

'Protecting the Moon: Governance, regulation and the lunar economy (ProtectMoon)' Abstracts

Talks

Growing Race in the Extra-Terrestrial Domain, Question on Celestial Stewardship: Exploitation or Conservation

Authors

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Abstract

Multiple actors' engagement and investment in the extraterrestrial domain, including celestial bodies, create opportunities to expand human geography and build greater interdependence between Earth and Space. Increasing competition in Lunar or Mars exploration undoubtedly reflects space actors' ambition to exploit resources, expand human settlement, and occupy strategic positions for civil, military, and commercial pursuits. However, technological development in space is uneven, so most aspiring space-faring countries in the global south don't have the capability to benefit from celestial resources. All these scenarios raise questions about celestial stewardship. With the growing space races, prominent space actors have ignored the environmental aspects of celestial bodies, the sustainable use of resources, and a sustainable future. For instance, the increasingly intense race to exploit lunar resources comes with proposals to build a permanent lunar base and nuclear reactors, raising questions about the applicability of existing international norms to address critical lunar governance areas, such as equitable access and the sustainability of lunar resources for stakeholders.

The study examines how growing competition on celestial bodies like the Moon and Mars is deeply intertwined with Earth-Space sustainability, and why there is an urgency to explore the concept of celestial stewardship through multidisciplinary approaches to shape planetary governance, in light of the changing nature of celestial exploration. This study applies explanatory approaches to investigate two contested approaches, contestation and conservation, and their relation with existing legal boundaries and norms.

The moon is the common heritage of humanity as per international Laws. Yet, it was once sold by an American company complying with all of the American laws. So, whose fault was the appropriation of moon-the USA, private company or the blind UN? (Online)

Authors

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Abstract

The Moon is the common heritage of all of humanity as per Corpus Juris Spatialis. Yet, once it was sold by an American Company complying all of the American Municipal Law. So, whose fault was that- the USA, the private company or the blind UN?

Deconfliction Without Exclusion: Safety Zones at Astronomy-Critical Lunar Sites

Authors

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Abstract

As Artemis II has shown, crewed operations in lunar space have resumed. The renewed pace of lunar activity brings into sharper focus a governance question of immediate significance for astronomy: how safety zones might be framed around astronomy-critical lunar sites. The lunar farside remains uniquely important for low-frequency radio astronomy because it is shielded from terrestrial radio noise, while polar and other sensitive regions also matter for dark-sky observation, calibration, and contamination-sensitive science. Yet these same environments are increasingly likely to support landers, relay systems, navigation infrastructure, servicing activity, and other operations capable of introducing radio-frequency interference, dust contamination, light disturbance, and cumulative degradation of observing conditions and scientific access.

This paper examines whether safety zones could serve as a lawful and workable mechanism for protecting observing conditions without hardening into exclusionary control. Rather than treating safety zones as either inherently necessary or inherently suspect, it considers how they might be structured to support deconfliction, prior coordination, and harmful-interference avoidance while remaining compatible with free access and due regard. The problem is especially severe on the lunar farside, where preserving radio quiet may require limiting certain activities, even as sustained operations are themselves likely to depend on communications, relay, navigation, and maintenance systems capable of compromising the very conditions astronomy seeks to preserve.

Against that background, the paper suggests a site-sensitive approach to astronomy-related safety zones. It explores whether such zones should be justified by identifiable scientific and operational risks rather than open-ended operator discretion; limited in scope, duration, and effect; and tied to obligations of prior notification, information-sharing, and coordination. It further considers whether measurable thresholds for radio interference, dust, illumination, and proximity effects could provide a more defensible basis for temporary restrictions than open-ended claims of operational necessity. The paper, therefore, asks how safety zones might be framed not as claims to control valuable lunar locations, but as reviewable and evidence-based tools for protecting observing conditions. Its broader suggestion is that, if lunar astronomy is to remain viable under conditions of renewed exploration and commercial activity, safety zones will need to be designed in a manner that protects scientific access while reducing the risk that deconfliction practices become de facto exclusion.

Cislunar and lunar orbit transparency as key to lunar governance

Authors

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Abstract

Traffic in deep Earth orbit (beyond 150,000 km) and in the vicinity of the moon is rapidly increasing, with implications for space governance. In contrast to the situation in LEO and GEO, historically there has been no consistent tracking or publication of trajectory data for objects in this more distant region. Objects abandoned in lunar orbit are now lost; they may have impacted the surface or remain in orbit as a risk to current missions. Objects (e.g. launch vehicle upper stages) abandoned in cislunar (Earth-Moon) orbits are strongly perturbed, often chaotically, until they are ejected from the Earth-Moon system or impact the Earth or the Moon. As in the 2022 case of object WE0913A, suspected to be the Chinese rocket stage CZ-3C Y12, such objects may impact the lunar surface, and the associated debris plumes cause risks to lunar science and lunar operations. Operators such as SpaceX are beginning to prefer heliocentric orbit disposal for lunar mission stages to avoid such risks.

Posters

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