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REMOVE BEFORE LAUNCH: COLLISIONS BETWEEN SPACE ACTIVITIES REGULATED UNDER THE OUTER SPACE TREATY AND THE ANTARCTIC TREATY SYSTEM.

Abstract

The International Geophysical Year (IGY) left an enduring legacy with the establishment of two significant multilateral governance systems: the Antarctic Treaty System (ATS) of 1959 and the Outer Space Treaty (OTS) of 1967. These frameworks successfully erected international structures for preserving and fostering cooperation in two pivotal domains crucial for humanity's future: the Antarctic region and outer space. Over six decades, member states of both systems have committed to stringent protocols governing activities in both realms. However, expanded access to outer space, particularly in Low Earth Orbit (LEO), has given rise to the concerning issue of space debris pollution. In a consistent pattern, the escalating generation of space debris has led to a growing number of debris re-entries from space into the Earth's atmosphere. Debris that fails to self-consume upon re-entry has begun accumulating in the Pole of Inaccessibility, known as 'Point Nemo.' The Point Nemo serves as the origin of the Antarctic Circumpolar Current (ACC), a marine current shaping the Antarctic continent and impacting the southern regions of Latin America. The ATS, through the Protocol on Environmental Protection, establishes the principle of 'the protection of the Antarctic environment and dependent and associated ecosystems.' This ensures the special protection of all Antarctic ecosystems, including the ACC, from human hazards or risks. Despite these protective measures, the increase in space pollution in LEO has impacted the Antarctic environment, particularly in the last decade, creating a collision between the ATS and OTS. Outer space activities, even when peaceful, inherently involve human-manned activities. This research constitutes an exploratory study aiming to delineate the intricate interface between the OTS and ATS concerning the accumulation of space pollution within the ACC. Investigating this nuanced terrain is crucial for unraveling the environmental risks and potential threats to human security arising from space debris infiltration into the Antarctic environment. Ultimately, the study aims to contribute significantly to international knowledge by crafting analytical models that illuminate the imperative of understanding the consequences of space pollution on Earth's ecosystems and the multilateral governance of strategic regions, such as the Antarctic and outer space.