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BUILDING OUR GREEN FUTURE IN SPACE: SUSTAINABILITY AND THE ARTEMIS GENERATION

Abstract

The year 2020 was a landmark for the sustainability movement. More than 50 years after the iconic "Earthrise" photo first sparked awareness of the fragility of our climate in public consciousness, the need for sustainable design, policy, and practice has never been more apparent. The applications of space technologies, science, and data towards climate research, environmental monitoring, and management of natural resources is well-established, but more recently the aerospace community has convened to formulate best practices and incorporate principles of sustainability into its own operations. Perhaps the most visible milestone of these dialogues was the 2019 adoption of the first set of Guidelines for the Long-Term Sustainability of Outer Space Activities ("LTS Guidelines") by the United Nations' Committee on the Peaceful Uses of Outer Space (UN COPUOS), which marked the commitment of signatory States to implement the Guidelines within their domestic regulatory frameworks.

This historic achievement followed nine years of negotiation within UNCOPUOS, a decade encompassing two other parallel developments: increased scientific understanding of the climate emergency and the influx of a generation of new space professionals under the age of 35, which has come to be colloquially known as the "Artemis Generation." Unlike their Apollo generation siblings, these young professionals' conception of the work they will achieve in their lifetimes—and their conception of the future itself—is characterized by an urgency to reorient the impact of human life in favor of long-term sustainability across borders, economic sectors, technological systems, and physical environments.

Space is not exempt from this sense of urgency; to the incoming workforce, sustainable design and practice is a chief concern. This paper will evaluate the results of a wide-ranging survey of young professionals under the age of 35 working in aerospace disciplines across academia, industry, and governments, investigating their views on space sustainability and its influence, both on their careers individually and on the future of space activities. Respondents from around the globe will characterize the weight of a space organization's sustainability on their inclination to pursue positions within that organization, as well as appraise key tenets of long-term space sustainability addressed in the LTS Guidelines. Respondents will also submit their assessments of space sustainability concepts, policies, design methodologies, and other influences that are specific to their region. The results of this survey will inform a set of recommendations for policy, technology, and business approaches for the long-term safety and sustainability of space activities.