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The future of space exploration and innovation (2)

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ETHICAL EXPLORATION AND THE ROLE OF PLANETARY PROTECTION

**Abstract**

The space exploration community needs to engage in a robust reevaluation concerning the ethics of how future crewed and uncrewed missions to the Moon and Mars will interact with those planetary environments, and incorporate these considerations into future space policy. These discussions must be rooted in the historical context of the violent colonialism in the Americas and across the globe that has accompanied exploration on Earth. The structures created by settler colonialism are very much alive today, impact the scientific community, and are currently replicated in the space exploration communities' plans for human exploration and in-situ resource utilization. These discussions must lead to enforceable planetary protection policies that create a framework for ethical exploration of other worlds. Current policy does not adequately address questions related to in-situ resource utilization and environmental preservation and is without enforcement mechanisms. Further, interactions with potential extraterrestrial life have scientific and moral stakes. Decisions on these topics will be made in the coming decade as the Artemis program enables frequent missions to the Moon and crewed missions to Mars. Those first choices will have irreversible consequences for the future of human space exploration and must be extremely well considered, with input from those beyond the scientific community, including expertise from the humanities and members of the general public. Without planetary protection policy that actively resists colonial practices, they will be replicated in our interactions and exploration of other planetary bodies. The time is now to engage in these difficult conversations and disrupt colonial practices within our field so that they are not carried to other worlds.

This paper was originally submitted as a white paper to the Planetary Science Decadal Survey. We are presenting the paper here to generate discussion on how these themes and recommendations are relevant to the international space policy community.