

HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Governmental Human Spaceflight Programs (Overview) (1)

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KEYNOTE: NASA'S HUMAN EXPLORATION AND OPERATIONS MISSION DIRECTORATE: AN
OVERVIEW OF CURRENT PROGRAMS

Abstract

This is an exciting time in the history of American spaceflight. NASA is developing a strategy to extend a human presence into the solar system. Today we have crews continuously in low earth orbit. In the future, we will have humans explore the solar system and eventually inhabit the solar system. In order to make this a reality, we must have humans become Earth independent. We will do this by using the ISS and later in the proving ground around the moon. NASA will not do this alone. We will do this in partnership with the commercial and international space communities.

In low Earth orbit, NASA is taking advantage of opportunities with commercial companies and new cutting-edge technology development unavailable until now. The International Space Station remains the springboard to our next great leap in exploration. The space station, a convergence of science, technology and human innovation, is helping us learn what it means to be a spacefaring people by demonstrating new technologies and making research breakthroughs not possible on Earth.

Simultaneously, NASA is providing an entirely new capability for human exploration missions by developing the Orion spacecraft and the Space Launch System (SLS), a crew capsule and heavy-lift rocket designed to expand human presence beyond low-Earth orbit, including to an asteroid and Mars. This capability will enable new missions of exploration in the solar system and be flexible for launching spacecraft for crew and cargo missions. In addition to opening new frontiers for explorers who will travel in Orion, the SLS also offers many benefits for science missions to places such as Mars, Saturn, and Jupiter, including large payload fairings that reduce experiment design complexity and high performance that decreases travel time and, by extension, cost and risk.

Additional exploration activities beyond low Earth orbit include the management of Human Space Flight Capabilities, Advanced Exploration Systems, and Space Life Sciences Research Applications, Launch Services, Space Transportation, and Space Communications in support of both human and robotic exploration programs.

This paper will offer an overview of the strategy NASA is pursuing in human spaceflight and provide a status of all major NASA Human Exploration and Operations programs and initiatives.