

# PAZ Mission

## Mission Overview

SpaceX is targeting a Falcon 9 launch of the PAZ satellite to low-Earth orbit on Saturday, February 17 from Space Launch Complex 4 East (SLC-4E) at Vandenberg Air Force Base, California. The instantaneous launch opportunity is at 6:17 a.m. PST, or 14:17 UTC. The satellite will be deployed approximately eleven minutes after launch.

An instantaneous backup launch opportunity is available on Sunday, February 18 at 6:16 a.m. PST, or 14:16 UTC.

Falcon 9's first stage for the PAZ mission previously supported the FORMOSAT-5 mission from SLC-4E in August 2017. SpaceX will not attempt to recover Falcon 9's first stage after launch.



Official SpaceX PAZ Mission Patch

## Payload

Hisdesat's PAZ satellite is equipped with an advanced radar instrument designed for high flexibility, and with the capability to operate in numerous modes allowing for the choice of several different image configurations. It will be able to generate images with up to 25 cm resolution, day and night and regardless of the meteorological conditions. Designed for a mission life of five and a half years, PAZ will orbit Earth 15 times per day, covering an area of over 300,000 square kilometers from an altitude of 514 kilometers and a velocity of seven kilometers per second. On its slightly inclined quasi-polar orbit, PAZ will cover the entire globe in 24 hours, serving both government and commercial needs.

PAZ also features a sophisticated Automatic Identification System (AIS), simultaneously combining for the first time ship AIS signals and Synthetic Aperture Radar (SAR) imagery, increasing the monitoring capacities of the maritime domain worldwide. It will also be equipped with a Radio Occultation and Heavy Precipitation experiment (ROHP) from the Institute of Space Science del Consejo Superior de Investigaciones Científicas (ICE-CSIC). For the first time ever, Global Navigation Satellite System (GNSS) Radio Occultation measurements will be taken at two polarizations, to exploit the potential capabilities of polarimetric radio occultation for detecting and quantifying heavy precipitation events.

Once in space, PAZ will share the same orbit as the TerraSAR-X and TanDEM-X radar satellites. They will be operated as a very high-resolution SAR satellite constellation. The addition of this third satellite will reduce revisit time and increase acquisition capacity, leading to subsequent benefits for various applications. All three satellites feature identical ground swaths and acquisition modes. The new setup will be jointly utilized by Hisdesat and Airbus.

## 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 SATELLITE DEPLOYMENT

Hour/Min/Sec	Events
00:01:17	Max Q (moment of peak mechanical stress on the rocket)
00:02:29	1st stage engine shutdown/main engine cutoff (MECO)
00:02:33	1st and 2nd stages separate
00:02:40	2nd stage engine starts
00:02:56	Fairing deployment
00:08:58	2nd stage engine cutoff (SECO-1)
00:10:58	PAZ satellite deployment

## Launch Facility

### Space Launch Complex 4 East (SLC-4E), Vandenberg Air Force Base, California

SpaceX's SLC-4E at Vandenberg Air Force Base has a long history dating back to the early 1960s. Originally an Atlas launch pad activated in 1962, SLC-4E was in active use until its last Titan IV launch in 2005. SpaceX's groundbreaking was in July 2011, and the pad was completed just 17 months later in November 2012. SpaceX took advantage of some existing pad infrastructure, but implemented extensive modifications and reconstruction of the launch complex. Part of the renovation included tearing down a 30+ story mobile service tower and a 20+ story umbilical tower. 97 percent of these units were recycled.

SLC-4E consists of a concrete launch pad/apron and a flame exhaust duct. Surrounding the pad are RP-1 and liquid oxygen storage tanks and an integration hangar. Before launch, Falcon 9's stages, fairing and the mission payload are housed inside the hangar. A crane/lift system moves Falcon 9 into a transporter erector system and the fairing and its payload are mated to the rocket. The vehicle is rolled from the hangar to the launch pad shortly before launch to minimize exposure to the elements.

## Resources

**SpaceX Contact** | John Taylor, Director of Communications, 310-363-6703, [media@spacex.com](mailto:media@spacex.com).

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

**Webcast** | Launch webcast will go live about 15 minutes before liftoff at [spacex.com/webcast](https://www.spacex.com/webcast).