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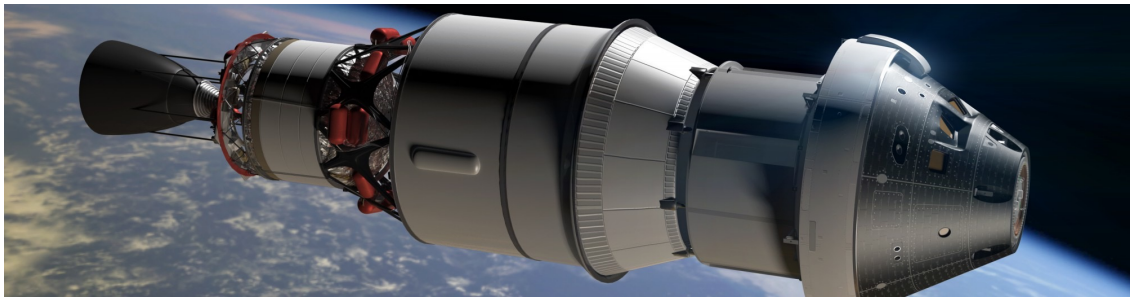
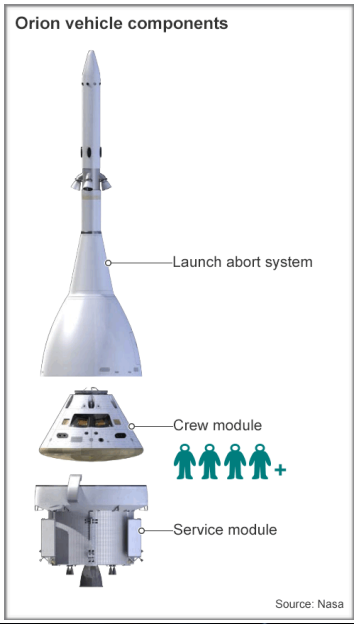


The Orion Multiple Purpose Crew Vehicle - is the most advanced and versatile spacecraft NASA has ever built. This vehicle will take humans further than ever before! (photo courtesy: NASA)

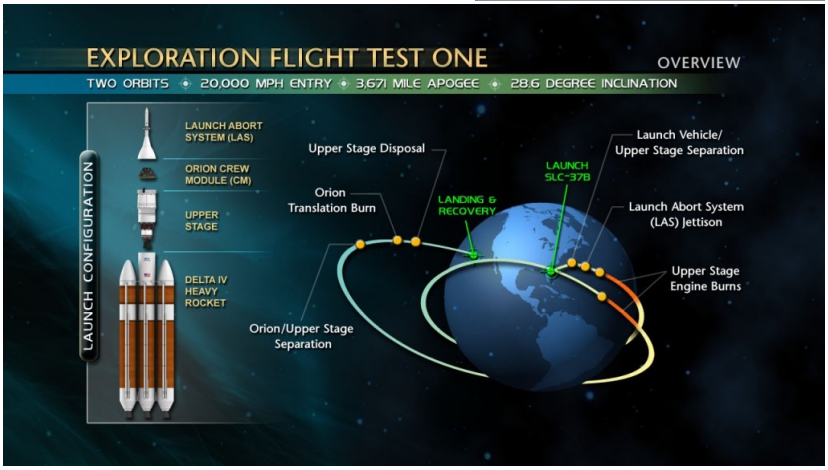
Orion Special



Orion Multi-Purpose Crew Vehicle -

Exploration Flight Test One - 1st Step Towards Mars

In December 1962 the famous Mariner 2 spacecraft became the first manmade object to be successfully sent to study another planet, when it flew by Venus and learned about the planet's temperature, atmosphere, and also about the solar wind (space weather) outside of the strong magnetic currents that surround Earth's magnetosphere. Since then, NASA has been reaching out across our Solar System using different probes, satellites, and rovers to gain more knowledge and expand the boundaries of the human imagination and innovation. Even walking on the moon during the Apollo Program in the late 1960's and early 1970's. The Orion Capsule (Orion Multi-Purpose Crew Vehicle) (picture Middle-right) is the next step in exploring our Solar System - because this will be the vehicle to take humans back to the moon, to near-Earth asteroids, and even Mars!



On December 5, 2014 after a one day delay because of winds and a broken valve on the Delta IV Heavy Rocket - the Orion Capsule finally launched for it's first test flight from Kennedy Space Center in Cape

Canaveral, Florida at 7:05am. This is truly the beginning of NASA's return to exploration and the first step towards putting a human on another planet. This return beyond Earth's orbit is the first time since the Apollo XVII mission in 1972 that any spacecraft built for humans has left low-Earth orbit, which is outer space between 80-2000 Km (50-1250 miles) above Earth's surface. The exciting thing about Orion's special orbit for this test flight - (photo previous page) is its path around Earth took the spacecraft approximately 5800 Km (3600 miles) above the surface and made two passes through the Van Allen Radiation Belts. The Van Allen Belts are doughnut shaped rings of really strong radiation around the Earth that are held in place by the Earth's Magnetosphere.

The reason for this flight test was to test the radiation levels traveling through the Van Allen Belts outside of low-Earth orbit and to test the vehicle's special "Heat Shield" during reentry into the Earth's Atmosphere from the much-faster Deep Space distances. While coming back through the Earth's Atmosphere, the Orion Capsule experienced something called Aerodynamic Heating - which is the extreme heating that occurs when a vehicle travels through any atmosphere at high-speeds. As Orion entered the Earth's atmosphere, the vehicle was approaching 32,200 Km/h (20,000 mph) and experienced temperatures over 2200 degrees Celsius (4000 degrees Fahrenheit).

The Orion Capsule completed its impressive first flight as it safely parachuted down into the Pacific Ocean just west of San Diego California approximately 4.5 hours after lifting off on the other side of the country. After being retrieved by the U.S. Navy Boat - U.S.S. Anchorage it was brought back to San Diego and shipped back to Kennedy Space Center were NASA Scientists and Engineers started to analyze all of the data Orion collected during its Exploration Flight Test One.

Photo of the Week

Photo: Out the Window of the Orion Spacecraft - Dec. 5, 2014 - This view reminds us of the Apollo Missions in the late 1960's and early 1970's. This was taken during Orion's journey outside of low-Earth orbit and is the first photo of Earth at this distance (approximately 5800km) taken from a spacecraft intended for humans in over 40 years. (photo courtesy: **universetoday.com**)