

**The Boomerang Circuit**  
**By MURRAY LEINSTER**

**A COMPLETE KIM RENDELL NOVEL**

*When the prison world of Ades, outpost of freedom, vanishes into nothingness, Kim Rendell sets forth in the "Starshine" to find out why—and his discoveries make tyrants tremble!*

**CHAPTER I**  
**Damaged Transmitter**

KIM RENDELL had almost forgotten that he was ever a matter-transmitter technician. But then the matter-transmitter on Terranova ceased to operate and they called on him.

It happened just like that. One instant the wavering, silvery film seemed to stretch across the arch in the public square of the principal but still small settlement on the first planet to be colonized in the Second Galaxy. The film bulged, and momentarily seemed to form the outline of a human figure as a totally-reflecting, pulsating cocoon about a moving object. Then it broke like a bubble-film and a walking figure stepped unconcernedly out. Instantly the silvery film was formed again behind it and another shape developed on the film's surface.

Only seconds before, these people and these objects had been on another planet in another island universe, across unthinkable parsecs of space. Now they were here. Bales and bundles and parcels of merchandise. Huge containers of foodstuffs—the colony on Terranova was still not completely self-sustaining—and drums of fuel for the space-ships busy mapping the new galaxy for the use of men, and more people, and a huge tank of viscous, opalescent plastic.

Then came a pretty girl, smiling brightly on her first appearance on a new planet in a new universe, and crates of castings for more spaceships, and a family group with a pet zorag on a leash behind them, and a batch of cryptic pieces of machinery, and a man.

Then nothing. Without fuss, the silvery film ceased to be. One could look completely through the archway which was the matter-transmitter. One could see what was on the other side instead of a wavering, pulsating reflection of objects nearby. The last man to come through spoke unconcernedly over his shoulder, to someone he evidently believed just behind, but who was actually now separated from him by the abyss between island universes and some thousands of parsecs beyond.

Nobody paid any attention to matter-transmitters ordinarily. They had been in use for ten thousand years. All the commerce of the First Galaxy now moved through them. Spaceships had become obsolete, and the little *Starshine*—which was the first handiwork of man to cross the gulf to the Second Galaxy—had been a museum exhibit for nearly two hundred years before Kim Rendell smashed out of the museum in it, with Dona, and the two of them went roaming hopelessly among the ancient, decaying civilizations of man's first home in quest of a world in which they could live in freedom.

IT SEEMED a hopeless quest, at first. Every government was absolute, and hence every ruler had become tyrannical. And the very limitations of spaceships, which had caused their supplantation by matter-transmitters, had seemed to doom their quest to futility.

But Kim had adapted the principle of the transmitter to the drive of his ship, and with the increased speed and range they'd found freedom on the prison world of Ades, where alone there was no tyranny. And later Kim had crossed to this new galaxy, and set up a transmitter here—the one which had just failed—and the exiled rebels and recalcitrants of Ades had begun to move through to a new universe

where, they swore, men should be forever free.\* (See "THE DISCIPLINARY CIRCUIT." Thrilling Wonder Stories, Winter Issue, 1946.)

They planned to have Ades remain a receiving-depot for more criminals and rebels who would increase the population of the new galaxy. There should be a constant flow of them. Governments which could not be overthrown existed everywhere. They were maintained by the device of the disciplinary circuit which enabled a tyrant or a group of oligarchs to administer intolerable torture to any individual they chose, wherever he might hide upon a planet's surface.

Revolt was utterly impossible. But there were some who revolted, nevertheless. And Ades had been a planet of hopeless exile to which such sturdy rebels could be sent as to a fate more mysterious and hence more terrible than death. On the whole, the newcomers were of the stuff of pioneers. The principal drawback was that so few women were rebels.

Events begun by the Empire of Sinab had solved even that problem of a superabundance of males, by reversing it. The Sinabian Empire had expanded by a policy of seemingly irresistible murder. By that policy, modified fighting-beams swept over a planet which was to be added to the empire, and in a single day slew every man and boy-child on it, leaving the women unharmed. And as time passed and years went by, when the women had grown numbed by their grief and then their despair that their race must die—why, then male colonists from Sinab appeared, and condescended to take the place of their *victims*.

They had planned to add Ades to their empire,\* (See "THE MANLESS WORLDS." Thrilling Wonder Stories, February, 1947) but the end was the exile of the men of Sinab to a planet and a universe so remote that men had not even conceived of such a distance before. And the widows of murdered men—not sharing that exile—accepted the wiveless men of Ades as their deliverers. From that time until now, it had seemed that only triumphs could lie before the exiles. Duplicates of the *Starshine* roamed among the new and unnamed stars of the Second Galaxy. Infinite opportunities lay ahead. Until now!

Now the matter-transmitter had ceased to operate. Five millions of human beings in the Second Galaxy were isolated from the First. Ades was the only planet in the home galaxy on which all men were criminals by definition, and hence were friendly to the people of the new settlements. Every single other planet—save the bewildered and almost manless planets which had been subject to Sinab—was a tyranny of one brutal variety or another.

Every other planet regarded the men of Ades as outlaws, rebels, and criminals. The people of Terranova, therefore, were not only cut off from the immigrants and supplies and the technical skills of Ades. They were necessarily isolated from the rest of the human race. And it could not be endured. And then, besides that, there were sixteen millions of people left on Ades, cut off from the hope that Terranova represented.

Kim Rendell was called on immediately. The Colony Organizer of Terranova, himself, went in person to confer and to bewail.

Kim Rendell was peacefully puttering with an unimportant small gadget when the Colony Organizer arrived. The house was something of a gem of polished plastic—Dona had designed it—and it stood on a hill with a view which faced the morning sun and the rising twin moons of Terranova.

The atmosphere flier descended, and Dona led the Organizer to the workshop in which Kim puttered. The Organizer had had half an hour in which to think of catastrophe. He was in a deplorable state when Kim looked up from the thing with which he was tinkering.

"Enter and welcome," he said cheerfully in the formal greeting. "I'm only amusing myself. But you look disturbed."

THE Colony Organizer bewailed the fact that there would be no more supplies from Ades. No more colonists. Technical information, urgently needed, could not be had. Supplies were called for for

exploring parties, and new building-machines were desperately in demand, and the storage-reserves were depleted and could last only so long if no more came through.

"But," said Kim blankly. "Why shouldn't they come through?"

"The matter-transmitter's stopped working!" The Colony Organizer wrung his hands. "If they're still transmitting on Ades, think of the lives and the precious material that's being lost!"

"They aren't transmitting," said Kim. "A transmitter and a receiver are a unit. Both have to work for either one to operate—except in the very special case of a transmitter-drive ship. But it's queer. I'll come take a look."

He slipped into the conventional out-of-door garments. Dona had listened. Now she said a word or two to Kim, her expression concerned. Kim's expression darkened.

"That's what I'm afraid of," he told her. "A transmitter is too simple to break down. They can get detuned, but we made the pair for Ades and Terranova especially. Their tuning elements are set in solid plastite. They couldn't get out of tune!"

He picked up a small box. He tucked it under his arm.

"I'll be back," he told Dona heavily. "But I suspect you'd better pack."

He went out to the grounded flier. Then Colony Organizer took it up and across the green-clad hills of Terranova. The vegetation of Terranova is extraordinarily flexible, and the green stuff below the flier swayed elaborately in the wind. The top of the forests bowed and bent in the form of billows and waves. The effect was that of an ocean; which complacently remained upraised in; hillocks and had no normal surface. It was not easy to get used to such things.

"I'm terribly worried," said the Organizer anxiously. "There is a tremendous shortages of textiles, and the ores we usually send back to balance our account are piling up."

"You're badly worried, eh?" said Kim, grimly.

"Of course! How can we keep our economic system now?"

Kim made an angry noise.

"I'm a lot more worried than you are," he snapped. "Nothing should have stopped this particular pair of transmitters from working but the destruction of one or the other! This box in my pocket might tell me the answer, but I'm afraid to find out. I assure you that temporary surpluses and shortages of ores and textiles are the least of the things we have to worry about."

The little flier sped on, with the great, waving billows of the forest beneath it. On one hillock there was a clearing with a group of four plastic houses shining in the sunlight. They looked horribly lonely in the sea of green, but the population on Terranova was spread thin. Far over at the horizon there was another clearing. Sunlight glinted on water. A pleasure-pool. There was a sizable village about it. Half a dozen soarers spun and whirled lazily above. Kim said:

"The thing is that Ades and the planets left over after we handled Sinab are the only places in the whole First Galaxy where there are no disciplinary circuits. Ades is the only place where a man can spit in the eye of another man and the two of them settle it between themselves. There's a government of sorts, on Ades, as there is here, but there's no ruler. Also there's nobody who can strut around and make other men bow to him. A woman on Ades, and here, belongs to the man she wants to belong to. She can't be seized by some lordling for his own pleasure, and turned over to his guards and underlings when he's through with her."

"That's true," said the Colony Organizer, who was still worried. "But the transmitter—"

"Gossip of the admirable state of things on Ades has gone about," said Kim hardly. "Some of our young men appointed themselves missionaries and went roaming around the planets, spreading word that Ades wasn't a bad place. That if you were exiled to Ades you were lucky. They probably bragged that we whipped the Empire of Sinab in a fight."

AT THIS the mouth of the Organizer dropped open in astonishment. "Of course, of course! The number of exiles arriving at Ades increased. It was excellent. We need people for the Second Galaxy, and people who earn exile are usually people with courage, willing to take risks for the sake of hope."

"Don't you realize that such things have been dangerous? When people on Markab Two began to

hope?" Kim said impatiently. "When peasants on the planets of Allioth began to imagine that things might be better? When slaves on Utbeg began to tell each other in murmurs that there was a place where people weren't slaves? Don't you see that such things would alarm the rulers of such Planets? How can people be held as slaves unless you keep them in despair?"

The Colony Organizer corrected his course a trifle. Far away the walls of the capital city of Terranova glinted in the sunlight

"And there are the twenty-one planets which fell into our laps when we had to smash Sinab," said Kim. "Ades became the subject of dreams. Peasants and commoners think of it yearningly, as a sort of paradise. But kings and tyrants dream of it either as a nightmare which threatens the tranquility of their realms, or else as a very pretty bit of loot to be seized if possible. There are probably ten thousand royal courts where ambitious men rack their brains for some plausible way to wipe out Ades as a menace and take over our twenty-one planets for loot. Ades is already full of spies, sent there in the guise of exiles. There've been men found murdered after torture,—seized and tortured by spies hoping to find out the secrets by which we whipped Sinab. There's one bomb-crater on Ades already, where a bomb smuggled through the transmitter was set off in an effort to wipe out all the brains on the planet. It didn't, but it was bad."

## CHAPTER II

### *Enemy Sabotage*

SKILFULLY the Colony Organizer sent the flier into the long shallow glide that would land it in the planet capital city. There were only twenty thousand people in that city. It would rate *as* a village anywhere except on Ades, but it was the largest settlement on Terranova.

"Then you think," said the harassed Organizer, "that some outrage has been committed and the transmitter on Ades damaged —perhaps by another bomb?"

"I hope it's no worse than that," said Kim. "I don't know what I fear, but there are still sixteen million people on Ades, and some of them are very decent folk. In a little while I'll know if it's nothing important, or if it's bad. I could have found out back at home, but I wanted to hold on to hope."

His lips were tightly compressed. The flier landed. The two men got out and went along a yielding walk to the central square of the city.

Many persons had collected in the square, more people in that one spot than Kim had seen together for many years. Now at least a thousand men and women and children had gathered, and were standing motionless, looking at the tall arch of the transmitter.

There would have been nothing extraordinary about the appearance of the arch to a man from past ages. It would have seemed to be quite commonplace—gracefully designed, to be sure, and with a smooth purity of line which the ancient artists only aspired to, but still not at all a remarkable object. But the throng of onlookers who stared at it, did so because they could look through it. That had never before been possible. It had been a matter-transmitter. Now it was only an arch. The people stared.

Kim went in the technician's door at the base of the arch. The local matter-technician greeted him with relief.

"I'm glad you have come, Kim Rendell," he said uneasily. "I can find nothing wrong. Every circuit is correct. Every contact is found. But it simply does not work!"

"I'll see," said Kim. "I'm sure you are right; but I'll verify it. Yet I'm afraid I'm only postponing a test I should have made before."

He went over the test-panel, trying the various circuits. All checked up satisfactorily. He went behind the test-panel and attached a number of leads. He returned to the front and worked the panel again. The results were wildly at variance with the original readings, but Kim regarded them with an angry acceptance.

"I reversed some leads, just in case a checking instrument was out by the same amount as a circuit," he told the technician. "To be frank about it, I made sure you hadn't knocked out the transmitter on

purpose. Such things have been done." Then he said grimly. "This one is all right. The transmitter on Ades is out of action. It not only doesn't work, but they haven't been able to fix it in—how long?"

"Two hours now," said the technician unhappily.

"Too long!" said Kim.

He unpacked his box. It was very small, a foot by a foot by a foot. There was a cone-shaped hole in one end which diminished to a small hole at the other end. Kim sweated a little.

"I should have tried this before," he said. "But I wanted to hope. With all the First Galaxy fearing and hating Ades, somebody would think of a way to do us damage, even without space-ships!"

He turned a tiny knob on the box, and looked through the hole. His lips tautened. He began to make tests. His face grew more and more drawn and sombre. At last he turned the little knob again, and nothing happened. His face went quite white.

"What is it?" asked the Colony Organizer

Kim sat down, looking rather sick.

"It's bad," he said. Then he gestured toward the box. "When we were fighting Sinab, somebody worked out an idea for the remote control of ships. Beam control would be too slow. At a few million miles, the formation the robot gathered would take seconds to get back to the control-board, and more seconds would be needed for the controlling signals to get back to the robot. In terms of light-years, communications that way would be impossible."

KIM glanced at the Organizer who signified by a nod that he understood. "If it took a year each way, there'd be *two* years between the robot's observation of something to be acted on," Kim continued "And the signal that would make it act. So this man proposed very tiny matter-transmitters. One on the robot and one on the home planet. A solid object would receive all the information the robot's instrument gathered.

"The transmitter would send it back to the control-board at transmitter-speed, and the board would impress orders on it and send it to the robot again. It could shuttle across the width of a galaxy a hundred times a second, and make robot-control at any distance practical. A few of them were made, but not used. This is one of them.

"I had it for measuring the actual speed of transmitter-travel between here and Ade: We thought the distance would be enough for a good measurement. It wasn't. But this is a transmitter like the big one, and it has a mate on Ades, and its mate is a hemisphere away from Ades' main transmitter. And neither one works. Something's happened on Ades, that involves both hemispheres. And the transmitters couldn't have been knocked out by something that only killed people. It looks as if Ades may have been destroyed."

There was an instant's uncomprehending silence. Then the realization struck home. In all of human history no planet had ever been completely destroyed. Dozens, even hundreds, had been devastated, before war came to an end by the discovery of a weapon too terrible to be used. Four had been depopulated by that weapon, the fighting beam.

But never before had it even been imagined that a planet could be wiped out of existence. —There are theoretic considerations," said Kim, dry-throated, "which make a material weapon like atomic explosive unthinkable. There are other considerations which make it certain that any immaterial weapon that could destroy a planet would have infinite speed and therefore infinite range. *If* Ades has been destroyed, all the human race, including us, must sooner or later be subject to those who control such a weapon." Kim Rendell paused and cleared his throat. "If they start off by destroying the only world on which men are free, I don't think I like it. Now I must go back home. I'd better get over to the First Galaxy in the *Starshine* and find out what's happened."

\* \* \* \*

The thousand million suns of the First Galaxy swam in space, attended by their families of planets. Three hundred million worlds had been populated by the human race. For thirty thousand years the

descendants of the people of Earth—that almost mythical first home of humanity—had spread through the vastness of what once had seemed to them the very cosmos itself.

In the older, long-settled planets, civilization rose to incredible heights of luxury and of pride, and then took the long dive down into decadence and futility while newer, fresher worlds still struggled upward from the status of frontier settlements.

But at long last humanity's task in the First Galaxy was ended. The last planet suitable for human occupancy had been mapped and colonized. The race had reached the limit of its growth. It had reached, too—or so it seemed—its highest possible point of development. Matter-transmitters conveyed parcels and persons instantly and easily from rim to rim of the galaxy.

Disciplinary circuits enforced the laws of planetary governments beyond any hope of evasion or defiance. There were impregnable defenses against attacks from space. There could be no war, there could be no revolt, could be no successful crime—save by people who controlled governments!—and there could be no hope. So humanity settled back toward barbarism.

Perhaps it was inevitable that conquest should again become possible, revolt conceivable, and crime once more feasible even to individuals, so that hope could return to men. And perhaps it was the most natural thing imaginable that hope first sprang from the prison world of Ades.

"They live on domed platforms of uranium glass and, when they go out to mine ore, they work in shielded space-suits."

WHISPERS spread from planet to planet. Ades, to which all rebels and nonconformists had been banished in hopeless exile, was no longer a symbol for isolation and despair. Its citizens—if criminals could be citizens anywhere—had revived the art of space-travel by means of ships.

The rest of the galaxy had abandoned space-ships long ago as antiquities. Matter-transmitters far surpassed them. But Ades had revived them and fought a war with the Empire of Sinab, and won it, and twenty-one planets with all their cities and machines had fallen to them. But the men of Sinab had been sent to an unimaginable fate, leaving wives and daughters behind. The fact that the women of the Sinabian Empire were mostly the widows of men massacred for the Empire's spread was not clearly told in the rumors which ran about among the world.

If you became a criminal and were exiled to Ades, you were lucky. There were not enough men on Ades to accomplish the high triumphs awaiting them on every hand. There was hope for any man who dared to become a rebel. Exile to Ades was the most fortunate of adventures instead of the most dreadful of fates.

Those whispers were fascinating, but they were seditious. The oligarchs and tyrants and despots and politicians who ruled their planets by the threat of the disciplinary circuit, found this new state of affairs deplorable. Populations grew restive. There was actually hope among the common people, who could be subjected to unbearable torment by the mere pressure of a button. And of course hope could not be permitted. Allow the populace to hope, and it would aspire to justice. Grant it justice and it might look for liberty! Something had to be done!

So something was done. Many things were done. Royal courts debated the question, alike of the danger and of possible loot in the empire to which Ades had fallen heir. And in consequence the despots had acted.

The *Starshine* winked into existence near the sun which had been the luminary of Ades. It was a small cold sun, and Ades had been its only planet. The *Starshine* had made the journey from Terranova in four leaps, of which the first was the monstrous one from the Second Galaxy to the First. Accuracy of aim could not be expected over such an expanse.

The little ship had come out of its first leap near that preposterous group of the blue-white suns of Dheen, whose complicated orbits about each other still puzzled mathematicians. And Kim had come to the sector of the galaxy he desired on his second leap, and to the star-cluster in the third, and the fourth brought him to the small sun he looked for.

But space was empty about it. A sun without planets is a rarity so strange that is almost impossible. This sun had possessed Ades. Nevertheless Kim searched for Ades. He found nothing. He searched for debris of an exploded planet. He found nothing. He set cameras to photograph all the cosmos about him, and drove the *Starshine* at highest interplanetary speed for twelve hours. Then he looked at the plates.

In that twelve hours the space-ship had driven some hundreds of thousands of miles. Even nearby stars at distances of light-years, would not have their angles change appreciably, and so would show upon the plates as definite, tiny dots. But any planet or any debris within a thousand million miles would make a streak instead of a dot upon the photographic plate.

There was nothing. Ades had vanished.

He aimed for the star Khiv and flashed to its vicinity. The banded planet Khiv Five swam sedately in emptiness. Kim drove for it, at first on mere overdrive, and then on the interplanetary drive used for rising from and landing on the surface of worlds. He landed on Khiv Five.

Women looked at him strangely. A spaceship which landed on Khiv Five—or anywhere else, for that matter—must certainly come from Ades, but ships were not commonplace sights. Kim was no commonplace sight, either. Six years before, the men on Khiv Five had died in one rotation of the planet. Every man and boy was murdered by the killing-beams of the now defunct Sinabian Empire. Now there were only women, save for the very few men who had migrated to it in quest of wives, and had remained to rear families.

The population of Khiv Five was overwhelmingly female.

Kim found his way to the governing center of the capital city. Dona walked with him through the city streets. There were women everywhere. They turned to stare at Kim. They looked at Dona with veiled eyes.

Long years on an exclusively feminine world does strange things to psychology. There were women wearing the badges of mourning for husbands dead more than half a decade.

In a sense it was a dramatization of their loss, because all women, everywhere, take a melancholy pleasure in the display of their unhappiness. But in part to boast of grief for a lost husband was an excuse for not having captured one of the few men who had arrived since the mass murder. As a matter of fact, Kim did not see a single man in the capital city of Khiv Five, but its streets swarmed with women.

He asked for the head of the planet government, and at long last found an untidy woman at a desk. He asked what was known of Ades.

"I was on Terranova," he explained. "The matter-transmitter went off and it did not come back on. I came back by space-ship to find out about it, and went to where Ades should have been. I'm Kim Rendell, and I used to be a matter-transmitter technician. I thought I might repair the one on Ades if it needed repairing. But I could find no planet circling Ades' sun."

The woman regarded him with what was almost hostility. .

"Kim Rendell," she said. "I've heard of you. You are a very famous man. But we women on Khiv Five can do without men!"

"No doubt," Kim said patiently. "But has there been any word of Ades?"

"We are not interested in Ades," she said angrily. "We can do without Ades."

"But I'm interested in Ades," said Kim. "And after all, it was Ades which punished the murderers of the men of Khiv Five. A certain amount of gratitude is indicated."

"Gratitude!" said the untidy woman harshly. "We'd have been grateful if you men of Ades had turned those Sinabians over to us! We'd have killed them every one—slowly!"

"But the point is," said Kim, "that something has happened to Ades. It might happen to Khiv Five. If we can find out what it was, we'll take steps so it won't happen again."

"Just leave us alone!" said the untidy woman fiercely. "We can get along without men or Ades or anything else. Go away!"

### CHAPTER III

## *Dangerous Trip*

DONA plucked at Kim's arm. He turned, seething, and went out. Outside he vented his bitterness.

"I thought men were crazy!" he said. "If she's the head of the planet government, I pity the planet."

"She could talk to another woman quite rationally," Dona said with satisfaction. "But she's had to persuade herself that she hates me, and you had me with you, and I'm prettier than she is, Kim, and I have you. So she couldn't talk to you."

"But she's unreasonable," Kim said stubbornly.

"We'll go back to the ship," said Dona brightly. "I'll lock you in it and then go find out what we want to know."

She smiled comfortably all the way back to the *Starshine*. But the staring women made Kim acutely uncomfortable. When he was safely inside the ship, he wiped perspiration from his forehead.

"I wouldn't want to live on this planet!" he said feverishly.

"I wouldn't want you to," said Dona. "Stay inside, darling. You'd better not even show yourself at a vision-port."

"Heaven forbid!" said Kim.

Dona went out. Kim paced up and down the living quarters of the ship. There was something in the back of his mind that would not quite come out. The disappearance of Ades was impossible. Men had conquered one galaxy and now started on a second, but never yet had they destroyed a planet. Never yet had they even moved one. But nevertheless, only thirty-six hours ago the planet Ades had revolved about its sun and men and women had strolled into its matter-transmitter with no hint of danger, and between two seconds something had happened.

Even had the planet been shattered into dust, its remnants should have been discoverable. And surely a device which could destroy a planet would have had some preliminary testings and the galaxy would have heard of its existence! This thing that had happened was inconceivable! On the basis of the photographs, Ades had not only been destroyed, but the quintillions of tons of its substance had been removed so far that sunlight shining upon them did not light them enough for photography. Which simply could not be.

Kim wrestled with the problem while Dona went about in the world of women. There was something odd about her in the eyes of women of Khiv Five. Their faces were unlike the faces of the women of a normal world. On a world with men and women, all women wear masks. Their thoughts are unreadable. But where there are no men, masks are useless. The women of Khiv Five saw plainly that Dona was unlike them, but they were willing to talk to her.

She came back to the *Starshine* as Kim reached a state of complete bewilderment. Ades could not have been destroyed. But it had vanished. Even if shattered, its fragments could not have been moved so far or so fast that they could no longer be detected. But they were undiscoverable. The thing was impossible on any scale of power conceivable for humans to use. But it had happened.

So Kim paced back and forth and bit his nails until Dona returned.

"We can take off, Kim," she said quietly.

She locked the inner airlock door as if shutting out something. She twisted the fastening extra tight. Her face was pale.

"What about Ades?" asked Kim.

"They had matter-transmission to it from here, too," said Dona. "You remember, the original transmitter on Ades was one-way only. It would receive but not send. Some new ones were built after the war with Sinabia, though. And this planet's communication with Ades cut off just when ours did, thirty-six hours ago. None of the other twenty planets has communication with it either. Something happened, and on the instant everything stopped."

"What caused it?" Kim asked, but Dona paid no attention.

"Take off, Kim," she said. "Men are marching out of the matter-transmitter. Marching, I said, Kim! Armed men, marching as soldiers, with machine-mounted heavy weapons. Somebody knows Ades can't



protect its own any more, and invaders must be crowding in for the spoils. I'm—afraid, Kim, that Ades has been destroyed and our planets are part of a tyrant's empire now."

LATER, the *Starshine* swooped down from the blue toward the matter-transmitter on Khiv Five. Serried ranks of marching figures were tramping out of the transmitter's silvery, wavering film. In strict geometric rows they marched, looking neither to the right nor to the left. They were a glittering stream, moving rhythmically in unison, proceeding to join an already-arrived mass of armed men already drawn up in impressive array.

Racing toward the high arch of the transmitter with air screaming about the *Starshine's* hull, Kim saw grimly that the figures were soldiers, as Dona had said. He had never before seen a soldier in actual life, but pictures and histories had made them familiar enough.

These were figures out of the unthinkable remote past. They wore helmets of polished metal. They glittered with shining orichalc and chromium. The bright small flashes of faceted corundum—synthetic sapphire in all the shades from blue-white to ruby—shone from their identical costumes and equipment. They were barbarous in their splendor, and strange in the precision and unison of their movements, which was like nothing so, much as the antics of girl precision dancers, without the extravagance of the dancers' gestures.

The *Starshine* dipped lower. It shot along a canyon-like open way between buildings. The matter-transmitter was upon a hill within the city and the ship was now lower than the transmitter and the heads of the soldiers who still tramped out of the archway in a scintillating stream.

Kim raged. Soldiers were an absurdity on top of a catastrophe. Something had erased the planet Ades from its orbit around a lonely sun. That bespoke science and intelligence beyond anything dreamed of hitherto. But soldiers marching like dancing-girls, bedecked with jewels and polished metal like the women of the pleasure-world of Dite—

This military display was pure childishness!

"Our pressure-wave'll topple them," said Kim savagely. "At least we'll smash the transmitter."

There was a monstrous roaring noise. The *Starshine*, which had flashed through intergalactic space at speeds no science was yet able to measure, roared between tall buildings in atmosphere. Wind whirled and howled past its hull. It dived forward toward the soldiers.

There was one instant when the ship was barely yards above the gaping faces of startled, barbarously accoutred troopers. The following spreading pressure-wave of the ship's faster-than-sound movement spread out on every side like a three-dimensional wake. It toppled the soldiers as it hit. They went down in unison, in a wildly-waving, light-flashing tangle of waving arms and legs and savage weapons.

But Kim saw, too, squat and bell-mouthed instruments on wheels, in the act of swinging to bear upon him. One bore on the *Starshine*. It was impossible to stop or swerve the ship. There was yet another fraction of a second of kaleidoscopic confusion, of momentary glimpses of incredibly antique and childish pomp.

And then anguish struck.

It was the hellish torment of a fighting-beam, more concentrated and more horrible than any other agony known to mankind. For the infinitesimal fraction of an instant Kim experienced it to the full. Then there was nothingness.

There was no sound. There was no planet. There was no sunlight on tall and stately structures built by men long murdered from the skies. The vision-ports showed remote and peaceful suns and all the tranquil glory of interstellar space. The *Starshine* floated in emptiness.

It was, of course, the result of that very small device that Kim had built into the *Starshine* before even the invention of the transmitter-drive. It was a relay which flung on faster-than-light drive the instant fighting-beams struck any living body in the ship. The *Starshine* had been thrown into full interstellar drive while still in atmosphere.

It had plunged upward—along the line of its aiming—through the air. The result of its passage to Khiv Five could only be guessed at, but in even the unthinkable minute part of a second it remained in air, the ship's outside temperatures had risen two hundred degrees. Moving at multiples of the speed of light,

it must have created an instantaneous flash of literally stellar heat by the mere compression of air before it.

KIM was sick and shaken by the agony which would have killed him had it lasted as long as the hundredth of a second. But Dona stared at him.

"Kim—what— Oh!"

She ran to him. The beam had not touched her. So close to the projector, it had been narrow, no more than a yard across. It had struck Kim and missed Dona.

"Oh, my poor Kim!"

He grimaced.

"Forget it," he said, breathing hard. "We've both had it before, but not as bad as this. It was a mobile fighting-beam projector. I imagine they'll think we burned up in a flash of lightning. I hope there were X-rays for them to enjoy."

For a long time Kim Rendell sat still, with his eyes closed. The dosage of the fighting-beam had been greater than they had ever experienced together, though. It left him weak and sick.

"Funny," he said presently. "Barbarous enough to have soldiers with decorative uniforms and shiny dingle-dangles on them, and modern enough to have fighting-beam projectors, and a weapon that's wiped Ades out of space. We've got to find out who they are, Dona, and where they came from. They've something quite new."

"I wonder," said Dona. But she still looked at Kim with troubled eyes.

"If it's new," said Dona. "If it's a weapon. Even if—if Ades is destroyed."

Kim stared at her.

"Now, what do you mean by that?"

"I don't quite know," admitted Dona. "I say things, and you turn them over in your head, and something quite new comes out. I told you a story about a dust-grain, once, and you made the transmitter-drive that took us to Ades in the first place and made everything else possible afterward."

"*Hmmm,*" said Kim meditatively. "If it's new. If it's a weapon. If Ades is destroyed. Why did you think of those three things?"

"You said no planet had ever been destroyed," she told him. "If anybody could think of a way to do such a thing, you could. And when Sinab had to be fought, and there weren't any weapons, you worked out a way to conquer them with things that certainly weren't weapons. Just broadcasters of the disciplinary circuit field. So I wondered if what they used was a weapon. Of course if it wasn't a weapon, it was probably something that had been used before for some other purpose, and it wouldn't be new."

"I've got to think about that," said Kim. He cogitated for a moment. "Yes, I definitely have to think about that."

Then he stood up.

"We'll try to identify these gentry first. Then we'll go to another of the twenty-one planets."

## CHAPTER IV

### *Despots Take Over*

HE TOOK his observations and swung the little ship about. He adjusted the radiation-switch to throw off the transmitter-drive on near approach to a sun. He aimed for the star Thom. Its fourth planet had been subjugated to the Empire of Sinab ten years before, and freed by the men of Sinab six years since.

The *Starshine* winked into being some twenty million miles from it, and two hundred million from the star. Kim looked annoyed, and then glanced at the relay and adjusted it again. He pointed the *Starshine*

close to the planet's disk. He pressed the transmitter-drive button. Instantly the ship was within mere thousands of miles of the planet

"Nice!" Kim was pleased. "Saves a lot of overdrive juggling. Those horrible fighter-beams seem to make one think more clearly. Dona, get us down to the night-side while I try to work something out. Don't ground. Just drop into atmosphere enough to pick up any broadcasts."

She took his place at the controls. He got out his writing-materials and a stylus and began busily to sketch and to calculate. Dona drove the ship to atmosphere on the dark side of Thom Four, not too far from the sunset's rim. In the earlier night hours, on a given continent, the broadcasts should be greater in number.

Communicator-bands murmured in soprano. Thom Four was more than ninety-five per cent female, too. Kim worked on. After a long time a speaker suddenly emitted a blast of martial music. Until now the broadcast programs had gone unheeded by both Kim and Dona, because from each wave-band only women's voices had come out, and only women's music. The sound of brazen horns was something new. Dona smiled at Kim and turned up the volume.

A man's voice said pompously:

"To the People of Thom Four, greeting!

"Whereas His Most Gracious Majesty, Elim the Fortieth, of high and noble lineage, has heard with distress of the misfortunes of the people of the planet Thom Four, of the injuries they have suffered at the hands of enemies, and of their present distressful state, and

"Whereas, His Most Gracious Majesty, Elim the Fortieth, of high and noble lineage, is moved to extend his protection to all well-disposed persons in need of a gallant and potent protector;

"Therefore His Most Gracious Majesty, Elim the Fortieth, of high and noble lineage, has commanded his loyal and courageous troops to occupy the said planet Thom Four, to defend it against all enemies whatsoever, and to extend to its people all the benefits of his reign.

"Given at his Palace of Gornith, on the second day of the tenth month of the sixteenth year of his reign, and signed by His Most Gracious Majesty, Elim the Fortieth, of high and noble lineage."

The voice stopped. There was another blare of martial music. The broadcast ended. Ten minutes later, on another wavelength, the same proclamation was repeated. That broadcast stopped too. Five minutes later came still another broadcast. And so on and so on. At long last there was but a single wavelength coming into the communicators. It was a broadcast of a drama with only female characters, and in which there was no reference to the fact that the human race normally includes two sexes. It was highly emotional and it was very strange indeed.

Then a pompous male voice read the silly proclamation and the broadcast cut off.

"The question," said Kim, "is whether I'd better try to catch a soldier and make him tell us where Gornith is and what planet ruled by Elim the Fortieth of high and noble lineage. I think I'd better find out."

"Darling," said Dona, "I'm not afraid of soldiers bothering you, but I certainly won't let you venture out on a planet full of women. And there's something else."

"What?"

"There are twenty-one planets which Ades used to protect. What planetary ruler could send troops to occupy twenty-one other planets? Do you think this King Elim the Fortieth has tried to seize all of them, or do you think he arranged a cooperative steal with the rulers of other planets, and an arrangement for them all to help protect each other? Hadn't we better make sure?"

KIM looked up at her from the desk where he worked. "You're an uncomfortably brainy woman, Dona," he said drily. "Do you think you could find Sinab? Sinab Two was the capital planet of the empire we had to take over." Dona looked carefully on a star-chart. Kim went back to his task. He had drawn, very carefully, an electronic circuit. Now he began to simplify it. He frowned from time to time, though, and by his expression was thinking of something else than the meticulous placing of symbols on paper.

It was symptomatic of his confidence in Dona, though, that he remained absorbed while she worked the ship. Presently there were mutterings in the speakers. Dona had navigated to another solar system

and entered the atmosphere of another planet.

"Listen, Kim!" she said suddenly.

From a communicator blared a heavy male voice.

"People of Sinab Two!" the voice said. "You are freed from the tyranny of the criminals of Ades.

"From this time forth, Sinab Two is under the protection of the Dynast of Tabor, whose mercy to the meek, justice to the just, and wrath toward the evil-doer is known among all men.

"People of Sinab Two! The soldiers now pouring in to defend you are to be received submissively. You will honor all requisitions for food, lodgings, and supplies. Such persons as have hitherto exercised public office will surrender their authority to the officials appointed by the Dynast to replace them.

"For your protection, absolute obedience is essential. Persons seeking to prevent the protection of Sinab Two by the troops of the Dynast of Tabor will be summarily dealt with. They can expect no mercy.

"People of Sinab Two! You are freed from the tyranny of the criminals of Ades!"

"So Elim the Fortieth, of high and noble lineage, has a competitor," Kim said grimly. "The Dynast of Tabor, eh? But there are twenty-one planets that used to belong to Sinab. I'm afraid we'll have to check further."

They did. While Kim scowlingly labored over the drawing of a new device, Dona drove the *Starshine* to six worlds in succession. And four of the six worlds had been taken over by the Sardathian League, by King Ulbert of Arth, by the Emperor and Council of the Republic of Sind—which was a remarkable item—and by the Emperor of Donet. On the last two worlds there was confusion. On one the population was sternly told by one set of voices that it now owed allegiance to Queen Amritha of Megar, and by another set that King Jan of Pirm would shortly throw out the Megarian invaders and protect them forever. On the sixth planet there were four armies proclaiming the exclusive nobility of their intentions.

"That's enough, Dona," Kim said in a tired voice. "Ades vanished or was destroyed, and instantly thereafter gracious majesties and dynasts and imperators and such vultures pounced on the planets we'd freed. But I'd like to know how they made sure it was safe to pounce!"

Dona punched buttons on the *Starshine's* control-board. The ship lifted. The great black mass which was the night-side of the last planet faded behind and the *Starshine* drove on into space. And Dona turned back to Kim from her post at the controls.

"Now what?"

Kim stared at nothing, his features somber.

"It's bad," he said sourly. "There's the gang on Terranova. They're fair game if they land on any planet in the whole First Galaxy—and Terranova isn't self-sustaining yet. They'll starve if they stay isolated. There are the people on Ades. Sixteen millions of them. Not a big population for a planet, but a lot of people to be murdered so a few princelings can feast on the leavings of Sinab's empire.

"There are all the people who'd started to dream because Ades had come to mean hope. And there are all the people in generations to come who'd like to dream of hope and now won't be able to, and there are all the nasty little surprise-attacks and treacheries which will be carried out by matter-transmitters, now that these gentry of high and noble lineage have been able to snatch some loot for themselves. It's pretty much of a mess, Dona."

DONA gave an impatient toss of her head. "You're not responsible for it, Kim," she protested.

"Maybe I should simply concentrate on finding a solution for Terranova, eh? Let decency as something to fight for go by the board and be strictly practical?"

"You shouldn't try to take all the problems of two galaxies on your shoulders," said Dona.

Kim shook his head impatiently.

"Look!" he said in vexation. "There's some way out of the mess! I just contrived a way to make a very desirable change in all the governments of the First Galaxy, given time. It was one of those problems that seem too big to handle, but it worked out very easily. But I absolutely can't think of the ghost of an idea of how to find a friendly world for Terranova!"

Dona waited.

"It occurs to me that I haven't slept for forty hours," Kim said. "I doubt that you've done any better. I think we should go to bed. There's one puzzle on which all the rest is based, and it's got me. What the devil happened to Ades? There's a whole planet, seven thousand miles in diameter, vanished as if it had never been. Maybe after some sleep I'll be able to work it out. Let's go to sleep!"

The space-ship *Starshine* drove on through emptiness at mere interplanetary speed, its meteor-repellers ceaselessly searching space for any sign of danger. But there was no danger. In the midst of space, between the stars, there was safety. Only where men were *was* there death.

The ship swam in the void, no lights showing in any of its ports.

Then, in the midst of the darkness inside, Kim sat up in his bunk.

"But hang it, Ades couldn't be destroyed," he cried, in exasperation.

## CHAPTER V

### *Industrial World*

PLANET SPICUS FIVE was an industrial world. According to the prevailing opinion in the best circles, its prosperity was due to an ample and adequate supply of raw materials, plus a skilled and thrifty population. There were sixteen matter-transmitters on the planet, and their silvery films were never still.

From abecedaria for infants to zylolites (synthetic) for industrial use, its products ran in endless streams to the transmitters, and the other products and raw materials obtained in exchange came out in streams no less continuous. The industrial area covered a continent of sprawling rectangular buildings designed for the ultimate of efficiency, with living-areas for the workmen spreading out between.

The *Starshine* descended through morning sunlight. Kim, newly shaved and rested, forgot to yawn as he stared through the vision-ports at the endless vista of structures made with a deliberate lack of grace. From a hundred-mile height they could be seen everywhere to north and south, to the eastward where it was already close to midday, and to where shadows beyond the dawn hid them. Even from that altitude they were no mere specks between the cloud-masses. They were definite shapes, each one a unit.

The ship went down and down and down. Kim felt uncomfortable and realized why. He spoke drily.

"I don't suppose we'll ever land on any new planet without being ready to wince from a fighting-beam and find ourselves snatched to hell-and-gone away."

Dona did not answer. She gazed at the industrial plants as they swelled in size with the *Starshine's* descent. Buildings two miles to a side were commonplace. Great rectangles three and even four miles long showed here and there. And there were at least half a dozen buildings, plainly factory units, which were more than ten miles in extent on each of their ground dimensions. When the *Starshine* was below the clouds, Dona focussed the electron telescope on one of them and gestured to call Kim's attention to the sight.

This factory building enclosed great quadrangles, with gigantic courtyards to allow—perhaps—of light. And within the courtyards were dwelling-units for workmen. The telescope showed them plainly. Workmen in factories like this would have no need and little opportunity ever to go beyond the limits of their place of employment. The factory in which they labored would confront them on every hand, at every instant of their life from birth until death.

"That's something I don't like, without even asking questions about it," said Kim.

He took the controls. The *Starshine* dived. He remembered to flick on the communicators. A droning filled the interior of the space-ship. Dona looked puzzled and tuned in. A male voice mumbled swiftly and without intonation through a long series of numerals and initial letters. It paused. Another voice said tensely, "*Tip.*" The first voice droned again. The second voice said, "*Tip.*" The first voice droned.

Dona looked blank. She turned up another wave-length. A voice barked hysterically. The words ran so swiftly together that they were almost indistinguishable, but certain syllables came out in patterns.

"It's something about commerce," said Kim. "Arranging for some material to be routed on a

matter-transmitter."

None of the wavelengths carried music. All carried voices, and all babbled swiftly, without expression, with a nerve-racking haste.

The *Starshine* landed before a gigantic building. An armed guard stood before it at a gateway. Kim trudged across to him. He came back.

"He's stupid," he said shortly. "He knows what to guard, and the name of the plant, and where a workman may go to be received into employment. That's all. We'll try again."

The *Starshine* rose and moved. She was designed for movement in space, with parsecs of distance on every hand. She was unhandy when used as now for an atmosphere-flier. She descended within a factory quadrangle. There was no one about. Literally no one. The dwelling-units were occupied, to be sure, but no one moved anywhere.

When Kim opened the air-lock there was a dull, grumbling rumble in the air. It came from the many-storied building which surrounded this courtyard and stretched away for miles.

KIM and Dona stood blankly in the airlock door. The air had no odor at all. There was no dust. There was not a single particle of growing stuff anywhere. To people who had lived on Terranova, it was incredible.

Then bells rang. Hundreds and thousands of bells. They rang stridently in all the rooms and corridors of all the dwelling-units which reached away as far as the eye could follow them. It was a ghastly sound, because every bell was in exactly the same tone and made exactly the same tintinabulation.

Then there was a stirring in the houses. Folk moved within them. Figures passed inside the windows. Now and again, briefly, faces peered out. But none lingered to stare at what must have been the unprecedented sight of a space-ship resting in the courtyard.

After a little figures appeared in the doors. Men and women swarmed out and streamed toward openings in the factory building. Their heads turned to gaze at the ship, but they did not even slacken speed in their haste toward the sound of industry.

Kim hailed them. They looked at him blankly and hurried on. He caught hold of a man.

"Where will I find the leader?" he asked sharply. "The boss! The government! The king or whatever you have! Where?" The man struggled.

"I be late," he protested unhappily. "I work. I be late!"

"Where's the government?" Kim repeated more sharply still. "The king or nobles or whoever makes the laws or whatever the devil—"

"I be late!" panted the man.

He twisted out of Kim's grasp and ran to join the swarming folk now approaching the great building.

They hurried inside. The quadrangle was again empty. Kim scowled. Then other workers came out of the factory and plodded wearily toward the dwelling-units. Kim waylaid a man and shot questions at him. His speech was slurred with fatigue. Dona could not understand him at all. But he gazed at the *Starshine*, and groped heavily for answers to Kim's questions, and at the end trudged exhaustedly into a doorway.

Kim came into the ship, scowling. He seated himself at the control-board. The -ship lifted once more. He headed toward the curve of the plant's bulging form.

"What did you learn, Kim?"

"This is the work continent," said Kim shortly. "The factories and the workmen are here. The owners live in a place of their own. I have to talk to one of the more important merchants. I need information."

Time passed and the ship went on over the rim of the planet. Orbital speed was impossible. The *Starshine* stayed almost within the atmosphere and moved eastward at no more than fifteen hundred miles an hour.

"Here it is," said Kim, at last.

The ship settled down once more. There was a thin, hazy overcast here, and clear vision came suddenly as they dropped below it. And the coast and the land before them brought an exclamation from Dona. The shoreline was magnificent, all beautiful bold cliffs with rolling hills behind them. There were

mountains on farther yet and splendid vistas everywhere. But more than the land or the natural setting, it was what men had done which caused Dona to exclaim.

The whole terrain was landscaped like a garden. As far as the eye could reach—and the *Starshine* still flew high—every hillside and every plain had been made into artificial but marvelous gardens. There were houses here and there. Some were huge and gracefully spreading, or airily soaring upward, or simple with the simplicity of gems and yet magnificent beyond compare. There was ostentation here, to be sure, but there was surely no tawdriness. There was no city in sight. There was not even a grouping of houses, yet many of the houses were large enough to shelter communities.

"I—see," said Kim. "The workmen live near the factories or in their compounds. The owners have their homes safely away from the ugly part of commerce. They've a small-sized continent of country homes, Dona, and undoubtedly it is very pleasant to live here. Whom shall we deal with?"

DONA shook her head. Kim picked a magnificent residence at random. He slanted the *Starshine* down. Presently it landed lightly upon smooth lawn of incredible perfection, before a home that Dona regarded with shining eyes.

"It's—lovely!" she said breathlessly. "It is," agreed Kim.

He sat still, looking.

"It even has a feeling all its own," he said. "The palace of a king or a tyrant always has something of arrogance about it. It's designed to impress the onlooker. A pleasure-palace is always tawdry. It's designed to flatter the man who enters it. These houses are solid. They're the homes of men who are thinking of generations to follow them and, meanwhile, only of themselves. I've heard of the merchant princes of Spicus Five, and I'm prejudiced. I don't like those factories with the workmen's homes inside. But—I like this house. Do you want to come with me?"

Dona looked at the house—yearningly. At the view all about, every tree and every stone so placed as to constitute perfection. The effect was not that of a finicky estheticism, but of authentic beauty and dignity. But after a moment Dona shook her head.

"I don't think I'd better," she said slowly. "I'm a woman, and I'd want one like it. I'll stay in the ship and look at the view. You've a communicator?"

Kim nodded. He opened the airlock door and stepped out. He walked toward the great building.

Dona watched his figure grow small in its progress toward the mansion. She watched him approach the ceremonial entrance. She saw a figure in formalized rich clothing appear in that doorway and bow to him. Kim spoke, with gestures. The richly clothed servant bowed for him to go first into the house. Kim entered and the door closed.

Dona looked at her surroundings. Dignity and tranquility and beauty were here. Children growing up in such an environment would be very happy and would feel utterly safe. Wide, smooth, close-cropped lawns, with ancient trees and flowering shrubs stretched away to the horizons. There was the gleam of statuary here and there—rarely. A long way off she could see the glitter of water, and beside it a graceful colonnade, and she knew that it was a pleasure-pool.

Once she saw two boys staring at the space-ship. There was no trace of fear in their manner. But a richly-dressed servant—much more carefully garbed than the boys—led up two of the slim riding-sards of Phanis, and the boys mounted and their steeds started off with that sinuous smooth swiftness which only sards possess in all the first galaxy.

Time passed, and shadows lengthened. Finally Dona realized how many hours had elapsed since Kim's departure. She was beginning to grow uneasy when the door opened again and Kim came out followed by four richly clad servants. Those servants carried bundles. Kim's voice came over the communicator.

"Close the inner airlock door, Dona, and don't open it until I say so."

Dona obeyed. She watched uneasily. The four servants placed their parcels inside the airlock at a gesture from Kim. Then there was an instant of odd tension. Dona could not see the servants, but she saw Kim smiling mirthlessly at them. He made no move to enter. He spoke sharply and she heard them file out of the air lock. Dona could see them again.

Kim stepped into the spaceship and closed the door.

"Take her up, Dona—fast!"

The *Starshine* shot upward, with the four servants craning their necks to look at it. It was out of sight of the ground in seconds. It was out of the atmosphere before Kim came into the control-room from the lock.

"Quite a civilization," he said. "You'd have liked that house Dona. There's a staff of several hundred servants, and it is beautiful inside. The man who owns it is also master of one of the bigger industrial plants. He doesn't go to the plant, of course. He has his offices at home, with a corps of secretaries and a television-screen for interviews with his underlings. Quite a chap."

"Were those four men servants?" Dona asked.

"No, they were guards," said Kim drily. "There are no proletarians around that place, and none are permitted. Guards stand watch night and day. I'd told my friend that the *Starshine* was packed with lethal gadgets with which Ades had won at least one war, and he's in the munitions business, so I wasn't going to let his guards get inside. They wanted to, badly, insisting they had to put their parcels in the proper place. He'd have paid them lavishly if they could have captured a ship like the *Starshine*."

He laughed a little.

"I was lucky to pick a munition maker. There aren't many wars in the ordinary course of events, but he turns out weapons for palace guards, mobile fighting-beam projectors, and so on. All the equipment for a planet ruler who wants a fancy army for parades or a force with a punch to fight off any sneak attack via matter-transmitter.

That's what your average ruler is afraid of, and what he keeps an army to defend himself against. Of course the disciplinary circuit takes care of his subjects."

## CHAPTER VI

### *Vanished World*

AHEAD of them loomed the sun, Spicus, many millions of miles away, while beneath them lay the planet, Spicus Five, a vast hemisphere which was rapidly shrinking into the distance. Kim moved over beside Dona and stared reflectively at the instrument board.

"I got frightened, Kim," the girl said. "You were gone so long."

"I was bargaining," Kim answered. "I told him I came from Ades. I'd a space-ship, so he could believe that. Then I told him what had happened. Selling munitions, he should have known about it beforehand, and I think he did. He doubted that I'd come from Ades as quickly as I said, though, until I recited the names of some of the gracious majesties who are making a grab of planets. Then he was sure. So he wanted to strike a bargain with me for Terranova. He'd supply it with arms, he said, in exchange for a star-cluster of his own in the Second Galaxy. If I'd set up a private matter-transmitter for him. . . ."

Kim laughed without mirth.

"He could colonize a couple of planets himself, and make a syndicate to handle the rest. He saw himself changing his status from that of a merchant princeling to that of a landed proprietor with half a dozen planets as private estates, and probably a crown to wear on week-ends and when he retired from business on Spicus Five. There are precedents, I gather."

"But Kim!" protested Dona. "What did you do?"

"I did one thing that's been needed for a long time," said Kim grimly. "It seems to me that I do everything backwards. I should have attended to the matter of Ades first, but I had a chance and took it. I think I put something in motion that will ultimately smash up the whole cursed system that's made slaves of every human being but those on Ades and Terranova—the disciplinary circuit. Back on Ades we've talked about the need to free the people of this galaxy. It's always seemed too big a job. But I think it's started now. It will be a profitable business, and my friend who wanted to bargain for some planets in the Second Galaxy will make a pretty penny of the beginning, and it will carry on of itself."

The planet below and behind was now only a globe. It soon dwindled into a tiny ball. Kim touched



Dona on the shoulder.

"I'll take over," he said. "We've got work to do, Dona."

Dona stood up and stamped her foot.

"Kim! You're misunderstanding me on purpose! What about Ades? Did you find out what happened to it?"

Kim began the process of sighting the *Starshine's* nose upon a single, distant, minute speck of light which seemingly could not be told from a million other points of light, all of which were suns.

"I think I found out something," he told her. "I thought a merchant planet would be the place to hear all the gossip of the galaxy. My friend back yonder put his research organization to work finding out what I wanted to know. What they dug up looks plausible. Right now I'm going to get even for it. That's a necessity! After that, we'll see.

"There were sixteen million people on Ades. We'll try to do something about them. They aren't likely to be all dead—yet." The sun of Ades swam in emptiness. For uncountable billions of years it had floated serenely with its single planet circling it in the companionability of bodies separated only by millions of miles, when their next nearest neighbors are light-years away. A sun with one planet is a great rarity.

A sun with no satellites—save for giant pulsing Cepheids and close-coupled double suns—is almost unknown. But for billions upon billions of years that sun and Ades had kept each other company. Then men had appeared. For a thousand years great spaceships had grimly trundled back and forth to unload their cargoes of criminals upon the chilly small world.

Ades was chosen as a prison planet from the beginning. Later matter-transmitters made the journeys of space-craft useless, for six, seven, eight thousand years there was no traffic but the one-way traffic of its especially contrived transmitter, which would receive criminals from all the galaxy but would return none or any news of them to the worlds outside.

DURING all that time a lonely guard-ship hung drearily about, watching lest someone try to rescue a man doomed to hopeless exile, and return him to happier scenes. And finally the guard-ship had gone away, because the space-ways were no longer used by anybody, and there were no ships in the void save those of the Patrol itself. Accordingly the Patrol was disbanded. For hundreds of years nothing happened at all. And then Kim Rendell came in the *Starshine*, and shortly thereafter tiny ships began to take off from Ades, and they fought valorously on distant star-systems, and at last a squadron of war-craft came to subjugate Ades for the beastly Empire of Sinab. Finally there was a battle in the bright beams of the lonely sun itself. And after that, for a time, little space-ships swam up from the planet and darted away, and darted back, and darted away, and back.

But never before had there been any such situation as now. The sun, which had kept company with Ades for so long, now shone in lonely splendor, amid emptiness, devoid of its companion. And that emptiness was bewildering to a small ship—sister to the *Starshine*—which flicked suddenly into being nearby.

The ship had come back from a journey among the virgin stars of the Second Galaxy with honorable scars upon its hull and a zestful young crew who wished to boast of their journeying. They had come back to Ades—so they thought—direct, not even stopping at Terranova. And there was no Ades.

The little ship flashed here and there about the bereft sun in bewilderment. It searched desperately for a planet some seven thousand miles in diameter, which had apparently been misplaced. And as it hunted, a second ship whisked into sight from faster-than-light drive. The detectors of the two ships told them of each other's presence, and they met and hung in space together. Then they searched in unison, but in vain. At long last they set out in company for one of the planets of the former Sinabian Empire, on which there must be some news of what had happened to Ades.

On transmitter-drive they inevitably separated and one was much closer to the chosen planet when they came out of stressed space. One drove down into atmosphere while the other was still thousands of miles away.

The leading ship went down at landing-speed, toward a city. The other ship watched by electron telescope and prepared to duplicate its course. But the man of the second ship saw—and there could be

no doubt about it—that suddenly the landing ship vanished from its place as if it had gone into intergalactic drive in atmosphere. There was a flash of intolerable, unbearable light. And then there was an explosion of such monstrous violence that half of the planet's capital city vanished or was laid in ruins.

The crew of second ship were stunned. But the second ship went slowly and cautiously down into atmosphere, and its communicators picked up voices issuing stern warnings that troops must be welcomed by all citizens, and that absolute obedience must be given to all men wearing the uniform of His Magnificence the Despot of Lith. And then there was babbling confusion and contradictory shoutings, and a hoarse voice ordered all soldiers of His Magnificence to keep a ceaseless watch upon the sky, because a ship had come down from overhead, and when the fighting-beams struck it—to kill its crew—it appeared to have fired some devastating projectile which had destroyed half a great city. All ships seen in the sky were to be shot down instantly. His Magnificence, the Despot of Lith, would avenge the outrage.

The lonely surviving ship went dazedly away from the planet which once had been friendly to the men of Ades. It went back to Ades' sun, and searched despairingly once again, and then fled to the Second Galaxy and Terranova, to tell of what it had seen.

That was an event of some importance. At least all of one planet had been rocked to its core from the detonation of a space-ship which flashed into collision with it at uncountable multiples of the speed of light, and was thereby raised to the temperature of a hot sun's very heart. And besides, there was agitation and suspicion and threats and diplomatic chaos among the planetary governments who had joined to loot the dependencies of Ades, once Ades was eliminated from the scene.

BUT a vastly, an enormously more significant event took place on a planet very far away, at almost the same instant. The planet was Donet Three, the only habitable planet of its system. It was a monstrous, sprawling world, visibly flattened by the speed of its rotation and actually habitable only by the fact that its rotation partly balanced out its high gravity.

The *Starshine* approached over a polar region and descended to touch atmosphere. Then, while Dona looked curiously through the electron-telescope at monstrous ice-mountains below, Kim donned a space-suit, went into the air-lock, and dropped a small object out of the door. He closed the door, returned to the control-room, and took the *Starshine* out to space again.

That was the most significant single action, in view of its ultimate meaning, that had been performed in the First Galaxy in ten thousand years. And yet, in a sense, it was purely a matter of form. It was not necessary for Kim to do it. He had arranged for the same effect to be produced, in time yet to come, upon every one of the three hundred million inhabited planets of the First Galaxy. The thing was automatic; implicit in the very nature of the tyrannical governments sustained by the disciplinary circuit.

Kim had simply dropped a small metal case to the surface of Donet Three. It was very strong—practically unbreakable. It contained an extremely simple electronic circuit. It fell through the frigid air of the flattened pole of Donet Three, and it struck the side of a sloping ice-mountain, and bounced and slid down to a valley and buried itself in snow, and only instants later, the small hole left by its fall was filled in and covered up completely by snow riding on a hundred-mile gale. It was undiscoverable. It was irretrievable. No device of man could detect or recover it. Kim himself could not have told where it fell.

Kim then sighted the *Starshine* on another distant target, and found the planet Arth, and dropped a small metal object into the depths of the humid and festering jungles along its equator. Human beings could live only in the polar regions of Arth. Then he visited a certain planet in the solar system of Tabor and a small metal case went twisting through deep water down to the seabed of its greatest ocean.

He dropped another on the shifting desert sands which cover one-third of Sind where an Emperor and Council rule in the name of a non-existent republic, and yet another on a planet of Megar, where an otherwise unidentified Queen Amritha held imperial power, and others. . . .

He dropped one small metal case, secured from a merchant-prince on Spicus Five, on each of the planets whose troops had moved into the planets left defenseless by the vanishment of Ades.

"I wanted to do that myself, because what we've got to do next is dangerous and we may get killed,"

he told Dona drily. "But now we're sure that men won't stay slaves forever and now we can try to do something about Ades. I'm afraid our chances are pretty slim."

## CHAPTER VII

### *One Chance in a Million*

IN SPITE of his pessimism, Kim settled I down to the -fine calculations required for a voyage to a blue-white dwarf star not readily distinguished from others. Most inhabited planets, of course, circled sol-type suns. Light much different from that in which the race had developed was apt to have produced vegetation inimical to humanity, and useful vegetation did not thrive. And of course sol-type stars are most readily spotted by space navigators. As he checked his course with star-charts, Dona spoke softly.

"Thanks, Kim."

"For what?"

"For not wanting to put me in safety when you're going to do something dangerous. I wouldn't let you, but thanks for not trying."

"Mmmh!" said Kim. "You're too useful."

He lined up his course and pressed the transmitter-drive stud on the control-panel. Space danced a momentary saraband,—and there was a blue-white dwarf two hundred million miles away, showing barely a planet-sized disk, but pouring out a pitiless white glare that hurt the eyes.

"That's it," said Kim. "That's the sun Alis. There should be four planets, but we're looking for Number One. It goes out beyond Two at aphelion, so we have to check the orbit—if we can find it—before we can be sure. No—we should be able to tell by the rotation. Very slow."

"And what are you going to do with it?" demanded Dona.

There were bright spots in emptiness which the electron telescope instantly declared to be planets. Kim set up cameras for pictures.

"Alis One is the only really uninhabitable planet in the galaxy that's inhabited," he observed painstakingly. "It belongs to Pharos Three. I understand it's the personal property of the king. It has no atmosphere in spite of an extremely high specific gravity and a reasonable mass. But the plutonium mines have been worked for five thousand years."

"Plutonium mines with that half-life?" Dona said skeptically. "You must be joking!"

"No," said Kim. "It's a very heavy planet, loaded with uranium and stuff from bismuth on out. It has an extremely eccentric orbit. As I told you, at aphelion it's beyond the orbit of Pharos Two. At perihelion, when it's nearest to its sun, it just barely misses Roche's Limit—the limit of nearness a satellite can come to its primary without being torn apart by tidal strains. And at its nearest to its sun, it's bombarded with everything a sun can fling out into space from its millions of tons of disintegrating atoms. Alpha rays, beta rays, gamma particles, neutrons, and everything else pour onto its surface as if it were being bombarded by a cyclotron with a beam the size of a planet's surface. You see what happens?"

Dona looked startled.

"But Kim, every particle of the whole surface would become terrifically radioactive. It would kill a man to land on it!"

"According to my merchant-prince friend on Spicus Five, it did kill the first men to set foot on it. But the point is that its heavy elements have been bombarded, and most of its uranium has gone on over to plutonium and americium and curium. In ancient days, when it went out on the long sweep away from its sun, it cooled off enough for men to land on it at its farthest-out point. With shielded space-suits they were able to mine its substance for four to five months before heat and rising induced radio-activity drove them off again. Then they'd wait for it to cool off once more on its next trip around.

"They went to it with space-ships, and the last space-line in the First Galaxy ran plutonium and americium and the other radioactives to a matter-transmitter from which they could be distributed all over the galaxy. But it wasn't very efficient. They could only mine for four or five months every four years. All their equipment was melted and ruined when they were able to land again. A few hundred years ago,

however, they solved the problem."

DONA stared out the vision-ports. Then were two planets which might be tilt one in question. But there were only three an sight.

"How did they solve it?" Dona asked.

"Somebody invented a shield," said Kim as drily as before. "It was a force-field. It has the property of a magnetic field on a conductor with a current in it, except that it acts on mass as such. A current-carrying conductor in a magnetic field tends to move at right angles both to the current and the field. This force-field acts as if mass were an electric charge.

"Anything having mass, entering the field, tries to move sidewise. The faster it moves, the stronger the sidewise impulse. Neutrons, gamma particles, met rays and even electrons have mass. So has light. Everything moving that hits the shielding field moves sidewise to its original course. Radiation from the sun isn't reflected. It's deflected, at right angles.

"So, with the shield up men can stay on the planet when it is less than three diameters from its sun. No heat reaches it. No neutrons. No radiations at all. It doesn't heat up. And that's the answer. For three months in every four-year revolution, they have to keep the shield up all the time. For three months more they keep it up intermittently, flashing it on for fractions of a second at a time, just enough to temper the amount of heat they get.

They live on great platforms of uranium glass, domed in. When they go out mining they wear shielded space-suits and work in shielded machines. The whole trick was worked out about five hundred years ago, they say, and the last space-line went out of existence, because they could use a matter-transmitter for all but six of our months of that planet's year."

"And did you find out how it's done?" asked Dona.

"Hardly," said Kim. "The planet belongs to the king of Pharos Three. Even five hundred years ago the governments of all the planets were quite tight corporations. Naturally Pharos wouldn't let the secret get out. There are other planets so close to their primaries that they're radioactive. If the secret were to be disclosed there'd be competition. There'd be other plutonium mines in operation. So he's managed to keep it to himself. But we've got to find out the trick." There was silence. Kim began to check over the pictures the cameras had taken and developed. He shook his head. Then he stared at a photograph which showed the blue-white dwarf itself. His face looked suddenly very drawn and tired.

"Kim," said Dona presently. "It's stupid of me, but I don't see how you're going to learn the secret."

Kim put the picture on the enlarger, for examination in a greater size.

"They made the shield to keep things out," he said wearily. "Radiation, charged particles, neutrons—everything. The planet simply can't be reached, not even by matter-transmitters, when the shield is up. But by the same token nothing can leave the planet either. It can't even be spotted from space, because the light of the sun isn't reflected. It's deflected to a right-angled course. You might pick it up if it formed a right-angled triangle with you and the sun, or you might spot it in transit across the sun's disk. But that's all."

"Yes."

"The shield was a special job," said Kim. "For a special purpose. It was not a weapon. But there were all those planets that could be grabbed if only Ades were knocked out. So why shouldn't King Pharos sneak a force-field generator on to Ades? When the field went on, Ades would be invisible and unreachable from outside. And the outside would be unreachable from it. Space-ships couldn't get through the field. Matter-transmitters couldn't operate through it. If a few technicians were sneaked to Ades as supposed exiles and promised adequate reward, don't you think they'd hide out somewhere and turn on that field, and leave it on until the folk on Ades had starved or gone mad?"

HORRIFIED, Dona stared at him. She went pale. "Oh—horrible! The sky would be black—always!"

Never a glimmer of light. No stars. No moons. No sun. The plants would die and rot, and the people would grow bleached and pale, and finally they'd starve."

"All but the little gang hidden away in a well-provisioned hideout," said Kim grimly. "I think that's what's happened to Ades, or is happening. And this is the solar system where the little trick was worked out. I'd hoped simply to raid the generator and find out how it worked, which would be dangerous enough. Look!"

He pointed to the projected image of the sun. There was a tiny dot against its surface. It was almost, it seemed, bathed in the tentacular arms of flaming gases flung up from the sun's surface.

"There's the planet," said Kim. "At its closest to the sun! With the shield up, so that nothing can reach its surface. Nothing! And that includes space-ships such as this. And at that distance, Dona, the hard radiation from the sun would go right through the *Starshine* and kill us in seconds before we could get within millions of miles of the planet. If there's any place in the universe that's unapproachable, there it is. It may be anything up to three months before the shield goes down even for fractions of a second at a time. And my guess is that the people on Ades won't last that long. They've had days in which to grow hopeless already. Want to gamble?"

Dona looked at him. He regarded her steadily.

"Whatever you say, Kim."

"Sixteen million lives on Ades, besides other aspects of the situation," said Kim. "The odds against us are probably about the same, sixteen million to one. That makes it a fair bet. We'll try."

He got up and began to tinker with the radiation-operated relay which turned off the transmitter-drive. Presently he looked up.

"I'm glad I married you, Dona," he said gruffly.

As the *Starshine* moved closer in, the feeling in the control-room grew tense. The little ship had advanced to within twenty millions of miles of the blue-white sun, and even at that distance there was a detectable X-ray intensity.

Kim had turned on a Geiger counter, and it was silent simply because there was no measurable interval between its discharges. A neutron detector showed an indication very close to the danger mark. But Kim had the *Starshine's* nose pointed to the intolerably glaring sun.

The electron telescope showed the sun's surface filling all its field, and because the illumination had been turned so low, raging sun-storms could be seen on the star's disk. Against it, the black silhouette of the planet was clear. It was small. Kim estimated its diameter at no more than six thousand miles. The *Starshine's* gyros hummed softly and the field of the telescope swayed until the planet was centered exactly.

There was a little sweat on Kim's forehead.

"I—don't mind taking the chance myself, Dona," he said, dry-throated. "But I hate to think of you. . . If we miss, we'll flash into the sun."

"And never know it," said Dona, smiling. "It'll be all over in the skillionth of a second—if we miss. But we won't."

"We're aiming for the disk of the planet," t he reminded her. "We have to go in on transmitter-speed to cut the time of our exposure to hard radiation. That speed will make the time of exposure effectively zero. But we have to move at a huge multiple of the speed of light, and we have to stop short of that planet. It may not be possible!"

"Do you want me to press the button, Kim?" Dona said softly.

He took a deep breath. "I'll do it. Thanks, Dona."

He put his finger on the stud that would throw the ship into transmitter-drive, aimed straight at the disk of planet against the inferno of sun beyond. There was nothing more certain than that to miss the planet would fling them instantly into the sun. And there was nothing more absurd than to expect to come out of transmitter-drive within any given number of millions of miles, much less within a few thousands. But—

Kim pressed the stud.

Instantly there was blackness before them. A monstrous, absolute blackness filled half the firmament.

It was the force-field-shielded planet, blotting out its sun and half the stars of the galaxy. Kim had made a bull's-eye on a target relatively the size of a dinnerplate at eleven hundred yards. More than that, he had stopped short of his target, equivalent to stopping a bullet three inches short of that plate.

He said in a queer voice:

"The—relay worked—even backward, Dona."

## CHAPTER VIII

### *Dark Barrier*

FOR a time Kim sat still and sweat poured out on his skin. Because their chances had seemed slight indeed. To stop a spaceship at transmitter-speed was impossible with manual means, anyhow. It could cross a galaxy in the tenth of a millisecond. So Kim had devised a radiation-operated relay which threw off the drive when the total radiation reaching a sensitive plate in the bow had reached an adjustable total.

If in an ordinary flight the *Starshine* headed into a sun—unlikely as such an occurrence was—the increased light striking the relay-plate would throw off the drive before harm came. But this time they had needed to approach fatally close to a star. So Kim had reversed the operation of the relay. It would throw off the drive when the amount of light reaching it dropped below a certain minimum. That could happen only if the ship came up behind the planet, so the sun was blacked out by the world's shadowed night-side.

It had happened. The glare was cut off. The transmitter-drive followed. The *Starshine* floated within a bare few million miles—perhaps less than one million—of a blue-white dwarf star, and the two humans in the ship were alive because they had between them and the sun's atomic furnaces, a planet some six thousand miles in diameter.

"We don't know how our velocity matches this thing," said Kim after an instant. "We could be drifting toward the edge of the shadow. You watch the stars all around. Make sure I head directly for that blackness. When we touch, I'll see what I can find out."

He reversed the ship's direction. He let the *Starshine* float down backward. The mass of unsubstantial darkness seemed to swell. It engulfed more and more of the cosmos. . . .

A long, long time later, there was a strange sensation in the feel of things. Dona gave a little cry.

"Kim! I feel queer! So queer!"

Kim moved heavily. His body resisted any attempt at motion, and yet he felt a horrible tension within him, as if every molecule were attempting to fly apart from every other molecule. The controls of the ship moved sluggishly. Each part of each device seemed to have a vast inertia. But the controls did yield. The drive did come on. A little later the sensation ended. But both Kim and Dona felt utterly exhausted.

"It—was getting dark, too," said Dona. She trembled.

"When we tried to move," said Kim, "our arms had a tendency to move at right angles to the way we wanted them to, at all the possible right angles at once. That was the edge of the shield, Dona. Now we'll see what we've got."

He uncovered the recording cabinet. There had been no need to set up instruments especially for the analysis of the field. They had been a part of the *Starshine's* original design for exploration. Now Kim read the records.

"Cosmic-ray intensity went down," he reported, studying the tapes. "The dielectric constant of space changed. It just soared up. The relationship of mass to inertia. That particular gadget never recorded anything significant before, Dona. In theory it should have detected space-warps. Actually, it never amounted to anything but a quantitative measure of gravitation on a planet one landed on. But it went wild in that field! And here! Look!"

He exultantly held out a paper recording. "Glance at that, Dona! See? A magnetometer to record the strength of the magnetic field on a new planet. It recorded the ship's own field in the absence of any other. And the ship's field dropped to zero! Do you see? Do you?"

"I'm afraid not," admitted Dona. But she smiled at the expression on Kim's face.

"It's the answer!" said Kim zestfully. "Still I don't know .v that blasted field is made, but I know now how it works. Neutrons have no magnetic field, but this thing turns them aside. Alpha and beta and gamma radiation do have magnetic fields, but this thing turns them aside, too. And the point is that it neutralizes their magnetic fields, because otherwise it couldn't start to turn them aside. So if we make a magnetic field too strong for the field to counter, it won't be able to turn aside anything in that magnetic area. The maximum force-field strength needed for the planet is simply equal to the top magnetic field the sun may project so far. If we can bury the *Starshine* in magnetic flux that the force-field can't handle—"

HE GRINNED. He hugged her.

"And there's a loop around the *Star-shine's* hull for space-radio use," he cried. "I'll run a really big current through that loop and we'll try again. We should be able to put quite a lot of juice through a six-turn loop and get a flux-density that will curl your hair!"

He set to work, beaming. It took him less than half an hour to set up a series-wound generator in the airlock, couple in a thermocell to the loop, so it would cool the generator as the current flowed and thereby reduce its internal resistance.

"Now!" he said. "We'll try once more. The more juice that goes through the outfit, the colder the generator will get and the less its resistance will be, and the more current it will make and the stronger the magnetic field will be."

He flipped a switch. There was a tiny humming noise. A meter-needle swayed over, and stayed.

The *Starshine* ventured into the black globe below.

Nothing happened. Nothing happened at all.

"The stars are blotted out, Kim," Dona at last said uneasily.

"But you feel all right, don't you?" He grinned like an ape in his delight.

"Why, yes."

"I feel unusually good," said Kim happily.

The vision-screens were utterly blank. The ports opened upon absolute blackness—blackness so dead and absorbent that it seemed more than merely lack of light. It seemed like something horrible pressing against the ports and trying to thrust itself in.-

And, suddenly, a screen glowed faintly, and then another... .

Then there was a greenish glow in the ports, and Dona looked out and down. Above was that blackness, complete and absolute. But below, seen with utter clarity, because of the absence of atmosphere, lay a world. Nothing grew upon it. Nothing moved. It was raw, naked rock with an unholy luminescence. Here and there the glow was brighter where mineral deposits contained more highly active material. The surface was tortured and twisted, in swirled strained writhings of formerly melted rock.

They looked. They saw no sign of human life nor any sign that humans had ever been, there. But after all, even five thousand years of mining on a globe six thousand miles through would not involve the disturbance of more than a fraction of its surface.

"We did it," said Kim. "The shield can be broken through by anything with a strong enough magnetic field. We won't disturb the local inhabitants. They undoubtedly have orders to kill anybody who incredibly man- t ages to intrude. We can't afford to take a chance. We've got to get back to Ades!"

He pointed the *Starshine* straight up. He d drove her, slowly, at the ceiling of impenetrable black. He worked upon the transmitter-drive relay. He adjusted it to throw the *Starshine* into transmitter-speed the instant h normal starlight appeared ahead. The ship swam slowly upward. Suddenly there was a momentary impression of reeling, dancing stars. Kim swung the bow about. "Now for Ades!" he said gleefully. "Did you know, Dona, that once upon a time the word Ades meant hell?"

The stars reeled again. . . .

They found Ades. Knowing how, now, it was not too difficult. There were two positions from which it could be detected. One was a position in which it was on a line between the *Starshine* and the sun. The other was a position in which the invisible planet of the space-ship, and the sun formed the three K points of a right-angled triangle with Ades in the ninety-degree corner.

Kim sent the little ship in a great circle beyond the planet's normal orbit, watching for it to appear where such an imaginary triangle would be formed. The deflected light of the sun would spread out in a circular flat thin plane, and somewhere about the circuit the *Starshine* had to run through it. It would be a momentary sight only, and it would not be bright; it would be utterly unlike the steady radiance of a normal planet. Such flashes, if seen before, would have been dismissed as illusions or as reflections from within the ship. Even so, it was a long, long time before Dona called out quickly.

"There!" she said, and pointed.

KIM swung the *Starshine* back. He saw the dim, diffused spectre of sun's reflection. They drove for it, and presently a minute dark space appeared. It grew against the background of a radiant galaxy, and presently was a huge blackness, and the *Starshine's* space-radio loop was once more filled with a highly improbable electrical amperage by the supercooled generator in the airlock.

The ship ventured cautiously into the black.

And later there were lonely, unspeakably desolate little lights of the lost world down below.

Kim drove for them with a reckless exultation. He landed in the very center of a despairing small settlement which had believed itself dead and damned—or at any rate doomed. He shouted out his coming, and Dona cried out the news that the end of darkness was near, and men came surging toward her to listen. But it was Dona who explained, her eyes shining in the light of the torches men held up toward her.

Kim had gone back into the ship and was using the communicators to rouse out the mayors of every municipality, and to say he had just reached the planet from Terra-nova—there was no time to tell of adventures in between—and he needed atmosphere fliers to gather around him at once, with armed men in them, for urgent business connected with the restoration of a normal state of affairs.

They came swiftly, fluttering down out of the blackness overhead, to land in the lights of huge bonfires built by Kim's orders. And Kim, on the communicators, asked for other bonfires everywhere, to help in navigation, and then he went out to be greeted by the bellowing Mayor of Steadheim.

"What's this?" he roared. "No sunlight! No stars! No matter-transmitter! No ships! Our ships took off and never came back! What the devil happened to the universe?"

Kim grinned at him.

"The universe is all right. It's Ades. Somewhere on the planet there's a generator throwing out a force-field. It will have plenty of power, that generator. Maybe I can pick it up with the instruments of the *Starshine*. But we'll be sure to find it with magnetic compasses. What we want is for everyone to flick their compasses and note the time of swing. We want to find the place where the swings get slower and slower. When we find a place where the compasses point steadily, without a flicker—not even up and down—we'll be at the generator. And everybody put on navigation-lights or there'll be crashes!"

He lifted the *Starshine* and by communicator kept track of the search. Toward the polar regions was the logical hiding-place for the generator, because there the chilly climate of Ades became frigid and there were no inhabitants. But it was a long search. Hours went by before a signal came from a quarter-way around the globe.

Then the *Starshine* drove through darkness—but cautiously—with atmosphere-fliers all about. And there was an area where the planet's magnetic field grew weaker and weaker, and then a space in which there was no magnetic field. But in the darkness they could find no sign of a depot!

## CHAPTER IX

### *Gadget of Hope*

GRIMLY Kim set the *Starshine* on the ground, in the very center of the dark area, and started the generator in the airlock. When it worked at its utmost, and nothing happened, Kim threw in the leads of the ship's full engine-power. There was a surging of all the terrific energy the ship's engines could give. Then the radio-loop went white-hot and melted, with a sputtering arc as the circuit broke.



Abruptly the stars appeared overhead, and simultaneously came the leaping flame of a rumbling explosion. Then followed the flare of fuel burning savagely in the night. The *Starshine's* full power had burned out the force-field generator, an instant before the loop melted to uselessness.

Kim was with the men who ran toward the scene of the explosion, and he would have tried to stop the killing of the other men who ran out of underground burrows, but the victims would not have it. They expected to be killed, and they fought wildly. All died.

Later Kim inspected the shattered apparatus which now lay in pieces, but he thought it could be reconstructed and perhaps in time understood.

"Night's nearly over," he announced to those who prowled through the wreckage. "It shouldn't be much more than an hour until dawn. If I hadn't seen sunlight for a week or more, I think, I'd go for a look at the sunrise."

In seconds the first atmosphere-flier took off. In minutes the last of them were gone. They flew like great black birds beneath the starlight, headed for the east to greet a sun they had not expected to see again.

But the Mayor of Steadheim stayed behind. "Hah!" he said, growling. "It's over my head. I don't know what happened and I never expect to understand. How are my sons in the new galaxy?"

"Fine when last we heard," said Dona, smiling. "Come into the ship."

He tramped into the living space of the *Starshine*. He eased himself into a seat. "Now tell me what's gone on, and what's happened, and why!" he commanded dictatorially.

Kim told him, as well as he could. The Mayor of Steadheim fumed.

"Took over the twenty-one planets, eh?" he sputtered. "We'll attend to that. We'll take a few ships, go over there, and punish 'em."

"I suspect they've pulled out," said Kim. "If they haven't, they will. And soon! The Gracious Majesties and Magnificents, and the other planetary rulers who essayed some easy conquests, have other need for their soldiers now. Plenty of need!"

"Eh, what?" cried the mayor. "What's the matter? Those rulers have got to have a lesson! We didn't try to free the whole galaxy because it was too big a job. But it looks like we'll have to try!"

"I doubt the need," said Kim, amused. "After all, it's the disciplinary circuit which has enslaved the human race. When the psychogram of every citizen is on file, and a disciplinarian has only to put his card in the machinery and press a button to have that man searched out by disciplinary-circuit waves and tortured, wherever he may be—when that's possible—any government is absolute. Men can't revolt when the whole population or any part of it can be tortured at the ruler's whim."

Dona's expression changed.

"Kim!" she said accusingly. "Those things you got on Spicus Five and dropped on the planets the soldiers came from—what were they?"

"I'll tell you," said Kim. "The disciplinary circuit is all right to keep criminals in hand—not rebels like us, but thieves and such—and it does keep down the number of officials who have to be supported by the state. Police and guards aren't really needed on a free planet with the disciplinary circuit in action. It's a useful machine for the protection of law and order. The trouble *is* that, like all machines, its use has been abused. Now it serves tyranny. So I made a device to defend freedom."

THE Mayor of Steadheim cocked a suspicious eye upon him.

"I procured a little gadget," said Kim. "I dropped the gadget in various places where it wasn't likely to be found. If one man is under disciplinary circuit punishment, or two or three or four—that's not unreasonable on a great planet—nothing happens. But if twenty-five or fifty or a hundred are punished at once, the disciplinary-circuit is blown out as I just blew out that force-field generator."

The Mayor of Steadheim considered this information.

"*Ha-hmmm!*" he said profoundly.

"Criminals can be kept down, but a revolt can't be suppressed," Kim went on. "The soldiers who are occupying the twenty-one planets will be called back to put down revolts, as soon as the people discover the disciplinary circuits on their planets are blowing out, and that they blow out again as fast as they're

re-made and used."

"*Hm!*" said the Mayor of Steadheim. "Not bad! And the rebels will have some very tasty ideas of what to do to the folk who've tyrannized over them. No troops can stop a revolt nowadays. Not for long!"

"No, not for long," said Kim. "No government will be able to rule with a dissatisfied population. Not if it has a little gadget hid den somewhere that will blow out the disciplinary circuit, if it's used to excess."

"Good enough, good enough," grumbled the mayor. "When rulers are kept busy satisfying their people, they won't have time to bother political offenders like us on Ades, or start wars." He looked up. "Space!" he groaned. "Three hundred million planets! How long before we can have them all fitted out for freedom?"

Kim chuckled.

"I explained the principle of the gadget to a munitions-manufacturer on Spicus Five," he said drily. "I offered it to him in exchange for a dozen samples made up to my order. Does it occur to you that every tyrant and every despot and every king in the Galaxy will be very, very happy to buy those little gadgets at a fine fat price, to sow in the dominions of his neighbors? Then he needn't fear them! Don't you see? And my munitions-maker friend will be impartially ready to sell them to his neighbors. They'll actually increase the market for military goods for palace guards and the like."

The Mayor of Steadheim puffed in his breath until it looked as if he would explode. Then he bellowed with laughter.

"Make the tyrants dethrone each other," he roared delightedly. "They'll weaken each other until they find they've their own people to deal with. There'll be a fine scramble! I give it five years, no more, before there's not a king in the galaxy who dares order an execution without a jury-trial first!"

"A consummation devoutly to be wished," said Kim, smiling. "I rather like the idea myself."

The mayor heaved himself up.

"Hah!" he said, still chuckling. "I'll go back to my wife and tell her to come outdoors and look at the stars, What will you two do next?"

"Sleep, I suspect," said Kim. It was all over. The realization made him aware of how tired he was. "We'll probably put in twenty-four hours of just plain slumber. Then we'll see if anything more needs to be done, and then I guess Dona and I will head back to Terranova. The Organizer there is worried about a shortage of textiles."

"To the devil with him," grunted the Mayor of Steadheim. "We've had a shortage of sunlight! You're a good man, Kim Rendell. I'll tell my grandchildren about you, when I have them."

He waved grandly and went out. A little later his flier took off, occulting stars as it rose.

Kim closed the airlock door. He yawned again.

"Kim," said Dona. "We had to break that shield, but it was dangerous."

"Yes," said Kim. He yawned again. "So it was. I'll be glad to get back to our house on Terranova."

"So will I," said Dona. Her face had become determined. "We shouldn't even think of leaving it again, Kim! *We* should—anchor ourselves to it, so nobody would think of asking us to leave."

"A good idea," said Kim. "If it could be done."

Dona looked critically at her fingers, but she flushed suddenly.

"It could," she said softly. "The best way would be—children."