

# International Space Law and the Environment

Tanja Masson-Zwaan

UN Space Law Conference, 8-10 Dec. 2020

Emerging Issues in Space Law and Policy – Perspectives for African Nations

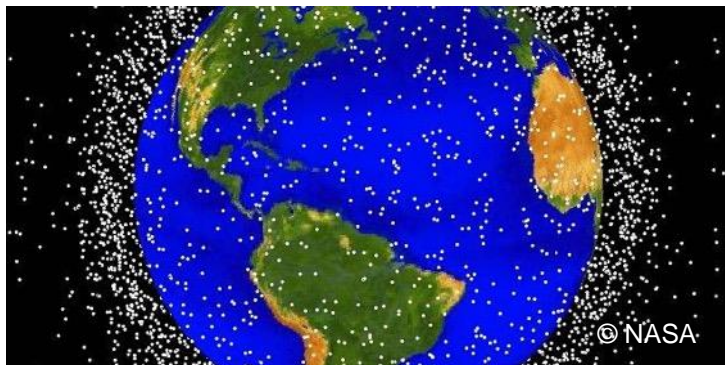


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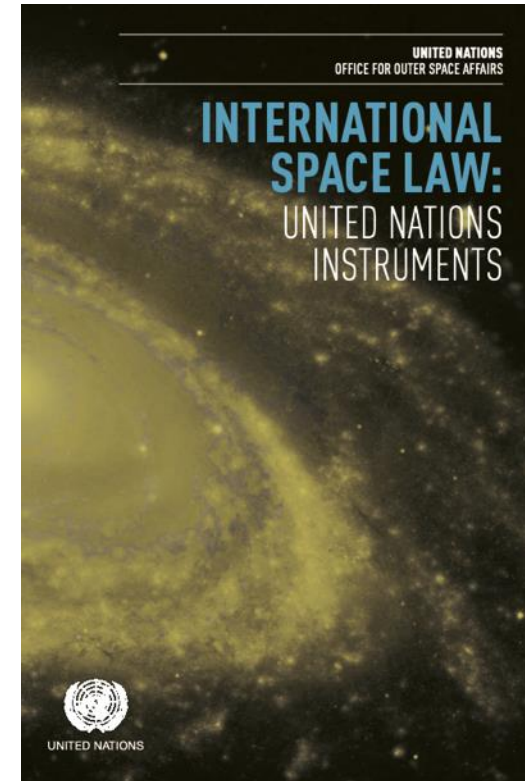
# Outer space and the environment

- More and diverse actors, more activity, more objects in space
- Congestion, collisions (Kessler effect)
- Need to ensure long term sustainability of space activities, protection of Earth's environment
- **Issues:**
  - Debris mitigation
  - Debris remediation
  - Backward/forward contamination



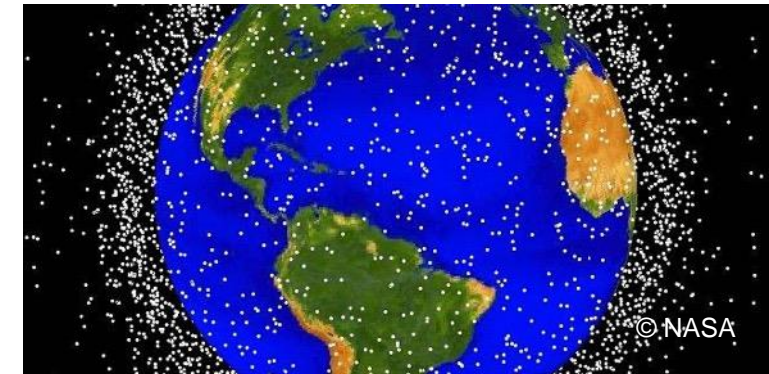
# The Outer Space Treaty and the environment

- **Art III:** international law applies
  - Incl. environmental law, case law
- **Art. VI:** international responsibility
  - Authorization/supervision)
- **Art. VII:** international liability
  - For damage caused by space object)
- **Art. VIII:** registration, jurisdiction & control
  - Ownership 'at eternam'
  
- **Art. IX:**
  - Cooperation and mutual assistance, due regard for interests of other states
  - Avoid harmful contamination or adverse changes in earth's environment, consultations



# Debris **mitigation**: legal issues

- No rules in treaties, term not mentioned
  - No duty to not create debris
  - No definition of space object
  - Collision: no standard of fault for damage
  - Crash: identification, recovery/return
  - Potential liability as long as object is in orbit
- IADC and UN Space Debris Mitigation Guidelines
  - Not legally binding, 'guidelines'
  - But find way into national law





# Recent case: debris in Africa?

May 12, 2020, 06:38pm EDT | 10,807 views

## Chinese Rocket Debris May Have Fallen On Villages In The Ivory Coast After An Uncontrolled Re-Entry



**Jonathan O'Callaghan** Contributor

Science

*Jonathan is a freelance space journalist that covers commercial spaceflight, space exploration, and astrophysics*

Potential issues:  
Damage; Liability; Return



Forbes, © AFP/Getty

The Long March-5B lifted off last week. AFP VIA GETTY IMAGES



**Jonathan McDowell**  
@planet4589

Reports of a 12-m-long object crashing into the village of Mahounou in Cote d'Ivoire. It's directly on the CZ-5B reentry track, 2100 km downrange from the Space-Track reentry location. Possible that part of the stage could have sliced through the atmo that far (photo: Aminata24)



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# Debris **remediation**: legal issues

- No rules in treaties, term not mentioned
  - No duty to clean up debris
  - Who pays, e.g. polluter pays principle
  - Consent / permission of owner needed for removal by 3<sup>rd</sup> party
  - Who owns recovered parts, if any
  - What if damage to a 3<sup>rd</sup> satellite in space, or on earth/in the air
  - What if the wrong satellite is picked up (national security, IP)



# Backward/forward contamination

- Contamination of the Earth by extra-terrestrial organisms ('backward')
- Contamination of other planets by terrestrial organisms ('forward')
- COSPAR Planetary Protection Policy, rev. 2020
  - Standards to guide compliance with art. IX OST
  - Not legally binding, recognized by COPUOS
  - Implemented by states, IGO, since 50+ years



# Categories, implementation

- Technical / procedural requirements for **5 categories** of planetary protection, depending on
  - Type of **mission** (e.g., orbiter, lander, sample return)
  - Target **body** (e.g. Moon, Mars, asteroid)
- Constantly updated to adapt to new scientific insights by PP **Panel**

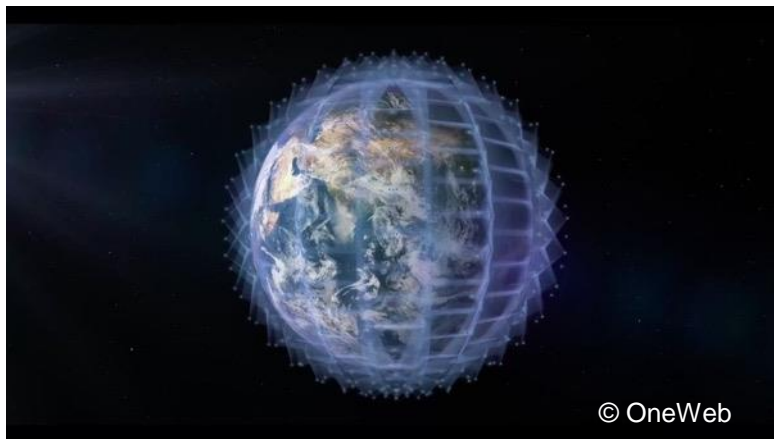




# Increasing environmental concerns

- Large constellations
  - More congestion, collisions, debris, and interference (Astronomy)
- Human missions to Moon and Mars
  - Update PPP
- Planetary missions by private entities
  - Risk of non-compliance

*SOLUTIONS? International coordination & regulation (COPUOS)  
National implementation, supervision*



Thank you!



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