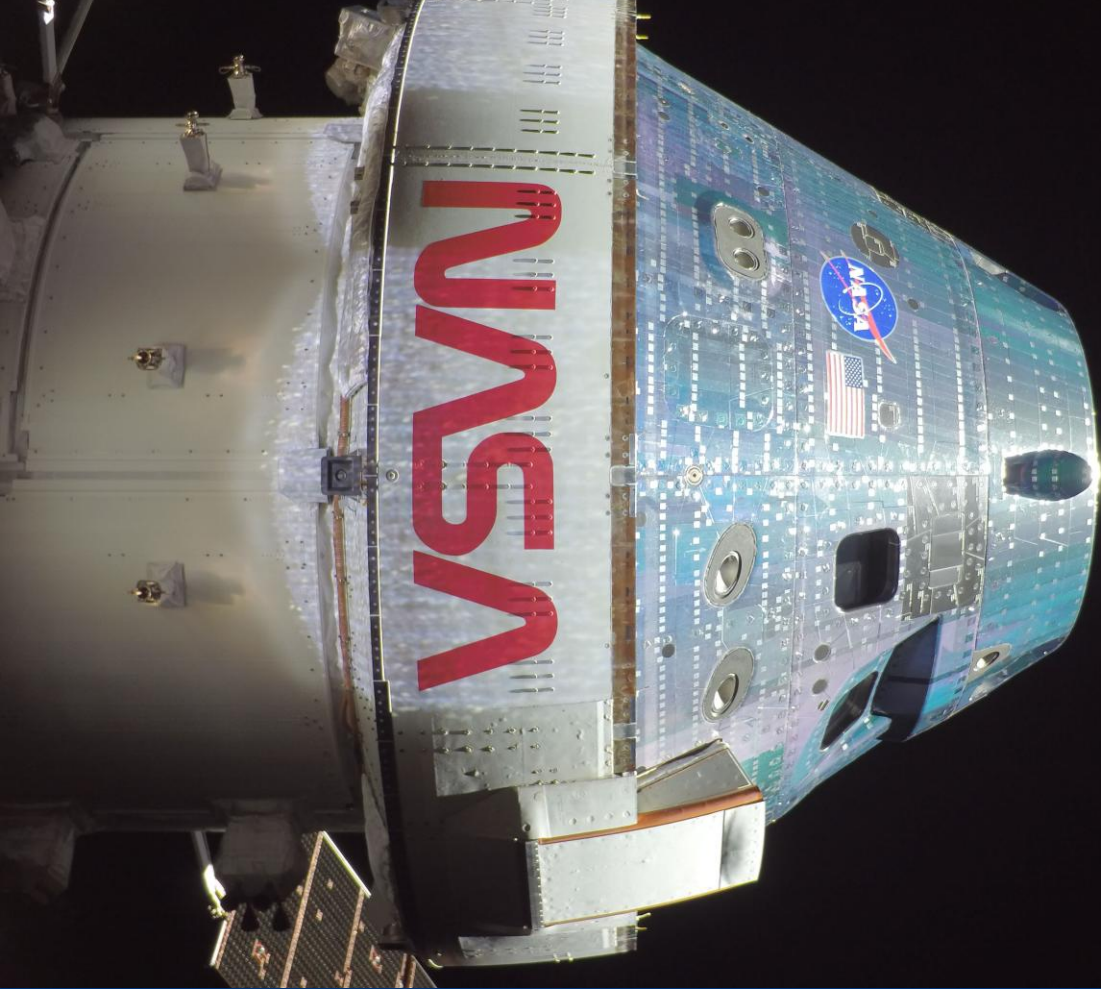




# Orion: Artemis II and Beyond

## Aircraft Builders Council Annual Conference

Miami, FL  
September 27-29, 2026

**Kirk Shireman**  
Vice President for Human Space Exploration  
& Orion Program Manager





## Special Thanks

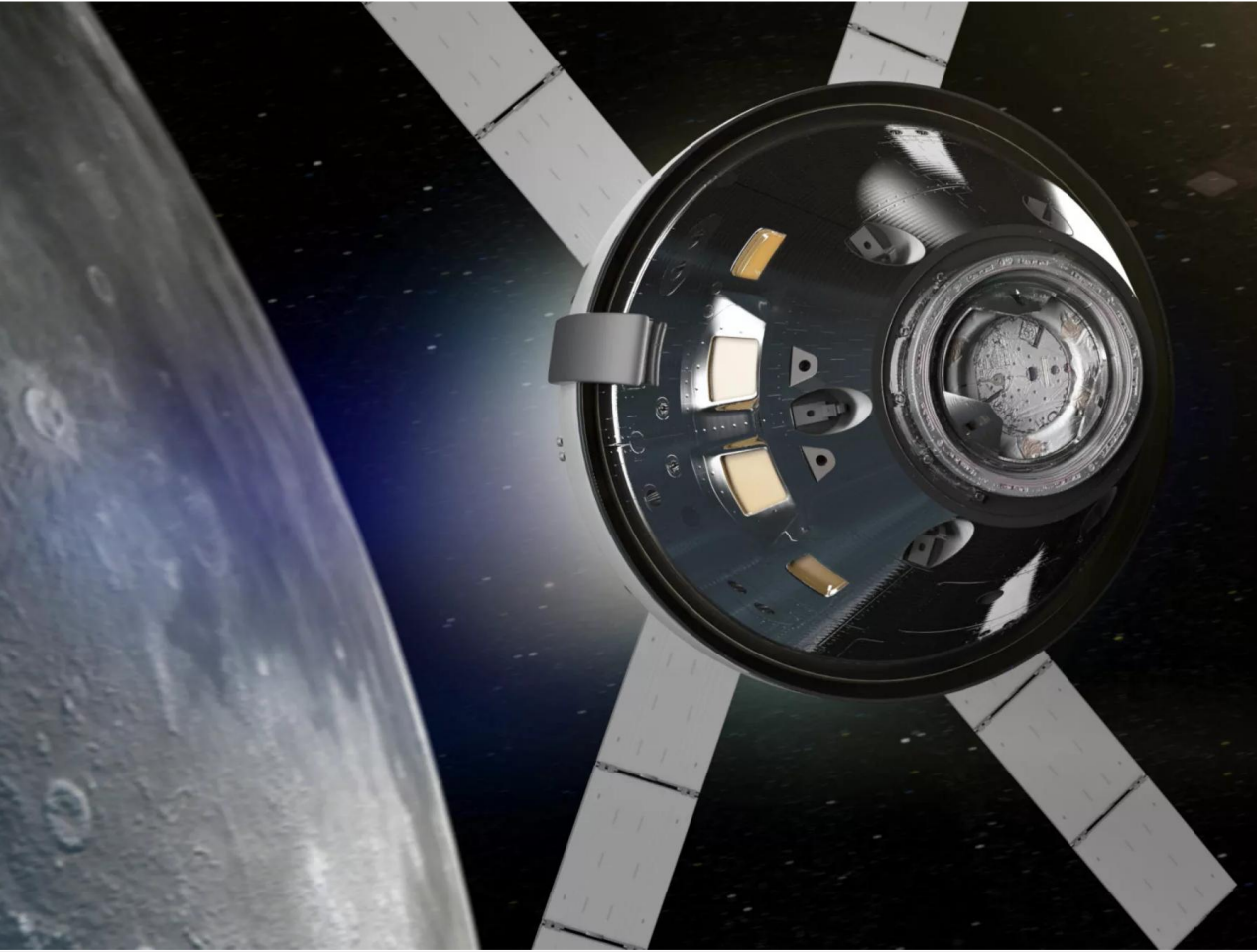
**Mark Purcell**

Director Aviation &  
Space Insurance Risk  
Management

And the team of  
Insurers, Brokers, and  
Associates who  
supported our One  
Liability Insurance  
Program

# MISSION SUCCESS!

# How is Orion like an Airplane?





ARTEMIS II

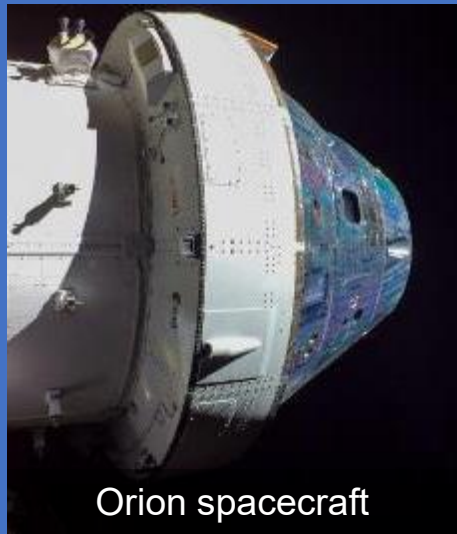
APRIL 1, 2026

And here we go.

# Artemis: A Foundation for Deep Space Exploration



Space Launch System



Orion spacecraft



Human Landing System



Surface Operations



Gateway



Exploration Ground Systems



Space Communications  
& Navigation



Surface Mobility



Spacesuits



Artemis Base Camp

# WHAT IT TAKES TO COME HOME SAFELY

LOW EARTH RETURN

vs

LUNAR RETURN

**3 HOURS**

**24X**  
LONGER

**3 DAYS**

**3,000°F**

**66%**  
HOTTER

**5,000°F**

**17,000 MPH**

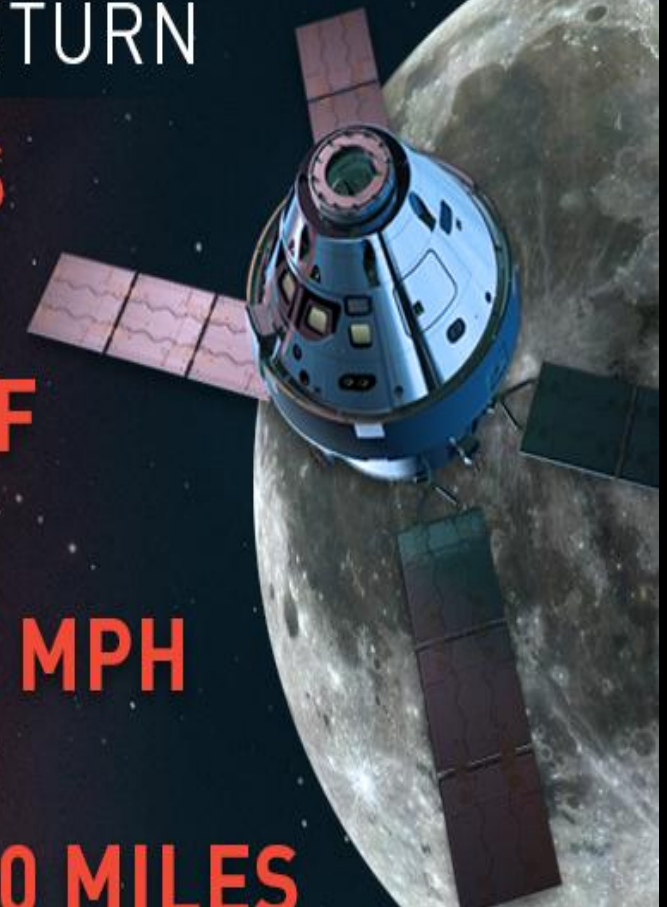
**7,700**  
MPH FASTER

**24,700 MPH**

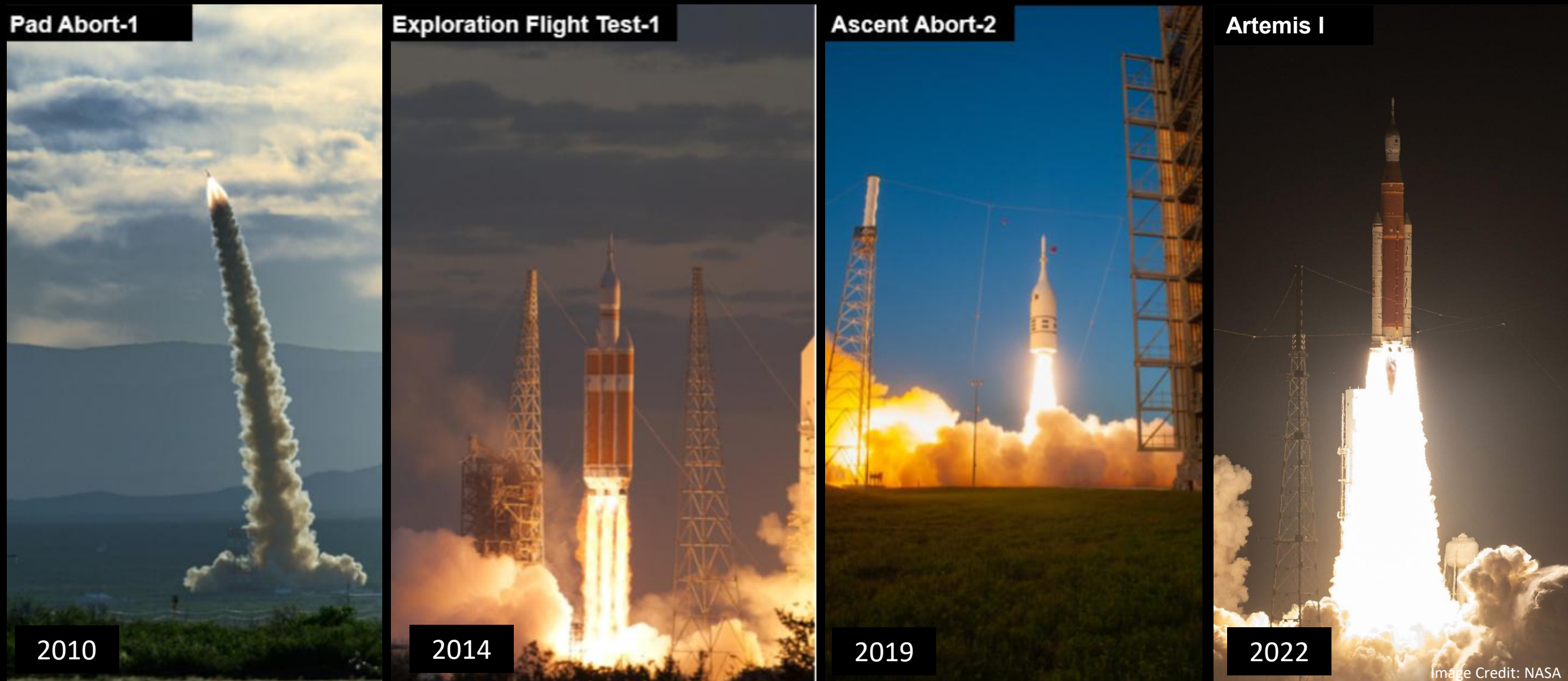
**250 MILES**

**1,000X**  
FARTHER

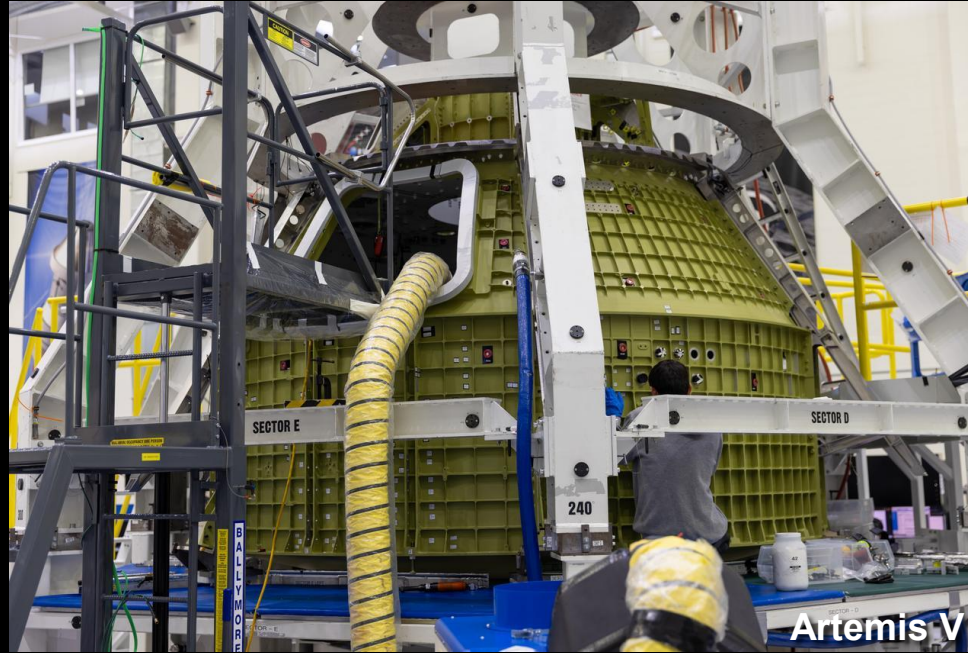
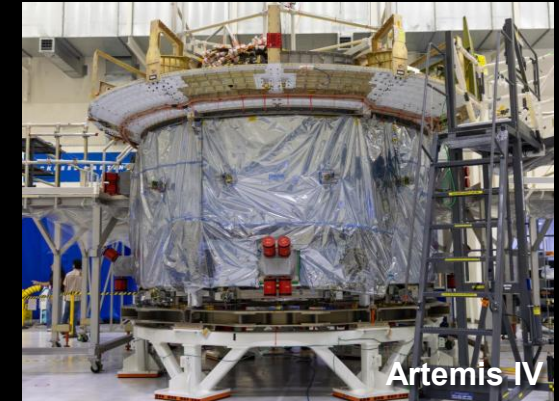
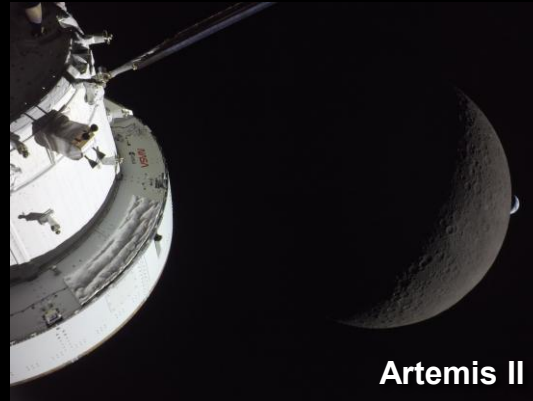
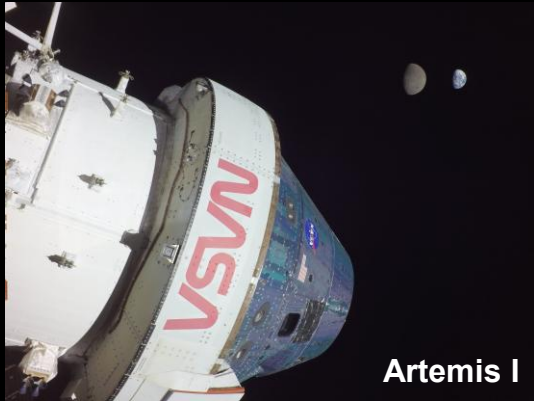
**240,000 MILES**



# Orion Reliability Built On Flight Tests



# Orion Spacecraft Missions & Production



# Artemis II: Preparing for Launch



Orion CSM Stack in the O&C



Orion Processing in the MPPF



Orion Integration in the LASF



Orion Stacked & Ready to Roll from the VAB!



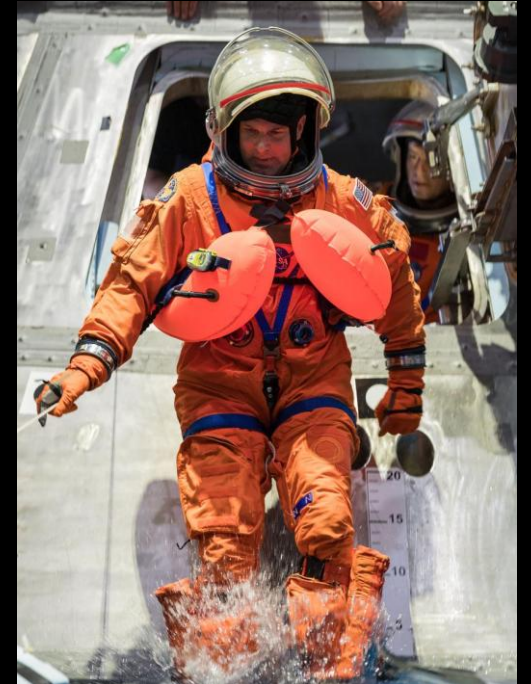
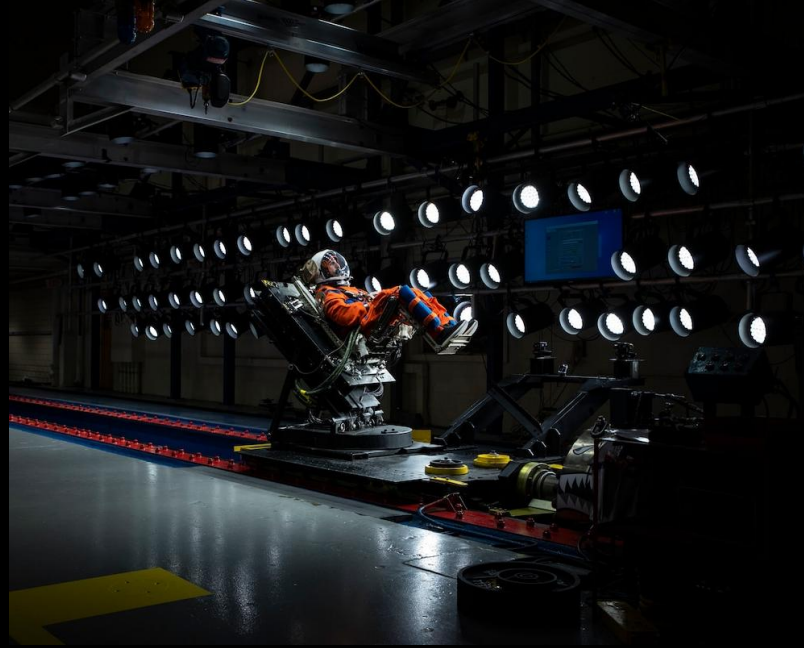
Stacking on SLS in VAB, KSC



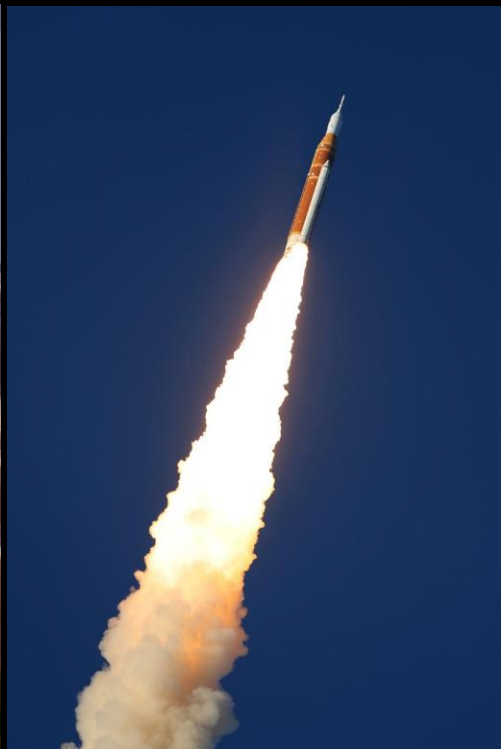
# Preparing for Crewed Missions to the Moon



# Human-in-the-Loop Testing



# ARTEMIS II LAUNCH



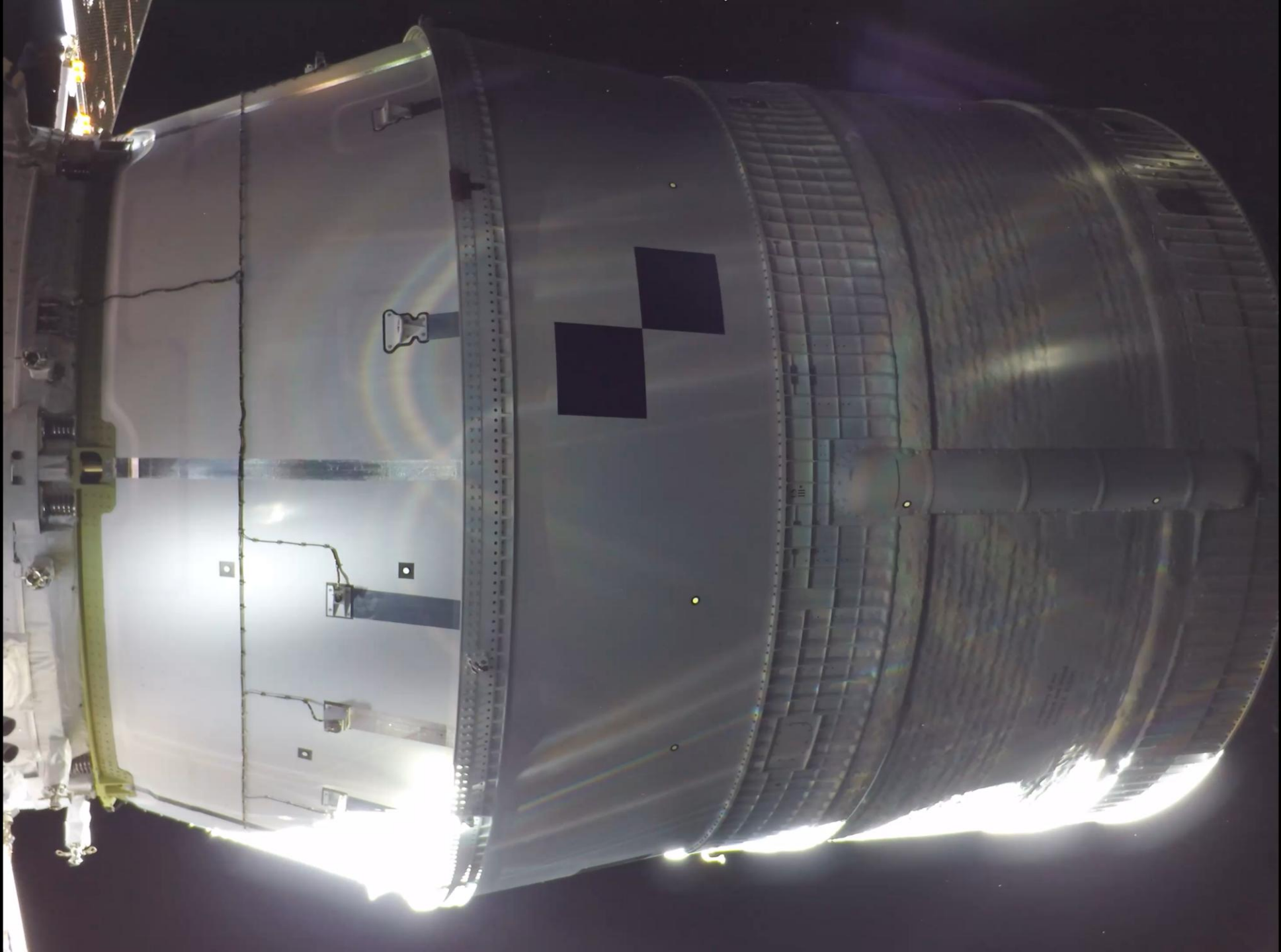




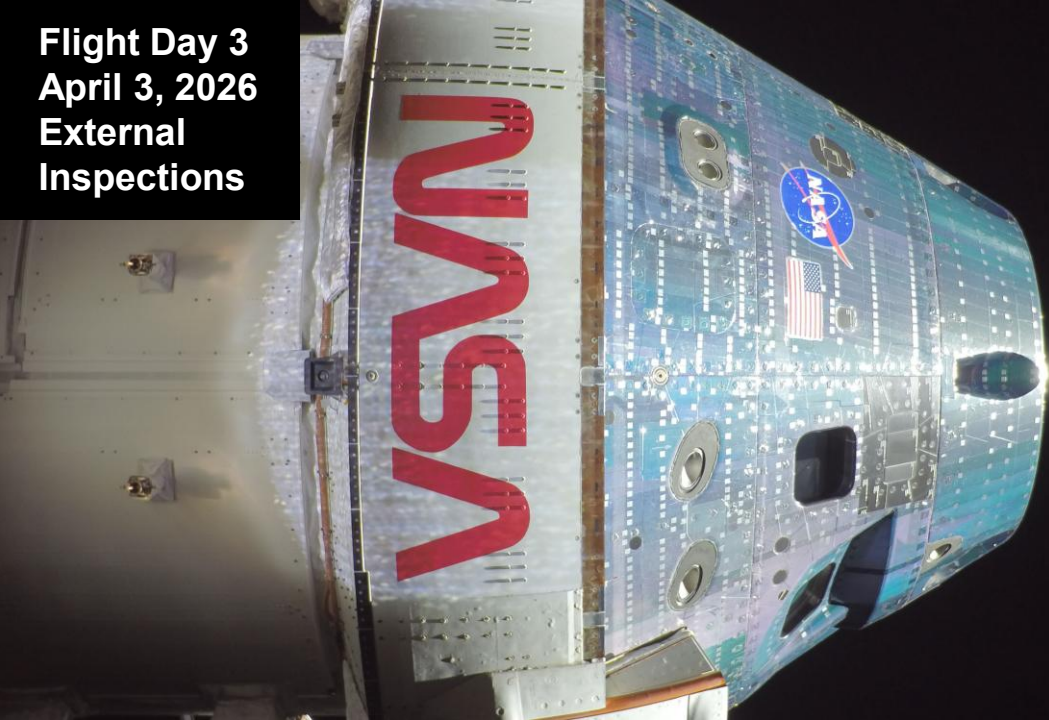
Flight Day 1  
April 1, 2026  
LAS Jettison



Flight Day 1  
April 1, 2026  
ICPS  
Separation



Flight Day 3  
April 3, 2026  
External  
Inspections



Our **Service Module** with **four solar array wings** generates about **11kw of power**. The **15,000 solar cells** tracking the sun, produce enough electricity to power **two typical homes**.



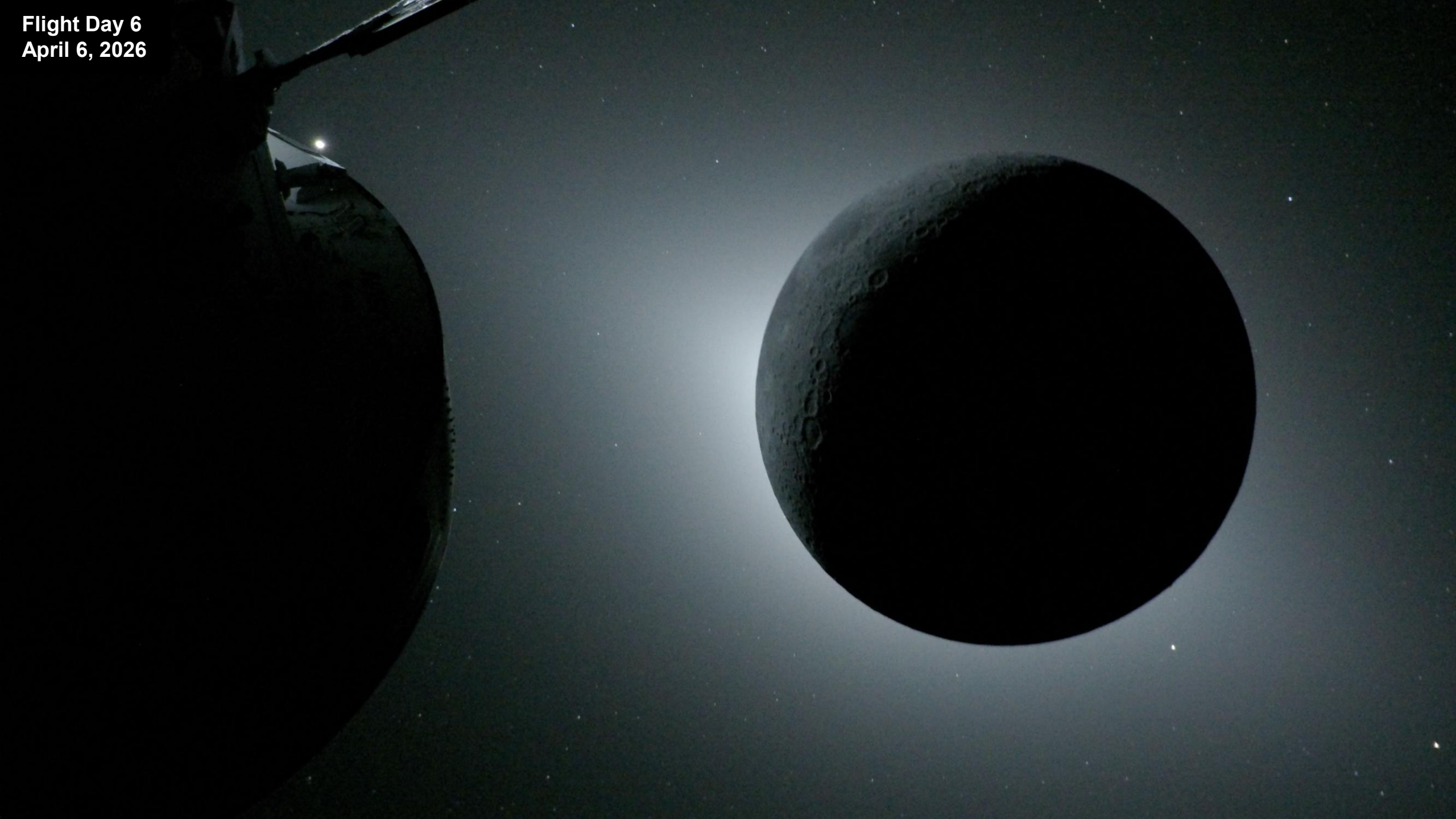
# Living in Orion





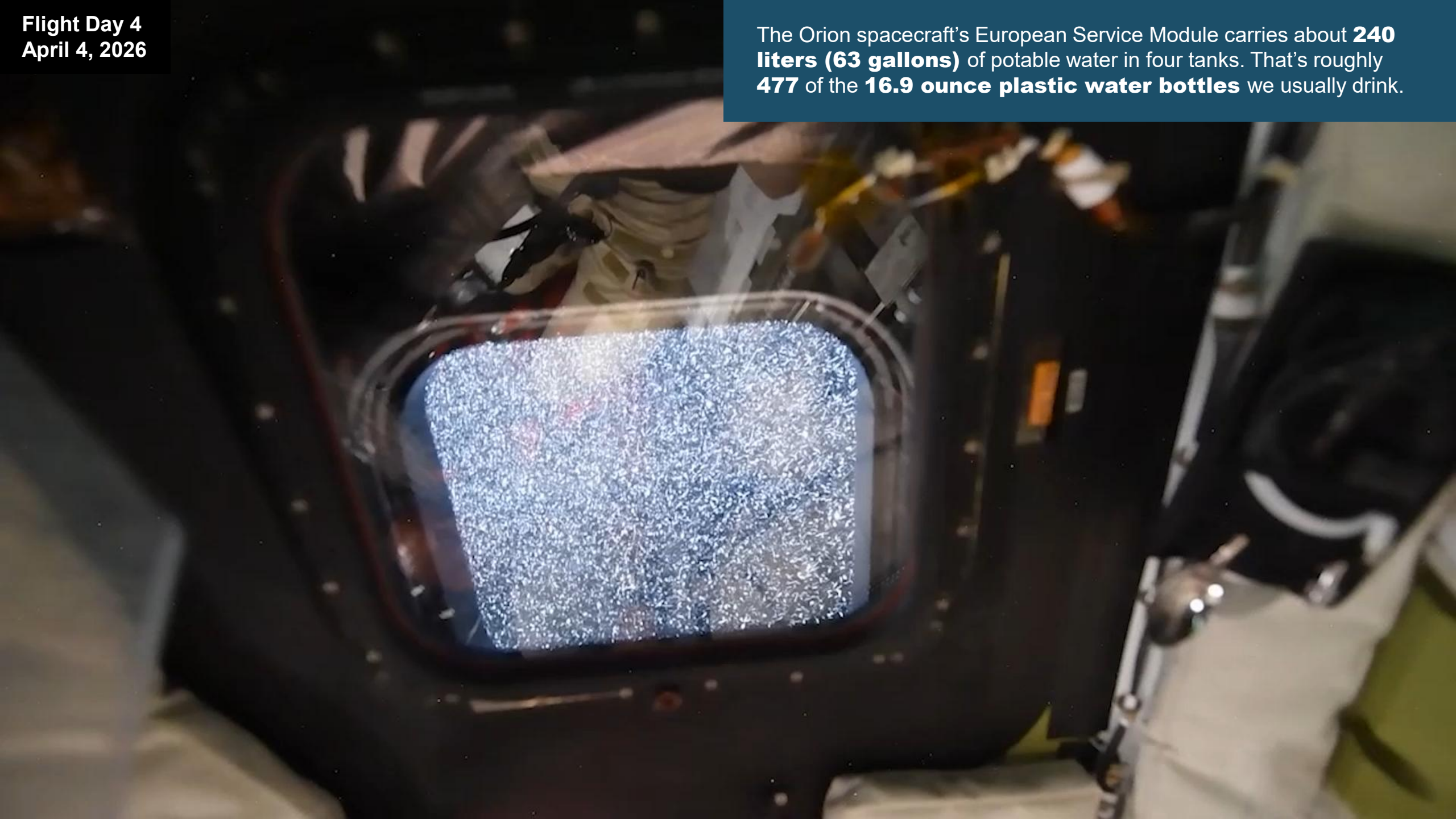
Our crew brought **189 unique food menu items**. They had more than **10 types of beverages**, **5 different hot sauces**, **5 Canadian** food products, **6 different desserts** and **58 tortillas**.

Flight Day 6  
April 6, 2026



Flight Day 4  
April 4, 2026

The Orion spacecraft's European Service Module carries about **240 liters (63 gallons)** of potable water in four tanks. That's roughly **477** of the **16.9 ounce plastic water bottles** we usually drink.



Flight Day 4  
April 4, 2026  
Exercise

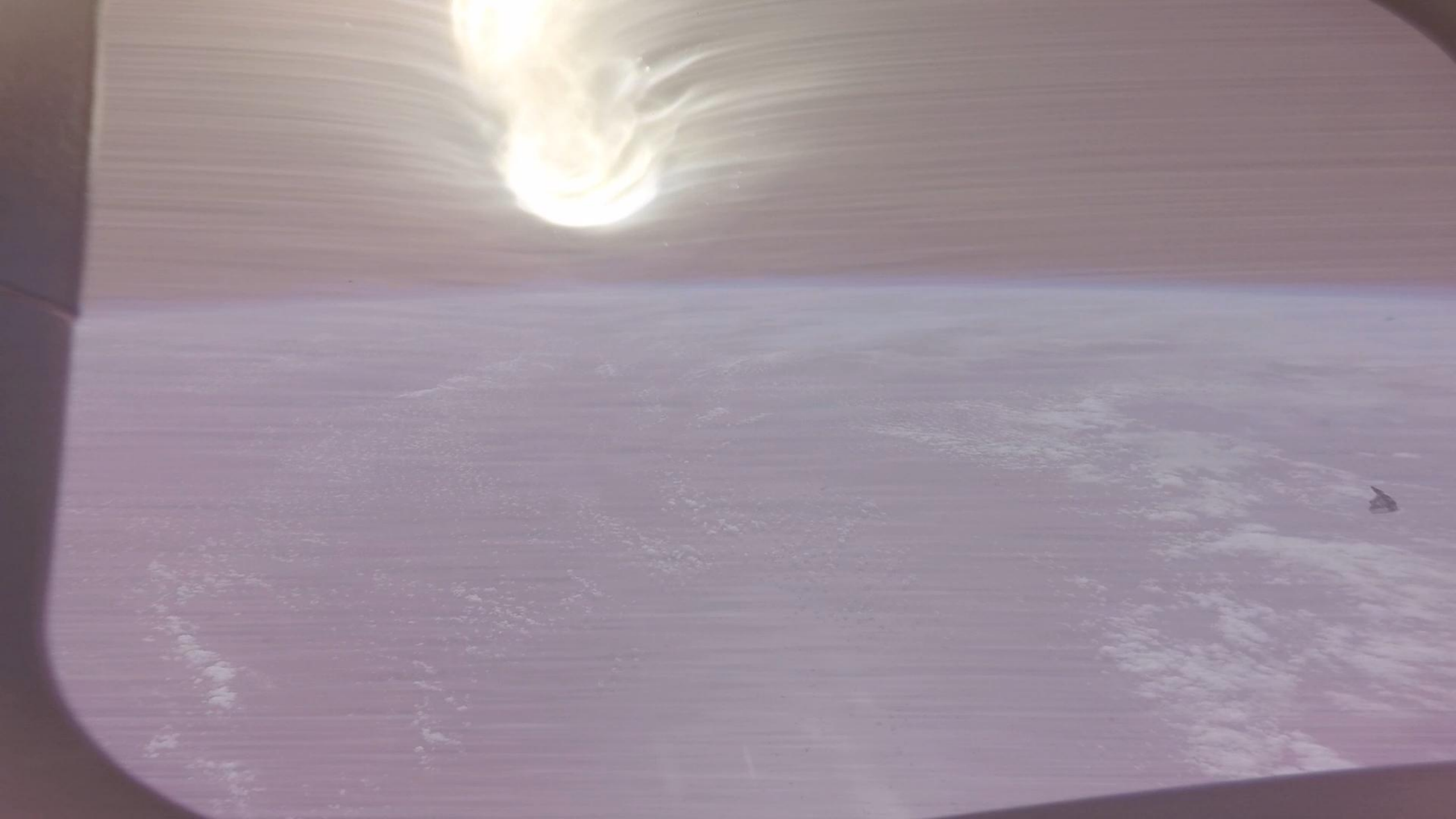




Flight Day 6  
April 6, 2026



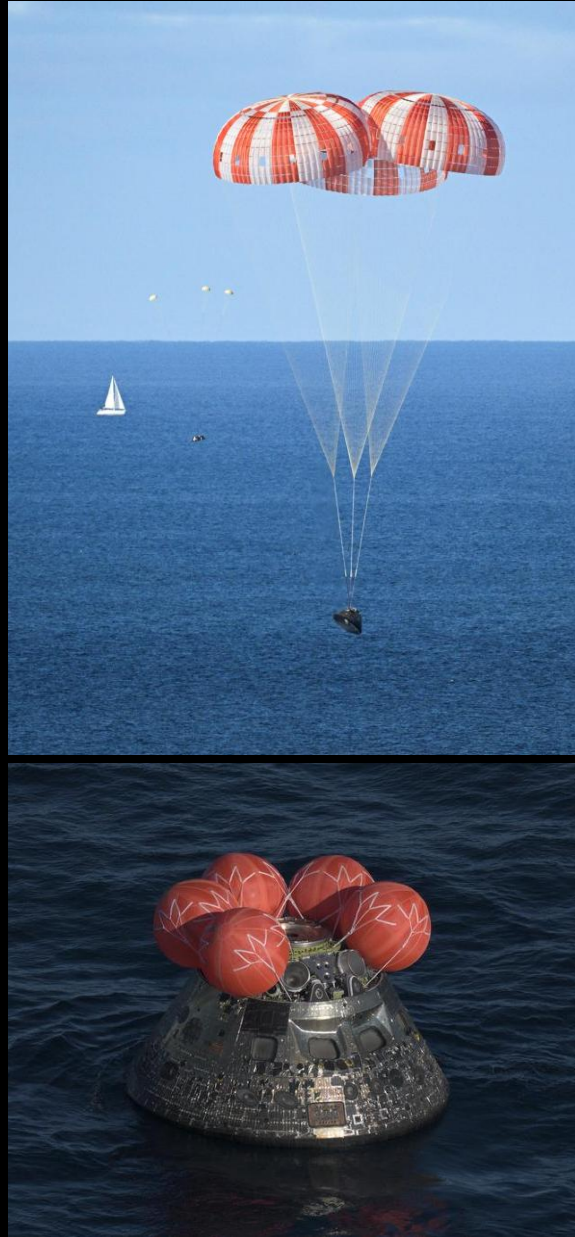




Flight Day 10  
April 10, 2026



# SPLASHDOWN & RECOVERY



April 10, 2026



April 10, 2026





**MISSION SUCCESS**

# ARTEMIS II



**Total Distance Traveled:**

694,481 miles

**Total Mission Duration:**

9 days, 1 hour, 32 minutes

**Record-Breaking Distance:**

Max distance of 252,756 miles —  
beating the Apollo 13 record by  
4,111 miles

**Lunar Closest Approach:**

4,067 miles above the lunar surface

**Reentry Speed:**

Mach 36.1 at entry interface

**Max Velocity at Reentry:**

24,665 mph

**Atmosphere Reentry Accuracy:**

Only 192 feet off from predictions

**Landing Accuracy:**

2.9 miles from the targeted landing site



# ARTEMIS III

**The Artemis III mission will launch crew in the Orion spacecraft on top of the Space Launch System rocket to test rendezvous and docking capabilities between Orion and commercial spacecraft needed to land astronauts on the Moon.**



# Artemis III Crew

Andre Douglas  
Mission Specialist

Luca Parmitano  
Pilot

Randy Bresnik  
Commander

Frank Rubio  
Mission Specialist



Image Credit: NASA

# ARTEMIS I

First Mission  
(Uncrewed Test Flight)



COMPLETE

# ARTEMIS II

First Artemis Crew



COMPLETE

# ARTEMIS III

First Artemis Docking in Space  
With Human Landing System  
Providers in Low Earth Orbit



CREW ANNOUNCEMENT  
JUNE 9

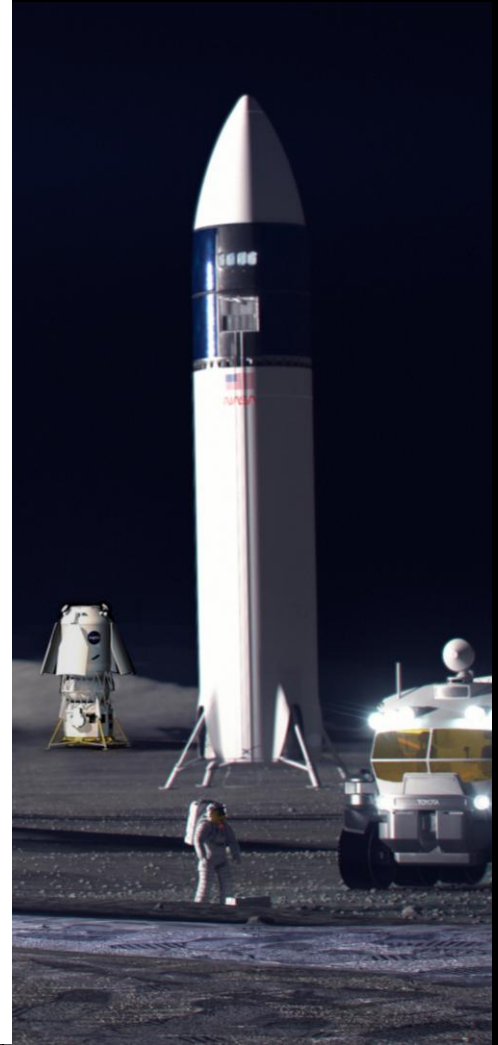
# ARTEMIS IV

First Artemis  
Human Surface Landing



# ARTEMIS V+

Annual Mission Cadence  
Sustained Lunar Presence





# Orion Spacecraft Reuse for Artemis Missions

Reduces costs by 50% per vehicle by Artemis V and an additional 30% by Artemis VIII



- Artemis I Orion Crew Module evolved into an Environmental Test Article providing essential data to inform spacecraft reuse for Artemis missions III and beyond.
- Artemis II hardware components will be refurbished and reused for Artemis V and will graduate to full reuse by Artemis VIII.



**Q&A**