unknown below that plane) and tapers from its broadest point, also even with the ground underneath it, of 57 centimeters up to a slightly rounded tip of about 7 centimeters, 4 millimeters.
>
> Through a mechanism unknown and unknowable, this stone provides the body that ought to have a point-one-two gravity that of the Earth and such that it would be influenced by the planet around which it orbits, but its gravity at every location around this small globe is point four-five that of the Earth.
>
> There is no proof such a gravity generating device might reduce existing gravity, but it proves that gravity can and is being influenced to become greater. Let me describe the findings…"

It continued on nineteen pages but never did state how this could be.

Tom closed that document and leaned back.

He understood that the devices of his Space Friends could be set to provide a range of effective gravity. In fact, it had been that

variability in an old stone hidden underground on the Martian moon of Phobos that had nearly caused catastrophe when it began to fluctuate up and down, and the upswings caused the small moon to begin traveling closer to the surface of its planet.

That might have spelled disaster to the colonists up there and so Tom had figured a way to disconnect it from a hidden power source and to drain it.

The more he considered this the more he believed there could be another gravity stone at work.

The only issue he had with that was his Friends had returned to Earth and when directly asked about that, denied there were any other stones in the solar system.

For a brief moment, the inventor wondered if this was the stone from Nestria and if that pointed out to the destruction of the planetoid. He tried putting that from his mind.Tom sat forward suddenly.

Could this be another stone that got lost somewhere in space and has only now been attracted to an orbit around our sun? It was a thought he did not like in the slightest.

Tom tried to put that thought aside, but about twenty minutes later started to consider it again. *Could*, he pondered, *there be some measurable difference in natural gravity and that enhanced or increased by a gravity stone?*

He knew there was a way to find out.

It resided down in his underground hangar in a storage box made of tomasite that was set into an alcove behind the *Sky Queen's* tail. It was small at only about a foot in height and had been the stone the Space Friends outfitted the airship Tom and Bud used to pilot them on their very first successful visit to Earth.

He'd even found out the hard way that it had to be recharged with some frequency. Its predecessor—destroyed before the aliens arrived—had operated for nearly a week before suddenly ceasing. At that time the Space Friends were still communicating and they had prompted him to move some sort of high-voltage power source into close proximity. When he did, the stone sucked what appeared to be a massive lightning bolt's worth of power in a split second.

The power supply had blown all breakers, but the stone had started working again.

He had no reason to think it would not repeat this performance, so he headed for the underground hangar. There, and after unlocking the stone and rolling it over to a clear place that was not on the elevator pad of the giant jet, he also rolled over the same

power supply he'd used before.

As a precaution he sent the *Queen* to ground level before performing his experiment. This included placing a pair of gravity sensing devices close to the stone and getting measurements of the before state.

Tom mentally crossed his fingers before plugging the power supply into a 440-volt outlet and flipping the switch. He also retreated to the farthest corner and waited.

It whined up for about a full minute before the same sudden draw of power made it stop.

With that Tom felt another twenty percent heavier. He withstood this for over an hour before the stone began to lose strength. Over the next fifteen minutes his normal weight returned and he put the stone back into storage.

He had his answer, at least on the small scale and that told him whatever it was out there had to have more mass that a "simple" gravity stone. And that gave him a clue what he needed both the *Challenger* and the probe to check for on the next pass through the field.

Tom felt he was coming closer to finding out the truth of the gravity field.

CHAPTER 13 /

WHAT CAN'T WE SEE?

WITH THE new programming routines Tom had created, the probe headed away from its location within forty thousand miles of *Challenger*. Using a bit of caution he had set its forward motion to about thirty thousand miles per hour. At that rate it would take five hours to get to the edge of the gravity zone.

But, because of the lateness in the day, Tom had no intention of allowing it to go all the way in. Instead, one hour later he hit the reverse mode and watched with satisfaction as the probe quickly veered to the left and slowed down until it had almost completed the turn and was heading back toward *Challenger*.

It would automatically park itself there and wait for the following morning.

He met Bud in the lobby of the Communications building at 8:00 and the two went into the control suite to talk to the duty technician who had been keeping a watch on things.

"Probe is rock steady in position with the ship, but they both have drifted in toward that gravity thing by a couple thousand miles. That started around nine last night from what Denise told me. She had watch until 2:00 am when I came on."

Tom thanked the man and slid into the control seat as the man stood and left the room.

Over the following seven hours they watched and controlled the probe while it headed into the field with an angular approach that would never see it more than a third of the way to the supposed center. At about the same time it reached what would be its closest point of approach for this run, Tom computed that it had veered several degrees in toward the center point, but was still managing to keep its speed and soon was outbound.

"What now?" Bud inquired.

"The probe has been programmed to repeat the maneuver from a point after it gets back out on the other side of the field, and to come in again but ten thousand miles closer. Then, it turns back around again and goes in another ten thousand. I want it to keep doing that as long as it can escape using just its regular arrays of repelatrons."

The flyer nodded but pointed to the monitor on which the gravity measurements were being displayed.

"How long before that all has to stop?"

"Honestly, I don't know, Bud. Now, if you ask me what the current run tells us, I might say it ought to be able to keep this up until it gets to about one hundred twenty thousand miles. That is the point where the probe will head back to *Challenger* and a top up on power."

"And," not to be deterred from the answer he really wanted, "when will that happen?"

"Oh. Well, right now it is taking about ten hours for a sweep past, then a two-hour turn around and the next sweep will be nearly fifty minutes less. So, with the distance we are now, and the theorized center point…" he did the math in his head, "two days and about fifteen hours from now. We come back then. Or," he said looking at the time on the clock, "I come in and you arrive a few hours later."

After leaving a page of information for the group of technicians who would keep watch—with instructions to hit a single key to make the probe instantly retreat if there was trouble—Tom and Bud left the room.

During the workday the inventor called over for status checks about every four hours and once again just before bed. There was nothing to report other than an increasing level of gravity.

"Hey, Tom. It's Keith Woeltje on duty tonight. The only other thing to report is that the camera caught something I'm not sure about. In one frame I can see reflections of a couple dozen asteroids way past the probe's position. Then, the next one five minutes later has a problem where you just can't see much in one place. But that is gone the next frame coming down."

Tom was surprised, but as he thought about it, the Observatory had reported a light issue in a few of their observations.

"Okay. Does the missing visual info seem to be round?"

"Oh. Hang on while I go back and look. I don't think it looked perfectly round but give me a minute…"

When he did come back he was lightly whistling. "You called it, Tom. Taller than it is wide by probably a factor of two. That's really weird."

"I agree. So, keep a good look out, and I want you to set the camera for twenty-second shots until I come in tomorrow morning. Call me on the TeleVoc if you see that light-hiding thing again tonight. Thanks!"

Keith did not call that night, but when Tom reviewed the earlier images he had to sit back and ponder the implications.

It might very well be something out there acting in some ways like a black hole, but not actually one.

He had to talk this over with his father and try to get Bob Jeffers to come in so they might discuss what this could really be.

Three hours later and over lunch, Bob began shaking his head and muttering to himself. When he finally articulated his thought, they were:

"We thought that was an anomaly, except it happened on three separate occasions. Still, I think we didn't want to believe it could be anything other than some sort of signal interference. I mean, we know that a good magnetic force can keep the Space Probers from getting a clear image." He looked at Tom. "This isn't that, is it?"

All the younger Swift could do was to shrug. "The truth is, Bob, I have no idea. It isn't like anything I've seen before other than some of the distance images your community have been getting of black holes for the last decade or so." Turning to Damon, he added, "I'm not sure we will see what is causing that until the probe gets a lot closer. Do you think the Government folks will be angry if I sent the probe in too far to get it back out again?"

Damon shook his head. "I made it completely clear this funding was for a probe that was likely to not be reusable in the future. Now, I have to tell you both I thought I meant it was going to be so sealed it might never be opened to have anything new put in. But…"

Bob raised his hand again. "A question. What is it we cannot see? Is it gravity? By that I mean *only* gravity, or is it an invisible body out there. I honestly can't say I've seen or heard of something that was not a solid body blocking light other than a black hole. But, you are fairly certain it does not meet the criteria to be thought of as one. And, I agree. I just can't think of an alternative. Except for an invisible planet."

Tom headed to the control suite after Bob left. There, he reset the flight programming so the probe would take a deeper dive through the gravity field and get to his hoped for close location in just two additional sweeps through.

Because of the speed the probe was now to be traveling, those would be completed just nineteen hours later, or shortly after he returned to work the next morning.

Even though it was going to be Saturday.

The important thing was the last pass would be inside of his target by about ten thousand miles. At that time he wanted to slow the probe and use its repelatrons to keep it from falling into the gravity field's center.

At least, that was his hope.

* * * * *

Bashalli's mother, Lalisha Prandit, offered to come early Saturday and would stay with the kids while Bashalli went in with Tom.

With about a half hour before he would send the order to slow down, he showed her what they were receiving as data and images and explained the basic control features for the probe.

“It looks so difficult,” she stated. “And, that board does all the controls?”

“Well, the probe does all the controls. All this does is send out new commands and checks what is coming back. For instance, in just a little I will send out the signal to change from going as fast as it can to basically hitting the brakes.”

“How fast is it going now?”

“It is so fast that if the probe were to hit our atmosphere, it would break up and burn to a cinder within about fifteen seconds.”

“Oh!” Well, please do not allow it to come home until it can do so nice and slowly.”

Tom even let his wife press the button to activate the new program. She hesitated until he offered to place his finger next to hers. On the count of three, they both pressed—although he let her do the actual pushing and he just followed along.

“When will we know?” she whispered. That made him smile.

“We will find out if it can slow down much and hold its distance in about five minutes. What we can’t directly see is the two side panels with most of the repelatrons turning around to face forward. But,” and he pointed to a small image on the monitor showing an outline of the probe, “if you watch you can see them right there.”

Watching the simple three-color image got her attention and she leaned forward as the two side panels on the screen began to move.

As they did, Tom kept an eye on the readouts for speed and for the pull of the gravity trying to draw the probe in.

Speed dropped fairly rapidly as did the distance to the center of the phenomenon.

He called out the range figures and as the probe approached a speed at which he hoped to place it in an orbit, he watched as the probe spontaneously turned itself around so the emergency repelatron pack could be in position to fire off if needed.

But, to his immense relief it did not appear to be necessary. The

same thing that had turned the probe around—its self-preservation programming—increased the power to the ten main drives and the probe began picking up speed and holding at an "altitude" of about one hundred five thousand miles.

Had he only understood just how close this was to a disaster point, the inventor might have worried.

Tom and Bud were walking across the parking lot in front of the Security building on their way to the Barn. From their right came a low moaning noise that was increasing in volume by the second. To Tom it sounded like a fighter jet that had just popped its speed brakes out.

"Look!" Bud shouted pointing to the hills across the lake from them.

With a lot of smoke pouring from it, something was streaking through the sky about two thousand feet up.

Tom immediately realized it was going to race high over them at just about supersonic speed and that unless it took a sudden nosedive, it was going to pass well overhead. But, he was gratified to see the company drones racing upward to try an intercept. He did not believe they would manage it, but as long as the rocket or missile or stricken jet missed them. which was fine, it appeared as if it would hit in the hills a couple miles to the west of Enterprises. And, unless it made it another five miles beyond that, it was not going to come close to the freeway.

"Come on, Bud. Control Tower… pronto!" About that time the noises from the missile stopped.

They raced between Security and Hank Sterling's Engineering building heading for the ten-story control tower. Eleven seconds later and with them at least nine hundred feet from their destination, the ground gave a slight shake and an explosion sounded beyond the nearest of the western hills.

Seconds later the fire trucks kept on the grounds came from their hangar with sirens blaring, all heading for the main gate.

It took them another two minutes to get to the tower and get into the elevator. When they arrived the place was a very controlled madhouse. All three duty controllers were speaking to various aircraft in the air or still on the ground. Within a minute, silence reigned so Tom stepped forward.

"Any information for me or should we just leave now?"

The lead controller turned and focused on the two men by the

elevator.

"Oh. Skipper. Well, nothing to say other than that was some sort of projectile and it was wobbling really severely as it went overhead. It hit maybe a mile and three-quarters beyond the west wall. Nothing up there of any consequence. I'm not really sure the fire trucks will get to what that was if they don't see it close to one of the small roads up there."

A minute later, and after thanking the controller for taking a few moments out to talk to them, Tom and Bud reached ground level.

"Where were we heading?" Bud asked ever so nervously. He had thought back to the time the Daughter of the Black Cobra had sent an old black MiG fighter over the hill above them, knocking several people over with its sonic pressure wave. And, that brought back a flash of being knocked overboard by the same sort of pressure when he and Tom had been erecting the High Space L-Evator down in the Galapagos. If it had not been for a safety net, he would have plummeted more than sixty feet to the water.

He was brought out of these thoughts by Tom.

"Going? Oh, the Barn, but that can wait, I was only going to ask you to help me fit a new payload into the nosecone of a rocket we're shipping down to Fearing day after tomorrow. Let's head for the big office and see if Dad has anything else to tell us. The rocket can wait until the night shift."

Damon had nothing to add to their meager knowledge.

It was the same one hour later. Even Harlan, who normally would try to keep both Swifts up to date on something as monumental as a missile overflying Enterprises, or any Swift facility, had no information for them.

Tom tried to keep busy on his plans for a visit out to the asteroid belt and a closer look at what it was making gravity, but his mind kept wandering to the missile. Or, what most people believed had been a missile.

Fortunately, the usually gabby and attention seeking *Shopton Bulletin* had not announced anything on their radio station other than a report of a sighting of "some weird son-of-a-gun doing stunts south of the lake." They didn't even have a report of the crash.

To Tom, it was all very odd, but he decided to not make any calls to Dan Perkins, the Publisher of the paper, for fear of stirring something up. In the past, Dan had either jumped the gun on printing stories he'd not verified, or downright made things up. He had a variety of reasons and excuses, but the fact was he finally stepped over a couple well-defined boundaries and had been sent to

prison not once, but twice.

Curiously, the second time had not been due to printing anything about the Swifts. It had been a story he'd paid a few hundred dollars for regarding "a golden handshake contract gone wild," that turned out to be a Top Secret U.S. Government project. Neither Uncle Sam nor the Federal Judge for the case, had accepted his, "I never knew…" excuse.

He'd gone away and even lost ownership of the newspaper. Now, and on his best behavior, he was allowed to run the *Bulletin* as he tried to rebuild any reputation he might have once had.

Tom returned to the Barn before heading home. With the realization he'd completely forgotten about finishing the probe mounting he was grateful for assistance of Arv Hanson, who he'd run into walking over to the open-sided building, he had the one hundred eleven pound probe attached to the mounting wall and left the clean room plastic wrap in place. Testing would have to be finished the next day before the nosecone was attached.

When he arrived home Bashalli looked at him and smiled. She mentioned hearing a jet pass close overhead that afternoon and wondered if it had been a Swift jet.

"Our drones headed out at top speed for a little run. Might have been that," he said returning her smile.

"Oh," she said cautiously, "and did one of them crash? I only ask because some young policeman—well, he looked more like Boy Scout age—came to the door to see if you were home and might tell him if he ought to go out to see what happened. I told him to call Enterprises. So…?"

Tom knew when he had to tell her everything, even bad news, so he sat down with her and took her hand.

"We had some sort of rocket fly high overhead this afternoon. The drones did actually go after it, but it crashed before they could do much more than all get heading on the right course."

She nodded but did not appear to be convinced.

"And, why didn't the drones all get to it before it even got over Enterprises? I thought that was their job."

"Mostly, they work from both **RADAR** contact information coming from the tower and also from any electronic or even electrical signals they spot. My initial guess is that rocket—and notice I did not call it a missile, and that is because missiles generally have electronics in them—that the rocket was completely unguided. As in more a large sort of model rocket like the sort Bart and I have fired off down by the lake a couple times."

“Oh. So, what you are telling me is that this is nothing to be worried over?”

Now, Tom shook his head. “Bash, any time someone shoots something almost blindly, it has a very tiny possibility of hitting something important. If it hit inside Enterprises, there is a less than nine percent possibility of hitting any building. Then, we build them strong so it would need to be a very big rocket with a lot of explosives inside and that means it probably could not have come very far.

“Harlan and his team are on this. He assures me this came in low and from many, many miles away, but it will be possible to track it from all the **RADAR** data we have. Remember, we have two towers working at different altitudes and that means much better information.”

He actually had not answered her question but she let it pass. Bashalli Swift knew that if there was any safety issue he would not hesitate to tell her and to safeguard the family.

By even the following day when *The Bulletin* came out there was only a small mention of a possible erroneous overflight by a test jet from Enterprises.

Harlan, however, had some information for both Tom and Damon when he arrived in their office at 9:00.

“That was unguided and filled with some very old and weak sticks of dynamite. Not even TNT or C4,” he told them. “Yes, it did explode, but even if it had hit someone’s house it would have only blasted shingles off in a five-foot area. So, I’m working with the FBI and the FAA, even though that organization was not up front with us last year over that old 727 that was purposely crashed here. Together, Agent Narz and I contacted Bernt Algren in DC, and he got in on the call to the FAA and expressed a desire to arrest someone if there was any hint of a lack of cooperation.”

Now, he grinned. “They guaranteed to have all flight recordings to the FBI by this time. As in right now. So, with that I shall leave you and tell you to not worry too much. We’ll find whoever did this and get it stopped!”

When Bud arrived at 10:00 they talked about the whole nosecone and probe thing Tom had suggested before the rocket arrived.

“Oh, that. Yeah,” Tom said. “Dad is working on a small lunar probe to start flying pole to pole up there in a week. It seems that the old radio repeater satellite up there is out of fuel and not much electrical power and both the UK and China have clubbed together to replace it for their dark side landers.”

The flyer looked curiously at this friend. “But wouldn’t those landers have run out of power long ago?”

“They might have except the satellite has been flashing down a high-intensity laser light to hit a collector on each one in alternating flyovers. That has been just enough to keep them from totally freezing, and every five days or so at least the British one can manage a two-hour extension of its movements. I think the Chinese one is down to a couple hundred feet.”

The two men left the office and spent under one hour at the Barn. At that point the “disco ball” probe with more that one hundred small solar power cells and five nitrogen-based aiming rocket nozzles was fully checked, the protective cover attached and was ready to go.

"That goes to Fearing this evening and into the sky tomorrow morning, Bud.”

“Uhh, speaking of going into the sky… when do we go up to see what the asteroid probe could not?”

CHAPTER 14 /
PLANNING A LITTLE TRIP

IT WOULD require at least three weeks to properly prepare for any trip out to investigate the gravity field at close proximity. And, as much as Tom might have wished to step in and help things go faster, he knew his people had their jobs, skills, and timetables.

Damon agreed with this. He cautioned his son against trying to speed up any process.

Even the usually ready-to-go Bud stated it was his belief they all needed time to get ready.

"I know this sounds like it comes from Sandy," he admitted sheepishly, "but I agree that I need to be around for a few weeks so that Sammy gets as much daddy time as possible before I'm gone for a few weeks." *Or, longer*, he was thinking.

The inventor had nothing to combat that because his own children needed more time with him at home, even though it had been quite a while since he had to leave for more than a trip down to Fearing Island or out to the Citadel, generally a day trip or one night.

It was also true that for each night he was home and in bed with Bashalli, she became more relaxed about just about everything.

She had admitted she understood his trip was a necessary thing but told him it was her wish he could do it either very quickly, or to send in another probe.

"I'd like to do that, too," he told her, "but the truth is that like manned spaceflight from the beginning, while a computer or set of them can process a lot of stuff faster than a man might, they still don't handle unexpected events or random observations very well. We've all tried to get AI, artificial intelligence, working over the past decade or more, but it all involves either a long learning process—and that means you have to expose the computer to many, many things—or you need to program in every situation. Still, that leaves you with the unexpected."

She had nodded, and she actually understood it all. Not a scientist or even someone trained in mathematics—she had been an artist by training and trade since about the time they had met—she had picked up a lot of things from her years with Tom Swift.

It even made her a little proud of herself that she didn't have to ask him to explain very many things these days.

So, when he told her the trip out would begin in about four weeks, she promised herself she would not start counting days and letting the approaching takeoff make her sad or nervous.

One week into the preparations, Tom and Damon were sitting in the office looking though that day's correspondence, when Trent buzzed them with the announcement they had a call from Senator Quintana.

"Phone only, no visuals," he added.

"Hello, Senator. Damon and Tom here on speakerphone. What can we do for you today?"

"I'm alone. And hello back at you both. I, or we, or… well, the powers in Government wish to have me ask if we might get a couple days of your time to go check out something I would have to say is unexpected for us. Something in space; something that seems to have gone into a sort of lopsided orbit around the Moon."

Neither of the Swifts had heard anything from their own Observatory so this took them by surprise. Damon asked if Peter had any more information than what he'd just said.

"This comes from a single observation by the folks down in Australia and they said it only lasted fifteen minutes. Something about an… ohh, let me find that. Hang on." He was gone for ten seconds. "Got it. Object presented alternating SRI reflectivity of point seven-nine to point-eight-four. That mean anything to you?"

They briefly explained Solar Reflectance Indexes and how it changed for white or dark, black, surfaces.

"All it likely means is whatever is out there is rotating and not made from a single substance or color. That tells me, and I'm certain Tom as well, this is not likely to be manmade but more a natural object."

Peter said nothing for a few seconds before venturing, "Rock?"

"If Bud were here he'd probably tell you 'paper,'" Tom said with a grin.

Damon interrupted that line of talk. "It could very well be. But to answer your basic question, I believe we have a couple spots open on our dance card, so all I need to ask is are we doing this as a fabulous gift to all who dwell in DC?"

"I have been reliably informed that we can offer you half a million in cash or negotiable bonds to be paid sometime in the next sixteen weeks. I've had a look at this year's budget and what the Treasury says they have in their wall safe, so I can tell you we are

good for it."

All three men chuckled at this. All knew that sometimes requests that offered payment were forgotten once completed and the bill submitted.

Tom asked, "When do you or they want us to go up? I ask because we might have time this week, but in a couple more I will not be around for up to a month."

"Okay. Taken under advisement and I shall not inquire about the why or even the where. So, as is the case in most of these things the ethereal *they* have stated sometime in the next five weeks, but I told them it could be a now or never. So… now?"

The Swifts agreed with a nod to each other and a verbal "Yes," to the Senator.

He said they would have all the information provided from the Woomera Baker Observatory in the southern hemisphere within the hour.

Tom believed it best to take up one of the flying saucer ships rather than to interrupt anything going on with any of his larger ships, most either at Fearing or in space. So, all he and Bud and the two other men who would go up—Zimby Cox and Deke Bodack—had to do the next morning was to drive out to the hangar where all four of the small, rounded disk spaceships were kept, climb up the stairs set into one of the legs, and head skyward.

The Australian observatory had managed to get a single somewhat blurry three-second video made from thirty-six separate still images. It showed what might be imagined, but it did give one good hint. Whatever it was, was rotating around an axis showing them that was around the narrow part, and not an end-to-end movement.

On the outbound leg most of the talk concerned the forthcoming "big" trip out to the asteroid belt. Little was mentioned until they reached the point twenty thousand miles from the Moon. At that point, Deke, manning the SuperSight, said he'd just spotted something heading around the far side of the Moon.

"I caught a glimpse of something that flashed slightly and then it was around. Are we going to go after it or wait for it to come back?"

"Let's slow down and wait for it to come back. That ought to give us time to observe. It must be rocky and just got caught in the Moon's gravity." He stopped. "Seems like we are running into gravity wherever we turn these days," the inventor observed.

A minute later the ship *pinged* them. "*Entering orbit at altitude of ten thousand miles. Will adjust to maintain altitude."*

After checking with Deke about the altitude of the object he told the ship to go to within one thousand miles of the surface.

ping

"Adjusting."

They needed to wait about thirty-five minutes because the object was moving at a brisk two thousand three hundred miles per hour.

The four men spent the time playing Rock, Paper, Scissors for the first five minutes and then in discussion about what to do if whatever came around was not just a rock.

Tom wasn't certain he wanted this to be anything other than a natural occurrence such as when objects inbound used to be attracted to the Earth enough to spend a few hours or even weeks in orbit before heading along their journey. That was, of course, before the Mules with their Attractatrons that could grab and fling things away from near-Earth encounters.

Or, near the Moon or even near Mars.

"Why," Bud asked thinking about the Mules' capabilities, "did whatever this is get into orbit?. I thought this sort of stuff is supposed to be taken care of."

Both Zimby and Deke looked to Tom for that answer.

"It should not have happened."

Oddly enough, Damon had that thought just moments before Tom radioed their current location and the crew's question about the Mules.

"Honestly, son, I have zero idea. The only two things that come to mind is size versus position of the Mules, or that they were busy and prioritized this as non-threatening and so they left it alone. The other possibility bothers me."

Tom had that thought, too. What if this was not a natural object and had actively defeated the ability of the Mules?

Nobody had very long to wait.

The time was up and the disappearance of the object on one side was reversed by its appearance on the other side of the Moon.

Tom had Deke zoom the SuperSight in on it.

The four men gasped.

It was most definitely not a natural object from space!

* * * * *

More than three hours passed and the object made two more orbits. Each time and for the period it was visible, all instruments were turned to study it.

Approximately twenty-two feet long and just under eight wide.

Slightly bell-shaped at one end and nearly a ball at the other, they all recognized it from the first time it came into view. It was an old Russian Soyuz spacecraft, complete with its service module and even the descent module. A close look showed them one of the solar panels that would have deployed once the craft reached orbit had been torn off and the other, pressed close to the side of the craft, visibly damaged. Almost reluctantly, Tom ordered the ship to approach and to match the orbital speed of the old spacecraft.

ping

"*Matching. State requested distance.*"

"Fifty feet."

ping

Tom took a cleansing breath. All four of them had heard long ago rumors of an errant Soviet spacecraft that attempted to get to the Moon before the United States' Apollo program. The wildest of them stated the Russian crew of three had overshot the Moon and headed out into space, lost forever and likely to have perished by use of cyanide capsules provided their space force in case of terrible accidents.

This had the earmarking's of such a catastrophic event, and Tom hated the idea of taking a peek inside to see if his fears were to come true.

He took manual control ten minutes later moving the saucer all around the other craft. Amazed, it was still spinning around and around, he now fully understood the nature of the different reflectivity. Grayish white for the most part, whenever it turned so the solar array remaining faced Earth, it looked dark over about half the visible surface.

After calling up diagrams of the craft, he and the others noticed a few other bits and pieces missing. The concave antenna for communications near the top of the orbital module was gone, So was the cover for the parachutes on the descent module. Even with enhancement, they could not see any chute bundle inside.

The other missing part, and one Tom believed might have led to the death of the occupants in a quick manner, was the periscope observation device on the side of the descent module. That had once

provided the crew with the ability to look down rather than to have engineered more than the single, small window into the side of the craft. Now, it was not just missing, where it had once attached was a hole of some six inches.

"Want me to go over and see... well," Bud said, "see?"

It was on these rare occasions Tom believed he should make, or should have been building, small probes with cameras to make close observations. But, he had not done that.

He mentioned this oversight before stating, "I think I'll go over." Seeing Bud about to protest, he added, "With, of course, Bud as my chaperone!"

"Maybe I should get some vacuum time, Tom?" suggested Deke.

"No." Tom shook his head. "For starters, if this was a crewed mission, they are likely to still be inside. As far as I know you have not encountered a deceased body caused by vacuum exposure. Bud and I, and my father and Zimby and several others, have. Just, not you. Believe me, you will sleep better if you don't go." He now turned to his best friend. "Are you ready?"

The flyer looked down at his clothing. "Not quite yet, but give me five minutes to climb into my suit and I'll join you."

In spite of the situation, Tom grinned.

Then, he went to the locker at the rear of the circular room and took out his spacesuit. With the helmet flipped over his head and sealed, he and Bud performed their checks and both declared readiness to head outside.

Bud stated he would be going first. It was not a request and Tom let him head into the one-man airlock.

Six minutes later he joined Bud outside and they activated the small maneuvering backpacks built into the suits. A moment later they had "landed" on the side of the ascent capsule.

Timing had let them touch and hold onto the surface close to both the missing parachute cover and the small view window that had mostly been incorporated so that people outside might look into the capsule to ensure the crew were still alive upon landing.

It had a gruesome history Tom preferred to ignore at the moment.

He shined his arm-mounted light into the chute hold. Deep inside was a canvas bundle with the main chute, but the CO_2 tank that would have shoved it out was ruptured.

"Even if they had made it back they would have crashed because they could not have slowed down," he said over the radio.

Now came the moment of truth. Bud tapped Tom on the shoulder and nodded. The inventor realized his brother-in-law was saying he would be the one to look inside.

Tom shrugged and nodded back.

Bud got to the window and tried to both look inside and get his light positioned to assist, but it was a tight squeeze. He took several attempts before he backed up and said a word.

"All I can see is the connecting tunnel between those two parts is open and a pair of legs are sticking down into the lower module. No sign of anything or anyone else."

Onboard the saucer, Deke asked, "What do we do about that… them?"

His answer was that the two outside would soon be inside and a decision would have to wait.

When Bud joined the others as the second man in, he shoved his helmet back and stood there. "Do I get out of this or are we heading back?"

"I believe we are inside for the duration, flyboy. So, get comfortable and I'll radio Dad to see what he suggests. For my part, I'd like to get that heading back toward Earth, but I don't think we can compute things to make that happen correctly. Might need to wait until we can bring *Goliath* up."

Outside he had taken about twenty images of the craft as it rotated at about a rate of one complete turn ever twenty seconds. Those showed all the damage they had been able to see. They were among the first things Damon saw after Tom told them they had identified the mystery object.

"Damn! So, it appears that the rumors all these years have been true, and that the Soviet government was lying all along. I really hate this, Tom. Really, *really* hate it. Can you give me a couple to call Peter Quintana?"

Tom agreed that was going to be his suggestion. "Standing by."

Peter was in his office and his reaction, at least verbally, was stronger than the older Swift's had been.

"I will absolutely crucify those… those…"and he faltered in his threat.

"So, should Tom try to bring that back home, now or most probably later, or just leave it in orbit up there?"

"Oh, I so want him to get that capsule back and for our doctors to give the… the crew a thorough *post mortem*, and then announce it all to the current government over there. The one that has told us

many, many times they are being one hundred percent transparent and have nothing left to hide from us. Pahhh!"

Peter said he needed to confer with the President as to how to proceed, so he left it at, "Just have Tom document as much as he can and bring back as many pictures as possible. Thank you for letting me know."

Once contact resumed with the saucer, Damon told Tom and the crew the outcome of the discussion.

"Peter, and I of course, want as much visual evidence as possible along with anything tangible you might be able to get out of that capsule. You mentioned the parachute? If that can be pulled out, it would be a good piece to have. Also, is it possible to have that other solar array folded down and brought back?"

They spoke of several additional photographs that would go a long way in political circles, and Tom promised to retrieve as much as possible.

"We've calculated the current orbit and with a small nudge we can give it, it will remain up here for a year or more. Perhaps we can come back and bring the crew and capsule home some time after I figure out this gravity business."

When the call ended, Tom turned around only to find Bud and Deke nearly into their spacesuits.

"Thought we'd go out and do a little housekeeping," the flyer stated. "Deke said he needs to stretch his legs and without Stefanie here to exercise him… that *is* what you said, Deke! Anyway, he wants to take a little walk, space or otherwise."

Tom's cheeks puffed out as he exhaled. He knew it would be useless to argue at this point.

"Great. See if you can get a good shot inside that window and also up through that periscope hole. That should give you a better view of whoever it was coming down or going up when this happened."

Bud set his camera for extremely low light conditions and then picked up a second one that featured a built-in light ring. Either or both would get the images requested. While he was attending to that, Deke slipped into the airlock. At his height, he needed to bring his knees up and squat a bit, but the hatch closed with no problems and he was soon outside waiting for the flyer to join him.

As soon as he joined the taller man, Bud suggested that he would attend to the taking of pictures up and inside while Deke wrangled the parachute pack out, hopefully keeping it intact, along with seeing what condition the solar panel was in.

“See if it still flexes as in we might like to shove it back into a compact package, loop one of our little straps around it and take it back to show the skipper. oh, and anything that seems to have Russian lettering on it you can detach. The idea is to get evidence, so think like Holmes or Poirot. And, I don’t mean Charlie Holmes or Emily Poirot either!”

Deke knew to not ask his friend why those names had come to mind so he just got on with what he had been tasked to do.

The parachute did detach—it actually was loose inside the hatch area—along with the ruptured tank. His attempt to shove the solar panel back together broke off a four-foot long piece that he could compress, so he was satisfied with that.

Nothing else could be tugged off so he returned to Bud’s side.

Eighteen minutes later, and with their treasures stowed in a small compartment accessible from inside the airlock, the saucer moved to aim its repelatrons at the lunar surface and shot away, heading for home.

CHAPTER 15 /
"THE OBSERVATORY FOUND *WHAT*?"

WHEN THE call came from the Swift Observatory, it was a conference call with Bob Jeffers and his immediate boss, Professor Heller, an eminent astrographer and one of the first people hired for the Observatory years earlier. What the Professor did not know about astronomy was likely to not be worth pursuing.

"Hello, Damon. Hello, Tom," the older man called out. It seemed obvious to the Swifts he was sitting a fair distance from the telephone's pick-up.

"Professor," Bob said in a low, scolding tone, "I need you to sit closer so the Swifts can hear you without you resorting to yelling. Come on over."

Sounds of a chair scraping over the floor could be heard causing Tom to grin at his father. The older man was just senior to Damon by ten years and yet his was a far generation away.

Finally, he asked, "Can the two of you hear me? I was assured by the saleswoman who got us this system we could be walking all over the place and still carry on conversations."

"We can hear you, Professor," Damon told him. "Tom and I have been led to believe you folks have a bit of information for us regarding what our ship, the *Sutter*, and a probes found out. So, what can you tell us?"

In what Tom took to be a grumpy tone, but Damon knew was just Heller's way of speaking to people he did not consider to be colleagues, came, "Impossible!"

After a pause during which no more was stated, Damon inquired, "What is impossible? What the findings show?"

"No. Findings are findings! What is impossible is that whatever that is has gone unnoticed for an exceptional period of time. As in, this likely has been there and settled in, making nice gravity arrangements with most if not all its neighbors to reside peacefully in that particular neighborhood. Possibly for longer than man has trod this planet! *That* is impossible."

With a glance at Damon, Tom asked, "So, are you telling us the appearance of something creating that gravity out there is impossible? That our observations are somehow faulty?"

"Of course I am not saying that! Observations are just that. Observations… of something. Just because we have nothing with

which to compare it, makes it impossible to describe the nature of it. Something impossible is there, nonetheless."

The two Swifts sat in silence. What Professor Heller had stated was something they both had considered. They were hoping, however, for a little more information.

Bob finally spoke up breaking the silence.

"We discussed this for an hour before calling. I am afraid we have not come to any conclusion as to what this might be, but that also means we have ruled nothing out. We are leaning toward Tom's notion this is not a black hole. His reasoning is solid; there is not enough gravitational influence to be found nor is there any sign of destruction on a wholesale level. Certainly, it might be argued that we nearly did not find the small hole Tom has utilized, and that was only because it is small enough to have nearly choked on debris out there."

Ten minutes later the astronomers begged off more conversation.

"It is all supposition for us at present," Bob stated.

The Professor snorted. "Guesswork is more like it. Tom? You are going to need to get us more information and observations. We leave it in your capable hands as to how you get that. If you need to take Bob along on some junket, ask."

Once the call ended, Damon looked at his son. "I have nothing to add right now. Do you?"

"No."

With his father giving him a curious look, Tom stood, stretched his back a little and headed for the door. "If anyone needs me I'll be in the underground office working out a flight plan and what sort of sensors I need to bring or design."

Damon smiled to himself as the door closed.

When Tom stepped from the building he headed for the small shed-like location of the stairs and elevator going down to the underground hangar where his *Sky Queen* sat when not in use. Halfway there a shout came from the direction of the Security building. Gary Bradley was jogging his way, so Tom stopped and waited.

"Thanks for not making me run any farther, skipper," the big Security man told him. "We can go on to wherever you were heading."

On the way to the elevator, Gary told Tom Harlan had found out a little more information about the projectile that had streaked over the grounds weeks earlier.

"As you know it hit in the hills up close to the old mine. In fact, if the work we did hadn't closed that off, the hit did. It collapsed the dome over the inner chamber so it's all gone. Anyway, we just got back some data from the FBI's test of residue."

Tom stopped and turned to face Gary.

"You want more, right?" Tom nodded. "Okay. That rocket was a sort of home built one. By that I mean it was built like a military missile, and even packed with explosives, but it was definitely not military. For one, and I see the question in your eyes, the body was not metal. It was a carbon composite. Lightweight and strong, but nowhere close to milspec." He meant military specifications.

Tom let out his breath. "What design? One of ours?"

"Polish. A reverse take on the S125 Neva/Pechora surface-to-air missile but used surface-to-surface in this case. Let's go down to your office and I'll show you what it might have looked like."

The elevator deposited them on the lower floor nine seconds after the doors closed. In Tom's office Gary took over his computer quickly calling up the missile design.

"Originally, it was a Soviet design from all the way back around 1960 or 61, the Poles made a few changes, reduced build costs, and used it for over half a century. Other than a few enhancements to targeting electronics and better solid motors, not much changed in all that time."

The pictures made it appear to be about eighteen or twenty feet long, two staged with the first one about sixty percent wider than the upper sixty percent.

"Each stage had three fins with a small trio near the nose for fine steering. The one that hit up there appears to have had no steerability. It also had case burn through near the middle of the second stage. That, as far as the Bureau's experts say, threw it off course—and we have to believe much higher—and that kept it from hitting here. We lucked out."

He told Tom it was probably to have contained a hundred pounds of explosives and those were not concentrated military type. "They found dynamite paper wrap."

"What damage could it have done?"

"Blown up a good size truck or done a lot of mischief if it hit a building. Could have toppled the control tower for instance."

Tom looked over the desk before asking about the source.

Gary shook his head. "Nobody has taken responsibility but the Air National Guard was detailed to backtrack the flight course and

say it took off from near Pittsford or possibly Rutland in Vermont. That would technically be beyond the original missile's range. Ticonderoga in our own state is within that range and is right on a state highway. They have started interviewing locals in all three places."

With not a lot more to tell the inventor, Gary excused himself. As he left the office he turned back. "One other thing. The rocket motors were also home made. For the first stage a trio of six-inch PVC pipes with a lot of duct tape holding them together and inside the body tube. Those would have burned for just a minute. The second stage that remained attached had a single pipe motor with a lot less tape around it so the second stage exhaust had to work around the first stage motors. That's why the burning through of the case. It also seems to have burned off one of the fins and that meant it had gone off course a few miles before crossing over Lake Carlopa. The FBI is tracking all purchases of enough raw materials to make at least one of them."

Tom was reminded of a number of large-scale model rocket failures at a few of the flying meets he had attended as a younger man. Even though there were now stringent rules and checks of everything a rocketeer brought, at one point, and unfortunately in a few non-sanctioned event, shortcuts and what some saw as "little cheats" found there way into rockets as small as a foot long all the way up to one man who had built a one-third scale version of the Blue Origin rocket in 2019.

That one had a liquid engine the builder had set up to burn methane and hydrogen peroxide. With properly built and tested fuel tanks this might have been an exceptional rocket to watch take to the sky.

Unfortunately for both the builder and three of his volunteer team, he had also cut corners in the radio controlled ignition system and a stray signal from an amateur radio operator just three blocks from the field being used had caused the engine to ignite with five people under or close to it. One survived by being blown off his feet just before the fireball of the explosion would have incinerated him along with the others.

Now, this attempt at building a rocket version of a foreign missile that had not properly been constructed.

Did this smack of an amateur builder, or something more sinister like an enemy wishing to make his rocket appear to be a poor build? That thought gave Tom nightmares for the following two nights, which did not make his weekend at all enjoyable.

* * * * *

On Monday he came into the office looking a little haggard. Trent had seen it and Damon spotted it right away.

"Sit," he instructed and pointed to the conference area seats, "and tell me what the heck got you looking like the after effect of a mugging."

Tom did sit and sank into the seat. He told his father about the feeling that came to him over the rocket.

Damon sat nodding at what he was hearing and also scowling a bit. When Tom was finished he sat back in thought a moment.

"Right. Okay, here is what I think about all that. Firstly, I agree this flyover was—*is*—something we need to take seriously. Unfortunately, the only thing I can think of to combat such… well, attacks… involves building our own missile system. That, as you can imagine, is not going to happen. So, what does that leave us with?"

Tom thought about this for two minutes before speaking.

"Our drones are very good at detecting things that present at least a two-foot area. So, either I find a way to narrow that down or —and I think this might be easier—I develop a sort of early warning system with cameras and **RADAR**s and possibly something else that we set up twenty, fifty or even seventy-five miles out. They pick up something, send the information directly to the drones and they dispatch themselves to intercept."

Damon agreed this might be a necessary step, but he also had something in mind for his son.

"Okay. Setting that aside for a few, I have come to the conclusion I know you already have and that is to get your manned mission up to inspect and try to discern what the heck is making that gravity field in the asteroid belt. And, to find out why it is not behaving like anything we've ever seen before."

Tom smiled. These were words he had been waiting to hear from his father for weeks. And, he believed he might be almost ready to announce his plans. Just, not quite.

"That is great. Thanks, and I do believe I need to be part of any manned flight out there. We've seen no indication, other than the strong gravity, there is anything out there to attack us. So, I will likely take our most powerful ship and a small crew.

Before heading home one evening before the flight, Tom made a call to a man who had helped him a couple months earlier, Dr. Oliver Mitchell Moore.

"Nice to hear from you, Tom. Did my information assist you in

any way. And, before you answer I have to say my continued observations have found nothing more than I sent you."

"Truthfully, what you sent corroborated what our own Swift Observatory had been able to tell us, but with your location giving us a triangulation point, what you sent has been important. It helped us send out a few probes and to get them to the correct location. For that I thank you."

"It was a pleasure. Might I ask that you send me some more detailed images of that area? I shall assume you have either sent something there with a camera, or will be in the near future."

Tom told him such images would be forthcoming in the next few weeks.

The other man was effusive in his thanks to Tom over what he imagined would be some of the most startling and revealing images of his career. Tom wondered if the man were placing just a little too much value in what he might receive, but promised, again, to send things within perhaps twenty days.

Takeoff was set for two weeks later. A crew of just nine—including Tom—would ride in *Goliath*, the most powerful ship in the Swift fleet. To ensure they had ample power there would be nothing carried on the giant cargo deck and just three of the multi-man Straddlers in their enclosures near the base of the control spire.

There was a lot to do in preparation for both the basic flight as well as the assumed mission for them all.

Chow, who would not be coming, insisted on preparing a mostly new menu of foods for the team with many of those based on short interviews he had with each man.

Many still wanted his two Italian staples—lasagna and spaghetti with meatballs—but Hank had asked for both his beef and veal versions of the first, layered, one along with the chef's vegetarian dish featuring crumbled and fried tofu bits along with at least two of the four layers of noodles made from thin strips of zucchini.

Two other crewmen seconded that request.

The only request that made the old chuck wagon cook scratch his head and go into this kitchen for several hours of tests was for veggie burgers. With all the normal fixings.

He tried five different mixtures of ingredients until he came on a mixture of very finely diced mushrooms, brown rice, boiled bulgur wheat, shredded Swiss cheese, egg whites and dried bread crumbs.

With the first three ingredients precooked before everything was mixed, formed and slightly frozen, he ended up with something that tasted great and still held together once it was fried in his kitchen, totally frozen and then reheated.

His primary taster had been Bud who gratefully tried everything and gave the chef some valuable comments. For all five recipes and five of the large burgers.

While they were getting the food situation in hand, Tom, Hank and Linda worked with the teams at the Construction Company to create four brand new repelatron emitters based on her SuperTron design. These four were flown out to Fearing Island five days ahead and mounted under the outer edge of the large cargo disc of *Goliath* along with four of the next-to-largest power pods that had been rushed into production out at the Citadel.

"While I am almost completely confident in the power of the large emitter at the bottom," Tom told his father as they had lunch one afternoon, "I am having those installed in case we have a need for even more thrust. The great thing is they can be independently aimed at a much wider angle than the main dish so we can use some asteroids out there for additional push."

"Do you have enough of those in your computers so you are not faced with trying to find one in an emergency?"

Tom explained that was one of the primary reasons he had had Bob at the Observatory do a scan of the immediate five million miles and to mark everything he found.

"I have sixty-two of them of great enough size to be used, and the absolute top eleven as primary candidates that will be constantly tracked."

Trying to disguise a smile coming on, the older Swift asked how Tom had thought to do that.

"Well, I have a great teacher and mentor who, along with a great grandfather and great great grandfather, have all have said, time and again, to prepare. So, that is what I did."

The remaining days before everyone would head to the Fearing Island base on the evening before the trip was spent in practicing many of the things they would be doing and even covering a few emergency drills. With just two days to go, Tom believed everyone had everything they needed to know or do well in hand.

Even his father had to admit the younger inventor was in charge and ready.

* * * * *

The inventor plotted and planned for everything they might need or want on this trip into the mysterious gravity sphere.

And, it now had been determined to be a nearly perfect oblong by Probe One. That unique vehicle had spent over three weeks traversing all around moving in and out, checking the gravitational pull at each point in its twenty-five trips toward the believed center of the phenomenon, and then had reattached itself to *Challenger* for its remote control ride back to Earth.

The two ships of space had arrived back at Fearing Island exactly three weeks prior to Tom's forthcoming adventure. Once home, both ships had been checked thoroughly for any damage. There had been none.

There was a wealth of information that had been put into digital storage along with the more abbreviated materials that had been transmitted back to Earth.

Between Tom, Damon and the people at the Observatory, more than four hundred man hours had been devoted to going through each data point, each image and each measurement to try to figure out exactly what a human crew was going to encounter and what was still unknown to them all.

The general list of knowns was longer by this point than the unknowns, but the biggest of those was still unknown. That was, what it could be causing the gravity and how that gravity had been "turned up" on at least three occasions.

Fortunately, both Probe One and *Challenger* had reacted quickly to any increase by scooting away from their position or course at that moment. Tom was personally amazed at the robustness of the probe as it dove into the gravity field time after time coming as close as one hundred and two thousand miles before it had sensed something that made it turn away.

What nobody could have realized was that those two thousand extra miles—and it could have managed that if pressed using a manual override—could have revealed something they had been searching for. The driving distance between Los Angeles and Chicago was nothing in space terms. It was a brief span of miles that Probe One could have covered in seconds.

It was the distance between the need to send a human crew out and finally understanding at least the basic reason for the gravity phenomenon.

Not the whole story, but at least enough to answer a couple important questions. It would have also led to the demise of the fast-rushing probe!

* * * * *

Bashalli and Sandy had come to Fearing with their husbands as had the wife of Red Jones and Zimby's girlfriend. The couples along with their crewmates flew over to the mainland and had an excellent dinner at a fine dining restaurant before getting back to their quarters about 10:00.

Words of love were exchanged in the Swift apartment as were the same basic ones in the Barclay/Swift-Barclay room, and everyone fell asleep before midnight.

The next morning Doc Simpson came out and held brief physical examinations of them all proclaiming them to be in universally fine condition.

As was usual for these sort of flights, there were tears and hugs and kisses, and the attached men had to pry themselves from their lady's arms, but soon the last of them had reached the living and control spaces at the top of the ship and were preparing for the final countdown.

Tom's voice was piped into the PA system where the small crowd gathered.

"We are going for lift off in one minute," he told everybody inside and outside. "All checks are one hundred percent positive, all systems are powered and showing nothing but green lights, and we are just waiting to get clearance from the tower to avoid startling a flight traversing down to Miami. Now standing at T-minus thirty seconds."

When the zero moment came, the giant ship lifted off the tarmac slowly—as it always did—before heading at increasing speed into the upper atmosphere.

The general flight out past Mars and to within about a million miles of the asteroid belt and slightly farther out from the gravity field was smooth. Tom paused them for a four-hour rest before heading toward the middle.

On the way in, at a cautious speed, they felt and could measure the increase in gravity. By the time they were about one hundred thirty thousand miles from the measured center they were approaching about the maximum level.

Six minutes later, with a suddenness that startled everyone, the ship bumped into something!

It wasn't enough to make them slow down much—perhaps ten percent of their speed—but it was felt by all and caused the four at

the controls to stare at their instruments and monitors.

It was Bud who called out for everyone to look.

On the main displays everyone could see a vague pattern of never-before colors and swirls out in front of them. One second it had not been there and then, right after the bump, it was.

To their amazement it seemed to be an arrangement held inside an invisible boundary sphere with a glassy-appearing cover, or shield, surrounding it all.

"Everyone," Tom called out through the ship, "you can see what we see. I just want to tell you that we are going in closer. It might be wise to strap in tightly."

As the ship approached and breached the disguising cover of radiation and swirling colors, everyone looking at one of the view screens found they were sharply taking in a breath.

"Jetz!" Bud exclaimed as he looked, slack-jawed at the sight before them. "It looks…" and he faltered.

"Like something decided to make a really fancy snow globe out here," Tom finished for him.

"Yeah. Weird or what?"

The inventor had nothing to say to answer that. What he was thinking was a question, that being, *How long has this been out here? We've never had any indication of it. Nothing!*

CHAPTER 16 /
WE CAN'T BELIEVE OUR EYES

AS *GOLIATH* approached the edge of the protective field encompassing the swirling colors, Tom called out to the crew to prepare for just about anything.

"I honestly cannot tell you what to expect, and mostly because our probes had great difficulties seeing *anything* and never got this close. The first ones, as you may already know, were small and the gravity crushed them. Same with the next one. It wasn't until we got to Probe One, our largest version, we got to about double our distance right now. Then, we had a struggle to get it out and away for recovery."

He cut the microphone and nodded to his copilot. "Okay, Bud, Let's ease forward and see what we find that shielding might be."

"Sure. At least the area isn't a moving target like it was a planet or even some alien spaceship. Just sort of a clear sphere full of colorful gases… or something…" He stopped talking as he realized that possibility had never been discussed before.

Certainly their Space Friends had amazing technologies that conceivably could manage something such as this, and at least one of that race's Masters had reason to resent the Swifts, but to either man's knowledge, those reptilian beings didn't have the ability to pilot spacecraft this far from their home system; that was why the Space Friends had once brought a Master—under protest—to Earth.

"I'm sorry, skipper. That was not something I meant to say out loud."

Tom had been thinking very hard about this new possibility for half a minute. "No. Nothing to be sorry about, flyboy. Just something neither dad nor I have actually considered. Let's back off a little and have a good think about this."

Bud set the controls to reverse their slow forward motion and soon they had pulled back four thousand miles and, by using their large repelatron, were stationary.

While Tom made a radio call back to discuss this added consideration with his father, Bud got up and brought them both sippy cups of hot coffee. After setting one down on a magnetic holder for Tom, he sat in his seat absently sucking the hot liquid without savoring, or particularly enjoying, the flavor. He momentarily thought about the fact that coffee from such a cup

never tasted good, and had an inspiration to ask Tom about making the steam able to escape and therefore bring out the aromas of the hot beverage. He was fairly certain that was the missing element.

His attention was brought back to the moment and reality as he heard Tom state to his father, “If this is something an alien race is doing, I hope it is not an indication of anything bad on the way. I mean, how could we fight a sudden hit from something generating such a high level of gravity?”

Damon’s voice came back a second later. “We just need to know more, Tom. You need to get *Goliath* in there and see what we are up against. Not, however, if there is any real danger to you or the crew and the ship!”

“Right. Okay, Dad. I’m going to take the ship in at an angle of about thirty degrees so we can increase speed and just skip off if necessary. We’ll try to get some good measurements, but I have the feeling this ship might not have the power to overcome a direct attempt at getting up close to study what is doing this. Not if they turn up the gravity on us. Do you concur?”

“I certainly do, Son. Or, I think I mean I would agree if it were not for those auxiliary repelatrons you have. Still, I suggest… no I *strongly* suggest a single pass and then retreat to study what you have before making a second approach.”

Once the ship got back underway, and the inventor had charted an angular approach he now wondered why it had not been his first instinct, *Goliath* aimed at a location that would place it “above” the supposed source of gravity as measured on the normal plane of the solar system. If he had all the proper information, this would see them coming to within no closer than twenty thousand miles of the center.

As the ship started to be pulled slightly downward, several of the sensor operators called out pertinent information.

“One-point-six Earth normal gravity fifteen degrees below and forward of the ship.”

“Computers suggest lowering ship’s internal gravity system by twenty-two percent!”

“We have a vibration in the storage room, skipper. Something on my monitor is shaking down there.”

This went on until the gravity source point was almost directly below them by fifty thousand miles at which point all ship’s gravity generators were shut down. Still, the crew was feeling more than twice normal gravity pulling them into their seats.

Nobody was interested in attempting to stand up at the present

time.

“Gravity source directly below us, Tom,” Hank called out from his station. “Main dish is finding something solid out there. I’m showing us being dragged down about one degree each twenty-six seconds right now. We’ve deflected more than nine degrees total since entering the sphere of influence. Can you compensate?”

Tom glanced to Bud who was working the controls as fast as his hands could react to what his eyes were seeing on his monitors.

“I can get us back about five of those, skipper,” he said through gritted teeth. The pull of gravity while they were all sitting upright was wearing on them all.

Tom set the repelatrons to full power to try to get them out of the way of possible harm as quickly as possible.

Nineteen minutes after they had set forward, the gravity registered slightly below what it had at maximum. With each passing minute it lessened until it was at one-point-three Earth normal and the ship raced forward as if it had been released from an invisible grip.

As the outside gravity had lessened, Tom had kept the ship’s own gravity-inducing system set at zero. He wanted to give everyone a bit of respite from the difficult minutes coming at them from outside. But, once they had come out of the influence of whatever it was out there, he asked them what they felt about leaving it off for a bit longer.

Then, the excess gravity stopped and two men who had unstrapped started to float off their couches.

“I could use a bathroom break, skipper, and that always works better when my feet are on the deck. So,” Zimby called over, “I’m for at least half gravity. Even more.”

The other agreed so Tom set their series of tiny repelatron emitters in the ceilings of the three decks to two-thirds Earth normal.

Fifteen minutes later, Hank had come back from the storage room below where he announced one of the crates of emergency oxygen cylinders had been nearly vibrated apart.

“I wrapped them up in a Durastress blanket and used a strap to buckle them together and to the deck hold downs.”

Tom sighed. “Thanks, Hank. Good work!”

He sat back a few more minutes trying to decide if a call back to his father was in order. The decision was taken from him as the radio came to life.

"Enterprises to *Goliath*. Enterprises to *Goliath*, This is Damon. Is Tom available to talk?"

"Yes. I am, Dad. We read you loud and clear. Just finished cleaning up a little from our attempt to run through the gravity sphere at an angle." He continued with the basics of what they'd encountered followed by a question about their next possible move.

"My suggesting is to just swing up and over that and come home, Tom. I've had the folks in Computing run some numbers and it all shows you are a little lacking in needed power in that ship if that gravity ramps up to over one hundred fifty percent. They are suggesting *Goliath* be outfitted with more repelatron power for a second foray. What do you think?"

Even with his father unable to see him, Tom nodded. "Right. I'd be fully on board with that concept except that the four extra ones we have are Lind Ming's SuperTrons. Do the Computer folks know that?"

Damon admitted he did not believe that to be so.

"I think we need to come home and have a few days of rest while I have the ship outfitted with a few things I believe might come in handy, and have the techs add some extra strapping for anything in storage or even on shelves, and then come back out for another try at getting close. I have the gut feeling there is more to this that needs much closer study. But, I want to take one more pass before we head for the stables."

It was agreed to allow the crew another hour before setting off on one last pass and then head for home.

When *Goliath* lifted from the tarmac on Fearing Island seventeen days later it was with an additional four medium-sized power pods attached at forty-five degree points on either side of the SuperTrons under the cargo deck. These would give the ship the equivalent of a thirty-percent additional level of power in case of any emergency requirement.

Tom had toyed for about two hours over adding four more auxiliary repelatrons out close to the edges of the wide disc to give them added flying power, and simply hooking those to the four extra pods, but had given up on that because of the added estimated eleven days to attach them along with any sort of steerable mounts and the necessary computer controls for them all.

They might add another nine or ten percent pushing power over a shortened period of time, but he also understood the giant repelatron antenna on the bottom of the ship could be run at

slightly higher than full power and give them just as much. Without the added weight and time necessary to see the additional work finished.

Once they neared the point where the atmosphere had no more affect on their flight speeds, Bud asked about the abandoned plan for more power.

Tom explained the timing, weight and other considerations and reminded his co-pilot the ship already had power to spare.

Bud grinned. “Just wanted to make certain you had convinced yourself and would not be trying to second guess anything once we get back out there.”

“Do I ever, Bud?”

The flyer sniggered and returned to his duties in getting them safely past several hundred objects in their path. For this traverse he had the latest computerized files on location of just about everything down to object that were just three-inches wide. That left thousands of smaller pieces that everyone trusted would be shoved to the sides using the scanning sweep of a repelatron in the very top of the control spire.

Even with that, several pieces managed to get through but were not allowed to do any damage by virtue of the super strong nature of the Durastress and tomasite coating all over the ship.

Four minutes after that Bud announced they had risen above almost everything within the first thousand miles of the planet.

“We are on target to avoid everything in higher orbits, skipper,” he announced.

Out and out they travelled soon passing the geosynchronous orbit altitude of 22,300 miles. Because their trajectory was nowhere close to passing over the equator, nobody could see a hint of the older Outpost. At this time of day even the *Space Queen* was on the other side of the planet so the only close object for them to see was the Moon, and that was about fifty degrees to their right.

They passed Earth’s natural and largest satellite one hundred eleven minutes after takeoff. Now, with little to occupy themselves other than keeping a lookout for any unplanned debris coming in from other places in the solar system, Tom suggested they get ready for the first of five 1.75-G acceleration periods.

“We’ll strap in and get going in ten minutes,” he told the crew. “This one will last four hours so anyone needing to sleep through it, go ahead other than myself, Bud and our duty sensor panel operator, Zimby. I’ll give the thirty-second countdown when that comes.”

Bud was looking at his navigation panel and only slightly turned his head to say to Tom, “I’m glad you had the gel acceleration couches put back in. And, if you don’t have an objection, once we are at traveling acceleration, why don’t I take an hour shift and you try to relax before you take one?”

It was a pattern the two men had followed time and again even though both understood they would likely not be sleeping during their “off” time but would be keeping a careful watch without actually keeping their hands on any of the controls.

“Works for me, but I’ll take the first watch. I had an extra cup of coffee this morning so I am still fighting that off.”

Bud, even though he also had extra caffeine earlier in the day, didn’t argue or even mention the point. He swung his couch back and released the gel’s stiffness function. As soon as he was in position and the gel had formed to his body, the same switch stiffened it to form a tight yet gentle hold onto him.

“Thirty seconds,” Tom called out to the crew, some of which he knew would be in their cabins and some in seats down on the lower level. When the last three seconds came, he did the countdown and then touched a small point on his main monitor.

The acceleration was not immediate, but it was steady so within a minute he was feeling more than an extra half of his body weight pressing all over him from the direction they were heading. After checking his instruments one more time, he leaned back and relaxed. He could still see everything germane to their travel and the ship without having to endure the pressure from directly over his head.

Three days later they were in a coast for at least sixteen hours so everyone could get a full shift’s sleep. After that it would be time for deceleration cycles equal to what they had already endured in getting up to their top speed for this trip.

This was also the time to break out the better tasting and more satisfying ready meals prepared by Chow. These were a welcome relief from the fast and easy-to-eat energy and protein bars the western chef made for those times when crew needed to just shove food in and chew while they were experiencing the pressures of movement.

In and of themselves, the bars were satisfying for hunger, but they were a bit monotonous in that there were only three combinations Chow had been able to determine were both nutritionally balanced as well as able to be vacuum-sealed and packaged for longer term storage without refrigeration.

Now, everyone crowded around the storage cabinet that held the eleven different meal packs they could be eating in less than 4 minutes.

Tom, who was getting ready to go to his cabin for a sleep break, selected the sloppy joe sauce over egg noodles meal. Bud grabbed his favorite lasagna and they sat down on two of the couches on the habitation level. Hank joined them with Chow's new vegetarian lasagna. A simple pull of a tab on the side started a thermic reaction that would heat everything in minutes. And, while it was not going to ever be like taking something out of a very hot oven, all foods designed to be eaten hot, were pleasantly so.

They noticed two of the technicians who had accompanied them from Fearing had selected different meals, took bites and then traded. Both men now seemed quite happy.

"Must be their first times with one of the ole' space cowboy's concoctions," the flyer quipped just loud enough for Tom to hear.

"Hey!" Zimby called out on seeing something new in the assortment of foods. "Chicken curry. I love Chow's chicken curry back at Enterprises. Looking forward to this." He came over to an empty seat close to the trio and activated his food heater.

As soon as he dug in he got an even wider smile. "Ohhhh," he said almost moaning with delight, "it's incredible! I got dibs on all the rest of these." This last was called out to nobody in particular, but he had hope. His was the first one taken of that recipe.

Around a mouthful of food, he asked Tom how his serving was. When the inventor nodded and said it was the usual wonderful, the pilot agreed and stated, "I'll bet that if the military served ready-to-eat rations this good there would be no problem getting people to reenlist. The old saying is true. 'Keep 'em well fed and keep 'em happy.'"

Seven hours later and with about one to go before they flipped the ship around to begin their slowing down, Tom woke up, took one of the recyclable moist cloths out of its package and gave his body a good wipe down. That, along with a clean undersuit—their "gravity long johns" as Bud called them—and a fresh jumpsuit made him feel nearly as good as new.

Upstairs he relieved Red at the controls a little early so the man could have one more peaceful meal.

Because of a half-shift rotation each 24-hours that kept the same people from always working together, Tom found himself sharing the control boards with Slim Davis.

Within half an hour of their deceleration time and rate

computations, Tom finally brought the *Goliath* to a halt in space. A halt was only a relative term as they, like the planets inbound and outbound of them, and the very asteroids, were travelling at a high rate of orbital speed through space. Tom made the announcement they would pause here for another six hours while everyone would be encouraged to take either a rest or to sleep.

Duanne came over to speak to the inventor.

"Skipper? I just got off eight hours of rest, so I'll take the watch if you don't have any objections."

Tom shook his head. "Heck, no, Duanne. You're a seasoned astronaut and have enough hours in the seat to qualify as an alternate pilot. So, with that I stand up…" and he did, "and head down for a snack and a rest. Frankly, I was going to tough it out for half the period, but you're saving me from getting myself into trouble."

The black man smiled at his boss. He totally appreciated the inventor's attitude toward employees in general, but Tom knew that Duanne had a past where he had, not with intent, killed an escaped felon who had been trying to kidnap Duanne's little sister. That had never seemed to Duanne like it bothered the inventor.

As he walked down the circular stairs to the lower deck, Tom smelled hints of curry. He looked over and smiled when he saw Zimby with another helping of the chicken dish, sitting to one side with his eyes closed in food rapture.

He wasn't really very hungry, but knew it had been seven hours since he had anything, so Tom took one of the vacuum-sealed ham and cheese sandwiches from the cooler. The only thing needed was to add a little mustard and mayonnaise to the bread and he sat down munching his first bite. It was on the second bite he realized he actually was hungry so he finished his sandwich and then grabbed one of the food bars to finish filling his stomach.

His sleep did not come easily as his mind raced around with a number of possibilities for what was about to happen.

With their instruments registering a field of gravity within the swirling color show inside the enclosed area, but nothing to indicate the width, height or depth of the field, Tom decided to try sliding *Goliath* upward—relative to their current orientation—until the readouts started to show lower levels. Then, he would move them forward and try to determine the size of what he believed must end up being a sphere, using mathematics.

It required more than two hours but in the end he believed there

had to be something in the middle of an area approximately nine thousand miles wide and greater than twice that tall. That was the outer point where an increase in gravity could be felt. Closer in it ramped swiftly down. It also explained why the area around this center had not been cleared of other materials.

If higher gravity did not extend beyond that point, how would anything be drawn in other than by a chance encounter?

He ordered readiness to move in and five minutes later the ship started directly toward the center of the gravity sphere.

Goliath seemed to bump into something they could neither see nor detect on their instruments. It was stronger than the outer spot they had hit and was just as invisible. Their lights flashed a few times, dimmed and then came to normal brightness and steadied.

"Everyone. Check everything. I need to know pronto if we got through whatever that was in one piece. Smallest details. Now!"

No negative reports came in, so he set the controls to continue their flight.

But, within a minute Tom and Bud were fighting a battle between the strong attraction force and the ship's abilities.

For a few seconds it seemed like the gravity phenomenon would win, but the pair slowly regained some control as the ship came to within what Tom thought must be ten thousand miles of the center.

Suddenly, almost as if someone had turned on a light switch in a very dark room, something sprang up in front of them all. It was what Tom could only think of as "hourglass shaped," consisted of at least two oddly-shaped spheroids connected in the middle by a tube of some sort of surface, and was filled with more and brighter colors than he had ever seen in or on a planetary body. Ever.

The world was as topsy-turvy as anything Tom had ever seen, and more complex than a very detailed M.C. Escher sketch, only hundreds of times more colorful and vivid... and confusing!

It was like something out of a psychotic dream, everything was swirls and wild colors and patterns. What should have been down was up and left seemed to be right!

Alarms started sounding throughout the ship; these were alarms that would automatically report distress over the radio to Enterprises.

The inventor ordered them to be silenced and shut off.

"Tom! Please come in. What is going on?" Damon's voice sounded over the radio as close to panic as the younger inventor had ever heard it.

“Dad. It’s Tom. We are okay. It’s just that I don’t think any of us were prepare for this. Honestly, we can’t believe our eyes right now!”

CHAPTER 17 /
STRANGE BEINGS FROM ANOTHER PLANET…

"WHAT IS 'this' Tom? What have you found?"

"I… I hardly know how to describe something I've never seen before, Dad. Let me call you back via video hookup in a minute. We have some images you need to see." When he did get the more complete communications in place, and sent through the first fifteen seconds of the video they'd taken, there was dead silence from the Earth end.

When he did speak, Damon's voice was so quiet Tom had to strain to hear him.

"Oh… my… god! That's just… well, that is so much beyond incredible, if I didn't know this could not be a hoax coming from you, I wouldn't believe it."

With no outside viewport, Tom had to assume the images they had all seen on the monitors were an exact representation of the truth outside the ship.

"Are you still being drawn in?"

It was such a simple question Tom nearly missed the significance of it. When he glanced at his positional readouts, he let out a gasp.

"Yes. We are. Have to go for now but I'll keep this channel open for you."

"No." It was a startling word spoken as an order. "I'd prefer to have no chance anyone might get wind of this. Just keep in audio contact please."

Bud helped by switching off the video portion of the signal and then helping his friend with the controlling of the ship. It was obvious they were being drawn in toward the heavenly body out there, and their rate of approach was increasing.

"Flip us to the side, Bud," Tom requested. "We need to get the repelatron pointing directly at that."

Seconds later the ship had reoriented itself and the nearly full power output of the giant antenna was shoving "down" at the upper of the two bulbous ends of what Tom had to now call a planetary body.

Hank, on one of the sensor panels, called over. "We're getting a basic measurement of that… whatever out there, skipper. Each end is about four hundred miles across, slightly under five hundred

miles tall, and the bridge between them is fifty miles. Overall, it is an even thousand miles long."

Several of the others let out appreciative whistles.

"We're slowing down some, Tom," Bud reported. "Rate of approach is only about thirty-eight hundred miles per hour. If the distance reading is correct, we're going to get there before we come to a stop. Likely to be landing at about four hundred miles per hour!"

That was decidedly not good news. Tom reached up and set their output to 100%. It was only an increase of about nine percent over what they had been using, but within a minute the pilot announced their new approximate landing speed would be about one hundred MPH.

"I'm going to wait until we get a lot closer then set the power to above normal max," Tom told his slightly apprehensive crew. He reminded them they had the extra power pods under them just in case of something like this. That helped the attitude in the ship.

The closer they came the more details stood out on the monitors. For instance, now they could detect areas that seemed to have extra light. That was a shock as any light had to either be some super-reflective surfaces... or artificial. As in created by someone or something.

Nobody else seemed to have noticed that, or considered the ramifications, so Tom elected to keep his thoughts private for the time being.

The decision was taken from him when they reached an altitude of about a thousand miles and everyone looking at an outside monitor of what the SuperSight was showing could see there were buildings down there!

With the increasing need to bleed off some of their speed, Tom placed the ship in an orbit up and over the two spherical ends of the object. They made a total of two orbits and managed to get down to the point where just an increase of four or five percent repelatron power would allow them to set down at a safe speed.

Now, it was a matter of where that should be.

Their SuperSight system scanned as much as they could see below the ship. Some of the details were slightly blurry, and that led Tom to think there could be some sort of atmosphere down there. When Bud asked how that might be possible—he had also come to that conclusion—he asked because of how relatively small the entire object was with no signs of either plants or water.

“No plants or water on Nestria,” Tom said and had to pause. He was still deeply hurt by the fact the small planetoid had been ruthlessly ripped from its orbit around Earth by the reptile Master, killing the few scientists who’d refused to evacuate.

“Uhh, yeah,” Bud said sparing Tom from needing to go on. “Do you think that shiny sort of bubble surrounding things keeps their air in?” He nodded toward the screen where something akin to a soap bubble, shaped like an old dumbbell, had appeared as the ship reached an altitude of nine hundred miles above the surface.

Once he got his mouth closed, Tom nodded. He had not anticipated that, but then again he had not anticipated any of this.

“Right. Okay, everyone,” he called out. “We are going to have to hightail it away from here or commit to landing. Zim? Nothing on the radios?”

“Not a peep, skipper.”

“Hank? Any buildup of energy you can spot?”

“Not getting much other than visuals inside that bubble. Do you think that is some sort of shield system?”

Tom shared his thought it was only meant to keep in their atmosphere.

“Yeah. Makes sense. So, no, nothing showing. Even the lights have remained constant.”

“Alright. We are going to land, folks. It’ll be on the lower lobe just over the current horizon. I spotted an area sort of like a giant city center square or park. Flat and nothing within about a thousand feet of the center point. Keep a good lookout for anything on that surface. I’ve marked it in the computer so once we get overhead and stop the orbit, I want a full report.”

Ten minutes later the ship stopped its forward motion, but was drifting down at a rate of about three hundred feet a minute. The inventor calculated his point of adding the extra power was approaching and would need to happen when they were just two thousand feet up.

I only hope we have enough power to get back off, he thought while both attempting to compute their maximum output and how long it might last them, as well as keeping an eye on the surrounding area of their intended landing spot.

“Seeing nothing except a few slight movements at the periphery of that open area, skipper,” Zimby called over.

“Still no energy readings to speak of,” Hank added. “Just a general power level that might go with any small city on Earth.”

Unspoken was the added reality that this was not on Earth so they had no idea what levels to expect would be normal.

Tom checked his power and made the final decision. “We are committed to landing. I’m not sure we could head back up right now. Our power pods are forty-six percent depleted. Let’s land and give them a couple hours while we try to see if the natives are friendly.”

He had to exceed his drive maximums by nineteen percent in order to get them on the ground with only a rather hard bump. As he shut the repelatrons off, he sighed inwardly. They were on the surface and seemed to be safe. For the moment.

“What are we seeing outside?” he asked.

Five set of eyes looked at the five major monitor areas. At first there was nothing to see.

Then, and it was Bud who spotted it first, a number of oddly angled planes became visible to them. The most shocking thing was there were sets of what appeared to be stairs set in many of these planes, and, like something from an M.C. Escher painting, they went up and came down and headed sideways at about thirty different angles, some even upside down.

But, it was what Tom saw on his monitor when he zoomed in on one of the upside down stair that sent a chill down his spine.

Poking upside down from what, to a human, was above their control cabin by neatly fifty feet, was a head and face... and it as staring right at their camera!

Over the next thirty minutes the Earthmen looked at various areas around the ship where more vaguely human-shaped beings—or machines—appeared and disappeared from many of the unbelievable angles out there.

The thing most disconcerting, among about a hundred things, was that some of these jumped from the tops, or bottoms, of these slopes, stairs and even just a basic plane, into the air and floated down onto something else and frequently at a totally different angle.

“Are those things flying?” Bud asked. “Because, if they are we might have landed on a real-life version of Krypton. You know. Where everyone can fly?”

“No. Not Krypton, Bud. Besides, that is just the name of an element the creators of Superman thought sounded good. But, I don’t think they are actually flying as just jumping and reorienting themselves to land on some other plane.”

“Well, it’s just plain weird!”

Tom could only nod. “Can’t dispute you there, flyboy.”

“Can someone see if they can figure out a scale for things out there, please,” Hank asked. “I’m getting dizzy just looking at all that activity and worry they could all be five times as tall as we are.”

Tom came to his rescue. “I’ve got the calibrating marker on my lower level monitor, Hank. From a RADAR reflection of the closest vertical plane I’m seeing we are nine hundred seventy-three feet away and that means the being that just wandered across my field of vision is about five feet tall. Oh, and in case nobody has notice it, our relative gravity is just under ninety percent Earth normal. Whatever is generating that field outside this place must be doing it as a protection method.”

“Which,” Bud considered aloud, “would mean this place is either incredibly dense to make that much gravity, or they have gravity stones or something like that.”

Everyone in the crew knew about the Space Friends and their gravity stones that generated more gravity on their own if given enough of a power input. One had nearly doomed the Martian moon, Phobos, to an early demise when it malfunctioned and tried to drive the small rocky chunk down into the atmosphere.

Tom had conquered that.

It was the sort of thing he was known for.

However, he was unable to even form a theory about this local gravity situation. Unless his brother-in-law was right, it was another in a string of anomalies to be pondered.

While the others looked around them, Tom decided to concentrate on finding one of the beings and watching it closely. He found one standing on a vertical wall—and he had to start adjusting his perception… that was likely to be as much a floor as what the ship stood on. Anyway, the being was currently facing away and moving forward and back. It did so standing upright on a pair of leg-like extensions that did not so much pick up and swing as they did moving slightly forward and backward with the being moving a disproportionate distance.

He was unable to see under the end of the appendage but had the notion there would be a wheel, tread, or even some sort of rotating ball making the movement possible.

Only to his partial surprise, the being arrived at a set of stairs that headed at about a seventy degree angle and apparently out from the current plane where it lifted one “leg", placed it on the first step and its entire body swung as if magically, or supported by

wires, into position at which point it walked away. That meant the stairs that seemed to be coming away from the wall were an illusion and, indeed, headed into the wall.

He felt as if his eyes were in danger of crossing so he rubbed them with his right index finger and thumb.

“Can we get a signal out to Enterprises?” he asked.

“Nothing at the moment, skipper. We lost everything once we got inside that last screen or bubble.””

“Okay,” he sighed. “Please keep trying.”

Sensing he needed to get Tom’s attention away from the impossible for a moment, Bud inquired when they would be going outside.

Tom’s head spun to the side and he looked at his friend as if the man had gone crazy. “Oh! You’re serious, Bud.”

“Yep. Those things do not seemed inclined to communicate with us. Nor, have they piled sticks up under the ship to try to burn us and force us to leave. Unless you hid some little drones with cameras in storage, I don’t think we have any way to see where those weird stairs all go, so that leaves us heading out to see for ourselves.”

Within the hour the visible scenery around the ship was becoming a little monotonous to the men inside, and no radio or even the Space Friends’ amazing instruments could get a signal out. Or, Tom hoped it was just the receiving and that his reports to Damon were getting through so nobody would be worried about them… and that the older inventor might be working on ideas about this strange world and the beings in it.

“I am about to suggest something that could be a little dangerous, although I personally doubt that given the lack of reaction we’ve encountered so far.” Tom had gathered everyone in the lower space where they spent off-duty time.

“Want one of us to go out?” Zimby asked. “If so, I volunteer!”

That was one thing Tom was incredibly grateful for. The women and men who called the Swifts their employers and friends were never of the mindset they ought to hold back when an adventure came along. It sometimes made it difficult to pare down a list to just the ones he would take along, but he was incredibly appreciative of them all.

“Well, Zimby, that is a very nice gesture. What if that isn’t what I was going to suggest?” He smiled.

“I’d still say I can go out and have a look around for us. Not a lot

to see on the monitors and we don't have that mythical camera drone someone mentioned earlier. So?"

The inventor nodded. "Okay. You're right. That is what I was going to suggest, but I wanted everyone's input on whether this should be a one-man thing or a small team. Any thoughts on the matter?"

He looked around at his crewmates. There wasn't anyone who didn't seem eager to go outside. Hank said it might be wise to send two men out. "One would remain on the cargo deck and the other can take one of the Straddlers out and fly around a little. Maybe go closer to the wall I can see over to the pilot's screen."

Bud agreed. "Yeah. One of us—and I will arm wrestle Zimby for that honor—goes over there and maybe flies up and around for five minutes and the other stays back but also on a Straddler ready to come to the rescue… if that is anywhere close to being necessary."

Tom agreed and said the flying man would be Bud on this one to be joined by Zimby after five minutes and they would then both fly around making observations and getting good video.

"While you two go get suited up, we'll take more measurements. Okay, everybody else, I need atmosphere, temperature, gravity and all of those sort of things I should have requested the moment we set down. Three minutes, please." With that, they all headed up to the working deck and began taking readings.

Before Bud or Zimby stepped into the elevator to head for the cargo deck and the storage for the Straddlers, he gave them the salient information.

"Outside temperature is about forty-one degrees and the atmosphere, although as thin as on Earth at fifteen thousand feet, is breathable for brief periods of time. A little too much CO2, but definitely not nearly as much as on Mars, and a manageable percentage less O2. Then, there is some nitrogen but a lot of helium, argon and neon."

"So," Bud asked as he finished checking the condition of his helmet's sealing ring, "if we put some electricity to the air, will it glow?"

Tom shook his head. "Do you know how much power it takes to get neon in sign tubes to glow?"

"Nope?"

"Well, luckily it is not a lot, but it does take a starting charge that is higher than the maintaining charge, and you don't want to be in the middle of that. But, now you mention it… both of you take some vacuum sample tubes and get us a couple cubic feet of their air. We

can give our Bud's neon sign thought a test later."

The two men headed down, but only after a final question from Bud.

"If the air isn't all that different, and we've all been in colder places, why wear the full outer space suits? Why not just environmentals?"

It was a good question, but Tom's answer was also a good one.

"Protection, flyboy. Purely to keep you and Zim safe and snug. It would not be good if you get delayed to make you stand in the cold for as long as it takes us to come out and get you."

"Good enough." And, down they went.

On the deck and with the pair of four-man Straddlers activated, Zimby asked Bud if he really wanted to go first. "I only ask because I don't want you to feel obligated."

Bud shook his head. "Do you want to go first, Zimby?"

The other pilot nodded.

"Fine. Hey, Tom, Zimby is going out first and I'll stand ready to assist."

Zimby's air scooter moved to the edge of the wide disc and headed into the open air. Given that the gravity had been so severe as they were landing, he was cautious about what he might do if it suddenly got much higher. He didn't have anything to worry about. It was a steady rate and the Straddler handled it with ease.

He headed straight away from the ship and soon approached the wall they had first seen an alien head pop out from. He even believed he was coming to the actual hole. It was not dark once he got closer but had a slight glow to it. He hovered at what, to him, would be above it and looked down.

An alien face was looking up at his, or was it sideways at him, from about ten feet inside.

The shock made the man let out a strong swear word and nearly caused him to fall from his mount.

"What is it, Zim?" Bud shouted over the radio.

By now, the pilot had regained his composure so he described what had greeting is look down.

"It wouldn't have been so bad Bud and everybody, but the darned thing is at a cockamamie angle and sort of upside down, but not quite. I can't describe it other than to agree with whoever it was that compared this place to a drawing by that M. C. Escher. I think that ought to be the name of this place! Escher."

A few second later he added, “Oh, and sorry for the cursing. Just wasn’t expecting what I saw. By the way, whatever it was has disappeared deeper into that hole. Stairway, I guess.”

“Do you think your camera got that being?” Tom asked. He did not have a direct hookup on his screen to what the men outside were seeing.

“Yeah, but my heads-up display showed it to be a little dark. Maybe you can correct that in the ship. Ummm, I’m going to another of these strange stairs about a hundred feet to my right.” As he turned he glanced back at the ship and could see that Bud had mounted his Straddler and had it perched at the edge of the disc to make it easier and faster in case he needed to rush out.

When Bud finally took off to join him, Zimby had already explored five such openings without seeing anything other than the first being. They split up and in the hour allotted them by Tom, they managed to fly up about an extra three hundred feet, down to almost the ground—if indeed that was the “ground” level— and about three-quarters of the way around the ship.

“Give us some more time, skipper, or do you want us back now?” This question came from Bud.

“Let’s get you both inside and then I want to take a small team out at the ground level and see what sort of attention we might garner. You two have only had a couple interesting non-encounters.”

Once back onboard the *Goliath*, Bud joined Tom, Hank and Deke in heading down both elevators and to the supposed ground. As they stood back from the opening, Tom glanced around them. There was just about nothing other than the impossible walls and about nine openings to be seen. He stepped out motioning the others to join him.

Over the following eighteen minutes they walked slowly around taking good looks at, and even picking up for closer examination, several items that might be rocks and might be parts of buildings or the strange beings, but to that point they saw no actual moving beings.

“Are you going to go father out?” Red asked Tom over the radio.

“Yes, we are. I still want you to keep to the four-hour time before anyone panics. We will most certainly be exploring at least one or two of the openings that are about at our current level. I have no idea what all this is made of, but it could block radio signals. Speaking of which, any luck getting out to Earth.”

“Negative. But we’re trying every two minutes.”

The foursome headed for one of the closer opening in a nearby wall. As they approached to within fifty feet, movement around them registered in their peripheral vision. Tom whipped his head around in time to see five nearly humanoid beings step/glide from an opening to their left about two hundred feet away.

Now standing back-to-back to give the team 360° vision, it was Hank who first called out another sighting. “I've got nine… no, there’s ten of them coming from behind the ship. All heading for us, skipper.”

Deke also radioed he was seeing three coming from a stairway in his direction.

Bud had to agree with them although he had nothing immediate in his field of view. Except, with a look around he grasped their situation.

“Hey! They’re closing us off from getting back to the ship. We’re *about to be trapped*!”

CHAPTER 18 /
ESCAPE TO/ING THE LABYRINTH

THE TOTALLY crazy non-human and yet somehow vaguely recognizable shapes came from the shadows that were not quite shadowy, all heading not entirely directly toward Tom and the small team.

Those actions sent more chills up Tom's spine than if whatever these were had come directly toward them screaming and waving some sort of weapons at them.

"Hoof it!" Hank shouted as he turned to his left in time to see five of the things darting on a more direct course. "Coming from my nine o'clock!

Bud, Tom and Deke turned their heads to see if the danger from that direction was worse than the other areas around them. It was. Hank's five had been joined by one more from around a corner that ran at a ninety-degree angle from their level.

Tom really wanted to be able to say their orientation was the correct one, but he'd seen enough Escher drawings to know that various angular applications of gravity and a twist or two of physics was in effect here.

He turned to his right and could see a wall on which no being, robot or anything else other than a set of stairs that looked like they headed down—on a wall that headed to their "up", about thirty feet above their position.

"That way," he shouted and then realized there was very little other sound around them and yelling was not called for. "We're going to try to walk up that wall," he explained as he began trotting over to it. The others followed, none of them quite believing what their leader was telling them they were about to do.

But, and to everyone's deep surprise, as soon as the inventor reached the wall and placed his right foot about fifteen inches up from their plane, he was able to lean back and get the other foot on what was their wall and now his "floor" and start to walk up it.

"Good enough for the skipper," Bud stated as he mimicked Tom's actions, "is good enough for me."

He, too, was soon walking up the new floor.

They were joined by the other two seconds later.

Tom pointed to the stairway slightly to his right. "I'm heading for

that to see if it goes anywhere good. You all might want to hold back, but…" and he looked over his shoulder at the approaching beings or devices, "…you may want to move up a little higher on this plane so they can't just reach out and drag you back off."

Saying that, he strode forward to the entry to the stairs. As he'd believed from observation, they did head back down. Impossibly, he knew that if he stepped up onto the first step he would be reoriented into a downhill position and could take the stairs wherever they went.

His powerful flashlight beam pierced the darkness down the stairs until it touched a new floor that must go off at an exaggerated angle to the left.

The others crowded around him as the robot beings started to twist and lay over until they could gain purchase on the wall/floor.

The four men took steps and then found themselves in a stairwell with vertical walls that somehow made them feel a lot better. Just as long as they did not focus on the floor below them that was going to be tricky to spin and twist to get onto.

First Tom, then Bud and Deke with Hank bringing up the rear, the men walked quickly down until Tom got to the bottom about fifty stair steps away.

"If you can picture the change," he told them over their radios, "as being like taking a properly oriented floor and then bringing it toward us to about one hundred degrees before tilting it to the left fifty degrees or thereabouts. There seems to be enough room for us to make the transition, so… here I go."

A large hand reached out and grabbed his shoulder.

Hank's voice came in his ears. "Not a chance in you-know-what, Tom. First, I go attached to you all with our line, then Bud and then you with Deke following at the end. And, according to both your father and Harlan Ames, I'm going into that new corridor with my weapon drawn and set on the highest setting."

Tom understood. They were faced with an unknown, disoriented to a high degree, and had been unable to communicate with whatever it was that populated this crazy, chaotic world, and there were about a half-dozen of the *whatevers* actively pursuing them.

He nodded. "Go."

Hank clipped himself to Bud and stepped around Tom. His left foot twisted a little and found a flat surface on which to stand.

"You know," he said, "I honestly didn't have to twist as much as it looks like I should have. I stepped, moved my foot a little and then it

just connected. Let me see if I can get the other foot down as well." He swung the right leg and foot up and in a second he was turned and twisted so he was properly oriented to the new surface. "Easy."

His powerful light beam pointed down the corridor to the other's left before he swung it around. There was only about three feet of hall behind him with nothing to indicate it could be any sort of door. Back he turned and started to move along the hall.

He reached the end of his tether fifteen feet farther along and stopped.

"Unless you have other plans, I say you three come join me and we can see where this one goes. I can only see another sixty feet or so, and don't detect anything that is wacky or topsy-turvy down that far. Just a sort of darkness."

"We're coming," Tom assured him as Bud did the stepping movement in front of him.

"Jetz! Hank's right. It looks like it would be impossible to get around and onto the next floor but it just happens. Come on, Tom and Deke."

Ten seconds later they were all in the hall that looked to be about eight feet wide and went on far enough their combined lights could not see the end.

If there is an end, Tom thought.

They all but ran down the corridor with the end point seemingly receding as they moved along. Tom called a halt after two minutes.

"This is ridiculous," he declared. "Let's stop a moment and check around here. First, though, let's all be very quiet and listen to any signs those things are still pursuing us."

He had two of them, Bud and Hank, facing the way they were going while he and Deke turned around the way they had come. For nearly a minute they all listened to their suits' outside microphones. It was Deke, and possibly due to his height, he detected the first sounds.

"Listen," he whispered as he turned his head a little from side to side. "A scraping. And, it's coming from back there."

In a moment they could all discern the sound. It was, to Tom, something akin to the noise made when a child goes down a slide. Not quite a whooshing and not exactly like a scraping, but it was vaguely familiar.

It was then they all saw that the corridor behind them had opened up some fifty feet back. The right wall silently slid up and a dark oddly shaped rectangle appeared. The noise got suddenly

louder. Without any consultation, they began stepping away from the black open portal. It was just a few steps at first, but once the first of their pursuers' feet came out of the hole—with whatever it was not so much sliding out but stepping out, fully upright, they already had some small momentum and that let them turn and race away a little quicker.

"I'm not so much feeling the Escher moniker," Bud said as they ran along, "as I am 'Nightmare Alley!'"

He had to stop talking as they now came—too suddenly for Tom's liking—to a fork in the hallway. "Right or left?" he asked.

"My money is on left," Hank responded.

"Good enough. Left it is," and they ran into the new hall that, for yet another unfathomable reason, tilted to their right about five feet into it. But, they never slowed their running and their bodies reoriented to the new angles instantly.

Over the following sixty-seven seconds they came to five additional branchings, each time choosing to go to their left. It might make retracing their steps easier if they could shake the things coming after them. Their luck and possible avenues of escape came to an end after the final crossway.

To Tom, it seemed they had been twisted around so by now what had been up in the long hall was now down. He could not come up with a satisfactory hypothesis for this… for *any* of this, so he gave up.

"Brief rest break," he declared and nobody contradicted the idea.

As their lights bathed the area in which they stood, everybody could see there was a wall to their left some thirty feet away, and a corresponding wall to the right about twice that distance from them. But, it was the wall before them that got their attention as it was only fifteen feet away.

They spread out to examine all parts of the walls trying to find a release of some sort that might open another route of escape. Five minutes later and with absolutely nothing found, they gathered just to the right of the opening through which they had entered.

Deke was the first to speak. "I'm kind of getting the feeling we got herded down to here, skipper. Nothing solid to go on, just a sense. Does anybody else feel like that?"

To Tom he sounded nervous, but he knew the tall man had nerves of steel. He shook his head.

"I'm not sensing that, Deke. Any of you two?" he looked first at Hank and then Bud.

"Nope," and "Not a thing," came from the two.

Tom tried peeking around the corner and down the long hall. It wasn't until perhaps twenty seconds later he detected a noise of something possibly metallic walking on something that might be more like a concrete. Looking down at his own feet he could see that the flooring appeared to be the metal.

That made no sense. If the floor was the metal how could a being or even a robot be constructed of concrete?

The others had curious looks on their faces. Now, Tom had an idea. These beings might be following them based on their radio transmissions. He made a "cut" motion while pointing at his own chest-mounted equipment and then leaned in to touch helmets. The others caught on immediately.

"Listen, guys. I'm not certain what they want from us, but they sure haven't tried to calmly communicate which gives me a couple thoughts. One, they cannot synch to our radios and even if they could, they do not speak any verbal language. And, two, they are curious about us but not out to do us harm. Otherwise, they could have fired something at us from the shadows outside or even from up at some crazy angle. What do you think?"

Bud raised a hand. "Well, I'd like the second one to be true. They've been within a direct line of fire several times and I'm pretty sure they are coming down that hall now. I'd like to suggest we spread out so they cannot get us all at one time."

He sounded a little discouraged to the inventor.

Hank and Deke agreed with Bud.

Tom had a small idea they might try.

"Okay. Let's suppose they are not killing machines but only some sort of investigative… uhhh, sentry. I'm going to move over to the farthest point and set my light down. Then, we all stand on this side of the entrance. Once they come it, and always assuming they head for the light, we slip back out and run."

Nobody wanted to ask what might happen if only a couple of the things came in leaving their companions in the hall to capture the humans.

"I wish we could get a message through to either the skipper, or one back to Earth," Zimby was saying to the four others in the main cabin.

"Yeah," Red agreed. "But, Tom told us to stay here unless specifically attacked, and that hasn't happened. If anything, I'd say

those things out there are actively shunning us as if they are telling us we are not within their wish to notice. Or, words to that effect."

Every camera outside was sweeping the area around the ship. The ones around the giant cargo disc were looking farther out and also up and down anything rising above the main plane of the planet while the dozen cameras around the lower bracing for their repelatron were checking out things on the ground and perhaps ten degrees up.

So far, about two hundred odd robotic shapes, with two arms and two legs but not entirely humanoid in appearance, had been spotted. None of them came to within three hundred feet of the ship and yet they all appeared to be moving and observing all the time.

Other than when what the Earthmen believed to be their heads turned away and they moved off as if supremely disinterested.

"Jayston? Anything on that radio of yours?" Red asked. As the current commander of the ship, he knew it was up to him to keep them all moving and doing things while they waited.

"Not a thing, Red. We lost their locator beacons when they turned that really strange corner over to the left. And, yes I have tried boosting everything and setting sensitivity to maximum. Sorry but they are out of comms reach right this moment." One glance toward him assured Red that their radio expert was as miserable about the situation as they all felt.

"Thanks. Good to know. And, well… no. I guess thanks says it all."

Tom's impromptu plan was a no go from the start. Rather than entering the large space where he and the others were trapped, and heading for the light, the now nine robotic beings came in three abreast turning directly toward the humans in their three rows. As the second set came in they veered to the right so they would form a line of six with the last ones completing the long row of nine.

Then, and to the horror of the four men, the ones farthest from them began to move forward and soon the formed a semicircle around Tom and his team.

They stopped and did not appear as if they were inclined to move any closer toward the humans.

Tom tapped his helmet and pointed to his breastpack indicating they should turn the radios on again.

As the inventor looked into their robotic faces he could see something that made his blood run icy cold.

Each one of them had a different face! Although not human and not similar to any animal they'd ever seen, the faces were individual to that robot.

Oh! Tom thought to himself. *They may not be robots after all!*

When he voiced his opinion to the others, all they could do was nod. They, too, had seen the different faces and watched as varying expressions crossed those features.

They ranged from curious to what Bud considered to be "slightly put out by all this."

"Okay," Tom said, pausing to think of what he wanted to say. "It appears that our new friends here are not just a pack of robots that have taken over this rather… uhh… interesting world. They would seem to be partly robotic and perhaps partly organic."

Deke ventured, "Does that make them androids or cyborgs or something else?" They looked to Tom.

"Honestly, I have no idea. And, I doubt we'll get the chance to closely examine one or more of them. I wish we could communicate with them but so far they have either not been able to pick up radio messages, or have ignored them."

Moving a little closer together, the Earth men talked over possibilities. A few minutes into this, Tom held up a hand.

"Deke? Cyborgs are part robot and part organic and androids are robotic but are shaped to look like humans or even specific animals."

He restarted the latest topic regarding ways to possibly communicate.

This was interrupted by one of the cyborgs nudging into Tom's hip. As he looked down, it looked up at him from about the five foot level of its eyes. There was some emotion or feeling in there, but it certainly was not what humans would recognize. Tom now worried it was trying to convey something like hatred or even love!

"Uh, guys? my little friend just tried to bump into me to get my attention, or he made a very weak attempt to push me over. Hold on a sec." He leaned over a little to come face-to-face with the being.

"I wish I knew what you wanted to tell me." He tried holding his hands, palms up, in front of him but not so close as to be perceived as a threat.

That is stupid," he thought. *They could see something like a smile as a threat*. He pulled his hands back and let them drop to his sides.

Hank, Bud and Deke were standing as still as they could manage.

The very last thing they wanted to do was to interrupt anything that might be a form of communication.

Tom continued. "So, we have tried English. How about I attempt my junior high Spanish. Hola. M*i nombre es Tom Swift. Vengo en son de paz.*" He paused. "Nothing? Okay, Hank here speaks a little Russian and French. So," he slowly turned and pointed to his Engineer saying, "how about saying we come in peace in both?"

Hank took a slow and careful half step forward. The attention of six of the cyborgs turned to him; "Uh… *Privet. My prishli s mirom. Eto russkiy*. No? Okay, how about Français? *Mon nom est Hank et nous souhaitons tous vous saluer en paix."*

When this failed to get any response, Bud tried his meager German.

"*Hallo an euch. Wir sind friedliche Männer von der Erde.*" He looked expectantly at them receiving no visible acknowledgement they had even heard him.

Deke now surprised them all. "What exactly do you want me to say, Tom? I can give them Greek, Japanese, a sort of Urdu and also possibly Filipino Tagalog."

Tom gave him a basic "we come in peace. Can you hear this?"

Deke gave them all a try. Nothing he did or said made any change, except they all did turn to face him when he first spoke to the inventor.

Just because he knew a little Esperanto, Hank also tossed in, "*Saluton al vi. Ĉu vi komprenas Esperanton*?"

"Okay. Before anyone tries Klingon on them, let's stop and think," Tom told them. He was just in the process of turning when the closest cyborg, the one he had directly addressed, did something that startled them all.

It lifted its left arm and pointed to the ceiling. Tom tried to recall all of their twists and turns on the way down to this room and came up with they were either pointing back to the surface, to in the vague direction of the ship.

Tom nodded and also pointed. "Yes, that's what we want to do. Go back."

It was at that time four of the cyborgs rushed in and collided with his hips and legs.

Red was drumming his fingers on the console with their camera monitors. He had been watching everything and could see no sign of their compatriots or any sort of pattern in how the strange machines

moved around.

“I am just about to ignore the skipper and head out there," he said in a loud enough voice to be heard all around the control level of the ship.

Zimby, who had just stood up to go get another cup of coffee, put a hand on the older man’s right shoulder.

“I know, Red. I feel the same. But, we told Tom we’d give them four hours before rushing in. We have another thirty-seven minutes,” he said checking his watch, “and then I’ll lead the charge!”

Hank and Bud started to jump forward but Tom warned them off.

“No! The last thing we want to do is appear aggressive. Someone give me a hand and I’ll stand back up.” Once he got to his feet and tensed—expecting there might be another rush—he had a thought.

“What if that was a way to test how we react?” he asked. “If I and we didn’t react with violence, perhaps they see that as a positive sign.

That no longer seemed the case when the entire group of cyborgs began coming in at them.

Tom and his team tried to dodge them for a few seconds until the inventor spotted something going on with their attackers. They were totally uncoordinated in their attack often bumping each other out of the way just before any collision with a human might occur.

In fact, three of them fell over as they all sought to get to Deke.

“Quick!” Tom yelled. “Through the hole and down the hall again!” He jumped over the pile of cyborg bodies and raced around the nearby corner with the other three on his heels.

But, seconds later they skidded to a halt. This was not the corridor they had come down before. It was not straight and had several angular bumps and what appeared to be branching hallways.

A second later they took off only slightly more cautiously. After two minutes they paused for a listen. None of them detected any sounds of pursuit.

“Okay,” Tom told them. “We stay on the move and I’ll try to direct us in the general directions we came. So, on down this corridor for at least three hundred feet and then see if there is anything heading to our right.”

The four of them set out at a jog. There was nothing visible in their three light beams—Tom had not attempted to retrieve his light from the far corner—nor anything behind them.

There was, however, a very dark upwardly-angled side corridor within what Tom believed must be a hundred feet of the one they came down through. With a quick point, he made the turn.

Even though they had escaped, and found an unoccupied corridor, none of the men had an idea in the world where to go. They were lost and it was not looking like they'd find a magic door any time soon.

That was about the time Tom stumbled over a small piece of something sticking out of the current floor and lurched forward, smashing his faceplate into an oddly-angled, protruding corner. It shattered and huge pieces detached and fell to the ground!

CHAPTER 19 /
WHY DIDN'T YOU SAY SO?

TOM HEARD many times as he grew up that in the last split seconds of life, a person's entire existence (life) passed through their mind and you could see just about everything. The way he'd heard that made the young Tom believed the brain must be trying to do a memory dump, but lacked a repository for that, so it was all wasted brain power.

The inventor felt like he ought to be experiencing such things, unless he was already dead and too far past the "life in review" point. Certainly, there had been that minuscule period of time when his mind let forth with a very concussive swear word, but that passed. In a way, he was greatly disappointed when not much happened. Except for the fact he could still breathe. And move.

With nothing else to do other than feel sorry for himself, he opened his eyes and looked into the very curious face of Bud Barclay.

"Uh, skipper? You okay? It's just that you kinda don't have a front to your helmet anymore."

Tom nodded and lifted his right hand up to his face. His gloved fingers could reach right inside the helmet and touch his nose. He started to laugh.

"Okay. I'm a chump and never thought to test for the quality of the atmosphere once we got inside this place. I know there is a very sparse air outside and that we might be able to survive if we had a proper breathing apparatus, but in here…" and he trailed off. With a little sigh he reached both hands up to the helmet's neck, pushed the two release points, and twisted the thing thirty degrees. He lifted it up and set it on the ground.

It wasn't going to do him any good from this point moving forward.

"You might not to want to leave that, skipper," Hank suggested. "For one, and this goes back to book and TV science fiction, you should never leave your technology with an alien race. Then, there is the real plus for you… I just so happen to have a plastic samples bag that will be sufficient to get over the helmet and then seal around your neck. You should be able to get from an enclosed space to the ship once we find it."

The inventor took stock of his feelings at the moment. From a

momentary despair he was now seeing the possibilities. He nodded and gave the engineer his thanks.

The two men took the next three minutes to seal the almost clear plastic around the helmet. A little suit repair paste added around the inner rim let them press and seal the bag tightly around the neck and still allow for use of the release tabs.

"I'd suggest trying that for pressure," Hank stated, "but let's be honest. I'd rather not take the chance."

Tom grinned even though their status was not in their favor. "Right. Why chance a blowout down here. I can set the suit to give me air circ and only moderate internal pressure. I can likely balance that against the outside pressure so there will be no need to strain the plastic."

They pondered aloud—no radios were required as the others had raised their faceplates—on what to do next. Twice they stopped and listened. There had been a very distant scraping noise at one point, but it went away fairly quickly.

The decision was made to head up this current offshoot corridor and to try to keep to a reverse of the basic turns they had made earlier. With that in mind, and Tom stating out loud to them what the next five steps would be, they set out.

Red, Zimby and one of the ship's technicians suited up. The waiting period had just passed and even with their radio set to the highest possible power for the ship-to-suit communications, they had been able to raise nobody.

As the three men stood inside the airlock waiting for it to cycle between ship's air and the outer atmosphere, no words were being spoken.

But, once the door's green **OKAY** light came on, Red made a statement.

"We are going out with these eRifles set on the highest power. We have only a single mission and that is to get to Tom and the others and the absolute soonest is mandatory. If anything tries to hinder us, I will take a shot over the top of it while you two get a direct bead. If anything shoots back at me, you two hit it and hit it hard!"

Nobody argued.

They all knew their lives would not be the same had they not been hired to work for the Swifts, and possibly not for the better. Every man on the ship felt such a strong allegiance to Tom and

Damon they would do anything in their power to see that Tom and his team came to no harm… assuming they were currently okay and just had something blocking radio signals.

Red, the only of them to have any military command experience —Zimby had been a pilot but never in charge of people—stood to one side of the hatch when it slid to the side, He carefully peered around the corner and looked at their surroundings. Then, before he would allow the other two to step out of the shadows, he called up to the control room.

"What have you got on the monitors?"

There was a slight pause followed by, "We count about ninety of those robotic things all around us. But, they seem to have just turned around or to one side or the other and are on the move."

"Toward us or away?" It came out as more of a growl than the older man intended.

"All seem to be moving away, Red. In fact, more than half of them have disappeared down or up through those strange stairways or ramps or what have you. More are going out of sight."

"How long do you estimate before they are all gone?"

"Maybe half a minute? Maybe slightly less. I'll let you know when we are down to just a few."

"Fine. We are stepping out onto the cargo disk and hauling out three of the four-man Straddlers."

"Okay. You are just about… yes. You are clear. Nobody is visible and Jayston did a scan for their little heat signatures and can't spot one."

One minute later, and after shutting the hatch and setting the lock just in case, the trio of flying cycles lifted off and headed over the disc and toward the ground.

Just prior to setting down, one of the robotic objects came out of a doorway. Zimby reacted quickly aiming his Attractatron at it and picking it up. He lifted it and set it down on another platform before giving it a slight shove.

Whatever it was stumbled back, turned and raced out of sight.

"That ought to tell them we mean business," he said with great determination in his tone.

The three men lifted back off, turned to the left, and headed in the direction Tom and the others had taken.

* * * * *

With no hint of what was about to happen, a new side opening

appeared and at least a dozen of the cyborgs entered the corridor just a few yards in front of them. Turning and running was not going to happen as another group almost magically appeared behind them.

The Earth men were trapped.

Tom gave a small shake of his head on seeing Bud reach into his leg pocket to bring out the small eGun they all were carrying. Even with the attack back in the dead end room, the cyborgs had actually done nothing to harm the men. “Not now, flyboy. Pull the hand out slowly and let it drop, please.”

Bud grumbled, but he did as his friend asked.

“I wish there was something we could do to get them to just leave us alone!”

“Well,” and Tom actually chuckled a little, “think about how we might react if these cyborgs came to Earth. Think back on how we reacted to the Space Friends and their Master before, during and after we understood the reason for that visit. The only thing different is that we had a history with the Friends and a way to communicate with them.”

Deke spoke. “Do you think they just can’t hear the radio signals, or they don’t understand any language?”

As he was asking this Tom was watching the faces of the three or four closest to him. Almost like a dog listening to something they do not understand, but are definitely paying attention to, these beings’ heads and faces turned to one side or the other. He could see in their eyes something approaching intelligent curiosity. He held up a hand to stop the others talking.

All cyborg eyes turned to look at him.

“I believe they might not get the radio signals, but it sure looks like they are hearing us talk.” He looked at the closest face. “Do you hear us?” and he pointed to his own ears.

This caused a look of consternation to cross that being’s face. Slowly, it lifted its own upper appendages—what looked a little like arms, only they were not human arms—and moved them to either side of its head.

“Yes. That is right,” the inventor said softly. “Ears. Listening to my voice,” and now he pointed to his mouth followed by his neck.

This was not replicated by the cyborg, but the facial features relaxed a little.

Other cyborgs began crowding around the one Tom believed he was communicating with. If he listened closely, he believed he could

hear an almost ultrasonic noise the might be their “voices.”

Bud was muttering something to Deke when Tom softly hushed them. “Listen,” he directed.

When they did, all four of the men could hear the voices. They were not at all electronic-sounding and different tones could be discerned coming from different cyborgs. What nobody could see were movements by their mouths even though they definitely opened and closed them periodically.

Almost four minutes went by before the cyborg Tom was thinking of as their leader turned back to him.

As before in the distant room, it pointed to each of the humans and then at an angle Tom took to mean “above” or “sky” or just plain old “space.”

The inventor nodded. “Do you want us to just get out of here and leave you alone?”

Nearly two more minutes of side conversations took place before the leader repeated its hand motion. Then, and to Tom’s great surprise, it nodded.

“Are you getting through to it?” Hank asked.

“I believe we are coming to a small agreement on some hand signals,” Tom answered. To the cyborg, he nodded and then pointed to himself and the other three before pointing in the same direction as the cyborg had. He added another nod.

The cyborg nodded. Then, all the others began to move forward to tightly surround the Earth team.

Red’s trio made a wide sweep around the perimeter, such as it might be defined, around their landing point. On a few occasions faces or bodies of the strange planet’s beings were spotted at various angles to the plane of his orientation, that being the ship’s. It was enough to make the seasoned spaceman shake his head a few times.

“Damned confusing to see one head pop out right side up and another at ninety degrees and still more thirty to fifty degrees off that!”

Zimby agreed, but his current task was to try to get Tom or any of the others on the radio. Time and again he made a call only to have nothing returned. The radios featured filters that made static and hissing a thing of the past, but he wondered if any returned calls might be getting blocked. Or, filtered somehow.

It took a minute for him to reconfigure his radio, but he was quickly listening to what communications of a hundred years earlier

must have been like. Hissing filled the background with occasional pops he could not identify an origin for, a couple of things sounding like scratchings and a low background hum that may be covering up anything under a certain range. That was the first thing he reset the filters to take out.

He made call after call before setting other noises to be removed. Before too long, he was back to the totally-filtered state.

"Not getting any hint coming back in, Red," he admitted with a weary resignation.

"Okay," the leader informed his mall reconnaissance team, "we are going inside. Only twenty feet at first and no rushing ahead. Okay?"

Both other men agreed by nodding and over the suit radios.

"Fine. I take point," Saying this, Red stepped forward, but in a crouch. N*o use being a full sized idiotic target*, he told himself.

Zimby, first, and their tech, Jake also crouched and more scuttled in than walked. Curiously, they did not notice the increasing gravity until they were all standing again at their first stopping point.

"Is it actually getting more like Earth gravity in here?" Jake asked.

Red had to think a moment. Because he had experienced far more varying gravity situations than the young man he had to process his body's reaction.

"You know, I think you're right. Let's all just hope that it doesn't keep getting higher and higher and that Tom and the others got trapped by it. If they are, I have no idea how we are going to get past that to bring them back!"

They continued on pausing about every twenty to thirty feet and taking stock of their surroundings, the gravity, and looking for any signs of the locals coming after them.

When they came to the first odd twist and turn the first team had taken, Red got down on his knees and probed the area beyond it with his light.

"Well," he said standing and brushing off non-existing dust from his suit, "It makes a whack-a-doodle turn and if this were back home I'd say anyone stepping in there is likely to be given the old carnival fun house treatment with the floor falling out or turning over or stairs suddenly becoming a slide and zip! Down you go!."

"But, this isn't back home," Zimby opined.

"No. No it most certainly is not. So, stand by to catch my

shoulders if I suddenly seem to be falling." He stepped forward with the other two right behind him almost touching his suit. Red bent his right knee and twisted his ankle in almost the opposite direction before placing the foot of his suit on the surface. With a chuckle the others heard on their radios, he pulled the other leg in behind him and them poked his head back into the corridor, now partially upside down and turned so that he had to move his head around about sixty degrees to look at them. His face wore a big smile.

"Piece of cake. Come on in!"

Many of the cyborgs had moved away from Tom and the one he was trying to "talk" with. There was now a solid blockage in front of them and another behind, but they had nearly ten feet of open space

Hank, Bud and Deke had taken seats on the floor.

Twice, Tom had attempted to set his radio system to take the input from his microphone and process it so that very high sounds might be brought down into more human hearing range, and had partially succeeded.

"The thing is," he told his compatriots, "I really need a solid four or five hours in the electronics lab on the *Sky Queen* or back in my own labs at Enterprises to get this right."

For another hour Tom and the one Bud was considering to be the Chief Cyborg attempted hand signals and even verbal communications, but it was becoming evident both were frustrated at the lack of a common ground other than the pointing to the sky thing. And, nodding.

It was Bud who heard the faint sounds coming from his helmet radio hanging at his side. He slowly reached up to tap the TeleVoc disc stuck behind his ear. These were the only way to use that system as it would be impossible to activate one attached to any collar.

A grin spread across his face as he heard, "Repeat. It's Red with Zimby and Jake. We are standing inside the first entry where you disappeared. Can any of you hear this?"

"Answer," the flyer thought. "Red, it's Bud. Firstly, we are okay, just a little hemmed in by a bunch of these cyborgial lifeforms. Cyborgies… cyborders? Whatever. We have been trapped by a bunch of them in a hallway that is, if Tom's memory is correct, ought to be about two hundred feet behind that entry and maybe ninety feet down. Had to make about a dozen turns and flip-overs. Let me get the skipper's attention. Right now he is in some sort of conference with their leader."

Red wanted to explode at that news, but held his tongue. “Right,” he said with a slight grunt, “I’ll wait.”

Bud’s slight throat clearings did not get Tom’s attention for over a minute. When it did, the inventor turned slightly with an annoyed look on his face. That disappeared once he saw his friend pointing behind his own ear. Tom nodded but mouthed the words, “Three minutes.”

Bud got back to Red after the time delay. “I can’t say I understand a lot of what they are signing to each other, Red, just that it seems like these cyborgs do not want us here and are trying to suggest we get the heck off their planet. It appears they are negotiating for an escort for us, but don’t quote me on that.”

“We’re on the move, Bud. Let Tom know we could be there with just one more twist of this strange little stroll we’re taking, or we might be there in two hours. Just keep this line open and I’ll have Zimby home in on you as best he can.”

When Bud passed this info along, Tom had to stop to think how he was going to tell their hosts more of them were coming, and they were just as peaceful as he and his three companions were.

He took a stab at it.

First pointing at his own legs and then those of the others, he made a walking motion with his right index and middle finger. It did not seem to be rejected as a concept and so he moved the fingers from his elbow to his palm showing movement before they pointed up.

Tom tilted his head and nodded.

The cyborg also tilted its head, but did not immediately nod. He conversed with his fellow cyborgs half a minute before turning back to Tom. Although his upper limbs were not articulated like a human’s were, he tried to mimic the motions using his three finger-like ending points and then pointing up, then pointing to Tom, Bud, Hank and finally Deke before pointing back to the sky.

Now, he nodded.

Tom nodded. He could not be certain, but believed they were coming to some agreement on the next steps.

The deal seemed to be sealed so that when the chief cyborg informed his companions of what the apparent plan might be, many of them also nodded. Then, almost as a single being rather than a group, they stepped back giving the humans an area some thirty feet wide with an opening at the end where a branch off of the corridor headed to their right.

Tom told his friends they ought to be moving along now, as that is what was apparently desired.

The others warily took a few steps toward the opening. When there was no reaction, one way of the other, they all stepped inside, allowed the new floor to flip their orientation about one hundred fifty degrees and then started to climb the new inclined floor.

Tom stopped them ten minutes later when he detected a light coming from around a corner.

He reached up and tapped his TeleVoc disc. “Red Jones,” he silently intoned.

“Hey, skipper,” the man’s voice came back loud and clear. “Where the heck are you?”

“Well, if you are coming to a cross corridor that at least goes off to your right and are shining lights down from where you are, it would seem we are less than a hundred feet away.”

“Okay. We’re gonna flash our lights. See what you get.”

With a sense of relief that nearly overcame the missing men, the lights ahead of them blinked off and on five times.

The view of *Goliath* standing five hundred feet ahead of them as they climbed on the Straddlers made at least three of the men weep with the emotions they’d kept pent up.

And, if they thought the outside was a wonderful thing to see, they all were overcome with joy at getting inside. Tom had never thought the rather utilitarian furnishing and equipment was beautiful… until now.

He quickly shucked his useless helmet and headed for his small room to give his face, head and neck a good wipe down before getting on the radio back to home. As soon as he tried sending a message it hit him they had lost all outside communications off the planet once they had touched down.

He had to gasp when his father’s voice came in, a little weak, but there.

During the next ten minutes Tom detailed what they had gone through before describing their hosts.

“Did you get video of them?”

“Unless they have some sort of blocking ability, and I haven’t actually looked at the suit videos, then yes. And, if I might make a suggestion, they really do not wish to have outsiders come here. Not certain if I got the message through, but I promised them once we

leave, that will be it for Earth visitors. It apparently was to their liking.

"What news from you and Momsie and Enterprises, my wife and kids and all that?"

"All are doing well. We were worried a little when more than just a couple hours went past without a signal other than the automatic beacon you planted up there before heading down."

They spoke another few minutes before Tom asked to have the call transferred to Bashalli.

"Okay, but there is one thing you ought to know." Damon paused before telling Tom what he'd just been told by Harlan.

"Son? You will recall that missile that overflew us weeks back?"

"Sure. Gary told me they'd heard it was some home-made thing. What's the latest?"

"Well, and what is likely to be the final information about this, that missile was actually made by the same firm in Poland that make their military ones. It was an order by a person for whom they have nothing other than a shipping address. It came over here on a freighter, empty. Just the shell. And, because they weren't certain what it might be used for—even though the mystery person suggested it was to go on display in a aerospace museum—they made certain it could not be adapted for flight. Well, not controlled flight."

Tom thought about this news for twenty seconds. "So, we don't know who this person was?"

"No. But the State Department says they are going to be keeping a closer watch at what is coming in, and that factory has promised to never make another shell for anyone."

When the call ended, Tom told Bud and Hank about the lack of a final word on the who or the why of the near attack.

Hank was certain the flyer would explode with anger, but all Bud did was to ask why nobody over in New Hampshire had told the FBI they had seen anything.

Tom could only shrug.

CHAPTER 20 /
A RETURN TO NORMALITY, WHATEVER *THAT* IS?

TOM KNEW that taking off from the planet might present difficulties given the high gravity evident everywhere in the vicinity in space but not down on the actual surface. When they initially came in for a landing he'd called for a trial run. It made their landing a very tricky endeavor, and there was no evidence it would be different going the other direction.

"Did you want Zimby and me to take *Goliath* up to test to see if it works?" Bud asked. He was serious in his desire to avoid allowing friend to take chances with anything that could prove to be dangerous.

Tom was shaking his head. "No. And, before you quote line and verse of Dad's admonition regarding not letting little Tommy get a splinter if Bud can run his hands over the rough piece of wood instead, let me tell you a very good reason. If the ship can take off, I am not all that certain I would want to drop back down, take on the crew, and try a second time."

What he did not state was that if the ship could not lift off, they were all going to be stuck on Escher for whatever was to be the rest of their lives.

Hank, standing nearby, nodded his head and stared at Bud as if trying to dare him to contradict the inventor.

Bud gave up. If questioned about this once back at Enterprises, he could state that he *tried*. It was all he could really do these days. Of course, he could try bringing up the subject of Bashalli and the kids to see if he could get Tom to relent, but that was a card he could only play a few times and this didn't seem to be one of the best times to try it.

Packing up took less than a half hour; Tom had believed from the start it would not do any good to bring out a lot of the things they carried onboard. So, other than stowing the Straddlers and a few items they'd staged on the cargo disc, there was little to do.

The air had immediately proved to be breathable even if it had a slightly lower oxygen level. The temperatures so far had been tolerable if a little cold. Heavy jackets and thick socks had been enough to keep them comfortable for short trips outside the ship onto the cargo deck. It had only been because of all the other protection Tom and his team had fully suited up for their expedition.

And, the level of ambient light was, for reasons he still had to figure out, brighter than could normally be expected this far from the Sun.

That seemed to be the norm; everything they'd encountered was not to be expected.

The inventor insisted on being the final person to take the elevator from the lower level and enter the ship. Bud was waiting for him on the control level pretending to be looking out to the farthest point he might see on the monitors, but Tom caught his friend's gaze coming down to him as he reached about half way up the spiral staircase.

The two men who had been friends more than half their lives stood side-by-side, rested their forearms on the back of two of the seats.

"Interesting place," Bud said almost noncommittally. Tom could picture the flyer with an old wheat stalk dangling from his lips, staring out at a field of grain.

"It is that, Bud. It is something I think deserves a lot more study, but then again we might just leave it the heck alone. Those partial robotic beings came out, chased us all over the underground, captured us for a little until I think they figured we are not a danger to them, and then just stepped aside.

"Even though I think I came to some understanding with the leader of that group, I would say that tells me they sort of do not want to bother us and do not want us to bother them. Maybe we'll give them the courtesy. Speaking of which, let's get seated, make the final checks and go home."

Bud nodded. "Yeah. Even with the three times a day messages to Sandy and Sammy on the trip out, I'm getting homesick."

Bud suggested he get the electronic checks started while Tom gave a final look down and around the ship. He spotted nothing they needed to pack up to take away until it hit him they had not taken any samples for study.

"I have to go back down a minute," he explained as he stood. The flyer looked at him, and Tom explained about just picking up a couple samples of loose materials.

"What if they don't like that and come after you?"

The inventor stopped. "I've spotted something that I should be able to pick up and only be out of the lower elevator for thirty seconds. We've never seen any indication they can move all that fast. I should be fine."

Tom decided on only wearing a heavy jumpsuit and an air scrubber mask. He could likely do it just holding his breath if necessary.

"Why don't I come along and help?"

"Bud, honestly… I'll be okay. This is a step outside, reach down a couple times and scurry back. Time me if you must."

The trip down to the cargo disc went quickly as did his few steps to the hatch down and to the boarding elevator. Then, that trip was about as normal. Once at the bottom he waited before pressing the **OPEN** button.

"Bud? How do things look outside the elevator?"

"Appears that our new friends really do not wish to associate with us for now. You are clear, but I am holding you to that thirty-second estimate. Or, as I see it, *promise*!"

Tom opened the doors of the lower elevator and stepped out. Standing there, he glanced around before spotting three possibilities. The first one weighed nearly nothing even though it was the largest of the three. That was shoved into a leg pouch. Item two looked like something that had broken off one of the cyborgs… metallic and possibly machined. It weighed an enormous amount and Tom took the time to carry it back to set inside the elevator.

"You've hit the half-minute mark, skipper. Come in."

"Just grabbing the third item, Bud. Hang on… another ten." He smiled as he heard the flyer muttering the seconds as he counted down.

The third and smallest piece looked like a miscellaneous stone. It, too, was heavier than it ought to be. He picked it up, hefted it in his right hand, and turned for the elevator.

Once inside and the doors were closed, he called out to Bud. "Coming up now."

"With only twelve seconds passed on that extension of ten you asked for."

Zimby's voice came on the intercom. "Bud's headed down to change out of his heavy suit. You two might have a race to see who gets back here to take the main seat!"

Tom took a minute to transfer his three samples into a secure holding bin inside the lower part of the control spire before heading back through decontamination and the elevator up.

By the time he reached the upper level and the control room, Bud was walking across the room in his standard jumpsuit; he had quickly shucked his outer environmental suit in his small cabin

before climbing the stairs up.

As the inventor started to step toward the control seats he asked the flyer, “How the heck to you get out of your suit so fast? I mean, You were still suited when I headed down to collect some things and we were in constant communications until I got into the elevator to come up from the cargo disc. You could have only headed down to change as I came up in the elevator, according to Zim, and that was less than two minutes before I got here… and yet you are a minute ahead of me. I even got mostly out of my suit in the elevator up. So?”

Bud chuckled. “If a magician tells you how he gets out of the locked box he can get tossed out of the Magic Circle. Sorry, Tom, but my secret travels only with me.”

Tom turned to Zimby who was sitting at the monitor station now. The man looked over and shrugged. And, rolled his eyes mouthing, “Bud!”

Next, the inventor joined Bud at the master controls, starting his own checks as everyone prepared for the takeoff. He put his headset on and keyed the microphone.

“Tom to crew. I just wanted to tell you a couple things, ask you for cooperation on another thing, and to be completely honest with you all. For starters, the request is that nobody talks about this mystery planet. Dad has asked me to keep this a company top secret. We just can’t have any other nation trying to come out here, even with a probe. My belief is he is not going to even tell the President about this, and I have doubts even our favorite senator will hear much. It is *that* important to keep this a secret.

“Next, we have learned a lot about the first *completely* alien planet we have encountered. Even Wanderer, when it came though, had once been a typical planet; it was round, had held an atmosphere, and had a civilization at some time. This one, some of you are calling Escher—and I can agree with that—is so different and in practically every conceivable way that in my own mind I am classifying it as a different category of space object.”

He paused a moment before going on.

“As to the beings we met, and most of you did not meet them as closely as Bud, Hank, Deke and I did, I have to say the video and audio we have will be carefully studied, but that might be all we ever have of them. My supposition is you all had ample chance to see them on the ship’s monitors. That will be our last views; I intend to request there be no further visits to Escher.

“Finally, this takeoff might be rough. You will all recall how we had a bad time getting down safely. In looking back that was mostly

because we had no idea what to expect and did not prepare for the level of repelatron thrust we needed. And so, for this takeoff, I am hitting the full settings. It will be shoving us all into the couches and might exceed four Gs at some point. It will not be comfortable, but should last less than three minutes.

"If anybody wants to sleep through it, Doc Simpson outfitted us with those very effective sleeping pills some have already taken on other trips—even coming out on this one—that work in about four minutes. Just let me know. Nobody will think anything about choosing that. Heck, if I didn't need to be fully awake over here I would be tempted."

While he and Bud finished their checks and finished making the necessary settings, he waited for anybody to request the pills.

Nobody did.

As far as he could hear around them, there were no conversations mentioning them.

Tom gave the one-minute ready announcement while he took a final look at the power settings and output values. It was all at perfectly normal ranges including the emergency power pods sitting down above the main reactor and their repelatrons beneath the cargo disc.

"Ten seconds to go. All final comments come now…" and he waited for anybody to speak up. With nothing being said he turned to placing his wrists in the restraints both he and Bud had extended from the panels in front of them. Automatic cuffs swung up and clicked into place. Air bladders inflated to protect the skin but both men knew it would take nearly enough force to remove their hands as to pull them out of the safety embrace.

"3… 2… and *we're off*!"

Repelatrons made little noise, but the power equipment did.

A howl, louder than anyone had experienced within the ship, vibrated and resounded up from nothing to the point Tom wished he could get fingers up to insert into his ears.

The ship rose, a bit more slowly than he had expected, but rise it did. As *Goliath* got to about two hundred feet above the surface a shudder went through everything. He, and the rest of the crew, held their breaths, but it disappeared in about five seconds to be replaced by a sort of roaring noise. The ship continued to head into the purple and green sky, picking up a little speed, for another ninety seconds before the roar began to reduce. Then, over another quarter minute it dropped to what he later thought was merely a "dull roar" and the ship kept climbing higher and higher.

Once he believed they were escaping the gravitational pull of Escher, he verbally ordered the ship to release his wrists. They had now achieved enough speed at that point to exceed 2-Gs. With the *Goliath* continuing to accelerate, his hands slipped partially down from the control desk but he caught and stopped them before they could drop into this lap.

A glance to Bud showed the flyer flexing his hands and wrists before placing them, almost casually, back on the horizontal surface.

"How are you doing?" the flyer said from the side of his mouth.

"Actually, pretty good. Hang on…" and he keyed the mic again. "I need anyone who did *not* come through that unscathed to announce themselves. Even a small muscle tweak. Sound off, please."

One by one the crew of eight called over that they were fine. Or, had no troubles. Or, in one case, that he should have visited the bathroom before takeoff!

Thirteen minutes later Tom shut down the drives and spun the ship so the array of their most powerful cameras faced back toward Escher.

Of course, it wasn't there.

With its solar collectors unfurled and working to fill the power needs so the reactor and even the emergency pods could recover from their strain to get the ship heading for home, Tom and Bud turned the controls over to Hank and Zimby. They would be flying on only 40% of their main repelatron power for another two hours.

Tom realized he had a painful headache so he walked, as casually as he could, over to the small combination office and sick bay. When Slim Davis looked over, he mouthed, "Private call home."

Inside, he slid the door closed and opened the small medicines cabinet. He took a single pain reliever and washed it down with a packet of water.

After that he sat on the low chair, took a couple deep breaths to clear his thoughts and reached for the radio headset.

"Tom to Enterprises. We are back on the way home. Do you copy?"

Because of the near immediate nature of the radios he used, he was unsurprised to get a response in less than two seconds.

"Yes, skipper. It's Larry Moss. You are coming in clear and strong. How is the trip?"

“Good, Larry. I’ll tell you about it once we get back. Or, Mike Jayston will. Can you connect me with my father?”

“Hang on…” It took about a minute giving Tom the chance to check the ship’s chronometer and to realize it was after eight in the evening back in Shopton.

Two clicks told him the call was being routed to a telephone.

“Is that you, Tom?” Damon’s voice came over the radio.

“Yeah. Mission over and I have a lot to tell you about once we get home. Most good and all of it interesting.”

“And, I will await that. On your way home, can you be thinking of some way to use all those great materials *Sutter* brought home? In addition to the big three I am certain you recall, they brought back seven tons of Mercury and another two tons of Bismuth.”

Thinking of the several variations in the appearance of the latter element, Tom asked, “What does it look like?”

“Like a rainbow of about nine colors, Son. It is beautiful. Oh, and I have a quick story about Dan Perkins. Seems he was hired by an unknown person in DC to spy on us as early as when you had *Goliath* here to take the *Skimmer* up the first time. He turned everything he had including photos over to Harlan and that mystery man was arrested yesterday!”

They spoke for three more minutes regarding some of the potential customers and uses for the other materials brought back, and the older Swift said he wanted them to consider one additional trip using the *Sutter* to see if they might find a few other things.

“I need you to hold a few seconds, Son, Hang on…”

Two seconds passed before Bashalli’s voice came on.

“Tom? I love you! Are you coming home? Are you okay? When will you be home? Can I call Sandy and tell her Bud is okay?”

With a laugh, Tom asked her to slow down. “Take a breath, Bash. We are all well and on our way home; with the position of Earth and our position and course it will take nine days at top speed, but we are all bushed and I might call for a full day of coasting in the middle to let us all recover. You wouldn’t want me to pass out while giving you a big hug and a kiss. Right?”

“No. Of course not; I just want you home so I can hold you and kiss you and the kids are always asking where you are. Even Bart, and he knows where you have gone! Come home?”

She sounded as if she was slowing down, so he told her how much he loved her and promised to call again the next morning.

"Give Sandy a heads up, but Bud will be calling her in the next hour or so."

As the call was cut, he realized he no longer had any headache. Either Doc's pills had worked their miracle, or the sound of his wife's voice did the trick.

He believed it was Bashalli.

* * * * *

Tom looked over the evening edition of the *New York Times* at his wife. Bashalli was sitting in her favorite position next to him on the sofa crocheting a fancy collar for a dress she'd found for little Anne. Sensing his gaze she looked up and smiled.

"Why are you staring at me?" she asked with a cheery voice.

"Mostly because I like the sight of you, Bash. But, also because I am trying to figure out if I ought to hang up my sense of adventure and take dad up on his suggestion I start easing into the more day to day operations of the company. He says I have more of an obligation with you and the kids, and especially since Amanda had to move back to Nevada to care for her mother. I think he's possibly right."

Bashalli frowned. "While I would truly love to have you here to come home each and every night right at five or six, I feel that you may not be totally ready for that. And, with even Anne now turning three and able to help get herself dressed and is potty trained, it isn't a lot of hard work except for getting the three of them up in the morning. I sort of wish Bart didn't take after his Aunt Sandy so much that he prefers to stay up late and sleep in." With a shrug, she returned to her needlework.

Tom sat deep in thought. On the one hand he had a great number of wonderful adventures in his past he could fondly think back on—very much now including the recent trip to Escher—or wonder how he ever survived a few of them! On the other hand he did love the sense of the chase. This last trip had given both his mind and his perceptions of the universe a real shake-up.

He wasn't so sure he minded that in the end.

He might have a talk with his father the next day or even the one after that. First, he wanted to plan the trip back to the Moon to retrieve the old Soviet space capsule, and then, tomorrow was Sandy Swift-Barclay's thirty-second birthday and he believed she might want an "all attention is on Sandy" day.

Then again… you never could tell about Sandy… At least Tom never could!

<•>—< End of Story >—<•>

This has been book 32 in the ***New TOM SWIFT Invention Series***.
Read them all, and then read them again:

{1} TOM SWIFT and His EvirOzone Revivicator
{2} TOM SWIFT and His QuieTurbine SkyLiner
{3} TOM SWIFT and the Transcontinental BulleTrain
{4} TOM SWIFT and His Oceanic SubLiminator
{5} TOM SWIFT and His Cyclonic Eradicator
{6} TOM SWIFT: Galactic Ambassador
{7} TOM SWIFT and the Paradox Planet
{8} TOM SWIFT and the Galaxy Ghosts
{9} TOM SWIFT and His Martian TerraVironment
{10} TOM SWIFT and His Tectonic Interrupter
{11} TOM SWIFT and the AntiInferno Suppressor
{12} TOM SWIFT and the High Space L-Evator
{13} TOM SWIFT and the IntraEarth Invaders
{14} TOM SWIFT and the Coupe of Invisibility
{15} TOM SWIFT and the Yesterday Machine
{16} TOM SWIFT and the Reconstructed Planet
{17} TOM SWIFT and His NanoSurgery Brigade
{18} TOM SWIFT and His ThermoIon Jetpack
{19} TOM SWIFT and the Atlantean HydroWay
{20} TOM SWIFT and the Electricity Vampires
{21} TOM SWIFT and the Solar Chaser
{22} TOM SWIFT and His SeaSpace HydroFarm
{23} TOM SWIFT and the Martian Moon Re-placement
{24} TOM SWIFT and the Venusian InvulnoSuit
{25} TOM SWIFT and the HoverCity
{26} TOM SWIFT and the SubNeptunian Circumnavigation
{27} TOM SWIFT and the Marianas AquaNoids
{28} TOM SWIFT and the Starless Planet
{29} TOM SWIFT and His HyperSonic SpacePlane
{30} TOM SWIFT and His Space Friends Return
{31} TOM SWIFT and His Antimatter PowerGrid
{32} TOM SWIFT and the Chaos Planet
{33} TOM SWIFT and the Sonic RacingCopter (coming late 2021)

Will there be more? As the saying goes, watch this space. Well, not *this* space, but you get the idea...