# DART MISSION

## MISSION OVERVIEW

SpaceX is targeting Tuesday, November 23 for Falcon 9's launch of **NASA's Double Asteroid Redirection Test (DART) mission** to an interplentary transfer orbit from Space Launch Complex 4 East (SLC-4E) at Vandenberg Space Force Base in California. The instantaneous launch window is at 10:21 p.m. PST (6:21 UTC on November 24), and a backup opportunity is available on Wednesday, November 24 at 10:20 p.m. PST (6:20 UTC on November 25).

This will be the third flight for this Falcon 9's first stage booster, which previously supported launch of Sentinel-6 Michael Freilich and a Starlink mission. Following stage separation, Falcon 9's first stage will land on the Of Course I Still Love You droneship, which will be located in the Pacific Ocean.

**DART** is humanity's first planetary defense test mission to see if intentionally crashing a spacecraft into an asteroid is an effective way to change its course, should an Earth-threatening asteroid be discovered in the future.

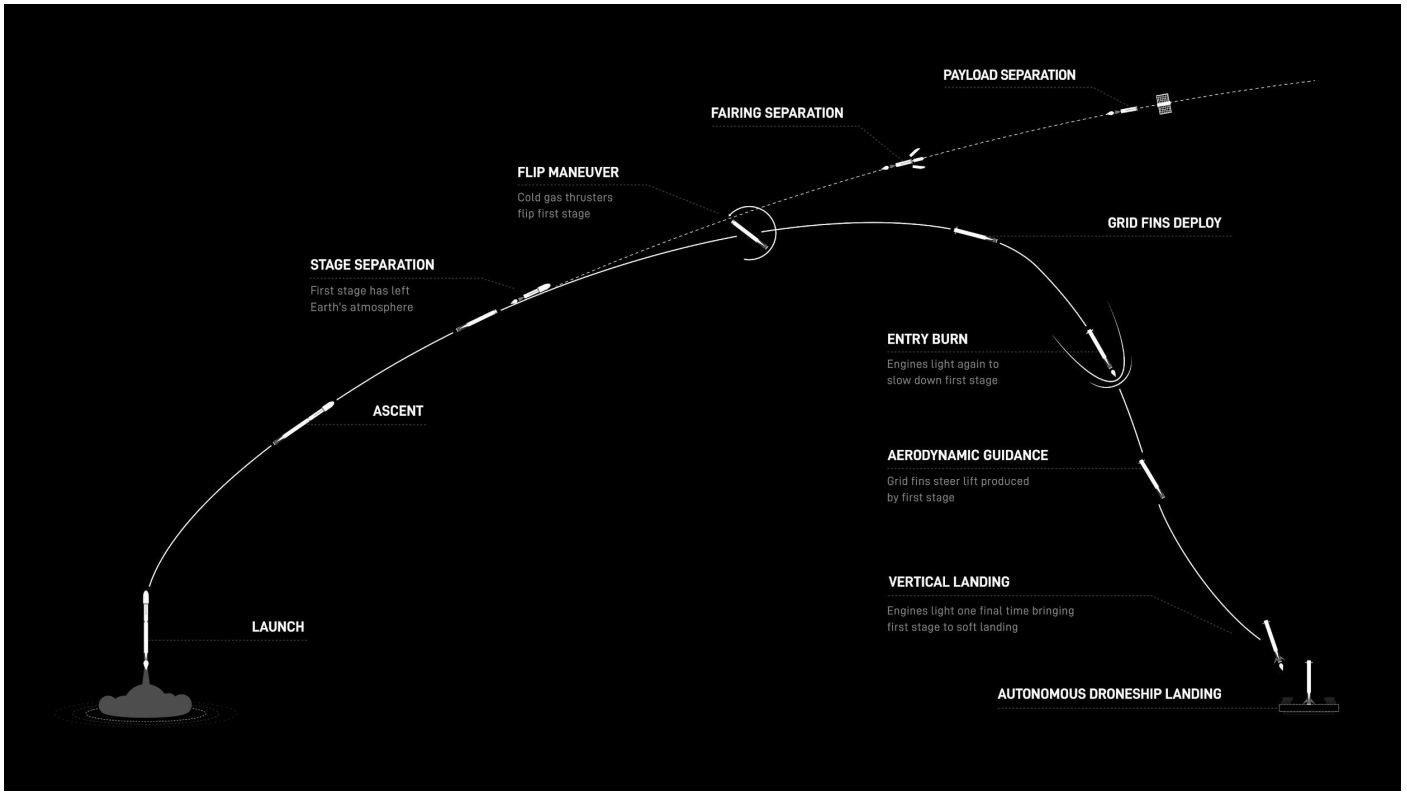
## WEBCAST

A live webcast of this mission will begin about 15 minutes prior to liftoff.

## PHOTOS

High-resolution photos will be posted at flickr.com/spacex.

## MISSION PROFILE



# **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) |
| 00:02:33 | 1st stage main engine cutoff (MECO) |
| 00:02:36 | Stage separation |
| 00:02:44 | 2nd stage engine starts |
| 00:03:11 | Fairing deployment |
| 00:06:40 | 1st stage entry burn start |
| 00:07:10 | 1st stage entry burn complete |
| 00:08:06 | 2nd stage engine cutoff (SECO-1) |
| 00:08:26 | 1st stage landing burn start |
| 00:08:52 | 1st stage landing burn complete |
| 00:28:37 | 2nd stage engine starts |
| 00:29:30 | 2nd stage engine cutoff (SECO-2) |
| 00:55:40 | DART deploys |