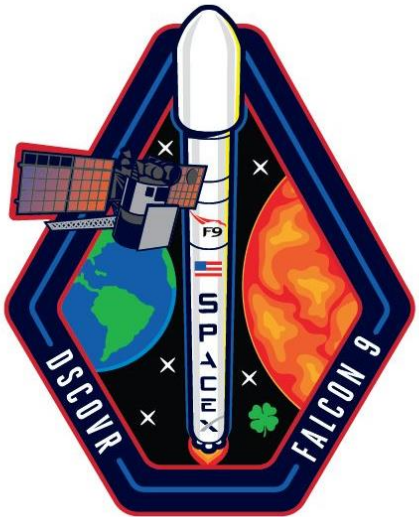
DSCOVR Mission

Mission Overview

SpaceX's customer for the DSCOVR mission is the United States Air Force, in conjunction with NOAA and NASA. In this flight, the Falcon 9 rocket will deliver the DSCOVR satellite to a 1,241,000 x 187 km orbit at 37 degrees.

The DSCOVR launch window will open at approximately 6:10pm EST on Sunday, February 8, 2015, from Space Launch Complex 40 at Cape Canaveral Air Force Station, Florida. If all goes as planned, the DSCOVR satellite will be deployed approximately 35 minutes after liftoff.



Official SpaceX DSCOVR mission patch.

Satellite Payload

DSCOVR

This mission will launch the Deep Space Climate Observatory (DSCOVR), a satellite in partnership with NOAA, NASA, and the USAF that will observe and provide advanced warning of extreme emissions from the sun which can affect power grids, communications systems, and satellites close to Earth. At launch, DSCOVR will weigh approximately 570 kg and is equipped with two deployable solar arrays, a propulsion module, boom, and high-gain antenna.

Ultimately, DSCOVR will be positioned at the Sun-Earth L_1 Lagrangian point, 1,500,000 kilometers (930,000 mi) from Earth, more than four times farther than the Moon. SpaceX will deliver DSCOVR to a parking orbit just under 200km, and the satellite will reach its final orbit 110 days after launch.

Launch Vehicle

FALCON 9

DSCOVR 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 beginning 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.

Web Resources

SPACEX MEDIA CONTACT | John Taylor, Director of Communications, 310-363-6703, media@spacex.com.

HIGH RESOLUTION PHOTOS | SpaceX will post high-resolution photographs after the mission at spacex.com/media.

WEBCAST | The launch will be webcast live at spacex.com/webcast beginning approximately 20 minutes before launch.

MORE RESOURCES ON THE WEB

spacex.com
twitter.com/elonmusk
twitter.com/spacex
facebook.com/spacex
plus.google.com/+SpaceX
youtube.com/spacex

DSCOVR Mission Timeline

Times are subject to change.

COUNTDOWN

Hour:Min:Sec	Events
- 10:00:00	Vehicle is powered on
- 3:00	Commence loading RP-1 (rocket grade kerosene)
- 2:35	Commence loading liquid oxygen (LOX)
- 1:30	LOX and RP-1 loading complete
- 0:10:00	Falcon 9 terminal count autosequence started
- 0:02:00	SpaceX Launch Director verifies go for launch
- 0:02:00	Range Control Officer (USAF) verifies range is go for launch
- 0:01:00	Command flight computer to begin final prelaunch checks
- 0:00:40	Pressurize propellant tanks
- 0:00:03	Engine controller commands engine ignition sequence
0:00:00	Falcon 9 liftoff

LAUNCH

Hour:Min	Events
0:03	1st stage engine shutdown/main engine cutoff (MECO)
0:03	1st and 2nd stages separation
0:03	2nd stage engine start
0:03	Fairing separation
0:09	2nd stage engine cutoff-1 (SECO-1)
0:30	2nd stage engine restart
0:31	2nd stage engine cutoff-2 (SECO-2)
0:35	DSCOVR satellite deployed

A Falcon 9 rocket launches from SpaceX's launch site at Vandenberg Air Force Base, Calif.

Launch Facility

SPACE LAUNCH COMPLEX 40, CAPE CANAVERAL AIR FORCE STATION, FLORIDA

SpaceX's Space Launch Complex 40 at Cape Canaveral Air Force Station is a world-class launch site that builds on strong heritage: the site at the north end of the Cape was used for many years to launch Titan rockets, among the most powerful rockets in the US fleet. SpaceX took over the facility in May 2008 and has since launched from the site 13 times.

A Falcon 9 rocket launches from SpaceX's launch site at Cape Canaveral Air Force Station, Fla.

The center of the complex is composed of the concrete launch pad/apron and flame exhaust duct. Surrounding the pad are four lightning towers, fuel storage tanks, and the integration hangar. Before launch, Falcon 9's stages and the payload are housed inside the hangar. The payload is encapsulated within the fairing either at the hangar or at an offsite location and then transported to the hangar – DSCOVR was encapsulated offsite. A crane/lift system moves Falcon 9 into a transporter-erector system and the payload and fairing are mated to the rocket. The vehicle is rolled from hangar to launch pad on fixed rails shortly before launch to minimize exposure to the elements.

SpaceX Launch Control, also at Cape Canaveral, is responsible for operating the Falcon 9 throughout the launch countdown.