

TOM CORBETT

SPACE CADET

THE ROBOT ROCKET

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A Tom Corbett Space Cadet Adventure

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Chapter 1

"Hey, Fellas!"

Space Cadet Roger Manning raced down the hall of the dormitory building at Space Academy, U.S.A., pursuing his two unit mates of the Polaris crew.

"What's up, Roger?" asked Tom Corbett, the curly-haired command cadet of the unit.

"Yeah, hot-shot," growled Astro, the giant Venusian power jockey, "what are you fusing your tubes about?"

The blond astrogator stopped beside them. "We don't have to worry about fixing up the dormitory room for Captain Strong's party," he announced proudly.

"We don't?" asked Tom, throwing a puzzled glance at Astro. "Why not?"

"Because," replied Roger idly, brushing his nails on his blue Senior Cadet tunic, "I have just made a deal with the Capella unit for their Earthworms to do it for us."

"A deal?" asked Tom. "What kind of deal?"

"I don't like this," growled Astro. "Any time Manning gets involved in a deal, I always end up on the losing end! All right, Manning, let's have it."

"It's simple, my Venusian bird-brained friend," Roger explained. "Tony Richards wanted to borrow my celestial tables-the ones I sent to New Chicago for-that cost me forty-three credits--"

"So?" asked Tom suspiciously.

"His Earthworm cadets are loaded with demerits," Roger continued. "So I lent Tony my tables and he lent me his cadets. We can sit around this afternoon while they do our work for us."

"And what is all this going to cost us?" asked the burly Venusian.

"Wait a minute, Astro." Tom stepped between the two cadets. "I don't think that's right, Roger."

This is our party for Captain Strong."

"I know it. So what?" demanded Roger.

"I don't think it's right to have someone else come in and do all the work."

"I agree," Astro added. "This is a surprise party to celebrate Captain Strong's fifteenth anniversary in the Solar Guard. We're throwing it because we like him. He means something special to us. So we should be happy to set it up all by ourselves."

"Now wait a minute!" exclaimed Roger. "I like Captain Strong as much as you do-but this is work!"

Tom suppressed a smile. He knew full well his unit mate's reluctance to do anything that involved physical exertion.

"If you don't want to help," he said, winking at Astro, "you don't have to."

"I didn't say I wouldn't help," Roger protested. "I just thought you guys would appreciate what I was doing for you. After all, you reap the

benefits too."

"Thanks, Roger," said Tom dryly. "But I'll just go ahead as we planned."

"But I already lent Tony the book of tables!" Roger wailed.

"That's too bad, Manning." Astro laughed. "I feel sorry for you. I really do. I could almost fall down on my little hands and knees and cry."

At that moment three boys in the green uniforms of the first-year cadets appeared at the far end of the hall and marched with precision toward Tom, Roger, and Astro.

"Here come the Earthworms now," whispered Tom. "Better send them back, Roger."

"Not before I have some fun with them," replied the blond-haired cadet. "I'm going to get something out of this deal!"

"Nothing doing, Roger," said Tom, taking him by the shoulder and turning him away.

"The Capella unit gives them enough rocket wash without you putting in your two cents."

"Yeah, come on, Roger. We have work to do," said Astro, grasping his unit mate by the front of his tunic. As easily as if he were lifting a bag of feathers, he hoisted Roger into the air and swung him into their dormitory room.

The three cadets came to a stop before Tom and snapped to attention. "Earthworms Monte, Coffin, and Mooney of the Capella unit reporting to Cadet Corbett as ordered, sir."

"At ease," Tom replied. "Take off. Roger decided he wouldn't need you after all."

"You mean it, Tom?" asked Monte incredulously. "You're not kidding us, are you?"

Tom shook his head. "No, this is official. Take off with Roger's blessings."

Without another word, the three Earthworms turned and raced down the corridor. Tom grinned and slowly stepped toward the dormitory room. He was greeted by the sound of Roger's outraged protests.

"Lemme go! Put me down, you excuse for humanity!"

Tom sighed and shook his head. Separating Astro and Roger in their endless quarrels had irritated him in the beginning of their association. But through the long months of their school life, he had become resigned to it and now accepted it with a weary indifference.

When he entered the room, he was not surprised to find Roger on top of the lockers, a good ten feet off the floor. Astro stood below him, legs apart, hands on hips, grinning triumphantly.

"Take him down, Astro," Tom said with a sigh. "We've got work to do."

Obediently Astro reached up and hauled Roger down, setting him on his feet easily.

Roger spun around angrily, ready to resume the fight, but Tom stepped in front of him quickly.

"Save it, Roger. Put that energy into getting these bunks moved around. I'll start stringing up the colored paper."

Roger growled and Astro grinned, but both of them went to work with vigor. Out of the corner of his eye, Tom watched them working together and felt a surge of pride. It wasn't every unit in the Academy that could boast having the best power-deck cadet and the best astrogator cadet. While he himself was happy to be the pilot and command cadet of the unit, he realized that without their solid support his efforts wouldn't be nearly as successful as they had been.

Soon the room was crisscrossed with strips of gaily colored paper, and the furniture had been rearranged to make space for the table they were borrowing from the messroom.

Then, while Astro was getting the table and Roger went for the ice cream, fruit juices, and a special cake brought all the way from Atom City by special messenger, Tom stripped a sheet from one of the beds for a tablecloth and dug out the forks and cups hoarded for days in anticipation of this event.

With nothing more to do until Astro returned with the table, Tom moved to the window and stared down on his favorite scene—the grassy, brilliant green quadrangle that was the hub, the center of the Academy. All around it the magnificent buildings of pure, clear Titan crystal picked up the rays of the afternoon sun and reflected them in many colors on the slidewalks that crisscrossed the campus, carrying the hundreds of cadets to all parts of the Academy. His glance wandered over to the greatest sight at Space Academy, the Tower of Galileo, and his eyes clouded with sudden emotion. To him, the magnificent tower was the symbol of this year, 2356, the age of the conquest of space. Now, after centuries of life on earth, men had broken the chains binding them to the mother planet. There were outposts of spacemen on the satellites of Alpha Centauri, and the colonies on Ganymede and Titan rivaled the largest cities of Earth, Venus, and Mars, the three planets of the Solar Alliance.

The Tower was also a personal symbol to Tom. It represented a whole new life. The day that he first saw it, he changed from a carefree boy with no responsibilities to a serious young man, destined to become one of the few who would shape men's future in space.

Tom smiled as he remembered his first days and weeks at Space Academy and the efforts to adjust to his unit mates, Roger and Astro. It had been rough. Although a brilliant boy, Roger had at first insisted on independence. He was a lone wolf and had resisted the unit system of training at the Academy. Astro, on the other hand, while the most ingenious power jockey in space, having cut his teeth on reactors of spaceships in the merchant fleet as an enlisted spaceman, was unable to grasp theoretical knowledge. More than once, Tom had seen him absolutely confounded when a problem on atomic motors was presented as a question on an examination paper. And yet Astro could take those same motors apart and put them together again blindfolded.

The greatest problem in those first weeks was learning to work together as a unit.

Captain Steve Strong, their unit commander, had recognized their potentialities and had worked with them, driving them, threatening them, consoling them, until now they were considered the finest unit in the Academy. That was the reason for the celebration. Captain Strong would be passing his fifteen years as Solar Guard officer today, and he, more than any other single factor, had been responsible for the success of the Polaris unit. The party was small, but the gratitude and the deep feeling of respect behind it great.

"Take a look at this cake!" yelled Roger, entering the room laden with packages and boxes. The cake was white, with a miniature

spaceship on top, and the inscription read: "Congratulations... 15 Years... Tom, Roger, Astro."

Astro burst in a moment later carrying the table. "Hurry up!" he hissed. "I just saw Captain Strong coming up the slidestairs!"

They quickly spread the cloth and placed the plates, cups, and forks.

Astro's eyes bulged at the sight of the cake. "Take your eyes off that, Astro," said Roger. "It's for Captain Strong."

"But he can't eat it all!" said Astro happily.

"Shh!" said Tom. "Here he comes!"

They heard footsteps on the corridor floor outside, and the door opened. Steve Strong, resplendent in his black-and-gold Solar Guard officer's uniform, stepped into the room.

"CONGRATULATIONS!" the cadets roared in unison as Strong stopped in obvious surprise.

He could hardly fight back the mist in his eyes at the sight of the table and the decorations.

"Thank you," he said quietly, with feeling. "It's the nicest surprise I've ever had."

"Let's eat!"

yelled Astro, notorious for his gargantuan appetite.

Tom and Roger had been touched by the emotion displayed by Strong, but Astro's emphatic and direct approach made them laugh.

"What's so funny?" growled the young giant. "That stuff's here to eat, not to look at."

"Just a minute," said Strong. He stepped aside and for the first time the three cadets saw that there was a fifth person in the room. "I want to introduce you to Cadet T. J. Thistle of Mars Academy. He will be attached to your unit for a while as an exchange cadet. We plan to send a cadet to Mars in his place."

The three boys stared at the new cadet. He was as small as Astro was big. Slim, and about five-two, he looked more like a prep school student than a full-fledged Senior Space Cadet.

The Polaris unit greeted him soberly. They resented having an outsider at their party, but since Captain Strong had brought him, there wasn't anything they could do about it.

"Glad to have you aboard, Thistle," said Tom, stepping forward to shake hands.

The small cadet returned the handclasp lightly and then looked around the room. "Well, a party!" he chirped in a high-pitched voice. "I can't think of a better way to get to know you guys!"

Roger and Astro shook hands and looked him over carefully.

"Thistle is a radar, astrogation, and communications wizard," said Strong. "He was the best they had at Mars."

The word wizard exploded in the air like a small atom bomb. Astro and Tom glanced at each other and winced. They knew what was coming. It was a challenge Roger Manning would not let pass without an argument. Already his eyes were dancing with delight.

"Well, a wizard, eh?" asked Roger, stepping right up to Thistle and

towering over him. "I never met a wizard before," he added caustically.

"Oh, no?" replied Thistle innocently. "Well, then, let me be the first one introduced to you.

T. J. Thistle, at your service!" He looked at Captain Strong. "Shall we eat, sir?"

As Manning's face suddenly reddened, Tom and Astro turned away quickly to hide their smiles.

Roger Manning had apparently met his match.

Chapter 2

"Boy! Is Roger burned up!"

Tom laughed as he carried his space bag to the door of the dormitory room. The Polaris unit had been ordered out on a routine patrol, with T. J. Thistle along as an observer.

"Never have I seen him so dead set on showing anyone up," Tom continued. "You know what he's going to do on that patrol today?"

"What?" asked Astro as he finished packing his space bag.

Tom grinned. "He's going to ask Thistle to take over the radar bridge," Tom said. "He's going to instruct him-get that, instruct him-on the finer points of astrogation."

His bag closed, Astro turned and looked at Tom. "So?"

"Don't you get it? As soon as Thistle makes a wrong move, Roger will be all over him."

Astro nodded. "From some of the remarks Thistle made at the party yesterday, this is going to be the battle of the century," he said. "Do me a favor and leave the intercom key open so I can hear everything."

The cadets picked up their bags and strolled toward the slidestairs. "We're to meet Roger and Thistle at the spaceport," Tom announced as they stepped on the moving duraplast stairway that would take them down to the main level of the dormitory building.

"What are the orders?" asked Astro.

"I haven't picked them up yet," Tom replied. "We'll get them at traffic control, but it's just routine. Out to the asteroid belt and back," Tom added over his shoulder."

"Routine?" Astro grinned. "I can remember the day when a trip out to the asteroid belt was like a deep-space hop."

Tom nodded. "You can say that again, spaceman."

On the main level they waited in line before the sergeant-at-arms desk to sign out. Chief Warrant Officer Mike McKenny sat behind the desk like a well-fed, satisfied bulldog. But no cadet in the Academy was ever fooled by his seemingly complacent appearance.

Spaceman McKenny had the reputation of being as harsh as any unit commander. When Tom and Astro stopped before him, McKenny grinned. "Well, the Polaris unit has a Martian visitor, I hear," he said in his familiar foghorn voice.

"Yes, we have, Mike," Tom replied. "And from the looks of him, he's going to give Manning a hard time on the radar bridge."

"From what I hear," drawled a voice in back of them, "Thistle is the hottest astrogator to hit the Academy in the last twenty years!"

As one, Tom and Astro spun around to challenge the attack on Roger. They came face to face with Tony Richards, the command cadet of the Capella crew, consistent rivals for Academy honors.

"I'll bet six desserts," said Astro, glancing at Richards, "that Manning can astrogate rings around that Martian monkey."

"Still sticking together, eh?" commented the Capella cadet. "You'd think that there wasn't another crew in the Academy but you."

Astro grinned and pointed to the trophy case at the other side of the huge lobby, where most of the trophies for inter-unit athletic competition bore the name Polaris.

"There's your answer," the burly cadet said. "I still bet six desserts, and on top of that I'm giving two-to-one odds."

"I'll take that!" retorted Richards. "Two-to-one!"

"But that doesn't include Sunday's dessert," Astro quickly amended.

"Not the ice cream and pie."

Tom laughed and tugged at Astro's arm. "Come on," he said. "We've got to hit the blue!"

With a parting wave to Tony Richards, they left the dormitory building and jumped on the slidewalk, rolling smoothly past the door. Wide belts of plastic that moved on underground rollers, the slidewalks crisscrossed the Academy, whisking cadets and officers silently and efficiently to all parts of the huge installation. The moving walks were crowded with spacemen dressed in the various colored uniforms of the Solar Guard; the red of the enlisted Solar Guard, black and gold of the Solar Guard officers, green of the Earthworm cadets, and the deep blue of the Senior Cadets. Shifting to an express walk at a junction point, Tom and Astro were being carried along toward the Academy spaceport at a fast clip, when Tom finally turned to Astro and broke the silence. "Feels good, doesn't it?" he said.

"What does?" asked Astro.

"Being a Space Cadet about to blast off."

Astro grinned. "It sure does," he said. "Better than anything I can think of."

In a few minutes the two cadets were at the Academy spaceport, the largest landing field for spaceships in the entire Solar Alliance. Set in a low valley, surrounded by rolling hills, the spaceport was not only the main base for the fleet of rocket cruisers and space scouts used by the cadets in their training hops, but had a special section devoted to commercial traffic. Tom and Astro hurried through the busy administration area to the control tower where air traffic was handled. While Astro waited outside, Tom signed the log and then went to get their orders.

The office of the traffic dispatcher was high above the field and afforded a view of the whole spaceport. Tom automatically searched out the gleaming hull of the Polaris when he entered and did not notice Captain Strong standing at the desk.

Captain Strong winked at the dispatch officer who stepped up to Tom. "Can I help you, Cadet?" he asked.

Tom came to attention and saluted. "Cadet Corbett, Polaris unit, requesting flight orders, sir,"

he said briskly, and then suddenly noticing Strong, flushed and grinned sheepishly. "Sorry, sir," he added.

"That's all right, Corbett," Strong replied. "The sight of a spaceship is always distracting." The Solar Guard captain held out a sheaf of papers. "I already have the orders," he continued. "I'm going to make this hop with you."

"Swell, sir," said Tom. But the question in his eyes was plain.

Strong smiled. "I was just telling Captain Smathers here about the space storm that seems to be brewing between Thistle and Manning," he said. "I think I'd better come along."

"Glad to have you aboard, sir," Tom said.

"Let's go!"

Outside the control office, Tom and Captain Strong joined Astro and got into a jet car.

Shooting across the concrete surface of the spaceport at a speed that made Astro turn pale, they reached the air lock of the Polaris and climbed into it.

"We blast off in ten minutes, Tom," Strong said. "Order all stations to stand by."

"Aye, aye, sir," Tom replied.

Leaving Astro on the power deck and Strong in the officer's cabin, Tom scampered up the final ladder to the control deck and immediately began preparations for blast-off.

Switching on the intercom, he cried: "Control deck to radar bridge! Check in, Roger!"

"Radar bridge, aye," came an unfamiliar voice over the loud-speaker. "Manning is not here. This is Thistle."

"Where is Manning?" asked Tom, puzzled.

"He-er--"

"Yeow!"

An earsplitting yell suddenly crackled over the communicator and echoed through the ship.

Tom leaped to his feet and scrambled up the radar-bridge ladder. He burst through the hatch and into the astrogator's compartment barely ahead of Captain Strong and Astro, who had also come running when they heard the agonized cry. They all stood aghast at the sight before them.

Thistle was standing to one side, an innocent grin on his face, watching Roger hop around the deck, scratching, wriggling, and squirming in a seemingly uncontrollable frenzy. Tom glanced at Strong, who bellowed at the top of his voice: "Stand to!"

Thistle snapped to attention immediately, but Roger was unable to stand still.

"What's the meaning of this?" demanded Strong.

"That creep!" gasped Roger, scratching his chest, then his arm, then his leg in rapid succession.

"That Martian monkey. He-he..." Roger stopped and began stripping off his tunic. "He put ants in my astrogation chair!"

"Ants!" Strong turned to Thistle. "Is that true, Cadet Thistle?" he growled.

"Well, no, sir. Not exactly," replied the little cadet innocently.

"Then what exactly did you do?" demanded Strong.

By now, Roger had stripped down to his shorts and was picking the ants from his body and his clothes. Tom and Astro could hardly repress their laughter as they helped him.

"I've been making a study of the structure of the society of ants, sir," announced Thistle with complete composure. "When I learned we

were going out to the asteroid belt, I figured I would have a lot of spare time and could do a little research. Manning accidentally overturned the jar and-" He stopped and shrugged.

"I'll turn you over, you little space grub!" Roger cried.

"Stow that gaff!" roared Strong, and then turned back to the little cadet, frowning.

"Thistle, you should know better than to bring insects aboard a spaceship!"

"But, sir," protested Thistle, his face still a mask of innocence. "I thought I could--"

"I don't care what you think!" snapped Strong. "The space code says, and I quote: 'No spaceman, at any time, under any conditions whatsoever, shall bring aboard, or have brought aboard, or precipitate the bringing aboard of any animal life of any size or nature without the express permission of the commanding officer of that vessel,' unquote."

"Yes, sir. I know," Thistle replied, with a glance at Roger who was still digging the ants from the seams of his tunic. "But an insect isn't an animal, is it, sir?" he asked blandly.

"That's enough!" Strong roared.

"Yes, sir! Sorry, sir!"

By that time Tom had finished spraying the deck with a small insect bomb, and Astro was helping Roger back into his uniform.

"Don't let anything like this happen again," Strong said sharply, then he checked his watch. "All hands to stations," he announced. "Stand

by to raise ship."

"Could you wait a minute until I get squared away, sir?" asked Roger, struggling into his trousers.

"No time, Roger. We have our blast-off time and orbit scheduled. Thistle will raise ship."

As Thistle whistled lightly and turned his attention to the huge astrogation panel, Roger's face clouded over and he continued dressing silently.

Tom, Astro, and Strong trooped off the bridge without another word. But when they reached the control deck, they burst into laughter.

"I won't say that Thistle let those ants loose on purpose"-Astro chuckled-"but he's way ahead so far."

Tom grinned in agreement. "I just hope this practical joking doesn't go too far," he said.

"It had better not," Strong said firmly. "Fun is fun, but out in space, where the slightest mistake can cost a man's life, it ceases to be funny. Take your stations!"

"Aye, aye, sir!" Tom replied.

As Astro hurried below to the power deck, and Strong strapped into an acceleration chair, Tom took his place at the control panel and began the routine of adjusting the dozens of dials and switches in preparation for blast-off. He flipped on the intercom and called: "Control deck to all stations, check in!"

"Power deck, aye!" Astro's voice crackled over the intercom. "Ready for blast-off."

"Radar bridge, aye!" replied Thistle. "Ready to raise ship!"

Tom turned his attention to the astral chronometer and watched the sweeping red second hand move around the face of the clock. When it touched thirty, he called again: "Energize the cooling pumps!"

On the power deck below, Astro threw the switch that started the mighty pumps and a faint whine could be heard throughout the whole ship.

"Cooling pumps in operation!" Astro announced over the intercom.

"Your orbit and course set, Thistle?" asked Tom.

"Yeah, it's set!" growled Roger in reply.

Tom grinned. "Feed reactant!" he called.

Another sound, heavier and deeper pitched, blended with the whine of the pumps.

"Reactant feeding at D-9 rate!" Astro shouted.

The huge ship began to tremble under the tremendous pressure of the pumps and feeders.

Tom's eyes were glued to the astral chronometer.

"Stand by to raise ship!" he called. "Blast off minus five, four, three, two, one-zero!"

He slammed home the main circuit switch. The ship trembled violently for a few seconds and then slowly rose from the face of the earth. It began picking up speed, accelerating at better than seven

miles per minute, hurtling spaceward into the new frontiers of mankind, the ever-expanding universe!

Chapter 3

"Asteroid belt dead ahead!"

Tom Corbett's voice rang over the spaceship's intercom. "Cut power to one-quarter thrust!" he ordered as he slammed the master control lever home. Then, putting the giant ship on automatic pilot, he picked up the intercom again. "Corbett to Captain Strong!" he called. "We've arrived, sir. Any special orders?"

"What's your position?" Strong asked.

"Quadrant seven, chart B, sector seventeen," said the young cadet.

"Assemble the crew on the double," ordered Strong. "I'll be right up."

After summoning his unit mates, Tom paused and stared out of the viewport into the weird-looking spacecape of small, medium, and giant-sized pieces of space junk that made up the asteroid belt.

The asteroid belt lay between Mars and Jupiter and could have been, as many believed, another planet that had been broken into billions of smaller planetoids by the terrible power of nearby Jupiter's gravity. The belt, circling endlessly around the sun, was a constant danger to spaceships in transit between Europa and Ganymede, satellites of Jupiter, and also was the birthplace of the meteors that showered on Earth, Mars, and Luna.

Captain Strong and the three cadets arrived on the control deck simultaneously. Strong wasted no time with preliminaries. He faced them and pointed to the asteroid belt clearly seen through the viewport. "There's a maverick planetoid acting up in this sector. Something has happened to its atomic structure and the planetoid

has changed its nature from a positive-or attracting magnetism-to a negative or repelling magnetism. It's been drifting in an irregular orbit for about two weeks now, bumping into other asteroids, which in turn are wandering into the space lanes and endangering space traffic. Our job is to find the maverick and blast it out of existence."

Strong walked to the electronic astrogation chart blinking on the afterbulkhead. "Reports from three space freighters have placed the maverick in this general area here," he continued, pointing it out on the chart. "So Thistle and Roger will take jet boat number one, and Tom and Astro number two, and begin a wide search sweep. I'll stay on board the Polaris and plot your reports. Any questions?"

"Yes, sir," said Tom. "Is the maverick planetoid very large?"

"About a thousand yards in diameter," replied Strong.

"How will we get rid of it?" asked Astro.

"We'll use it for a little target practice," Strong answered with a grin. "I don't think you'll mind taking pot shots at it with the six-inch atomic blasters, will you?"

"Mind!" yowled Roger. "All I want is first crack at it."

"Why first?" asked Thistle innocently.

"Because Astro and Tom are better than I am," said Roger slyly but keeping a straight face. "I just want to make sure that I get at least one shot at it."

"Better than you!" gasped Astro. "Well, I'll be a Martian monkey! Since when have you ever thought that anyone else could be better than you in anything?"

Strong interrupted before Roger could answer. "Suppose you find it before you argue that point? Get moving!"

The four cadets saluted briskly and trooped out of the control deck. On the way down to the boat deck, Thistle eyed Roger curiously. While waiting in the air lock for Astro and Tom to blast off, he turned to the blond-haired cadet. "I want to apologize, Roger," he said, offering his hand, "about the ants, I mean."

"Forget it!" replied Roger matter-of-factly, shaking Thistle's hand. "A practical joke is-well-" He paused and shrugged. "It could happen to anybody."

"That's what I thought," muttered Thistle under his breath.

"What did you say?"

"I said that's a nice sportsmanlike thought," replied Thistle casually. "Come on. Tom and Astro are ready to blast off."

Thistle walked up to the hatch and stared through the small viewport, hiding a smile.

Being a practical joker himself, he could smell the possibility of one a mile off.

The two cadets remained in the air lock, just off the boat deck, while Astro and Tom completed their warm-up, and then sent the sleek little jet boat rocketing out of the open hatch.

When the outer hatch had closed again and air pressure had been equalized, Thistle entered the boat deck and climbed into their boat.

"I'll pilot," announced Roger.

"O.K.," replied Thistle casually.

"Ready?"

"All set."

Almost in one movement, Roger tripped the switch that opened the outer hatch and jammed the acceleration lever home, sending the jet boat shooting out of the Polaris under full throttle. Thistle was slammed back into his seat.

"What's the matter?" asked Roger innocently. "Too fast for you?"

"Oh, no, not at all," Thistle gulped.

Roger maneuvered the small craft with ease as they worked their way into the thick part of the asteroid belt. With Thistle checking out the search areas and relaying the information back to Strong over the audioceiver, Roger concentrated on avoiding the tiny silent world orbiting all around him.

They finished searching through three sectors and Thistle had begun to relax, thinking that perhaps he had been wrong about Roger, when they began to press further into the dense mass of asteroids. Roger bent over the controls, gripping the acceleration lever tensely, turning, rising, dropping, avoiding the space junk that would seemingly appear out of nowhere. A master of handling small craft, Roger began increasing the speed of the jet boat, sweeping in and around the circling bodies, sometimes coming within inches of colliding with them.

Beads of sweat popped out on Thistle's forehead. He choked and gulped, realizing that Roger was retaliating for the ant episode, but he would not admit to being afraid.

"I love to handle a jet boat in tight quarters," Roger said casually. "It's good practice for the reflexes."

"Yeah," Thistle gulped as they narrowly missed smashing into a huge, jagged asteroid as big as the Polaris.

"Yeah, it can be fun sometimes."

Roger reached over and flipped open the audioceiver key, and then looked at Thistle.

"Well, what do you know? The key jammed," he said. "We can't close the circuit now!"

Strong's voice filled the tiny cabin of the ship. "Anything wrong, Roger?"

"The circuit key of the audioceiver is jammed open, sir," answered Roger, grinning at Thistle.

"See anything yet?" asked Strong.

"Nothing, sir," said Roger.

"Keep searching," ordered Strong.

"Aye, aye, sir," said Roger, and pressed the acceleration lever all the way over.

The tiny craft leaped forward through the thick mass of asteroids. It was all Roger could do to keep the tiny craft from crashing. Thistle started to protest, then kept silent, staring at the open key. He knew that every word he said would be heard by Strong, Tom, and Astro.

He was sure that Roger had arranged for the key to be jammed in

some way. But he was determined not to say a word.

"We're moving into sector nine," Tom's voice was heard over the audioceiver as he reported back to Strong.

Thistle looked at his chart. They were in sector nine themselves. Avoiding asteroids was one thing, but to have another jet boat maneuvering around near them was something else.

"Don't you think you better slow down a bit, Roger?" asked Thistle in a hurried whisper.

"What did you say, Thistle?" bellowed Roger. "Did you say you wanted to slow down?"

Thistle's face turned red. "Yeah," he said grudgingly. "Slow down."

"Well," said Roger with a casual air, "if you're afraid of a little space junk, sure, I'll slow down."

"What's the trouble?" inquired Captain Strong.

"Nothing, sir," said Roger with a hint of triumph in his voice. "It seems that our Martian radar wizard is scared of a little speed!"

"How fast are you going, Manning?" demanded Strong. "If you're pulling one of your gags--"

"Roger, look out!" Thistle suddenly yelled, pointing through the viewport.

Dead ahead was a giant planetoid. Roger swerved in time, but then found himself heading straight for the other jet boat!

"Pull up, Roger! Pull up!" Astro's voice blasted over the audioceiver.

Roger pulled back on the control stick. It would not move. He grabbed the acceleration lever and reversed his rockets in a desperate attempt to brake their speed, but it was useless. The two jet boats were hurtling straight at each other.

At the last minute Tom's boat swerved, narrowly missing them, but even as Roger breathed a sigh of relief, Thistle grabbed him by the arm and spun him around to look through the rear viewport. Roger's face whitened in sudden horror. Tom and Astro had piled into the huge asteroid.

Strong's voice roared over the audioceiver demanding to know what the trouble was.

Thistle stammered out a reply as Roger slammed his tiny ship into a tight turn and headed back to the other jet boat, now drifting around in silent orbit just above the surface of the planetoid.

"Tom! Tom!" Roger shouted frantically into the intercom. "Can you hear me?"

"Yes," came Tom's weak reply. "We're O.K., but we're leaking oxygen. And we don't have space suits."

"I'll come alongside and take you off!" Roger called.

"No, Manning!" interrupted Strong on the audioceiver. "You've got to bring the boat back to the Polaris.

If you open the hatch, you'll kill Astro and Corbett!"

"But there's no way of getting a line or grappling hook on it, sir," said Roger. "You'll have to bring the Polaris in here!"

"Impossible!" replied Strong. "I couldn't find you. The radar scanner is useless. Every piece of space junk around you shows up as a blip. I can't tell which one is your ship!"

"We can 'con' you in here!" said Roger determinedly. "Just follow our orders."

"Your orders!" gasped Strong. Then, realizing that Roger was under extreme pressure and was unaware of his breach of military courtesy, he replied: "Very well, Manning. I'm on a course of zero-zero seven degrees, eighteen on the upgrade of the ecliptic. What are my orders?"

"What's the quadrant, Thistle?" asked Roger.

"Sector nine, chart C," replied the little cadet quickly, then pausing, his eyes closed, his lips moving rapidly, he suddenly called into the intercom: "Change your course three degrees starboard, one downgrade, and proceed for about ten thousand yards. Check?"

He glanced inquiringly at Roger, who had been doing the same thing: plotting a complicated astrogation problem in his head.

"Right!" nodded Roger.

"I'm under way," announced Strong. "Three starboard, one down, ten thousand!"

Standing off the crippled jet boat, watching Tom and Astro work frantically to plug leaks in their vacuumized cabin, T. J. Thistle and Roger Manning charted the progress of the Polaris in their minds. Without a single instrument and relying on nothing but their memory of the astrogation tables, the inborn sense of direction that made both of them outstanding astrogators, they maneuvered the huge rocket cruiser through the mass of space junk.

"Now drop three degrees on the ecliptic," Thistle called into the intercom. "Move ahead about four hundred yards, sir, and you'll be right over the other jet boat."

A moment later T.J. and Manning sighed with relief as Tom's voice roared over the loud-speaker:

"The Polaris is right over us!"

Even as Thistle and Roger turned to look, Captain Strong had dropped grappling lines with electromagnetic heads and had picked up the disabled jet boat to haul it safely aboard the cruiser.

Roger and Thistle blasted in after them. Once the outer hatch had been closed and the pressure of the boat deck brought up to normal, Strong rushed out of the air deck to meet them.

"This," exploded Strong, "is the most fantastic thing I've ever been through in my entire life!"

"It has to be fantastic if Manning is involved in it," said Tom with a good-natured grin at Roger. "Thanks, spaceman, for pulling me out of that one."

"Same here, Roger," said Astro.

"I don't want any credit," said Roger, unusually serious. "And I mean it. I take my hat off to the greatest astrogator in space, T. J. Thistle." He turned and offered his hand to the small cadet.

The little cadet shook his head. "You know, I heard about Roger Manning on Mars," he said.

"Every time my instructor wanted to emphasize a point he would

explain how Manning had done it. I thought it was a lot of space gas. But, spaceman, this guy is the greatest brain I've ever met!" He turned and grasped Roger's hand firmly.

"Now that the mutual admiration society has been called to order, do you think we could spend a little time looking for the maverick asteroid?" asked Strong with a grin.

"Yes, sir," said Tom. And then, with Astro and Strong, he turned to watch Roger Manning and T. J. Thistle walk off the boat with their arms around each other's shoulders.

One important problem seemed to have been solved.

Chapter 4

"I'm sorry, Steve, but the Polaris unit has to be broken up."

Commander Walters stood behind his desk and looked sympathetically at the young Solar Guard officer who had brought the Polaris crew through the toughest academic course in the Solar Alliance, turning green Earthworms to seasoned cadets.

"Commander," said Strong, his face white, "I would like to write a formal protest to this decision."

"You have my permission," said Walters. "In fact, I would not have expected anything less than a rousing argument from you over this decision. But I, Major Connel, and a majority of the Board of Regents for the Academy consider it a wise move."

"But you're breaking up the finest unit the Academy has ever had, sir," protested Strong.

"Sit down, Steve. I want you to understand that this action was not taken on the spur of the moment."

"I believe that, sir."

"We have only one thought in mind," continued the grizzled commander of Space Academy, "the constant improvement in teaching methods. Never forget, Steve, that Major Connel's replacement, my successor in years to come, and future members of the Solar Alliance Council will be drawn from men who are cadets today. We have to make sure that the leaders of the future are the very best we can turn out for the tough job that lies ahead."

We haven't even begun to touch the frontiers of outer space. We've only scratched the surface of what this universe holds for us. We have to make sure that the society we're building now will be in the hands of imaginative men trained for the job of leadership, and with an understanding of what the word progress means."

Strong sat slumped in the heavy chair. He could hardly find the courage to look at his superior officer. He knew that what Walters was saying was true. Even his short span of fifteen years as an officer in the Solar Guard and as a Space Cadet had been designed to make him a suitable part of the future of the Solar Alliance.

"It's not going to be easy to fit another cadet into that unit, sir," Strong said slowly.

"I know that," said Walters heavily. "But that's a problem I'm handing you."

Strong looked up quickly. "Me!"

Walters nodded gravely. "You, Steve," he said, and then lifted his hand quickly. "Now before you get on your rockets and start blasting-"

"Blasting!" roared Strong, forgetting for a moment that he was addressing his superior officer.

"Commander Walters, if you remember, you took me off your staff and made me unit instructor to the Polaris cadets because you thought they would make the finest unit the Academy has ever had."

"And you have made them into the finest," said Walters.

"Then why not let them remain a unit!" snapped Strong.

"Careful, Steve," said Walters. "I explained my reasons."

"Reasons!" exclaimed Strong. "Those three cadets think as much alike as any three human beings I have ever met in my life. If you take one of them out of the unit it would be like cutting off an arm- or a leg- or in this case, since Roger is the astrogator, putting out its eye!"

When Walters failed to reply, Strong edged forward in his chair and began to plead earnestly.

"Sir, individually, Tom, Roger, and Astro are perhaps the finest cadets we have had-and as a team, well, there just isn't any telling how much they can accomplish. But what will happen if you break up this team?"

Walters stirred restlessly under Strong's earnest stare, but the young officer continued.

"Have you considered the possibility that if you break up this unit by taking one cadet away you might lose all three? Those boys don't just have reactant fuel running through their veins! They have blood and feelings and emotions. I hesitate to say that they would quit the Cadet Corps, because the thought frightens me. But, sir, that is what your action can precipitate.

You are taking the gamble of losing all three. There isn't a commercial space line in operation now that wouldn't hire them on the spot! At ten times the money they could ever hope to make as Solar Guard officers!"

"That's enough, Steve!" rasped Walters. "The decision stands. It is only in consideration of the attachment you have for these cadets that I have allowed you to speak your mind so freely and openly, but there comes a time when objective decisions and opinions have to be

considered over personal feelings. And no one knows that better than you do."

"Very well, sir," said Strong, rising and coming to attention. "Then I hereby ask to be relieved of duty as instructor of the Polaris unit. I request assignment to line of duty."

Walters frowned. "Permission denied!" he barked, "You are the finest officer we have for this job and it would be senseless to assign anyone else."

"I may resign from the service, sir," said Strong coldly.

"Don't threaten me, Steve!"

"Do I have permission to leave, sir?" asked Strong tightly.

"Not until you give me your word that you will behave and act as an officer in the Solar Guard should act and behave."

"The commander cannot dictate my feelings."

"Your feelings are not important!" snapped Walters. "The only thing important here is the progress of the Solar Alliance!"

"Yes, sir."

"You will," said Walters, his voice heavy with authority, "go to the Polaris unit and inform them of this decision. Cadet Roger Manning is being taken out of the unit."

"I refuse, sir," said Strong, staring at the wall.

"You cannot refuse."

"I do, sir. I will not tell those cadets that they are being broken up after months and years of telling them how important it is to learn to live and work and depend on each other."

"Would you prefer the news to come via the grapevine?"

Strong hesitated. "No, sir," he replied softly.

Walters came around the desk and put his hand on the young captain's shoulder.

"Steve, I expected this fight from you," he said. "But try to understand, try to see what it will mean to Mars Academy to have someone like Roger Manning there. That boy is one of the finest astrogators I have ever seen. Keeping Tom and Astro and Roger together is just wasting good material. They have to be divided and their intelligence and talent for leadership spread around where it will do the most good."

"Yes, sir," said Strong, getting control of himself.

"Will you tell them?"

"Yes, sir. I will."

"And will you stick with them as a unit instructor to break in the new cadet?"

"Yes, sir. But I think it might be better if you let Tom and Astro select their new astrogator.

They're pretty hot spacemen, you know. There are a hundred cadets that would give their space boots to be a member of the Polaris unit."

"Roger's replacement has already been selected."

Strong looked at him. "Who, sir?"

"T. J. Thistle."

Strong looked up sharply. "Thistle!"

"That report of the personality conflict between Manning and Thistle, and the eventual outcome of the scrape in the asteroid belt, convinced Major Connel and the Reviewing Board that Thistle was the right man. Psychologically, he is perfect for them. He's the same type as Manning."

Strong relaxed a little. "It might not be so bad at that." He grinned at Commander Walters. "They already like him."

"Then it's settled," said Walters with a sigh of relief. "I'll have them assemble here in the office."

"Don't do that, sir. Let me tell them in my own way when the right time comes."

"When would that be?"

"Perhaps tonight-or tomorrow."

"Too late. Manning leaves for Mars tomorrow night. And we have a little surprise for him, tomorrow afternoon."

"Then in their dormitory, sir," said Strong.

Walters nodded. "I'll have them report to their quarters."

Strong came to attention and saluted. "Request permission to leave,

sir."

"Permission granted. And good luck, Steve."

Strong walked slowly out of the office and down the long corridor to the slidestairs. He descended to the ground floor of the Tower of Galileo, and stopping for a moment to light his pipe on the steps overlooking the grassy quadrangle, he continued to the slidewalk and stepped on the one heading in the general direction of the cadets' dormitory.

"Hiya, Steve!" a cheery voice greeted him. But Strong did not look up or acknowledge the call.

He puffed on his pipe thoughtfully as he glided across the quadrangle to the crowded plaza outside the cadets' dormitory, not conscious of the greetings of the cadets around him. He walked into the building where Warrant Officer Mike McKenny was eating out several cadets for some minor infractions.

"Yer nothin' but space bubs while yer wearin' the green uniforms! Ya hear that? When a senior cadet tells ya to do something ya do it, or yer backs will be busted scrubbin' pots an' pans in the galley! Now carry on!"

Strong smiled absently and walked to the slide-stairs. Riding up to the forty-second floor, he strolled down the corridor until he came to Room 42B. On a brass name plate on the door, in neatly lettered script, were the names of the occupants and the unit.

He opened the door gently and entered. The room was deserted. Walking around the room, he idly inspected the cadets' gear and glanced through their textbooks. He stared at the bench beside Roger's bunk, recalling that he had sat on that bench the first day he

met them, telling them that the most important thing in Space Academy was to look out for the other fellow as well as yourself.

He was standing at the window, gazing out over the Academy grounds and listening to the faraway roar of the jets at the spaceport, when the door burst open and Tom, Roger, and Astro tumbled into the room.

"You big galoot!" shouted Roger. "I'll cut you down to my size and then beat the stuffings out of you!"

He jumped on Astro from one side, while Tom leaped at him from the other. They all went down in a heap at Strong's feet, punching, grappling, wrestling, grunting, and laughing.

They were completely unaware of Strong's presence, and he waited until Astro was pinned to the floor before calling them to attention.

They were happy to see Strong, expecting another assignment aboard the Polaris.

"Where do we go this time?" asked Tom. "Roger is about to bust trying to prove a theory which he and Thistle worked out."

"You're not going anywhere, Tom," said Strong softly. "Sit down, all of you."

His somber tone dampened their gaiety, and as they found seats on the bunks, they eyed him curiously.

"I've got some pretty bad news for you," he said gently.

They looked at each other.

"How bad, sir?" asked Astro.

Strong took a deep breath. "I'll get it over with quickly," he said. "First I want you to know that I fought as hard as I could against these orders. But the decision stands, and you'll have to accept them."

"We've been grounded!" said Tom, voicing his idea of the worst thing that could happen.

"They're taking the Polaris away from us!" exclaimed Astro.

"No." Strong paused and looked at each of them slowly before he resumed, his voice hardly audible. "The unit has been broken up. Roger has been assigned to Mars Academy.

He leaves tomorrow afternoon."

Nothing in the whole universe could have stunned the three cadets more. For a long moment they sat stone-still and stared at him unbelievably. Finally Tom shook his head and stood up.

"Excuse me, sir, but I—" he stammered, and then turned toward the door, his eyes brimming with quick, hot tears. He ran from the room.

Astro stared at Roger dumfounded, tears streaming openly down his cheeks, his big shoulders quivering.

Roger Manning sat very still. His face showed no emotion, but his eyes were cold and blank.

Strong turned away. He stared out the window but could not see a thing.

Suddenly he heard a loud crash behind him. Turning quickly, he saw that Astro had shoved his fist through a one-inch-thick locker door. But Roger remained perfectly still.

The Polaris unit of Tom Corbett, Roger Manning, and Astro had made their last flight together.

Chapter 5

"At-ten-shun!

Fo'ard!

Harrrcchh!"

roared Chief Warrant Officer Mike McKenny, resplendent in his full-dress scarlet enlisted man's uniform. As drill officer of the Cadet Corps, he led the entire contingent of three thousand cadets in full-dress review before Roger Manning.

Thirty companies, consisting of a hundred cadets in each company, marched in methodical precision across the quadrangle, past the officers of the Solar Guard grouped on the stairs of the Tower of Galileo. Immediately in front of them, standing alone at rigid attention, Roger Manning accepted the honor of the review with not a thread of emotion or feeling.

"Eyes-Right!"

Mike's order snapped through the crisp air as the first company marched past. The Solar Alliance flag dipped in salute to the cadet selected to represent Space Academy, Earth, in an exchange of students with the Mars Academy, the first step toward integration of the two great schools.

At the precise moment that the colors were dipped, the Academy band began to play and more than three thousand voices sang the one song that meant more to a spaceman than any other.

From the rocket fields of the Academy To the far-flung stars of outer

space, We're Space Cadets training to be ready for dangers we may face.

Up in the sky, rocketing past, Higher than high, faster than fast, Out into space, into the sun, Look at her go when we give her the gun!

As the full chorus echoed over the quadrangle, the companies paraded past Roger and marched to their stations opposite the Tower and came to rest.

Tom Corbett, Astro, and Captain Strong had been honored by being placed just to the rear of Roger as he took the review. Unashamed tears were streaming down the boys' faces. Neither of them could imagine what it would be like to fly without Roger, but at the same time they were proud that he had been selected over all other cadets for the signal honor.

The review was over finally and all the companies were standing at parade rest on their side of the quadrangle.

Mike McKenny stepped forward briskly and marched with the color guard toward Roger.

Then, while the band played "Stars Afield" softly in the background, the Solar Alliance flag was stripped from the pole and folded with precision and care. Mike snapped to attention and addressed himself to Commander Walters.

"Sir," he roared, "request permission to present Cadet Manning with the colors!"

"Permission granted!" replied Walters.

Mike took three steps forward and extended the folded flag to Roger, who, without batting an eyelash, accepted it. Mike snapped a salute,

took three steps back, and received a salute from Roger in return.

Mike made an about-face. His arms at his sides like ramrods, his jaw thrust forward, he barked commands to the cadets of the color guards.

"Guard! Ready!"

The dozen cadets pulled the heat-blaster rifles from their shoulders and brought them forward.

"Aim!"

The guns were placed on their shoulders and aimed into the sky.

"Fire!"

A dozen shots crackled through the air as one.

"Fire!"

roared Mike again. And again the shots reverberated across the quadrangle.

Three times the blasters were fired, filling the nostrils of those nearby with the pungent odor of burning chemicals.

"About-face!"

Harch!" roared Mike. The color guard marched back to their position before the Cadet Corps and came to attention.

"By the hand-saluter" roared Mike.

"Salute!"

As one, every individual on the field in a Solar Guard uniform, from Earthworm cadet to thirty-year line officer, snapped to attention, saluting Roger Manning.

Roger returned the salute, holding it a brief second longer than usual, then brought his hand down sharply and executed a perfect about-face to look up at Commander Walters standing on the Tower steps.

Walters stepped forward and unfolded a scroll. Clearing his throat, he began to speak, his words ringing over the quadrangle:

"It is my privilege and honor to present to Cadet Roger Manning the Academy Medal of Honor for his astute leadership, unparalleled bravery, integrity, honor, and service to the Space Cadet Corps!" Walters paused, looked directly at Manning, and added in softer tones: "And it gives me the greatest of pleasure to say that Cadet Manning is following in the footsteps of his famous father, Captain Kenneth Rogers Manning, who was awarded the Solar Medal for bravery above and beyond the call of duty."

With that, Roger stepped forward, immaculate, cool, and poised—a born spaceman from the top of his blond head to the bottom of his quick feet—and accepted the gold medallion, a spaceship blasting off engraved on the front and his name inscribed on the back.

He saluted and stepped back. As soon as he brought his hand down, completing the salute, the entire Cadet Corps ripped loose with three prolonged cheers.

The review was over.

Tom, Roger, and Astro stood at the base of the giant passenger liner at the Atom City spaceport, avoiding each other's eyes.

"Don't get yourself all jammed up with those Martians, Manning."

growled Astro.

"Yeah, they're pretty tough," added Tom.

"O.K.," said Roger softly.

"And don't forget, there's plenty of time to send us plenty of letters or audiomessages," Astro added.

"Yeah, sure," agreed Roger softly. "Sure, I'll do that, you big ape."

"Coming aboard, Cadet?" asked a pretty stewardess, standing in the hatch. "We raise ship in two minutes."

"Coming, miss," said Roger, not even bothering to comment on her looks. He looked at Astro and Tom. "Well," he said, fighting back the lump in his throat, "I guess this is it."

"Yeah," said Tom huskily.

"Looks that way," nodded Astro.

"Don't let this big gorilla get into trouble, Tom," said Roger, looking up at Astro.

"And don't you get fancy up there," said Tom, pointing toward space.

"One minute to go, Cadet," said the stewardess. "I'm sorry, but I have to close the hatch."

Tom gripped Roger's hand firmly. "Spaceman's luck, Roger," he said.

Astro took the other hand. "So long," he gulped, "friend."

"Good-by, both of you," said Roger with a forced grin. "Spaceman's luck!"

Roger hopped up the steps into the ship, and the hatch slammed closed behind him.

Tom and Astro hurried back from the ramp to avoid the blast-off exhaust, and, standing behind the Titan crystal deflector, watched the great ship rise slowly off the ground. In half a minute it was lost in the cloudless blue sky over their heads.

Without a word, they turned and climbed into the nearest jet car, a tear-shaped vehicle with a clear plastic top. "Monorail station," ordered Tom.

They rode through the streets of the modern city in silence. Even later, when they were seated in the soft reclining chairs of the sleek monorail train, hurtling back to Space Academy, they did not talk. Neither of them wanted to put into words the deep emptiness they felt.

Finally it was Tom who broke the uneasy silence between them. "Look at it this way, Astro," he said. "Roger's gone, and we have to learn to live with it."

The big Venusian was silent.

"The unit would have been broken up, anyway, as soon as we graduated from the Academy," Tom continued. "We would have all been assigned to different duties."

Astro merely turned and looked out the window.

"It happened a little sooner, that's all," said Tom. "We've got responsibilities to face."

Roger has his, and we have ours."

"Tom," said the big cadet softly, "I'm going to apply for a transfer."

"No, you're not," said Tom emphatically.

"Why not?" asked Astro. "It won't be the same with another cadet in the Polaris."

"Don't forget," Tom said softly, "the psychographs of every cadet at the Academy are charted and cross-checked. Commander Walters would not put in another cadet unless it was psychologically sound and he was sure that he would fit."

"O.K., but what's that got to do with our liking the guy?"

"Remember the way we felt about Roger? Neither of us liked him. Maybe you've forgotten that fight I had with him at the beginning of our training?"

"I haven't forgotten," said Astro. "But another guy on the radar deck—well, I don't think I could trust anyone else up there." Astro shook his head. "Roger's the best astrogator there is.

How could we do with less?"

"We'll have to do with less," replied Tom. "That's the way it is. You have to expect the same difficulties in everyday life as you would in space aboard the Polaris.

Why not wait until we see what kind of a guy the new cadet is, before we judge him?"

Astro was silent for a long time. In fact, he did not speak again until

they were standing on the platform waiting for the monorail to come to a stop at the Academy station. "O.K., he's going to get a square deal," the Venusian cadet said, "but he's sure going to have to show me a lot before he can step into Roger's shoes."

"He's not going to step into anybody's shoes," Tom asserted. "He's going to make his own place on our crew, and whether you like it or not, we've got to help him."

The train finally glided into the Academy station and Tom and Astro were swept across the platform in the mobs of noisy cadets getting on and off, coming back from leave or just going on a week-end pass to Atom City.

Ordinarily a week end would have found Tom and Astro relaxing in Atom City, but on the following Saturday morning, Tom and Astro didn't even bother to go down to the mess hall for breakfast since it was not obligatory. They had a light snack at the canteen and idled away the afternoon, watching a mercuryball game. That night they sat through an uninteresting stereo in the Academy movie house. Sunday morning they went to the Solar Church and spent the rest of the day reading the Sunday papers and relaxing. Neither of them wanted to face the evening mess call. They knew Strong would introduce them to their new unit mate at that time. But by five in the afternoon, they were ready. Both had dressed and showered and were waiting for the first bell to dinner.

"I wonder who it will be?" Astro mused.

"Think we might be lucky enough to get someone like Tony Richards?"

"I sure hope so," said Astro.

The bell rang softly and they left their quarters, without another word, joining the other cadets on their way down to the mess hall. All around them various friends, who understood what they were feeling, came up and slapped them on the back, or made some gesture of sympathy.

Tom and Astro held their feelings in check and strode into the mess hall with the other cadets, mentally crossing their fingers. They were not surprised to find Captain Strong waiting for them at the table.

"Tom, Astro," he said, "I would like you to meet the new member of the Polaris unit. Cadet T. J. Thistle."

"Well! Well! Don't break down and cry, Astro!" the tiny cadet said breezily. "I'll astrogate circles around Manning. You have nothing to worry about with T. J. Thistle on the radar bridge!"

"But you will, if there are any more cracks about Manning!" growled Astro.

Tom glanced at Strong, who did not return the look. Avoiding Astro's eyes, he took a deep breath and faced the cocky little Martian.

"Glad to have you aboard, Thistle," he said heavily.

Chapter 6

For more than a week, T. J. Thistle had been working with Tom and Astro on carefully selected projects at the Academy under the watchful eye of Captain Strong. Tom had already begun to accept the new cadet, and the young captain noted with hope that a friendship was developing slowly between the two boys. But Astro was much slower in coming around. The big cadet's allegiance to Roger was strong and nothing Cadet Thistle could do or say weakened his icy reserve.

And while the integration of the new cadet in the Polaris unit was high on the list of Commander Walters' problems, another problem, more serious and more immediate, demanded his attention.

When Walters summoned him to his office late one afternoon, Captain Strong thought it was about the Polaris unit.

"No," Walters said, when Strong began a progress report on the activities of the three boys, "that is not what I wanted to see you about."

Strong was relieved. He felt sure that in time Thistle would fit into the unit and that Astro would come around, but he would need more time. He expressed these feelings and then asked, "What is it, sir?"

"Steve," Walters sighed heavily, "what do you know about the project known as Beachhead?"

Strong sat up straight. "Beachhead!" he exclaimed. "Why, that's one of the laboratory operations, isn't it, sir?"

Walters nodded. "To a degree. Operation Beachhead is a project

developed by the Academy line officers in close cooperation with the idea men over at the lab."

The commander walked to the opposite side of the office and pushed a button on the wall. One section of the wall slid back, revealing a blank screen ten feet square. Walters pushed another button and a picture of a deep-space star field appeared on the screen.

Simultaneously, the lights in the office grew dim. Walters pointed to the star Alpha Centauri, then traced a direct line with his finger to the planet Wolf 359, continuing past it to a bright dot of light just at the edge of the screen. He pushed the projection button again, and a second star field appeared on the screen. The dot of light was immediately recognizable as a brilliant star, the dominating celestial body among many hundreds of others.

"Sirius!" exclaimed Strong involuntarily.

Walters nodded, and Strong came up beside him to examine the bright star that was really a double star, a twin, white dwarf. "For years," Walters said, "we have suspected Sirius of being responsible for a number of strange incidents in space that could not be accounted for. For instance, deep-space skippers have reported instrument failure when they came close to it. There have been a few crack-ups, and we have lost men. We began to investigate about two years ago." The commander paused and sighed. "But how do you investigate something that threatens the life of the investigators?" he resumed. "Well, Major Connel, Professor Sykes, and Dr. Dale decided to work on the problem. They built a robot rocket-a huge missile-engineered as finely as a watch. They loaded it with recording instruments that could measure every kind of disturbance from small quakes to methane ammonia surface storms, and they finally narrowed the source of the main disturbances to this satellite

here."

Walters pointed to a small white body orbiting slowly around the huge double star. "This satellite or moon, which we've named Thor, has been host to the robot rocket for six months."

"The missile is orbiting around the satellite?" asked Strong.

"Yes," the commander replied. "It was fired about seven months ago from Titan and has been orbiting around Thor for nearly six months now. It has recorded enough data for our technicians to work on. They hope to learn whether we will have to compensate for the trouble with different or new instruments when spaceships pass close by, or whether they'll have to stay out of the area altogether."

Walters pushed the button again, and as the image on the screen disappeared, the lights in the office came up. He returned to his desk.

"Now this is why I've called you in," he announced. "I want you to take the Polaris unit, fly out to Thor, and reclaim the robot rocket."

Strong stiffened. "Sir, I don't think the Polaris unit is ready to accept such a responsibility yet," he protested. "An assignment like this one always has a certain element of danger. I'm not sure that those three boys can work together well enough to handle emergencies."

"That's exactly why I'm sending them, Steve," said Walters coldly. "I feel this assignment will teach them to work together."

"I see," replied Steve thoughtfully. "It might work. When would you want us to blast off, sir?"

"Immediately!"

"Very well, sir." Strong rose and prepared to leave.

"And not a word about this to anyone, Steve," Walters warned. "There's another reason for this operation. We hope-and there is a good chance our hope will be realized-that Thor will give the Solar Alliance the biggest uranium strike to be discovered in our time."

Strong's jaw dropped open. "Uranium!" he gasped.

"Yes," nodded Walters. "So you can understand the need for secrecy. You will not even blast off directly for Sirius, but log yourself out as a routine patrol to Ganymede and then change course inside the Mars orbit. Your only stop will be for refueling at Alpha Centauri."

"Very well, sir," replied Strong.

"And another thing," Walters added. "You will have another cadet flying with you. Cadet Alex Monroe. He's a physicist who has been working on this project from the beginning.

Monroe will handle the robot rocket once you recapture it. There's no need to haul the whole projectile back to Earth. He will take out the recorded data, and then you can blast the rocket out of existence."

"Yes, sir," said Strong.

"That's all, Steve." Walters extended his hand and smiled. "Spaceman's luck!"

"Thank you, sir. We may very well need it."

* * *

Meanwhile, the Polaris unit was busy on a project of its own.

In hope of bringing the three cadets closer together, Captain Strong had placed Astro in charge of overhauling the power deck of an Academy supply ship. The idea behind Strong's plan was to make Astro open up. He knew that the Venusian cadet could talk anyone's ear off when it came to a discussion of the power deck of a spaceship. In this way, he hoped Astro would relax and give Thistle a chance to be friendly.

The three boys were stripped to the waist, since the heating chambers of the power deck were close and warm. They had been tearing down the lead baffles around the reaction-mass chamber all morning and now the intricate parts of the interlocking lead shields lay on the deck around them. Astro's eyes gleamed as he picked up one and then another of the dirty, sludge-coated plates.

"This is what happens," explained Astro to his two unit mates, "when the power jockey is too quick on acceleration. You have to feed the reactant slowly and easily, according to the feel of the pull of gravity on the ship itself."

"What do you mean 'feel'?" asked Thistle. "How can you feel something when you got a thousand tons blasting off the ground."

Tom grinned. "Astro can feel it," he said.

"You make it sound like an old-fashioned airplane where the pilot flew by the seat of his pants."

"There was a lot in the pilot's favor if he had a feel for his ship in those days," replied Astro. "He didn't have to depend on any navigator wizards to tell him where to go or how to fly. He could feel it himself."

Thistle's face suddenly clouded over. "Listen, Astro!" he barked. "I

didn't ask to be sent to Earth Academy and I didn't ask to take Manning's place."

"Wait a minute," said Tom, sensing the friction in the air. "Take it easy, both of you!"

"I'll take it easy," growled Astro, his giant bulk towering over Thistle. "When this gnat-sized monkey learns he can't take Manning's place."

"Is that so?" replied Thistle, bristling. "You don't scare me with your size, Astro! I'll take you on any day in the week! If you want to fight, come and fight, but lay off the remarks about my taking Manning's place!"

"Why, you excuse for a man!" muttered Astro. "All I would have to do is sneeze and you'd blast off at a D-9 rate! Why don't you transfer out and leave us spacemen alone?"

"That would be easy, big boy!" snapped Thistle. "That would be the simplest thing in the world to do, but I don't quit, see? I figure I'm just as space-blasting tough as you think you are, and what you can dish out, I can take and give right back in spades!"

"You wouldn't last five minutes!" said Astro.

"You just try it, big boy, and see how long I last!" Thistle retorted hotly.

Astro took a step forward, but Thistle did not back up. He stood his ground, glaring at the giant cadet, his head tilted back so he could stare Astro in the eye.

"That's enough!" barked Tom, jumping between them. "You want to get killed, T.J.?" he snapped at the little cadet. Then turning to Astro, he glared at him angrily. "And you, you ought to be ashamed of yourself! You think anybody's going to be impressed if you belt him

around?"

Astro was silent.

"I'll tell you this, Astro!" Tom said heavily. "You bother T.J. and you'll have to take me on, too!"

Astro's face was impassive.

"You hear that, Astro?" Tom continued. "You'll have to take me on, too!"

Astro's face retained the same immobile expression as Tom blasted him.

"Make up your mind," said Tom, his voice harsh and biting with authority. Without realizing it, Tom Corbett had gradually learned the delicate, elusive job of objective command, berating his own best friend, if necessary, to assure smooth operation in the unit.

Tom was very much affected by what he was saying to Astro. He was deeply touched by the strong feelings Astro had developed for Roger, as strong as his own, but when the success of the unit depended on co-operation, Tom Corbett, command cadet on the Polaris, was ready to demand instant respect for his judgments and decisions. A leader was not a leader unless he could lead.

And Tom was emerging as a sound, responsible leader.

That was what Strong felt as he stood to one side just off the power-deck chamber, listening to the argument. He was proud of the way Tom was handling the situation.

Astro did not speak. He turned his back on Tom and T.J. and began working on the lead baffling shields with a cold ferocity. Tom turned

back to T.J.

"And you get this through your head, Thistle!" he barked. "I'm going to see that this unit succeeds, if I have to beat the stuffings out of both of you. And if you don't think I can or will you just step out of line again!"

Thistle nodded, picked up one of the plates, and went to work, while Tom attacked still another section of the dirty lead shield. Strong waited a few minutes before coming into the chamber so that they would not suspect he had overheard.

"Nice job," he said airily. "But you better get it finished fast. We've been assigned to a mission and we blast off right away."

Neither of the three boys replied to this matter-of-fact announcement immediately. It wasn't until Strong told them they were going into deep space that any emotion registered on their faces. Try as they might, they could not suppress the grins that curled over their lips at the news.

"Exactly where are we going, sir?" asked Tom.

"Sirius!" said Strong. "And I want to warn you now so there won't be any slip-ups. This is top secret. To anyone and everyone: this is a routine flight to Ganymede."

And with this news, the three cadets broke out into a cheer, their animosity toward each other momentarily forgotten. Steve Strong's eyes were grave and thoughtful as he watched them, wondering if a flight into space, with all its dangers, would not be too much for a unit of Corbett, Thistle, and Astro to survive.

As soon as Strong had retreated to the ladder and left the ship, the three boys dropped their tools and gathered for excited talk and

speculation about the secret mission.

"What do you think it is, Tom?" Thistle asked.

Tom's brow was creased as he answered. "Whatever it is, one thing is sure."

Astro and Thistle looked at him questioningly.

"Anything," Tom added, "top secret spells trouble and hard work. And that only means one thing to us-as a unit, we've got to get on the ball!"

Chapter 7

In a quiet residential section of Atom City a jet car sped through the streets and braked to a stop before a small, modest house. Two men got out. They glanced over their shoulders furtively, hurried into the house, and closed the door quickly behind them. A few moments later a faint light appeared in the basement window. The dark night was further emphasized by the light of a small moon hanging just above the horizon and the shadows it cast created an atmosphere of tense expectation. Outwardly, there was nothing to suggest anything unusual about the little house. It was very much like thousands of others in the suburbs of Atom City. It was surrounded by a neatly trimmed lawn and carefully tended shrubbery, yet a certain air of mystery clung to the house like the threat of an impending storm.

In the basement the two men from the jet car stood nervously waiting the arrival of a third man.

"What do you think he wants?" asked Hank Lister, a tall, bony man wearing the black trousers and tunic of a merchant spaceman.

His companion, Boris Willard, shook his head negatively. "I don't know," he muttered, shuffling his feet noiselessly.

They waited a few minutes more, and then, hearing a door open above them, turned to face the small slidestairs. A man in dressing gown glided down to their level. "Hello, Hank-Boris," he said casually. "Glad you could come."

"What's this all about, Wilson?" Lister demanded impatiently.

"We're blasting off for Alpha Proxima in the morning," Willard added. "We've got to get some sleep."

Jack Wilson, young, not more than thirty, with deep-set eyes and jet-black hair that was cut short, laughed lightly. "Alpha Proxima, eh?" he said. "Still prospecting for peanuts, I see."

"We'll get our big strike yet," grumbled Willard.

"Not the way you two are going about it." Wilson laughed. "But if you're willing to give up your precious sleep and your trip to Alpha Proxima, you'll get your chance at that strike."

"What're you talking about?" demanded Lister.

Wilson casually walked over to the corner counter to pour himself a cup of coffee from the tap connected to the pot in the kitchen above. "There's a ship blasting off from the Academy tomorrow night," he said, "and do you know where it's going?"

"Stop playing games!" snapped Lister.

"Get on with it!" barked Boris Willard, thick through the chest, with powerful shoulders.

He was dressed like Lister, in tight-fitting black tunic and trousers.

"Well," began Wilson, "two years ago I told you that I might have a deal for you. There was something stirring around the laboratory that I couldn't learn anything about. And although I've worked on some pretty big secret projects with Professor Sykes and Dr. Joan Dale, they wouldn't let anyone near it. They kept everything under guard," he snorted derisively.

"Major Lou Connel was in charge of security, and you know him--"

"Wait a minute!" interrupted Willard. "If Connel is mixed up in this, I

don't want any part of it."

"Me neither," said Lister.

"Relax! By the rings of Saturn, you two sound like a couple of Earthworms instead of professional space prospectors!" Wilson filled the coffee cup again and turned back to them, his face and voice hard. "Even if Lou Connel was in on this," he said, "it wouldn't make any difference. This time I'm going to hit it- and I'm going to hit it big."

"What's the deal?" asked Willard.

"As I said, tomorrow an Academy spaceship, the Polaris, is going to blast off supposedly heading for Ganymede." Wilson took another sip of coffee and chuckled. "But as soon as it gets past the Mars orbit," he said, "it's going to change course."

"So what?" demanded Lister, finally helping himself to a cup of coffee.

"The spaceship is tied up with the secret project!"

"How do you know?" asked Willard excitedly.

"What do you think I've been breaking my back in that laboratory, taking Connel's gaff and putting up with that dopey Professor Sykes, all these months for?" Wilson demanded bitterly.

"I've been sweating this one out over two years, ever since Connel and Sykes became overly interested in reports by deep-space skippers that their gear went haywire after blasting by Sirius.

Connel and Sykes don't get chummy and start working together for nothing. I made it my business to be on the inside."

"What are they going after?" Lister asked.

"What do you think?"

"Uranium?" asked Willard hopefully.

"Right!" replied Wilson. "More space-blasted uranium than you can conceive! A whole satellite of uranium."

Willard and Lister looked at each other and grinned. "O.K., what are the details?" Lister asked.

"It's simple," replied Wilson. "The whole project has been centered around a robot rocket which was fired from Titan about seven months ago and has been circling around Thor, a satellite of Sirius, recording data on film and tape audiographs. The Polaris is going out to reclaim the rocket. The information on those tapes and the film will tell how much, not if there is any, but how much there is!"

"Wow!" gasped Willard.

"What do we do?" pursued Lister.

"Nothing much, Hank," replied Wilson. "You just follow the Polaris out to Sirius in your ship and stand off in space until they pick up the rocket. Then you move in."

"Move in?" asked Boris suspiciously. "Not politely, I suppose."

"Hardly." Wilson laughed. "Not if you want the data from that robot rocket. They won't just hand it to you on a silver platter."

"I get it," snorted Lister. "A hijack job."

"Congratulations," Wilson murmured dryly.

"All right. Suppose we do get the dope?" growled Willard. "What good will it do us? How does that get us the uranium?"

"Pay attention, because this is the tricky part of the whole plan." Wilson's eyes glowed with excitement and he spoke rapidly. "According to the space code, anyone who claims to have found a virgin field of uranium has to offer concrete proof that there is uranium in the stake-out, otherwise people could go out and lay claim to everything in space and then search it out at leisure--"

"Sure, sure. We know that," Lister interrupted. "We've been trying to beat that rap for years."

"You can't," replied Wilson. "That's why you're both still a couple of space rats looking for that big strike."

"All right," grumbled Boris Willard. "Knock it off. What's that got to do with this operation?"

"Everything," Wilson said. "The rule applies to the Solar Guard too! They have to get proof that there is uranium before they can file a claim. And their proof is in that robot. So if you get all the information, you'll do two things--"

"Wreck their claim," Lister interrupted. "And set up ours!"

"Lister, you're a genius," sighed Wilson, the sarcasm in his voice unmistakable.

"It sounds real nice and pretty," Boris Willard growled. "But have you figured how we're going to get away with it?"

"Just knock off that Solar Guard crew," said Lister excitedly. "It'll be a

cinch, Boris."

"Sure," replied Willard acidly. "Us against an armed cruiser. Like taking candy away from a baby."

"That's a mere detail," said Wilson casually. "And I'm sure a whole uranium field will give you ample inspiration as to a method."

"I'd take on the whole Solar Guard fleet for something like that," Lister chortled.

"And suppose we do get the records?" said Willard stolidly. "Suppose we show up with all the proof? The Solar Guard Claims Board isn't dumb. They'll know how we got it."

"Not if the Solar Guard cruiser is wrecked," chimed in Wilson. "Not if it looks like the ship was hit by a meteor, or it crashed on the satellite and all the records are destroyed."

"Then how would we have the records?" Willard persisted.

"You'll have copied them! Blast it!" Wilson exploded. "Do I have to do all your thinking for you? Those are mere details which we can work out! The over-all plan is for you to show up a month or so later with proof of the uranium deposits, that's all. And once you get that from the Polaris crew, we're a cinch!"

"Wait a minute!" protested Lister. "I've heard about the Polaris unit. They're pretty smart kids. We might have trouble with them."

Wilson grinned. "No, you won't. One member of the unit has been taken out. The unit is not the same. You'll have no trouble."

"It sounds like a cinch," said Lister with a big grin.

"Yeah, but where do you come in, Wilson?" asked Willard. "Can't they connect you with this? After all, you work right there in the laboratory."

Wilson's face hardened. "What connection can there be if the Polaris and her crew are lost-victims of the mysterious satellite? And besides, no one will ever know we're working together. The claim will be registered in your names. I'll be your silent partner. I get my one third under cover."

"That sounds fair enough," agreed Boris Willard, almost too casually.

"And just so there is no mistake about my getting a full third," said Wilson airily, "I've recorded the entire conversation we've had here tonight. You forget to give me my share, and though I may go to prison, you'll keep me company!" Wilson grinned.

"Why, you!" snarled Willard, stepping forward, fists clenched.

"Don't, Boris," said Wilson easily. "You'll only be hurting yourself. After all, isn't one third of a billion credits enough for you?"

"A billion!" gasped Lister.

"A cool billion is the estimate of what the uranium deposit on that satellite is worth."

"O.K.!" said Boris Willard, relaxing again. "It's a deal."

The three men shook hands. "Now, for the details of the trip," said Wilson. "Here's the way I suggest you take over the Polaris..."

The three men, hunched over their coffee cups, began studying star charts and supply lists for the deep-space voyage to the brightest star in the heavens and the most ambitious criminal act of claim

jumping ever attempted.

* * *

An uneasy peace had developed between Astro and Thistle in view of their mission to Sirius. The three boys had been swept up in a common bond of enthusiasm over the flight beyond Pluto's orbit. Busily packing their gear in the dormitory, Thistle, Tom, and Astro were exchanging wisecracks when the door opened and a blue-clad cadet entered softly.

"Pardon me," he said loftily. "I presume that this is the Polaris unit?"

The three cadets stopped their packing and turned to the new arrival.

"That's right," Tom replied. "You must be Alex Monroe." He extended his hand in greeting.

Monroe appeared not to notice it and walked lightly into the room. "Yes, I'm Monroe," he said.

"Who are you?"

"Tom Corbett," said Tom, dropping his hand and shrugging. "This is Cadet Astro, power deck, and Cadet Thistle, radar bridge. I'm command cadet."

Monroe nodded his head coldly. "Captain Strong suggested that I come up and get acquainted," he said.

"Well, sit down and tell us about yourself, Alex," Astro said good-naturedly.

"I prefer to stand," the cadet replied disdainfully. "And if you don't mind, Cadet Astro, I would prefer to be less informal."

"Informal?" Astro blinked and looked at Tom.

"Very well, Cadet Monroe," said Tom, with a wry grin. "If that's the way you want it." He turned to Astro. "He means he doesn't want you to use his first name."

"Oh," said Astro gently. "Well, I can understand that, with a name like Alex."

"I may as well warn all of you now," said Monroe, raising his eyebrows slightly. "The more formal our relationship is during this trip out to Sirius, the better it will be for all of us."

"If getting to know you," said Thistle dryly, "would make us behave like you, Brain, I think that's a good suggestion."

Monroe stiffened. "I don't like that name, Cadet Thistle."

"Oh!" Thistle smiled. "Pardon me. I just meant to be as nasty as I could."

Monroe's face turned red and he almost lost his composure, but he recovered quickly.

"Nothing you can say will annoy me," he said in a carefully controlled voice. "Nothing you can do will interest me. And now that I've had the dubious pleasure of meeting you, you'll pardon me while I leave."

As he turned to the door, Tom, Astro, and Thistle acted as a unit for the first time. Tom snatched a sheet off his bunk and spread it on the floor before Monroe, Astro grabbed the door and opened it, and Thistle bent low in a courtly bow as the cadet stalked out of the room.

When Monroe had disappeared, the three cadets burst into laughter.

Posturing in an imitation of Monroe, Thistle shouted:

"And now that I've had the du-bbee-ous pleas-uuurrrre of meeting you, you'll phad-don me while I leave!"

The other two cadets roared with laughter as Thistle continued his impersonation until finally Tom settled on his bunk and raised an admonitory finger.

"Don't sell that guy short!" he said seriously. "Monroe is one of the biggest brains at the Academy. He's not a line cadet like us, just busting rockets. He's a nucleonics major and he works with people like Professor Sykes and Dr. Dale. From all the scuttlebutt about him, it's a wonder a guy that smart can be alive."

"That doesn't excuse him for behaving like a fool," grumbled Astro.

"Sure it does," said Thistle. "When you got his kind of brains, you can get away with a lot of things."

"I'd feel better," commented Tom, stuffing gear into his space bag, "if he would relax a little. On a long hop like this, a guy like that can wear you down."

"We'll straighten him out," said Astro. "Gimme another towel, Thistle!"

"Sure!" T.J. threw him the towel.

Tom stopped. The simple gesture of a towel being asked for and given between Thistle and Astro was great progress in their friendship. Tom was relaxed for the first time in weeks. But even as he hurried with his packing, a frown grew slowly on his face. A long hop to deep space with friction in the crew spelled trouble. Big trouble.

Chapter 8

The Polaris stood poised on its stabilizer fins, its nose pointed spaceward, on the ramp, ready for blast-off. Food, clothes, spare parts for emergency repairs, equipment for building spare parts, extra tanks of oxygen, electronic gear for repairing the miles and miles of wiring that ran throughout the great ship, all of this and more had been stored on the vessel in preparation for the deep-space flight.

Captain Strong had checked the supplies as they were put aboard and when the last of the gear had been stowed, and the storage hatches closed and sealed off, he entered the ship and called into the intercom near the main hatch:

"Captain Strong to all hands! Check in!" "Cadet Corbett standing by on the control deck, sir," replied Tom over the intercom.

"Cadet Astro standing by on the power deck, sir."

"Cadet Thistle standing by on radar deck, sir."

"Cadet Monroe standing by as ordered, sir."

"Very well," Strong declared. "Close the main hatch and start the pumps, Corbett!"

Strong watched the great pluglike hatch close slowly, and then nodded as the faint hiss of the oxygen pumps began its never-ending whisper, supplying the ship with life-giving air for the entire space voyage. Satisfied, the Solar Guard captain hurried to the control deck and took his place beside Tom in the copilot's chair.

"Ready for blast-off, Tom?" he asked.

"Ready, sir."

"Proceed."

"Aye, aye, sir!" replied the cadet.

Tom went to work with practiced ease. His hands moved quickly over the control panel, pulling levers, turning dials, and pressing buttons that would activate the giant ship.

"Power deck, check in!" he called into the intercom.

"Power deck, aye!"

"Are you compensating for the extra weight, Astro?"

"All checked out to the pound, Tom," replied Astro.

"Energize the cooling pumps!" said Tom.

"Pumps in operation!" replied Astro, and immediately the whine of the pumps droned through the ship.

"Feed reactant at D-11 rate for the extra weight!"

"D-11, aye!"

"Radar bridge, check in!"

"Radar bridge, aye!"

"All clear forward and up, T.J.?"

"All clear!" came T.J.'s reply.

"Stand by!"

Strong watched Tom go through blast-off procedure quietly, proud of the efficient way that the cadet handled himself and the big vessel. Tom picked up the intercom mike again.

"Polaris to control tower. Request orbit and blastoff time. Over to you."

"Tower to Polaris. Your orbit is seven-nine-three!" the voice of the tower operator replied. "Blast off fifteen hundred thirty-seven thirty!"

Tom repeated the instructions, concluding with a polite but crisp, "Thank you, tower!"

"Spaceman's luck!" said the voice.

"Did you get that orbit, T.J.?" asked Tom.

"All checked out!" replied the little Martian cadet.

The pressure of the pumps had been building all the time and the big ship began to vibrate. Tom watched the red hand of the astral chronometer over his head. It swept to within fifteen seconds of blastoff time.

"Strap in!" ordered Tom over his intercom.

He watched the red hand hit minus ten. "Stand by!" he called.

The ship was actually trembling now under the pressure of the pumps. The noise was deafening.

"Blast off minus five!" roared Tom, "--four, three, two, one--zero!"

Flame and smoke blasting from her exhaust, the Polaris rose from the surface of the ground slowly at first, then gradually picked up speed as the mighty reactors poured out tons of thrust. Accelerating faster with each passing second, the ship rocketed through the atmosphere, as though eager to reach the limitless freedom of space.

Inside, the cadets and Captain Strong were driven back into their chairs and cushions by the tremendous acceleration force. The pressure on their bodies seemed unbearable until, suddenly, they no longer felt any sensation of weight on them.

"Switch on gravity generators! We're in free fall!" Tom yelled.

Tom glanced at the astral chronometer. "Space-borne at fifteen thirty-eight fifteen, sir," he reported.

"Very well, Tom," acknowledged Strong as he straightened up in his chair. "Good blast-off.

Very good. You're getting to be quite a hot pilot."

Tom grinned. "Thank you, sir." Recording the blast-off time in the ship's log, he switched on the automatic gyros and was able to relax for the first time.

The ship was now operating on its own, guided by an electronic eye sensitive to and able to correct the slightest deviation in course and speed. Gyro-controlled, the Polaris hurtled through space toward Ganymede and the secret point of departure near the Mars-Jupiter orbit.

But unknown to them, another vessel blasted off from Earth at almost the same time.

From a small private spaceport near the Academy, Boris Willard and Hank Lister had raised ship in pursuit of the Polaris, and were blasting several thousand miles astern, stalking the giant cruiser like an evil bird of prey.

With the Mars orbit safely behind them, T. J. Thistle began the complicated procedure of a course change for the giant spaceship. He sat before the controls of the radar bridge, his nimble fingers punching out the information on the high-speed electronic computer. He snapped the tab for the answer, read it, grunted satisfiedly, and then rubbed his eyes wearily. He had been on continuous watch for more than twenty hours, waiting to make the course change that would take them into deep space. He checked the answer twice more before flipping open the intercom key. "Radar bridge to control deck," he called. "Check in, Tom."

"Corbett is off watch, Thistle," replied Captain Strong's voice over the loud-speaker.

"What is it?"

"Have the information for the course change coming up, sir," replied T.J.

"Very well, I'll record it," said Strong.

"At exactly twenty-two thirty-five, make fifty-degree turn to starboard, then three degrees up on the plane of the ecliptic. Give the ship ten seconds to steady herself, and then Astro can cut in the hyper-drive. That'll put us on a straight course to Alpha Centauri, sir."

"Check," replied Strong.

"And if it's all right with you, sir," T.J. continued, "I'd like to put my station on automatic now and get some sleep. I've been on watch a

long time."

"Of course, Thistle," said Strong. "But are you sure of this heading? A mistake of a fraction of a degree, and we'll be off Alpha Centauri by a couple million miles."

"The heading is correct, sir," replied Thistle.

"Very well. You can sack in now. Switch your scanner down to the control deck."

"Thank you, sir," said T.J. He hurriedly switched the radar scanner to the control-deck screen and slumped back in his chair, yawning loudly. Exhausted, he felt that he could climb right into the nearest acceleration couch and sleep for a week. There was a sudden noise behind him, and he looked up. Alex Monroe stood just inside the hatch, staring at him aloofly.

"What do you want, Brain?" asked Thistle, rising and pushing past him as he walked to the acceleration couch.

Monroe grabbed the little cadet by his tunic and held him back. "You're just coming off watch, aren't you, Thistle?" he asked.

"So what?"

Monroe spoke briskly. "I need your help. Come with me." And without another word, he turned to go.

"Wait a minute!" Thistle protested. "I just pulled a twenty-hour watch while you were sleeping. Now it's my turn to hit the sack!"

Monroe spun around lightly and looked at T.J. as if he were a specimen under glass. "I don't like working with you any more than you do with me, Thistle," he said bitingly, "but my job is the important

consideration on this trip."

T.J. was dumfounded. "Is that so? Well, let me tell you something, Brain!" he snapped.

"I don't like that name, Thistle," Monroe interrupted, bristling.

"That's too space-blasting bad!" Thistle roared.

The clank of a hatch interrupted them, and they turned to see Captain Strong watching them, the expression on his face grim and foreboding. "What's going on here?" he snapped.

"I could hear you two bellowing at each other down on the control deck." He looked at Thistle. "What's this all about, Thistle?"

"I just pulled a twenty-hour watch, sir," said Thistle, "and this guy comes in and demands that I help him!"

Strong looked at Monroe. "Demands?"

Monroe spoke smoothly. "I've tried to co-operate, Captain Strong, but apparently if you're not in the Polaris unit, you get no assistance."

Strong looked at both of them. "Thistle, did you bother to find out what Cadet Monroe wanted?" he demanded.

"Well-no, sir. He just came in and ordered me to come with him."

"It's only a few minutes' work, sir," interjected Monroe smoothly.

"And did you see if Corbett was busy?" Strong barked. "Or Astro? Didn't you consider that Thistle had just pulled a triple tour of watch duty?"

Monroe was silent, staring at some point just below Strong's eyes.

"I want co-operation on this trip from everyone!"

Strong said in his harshest, most authoritative tone. He pointed to Thistle. "You help Cadet Monroe any way you can, and you"-he pointed to Monroe-"be more considerate of the cadets' working schedules. Is that clear?"

"Perfectly clear, sir," said Monroe softly.

"Yes, sir," growled Thistle.

Strong's tone was firm as he continued, "Now you pass the word along to Corbett and Astro. This mission is more important than you think. Reclaiming the information in the robot rocket is one part, and it might lead us to a new supply of uranium--"

Thistle's eyes opened wide. It was the first he had heard of the secret reason for the project.

"Uranium!" he gasped.

"Yes, Thistle. Possibly a whole satellite full of uranium," replied Strong. "The instruments in the robot rocket will tell us exactly. So we on the Polaris have one job, to find the rocket so Monroe can reclaim the data." Strong turned to Monroe quickly. "And you, Cadet, had better not impose on my orders to Corbett, Thistle, and Astro to help you, by ordering them around as if they were Earthworm cadets! Is that clear, both of you?"

The two boys nodded slowly.

"Pass what I've told you along to Corbett and Astro! The first one that steps out of line gets more demerits than he can work off in a year!"

Strong spun around and left them glaring at each other.

Monroe smiled smoothly. "Come on, Thistle," he said. "And remember-co-operation!"

"Go blast your jets, Brain!" said Thistle unhappily as he followed Monroe off the bridge.

Chapter 9

"Control deck to power deck! Check in, Astro!" Tom's voice crackled over the intercom and down on the noisy power deck. Astro picked up the mike.

"Power deck, aye!" he replied. "Go ahead, Tom."

"I'm getting a low reading on the strainer in the hyperdrive filter," Tom reported. "Check it, will you? I'll take over your controls."

"Right!" said Astro. He replaced the mike and turned to the main reactors. Hyperdrive was Astro's real love. He could stand for hours watching the operation of the complicated mechanism and needed only the slightest excuse to examine it without the protective lead baffling. Quickly donning his lead-lined suit, he attacked the shield of the powerful machine with a wrench, a blissful expression on his face.

In less than a minute the casing was off and the exposed strainer lay before him.

"Uh-huh!" Astro muttered. "There's the trouble. The filters are clogged." He reached in and pulled the filters out of the strainer. Holding them up to the light-radiation counter to see how badly they were damaged, he shook his head. "Needs new ones!" he decided. But when he turned to the supply locker at the rear of the power deck, he saw Monroe standing behind a protective screen, watching him with a bemused expression.

"What do you want down here, Brain?" Astro growled.

"I need you for some heavy work," announced Monroe.

"Are you nuts?" Astro exclaimed. "I can't leave the power deck with the casing open."

"I'll wait for you," said Monroe casually. "But hurry it up, will you?"

"I can't leave the power deck!" Astro bellowed. "Not a chance. Go somewhere else, Brain." He turned to pick new filters out of the supply locker, and when he turned back, he was surprised to find Monroe still there. "Are you still here?" he demanded.

"Waiting for you," Monroe said smoothly.

"Keep on waiting!" snapped Astro.

"Perhaps I'd better speak to Captain Strong," Monroe said evenly. "There isn't any reason why you can't put the ship on automatic and help me for a few minutes."

"Don't threaten me, Monroe," the big cadet growled, "or I'll smear you all over the deck!"

"Captain Strong wanted me to set up the new prisms for detecting radiation and gamma rays,"

Monroe said calmly. "I need your muscle to hold it in place while I adjust it."

He shrugged indifferently. "Of course, if you want me to tell Captain Strong that you refused to co-operate-" He didn't finish the sentence.

Astro glared at him. Restraining a powerful impulse to step forward and belt the supercilious cadet, he turned to the hyperdrive reactor and inserted the new filters, and closed the casing.

He stepped to the control panel and snapped on the intercom. "All

set, Tom. It was a dirty filter."

"O.K., Astro," came Tom's reply. "The reading's back up to normal now."

"And you'll have to handle my controls a little longer."

"Why? Something else wrong?"

"Nothing a good right hook wouldn't fix in time," Astro grumbled, glaring at Monroe. "I have to go help Monroe, or he'll send Captain Strong crawling down my back."

The big cadet closed the intercom key violently and turned to Monroe. "All right, let's go!

And don't give me any more of your lip! I'm in the right mood to see what would happen to that smug smile of yours if you got a fist in it!"

"Physical violence--that's about what I could expect from a specimen like you," said Monroe sarcastically. He turned away quickly, running up the ladder to avoid the waste rag Astro had been using to wipe his hands.

The antagonism Monroe generated served a strangely worthy purpose, however. So intense was Thistle and Astro's dislike for the physics cadet that a mutual respect--the respect that Strong and Tom had hoped would come in time--began to develop between them. More than once, Tom found T.J. and Astro sitting in the messroom swapping gripes over Monroe's attitude.

The Polaris was nearing the Solar Guard outpost on Alpha Centauri, the one and only refueling stop, when Monroe stopped off in the control deck and sat down beside Tom in the copilot's chair.

"Hiya, Alex!" said Tom casually. "How's the work going? All set to pick up the rocket?"

"The work is pretty much under control, Corbett," replied Monroe.

"Good," said Tom with a grin. "Long trip, huh? This your first hop into space?"

"Yes. And the trip is beginning to get a little dull."

Tom nodded toward the viewport. "We've got a long way to go yet, but there's Alpha Centauri up ahead. You can just see her there to starboard. That's our only stop. While we refuel, you can get out and stretch your legs."

Monroe nodded. "That will be a pleasant diversion," he grunted.

"And that's Sirius way up ahead," Tom continued pleasantly. "See that bright one? That's our baby."

Monroe looked at Tom with a quizzical expression. "You know, you puzzle me, Corbett," he said.

"Oh, how's that?"

"Your work is excellent. But those unit mates of yours!" Monroe's face showed his disgust. "You waste a lot of time on them. Are they worth it?"

Tom's face flushed. He gripped the controls tightly and turned to Monroe slowly. "I'll tell you, Alex," he said evenly. "A unit is only as good as each of its members. Astro and T.J. and myself make up a whole unit. If one of us flops, we all flop."

"If you really believe that," said Monroe coldly, "then you're no better

than they are."

Tom's face burned with indignation, but he refused to allow himself the luxury of anger.

"Listen, Monroe," he said finally, "Astro has the best mechanical and nucleonic mind I have ever come across, and T.J. is only equaled by one other guy on the radar deck—a guy incidentally who would probably put you in your place in about ten seconds, if he were around. As for me, I'm nothing but a rocket buster, a guy who flies a ship. Those fellows are the real brains in the Polaris crew and I wish I was half as good in my job as they are in theirs." Tom paused and then smiled. "They could even teach you something," he added.

"Don't be ridiculous!" Monroe snapped.

"I'm not," said Tom. "For your information, you set up that radiation prism wrong."

"Impossible!" retorted Monroe. "I adjusted it myself."

"You got the co-ordinates wrong," Tom persisted. "It should have been parallax seventeen instead of reflection twenty-two. Astro found the mistake, and T.J. corrected it."

"Corrected it?" asked Monroe hollowly.

"You'll have to excuse me now, Monroe," said Tom. "I've got work to do."

A worried frown on his face, Monroe rose and hurried below decks where he had set up the strange-looking gear he would have to use when they pulled the data out of the rocket.

Quickly he checked the coordinator on the prism, and his face grew

pale. Corbett was right.

He had made a mistake and it had been corrected!

His mouth set in a grim line, he hurried to Captain Strong's quarters.

"Sir," he announced, "I have a request to make."

"What is it, Monroe?" asked Strong.

"I request, sir, that you instruct Cadets Corbett, Thistle, and Astro to leave the instruments in the afterdeck alone and not to touch them."

Strong frowned. "Are you sure the cadets have been tampering with them?" he demanded.

"Positive, sir," Monroe said. "Corbett admitted as much to me just a few minutes ago. I checked the readings on the instruments myself. I had set the co-ordinates for parallax seventeen, and they had incorrectly adjusted them for reflection twenty-two. That could have been a serious mistake, sir."

"I'll speak to them at once," said Strong.

"Thank you, sir." Monroe saluted smartly and left.

A few minutes later, on the control deck, Strong questioned Tom.

"Yes, sir, T.J. made the adjustment," replied Tom. "But it was just the other way round."

Monroe made the mistake, and T.J. corrected it."

"Are you sure, Corbett?"

"I give you my spaceman's oath on it, sir."

"I see," said the young officer, thoughtfully stroking his chin. "Have you any idea why Monroe would come to me with a story just the opposite of what actually happened? I would think he would be pleased to have a mistake corrected before any damage was done, or before I discovered it myself."

"I can make a personal observation, sir," Tom volunteered slowly.

Strong nodded. "Go ahead."

"For some reason, Monroe is eaten up by the idea that he has to be perfect."

"A scientist has to be," said Strong.

"No, sir, real scientists like Dr. Dale and Professor Sykes make allowances for mistakes. They really do, sir," said Tom seriously. "But Monroe wants to be perfect all the time and it bothers him if somebody catches him in a mistake. Especially us," he added.

"Yes," admitted Strong. "I know he's been giving you cadets a hard time."

"Don't worry about it, sir," said Tom, grinning. "It's working out better than you think, sir."

"How's that?"

"Both Astro and T.J. are so mad at Monroe they've become close friends. Why, they're even plotting ways of making him see the light!"

Strong's face darkened. "You don't think this prism business could be a joke, do you?"

"No, sir, it isn't," Tom replied. "Monroe really made a mistake. I sure wish I knew what was eating that guy. It's a strain to have a foul ball like him on a long hop like this. We've tried to be friends with him, sir, but he won't have any of it."

Strong nodded. "All right, Tom. Just do the best you can. Something will work out. After all, a deep-space hop isn't the best place to iron out personality problems."

Four hours later the tiny Solar Guard outpost of Alpha Centauri was sighted. After identification and code signals were exchanged, Tom and Captain Strong prepared to land the giant rocket cruiser.

"We'll come in on sixty-power thrust, Tom. The gravity of Alpha Centauri is slightly less than ours back on Earth."

"Aye, aye, sir!" replied Tom.

A small rocket scout was sent out to meet the giant space cruiser and guided it into position over the small spaceport. A few moments later the three members of the Polaris unit brought the huge ship down with practiced ease, amid Alpha Centauri's tropical lushness.

Monroe was on the control deck, dressed in his blue uniform, ready to go ashore.

"Is this the first time you've ever been away from our solar system, Monroe?" Strong asked, noticing Monroe's eagerness.

"Yes, sir," replied the cadet eagerly. The poise and confidence he had exhibited throughout the trip had dissolved to reveal an ordinary excited young spaceman about to go ashore.

"Well, go ashore and have yourself a good stretch. This will be the

last bit of solid ground we'll see for some time to come," Strong said.

"Do I have permission to leave the ship, sir?" asked Tom with a salute.

"Sure, Tom. You need some relaxation too. Go. It's fresh water swimming in the California Ocean. and very invigorating."

"Thank you, sir."

"Hurry up, Corbett!" growled Astro. "We three guys have things to do." T.J. and Astro were both dressed and ready to go.

Strong cleared his throat. "Just a minute, boys. I want you to stay together! All four of you!"

"But, sir," complained T.J., "Monroe doesn't like the things we like."

"I said stick together," said Strong dryly.

After a quick shower, Tom changed into his dress blues. Strong watched the four cadets troop off the ship together. As soon as they were gone, he turned to the mike on the control panel and called the traffic-control tower of the tiny outpost station. "This is Captain Strong aboard the Polaris.

I am on a top-secret mission. All priority request."

"Go ahead, Captain Strong," replied the tower.

The blip he had seen on the radar scanner could have been anything. Anything at all-a wandering comet or asteroid. But he had to be sure. It couldn't be a ship-how could anyone know about his mission?

"I must speak to your commander and security chief at once," Steve

Strong said after a long breath. He waited a few minutes before a gruff voice announced himself as the commander and demanded to know what Strong wanted.

"I want," said Strong, "a special security check placed on Cadets Corbett, Astro, Thistle, and Monroe, and necessary arrangements made for an official board of inquiry and psychiatric hypnosis questioning of all four."

Chapter 10

"This is our radar installation, Cadets."

The handsome young officer, Lieutenant Morton of the commanding officer's staff, had volunteered to show Tom, Astro, T.J., and Monroe around the beautiful little colony. More than ten thousand people, mostly Solar Guardsmen and their wives and children, with a sprinkling of civilian engineers and technicians, manned the tiny outpost in the stars, many light years away from their beloved Earth.

"Do you get much traffic out here, sir?" asked Tom.

"No, Cadet," replied Morton. "Not more than one or two freighters a week, besides the regular mail ship that comes in every four days. But we enjoy living out here. It's like having the whole Earth as your playground." He stretched his hand out toward the lush tropical jungle that was a virtual paradise of shrubs, flowers, and giant trees that loomed high over their heads. Astro's eyes grew a little misty. The vegetation of the planet reminded him of his home planet Venus.

But there was a remarkable difference. Alpha Centauri did not have one poisonous snake, one ferocious beast, or any animal that did not live off anything but the vegetation.

"It's a remarkable world," Lieutenant Morton commented as he led them back through the center of Connel City, named after the famous major in the Solar Guard. "The creatures who inhabit this world have never known a natural enemy. Nothing has ever tried to harm them, and so they are friendly and gentle. You can walk through the jungle and meet some pretty ugly-looking creatures. But all they do is moan and bellow and come up to get a pat on the nose.

The children of the colony have a wonderful time playing with a four-legged beast we call the caterpillar because its hide ripples when it walks, and the children slide up and down on its back like a ride at a carnival."

Astro laughed merrily and described how he hunted in the wild jungles of Venus for the huge carnivorous tyrannosaurus.

Morton shook his head at the Venusian's tale. "We have a law that no one is allowed to mistreat any of the creatures of Alpha, or the exact same treatment will be given to the offender," he said.

"You run up against a real mad tyranno," said Astro with a grin, "and you'll soon find out who's going to do the mistreating."

After completing the tour of the colony outpost, the four boys strolled leisurely along the main street and gazed into the shop windows. Although the colony had been in existence only a short time, there was a noticeable change in the style of clothing, the people adapting themselves to the balmy atmosphere of the tropical world. The thick robes of the colder planets had been replaced with the luxuriantly soft stylon space cloth for cooler comfort.

"Let's eat," suggested Astro, stopping before one of the elegant restaurants that lined the street.

"How about a swim first?" suggested Tom, remembering Strong's suggestion. "Then we can work up an appetite and come back."

The boys hurried to a corner where they hailed a jet taxi and ordered the driver to take them to the nearest beach. A few minutes later they were flashing down a beautiful jungle trail, twisting and turning through the tropical wilderness to the California Ocean, a magnificent blue breadth of water that stretched three-quarters

around the surface of the globe. Small Titan crystal beach houses had been built on the sandy waterfront and it was no problem for the boys to rent one for the afternoon. But they did have a problem finding a pair of swimming trunks big enough for Astro.

Monroe refused to swim. He was quite subdued and even Astro found it hard to maintain his dislike, except when he remembered some of Monroe's unpleasant actions on the trip out and some of the things he had said. So, while Astro, T.J., and Tom swam in the wonderfully refreshing water, Monroe simply sat and watched them.

At last they were too tired to swim any more, and using the audioset in the beach house, ordered the jet taxi to come and pick them up. They were sitting on the front steps of the house, anticipating a huge dinner, when they heard the piercing wail of a siren from the direction of the road. The cadets ran down to the edge of the concrete strip to see what was wrong. A Solar Guard jet car raced around the last curve, siren screaming, and skidded to a stop before them.

Captain Strong got out, a paral-ray gun strapped to his side. Inside, four enlisted Space Marines sat alertly, heat blasters ready.

"Get in!" Strong ordered, his manner rather cold and harsh.

The four cadets piled into the jet car, and with siren screaming, it turned and headed back toward Connel City.

"What's up, sir?" asked Tom.

"Can't talk now!" snapped Strong.

"Yes, sir!"

Tom noticed that the Marines were still holding the heat blasters at ready. He wondered about that. He wondered about Captain

Strong's cold and distant attitude; but this was not the time or place for questions. The four boys darted looks at each other-but that was all.

They did not return to the ship. Instead, they roared into the compound of the Solar Guard station and drew to a stop before a heavily guarded building. The Marines got out first and held the guns on the four boys as they filed past.

"Inside," said the first Marine. Strong had gone in ahead of them. "Step on it, Cadet!

This is official business!" he snapped when Astro was slow in getting out of the car.

The big cadet glowered at the Marine. "See me sometime when you haven't got a blaster in your hand, Marine!"

The Marine looked him right in the eye. "But I have a blaster in my hand, Cadet. Now move!" Astro moved.

Entering a small room, the boys saw Captain Strong standing beside a desk. A man in the uniform of a Solar Guard major sat behind it, and he also had a paralo-ray pistol strapped to his waist.

"Sit down," said Strong. "This is Major Hugo."

Major Hugo was a thick-set man with an expression on his face that quietly but firmly implied there would be no nonsense. "This is an official board of inquiry," Hugo announced.

"Inquiry!" exclaimed Tom involuntarily. "Sir, may I have permission to speak?"

"Go ahead," said Major Hugo.

"I am not, and do not intend to be impertinent, sir, but I respectfully request that we be given the advice, aid, and comfort of legal opinion."

Major Hugo looked at Strong, who suppressed a smile. "What are these cadets, space lawyers?" he snapped.

Strong said nothing, but he was proud of the manner in which Tom made his request before there had been any questions.

"Harrumph," Major Hugo cleared his throat. "Well, under the circumstances, I don't think that will be necessary, Cadet-er-what's your name-" He looked at the card before him: "Cadet Corbett."

"Yes, sir," said Tom, "but you said, sir, and I notice this is being taken down on a sound spool, that it was an official board of inquiry. In that case, sir, I feel it is my right, as well as my duty, to be represented by counsel before any information can be solicited from myself or my unit mates."

Major Hugo flushed angrily. "Very well, Cadet Corbett, I will act as your adviser."

"You can't, sir," said Tom firmly, "since you are the presiding inquiry officer. In any case, the choice is my discretion." He turned to Captain Strong. "Captain Strong, will you act as our adviser?"

"He can't either!" said Hugo. "He's the accusing officer."

"Accusing officer!" gasped Tom. Dumfounded, he and his unit mates stared at Strong.

"I suggest that you enlist the aid of Lieutenant Morton," said Strong with a wink at the cadet.

The wink was enough to satisfy Tom. "Very well, sir. Lieutenant Morton, will you be our legal adviser?"

The young lieutenant smiled and nodded in agreement.

"All right!" said Hugo. "Now that the legal problems are straightened out, suppose we get on with the investigation."

"Yes, sir," said Morton. "But may I inquire as to the nature of the charges and the questions you wish to place before the cadets?"

"We just want to ask them some simple questions." Hugo sighed. "Captain Strong suspected a space craft was trailing him out here to Alpha Centauri. When we sent out a scout to find it, it had disappeared under what can be termed suspicious circumstances.

Since Captain Strong requested me to examine these four cadets for the purpose of finding out if they had mentioned their mission to anyone, he naturally became the accusing officer,"

continued the major. "No one is going to Prison Rock, and no one is accused of murdering anyone. All we want to do is ask a few questions. All right, Cadets? All right, Lieutenant Morton? All right, Captain Strong?" he bellowed at the top of his voice, his exasperation making everyone, even the Marines, grin.

One by one, Tom, Astro, and Thistle were questioned closely about any conversations they might have had after being assigned to the mission into deep space. Each of them emphatically denied having revealed to anyone their true destination. They had followed Strong's instructions, and when queried about the assignment, had said that the Polaris was making a routine flight to Ganymede.

Hugo, then, questioned Monroe.

"Have you talked to anyone outside the laboratory about this project, Cadet Monroe?" he asked.

"No one, sir," said Cadet Monroe. "I haven't even spoken to my commanding officer about it."

"Who is your commanding officer?" asked Hugo.

"Major Connel, sir. I've been working on this special detail under his separate, direct command."

"That's a little ambiguous, isn't it? Didn't Major Connel conceive this idea?" snorted Major Hugo.

"Yes, sir. I believe it was his idea, sir," replied Monroe. "But I was just emphasizing how little I had to say to anyone outside the laboratory, sir, when I mentioned that I had not even discussed it with him."

"All right," sighed Hugo. "Take 'em over to the laboratory and let's find out the real truth."

"The real truth, sir?" asked Tom.

"You're going to be put under psychiatric hypnosis for total examination," explained Strong. "I'm sorry, Tom, but this is serious. There was a ship on our tail all the way out to Alpha Centauri and then it disappeared. There isn't another place it could have gone-to deliver cargo, for instance-and there's no other reason for it to be out here. We've got to discover the facts."

"We're not accusing you of lying, Cadets," said Hugo. "You simply may have, without realizing it, mentioned this mission to some unauthorized person who has made capital out of it. Perhaps mechanic at the Academy spaceport." He sighed. "We cannot take

any a chances. There is an alternative. You can refuse to take the tests, but in that case you will be retained here at the colony until the Polaris returns."

"I'll take the test, sir," said Tom.

"So will we," said Astro and Thistle, and looked at each other and grinned. They already were beginning to think of each other automatically. Strong and Tom noticed it and would have been happy about it, under other circumstances.

"How about you, Cadet Monroe?" asked Hugo.

"I will be glad to take the test, sir," he said slowly but with confidence.

"Very well," said Hugo, getting up. "Let's get over to the laboratory."

Still under guard, the four boys marched out of the small building to the laboratory.

"There's only one thing bothering me," said Astro quietly to Tom as they marched before the Marines. "If I did happen to mention it to someone accidentally, like a mechanic or somebody-you know, in conversation-how will they determine if I did it accidentally or on purpose?"

Tom looked up at him gravely. "I don't know, Astro," he said. "In any case, it won't look good on our records."

Chapter 11

"I spoke to no one outside the laboratory," Cadet Alex Monroe said in the hushed whisper of a person under hypnosis.

"No one at all?" pressed Major Hugo.

"I spoke to no one outside the laboratory," repeated Monroe.

Hugo sighed and looked at Strong. "There's your answer, Strong," he said. "Cadets Corbett, Thistle, and Astro-and now Monroe-are all clear of having spoken to anyone about their mission. If there was a security leak, it came from another source."

"Thank you, sir," said Strong gravely. "And now, if the major would be kind enough, I would like to undergo the test myself."

"You!" gasped Hugo.

"I am not immune from making a slip, sir. And I would have a clearer conscience if I knew that I had done as much as I demanded of the cadets."

Hugo nodded. "Very well, Strong. You're right, of course."

Monroe was awakened and sent out of the room. Strong sat down in the chair and watched the revolving, softly flashing light from a hypnoscope before him. In a matter of seconds he was completely helpless, and Major Hugo began questioning him. But after fifteen minutes the major was satisfied Strong had not slipped either and he woke Strong from his hypnotic sleep.

"You're clean, Strong," he announced. "If that ship on your tail has anything to do with your mission, the information they have certainly

did not come from you or any of your crew on the Polaris."

"Thank you, sir," Strong said. "Now I would suggest that you get in contact with Space Academy and let Major Connel take all necessary measures to track down the leak."

"It may be just a case of jitters," young Lieutenant Morton suggested.

"Hardly, Lieutenant," said Hugo. "Remember, there isn't any other outpost on Alpha Centauri, so whoever was back there is hiding, or lying in wait for Strong to blast off again and pick up where they left off." He turned to Steve. "How about my sending an escort along with you-just in case?"

Strong considered this suggestion for a moment. Then he decided against it, relying on his judgment and the ability of the Polaris to stand off any direct attacks. Now that he was alerted to the possibility of danger, he would be wary. "No, thanks," he said. "We will just proceed as scheduled. But thank you for your cooperation and your time, sir."

"Then I'll have orders issued to give you blast-off clearance whenever you're ready," declared Hugo.

"Thank you, sir." Strong saluted and left the room as Hugo picked up the intercom and began snapping out orders to the traffic-control tower.

Outside, Steve Strong gathered the cadets together and briefed them. "I'm glad that none of you made a slip about the mission," he said seriously. "But that does not eliminate the possibility that we may have unwelcome company before we get back. I want a careful radar watch maintained at all times. Anything, and that includes space junk, is to be reported to me immediately."

"When do we blast off, sir?" asked Tom.

"As soon as we can get to the spaceport, Tom. We've already lost valuable time."

Without another word, the boys and Strong climbed into the jet car and it rocketed away from the building toward the spaceport.

The Polaris was ready for them when they arrived, and they were passed aboard by a tough Marine sergeant who made each of them show identification before he allowed them to enter the ship.

As soon as the hatch was closed and the cadets were at their stations, Tom received a blast-off clearance without delay from the alerted traffic-control tower.

"Stand by to raise ship!" bellowed Tom, after the preliminary steps to blast off had been taken.

"Blast off minus five, four, three, two, one--zero!"

Against the comparatively light gravity of Alpha Centauri, the ship ripped away from the surface of the tropical planet and in a few seconds was lost to ground observers. Once again, Tom Corbett sat at the controls of the Polaris, heading into an unknown sector of the universe with the threat of danger riding in his wake through the trackless emptiness of deep, uncharted space!

* * *

"What's going on?" demanded Hank Lister, crowding behind Boris Willard as the latter watched the activity around the Connel City spaceport on their ship's long-range telescope.

When the two men had discovered the rocket scout blasting toward

them from Connel City right after the Polaris had landed, Boris Willard had conceived a desperate plan.

Storing extra oxygen and synthetic foods aboard a jet boat, Willard and Lister set the controls of their bulky freighter at a thirty degree up-plane angle and sent it, unmanned, in a million-mile orbit, while they blasted off in the jet boat. Figuring the ship Strong had sent out would be looking for a large spaceship, Willard hoped the Solar Guard scout's radar would show their jet boat up as a slight blip, if discovered at all-possibly not larger than a piece of space junk-and be ignored.

Then, if their ship was discovered, they could sneak into Connel City later and claim that they had to abandon ship because of some emergency.

It was a desperate plan-and it had worked. Their ship, Traveler, had completed the million-mile orbit without mishap, and they had boarded her again.

Now, from a safe distance off Alpha Centauri, confident that they had eluded the Solar Guard, they watched the Polaris blast off and set course for Sirius. "All right," Willard said, turning to Lister. "Get below and stand by to start blasting. We'll have to bypass Alpha Centauri and pick up the Polaris on the other side." He snapped off the long-range telescaner and turned to the control board.

Lister hesitated. "I don't like this, Boris," he said. "We're taking all the chances and Wilson is sitting back there on Earth, and he's going to get as much out of this as we do."

Willard snarled, "Have you forgotten the recording he made of our conversation that night? We haven't any choice. Now get below. We'll have to really push this wagon to make up for the time lost in

detouring around Alpha."

"If they're suspicious," suggested Lister, "how about getting in touch with Wilson and telling him? What's the use of our getting all the information out of that robot rocket and trying to make a claim to the uranium, if they get him in the meantime and he confesses? We might come back to Atom City with a claim and walk right into a trap. Have you thought about that?"

Willard's narrow brow creased in thought. "You're right," he agreed finally. "I'll contact him and tell him what's up. Meantime, get below and pour on the neutrons! We're wasting time!"

When Lister went down to the power deck, Boris Willard turned to the long-range communicator Wilson had built for them and installed in the ship. There was only one frequency and it led directly to a hidden receiver in Wilson's suburban home outside Atom City.

Quickly Willard contacted Wilson and told him of the efforts made by Strong to check on them.

Wilson's voice was clear, though he was light years away. "You acted smartly," he said smoothly.

"Just watch your step and don't worry about me. There's no possible way for Connel to connect me with you. Just carry on with the plan and make sure you go directly to Alpha Proxima. After you destroy the Polaris, contact me and let me know how things are going."

"Check!" Willard said. "But watch your step with Connel. He's plenty tough."

"You watch yours with Strong. In many ways he's just as tough. End transmission!"

"End transmission!" said Willard. He snapped off the communicator and turned to the intercom. "Ready to go, Lister?"

"Ready!"

"Pour it on!" roared the burly spaceman. The powerful freighter shot ahead in space on a course that would take them deeper into space on the trail of the Polaris.

* * *

Unaware that the Polaris was being followed by a determined pair of criminals, T. J. Thistle sat on the radar bridge amusing himself with an audiograph recording of a space adventure. In three hours they would be cutting back from hyperdrive to standard space speed for their approach to Sirius. The young cadet was bored. He stopped the audiograph, got up, stretched, and yawned. He flipped the switch to the intercom. "Say, Tom," he called, "any sign of the robot rocket around the satellite?"

"I don't know. Monroe is aft fiddling around with that complicated gear of his," replied Tom.

"Attention! Attention! All hands lay to on the control deck on the double!" Strong's voice interrupted the conversation between Tom and T.J.

Moving quickly, T.J. jammed the radar-scanner switch over to automatic and leaped for the ladder leading to the control deck. He reached there just as Astro, Strong, and Monroe arrived from below. Strong's face was grave with concern.

"What is it, sir?" asked Tom.

"What's our estimated time of arrival, Corbett?" asked Strong.

"About three more hours on hyperdrive and then about an hour on standard space speed should bring us right on top of Thor, sir," replied Tom with a glance at T.J. who nodded in agreement.

"Is there something wrong, sir?"

"We should have picked up the satellite and the robot rocket on radar eight hours ago,"

said Strong quietly. "We picked up the satellite all right, but there is no sign of the rocket."

"And we're in the right position," said Monroe, glancing at T.J., "unless Thistle's astrogation is off."

"My astrogation is never off!" snapped the small cadet.

"Dampen your tubes, both of you!" snapped Strong. "No one is accusing anyone of anything."

The plain and simple truth is that the rocket is lost. And we've got to find it."

"Unless Monroe's calculations are off, sir," said T.J., unable to resist a last bit of needling.

Monroe reddened. "Captain Strong checked my figures himself," he said angrily.

Strong nodded in agreement. He walked to the rear of the control deck and began checking the astrogation chart against a scale drawing of Thor, the satellite of Sirius. "The robot rocket has a gyroscope inside," he declared. "When it was fired from Titan, the distance from Titan to Thor was measured within a thousand miles,

and the speed and course of the robot set accordingly.

The gyroscope was timed to take over the control of the rocket at the precise point when the rocket entered the gravitational pull of Thor, and then send the robot into a holding orbit about five hundred miles above the surface of the satellite."

Strong paused and stared at them. "The radar scanner Monroe has set up on the afterdeck was especially designed to pick up a signal being sent out from the robot within a radius of one hundred thousand miles. We are well within that radius now and should have picked up the signal long ago. We haven't. There are two possibilities. One: that the robot ran out of fuel and has fallen into the satellite--or, the gyroscope failed to function properly and the robot is now speeding deeper and deeper into space."

"What are we going to do about it, sir?" asked Tom.

Strong replied, "I want you and Astro to go below and begin fitting out two jet boats immediately for an extensive search of the atmosphere of Thor and for a detailed survey of the surface of Thor itself. The recording data may be ruined. The rocket may not have done its job at all, because of instrument failure. But the only way we can be sure is to find that rocket! And if we have to stay out here for six months, that's exactly what we are going to do!"

Chapter 12

"Blast off!"

At Strong's order Tom sent the small space craft hurtling out of the Polaris.

The jet boat containing T.J. and Astro rocketed out after him within a few minutes.

Tom established contact with Strong over the intercom and headed the speedy vessel in the direction of Thor. The satellite loomed ahead of them, orbiting slowly around the twin stars of Sirius, double suns set far away against the cold, black void of space.

"Are you sure all the gear and instruments are antiradiated?" asked Tom, glancing at Monroe seated beside him.

"Everything has been made positive to U-235," Monroe nodded. "Only material that has a negative gamma count can be affected by uranium. We can maneuver without worrying about any disturbances in our instruments."

Tom nodded. "That's good. I plan to orbit through the atmosphere at an altitude of about four hundred and fifty miles above the surface of Thor and then spiral around, getting lower and lower.

"That should do it," agreed Monroe a little tightly. Tom looked at him. "Are you all right, Alex?" he asked.

"Yes. I'm all right."

"I'll contact Astro and tell him to hold at four hundred and seventy-five miles and spiral in from that altitude. That way we'll be covering the

area at twenty-five-mile intervals."

Tom switched on the communicator and relayed the information to Astro and T.J. in the second jet boat.

"Polaris to Corbett and Astro, Polaris to Corbett and Astro, come in." Strong's voice suddenly filled the tiny compartment in the jet boat and Tom flipped on the communicator to reply.

"Go ahead, sir," said Tom.

From somewhere in space, Astro's heavy voice was heard. "Standing by, sir."

"I'm taking the Polaris on a wide orbit around the satellite to see what I can find," Strong announced. "Are you in the atmosphere yet?"

"Just entering it now, sir," said Tom.

"What does it look like? Oxygen? Methane ammonia?"

"It's ammonia all right, sir," replied Tom. "And from the readings we are getting on the sensitizer, I would say it's about the heaviest concentration I've ever come across."

"How about you, Astro?" asked Strong.

"Same here, sir. I would say it's about seven-point density," replied the burly cadet from his jet boat.

"All right," said Strong. "Your space suits can withstand methane ammonia up to a density of twelve. That's a pretty big margin of safety. But be careful of the temperature.

Don't get out of the jet boat and wander around if it's more than two

hundred degrees below zero."

"Yes, sir," replied Tom calmly.

"Do you have radiation counters with you?" asked Strong.

"Yes, sir," said Tom. "Three of them, in fact. Two portables and the large X-4-Z Super-Geiger."

From the Polaris, Strong kept checking the cadets on gear as Tom drew closer and closer to the swirling cloudy mist of methane ammonia atmosphere.

"All right, Corbett," said Strong finally. "I'm blasting now, but I'll stay within communicator range. Don't play it heroic and not call me if you have any problems."

"Don't worry, sir," said Tom. "I don't like this ammoniated soup at all."

As Tom's jet boat dropped lower and lower into the white swirling mists over the satellite, Monroe kept a careful check on the radioactivity count.

"How's it going, Alex?" asked Tom.

"Going up all the time," said the cadet. "There must be enough uranium ore down there to supply the Solar Guard with reactant for the next century."

"You think such a heavy concentration of uranium is possible? It couldn't be anything else, could it?" asked Tom.

"Corbett," said Monroe grimly, "from the readings on this Super-Geiger, it can be only one thing."

"Well, for Pete's sake, Monroe, spill it!" said Tom. "What is it?"

"I'll tell you later! Contact Astro and Thistle! Tell them to blast out of here. We're in danger!"

"Are you kidding?" asked Tom. "How could that be?"

"Don't argue with me, Corbett! Get out of here!"

Tom picked up the mike and began calling desperately. "Corbett to Astro! Come in, Astro!" As he talked, he advanced the acceleration throttle around and pulled back on the control lever sharply. The tiny vessel shot straight up out of the swirling ammonia mist.

"Astro, check in! Get out of here!" Tom continued to call. "Monroe has discovered something dangerous!"

There was no answer. Only static crackles over the compartment loud-speaker. Tom's mind worked furiously as the ship climbed out of the methane ammonia atmosphere and into the clear blue of space. He cut the acceleration and began a circling orbit above the satellite.

"Come in, Astro! This is Tom. Come in, T.J. Check in!"

There was still no answer.

Tom flipped the switch to the long-range band and began calling again. "Tom Corbett to Captain Strong on the Polaris, Corbett to the Polaris--"

"What is it, Tom?" answered Strong's reassuring voice.

"It's Astro, sir. Monroe discovered something dangerous. I don't know what. But I called Astro to tell im to blast out of there and got no

answer!"

"By the rings of Saturn!" cried Strong. "And I'm at least two hours away from you." His voice was bitter and Tom could hear the sudden worry in the young skipper's voice.

"Stand by. Don't go into that atmosphere again until I get there," said Strong.

"But, sir," protested Tom, "what about Astro and T.J.?"

"It will be better to wait and search for them with the Polaris," declared Strong. "That's an order, Corbett! Stand by until I get there! End transmission!"

Tom looked down into the thick clouds of ammonia surrounding Thor and shook his head.

Then he turned to Monroe. "What did you discover down there?" he demanded.

Alex Monroe's face was white. "I still can't believe my eyes."

"What is it?" demanded Tom, and pulled the Super-Geiger out of Monroe's hand to read the indicator himself. He stared unbelievably at the delicate radiation counter. The indicator dial had swung past the point of U-238.07 and was centering itself in the red area marked U-235!

"Why-it's-it's reacting!" Tom stammered, looking at Monroe with horror. "Why, that's on the verge of blowing--"

"No," said Monroe calmly. "I don't think it's going to blow up! But a great mass of Thor's surface is in a state of fissionable agitation. It may recede-or it may build."

"But how can that be!" exclaimed Tom. "U-238.07 is the ore from which U-235 is extracted. It has to be refined!"

Monroe shook his head. "That's one of the things that's been bothering Professor Sykes and Dr.

Dale. Ordinary deposits of U-238.07 would not cause the reaction and disturbances we've been getting from this area of space. But through some freak process of nature, the U-238.07 on Thor has been processed and there are huge masses of U-235-pure reactant!"

"But Astro and T.J. are down there!" Tom exclaimed. "They'll be burned alive by the radiation!"

"There's a chance, Tom," said Monroe. "Remember, the jet boat has been made positive to U-235. It will protect them. The thing I'm worried about is-" Monroe paused.

Tom looked at him. "Is what?" he demanded.

"Whether the ship will remain airtight under the pressure of the methane ammonia atmosphere,"

Monroe continued reluctantly. "It's heavier than anything we've ever encountered before-even on Jupiter-or Saturn. If they lose oxygen--"

"I'm going down," said Tom grimly. "Are you with me?"

Monroe did not answer. He stared straight ahead. Beads of sweat broke out on his forehead. "I can't answer you, Corbett. I can't say I will go with you. I'm too scared."

"I'm scared, too," said Tom.

"But if I say no, then I'll never be able to live with myself again. I can't make the decision.

You'll have to make it for me."

"Just tell me one thing. Do we stand a chance if we go down there?"

Monroe nodded after a moment and gulped. "I think so. Now that we know what to expect, we can be prepared. We can get into our space suits now, just in case we spring a leak."

Tom nodded. "Then get into your suit. Down we go."

A few minutes later the boys were encased in the bulky, lead-lined space suits they had brought with them. They checked their ship thoroughly for weak points before settling back in their bucket seats, Monroe holding the Super-Geiger on his lap and the portable counters slung over their shoulders.

"You'll have to watch the atmosphere pressure, Tom," said Monroe. "I'll have all I can do to handle this Geiger."

"Right," replied Tom. "You ready now?"

"Wait!" exclaimed Monroe. "What do we do when we get down there?"

"We get out and start looking," said Tom grimly. "O.K. Buckle on your helmet and adjust the valves, so all we have to do is turn it on in case the boat springs a leak."

Monroe nodded and adjusted Tom's valve, while Tom leaned over and adjusted Monroe's.

"All set?" Tom asked.

"All set!" replied Monroe.

Tom eased the accelerator lever forward and sent the tiny vessel nosing down into the wispy, undulating gas cloud. Just before they reached the first layers of the atmosphere, Tom spoke to Monroe without looking at him. "It takes a brave man to do what you're doing, Alex. And I want you to know I couldn't think more of you. You're risking your neck for a couple of guys that have given you a pretty hard time."

"I deserved it," said Monroe.

"Why did you deserve it?" asked Tom softly, guiding the tiny boat into the mists carefully. He flipped on the switch of the communicator to warm it up.

"I was scared, Tom," Monroe admitted. "More scared than at any other time in my life."

"Scared of what?" asked Tom.

"Of you and Astro and Thistle's reputation. You have no idea how I looked up to you and the others. You see, I wanted to be a radarman but flunked out psychologically. I've since overcome the difficulty. But, in the meantime, I had become interested in lab work and it was too late to join another unit. So I concentrated on succeeding as an individual. When I came aboard the Polaris the first time, I thought you guys wouldn't like me because I was a Brain, so I decided to beat you to the punch."

Tom listened to the confession of the cadet, all the while searching and probing the mists for a sign of the missing jet boat. "Alex, you made one mistake," he said. "Not of being afraid of us-I guess, under the circumstances, I would have been afraid too. But your

mistake was in not bothering to find out what we were like before you decided you didn't like us."

"I know that now," said Monroe grimly. "And if I ever get the chance, I'm going to tell Thistle and Astro just what I've told you."

Tom grinned. "You won't have to say a word, Alex. When they learn that you came down into this soup looking for them, and bucking an order of Captain Strong's to boot, that's all they'll need to know."

"Thanks, Tom," said Monroe with a grin. He managed to raise his thickly padded hand and the two cadets gripped hands.

"All right, let's concentrate on finding those two jokers before they get their whiskers singed with a home-grown reaction mass!"

"Altitude one hundred miles and closing in fast," said Monroe in a firm voice. "Radiation count up to critical mass."

Tom picked up the mike of the communicator and began calling hesitantly. "Corbett to Astro! Come in, Astro. Corbett on jet boat one to Astro on jet boat two, come in, Astro--"

He waited. Only static crackled over the loudspeaker.

"Here we go!" he said. "Right down to the surface!"

He pressed the acceleration lever forward and the small craft shot straight down into the thick, boiling clouds of methane ammonia gas shrouding a freak of nature, a wildcatting reaction mass big enough to blow an entire planet into space dust.

Chapter 13

"Do you hear what I hear?" Boris Willard exclaimed.

"Just the break we need!" chortled Lister.

"With his four cadets down in that ammonia soup, Strong doesn't stand a chance."

Willard snapped off the radar screen where the images of the Polaris and the two jet boats had been revealed. The conversations between Tom and Strong had given the two criminals sudden hope of an advantage.

"But how are we going to get past Strong's atomic war heads?" asked Lister with a worried frown on his face. "He's suspicious already, and if he sees us come alongside in the freighter, he'll open fire without stopping to ask questions."

"We're not going alongside in the freighter," replied Willard. "We're going to pull a fast one!"

"How?"

"We're going to fly the Traveler into that soup and hide her just below the surface of the atmosphere."

"What good will that do?" asked Lister.

"Let me finish," persisted Willard. "We'll leave the Traveler and take off in a jet boat."

We'll blast up alongside the Polaris and Strong will think we're one of the cadet crews. All jet boats look alike on a radar scanner. He takes

us aboard-and we take him! We knock off Strong and spend our time looking for the projectile without any worries."

Lister's face broke out into a grin. "And the cadets are left in the soup!"

"Right. Two of them are already done for, anyhow. You heard what Corbett said. Come on. We haven't any time to lose! We've got to get inside that ammonia atmosphere before Strong shows up in the Polaris!"

Quickly the two men turned to the task of maneuvering the bulky freighter into the swirling mist of the deadly ammonia gases.

* * *

Meanwhile, aboard the Polaris, Captain Strong sat before the control board on the great cruiser gripping the acceleration lever tightly, holding it at full forward thrust. His face set in a grim expression of determination, he flew the Polaris with every trick at his command. He had more than an hour to go--and no report from Corbett.

He flipped on the communicator for the tenth time.

"Polaris to Corbett," he called.

"Come in, Tom. Any sign of T.J. or Astro?"

The nerve-rattling noise of static was all the answer he got.

Strong clenched his teeth in frustration. He should have known that Tom would not stand by waiting for him to return while his friends were in danger.

Ahead, he could see the round ball of white that made the satellite

Thor different from the other satellites orbiting around Sirius. Angry and a little frightened at the thought of losing the cadets to the suffocating, deadly gases, Strong was unaware that the space freighter Traveler had nosed its way into the upper layers of the ammonia atmosphere around Thor and lay in wait for him. Throughout the entire voyage from Alpha Centauri the young captain had kept a close and careful check of the space astern, anticipating the reappearance of the strange ship. But he had seen nothing to arouse further suspicions, and now, facing another danger in the atmosphere of Thor, he unknowingly blasted straight toward the cunning trap laid by Willard and Lister.

Again Strong tried to reach Tom over the communicator but there was no answer except his own voice echoing hollowly on the control deck.

* * *

"Astro!"

T. J. Thistle's voice was but a thin squeak over the communicator inside his space helmet.

"Astro, come in! Where are you?"

"Right beside you, T.J.," replied Astro over the same communication system. "The gases and the radioactivity are affecting the electric circuits in our suits, making the sound fade once in a while."

"I can't see a thing!" said T.J. "And I'm scared to move away from the ship."

"Don't," replied Astro, his voice sounding distant over the headset. "The best thing to do is stay where we are and wait for help to come."

"What do you think happened?" asked T.J. "All of a sudden the instruments started going crazy, and the next thing I knew you were strapping on my helmet."

Astro reached out his hand and touched the small cadet's shoulder. "There's a strange phenomenon here, T.J.," said the big cadet. "There's only one thing that could affect a Super-Geiger. And that's a pure fissionable element."

"U-235!" gasped T.J.

"Right," said Astro grimly. "It's a lucky thing for us we've got lead-lined space suits; otherwise, the reaction mass on this satellite would knock out our electrical systems completely."

And in this subzero atmosphere we wouldn't last five seconds."

Thistle began feeling his way around the side of the jet boat. He could not see anything but the vaguest hint of movement in front of him, and that movement was the agitation of the ammonia gases clinging to the surface of the satellite. He felt the edge of the hatch and he ran his hands inside to the bucket seat, reaching for the Super-Geiger. "See if you can pick this thing up, Astro," he said. "I've got an idea."

"What?" asked Astro, coming up alongside of him. Feeling his way around, he lifted the awkward instrument out of the jet boat.

"Hold it so I can get close to it," said T.J.

The big Venusian held the Super-Geiger close to his chest and T.J. moved in closer, until his helmet touched the instrument. Vaguely, by straining his eyes, he could barely make out the face of the indicator. The needle was swung sharply over to the extreme right side.

"We got to get out of here!" T.J. cried over the intercom. "This place is so hot, it's like standing around an open bucket of reaction mass in the power deck. It'll penetrate our suits in a little while."

"But we can't leave the jet boat," said Astro. "If they come looking for us, they stand a better chance of picking up a hunk of metal as big as the jet boat on their radar scanner than us."

"We've got to move, I tell you!" shouted T.J. over the fading communication circuit. "In ten minutes we'll be a couple of fried eggs!"

"But where will we go?"

"Any place!" shouted T.J. "This whole satellite can't be a hot seat!"

Behind the protective wall of the thin, lead-coated bubble of his helmet, Astro closed his eyes and tried to shake off the idea that a whole moon could be a charged, boiling mass.

"All right," he said finally. "But we have to leave a trail so that if they do find the jet boat, they will be able to track us down."

"What kind of trail?" asked Thistle.

"I've got it!" Astro turned back to the jet boat and ripped open the hood over the small power unit. Working from memory, he loosened the casing around various small motors and pulled out coils of copper wire. In a few minutes he had them all unwound and, attaching one end of the wire to the steering column of the jet boat, he began to walk away into the nothingness of the swirling mist. T.J. followed him, carrying the Super-Geiger and holding on to Astro's belt.

They walked silently for perhaps a half hour, but the radiation never varied. Step by step, the boys felt their way along, sliding their thick-soled space boots across the hard-frozen surface of the satellite and uncoiling the copper wire. But slowly and inexorably, a rising tide of fear began to engulf them.

* * *

"What's on your side?" asked Tom, turning to look at Monroe. "There isn't anything on my side but ammonia mist and more ammonia mist."

"Nothing over here, either," replied Monroe. He checked the Super-Geiger on his lap.

"We've evidently left the area of the critical mass. It must be a pocket of some kind."

"And we've got to find Astro and T.J. in this stuff," said Tom, shaking his head. "Well, what are your suggestions, Alex?"

"What else can we do but land and start searching?"

"How about sticking with the jet boat? Once we leave this kiddy car, we might never be able to find it again."

"That's true," said Alex thoughtfully. "But we're so close to the surface now, we're taking a chance of hitting something."

"I know," said Tom. "But what happens if we find Astro and T.J. and then can't get back to the jet boat?"

"Anything you say," said Alex firmly. "You've had more experience with a jet boat than I have. If we could move over the surface at a very low speed, we might avoid being badly damaged if we do hit

anything."

"That's just what I was thinking," said Tom, then suddenly pointed up and behind them.

"Alex! Look!" he exclaimed.

Monroe turned and looked up through the clear Titan crystal hood of the small craft.

Above and behind them was a distinct and clear opening in the billowing mist.

"By the craters of Luna!" cried Tom. "I've got it!"

"I don't understand," said Monroe, staring at the cleared area. He could see as far as a hundred feet before the walls of the boiling ammonia gases came together again.

"The heat of the exhausts from the jet boat has burned a path in the ammonia!"

"But-but--" gasped Monroe, "how is it possible for it to remain. Heat dissipates--"

"Don't you see?" cried Tom, his hands already grabbing for the accelerating lever. "The heat can't go any place! It can't dissipate itself because the methane ammonia is so cold, it forms a trap. The exhaust simply burns away the cold mists and it takes a certain amount of time before the cold can overcome the heat and close in again!"

Monroe's face broke out into a grin. "Then all we do is keep blasting while we're on the ground, and we'll be able to see!"

"Right," said Tom.

"Let's go!" urged Monroe. "But make it snappy! The Geiger is beginning to act up."

Tom glanced at the delicate instrument on Monroe's lap. The tiny ship had already begun to move, and with it the indicator on the Super-Geiger began to indicate they were heading straight for an intense, near-critical mass.

Tom maneuvered the vessel around the surface of the satellite carefully, going in different directions, first left and then right, to test the Super-Geiger.

Straight ahead of them lay the critical area.

"You know something, Alex," Tom said thoughtfully, as he flew the boat slowly and carefully.

"Astro and T.J. were roughly in the same position we were over the satellite when we lost contact with them. If that's the case, then the reason our instruments didn't go crazy the second time we came down- this time-was because we missed that area! And Astro and T.J. must have been right on top of it!"

"Then you think they might be inside now?" asked Monroe.

"Exactly!" said Tom. "So we're going to explore the whole area."

"If anyone had ever told me I would be riding a jet boat, exploring the heart of a natural atom bomb, I'd have called them crazy! Let's go!"

Tom shoved the acceleration lever forward and sent the tiny boat rocketing into the hot area, the exhausts burning away the mists around them, revealing the bleak, desolate, uninviting landscape of

Chapter 14

"Check in, Tom! Check in!" Strong's voice was hoarse as he sent his urgent call into the treacherous atmosphere of Thor. "Astro, T.J., Tom, Monroe! Check in!"

The Polaris hovered just above the outer layers of the methane ammonia atmosphere, ready to plunge toward the surface of the satellite should the call be acknowledged. Strong glanced up through the viewport and caught sight of Sirius. Like an evil omen, the double sun cast its white-hot heat over a wide arc of space. The sight of the white dwarfs filled Strong with sudden rage. "You can't have them!" he muttered between clenched teeth. "I'll get them back!"

Strong turned away from the viewport and adjusted his controls, preparing to send the ship below the murky surface of Thor's atmosphere.

"Here goes nothing!" he said under his breath, and pressed forward gently on the acceleration lever. The ship nosed down toward the swirling mists.

He was approaching Thor in a slow, steady orbit, scanning the mists carefully when a blip suddenly appeared on the radar screen. Hoping against hope, Strong slammed on the braking rockets and brought the big ship to a standstill in space. He checked the scanner carefully and watched the tiny space vessel come straight forward, blasting smoothly toward the Polaris.

He almost shouted with joy as he recognized the outline of a jet boat.

Strong flipped the switch to open the catapult deck for the jet boat to land, then raced below to wait for the cadets in the air lock.

A moment later he heard the boat slip into the open hatch and come to a stuttering, vibrating halt.

Strong immediately closed the hatch and raised the oxygen content of the chamber to that of the rest of the ship. The equalizer signal had scarcely started ringing when he yanked open the air-lock portal and raced over to the tiny space craft.

Strong wrenched the hatch open. "Boys, what happened-" He stopped suddenly, eyes wide with shock.

"Just put your hands up, Strong, and back up slowly," said Boris Willard, holding a paralo-ray gun steady in his big hand while Lister scrambled out of the ship to grab Strong's arms and pin them in back of him.

"Why, you--!" Strong grasped Lister's wrists and tried to pull him between himself and the ray gun, but Willard was prepared. Reaching out quickly, he brought the barrel of the ray gun down hard on Strong's head.

The Solar Guard captain slumped to the deck, unconscious.

"Well," said Willard, climbing out of the jet boat, "I guess we got ourselves a Solar Guard cruiser!" He grinned at Lister.

"We sure have!" replied his henchman. They grabbed Strong by the arms and pulled him off the boat deck into the air lock.

"Why don't we knock him off now and get it over with?" Lister grunted.

"We'd better hang on to him for a while," replied Willard. "We might need information later about the robot rocket. Let's just lock him in

the brig now and take a look at this wagon."

"O.K.," said Lister, closing the air-lock portal. He turned back to look at Strong lying helplessly on the floor and grinned. "You know something, Boris? This is just about the easiest job we ever handled!"

"Yeah. And there's nothing that can stop us now!" Boris chortled.

"That's right!" Lister agreed. "Nobody knows we came out here and there ain't no way of proving we had anything to do with this!"

"Right. All we have to do now is find the projectile, get the information out of her, and blast out to Alpha Proxima in the Traveler. We crash the Polaris on Thor and when they come to investigate--" The burly spaceman shrugged and grinned.

"Just another space tragedy!"

* * *

"That's as far as we can go with the wire," T.J. suddenly announced.

"Then this is where we sit and wait," said Astro over his helmet communicator. "Unless you want to walk around in a circle, using the wire as a plumb line and investigate further?"

"Let's keep moving," said T.J. "Just sitting still and looking at the landscape gives me the heebie-jeebies."

"What landscape?" growled Astro, pulling the wire tightly and moving to his left. T.J. trailed behind him, still holding on to his belt.

The two boys had moved about a hundred feet when Astro felt a tug at his waist. "What is it?" he asked, turning to face T.J.

But there was no answer. Astro could see the little cadet's lips moving, but there wasn't a sound from his helmet communicator, and he realized it had finally gone dead. Shrugging helplessly, Astro turned away again to resume the search, when he felt a more urgent tug at his waist. He looked at T.J. inquiringly and saw his unit mate waving his arms in the air and gesticulating wildly. After a moment of bewilderment, Astro finally understood T.J.'s frantic signals. T.J. was describing a jet boat landing!

Astro nodded, and still holding the wire, he moved in the direction T.J. had indicated, straining to see through the mists. He thought he saw something moving and plunged ahead faster. There was a tug at his belt, but he ignored it. If there was anything ahead of him, moving around in the mist, it could only be Tom and Monroe prowling the surface of the satellite in search of them.

Again there was a pull at his waist, an insistent tug that nearly jerked him off his feet. He stopped and turned around. T.J. was gesturing wildly to their left. Astro let out a bellowing roar when he saw a shadowy outline that resembled a jet boat through an opening in the boiling mists.

He lunged ahead, dropping the wire connecting them to the jet boat and dragging T.J. behind him.

But he hadn't moved five feet before the clearing in the mist closed and he was again stranded in the deadly fog. But now he had lost contact with his own jet boat!

For the first time since their hazardous crash landing on the satellite, Astro was frightened.

"Move," he said to himself grimly. "Keep moving. There has to be a way out of this somewhere!"

Keep moving. Walk. Take another step-and then another -and another."

The big cadet strained his eyes for a sight of the jet boat. Now he wasn't sure that he really had seen it. But what else could it be? What else would be on this dead moon? "Keep going, Astro, keep looking!" he muttered to himself.

Suddenly he stopped. There it was again! A vague shadow in the mists. Quickly the mist dissolved and a red glow he knew could only come from the exhausts of a jet boat bore down on him.

"Get back!" he yelled, forgetting that T.J. could no longer hear him. "Get back!"

He lunged to one side so fast that he jerked the smaller cadet off his feet. Reaching down, he grabbed T.J. by the arms and pulled him up again, just managing to get T.J. out of the way of the jet boat's exhaust as it began to burn the thick methane ammonia gases around them, clearing the atmosphere.

In the jet boat, Tom and Monroe spotted the two space-suited figures immediately.

"Astro!" yelled Tom over the communicator. "Astro! Are you all right?"

Without waiting for an answer, Tom cut the jets on the small craft and opened the hatch of the cabin. He was out of the jet boat and at T.J. and Astro's side in two leaps. "Astro, are you O.K.?" he called frantically.

In the cleared atmosphere, Astro could see Tom's lips moving. He quickly patted the side of his helmet and shook his head, indicating

his communicator was dead.

With Monroe helping T.J. back to the ship and Tom beside Astro, the four boys hurried to the small vessel before the thick swirling ammonia gases could close in on them again.

Once inside the jet boat, Tom turned on the oxygen purifier and in a moment the ammonia gas that had seeped into the ship was sucked out. When the gauge indicated the air supply was pure, they all took off their helmets.

"Wow!" bellowed Astro. "I've never been so glad to see anyone in my life!" He grabbed Tom by the hand and shook it heartily.

"Same here, buddy!" said T.J. happily to Monroe.

"Glad we found you, Thistle," replied Monroe shyly.

"Listen, fellows," announced Tom, "I want both of you to know that if it hadn't been for Alex, I couldn't have done it. He discovered what the trouble was before it hit our ship, so we blasted out in time."

Astro and T.J. turned to the quiet cadet and looked at him quizzically.

"And when it was time to come down in the soup again and risk our necks to save yours," added Tom, "he was ready to go." Astro and T.J. gripped Monroe's hand in unspoken friendship.

"Thanks, Alex," said Astro. "I guess I owe you an apology."

"Same here, Brain," said T.J. breezily. "But I never doubted you had the stuff from the very beginning."

"T.J.!" said Tom, wagging his finger in warning.

"Well, I didn't," said T.J. with a shrug of his shoulders. "I just didn't like the way he was using what he had, that's all."

They all laughed.

"No, I'm the one who owes you the apology, fellows," said Monroe quietly. "I tried to explain it to Tom before we came down into this stuff looking for you. I behaved the way I did because I was scared." He paused and then added bitterly, "I was a coward."

"Listen!" growled Astro. "If any space-gassing bum ever calls you a coward, send him around to see me. I'll straighten him out."

"O.K.! Now that we're one big happy family," said T.J., with a twinkle in his eyes, "how about blasting out of here? I've had enough of this place for the rest of my life!"

"No sooner said than done!" replied Tom with a smile. He pressed forward on the acceleration lever and the small craft began to rise slowly into the mists. Gathering speed, Tom rammed the lever down all the way and the jet boat shot straight up in a climb toward the surface of the atmosphere and the clear, lucid brilliance of outer space.

"Tom, look out!" yelled Astro a few minutes later.

The immense bulk of a spaceship loomed ahead. Tom jammed on the nose braking rockets of the tiny ship and cut hard to the right to avoid a deadly collision. But a crash was inevitable.

Chapter 15

There was the terrifying sound of wrenching metal as the jet boat flashed past the huge spaceship, scraping along the steel hull. The tiny boat lurched and corkscrewed into the mists of Thor, out of control.

As Tom fought the controls and brought the boat into level flight again, Astro spun around to look back at the ship that had loomed out of nowhere.

"Why, that's not the Polaris!" he gasped.

"Never mind that now!" Monroe shouted.

"Switch on the emergency purifier, quick! We're leaking!" T.J. grabbed the switch and turned up the oxygen pressure to keep pace with the ammonia gases seeping into the ship.

"Watch it!" Tom called. "Don't overload it!"

"It can't be helped," said Astro, checking the pump anxiously. "There are too many of us in here!" He turned to the other cadets. "Alex, you and T.J. put your helmets on!" he ordered.

"Use the oxygen from your suit tanks."

"Right!" replied T.J.

Monroe and the little cadet hastily donned their helmets again. Astro sat up and grunted his satisfaction.

"Is it O.K.?" inquired Tom.

"Yeah," said Astro. "It's O.K."

"All right," Tom nodded after a quick check of the controls. "We're in good shape. Let's go back and find the Polaris."

"But it's not the Polaris, I tell you!" Astro protested.

"Who else could it be, you Venusian clunk?" inquired T.J. over the communicator in his fish-bowl helmet.

"I don't know who it could be, but I can tell you what it could be!" growled Astro.

"What is it?" asked T.J.

"That's a freighter," said Astro firmly. "Class J-7. Can carry cargo up to one thousand tons. She's equipped with hyperdrive and was designed for deep-space travel. Any more questions?"

Astro's voice rose as he finished the explanation, barking the last sentence into the communicator mike.

T.J. winced. "O.K., O.K., so you're a walking encyclopedia about spaceships," the tiny cadet replied. "But what's it doing out here, in the first place?"

"That," said Astro loftily, "you will have to wait and see."

"All right, you guys, knock it off," Tom said with a grin. "We're going to find out about that right now. The crew on that ship must've been using radar to probe through this soup. They probably saw us flash past."

"But who could they be?" Monroe asked. "There isn't supposed to be a ship out here."

"I know," Tom replied. "That's why we've got to play this smart. I'll make a slow pass at her while T.J. and you bail out and try to get aboard her. Then I'll go into some crazy gyro spins and turns, as if we were out of control, and we'll call for help. We won't mention you two."

"Good idea," commented Astro. "Only one thing wrong with it."

"You want to go, I suppose?" asked Tom.

"That's the only objection I've got," said Astro.

"Listen, you Venusian ape man," said T.J., "you're hard luck to me. I had one experience with you already. I'll take the Brain along on this one, if you don't mind. He has a slight edge on you in intelligence."

"Thistle," growled Astro, "when I get you back on the Polaris, where I have room, I'm going to take you apart and find out what makes you tick!"

"What's the matter? Tired of being a big stupid ox? Want to find out how the other half lives, eh?"

Astro made a gurgling sound in his throat and grabbed for the little cadet, who laughed at him safely from inside his space suit. "Not even you can get to me now, dear boy," said Thistle.

During the good-natured banter, Tom had maneuvered the tiny ship alongside the freighter.

Clamping his own helmet on and making certain that Astro was wearing his, he opened the hatch and called, "Stand by!"

Monroe and T.J. stood poised at the open hatch and waited for Tom's next order.

"Go!" yelled the curly-headed cadet.

The two cadets sprang out into space and shot toward the side of the freighter. Tom and Astro watched anxiously as they flipped over and brought their magnetic space boots to bear against the hull. As soon as their magnetic shoes touched the steel plates and they were safely aboard the ship, Tom gunned the boat, sending it into a wide variety of spins, turns, and dives.

Astro clung to his seat and grinned at Tom. "This is better than the roller coaster!" he yowled.

"Hey, Tom!" T.J.'s voice suddenly crackled over the communicator. "This is T.J., check in!"

"Go ahead, T.J.!" said Tom.

"We found the emergency hatch unlocked," T.J. answered. "We're inside the air lock now. No sign of anyone aboard so far."

"Be careful!" warned Tom. "They-whomever they are-might be waiting for you."

"Don't worry!"

Maneuvering carefully, Tom guided the tiny boat alongside the huge freighter and braked sharply beside the large jet boat's hatch.

"Watch it!" cried Astro as the hatch suddenly began to open.

Tom hesitated, undecided whether to fly the jet boat aboard the larger vessel or to blast off. The decision was made for him when he saw the familiar space-suited figure of T.J. standing inside, gesturing for him to come into the ship.

"It's O.K., Tom! She's deserted!" T.J. cried over the intercom.

"Deserted!" said Tom. He looked at Astro, puzzled, but the big cadet merely shrugged.

Flying the jet boat into the freighter, Tom and Astro waited until the outer hatch was closed and the air pressure was equalized. They were met by T.J. when they finally climbed out of the boat.

"Greetings, Cadets!" T.J. said casually. "Be my guests!"

"Where's Alex?" asked Tom.

"Right here!" said the cadet, coming toward them. "I just went through the entire ship.

There isn't a soul aboard. But there was-and not too long ago, either."

"How do you figure that?" asked Astro.

"Somebody used the galley this morning. The heater is still warm and there is evidence that the ship had been occupied by two men, possibly three."

"But where are they now?" asked Tom. "And who are they?"

"Yeah, and why would they leave their ship orbiting in this soup-" began Astro, but was stopped by T.J. who snapped his fingers suddenly.

"Wait a minute!" he cried. "Remember that security check we went through back on Alpha Centauri? Captain Strong thought someone had been tailing us! And he was right!"

"All right!" agreed Tom. "We've had a little company on the way out here. But where are they now?"

"They might have been looking for us!" said Astro grimly. "They could have seen us blast off in two jets and figure there was a good chance to find out--"

"Find out about what, bonehead?" snapped T.J. "Have you forgotten that no one knows about this project but us?"

"Take it easy, T.J.," said Tom. "They could have followed us in the jet boats to discover what it was we were after."

"If that's the case," said Alex, "they might be down there in the soup with their instruments knocked out by the U-235!"

"Could be," said Tom. "I think the first thing we'd better do is contact Captain Strong and find out what's cooking with him!"

The four boys climbed up to the control deck of the freighter, and while Tom took over the communicator, the others listened to his repeated calls for Captain Strong. After forty-five futile minutes, Tom spun around and faced them.

"Either Captain Strong is out of range of this set," he said, "or he's down there in that soup looking for us, with his communications unit knocked out." He stared at them. "Well, do we go down after him?"

"You mean," Astro began cautiously, "go down in this ship, don't you?"

"Why would we go down in a jet boat when we've got a spaceship?" demanded T.J.

"Think you can handle the power deck, Astro?" asked Tom.

"Silly boy!" boomed the cadet, greatly relieved. "Just gimme two minutes to check her out!" He turned and hurried off. Tom immediately began checking the control deck carefully while T.J. hurried up to the radar bridge.

"Get the scanner going and patch it in to the control-deck screen, T.J.," ordered Tom over the intercom.

"Right!" came the little cadet's reply.

Tom and Alex sat before the unfamiliar control panel and began checking out the different switches and circuits. It did not take the curly-haired cadet long to acquire a working knowledge of the ship's controls-about the same length of time it took Astro to report from the power deck that he was ready to go-and for T.J. to heat up his equipment on the radar bridge.

Tom opened the reactors and eased the ship into movement, its jets blasting smoothly.

"We're going down to scan the surface of the satellite," announced Tom. "Take it easy down there, Astro!" he warned the big cadet. "Don't give me too much power at once. And, T.J.-!"

"Yeah?"

"Scan through a fifty-mile range!"

"Check!" replied the cadet.

"All right. Here we go!" The heavy freighter responded easily to Tom's handling and began a downward flight through the mists of Thor.

For more than four hours the cadets searched the surface of the satellite, flying a crisscrossing pattern just above the surface of the frozen landscape. But there was no sign of either Captain Strong or the crew of the freighter. And now the importance of the problem of the freighter, and who had brought it out to Sirius began to diminish in the light of Captain Strong's mysterious absence.

Finally, Tom put the ship on one-quarter space speed, turned her nose up slowly, and climbed out of the mists.

They were nearly free of the blanketing gases when a call from the radar bridge added still another worry to Tom's deep concern.

"I've found it! Tom, I've found the robot rocket!" T.J.'s voice shattered the tense silence on the freighter. "She's on the other side of Thor-and she's on a course that'll take her straight into the sun!"

Chapter 16

"Check in, Captain Strong! Check in!"

Tom's voice was hoarse from more than an hour of futile calling, but he continued doggedly.

"Tom Corbett to Captain Strong aboard the Polaris. Check in, sir! We've found the robot rocket! Check in, Captain Strong!"

Finally, Tom put the mike down wearily and turned to Astro, T.J., and Alex who were gathered around the huge radar scanner, watching the robot rocket, clearly outlined on the screen.

"There's no doubt about it," declared Alex grimly. "She's falling into the sun." He glanced at the twin stars of Sirius. "And the presence of U-235 on the satellite accounts for the projectile not remaining in a fixed orbit around Thor."

Tom nodded in agreement. "The radioactivity of the U-235 must have affected the gyro controls on the robot and knocked it out of its fixed course. Now it's being pulled in by Sirius' gravity."

"All right," growled Astro. "What are we going to do about it?"

"Are you kidding?" exclaimed T.J. "What can we do?"

"Listen, squirt," said the big Venusian, "I looked around down below and found enough fuel to haul this wagon back and forth from Earth to Sirius three times over."

"So what?" barked T.J.

"So this!" said Astro, turning to Tom. "Listen, Tom, why don't we go

down and pull that robot out ourselves?"

"We'll need more fuel than we have!" exclaimed Alex.

"We can blast back to the surface of Thor and take on as much reactant as we need!

We have an unlimited supply down there!"

Tom hesitated. "This is a freighter," he said thoughtfully. "How do you know she'll take the beating?"

"She will," Astro asserted. "Take my word for it. You keep trying to raise the skipper, we'll try and work out a plan."

While Tom turned back to the control board, mike in hand, and resumed his seemingly futile attempt to raise the Polaris, T.J. began a hurried conference with his unit mates, computing the effect of Sirius' gravity on the robot rocket, and planning a method of storing more reactant aboard the ship.

They came to an agreement among themselves in a few minutes, and turned back to Tom.

"Tom," said Monroe, "we want you to listen to this idea."

"Wait a minute, fellows," said Tom, turning to face them. "I know that you've worked out a way we can go in and reclaim the robot and get out again. But I have to make the final decision. I can't take the responsibility of this kind of an operation. I'm not an officer in the Solar Guard. I'm just a cadet. I don't even hold higher rank than either of you—it's just a tradition that the pilot is the command cadet. If we do anything, we should look for Captain Strong. He may be in trouble."

"We understand that, Tom," said Astro, "and believe me, we're just

as worried about him as you are. But it seems to us that he would be the first to tell us to carry out orders. And our orders are to recapture that rocket."

"Well--" Tom hesitated and then faced Astro directly. "Let's hear your plan," he said.

"Alex will explain most of it," Astro said.

Alex Monroe picked up a clipboard and began to sketch rapidly. He held it up for them to see.

"The sun star Sirius has a gravity of about three times that of Earth," he said. Now, the robot rocket is still under power, otherwise it would have just fallen into the sun and that would have been the end of it. It's holding a spiral orbit around Sirius, like this." He drew a double sun star, then drew a spiral coiling line around that. "Each complete turn of the rocket around the sun brings it fifteen thousand miles further into the sun's grip."

Tom interrupted with a question. "You've figured out the behavior of the rocket, but have you figured out what will happen when you take a ship the size of this one down into the gravity pull of the sun?"

"I figure this ship weighs about three thousand tons, and we can get rid of about four hundred by stripping some of the cargo-handling gear in the holds," said Astro enthusiastically. "Now, by going down to the satellite and taking on as much reactant as there is room for--and I think we can safely store about a ton of that stuff down below--we can go far enough into the sun's grip to meet the robot rocket as it is coming around in its last spiral orbit."

"That's figuring it pretty close, isn't it?" asked Tom.

"Not at all," replied T.J. "Since we have planned a fifty-percent

margin of safety."

"That could be more than enough," agreed Tom thoughtfully, studying the figures Alex gave him. "In other words, you figure that by the time the robot comes around on its last orbit, before falling into the sun, we can blast down and get it, and get out again, with a safety margin of fifty percent."

"Exactly!" said Alex. "And don't forget, we won't necessarily have to bring out the whole robot."

We can go aboard and in fifteen minutes I can strip the important data from the recording machines. Then we just blast out of there and let the robot fall."

Tom studied the figures closely and checked them himself on the computer. He turned back to the three cadets. "O.K.," he said simply. "We go after her."

"Yeow!" roared Astro, and dashed down below to the power deck.

Alex and T.J. grinned at each other and began more detailed calculations, working out the intersecting courses of the robot rocket and the space freighter.

Within an hour Astro had managed to strip the holds of their heaviest cargo-handling gear: winches, booms, and blocks, stages and cleats, hauling it all up to the main loading hatch and dumping it over the side, letting it drift into space. When Astro was finished stripping the ship of the unnecessary gear, Tom helped the big cadet build temporary storage chambers for the U-235 they planned to take aboard. Using boron steel rods to control the mass, Astro laid them carefully in the chambers, and finally completed an area that would be safe and serviceable for the large amount of pure fissionable

material they planned to take aboard. And while Tom and Astro worked to convert the hold, T.J. and Alex Monroe sweated out the innumerable calculations necessary to break the grip of the sun's gravity on the robot rocket.

At frequent intervals Tom hurried to the control deck to send out a desperate call to Captain Strong. But there was no answering sound over the communicator but the crackle of static from the radioactive ground on Thor.

In less than eight hours, the four cadets had accomplished a job that would have taken at least three days under normal circumstances. The Traveler was stripped of everything that could be pushed over the side to reduce weight. The cadets gathered on the control deck and made a last, thorough check of the ship before taking the first step: blasting back into the ammonia mists to load the U-235. Geared for speed and power, the Traveler was nothing more than a hollow hull with more power than had ever been envisioned for a ship her size, and Tom began the delicate task of re-entering the methane ammonia atmosphere. After an hour of cautious prying, he eased the ship to the surface of the satellite in a belly landing to facilitate loading the U-235.

Then, gathering on the bridge of the ship, they donned their heavy, lead-lined space suits, checked each other carefully for perfect protection against the deadly radioactive rays of the pure uranium, and left the ship.

Using only lead buckets, Tom, T.J., and Alex worked tirelessly, filling the containers with pure U-235 and struggling with them back to the ship, where Astro, his huge shoulders straining inside his protective space suit, deposited the reactant in the hastily constructed chamber, watching it every minute, alert for any indication that the mass was wildcatting.

Driving the boron steel rods into the slowly enlarging pile, Astro worked the raw energy not unlike a mill hand stirring molten steel in the furnace of a mill.

For more than sixteen hours the cadets labored over the task of hauling the heavy element aboard the ship, until finally the last lead-lined bucket of U-235 had been deposited in the chamber. Astro demanded that one of them watch the pile while he made the necessary adjustment for feeding the energy to the atomic-driven motors. Once they thought the ship was ready for blast-off, but just in time Astro discovered that the cooling pumps were not able to take care of the overabundance of power. Working feverishly, the four boys converted spare parts from all over the ship into a second set of pumps. At last the extra set was finished and Tom, T.J., Alex, and Astro slumped to the deck before the new pumps on the power deck, exhausted.

Suddenly Tom began to laugh. "It's those crazy-looking pumps," he said. "I never saw anything so funny-looking in my life!"

"Can you think of a better use for a bedspring," said Astro proudly, "than for shock absorbers under the casings?"

Tom, T.J., and Alex admitted that they could not, and wearily they climbed to their blast-off stations and started a series of dry runs to make sure they could maintain proper control of the ship. After half a dozen run-throughs Tom snapped on the communicator switch and called into the mike: "Stand by to raise ship!"

"Radar deck, aye!" reported T.J. from the radar bridge.

"Power deck, aye!" bellowed Astro from the power deck.

"Switch on take-off gyros!" Tom roared. "Energize the cooling

pumps!"

"Pumps in operation!" replied Astro.

"Feed reactant at D-9 rate! Stand by to raise ship!"

Crossing his fingers, the curly-haired cadet began the count: "Blast off minus five, four, three, two, one--zero!"

The ship trembled, and then raised itself easily from the surface of Thor to shoot up straight through the mists toward open space and the robot rocket.

But even as he flew the ship, Tom was troubled. He thought of Captain Strong. The question of whether he had made the right decision--whether to continue to search for Captain Strong or go after the robot rocket--tugged insistently at his brain. He clenched his teeth.

"When you're a spaceman, you follow orders," he said to himself. "The orders were to reclaim the information in the rocket. And that's just what we're going to do."

He shoved the acceleration lever over to full space speed, and the freighter rocketed toward the double sun star, Sirius.

Chapter 17

"They're going after it!" cried Boris Willard.

The burly spaceman spun away from the radar scanner on the Polaris and clapped his hands with glee. "I told you to just sit tight and wait for the cadets to make the first move. As soon as they saw the robot rocket falling into the sun, they went blasting after it like a kid after candy!"

Hank Lister grinned and clapped the shorter spaceman on the back. "I got to hand it to you, Willard," he said. "You sure had it all figured out."

"Now we just wait for them to get back with the robot. Then we move up alongside of them with the Polaris' six-inch atomic blasters ready to blow them out of space and take over the records. And if they don't make it"-he shrugged-"it's four cadets that get burned up in Sirius instead of us!" He spun around and glared at Strong tied up in the control-deck acceleration chair. "Well, Strong, what do you think of the idea? Slick, huh?"

"Willard," said Strong through clenched teeth, "if anything happens to those boys, I'll see to it that you and your accomplice get sent to the Prison Rock for the rest of your lives!"

"Stow that gaff, Strong. You ain't going to do nothing." Boris got up and hefted his trousers, walking toward Strong. "We just outsmarted you, that's all."

"If you had let me talk to Corbett, I could have stopped them!" snapped Strong.

"Who wanted to stop them?" chortled Willard. "If they didn't go after the robot rocket, we would have had to do it. And I prefer risking their necks instead of ours." "But it's murder!" shouted Strong. "That freighter can't stand up under that kind of a beating!"

"You might be surprised, Strong," replied Willard. "Our old ship is in pretty good condition.

We just had her overhauled before we came out here."

"Let him alone," said Lister. "Come on. Let's take a look at what those monkeys are doing." He stared at the screen and then turned to the young captain. "I sure got to hand it to you, Strong," he said, "you make some good spacemen out of those young punks at the Academy. Corbett is handling that freighter like he was born on her."

"There ain't but one thing bothering me," said Boris Willard, scratching his three-day growth of beard. "If those kids are so smart, how come they take a chance of going into the gravity field of Sirius after the rocket with just enough fuel to get home on?"

Lister shook his head. "There was plenty of fuel aboard, enough for several trips out to Sirius and back to Earth again," he said. "But there certainly was not enough to go in after the rocket too."

"I hope they make it," said Willard, watching the blip of the Traveler moving in a steady intersecting orbit toward the smaller blip of the robot rocket.

"They'd better make it, Boris!" snapped Strong.

"Aw, dry up, Strong!" bellowed Willard. "Even if the cadets do get back, how long do you think you guys will be around to spill the beans? It would be kind of foolish, wouldn't it, to make a big haul, taking the chances we've taken, and then let you get back to the

Solar Guard and blast us, wouldn't it?"

"You haven't got the guts to murder five people in cold blood!" challenged Strong, his eyes flashing.

"That's right, I ain't," said Willard. "But ain't nothing to stop me from leaving you five out here to murder each other when you find out you ain't got enough fuel to get home!"

Strong strained against the thin wire binding him to the acceleration chair.

Willard grunted. "Relax, Strong. You ain't going no place and you're just cutting your wrists on that wire."

"Hey, look, Boris!" cried Lister, who had continued to watch the Traveler and the orbiting robot rocket grow closer together. "They're intercepting the rocket now! I never thought that old wagon could move like that!"

"It won't be long now," said Willard. "I just hope they got enough fuel left to get out of there again!"

Fascinated with the drama unfolding on the radar scanner, the two men hunched over the screen and watched as the two white blips converged.

* * *

"What's the matter, Astro?" demanded Tom.

"The emergency pumps we built!" yelled Astro over the intercom. "They're not working properly. There must be something clogging the feeders!"

"Can you fix it?" asked Tom, his eyes on the scanner image relayed from the radar-bridge scanner. The blip of the robot rocket was rapidly nearing the point of contact.

"Yes, but it's a question of how much time we have before we have to start matching speed with the robot."

"We have about fifteen minutes," supplied T.J., who had been listening to the conversation.

"Not enough," said Astro.

"But we've got to match speed with the rocket!" said Tom. "Isn't there anything we can do?"

"Nothing, unless you want to wait for her to come around again," replied Astro.

"Wait a minute, Tom," said Alex, sitting beside the command cadet. "Astro, how much speed can you get up?"

"I can match the speed of the robot now, but I don't know how long I can sustain it. That's the whole point. Without those extra pumps, I don't think I can keep this reactant mass cool enough to prevent an explosion."

"But can you get up to the speed of the rocket for-say, for about a minute?"

"Sure," said Astro. "But what good will that do?" The big cadet's voice was filled with defeat.

"What can you do in a minute? There's hardly enough time to get aboard the rocket."

"Just sit tight, Astro," said Alex and turned to Tom. "Tom, I've got an idea. Suppose one of us goes aboard the rocket and stays aboard making a complete trip around Sirius, and meets you again later. By that time Astro should have the pumps fixed, and you can come alongside the rocket and pick him up."

"That's out!" said Tom automatically. "I've gone far enough with this idea. I'm sorry, Alex." He shook his head. "I couldn't let you do that."

"Listen, Tom," said Alex desperately, "it's not only for the information. After all, we got almost all the information we need by finding the U-235 on Thor. And we could always send out another robot from the Academy. This is something personal."

Tom looked at him, puzzled. "Personal?"

Alex Monroe nodded, his eyes shining. "Tom, everything we've been through on this trip, I went through too, but it wasn't just me. The decision and the ideas came from you or Astro or T.J. I knew I could always depend on you guys to save my neck if anything happened. So I haven't really put my own-" Alex paused-"my own courage to a complete test. An isolated test.

I want to ride that rocket around the sun!"

Tom looked deep into the eyes of the young physics student, his shipmate and his newest friend.

Again he was faced with the heavy responsibility of decision. Was he experienced enough to correctly evaluate Alex's chances for survival? Did he have the right to permit or deny a man the opportunity to test his courage and find out for himself whether he could function as an efficient spaceman?

Alex waited for Tom's decision anxiously, and finally Tom shook his

head. "I'm sorry, Alex," he said, "we made a good try for the rocket, but there's nothing else we can do."

"Tom, you've got to let me try it!"

"You don't know what you're asking, Alex," said Tom, avoiding the other's eyes.

Astro suddenly burst into the control deck, his eyes flashing, his fist balled. He strode forward, body glistening with sweat, the rocket jockey's tools and wrenches clanging at every step, as they dangled from the heavy leather belt.

"Tom!" he barked. "I just heard what you said over the intercom and now I want to tell you something."

"Get below, Astro!" snapped Tom. "This has nothing to do with you at all. Get below!"

"Is that the kind of orders you've learned to give!" barked the big cadet, glaring at his best friend and unit mate. "Sure, you can order me below, and I'll have to go. But not before I tell you something, Tom. I've been with you through just about everything two guys can go through and come out in one piece. And always, right down the line, you've been a brilliant leader-yes, by the craters of Luna, brilliant!"

"We've got to blast out of here," said Tom coldly. "For the last time, get below!"

"Not before you've heard me out!" snapped Astro.

"All right," said Tom coldly. "Speak your piece."

"Every one of us has a job we're supposed to learn before we can

graduate from the Academy and become Solar Guard officers. With Roger Manning and T.J. it's radar, electronics, communications, astrogation. With me, it's mechanical application of nucleonics. And with you it's flying and the responsibility of command. Get that, Corbett! Command!"

Tom was shocked by the unexpected blast from Astro. Never had there been harsh words between them until this moment.

"I know my job," Astro continued, "Roger and T.J. know their jobs, but I'm beginning to doubt if you know yours! Being in command of a ship and of men, being responsible for the lives of your passengers and crew is more than just turning a few switches and giving orders on the control deck. We've got automatic gear that can handle a ship better than you or anyone else.

They put a commander on a ship to make decisions! Big decisions like the one you're avoiding right now. Have you ever thought about what it's going to be like when you get that black-and-gold officer's uniform? You think it's all going to be a bed of roses?

You're going to have to tell me to do things that are dangerous and that you want to do yourself, but you don't dare, because if you're lost, then the crew is without a skipper and the ship is lost.

Of course it's dangerous for Monroe to go out in the rocket-of course you want to go yourself and would go, if I wasn't big enough to stop you. So what do you do? Instead of facing the decision of sending a man-possibly to his death-so he can find out the depth of his courage, you back out! You haven't got the guts to be a commander, Corbett!" roared the big cadet. "You haven't the courage to be able to tell a guy 'Go out there and get yourself killed, because I'm the commander and I'm telling you to!'"

Astro stopped abruptly and clamped his jaw shut.

Tom Corbett stared at his friend and at the eager, expectant face of Alex Monroe.

Thistle had heard the yelling and had come down from the radar deck.

So this is what it takes to be a leader, thought Tom. This is the reason for so many searching psychological examinations before you are assigned to a position on a ship, why there are so few command cadets, why there are so many astrogators and power jockeys.

Tom stood up. His jaw was set. "Thank you, Astro," he said. "Thank you for teaching me what it means to be a commander."

"What are you going to do?" asked Astro.

Alex and T.J. waited anxiously.

"Get ready to board the rocket when we come alongside, Monroe," said Tom, turning to the cadet. "This is your job, the one you've been trained to do. Get the information out of that rocket. We'll give you all the support we can, but you'll have to go aboard alone."

"Thank you, Tom," said Monroe. "You'll be a great skipper someday."

"He's a great skipper right now!" said Astro.

"Cut the chatter!" Tom snapped. "Stand by to board rocket!"

And there was no mistake about it, there was more authority in his voice, more confidence, more determination than Astro had ever

heard before.

Chapter 18

"All checked out, Tom," T.J. reported into the intercom.

"Very well," Tom's voice replied over the air-lock loud-speaker. "Stand by. Two minutes before boarding time."

T.J. made a last-minute check of the space-suited figure of Alex Monroe standing in the air lock of the Traveler.

"You're all set," said the small cadet. "Remember, as soon as the pressure gauge starts dropping, turn on your oxygen. Got it?"

"Right."

"Spaceman's luck, Alex."

"Thanks," said the young cadet, who was going to test his courage and to do the job he was trained to do.

T.J. stepped out of the air lock, closed the portal, and hurried to the radar bridge.

"One minute before boarding time," said Tom over the intercom.

"Robot rocket steady on orbit," announced T.J. from the radar bridge. "But we need more speed to catch up to her."

"More power, Astro," said Tom coolly into the intercom.

"Power, aye!" came the reply from the power deck, followed by a screaming whine that began to build to a piercing shriek as more and more pressure was applied to the straining cooling pump.

"Thirty seconds to boarding time. Open hatch!" ordered Tom.

"Hatch open," replied Monroe from the air lock.

"Rocket hundred feet ahead of us. Coming up to starboard!" reported T.J. from the radar bridge.

"I can see the rocket!" called Monroe. "I'm ready."

"Fifteen seconds," said Tom.

"Fifty feet!" reported T.J.

"Ten seconds!"

"Twenty-five feet!"

Operating on only one pump, the ship began to shake violently under the pressure of the speed.

"Five seconds, four, three, two, one--Jump!" roared Tom into the intercom.

On the radar bridge, T.J. saw the figure of Monroe jump into space and then become a part of the outline of the rocket.

"Reduce thrust!" Tom's voice roared over the intercom.

"Power deck, aye!" replied Astro, and immediately the vibration that had rocked the hulking freighter subsided.

"All right, Astro, get to work on those emergency pumps," Tom ordered. "And, T.J., I want a report every five minutes on the position, altitude, and speed of the robot!"

"O.K., Tom," replied T.J. "Monroe's just getting the hatch open now. So far so good."

Putting the ship on automatic pilot, Tom left the control deck to join Astro on the power deck.

He found the giant Venusian already stripped to the waist and pulling on a protective lead-lined suit.

"I'll help you," said Tom, stripping to the waist and grabbing another lead-lined suit.

Without any further conversation, the two cadets began to tear down and rebuild the extra pumps, working against time to be ready to meet the robot rocket again when it had completed its orbit around the twin stars of Sirius.

"Altitude estimated," came T.J.'s voice over the intercom loud-speaker, "three million five hundred fifty-seven thousand miles from sun, twenty-two thousand miles from point of no return."

Tom paused to listen to the report, and then resumed his work with Astro, a frown of worry creasing his forehead.

Astro looked at him sympathetically. "Stop worrying about him, Tom," he said. "It's worse when you think about it."

"I know," said Tom bitterly. "Come on. Let's get this thing working." He renewed his efforts with sudden ferocity. If anything happened to Monroe, it would not be for any lack of effort on his part or Astro's.

On the radar bridge, T. J. Thistle sat at the scanner watching the blip of the robot rocket as it spun dizzily around the twin stars. He worked steadily at the electronic computer, calculating speed, altitude, gravity force on the rocket, probable fuel capacity and all possible

factors. He refused to allow his mind to wander, refused to think about what Monroe was going through. It was easy enough to calculate the estimated temperature aboard the rocket as it flew near the blazing sun, and he could well imagine the heat Monroe was suffering.

"Five-minute report," he called over the intercom. "Robot now reaching one hundred and eighty degree position of its orbit. It is in diametric opposition to the position of our ship." He paused and glanced at the scanner which showed the twin suns directly between the robot and the freighter.

"She's starting to swing around," he continued over the intercom. "I hope you fellows will be ready. We only have one chance to save Monroe!"

* * *

"Are you sure he went inside the robot?" demanded Boris Willard.

"I'm telling you what I saw," said Lister hotly, but with awe in his voice. "They pulled up alongside the rocket, and then a guy in a space suit went aboard the rocket. The Traveler is standing still in space, probably waiting for the rocket to come around again."

Boris Willard shook his head. "Blast it!" he muttered. "Why didn't they couple to the projectile and blast out of there with the thing in one piece instead of putting a guy aboard to ride around Sirius?"

"Probably didn't have enough reactant," replied Lister, "or if they did, one set of pumps wouldn't be enough to supply power to pull both the Traveler and the rocket out of the grip of the sun."

"I don't see how they managed to get as far as they did on those pumps," commented Willard. He turned back to Strong.

"Well, Strong," he said with a grin, "it's sure going to be rough on those kids to find out all their hard work and ingenuity was for nothing."

"Don't bank on it, Willard!" snapped Strong. "That same ingenuity will figure out some way to take care of you, too!"

"Oh, I'll admit they're brave enough," acknowledged Willard. "I gotta hand them that. But it's going to take more than guts to mess us up now. We're holding all the cards. Our ace in the hole is the six-inch blasters, and you're the joker!"

Lister and Willard broke out into a roaring laugh. Captain Steve Strong glared at them.

His mind worked furiously in a vain attempt to find some means of warning Tom and the others on the freighter. He knew that Tom would refuse to surrender-and the cadets wouldn't stand a chance with a merciless man like Willard.

"Let's make a deal, Willard," he said at length.

Boris winked at Lister. "What kind of a deal?"

"You can have the information out of the robot rocket if you'll leave the cadets alone."

"Why should I make a deal with you? I just told you there ain't nothing you or the cadets can do to stop us now. You gotta have something to offer to make a deal. You ain't got nothing I want."

"Immunity," said Strong.

"Immunity!" sneered Willard. "You're kidding me, Strong. I suppose

you're going to tell me you'll guarantee me no action will be taken when we get back to Atom City. Is that right?"

"That's what I had in mind," said Strong.

"No good!" snapped Boris Willard. "You know that private agreements are not binding when made by individual officers. They have to pass a board of review of the Solar Guard-and that means Connel. And Major Connel won't approve anything that smells crooked."

"What do you take us for? A coupla jerks?" Lister growled.

"That's exactly what you are," said Strong coldly, "if you think you can get away with this scheme."

Boris laughed. "We don't think, Strong, we knowr "As you said," Strong commented harshly, "Connel won't touch anything that's crooked.

So when you show up with the claim and proof for the uranium strike on Thor, do you think he would approve your claim? Especially when four cadets, an officer, and a heavy cruiser don't return?"

"Connel ain't got no choice, Strong," sneered Lister. "He'll have to approve our claim because it'll be presented nice and legitimate."

"Legitimate!" exclaimed Strong. "You're bigger fools than I thought you were. This stunt of yours smells from here to Pluto!"

"It does, huh?" Willard grinned. "Well, listen to this. As soon as we clean up those cadets and collect the dope from the robot rocket, the Polaris is going to send out a distress call. It's been hit by a meteor. It's out of control. And just in case the call doesn't get through, we'll make sure that it's recorded on the ship's audio-reference tape so

that someday, if and when the Polaris is found, they'll know what made her crash."

"Crash!" exclaimed Strong involuntarily.

"That's right," Lister chimed in. "The Polaris is going to splash herself all over the satellite. There'll be nothing left of her but little pieces."

"Connel will see through that dodge," Strong blurted loudly, trying to cover a sudden uneasiness at his enemies' confidence.

"He can see whatever he wants," announced Willard. "But he won't be able to prove anything and he won't be able to tie us up with it."

"Why not?" asked Strong, inwardly praying that their arrogance would make them reveal their entire plan.

"Because we'll be far away from here," replied Lister, falling into the trap. "After we set up the terrible accident, we'll blast over to Alpha Proxima. That's where we're supposed to be, according to our flight plan. We're just a couple of crummy space prospectors, looking for a big strike." He grinned evilly and then laughed. "And are we hitting it!"

"That won't make sense if you file the information on a claim near Sirius," pursued Strong, trying to keep the eagerness out of his voice.

"It'll make plenty of sense in about a month, Strong," replied Willard. "You see, we're going to be taking the long way home. Past Sirius as a matter of fact. And we're going to have a breakdown ourselves. Pretty close to the satellite."

"We'll even send out a distress alert," chortled Lister. "Poor space

tramps in their beat-up old ship-they need help bad."

"But those space tramps are going to be lucky," continued Willard. "While they're drifting around, they're going to pick up all the dope on the satellite on their own instruments-more than enough to stake a claim-and that'll be that. Connel or nobody can say we didn't get the information legitimate."

"Not if you give him the records from the robot," snapped Strong, feeling trapped.

"We ain't that dumb, Strong." Lister laughed. "We'll just copy enough of the robot's information to stake the claim and then leave the stuff in the Polaris for the Solar Guard to find. Of course, it'll be too badly burned to make any sense at all and the Solar Guard won't be able to stake any claim based on it." "How about it, Strong?" asked Willard. "Think we got a good case?"

Strong stared at the two men, his heart sinking. He realized that their scheme was almost foolproof. As they laughed and turned back to the scanner, he twisted helplessly against the wires that held his wrists behind him. His hands felt clammy and wet, and he looked over his head to see if there was any condensation on the bulkhead above his head, but there wasn't any.

Then he realized that he had cut his wrists on the wire and that the clamminess he felt was his own blood.

He slumped over, his mind refusing to accept what seemed to be the cadets' and his inevitable end. But there was nothing he could do to stop Lister and Willard.

"The rocket's coming around the other side now," said Lister, watching the scanner closely.

Boris hunched over the screen beside his partner and watched the blips of the freighter and the rocket. "Boy, I sure hope they make it!" he said. "It would be a downright shame if we had to bump those guys off for nothing!"

* * *

In the cramped quarters of the robot rocket, where every available inch of space had been utilized for the delicate instruments, Alex Monroe forced himself to forget that he was all alone in the tiny projectile; that he would fall into the sun and die if Tom and the others failed to pick him up on the next turn around.

He moved around the small area as though he were a man at home. It was not too difficult to imagine that the robot rocket was on the ground, safely inside the hangar at Titan where he and Professor Sykes and Dr. Dale had built the robot and installed the instruments.

Once Alex Monroe had made the break from the Traveler and he was alone inside the tiny robot, it seemed the most natural thing in the world to be a courageous man. There was no question in his mind that Tom, Astro, and T.J. would pick him up when the robot had completed its orbit around Sirius. Alex tasted courage and found it to his liking.

It was a confident cadet, who, working against time, stripped the audio spools from their turntables, removed strips of film hardly larger than wire, and copied invaluable data from the radiation counters. This was indeed a different Monroe from the one who had first set out on the mission.

He went from one instrument to another, checking them carefully and stripping them of their information, and putting it into a small bag that dangled from his belt.

Alex Monroe was not aware that he was another excellent example of the type of man being developed in the year 2356, or that spacemen of the unforeseen future would look back on the dangers he now faced as being the foundation for their own world.

Without realizing it, Alex's behavior could have been predicted with careful accuracy by the Academy Entrance Examiners. No one became a Space Cadet unless he could be depended upon. But confidence, the wise old heads at Space Academy knew, must come from a desire inside the individual. It was not his valor they saw when he entered the Academy, it was the desire to be the possessor of valor.

Chapter 19

"Here she comes!" T.J.'s voice roared over the intercom.

"Give me speed, Astro!" Tom called, his eyes on the scanner where the blip of the rocket was rapidly approaching the center of the grid. Tom held his finger on the switch, ready to open the hatch of the air-lock chamber.

"More speed!" yelled T.J. "We're not catching up to her!"

On the power deck, Astro advanced his acceleration lever. Reaction fuel poured into the firing chamber, but before it could reach the chamber, it would have to pass the cooling pumps. It was on the jerry-built pumps that the giant Venusian's attention focused. It was in the complicated mass of pipe, steel, lead, and baffling that the success or failure of their desperate attempt rested.

His hands gripping the lever, ready to cut down speed should the pumps begin to show signs of failure, the big cadet crossed his fingers and breathed a silent prayer.

"More speed, Astro!" Tom bellowed from the control deck.

Astro advanced the lever another notch, and the indicator beside the pumps began to climb as the reactant was forced into the firing chamber. Noticeably, the Traveler began to pick up speed.

"More, Astro! We're gaining on her but we need more speed!" yelled Tom.

Hesitating only momentarily, Astro slammed the lever into the last notch. There was a hissing noise that rose above the other sounds

on the power deck, and the reactant poured through the cooling pumps. In response, the freighter literally leaped ahead as the energy was converted into gases and blasted through the exhaust tubes.

"That's it! That's it!" cried Tom. "Now we're picking up on her!"

Suddenly Tom's blood seemed to freeze. The hatch on the robot was closed! Why wasn't Monroe on the hull of the rocket, ready to climb aboard?

"Fifty feet!" yelled T.J. from the radar bridge. "Tom, Monroe is still inside the rocket!"

"I know!" said Tom. "Something must be wrong inside and he can't get out-or he doesn't know we're ready to take him off! Come below and take over the controls!"

"I've tried calling him on the communicator, but he doesn't answer! Electrical interference from Sirius must be jamming the circuits!"

"Come below!" bellowed Tom with authority. "Stop jabbering and take over the controls!"

T.J. was down the ladder and at Tom's side in two seconds. Before he could take his place in the copilot's chair, Tom was up and racing to the lower deck and the air-lock chamber.

"What are you going to do?" demanded Astro over the intercom. "What's going on up there?"

Tom did not take time to answer. He was too busy pulling on his space suit. But he could hear the voices of his unit mates over the air-lock loud-speaker.

"We're alongside, Tom!" T.J. called. "What's keeping you? Get going. This ship feels as if it's going to shake apart!"

"I can't sustain this speed much longer!" roared Astro from the power deck. "If I don't cut back soon, we're going to blow up!"

"No, don't, Astro!" screamed T.J. "You've got to keep it up!"

"We can't! We'll blow up, I tell you!"

"So we'll blow up!" roared the tiny cadet. "Don't cut back!"

Paying scant attention to T.J. and Astro, Tom coolly and quickly completed dressing and put on his space helmet.

"I'm all set," he announced over his headset. "I'm lowering the pressure of the air lock!"

Watching the gauge, Tom moved over to the outer air-lock portal. When the dial registered zero, he opened the massive door and stood poised on the edge, staring at the robot rocket almost alongside.

"I'm five feet away from the stern of the rocket," said Tom over the helmet intercom.

"Give me a little more speed, Astro."

"I can't," the big cadet replied. "There isn't another ounce of thrust left in this wagon."

"Then I'll have to jump!" said Tom.

"You're crazy!" roared Astro.

"Don't worry," said Tom with a slight chuckle. "I've made bigger jumps than that in space."

"You can make it," encouraged T.J. "Just be calm and don't give yourself too much of a push."

Tom stepped to the edge of the hatch, judged his distance, and gave a light shove with his feet.

He left the side of the freighter and glided, weightless, toward the stem of the robot.

As he moved, the young cadet relaxed his body and at the last possible moment flipped over and landed, feet first, on the hull of the robot. He felt the reassuring grip of his magnetic boots gripping the steel plates and breathed a sigh of relief. He immediately began walking toward the hatch of the tiny vessel, the hull of the Traveler looming up fifteen feet away like a huge sheer wall of steel.

He reached the hatch easily and dropped to one knee, grabbing the handle. He turned it slowly.

It would not give. He twisted harder. He stretched out flat on the deck, grabbed the handle with both hands, and twisted with all his strength. Slowly, he felt the handle turn a quarter of an inch.

He changed his position and twisted again, gaining leverage with his whole body, pressing his body against the steel deck. The hatch gave another quarter of an inch.

Suddenly he noticed that the freighter had dropped back and away from the robot. The hatch that he had used was fifteen feet further behind the stern of the robot. Obviously, Astro was having difficulty in maintaining speed. Tom realized quickly that if he did not return to the freighter now he might not have another chance.

Tom fought against the urge to leap back aboard the freighter and he turned back to the handle of the hatch, summoning strength he never thought he possessed. The handle gave another quarter of an inch.

The Traveler was slipping back faster and faster now. He renewed his attack on the handle of the hatch, twisting it with the very last ounce of strength he had, and finally the handle spun free and the hatch cover lifted. Below him, in the brilliant light of the sun star Sirius, he could see the grinning face of Alex Monroe through the clear space helmet.

Without a word, Tom reached down and grabbed the cadet by the arm. Holding on to the edge of the hatch, so that the movement would not send them shooting off into space, he pulled the cadet up and out on the hull of the robot.

Unable to talk to each other over the intercom because of the electrical interference from Sirius, Tom gestured to Monroe, using sign language to explain the situation.

When Monroe nodded that he understood, Tom indicated that Monroe was to jump first.

The steel hull of the Traveler was more than twenty feet astern of the rocket as Monroe, completely at ease, shot out toward the freighter. He flipped over easily in midspace and landed, feet first, on the steel hull of the Traveler.

Tom waved his hand and stood up. He looked at the ever-widening gap between the ship and the robot, and then blotted every thought out of his mind in an effort to relax the tension that was surging through his body. Taking a deep breath, he leaped.

Drifting across the chasm that separated the two space vessels, he flipped over completely to glide, feet-first, and seconds later felt a tug at his boots. He looked down. His feet were firmly planted on the steel hull of the Traveler.

He looked around. The stern of the rocket was now more than thirty feet away.

Breathing a silent prayer of gratitude, Tom motioned Alex toward the midships hatch, and taking careful, cautious steps, they both made their way back to the safety of the air lock.

Once inside, with the outside hatch closed and the pressure equalized, the two cadets stripped off their helmets.

"Thanks, Tom!" were Monroe's first words. "I couldn't get that hatch open."

"I figured as much," said Tom. "Did you get all the information?"

Monroe patted the bag hanging from his belt. "It's all here. And from the little I read, this operation is a tremendous success. Far more than we had hoped."

"Good!" said Tom shortly. "But let's hold the congratulations. We still have work to do!"

Tom opened the portal leading to the ship and, still wearing the cumbersome space suit, hurried to the control deck. T.J. greeted him with a grin and slapped him on the back.

Tom smiled his acknowledgment and reached for the intercom mike. "Astro!" he called.

"Give me a ten-second blast on the starboard steering rockets. And

pour it on! We're getting out of here!"

"Aye, aye, skipper!" the giant Venusian's voice bellowed happily from the power deck.

A few seconds later Tom, T.J., and Monroe were nearly thrown to the deck as the sudden burst of power took the freighter away from the deadly grip of the sun.

Tom sat before the scanner and watched the sun star and the robot rocket recede quickly.

"The next order of business," he declared in a firm, clear voice, "is to find Captain Strong!"

Chapter 20

"All right, Lister, stand by the blasters! Here they come!"

Boris Willard and Hank Lister had flown the Polaris out of the protective blanket of the methane ammonia atmosphere in which they had remained hidden and now blasted toward the old space freighter.

"I'll come up alongside of it without communicating with them," called Willard over the intercom. "Get a bead on them but don't be too touchy with that trigger! We don't wanta blast them before we get the information. We'll try to get them aboard first."

"Check," replied Lister from the gun deck. He had removed the cover of the giant six-inch gun and loaded it with an atomic shell. Staring into the range finder, he saw that the Traveler was a sitting duck and could be blasted out of existence by one touch of his finger.

On the control deck, Boris Willard turned and grinned at Strong who had been gagged.

"Well, Strong, it looks like everything's almost over," he chortled.

Strong made a muffled sound through the gag in his mouth.

"What's that you said?" asked Willard with a sneering laugh. "You don't talk so good, do you?"

Boris turned his back on the young captain and concentrated on maneuvering the Polaris on a parallel course to the Traveler, as the freighter blasted toward them.

"Just keep coming, you young punks," he muttered. "just keep

coming and get the surprise of your lives!"

"Corbett over to the Polaris. Check in, Captain Strong!"

Tom sat on the control deck of the Traveler, watching the Polaris blast toward them and then swing onto a parallel course.

"Come in, Captain Strong! This is Corbett on the Traveler!

Come in!"

The Polaris had now swung around and was on the same course as the freighter, but there was still no answer from Captain Strong.

* * *

Tom's brow was creased in thought. Suddenly he snapped his fingers! He flipped off the communicator key and called Astro, T.J., and Monroe to the control deck. When they appeared, he pointed to the Polaris, clearly visible through the viewport.

"We've been so busy trying to get the projectile's information and a hundred other things that we haven't given much thought to how and why we found this freighter deserted in the mists over Thor."

The boys nodded in agreement. "Now, look," said Tom seriously, "suppose the men who brought this ship out here were not lost in the mists of Thor but had laid a trap for Captain Strong!"

"Go on," said Astro.

"Well, assuming whoever they are, are after the robot, and knowing that there wasn't anything they could do while we were down in the sun trying to get the information, wouldn't they wait until we got back and then try to hijack the information?"

"Sure," said T.J., "but you're assuming whoever they are have taken over the Polaris."

How can you be sure?"

"I can't be sure," said Tom. "But there isn't any other explanation for Captain Strong not acknowledging my calls. You know how long I've been trying to get him on the communicator."

"Suppose his gear's been knocked out," offered Monroe.

"Then he'd certainly try to make some sort of signal," replied Tom. "Even if it was an old trick like Morse code with a light!"

"Then you think whoever brought this ship out here has taken over the Polaris?" asked T.J.

"Exactly," said Tom. "And if I'm wrong, then it won't be the first time and we've played it safe."

"All right," said Astro, "that sounds reasonable enough and ought to be easy to find out. Got any ideas?"

Tom nodded his head. "Whoever is on that ship with Captain Strong knows there are four of us."

Suppose Astro gets on the communicator and tells Strong that I have been killed and that T.J. is badly injured, and we need medical supplies from the Polaris right away!

Then we couple to the Polaris, and Astro and Monroe go aboard the Polaris carrying T.J. in a stretcher while I hide out."

"Sounds O.K. to me," said Astro thoughtfully.

"Sure," agreed T.J.

Monroe nodded.

"O.K., get on the communicator, Astro, and tell them just what I said," ordered Tom.

"Alex, you help T.J. get bandaged up. Make it look as if he was hurt pretty bad."

Astro sat before the control panel and opened the communicator key. He began calling Captain Strong and repeated the story Tom had devised. Meanwhile, Alex bandaged T.J. and placed him in a stretcher with a paralo-ray gun cleverly concealed in the bandages. Tom hurried below to the air-lock chamber and donned a space suit again. He stood beside the hatch, ready to slip outside and cross over to the Polaris the moment it came alongside.

Through his helmet intercom, Tom could hear Astro broadcasting the story of their need for help.

Again and again he heard Astro call for aid but in the air lock Tom had no way of knowing how close the ships were, until he heard the unmistakable hum of the magnetic grapplers in operation, and a few seconds later felt the slight jolt of the ships coming together. Opening the hatch quickly, he slipped out and jumped across the gap of space to the Polaris.

His magnetic-soled space boots gripping the steel hull plates of the Polaris, he walked hurriedly to the stern, and finding the emergency escape hatch that could be opened from the outside, he slipped into the ship.

Safely inside, he stripped off the space suit and made his way

forward. From somewhere in the forward part of the ship came the sound of voices.

He stopped and tried to hear what was being said, but the oxygen pumps were making so much noise that he could not distinguish a word. Continuing forward, along the corridors that were as familiar to him as the palms of his hands, he reached one of the arms lockers.

Gratefully, he strapped on two paralo-ray guns and lifted the satisfying bulk of a heat-blasting rifle to his shoulder. Closing the locker, he continued on through the ship cautiously.

"Stand where you are, or I'll blast you!" Tom heard a harsh voice say. He stopped, his heart racing, and waited for further conversation to determine how many men there were and where they were located. He recognized Astro's bellow now. The Venusian's words were clear and distinct, his voice filled with rage.

"Why, you dirty space crawlers, I'll wipe the deck with you!"

There was a loud crash, several distinct blows loud enough to have only come from Astro's fists, the unmistakable hiss of a paralo-ray gun, and finally silence, a deep menacing silence.

Tom moved on down the companionway toward the control deck where he was sure the fight had taken place. Reaching the ladder leading up to it, he paused. He could hear everything now.

"Wake up, Lister," a voice said topside. "He didn't hit you that hard!"

Tom heard several moans and he grinned. Astro had hit him that hard.

"Come on," urged the voice. "If they tried to trick us with that stretcher gag, Corbett must be around somewhere, too. You take the

starboard side, I'll take the port! Shoot first and ask questions later!"

"What about the others?" Tom heard another voice groan.

"They're all frozen. I gave them a paralo-ray blast. They won't be any trouble. But Corbett will be if we don't find him. Now get moving!"

Tom quickly ducked back into the shadows, taking a position where he could see the ladder clearly. Before the two men could split up and begin searching the starboard and port sides of the ship, they would have to come down that ladder.

Holding both ray guns tightly, he waited. He heard footsteps on the deck over his head, shuffling toward the ladder. Raising the guns, he sighted at the top rungs. A second later the figure of a man came into view. It was Lister.

Tom waited until he was directly in his sight, and fired both guns simultaneously. He caught Lister with both beams of the paralo rays, and he immediately froze and dropped to the deck, still in the rigid climbing attitude.

But Willard was too quick for Tom. An experienced fighter, he knew how to operate under fire and he had his wits about him. No sooner had the beams of Tom's paralo-ray guns stiffened Lister, who had been two steps ahead of him, than Willard ducked back in the hatch and from behind his protective cover began firing his heat blaster in a spasm of furiously exploding flame.

Tom jerked back just in time, but not before a near miss had touched his guns, knocking them out of his hands. He did not stop to pick them up. He fell back and ran, his mouth dry and heart throbbing. His mind raced trying to figure out what his enemy would do. Behind him, he could hear Willard's heavy steps. Tom knew he would have to find

cover before he could make another stand. Suddenly he remembered the spare lead shields on the power deck.

Running madly, he reached the power-deck hatch and slithered down the metal ladder into the deserted compartment. Without hesitation, he unslung the heat-blasting rifle from his shoulder and scrambled behind the huge lead shields that were propped up in a corner near the supply locker.

Slipping the barrel of the rifle into one of the holes in the shield used for pipe connections, Tom sighted on the ladder that led down into the power deck. Sooner or later, he knew, the man would have to come down to get him.

He began to sweat from the heat on the power deck. His vision was blurred and he had difficulty seeing, but he did not move. If the two men had gone as far as they had in their desperate attempt to get the information from the robot rocket, they would go further, and the only thing left was death for all of them.

He suddenly stiffened as he heard light footsteps on the deck overhead, approaching the hatch. His finger coiled around the trigger of the gun. He waited breathlessly.

But Boris Willard anticipated the trap. Instead of climbing down the ladder, an easy target, he dropped through the hatch, landing lightly on his feet, his heat rifle ready to fire.

Tom's jaw tightened. There could be no bluff now. One of them would never take another step outside the power deck.

"Drop your gun, mister," called Tom, "or I'll burn you to a crisp!"

With lightninglike speed Boris Willard dropped to the deck and fired at the lead shield.

At the same instant, Tom fired his rifle.

There was a blinding flash and searing heat. Tom was momentarily dazed. When he recovered his senses, he saw that Willard's blast had melted nearly all the lead shield around his gun.

Raising his head cautiously, Tom looked out. He saw he had not missed.

There was a glowing spot on the steel deck where Boris Willard had stood. Of the man there wasn't even an indication that he had ever existed.

* * *

"Well, they've taken Jack Wilson into custody and he's confessed," declared Strong, turning back from the long-range communicator. "And with Lister's confession, there's no doubt both of them will spend the rest of their lives on Prison Rock."

As the four cadets grinned happily, Strong rose to face Tom directly, his face oddly stern.

"Of course," he continued, "I should see that you four are disciplined when we get back to the Academy for disobeying orders!" He turned to Tom. "I told you to remain outside the atmosphere of Thor until I returned."

"But if he had, sir," Astro interrupted gently, "T.J. and I wouldn't be here listening to you bawl us out."

Strong's face darkened, then slowly brightened. "I should know by this time that I can't win an argument with the Polaris unit," he admitted.

T.J. cleared his throat. "You think we could get a liberty after this operation is over, sir?" he asked.

"Liberty!" Strong roared.

"Yes, sir," replied T.J. blandly. "I'd like some time to get better acquainted with Astro."

Strong laughed. "All right, Thistle," he said. "In fact you'll all get a long leave. You deserve it after this job."

"There's only one regret, sir," Tom said.

"What's that, Tom?" asked Strong.

Tom gripped Alex Monroe by the shoulder. "That there can't be four cadets in a unit, instead of three."

"But that doesn't stop us from being friends," said Alex Monroe with a smile at Tom Corbett who had given him the opportunity to prove that he had courage.

Alex's expression of good fellowship and understanding brought back memories of Roger Manning. Tom recalled the many dangerous adventures that he, Astro, and Roger had shared and survived. He looked up and caught Astro's eye.

"I wonder what Roger's doing right now."

"I was just thinking about him," Astro replied. "I had a feeling that there was something missing-and there is! Roger."

T. J. Thistle, a gleam in his eye, slapped the big Venusian on the back. "Don't worry about it, old bean, pretty soon you'll have loving

memories of me, too!"

THE END

The Robot Rocket by Carey Rockwell

No. 8 of the 8-book Tom Corbett series.

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