

HUMAN EXPLORATION OF THE SOLAR SYSTEM SYMPOSIUM (A5)  
Human Exploration of the Moon and Cislunar Space (1)

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ORION PROGRAM STATUS

**Abstract**

The Orion program, originally known as the Crew Exploration Vehicle (CEV) project, was awarded to Lockheed Martin in September 2006 for the Design, Development, Test and Evaluation (DDTE) and production phases. The 2011 President's Budget Request, released in February 2010, called for the cancellation of the Constellation Program, including Orion, however, Orion was ultimately reformed as the Multi-Purpose Crew Vehicle (MPCV) program and, although the fundamental design requirements of the vehicle have remained stable since the reformulation, the vehicle's mission has significantly changed from ISS crew servicing to beyond earth orbit (BEO) exploration. Since the reestablishment of Orion as the BEO MPCV the design requirements have stabilized and the program will now focus more on test and evaluation.

Following the reformulation of Orion MPCV in 2011 Lockheed Martin's contract was modified to focus on an efficient flight test strategy starting with a very important risk reduction flight called Exploration Flight Test 1 (EFT-1) to validate subsystems on Orion required for a high speed re-entry similar to a BEO return. This mission will be followed by an un-crewed Exploration Flight Test (EM-1) in 2017, an ascent abort test (AA-2) in 2018, and then a crewed Exploration Flight Test (EM-2) in 2021.

This paper will describe the most recent progress of the Orion Project, including current test architecture, risk reduction initiatives, vehicle design, and production status.