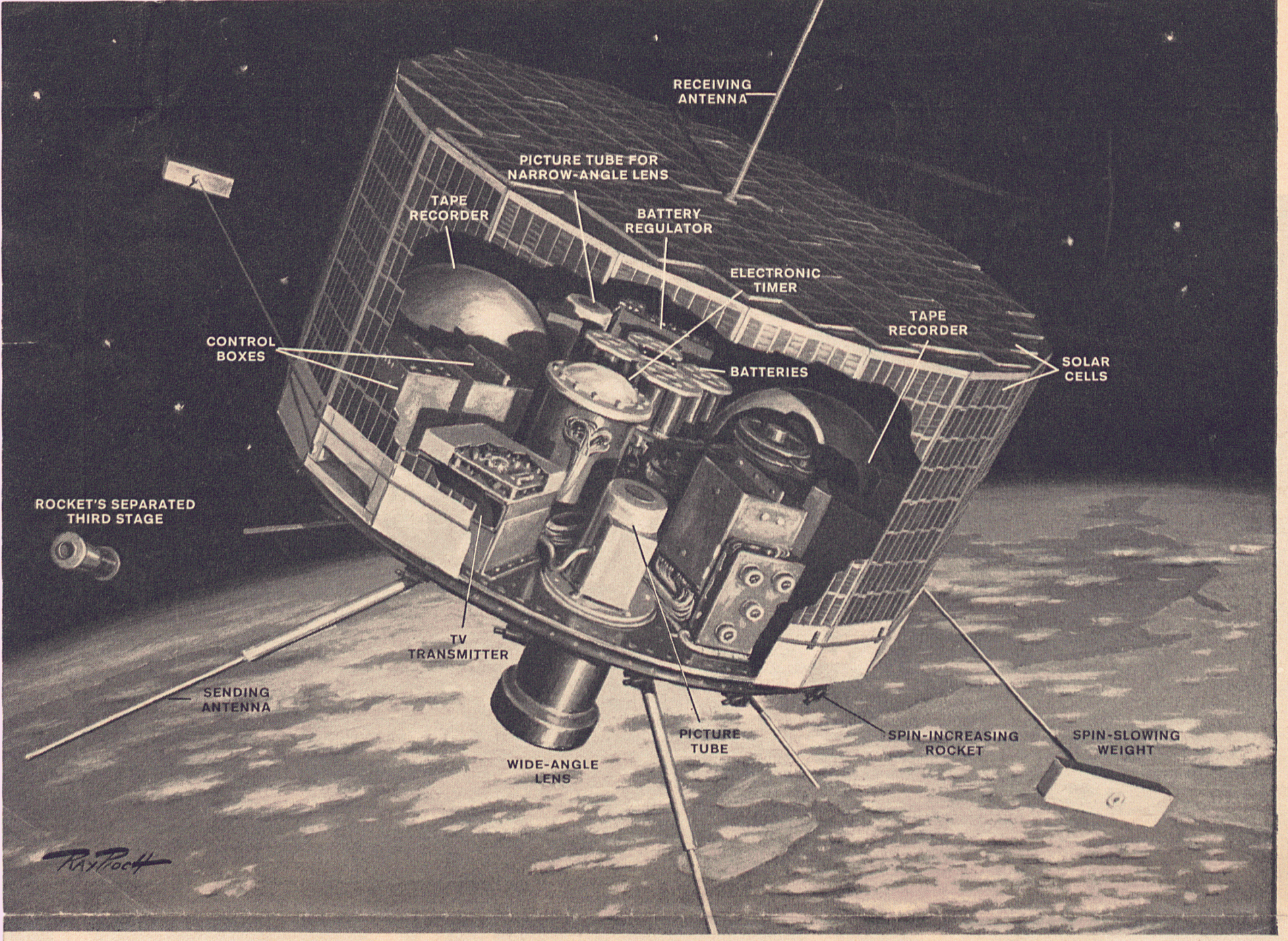
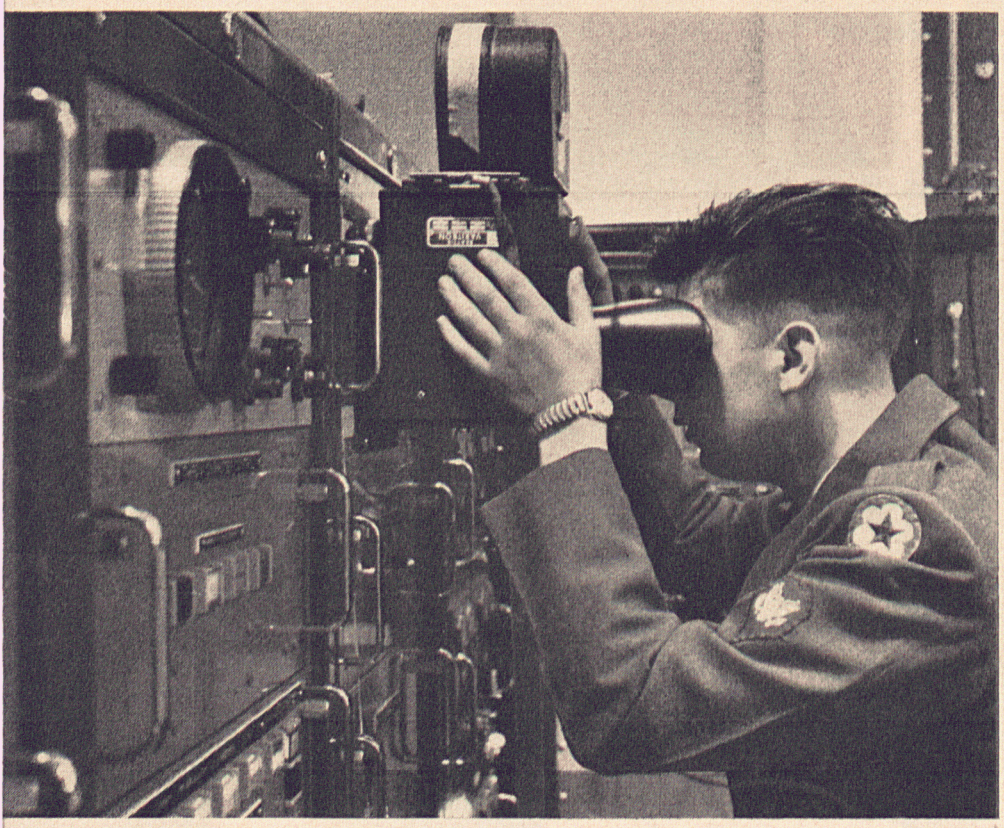


TIROS is a 270-pound object, endowed with a skin of solar cells to give its machinery power. This cutaway drawing shows it at the critical moment, 45 minutes after launching, when its payload begins to function with clockwork precision over the Indian Ocean. Its electronic timer has released weights which spiral out from the satellite on cables unwinding from its base. Like a whirling ice skater who extends his arms, the satellite slows in its spinning from 120 rpm to 10 rpm, the speed at which its two cameras can best take pictures. When fully unwound, weights and cables will drop off and drift away. If it slows too much, rockets can increase spin. Pictures are recorded on tape until radio signal from the ground directs transmitter to send them to earth. Control boxes contain circuits which run the equipment. Behind Tiros floats the third stage of the Thor-Able which carried it up into orbit and then separated from the satellite.



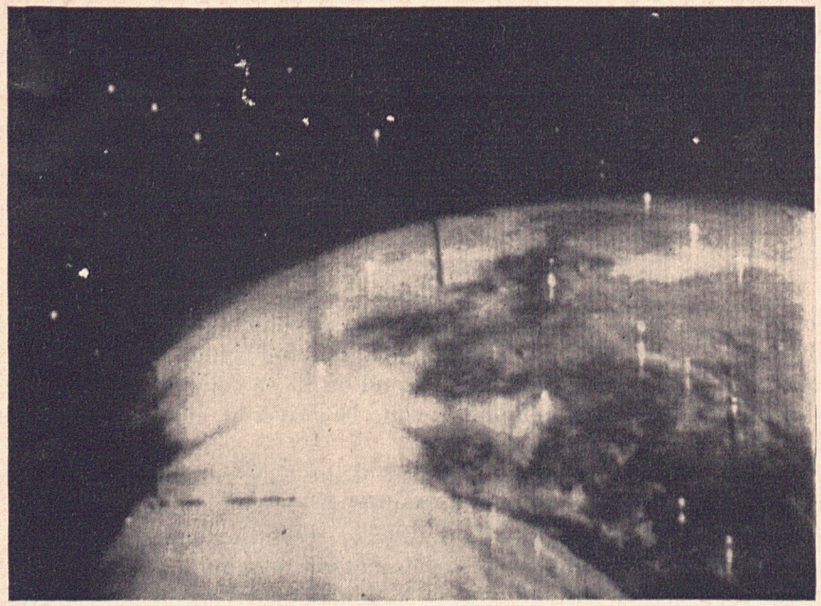
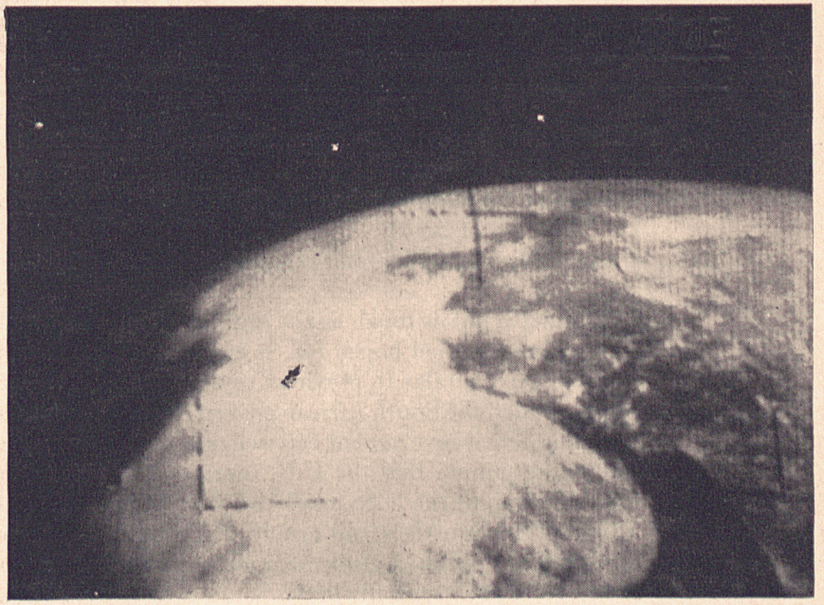
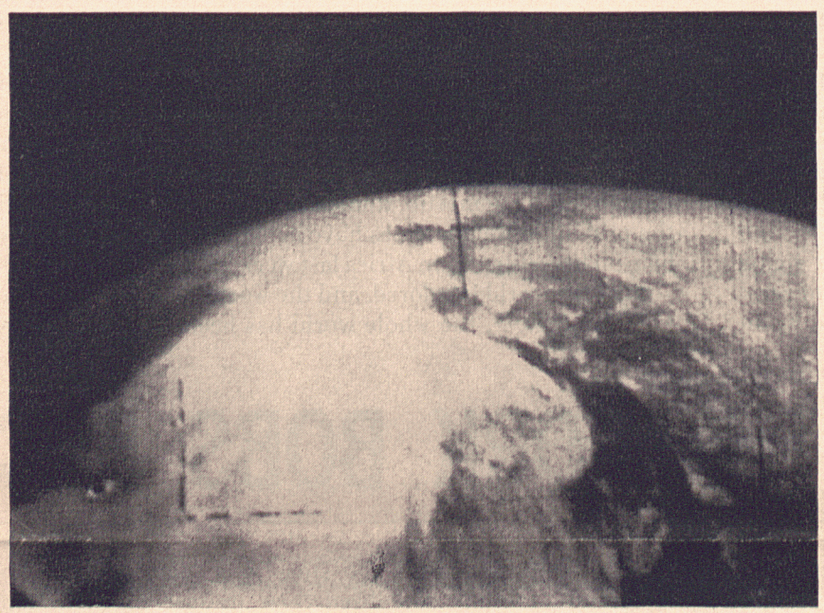
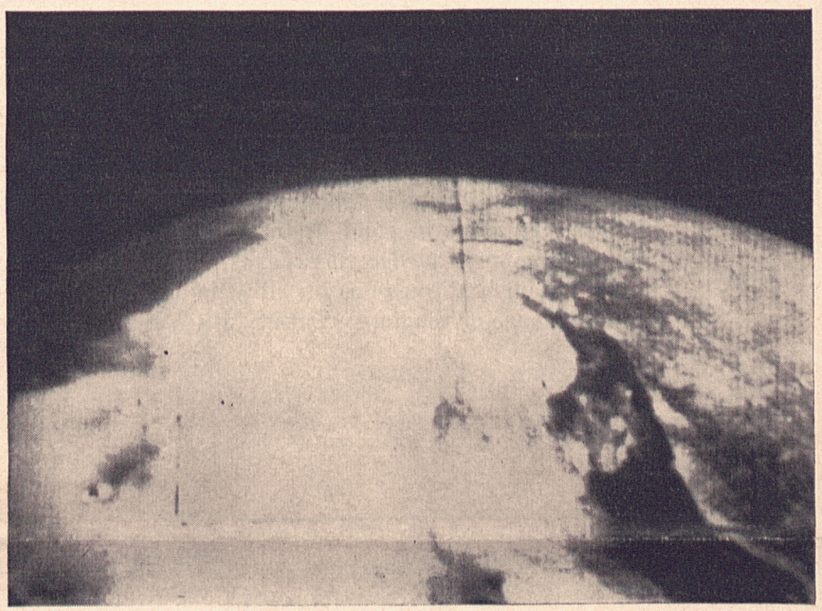
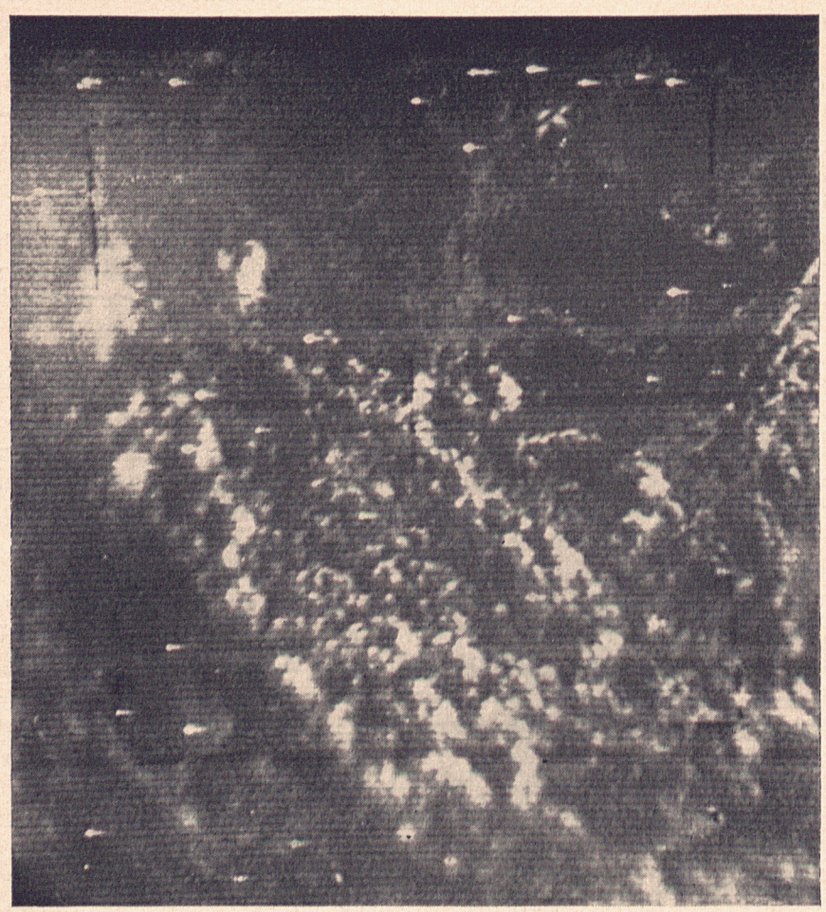
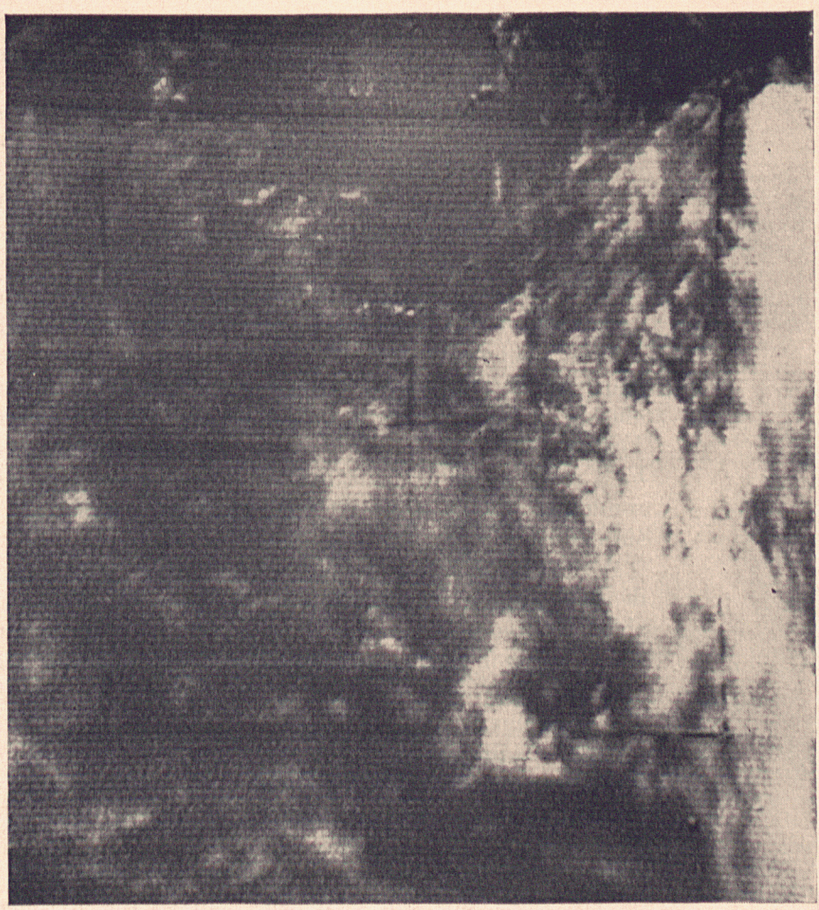
RECEIVING THE PICTURES, SP 4/c James Molnar at Fort Monmouth control center works a special camera which records the cloud images transmitted from satellite. A second receiving station is at Kaena Point, Oahu, in Hawaii.

TIROS BEGINS A NEW WORLD OF WEATHER

As it settled into orbit, the Tiros weather satellite launched by NASA got right down to work and produced the historic pictures on the opposite page. These space-view pictures of the earth's cloud cover, transmitted by television to ground stations, mark an extraordinary breakthrough in the science of weather forecasting and prove that Tiros is the country's most successful space shoot to date.

Flung up from Cape Canaveral by a Thor-Able rocket, Tiros was orbiting in an almost perfect circle west to east around the earth, 450 miles out. The work horses of its payload, designed by the Army Signal Corps and RCA, are two cameras: a wide-angle lens photographing 800-mile squares of the earth's surface and a second lens shooting 30-mile squares. Ranging between the latitudes of Montreal and New Zealand, Tiros photographs over half the surface of the globe (but misses most of the U.S.S.R.). The cloud patterns revealed by such satellites will give weathermen an immediate idea of the weather on a global basis, enabling them to formulate accurate over-all laws about the atmosphere and enormously improve long-range forecasts. By 1965 the U.S. may have two or three weather satellites aloft at all times. The new long-range forecasts will save the U.S. billions of dollars a year. And man will finally be able to talk sensibly about one of his favorite—and most baffling—topics of conversation.

Life Magazine, April 11, 1960

HISTORIC PICTURES taken by Tiros show, in four wide-angle lens shots at top, the mouth of the St. Lawrence River (*top left*) growing larger (*top right*) and still larger as satellite moves over it toward the Atlantic. Bottom pictures were taken by narrow-angle lens near storm center off the Carolina coast. At left are low-lying fleecy cumulus associated with fair weather. At right are high-altitude cumulus and cirrus clouds of type which hover over storm fronts.

National Oceanic and Atmospheric Administration
TIROS Satellites and Satellite Meteorology

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March 20, 2009