

# Astronauts board shuttle Discovery for last flight

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STS-133 crew members, front row from left, pilot Eric Boe, commander Steve Lindsey, second row, mission specialist Alvin Drew, Steve Bowen, third row from left, Nicole Stott, and Michael Barratt, leave the Operations and Checkout Building at the Kennedy Space Center in Cape Canaveral, Fla., for a trip to the launch pad Thursday, Feb. 24, 2011. The space shuttle Discovery is scheduled to lift off this afternoon on an 11-day mission to the international space station. (AP Photo/Chris O'Meara)

NASA's most traveled space shuttle, Discovery, was fueled Thursday for its final voyage after nearly three decades of service.

The six astronauts for the space station delivery mission headed to the launch pad in early afternoon, waving and smiling to the massive picture-taking crowd at crew quarters. Once at the pad, they paused at the base of the pad to gaze up at Discovery and embraced in a group hug, before

getting on board.

The crew never made it this far before; November's launch attempt ended midway through fueling.

Launch director Mike Leinbach said everything finally seemed to be coming together. Even the weather was looking up: the forecast improved to 90 percent "go" for the 4:50 p.m. liftoff.

"I think the weather's going to be good," Leinbach said Thursday morning. "It's a machine so you never know until the final seconds on the clock if all pieces of the machine are going to behave. But right now, it feels good."

This time, no [hydrogen gas](#) seeped out during fueling. NASA also was confident no cracks would develop in the [external fuel tank](#); final checks uncovered nothing serious, although pictures still were being analyzed. Both problems cropped up during the initial countdown in November, and the repairs took almost four months. The cracks in the midsection of the tank, which holds instruments but no fuel, could have been dangerous.

Discovery will head to the [International Space Station](#) with the crew, as well as a load of supplies and a humanoid robot.

This will be the 39th flight for Discovery, set to become the first of the three surviving space shuttles to be retired this year and sent to a museum. It has since logged 143 million miles since its first flight in 1984.

Atlantis is set to soar in April and Endeavour at the end of June.

An estimated 40,000 guests were gathering for Discovery's farewell

launch; a small contingent from Congress was among the expected VIPs. Watching with special interest from Mission Control in Houston should be astronaut Timothy Kopra, who was supposed to be the flight's lead spacewalker. He was hurt in a bicycle crash last month and was replaced by Stephen Bowen, who will become the first astronaut to fly back-to-back shuttle missions.

Well before dawn, recreational vehicles already lined nearby roads offering the best views of liftoff. By early afternoon, the routes leading to Kennedy Space Center were jammed. Signs outside businesses and government offices in the neighboring towns of Cape Canaveral and Cocoa Beach offered words of encouragement. "The heavens await Discovery," one church proclaimed. Local grocery stores stocked up on extra red, white and blue cakes adorned with shuttle pictures. Camera batteries flew off shelves.

Leinbach noted that it would be "tough" to see Discovery soar one last time. "What will be most difficult will be on landing day when we know that that's the end of her mission completely," he said.

Discovery will spend 11 days in orbit - on top of the 352 days it's already spent circling the planet - and will rack up another 4.5 million miles.

Its list of achievements include delivering the Hubble Space Telescope to orbit, carrying the first Russian cosmonaut to launch on a U.S. spaceship, returning Mercury astronaut John Glenn to orbit, and bringing shuttle flights back to life after the Challenger and Columbia accidents.

"She's been an amazing machine," Leinbach said Wednesday. "She's done everything we've asked of her."

Heading up Discovery's veteran crew is retired Air Force Col. Steven Lindsey. Two of his crew actually lived on the space station in 2009.

During the 11-day flight, they will deliver and install a closet-like compartment full of space station supplies - made in Italy and named Leonardo for il Signor da Vinci.

Packed inside the compartment is Robonaut 2, or R2, set to become the first [humanoid robot](#) in space. The experimental machine - looking human from the waist up - will remain boxed until after Discovery departs.

Up at the space station, meanwhile, the six-person crew welcomed a European cargo ship that was launched last week from French Guiana. It docked successfully just six hours before Discovery's planned liftoff, keeping the shuttle countdown on track.

"Busy day in space," station commander Scott Kelly noted in a tweet.

NASA is under presidential direction to retire the shuttle fleet this summer, let private companies take over trips to orbit and focus on getting astronauts to asteroids and Mars. There's been considerable disagreement among lawmakers and the space community on how best to accomplish this.

"Godspeed Discovery," retired space shuttle program manager Wayne Hale said in a Twitter update Thursday. "Prayers for a safe flight and wisdom for decision makers."

**More information:**

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

Robonaut: <http://robonaut.jsc.nasa.gov/default.asp>

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