

Boeing 1 month out from 4 years of catchup to SpaceX with 1st crewed Starliner flight

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After nearly four years of playing catchup, Boeing is finally set to join SpaceX as one of two commercial partners capable of flying NASA astronauts to the International Space Station.

Boeing's CST-100 Starliner is aiming for a May 6 launch, carrying commander Barry "Butch" Wilmore and pilot Sunita "Suni" Williams on the Crew Flight Test. They will fly atop an Atlas V rocket from Cape Canaveral Space Force Station's Space Launch Complex 41.

The duo are looking to dock Starliner with the ISS for about eight days before bringing the spacecraft back home for a ground landing in the western U.S. It will pave the way for Boeing to begin regular service to the station as part of NASA's Commercial Crew Program, the remedy to reliance on Russia for ferry service to the ISS after the end of the space shuttle program in 2011.

"It's really exciting to finally get here to this day," said Williams, and "represent so many people who have worked for years to get this Boeing Starliner ready to go. We just happen to be the tip of the spear, the face of it, and take it to space."

Starliner's path to [human spaceflight](#) has been a tortuous one. SpaceX has surged ahead since it made the first visit with astronauts on board one of its Crew Dragon spacecraft in May 2020. Including that flight, Elon Musk's company has now flown 50 humans to space across 13 flights among its fleet of four Crew Dragons.

SpaceX and Boeing had been fairly close in development leading up to their first uncrewed test flights, but the December 2019 attempt by Boeing called the Orbital Flight Test (OFT) had several issues that did not let it rendezvous with the ISS. NASA deemed that flight a "high visibility close call" that forced a major overhaul of the program including hardware, software and [management practices](#) from both Boeing and NASA oversight.

It also meant Boeing had to fly a second uncrewed test flight (OFT-2), which it did in May 2022, successfully docking with the ISS. But that

flight also had issues. While it looked like the CFT flight with Wilmore and Williams was set to fly in 2023, new concerns related to the spacecraft's parachutes as well as the discovery that much of the tape used in the Starliner hardware was flammable required even further delays.

"I'm not gonna say it's been easy," Williams said. "It's a little bit of an emotional roller coaster as things are getting fixed, or you see a couple steps back, but then you see a couple of steps forward. And we're at that point now. We knew we would get here eventually. It's a solid spacecraft."

Both astronauts have previous experience having flown on the space shuttle and on Russian Soyuz spacecraft for stays on board the ISS.

"This is completely different. This is development preparation for the first crewed flight of this spacecraft, and there is no training program. We are making the training program," Wilmore said. "This is a test mission. That's why it says on the patch 'Crew Flight Test.' And the focus is the mission, the test and the things we're doing to certify and validate the capabilities of the spacecraft."

Wilmore, who was part of NASA's 2000 astronaut class, was the pilot for STS-129 on board Space Shuttle Atlantis for an 11-day mission in 2009 and then stayed on board the ISS for nearly five months from 2014-2015. Williams was part of NASA's 1998 astronaut class and had two long-term stays on board the ISS, first flying in 2006 on Space Shuttle Discovery on STS-116 and flying home on Space Shuttle Atlantis on STS-117 in 2007 after 192 days in space. She then flew on a Soyuz in 2012 for a four-month stay on board.

This will be the third spaceflight for both.

"The first conversation we had after the assignments were made, we sat down and I said, 'Suni, I'm gonna have the title (of commander), but we're going to do this together,'" Wilmore said. "Because I need her and her expertise and what she brings to the table. ... We go all the way back to the test pilot school days. I won't tell you how many decades ago that was. But we've known each other a long time, and I respect her ability, capability, insight."

The flight from Cape Canaveral will be the first since the Gemini program to send humans to space with Apollo and space shuttle flights coming from Kennedy Space Center. This will also be the first human spaceflight for United Launch Alliance, which is contracted to fly an additional six Starliner flights to the ISS through 2030.

"This will be the 100th launch of the Atlas we're told, and we are excited to be ULA's first self-loading payload," Wilmore said.

After launch, both will take turns testing out manual backup systems built into Starliner, which is designed to fly and dock autonomously with the ISS similar to SpaceX's Crew Dragon.

"It is human spaceflight and we want to make sure that our systems are robust in their automation, but we also want to make sure that our backup systems are equally as robust for when those possibilities where automation can fail," Wilmore said. "It does have controls, this spacecraft does. And we don't expect any ... significant failures."

He said the ship has both manual control as well as a backup computer to punch in maneuvers.

"We're all humans, we can't build things perfectly," he said noting that actions could even be taken during the spacecraft's deorbit burn back to Earth. "We can go to this backup mode and fly it manually and still hit

the bullseye, which is a huge, huge capability that other spacecraft simply don't have."

Wilmore and Williams have been part of Starliner's evolution for more than five years. Both had been assigned as either primary crew or backup for Boeing missions back in 2018. With delays, the crews have been juggled by NASA with Williams and Wilmore getting the final Starliner test flight duties assigned after the completion of OFT-2 in 2022.

"We checked all the boxes, crossed the T's, dotted the I's, where we feel both ready and comfortable to go, and the spacecraft is ready to go as well," Williams said.

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