

Space Politics: Part II



Space Politics: The UN

- The United Nations core actor for space politics
- Founded in 1945
- Multilateral governmental organization
- In 1958 UN ad hoc committee for discussion of space politics
- Why might this committee come together in 1958?
- In 1959 ad hoc committee becomes United Nations Committee on the Peaceful Uses of Outer Space (COPUOS)
- COPUOS remains key space organization
- Space activities of UN now carried out under UNOOSA which includes COPUOS and other space mandates from the UN general assembly



Space Politics: The UN

- In 1962 the UN created the United Nations Office of Outer Space Affairs to carry out the mandates of the COPUOS as well as other space issues identified by general assembly



UNITED NATIONS

Office for Outer Space Affairs

Space Politics: The OST

- First introduced in 1966, the Outer Space Treaty entered into force in late 1967.
- The treaty has 17 articles dealing with a variety of issues, and is reflective of the Cold War era in which it was created.
- However, the treaty is also highly idealistic and crafts a cooperative and peaceful image of Space use that has been challenged ever since
- The treaty has not been amended since its inception, and only been modified to correct for the use of male pronouns
- The treaty has been signed by all major Space-faring nations

Space Politics: The OST

- Article I: “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 or scientific development, and shall be the province of all mankind.”

Space Politics: The OST

- Article II: “Outer 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.**”

Space Politics: The OST

- Article III: “States Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the moon and other celestial bodies, **in accordance with international law, including the Charter of [of human rights of] the United Nations**, in the interest of maintaining international peace and security and promoting international co-operation and understanding.”

Space Politics: The OST

- Article IV: “States Parties to the Treaty undertake not to place in orbit around the earth any objects carrying **nuclear weapons or any other kinds of weapons of mass destruction**, install such weapons on celestial bodies, or station such weapons in outer space in any other manner.”

Space Politics: The OST

- Article V: “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.”

Space Politics: The OST

- Article VI: “States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including the moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty.”

Space Politics: The OST

- Article VII: “Each State Party to the Treaty that launches or procures the launching of an object into outer space, including the moon and other celestial bodies, and each State Party **from whose territory or facility an object is launched, is internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons** by such object or its component parts on the Earth, in air or in outer space, including the moon and other celestial bodies.”

Space Politics: The OST

- Article VIII: “A State Party to the Treaty on whose registry an object launched into outer space is carried **shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body.** Ownership of objects launched into outer space, including objects landed or constructed on a celestial body, and of their component parts, is not affected by their presence in outer space or on a celestial body or by their return to the Earth. ”

Space Politics: The OST

- Article IX: In the exploration and use of outer space, including the moon and other celestial bodies, States Parties to the Treaty shall be guided by the principle of cooperation and mutual assistance and shall conduct all their activities in outer space, including the moon and other celestial bodies, with due regard to the corresponding interests of all other States Parties to the Treaty. States Parties to the Treaty shall pursue studies of outer space, including the moon and other celestial bodies, and **conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth** resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose.”

Space Politics: The OST

- Article X: “In order to promote international co-operation in the exploration and use of outer space, including the moon and other celestial bodies, in conformity with the purposes of this Treaty, the States Parties to the Treaty shall consider on a basis of equality any requests by other **States Parties to the Treaty to be afforded an opportunity to observe the flight of space objects launched** by those States. The nature of such an opportunity for observation and the conditions under which it could be afforded shall be determined by agreement between the States concerned.”

Space Politics: The OST

- Article XI: “In order to promote international cooperation in the peaceful exploration and use of outer space, States Parties to the Treaty conducting activities in outer space, including the moon and other celestial bodies, **agree to inform** the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, **of the nature, conduct, locations and results of such activities.**”

Space Politics: The OST

- Article XII: “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.”

Space Politics: The OST

- Article XIII: “The provisions of this Treaty shall **apply to the activities of States Parties to the Treaty** in the exploration and use of outer space, including the moon and other celestial bodies, whether such activities are carried on by a single State Party to the Treaty or **jointly with other States, including cases where they are carried on within the framework of international intergovernmental organizations.**”

Space Politics: 1968 Rescue and Return Agreement

- The 1968 RRA builds off of Article V and is very much a Cold War document
- The treaty outlines help is to be provided for astronauts experiencing difficulties in or over the territories of all parties.
- The treaty does not require party members to assist in-orbit astronauts experiencing difficulties
- An existing question of the RRA is whether it should apply to Space tourists

Space Politics: 1972 Liability Convention

- The 1972 Liability Convention expands on Article VII of the OST which does not clarify what “damage” or “launching state” can be interpreted as
- The convention identifies that damage caused to Earth people or property by Space objects is subject to *absolute liability* of the launching state (meaning that the claimant does not need to prove fault of the defendant).
- The convention also identifies that damage in-orbit or on other planetary bodies operates under *fault liability* meaning the two parties must prove fault of the other
- In both cases all parties will be represented by their national governments

Space Politics: 1972 Liability Convention

- The Liability Convention too has some modern questions surrounding it
 - In international proceedings, would a company like SpaceX want to be represented by the U.S. Government or their own lawyers?
 - The clause of *absolute liability* has been argued to be a barrier to addressing orbital debris, as any unintentional disruption of space debris may cause it to damage people or property on Earth
 - Further if the disrupting party is not the launching party of the orbital debris, are they still liable
 - Finally as is typically in international law, there is no universally recognized arbitration agency or means for these claims against one another

Space Politics: 1975 Registration Convention

- The Registration Convention expands on Article VIII of the OST
- Driving interests for the registration for Space objects are:
 - For identification of liability
 - Transparency (especially related to military interests)
 - Sustainability (debris and traffic)
- The notion behind the Registration Convention isn't particularly controversial (other than secrecy interests of militaries)
- The real problem lies in the decentralized means of registration. There is no central registrar. It is meant to be the Office of the Secretary General, but states are also allowed to keep an internal national registry
- Further there is little direction on what kind of information the states must provide to the UN and when (many wait until after launch)
- Space traffic and orbital debris advocates have pointed to the need for a centralized catalogue of Space objects (currently the largest is housed with the U.S. DOD's Joint Space Operations Centre).
- Further challenges have been identified regarding in-orbit transfer of satellites and the increasing participation of non-state actors in LEO, MEO, and GEO

Space Politics: 1979 Moon Agreement

- The Moon Agreement is the least ratified of the four major Space treaties (no major Space-faring nations have signed it)
- Two primary reasons for its lack of uptake when it was introduced were:
 - A loss of interest in the Moon and by both superpowers in the 1980s
 - Increasing appropriation interests (possibly brought on by the return of Cold War tensions)
- The Moon Agreement's main goal is to distinguish scientific activities from commercial activities
- The agreement states that parties can land, establish bases, and collect samples for scientific purposes but that these actions do not represent national appropriation of the Moon
- Famously the Moon makes clear that the Moon's resources are the common heritage of all humankind, a notion which has been challenged by modern off-Earth mining interests
- Other potentially contentious articles in the agreement include requirements for sharing samples, and aid to developing countries in the means of technological transfer

Space Politics: Notable Resolutions since the Treaty Era

- 1982 – Direct Broadcasting by Satellite Principles
 - States have the right to refuse the delivery of signals into their national territory (i.e. no HBO in North Korean)
- 1986 – Remote Sensing Principles
 - States do not need the permission of other states to collect data from their territory via remote sensing
 - The sensed state shall have a right to request the data obtained (though copyright and reasonable cost apply)
 - These principles are widely accepted
- 1992 Principles of Nuclear Power Use
 - Establish the precautions necessary for launching nuclear power sources through Earth's biosphere
- 1996 – Resolution on Space Benefits
 - Introduced by developing countries who didn't think developed countries were fully applying Article I of the OST
 - The resolution attempts to establish means of global benefits from Space activities
 - One outcome has been a provision that states cannot be coerced into participating in Space activities

Space Politics: Space Politics since Y2K

- Outside of the COPUOS a number of governing instruments have developed to respond to a variety of modern Space issues
- Many of these are bilateral agreements between space agencies and national governments.
- For example, NASA has over 1000 separate bilateral agreements or MOUs with various non-U.S. entities on scientific and technical matters
- Further, the 1980 creation of the ESA in a sense created a governing body for the member states and their national space programs (as the ESA has a number of principles for its members)
- Finally particular issues have had governance regimes (of various modes) pop-up around them:
 - Communications coordination (of frequencies and orbits)
 - Orbital debris
 - Space markets
 - Space traffic
 - Planetary contamination

Space Politics: The ITU

- The International Telecommunications Union is some form or another has been around since 1865
- Its mandate is to coordinate use of frequencies within the radio spectrum as well as to coordinate orbital paths
- The ITU is an international organization housed within the UN. Participation in the ITU by national governments is essentially universal
- Private organizations also participate in ITU research and analysis, but do not vote (unless acting as an envoy for a national government)

Space Politics: The ITU

- The ITU works to coordinate use of frequencies within the radio portion of the EM spectrum
- This is important as overlapping frequencies can make communications impossible
- The ITU does this for all forms of radio use (airplanes, radio stations etc...) but for our purpose the concern is radio frequencies used by spacecraft and satellites

Radio
Microwave
Infrared
Visible
Ultraviolet
X-ray
Gamma-ray



AM radio

Amateur radio

Aircraft communication

Microwave oven

TV Remote Control

Night vision goggles

UV light from the Sun

Airport security scanner

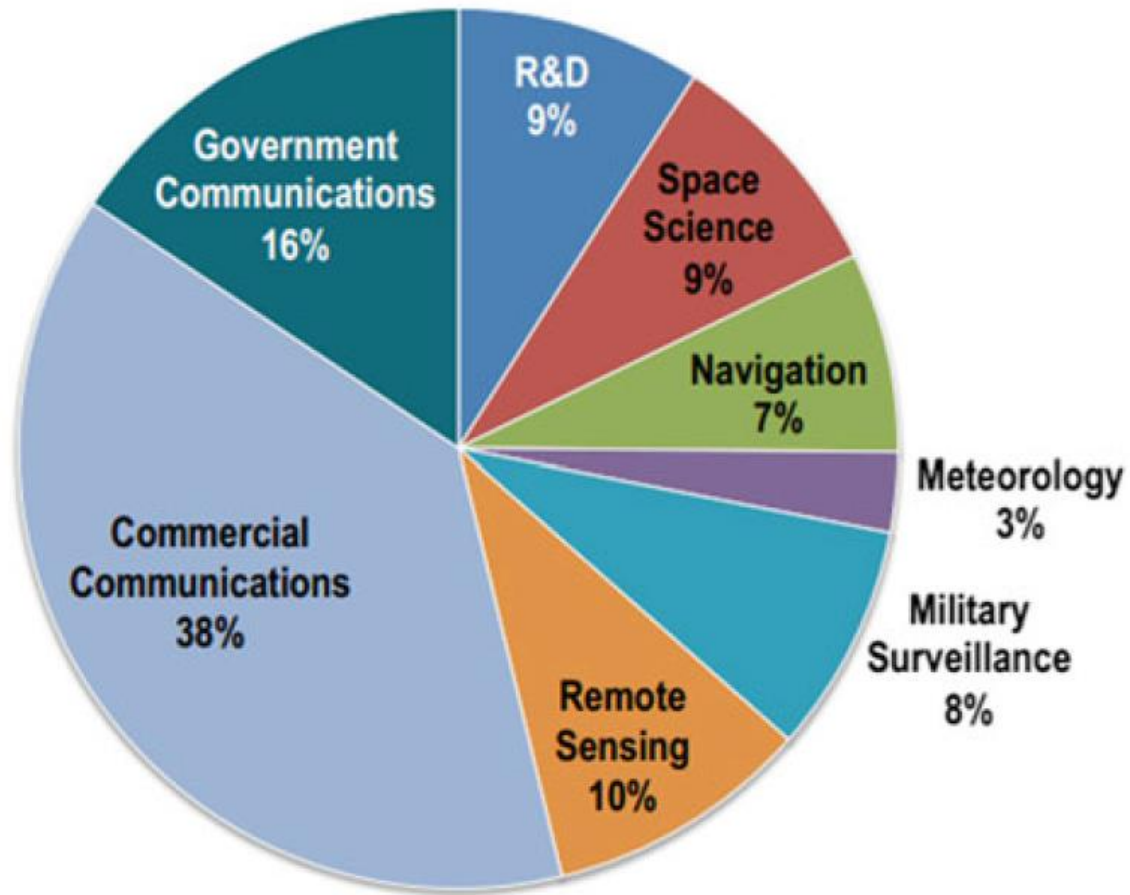
PET scan

Terrestrial gamma-ray flashes

Space Politics: The ITU

- We are currently surrounded by an abundance of radio waves and microwaves
- Radio waves are used for communication because they are typically not affected by atmospheric conditions
- Microwaves are also used for communication (cell phones)
- Many household wireless items use infrared (your phone camera can sometimes see the infrared light coming from the TV remote)
- Humans cannot see anything except the visible spectrum

Space Politics: The ITU



Division of operational satellites in Earth orbit (Allison, 2014, 6)

Space Politics: The Principle of Equal Access

- There are roughly 1200 active satellites in orbit
- Every satellite needs access to a frequency in the radio section of the EM spectrum
- At first frequencies were distributed on a first come first serve basis
- By the 1960s developing countries who were not yet using any parts of the radio spectrum though this was unfair as by the time they had satellites all useful frequencies would be taken
- In 1973 some of these developing countries proposed the Principle of Equal Access
- This idea was debated until the 1988 World Administrative Radio Conference established reserved locations in GSO for developing countries even if they were not yet using them.
- PHOTO: 1988 WARC Conference (itu.int)



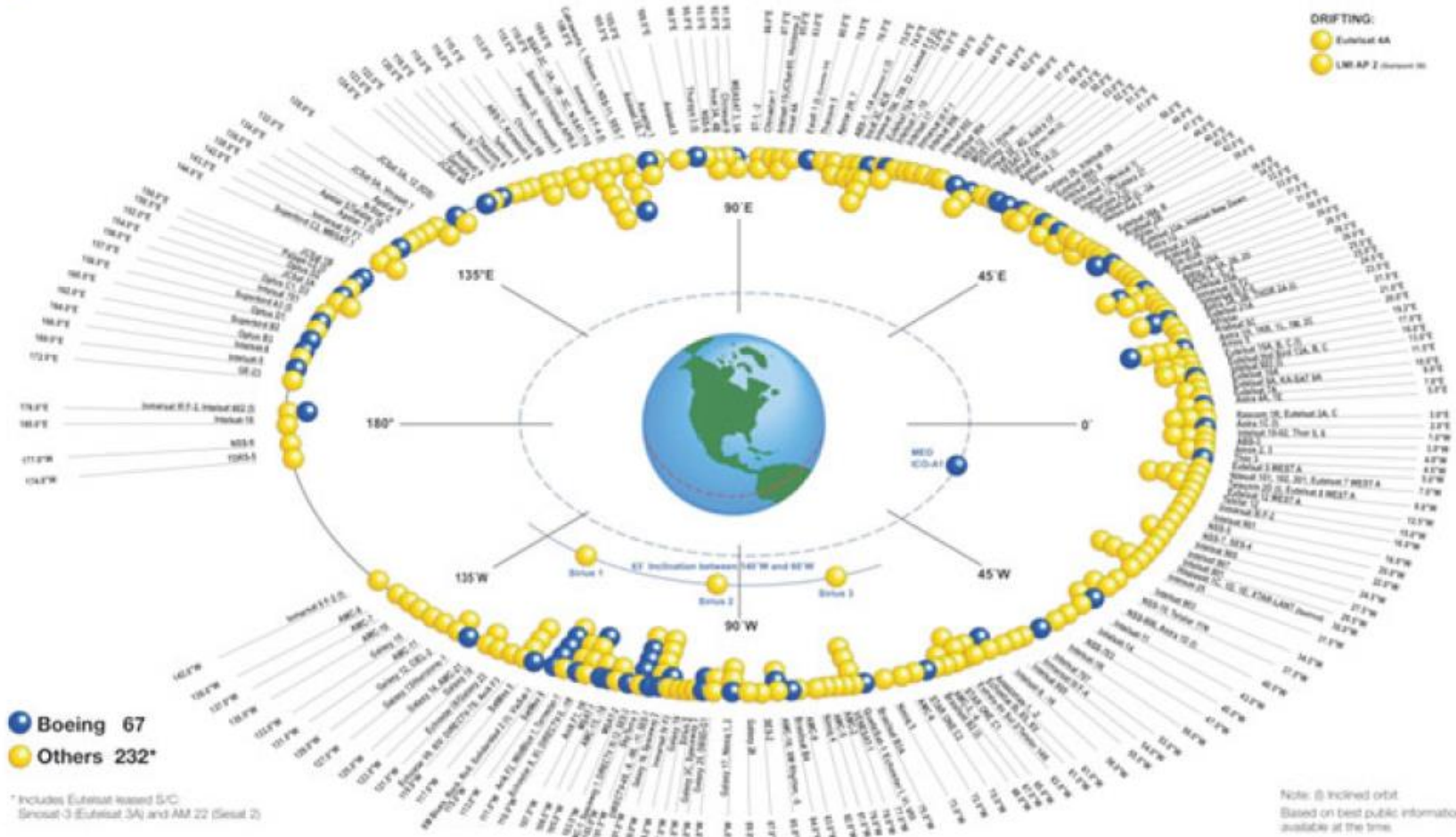
Space Politics: The Bogota Declaration

- In 1976 representatives from Colombia, Congo, Ecuador, Indonesia, Kenya, Uganda, and Zaire created presented the Bogota Declaration
- The declaration aimed to identify GSO Space as national territory of equatorial nations.
- The Bogota Declaration would require some reworking of the OST
- It was considered by the ITU but never adopted and is not recognized today as Space law.

Space Politics: The Bogota Declaration



Commercial Communications Satellites Geosynchronous Orbit



Space Politics: The 2015 U.S. Space Act

- In late 2015 the U.S. Congress passed the Commercial Space Act of 2015
- The law was designed to reduce barriers to investment in Space launch providers and other ventures by:
 - Providing government insurance for launch providers who experience failures
 - Extending the “learning period” for commercial human space flight development to reduce safety regulations and increase innovation and testing
- Critics have identified that in doing so it violates the 1967 OST because a separate clause allows for the “commercial exploitation” of Space resources by U.S. citizens.

Space Politics: The 2015 U.S. Space Act

