Orbital Test Vehicle Mission 5

Mission Overview

SpaceX's Falcon 9 rocket will launch the U.S. Air Force's X-37B Orbital Test Vehicle (OTV) on its fifth mission.

SpaceX is targeting launch of OTV-5 from Launch Complex 39A (LC-39A) at NASA's Kennedy Space Center in Florida. The primary launch window opens on Thursday, September 7 at 9:50 a.m. EDT or 13:50 UTC, and closes at 2:55 p.m. EDT or 18:55 UTC.

A backup launch window is available on Friday, September 8.

Following stage separation, Falcon 9's first stage will attempt to land at SpaceX's Landing Zone 1 (LZ-1) at Cape Canaveral Air Force Station, Florida.

Official SpaceX OTV-5 mission patch

Launch Vehicle

OTV-5 will launch on Falcon 9, a two-stage rocket designed from the ground up by SpaceX for the reliable and cost-efficient transport of satellites and SpaceX's Dragon spacecraft. As the first rocket completely developed in the 21st century, Falcon 9 was designed from the outset for maximum reliability. Falcon 9's simple two-stage configuration minimizes the number of separation events – and with nine first stage engines, it can safely complete its mission even in the event of an engine shutdown.

Launch Facility

Launch Complex 39A at Kennedy Space Center, Florida

Launch Complex 39A (LC-39A) at Kennedy Space Center has a history dating back to the early 1960s. Originally built to support the Apollo program, LC-39A supported the first Saturn V launch (Apollo 4), and many subsequent Apollo missions, including Apollo 11 in July 1969. Beginning in the late 1970s, LC-39A was modified to support space shuttle launches, hosting the first and last shuttle missions to orbit in 1981 and 2011, respectively.

In 2014, SpaceX signed a 20-year lease with NASA for the use of Launch Complex 39A. Since then, the company has made significant upgrades to modernize the pad's structures and ground systems, while also preserving its important heritage. Extensive modifications to LC-39A have been made to support launches of both the Falcon 9 and Falcon Heavy launch vehicles. These upgrades will also enable LC-39A to serve as the complex from which SpaceX will launch crew rotation missions to and from the International Space Station for NASA's Commercial Crew Program.

Mission Timeline (all times approximate)

COUNTDOWN

Hour/Min/Sec	Events
- 01:03:00	Launch Conductor takes launch readiness poll
- 01:00:00	RP-1 (rocket grade kerosene) loading underway
- 00:35:00	LOX (liquid oxygen) loading underway
- 00:07:00	Falcon 9 begins engine chill prior to launch
- 00:01:00	Flight computer commanded to begin final prelaunch checks
- 00:01:00	Propellant tank pressurization to flight pressure begins
- 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 AND LANDING

Hour/Min/Sec	Events
00:01:19	Max Q (moment of peak mechanical stress on the rocket)
00:02:23	1st stage main engine cutoff (MECO)
00:02:26	1st and 2nd stages separate
00:02:34	2nd stage engine starts
00:02:39	1st stage boostback burn begins
00:06:34	1st stage entry burn begins
00:08:14	1st stage landing

Resources

SPACEX CONTACT | John Taylor, Director of Communications, 310-363-6703, media@spacex.com.
PHOTOS | High-resolution photos will be posted at flickr.com/spacex.
WEBCAST | Launch webcast will go live about 10 minutes before liftoff at spacex.com/webcast.