

IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (E7)
Interactive Presentations - IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (IP)

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KEEPING THE BALANCE: THE WAY COMMERCIALIZATION CAN HINDER SCIENTIFIC
RESEARCH IN OUTER SPACE

Abstract

Since the last decade, space endeavors experienced an increasing interest from private companies. Businesses of all sizes are getting ready to capitalize on the compelling opportunities that space activities can bring. UNOOSA's index of space objects shows that each year, more and more objects are being launched into outer space. However, this development threatens to eclipse important scientific research in outer space. Astronomers worldwide raised their voices, warning about the light pollution caused by satellites, especially large constellations, and space debris. In February 2024, the Scientific and Technical Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space (UN COPUOS) decided to include in its provisional agenda for the next five years an agenda item with the title: "Dark and Quiet Skies, astronomy and large constellations: addressing emerging issues and challenges". Policymakers now have to find a balance between protecting scientific interests and fostering the commercial space sector.

The launch of Starlink's satellite constellations serves as a warning example of how easily the balance can be tipped in favor of commercial actors. After launch, the emitted light from the Starlink satellites leads to an unintentional increase in the brightness of the night sky. This relatively small change significantly affected astronomers in carrying out scientific research, highlighting the importance of future regulatory frameworks to uphold the principles set forth in Article 1 Outer Space Treaty.

Article 1 of the Outer Space Treaty states: "the exploration and use of outer space [...], shall be carried out for the benefit and in the interest of all countries [...]. There shall be freedom of scientific investigation in outer space, including the Moon and other celestial bodies, and States shall facilitate and encourage international co-operation in such investigation."

The delicate balancing act between the commercialization of space and maintaining the integrity of scientific research will be one of the biggest challenges of the new space era. It requires a multi-faceted approach as well as the ability to adapt any future strategies to current processes.

This paper, in the form of a virtual poster presentation, examines the challenges and opportunities that are presented by the coexistence of commercial interests and scientific research in outer space. It emphasizes the need for legislative efforts that uphold the principles of the Outer Space Treaty for ensuring maximum benefits from outer space activities for all.