

Resources Beyond Earth: Enabling Future Exploration and the New Space Economy

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ABSTRACT

Throughout human history, resources have been the driving force for exploration and also the means to do so. However, as we continue our exploration of space, our efforts will eventually become limited by the materials we can carry from Earth. In recent years, space agencies and the private sector have increasingly realized that further exploration and growth of commercial opportunities in space will require the identification, extraction, and processing of materials, production of propellants, and power generation from extraterrestrial resources for more affordable and flexible transportation, facilities and infrastructure construction, energy production, and life support. This rising interest on the search, extraction, and utilization of resources in space, the Moon, asteroids, and other planets may be about to radically influence future space destinations, mission objectives, spacecraft design, technology development, and commercial activities in space.