

space



D. Graham

## Sun kills crucial info from Titan

United Press International  
MOUNTAIN VIEW, Calif. — The first major disappointment in the 6½-year journey of Pioneer 11 occurred when crucial data about possible life on Saturn's moon, Titan, was lost.

The Space Agency said huge bursts of radiation from the sun blacked out radio signals from the 565-pound spacecraft for two hours Monday.

That crucial time period was Pioneer's only chance — for just 15 minutes while moving at 25,000 mph — to obtain ultraviolet measurements of Titan.

These measurements would have given the satellite's temperature, the key to the question of whether Titan's conditions could foster life.

Titan is the last place in the solar system besides Earth where scientists think life forms could develop.

Charles Hall, Pioneer Project manager, said he was deeply disappointed. But he said a small percentage of the data might be recovered by intensive reviews of recordings made at the tracking station at Madrid.

Previously, Pioneer had been unusually lucky during its 2 billion-mile trip. It survived the asteroid belt, and it suffered some circuitry damage when blasted by enormous radiation as it curved close around Jupiter. But that damage had been expected.

Titan's temperature is important because, for life to exist, the surface should be above freezing, the level allowing primitive organisms to move.

Titan, larger than either Earth's moon or the planet Mercury, has the chemicals necessary for organisms to form, and it has an atmosphere.

Many scientists theorize that Titan's surface is about 300 degrees below zero Fahrenheit, but this calculation has not been proved and some scientists disagree with it.

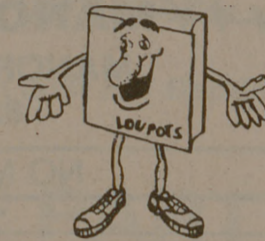
Tuesday, Pioneer was outbound, 1.6 million miles from Saturn, passing some of its moons other than Titan and headed on a trajectory that will take it out of the solar system in 1993.



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## NASA cuts two tests

# Delays plague shuttle

United Press International  
WASHINGTON — The space agency has trimmed its space shuttle flight test program from four flights to reduce delays in subsequent operational missions.

The effort to develop the big-geared rocket transport has been plagued by numerous problems for the past few years and is now more than a year behind schedule. The problems are so serious President Carter has asked for a briefing next month.

Getting the space shuttle ready for operational satellite launchings soon as possible is particularly important because the Defense Department is counting on the ship to carry up military payloads in the early 1980s. Commercial satellite operators also are affected by delays.

The shuttle is the first spaceship to return from orbit to an airfield landing. This will allow it to be used over and over again.

The initial launch of the Columbia, the first of four rocket planes to be built, now is scheduled for some time between the end of March and the end of June next year — but the space agency officials believe it will likely be delayed into next summer.

Astronauts John W. Young and Robert L. Crippen will make the flight, starting out from Cape Canaveral, Fla., and gliding to a landing at Edwards Air Force Base, Calif., 53 hours later.

The mission, once set for last March, was first stalled by troubles with the powerful newly designed hydrogen-oxygen engines that will power the Columbia into orbit. But recently it has been delayed by the installation of vital insulation on the ship's aluminum skin.

Five additional two-man shuttle flights in orbit were planned before the 122-foot-long spaceship was to be declared ready to carry out operational satellite launching missions.

The original schedule called for the sixth test flight in March 1980, with the first operational mission coming two months later. Four more operational missions had been scheduled for 1980.

The most recent timetable, presented last week to organizations that will use the ship, eliminates the last two test flights and turns them into operational missions. Space officials point out that additional test missions can be scheduled if the initial flights encounter difficulties.

The latest tentative schedule, devised for planning purposes, looks like this:

Space shuttle 1 — to be launched by June 1980.

Space shuttle 2 — launched by November 1980.

Space shuttle 3 — by February 1981.

Space shuttle 4 — by May 1981.

Space shuttle 5 (the first operational mission) — to launch a tracking and data relay satellite Sept. 1, 1981.

Space shuttle 6 — to launch three communications satellites Oct. 21, 1981.

Thirteen flights of the Columbia and the second space shuttle, the not-yet-completed Challenger, are tentatively planned for 1982.

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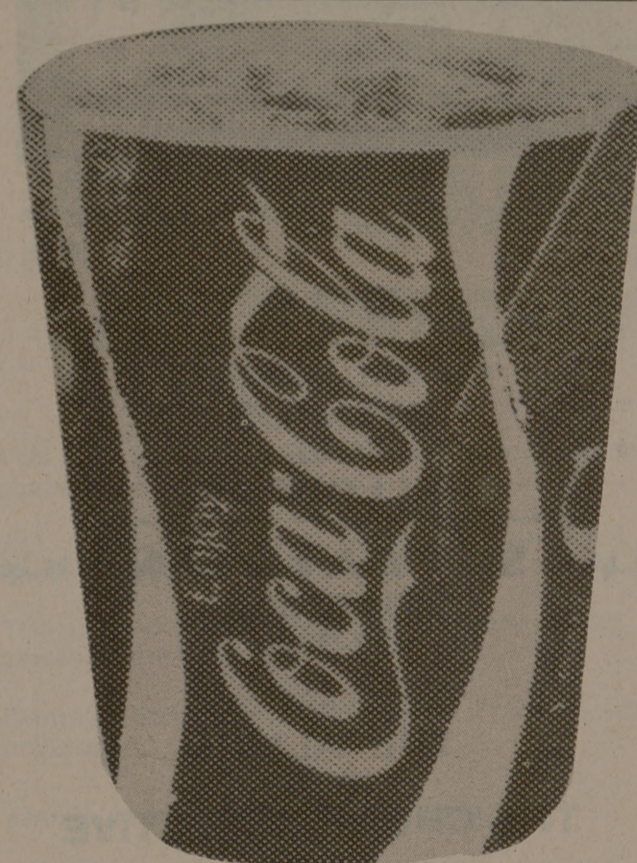
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