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THE ISS PARTNERSHIP AND HUMAN EXPLORATION IN CISLUNAR SPACE AND ON THE MOON

Abstract

The International Space Station (ISS) is the most ambitious international human spaceflight program since the beginning of space exploration. The ISS has been in space for almost 20 years serving as a research and innovation platform which delivers enormous benefit to humanity. The ISS and its partnership are also transforming the future of low Earth orbit from a government dominated domain to one where the private sector can own and operate in-space human infrastructure which can be used by many users. ISS partner agencies recognize that the next step for human space exploration is beyond low Earth orbit; to the Moon and then on to Mars. Since 2014, they have been engaged in a coordinated effort to plan future this future of human space exploration, with sustainability, partnerships and opportunity as driving imperatives. They have focused on defining future missions and capabilities which consider ISS lessons learned and build on the capabilities which have made the ISS successful. This work began with understanding their common goals and objectives, and continued to pre-program formulation concept studies of capabilities and infrastructure. Their goal was not only to maintain the ISS partnership but also to create opportunities for commercial partnerships and new agencies to contribute to the endeavor. This study defined a conceptual cislunar Gateway and demonstrated how it serves as an important part of a sustainable human space exploration architecture. Based on this study work, NASA and its ISS partner agencies are ready to invest in the Gateway. Both individually and collectively they are starting to discuss specific ideas for using the Gateway to access the lunar surface. This paper will share the findings of the ISS Exploration Capabilities Study, started in 2014, as well as describe how the ISS program partners will make the Lunar Orbiting Platform -Gateway a reality.