



JULES VERNE'S TOMBSTONE AT AMIENS  
PORTRAYING HIS IMMORTALITY

# AMAZING STORIES

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## In Our Next Issue:

**REMOTE CONTROL**, by Walter Kateley. Due to the decrease of our advertising, our extra 16 pages were discontinued, which in turn crowded this story out from this issue also.

**THE GREEN GIRL** (a serial in 2 parts), Part II, by Jack Williamson. In the concluding chapters of this classic the author continues the accelerating pace set in the first instalment. The only intelligence we know of now is that which is housed in the human body. But is it really necessary for intelligence to have only such a habitation? Why might it not just as easily send out its influence through some other force, about which we know nothing at the present time? It seems to us not only possible, but probable, that there is such a force somewhere and may even some day be discovered. "The Green Girl" will, we are sure, rank in your favor with a number of your favorites, among which we unhesitatingly mention "The Moon Pool" and "The Skylark of Space."

**THE CONQUEST OF THE EARTH**, by Isaac R. Nathanson. Although this story about an Andromedan invasion of the earth is by an author who is new to our readers, the story reads like an old favorite. Mr. Nathanson has not only made a careful check on his science, but he has the gift of fiction writing. And we know you will welcome the announcement that there will be more by him soon.

**THE METAL HORDE**, by John W. Campbell, Jr. Here is another interplanetary story by our young scientist author that is even better than his previous ones. We can leave it to Mr. Campbell to give us a unique tale, original in its conception and ingeniously worked out.

**THE FEATHERED DETECTIVE**, by A. Hyatt Verrill. Under this author's skilful handling this tale has an individuality that easily stands with the best scientific detective story. The green turacou and the change of color of its plumage when wet is a much debated subject among ornithologists. Mr. Verrill knows his subject. We feel no more need be said.

## In Our March Issue:

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### Our Cover

this month depicts a scene from Part I of the story entitled, "The Green Girl," by Jack Williamson, in which the ship, built by the hero scientist to move through air, on the surface of the ground and through water, with equal adaptability, is shown breaking through the overlying water at the bottom of a certain point of the Pacific to a city under the ocean. The city is enabled to keep the ocean as a roof by virtue of a gas, which the intelligences inhabiting this sub-sea city have invented.

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*ACCORDING to our best astronomers, the earth is undergoing definite changes. Those changes, fortunately for human generations in the distant future, are so slow in development that they can barely be discerned even by the astronomers who have dedicated themselves to the task of measuring the differences. But suppose that some scientist should accidentally fall on the happy secret of a machine to speed up these changes? Much, indeed, might happen. With this idea in mind, Robert A. Wait, an astronomer of note, works up a fascinating astronomical fantasy, dealing with the troubles of the earth from cosmic and interplanetary forces, and gives us, in a popular vein, a great deal of instructive material.*

# Lanterns of God

By Robert A. Wait

Author of "The Invisible Finite."

Illustrated by MOREY

**B**UT Carl, I don't quite agree that you will benefit mankind any. Where would we gain? And anyway, frankly I don't believe you can do it!"

"All right. You don't need to believe it. I'll prove it to you. You come with me to my workshop and I'll show you. I'll fix it so that I can carry you around on the point of a needle without your being conscious of your sharp chair."

Carl Brown was an investigator and inventor in his spare time. During the day he helped to mend autos. He was an expert mechanic and electrical wizard. Georgia Hemway was more than casually interested in "her man" and to see him depart from his more sane inventions into this new path of black magic was not at all to her liking. She straightened his tie and smoothed his hair a bit. Perhaps very personal attention would sidetrack his feverish plans.

"Let me show you why I feel confident I'm on the brink of a marvelous discovery, Georgia.

"First we must refer to some physical laws. You remember enough of your physics to get my points.

"The earth is a body which is subject to two types of dynamic forces. First, it is subject to the action of what I call 'gravitational friction.' Secondly, the earth and her atmosphere are not subject to any real friction from space in spinning around on the polar axis. Additionally, the earth is subject to a motion in an ellipse about our sun, held in its path by the combined gravitational influences of the solar system. One complete revolution through this ellipsoidal path we call a year.

"Now, of course, the earth is subject to an actual slowing up in her path by the combined effects of the planets about her. At times this old planet of ours

wobbled in and out of her elliptic path very greatly. The path is only one-sixtieth out of circular, and figures tell us that the ellipse is slowly becoming more and more a true circle. It is said that in about 25,000 years the earth's path will be a circle about the sun, and that it will then proceed to swing to the other side of the ecliptic for some 80,000 years.

"What I wish to bring out is this: there are two types of dynamic forces involved—those known as conservative, and those known as non-conservative.

"The conservative forces are those represented by a pendulum motion where the total forces of energy remain conserved or constant. If the pendulum is moving rapidly, as at the low point or center of its swing, then kinetic energy, or energy of motion, is at a maximum, and potential energy, or 'reserved power,' is at a minimum. Now at the completion of the swing of the kinetic energy decreases rapidly to a zero and at the same time potential energy increases to a maximum. Then the pendulum starts back and the whole change is again gone through. These are the actions of the forces of gravity and elasticity. Of course, if there were no surrounding air or bearings to the pendulum to produce friction, the pendulum would *never stop* swinging. The last mentioned force—friction—is the non-conservative force. Through it actual energy is dissipated. The system becomes non-conservative, energy is constantly lost, and so eventually one of the forces, gravity or elasticity (which feed on energy for their operation) ceases to operate, the pendulum stops for want of kinetic energy."

"Yes, yes, but what has all this lecture to do with your wild scheme to annul gravity? I can see what you have proposed, but what has it to do with giving me a ride on a needle point?"



*Suddenly he was startled by a brilliant flash high overhead. Glancing quickly up, he saw a ball of blue-green light divide into two parts.*

The young woman spoke petulantly. She had hoped to avoid this; not that she disliked to talk of it, but she felt that Brown had done enough thinking for one day.

"Dear, you are more dense than I thought. Don't you see that the earth is subject to both gravity and elasticity? It has practically no friction among its neighbors, and so travels as a body subject to conservative forces, or practically so. Of course, on the earth's rotation on its own axis we have the actual braking effect of the ocean tides, due to the gravitational attraction of the moon on the mobile bodies of water. These do produce a dragging effect to slow our spinning action, but have little or no effect on our orbit about the sun. Now suppose I could control the form of energy to transfer kinetic to potential at will. What could I do to the motion of the earth about the sun? Well, what happens when I stop a pendulum in its swing? What happens to the kinetic energy? It becomes dissipated and the force of gravity predominates. Suppose I release the pendulum—what happens? It depends on where I stopped it. Should I have stopped it when kinetic energy was at a maximum, I would have so reduced the energy by that non-conservative force, friction (stopping it), that the residue of potential energy would not be great enough to overcome the force of gravity to answer to the call of elasticity. If, on the other hand, I stopped the pendulum at the end of the swing where kinetic energy is at a minimum, upon release the pendulum would describe about the same action as before, for friction can affect only kinetic energy, and thus the forces of gravity and elasticity would have sufficient energy to operate again. Thus we see that the less the kinetic energy is, the greater is the effect of gravity and the weaker the forces of elasticity.

"Let's reverse it and apply it to the earth. The orbit is the path of the pendulum and the earth is the weight on the pendulum. If the pendulum swings faster and faster, the weight becomes 'heavier and heavier,' or really as the kinetic energy increases (with speed) the effect of gravity becomes greater and greater. Applied to the earth, this means that if the earth should increase its kinetic energy, it would increase its orbital speed and lower the gravitational pull of the sun. If the kinetic energy is increased sufficiently, the gravitational pull can be overcome, or nearly so, since we could not convert all energy from potential to kinetic. When a body moves with an angular velocity, it has an acceleration to the center such as a pebble or other object swung in a circle at the end of a string. To cause this acceleration there is a force known as 'centripetal force.' In accord with Newton's third law of motion that 'action and reaction are equal and opposite,' we must have centrifugal force or a force that causes the outer body to react in an outward force equal to the strain drawing it inward. As speed increases, our forces both increase. Since all bodies tend to move in straight lines unless compelled out of that line by some force, it follows that bodies moving in curves or circles are under stress of some force, and, according to Newton's third law of motion, there must be a force tending to change curved motion to straight line motion. It is this force which finally becomes great enough to cause the over-balance when centrifugal appears to overcome centripetal and the strain breaks the string, allowing the pebble to fly off at a tangent from the circle it has been describing.

"Suppose, Georgia, that I could so increase the avail-

able kinetic energy of the earth's orbital motion as to quicken its speed? Could I not increase centripetal and centrifugal forces acting on the sun and earth and finally so enlarge the force tending to straighten the earth's path of motion that we could break or at least *stretch* the gravitational bond between earth and sun?"

"But why? What would you gain if you did *stretch* the bond between earth and sun? What good would it do?" asked Georgia.

"What would you give to be able to see Mars at 5,000 miles distance? What couldn't we see there if I could so enlarge the earth's path about the sun as to come that close to Mars? I can control that enlargement. I can get earth that close to Mars and away again, back to this orbit or to one closer to the sun!"

"Carl, you're mad! Why we'd be killed the moment you started such a thing! You'd disrupt the whole solar system. All planets are dependent on others for their paths of motion. You would have us all colliding or being killed by the terrible earthquakes that would follow any change of gravitational pull by the sun."

"Tommyrot! I know I can do it and with no bad effects on the solar system or us. True, things will be different, but not so different that we can't live and survive it. Girl, think of the possibilities! Why, we can come close enough to Mars to send rockets to her. We can visit Venus, even Neptune, if we cared to!"

"You forget what Jupiter would do to our oceans and atmosphere. We'd have neither as soon as Jupiter's gravity was felt. Remember that of the four moons Jupiter possesses, three of them are bigger than earth's is! Jupiter has a volume 1,300 times that of earth and her gravity is such that a person weighing one hundred pounds here would weigh two hundred and sixty there. Now, Mr. Smarty, I don't believe you'd better go to Jupiter tonight!"

"Just the same I can do it. What's more, I *will* do it!"

"Carl Brown! If you even think of such a thing I'll never speak to you again, and that would be very hard for me to do. Oh my dear, please give up these studies in things of which you know so little. Work on those more practical things you have to solve. I want to marry you as you have asked a dozen times, but I will not, cannot marry a dreamer who lets the material part of life's rewards slip by him so easily as you have let them. Come, let's forget all this delirium you have been through tonight. Leave earth to go on as she has for the past billion or so years and build our home to enjoy the peace she offers all her children!"

"When will you marry me if I give up these ideas?"

"Carl, it depends on you. I will be happy to become your wife, just as soon as you can furnish the home we want."

The young inventor looked his skepticism. He half smiled and shrugged his shoulders.

"**G**EOORGIA, it's now or never. If you promise now to marry me in June, I'll give up everything but my regular job and the 'practical' side of invention. Will you?"

"You know how hard it is to tell you no, yet you persist in your demands. No, I will not become engaged to you nor promise to marry you until you prove your willingness to give up these wild plans. You have promised me time and again that you'd get down to the grind—always you fail because of some new crazy scheme."

"Yes, and many are the promises you have made to me too, to become my fiancée. Always you refuse at the last minute, using my failings as an excuse.

"Listen, Georgia. I love you, and will always love you. But I will not be used nor treated as a child, and to hold my conduct over me as a stick is to treat me as a child. I am returning to my home and workshop now. I have there a machine just finished which I believe to be capable of putting this old world out into space so far that old Sol would never find it. I shall wait until ten tomorrow night, for you to call me or send word that you will become my bride in June. If you do not, I don't care what happens anyway and shall do my best—or worst—to so alter the operation of earth's laws of motion as to throw us out farther from the sun. Yes, to Jupiter or maybe Neptune—I'll give you your choice in that case! Good-night."

The door slammed and he was gone.

Georgia looked at the clock. Ten P.M. She glanced at the calendar. Monday, April 11th. Dropping into a chair she meditated. Would he? *Could* he? It was much like a hold-up. One doesn't believe the robber would shoot to kill, yet one isn't ever *sure*. One suspects the gun is empty of bullets, but one doesn't feel sure enough to risk his life by disobeying orders. What to do?

For a full hour the girl thought, murmured and frowned. Finally she arose and went up the dark stairs to her cosy room.

"Well," she mused half aloud, "if I don't marry him, he may try it. *It might work*. On the other hand, if I marry him, he might try it anyway—and it might work. Better to wait and see. Perhaps he won't try it. Maybe it won't work anyhow. If he's brute enough to try it against my wishes, I guess I'd be better off without him. But I do so love him for all his insane ways! I hope it doesn't work!"

With this thought she slipped in between the clean, cool sheets of her little green lacquered bed. Reaching over to her table, she picked up the latest copy of *Science Squibs*, which had in it many articles on astronomy, physics and related subjects. The girl was trying very hard to become acquainted with popular studies in astronomy and all science in general. For wasn't Carl interested in all these things?

For two hours she pursued her reading, plowing laboriously through articles on celestial mechanics, electrical developments of interest, and discussions on the relations of electricity and gravity. Several times she found it necessary to stop and look up theories and laws in her handbook of science factors.

Especially was she interested in a short note on the appearance of several very bright stars in the heavens, which had flared brilliantly and then died away, leaving only traces of their paths in nebulous matter. Some discussion ensued in the article as to the probable speed with which the stars had come into and gone out of the visible universe, and the general relation of light, speed, and gravitational effects in celestial visitors, which left such veils of luminous cosmic dust or gas; scientists disagreed on the exact state of matter represented by these wisps of glowing star dust. There followed several articles on atomic disintegration, electrical power transformers, and technical mathematics.

Some way the pages of the magazine got to swaying about, and several of the lines jumped from the columns

of print and danced crazily up and down until Georgia, startled from her doze, captured them with a sweep of her eyes—funny—how stars associated with  $x$ ,  $y$  and  $z$ , and all seemed to float through those glittering electrical machines the magazine had said were—the comets—that made—the masses—of—nebulous—matter—.

The magazine slid to the floor; the arm which had held it fell limp and quiet and the girl sighed slightly. Cascades of dream waters foamed and splashed as they carried her in the canoe of fancy to slumberland.

"HARDING! Come here quick! Get that binocular there and look up at the zenith."

"Very well," Harding replied as he hurried into the observatory. "What's all the disturbance?"

The two men, both observers in the great Click Observatory, were doing a stretch of early morning observation. Jonesly had called his colleague in great excitement.

"A moment ago I was startled by a blue-white flare at the zenith and a second later the flare divided into two parts and receded one from the other in a flash, each describing a curved path. Fortunately I have an exposed plate in that camera. It will all be recorded on it. Look, now, for the two points of blue-white light are visible yet. They are still moving rapidly but are very plain."

The two men were intent for some time on the motion of these two points of light. Each point was moving in a curved path, and each was slowly straightening out more and more into a nearly straight path, traveling at right angles to each other.

"Well, we've seen all we can. I'm sure there won't be any further exhibition. Come, let's develop that plate. I've taken sufficient data for us to calculate the path and general size. We'll wire for data from the South American observatory and try to determine its distance." Plainly Jonesly was excited.

After sending the request by radio and developing the exposed plate, the two went to sleep for a few hours.

Breakfast found the men mixing grapefruit with cosmic sections, until the amateur would have feared to eat for fear of getting an ellipse mixed with a slice of buttered toast.

"Jim, there's only one conclusion."

Harding was consuming much jam and toast as he spoke to his fellow-worker.

"The photo developed from the plate we exposed shows conclusively that the visiting celestial body was traveling in a hyperbolic curve. Now of course that means that it will never return to the solar system—at least not unless it passes through infinity, which is difficult to conceive."

"Would you explain to poor, dumb me, please?"

Janet Jonesly was admittedly a butterfly and did not pretend to know anything about her father's calling.

"Certainly, Janet. You see in curves there are really but two kinds if we consider them from a very strict standpoint. They are the ellipse and the hyperbola. You know what an ellipse is—a so-called oval-shaped curve, but unlike a true oval it is symmetrical at both ends. The ellipse may be taken as including the circle. A hyperbola is a curve which approaches from infinity at the upper right to a point at the center of our drawing, curves around through the point chosen as the center or zero point much as the sharp curve of an ellipse and departs toward infinity in the lower right hand direction.

Now the characteristic of this curve is that its two ends never meet, constantly becoming farther apart until infinity is reached. On passing through infinity the curve again approaches the zero point from the upper left corner of our diagram and describes the same type of path as the first formed curve, departing to infinity toward the lower left direction. The two pieces of the curve are as mirror images to each other.

"Now, should a body such as a comet enter the solar system on a hyperbolic curve and depart on the same, it will never return to this system until it has gone through infinity. It will then return on the side opposite to its original visit. That is, unless you adopt Einstein's view that our cosmos is spherical and that light leaving us now may return after traveling completely around the cosmos. Einstein estimates this cosmos at 150,000,000 light years across. In that case, infinity becomes more understandable. At any rate, a body which travels on an hyperbolic curve will not return in a sufficiently short time to enable any records of its first visit to endure throughout the interval. Probably the earth would have become dead, and our sun cold and dark before the return of any such visitors."

"I see," said Janet, "but you fail to make me see where there are but two types of curves. What about a parabola? A circle? You fail to mention a straight line also."

"Daughter," began Jonesly, relieving his friend of the task of educating his pretty daughter, "a parabola may be considered as a partition between an hyperbola and an ellipse. A circle is merely a special case of the ellipse where the eccentricity is zero. Although the so-called straight line is not, strictly speaking, a conic section, it may surprise you to learn that a straight line is really an arc of a circle!"

"How idiotic it sounds. Dad, if you were given to joking, I would believe you were stringing me with that remark. I suppose I'm too much of a geometric imbecile to understand how that could be."

"No, daughter, even you can understand!"

The girl's father smiled as he made this remark which she knew he meant only as a jest. He was never seriously sarcastic.

"First of all, let's start with a three-inch circle. Its curvature is apparent—very much of a curved arc. Now notice that as the radius of the circle increases, the curve in the arc becomes less and less. Suppose we increase the radius of the circle to one hundred feet. Now take a one foot arc out of this circle and you will find that the curvature of this arc is very slight compared to the curve of a smaller circle. Suppose we increase the radius of the circle—what happens to the curvature of the arc?"

"Why, the curvature becomes less and less. I would say, Dad, that as the radius of the circle increases, the curvatures of the circle become less and less, tending to flatten out more and more."

"Exactly, Janet," interrupted Harding. "Now, Janet, if that is true, what must be true when the curvature of the arc of a circle becomes zero—in other words, a straight line? Don't know? Well, what's the greatest quantity, distance, or amount called? Wouldn't the radius increase as the curvature flattens out more?"

Janet puckered her brow prettily for a moment and then opened her eyes wide in delighted understanding.

"I see it now!" she exclaimed. "If the radius increase

of a circle causes a decrease in the curvature—or an approach to zero curvature—when the radius becomes big enough, the curvature will be zero. In other words, when the radius becomes infinite in length, the curvature will become a straight line."

"Exactly!" laughed the girl's father, shifting his position to an easy chair beside a small table of books and drawing instruments. "Here, follow this drawing."

He sketched swiftly, exhibited his work and crumpled the piece with his concluding remark.

"A straight line is really the arc of a circle with an infinitely large radius. Hard to see, but true."

"Well, after that mental strain, I guess I'll be excused," said Janet. "Lots of tennis and things on for this morning. Will you be here for lunch, Dad?"

"Yes, dear. I'll have a couple of friends, so please tell Martha as you leave. Good-bye for now."

The pretty young girl gracefully tripped out and down the steps to a waiting motor car.

"A great girl, yours, Jim. Wish I had married, even if I had had your hard luck in keeping a wife from death. Fortunately you believe in eternity so you are not as lonely as you might be."

"Yes, Frank, I do believe in eternity. Study of God's heavens leaves little chance for any other belief—greater than nature is nature's law. There *must* be a control or guiding intelligence somewhere to keep the cosmos in order as well as the little point of existence we call earth. That intelligence we some of us call God."

"Say, Jim, do you know what I believe this affair last night means? Well here—suppose we consider what happened. I saw a large ball of light at the zenith which suddenly divided and the two parts receded from each other. The photo shows that the sum total of the motion of these points describes a hyperbola. Now the chances are infinity to one against such a thing happening. I believe that a single body described that path."

"But in that case, Harding, you could not have seen a dividing of the body, and besides, I saw the two bodies. Anyway, you would have witnessed the approach and passage of a body as big as that had it been single and describing an hyperbola. I can't see any explanation."

"Where's your imagination! Listen. Did you ever hear of a body moving faster than light? No? Well, neither have I, but does that prove it could not? Certainly not. In fact, as we modern scientists view nature, speeds double that of light would be possible—yes, probable under the correct conditions. Now witness this little sketch I made."

He placed the pencil at the upper right of the pad of paper. Beside it he placed a red crayon and brought both across the paper in an hyperbola, ending at the lower right corner of the paper.

"The pencil is the body we saw. The red is the light constantly being emitted from it by its luminous ball. We stand at the zero point here at the maximum point of the curve; that is, we are here on earth observing this celestial visitor curve into and out of our vision—a wandering star I believe it to be. Now suppose, Jim, that this visitor was traveling faster than light. Say ten times the speed of light. At what point would we first see the visitor? Why, at the point in its path closest to the earth. Therefore, in this case, since the light of the approaching visitor would always be *behind* it, the body would reach us before its light. *Voila!*"

"I don't see it yet. What's the point?"

"Why, Jim! I didn't think you were that dense! That wandering star appeared at the zenith *before* its light, then we saw it *there* because it was closest to us, and as it departed again on its path we saw not only the trail of light it then left—going down to the right out of the solar system—but also the trail of light that it left behind it in coming *into* the solar system, which was just beginning to catch up. Now, of course, this would make it appear as though the brilliant mass at the zenith divided and went both ways—we are seeing both the light from the incoming and the outgoing path! Think of it, man! We were seeing that star both coming and going all at once—incredible but perfectly possible, and I believe true."

The two men sat silent for a moment, each trying to comprehend the implications in this conclusion.

"Marconigram, Mr. Harding."

The housekeeper handed her employer the message. He opened and read it, turned to the desk and made a few calculations, looked up some logarithms, and by use of a table finally obtained the answer to the problem he was working.

"According to this information from South America and our data here, that visitor last night came within roughly a billion miles of our solar system. That's pretty close, but of course, it may not be a dense enough body to affect our system much."

He calculated a little more and announced that the body was apparently of enormous size but not as dense as our own sun.

That night a search was made for the two points of light observed the preceding night. None could be found. About 12:30 when all the mists had cleared and the heavens blazed with a thousand glittering stars, all the astronomical world was startled by the repetition of the phenomenon of the preceding night, performed on a truly enormous scale. The flash of an enormous blue-green ball of light at the zenith, its apparent division, and the streaks of light in each direction showing what was, in appearance, two separate parts receding, but what really was the appearance of the light from the incoming and outgoing paths of the giant visitor.

Suddenly the entire earth trembled, heaved slightly and shuddered, throwing buildings to the ground, opening great cracks in the surface where whole cities dropped out of sight.

Amazed beyond the power of speech, the observers of stars beheld the sun, old Sol himself, appear over the horizon—but great God! the sun was rising in the north west.

What great cataclysm had befallen old mother earth, or was the sun himself out of place?

Suddenly the whole sky began to dim to twilight. The sun remained but his size was diminishing, his light failing. The orb remained above the horizon but seemed to be circumscribing a circle horizontally about the earth! In two hours the size of the sun was only half what it usually appeared to be, and the light was dim as late dusk.

Apparently the sun was traveling about the earth every eight hours, growing smaller and more and more dim each time.

Was the sun moving or was the earth sweeping out into space, darting after some prey as a hawk sweeps down from the skies and darts after an unfortunate

CARL BROWN brooded throughout the day of April 12th. He stayed close to home, giving every chance for the message to come, which he hoped to get. If none should come, his mind was made up—he would most certainly try to do just what he had said. His machine should have a trial; and if he could get the earth out of her orbit, he'd do it!

Nine P.M. and no message. The young inventor strode restlessly about his work shop. He thought over all his plans for a happy home, and then those of moving the world. Carefully he weighed them against each other. Which was worth the most? Should he swallow his pride and return to his sweetheart for forgiveness? No! She had always refused to give him any definite promise. He was too old a fellow to be treated as a child. He would give her a scare if she didn't come with a promise.

Ten o'clock and still no message. Half an hour later the young man strode to the new part of his work shop. Standing amid a maze of motors was a shining giant of glittering arms, movable discs, and hammer-like affairs. Truly imposing was this monster machine yet every part seemed to be one with its neighbor in a massive unit of parts. Parts as small as pins stood by the side of great blocks of chrome steel; under both might be found bulbs containing fibrils of finest platinum with grids and plates of processed molybdenum-aluminum alloy. All the parts of this colossus were placed in compact style, each apparently dependent on the other for its function.

With grimly set jaw and wildly flashing eyes the master of this massive child of his brain threw the master-switch on the slate switchboard to his right. The low drone of starting motors pervaded all the air. Gradually the hum rose in pitch to a whirr. With a click a secondary switch clipped into place. Siren-like the whirr rose to a shriek and the air thrilled to many high-pitched, screaming motors. Almost without a glance at the many meters on the control board, Carl moved the sliding contacts of a series of coils at the base of the machine. The tubes amid the metal parts slowly came from darkness into ruddy glow, finally giving forth a blue-white glare, and flooding the room with stark, sharp shadows of motionless bars and rods. A final thrust at one majestic, stately lever of brightest chrome-plated steel and the master had his servant in full action. With crash of steel against steel, the quick flash of scintillating arms of burnished metal, the doom of earth commenced to become real.

Enormous black shadows danced and flashed about the room. Great patches of glaring white rocked to and fro on the ceiling. A look of awe spread over the features of the young man, ever changing in the ghastly light thrown by the flaring bulbs in the demon of energy.

For two hours the machine continued to roar, splashing light over the whole room. The heat was intense. The outside atmosphere became chill. Frost formed over the roof of the workshop. The human operator shivered violently. He slipped on an overcoat. This was to be expected. It showed that the machine was working. Carl stepped outside to see what effect on the surroundings this experiment was having. Suddenly he was startled by a brilliant flash high overhead. Glancing quickly up he saw a ball of blue-green light divide into two parts which swept apart in a great arc, becoming gradually smaller and farther apart. Wondering a bit he stepped back in to observe his whirling destroyer.



The machine groaned, strained at its anchor bolts, and shifted its speed to an even higher pitch of confused shrieks and throbbing poundings. Suddenly the dark outside the workshop became light and lo! the sun rose over the northern horizon! With the light came great upheavals and tremblings of the earth. The buildings in the distance tottered and fell, leaving only great clouds of dust which floated slowly up and away. Around the horizon the sun moved from east to west, just above the horizon line. Slowly, as the dumfounded inventor watched in silence, the light of old Sol faded and by the end of an hour the apparent size of the disc of the sun was much smaller than usual. Could it be that his machine had worked so well so quickly? Carl Brown looked his terror. He had not expected such violent action nor such nearly instantaneous response to the change he had made in the energy relations.

By the end of five hours the sun had become very small. Light was nearly gone from the earth. Not only had the orbit of Mars been passed, but the earth had plunged through the asteroid belt. Several enormous planetoids had struck the earth with prodigious thumps, causing local earthquakes in the countries where they struck.

As soon as he understood what was happening, Brown reversed his machine, but to no avail. The bonds he had so weakened by his machine were now so far stretched and weakened that the momentum the earth had acquired overcame all tendency toward sunward motion.

Earthquakes, tidal waves, volcanic eruptions, shifting of mountain ranges, and sinking of whole sections of continents followed in a terrifying series. Large parts of the human race were being wiped out. The earth, lacking the sun's heat, was rapidly growing cold. Fortunately the atmosphere remained with the earth and was traveling along in normal form with the spinning sphere though windstorms were numerous. Human existence became a matter of the survival of the fittest. Strong men killed weaker men, women, and children in their efforts to save themselves. No matter, it seemed all would soon be dead from cold. Northerly bodies of water froze solid. Even the salt seas congealed. The hot equatorial belt saw an inch of ice on its once lukewarm ponds and streams. All natural light was gone. Darkness was on the earth.

**F**OR three days conditions became steadily worse. Light was completely gone, and the deadly cold of space was sapping up all the heat which the earth had stored up. Long since the solar system had been lost in the far distance. Old Sol became a faint star, observed with terrified interest by brave astronomers, who stuck to their posts as observers of what was going on.

By now the truth was suspected. The combined effect of the monster wandering star, which passed so close to the solar system along with the overbalanced energy conditions of earth and sun, had resulted in the visitor attracting earth irresistibly out into space, on a mad race through the cosmos. The pull of the sun and of the wandering star had nearly torn earth asunder, but finally the solar attraction grew too weak to affect the racing planet any longer. The earth was tearing after her new affinity with all the speed she could muster. Astronomers calculated that already her speed had reached that of light. During the entire time sharp watch had been kept for the appearance of the wandering visitor, who had so rudely torn from Sol his child

Earth. If humanity survived the interstellar cold which was gradually numbing everyone, it might have the pleasure of being scorched to cinders by its attractor once it caught up with it.

The sixth day brought cheer to human hearts, for the earth was speeding fast toward her captivating star, albeit it would be a considerable time before it would get close enough to feel the glow of warmth of her heat. Strangely the earth seemed to be entering a shower of dust, said by scientists to be the tail of cooled matter streaming out into space from the glowing star the earth was rushing after. With the meteoric dust came a little heat, fortunately, for all water was frozen on earth's surface. Men lived at the equator as Eskimos. Only a tattered remnant of humanity remained, but that remnant had great joy from the announcement that earth would soon be in a warmer region, even if it continued to get warmer and warmer, till it was consumed in stellar mists hotter than man could conceive of.

By the end of a month, time being kept only by mechanical means, such as clocks and watches surviving the horribly destructive effects of earth's convulsions during her struggle to leave the solar system, the climate had become again somewhat livable. The meteoric dust falling on the earth was becoming much more noticeable and its concentration and speed had caused a sort of phosphorescent luminosity on the side of earth facing the runaway star. Fortunately, earth continued to rotate on her own axis. This provided all parts of the globe with hours of light even though it was feeble. Vegetation had ceased to grow and had frozen to brown, withered stalks and leaves. Men hoped to see the return of these "when they reached the star." Every hope was held for the recovery of vegetation now that light was returning.

At the end of forty-five days, with food supplies running low, man was thrilled to hear from observatories that the star had been sighted, and that the earth would have normal illumination within two days. Fears were held about what would happen when the earth came closer to the leading star, now universally known as "The Thief." Certainly the size of the attracting star would draw earth into her vortex and consume everything to cosmic dust. It was finally agreed that when such a time was reached the machine which had caused this catastrophe should endeavor to force earth away from The Thief. Some wished to try immediately to get free, but upon mature thought, realized that the most they would accomplish thus would be to strand themselves in the midst of interstellar space. That would indeed be a "cool" proposition. None cared to float eternally through space, prey to every wandering body, though doubtless all would be dead after three days of such isolation.

Astronomers reported much of interest. First of all the familiar constellations had disappeared. Some of the same stars were visible, but the shape of the constellations so long known to man was gone, and with the disappearance of these "sky marks" the astronomical world was lost, as far as charting the earth's track through space was concerned. The speed had so increased that no further efforts were made to determine it. Everyone was satisfied that the earth was going too fast to be stopped by anything but a miracle. The change in arrangement among the now unfamiliar stars was visible each night, although the term "night" had changed its meaning.



Scientists informed the million and a half survivors that the earth was leaving the universe in which she had lived so long. She was about to plunge from the edge of her natal galaxy into boundless black intra-universal space. Perhaps she would survive, perhaps not. The speed of The Thief was an ever-increasing marvel to humanity. Too dazed at first to realize anything but the personal misery and suffering brought on by the extraction of earth from the solar "home circle," man again began to notice what was happening to the world in general. The problem of the coming trip through the black void of starless space held every imagination in constant suspense. Could earth survive such a trip? Whither, pray, would this Thief fetch her loot?

**T**HE existence of other universes besides the solar galaxy had been long known, and now in the eve of earth's life, man was to make the great voyage through God's house from room to room, perhaps from cellar to garret. What would another universe reveal after passing through it? Shortly they were to know, for within a week the news went abroad that on July 6th the earth would make its dive from the edge of the solar system into the inky waters of the black cosmos.

The night of the great event found everyone abroad, watching. In the direction of The Thief astronomers reported an ever-thinning grouping of stars. No great change occurred as Old Mother Earth flashed past the boundaries of the star group which had for so many millions of years given her a home. Millions of stars behind, black night ahead, except for the ever-increasing glow of warmth from The Thief.

Man had again become established in habits and was fast building him a temporary home. It was a universal agreement that time should still be recorded by the mechanical chronometers in hours, a twenty-fourth of a solar day. The days of the month were kept officially, although the general public had long since lost track of what day or month it was. Some declared it had been a year since they left the sun and planets behind. Others swore it had been only a month.

Vegetation again began to grow. Food became plentiful and man began to come back into his own free life, with the change over former life, that labor and work in general was divided, so that everyone had an equal minimum amount to do during each "light period." Since there were now three periods of light and three of darkness in every forty-eight hours, this meant a rather even continuous grind, but no one minded, because of the equality of distribution of the fruits of labor. Each shared with the other in the temporary government, the agent used as distributing and regulating body. Man was building himself back into his world, but feared constantly the possibility of new catastrophes at the end of a week.

The observatories reported the solar galaxy to be taking on a definite shape. It seemed to be a great pancake very much puffed up in the middle. As the earth raced farther away from it, this galaxy began to show a spiral form and appear much like a monstrous spiral nebula. Apparently all the stars in it were involved in a great whirling action. Doubtless these all were concentrating toward the center, slowly condensing to a more compact mass. Perhaps some day, eons hence, that group would coalesce into one or more giant suns and rush through space in new form. True, the whirling

motion was not apparent to observation, but the shape and positions of the parts of the nebula-like affair left little doubt as to its similarity to the gaseous whirling nebulae. Natural law, God, or whatever one may term the all-pervading intelligence that keeps the cosmos in order, apparently functioned in a definite way to create new suns and worlds—whether the material be luminous gases or fiery suns.

All through the month of August the mad pair, gigantic sun and infinitesimal earth, careered through space, leaving one universe far behind, an ever diminishing grouping of stars, and hastening toward new universes, ever seeking, never pausing, crazed with speed, veering not, but onward in its chosen path. The earth had met no floating masses, none of the cosmic dark matter floating in space. Her leader, The Thief, cleared a wide path sucking into its maw all matter that it passed near. Fed on these pieces of matter, the giant grew ever larger. In turn the shower of meteoric dust on earth became more noticeable as time went on, and men found themselves gaining in weight without apparent increased size of body. The earth was becoming noticeably larger. The moon was taking on a new appearance. Many of its craters were covered over. There appeared to be a bit of vegetation on some of the hillsides. Perhaps low forms of life which had always been there, were blossoming under the more favorable conditions for growth from this warm shower of dust.

At length announcement came that in the dim distance a new gathering of hazy light could be seen. This meant the approach to a new universe. What might it hold in store for them? Would the flying pair sail in and out again? Would both perish there?

Shortly man saw unfold before him a new group of stars, gorgeous in their colors. Astronomers reported every color of the rainbow represented and many hundred shadings of the same.

When the first outlying stars had been passed in entering this kingdom of color, distinctly disconcerting news was sent abroad. Calculations and observations showed a large cluster of slowly dying suns to be directly in the path of The Thief. Now if these remained, there would be a mighty collision and the earth would shoot into a sea of incandescent gases so hot from the impact that not a wisp of any molecule of earth would remain. Even atoms would be disintegrated. It was not pleasant to think upon, and religious fanatics seized on it as the "promised" destruction of the world by fire. There were a few who held themselves silent and who refused to believe with the average, that unless a miracle occurred, this was the end of the world. Even the well-ordered government failed to hold the people to the every-day tasks. There seemed to be no intelligence left in man.

**T**HE date set for the collision arrived and again all mankind sat in their box seat to witness the play of the hour, where the actors spoke with tongues of flame.

At the appointed moment a glaring light filled all space, pure white in color it was, and so intense that fully half the earth's peoples were struck blind for days. A wave of heat enveloped the earth, and had it not been for the protecting blanket of atmosphere, every living being would have charred to blackest carbon. Many died from the heat. The waters of the sea gave up great clouds of vapor and mankind drooped and wilted in the



hot steam-laden air. Vegetation wilted, and every living thing was partially suffocated from the humid air.

Twenty-four hours saw a change and the temperature dropped to summer heat. The earth was bathed in a luminous ether. Light fell from all sides upon the sphere, which hurled itself through this fire-mist by force of the momentum it had won throughout these months of winging through space.

Again the Click Observatory theorized, giving the world new knowledge of its condition.

"Jonesy," said Harding, "I tell you I'm right. We're through the worst of it. We're coming out the other side soon. This continual day is going to fade soon. I wouldn't have believed it possible, but so it seems to be, anyway."

"Why should we expect to ever get away in that case? I can agree that probably you are right."

"Here." Harding drew sketches rapidly. "This earth has been accelerating constantly since last April. Now we've reached a speed that cannot be measured except in units of light speed. Our Thief must have been going that fast too. Now what becomes of energy of motion when suddenly stopped? Why, it either turns aside or develops heat. When our monster star struck

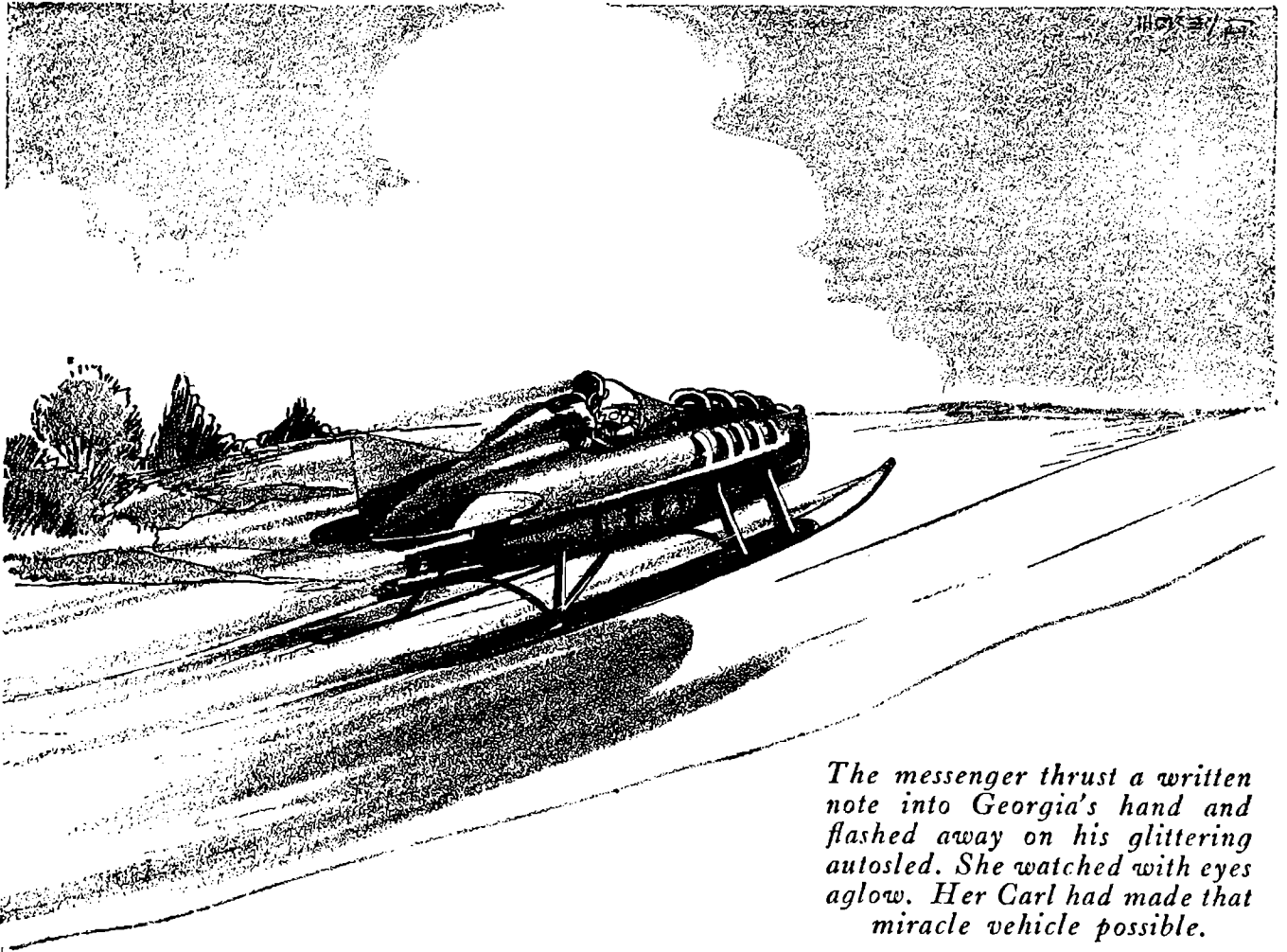
those nearly dead suns in our path, the heat and energy evolved simply threw out the matter to such enormously large distances that it was so attenuated, that we could pass right through it without great harm like going through the tail of a comet. We don't notice it. This, of course, was different but here we are, almost past our Thief who is no more. He has been destroyed and in some billions of years hence will condense with those suns he gasified to make another giant sun. We pass onward; our gravity pull for The Thief is practically gone. See, the mists clear."

"Great God of all—look!"

Before them in the jet black heavens lay a veritable jewel box and directly in their path an especially fine grouping of stars appeared. They enlarged in size even as the men looked. Brilliant beyond belief and of many hues were these stars.

"Brown, looks to me like your machine will have to catch us a sun now that The Thief has been destroyed. We are free of it, yet where will we go? We must have heat."

Jonesy spoke to Carl Brown, for the whole scientific world had united efforts after the great thrust out into space. The machine had been saved and revamped so



*The messenger thrust a written note into Georgia's hand and flashed away on his glittering autosled. She watched with eyes aglow. Her Carl had made that miracle vehicle possible.*

that if occasion offered, it could be used again. Enlargements and improvements made a really formidable affair of it.

"I will try to get us a parent sun as we enter this coming universe. Georgia, I ask you to pick out from what you see, the star you would most like to have as your sun. When I spitefully threw us all out of our place, I vowed I would atone for my misdeed. Now help yourself to a sun and I'll get us there."

The girl spoke softly as she pointed off to the left horizon.

"Do you see that gorgeous cluster of five stars? I want it for my suns. I want more than one star. We have billions from which to choose, but those I chose from all."

"They will be yours if we live to get there."

Carl hurried to the central power station to give orders for the try. It would be like casting a rope for a post—if only the loop would drop over yon star cluster.

Two hours brought the star group nearer. Six hours passed and before the world lay a magnificent group of suns. Five of them there were, four arranged in two pairs, each pair rotating as the ends of gyrating dumbbells, and these two pairs rotating about the fifth mammoth sun as a common center of gravity. The central sun was white, the members of one pair were rose-red and sea-green respectively, and of those in the other set one was a soft yellow and one pale blue. Truly a transforming sight!

Day and night Carl Brown labored to bring the earth

into this group of suns, so as to establish it as a regular planetary body. Gradually the task became more and more delicate. The earth was fast passing through this small cluster and if earth hoped to establish herself as a dependent body, the act must culminate nearly at once.

"Carl dear, don't labor so. You must rest. It has been seventy-two hours since you had sleep and no man can stand that pace. You'll collapse."

**G**EOORGIA had become a faithful companion to her beloved scientist sweetheart. He had rapidly ascended the ladder of scientific prominence and by dint of hard study had become skilled in the laws of celestial mechanics, primarily because he had known that this moment would arrive. Some day he had known that he must try to capture a sun instead of repel one. The time had come and his dearest possession, Georgia, his promised wife, was ever at his side helping all she could.

"Georgia, darling, you don't know the moments I slip off into dreamland for three winks and a sigh. I really am not so in need of sleep as you think.

"Look! We are stopping. We've been slowing down rapidly since we lost The Thief. I presume the gravitational pull of that great gaseous nebula formed by the collision has been acting on the earth with a steady powerful drag. At any rate, we're not to pass out of your chosen star cluster. I shall endeavor to give earth a position in that cluster that will thrill mankind till the end of time."

"What do you mean, my boy?"

Dr. Harding stepped into the room just in time to hear the last of Carl's comment. He continued his question.

"What do you intend doing? I must say I am already thrilled at the truly gorgeous sight we have before us in these stars."

"Dr. Harding, if you will give me your help, I will show you by actions what I intend doing. Please draw a rough sketch of what you have found this group of stars to be and indicate the paths and directions of motion of these five colored jewels, the Lanterns of God."

"Carl! So shall they be known—The Five Colored Jewels, Lanterns of God."

Georgia beamed on her lover with pride as never before. His many sided soul was ever revealing a new glory to her. How could she have been so blind and narrow in those days so far past? She had nearly thrown away one of the finest things her life had ever known. How little people's minds had been, back in those days before Earth's migration!

So the men went to work in the ever-increasing laboratory where masses of machinery screamed and hammered in the great effort to capture the star group as parents. Days held man in suspense—the task was one of such importance and such delicacy as to cause entire humanity to walk tip-toe and to speak low lest it should disrupt the delicate web of magnetic lines of force being slowly woven about the Lanterns of God, as the five stars had been named.

Almost imperceptibly at first and then with a precipitate rush earth skidded from her blind rush outward and headed in a great arc around the star group. Once more the earth was warmed, once again light fell with blessing on her cool crust. Vegetation sprang to life almost over night and when at the third day earth passed closest to the cluster, flowers bloomed as by magic. The scientific world stood gaping. Never had there been such growth in the history of man. But more wonders were to follow.

Within a week earth had made four rushes into and out of the star group, oscillating on a large elliptic path, ever concentrating its efforts to come closer to the stars it sought as suns. The men who controlled this motion were besieged to hurry to an end and locate earth in an orbit so that life might once more settle to normal. The reply was always the same.

"We cannot hurry matters," explained the young scientist Brown, who was formerly called a "crazy inventor." "Should we attempt to form our path into a permanent one immediately, the forces so expended would doubtless cause another series of earthquakes, eruptions, and might possibly cause a universal flood from the oceans racing around the earth. We might even burst the earth asunder, for the strain of the breaking away from the solar system had weakened considerably the crystalline structure of earth's lower crusts. An error of a few seconds in our calculations, or a change of a few minutes in our celestial path might plunge us into the center of one of the Lanterns. We cannot risk all for the relief of temporary sufferings. *Man must survive*; therefore he must act cautiously."

**T**WO years had passed and at last the renowned astronomer, Carl Brown, announced that he had completed the work of establishing earth in her new orbit. The orbit, he declared, was circular and passed at an

angle of thirty degrees to the plane of revolution of the pairs of Lanterns about the central star, in a regular manner about the center star, at a distance of roughly one billion and a half miles. The orbit lay between the central sun and the two revolving pairs of stars, so that when one-half the earth was toward the central sun, the other half looked upon a pair of the Lanterns slowly gyrating about end for end.

"See Georgia, my beloved wife, always will the earth have light—if not from one of the Lanterns of God, then from another. As the white Lantern sets on one horizon, two of the Five Jewels rise on the other, flooding the dusk with glorious colors. Off to the left you see the other pair, gyrating and sailing majestically through space. Soon we will come nearer them and our lives will alter some, because of the change of light. Thus will man ever have a thrilling sight before him, never darkness—always light, symbolical, I hope, of the liberated human race, for we have discovered that our white Lantern sends out streams of energy which we may collect and use for labor, much like electricity."

"What has been determined concerning the orbit in which we travel, husband of mine? I care little though, as long as you are here to travel round it with me."

"To be prosaic," smiled Carl, "we will go a little way into the mass of detail we have accumulated in the last two years."

"First let me confide in you. I am not what I am taken to be. My knowledge of the heavens has come to me only in this wild ride through space, and while I am hailed as a master mind by some, I know my limits and how frail is the pillar of glory on which I stand. Nevertheless, I stand on it with pride and will ever guard it against a rude attack."

"I don't believe it, Carl. I believe you are really as great as you are heralded as being. Man is as adaptable as any other of nature's beings. Every living being adapts itself to the conditions in which it finds itself. If not, it dies. Witness that flat fish of the ocean which travels always close to the sand at the bed of the sea yet neither eye is down. It is born with an eye on each side of its head. Because it has no use for this eye on the sand-ward side, that eye shortly migrates through the head to the upper side of the head beside the eye originally there. Thus it has both eyes for use where it needs them. This is a pure case of adaptation of life to conditions."

"Now you are no fish, dear heart, but the same general laws apply to all of God's creatures. You were thrown into a sea of new conditions and your intellect rose to the occasion, grasping all and making you a leader. It was not accident, but the survival of the highest type of life, that left you here and destroyed so many other people. But enough of that—what about the new abode of earth?" There she paused.

"Listen then to your superman, as you will insist I have become!" Carl joked and then continued in more serious vein. "Our earth has become established on a new orbit here, between the Lanterns of God, the length of which is about ten billion miles. The path of the earth in the solar system was roughly five hundred and eighty-three million miles. That old path required one solar year to traverse. This new path requires 5.76 of our old years for earth to circumscribe its new circle about the White Lantern. That means that the earth is now circling the new path at an orbital speed of roughly

fifty-five miles per second. Frankly we've been here so short a time that we are uncertain about such figures. Thirty years from now we'll know more—much more. Our present orbit is about a billion miles inside the circular path of the two pairs of Lanterns. The size of the Five Jewels is so great that plenty of heat and light reaches us here and it is believed that these suns are very young. The Great Watchman has but recently lighted these Lanterns on the highways of eternity. Vegetation has grown so miraculously because of the constant light and energy being poured out to us from both sides. As we whirl around our orbit we will gradually shift from one set of the dumb-bell-like Lanterns to the other. See, Georgia, the Great Ruby is eclipsing the Peacock. It will be another week before that eclipse is passed. One end of the dumb-bell is toward us and, in rotating end over end, it obscures the far end from our vision. These end over end gyrations occur ten times in one of our revolutions about the white Lantern. Each pair rotates at the same speed and each completes its trip about the central sun in eleven of our solar years.

"What are we to do about the vast change in our living conditions?" said she. "Are you, my husband, going to continue to try to live without proper sleep? This continual light, while not hard on the nerves, leads you solar creatures into bad habits of wakefulness."

The stern yet tender-faced young man of destiny became thoughtful.

"We have not determined what we will do as yet. It is thought that since the world itself now revolves once in twenty-two of our old solar hours and since there is no night, some new conditions of rest must establish themselves. As a matter of fact, we do not need as much rest as before. Have you noticed how long you can work here without tiring? We believe that the light or energy rays coming from these Lanterns of God are of a more active nature than those we received from old Sol. Being younger stars, that would be possible. Matter has not yet become definitely established in those balls of glorious light. Perhaps energy forms and transformations undreamed of are continuously being accomplished. We know that the Diamond sends us a constant supply of electronic energy of an entirely new type. We use it, but do not understand it. It was the same with electricity when that form of energy had its day."

**M**ESSAGE for Mr. Brown, ma'm." The messenger thrust a written note into George's hand and flashed away on his glittering autosled. The woman watched with eyes aglow. Her Carl had made that miracle vehicle possible. The mechanism he had never divulged to anyone. Attempts to pry into the motive box, a small unit no larger than a cigar box, had always ended in the loss of a life. Every sled bore a warning against tampering, but some curious souls were still foolish enough to let prying fingers bring their destruction. Carl had said that the basic thing was a nullification of earth's gravity and an electronic stream for driving the sled forward. Both the strength of gravity pull and the speed of the sled could be controlled by two simple sliding levers at the finger tips. An individual could actually rise a little way into the air and speed across the fields and hills without reference to the roadways of old.

Returning to the breakfast room, Georgia met her husband and presented the note.

"My dear!" cried he in great excitement. "Listen to this: 'Have located what we believe to be another planet in this system. Come at once.' The message is dated at Click Observatory and confirms our suspicions. We have noticed some very peculiar antics of earth in parts of her orbit. This led us to believe that very probably there were other larger dark bodies than earth in this system of suns. It is only reasonable that there may be some planets although these must be very young suns. Of course, it depends on what theory one believes regarding the origin of such systems of suns and planets. The Laplace theory of the planets originating from whirling rings of matter left in space by a rapidly contracting whirling nebula does not seem to hold water. The other theory at present prominent seems most likely."

"That is the planetesimal theory, is it not? What are its main points, Carl?"

"It is based on a spiral nebula. These nebulae are thought to originate in two ways. Either two bodies collide in space, just as The Thief did with that group of suns, and gasifies or is thrown into cosmic dust, or two hot star bodies pass too close to each other, and by the gravitational influence, one on the other, cause a tidal eruption of matter from both stars. This would stream out into space as the stars traveled on in their paths. Arrhenius has suggested that the universe is full of cosmic dust thrown out by the radiant-energy-pressure of incandescent stars. This dust is supposed to collide and gradually build up a gaseous nebula. There are two distinct types of nebulae in space, so the first two theories may form the spirals and the Arrhenius theory account for the type of nebula whose spectrum shows it to be entirely incandescent gases.

"Either way you take it, the planetesimal theory has these gigantic mists of matter slowly condense to the parts of a system such as ours. The arms of the nebulae generally have knot-like groups of matter which are thought to continue to build themselves up by gravitational attraction of matter at the expense of the surrounding smaller aggregates. Ever becoming larger by the impact of the particles of matter showering it from all sides, the planet being born becomes hot and if large enough, through continued growth, it becomes gaseous or liquid much as Jupiter was, or Saturn. The central group of a nebula, being largest to start with, gathers more matter than the others and so becomes larger and hotter than the others, since most matter means most impacts during collection. The large bodies, hotter at the beginning, remain incandescent, long after the small bodies have lost their heat by radiation.

"Our own earth still receives matter from space. Some hundred million tiny meteors are swept up by Mother Earth each day, it is estimated. This matter is supposed to be some of the remnants of our original nebula."

"How magnificent an idea!" said Georgia. "We are still in the nebular stage, albeit very near the end! Cosmic history is being made by us, now! One seldom thinks of it that way. Carl, what a truly grand play man is audience to—the formation of worlds. Are there many such in the universe?"

"You have seen the Pleiades, or Seven Sisters, have you not, Georgia? Well, large telescopes give us pictures which prove that this group is a nebular group in the far advanced stages. Although well formed, the main star bodies are gathering in cosmic veils that stretch

from star to star at present. A million years hence, perhaps, they will have cleared to brilliant individuals, having sucked in all surrounding matter by gravitational influence."

"How wonderful. But, dear, you must go at once to the observatory. They will need you."

"You honor me beyond my deserts. I shall go immediately, to be gone a week or so."

THE airport at the observatory loomed in the far distance as Carl Brown winged his way through the colored dusk toward it. The sapphire and golden Lanterns illuminated the earth in beautiful soft light and far off on the horizon appeared the other pair of Colored Jewels long since left behind by earth in her dizzy rush about the central sun.

Alighting at the port from his aerosled, the young inventor hastened to the observatory. Here he was met by a group of enthusiastic astronomers who conducted him to the observation platform and pointed with excited gestures to the clear image of a planet in the field of the telescope. A dull gray it was in color, but with unmistakable polar caps of snow and ice much like the appearance of Mars, back in the solar system.

"The fact that we have light here all the time makes observation very difficult. Fortunately, the Colored Jewels do not give such intense light as the White Lantern. Were we faced all the time by that white light we would be unable to see any stars or planets and would be completely at sea as to all astronomical data. In fact, the science of star study would go by the board, for we could never see the stars about us, at least not with our present types of telescopes."

"That planet," inquired Carl, "have you calculated its distance yet? What would you judge about its ability to support life?"

"We find it to be about seventy million miles away, traveling in an orbit almost at right angles to us. We will never pass closer to it than fifty million miles. It seems to have a prodigious speed—about seven hundred miles per second."

Further study revealed that the planet was fast approaching its near point to earth and that the earth was responding to its gravitational attraction.

A week of observation gave a mass of detail concerning the new planet. It was enormous, but had a density much the same as that of earth. The last day of observation showed a peculiar jet or path of violet haze streaking away from the planet in such a direction that, if extended indefinitely, it would cross the earth's orbit. The probable meaning of it struck home in but one mind. Carl Brown meant to investigate this; if his suspicions were confirmed he would prepare the world for a grand piece of news. It meant either war to extinction or else advancement such as the world had not dreamed about. A great emotional lump swelled in the scientist's throat and his eyes flooded with tears at the high thrill he tried to subdue—if he could be the means of freeing mankind from the fetters of labor!

Returning home *via* air sled, the excited inventor confided to his wife his thoughts. She agreed with him, and they both settled to an impatient wait of six months or so.

Constant study of the heavens brought conviction to Carl Brown, and it was with great pride and excitement that he finally announced through the public radiophone that the earth was soon to be host to a group of visitors

from the planet which had passed about six months ago. Whether the visit was to be hostile or peaceful remained to be seen. Many scoffed, saying that at last fame had gone to the head of the young inventor, who had skyrocketed into public favor so gloriously. Some believed implicitly in what he said and made preparations for receiving the visitors. Most people were willing to be shown, and if the visitors, or any sign of them, appeared, the public were willing to give Brown credit for having discovered the oncoming space traveler.

One month later a beautiful ether-ship circled the earth once and settled to the surface like a ball of thistle-down. Golden and burnished it was, fully a thousand feet long and a hundred high. Only one opening showed—a window at the very nose of the ship. Slowly a door opened, then a second and a third. After that nothing happened. No one came out; no movement could be detected about.

Before any moves were made, the prophet of the ship's visit was sought out. He should be the first to go into this seemingly empty visitor. Taking with him a large group of his fellow scientists, Carl Brown entered the body of the ship. The instant this group had passed in, the curious-minded followed, crowding into the ship.

It was after about two hundred souls had entered the great golden craft that the blow fell. With no warning whatever, the doors on the monster snapped shut, and with no further ado it slowly rose, pointed its nose at one pair of the Colored Jewels, and with ever increasing speed streaked out into space. With arms raised toward the fast disappearing ship, Georgia Brown stood in mute appeal to the Creator, but the Lanterns of God sailed majestically on, lighting the highways of eternity.

SOMEONE was shaking the universe, the Jewels were skittering off and their glow was becoming bright and light like Old Sol himself.

"Georgia, dear, come! Come, child! Stop your shouting."

"Carl! Carl! My husband!" cried the girl, as she reached out, grasping her mother's arm and the white sheets of her own little bed.

"You have been calling Carl for five minutes, my daughter. He is waiting on the phone for you. Hurry."

Georgia rubbed her eyes, smiled guiltily and hopped out of bed into her red mules and robe. Down the hall she flew to the phone.

"Hello, dear—yes, yes, I am all right, but I just woke up. Tell me, did you work on your machine last night—the one with which you were going to send me to Mars, or maybe Jupiter?"

From the receiver came the eager voice of the young inventor.

"Yes, sweetheart, I worked on it, but the wiring got mixed up or something and it caught fire and burned completely up. The whole workshop burned. But don't let that bother you—I've sold my gasoline saver to the General Auto Corporation! It means a fortune for us—that is, if you'll forgive my mean streak of last night."

"Forgive you? Why, of course, Carl. It is I who should ask your forgiveness for my stubborn ways. How glad I am that terrible machine of yours burned. Promise me you won't build another one—if I promise to become Mrs. Brown in June, dear? Cross your heart? You're a darling. Don't forget, I want to hear all about the sale of 'our' gasoline saver. I'll be waiting for you tonight *before* ten o'clock!"