



CREW DEMO-1 MISSION

MISSION OVERVIEW

SpaceX is targeting Saturday, March 2 for launch of Crew Dragon’s first demonstration mission from Launch Complex 39A (LC-39A) at NASA’s Kennedy Space Center in Florida. This test flight without crew on board the spacecraft is intended to demonstrate SpaceX’s capabilities to safely and reliably fly astronauts to and from the International Space Station as part of NASA’s Commercial Crew Program.

The instantaneous launch window opens at 2:49 a.m. EST, or 7:49 UTC, and a backup instantaneous launch opportunity is available on Tuesday, March 5 at 1:38 a.m. EST, or 6:38 UTC. Following stage separation, SpaceX will attempt to land Falcon 9’s first stage on the “Of Course I Still Love You” droneship, which will be stationed in the Atlantic Ocean.

Crew Dragon, designed from the beginning to be one of the safest human space vehicles ever built, benefits from the flight heritage of the current iteration of Dragon, which restored the United States’ capability to deliver and return significant amounts of cargo to and from the International Space Station. Dragon has completed 16 missions to and from the orbiting laboratory.

To support human spaceflight, Crew Dragon features an environmental control and life support system, which provides a comfortable and safe environment for crew members. The spacecraft is equipped with a highly reliable launch escape system capable of carrying crew to safety at any point during ascent or in the unlikely event of an anomaly on the pad. While the crew can take manual control of the spacecraft if necessary, Crew Dragon missions will autonomously dock and undock with the International Space Station. After undocking from the space station and reentering Earth’s atmosphere, Crew Dragon will use an enhanced parachute system to splashdown in the Atlantic Ocean.

On this first test flight, Crew Dragon will transport roughly 400 pounds of crew supplies and equipment to the International Space Station. In addition, the spacecraft will be carrying mass simulators and an anthropomorphic test device (ATD) that is fitted with sensors around the head, neck, and spine to gather data ahead of SpaceX’s second demonstration mission with NASA astronauts on board the spacecraft.

Falcon 9 and Crew Dragon will launch from Launch Complex 39A at NASA’s Kennedy Space Center, which has a long and storied history dating back to the 1960s. In 2014, SpaceX signed a 20-year lease for use of LC-39A. Since then, SpaceX has made significant upgrades to modernize the pad’s structures and ground systems, while also preserving its important heritage. Extensive modifications have been made to LC-39A, including removal of the existing rotating service structure and installation of a new access arm from which crew will board the spacecraft.

WEBCAST

Launch webcast will go live about 50 minutes before liftoff at [spacex.com/webcast](https://www.spacex.com/webcast)

PHOTOS

High-resolution photos will be posted at [flickr.com/spacex](https://www.flickr.com/spacex)



SPACE X CONTACT

Eva Behrend,
Sr. Communications Manager,
310-363-6247
media@spacex.com

MISSION TIMELINE (all times approximate)

COUNTDOWN

Min/Sec	Event
- 45:00	SpaceX Launch Director verifies go for propellant load
- 37:00	Dragon launch escape system is armed
- 35:00	RP-1 (rocket grade kerosene) loading begins
- 35:00	1st stage LOX (liquid oxygen) loading begins
- 16:00	2nd stage LOX loading begins
- 07:00	Falcon 9 begins engine chill prior to launch
- 05:00	Dragon transitions to internal power
- 01:00	Command flight computer to begin final prelaunch checks
- 01:00	Propellant tank pressurization to flight pressure begins
- 00:45	SpaceX Launch Director verifies go for launch
- 00:03	Engine controller commands engine ignition sequence to start
- 00:00	Falcon 9 liftoff

LAUNCH, LANDING, AND DRAGON DEPLOYMENT

Min/Sec	Event
00:58	Max Q (moment of peak mechanical stress on the rocket)
02:35	1st stage main engine cutoff (MECO)
02:38	1st and 2nd stages separate
02:42	2nd stage engine starts
07:48	1st stage entry burn
08:59	2nd stage engine cutoff (SECO-1)
09:24	1st stage landing burn
09:52	1st stage landing
11:00	Dragon separates from 2nd stage

ISS DOCKING

Crew Dragon will perform a series of phasing maneuvers to gradually approach and autonomously dock with the International Space Station on Sunday, March 3 at approximately 6:00 a.m. EST. Filled with about 400 pounds of crew supplies and equipment, Dragon will remain docked with space station for five days.

RETURN FLIGHT

Crew Dragon will autonomously undock with the International Space Station on Friday, March 8 at approximately 2:30 a.m. EST. About five hours after Dragon departs the space station, it will conduct its deorbit burn, which lasts approximately 15 minutes. Dragon will reenter Earth's atmosphere and splashdown in the Atlantic Ocean about 35 to 40 minutes later, or at approximately 8:45 a.m. EST.