SpaceX successfully launches second crew to space on first operational mission

SpaceX successfully launched its second crew of astronauts to orbit this evening inside the company's Crew Dragon spacecraft. The flight, called Crew-1, marks the first operational mission of the Crew Dragon, as SpaceX embarks on a new era of regularly sending people to and from the International Space Station for NASA.

The Crew Dragon took off at 7:27PM ET on top of SpaceX's Falcon 9 rocket, launching from NASA's Kennedy Space Center in Florida. Flying inside the capsule are three NASA astronauts — Mike Hopkins, Victor Glover, and Shannon Walker — as well as Soichi Noguchi, from the Japanese Aerospace Exploration Agency, or JAXA. Now in orbit, the crew will spend the next more than a day in space before docking with the ISS on Monday at around 11PM ET. The Crew Dragon is designed to automatically dock to the space station, without needing input from the crew inside.

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After takeoff, the Falcon 9 booster successfully landed on the drone ship "Just Read the Instructions" in the Atlantic Ocean. The plan is for the booster to be re-used on SpaceX's next crewed mission, Crew-2.

While this is SpaceX's second crewed flight to space, it's the first true long-duration mission of SpaceX's new Crew Dragon spacecraft. The Crew Dragon's first crewed flight to space in May lasted just two months from start to finish. That flight

was a test – meant to demonstrate that the vehicle can safely transport people to the space station and bring them back home again. It succeeded, and now the Crew Dragon is the first vehicle that NASA has certified to carry humans since the Space Shuttle – and the first private spacecraft ever to receive that designation.

[embedded content]

This particular Crew Dragon capsule is named Resilience. Minutes before launch, Hopkins addressed the astronauts' colleagues at NASA and SpaceX. "By working together through these difficult times, you've inspired the nation, the world, and in no small part, the name of this incredible vehicle, Resilience," Hopkins said. "Now it's time for us to do our part."

Moving forward, crewed flights of the Crew Dragon will look a lot like the one that launched today. A few times a year, the capsule will launch to the ISS, carrying a mix of NASA astronauts and astronauts from other international space programs partnered with the United States. That routine launch schedule has been hoped for since 2014, when NASA tasked SpaceX with creating a vehicle that could ferry astronauts to and from the space station every six months, as part of the agency's Commercial Crew Program. Now the company is finally making good on that promise.

Despite reaching this important milestone, some NASA officials are hesitant to describe the Crew Dragon as fully operational just yet. The losses of two Space Shuttles – Challenger and Columbia – still weigh on the agency, and NASA engineers don't want to get into the mindset that their work is finished. "I think what makes us nervous at NASA is that we don't want to ever just declare victory and say we were done learning and get complacent," Phil McAlister, director of commercial spaceflight at NASA, said during a press briefing with reporters ahead of the flight. "I think there's a feeling that

if we start just referring to these as operational that we won’t stay hungry — we won’t remain vigilant.”

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Today’s flight is still a critical moment for NASA, as it ensures that the space agency has a way to launch its own astronauts to the International Space Station from the US. After the last flight of the Space Shuttle took place in 2011, NASA had to rely on Russia to get the agency’s astronauts to the ISS. NASA had to pay roughly $80 million per seat on Russia’s Soyuz rocket. Now, NASA has another option for sending its astronauts into space on the Crew Dragon, where the price of a seat is roughly as low as $55 million, according to a government audit.

Soon, NASA could have even more options for flying its astronauts, as SpaceX is just one of two companies challenged with creating a taxi for people to travel to the space station. The other company, Boeing, has been developing its own capsule called the CST-100 Starliner. That vehicle is still in development after its first uncrewed flight to the International Space Station didn’t go exactly to plan. During a test last year, the Starliner suffered multiple software glitches, preventing the capsule from reaching the space station and prompting Boeing to bring the vehicle back to Earth early. The company plans to do a second uncrewed flight test sometime early next year.

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That means SpaceX will be NASA’s primary launch provider for now, with the Crew Dragon helping to increase the amount of people living on board the ISS. During the Soyuz era, the space station typically housed crews of six for months at a time, since the Soyuz capsule can only carry crews of three to space. But with four seats on the Crew Dragon, the space station will soon have seven members living on board for the first time. The crew of four on board the Crew Dragon will

meet up with NASA astronaut Kate Rubins and Russian cosmonauts Sergey Ryzhikov and Sergey Kud-Sverchkov, who arrived at the ISS in a Soyuz in October. It’s such a large cast of people that astronaut Mike Hopkins noted he may have to sleep in the Crew Dragon for a while, since there aren’t enough sleeping quarters for everyone on board.

With so many astronauts on board, the crew expects to get a lot done during their six-month stay. “It’s going to be exciting to see how much work we’re going to be able to get done where we’re there,” Hopkins said during an interview ahead of the flight, adding that there wasn’t a lot of free time in their schedule during the first week of their stay. “So I think they’re going to keep us pretty busy.”

https://www.theverge.com/2020/11/15/21565237/spacex-crew-1-dragon-launch-success-falcon-9-nasa