



## NASA PREPARES FOR SHUTTLE LAUNCH TWO YEARS AFTER COLUMBIA DISASTER

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*Just over two years following the Space Shuttle Columbia disaster, the United States prepares to resume manned shuttle missions with a trip to the International Space Station sometime next month.*

The launch of Space Shuttle Discovery, scheduled to take place between May 15 and June 3, is in the final planning stages. Discovery has already made the 4-mile trip from the assembly building to its oceanfront launch pad at Kennedy Space Center in Florida.

Final prelaunch preparations include testing the redesigned external fuel tank, installing the payload which will hold parts, clothing, food and experiments, and running a full dress rehearsal with the flight crew.

### **Lessons from Columbia**

NASA suspended space shuttle missions after the Columbia disintegrated upon re-entry into the Earth's atmosphere, killing all seven on board, on Feb. 1, 2003.

The Columbia accident was caused when a piece of foam from the external fuel tank broke off during liftoff and pierced the heat-resistant tiles on the left wing of the craft. This allowed extremely hot gases to penetrate the heat shield and melt the structure upon re-entry.

Changes to the space shuttle include a redesigned external tank and special equipment that will allow astronauts to monitor potential damages to the shuttle's exterior while in flight.

The old external tank design relied on thick pieces of foam to prevent icing. In the new design, some of that foam has been replaced with electric heaters to prevent ice buildup.

More advanced imaging equipment will record the launch of the space shuttle, improving safety by allowing engineers to more closely monitor possible problems with the craft as it enters space.

### **The return to flight**

This upcoming mission is the 114th space shuttle flight and the 31st flight for Discovery.

The crew of seven astronauts will fly to the International Space Station to test and evaluate new safety procedures. Since the Columbia disaster, the Russian spaceship Soyuz has been the only way to get people and supplies to the space station.

One of the Soyuz rockets launched April 15, carrying three astronauts -- a Russian, American and Italian -- to the space station. They will assist Discovery's crew on its historic flight.

"Our particular part will be conducting a photo survey of the exterior of the shuttle while it is maneuvering immediately below us prior to docking," American astronaut John Phillips, who will stay on the ISS for the next six months, said at a news conference.

### **The future of manned spaceflight?**

While space shuttle flights are the mainstay of the U.S. space program at present, a new space vehicle is in the works.

President Bush, who has outlined a vision of establishing a station on the moon and then traveling to Mars, directed NASA to develop a new Crew Exploration Vehicle by 2014.

The president wants the United States to lead the way to the Red Planet, just as it did when Apollo 11 landed on the moon in 1969.

"The Crew Exploration Vehicle will be capable of ferrying astronauts and scientists to the space station after the shuttle is retired. But the main purpose of this spacecraft will be to carry astronauts beyond our orbit to other worlds. This will be the first spacecraft of its kind since the Apollo Command Module," the president said in January 2004.

*--Compiled by Annie Schleicher for NewsHour Extra*

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