

Nimbus 6: Orbiting global monitor

Nimbus 6, a weather satellite described by NASA officials as "the most sophisticated package of meteorological research instruments ever developed," is now in its third week of a polar orbit that shows it the whole earth twice a day. Besides serving as a test bed for the latest weather-watching devices, a major role of Nimbus 6, launched June 12, is to gather data to be used in preparing numerical models of the atmosphere for the vast, international Global Atmospheric Research Program (GARP) to be conducted in 1978-79.

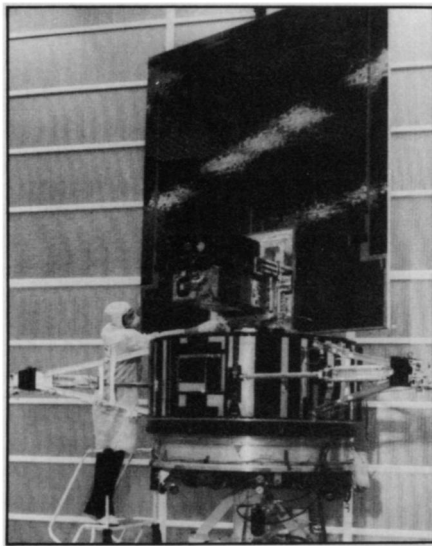
Unlike SMS-1, the synchronous satellite that photographed developing weather patterns from a fixed position for last summer's GARP Atlantic Tropical Experiment (GATE), Nimbus 6 moves around the planet reporting on temperatures, winds and water distribution.

Several of its instruments are concerned with "vertical profiling"—looking down to make measurements at different atmospheric levels. One, for example, measures in 17 separate infrared bands to monitor both reflected solar radiation and the earth's own emissions, yielding temperature and water vapor profiles in clouds as high as 40 kilometers from the surface. Another device looks at the limb, or visible edge, of the earth to record the structure and ozone-density distribution of the stratosphere, with vertical temperature resolution as fine as 6,500 feet, about five times as good as similar instruments on previous Nimbus probes.

Besides making these and other measurements on its own, Nimbus 6 will serve as a communications relay for a series of instrumented balloons in a multinational study called TWERLE—the Tropical Wind, Energy-conversion and Reference Level Experiment. Floating nearly 30 kilometers up, the balloons will send temperature, pressure, altitude and wind data through Nimbus 6 to a central ground station. TWERLE will involve scientists in the United States, Australia, Brazil, Canada, France, Norway, South Africa and the United Kingdom.

TWERLE and two of the temperature profilers are the satellite's major GARP-related experiments. Their data will be used in conjunction with findings from GATE to develop numerical models of the behavior of the atmosphere, against which will be compared the findings from the 1978-79 GARP international phase.

And GARP planners need all the help they can get. Dividing the entire globe into imaginary 500 kilometer squares, they hope to use a minimum of nine satellites (including 4 Nimbus-style polar orbiters and 5 synchronous SMS-type weather-watchers) along with hosts of ships, planes, buoys, balloons and other devices to collect data from every square. □



OSO-8 gets a check before launch.

OSO-8: Sun and beyond

The sun and a host of celestial exotica are among the targets of the eighth Orbiting Solar Observatory satellite, OSO-8, which was placed in its nearly circular earth orbit on June 21. The probe's primary instruments are a pair of ultraviolet telescopes—a UV spectrometer that will record spectral profiles from various parts of the solar disk for Elmo C. Brunner Jr. of the University of Colorado and an instrument that will study the fine structure of the sun's chromosphere for R.M. Bonnet of the French National Center for Scientific Research in Paris. Other instruments, however, will seek such phenomena as supernova remnants and the possible pulsars within them; certain X-ray-emitting binary stars that seem to include a visible star with a smaller companion

A cautious twist in the risky shift

Henry makes good money grinding out schlock Westerns, but he is a talented writer and has recently been working on an idea for a novel of potential literary significance. Should Henry give up his lucrative Westerns in order to pursue a more creative career that may or may not be financially successful? In 1961 James Stoner posed this and a number of similar questions as part of a research project designed to test the old adage that groups are more cautious and less creatively daring than individuals. Compromise within groups, for instance, might put a damper on daring decisions and inhibit extremist positions.

Participants in Stoner's experiments were asked individually how they would solve Henry's dilemma. They then assembled to discuss the same problem and

that may be a neutron star or even a black hole; and cosmic X-ray background radiation.

In addition, OSO-8 carries a "stored-command processor" which will let astronomers on the ground prepare complex instructions for the probe's many instruments in response to changing conditions on the sun, then trigger the instructions at a predetermined moment. □

Two by two to Venus

The Soviet Union, which likes to send its Venus probes in pairs, has done it again. On June 14, less than a week after the June 8 launch of Venera 9 (SN: 6/14/75, p. 382), Venera 10 was sent on its way. Both spacecraft are due for an October arrival. Previous mission plans and the approximately five-ton weight of the new probes suggest that both vehicles will attempt either to land on the cloud-shrouded planet or to drop off descent stages from a fly-by trajectory.

In 1969, Veneras 5 and 6 reached the planet and reported data during descent through the atmosphere. Both Venera 7 in 1971 and Venera 8 in 1972 reached Venus, but their respective companion probes failed to get out of earth orbit. □

Cosmonauts crack barrier

Soyuz 18 cosmonauts Pyotr Klimuk and Vitaliy Sevastyanov set a new Soviet duration record for men in space on June 24, breaking the 30-day mark of the Soyuz 17 crewmen (SN: 5/31/75, p. 351). Both crews spent most of their time aboard the Salyut 4 space station, with Klimuk and Sevastyanov becoming the first crew to successfully re-occupy a Salyut. The busy Soyuz 18 itinerary has included solar spectroscopy, X-ray astronomy, solar and galactic cosmic-ray studies and investigations of earth's atmosphere including pollution and density measurements. □

arrive at a group decision. The groups, on the whole, turned out to be more risk-prone than the average individual. Stoner's surprising finding was immediately dubbed the "risky-shift" phenomenon.

If group discussion does indeed result in more risky or extreme decisions, then some important questions have to be answered. For instance, does discussion in juries, in business committees and in military decision groups generally increase risk-taking? Perhaps not. Perhaps the risky shift is only part of a larger phenomenon.

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