



# STARLINK MISSION

## MISSION OVERVIEW

SpaceX is targeting Wednesday, April 22 at 3:30 p.m. EDT, or 19:30 p.m. UTC, for its seventh launch of Starlink satellites. Falcon 9 will lift off from Launch Complex 39A (LC-39A) at NASA's Kennedy Space Center in Florida. A backup opportunity is available on Thursday, April 23 at 3:15 p.m. EDT, or 19:15 UTC.

Falcon 9's first stage previously supported Crew Dragon's first flight to the International Space Station, launch of the RADARSAT Constellation Mission, and the fourth Starlink mission. Following stage separation, SpaceX will land Falcon 9's first stage on the "Of Course I Still Love You" droneship, which will be stationed in the Atlantic Ocean. Falcon 9's fairing previously supported the AMOS-17 mission.

The Starlink satellites will deploy in an elliptical orbit approximately 15 minutes after liftoff. Prior to orbit raise, SpaceX engineers will conduct data reviews to ensure all Starlink satellites are operating as intended. Once the checkouts are complete, the satellites will then use their onboard ion thrusters to move into their intended orbits and operational altitude of 550 km.

## PAYLOAD DESCRIPTION

SpaceX is leveraging its experience in building rockets and spacecraft to deploy the world's most advanced broadband internet system. With performance that far surpasses that of traditional satellite internet and a global network unbounded by ground infrastructure limitations, Starlink will deliver high speed broadband internet to locations where access has been unreliable, expensive, or completely unavailable.

Each Starlink satellite weights approximately 260 kg and features a compact, flat-panel design that minimizes volume, allowing for a dense launch stack to take full advantage of Falcon 9's launch capabilities. With four powerful phased array and two parabolic antennas on each satellite, an enormous amount of throughput can be placed and redirected in a short time, for an order of magnitude lower cost than traditional satellite-based internet.

Starlink satellites are on the leading edge of on-orbit debris mitigation, meeting or exceeding all regulatory and industry standards. At end of their life cycle, the satellites will utilize their on-board propulsion system to deorbit over the course of a few months. In the unlikely event their propulsion system becomes inoperable, the satellites will burn up in Earth's atmosphere within 1-5 years, significantly less than the hundreds or thousands of years required at higher altitudes. Further, Starlink components are designed for full demisability.

Starlink is targeting service in the Northern U.S. and Canada in 2020, rapidly expanding to near global coverage of the populated world by 2021. Additional information on the system can be found at [starlink.com](https://starlink.com).

## WEBCAST

Launch webcast will go live about 10 minutes before liftoff at [spacex.com/webcast](https://spacex.com/webcast)

## PHOTOS

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



## LAUNCH FACILITY

Falcon 9 will launch this mission from Launch Complex 39A (LC-39A) at Kennedy Space Center in Florida. Learn more about SpaceX's launch facilities at [spacex.com/about](https://spacex.com/about)

## MISSION CONTROL AUDIO

Approximately 35 minutes before liftoff, audio from mission control will be available at [youtube.com/spacex](https://youtube.com/spacex).

## MISSION TIMELINE (all times approximate)

### COUNTDOWN

Hr/Min/Sec	Event
- 00:38:00	SpaceX Launch Director verifies go for propellant load
- 00:35:00	RP-1 (rocket grade kerosene) loading underway
- 00:35:00	1st stage LOX (liquid oxygen) loading underway
- 00:16:00	2nd stage LOX loading underway
- 00:07:00	Falcon 9 begins engine chill prior to launch
- 00:01:00	Command flight computer 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, LANDING, AND DEPLOYMENT

Hr/Min/Sec	Event
00:01:12	Max Q (moment of peak mechanical stress on the rocket)
00:02:32	1st stage main engine cutoff (MECO)
00:02:35	1st and 2nd stages separate
00:02:43	2nd stage engine starts
00:03:07	Fairing deployment
00:07:04	1st stage entry burn complete
00:08:45	1st stage landing
00:08:55	2nd stage engine cutoff (SECO-1)
00:14:51	Starlink satellites begin deployment