CRS-17 MISSION

MISSION OVERVIEW

SpaceX is targeting Friday, May 3 for an instantaneous launch of its seventeenth Commercial Resupply Services mission (CRS-17) at 3:11 a.m. EDT, or 7:11 UTC, from Space Launch Complex 40 (SLC-40) at Cape Canaveral Air Force Station, Florida. Dragon will separate from Falcon 9's second stage about 9 minutes after liftoff and attach to the space station on Sunday, May 5. An instantaneous backup launch opportunity is available on Saturday, May 4 at 2:48 a.m. EDT, or 6:48 UTC.

The Dragon spacecraft that will support the CRS-17 mission previously supported the CRS-12 mission in August 2017. Following stage separation, SpaceX will attempt to recover Falcon 9's first stage on the Of Course I Still Love You droneship, stationed in the Atlantic Ocean.

WEBCAST

Launch webcast will go live about 15 minutes before liftoff at spacex.com/webcast

PHOTOS

High-resolution photos will be posted at flickr.com/spacex

DRAGON SPACECRAFT

Dragon will be filled with more than 5,500 pounds of supplies and payloads, including critical materials to directly support more than 250 science and research investigations that will occur onboard the orbiting laboratory.

CRS-17 is the seventeenth of up to 20 missions to the International Space Station that SpaceX will fly for NASA under the first CRS contract. In January 2016, NASA announced that SpaceX's Falcon 9 launch vehicle and Dragon spacecraft were selected to resupply the space station through 2024 as part of a second Commercial Resupply Services contract award. Under the CRS contracts, SpaceX has restored the United States' capability to deliver and return significant amounts of cargo, including live plants and animals, to and from the orbiting laboratory. Crew Dragon, a variant of the Dragon spacecraft designed to transport U.S-based crew to and from the space station, completed its first demonstration mission in March 2019.

ISS CAPTURE

International Space Station crew members will use the station's 57.7-foot (17.6-meter) robotic arm to capture Dragon and attach it to the orbiting laboratory on Sunday, May 5.

RETURN FLIGHT

Dragon will return to Earth with more than 4,200 pounds of cargo after an approximately four-week stay at the International Space Station. About five hours after Dragon leaves the space station, it will conduct its deorbit burn, which lasts up to 10 minutes. It takes about 30 minutes for Dragon to reenter the Earth's atmosphere and splash down in the Pacific Ocean off the coast of Baja, California.

SPACEX CONTACT

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MISSION TIMELINE (all times approximate)

COUNTDOWN

Hour/Min/Sec	Event
- 00:38:00	SpaceX Launch Director verifies go for propellant load
- 00:35:00	RP-1 (rocket grade kerosene) loading begins
- 00:35:00	1st stage LOX (liquid oxygen) loading begins
- 00:16:00	2nd stage LOX loading begins
- 00:07:58	Dragon transitions to internal power
- 00:07:00	Falcon 9 begins pre-launch engine chill
- 00:01:00	Command flight computer to begin final prelaunch checks
- 00:01:00	Propellant tanks pressurize for flight
- 00:00:45	SpaceX Launch Director verifies go for launch
- 00:00:03	Engine controller commands engine ignition sequence to start
- 00:00:00	Falcon 9 liftoff

LAUNCH, LANDINGS, AND SATELLITE DEPLOYMENT

Hour/Min/Sec	Event
00:01:12	Max Q (moment of peak mechanical stress on the rocket)
00:02:17	1st stage main engine cutoff (MECO)
00:02:21	1st and 2nd stages separate
00:02:28	2nd stage engine starts
00:02:34	1st stage boostback burn begins
00:06:39	1st stage entry burn begins
00:08:27	1st stage landing
00:08:39	2nd stage engine cutoff (SECO)
00:09:38	Dragon separates from 2nd stage
00:12:08	Dragon's solar arrays deploy
02:19:00	Dragon's Guidance, Navigation and Control bay door opens

LAUNCH FACILITY

Space Launch Complex 40 at Cape Canaveral Air Force Station, Florida

SpaceX's SLC-40 at Cape Canaveral Air Force Station is a world-class launch site that builds on a strong heritage. The site, located at the north end of Cape Canaveral Air Force Station, was used for many years to launch Titan rockets, among the most powerful in the U.S. fleet. SpaceX took over the facility in May 2008.

The center of the complex is composed of the concrete launch pad and flame diverter system. Surrounding the pad are four lightning towers, propellant storage tanks, and the integration hangar. Before launch, Falcon 9's stages and payload are housed inside the hangar. The payload is mated to the Falcon 9 inside SLC-40's hangar on the transporter erector. The rocket and payload are then rolled out from the hangar to the launch pad and lifted to a vertical position.