SPACE

Tiros to Spot Hurricanes

Tiros III weather satellite will track hurricanes. Its TV pictures will be used for study of the origin and development of the storms, Tove Neville reports.

➤ A NEW TIROS weather satellite is checking the Atlantic Ocean for hurricanes during the season.

The Tiros III will actually be used as part of the hurricane warning system if it proves capable of taking pictures in which the tropical storms can be identified.

Meteorologists also hope to measure the heat in and around hurricanes with the infrared sensors on the new Tiros. This would add to the information about the energy that drives a hurricane.

Heat radiation studies may also show how much cooling is taking place at the top of clouds and give a rough measure of sea surface temperatures.

The 285-pound Tiros III went into orbit from Cape Canaveral, Fla., July 12, on a path 461 miles from earth when closest, 506 miles when farthest away. It now circles the earth every 100 minutes.

The first pictures from Tiros III show a cyclone system over Labrador and the cloud cover over the St. Lawrence River, the National Aeronautics and Space Administration reported. Both television cameras are working "very well."

Unlike the two earlier satellites, which used both a wide angle and a narrow angle high resolution camera, Tiros III will have two wide angle cameras. This is because the most important information for weather analysis from the first two weather satellites came from wide angle pictures.

Power for the satellite will be provided by chemical batteries charged by more than 9,000 solar cells. These are mounted on the top and sides of the spacecraft which is 42 inches in diameter and 19 inches high.

A new experiment will be to measure radiation to find how much solar energy is absorbed, reflected and emitted by the earth and its atmosphere. Tiros III carries three radiation experiments, two of which were included in the earlier satellites.

One hundred nations, among them Soviet Russia, are being invited by the United States to use weather information from the new Tiros III satellite.

Nations interested in receiving pictures of cloud formations and storm centers coming their way can participate in a special exchange program of weather observations with the U.S.

Special cloud pictures taken by airplane of local areas in foreign countries, results of radio sonde experiments and radiation observations would be sent to the U.S. In return, the U.S. will supply pictures taken with the satellite's television cameras.

Dr. F. W. Reichelderfer, chief of the U.S. Weather Bureau, reported that 17 countries participated in exchange of weather information on Tiros II. Weather specialists hope to study the origin and development of hurricanes from Tiros pictures.

Dr. Reichelderfer said that weather information from Tiros III of the cloud cover over the oceans in the Southern Hemisphere will be a great gain since very little weather information is now available from these areas.

Ground stations to receive signals from Tiros III are located at Wallops Island, Va., and at Pacific Missile Range, Calif. An additional station in Santiago, Chile, can trigger the clock that starts the TV picture cameras at times when U.S. stations cannot. The cameras can take pictures, for five hours at a time, from 48 degrees north to 48 degrees south, or as far north and south as Newfoundland and southern Chile.

Tiros is not earth-oriented. Part of the time the cameras point away from earth or the satellite passes the dark part of the earth.

For this reason Tiros III will take pictures of the Northern Hemisphere for about four weeks at a time and will then snap cloud covers in the Southern Hemisphere for four weeks. Weathermen will compare the pictures to their own weather maps made up of information from ground weather stations and weather ships in the oceans.

NASA reported that Tiros II, still in orbit and transmitting, may be silenced if it interferes with the new Tiros. Its solar cells are in excellent condition, but its batteries are showing some wear. Tiros I and II have taken thousands of photographs.

In the planning stage are three more Tiros satellites before the operational, earth-oriented Nimbus weather satellite is launched in a polar orbit that would allow weather readings all over earth once a day. Eventually 24-hour weather satellites, which would stay over the same spots of the earth at all times, could send back continuous weather information.

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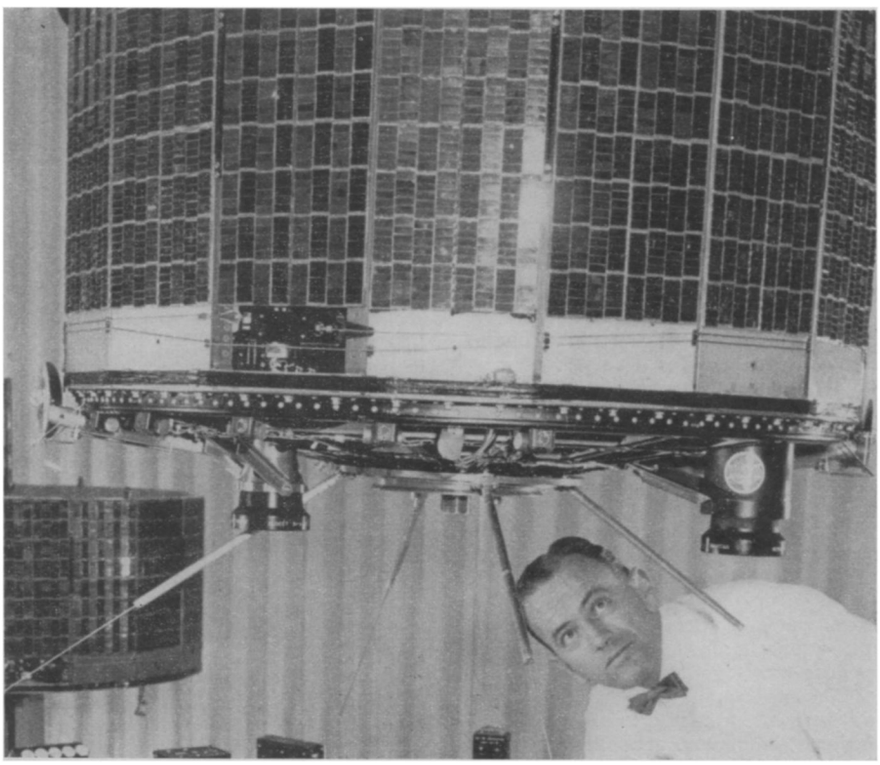

HURRICANE SPOTTER—Weather satellite Tiros III will track hurricanes with two wide-angle television cameras.

SPACE

Orbiting Midas Satellite Heaviest for U. S.

➤ THE HEAVIEST space craft launched so far by the United States is the Air Force Midas III sent into a polar orbit 1,850 miles up on July 12.

The Midas reconnaissance satellite, sometimes called the "spy-in-the-sky," carries infrered sensors capable of spotting the heat from enemy missiles. It circles the earth every 160 minutes.

The satellite, boosted by an Atlas rocket, surveys the entire earth as it travels over the poles and the earth rotates beneath it. The Midas (Missile Defense Alarm System) was launched from Point Aguello, Calif. Two earlier Midas satellites were fired from Cape Canaveral, Fla. One failed. The second went into orbit but failed to continue transmitting.

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