

Discovery powers up today; three RCC panels installed on left wing



Peas and honey focus of science experiments on Space Station

▲ **Shuttle Update:** **Discovery** is scheduled to be powered up today. While the rudder speed brake panels are removed from the vehicle, workers are performing fastener replacement in preparation for reinstallation on the vehicle. Reinforced carbon-carbon (RCC) panel installation is continuing with three left-hand panels hung. Build-up of the left-hand panels and associated fittings is ongoing. Following a successful fit check, technicians continue to assemble and install the Thermal Protection System blankets inside



the ring to be fitted inside **Discovery's** nose cap (left).

Technicians continue to process **Atlantis** for its future mission to the International Space Station. Flex hose

X-rays and inspections are complete and engineers are evaluating the results. Fifteen T-seals, the C-shaped seals that fit between each RCC panel, have been installed on the left-hand wing leading edge. Right-hand RCC panel measurements are complete with panel assembly in progress.

Space Shuttle **Endeavour** is in its Orbiter Major Modification period, which began in December 2003.

▲ **ISS Update:** Expedition 8 Commander Michael Foale and Flight Engineer Alexander Kaleri devoted much of last week to science activities. Kaleri tended the Rasteniya experiment, a greenhouse containing peas, designed to see how plants grow in a microgravity environment. Kaleri also did a test of the Russian TORU manual docking system, using the ISS Progress 13 vehicle docked to Zvezda. That Progress is to be undocked and burn up in

the Earth's atmosphere in mid-May, the day before a new Progress arrives with about 2-1/2 tons of equipment, supplies, water and fuel. Foale worked with the Miscible Fluids in Microgravity experiment. It involves injecting honey into a container of water to see how the two combine in weightlessness. He also worked with the Pore Formation and Mobility Investigation, melting a transparent material in the Microgravity Science Glovebox to observe the formation and interaction of bubbles in the material. The experiment could help in prevention of bubble formation during such processes, perhaps resulting in stronger materials.

◆ **NASA Science** – A physics experiment on the drawing board for the International Space Station could help find the grand, unifying “Theory of Everything.” A new concept for an experiment to test the predictions of Einstein’s relativity more precisely than ever before is being developed by scientists at NASA’s Jet Propulsion Laboratory. The experiment, called Laser Astrometric Test Of Relativity (LATOR), would look at how the sun’s gravity deflects beams of laser light emitted by two mini-satellites. To read the full story, go to the Web site

http://science.nasa.gov/headlines/y2004/26mar_einstein.htm

◆ **Did You Know?** Ultrasound techniques perfected by NASA to care for injured astronauts in space can also diagnose injuries on professional athletes. New training methods allow people with minimal skills to learn how to use this technology in remote areas then send data to a physician who can make real-time recommendations for emergency action. The many uses of this newly developed technology were revealed at a Space Research Update last week at NASA Headquarters.