



National Aeronautics and  
Space Administration



## NASA'S COMMERCIAL CREW PROGRAM MISSION OVERVIEW

# NASA's SpaceX Crew-8



NASA and SpaceX will launch a crew of four on an American rocket and spacecraft to the International Space Station. The agency's SpaceX Crew-8 mission will carry NASA astronauts Matthew Dominick, commander; Michael Barratt, pilot; Jeanette Epps, mission specialist; and Roscosmos cosmonaut mission specialist Alexander Grebenkin.

The SpaceX Falcon 9 rocket will launch the crew aboard a Dragon spacecraft, named Endeavour, from Launch Complex 39A at NASA's Kennedy Space Center in Florida. Following its arrival to the space station, Crew-8 will dock to the forward-facing port of the Harmony module.

The flight is the eighth crew rotation mission with SpaceX to station, and the ninth flight of Dragon with people as part of NASA's Commercial Crew Program. The crew will spend several months living and working aboard the orbiting laboratory before returning to Earth in the fall of 2024.

## LAUNCH VEHICLE

### SpaceX Falcon 9 Rocket

**HEIGHT:** 229.6 ft

**DIAMETER:** 12 ft

**PROPELLENT:** LOX (liquid oxygen) and rocket grade kerosene (RP-1)

**PROPULSION:** 9 SpaceX Merlin engines – 190,000 lbf each

**LAUNCH LOCATION:** Launch Complex 39A at NASA's Kennedy Space Center in Florida

This will be the first launch for the SpaceX Falcon 9 rocket supporting this mission. The rocket will accelerate Dragon to an orbital velocity of 17,500 mph prior to the spacecraft's separation and rendezvous and docking with the International Space Station. Following stage separation, the Falcon 9 first stage will land at SpaceX's Landing Zone 1 at Cape Canaveral Space Force Station in Florida.

## SPACECRAFT

### SpaceX Dragon

**HEIGHT:** 26.7 ft

**DIAMETER:** 13 ft

**VOLUME:** 328 ft<sup>3</sup>

**CREW CAPACITY:** Up to seven

**RETURN:** Splashdown-based water return off the coast of Florida



The Crew-8 mission will fly aboard SpaceX's Dragon spacecraft. The spacecraft, named Endeavour, previously supported NASA's Demo-2, Crew-2, and Crew-6, as well as Axiom Space's Ax-1 flights to and from the space station. As part of the refurbishment process, teams installed new components, including the heat shield, parachutes, Draco engines, and nosecone.

These critical hardware components help the spacecraft withstand launch and reentry and provide steering and thrust to the spacecraft.

# MEET CREW-8

**Matthew Dominick**  
COMMANDER

Hometown:  
Wheat Ridge, Colorado  
Previous Missions:  
First Mission



**Michael Barratt**  
PILOT

Hometown:  
Camas, Washington  
Previous Missions:  
Expeditions 19 and 20,  
STS-133



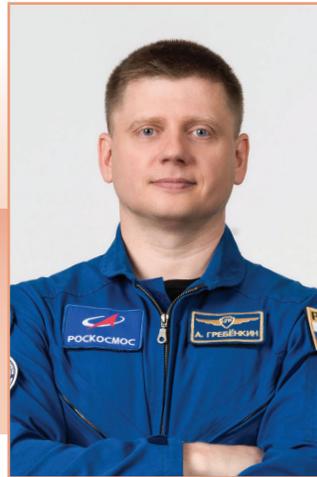
**Jeanette Epps**  
MISSION SPECIALIST

Hometown:  
Syracuse, New York  
Previous Missions:  
First Mission



**Alexander Grebenkin**  
MISSION SPECIALIST

Hometown:  
Myski, Russia  
Previous Missions:  
First Mission



## BEHIND THE DESIGN



The official insignia of the SpaceX Crew-8 mission. Dragon Crew-8, composed of NASA astronauts Matthew Dominick, Michael Barratt, and Jeanette Epps, and Roscosmos cosmonaut Alexander Grebenkin, will maintain a continuous human research presence in low Earth orbit. The crew is represented by the never-ending path of a

Latin numeral 8, with the dragon bowing with respect to the destination, the International Space Station.

## SCIENCE

Crew-8 will conduct new [scientific research](#) to prepare for human exploration beyond low Earth orbit and benefit humanity on Earth.

Experiments include using stem cells to create organoid models to study degenerative diseases, studying the effects of [microgravity and UV radiation on plants](#) at a cellular level, and testing whether wearing pressure [cuffs](#) on the legs could prevent fluid shifts and reduce health problems in astronauts. These are just a few of the more than 200 scientific experiments and technology demonstrations taking place during their mission.