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OPPORTUNITIES FOR ARTEMIS EVOLUTION TO A FUTURE LUNAR ECO-SYSTEM

Abstract

NASA's Artemis campaign comprises a coalition of partnerships with industry, international partners, and academia that will 1) conduct a wide range of science activities, making new discoveries about Earth, the Moon, and the history and formation of our solar system; 2) demonstrate the technologies and capabilities needed for human missions to Mars; 3) conduct human health and performance research and Mars analog activities; and 4) conduct resource utilization demonstrations.

The Artemis campaign, when in operation, forms the backbone and template for future commercial ventures. Our partnerships will lay the foundation for a wide-range of possible future activities at the Moon based on our initial human and robotic plans for the South Pole and beyond. The demand for sustained human and robotic presence, and the investments in human and robotic infrastructure to conduct the wide range of science and exploration objectives, could drive demand for enterprising solutions for lunar-based commercial transportation, commercial resource mining, construction and operations of long-term science outposts, and a long-term test bed for future technologies and capabilities.

This paper will explore the links between NASA's current plans and possible future evolution of the capabilities established by those plans. Authors will bring expert perspectives and backgrounds spanning government policy and plans, geology and planetary science, and industry and international capabilities and goals.