

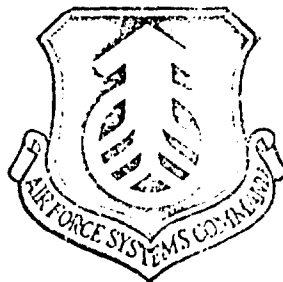
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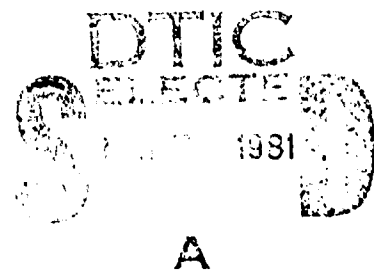
FOREIGN TECHNOLOGY DIVISION



LET'S TALK ABOUT SATELLITES

by

Li Shuili

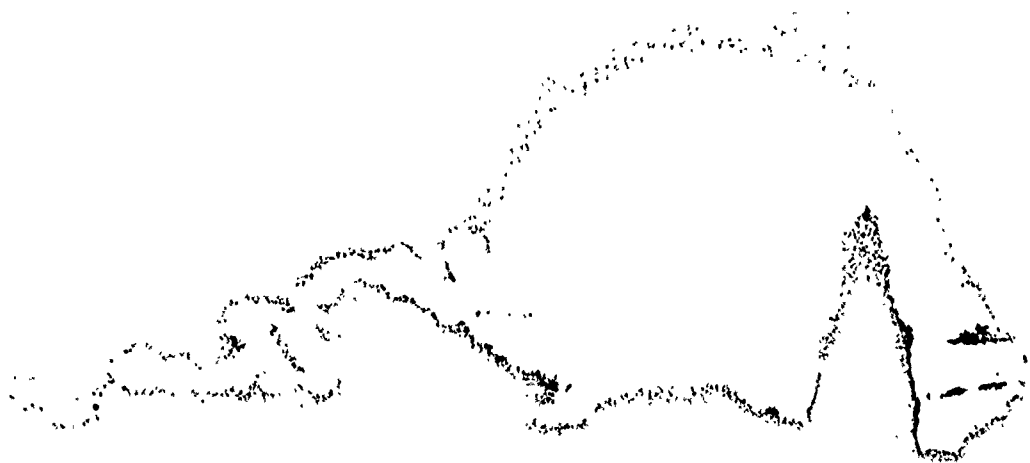


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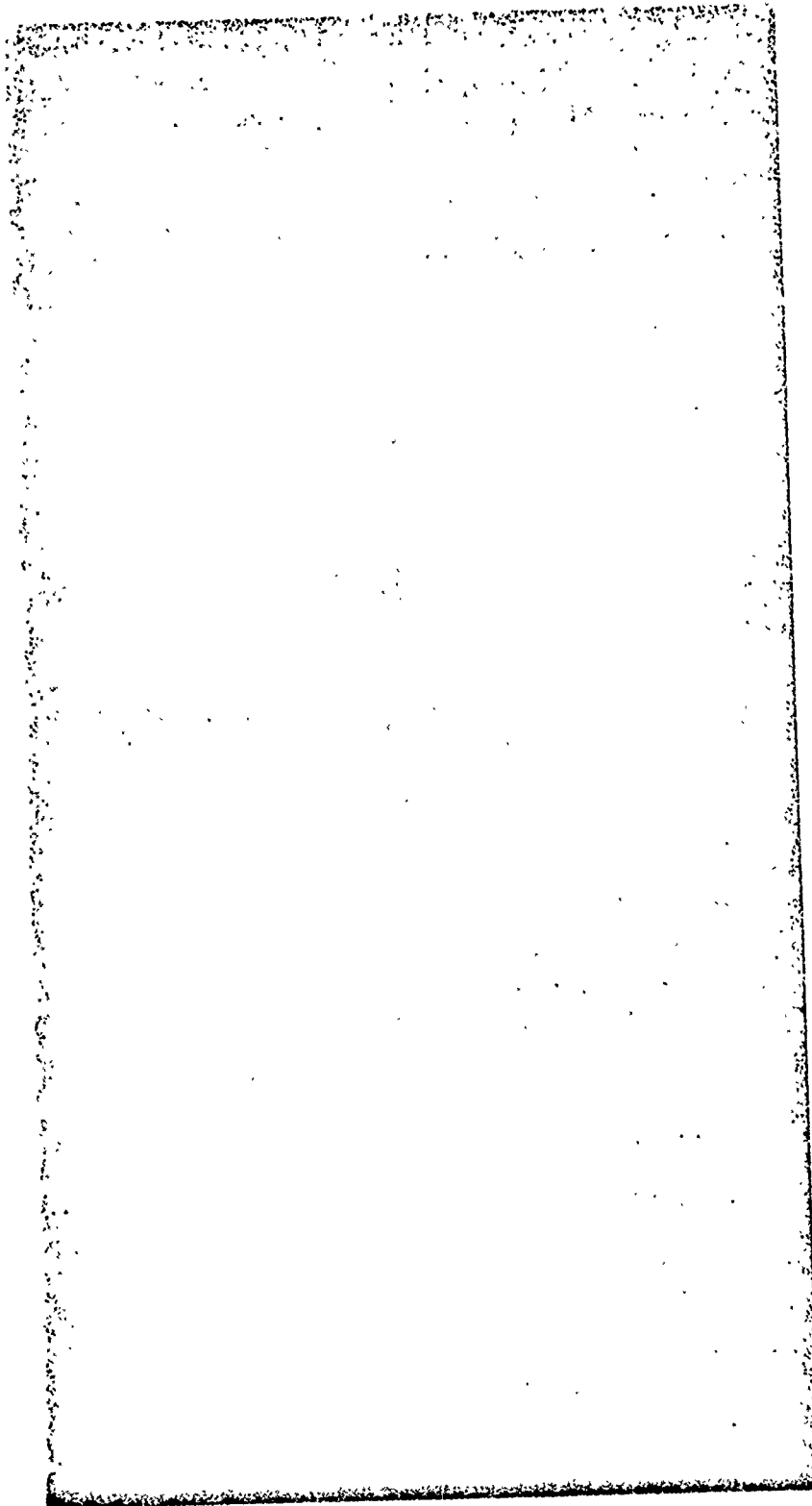


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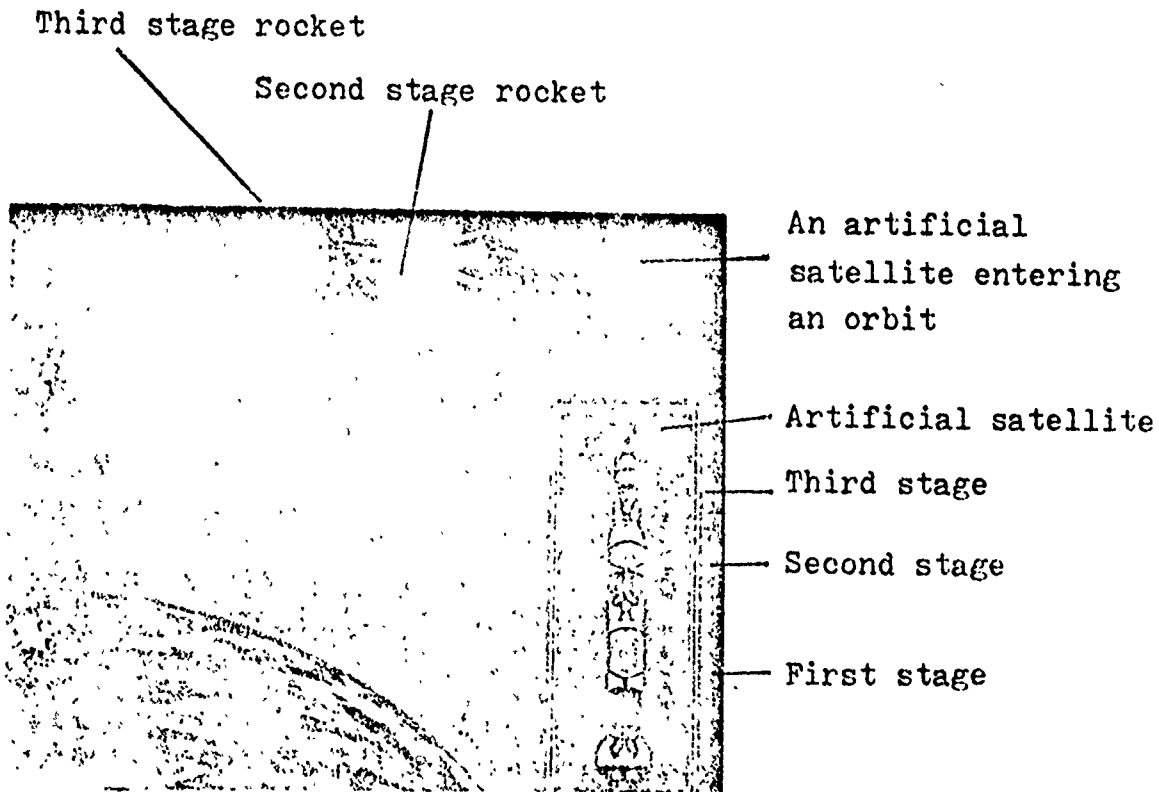
飞向太空

TOWARD THE SPACE

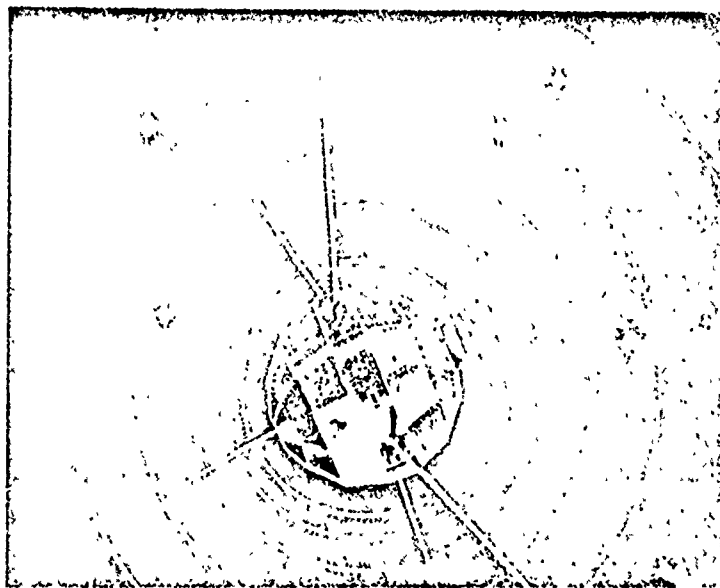


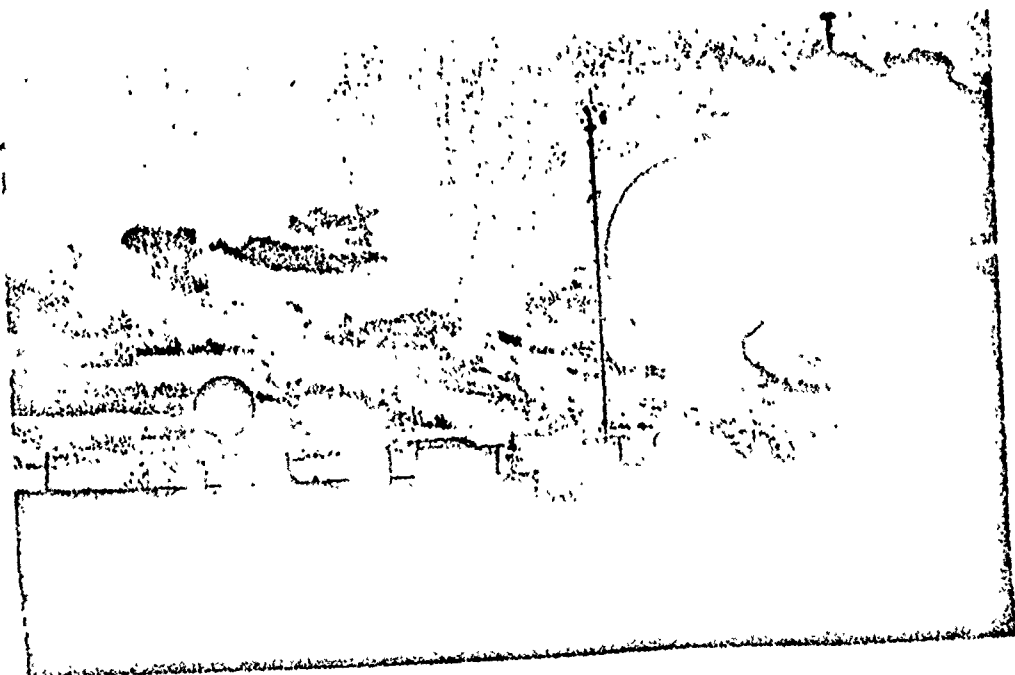
A giant rocket
carrying an
artificial
satellite is
about to fly
toward space

(1) When an artificial satellite travels on the orbit around the earth, its centrifugal force is equal to the gravitational pull of the earth, so that it will neither depart from nor fall on the earth. The orbiting velocity of the satellite near the earth is 7.9 meters per second, and this is called the first universe speed. If the satellite travels slower than this speed, then it will be pulled back to earth; if faster than this speed, then it will travel along an ellipsoidal orbit. When a satellite's speed reaches 11.2 meters per second -- the second universe speed, it will depart from the earth and become an artificial planet revolving around the sun. When the speed of a satellite reaches 16.7 meters per second -- the third universe speed, it will leave the solar system and enter the world of fixed stars.



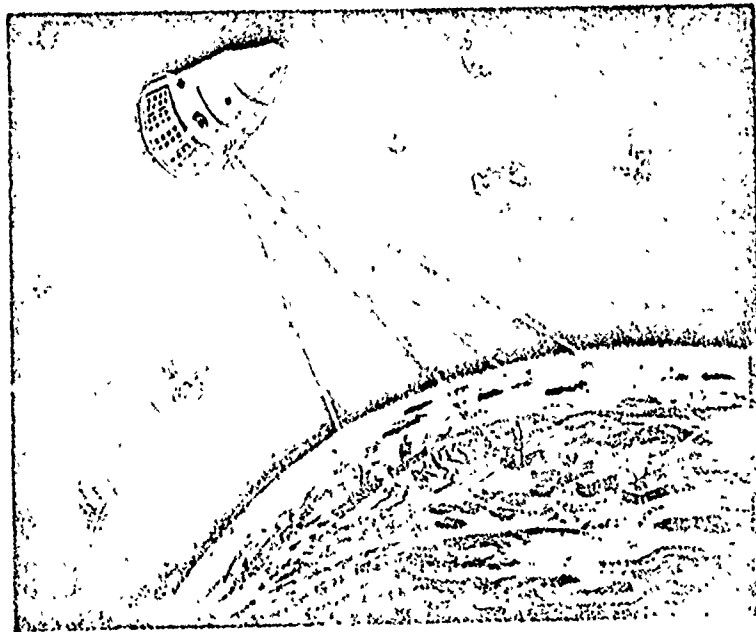
(2) Our country successfully launched the first scientific experimental satellite on April 24, 1970. The satellite weighed 173 kilograms, heavier than the first satellite that was launched by any other nation. The satellite carried a strong radio-wave transmitter, broadcasting the music of "East Is Red" and scientific data to earth. Since then, we have launched a total of eight artificial satellites. Although several countries have launched satellites from time to time, only the U. S. A., Soviet Union, France, Japan, and China used home-made rockets for launching the satellites.





Observing the atmosphere and
forecasting accurate weather

(3) An artificial satellite faces little interferences in the space. With the various instruments and equipment that it carries, it can observe the space above and the earth below. It also can transmit signals and data. Hence, an artificial satellite not only serves important functions for scientific research, production, and daily activities, but it also possesses special military significance. According to statistics, of the satellites that were launched by the U. S. A. and U. S. S. R., seventy percent were military satellites. These military satellites are used for military intelligence, electronic espionage, communications network, navigation, weather forecasting, and geographic mapping. From a long point of view, as military satellites become more widely used, there will be a new battle in space -- a "high ground" to fight for by all sides.

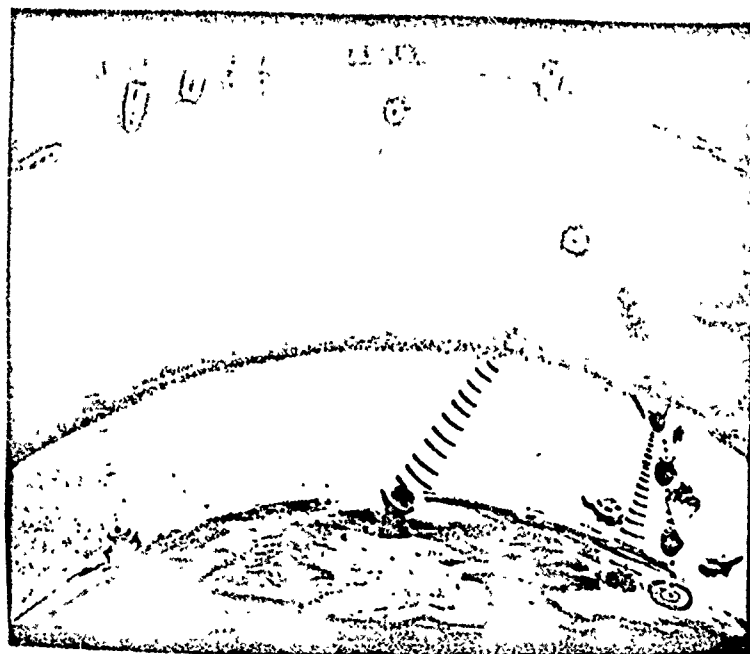


(4) In order to recover a satellite and spaceship the "landing module" must be returned to earth. To achieve a safe return, on the one hand there must be effective measures on the "landing module" to protect against heat and deceleration, and on the other hand control from the ground must be conducted with close precision. The normal reentry process consists of the stages: descent from orbit, reentry into the atmosphere, impact, and recovery. Since 1975 China has successfully recovered three man-made satellites and we are third in the world after the Soviet Union and the USA to master this technology.

LET'S TALK ABOUT SATELLITES

TEXT BY Li Shuili

Chang



When we gaze at a satellite traveling across the night sky, we are certainly likely to think of the people who developed and launched the satellite. They live in a satellite town in the Gobi interior imagining the satellite twinkling so as it revolves around the earth in search of scientific truths.

They love the satellite test facilities because this is the satellite's "dressing table" prior to departure. The test soldiers handle the instruments, in testing and assembly on the satellite and concentrating on their own happy aspirations: Let our country's satellite have a healthy "heart", unimpeded "blood vessels", keen "nerves" and bright "eyes".

They love the weather radar and sounding balloons, have many times switched on the radar antenna looking up at the sky, and have sent a series of balloons into the blue sky. The sounding instruments under the balloons float on clouds and wind, report weather information and look for a good time for launching the satellite.

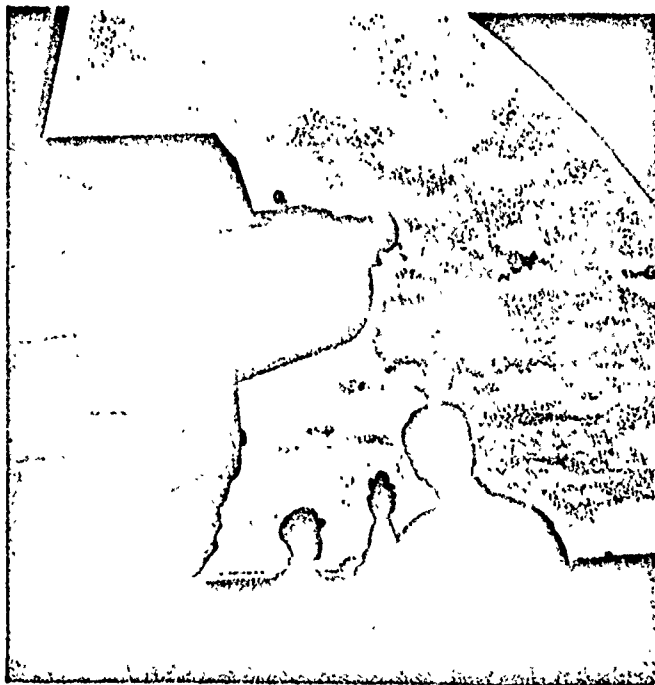
They love the satellite tracking instruments using them to describe the air corridor, in a magnificent solar system, the camera lens looses at the universe and describes the track of the satellites flight and photographs the path travelled by the satellite.

They love the satellite launch site. When the giant crane lifts the silver rocket, when it is fueled and when pre-launch preparations are completed, their perspiration will have flooded the test platform. At launch the light of dawn, the tower, the rocket, and the soldiers together make a colorful picture.

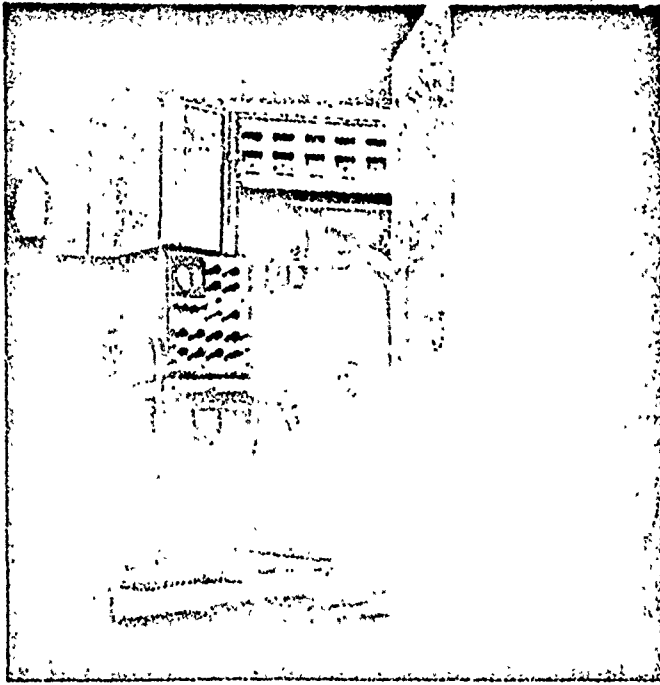
Look! The morning sun is dyeing the haze red, and on the launching tower, the silvery rocket carrying the satellite once again is saying goodbye to our country. That red hot flame and that earth-shaking thundering sound make us admire the honor of the soldiers. These soldiers launch the satellites for our country and people; we salute them!

Text by Han Yingshan

Photo by Liu Tung



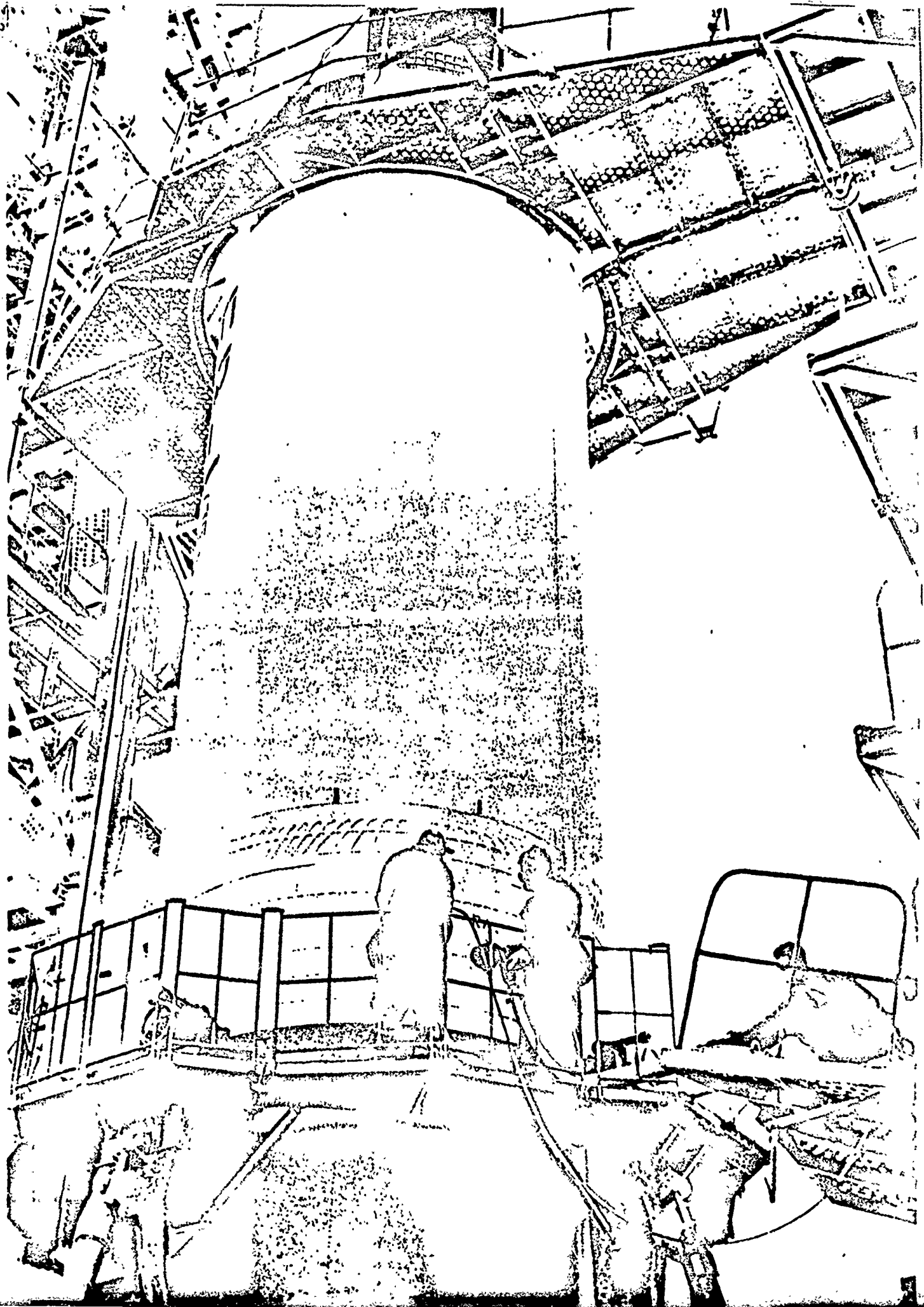
The coordinates-tracking movie instrument is observing and photographing the flight of the transport rocket.



The electronic computer receives and computes the measuring signals from various equipment.

The radar is tracking the transport rocket and controls the safety of the rocket flight.





Caption to Photo on page 11

Adding fuel to the transport rocket.