

SpaceX capsule on big mission to return to Earth (Update)

March 8 2019, by Ivan Couronne



This video grab taken from the NASA/SpaceX webcast transmission on March 3, 2019, shows a SpaceX Falcon 9 rocket docked with the International Space Station (ISS) during the Demo-1 mission

Crew Dragon, the new space capsule built by SpaceX, left orbit Friday to dive into the atmosphere for a splashdown in the Atlantic Ocean—the final and most dangerous phase of a demonstration mission for NASA.

If Dragon returns to Earth without incident and in one piece, SpaceX will have passed the test: to demonstrate that it can safely transport astronauts to and from the International Space Station.

Dragon gently and successfully undocked from the ISS Friday at 0732 GMT some 250 miles (400 kilometers) over Sudan.

After wires and hooks latching it to the ISS were released, the unmanned white module's thrusters fired several times, easing it away from the space station.

On NASA TV, it looked like a slow-motion ballet even though the two craft were actually orbiting Earth at 17,500 miles per hour.

The re-entry into Earth's atmosphere will test its heat shield for the first time. Splashdown off the coast of Florida is expected at 8:45 am (1345 GMT).

Four large parachutes, tested multiple times on Earth, will slow its fall.

"I'd say hypersonic re-entry is probably my biggest concern," Elon Musk, the founder and head of SpaceX, said last Saturday following the capsule's launch from the Kennedy Space Center.

"Will the parachutes deploy correctly? And will the system guide Dragon 2 to the right location and splashdown safely?" he asked.

The mission has been hitch-free thus far. Dragon docked with the ISS on Sunday without incident, and the space station's three current crew members were able to open the hatch and enter the capsule. They closed the hatch Thursday.

This time around, Dragon's own crew member is a dummy, named

Ripley.

But if all goes well, the next flight will see two US astronauts book a return trip to the ISS, sometime before the end of the year, according to NASA. Boeing is also in on the project to resume manned space flight from US soil after an eight year hiatus.

"It won't be long before our astronaut colleagues are aboard Crew Dragon and Boeing Starliner vehicles, and we can't wait," US astronaut Anne McClain said on behalf of the ISS crew after the capsule left the ISS.

"Let us continue to be united by our insatiable curiosity to go beyond what is known, to do what has never been done. We humans are at our best when we are part of something bigger than ourselves."

The capsule's descent will be broadcast in its entirety by NASA and SpaceX, thanks in large part to a camera embedded in Dragon.

A NASA spokeswoman told AFP a drone would be on hand over the Atlantic to try to film the capsule.



A dummy named Ripley rides inside a SpaceX Falcon 9 rocket with the company's Crew Dragon spacecraft on board after the opening of the hatch during the Demo-1 mission

Long-range cameras have also been loaded onto the recovery ship. SpaceX did not broadcast live footage of Dragon's interior during the flight up to the ISS.

Like Apollo

NASA and the administration of President Donald Trump have spent all week extolling the historic nature of the mission.

It represents the first private space mission to the ISS, as well as the first time a space vessel capable of carrying people was launched by the US in eight years.

Dragon also marks a return to a "vintage" format: it is the first US capsule since the pioneering Apollo program of the 1960s and 70s.

Capsules have no wings and fall to the earth, their descent slowed only by parachutes—much like the Russian Soyuz craft, which lands in the steppes of Kazakhstan.

The last generation of US spacecraft, the Space shuttles, landed like airplanes. Shuttles took American astronauts to space from 1981 to 2011, but their cost proved prohibitive, while two of the original four craft had catastrophic accidents, killing 14 crew members.

After the program was retired, the US government, under then president Barack Obama, turned toward SpaceX and Boeing to develop a new way to ferry its crews, paying the firms for their transport services.

Due to about three years of development delays, the switch has come to fruition under Trump.

For now, Russia will continue to be the only country taking humans to the ISS. NASA buys seats for its astronauts, who train with their cosmonaut counterparts.

Russia, for its part, has not seemed particularly enthused with the success of the Dragon flight.

While the space world was busy congratulating SpaceX and NASA last Saturday, Russian space agency Roskomos tweeted only the following day, praising the US space agency, not SpaceX.

It insisted that the "safety of flights should be irreproachable," a likely reference to technical objections Russia had raised on Dragon's approach procedure towards the ISS.

But the space agencies themselves insist that cooperation remains excellent.

In the long run, said NASA's Johnson Space Center director Mark Geyer, US astronauts will continue to learn Russian, and vice versa.

"There'll be a Russian on our flights, and we'll still have an American on a Soyuz flight. That's mainly because we always want, in case there are issues with either system, that we have an integrated crew."

© 2019 AFP

Citation: SpaceX capsule on big mission to return to Earth (Update) (2019, March 8) retrieved 16 July 2024 from <https://phys.org/news/2019-03-spacex-capsule-big-mission-earth.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.