

DELL

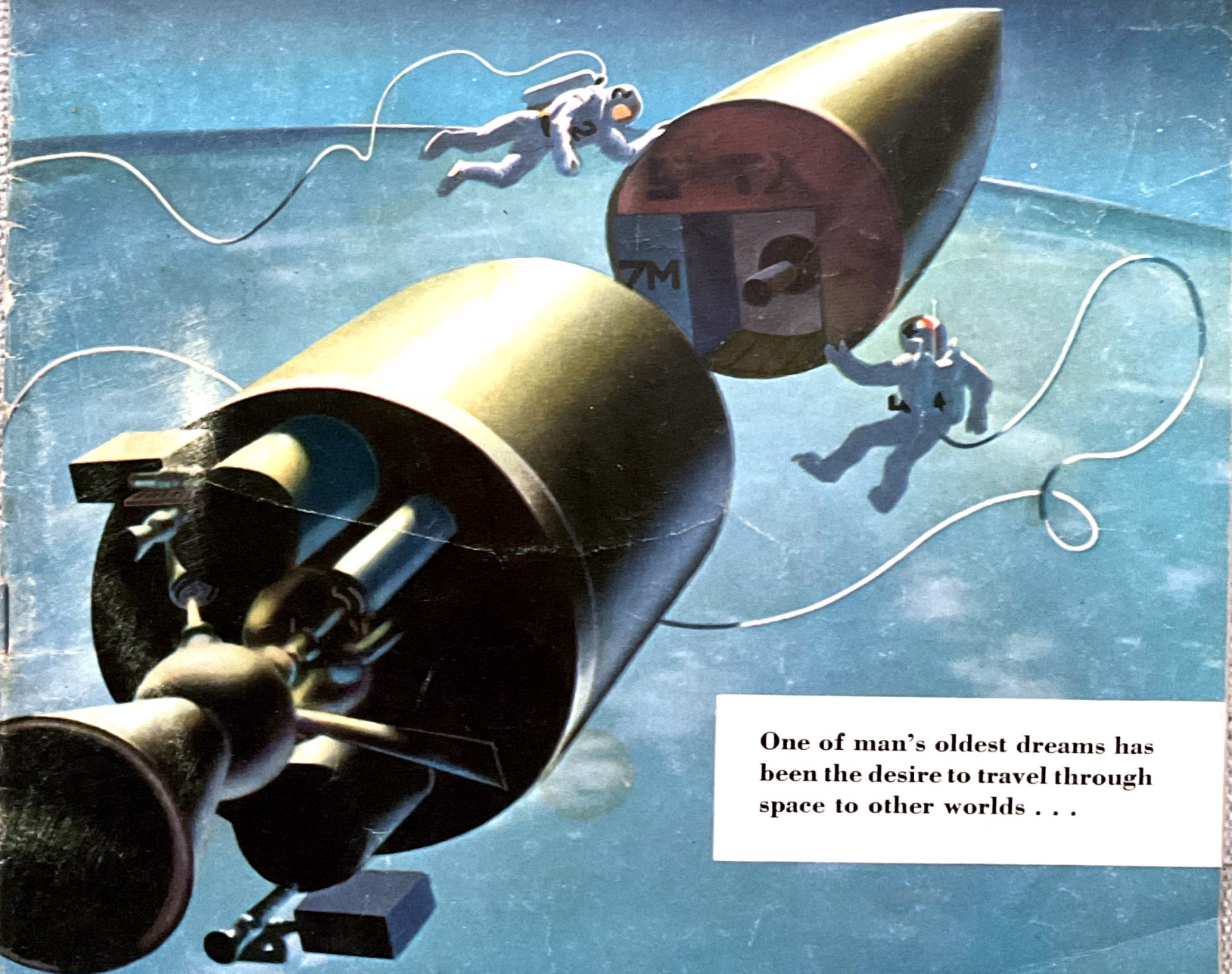
NO. 716

10¢

Walt Disney's

MAN IN SPACE

A SCIENCE FEATURE FROM
TOMORROWLAND



One of man's oldest dreams has been the desire to travel through space to other worlds . . .



SCIENCE FICTION

GIVES WAY TO

**SCIENCE-
FACTUAL**

Down through the centuries, men have written about travel into space...to the moon...fantastic and imaginative tales of how it would be done and what it would be like. However, these were merely stories based upon men's dreams.

Now, with the announcement by our government of a plan to launch an artificial satellite, it seems that we are on the threshold of actually taking man into space. The greatest minds in all the branches of science are pooling their knowledge and research to make the writers' fiction become fact. The far-distant future that men dreamed about is fast approaching.

MAN IN SPACE looks into the near future with ideas of how traveling through space may be accomplished and of man's probable feelings and experiences.

Walt Disney's **MAN IN SPACE**, No. 716. Published by Dell Publishing Co., Inc., 261 Fifth Avenue, New York 16, N. Y.; George T. Delacorte, Jr., President; Helen Meyer, Vice-President; Albert P. Delacorte, Vice-President. Single copies, 10 cents. Copyright © 1956, by Walt Disney Productions. All rights reserved throughout the world. Nothing herein contained to be reproduced without permission of Walt Disney Productions. Authorized edition. Printed in U.S.A. Designed and produced by Western Printing & Lithographing Co.

Walt Disney's

MAN IN SPACE

A SCIENCE FEATURE FROM **TOMORROWLAND**



THROUGH THE AGES, MAN HAS GAZED AT THE SKY... WONDERING WHAT UNKNOWN MYSTERIES IT HELD... LONGING TO EXPLORE...



PERHAPS, FIRST OF ALL... THE MOON!

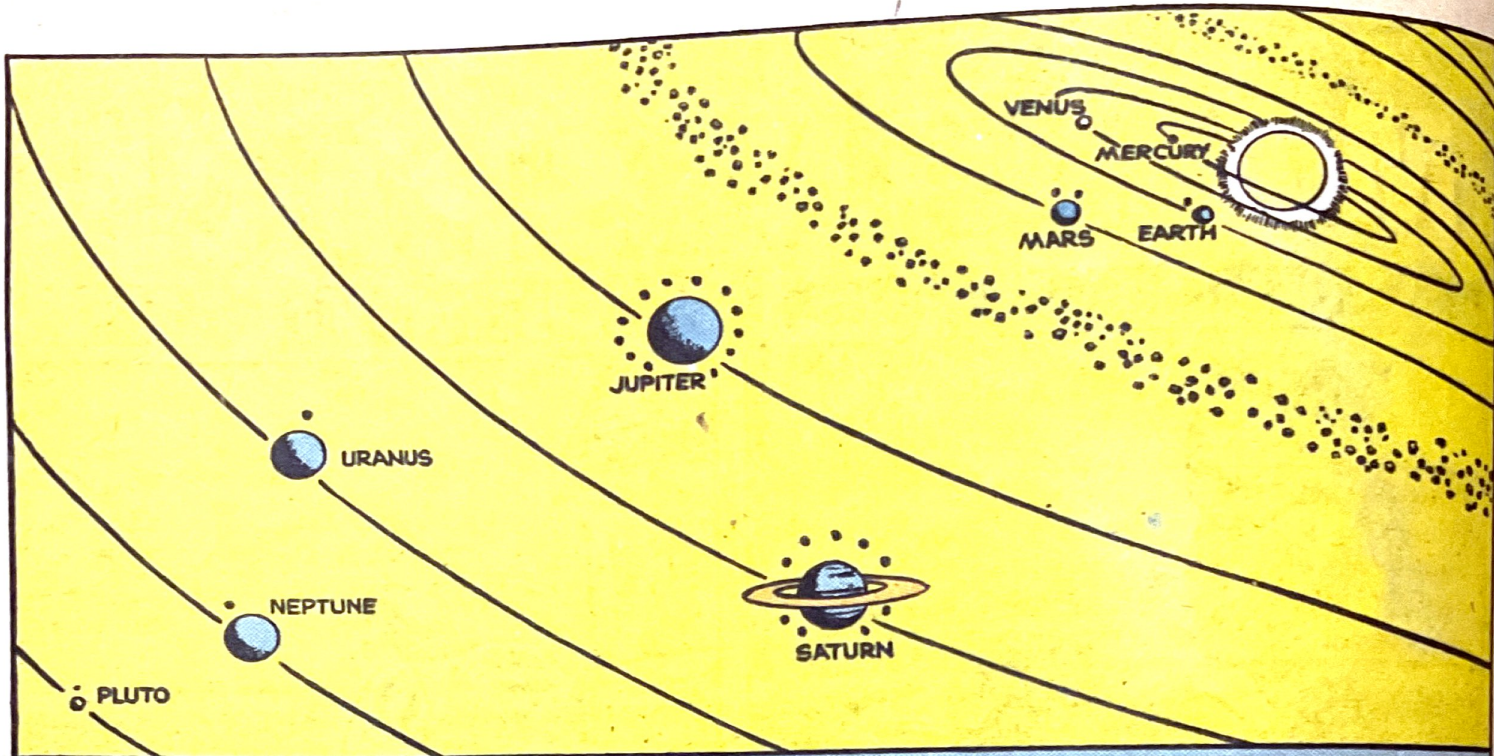


The moon is a dead world without atmosphere... a silent, unchanging desert where temperatures drop to 250 degrees below zero on the shadow side and boil at over 200 degrees on the side toward the sun.



How the moon came to be is a mystery, but our astronomers believe that the solar system was once part of a large, swirling cloud of cosmic gases and dust.

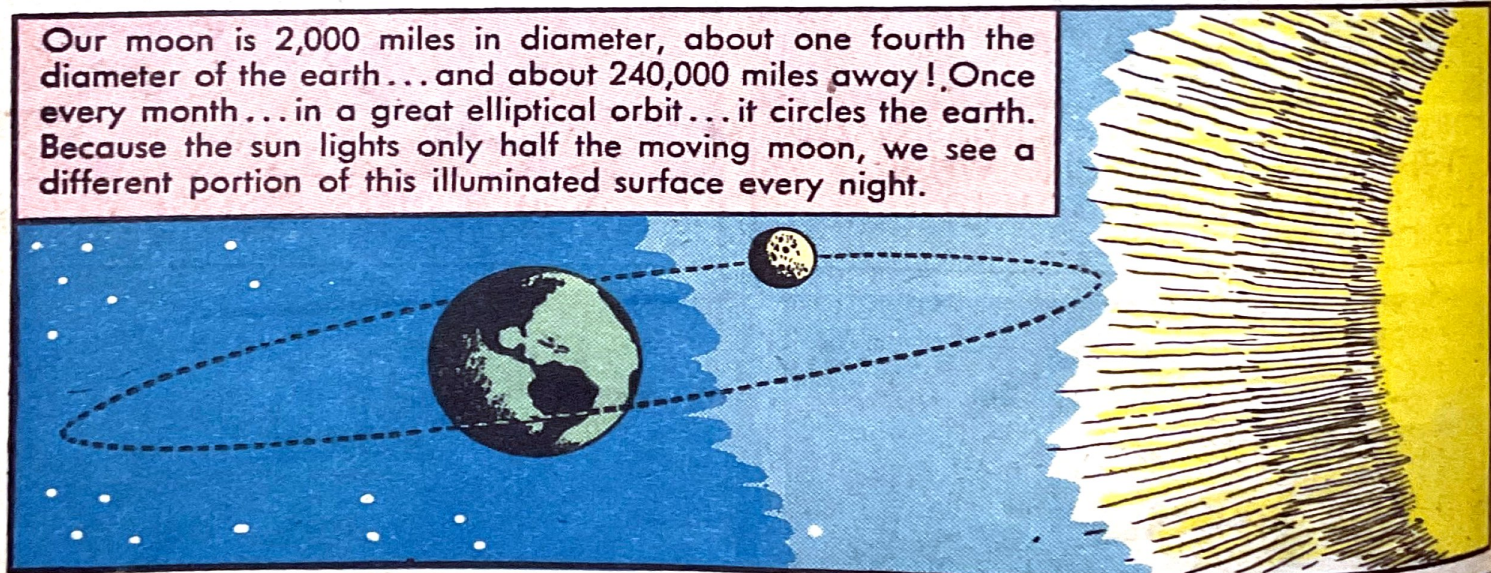
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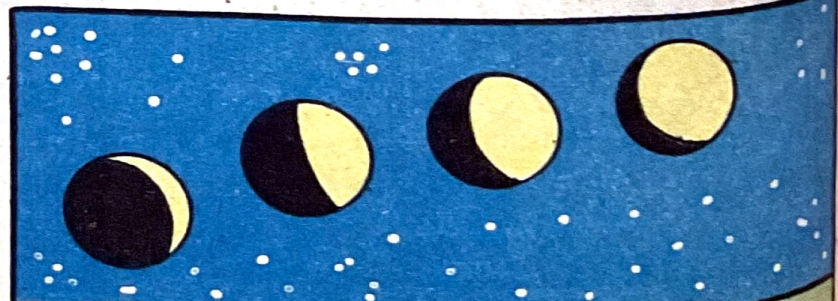
This cloud gradually condensed to form the sun... the nine planets endlessly spinning around it... and even their moons whirling in smaller orbits around each of them. Giant

Jupiter has **TWELVE MOONS**. Saturn has **NINE**. Mars has two. Mercury and Venus are the only planets without at least one moon. We have only one, of course.

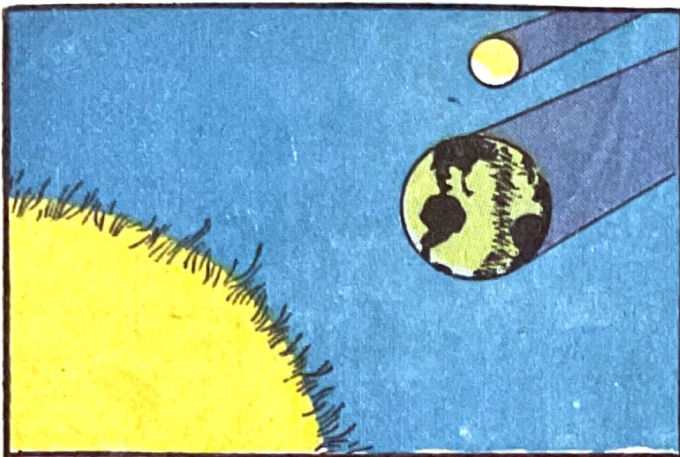
Our moon is 2,000 miles in diameter, about one fourth the diameter of the earth... and about 240,000 miles away! Once every month... in a great elliptical orbit... it circles the earth. Because the sun lights only half the moving moon, we see a different portion of this illuminated surface every night.



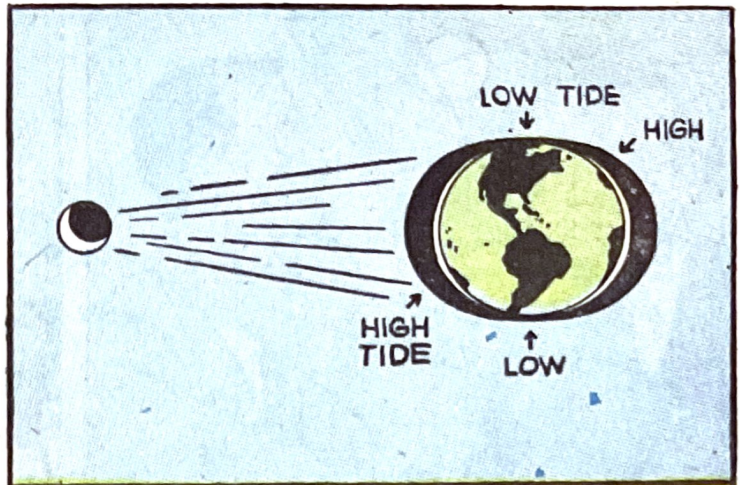
When the moon is between earth and the sun, we see only the shadow side... and call this the **NEW MOON**.



During the following two weeks, as it progresses on its circular path, we see more and more of the lighted half... until it reaches a point on the other side of the earth from the sun...



Where it appears to us as a **FULL MOON**. Then, as it continues on its circular path, we see less and less of its lighted half until finally, it completes its monthly trip and becomes a **NEW MOON** once again.



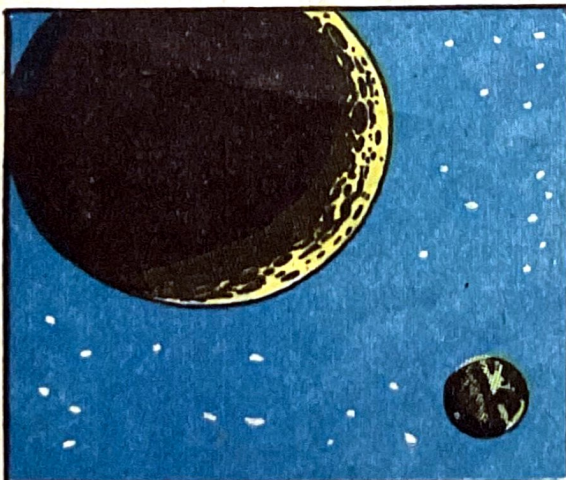
But **EVERY DAY**, the moon shows its influence on our lives. Its gravitational pull on the oceans of our earth causes high and low tides around the world.



For centuries, distance veiled the moon in mystery... but powerful telescopes and cameras now give us close-ups of the moon's surface... its rugged mountains, some more than a mile higher than the loftiest peak on earth...



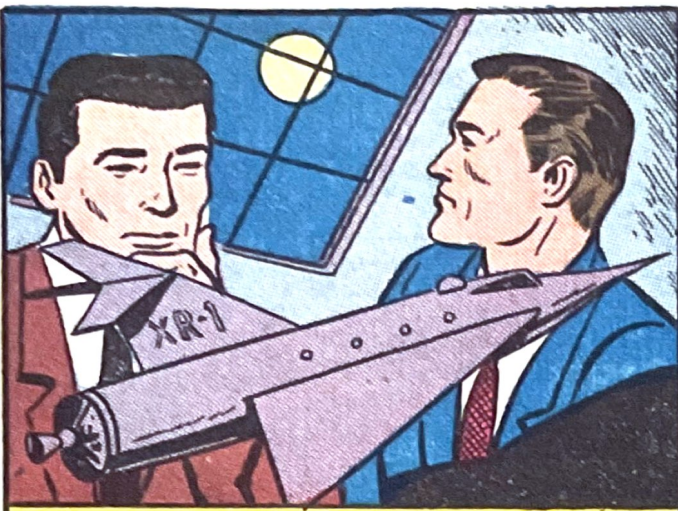
Its craters... ranging in size from small potholes to giant openings one hundred forty-six miles across!



Experts agree that the **OTHER** side of the moon probably looks much like the side that always faces us. But **NO MAN HAS EVER SEEN IT**.



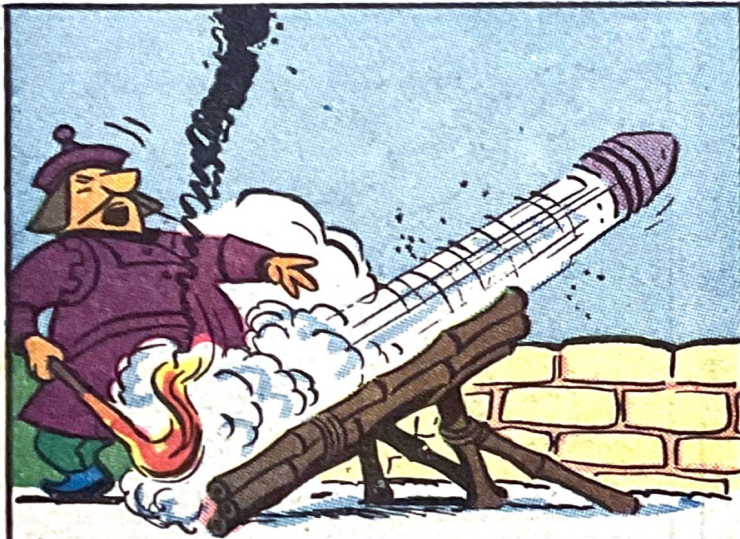
Great discoveries have brought us to the threshold of a new frontier... interplanetary space... and surely one of man's first objectives in the exploration of space will be the moon! Even now, scientists and engineers are planning that trip to the other side of the moon.



On one point all seem to agree... whether we use chemical fuels or atomic energy, it will be a rocket powered ship that will finally take man into space.



To find the beginnings of our rocket history, we must go back to thirteenth-century China... the battle of KAI FUNG FOO, to be exact.



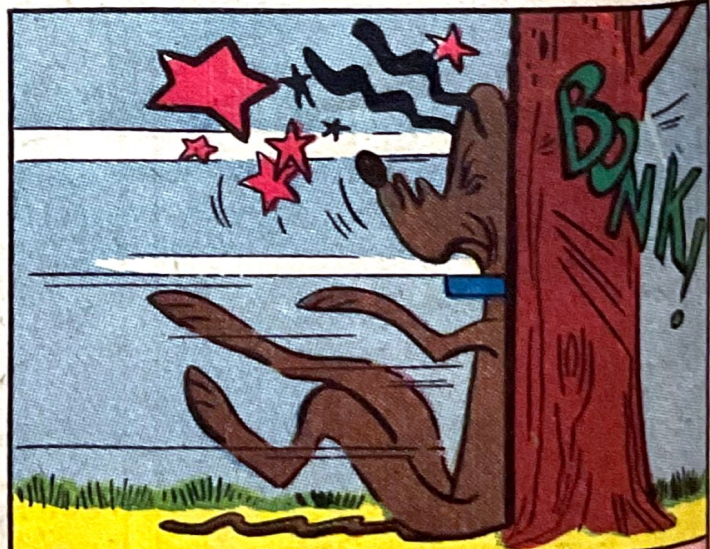
That was the first time explosive forces were used to propel flying missiles.

Over five hundred years later, Sir Isaac Newton explained this phenomenon.

For every ACTION force, there is an equal but opposite REACTION force.

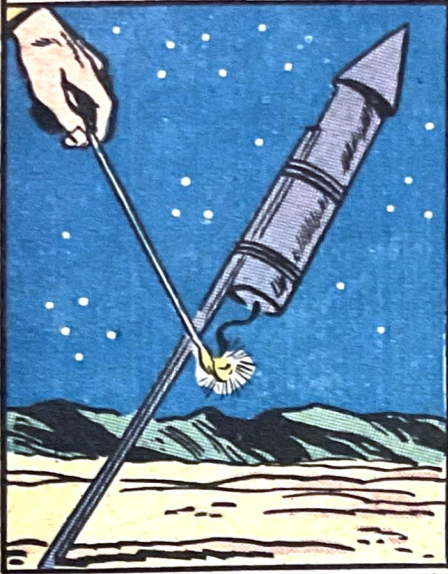


This principle is illustrated every time your pet dog sneezes. That's an ACTION force...



Which pushes his head back with an equal REACTION force!

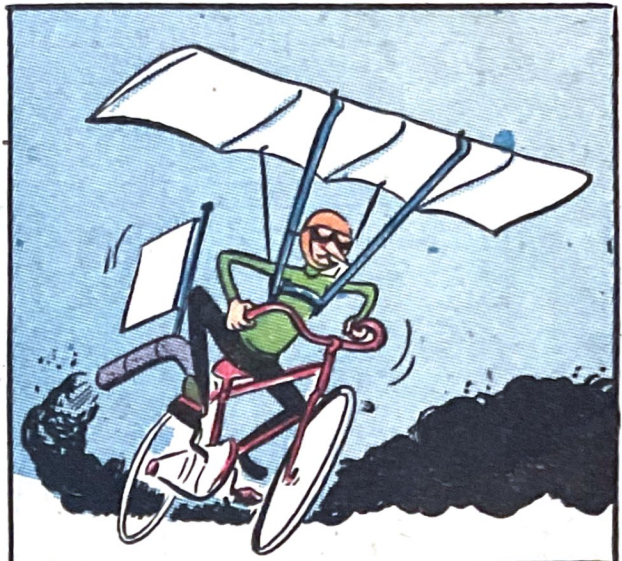
Also, when an ordinary skyrocket is fired...



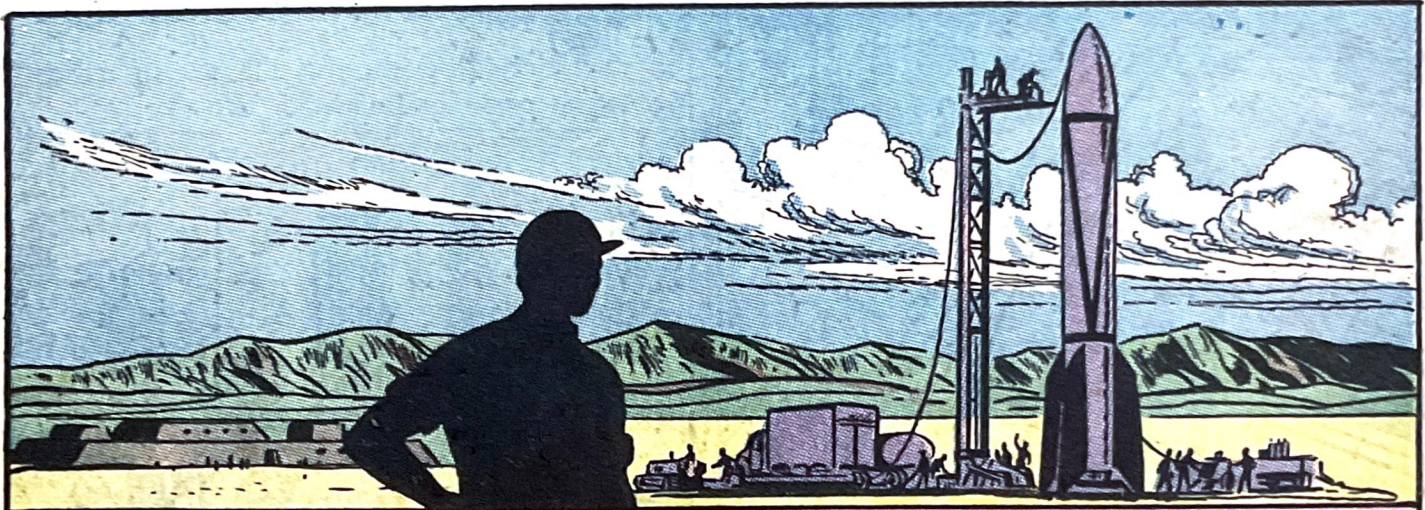
The explosive force THIS way.



Forces the sky-rocket THIS way.



Early rocket experimenters met with varying degrees of success.



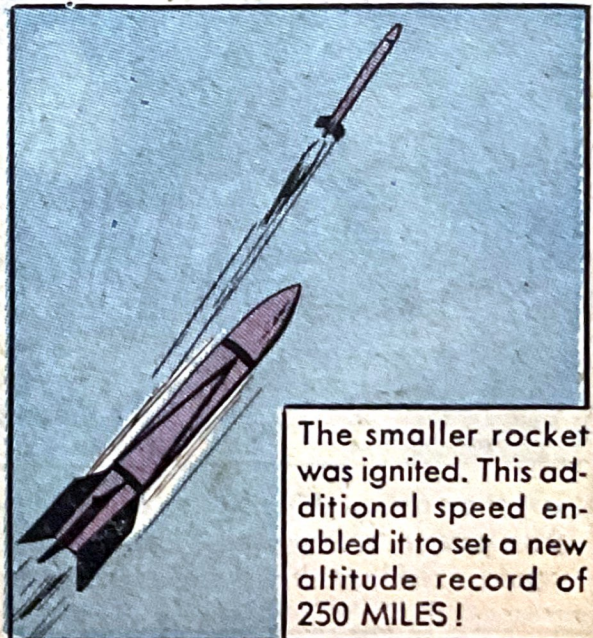
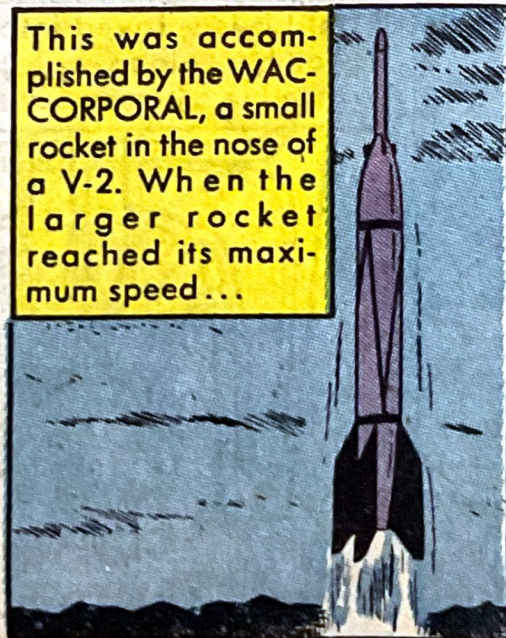
In 1945, our government began a serious rocket-building program. With knowledge gained from captured German V-2 rockets, our proving grounds at White Sands, New Mexico, developed new and improved types like the MARTIN...the VIKING...the CORPORAL.

Within four years, space history was made...

A rocket had reached OUTER SPACE!



This was accomplished by the WAC-CORPORAL, a small rocket in the nose of a V-2. When the larger rocket reached its maximum speed...



The smaller rocket was ignited. This additional speed enabled it to set a new altitude record of 250 MILES!

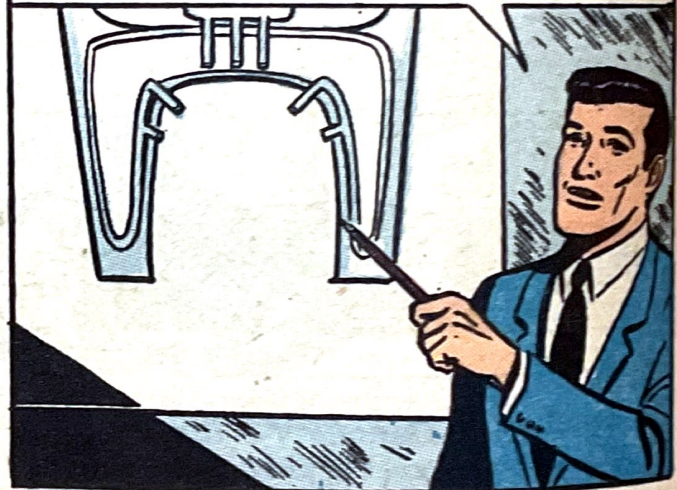
That was the first time a man-made object had reached the realm of outer space! It was a TWO-STAGE rocket. The next logical step is a THREE-STAGE ROCKET.



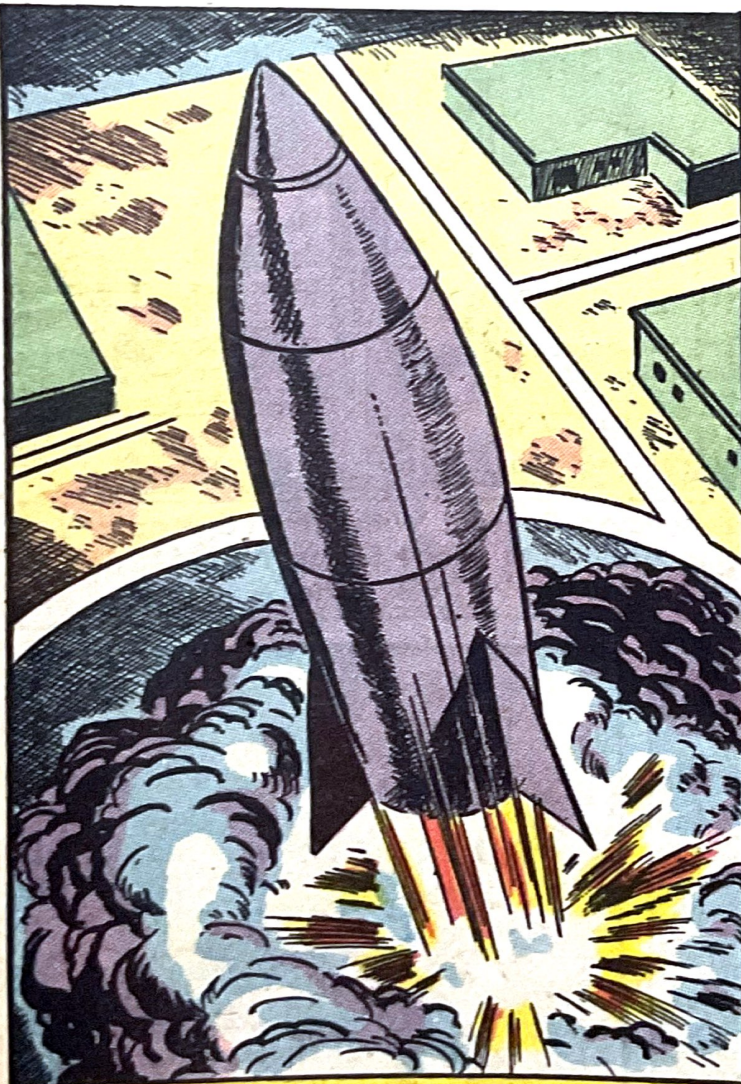
Our three-stage rocket will use LIQUID OXYGEN and ALCOHOL... and will stand about seventy feet high.



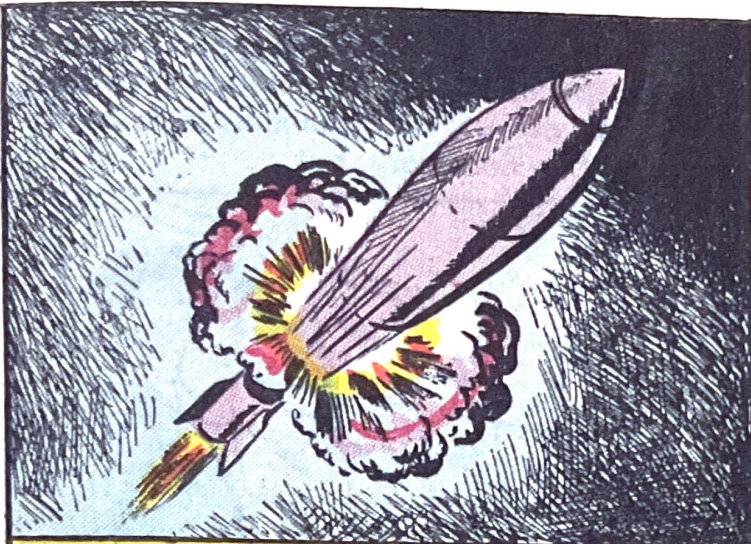
If it were not for its design. Fuel alcohol is first circulated around the motor as a constant cooling device...



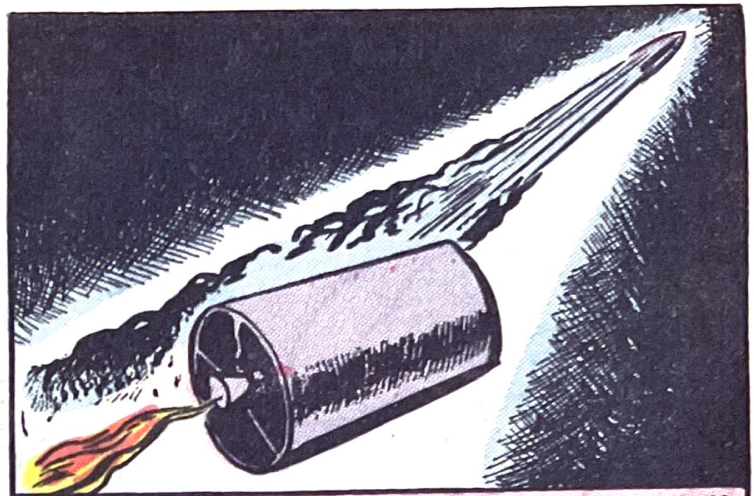
Until it is sprayed into the combustion chamber, along with the oxygen, and ignited in a continuous explosion.



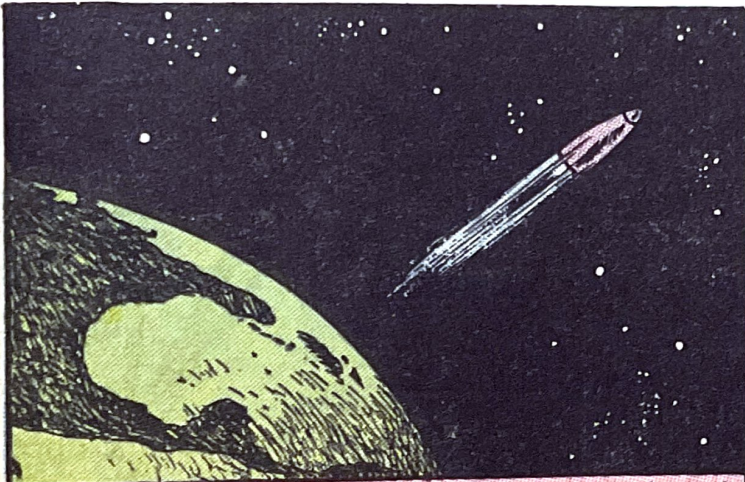
To lift an actual ship this size will take tremendous power... a sustained torch-like blast that would quickly melt the rocket motor itself...



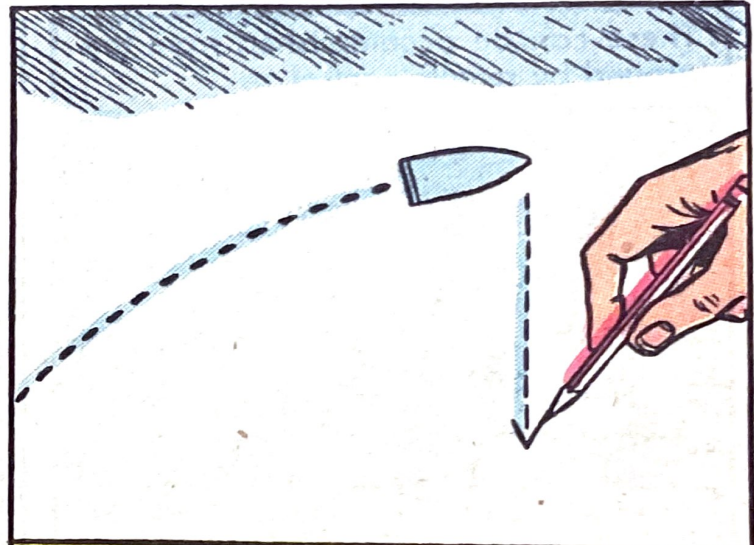
Within sixty-five seconds of the blast-off, our rocket will reach an altitude of twenty miles and drop its first section.



At forty-five miles, the second stage is cast off ... the third stage leaping higher and faster, continuing to fire until it reaches an altitude of seventy miles ...

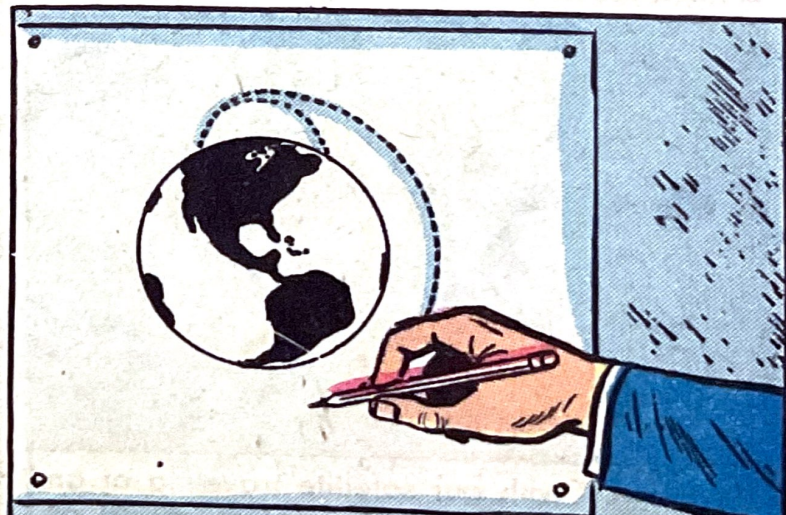
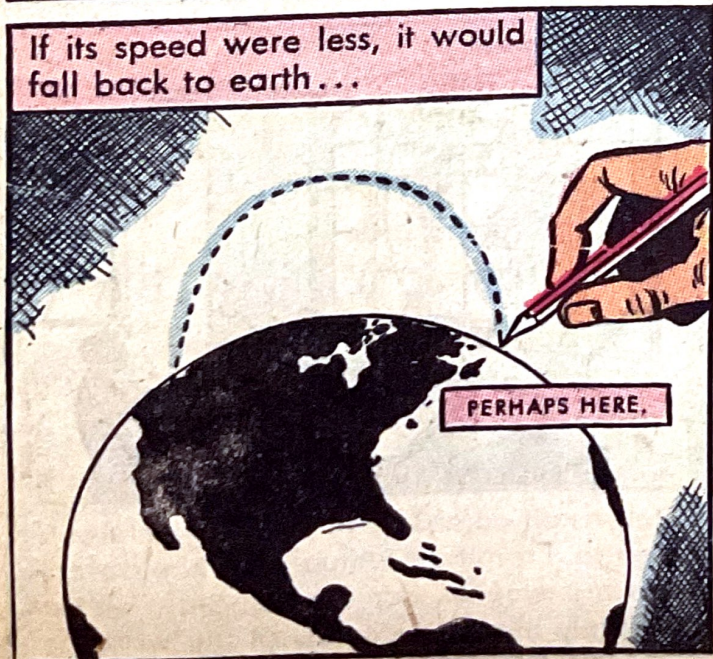


And a speed of over 18,000 miles per hour! At this point, its momentum would carry it right out into space, if it were not for the pull of earth's gravity.



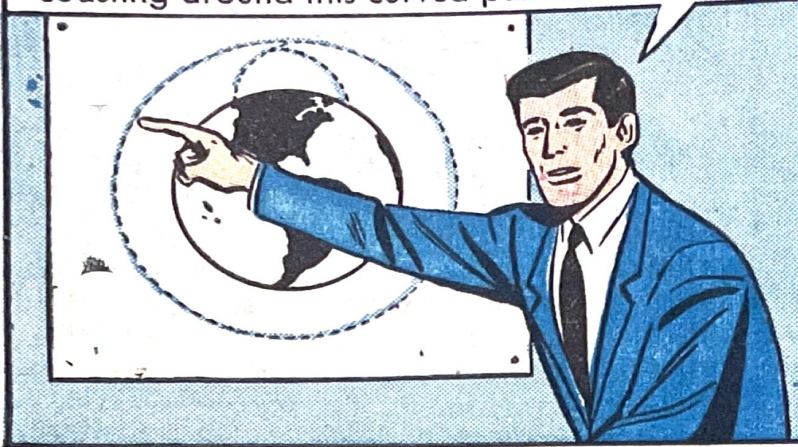
This downward pull bends its upward course back ... on a curved path.

If its speed were less, it would fall back to earth ...

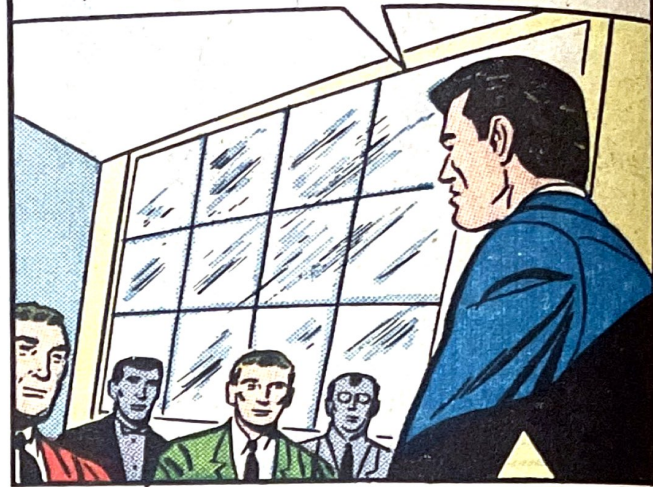


But on its carefully calculated course, it is carried high enough so that its downward curve matches the curvature of the earth ...

And it keeps falling **AROUND THE EARTH** instead! As long as it maintains sufficient speed, its centrifugal force outward will be balanced by the downward pull of gravity and keep it coasting around this curved path indefinitely.



And it **CAN** maintain its speed because, in space, there is no air friction to slow it down! A few adjustments in its course may be necessary, but...

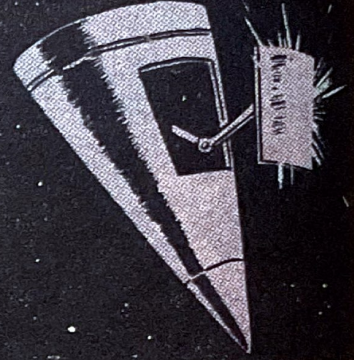


These can be accomplished from the ground by remote control.

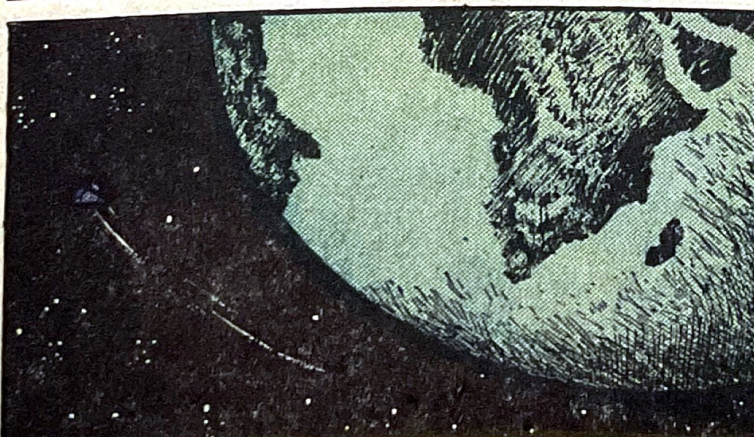


After which it will continue to coast out there forever... a man-made satellite... our first explorer in space... and a big step on that first trip to the moon!

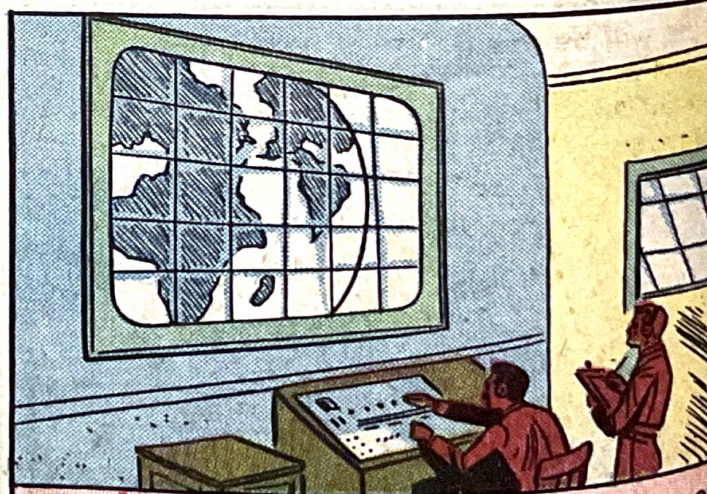
You see, this instrument-carrying rocket will give us a lot of important information we **NEED** before we dare let a man venture into space.



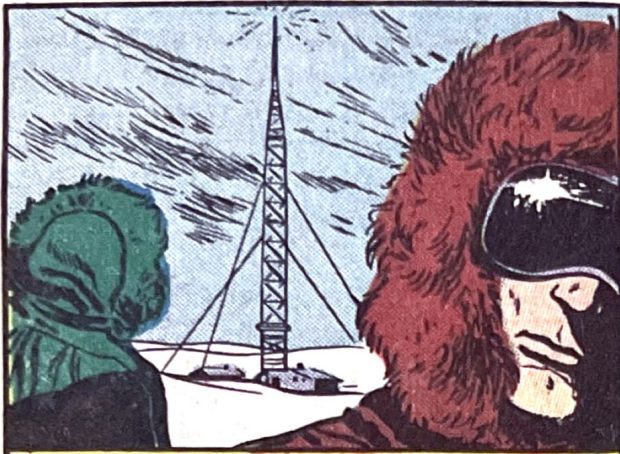
To run the scientific apparatus in it, a mirror will focus the intense rays of the sun onto a silicon battery... converting solar energy into electricity.



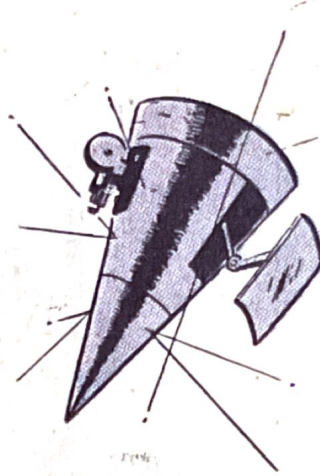
So now... with our satellite traveling at an altitude of 1,075 miles, at a speed of nearly 16,000 miles per hour... it will make a complete trip around the world **EVERY TWO HOURS!**



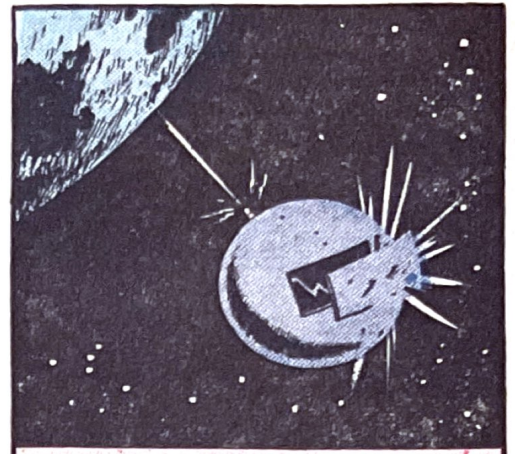
Its television camera will send us pictures of the earth. From that altitude, we can observe storm movements. For the first time, we can accurately map the oceans of the world.



Every two hours, the satellite will cross the North Pole and transmit data to a receiving station below... important data on cosmic rays... on space temperature changes...



And on meteorites. Hits by meteorites as small as grains of sand will be recorded!



Even if the first of these satellites is no larger than a basketball, it will provide invaluable answers to many questions.

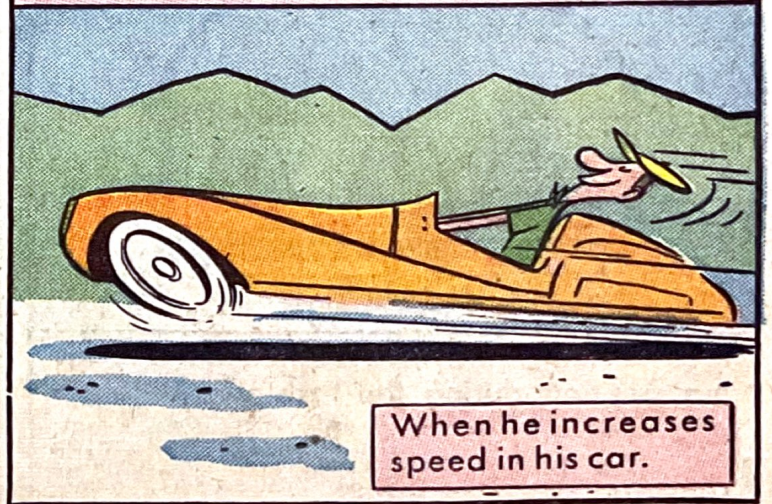
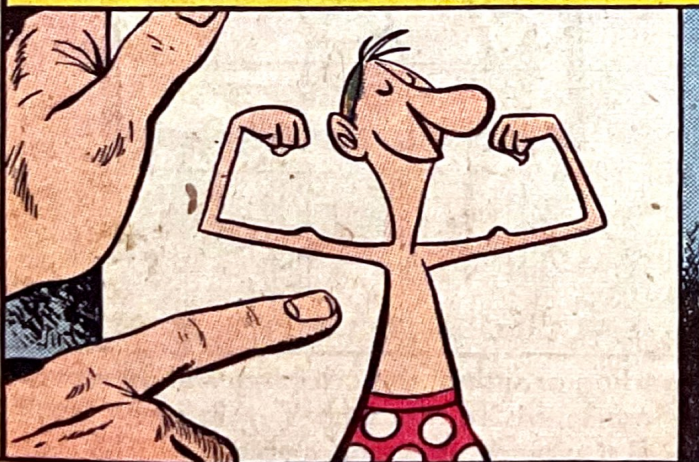
But it cannot answer one of the biggest questions... how will MAN himself react, mentally and physically, to the unearthly experience of space travel? This is the concern of a new field of science called SPACE MEDICINE.

To illustrate the complex problems of space medicine, we designed, as our guinea pig, a sort of COMMON MAN.

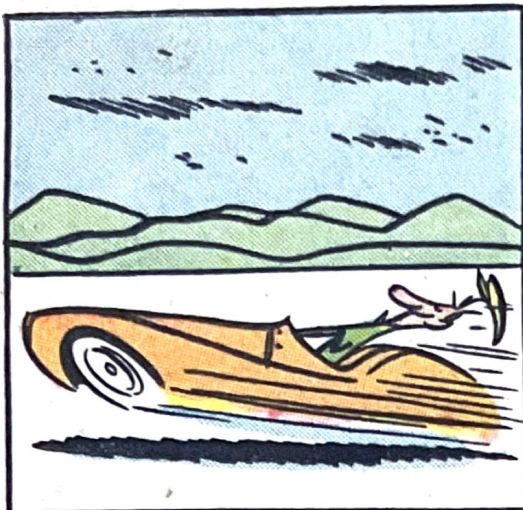


But a very UN-common man, too... since he will be the first of a new species! We will call him HOMO SAPIENS EXTRATERRESTRIALIS... or SPACE MAN.

One of our first questions is... will he be able to bear the tremendous stresses of being fired into space? He gets an inkling of these...

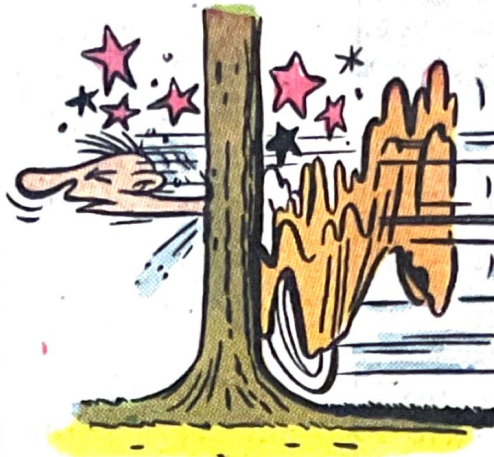


When he increases speed in his car.



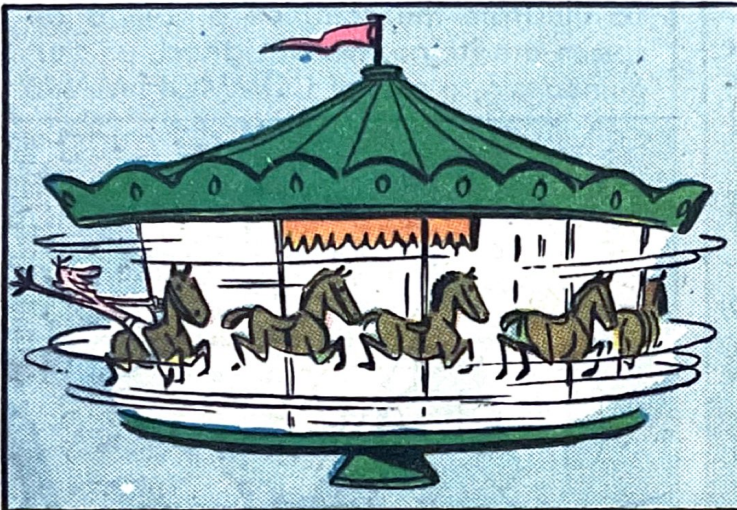
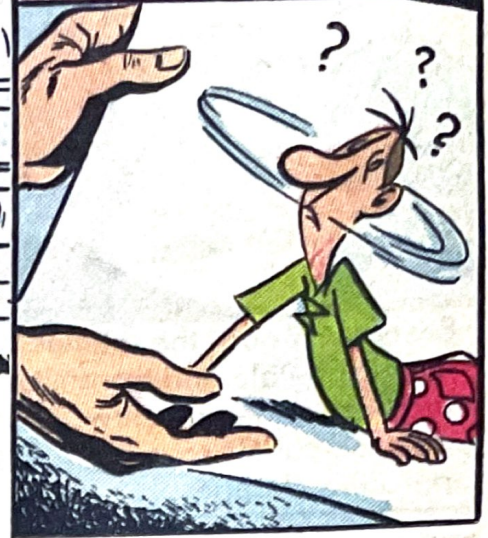
As the car moves forward, he is pressed against the back of his seat... his body resisting the change of motion.

Then, when the car STOPS .

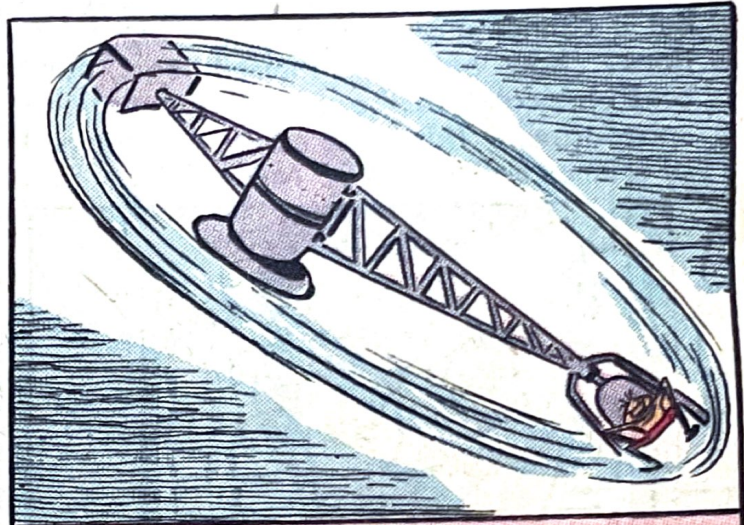


his body moves forward.

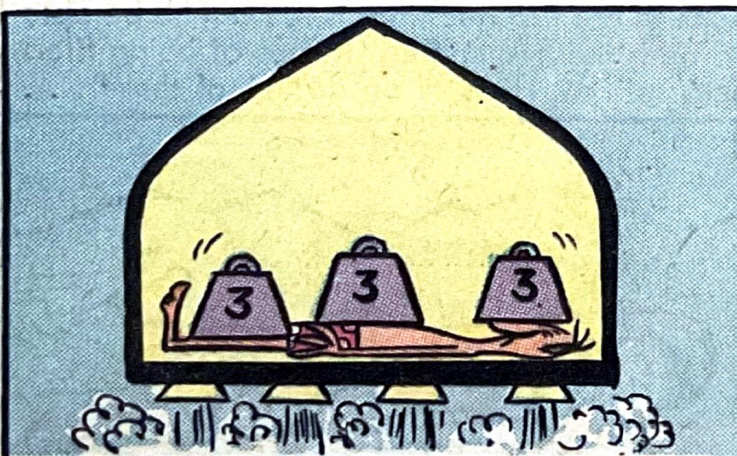
Perhaps this would be a good time to explain centrifugal force!



It is the force exerted outward by anything spinning around a center. You feel it WHEN YOU'RE ON A MERRY-GO-ROUND.



With a machine called a centrifuge, we can duplicate the crushing pressures our space man will have to endure in a rocket take-off.

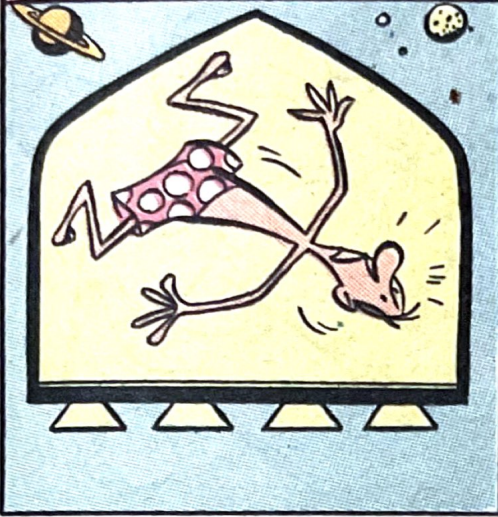


From such tests, we have learned that a reclining position during the take-off will allow pressures to be more evenly distributed over his entire body... a pressure NINE TIMES HIS WEIGHT, OR MORE.

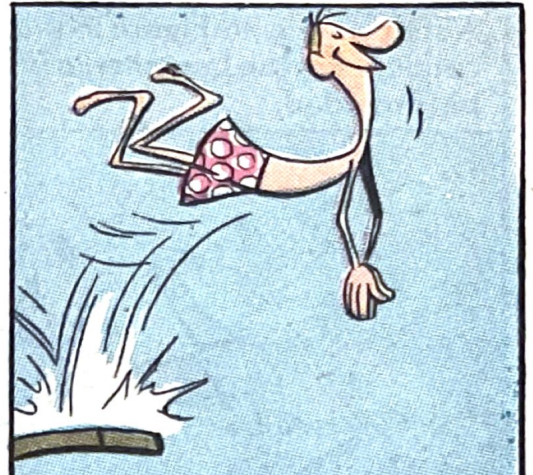


Standing or sitting, this crushing weight would be concentrated on such a relatively small area, it would be unendurable.

When the engine stops, man will face his next big problem ... **WEIGHTLESSNESS.**

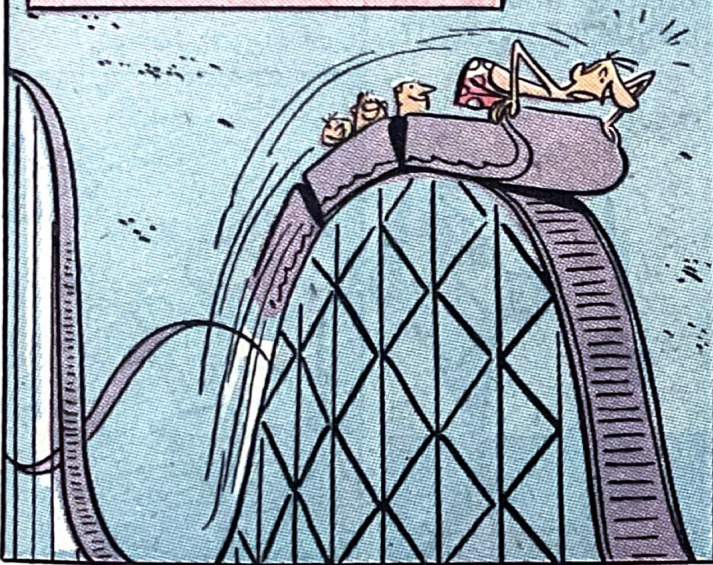


In space ... a man, a feather, a bubble, or a piece of iron ... will have the same weight.

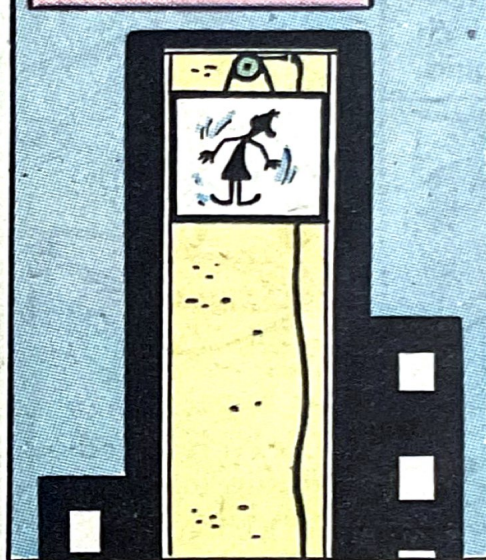


Here on earth, **MOMENTARY** weightlessness is not too strange to us. We experience it **IN A DIVE...**

ON A ROLLER COASTER...

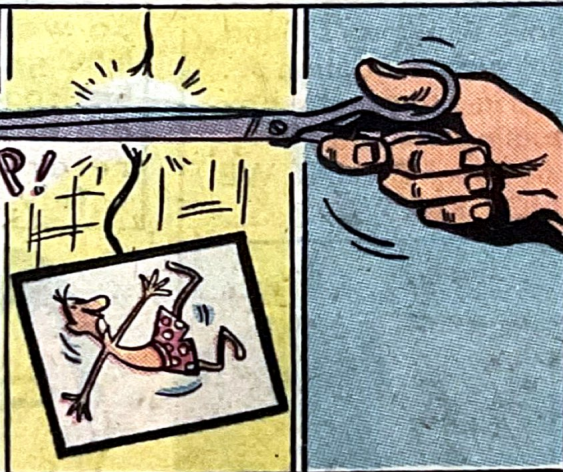


IN AN ELEVATOR...



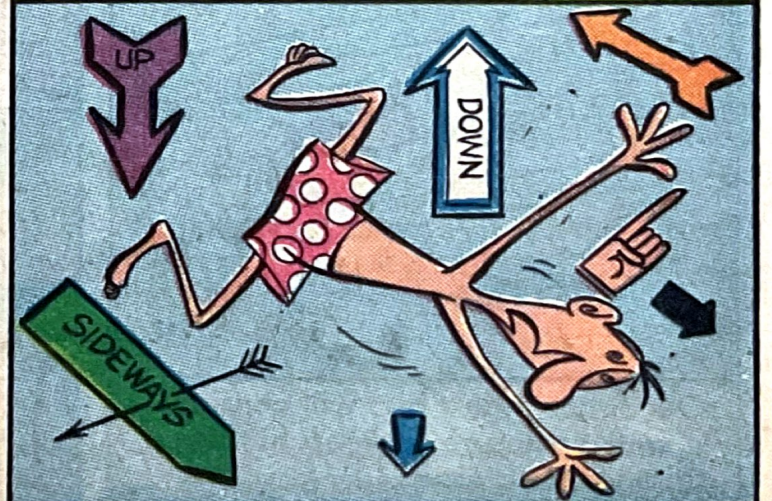
But these are just **MOMENTS** of weightlessness! However, if we remove all support by cutting the elevator cable, we produce the weightlessness man will feel in space.

SNIP!

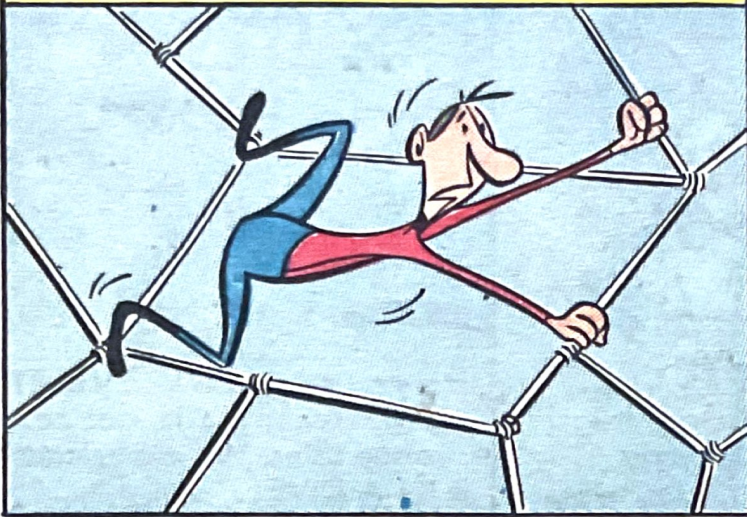


It will take iron nerves, waiting for the impact that never comes! We can only hope that man in space will get used to this constant feeling of falling.

Without weight, our ideas of up and down will no longer exist! Man will have trouble adjusting himself.



A space man must learn to move with extreme caution. For the beginner, a web of ropes may be provided.



Dining under conditions of weightlessness will present new and surprising problems... particularly with liquids. THEY WON'T POUR.



They must be conveyed by TITRATION TUBES which will hold the liquid.



Plastic bottles will be used so liquids can be SQUEEZED OUT.

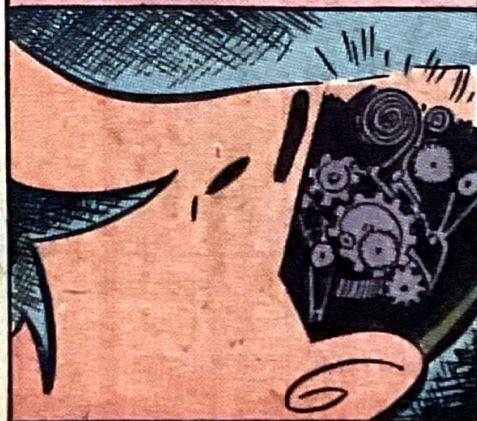


Space etiquette will call for extensive use of sugar tongs.



Our space man's bed will consist of a web enclosure to keep him from drifting in his sleep.

But how will man's mind react to such a situation... trapped in a tiny metal box... floating in the nothingness of space? THAT WE DO NOT KNOW.



So we must plan intelligently if these first space pioneers are to survive and return to earth safely.



When will we make a try at the first trip to the moon?

From what we've learned from our satellite, we're getting closer! Here is the plan for a trip AROUND

THE MOON. It must be made in two phases, because a rocket ship taking off from the earth...

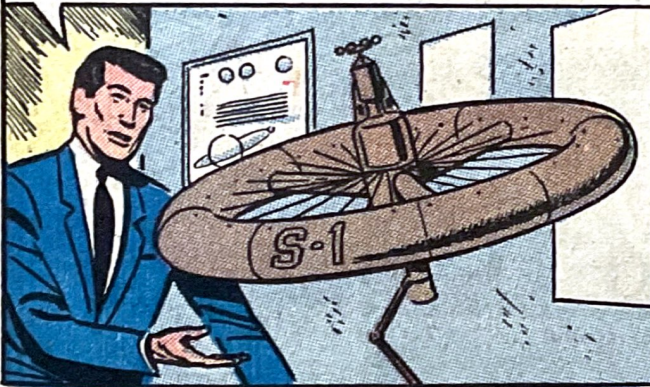


Will use almost all the fuel it can carry to reach a speed great enough to balance the pull of gravity. Then, unpowered... as with our unmanned satellite... it will keep circling the earth in an orbit outside of the atmosphere.

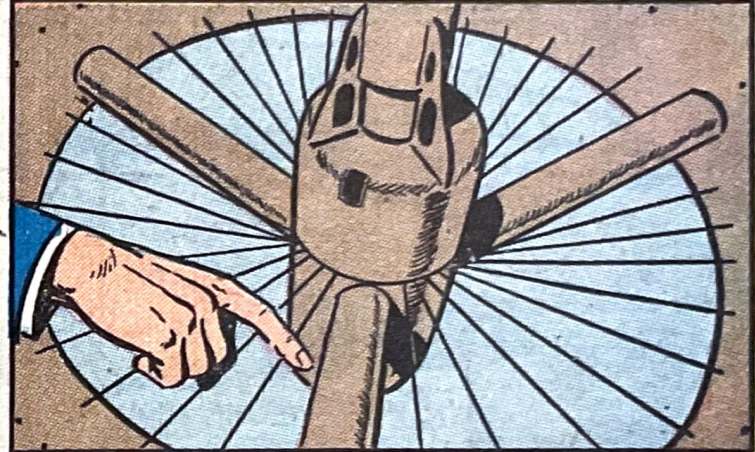


This is the first phase. However, if we can refuel the ship in this orbit, with fuel from cargo rocket ships, it can set out on the second phase... the trip around the moon and back.

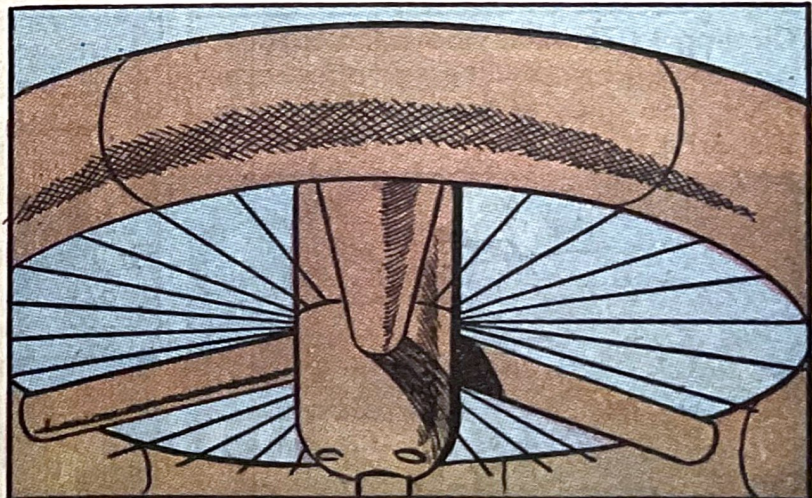
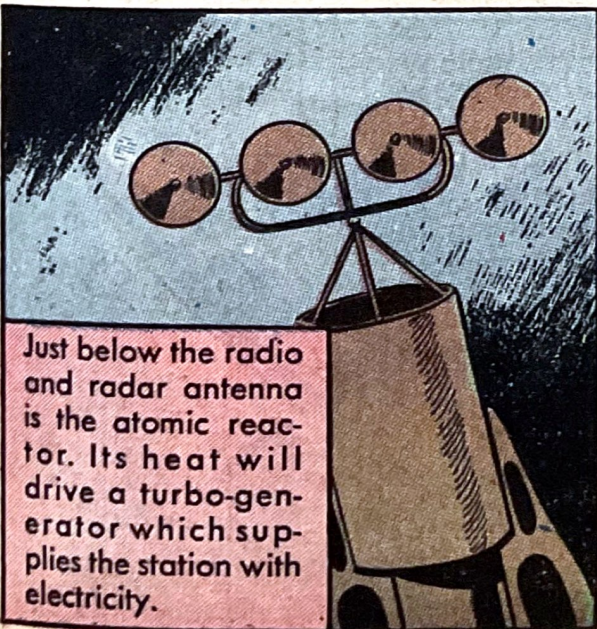
To facilitate the refueling operation, we will set up an advance base in the orbit, 1,000 miles above the earth. This space station will be headquarters for the final ascent to the moon. It will have the shape of a wheel measuring 200 feet across.



The outside rim will contain living and working quarters for a crew of fifty men. Access to the station will be through an air lock located in the hub.

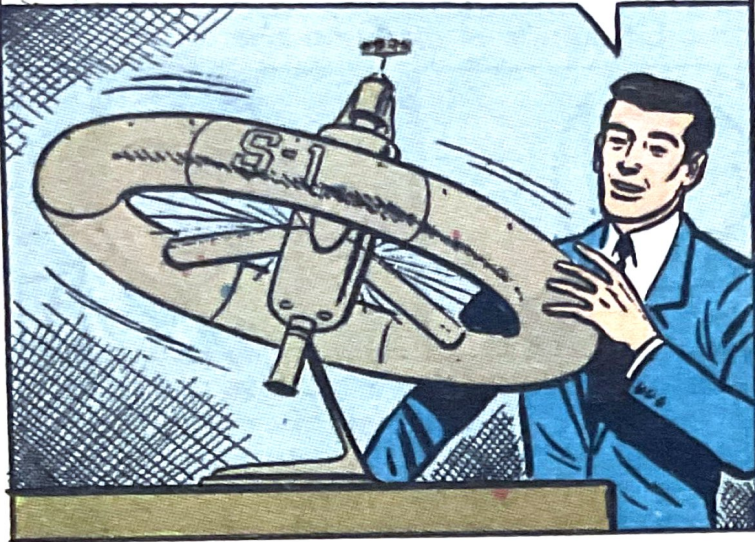


Just below the radio and radar antenna is the atomic reactor. Its heat will drive a turbo-generator which supplies the station with electricity.

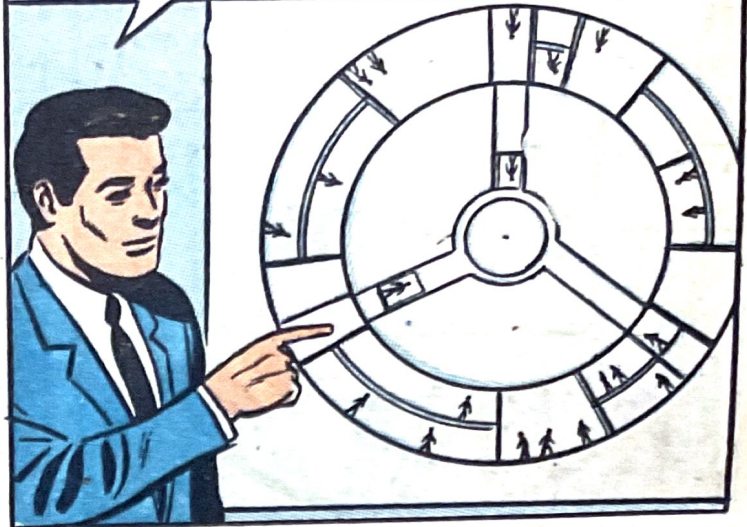


The three large spokes are elevator shafts. The small pipes are used as condensers for the turbo-generator and the air conditioning plant.

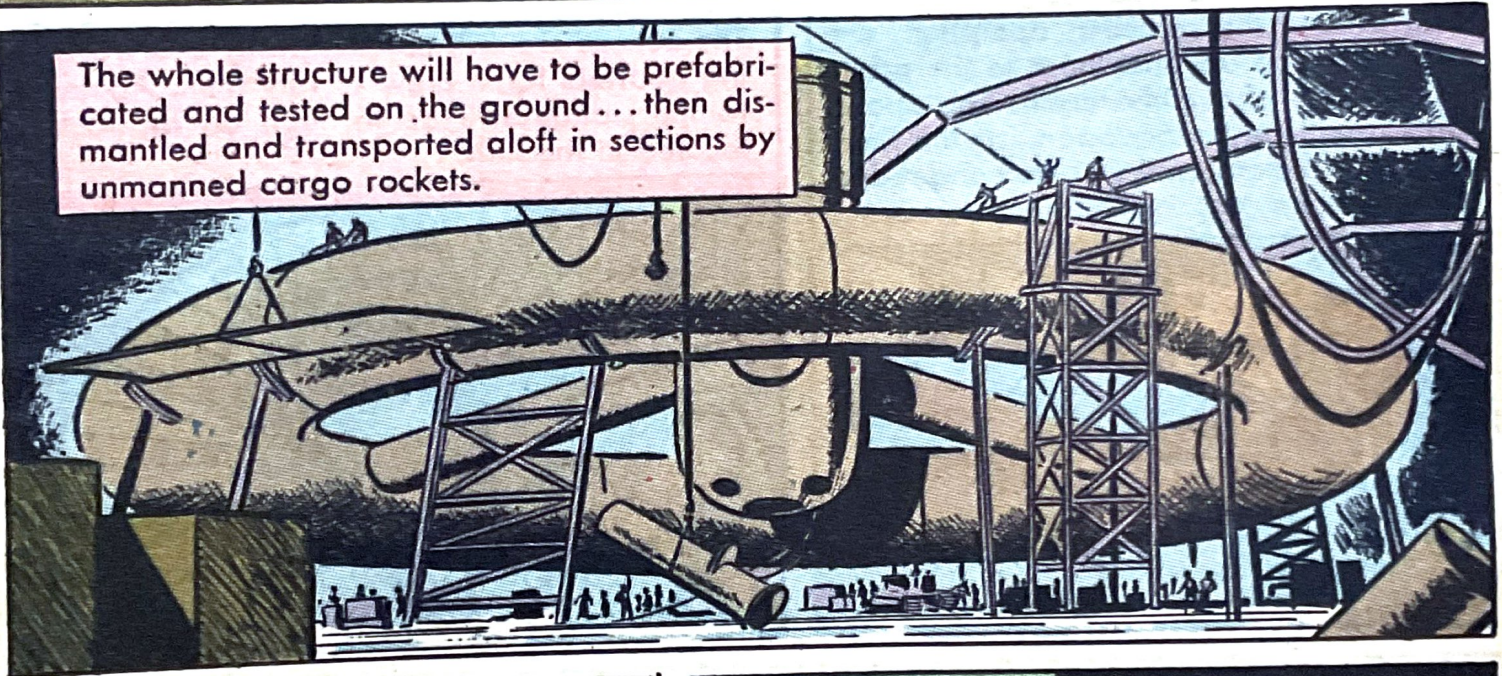
The wheel will rotate three times a minute. The resulting centrifugal force will produce an artificial gravity for the men inside.



The floors are placed so their heads will be toward the hub, which will be "up," and any direction away from center is "down."



The whole structure will have to be prefabricated and tested on the ground... then dismantled and transported aloft in sections by unmanned cargo rockets.

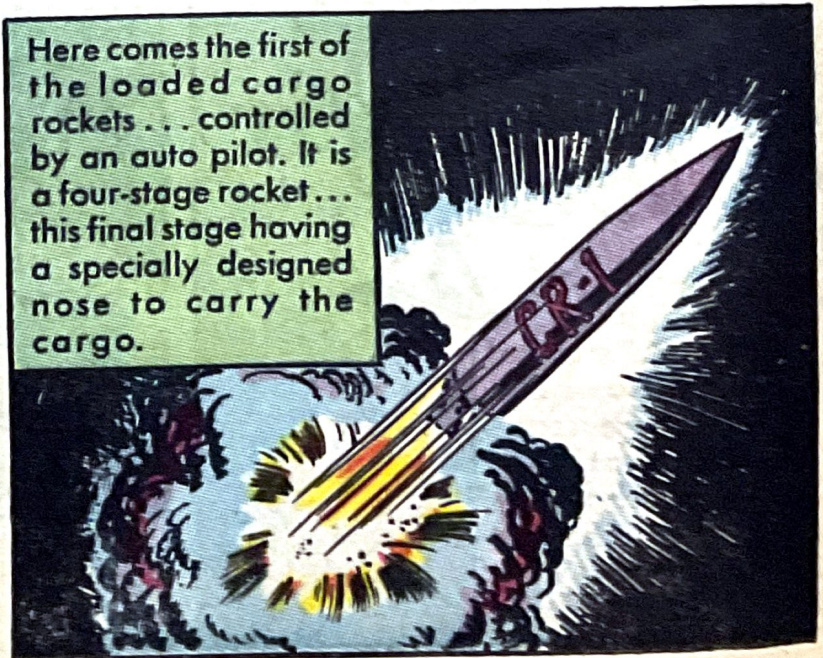


Circling 1,075 miles above the earth, a passenger rocket will guide approaching cargo ships to their rendezvous in the orbit.

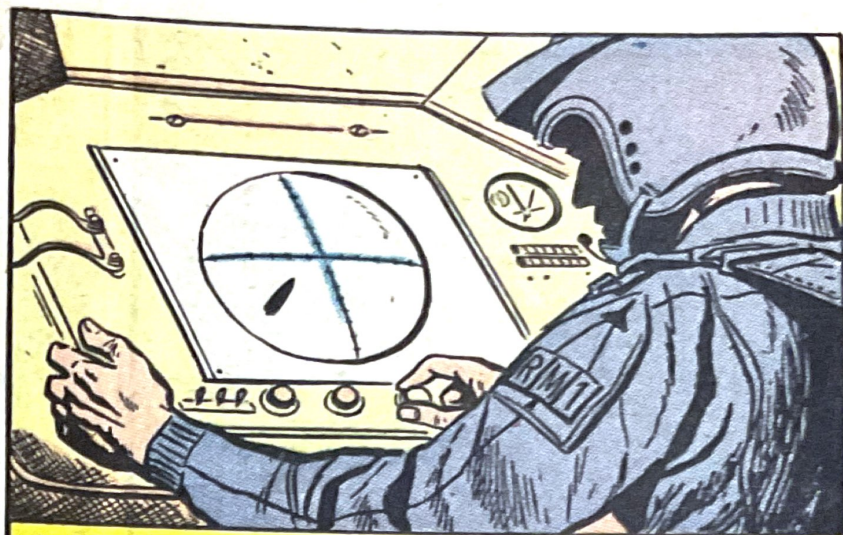
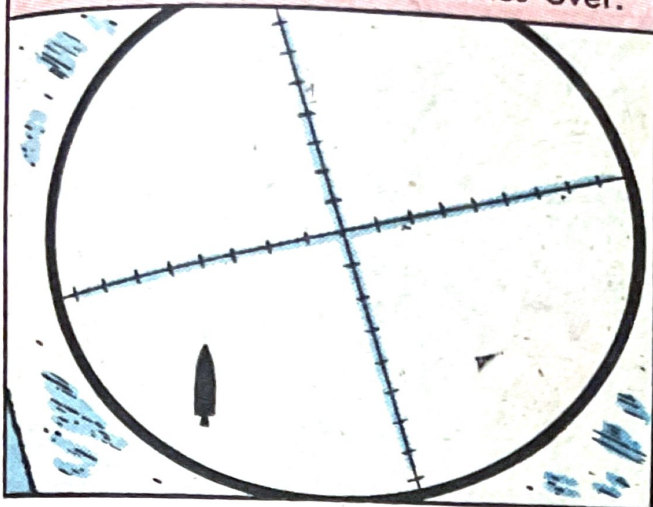


This ship will be the command post until after the space wheel is finished.

Here comes the first of the loaded cargo rockets... controlled by an auto pilot. It is a four-stage rocket... this final stage having a specially designed nose to carry the cargo.

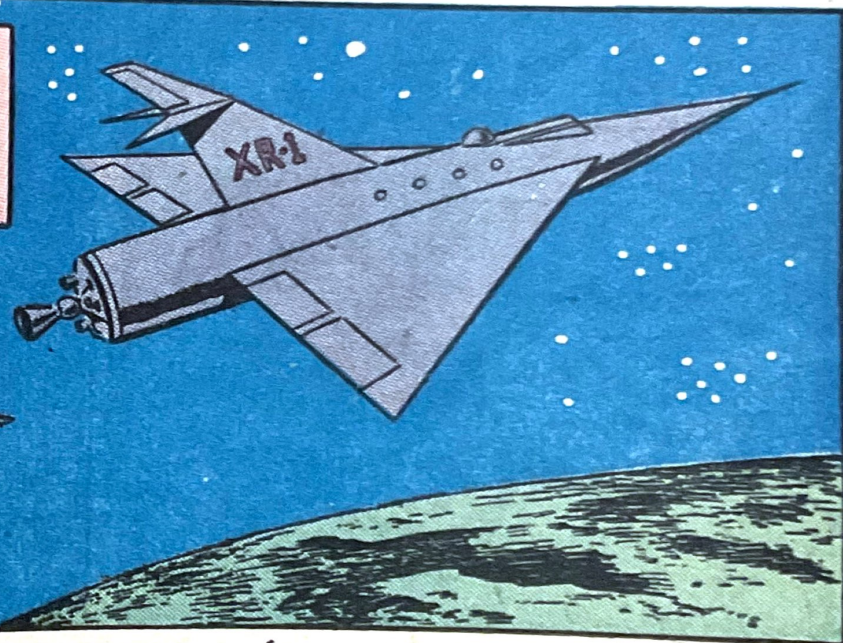


When the rocket's speed reaches 18,468 miles per hour, its motor automatically cuts off... and the navigator in the control rocket takes over.

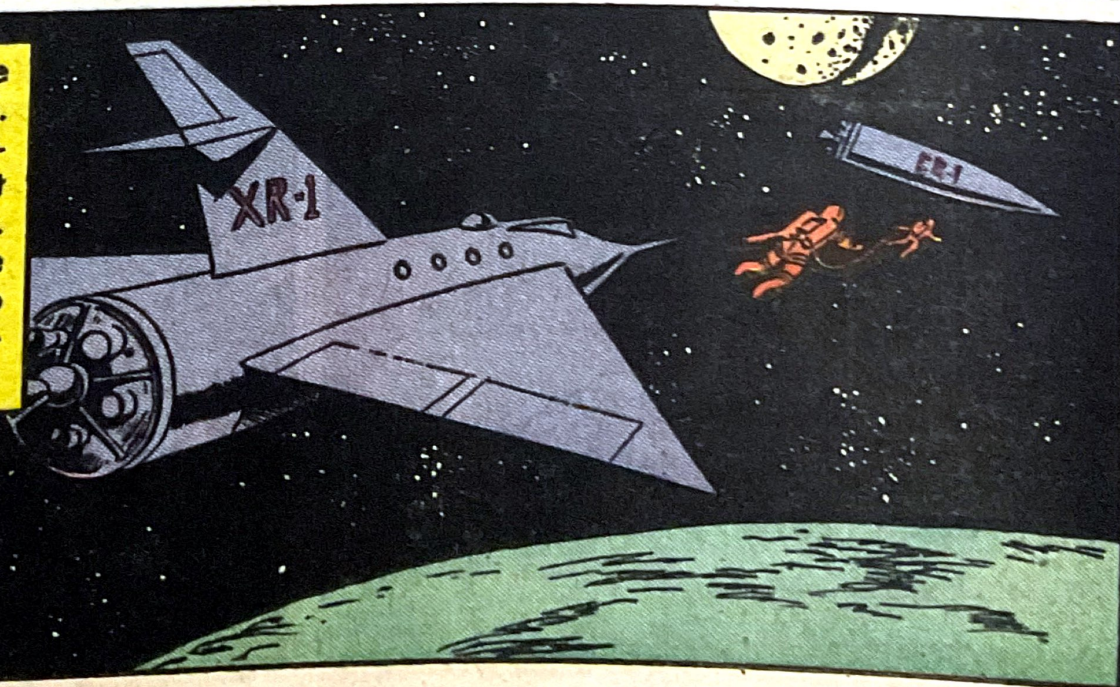


With the aid of remote controls, he rotates the rising cargo ship so that, when it arrives in the orbit, it will line up with the guide ship.

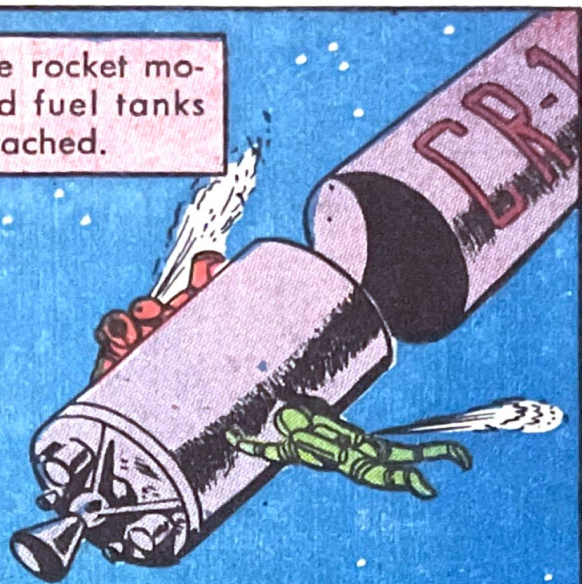
Now comes the most precise maneuver of the entire operation! The motor of the cargo ship is fired again... until its speed and course exactly match that of the guide ship.



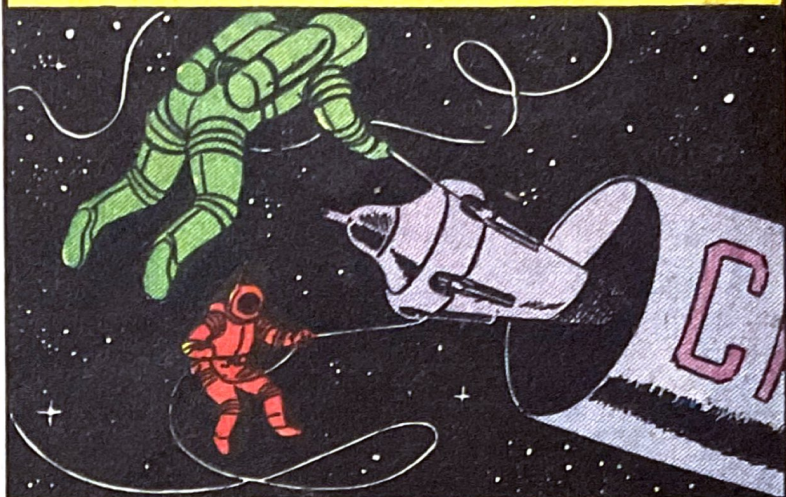
Fifty-six minutes have elapsed since take-off. The cargo ship is floating in space 2,000 feet ahead of the guide ship. Two crewmen make their way to the cargo head to begin the unloading operation.



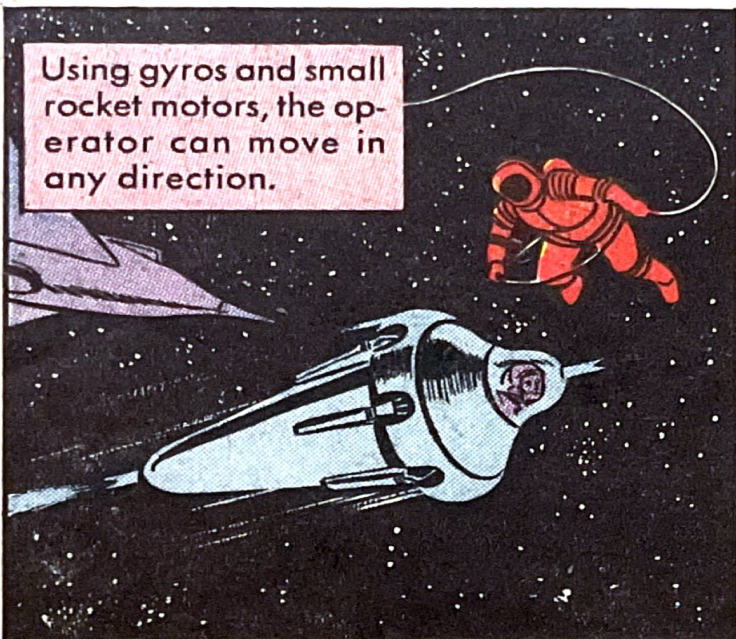
First the rocket motor and fuel tanks are detached.



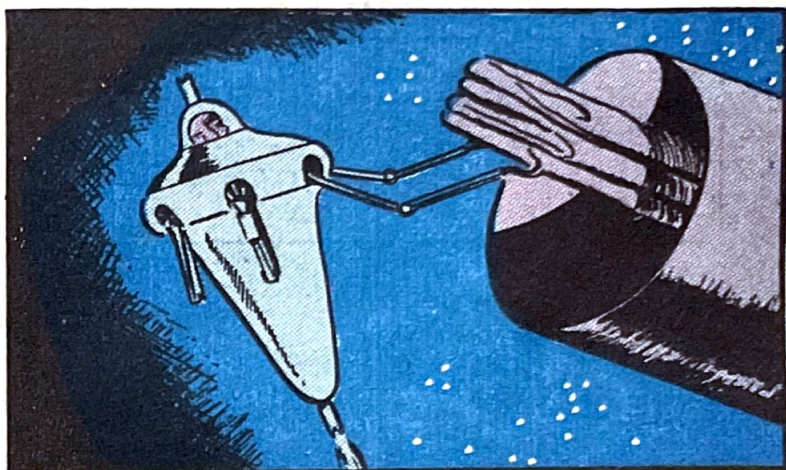
Then two bottle-type construction suits are removed from the hull... and fitted in the air lock of the guide ship. Each of these suits will receive an operator:



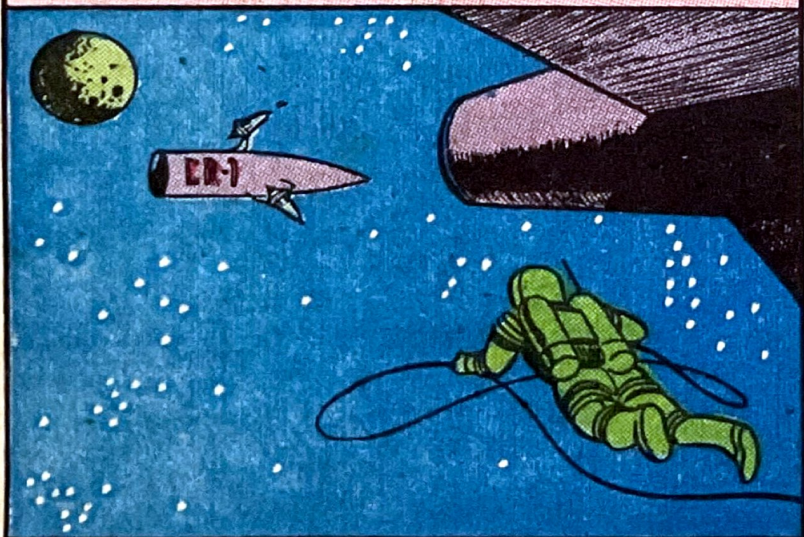
Using gyros and small rocket motors, the operator can move in any direction.



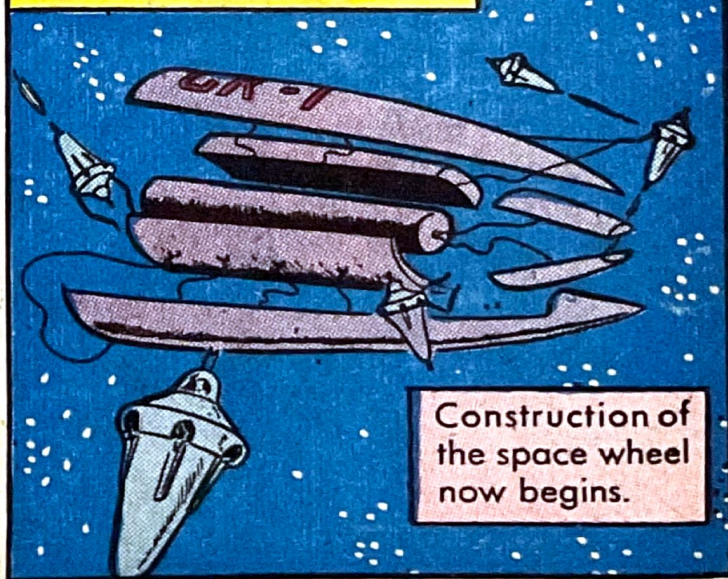
The suit has seven remotely controlled mechanical arms... each arm equipped with a specialized tool for the variety of tasks in assembling the space station.



To make way for other supply rockets soon to arrive, sections of the cargo ship are moved back and the sides mechanically separated.

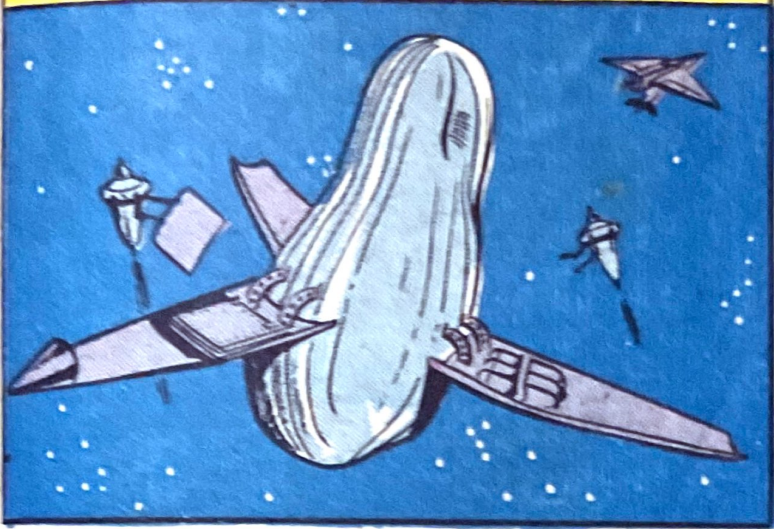


Nylon ropes prevent parts from slowly drifting away.

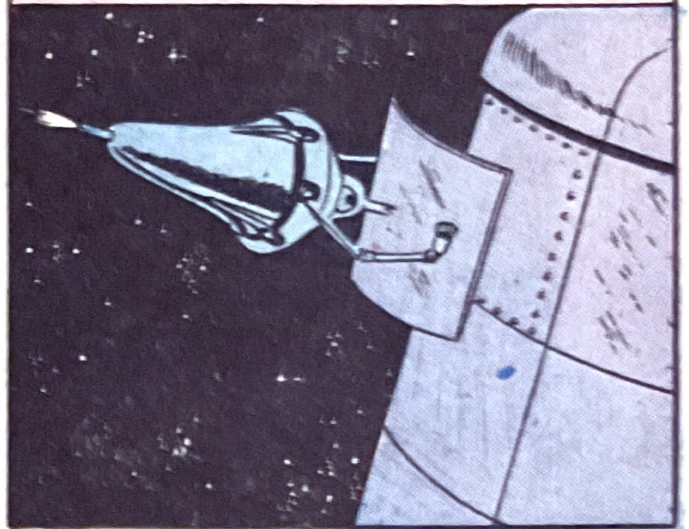


Construction of the space wheel now begins.

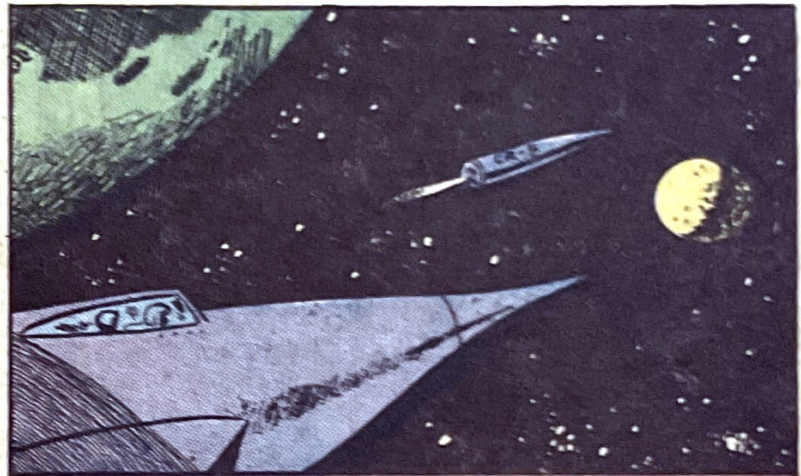
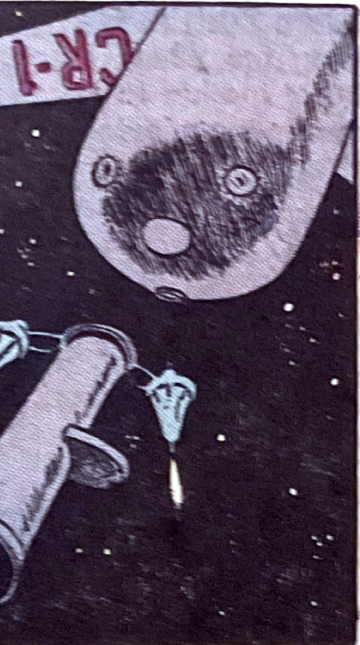
The folded plastic inner section of the hub is first. Built-in tanks of compressed air inflate it, just like a large balloon.



Thin metal plates are immediately clamped onto the outside to protect against meteorites.

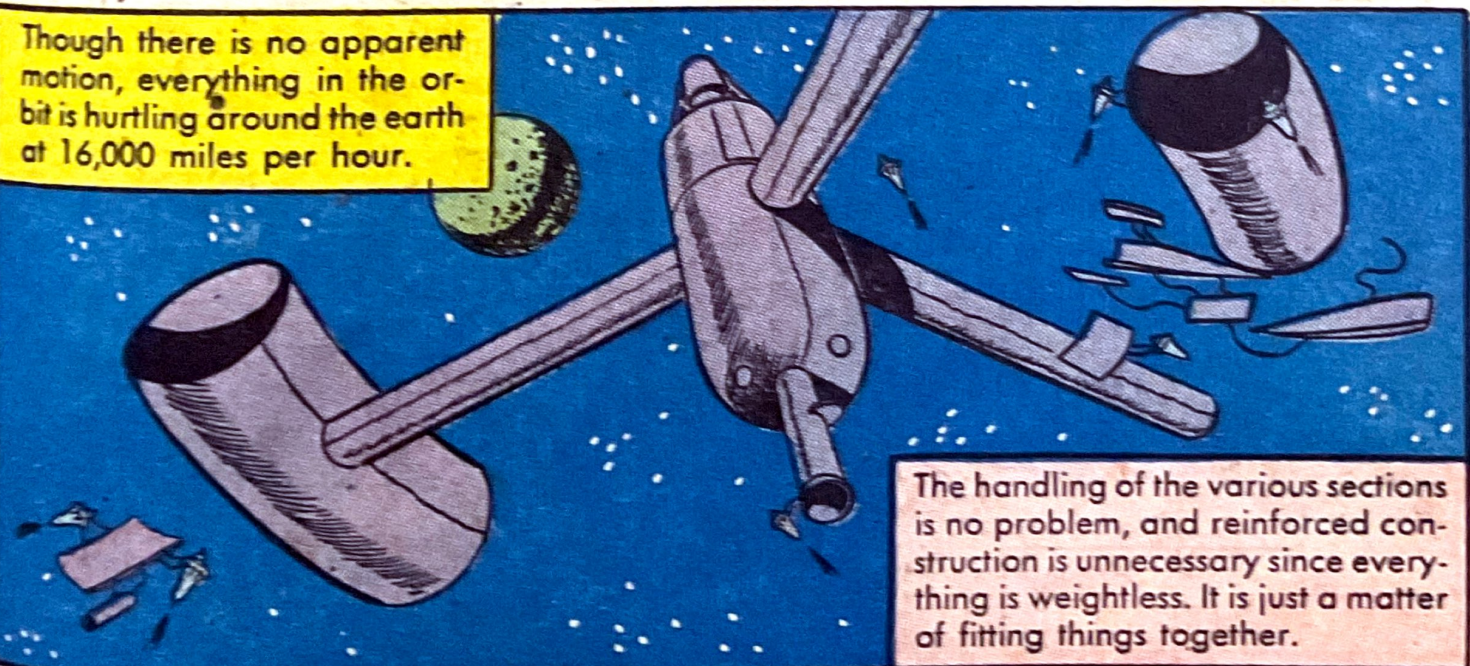


When the air lock is attached, the pressurized hub section can be used as temporary living quarters.



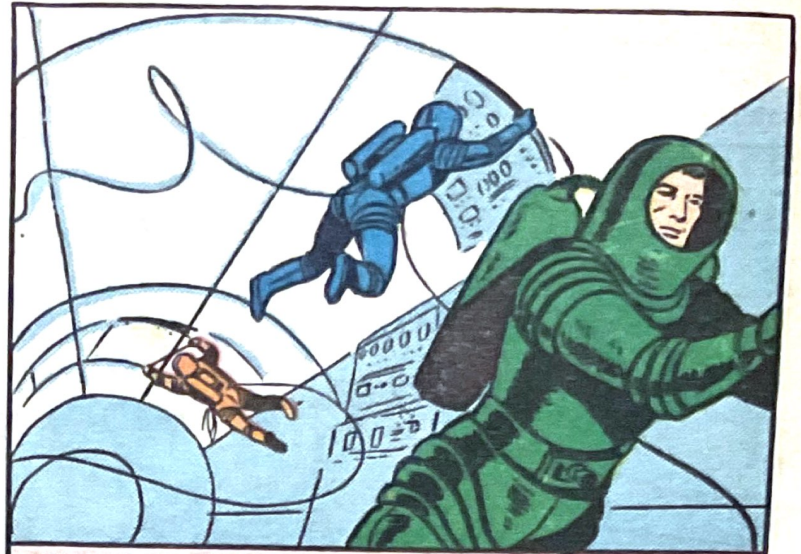
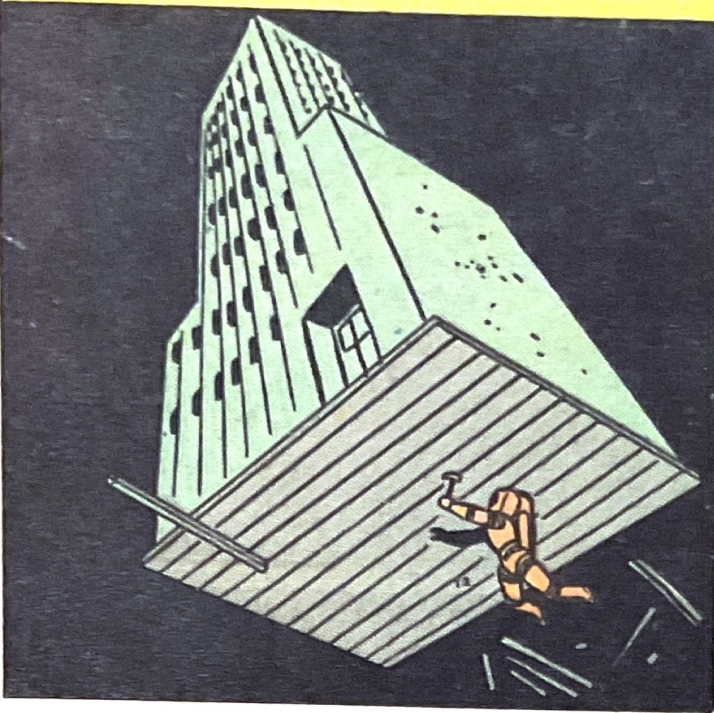
Every twenty-four hours, another cargo rocket will arrive in the orbit... each load carefully scheduled so that the parts of the station can be assembled in the correct order.

Though there is no apparent motion, everything in the orbit is hurtling around the earth at 16,000 miles per hour.

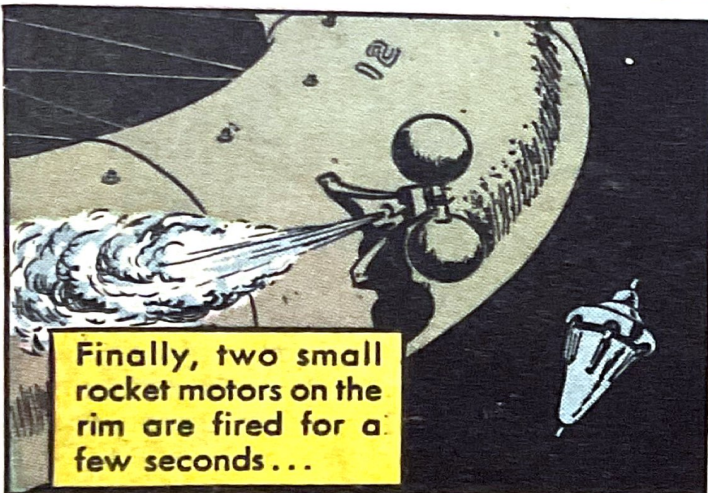


The handling of the various sections is no problem, and reinforced construction is unnecessary since everything is weightless. It is just a matter of fitting things together.

Out in space, ONE MAN could build a skyscraper without a scaffold or a ladder!



The shell of the station is complete now... so the men turn to the delicate task of installing the instruments and equipment inside.



Finally, two small rocket motors on the rim are fired for a few seconds...



Setting the wheel in permanent motion to revolve three times a minute...



Creating artificial gravity for our crew inside.

For the first time since the arrival in space, things again have weight... and life takes on some semblance of normalcy. LIQUIDS POUR.



The wheel is divided into nine sections.

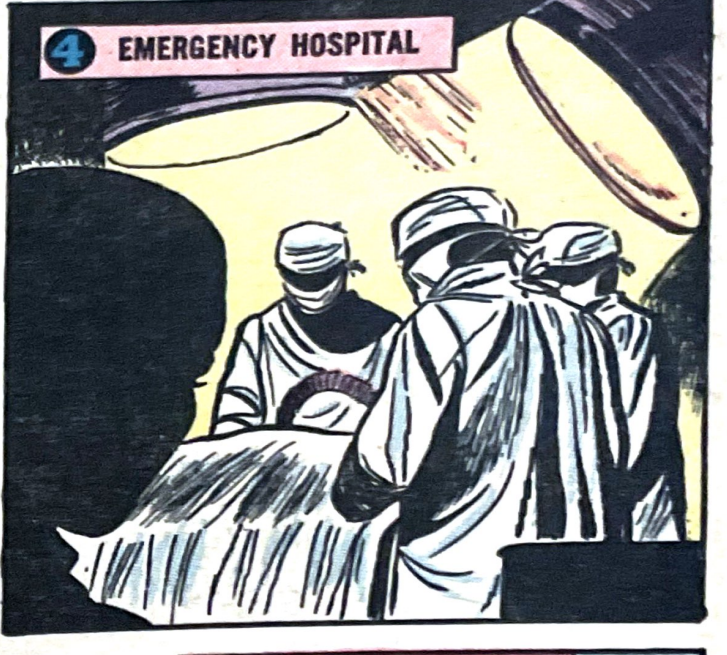
1 HEADQUARTERS & COMMUNICATIONS



2 WEATHER OBSERVATIONS & PREDICTIONS
Circling in an orbit at right angles to the earth's rotation will bring the station over every area of the world.

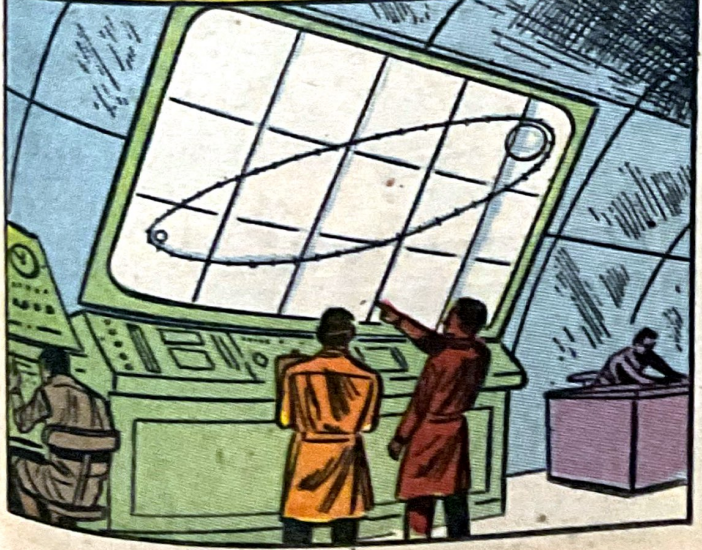


3 MILITARY. Here military reconnaissance experts, aided by powerful optical and radar telescopes, can observe every spot on the globe.



4 EMERGENCY HOSPITAL

5 ASTRONOMY DIVISION. Here the planning will be done for the trip around the moon.




6 CALCULATING MACHINES

7 MAINTENANCE FACILITIES & AIR CONDITIONING EQUIPMENT

8 BOTANICAL & ZOOLOGICAL LABORATORY




9 LIVING QUARTERS



As life on the station settles down to routine, large reflecting telescopes begin their work. These giant eyes float nearby, relaying pictures to television screens inside the wheel.

One telescope photographs the surface of the earth for the military reconnaissance experts ... bringing it close for careful study.



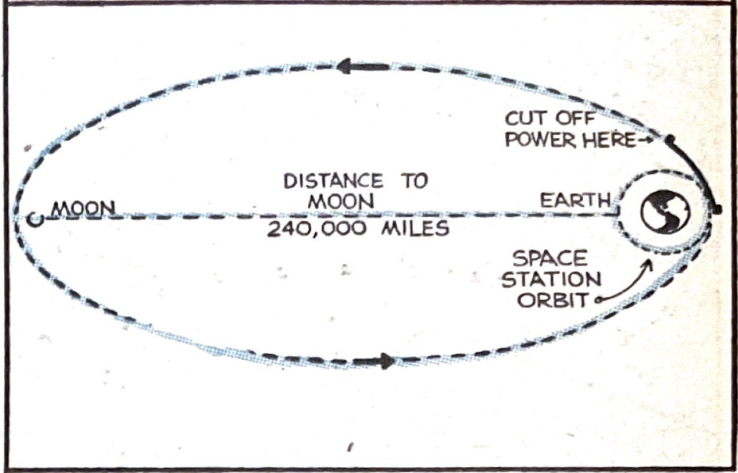
Another telescope is assigned to weather observation. Now the meteorologists can begin studies for long range weather forecasting.

The third telescope is trained on our next objective ... THE MOON.

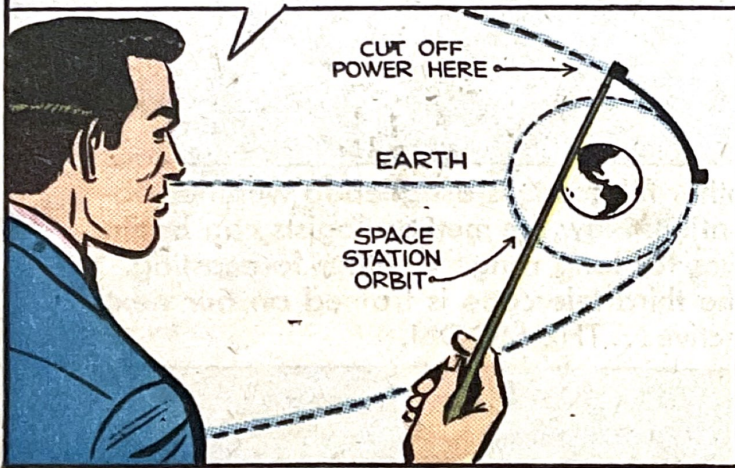
The purpose of the first moon trip will be to test the methods and equipment to be used on later voyages into space. Essentially a scouting trip... no landing will be attempted.



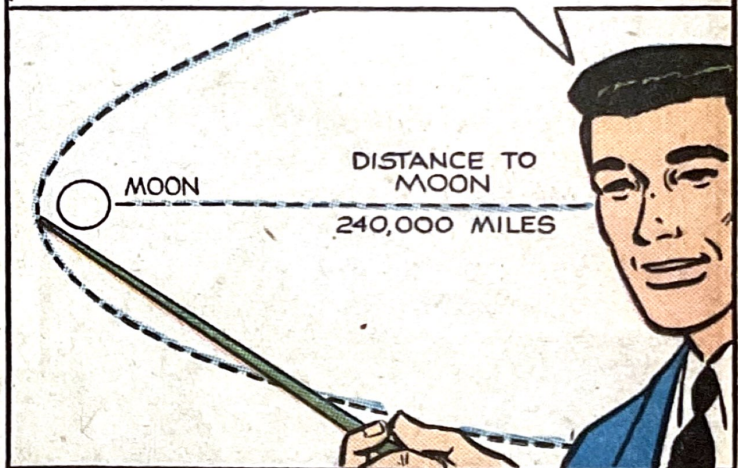
This drawing shows the elliptical path our rocket will follow. Since it will take five days to reach the earth-circling moon, we must, of course, aim the ship well ahead of it.



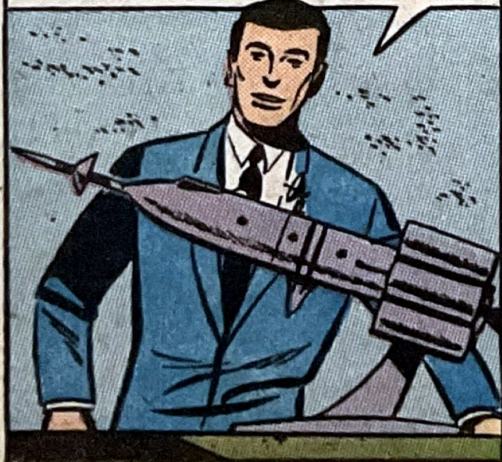
To leave the orbit of the space station, the rocket's speed is increased by firing its motors for ten minutes. They are cut off here... and the ship will coast for FIVE DAYS.



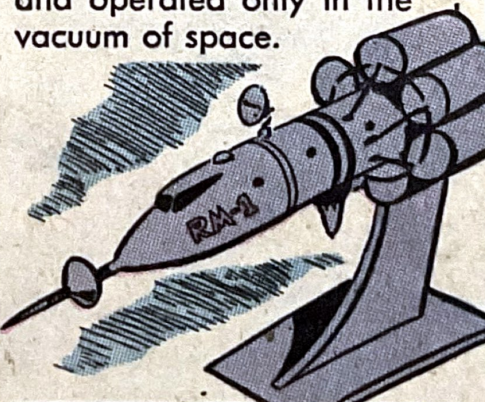
The ship coasts on past the moon until the pull of gravity slows it down, and it begins to fall toward earth. In five more days, it will have fallen back to the space station.



Here we see how our moon ship might be designed. For its hull, we will adapt the cabin section of an earth-to-space station passenger rocket.

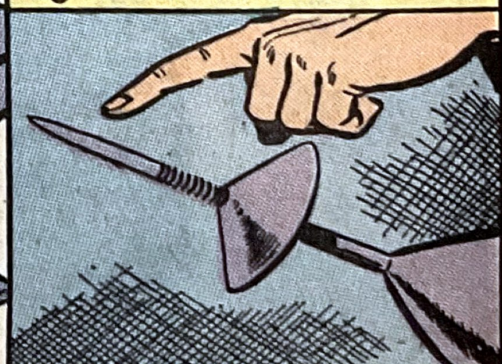


Rocket Ship RM-1 will be fifty-three feet long and will need no wings or tail since it will be assembled and operated only in the vacuum of space.



Streamlining is also unnecessary in space.

The nose will hold an atomic reactor which will drive a steam turbine and furnish electrical power for the ship's lights and instruments.



The shield protects the crew from dangerous radiation.

All maneuvers will be automatically piloted by split second operational sequences on prepared control tapes.

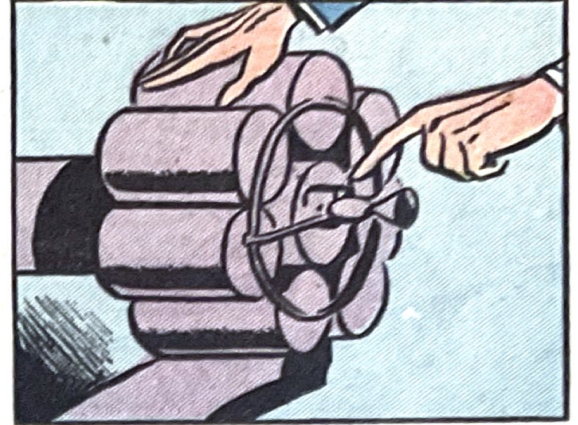
This is the directional radio-radar antenna.

RM-1

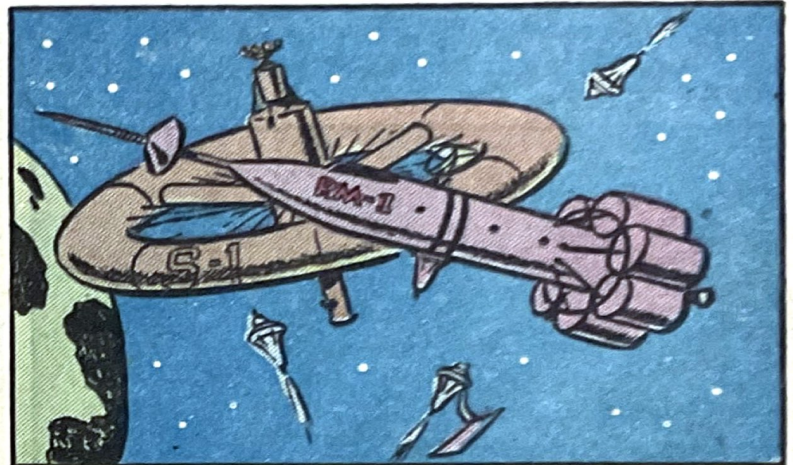
The crew of four will be placed two up front and two amidships.

This is an air lock and space suit which can be entered from inside the ship.

Seven extra fuel tanks carry hydrazine and nitric acid. All but the center tank will be released when empty to cut down on dead weight.



Even though we now have the theoretical knowledge necessary, it will be many years before we actually make a trip around the moon! However, let us pretend that all the problems have been solved and we ARE ready to make the trip ... right now.



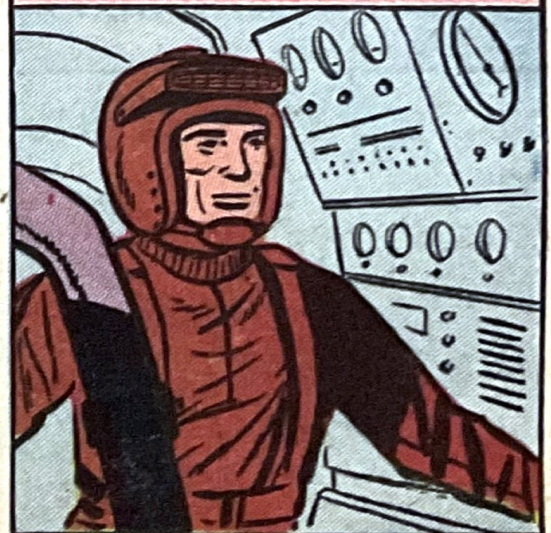
There is tense excitement at the space station as final preparations are made! The captain is the last to board the ship; it is his job to direct the entire expedition!

But on this trip, everyone is important! The NAVIGATOR is responsible for plotting the path through space.

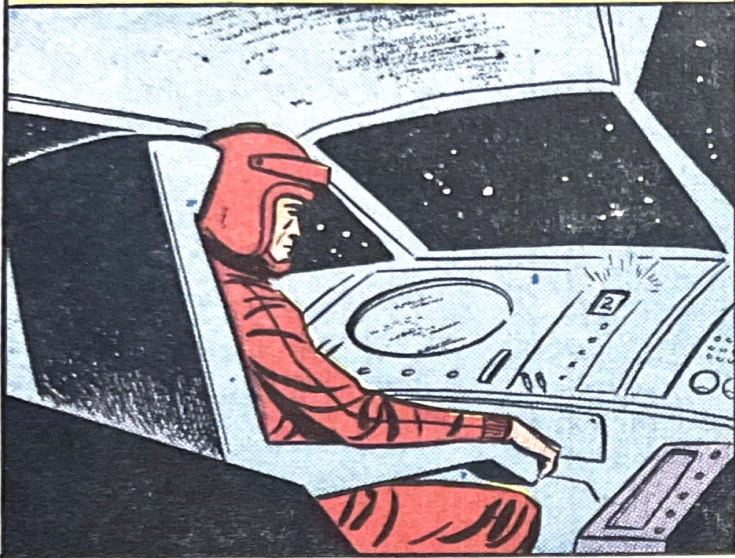


The RADIO OPERATOR must maintain communication with the earth and the space station.

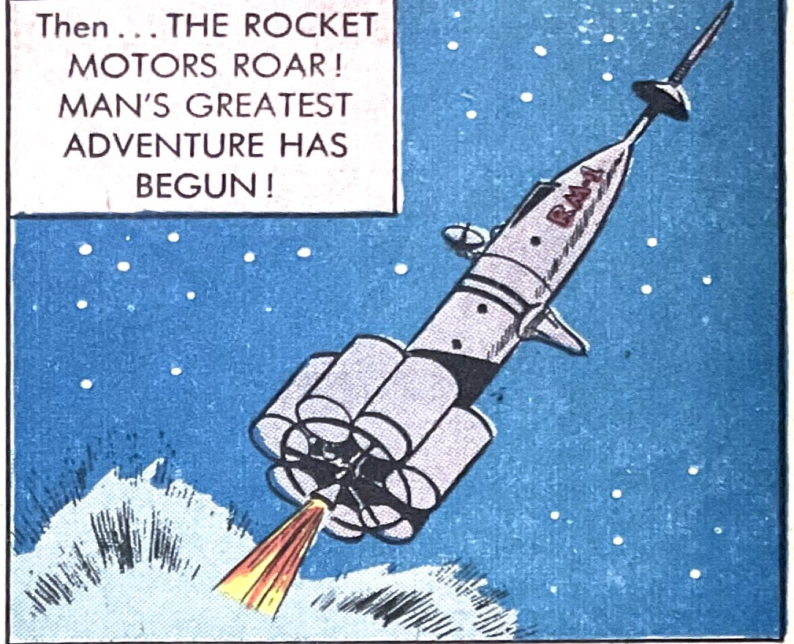
The ENGINEER is responsible for the ship's motor and other mechanical functions.



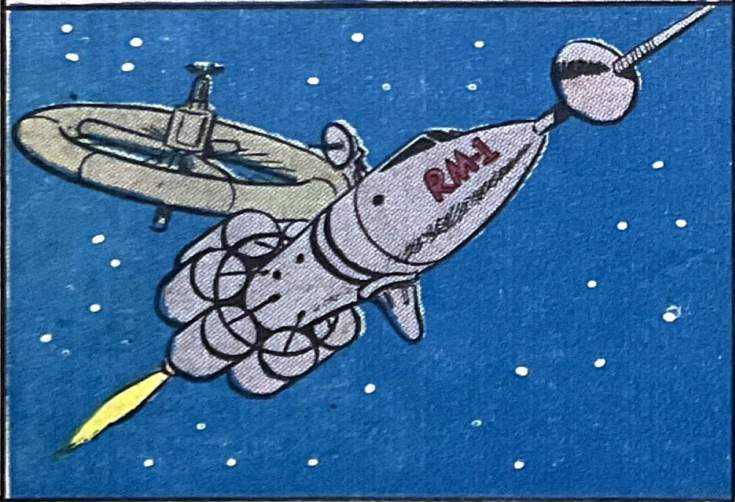
Now, everything is checked. The seconds tick off on the captain's firing timer...



Then... THE ROCKET MOTORS ROAR! MAN'S GREATEST ADVENTURE HAS BEGUN!

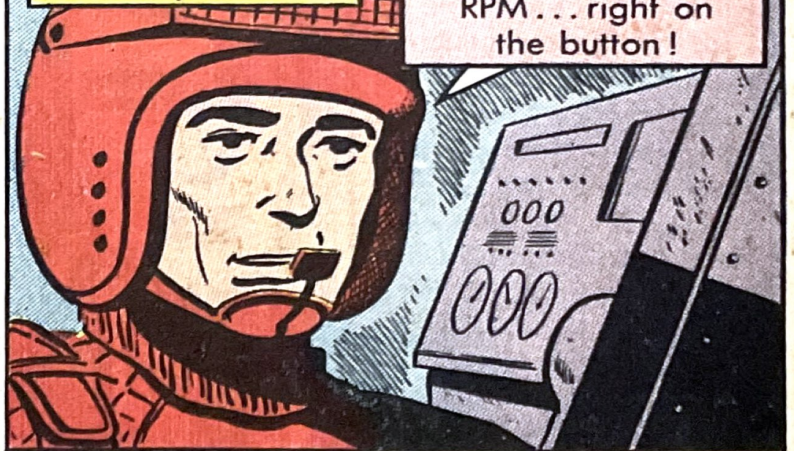


The ship seems to DRIFT away from the space station, since the speed of everything in the orbit is already 16,000 miles per hour!



But speed increases rapidly. The captain gets a report from the engineer.

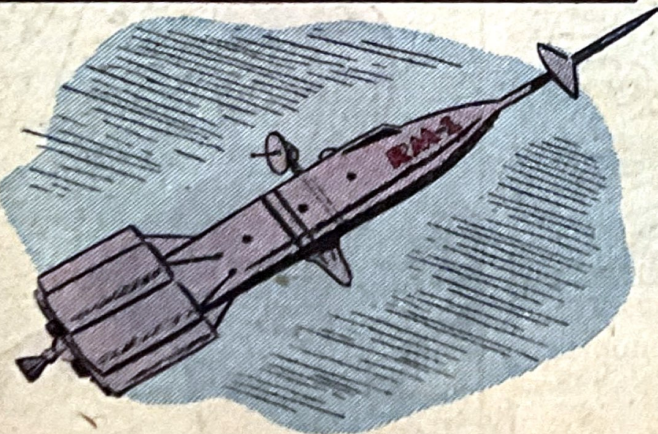
Engineer to Captain!
Motor pressure 447 PSI... three low.
Turbo pump 11,000 RPM... right on the button!



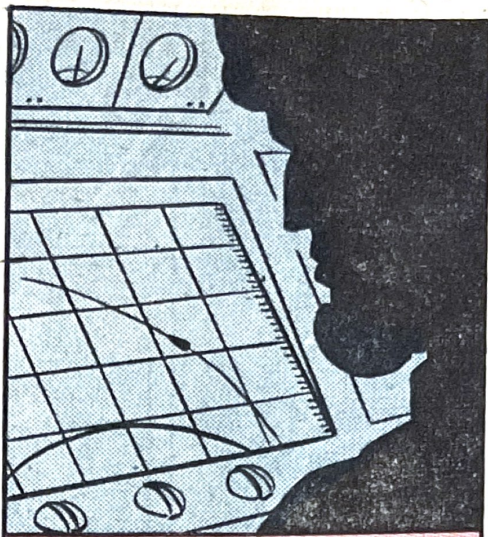
Now the rocket motors are cut off. Firing time exactly ten minutes thirty-five seconds. Cut off velocity nearly 22,000 miles per hour. Cut off altitude 1,765.2 miles.

The ship is on its way! But the captain must continue to check reports.

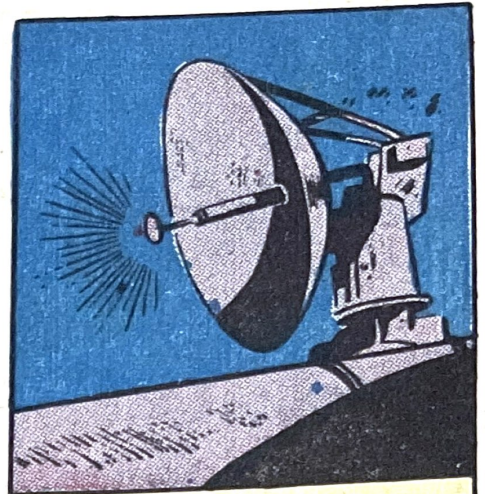
Tank gauge readings 8,550 pounds hydrazine... thirty pounds low. 1,405 pounds nitric acid... forty-five pounds high.



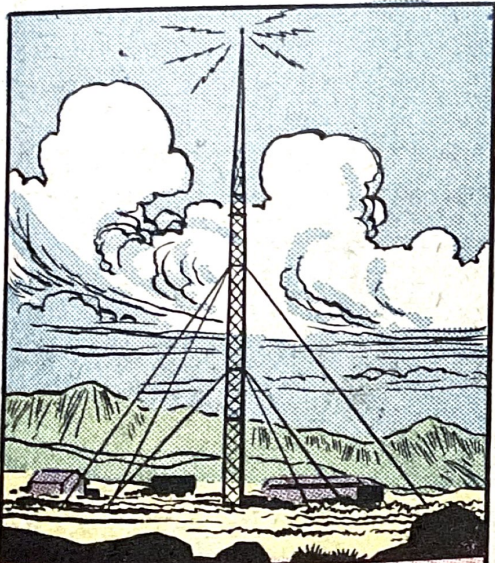
The navigator checks the star tracker with an optical and radar fix.



The computer gets his readings and delivers the ship's exact position.

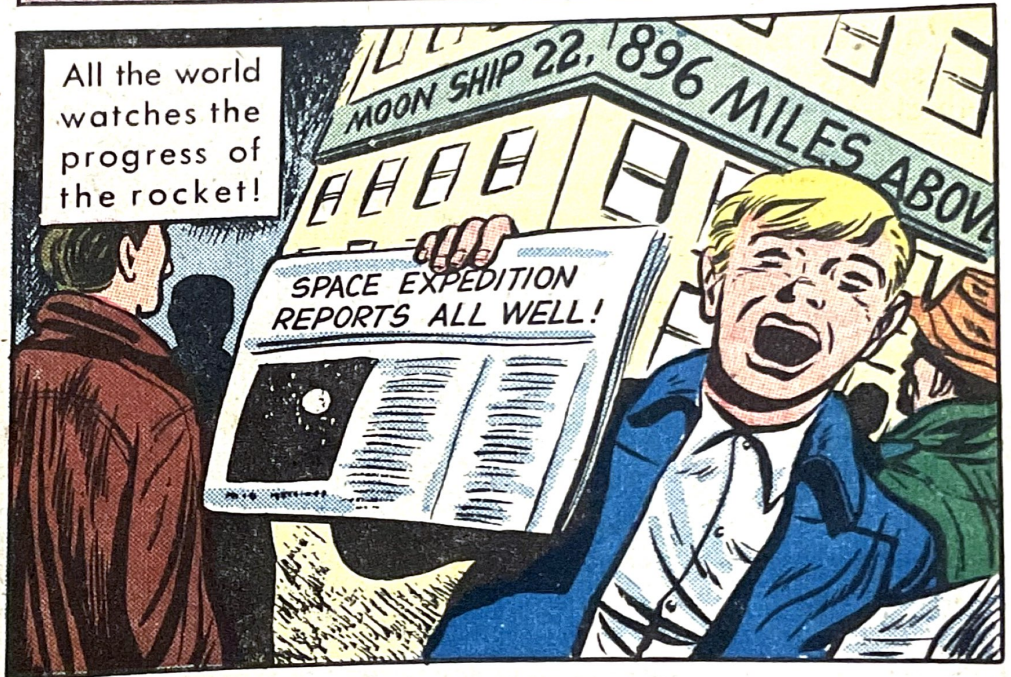


The radio operator transmits tape recordings of all reports to the space station far below.

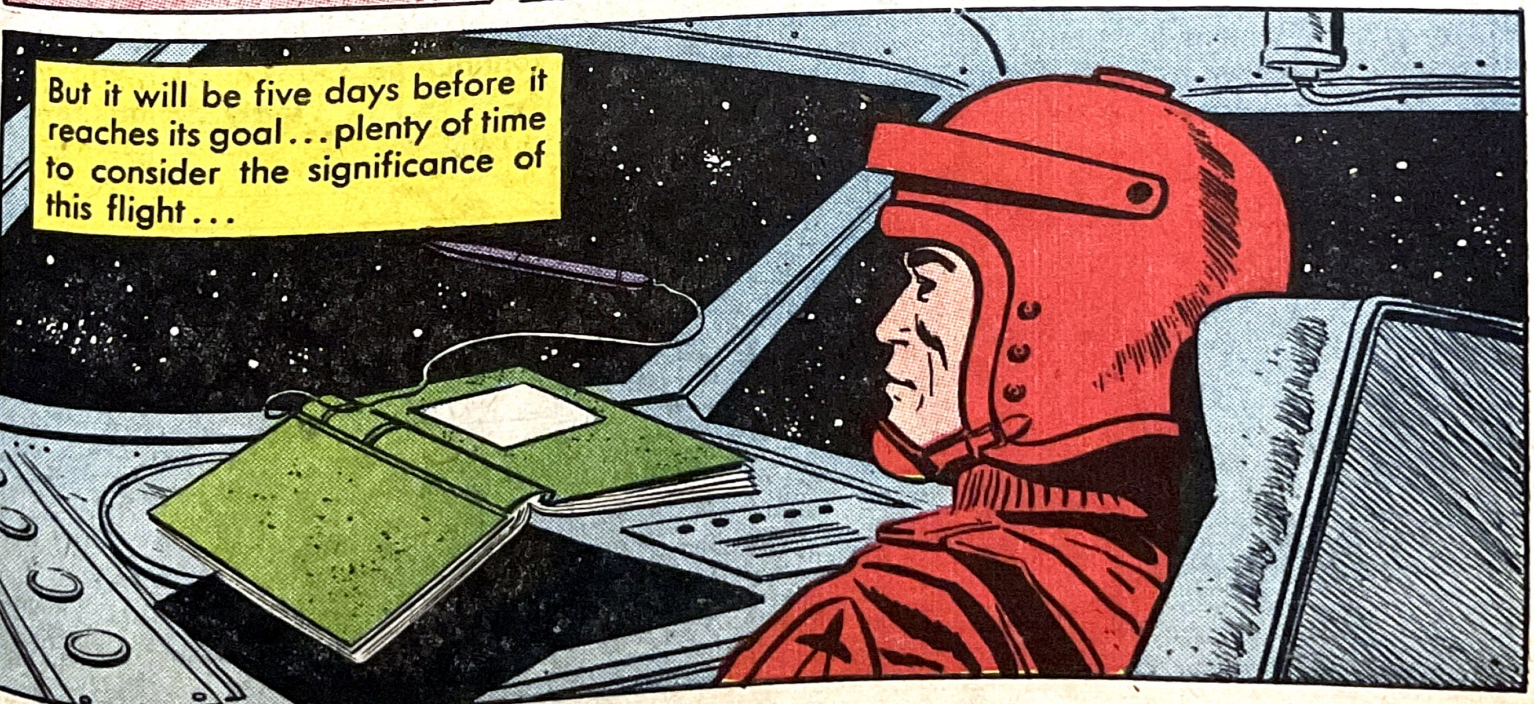


There they are re-recorded, then relayed on to the earth.

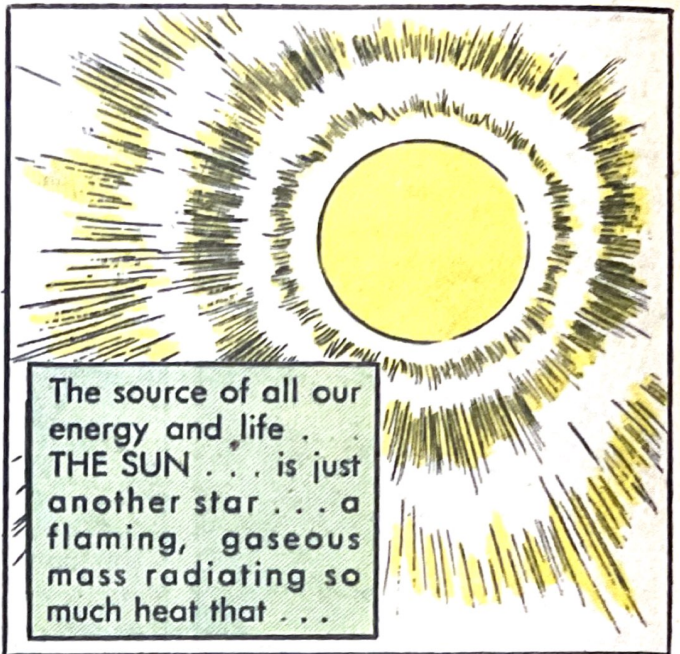
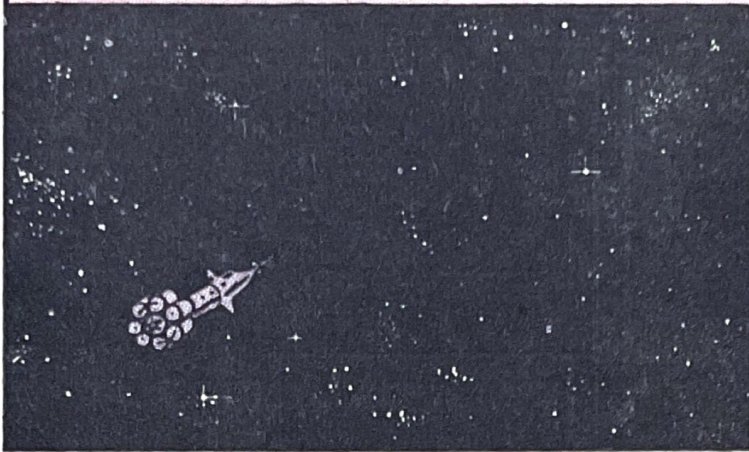
All the world watches the progress of the rocket!



But it will be five days before it reaches its goal... plenty of time to consider the significance of this flight...



Out there is the endlessness of the universe. Out there, a **HUNDRED BILLION STARS** make up the great pinwheel of our galaxy alone. And yet, beyond are millions of other galaxies ... many just as large!

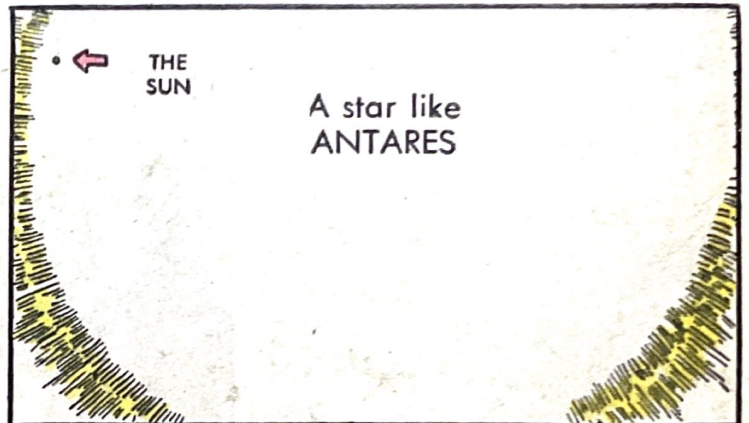


The source of all our energy and life . . . **THE SUN** . . . is just another star . . . a flaming, gaseous mass radiating so much heat that . . .

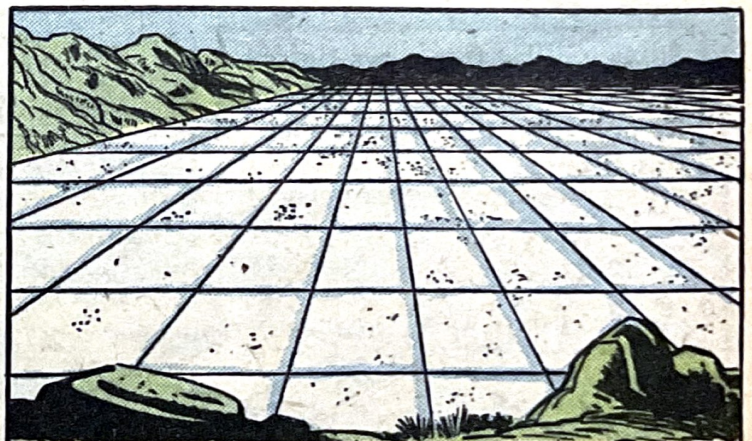
If all its radiations were concentrated on a solid column of ice nearly three miles thick, stretching the ninety-three million miles between the sun and the earth . . .



THE ICE WOULD MELT COMPLETELY IN JUST ONE SECOND!



The whole trip to the moon and back to earth won't even equal two-thirds the diameter of the sun . . . 864,000 miles! And still, some of those stars out there are **300 TIMES THE DIAMETER OF OUR SUN.**



If we had a scale map of the known universe measuring **FIFTEEN MILES ACROSS** . . . our whole solar system, the sun and all the planets, would be represented on it by a dot no bigger than **THIS** →

On such a map . . . the earth, the moon, and the path of Moon Rocket-1 would not show under the most powerful microscope!



But still . . . this IS man's first visit to any neighbor in space!

Now the ship is fifty hours and 169,000 miles from the space station. All is well.

Look! All I need is a moon goddess in three letters.



Then . . .

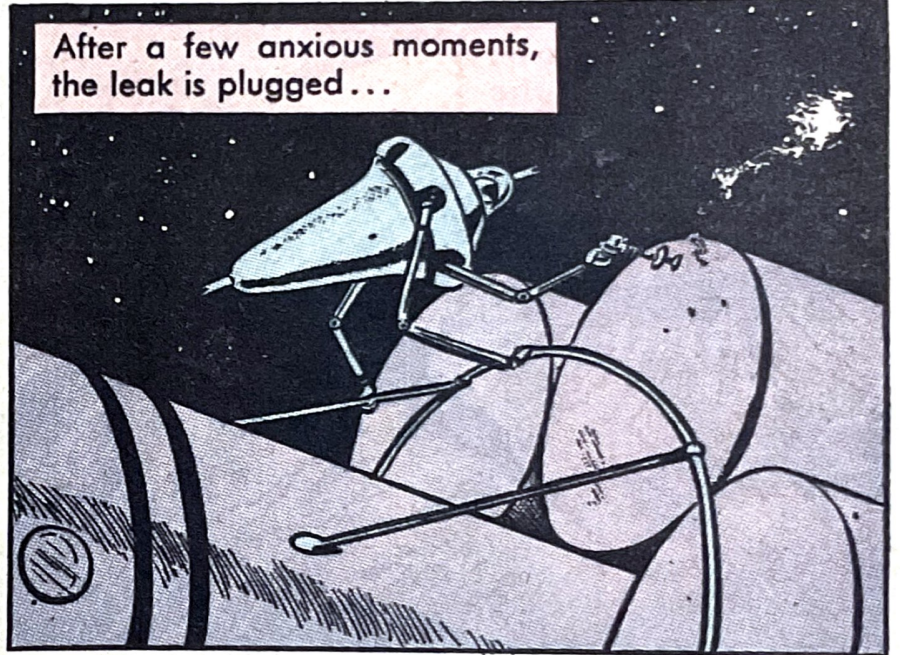
Meteor hit in No. 2 nitric acid tank! PRESSURE DROPPING FAST!



Fix that hole, boy! Try to reach it with gripping arms. Don't use the motors near the leak!

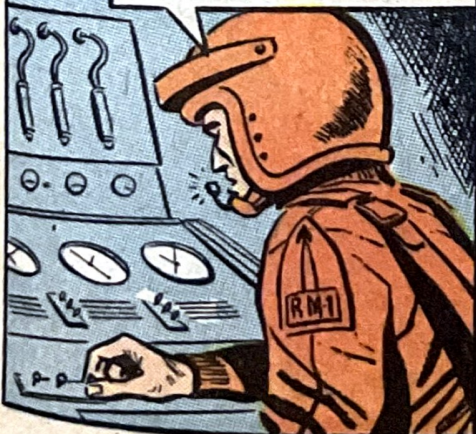


After a few anxious moments, the leak is plugged . . .



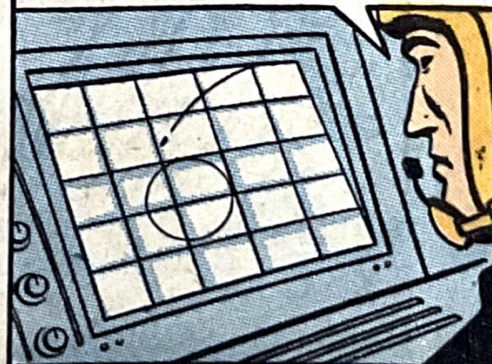
And reports made . . .

Estimated diameter of meteor, one-sixteenth of an inch. No injuries. Equipment okay.

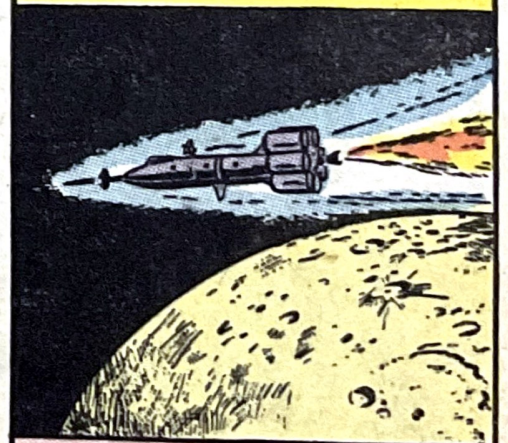


The trip proceeds on flight plan until . . . at 110 hours, 53 minutes, 09 seconds . . .

Our course shows collision with the moon at 120 hours, 56 minutes . . . must use correction tape three four zero.



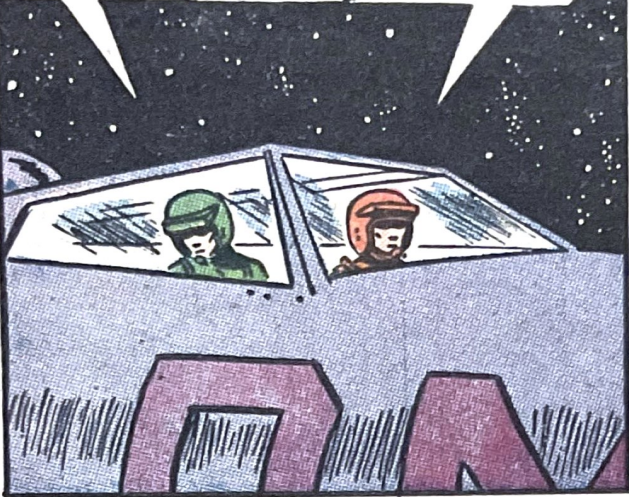
At 116 hours, the captain gets ready to make the needed power shift . . .



Just a short burst from the motors to alter the course!

Captain, we'll pass the moon's surface at 63 miles instead of 60 miles!

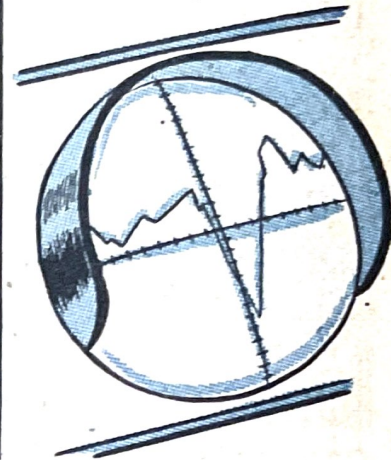
Close enough! We'll compensate for that after the sweep!



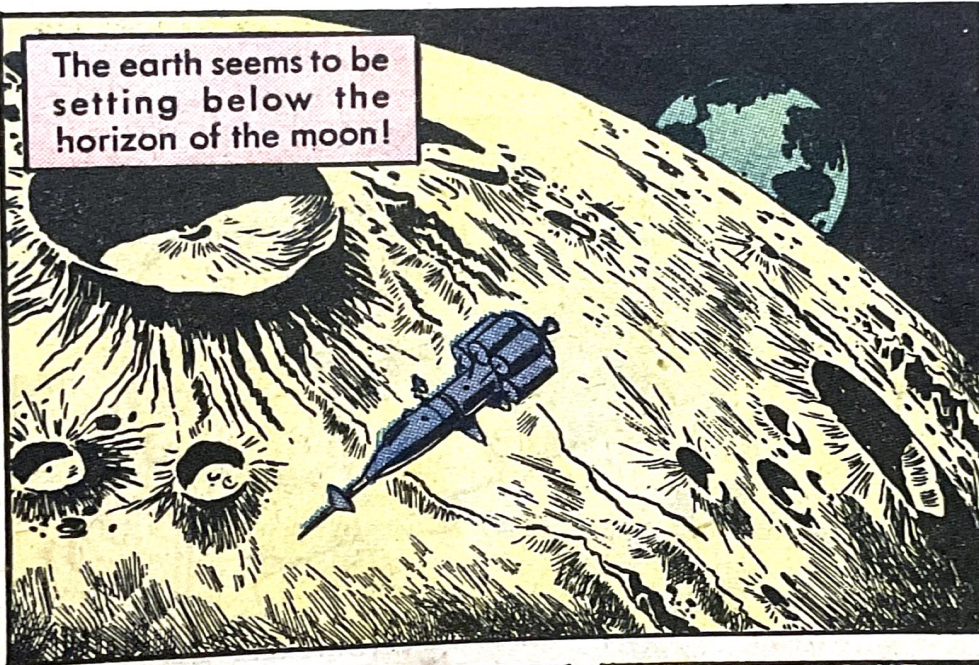
The cameras are ready... men are at their stations for Observation Schedule 17.



The contour mapper is aimed at the moon's surface.



The earth seems to be setting below the horizon of the moon!



In one moment, the rocket will be **BEHIND THE MOON.**

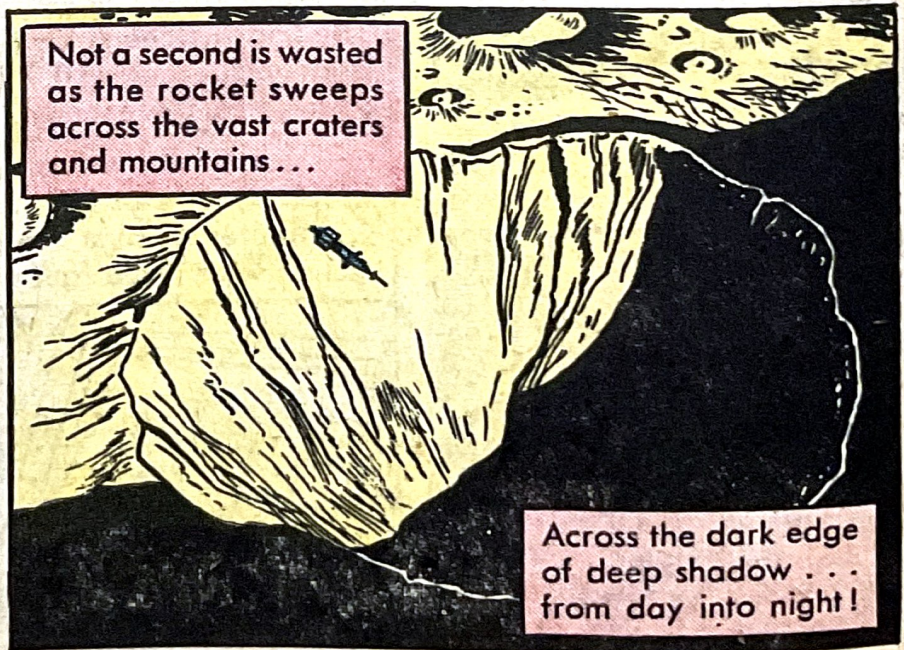
This is our last radio message until we come out on the other side.



And this is it . . . the **NEVER-SEEN SIDE OF THE MOON!**



Not a second is wasted as the rocket sweeps across the vast craters and mountains . . .



Across the dark edge of deep shadow . . . from day into night!

Now flares are fired at three-minute intervals.



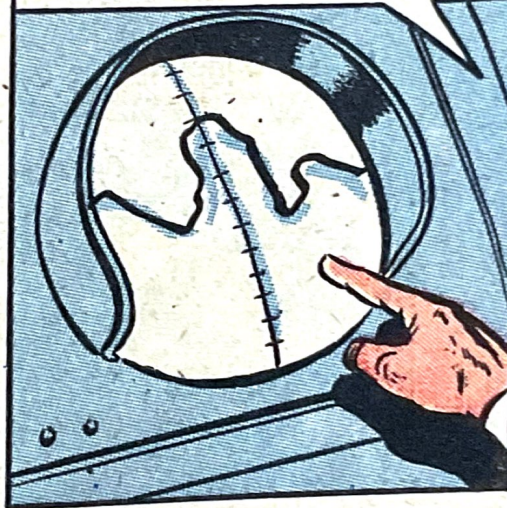
Captain! I'm getting a high geiger count at 33 degrees!



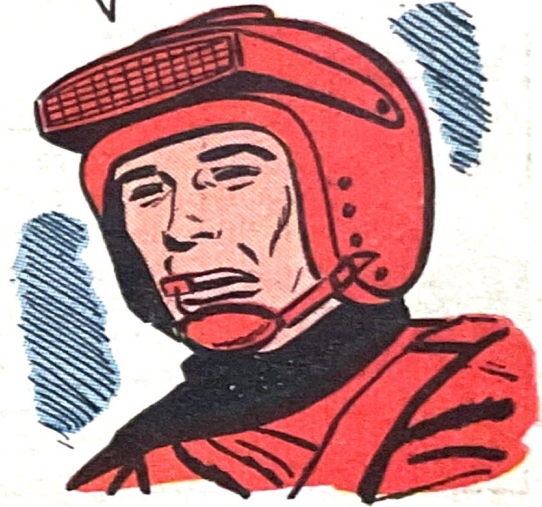
Scintillation counter shows high degree of radioactivity on the same bearing!



Contour mapper shows very unusual formation at 15 degrees southern latitude and meridian two-ten!



Get some flares in that area quick! And keep those cameras going!

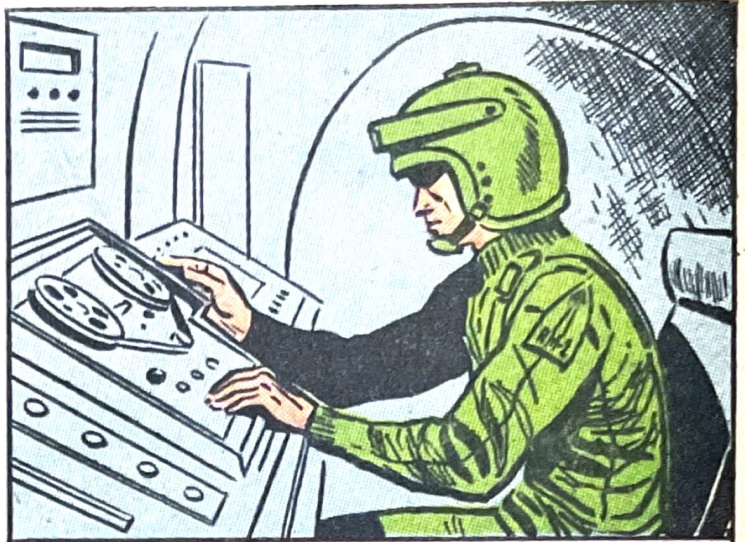


Look at that peak down there!

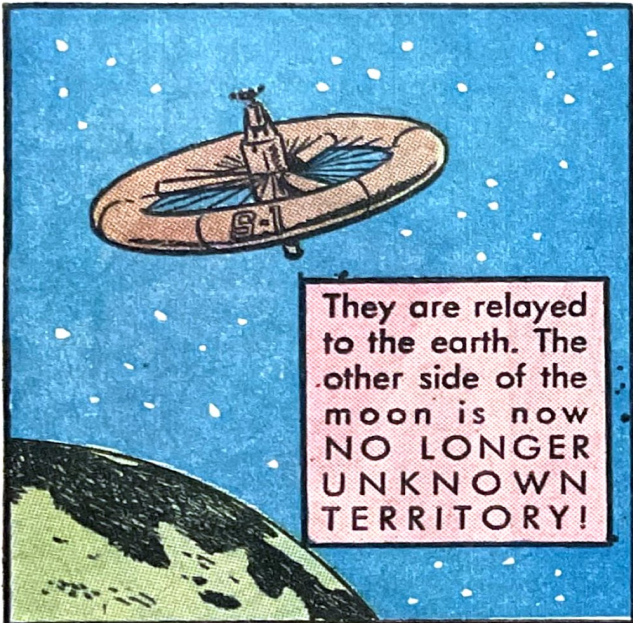
Must be fifty thousand feet high!



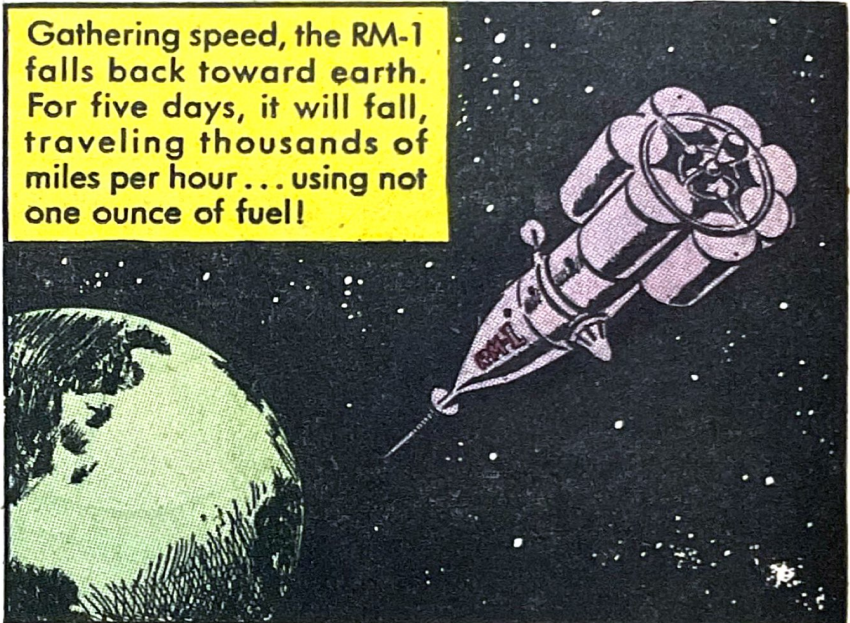
Finally...at 122 hours...after almost one hundred minutes behind the moon... **THE EARTH APPEARS AGAIN!**



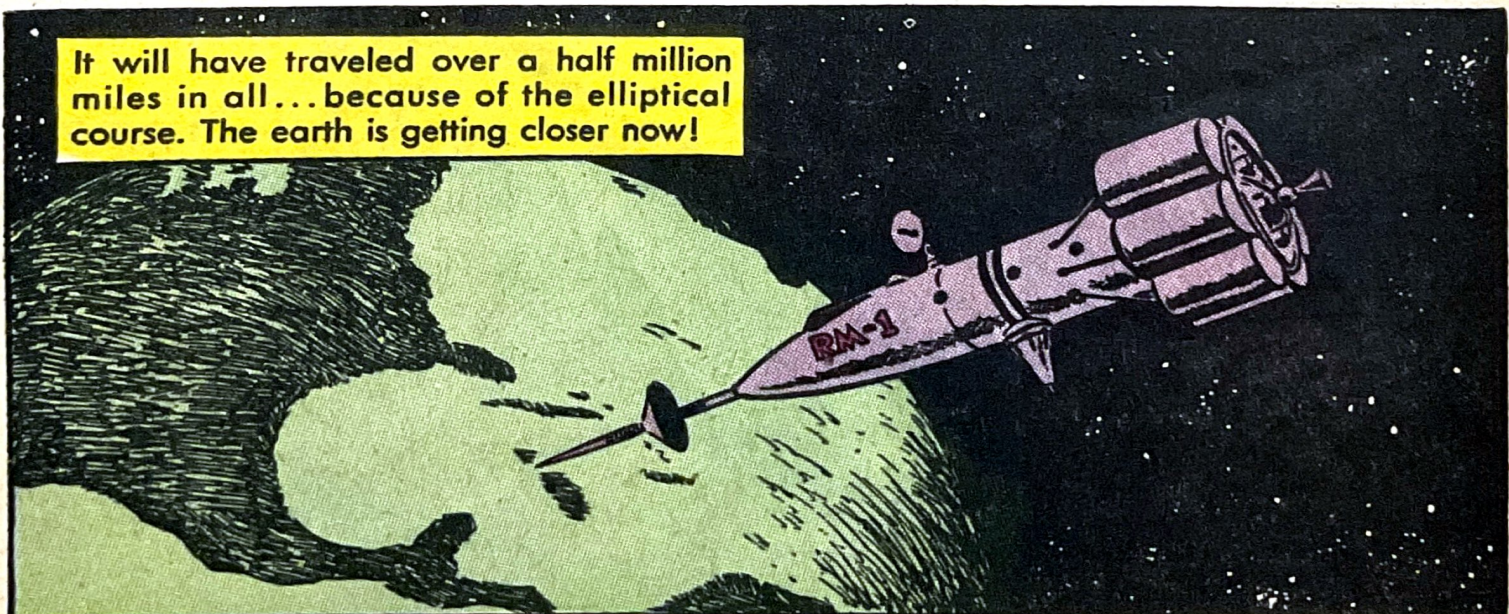
The radio operator immediately re-establishes contact with the station and transmits tape recordings of all behind-the-moon reports.



They are relayed to the earth. The other side of the moon is now **NO LONGER UNKNOWN TERRITORY!**

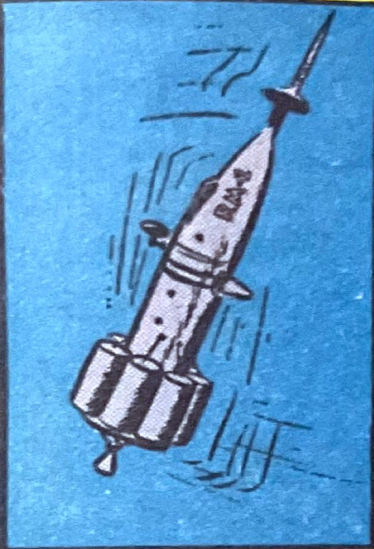


Gathering speed, the RM-1 falls back toward earth. For five days, it will fall, traveling thousands of miles per hour... using not one ounce of fuel!



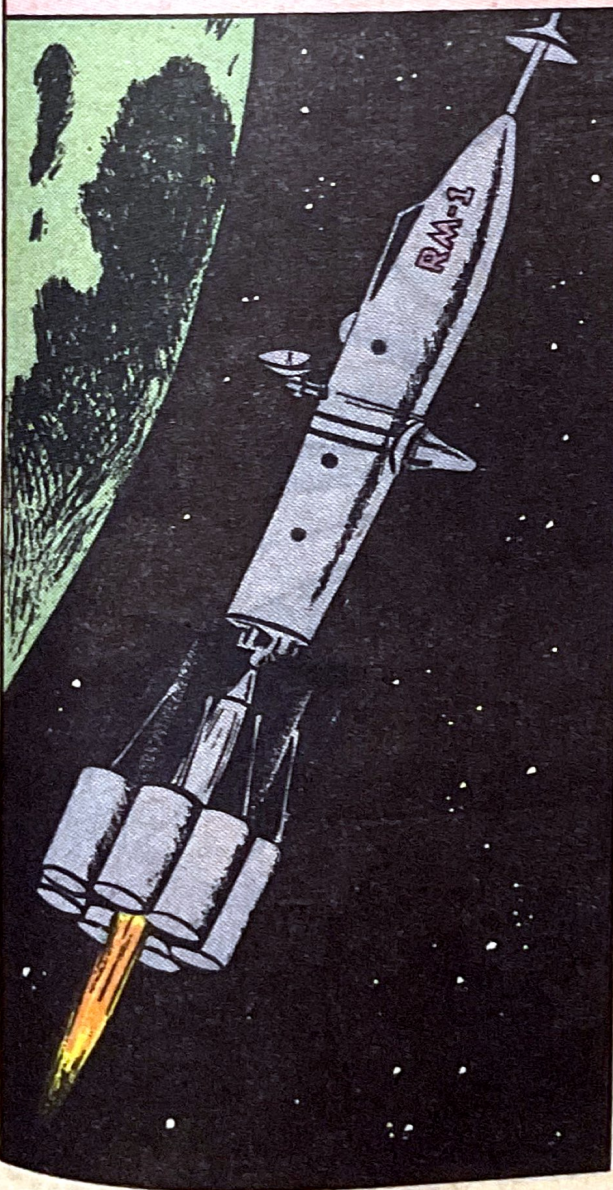
It will have traveled over a half million miles in all...because of the elliptical course. The earth is getting closer now!

Upon entering the space station's orbit, the ship is rolled to the correct angle for braking, and the extra fuel tanks are set for release.

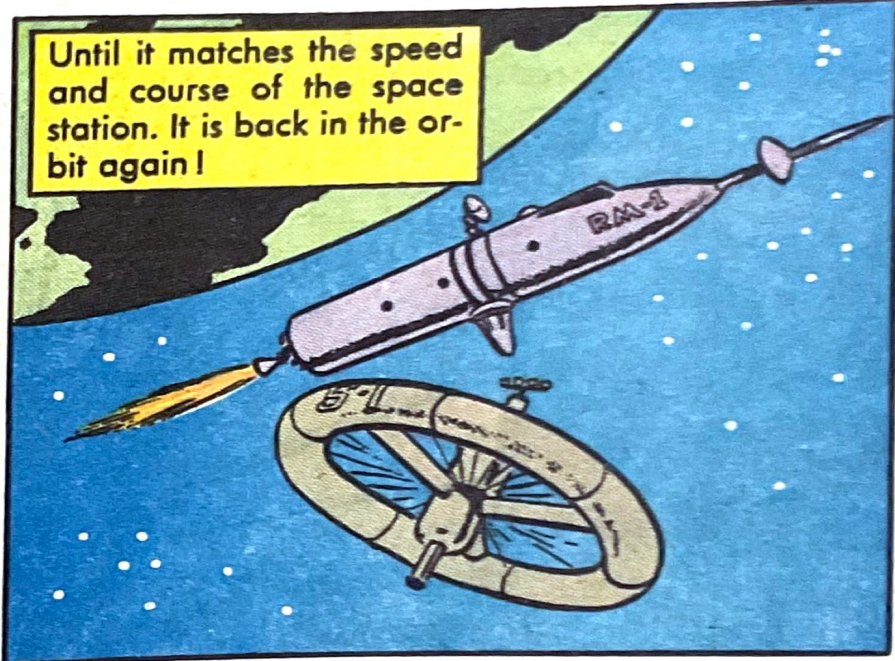


There comes the station... around the earth. The automatic firing timer is set...

NOW... the ship's motors blast! The tanks hurtle onward. The ship's speed is slowly checked...



Until it matches the speed and course of the space station. It is back in the orbit again!



Project RM-1... THE FIRST VOYAGE THROUGH INTERPLANETARY SPACE... has been SUCCESSFUL

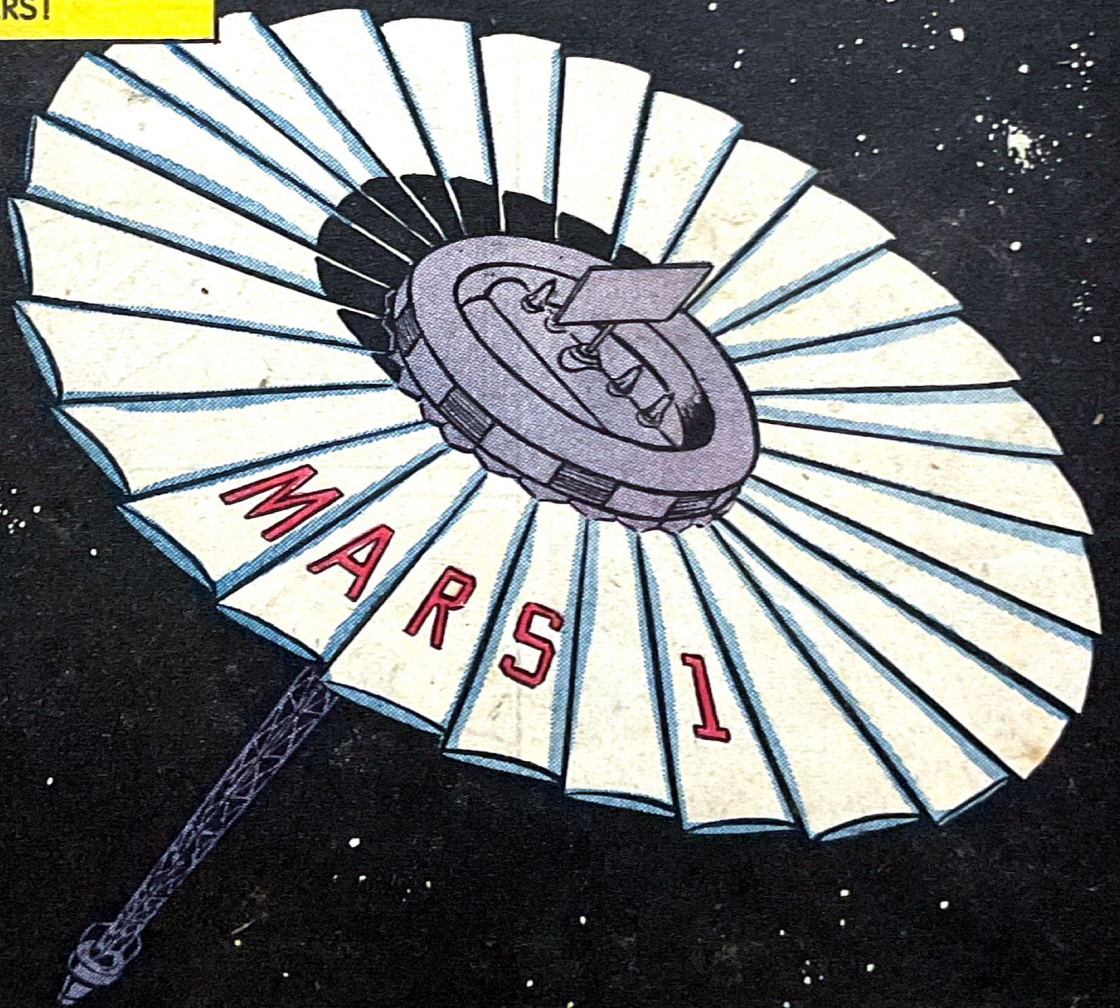
A whole world shares the achievement!
And already, plans are being made
for an expedition which will
actually LAND on the moon.



Next will come the final preparation of...



An atomic powered rocket ship
to probe the vastness of space
and solve the mysteries of the
RED PLANET, MARS!



ROCKETEER'S QUIZ!

See how well you can do... then check your answers at the bottom of the page

1

As a rocket ship returns to earth, air pressure of the thickening atmosphere builds up on its control surfaces. Then, for the first time, its captain can begin to fly it like a normal plane.

At what altitude do you think the atmosphere will begin to permit controlled flight?

- A** 250 miles
- B** 150,000 feet
- C** 50 miles
- D** 22 miles

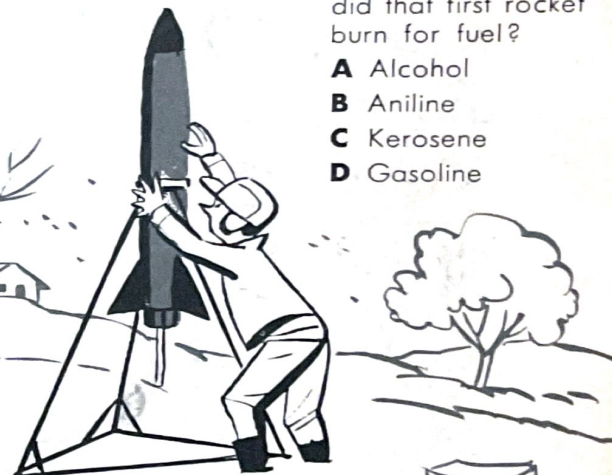


2

Credit for the first flight of a liquid fuel rocket goes to Dr. Robert H. Goddard. On March 16, 1920, Dr. Goddard's third rocket achieved flight of 2½ seconds duration and an average speed of only 60 miles per hour...but it set the pattern of design for many early liquid fuel rockets.

Which of these did that first rocket burn for fuel?

- A** Alcohol
- B** Aniline
- C** Kerosene
- D** Gasoline



3

As a rocket fuel, RED FUMING NITRIC ACID and ANILINE eliminate need of an ignition system because, when combined, they produce spontaneous combustion.

1. 50 miles 2. Gasoline 3. Dyes

ANSWERS



We may not carry rocket fuel around with us, but few of us are ever far from one form of aniline. Where is it?

- A** In safety matches
- B** In soda pop
- C** In the dyes in our clothing
- D** In cheese

A PLEDGE **DELL COMIC** TO PARENTS

The Dell Trademark is, and always has been, a positive guarantee that the comic magazine bearing it contains only clean and wholesome entertainment. The Dell code eliminates entirely, rather than regulates, objectionable material. That's why when your child buys a Dell Comic you can be sure it contains only good fun. "DELL COMICS ARE GOOD COMICS" is our credo and constant goal.

Bill Wisdom Says:

YOUR VACATION IS SO SHORT— Don't lose part of it by having an accident — **PLAY SAFE!**



Riding a Bike

Don't take chances hitching behind cars, zig zagging, riding "without hands," carrying others on bike. Look carefully when coming to intersection. Ride on right side of roadway. Wear white when it gets dark, and use bright headlight and red, rear reflector. Be sure tires and brakes are in good shape. Keep alert.



Swimming

Swim where there is a lifeguard, if possible. If you swim anywhere else be sure there is no fast current, or undertow. Check with long pole for depth, hidden rocks, logs before diving. Always swim with a "buddy." Don't swim when tired, over-heated or chilled. Be sure a rope, boat, or life preserver is handy.

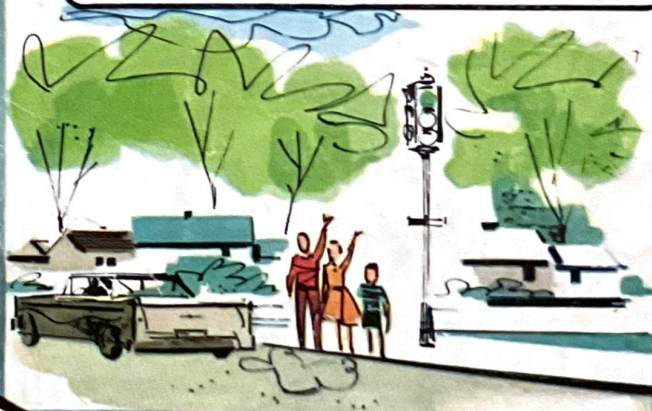


Playing Games

Make the place you play safe—by clearing away broken glass, rocks and other dangerous things. When climbing, hold on with both hands. Don't get too close to fire. Avoid strange dogs. Make the street "out of bounds." Be careful of all sharp or pointed articles.

Going Places

"Watch your step" before crossing street. Look right, left and around corner. Never step between parked cars or cross in middle of the block. Don't run after buses or cars. Don't accept rides with strangers. Wherever you go, be smart—play safe!



HEY KIDS!

Remind your Mom that **JUICY FRUIT GUM** is a pure, wholesome treat that won't spoil your appetite. Tell her to keep plenty on hand.

