



AX-2 MISSION

MISSION OVERVIEW

SpaceX is targeting no earlier than Sunday, May 21 for Axiom Space's Axiom Mission 2 (**Ax-2**) to the International Space Station from Launch Complex 39A (LC-39A) at NASA's Kennedy Space Center in Florida. The instantaneous launch window is at 5:37 p.m. ET (21:37 UTC), with a backup opportunity available on Monday, May 22 at 5:14 p.m. ET (21:14 UTC).

The Dragon spacecraft supporting this mission previously flew Crew-4 to and from the space station. Following stage separation, Falcon 9's first stage will land on Landing Zone 1 (LZ-1) at Cape Canaveral Space Force Station.

During their time on the orbiting laboratory, the crew will conduct over **20 science and technology experiments** in areas such as human physiology, physical sciences, and STEAM to help expand knowledge to benefit life on Earth in areas such as healthcare, materials, technology development, and enable industrial advances.

WEBCAST

The **SpaceX webcast** for the Ax-2 mission will go live about 3.5 hours before liftoff.

PHOTOS

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

THE ASTRONAUTS



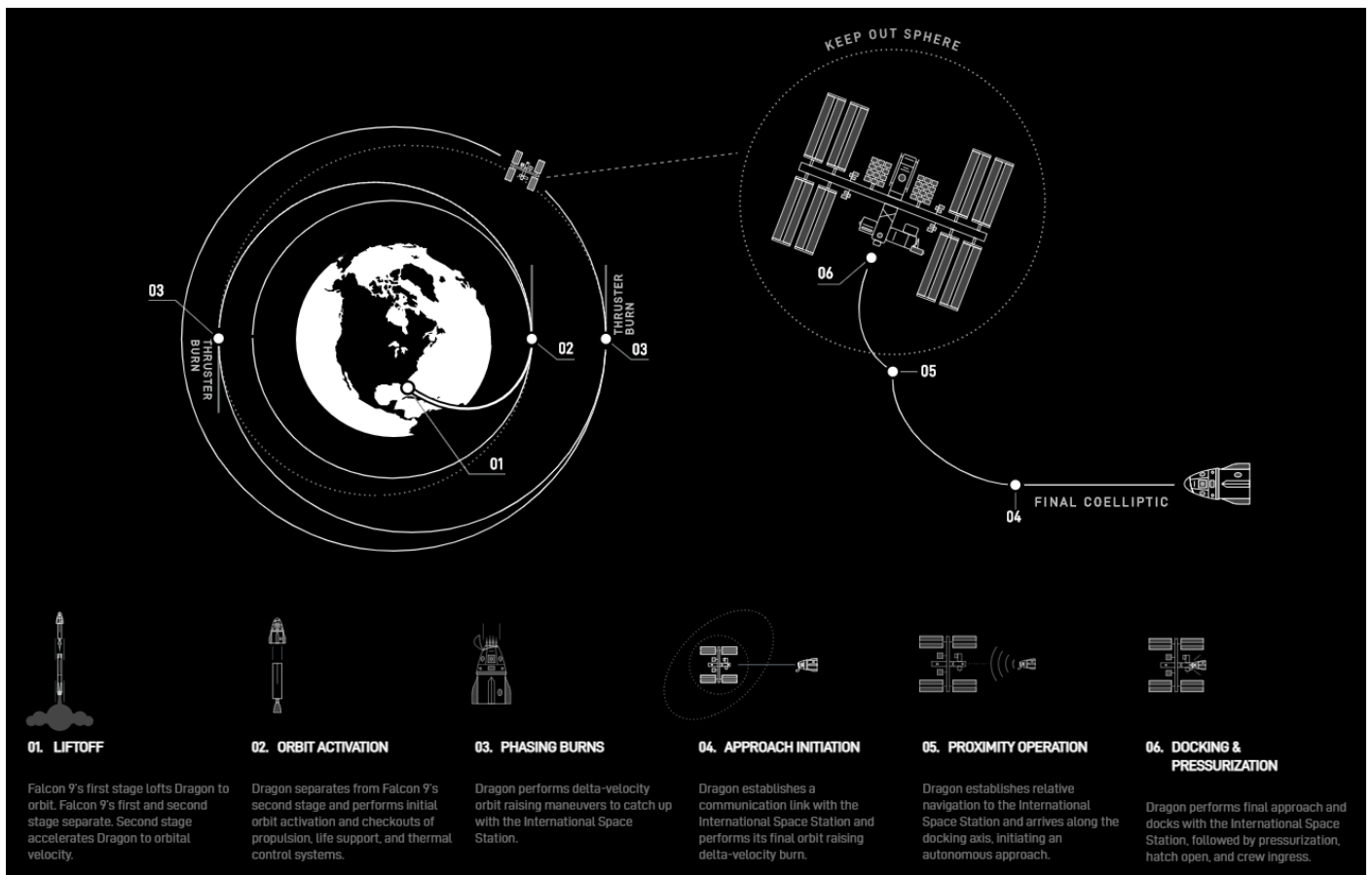
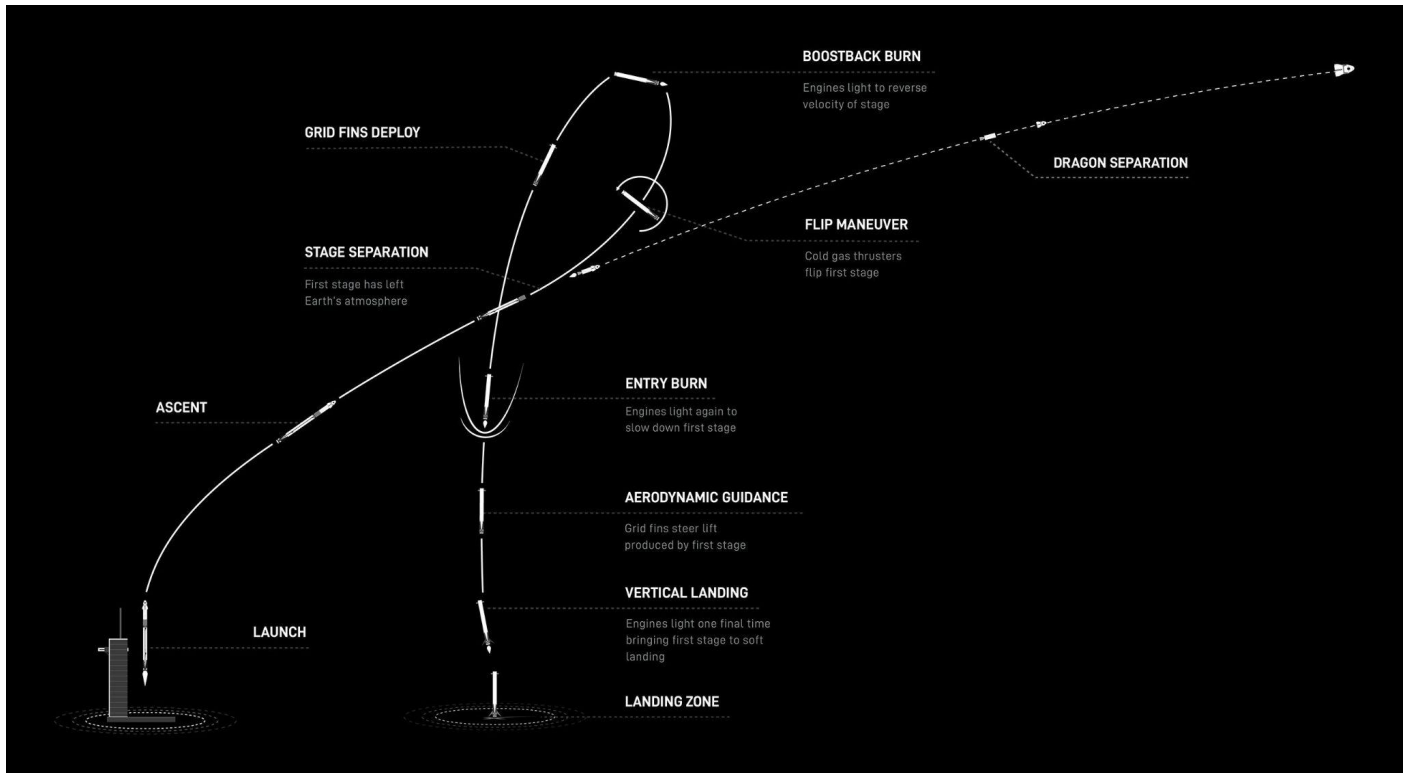
Peggy Whitson

John Shoffner

Ali Alqarni

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MISSION PROFILE



01. LIFTOFF

Falcon 9's first stage lofts Dragon to orbit. Falcon 9's first and second stage separate. Second stage accelerates Dragon to orbital velocity.



02. ORBIT ACTIVATION

Dragon separates from Falcon 9's second stage and performs initial orbit activation and checkouts of propulsion, life support, and thermal control systems.



03. PHASING BURNS

Dragon performs delta-velocity orbit raising maneuvers to catch up with the International Space Station.



04. APPROACH INITIATION

Dragon establishes a communication link with the International Space Station and performs its final orbit raising delta-velocity burn.



05. PROXIMITY OPERATION

Dragon establishes relative navigation to the International Space Station and arrives along the docking axis, initiating an autonomous approach.



06. DOCKING & PRESSURIZATION

Dragon performs final approach and docks with the International Space Station, followed by pressurization, hatch open, and crew ingress.

MISSION TIMELINE (ALL TIMES APPROXIMATE)

COUNTDOWN

Hr/Min/Sec	Event
- 00:45:00	SpaceX Launch Director verifies go for propellant load
- 00:42:00	Crew access arm retracts
- 00:37:00	Dragon's launch escape system is armed
- 00:35:00	RP-1 (rocket grade kerosene) loading begins
- 00:35:00	1st stage LOX (liquid oxygen) loading begins
- 00:16:00	2nd stage LOX loading begins
- 00:07:00	Falcon 9 begins engine chill prior to launch
- 00:05:00	Dragon transitions to internal power
- 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
00:01:02	Max Q (moment of peak mechanical stress on the rocket)
00:02:26	1st stage main engine cutoff (MECO)
00:02:29	1st and 2nd stages separate
00:02:37	2nd stage engine starts
00:02:39	Boostback Burn Start
00:03:28	Boostback Burn End
00:06:25	1st stage entry burn
00:07:31	1st stage landing burn
00:07:58	1st stage landing
00:08:47	2nd stage engine cutoff (SECO-1)
00:11:58	Dragon separates from 2nd stage
00:12:46	Dragon nosecone open sequence begins