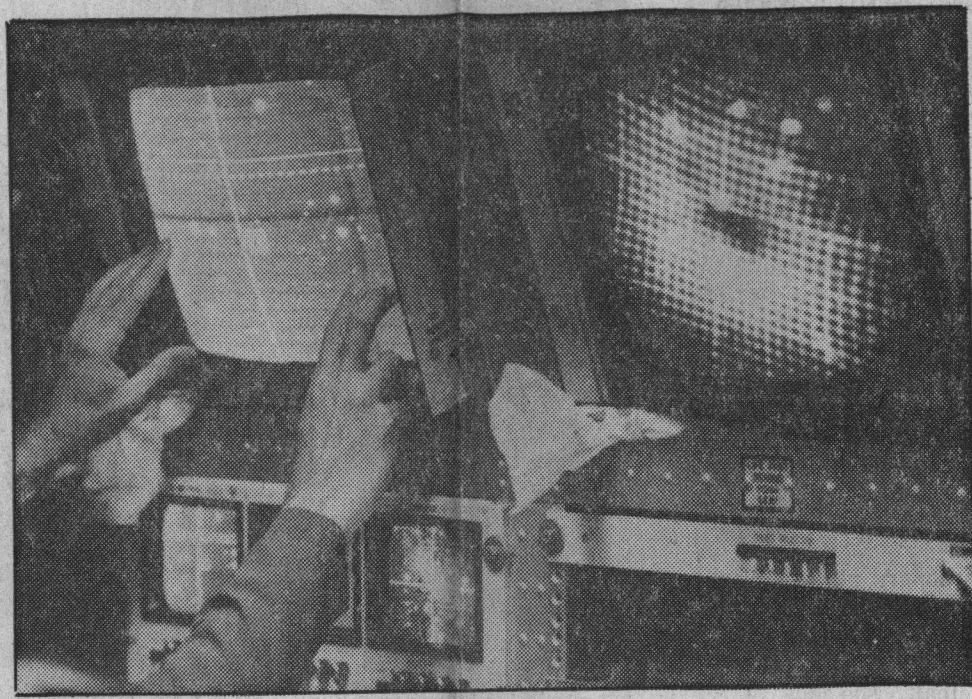
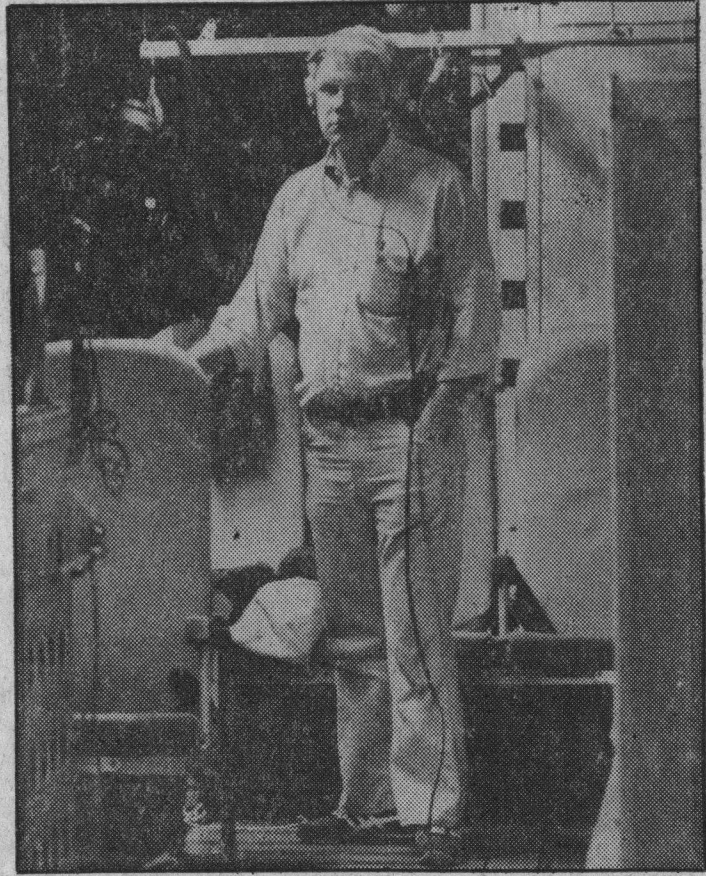


# Tree 'n Sea Living

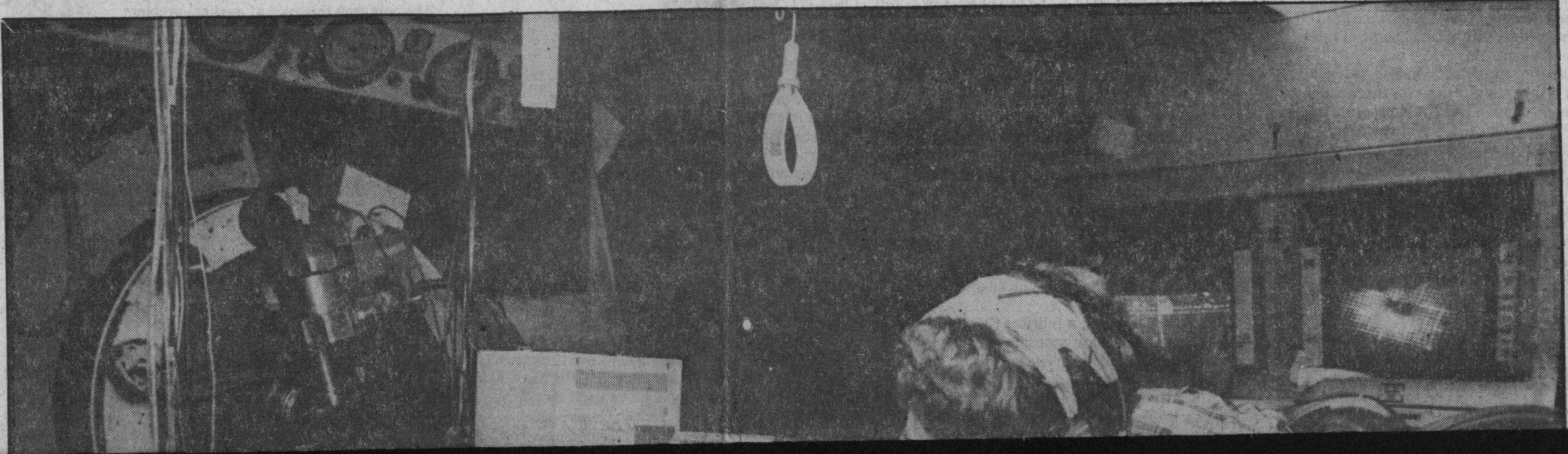
7/25/82

## Flying High To Probe The Stars



NASA Photo

At left is UCSC's David Rank; At center, NASA-Ames' Dan Lester and Harriet Dinerstein and below, Fred Witteborn, also of NASA.





By JOHN McNICHOLAS  
Sentinel Staff Writer

**N**EVERTHELESS, it moves." Galileo is said to have muttered these words under his breath after the Inquisition in 1633 forced him to recant his belief the earth was not the center of the universe, that it moved around the sun.

That was 350 years ago. Today, astronomers fly at 40,000 feet in a giant jet cargo plane equipped with a two-ton, 36-inch telescope and packed with computer-controlled observational equipment. They plumb the depths of the universe, unlocking secrets and uncovering puzzles undreamed of even 50 years ago.

Last Monday night, UCSC Professor and Lick Observatory Astronomer David Rank joined NASA Astronomer Fred Witteborn in NASA's Kuiper Airborne Observatory for a 7½-hour

flight. The pair and their team of collaborators are searching the tenuous gases and dust near stars 10 to 20,000 light years from earth for clues to the galaxy's evolution.

Flying from the NASA Ames Research Center at Moffett Field, the converted C-141 carries its 36-inch telescope and 12 or more people into the earth's stratosphere. They are there to study infrared radiation, which is absorbed by water vapor in the lower atmosphere.

When the plane reaches the right altitude, a door in the fuselage opens, and the nitrogen-cooled telescope begins its search.

The plane's course, figured down to the minute, parallels the observed object's direction of travel. Once the object is pinpointed by the tracker amid the myriad stars in the vastly deep fields of space, computers hold the telescope on the object while the

data is recorded by other computers.

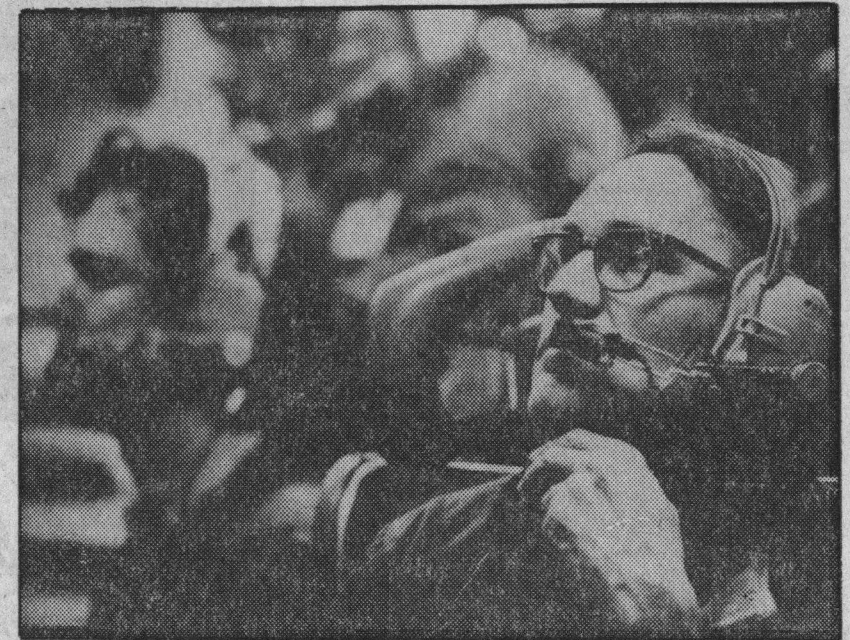
Each observation is timed to the second, and each move of the research team is as tightly choreographed as a dance team's. A small glitch, a moment's inattention or carelessness can scrub a \$40,000 mission or, at worst, endanger the plane and the crew.

Monday's mission went almost flawlessly. Using a supercooled spectroscope developed by Rank, the team — which includes three former UCSC students and Rank's student assistant — collected data on interstellar dust and the abundance of argon. They hope to find, among other things, whether the galaxy evolved unevenly, and when and how star formation took place.

"The other reason we're doing this," Rank said, "is because it's fun to do."

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Photos By Bill Lovejoy