

tee, Genentech requested permission to "scale-up" production of both interferons to batches of 600 liters.

Like interferon, human growth hormone bacterially produced (SN: 7/14/79, p. 22) is fully as effective as natural material, Stebbing reports. In experiments measuring weight gains and bone length in rats, bacterially made hormone stimulated growth to the same extent as hormone obtained from human pituitaries. □

## Two more visits to Salyut 6

The Soviet Salyut 6 space station, in orbit since September 1977 and occupied since April 9 by cosmonauts Leonid Popov and Valery Ryumin, has served as home for two more cosmonaut crews in recent weeks, making a total of 10 crews who have visited the facility. On May 26, Valery Kubasov and Bertalan Farkas, the first Hungarian cosmonaut, were launched toward the station aboard Soyuz 36. They returned to earth eight days later aboard Soyuz 35, leaving the fresher craft still docked with the Salyut. (Besides Russia, cosmonauts have also been provided from Czechoslovakia, Poland, East Germany and Bulgaria. Others are in training from Cuba, Mongolia and Vietnam, with plans to include candidates from India and France.)

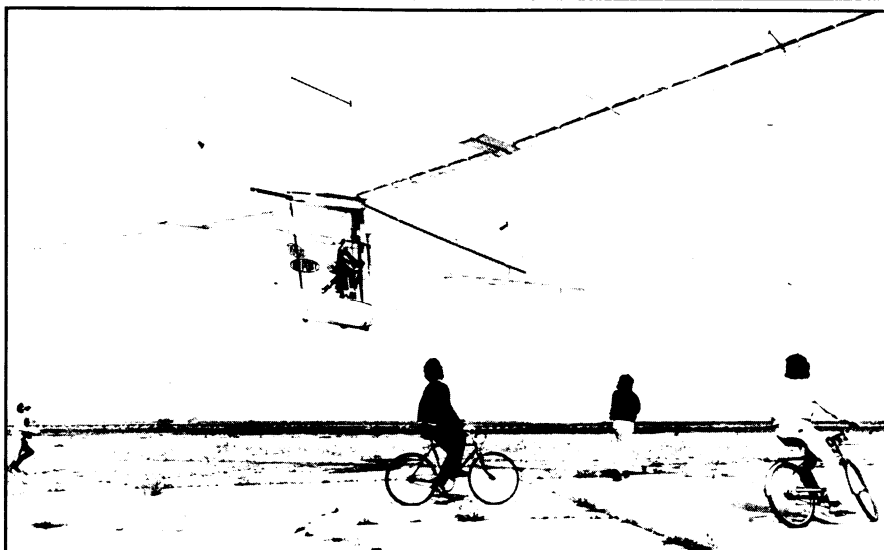
Only two days later, on June 5, Yuri Malyshev and Vladimir Aksenov took off for Salyut 6 aboard Soyuz T2, an improved version of the spacecraft including revised propulsion equipment and a computer designed to reduce the crew's dependence on data and navigational support from the ground. After spending some time aboard the station, they descended to earth aboard the T2.

Popov and Ryumin, meanwhile, are expected to remain aboard Salyut 6 for an extended period, in view of Soviet reports that the cosmonauts exercise 90 minutes a day, "as they have to be in a perfect state of fitness for a long time to come." □

## NOAA-B aloft but useless

The National Oceanic and Atmospheric Administration's NOAA-B weather satellite, launched on May 29, is useless, according to agency officials, because it was launched into the wrong orbit. The mishap apparently resulted from a sequence of events that began when one of the two booster engines on the rocket carrying the satellite developed only 75 percent of its planned thrust, leaving NOAA-B in a 150-by-900-nautical-mile orbit instead of the 470-n.m. circular orbit for which its instruments were designed. To ensure data continuity from the satellite series, NOAA-C, formerly scheduled for 1981, is being retargeted for a November launch. □

## Condor's grandchild: This penguin can fly



What's left for the team that engineered successful human-powered flight? The world's first human-piloted solar-powered aircraft. Brainchildren of Paul MacCready — whose Gossamer Condor (SN: 9/3/77, p. 149) and Gossamer Albatross (SN: 6/16/79, p. 390) set records and won awards for human-powered aircraft — the Gossamer Penguin and the Solar Challenger are expected to demonstrate later this year the potential of sunlight-powered flight. Having already completed test hops, MacCready's Penguin (above) — a 68-pound, three-quarter scale version of his Albatross — is expected to make its maiden voyage later this month under the control of Janice Brown, a 31-year-old Bakersfield, Calif., elementary school teacher and certified pilot. Soaring at about 15 miles per hour all of five to 10 feet off the ground, Brown hopes to prove that the craft can take off and be controlled over a several mile flight path. A panel of photovoltaic solar cells powers a five-inch-long motor, which in turn drives the rear-mounted propeller. There are no batteries for energy storage, so clouds could mar its success. Sometime this fall Brown will pilot the Challenger, a more conventional-looking extremely lightweight plane that carries 30,000 solar cells. The two-horsepower craft is expected to cruise 100 miles or more at 40 mph and altitudes of 200 to 5,000 feet, even under turbulent conditions.

## New pieces to the Mayan puzzle



What, at first glance, may look like a computerized cave painting is actually a radar image taken from 28,000 feet above the dense rain forest of Guatemala's central lowlands. The grid patterns (enhanced by computer processing) represent part of a complex network of drainage canals dug by the Mayan civilization between 250 B.C. and A.D. 900, according to archaeologist Richard E. W. Adams of Cambridge University in England. After a month-long trip by car and canoe through the rain forest, Adams and archaeologist T. Patrick Culbert of the University of Arizona confirmed the existence of the elaborate canal network. The finding, they say, appears to answer the long-time question of how the Mayan population — estimated to have been at between 2 million and 3 million persons at one time — fed itself in an area that would seem to have been only marginally suited for agriculture. The one-half-meter-deep by one-to-three-meter-wide canals would have increased agricultural productivity, say the archaeologists. The discovery occurred during initial tests of the radar imaging system over an 80,000-square-kilometer region of Guatemala and Belize in 1977 and 1978. A form of the system, called synthetic aperture radar, was later used in the now-defunct NASA Seasat ocean monitoring satellite. It was developed for NASA by the Jet Propulsion Laboratory in Pasadena, Calif.