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Human Exploration of the Moon and Cislunar Space (1)

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THE GLOBAL EXPLORATION ROADMAP: COLLABORATION PROMOTING THE FUTURE FOR
HUMAN SPACE EXPLORATION

Abstract

Humans have explored space for over 50 years, starting with the first flights of Yuri Gagarin and Alan Shepard, NASA's Apollo Moon program and most recently through the International Space Station as the centrepiece of human activity in low Earth orbit (LEO). Other nations, namely China and India, are actively demonstrating technologies and capabilities in space or on the boundaries of space. Representatives from fifteen space agencies are active in the International Space Exploration Coordination Group (ISECG), all with interest in coordinating and contributing to a global effort to explore. The Global Exploration Roadmap, first released in 2011 and subsequently in 2013, serves as a tool to coordinate space agencies' efforts, focus investments and promote ideas which will help make future human missions a reality.

Space agencies participating in ISECG will release an updated Global Exploration Roadmap in late 2017. It will provide insights into the progress achieved and future steps which agencies deem important to enable sustained human activities in LEO as well as missions beyond LEO, including those to the Moon and Mars. It will also articulate the role of partnerships, both international agency partnerships and public-private partnerships for enabling future missions.

The last several years have seen many exciting space exploration accomplishments across the globe. There are new robotic explorers either on the way or actively studying the Moon, asteroids and Mars. Privately funded lunar lander mission teams seek to launch before the end of 2017 and collect the Google LunarX prize. NASA's Orion space exploration capsule is being assembled for its first flight with the new heavy lift launcher, the Space Launch System. Space agencies are preparing future missions to Mars and its moon Phobos, along with several new robotic lunar missions. All of these activities demonstrate the excitement and promise of space exploration. With Orion and the Space Launch System, human missions into cislunar space will begin in the next several years. While using cislunar space to prepare the capabilities for sustainable exploration, the presence of astronauts and their infrastructure will support and in some cases enable scientific, exploration and private sector endeavors. These astronauts and their infrastructure will assist in the robotic exploration of the Moon and Mars. This paper will provide an overview of the upcoming update of the Global Exploration Roadmap.