

Exploring Further

NASA is embarking on a new era of space exploration in which humans will travel deeper into the solar system than ever before. The International Space Station is the centerpiece for space operations. Serving as a test bed for research and new technologies, the space station is a steppingstone toward future exploration destinations. The commercial industry will transport cargo and eventually crew to the space station while NASA focuses on developing the Orion Multi-Purpose Crew Vehicle, Space Launch System, and advanced exploration systems that will enable a sustainable human presence to destinations such as the moon, near-Earth asteroids and Mars.

To learn more, visit <http://www.nasa.gov/exploration>.

The Future of American Human SPACEFLIGHT

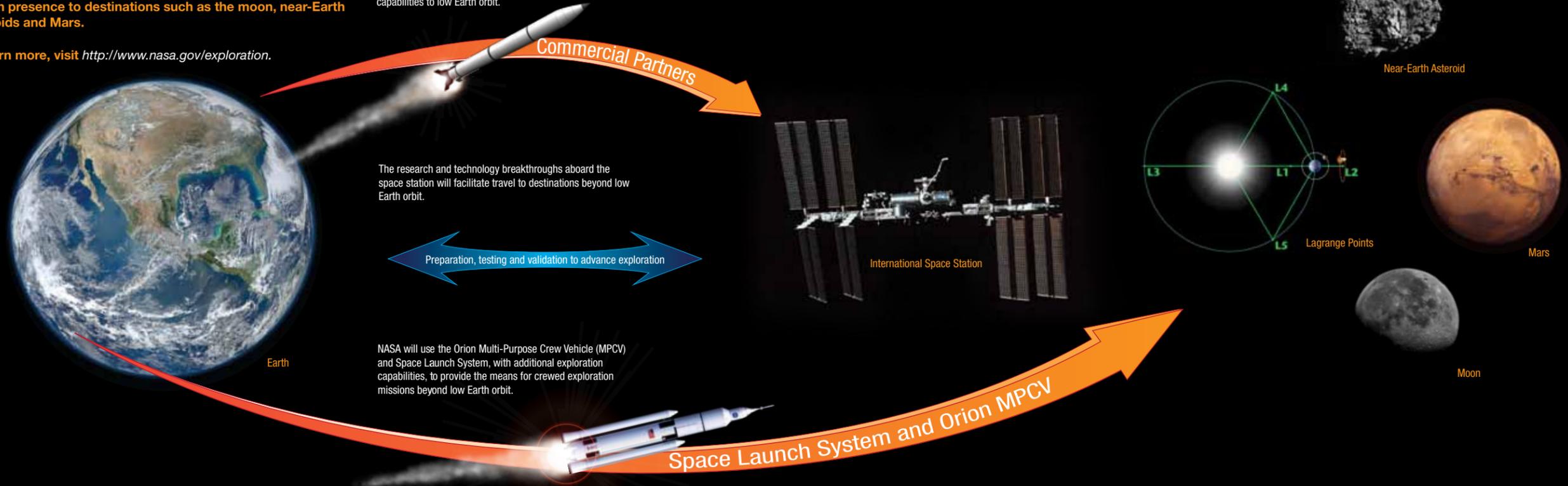
National Aeronautics and Space Administration



Following NASA's innovative partnership activities and investments in U.S. commercial launch capabilities, the agency has purchased cargo transportation services to and from the Space Station and will continue to partner in the development of crew transportation capabilities to low Earth orbit.

"This is the next chapter that we can write together here at NASA. We will partner with industry. We will invest in cutting-edge research and technology. We will set far-reaching milestones and provide the resources to reach those milestones. And step by step, we will push the boundaries not only of where we can go but what we can do...."

— President Barack Obama



Destinations

Lagrange Points
Lagrange Points are microgravity destinations beyond low Earth orbit that provide opportunities for construction, fueling and repair of complex in-space systems. These points in space can serve as a gateway to reaching multiple destinations in our solar system.

Near-Earth Asteroids
These near-Earth objects may provide answers to some of humankind's most compelling questions, such as these: How did the solar system form? Where did Earth's water and other organic materials come from?

Moon
Earth's nearest neighbor provides significant opportunities for commercial and international collaboration and has critical resources needed to sustain human explorers.

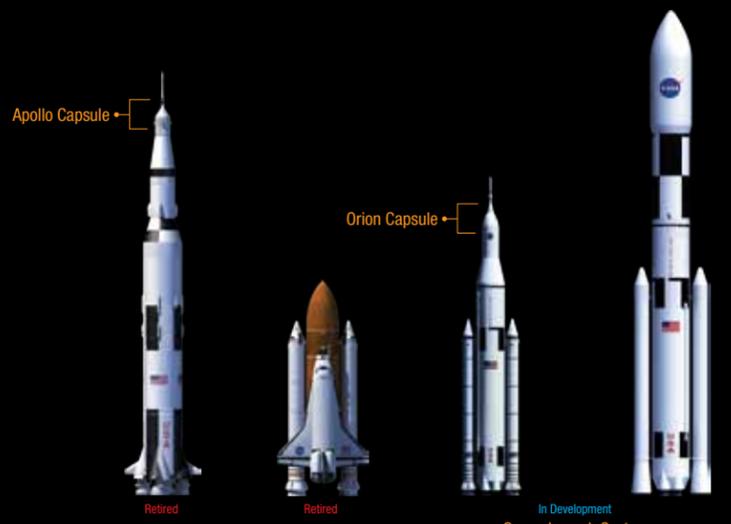
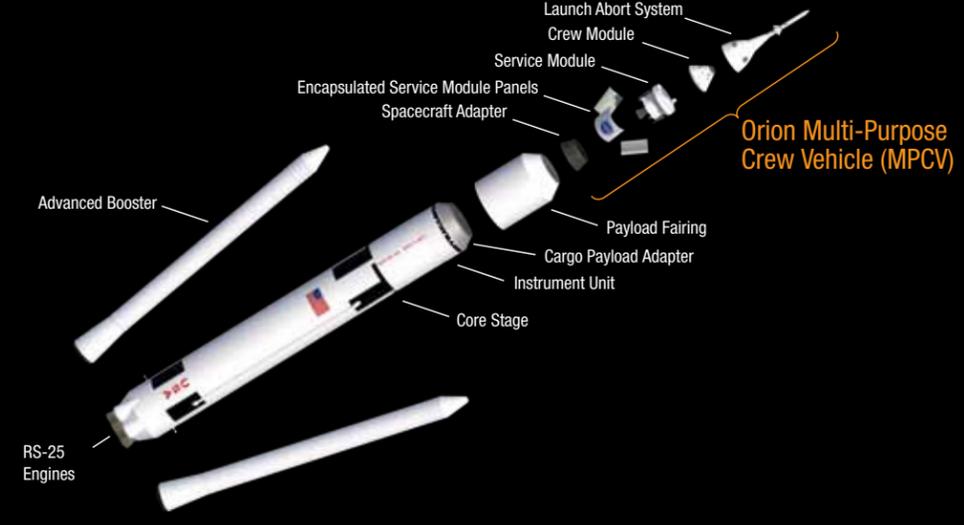
Mars
Mars provides the best opportunity to demonstrate that humans can live for extended — even permanent — stays beyond low Earth orbit. The technology and space systems required to transport and sustain explorers on Mars will expand scientific knowledge and drive technological innovation.

Commercial Spaceflight Development

NASA is investing financial and technical resources to stimulate efforts within the commercial industry to develop and demonstrate cargo and crew space transportation capabilities to and from low Earth orbit.

Cargo Partners	Commercial Company	Spacecraft	Launch Vehicle
	Space Exploration Technologies (SpaceX)	Dragon (Cargo)	Falcon 9
	Orbital Sciences Corporation (Orbital)	Cygnus	Antares

Funded Crew Partners	Commercial Company	Spacecraft	Launch Vehicle
	Blue Origin	Crew Transportation System	Initial — Atlas V Final — Own Reusable Booster System
	Sierra Nevada Corporation	Dream Chaser	Atlas V
	SpaceX	Dragon (Crew)	Falcon 9
	The Boeing Company	Crew Space Transportation (CST)-100	Initial — Atlas V



Launch Vehicle	Saturn V	Space Shuttle	Space Launch System
			Initial Lift Capability Evolved Lift Capability
Years	1967–1973	1981–2011	First uncrewed launch planned for 2017 to be determined
Height	111 m (363 ft)	56 m (184 ft) (Orbiter 122 ft)	97 m (318 ft) → 115 m (376 ft)
Lift Capability to Low Earth Orbit	118 metric tons	28 metric tons (to 28.5° inclination)	70 metric tons → 130 metric tons
Crew Capsule/Capacity	Apollo Spacecraft 	Orbiter 	Orion MPCV Cargo Configuration Shown

Human Spaceflight Capabilities

NASA is developing next-generation spaceflight technology to explore multiple destinations throughout the solar system. New technology systems include the following:

- Mobile Extravehicular Activity and Robotic Platform
- Deep Space Habitation
- Advanced Spacesuits
- Advanced Space Communication
- Advanced In-Space Propulsion
- In Situ Resource Utilization
- Human-Robotic Systems