

Not a frontier:

The outer space governance framework

Jessica West, PhD

Project Ploughshares

UNIDIR Space Security Workshop, UNHQ New York

30 January 2019

Key questions

How is outer
space
governed?

What are the
arms control
implications?

What are the
gaps, tensions,
disagreements?

WHY DOES THIS MATTER?

How is space governed?

Misconception: space is an ungoverned, lawless frontier



However: **inadequacy** in face of encroaching warfare and weaponization

How is space governed?



Outer Space Treaty (1967)

Key values and principles:

- Preserved for use by all nations for the **benefit of all humankind**
- No claims of sovereignty over celestial bodies, such as the moon
- Celestial bodies can only be used for **peaceful purposes**
- States are **liable** for damage caused by their space objects
- Activities should **avoid harmful contamination**

Outer Space Treaty

A partial non-armament treaty

- Bans nuclear weapons or other **weapons of mass destruction** in orbit or on celestial bodies
- **Silences:**
 - Conventional weapons
 - Meaning of peaceful purposes
 - Activities in orbit v. celestial bodies



"The world looked over the edge of the abyss and chose a different path."

— Joanne Gabrynowicz

In practice, non-aggressive military use is long accepted

Major UN Space Treaties

Responsibilities of space-faring states further codified

Treaty	Date	Total parties	Total signatories
Outer Space Treaty	1967	107	23
Rescue Agreement	1968	96	23
Liability Convention	1972	95	19
Registration Convention	1975	67	3
Moon Agreement	1979	18	4

But: these say little about arms control/conflict

Key UN Space Principles

Reinforce principles of peaceful use, universal benefit, and state responsibility

Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space (1963)

Principles on Direct Broadcasting by Satellite (1982)

Principles on Remote Sensing (1986)

Principles on Nuclear Power Sources (1992)

Declaration on Outer Space Benefits (1996)

Space Debris Mitigation Guidelines (2007)

Guidelines for the Long-Term Sustainability of Outer Space

LTS...“relevant to *all space activities*, whether planned or ongoing, as practicable, and to all phases of a space mission...”

Bi-lateral agreements

Promoting strategic stability by protecting key satellite functions

- **Agreement on measures to reduce the risk of outbreak of nuclear war** : aimed at protecting early-warning satellites
- **Hot Line Agreement**: applies the principle of non-interference to certain satellites (in this case, communications).
- **SALT 1 Agreement**: Provides for verification by national technical means and establishes the principle of **non-interference** with such means
- ~~**ABM Treaty**~~: Includes prohibition on space-based ABM systems, **verification** by national technical means, and **non-interference** with such national technical means i.e. reconnaissance satellites

International law

Partial Test Ban Treaty: Prohibits any nuclear explosion in the atmosphere, in outer space, or under withdrawal (art. IV) water

ENMOD Convention: Prohibits the military or hostile use of environmental modification techniques, which would change - through the deliberate manipulation of natural processes - the dynamics, composition or structure of the earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space

MTCR: (voluntary) aims to limit the spread of ballistic missiles and other unmanned delivery systems that could be used for WMD

International law

Restrictions on armed conflict

UN Charter: Prohibits the threat or use of force against any State in all environments and lays down the right of individual or collective self-defence in response to armed attack

International humanitarian law: applies to armed conflict in outer space

- Distinction, proportionality, precaution
- Does **not** protect dual-use spacecraft

Customary international law: in practice, states have observed restrictions on deployment of ASATs, but not a sense of a legal obligation

- Exception: debris-producing ASATs

Arms control: gaps and controversies

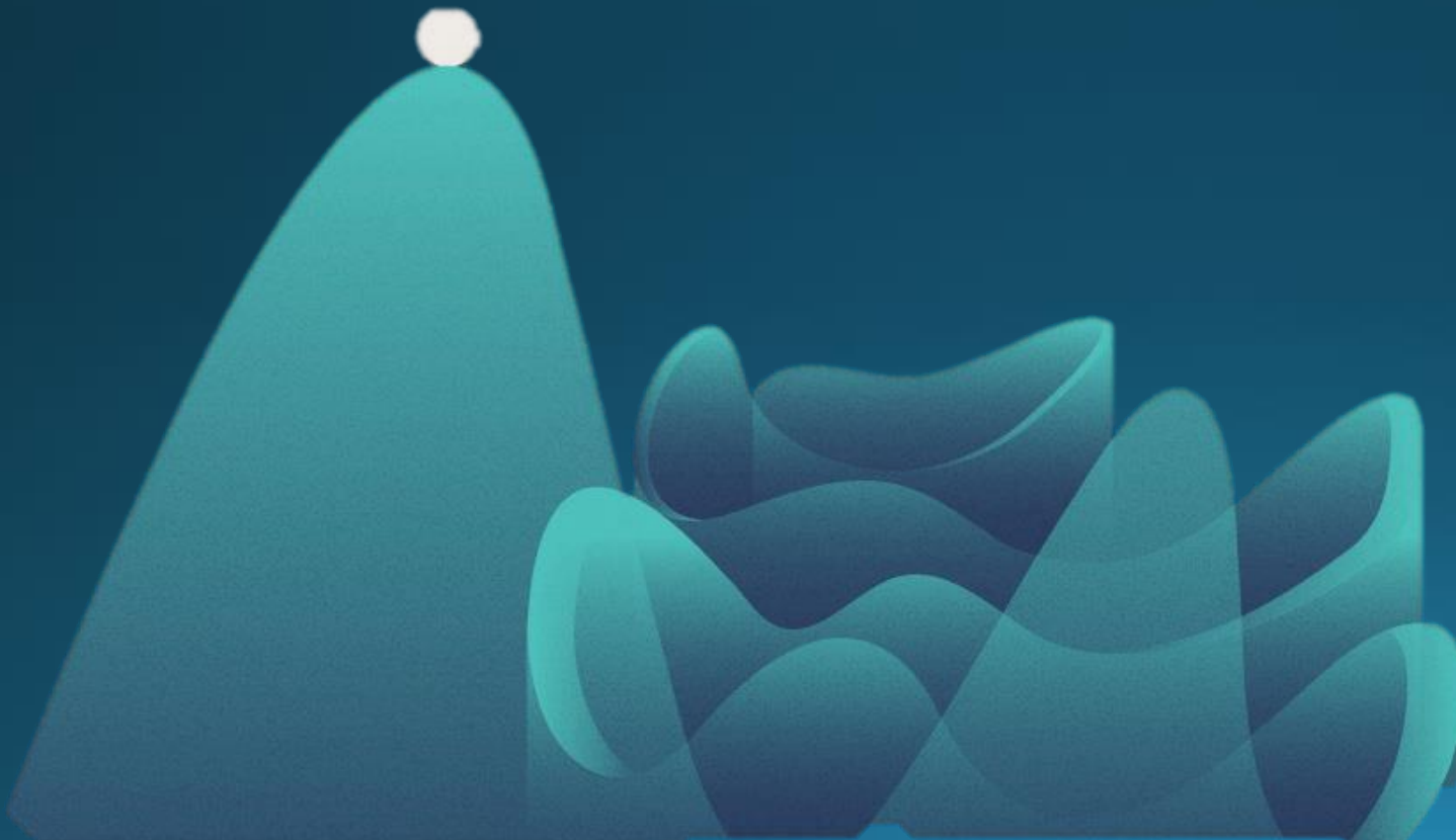
A long-standing objective...so why is it so hard?!



- Are military/aggressive uses of space allowed beyond confines of celestial bodies?
- What constitutes a weapon?
- What constitutes the use of force?
- Who does verification and how?
- What constitutes harmful interference with ability of others to use space?
- What constitutes self-defense?
- What limitations does IHL place on use of weapons/force in outer space?

WHY DOES THIS MATTER?

WHY NOW?



Technology development

Accelerating R/D and *demonstration* of ASAT capabilities

- Dual-use kinetic interceptors
- Lasers/directed energy

Accelerating *deployment* of dual-use capabilities

- Maneuvering, inspection, close proximity operations

Positive applications of dual-use capabilities

- Satellite servicing, debris removal



From
hypothetical
to reality

National laws and policies

From restraint to space as a “domain of warfare”



The way forward

Build on existing governance:

- Responsibilities
- Restrictions
- Restraint

Bring the pieces together:



Learn more



A comprehensive assessment of the prevailing trends and annual developments related to the security of outer space

"Secure and sustainable access to and use of space, and freedom from space-based threats."

Project partners:

Project Ploughshares

The Simons Foundations

McGill University

University of Adelaide

George Washington University