

# AZIMUTH

ADVISORY

## Key Legal Challenges arising from Natural Resource Extraction of Celestial Bodies

United Nations/Chile Conference on Space Law and Policy:  
Governance and Legal Perspectives on Space Activities in Earth Orbit and Beyond



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# Space Resource Activities will involve many complex issues and challenges

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- Key issues:
    - Legal and Governance but also ....
    - Sustainability
    - Avoiding Conflict
    - Technological / Scientific
    - Environmental / Cultural / Economic / Geopolitical / Humanistic
    - Stewardship
    - How do we regard space? / How do we interact with space?
  - We need to understand the *questions* before we can begin to consider the *answers*...
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# What is at Stake?

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- Available resources?
  - *Moon*: Rare Earth minerals? Helium 3? and most significantly water
  - *Asteroids*: Volatile, Platinum, Nickel, etc; \$\$\$\$\$\$?
- Resources could be used / utilised in situ (ISRU) or (later?) sent to Earth (but does the business case make sense for the latter?)
- Proponents argue that ‘space mining’ can add to and redistribute wealth worldwide
- Others fear that it could instead lead to a ‘land grab’, ‘gold rush’ – and ultimately conflict?

# Legal and Governance considerations will include:

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- UN Treaty Regime:
    - Outer Space Treaty / Moon Agreement etc
  - Other UNCOPUOS Instruments:
    - Space Debris Mitigation Guidelines / Long Term Sustainability Guidelines etc
  - Are there lessons to be learnt from other governance structures for resources Beyond National Jurisdiction?
    - ITU? ISBA? etc
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# Use of Space Resources: 1967 Outer Space Treaty

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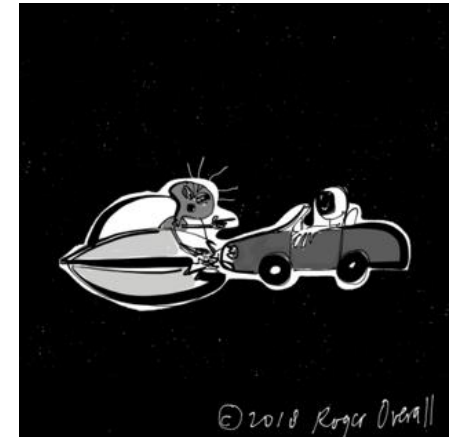
- Art. I OST: Freedom of Exploration and Use
  - For the benefit of and in the interests of all countries
  - Province of all mankind
  - In accordance with international law
  - Free access to all areas of celestial bodies
  - Is commercial use of resources in line with Art. I?
- Art. II OST: Non-appropriation
  - Outer space is not subject to national appropriation
  - Are exploitation and utilization of space resources covered by this principle?
  - Artemis Accords? Correct reflection of the legal position?
- Art. IV OST: Use for peaceful purposes
  - No nuclear weapons/ weapons of mass destruction anywhere
  - Moon (+ celestial bodies): exclusively peaceful purposes
  - How to avoid conflict in competition for resources?



# Use of Space Resources: 1967 Outer Space Treaty

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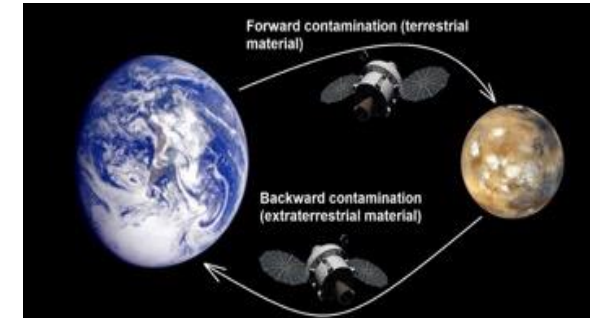
- Art. VI: International Responsibility
  - International responsibility for national activities (including on celestial bodies)
  - Non-governmental entities: authorization and continuing supervision by the appropriate State
  - Assure compliance with Treaty provisions
  - Do resource activities fall within scope of the Treaty law?
  
- Art. VII: International Liability for damage
  - Launching State(s)
  - Launch/ procure/ territory/ facility
  - Damage
  - On Earth or to aircraft (absolute) / in space (fault)
  - To another State Party or its natural /juridical persons
  - By a space object or its component parts
  - 1967 Outer Space Treaty / 1972 Liability Convention – applicable?
  - How do States / corporations protect themselves?



# Use of Space Resources: 1967 Outer Space Treaty

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- Art. IX: No Harmful Interference
  - Due regard, consultation
  - No harmful contamination of space
  - No adverse changes in Earth environment
  - How to monitor resource activities?
- Art. XI-XII: Cooperation
  - Promote international co-operation
  - Inform UN, public, international scientific community
  - Visits to stations, installations, vehicles in space
  - Reciprocity, reasonable advance notice
  - Can States make non-governmental stakeholders comply with these rules?



# Use of Space Resources: 1979 Moon Agreement

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- The only UN Space Treaty to specifically address exploitation of space resources
  - Art. 11(1): Moon and its natural resources are the ‘Common Heritage of (Hu)Mankind’
  - Art. 11(5): Undertaking to establish International regime and procedures ‘as such exploitation is about to become feasible’
  - Art. 11(7): purposes of the regime:
    - Orderly and safe development
    - Rational management
    - Expansion of opportunities in use
    - Equitable sharing in the benefits, with special consideration for:
      - Interests and needs of developing countries,
      - Efforts of countries which contributed directly or indirectly
  - Only 18 ratifications – including Chile
- Rights and Obligations of States Parties





## Other relevant issues

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- Waste on celestial bodies
  - 2007 UN Debris mitigation guidelines? Only address orbital debris
  - Lunar waste management?
  - Rehabilitation of extraction sites?
  - 2019 UN Long-term sustainability guidelines? Only mention celestial bodies in Guideline D.1 on promoting and supporting research
- Protection of heritage sites?
- Protection of operations?
- Avoid interference with other activities?
- Others?



[PhotoVideoStock/Getty](#)

# Other Considerations: National / Bilateral and Civil Society Initiatives

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- National Legislative Initiatives (include...)
  - USA (2015)
  - Luxembourg (2017)
  - UAE (2019)
  - Japan (2021) (in force 2022)
- Bilateral Initiatives (include...)
  - USA *et al* (2020)
    - Artemis Accords – bilateral (political) agreements
  - China / Russia MOU (2021)
    - Establishing a Lunar base (International Lunar Research Station)
- Non-governmental / Civil Society Initiatives (include....)
  - IISL Position Paper (2015)
  - The Hague Space Resources Governance Working Group (2015-2019) Building Blocks / Commentary
  - Other work by Civil Society
  - Industry initiatives

# Artemis Accords (2020)

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A series of bilateral non-binding (political) agreements between NASA and the Space Agencies of a number of countries – centrality around the 1967 Outer Space Treaty and recognising multilateral discussions at UNCOPUOS

Deals with *inter alia*:

Peaceful Purposes

Transparency

**Interoperability**

Emergency Assistance

Registration of Space Objects

Release of Scientific Data

**Preserving Outer Space Heritage**

Space Resources

**Deconfliction of Space Activities**

Orbital Debris

# Initial Information Gathering for WG – How to Understand the Issues

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- The **type of space resources** that fall within the mandate and scope of the Working Group
- The **type of activities** that fall within the mandate and scope of the Working Group
- The **type of information to be collected** by the Working Group in accordance with its mandate
- The **views of States members regarding the existing legal framework** for space resource activities
- The current practices and challenges in the **implementation of the existing legal framework** for such activities
- The **benefits and challenges of development of a framework** for such activities
- The relevant **factors for the development of a set of initial recommended principles** for such activities
- The format, agenda, topics and other details of the **dedicated conference** (currently) scheduled for 2024
- Any other background or information paper, or any other views, that Member States may wish to share

# The (Potential) Risk

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**Will UNCOPUOS Member States agree on a Multilateral Framework for such activities through the Working Group?**

**If so, on what basis?**

**What fundamental principles will apply?**

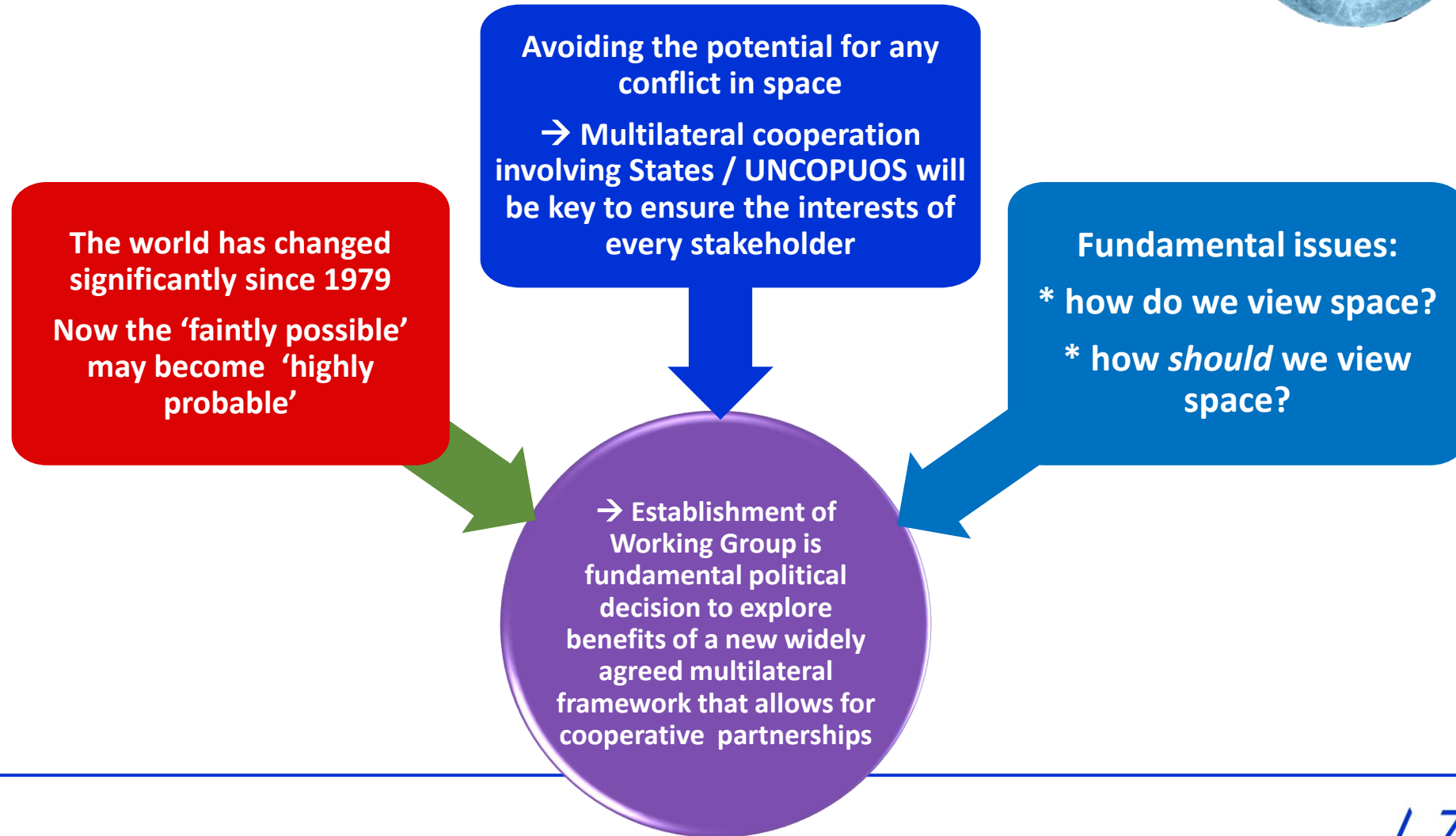
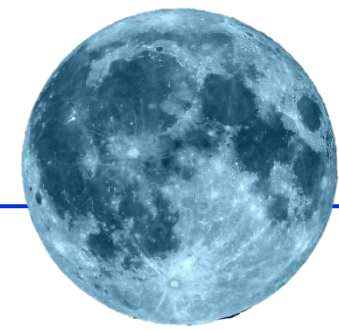


**Impact of national regulation in the *absence* of a Multilateral Framework based on consensus?**



**Worst case scenario - a potential challenge to the rationale underlying non-appropriation in its original and fundamental sense?**

# Crystal Ball Gazing: An Optimist's View





# AZIMUTH

A D V I S O R Y

**Thank you!**

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