



Across the and Sark Akar walked over to the center of the landing stage. Here, supported by a funnel-shaped metal was a big thing whose about seventy-five feet in diameter. There was a row of circular windows running horizontally around its circumference. Four cylindrical objects, looking like some kind of searchlights, were set at equal intervals around its lower hemisphere.

Atomic Fire

by Raymond Gallun

AGGAR HO was scrutinizing carefully the scene in the view-plate of the great reflecting telescope of the University of Itlantos in Panenbu, the capital city of Aerth. Every now and then he would glance aside, and taking a silvery stylus in his skinny, almost claw like hand, he would draw queer little symbols and figures on a pad of white paper on the desk before him. There was a concerned look in his immense eyes, and in his furry, though oddly human face, there was an expression which one of his fellow creatures may have interpreted as denoting awe, or even dread. To Aggar Ho such emotions were almost impossibilities. For eons his ancestors had been toying with the forces of nature, curbing them according to their needs and desires, until now it would have taken a great danger indeed to awaken in any member of his race the remotest hint of fear.

But though the danger which Aggar Ho read among the stars may have been colossal enough to make him a little afraid, his keen intellect remained unhampered. If it was within the scope of possibility for him to help avert any coming calamity, certainly no silly emotions would prevent him from doing so.

To a man of the twentieth century, Aggar Ho would have seemed to be a creature of a nightmare. He wore only a plain silver diadem to hold his bushy gray hair in place and a breech cloth of some gray knitted material about his hips. In consequence, his peculiar physique was well revealed. Except for his chest, which housed his huge lungs and was immense beyond all

comparison with anything human, his body was singularly frail. His arms and legs were spindly and attenuated. His feet were flat and large. A thick polar fur covered him from head to foot. His ears were very large and bat like—adapted for hearing in a very rarefied atmosphere where all sounds are faint. His great green eyes had elongated pupils like those of cats. They stared out from either side of his beak-like nose and made him look for all the world like a crafty old owl. There was just a hint of fierce determination about them, a look which had survived Aggar Ho's youth. Plainly the old scientist belonged to an age far distant from the year 1931. The appointments of the room—its dials, switches, and its single radium lamp over the desk in front of the telescope, and its big crystal dome which transmitted the starlight all proved this.

Many strange things had happened to Aerth in the past ten million years. In 2069 A. D. the inhabitants of Mars, driven from their native planet by shortage of air, water and sunshine, had descended to Aerth. With their superior weapons and knowledge they quickly subdued the Aerthians. It was from these conquerors that Aggar Ho was descended. The Martians had not been cruel masters. They had ruled Aerth wisely and efficiently for ten million years, and had won the admiration and willing co-operation of the natives to whom they were almost gods. The two races always remained distinct from one another, for though inter-marriage was not uncommon, no offspring came from such unions.

As nature had worked on Mars, so it

worked on Aerth. The planet's water supply slowly seeped into the rocks far beneath the surface crust, or as vapor, leaked away into space until now the oceans had vanished. The atmosphere was gradually dissipated in this latter fashion until at length it was so rare that a man of the year 2000 would have gasped and died in it in a few minutes. The sun, too, had grown old. Its deep red light shone down upon vast stretches of parched desert over which every now and then terrific dust storms raced. The sky was always a deep cloudless blue. In it a few stars twinkled even during the day. Except where the thin ribbon-like canals ran their ruler-edged courses over the face of the planet bringing water from the melting polar snow-caps, everything was dry and devoid of vegetation. The summers were still quite warm but the winters were terrifically cold.

Presently Aggar Ho readied for a tiny lever at the side of his desk and swung it from a vertical to a horizontal position. The picture in the view-plate before him faded. Then he tapped a little brazen gong with his stylus. In a moment, in answer to the tinkling summons, another creature entered the room through a curtained door.

The new arrival was somewhat more human than Aggar Ho. He was heavier and much better muscled. His chest was large, but not so large as the Martian scientist's, and the white fur on his body was not so long and thick. His eyes were blue; there was a twinkle about them which told plainly that their possessor was brim full of clever good nature. The ancestors of this man had all been natives of Aerth.

"Well, Chief," he said, "what news from the stars? Has the Black Nebula come close enough so that we may pull its tail or has it suddenly vanished altogether?" Plainly the two men were on the most intimate of terms.

Aggar Ho looked up at his assistant.

The grave expression on his face did not change. "We can no longer joke about the Black Nebula, Sark Ahar, my son," he said. "Unless something can be done, it will cause all the inhabitants of Aerth to be frozen to death in thirty-five days."

The glint in the young Aerthian's eyes grew hard. "You have finished your calculations? You know that all this is true?" he inquired.

"There is no chance for a mistake." returned Aggar Ho. "Here are my figures," and he tapped the pad of paper lying on his desk. "You may take them to your work room and check them if you like. Ever since we began to watch the Black Nebula six months ago I have been afraid. We thought that it would miss the solar system by several billion miles but tonight I have plotted its course. It is going to envelope the sun and blot out its light and warmth! Macroscopic observations prove that it is a vast cloud of the heavy opaque gas number 106. When it reaches the sun, it will form a dense layer over its surface. Then there will be darkness."

"You have thought of a way out?" asked Sark Ahar.

"Yes. There is atomic energy. I have a theory which with a good deal of careful experimenting may result in its release. With the inexhaustible power contained in the atoms of all substances at our command there is no doubt that we could both heat and light our world very adequately. Great spheres of white-hot disintegrating matter supported on towers all along the courses of the canals would free us forever from dependence on the sun. But can we control such a mighty force? Once started anywhere on Aerth the process of disintegration would probably continue until the planet had become a globe of incandescent gas."

"We will find a way, Chief." said Sark Ahar. "The space ship was delivered by

the Fallef Company at noon today. It is on the landing stage now. Are we going to start the experiment tomorrow?"

"Yes."

AGGAR Ho and Sark Ahar stepped out of the elevator which had carried them to the landing platform at the very pinnacle of the highest tower of the observatory. Presently they had left the little cupola-like structure at the top of the shaft. The platform was a flat, metallic square about two hundred feet each way. A light, icy breeze swept through the morning sky. It blew against the bodies of the two men rumpling their silky fur wrappings. There was an exhilarating tang in it. The altitude of the tower was fully two thousand feet, and the view from its summit was magnificent. Below them toward the west the men could see the great city of Panenbu, with its countless multicolored spires, gleaming under the morning sunshine. The streets were thronged with midgets going to work—still ignorant of the danger that threatened them. Toward the east beginning at the base of the great observatory building was a strip of cultivated land about eight miles wide. It was faintly green with the earliest growth of a grass-like cereal called telth, for the water coming down throughout the subterranean conduits from the melting north polar snows had just arrived three weeks before.

Beyond the band of telth, the Aerthian wilderness stretched off to the far horizon. Except for the countless dunes of yellow sand, it was almost as flat as a table top. It was the bottom of what had once been the Atlantic Ocean.

Everything in view was harshly clear cut, even in the great distance. Above arched the deep lapis-lazuli dome of the sky. Here and there in it a saucy star twinkled.

Occasionally a torpedo-shaped aircraft would glide noiselessly past the

tower carrying a group of furry men to some distant city. The sun would glint on its silvery hull, and on the queer numerals mounted on its prow.

Aggar Ho and Sark Ahar walked over to the center of the landing stage. Here, supported by a funnel-shaped cradle was a big shiny sphere about seventy-five feet in diameter. There was a row of circular windows running horizontally around its circumference. Four cylindrical objects, looking like some kind of searchlights, were set at equal intervals around its tower hemisphere. They pointed slantingly downward at an angle of forty-five degrees with the platform. The globe was a space-flier.

Aggar Ho opened an oval door in the side of the craft. The two men ascended a short flight of metal steps to the central chamber of the ship. The room, which was lighted by port holes set all around its walls, was packed with a bewildering outlay of scientific apparatus. At one side, before a large window, was the pilot seat, and in front of it, a number of levers and a board bearing many dials and instruments. It was by means of these that the flier was controlled. The remainder of the floor space was occupied by machinery and devices, and constituted a complete laboratory for exploring the inner secrets of atomic structure. In the center of the room, supported by a sort of tripod, was a black object which looked like a big pressure kettle. Many cables and wires led to it from a bank of cylindrical tanks which were filled with a fluid that supplied an electrical circuit of enormous voltage and amperage. There was a work-bench running almost completely around the walls of the laboratory, and on it were ranged many odd instruments. There were queer microscope-like devices for watching the electrons of atoms rotating in their orbits; there were big glass globes for producing strange rays;

there were several electric furnaces, lathes and other machinery for turning out new apparatus whenever it was needed. Besides there was a multitude of other things.

Aggar Ho seated himself in the pilot's chair while Sark Ahir stood beside him. The old Martian shifted a little lever on the control-board. A low musical hum started from some where in the hulk of the ship; in spite of its faintness, it was somehow suggestive of an enormous and mysterious power. Now the space flier was shooting upward. It swayed a little. The two men felt their weight apparently increase; just as though they were going upward on a fast elevator. The four repulsion-ray projectors, mounted on the bottom hemisphere of the craft, were sending powerful beams of energy downward and were raising the big globe from the ground.

Details on Aerth's surface were growing rapidly smaller and the field of view was broadening out, Panenbu, with its narrow encircling ring of vegetation spreading out like a vast disc on the desert, was rapidly becoming a toy city. It seemed to drift toward the west, for the fliers were hurtling eastward with terrific velocity. Limitless sandy plains were coming into view, all gleaming and desolate under the morning sunshine. Panenbu disappeared beneath the horizon. Now and then thin ribbons of vegetation running from pole to pole would be seen, traced like tautly drawn strings across the wilderness. Now Aerth looked like a great relief map, and now it began to take on a slight outward curvature. The scientist and his subordinate were rapidly drawing away from their planet.

"That was a fine start, Chief," said Sark Ahir. "The ship is gaining altitude faster than I ever saw a space craft do before at the outset. But I suppose you have to expect such performance from any new invention of the Fallefs. Everything they

produce is wonderful."

Aggar Ho turned toward his young assistant. His face was screwed up into a grimace which Sark Ahir recognized as a disdainful smile. "It was I who invented the new repulsion-ray concentrator that makes the rapid acceleration of this space ship possible. I sold Fallef the rights. Fallef's bungling assistants certainly would never have thought of the idea." Aggar Ho paused for a moment. Finally he said: "You may sleep now, Sark Ahir. In four hours I will call you to take charge of the craft."

The younger man climbed the spiraling metal star to the upper compartment. Here was a little kitchen, a room full of supplies, and a chamber with four berths in it. Sark Ahir tumbled into one and was quickly asleep. Since he had assisted his chief in his work the night before he had, of course, not slept.

Aggar Ho, seated before the control-board watching dials, meters, diminishing Aerth, and the star-shot sable of empty space, mused softly: "He is a fine young Aerthian, Sark Ahir—a native, born of natives and yet clever—very clever. Sometimes I almost think he will become a scientist. But that would be odd. There hasn't been a man of great wisdom among their race for millions of years. They were a great people before my ancestors came but our superior knowledge robbed them of all initiative. It is too bad."

THE musical ringing of a little bell at his ear told Sark Ahir that his rest period was over. He climbed out of his berth and joined Aggar Ho. He glanced at a meter on the control board.

"Thirty thousand miles," he read aloud.

"Yes," returned the Martian. "By the time your four hours on duty is over, allowing for acceleration, we should be

eighty thousand miles from Aerth. There we will stop. During our experiment on atomic energy we will travel in an orbit that distance from the planet. The World Council has decreed it. They fear that we may destroy Aerth if we work on its surface, and well they may, for we are playing with a dangerous thing. Call me when it is time. Good-night.”

Aggar Ho retired and the young Aerthian took his place.

Sark Ahar stared at the star-strewn circle of blackness before him. There was little to do but think, for the controlling of the ship was, for him, almost automatic. Except when now and then a small meteorite struck the impenetrable force-shield of the craft and made it sway a little, there was no movement.

The death of the world!—within a month! Aggar Ho had predicted it and he, Sark Ahar, had checked his calculations. The Martian as usual was right. They were wonderful, those Martians—especially Aggar Ho. Wasn't it he who had engineered the building of the great Than Taxa canal running a distance of more than ten thousand miles over Aearth's surface? Wasn't it he who had extended man's natural span of life to more than a thousand years? Aggar Ho was great, but here at last was his defeat. What if he did release and control atomic energy? There wouldn't be time to build the towers and spheres he had talked about. Like every man of his race, Aggar Ho had pluck—he'd fight against reason. That was just what he was doing now. But it was useless. The inhabitants of Aerth would freeze to death unless someone thought of something else. He'd have to think. But no, that wasn't sense.

After an hour or so the moon came along and drifted into the flock of stars that had been shining at Sark Ahar through the observation window. It was only a little

more than half illuminated. The sun was toward the left of it and wasn't visible from where the Aerthian sat. The satellite seemed a little larger than when viewed from the planet, and its empty plains gleamed with an almost blinding intensity. Sark Ahar studied it. His keen eyes could even make out a few big craters. It was a funny world—the moon—all jagged and cut up and deserted. Sark Ahar had been there twice—with his chief. Clad in oxygen helmet and heavy armor, he had enjoyed wandering through its empty valleys and climbing into its lonely craters. Around Tyco there were the remains of an extensive irrigation system built by the last of the Planarians to make use of the almost vanished water supply. Those Moon Men had become extinct before there were human beings on Aerth, What good was the moon now? It was just a useless derelict of space, desolate and lifeless.

When Aggar Ho returned from his nap he ordered his subordinate to shut off the power. As he had predicted, the craft was eighty thousand miles from Aerth. Its' momentum would, of course, carry it a little beyond this point, but the gravitational pull of the planet would drag it back: and during the course of the experiment it would revolve as a little satellite of Aerth.

Immediately the two men set to work on their seemingly hopeless task. The cover was removed from the great caldron-like furnace and an odd set of metallic plates was placed inside, together with a small quantity of mercury. Then the cover was replaced and the air exhausted from the interior by means of a small electric pump. For a whole day a current with titanic voltage and strength crackled between the plates. Aggar Ho and Sark Ahar, wearing thick goggles and hiding behind lead shields, which alone saved their lives from the dangerous emanations, watched the white-hot inferno through a little quartz window set in the side of the

furnace. The whole ship fairly reeked with heat, and the meters registered an enormous consumption of power. Finally Aggar Ho threw the great switches. The light slowly faded from the plates. The first attempt had been a failure. Mercury had refused to give up its atomic energy.

The plates were changed and another substance was placed in the furnace—this time silicon. Another trial was made—also without any hint of success.

Day after day the same soul-searing work went on—new elements, new compounds, new plates, new voltages—all to no avail. And always that big black cloud of fate that was going to blot out the sun crept nearer and nearer. The two experimenters watched its progress in the view-plate of their radio vision instrument. The pictures were radioed direct from the observatory at Panenbu. Fifteen, fourteen, thirteen, twelve days— slowly the time of darkness crept closer. It was only the pluck and self-control resulting from ages of scientific race training that kept all Aerth from going mad.

There were thousands of scientists working on the problem of saving Aerth, and almost all of them sought the means of doing so in atomic energy. None believed that there was any hope, even if the mighty power were discovered, but all kept doggedly on. Aggar Ho and Sark Ahar sighted several experimental ships like their own, and they talked to the occupants of over nine hundred of them by radio. Never was the slightest hint of success reported.

AT last the day when darkness was to fall upon the solar system came. Sark Ahar and Aggar Ho watched the approach of the shadow through the windows of their ship. To a casual observer there would have been nothing very awful about the thing. The only evidence of its presence was the apparent absence of stars in a small portion of the

heavens. Gradually as the cloud crept on, other stars were blotted out and some of these which had been hidden reappeared. To all appearances the blackness was moving with utmost slowness, but in reality it was tearing along at a terrific rate. Always it crept closer to the sun. Presently it touched the edge of the glowing red disc, and then for thirty hours the light of the old luminary was slowly fading. For five hours after that a grayish, scarcely visible luminosity continued to come from it, but at last even that disappeared. On Aerth the lights of the scattered cities glowed as patches of dim radiance. Except for these, the planet was entirely invisible. Only the icy stars gleamed on unchanged.

Reports of the progress of things on Aerth came to the two experimenters by radio:

“Sun motors stopped. Stored power will last for several days,” was the first report after the coming of darkness.

To all appearances there was little panic. The people had shut themselves in their homes and were waiting resignedly for their end.

Almost all the experimenters had given up the quest and had returned to their native cities. Aggar Ho and Sark Ahar were among the few who remained out in space. They were working like two demons just as they had been working for a month. They would have to give up soon for their supply of power was low.

Two days after the coming of the cloud the report reached the space-ship: “The atmosphere of the planet is freezing. It is falling like snow. In many places whole communities have been frozen to death. The stored solar energy may keep a few people alive for a short time, but the end cannot be far off.”

Aggar Ho was fruitlessly examining the instruments over the roaring ray furnace.

There was a mixture never before tried, between the plates. Presently he turned toward the younger man who was standing beside him. The old Martian was slowly shaking his head. Sark Ahar scrutinized his chief carefully. He could see that his big eyes were watery and blood-shot and that his rumpled fur looked unusually shabby. Lack of sleep and continuous labor had certainly done him no good.

“You had better rest,” said Sark Ahar. “I will watch the furnace. Perhaps when you awaken, the problem will be solved.”

Aggar Ho smiled sadly. “Perhaps,” he said, and then, after a pause, “Thank you, my boy.” He tramped wearily up the spiral stairs, his magnetic boots which served to hold him to the steel floor in the absence of gravity making a clattering noise.

When he was gone Sark Ahar took a single perfunctory look at the instruments, satisfying himself that they registered nothing of importance. Then he went over to the pilot seat at the side of the chamber and sat down on it. He turned it around on its swivel so that he could look toward the experimental apparatus.

Sark Ahar was extremely tired, but still he mustn't sleep. He must watch for results—results that never appeared.

Gradually the monotonous crackling of the furnace and the steady drone of the electrical machinery worked on him. He grew drowsy. Nothing mattered to his fagged brain any more. The world was doomed. He didn't have to watch those dials. He slumped far over one arm of the pilot seat. His outflung hand bumped lightly against a tiny lever that gleamed brightly on the snip's control board under the cold light of a little glass illuminating globe set in the ceiling. The catch of the lever was released and the spring that was attached to it made it snap into a new position. A low musical droning

almost smothered by the noise of the furnace set in. The ship gave a slight lurch. Its propelling machinery was running at full capacity, sending it hurtling across space. But Sark Ahar did not notice. He was fast asleep.

For hours he slept. Odd dreams flitted through his brain. Devils and imps and what not danced and grimaced before his mind's eye. He saw the moon and then he saw lurid flames suddenly leap out of it. Finally he dreamed that he, a noted scientist, had invented a mechanical man—a great metal giant with fanged jaws, taloned hands and flaming eyes. He dreamed that the giant had turned upon him—was going to kill him. He felt its hot claws around his throat and its fiery breath against his cheek.

Sark Ahar awoke with a start. His dream had been part reality. The chamber was glowing like a white hot inferno, and flickering black shadows of fantastic pieces of apparatus were dancing on the walls. The light in the illuminating globes had somehow died out. The young Aerthian could hear a thunderous roar quite distinct from the noise the furnace had once produced. It was louder and more terrible. The air all about was terrifically hot. It scalded Sark Ahar's lungs. There was a vapor in it—a strange fiery gas. He could see long, slender pencilings of it reaching over and under the thick lead shields around the furnace like the tentacles of a luminous octopus. Luckily for him he was behind one of those lead shields; if he had not been, the deadly emanations would have killed him.

What had happened? Atomic energy! Atomic energy at last! The words fairly shrieked through his brain. But what of it? It was too late to do anything. Besides, that terrific power couldn't be controlled. He'd almost forgotten that. It couldn't be controlled!

He grabbed a long buckler-like sheet

of lead which had a hand-grip on one side of it. It was convex and was as tall as a man, and resembled the shields which archers of a forgotten antiquity had used. It would protect him from the dangerous rays.

He held it out in front of him and peered through the glazed peep-hole which was on a level with his eyes. The bottom of the furnace must have melted away. There was a dazzling mass of bluish incandescence visible beneath the lead shields around the caldron-like piece of apparatus. It was hissing and spilling like a violently active chemical. The steel floor was burning! And the atomic fire was spreading—consuming everything in its path! In a few minutes the whole ship would be a fiery mass of incandescence!

Sark Ahar stared wildly about. What should he do? Try to save himself, try to save Aggar Ho? It was better to freeze than to burn to death.

His eyes fell on the dials of the control board. Though Aerth's satellite was now, of course, invisible, he could tell by the delicate instruments that the ship was hurtling along at a terrific rate only five thousand miles from the moon! Its course was parallel to the lunar surface.

A CRAZY idea, that marked him forever as a genius, came to Sark Ahar. How it was born no man may tell. Quick as a flash he gripped the steering lever and swung it around a full quarter turn. The space flier lurched, then it swung inward and headed straight toward the moon, falling more and more rapidly every instant!

"Aggar Ho!" shrieked Sark Ahar, "Come down! Quick! You do not wish to burn!" Carefully manipulating his big protecting shield so that it was always between him and the rapidly spreading conflagration at the center of the room, Sark Ahar made his way to the spiral stairway. He

saw the old scientist descending.

"Get a lead shield in the upper storeroom, Aggar Ho," he cried. "Else you will be killed by the rays. Come quickly."

In a moment the Martian was with him.

They followed another downward leading spiral and found themselves in a cylindrical room that housed a tiny torpedo-shaped space-flier. Sark Ahar opened a circular door in the side of the craft and thrust the old scientist unceremoniously inside. He followed closely, slamming the door behind him. He dropped into the pilot seat. A turn of a knob, and a door at one end of the tubular chamber that housed the space-boat opened. In a moment the little craft glided gracefully out into the open, free from the blazing sphere.

Sark Ahar allowed the globe to get fully a hundred miles ahead of him in its headlong rush moonward. Then at a safe distance he followed it.

He turned toward Aggar Ho, who was in the passenger seat behind him, "I think I have saved Aerth, Chief," he said. There was a broad smile on his face.

"Saved Aerth?" returned Aggar Ho. "What do you mean? I see that we have released the power which we sought, but that will do us no good now."

"Watch for a little while, Chief," said Sark Ahar.

In the next minute and a half the sphere became a globe of blue-white fire, and presently, after the two Aerthians had followed it in its fall for about three thousand miles, it exploded, sending out its flaming fragments cone-wise toward the moon. The lunar surface two thousand miles below was dimly visible by their light. The pieces of the space-ship glowed brighter and continued their headlong descent. Still Sark Ahar dove after them. In a few minutes the fragments crashed into the satellite,

scattering themselves over mountain, crater and dead sea bottom. Nor did their fire die out! It increased in intensity fed by the fine sand which covered most of the moon. It was spreading rapidly, enveloping everything in its path.

Sark Ahar was smiling. "Do you understand, Chief?" he asked.

Aggar Ho had completely forgotten his habitual calm. "I do!" he cried. "You meant to kindle an atomic fire on the moon and make it take the place of our sun! And you have succeeded!"

The two men returned to Aerth. Within three days the moon's surface had become entirely incandescent. A week later Aerth was much the same as it had been for thousands of years except that the spring crops had been destroyed and almost half of the population had perished. But nature quickly mends and forgets such calamities.

In the long course of cosmic history they are common.

Since the moon travels slowly in its orbit in the same direction that Aerth revolves, the days were, of course, a trifle longer.

Aggar Ho predicted correctly that in fifty years the sun would absorb its enveloping cloud, and would shine with greater intensity than it had for countless ages.

Ten thousand years afterward, throngs of eager travelers still came to Panenbu to view a majestic work of art which awoke in them admiration for a great man of the past. At the pinnacle of what had once been the landing tower of the observatory stood a colossal statue. Across its breast was engraved the inscription: This is Sark Ahar, native Aerthian who saved Aerth."