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IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Governmental Human Spaceflight Programmes (Overview) (1)

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STEWARDING HUMANITY'S GLOBAL MOVEMENT TO DEEP SPACE

Abstract

The coming decades will be a watershed in deep space discovery, exploration, and technological advancement. As NASA progresses through its flight tests to validate the mainline arteries to the Moon – the SLS rocket and Orion spacecraft – the agency is on the cusp of deploying a steady cadence of missions that together will comprise the Artemis campaign.

The 21st century lunar transportation infrastructure will be bolstered with a growing space launch market but getting there is just the beginning. Starting with Artemis III, we begin a cadence of crew landing expeditions near the lunar South Pole to build the Artemis Base Camp. In orbit, an international coalition of partners will start assembly of the lunar orbiting Gateway.

The Artemis campaign represents the capabilities and operations needed to safely conduct deep space science and exploration missions at the Moon and is tightly coupled with Mars mission planning that will leverage all potential derivatives from Artemis. This incremental, modular approach for implementing the Moon and Mars exploration strategy acknowledges the potential for future technological advances and realistic budget profiles for NASA and its partners.

A momentous development effort is ahead of us, and while there are historical parallels, none rival the complexity of simultaneously building lunar orbital and surface infrastructures 250,000 miles from Earth with a growing number of international and industry partners. Maintaining a balance of government insight and oversight and commercial competition while prioritizing NASA's deep space science objectives is a unique challenge of its own.

This paper will illuminate the Moon and Mars exploration strategy and commonalities and provide insight into NASA's internal management and global stewardship of humanity's shift toward a long-term presence in deep space.