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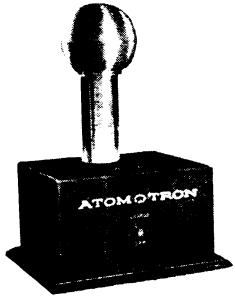


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ENGINEERING

Improve Tracking System For Moon and Satellites

➤ AN IMPROVED tracking system for aiming radar antennas at the moon and man-made satellites, 25 times more accurate than previous methods, was reported to the Institute of Radio Engineers meeting in New York.

The system operates on punched cards, Olaf A. Guzman of the U.S. Army Signal Corps Engineering Laboratories, Fort Monmouth, N.J., reported. Naval Observatory data regarding the moon are punched on cards, then the information is fed to a digital computer that calculates where the moon will be at different instants with respect to the antenna.

Results of the computer's calculations are stored on magnetic tapes and fed into another kind of computer, an analogue system, that provides a continual flow of positional signals to keep the antenna aimed constantly and accurately at the moon.

Last year, scientists at the Naval Research Laboratory in Washington succeeded in receiving voice signals reflected from the moon, opening up the possibility of using the moon to relay long-distance radio transmissions.

Science News Letter, April 5, 1958

GEOPHYSICS

Explorer III Placed In Orbit Successfully

➤ THE THIRD United States artificial earth satellite, Explorer III, was launched by the Army's Jupiter C rocket at 12:38 p.m., March 26, at Cape Canaveral, Fla.

Facts and figures for this satellite, the lowest flying one of those launched, are: Time for completing one trip around the earth, 115.7 minutes; perigee, 110 miles; apogee, 1,738 miles; angle to the equator, 33.3 degrees; lifetime expectancy, "at least three or four weeks."

Since Explorer III's orbit dips closer the earth than had been planned, the satellite is subject to drag during the time it is in the region of thin air near the earth. If it goes through this part of its orbit in a broadside flight attitude, explained Dr. William H. Pickering, director of the Jet Propulsion Laboratory at California Institute of Technology, a month would be the maximum life expectancy.

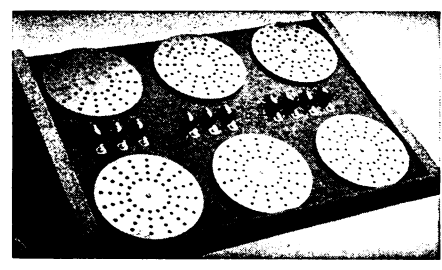
A high-powered transmitter, equipped to make broadcasts of tape-recorded information on command from ground stations, is providing important information on cosmic rays. Early information received indicated that cosmic rays and temperature data are within the "expected limits" and that all of the micrometeorite impact detectors are in operating condition.

Explorer III, now known to scientists and astronomers as Satellite 1958 gamma, is expected to outlive the two-month batteries that power the radio transmitters in the satellite.

Like its predecessor Explorer I, this latest satellite weighs approximately 31 pounds; its shape is an 80-inch tube. Transmitters broadcast on a frequency of 108.03 and 108 megacycles.

Science News Letter, April 5, 1958

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