

all cancers of the liver are associated with AFP."

Waldmann and his colleagues have also found that 80 percent of 79 patients with cancer of the testicles had 40 ng/ml of AFP. Patients with cancer of the lungs, pancreas or other organs also had elevated AFP levels, but not as much as patients with testicular tumors. Healthy adults usually had no more than 1 to 14 ng/ml of

AFP. But pregnant women, patients with cirrhosis of the liver and children with a particular autoimmune disease also had large amounts of AFP (above 50 ng/ml).

So AFP assays do not appear to offer as exacting a diagnosis of cancer as do CEA assays.

Still, Waldmann says, AFP assays are quite effective in estimating the success of cancer therapy. If a patient is suc-

cessfully treated for cancer, AFP levels in the blood decrease. Every patient found to have elevated AFP levels during treatment has experienced a resurgence of cancer.

The AFP assay, like the CEA assay, must be pinned to specific cancers, Snyder asserts. Then the assays might complement rather than oppose each other in the early diagnosis and treatment of cancer. □

## Skylab's research program curtailed but continuing

As the frustrated, overheated crew of the Skylab orbiting workshop labored through their second week in space, the path to their two goals—salvage and science—began to sort itself out.

Despite a busy schedule of observations of the earth, sun and stars, most of the efforts of astronauts Charles Conrad, Paul Weitz and Joseph Kerwin were focused on a two-man spacewalk, finally scheduled for late this week, aimed at freeing the jammed solar panel that had crippled the mission from its beginning.

For several days, earthbound mission controllers in Houston considered extending the astronaut's stay an extra 10 days, which would carry them into a period when the space station would be in almost continuous sunlight. This would provide as much as 3,000 watts of additional power from Skylab's solar cells even if the jammed panel were not freed, as well as allowing extra time for photography and other experiments that have been shortened or postponed because of the reduced power available. But on Tuesday, following a study of risks, mission delays and other factors, program director William Schneider announced that "the review has resulted in the conclusion that there is no justification for any extension of the mission at this time."

As planning proceeded for the freeing of the stuck solar panel wing, there were at least heartening signs that the panel would work if it could be opened. Even in its mostly closed position, the panel was providing about 80 watts of power, proof that its connections were still intact. It was even being used to "trickle-charge" the batteries in the laboratory's spacecraft docking adapter. The adapter houses many of Skylab's scientific experiments, including the elaborate array of cameras and other scanners in the

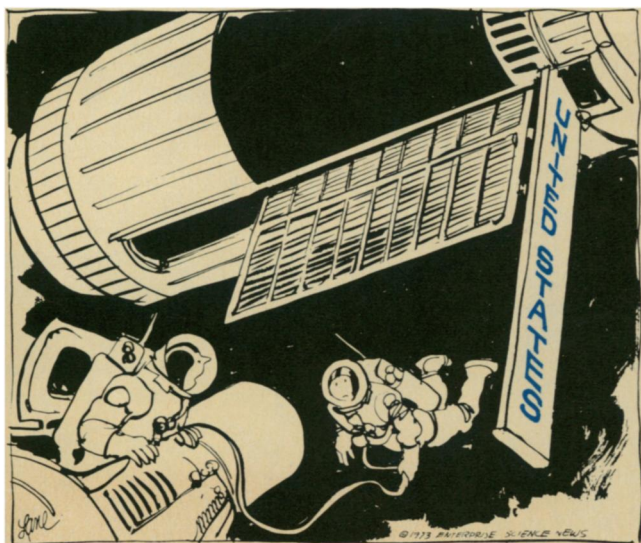
complex Earth Resources Experiment Package (EREP).

EREP is a much more sophisticated version of the system aboard the Earth Resources Technology Satellite (SN: 3/31/73, p. 214), which has already recorded numerous examples of pollution sources, geological structures, crop conditions and other features. Several apparent problems showed up with the EREP cameras, but have largely been traced to "glitches" in malfunction detectors and computers.

EREP has been one of the experiments hardest hit by Skylab's reduced power. Photographic passes that were to have taken in as much as 120 degrees of the earth's surface have been held to barely 40. An 11-minute scan of a swath from San Francisco to the Gulf of Mexico was all that remained of an originally scheduled 30 minutes. One 12-minute pass from the midwestern United States to the Virgin Islands was to have been almost three times that length. A scanning run of the sun with Skylab's solar telescope was shortened by some 50 percent because of the need to run the telescope at half speed.

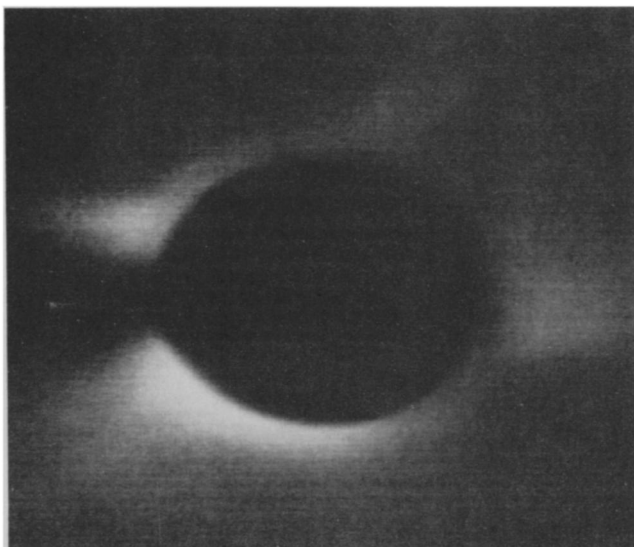
Even so, Skylab has photographed earthquake fault zones in California, volcanoes in Mexico, strip-mining damage in the Ohio Valley, wetlands on the Georgia coast and urban sprawl in Atlanta. The Apollo telescope mount, whose four-winged solar array is open and working, has been providing four or five photo passes of the sun and sky a day.

Meanwhile, the astronauts rehearsed the tricky double spacewalk to free the guilty solar panel. On the weekend, officials had been allotting a full 10-hour workday for the actual freeing operation, but as procedures were refined, estimates of the necessary time dropped to as little as four hours or less.



ESN

"Houston control says try kicking it."



NASA

Skylab solar telescope photographed the sun's corona.