



PSYCHE MISSION

MISSION OVERVIEW

SpaceX and NASA are targeting Friday, October 13 at 10:19 a.m. ET for Falcon Heavy’s launch of the Psyche mission to an interplanetary transfer orbit from Launch Complex 39A (LC-39A) at NASA’s Kennedy Space Center in Florida. If needed, a backup launch opportunity is available on Saturday, October 14 at 10:24 a.m. ET.

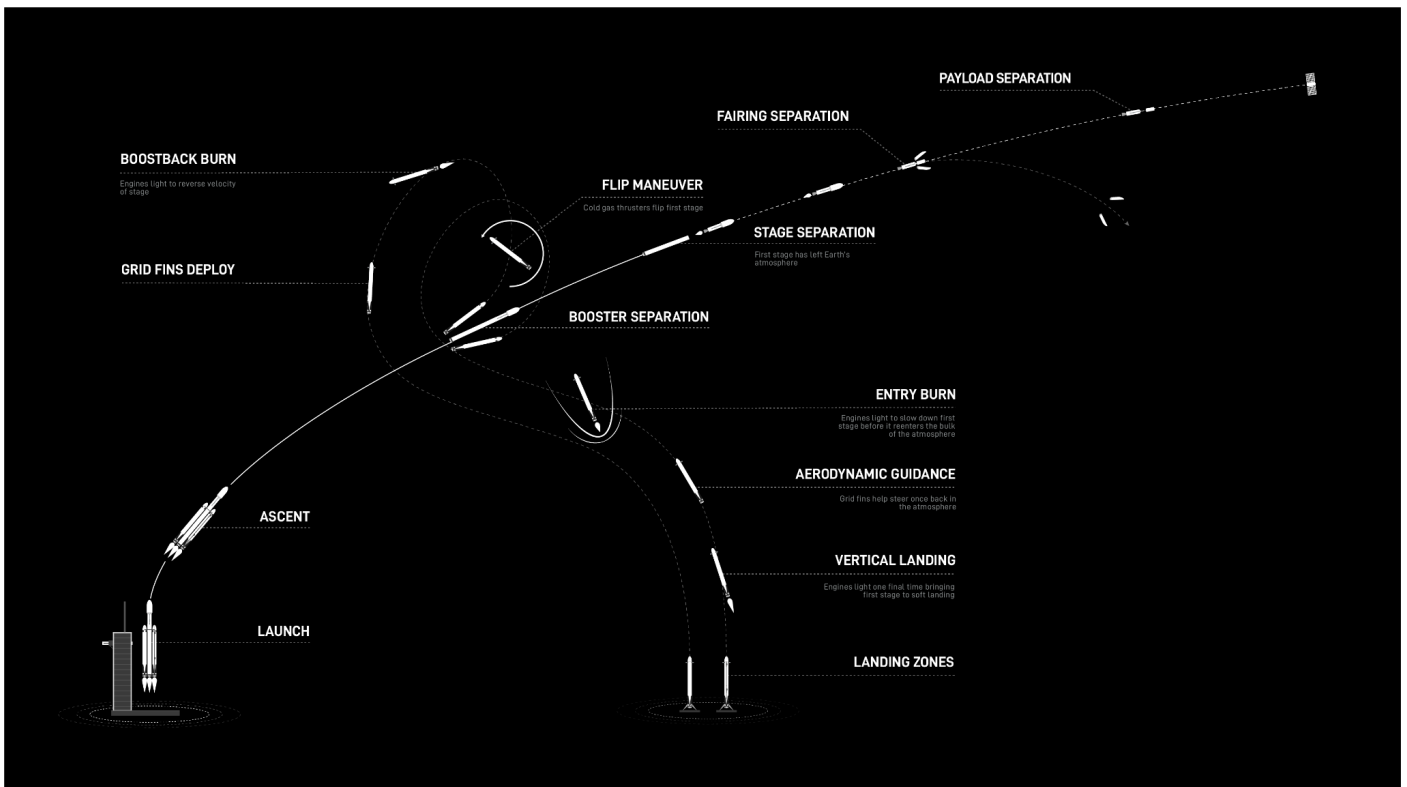
The **Psyche spacecraft** will travel to a metal-rich asteroid of the same name orbiting the Sun between Jupiter and Mars in pursuit of studying the exposed nickel-iron core of an early planet, one of the building blocks of our solar system. The mission will also demonstrate NASA’s first deep space test of the **Deep Space Optical Communications (DSOC) system** – high-bandwidth optical communications through space and back to Earth – from distances far exceeding the Moon – using a near-infrared laser.

This will be the fourth launch for the side boosters, both of which previously supported USSF-44, USSF-67, and Hughes JUPITER 3. Following stage separation, Falcon Heavy’s two side boosters will land on SpaceX’s Landing Zones 1 and 2 (LZ-1 and LZ-2) at Cape Canaveral Space Force Station in Florida.

WEBCAST

A live webcast of this mission will begin on **NASA TV** about 45 minutes prior to liftoff.

MISSION PROFILE



MISSION TIMELINE (ALL TIMES APPROXIMATE)

COUNTDOWN

Hr/Min/Sec	Event
- 00:53:00	SpaceX Launch Director verifies go for propellant load
- 00:50:00	1st stage RP-1 (rocket grade kerosene) loading begins
- 00:45:00	1st stage LOX (liquid oxygen) loading begins
- 00:35:00	2nd stage RP-1 (rocket grade kerosene) loading begins
- 00:18:30	2nd stage LOX loading begins
- 00:07:00	Falcon Heavy begins engine chill
- 00:00:59	Flight computer commanded to begin final pre-launch checks
- 00:00:45	SpaceX Launch Director verifies go for launch
- 00:00:20	Propellant tanks pressurize for flight
- 00:00:06	Engine controller commands engine ignition sequence to start
- 00:00:00	Falcon Heavy liftoff

LAUNCH, LANDING AND DEPLOYMENT

Hr/Min/Sec	Event
00:01:09	Max Q (Moment of peak mechanical stress on the rocket)
00:02:25	Side boosters engine cutoff (BECO)
00:02:28	Side boosters separate
00:02:40	Side boosters boostback burns begin
00:03:51	Side boosters boostback burns end
00:03:55	1st stage main engine cutoff (MECO)
00:03:59	1st and 2nd stages separate
00:04:04	2nd stage engine starts (SES)
00:04:24	Fairing deployment
00:06:47	Side boosters entry burns start
00:07:04	Side boosters entry burns end
00:08:00	Side boosters landing burns start
00:08:17	Side boosters landing
00:08:26	2nd stage engine cutoff (SECO-1)
00:54:00	2nd stage engine starts (SES-2)
00:56:12	2nd stage engine cutoff (SECO-2)
01:02:24	Psyche deploys