Zuma Mission

Mission Overview

SpaceX's Falcon 9 rocket will deliver the Zuma spacecraft to orbit.

SpaceX is targeting launch of the Zuma spacecraft from Space Launch Complex 40 (SLC-40) at Cape Canaveral Air Force Station, Florida. The two-hour primary launch window opens at 8:00 p.m. EST on Sunday, January 7, or 1:00 UTC on Monday, January 8. A backup two-hour launch window opens at 8:00 p.m. EST on Monday, January 8, or 1:00 UTC on Tuesday, January 9.

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 Zuma mission patch

Launch Vehicle

The Zuma spacecraft will launch on Falcon 9, a two-stage rocket designed from the ground up by SpaceX for maximum reliability and the cost-efficient transport of satellites and SpaceX's Dragon spacecraft. Falcon 9's first stage incorporates nine Merlin engines, with a combined thrust greater than five 747s at full power, that launch the rocket to space. Unlike airplanes, a rocket's thrust increases with altitude; Falcon 9 generates more than 1.7 million pounds of thrust at sea level but gets up to over 1.8 million pounds of thrust in the vacuum of space. The second stage, powered by a single Merlin vacuum engine, delivers Falcon 9's payload to the desired orbit.

Falcon 9 is the first orbital class rocket capable of reflight. SpaceX believes rocket reusability is the key breakthrough needed to reduce the cost of access to space and enable people to live on other planets.

Launch Facility

Space Launch Complex 40 (SLC-40), Cape Canaveral Air Force Station, Florida
Space Launch Complex 40 (SLC-40), Cape Canaveral Air Force Station, Fla. 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.

Mission Timeline (all times approximate)

COUNTDOWN

Hour/Min/Sec	Events
- 01:13:00	SpaceX Launch Director verifies go for propellant load
- 01:10:00	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
00:01:16	Max Q (moment of peak mechanical stress on the rocket)
00:02:20	1st stage main engine cutoff (MECO)
00:02:24	1st and 2nd stages separate
00:02:25	2nd stage engine starts
00:02:33	1st stage boostback burn begins
00:03:08	Fairing deployment
00:06:15	1st stage entry burn begins
00:07:56	1st stage landing

Resources

SpaceX Contact | James Gleeson, Sr. Manager, Communications, 202-649-2633, media@spacex.com.
Photos | High-resolution photos will be posted at flickr.com/spacex.
Webcast | Launch webcast will go live about 20 minutes before liftoff at spacex.com/webcast.