



# Mining the Moon for Profit Law and Policy Issues

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# From Summer 2016...A New Era?

The US Federal Aviation Administration (FAA) authorised the first private lunar mission.

Moon Express, a privately held American company, was authorised to travel beyond Earth's orbit and then land and navigate on the Moon's surface.

MoonEx claimed that this decision marks “a new era of ongoing commercial lunar exploration and discovery, unlocking the immense potential of the Moon's valuable resources”.



# Mining the Moon? A Matter of Ownership



# Who Owns the Moon?

- Article II of the Outer Space Treaty: “[o]uter space, including the Moon and other celestial bodies, **is not subject to national appropriation** by claim of sovereignty, by means of use or occupation, or by any other means”.
- Article 11(3) of the Moon Agreement provides: “[n]either the surface nor the subsurface of the Moon, nor any part thereof or natural resources in place, **shall become property of any State**, . . . or non-governmental entity or of any natural person”.

# State Sovereignty v. Private Property

- The exploitation and property rights over natural resources is attributed by a **State's sovereign power over its territory.**
- But the Moon is not subject to national appropriation...
- ... towards the emergence of forms of **private sovereignty** in the lack of any regulation

# The Rationale of the Outer Space Treaty

*The negotiating history of the Treaty shows that the purpose of this provision was to **prohibit a repetition of the race for the acquisition of national sovereignty over overseas territories that developed in the sixteenth, seventeenth, eighteenth and nineteenth centuries.** The Treaty makes clear that no user of space may lay claim to, or seek to establish, national sovereignty over outer space or a celestial body*

Mr. Herbert Reis, United States representative to the U.N. Committee on the Peaceful Uses of Outer Space (1969)



# High Seas and Space

- **The Moon as the High Seas?**
- According to Article 89 of the United Nations Convention on the Law of the Sea (UNCLOS), “[n]o State may validly purport to subject any part of the high seas to its sovereignty”.
- Article 116 of the UNCLOS provides that “[a]ll States have the right for their nationals to engage in fishing on the high seas” subject to certain environmental limits.
- Differences:
  - Express provision for a right to fish on the high seas.
  - The freedom of fishing on high seas as a practice protected by customary international law.

# High Seas and Space

- More similar to collecting mineral resources of the seafloor beyond the continental shelf
- The natural resources of the seabed are governed by a complex legal regime of the so-called “Area” that is set out in the UNCLOS. Article 136 of the UNCLOS provides that “[t]he Area and its resources are the common heritage of mankind.”
- Similarities:
  - Complexity in extracting these resources until recent times for technical reasons
  - nonrenewable resources
  - location is in a territory where no national sovereign claim is allowed
  - no general exploitation and appropriation rights for private entities over the natural resources of the Area (unlike the legal regime applicable to high seas’ fish resources)



# Ice and Space

## The Moon as the Antarctic?

A notable exception to the sovereign exploitation of national resources on earth is the case of Antarctic.

However...Article 7 of the Protocol on Environmental Protection to the Antarctic Treaty provides that “[a]ny activity relating to mineral resources, other than scientific research, shall be prohibited.”



# The Moon as Commons?

Article I of the Outer Space Treaty says:

*The exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the **benefit and in the interests of all countries**, irrespective of their degree of economic and scientific development, and shall be **the province of all mankind**. Outer Space, including the Moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.*

## **Limitations to Ownership?**

- Can the right to extract natural resources be exercised until they are completely consumed?
- What would happen if a monopoly or oligopoly of private/public entities occupy all the available space to extract resources?

## **The Moon as a Scarce Resource**

# Two Other Examples

- **Environmental Protection**
  - Can we consider the moon as part of the earth environment?
  - How can we assess the consequences of mining the moon over the earth environment?
- **Research on Spatial Resources**
  - Mining the moon for research purposes
  - Research as a value for the mankind



# Perspectives

- **Priority Rights using an international public registry?**
  - How large could the claim be?
  - How long should the exclusive mining rights last?
  - ...
- **Level of Regulation:** national or international law?
- **Type of Regulation:** binding or soft law?

## Some perspectives...

- The Moon between the private and public law dimension
- Expressing national sovereignty through the recognition of ownership rights (e.g. US and Luxembourg)
- Unregulated commercial exploitation of natural resources as a risk to escalation towards conflicts contrary to the purpose to avoid any conflict in outer space (e.g. the history of the EU)

# Thanks

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