

# Orion spacecraft makes first orbital flight

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The US National Aeronautic and Space Administration (NASA) conducted a successful test flight of the new Orion spacecraft Friday, putting it into orbit and bringing it back successfully in a splashdown landing in the Pacific Ocean southwest of San Diego.

The launch came after a one-day delay caused by high winds at the launch site at Cape Canaveral, Florida.

The 11-foot-high capsule, which will seat four when fully operational, carried no passengers on this mission, which was intended to test the vehicle's capabilities in the most demanding parts of space flight, including blastoff, achieving a stable orbit and reentry.

The capsule weighs nearly ten tons, and achieved a maximum speed of 20,000 miles an hour, equivalent to that of a spacecraft returning to the Earth from the Moon, before decelerating sharply to only 20 miles an hour when it descended by parachute into the ocean.

Orion made only two orbits, reaching an altitude of 3,604 miles, well above the low-Earth orbit of the International Space Station, which is about 300 miles up.

The limited mission was a reflection of the drastically curtailed manned-space operations at NASA, which ended the space shuttle program in 2011 and is not scheduled to resume manned flights using Orion until 2021.

During that interval, NASA has to depend on Russian rockets to transport US astronauts to the International Space Station, as well as supplies for the orbiting observatory. This has become an increasing political embarrassment to Washington this year, with the mounting conflict with Moscow provoked by the establishment of a US-backed ultra-right regime in Ukraine.

While a NASA spokesman gushed that Orion represented "the new era of American space exploration," it is more like a rerun of an antiquated

and distant era.

The Orion test does not represent a significant scientific or technical advance for the US space program. Orion is merely a larger version of the old Apollo space capsule, with more modern computers and software, but using similar spaceflight techniques. There has not been any substantial development to take advantage of the advances in engineering, metallurgy and physics over the past half-century to develop something new.

It was put into space atop a Delta IV rocket, the latest version of the three-stage rocket using a mixture of liquid hydrogen and liquid oxygen, first developed in the 1950s as the Thor intercontinental ballistic missile for the Air Force.

Remarkably, the orbit achieved by Orion is the furthest distance from Earth of any vehicle capable of carrying human passengers since the Apollo program ended in 1972. Since the era of the Moon landings (1969-1972), manned space flight has been confined to low-Earth orbit missions like the space shuttles, the International Space Station and the initial efforts of new space programs like that of China.

The Orion launch has been caught up in a series of policy and budget conflicts extending over two administrations, which reflect the crisis and relative decline of American imperialism.

The Bush administration had proposed the development of a new launch mechanism, a rocket dubbed Constellation, but this was cancelled by the Obama administration because of its gargantuan cost and technical difficulties.

Congressional Republicans, as well as Democrats in areas with large NASA contracts, pushed for a revival of the manned space program, partly in the interests of the corporate subcontractors, partly out of concern that abandoning manned space flights to Russia, China and other rivals would be a devastating blow to the

international prestige of US imperialism.

The result was Orion, a space capsule for which a launch vehicle capable of boosting astronauts safely into orbit must still be developed. This new rocket, now called the Space Launch System, is not expected to be ready for test launches until 2018, assuming Congress appropriates the \$20 billion, on top of NASA's existing budget, that will be required.

Nor is Orion a significant step towards a Mars mission in 20 to 30 years, as NASA officials have suggested. Orion is a capsule suitable for Earth-to-Moon voyages, or perhaps a mission to a nearby asteroid, but incapable of making the lengthy round-trip to Mars, which would take up to two years.

NASA must still develop and build the capsule for the long-term flight through deep space, which must have radiation shielding for journeys to both the Moon and Mars well beyond what is available for Orion, as well as considerable cargo capacity and fuel sufficient not only to reach Mars, but to return to Earth.



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