Space Station "Doorway to Space" Passes Critical Pre-Launch Test

The Boeing-built Joint Airlock Module has successfully completed a series of leak checks in a vacuum chamber that is used to test the pressurized elements of the International Space Station.

The 6 1/2-ton airlock is designed to accommodate both American and Russian spacesuits. The 20-foot-long module has two compartments: the crew lock, from which astronauts will enter and exit the ISS; and the equipment lock, where spacewalkers will change into and out of their suits and stow all necessary gear.

Shortly after its arrival from Marshall Space Flight Center where it was built by Boeing engineers, the airlock was transported to the Operations & Checkout Building high bay and lowered into the vacuum chamber. Once the chamber's lid was lowered and secured, a vacuum environment equivalent to 400,000 feet altitude or 80 miles was created to determine if the pressurized module had any leaks and confirm the rates at which gases were consumed. Sensors inside and outside the module measured any pressure changes during the operations that lasted 120 hours.

The three-story, stainless steel chamber is one of two built by NASA in 1964 to test the Apollo program flight hardware in a simulated low-Earth orbit environment. Both chambers were deactivated in 1975 when the Apollo-Soyuz project ended.

In 1998, NASA selected the Boeing payload ground operations contract team to renovate one of the two chambers. The team, which included NASA and Dynacs Engineering Co., provided designs for the new vacuum chamber pumping equipment and controls, a new control room and a new rotation and handling fixture.

The airlock joins more than 108 tons of space station elements, including starboard and port truss sections that are being prepared for flight at Kennedy Space Center. It is scheduled to be launched on the STS 104 mission aboard the Space Shuttle Atlantis in May 2001.

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For further information:
Ann Beach
321-264-8582