

Most traveled space shuttle ready for final launch

February 23 2011, By MARCIA DUNN , AP Aerospace Writer



NASA workers walk near the external tank, rear, of the space shuttle Discovery at the Kennedy Space Center in Cape Canaveral, Fla., Wednesday, Feb. 23, 2011. The space shuttle Discovery is scheduled to lift off Thursday afternoon on its final voyage, an 11-day mission to the international space station. (AP Photo/Wilfredo Lee)

After 143 million miles and nearly a year all told in orbit, space shuttle Discovery is poised to blast off Thursday one last time.

It promises to be a sentimental journey for the six astronauts assigned to the mission as well as the supporting cast of thousands who have painstakingly prepped the world's most traveled rocketship.

Once more, NASA's fleet leader is paving a new road, one that leads to

shuttle retirement and an uncertain future for America's space program.

When Discovery returns from the [International Space Station](#), it will be the first of the three surviving shuttles to be decommissioned this year and shipped off to a museum. The Smithsonian Institution has first dibs on this one.

But the end of the 30-year shuttle program is still months down the road. For now, NASA prefers to focus on Discovery's last hurrah, an 11-day mission to deliver a bundle of space station supplies and an experimental [humanoid robot](#) that will become the first of its kind in space.

"Discovery is the most flown spacecraft in history," NASA Administrator Charles Bolden told The Associated Press. "People don't understand. They say it matter-of-factly. There is no other multi-flown spacecraft than the shuttle."

It's been an uncharacteristically bumpy exit for Discovery.

[Fuel tank](#) cracks - one of the most challenging problems to strike the shuttles - cropped up during the initial countdown in early November. It took until January for NASA to understand the cracking in the center portion of the tank that holds instruments, and to be assured the repairs would work. Then last month, the lead spacewalker was injured in a bicycle crash and had to be replaced on the crew.

Launch director Mike Leinbach said Discovery has been "a great ship ... an amazing machine."

"This is her 39th mission," he said Wednesday. "We'd have quite a few left in her had the program been extended, but it wasn't."

"Landing day is going to be tough," he noted, as will landing day be for

shuttle Endeavour in the spring and especially for shuttle Atlantis in the summer.

Leinbach expects there to be a lot of choked up people on the runway "because it's the end of a 30-year program that not only have we worked in ... but we've grown to love and appreciate and feel like we're doing something special for the country and really the world."

Discovery has long been a favorite at NASA, at least unofficially.

The oldest of the surviving shuttles that first flew in 1984, Discovery carried the Hubble Space Telescope into orbit in 1990, returned Mercury astronaut John Glenn to space at age 77, and got NASA flying again after the Challenger and Columbia shuttle disasters.

"No small feat," Leinbach observed.

Discovery has flown to the space station 12 times; the upcoming trip will be No. 13. Overall, it's spent 352 days in space and circled Earth 5,628 times.

The commander of Discovery's final mission, Steven Lindsey, has flown this particular shuttle twice before, once alongside Glenn.

"It will be really sad to call 'wheels stop' for the last time on it," said Lindsey. "But when you think about all the things Discovery has done ... It's just got a lot of history.

To mark the historic nature of the flight, the six astronauts are taking up a medallion from Britain's Royal Society that was struck in honor of 18th-century British explorer James Cook. His ships included the Discovery, one of the exploring vessels after which the shuttle was named.

Discovery's planned liftoff at 4:50 p.m. - as convenient as it gets - is expected to pack in the crowds. NASA is anticipating 40,000 guests, including 15 members of Congress.

"It's generated a lot of interest," said NASA test director Steve Payne. "The last few missions, people are starting to realize that they either see one now or they don't get to see one at all."

The future, as outlined by the White House, involves turning orbital rides over to private companies in order to free [NASA](#) up for grander outer space travel. Asteroids and Mars are on the must-see list.

"We're still working on the what's next part," launch manager Mike Moses said at the customary day-before-launch news conference.

The new approach is neither good nor bad, Moses stressed. "We can't keep doing what we're doing with the budgets we have, so this is the new future," he said.

As long as the space shuttles keep flying, the government can't invest enough money in a successor spaceship, said White House science adviser John Holdren.

"We need to move toward a more modern, more efficient and safer way to get our astronauts in low Earth orbit," Holdren said last week.

Bolden, a former astronaut, said his No. 1 priority, for now, is getting the last three shuttle missions flown safely. He expects to be "crying like a baby" when Atlantis makes the final landing of the final flight.

More information: NASA: <http://www.nasa.gov/shuttle>

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