

# ★ PLANET ★

## ★   ★   ★   STORIES   ★   ★

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### FOUR GRIPPING NOVELETS OF ALIEN WORLDS

- COSMIC CASTAWAY** . . . . . Carl Jacobi 2  
 Standish, Earth's Defense Engineer, the one man who could save the Solar System from the Sirian invaders, was helpless in a prison ship wrecked in uncharted space.
- CITADEL OF LOST SHIPS** . . . . . Leigh Brackett 44  
 Romany, the Gypsy world of space flotsam, swung its orbit close to Venus, and became a trap for outlawed Roy Campbell—who sought only aid for the persecuted people who had adopted him for their own.
- THE FLAME BREATHERS** . . . . . Ray Cummings 71  
 One expedition had perished on mystery-shrouded Vulcan. Now, another searched for the unknown horror that stalked its cratered depths.
- SLAVES OF THE NINTH MOON** . . . . . Ross Rocklynne 100  
 Hallmyer's mission was a terrible one, even for an ace trouble-shooter such as he—for if he succeeded, the girl he loved must die.

### FOUR OUTSTANDING PLANET SHORT STORIES

- THE SWORD OF JOHNNY DAMOKLES** . . . . . Hugh Frazier Parker 24  
 A crack pilot and a history-loving Greek—not the best combination in the world to blast to bits a mad dictator's dreams—particularly when they are prisoners building the invaders' weapons.
- ORIDIN'S FORMULA** . . . . . R. R. Winterbotham 39  
 The formula was a simple equation, but Caddo would kill to get it—for with its secret the possessor could rule the universe.
- STAR OF PANADUR** . . . . . Albert dePina and Henry Hasse 65  
 Death walked the barren wastes of Jupiter's satellite—and watching, a weird uncanny knowledge in its eyes, was the animal whose presence had brought murder out of hiding.
- TROUBLE ON TYCHO** . . . . . Nelson S. Bond 91  
 The man who said, "Music hath charms," certainly had never heard Isobar Jones' squealing bagpipes. Why, the playing was so bad, even his fellow-workers on that lonely Moon outpost couldn't compute its nuisance value.

### P. S.'s DEPARTMENTS

- P. S.'s FEATURE FLASH** . . . . . 64  
 Meet "formally" two of the boys who ordinarily feature another department.
- THE VIZIGRAPH** . . . . . 118  
 Kicks and Kudos, bombs and bouquets from the paying patrons.

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# ORIDIN'S FORMULA

By R. R. WINTERBOTHAM

The formula was a simple equation, but Caddo had to have it—  
for knowing its answer meant he would rule the universe.

Illustrated by Doolin



"Open up," Caddo snarled, "or I'll blow my way in!"

ORIDIN the Recluse listened to the threat wirelessly from the space ship that was hovering in a landing orbit about the planetoid Azair.

I've a bead on your atmosphere plant," said the snarling voice. "One false move and I'll blast it to star dust."

Oridin shrugged as he heard the words.

One more fool had come to Azair looking for the secret that the Recluse of the Asteroids was supposed to possess.

"Your threats are unnecessary, stranger," Oridin replied in the microphone of his radio. "Everyone is welcome here as long as he behaves. I have ways of dealing with those who don't."

"I'm warning you," came the voice again, "that I will stand for no foolishness. I'll kill you if you try to resist."

Oridin smiled. "Land, stranger, you need not fear me."

The hermit arose and went to the galley of the warm little house that seemed to grow from the solid rocks of the tiny planet. He pressed a button, waited a second and then opened a small compartment. In the box was a steaming pot of coffee, freshly made by Oridin's automatic cook.

Outside the transparent shelter, the air grew blue from the reflection of landing rockets. Oridin glanced to the leveled surface on which the ship was coming to rest. He saw a turret training on the little house. Oridin was not afraid; the visitor probably would be interesting. Even a recluse can grow lonesome on a minor planet.

A figure emerged from the spaceship. He wore an oxygen helmet, although Oridin plentifully supplied the planetoid with artificial atmosphere from a small plant at the north pole. The stranger did not believe that Oridin would not resist. Again Oridin smiled. Deep in the rocks of Azair were guns that could have blasted the visitor a thousand times, had Oridin wished. But there was nothing clever about blowing a foe to pieces. The foe too often was killed before he sensed defeat. Oridin enjoyed an equal battle, or even one against odds.

"Open up! Open up, I tell you, or I'll burn my way in!" demanded the visitor.

"He's certainly not deceiving me as to his intentions," Oridin decided.

The recluse pushed a button on the wall, and a giant gate swung outward admitting the stranger.

The fellow was as tall and as muscular as Oridin himself, but the space suit and the gaping blaster he held in his hand made the visitor seem much more for-

midable. Oridin himself was dressed in bell-bottomed slacks and a loosely fitting, slipover coat. His beard softened his countenance and made him seem quite gentle, except for a certain glitter in his eyes that seemed to warn that Oridin loved a contest. And this would seem to be a deadly contest.

Oridin bowed.

"You are welcome, stranger," he said. "Take off your helmet, for the air is pure. Put aside your gun, for I am unarmed and I do not intend to harm you."

The stranger hesitated, uncertainly.

"No tricks, Oridin!" he warned.

"Tricks?" Oridin laughed tauntingly. "You are not very confident for a man of your caliber. I've heard of you often, Caddo Velexis. They say you have conquered whole nations single-handed, and yet you are afraid of an unarmed hermit."

"I'm not afraid of you," Caddo said in a tone that hinted he was.

Caddo removed his helmet and holstered his blaster, but Oridin noted that the terrestrial giant did not move the firing button to safety.

"Will you have some coffee?" Oridin asked. "It will refresh you after your long trip, and you must have had a long trip, for we are in a very sparsely filled part of the sky."

Oridin lifted the pot and poured the brown steaming liquid into a thick, metal mug.

Caddo waved it aside.

"I have no time!"

"Do not be alarmed," Oridin said. "The patrol will not be near Azair for three days."

Oridin sat down. His fingers felt under the arm of the chair where a series of buttons controlled other mechanisms in the room. Caddo had relaxed his watchfulness.

"In three days I'll be well toward the other side of the solar system," Caddo said.

Oridin lifted his eyebrows.

"Toward the earth? You have undertaken something this time!"

"Yes!" Caddo said. "It's the Earth I am after! I have all I want of the outlying planets and planetoids. You can

capture a hundred of them and be no better off than you were at first. But if you capture the Earth, you can rule the universe."

Oridin touched one of the buttons. A tiny pinhole in the wall of the room seemed to blink. There was a blinding flash and the smell of burned leather permeated the place.

CADDO gave a cry of alarm and sprang back, knocking over his chair. He was on his feet holding his blaster in his hand in a second. Across the top of his helmet was a scorched streak.

"You tried to kill me!" Caddo screamed. "You dirty swine."

Oridin's lips parted in a smile as he looked without fear into the mouth of the trembling weapon.

"Don't underestimate yourself, Caddo," he said. "The hot beam was only a warning—something to let you know that I could kill you anytime I wished. Even now, before you could squeeze the trigger on the weapon, I could cause certain things to happen—no, no! You are safe, Caddo—I could cause you to die if I wish, but you are interesting, a dangerous man. It would be a better accomplishment for me to give you a punishment you deserve."

The fear that shone in Caddo's eyes faded away. For a moment he watched Oridin. Then he laughed.

"So it's that kind of a game, is it? I can play it too! Your threats do not frighten me. Nor am I afraid of your hot beam. Look!"

Caddo thrust his arm forward into the path of the beam. There was a puff of smoke as the tremendous heat vaporized particles of dust on the leather sleeves. Then nothing happened.

"I have a neutralizing force, powered with a small battery in my clothing," Caddo said. "Foolishly, I did not have it turned on a moment ago. But you can't hurt me now."

Oridin shrugged. "I am still not afraid of you Caddo. If you had come here to loot, you would have killed me long ago. But what you want is something you cannot gain by killing me. What is it?"

"You are going to give me the secret

that will make me the master of the earth, and the master of the universe," Caddo announced.

Oridin poured himself a mug of coffee.

"I knew you did not want gold, although Azair is filthy with the stuff," he said. "But what secret have I that is so powerful?"

"The *Discovery!*" Caddo said.

"I have many." Oridin nodded toward the wall, and the pinhole of light blinked out.

"I want the secret of the universe!" Caddo spoke tensely.

"Come! Don't be so melodramatic," Oridin chided. "The universe is full of secrets."

"You're stalling. You know what I mean!"

"I think I do," Oridin agreed. "My erratic experiments have revealed a certain mathematical function,  $J$ , which theoretically opens the door to action without probability. Is that what you want, Caddo? The value of  $J$ ?"

"The mathematical bombsight!" Caddo said. "It removes probability and makes certainty of everything. With my calculations based on certainty, I'll be fate itself! I can conquer the world, chain the universe and govern creation."

Oridin laughed quietly.

"Alexander, Caesar, Napoleon, Genghis Khan and Hitler spoke those words and they were willing to bargain with the devil himself to make them come true," he said. "I suppose I am the devil, for I know the answer and I can tell you the answer—for a price."

"You'll give it to me for nothing!" Caddo patted the blister, now in the holster at his side.

"Is that your only offer?" Oridin asked, still wearing an amused half-smile.

"It is!"

Oridin rose and moved toward a safe under two clocks on the wall across the room. One of these clocks gave the terrestrial days, hours and minutes according to the General Meridian time. The other registered the four-hour rotation of Azair.

"Wait!" Caddo halted Oridin. "No tricks. Give me the combination and I'll open the safe!"

Oridin turned to the space pirate.

"The safe is unlocked. The formula is inside."

Caddo's eyes betrayed his suspicion. The most valuable secret in the world was in an unlocked safe! Warily Caddo stepped forward. He hesitated, wondering if even his neutralizing force was enough to protect him.

"There's no danger. Go ahead. Help yourself," Oridin urged.

Caddo was desperate. He touched the handle of the door. It was unlocked. He flung it open. Inside the safe was a single sheet of white paper.

Caddo seized it eagerly. His eyes widened in amazement as he read:

"The certainty of success in any course of operations, expressed in mathematical terms, represents the sum of all factors, beginning at the starting point, which must be described as *real zero*, and ending with the objective, also reduced to a real numerical value. The constant of certainty, *J*, can be the determining factor which leads an operation from the beginning to the objective."

Caddo read the paper and reread it again and again.

"Is this all of it?" he asked, turning to Oridin.

"Every bit," Oridin replied. "The formula is simple, like the one to determine the sum of an arithmetical progression—the first number of the progression plus the last number, multiplied by the number of terms in the progression and divided by two. In your case the progression lies between what you have and what you want. The certainty of getting it is the sum of all the factors."

CADDO sat down in a chair at the desk. He seemed to forget his suspicions of Oridin, who had placed a stack of paper beside him. Caddo was engrossed in the formula and Caddo, as a mathematician, knew that everything in the world could be expressed in figures. What would Napoleon, or Hitler, have given for this formula!

"The beginning is *real zero*!" Caddo spoke aloud.

"Which is different from a mathematical zero," Oridin said. "I might say that zero, like absolute vacuum, never occurs. Even if we have two apples and eat two

of them the atoms of the apples continue to exist. In the formula you have a small fraction instead of zero. It serves the same purpose. If you multiply a number *X* by zero, the answer is zero. Multiply a fraction approaching zero, .000,000,001 by another number and that number approaches zero too. If that number is a fraction it will be even closer to zero than our *real zero*. In fact, we are dealing with trans-zero numbers, just like the transfinite numbers discovered by Georg Cantor."

"Yes, yes!" Caddo said eagerly. He picked up a pencil. He scribbled furiously. His objective was all of the power in the world expressed in ergs; all of the gold in the world, expressed in dollars; all of the land, expressed in acres; the people, in individuals.

Oridin moved softly behind him. A multiple-calculator made its appearance in the room. Paper flew from under Caddo's pencil. Sweat poured from his space-browned face.

The two clocks on the wall recorded the turning of the earth and the planetoid Azair.

Caddo forgot about Oridin. He forgot about everything except the figures that revolved in his brain.

Oridin moved out into the warm artificial atmosphere of his planetoid. He was a recluse again. He was alone. A momentary contact with the greed, and avarice of the human race had been wiped away.

Far out in space was a glow of rockets. A ship was going to land. It had seemed only a short time since Caddo had landed. But that was three terrestrial days ago. This was the patrol.

"I've a prisoner for you," Oridin informed the captain. "It's Caddo."

"Caddo! He's the No. 1 universal enemy. Man, you'll grow rich with the rewards offered on nine planets for his capture."

"You can have the reward," Oridin said. "Take him away. He's a nuisance."

They found Caddo in the lounge of Oridin's house chewing on a book of logarithms. His mind was gone. He could only babble figures. His fingers twitched with cramps from writing with a pencil and punching the keys of the

calculating machine. Every spark of vitality had been taken from his body. The batteries of his force armor had burned out.

"What's the matter with him?" the captain asked.

"He wanted too much," Oridin replied. "I gave him a simple little formula for success, but the formula ceases to be simple as the definition for success grows more demanding. Had he sought perfection, Caddo would have seen that even this was unrecognizable, although

"There's nothing difficult in the formula. It proves that certainty is unrecognizable. You'll have to admit that a goal, to be reached has to follow a path and that path is determined by two points. The beginning is one and the second one makes the ultimate objective certain. Therefore the second point is certainty. But certainty is unrecognizable—"

Oridin brought forth his formula and allowed the captain to read it. The patrol officer blinked his eyes and scratched his head. Oridin wrote his formula out:

$$J = \frac{(a + 1) \text{ times infinity}}{2}$$

2

"*J* is certainly, *a* our starting point and 1 is unity, or perfection," Oridin explained. "Our starting point is close to zero, but not zero. But for convenience we'll say that it's a fraction so close that we can call it zero. Then certainty, *J*, is one-half of infinity, which you'll have to agree does not approach infinity and may be well within the realm of human comprehension, although we will not recognize perfection because we do not know what number is halfway to infinity. Caddo overlooked the fact that he went further and further into the transfinite with each number he added to his equation, for there are an infinity of numbers between any two whole numbers and any two fractions and their sum is always infinity."

The patrol captain already was muttering to himself and Oridin hurried him out of the house and into the patrol ship with his prisoner.

After the space craft had gone, Oridin returned to his living quarters and replaced his formula in the unlocked safe. He cleaned the litter made by Caddo and sat down. Once again, Oridin was a recluse and he would remain so until someone else had a dream of conquering the universe.

the certainty was only halfway to infinity—"

"Sorry, Mr. Oridin, but I'm not a mathematician," the captain said.

