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## Spin hinders stabilization test

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A key, and long-awaited, experiment on the fifth Applications Technology Satellite—the test of a passive stabilization system that could greatly simplify satellite design—may never take place as planned, due to failure to stabilize the satellite's violent spin.

Launched Aug. 12, ATS-5 inexplicably went into a flat spin around its yaw (horizontal) axis, rather than the roll (vertical, lateral) axis as intended. On Sept. 5, flight controllers at Goddard Space Flight Center ejected the probe's apogee kick motor, the motor used to loft it into its high, synchronous orbit. The ejection, a standard procedure to free parts of the spacecraft for deployment, took place successfully, but the resulting spin on the already-whirling satellite caused it to begin spinning exactly opposite to the planned direction.

This prevented the release of the four 124-foot booms and 45-foot damper boom that are the basis of the gravity gradient system, which works like a spinning ice skater extending his arms. Thus, instead of being slowed down and stabilized, the satellite remains for the foreseeable future in a 70- to 80-revolution-per-minute tizzy.

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## POLICY

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### Dembling moves up

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Paul G. Dembling, former general counsel for the National Aeronautics and Space Administration, has been appointed NASA's deputy associate administrator.

Dembling, who has been particularly active in the field of space law (SN: 12/14, p. 599), was a principal drafter of the Eisenhower Administration's bill which became the National Aeronautics and Space Act of 1958.

The new general counsel is Spencer M. Beresford, former special counsel for the House Committee on Science and Astronautics.

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## MOONROCKS

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### Smithsonian gets first public sample

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The first publicly displayed rock from the moon is an igneous breccia on exhibit in the Smithsonian Institution in Washington.

The gray rock, weighing 478.8 grams, is sealed in a nitrogen-filled, clear, plastic canister, covered by a glass bubble. Held in place by clamps to prevent its being broken, it was originally part of a larger piece, brought back from the moon by the Apollo 11 astronauts and subsequently split by geologists studying the mineral structure of the rocks' interiors.

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## APOLLO

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### Color TV for the lunar surface

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The use of color television on the moon has been approved for future Apollo missions by the National Aeronautics and Space Administration.

The color system, developed by Westinghouse, involves a rotating color-filter wheel synchronized with an identical filter at the Manned Spacecraft Center. Color television on previous Apollo flights has been confined to

the command module. It will be added to lunar modules, which formerly had only black and white, beginning with the upcoming Apollo 12 mission set for Nov. 14.

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## METEOROLOGY

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### Vertical temperature profiling

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One of the main goals of the Nimbus III weather satellite, launched April 10, was to test the efficiency of measuring vertical temperature profiles of the atmosphere from space. The satellite has proven so successful at its task that officials of the Environmental Science Services Administration have labeled it a breakthrough of major proportions.

Analysis of the spacecraft's data indicates that a profile taken over Kingston, Jamaica, matches almost exactly those made by a radiosonde balloon launched from the island at the same time.

The reason for the excitement, says Dave Johnson, director of ESSA's National Environmental Satellite Center, is that such profiles are an "absolutely essential" key to the global mathematical models needed for long-range weather predictions (SN: 9/6, p. 185). Nimbus III opens the possibility of getting temperature, pressure, humidity and wind speed data from numerous locations over the entire world on a daily basis.

This, Johnson says, "is as significant to meteorology as the launch of the first satellite."

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## POLLUTION

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### Cleaner air for spacecraft

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Atmospheric pollution in a spacecraft can be a more serious problem than it is on the ground, since breezes and rain don't come along to cleanse the air. Lockheed Missiles and Space Co. in Sunnyvale, Calif., is thus going to spend the next 19 months looking for a suitable pollution-control system for space.

The goal of the project, under contract from the National Aeronautics and Space Administration, is to find a filter capable of trapping trace-contaminant gases during long, future space flights. Such missions could involve recirculating the same atmosphere for as long as two years, with as many as 150 contaminants present.

Among possible filters are several charcoal and chemical materials, including a type of activated charcoal, one gram of which has an adsorptive surface area of some 2,500 square yards. Lockheed will also investigate ways of regenerating the filters after they are completely filled. Heat and steam are possibilities.

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## HELICOPTERS

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### Noise reduction may save sitting ducks

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To help ease helicopters of their present sitting-duck status, the Army is seeking ways to quiet them.

Contracts for research on silencing have been awarded by the Army Aviation Material Laboratories to the manufacturers of the Hughes OH-6A, the Kaman HH-43B and the Sikorsky SH-3A. The techniques under study include slowing the main and/or tail rotors, modifying the tips of the rotor blades to cut vortex noise, and the use of baffling and other insulation.