SPACE EXPLORATION SYMPOSIUM (A3)
Space Exploration Overview (1)

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A STRATEGY FOR ROBOTIC PRECURSOR MISSIONS TO SUPPORT HUMAN EXPLORATION

Abstract

NASA's plans to send human missions beyond Earth orbit must be informed by knowledge of the potential destinations. The planning of future robotic precursor missions to gather crucial environmental data on the Moon, near-Earth asteroids, and Mars will be guided by a set of strategic knowledge gaps. These strategic knowledge gaps have been defined and reviewed by the human exploration, science, and international communities, and will be incorporated into the Global Exploration Roadmap.

The strategic knowledge gaps will be addressed through a portfolio of activities that are jointly planned and funded by NASA's human exploration and science organizations. The initial Joint Robotic Precursor Activities (JRPA) include development of a lunar resources prospecting payload in partnership with the Canadian Space Agency; development of a small lunar lander and flight tests of an autonomous precision landing system; imaging near-Earth asteroids with ground-based radar; and a radiation detector on the Mars Science Laboratory rover to measure the interplanetary and surface radiation environments. The JRPA also include research and analysis efforts to study data on the Moon and small bodies from both the exploration and science perspectives. Future activities will be funded through a range of competitive announcements.