

NASA says no new launch attempt before next Sunday

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Space shuttle Endeavour is seen at Pad 39A at the Kennedy Space Center in Cape Canaveral, Fla., Saturday, April 30, 2011. Yesterdays' launch attempt was scrubbed due to technical problems.(AP Photo/Chris O'Meara)

NASA's space shuttles are dragging their tails toward retirement.

The high-profile voyage of Endeavour - the next-to-last space shuttle flight led by the husband of wounded Rep. [Gabrielle Giffords](#) - is off until at least next Sunday because of a technical problem. The latest culprit, believed to be a bad fuse box, illustrates just how complex these space machines are and why NASA's goodbye to the 30-year shuttle program may be a long one.

Commander Mark Kelly and his five crewmates quickly headed back to Houston on Sunday morning, two days after their first [launch](#) attempt

was foiled.

Giffords wasn't far behind; she was in Houston by midafternoon, ready to resume rehab at the hospital where she's been undergoing treatment since January, after being shot in the head in an assassination attempt. She had arrived in Florida Wednesday to take part in the excitement of the launch countdown and to see her husband blast off. It was not immediately known if she would be back for a second try.

Her presence added to the drama surrounding Endeavour's liftoff. So did that of President [Barack Obama](#) and his family. They were disappointed not to see a launch on Friday, but still dropped by for a tour at Kennedy Space Center anyway. Obama hinted he might make a return visit to see the very last shuttle launch this summer.

The tip-off that Endeavour had a problem was the failure of heaters that are crucial for keeping a fuel line from freezing in space. The launch was called off Friday as the astronauts headed to the pad to board the shuttle. NASA has now traced the problem to the switch box.

Over the decades, space shuttles have encountered all sorts of technical problems, from nose to tail, that have held up launches. So have problems with their tanks and booster rockets.

Fuel leaks. Engine shutdowns. Wiring problems. Stuck valves. Burst hoses. Turbine failures. Hail damage, even woodpecker holes in the insulating foam of fuel tanks.

The list goes on - no surprise given the estimated 1 million parts per shuttle and 2.5 million parts when you throw in the giant fuel tank and two boosters.

Discovery sat out launch for four months before making its final mission

in February. It was grounded by a cracked fuel tank. Now it's Endeavour's turn to stall.

"It is kind of funny. It's almost like they don't want to give up," launch director Mike Leinbach said Sunday. "But it's just coincidence."

Taking out the suspect switch box in Endeavour's engine compartment and putting in a new one is relatively straightforward, Leinbach said. But two full days of testing will be needed - on multiple systems associated with the box.

The heaters that remained off Friday are crucial for keeping a hydrazine fuel line from freezing in space, which, in turn, could lead to a rupture and even a fire once the shuttle is back in the atmosphere. The hydrazine feeds the devices that provide hydraulic power to move the main engine at liftoff and the brakes and rudder during landing.

Mike Moses, chairman of the mission management team, said next Sunday is the earliest possible launch date.

"There's still a whole lot of short-term work that has to be done," he told reporters.

This will be the last voyage into orbit for Endeavour, NASA's youngest shuttle.

NASA officials have stressed repeatedly that they will not ease up on any launch rules, even as the [shuttle program](#) winds down. Extra precautions were put in place after the 1986 Challenger launch accident and the 2003 Columbia disaster. A total of 14 astronauts died in those two catastrophes.

Leinbach said Endeavour's current problems are not necessarily a sign of

age. It first flew in 1992. Officials did not immediately know the age of the switch box in question.

"As far as the orbiter getting old, no, it's a machine and occasionally machines break," Leinbach said. "This time, we had a failure in a switching box ... it's just part of the business."

The delay, if it last much longer, could end up having a domino effect on the final shuttle mission. Atlantis is scheduled to blast off June 28 to close down the program. For now, anyway, that date is still safe.

As for Endeavour's astronauts, they will remain in quarantine this week at Johnson Space Center in Houston. Kelly will be able to visit Giffords in rehab, provided she remains germ-free and he stays clear of possibly contagious people, officials said.

Once NASA's shuttles are done flying, they will be on display in Florida, California and the Washington, D.C. area. NASA will continue to rely on rides to the International [Space](#) Station in Russian Soyuz capsules while new spacecraft are developed by private companies.

More information: NASA Endeavour crew and mission:
<http://1.usa.gov/7pZhDh>

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