

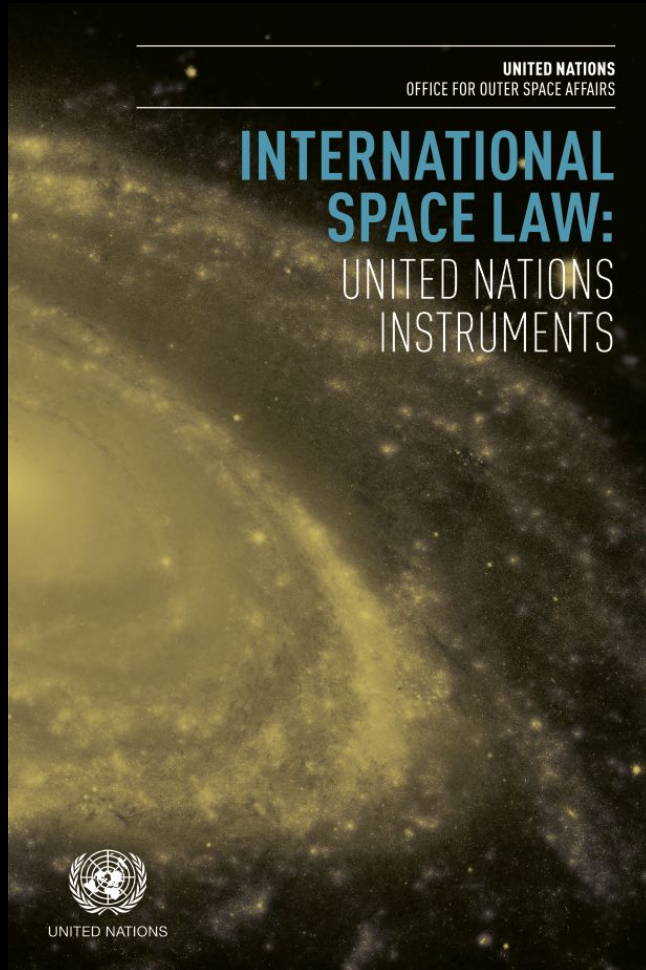
2024 Foresight Space Futures and Governance Workshop

Mapping and Shaping the Lunar Legal Landscape

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International Space Law

A modest regime with broad principles

- explicit obligations
- explicit prohibitions
- broad permissions (freedoms/liberties)

1967 Outer Space Treaty
Article V

Obligations

States Parties to the Treaty **shall regard astronauts** as envoys of mankind in outer space and **shall render to them all possible assistance** in the event of accident, distress, or emergency landing on the territory of another State Party or on the high seas.

When astronauts make such a landing, they **shall be safely and promptly returned** to the State of registry of their space vehicle.

In carrying on activities in outer space and on celestial bodies, the astronauts of one State Party **shall render all possible assistance to the astronauts** of other States Parties.

1967 Outer Space Treaty
Article IV
Paragraph 2

Prohibitions

The Moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes.

The establishment of **military bases, installations** and **fortifications**, the **testing of any type of weapons** and the conduct of **military manoeuvres** on celestial bodies **shall be forbidden**.

1967 Outer Space Treaty
Article I, Sentence 2

Permissions

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.**

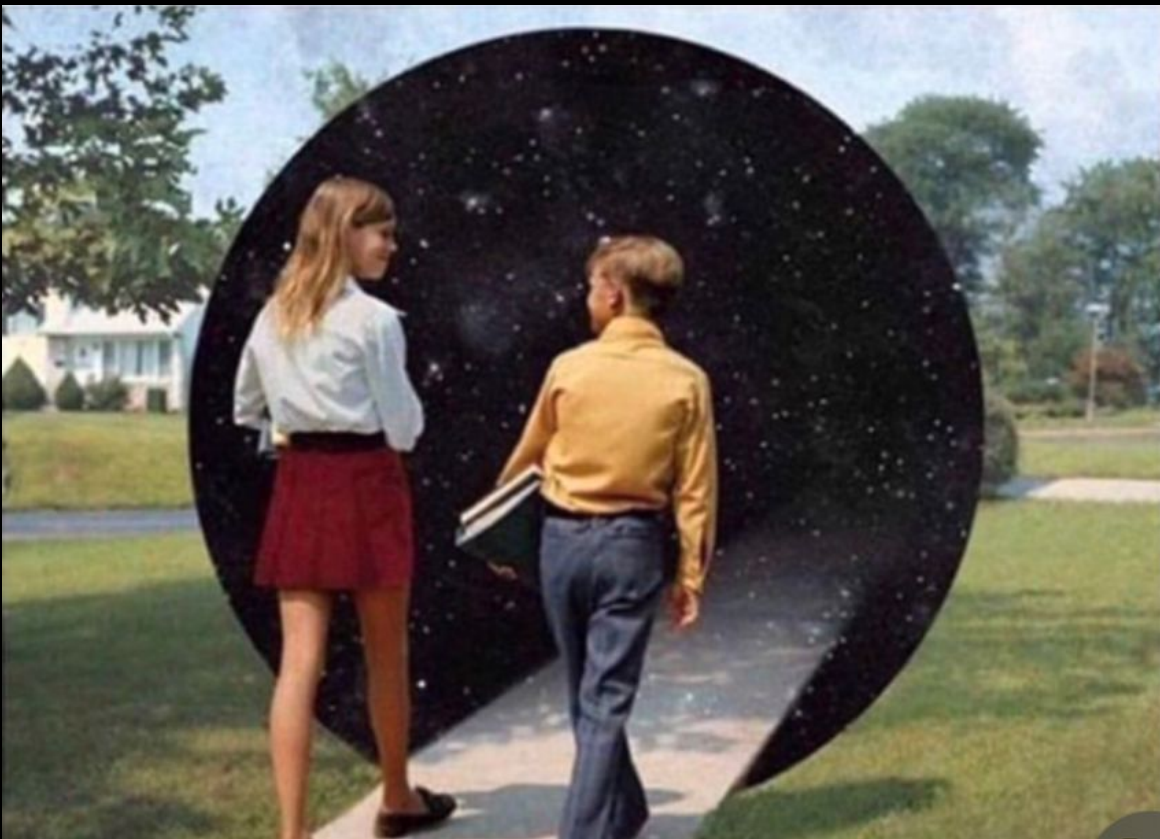
Article XII
Sentence 2

All stations, installations, equipment and space vehicles on the Moon and other celestial bodies **shall be open** to representatives of other States Parties to the Treaty on a basis of reciprocity.

Gaps (lacunae) the law does not address or regulate

Unclarity (non-liquet) the law is unclear

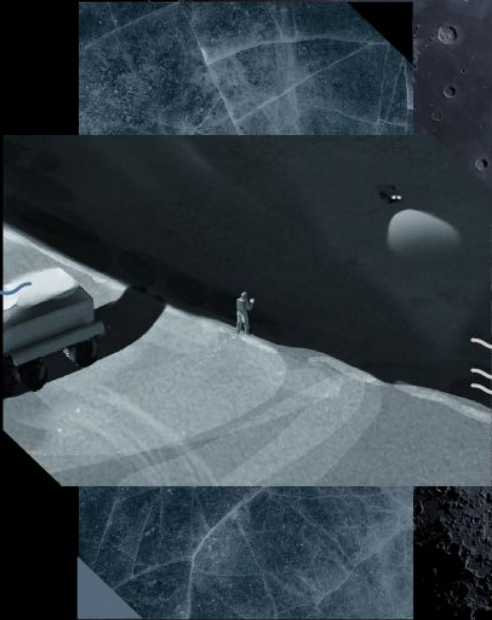
Legal dilemmas When an actor confronts an irresolvable and unavoidable conflict between two legal norms so that obeying or applying one norm necessarily entails the undue impairment of the other.



A-legality Deficiencies in the law Gaps (lacunae) & Unclarity (non-liquet)	Legality
Illegality	Legal Dilemmas Irresolvable norm conflicts (legal AND illegal)

Commerce versus Science?

A Vision
for Humanity's
Future in Space



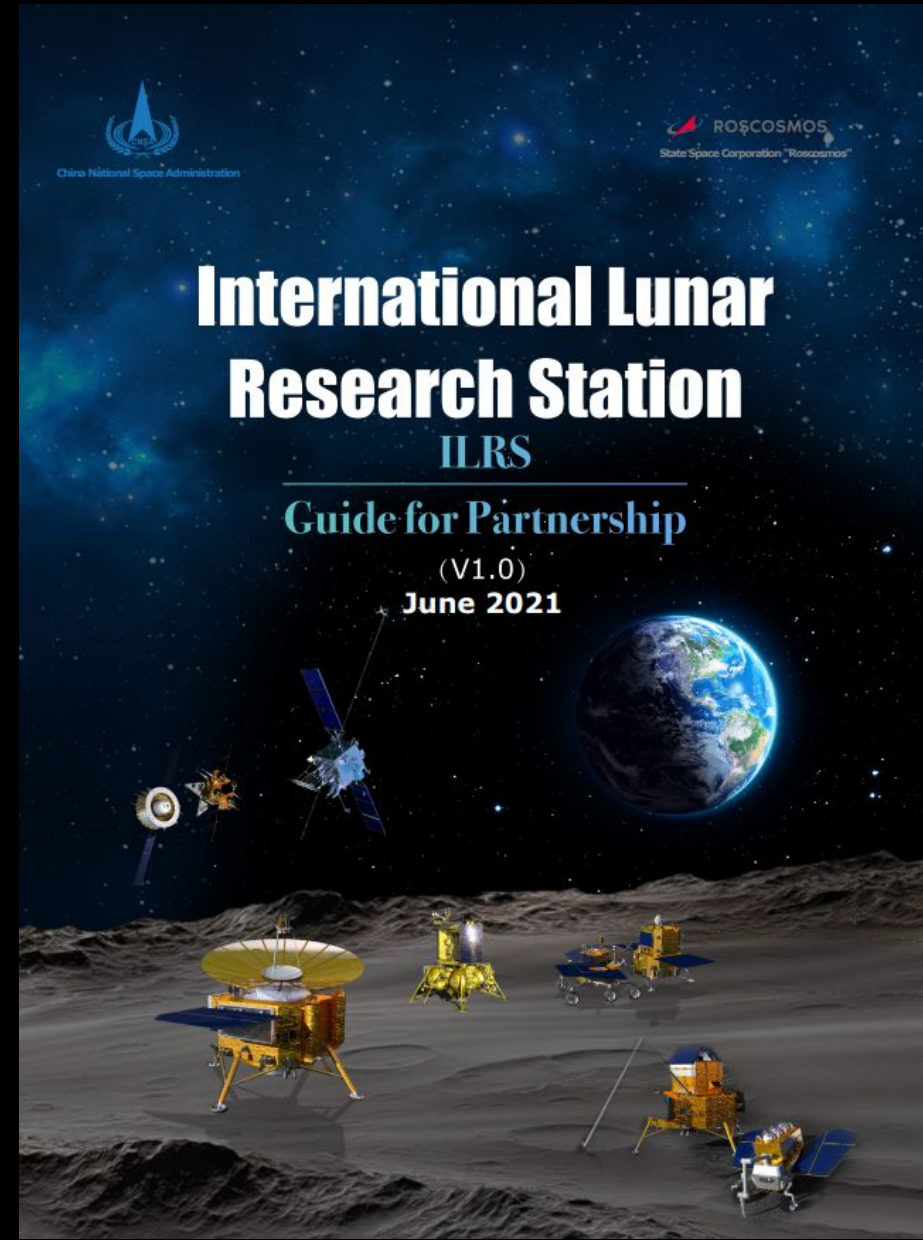
Lockheed Martin's
Water-Based
Lunar Architecture

LOCKHEED MARTIN

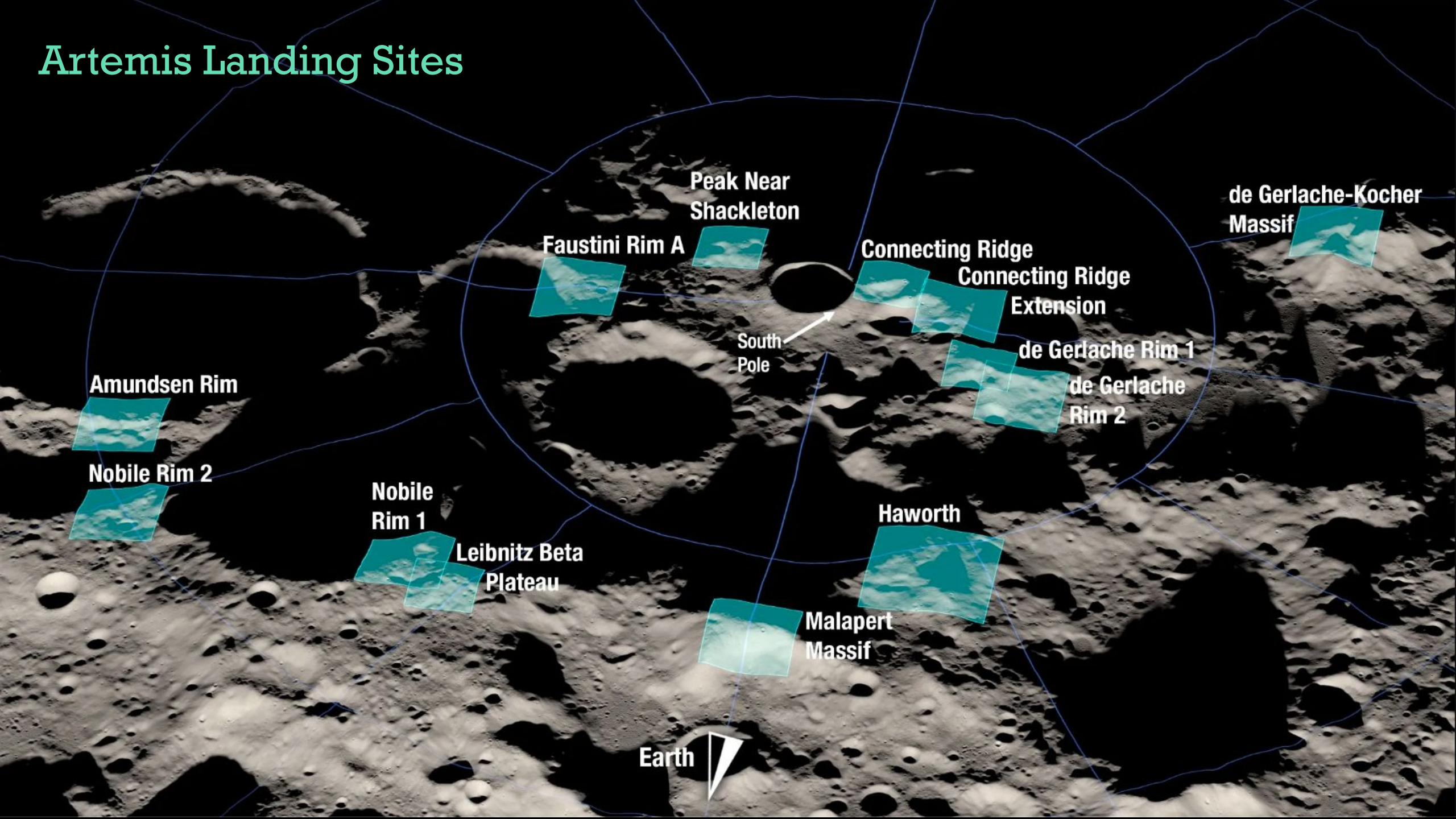
Lunar Crater Radio Telescope (LCRT)



Geopolitical lunar rivals?



Artemis Landing Sites



Peak Near Shackleton

Faustini Rim A

Connecting Ridge

Connecting Ridge Extension

de Gerlache-Kocher Massif

South Pole

de Gerlache Rim 1

de Gerlache Rim 2

Amundsen Rim

Nobile Rim 2

Nobile Rim 1

Leibnitz Beta Plateau

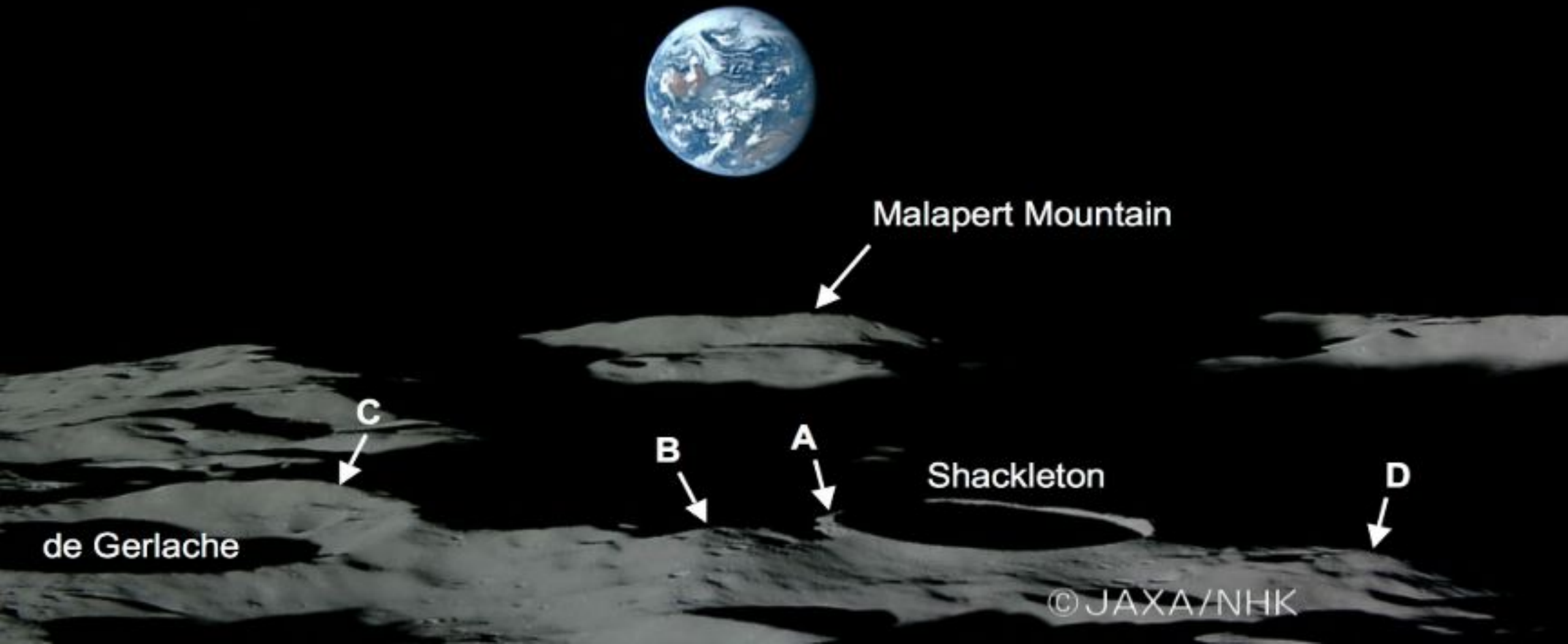
Haworth

Malapert Massif

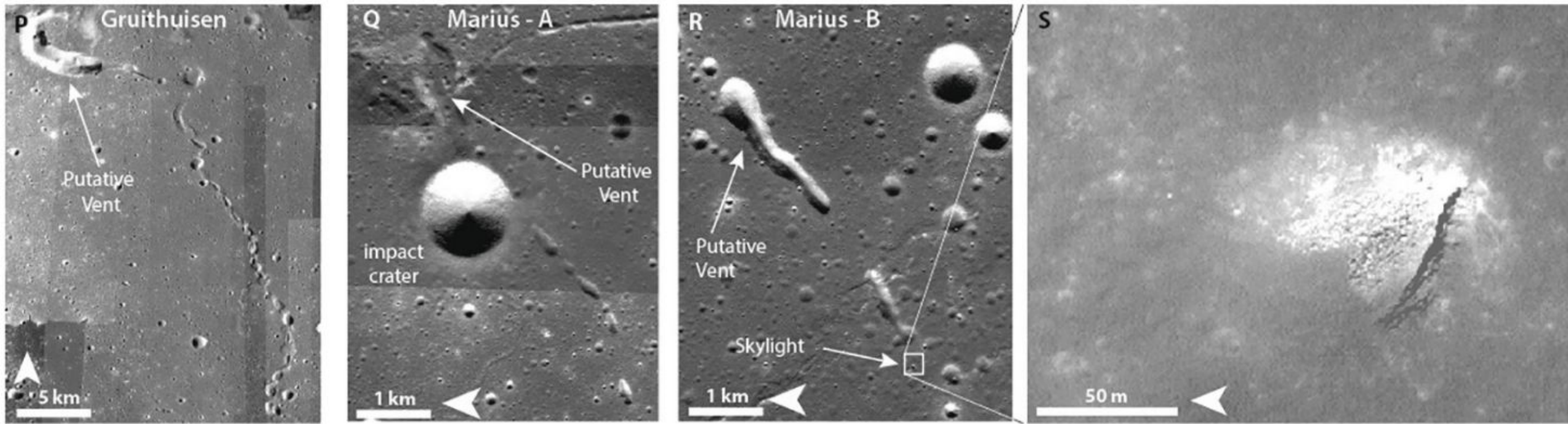
Earth

Peaks of Eternal Light

Four peaks are identified which are illuminated more than 80% of the time. (source: Bussey et al. 2010)



Lunar Lava Tubes



Examples of lunar lava tube candidate collapse chains in *Gruithuisen* and *Marius Hills*

A smaller collapse characterized by fallen boulders and vertical walls is a probable incipient skylight in the chain of *Marius-B*.

This leaves us with

Opportunities for intentional norm formation

Purposeful legal precedent setting

Thank You

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