



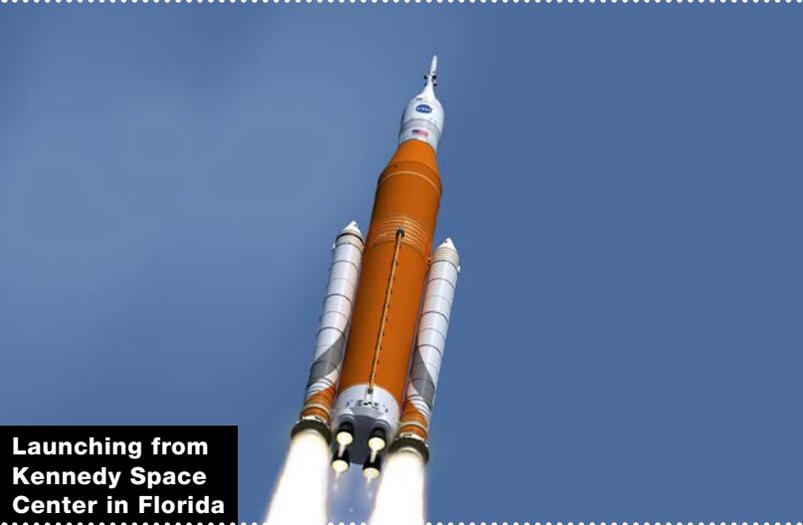
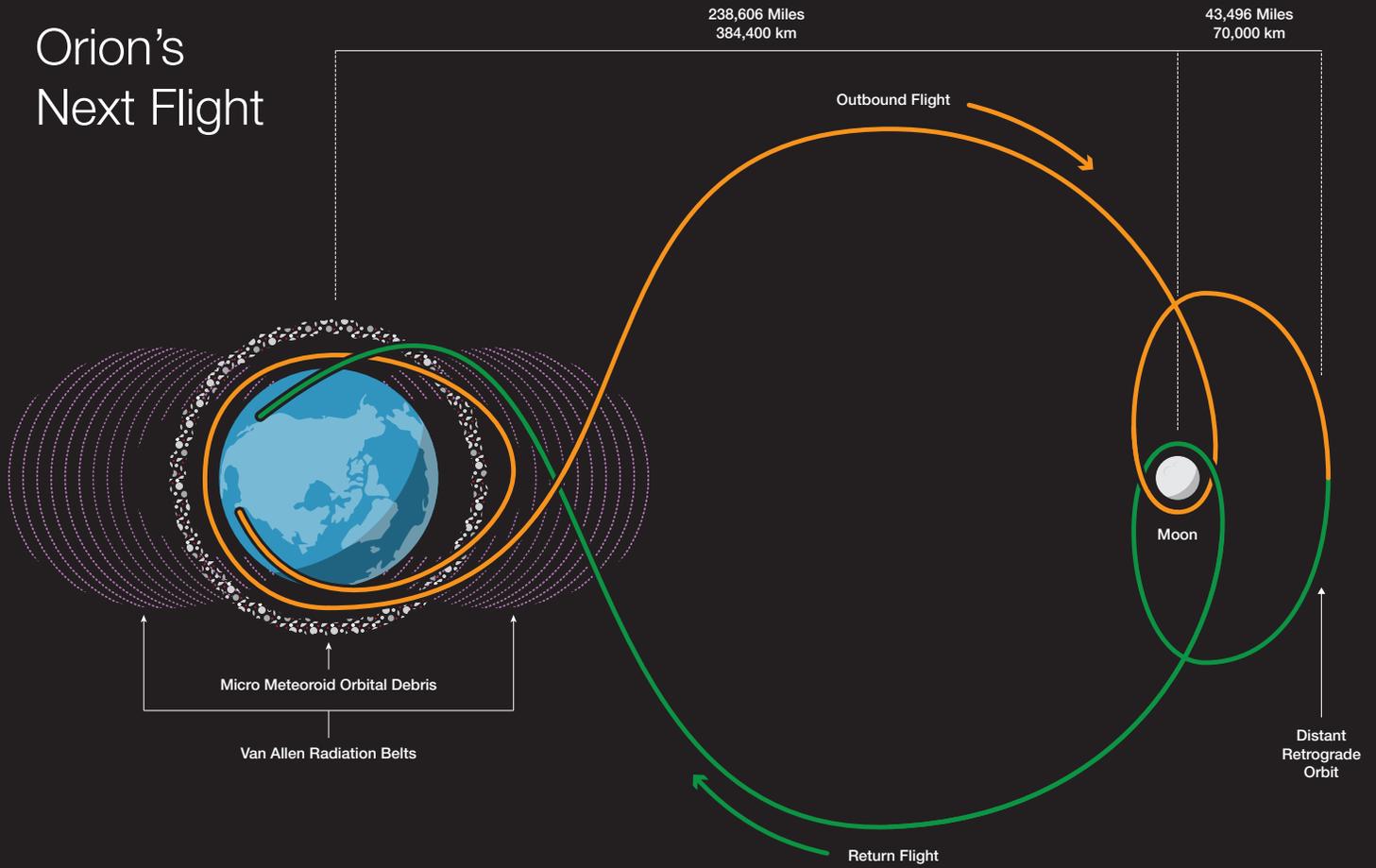
NASA'S ORION SPACECRAFT

Humans will be able to live and work in deep space for years and return safely home. The journey begins with the Orion spacecraft – NASA's new interplanetary spaceship that will launch atop the world's most powerful rocket to take astronauts on a journey of exploration throughout our solar system.

The Space Launch System rocket will cast Orion beyond the moon, out to an asteroid and then on toward the Red Planet, enabling humanity to one day pioneer new worlds. To protect astronauts on these long-duration missions and return them safely to Earth, Orion engineers have woven innovative technology, advanced systems and state-of-the-art thermal protection into the fabric of the spacecraft. The team behind Orion has built upon the past 50 years of space exploration experience in human spaceflight, launch operations, robotic precursor missions, in-space construction and mission management.



Orion's Next Flight





Crew Module Pressure Vessel
Kennedy Space Center, Florida



Heat Shield
Kennedy Space Center, Florida

Exploration Mission-1

The Space Launch System rocket with Orion atop is targeted to launch from Kennedy's Launch Pad 39B in late 2019. EM-1 will send Orion on a path more than 40,000 miles beyond the moon over a course of three weeks, farther into space than human spaceflight has ever traveled before. The spacecraft will return to Earth and safely splash down in the Pacific Ocean off the coast of California. The mission will advance and validate capabilities required for human exploration of Mars.



Service Module Structural Testing
Space Power Facility at NASA Glenn Research Center's Plum Brook Station



Jettison Motor Test
Sacramento, California



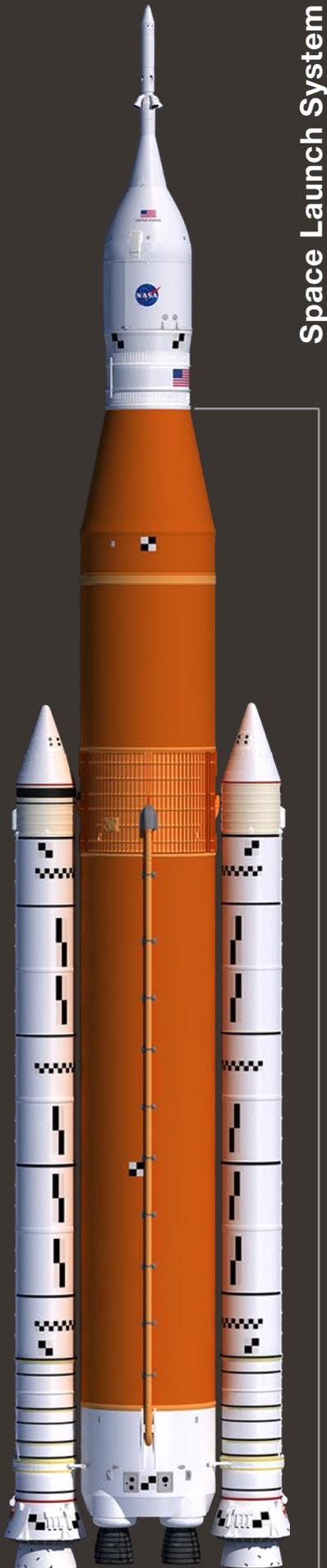
Service Module Flight Article
Bremen, Germany



Propulsion Qualification Module Testing
White Sands Test Facility, New Mexico



Human Rating Parachutes
Yuma, Arizona



Space Launch System



Orion Spacecraft

Space Launch System

The Space Launch System is a powerful launch vehicle, which will expand human presence to celestial destinations beyond low-Earth orbit and throughout the solar system. This launch vehicle will be capable of launching Orion to an asteroid, the moon and on the journey to Mars.

Orion Spacecraft

1 Launch Abort System

The launch abort system, positioned on a tower atop the crew module, can activate within milliseconds to propel the vehicle to safety and position the crew module for a safe landing.

2 Crew Module

The crew module is capable of transporting four crew members beyond the moon, providing a safe habitat from launch through landing and recovery. Inside the familiar deep-space capsule shape are advances in life support, avionics, power systems, and advanced manufacturing techniques.

3 Service Module

Created in collaboration with ESA (European Space Agency), the service module provides support to the crew module from launch through separation prior to entry. It provides in-space propulsion for orbital transfer, power and thermal control, attitude control and high altitude ascent aborts. While mated with the crew module, it also provides water and air to support the crew.

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