SAMPLE

Cosmic Explorers: Space Policy

Governing the Final Frontier

Aira Astralis

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Contents

Introduction

Chapter 01: The Discovery of Space Policy

Chapter 02: Understanding Space Policy

Chapter 03: Key Characteristics of Space Policy

Chapter 04: The Science Behind Space Policy

Chapter 05: Observation and Measurement of Space Policy

Chapter 06: Important Features of Space Policy

Chapter 07: Space Policy in Context

Chapter 08: Modern Understanding of Space Policy

Chapter 09: Research and Exploration of Space Policy

Chapter 10: Significant Discoveries About Space Policy

Chapter 11: Challenges and Mysteries of Space Policy

Chapter 12: Future Directions in Space Policy Research

Chapter 13: Trivia and Curiosities of Space Policy

Chapter 14: Conclusion: The Significance of Space Policy

Conclusion

This free sample contains the Introduction and Chapter 1. The complete book contains the full contents above.

Introduction

Space policy is the political decision-making process for, and application of, public policy of a state (or association of states) regarding spaceflight and uses of outer space, both for civilian (scientific and commercial) and military purposes. International treaties, such as the 1967 Outer Space Treaty, attempt to maximize the peaceful uses of space and restrict the militarization of space.

Space policy intersects with science policy, since national space programs often perform or fund research in space science, and also with defense policy, for applications such as spy satellites and anti-satellite weapons. It also encompasses government regulation of third-party activities such as commercial communications satellites and private spaceflight. Space policy also encompasses the creation and application of space law, and space advocacy organizations exist to support the cause of space exploration.

Space law is an area of the law that encompasses national and international law governing activities in outer space. There are currently six treaties that make up the body of international space law. The inception of the field of space law began with the launch of the world's first artificial satellite by the Soviet Union in October 1957. Named Sputnik 1, the satellite was launched as part of the International Geophysical Year.

Since that time, space law has evolved and assumed more importance as mankind has increasingly come to use and rely on space-based resources. International space law consists of six international treaties, five declarations and principles, and other United Nations (UN) General Assembly resolutions. The UN Office for Outer Space Affairs (UNOOSA) is primarily responsible for the implementation of international space law, and helps advise governments and non-governmental organizations on space law.

Early arms-control thinking reached toward orbit almost as soon as weapons did. The 1963 Partial Test Ban Treaty, for instance, bars nuclear detonations in the atmosphere, in space, and beneath the sea, and even forbids underground tests whose radioactive debris crosses the borders of the testing state. As knowledge of fallout grew, those prohibitions drew intense public attention, and outer space entered the vocabulary of diplomacy alongside the vocabulary of rocketry.

American institutions began planning before the space age did. By May 1946, a Pentagon-led study team had released a Preliminary Design for an Experimental World-Circling Spaceship, a first blueprint for a United States satellite, and the missile-testing range established at Cape Canaveral soon gave the country a place to fly its rockets. The chapters that follow trace how

those early decisions grew into today's web of directives, treaties, budgets, and bureaucracies.

Chapter 01: The Discovery of Space Policy

The treaty prohibits nuclear weapons tests or nuclear explosions in the atmosphere, in outer space, and under water. It also prohibits nuclear explosions underground if they cause "radioactive debris to be present outside the territorial limits of the State under whose jurisdiction or control" the explosions were conducted. With increased knowledge of the effects of nuclear fallout, the issue of nuclear tests and the resultant radioactive debris drew intensified public attention.

As the treaty does not outright ban nuclear tests underground, hundreds of such tests were conducted in the following decades. The Partial Test Ban Treaty is seen as the first step towards global nuclear disarmament. Continued efforts in this direction include increasing public awareness through events such as the International Day for the Total Elimination of Nuclear Weapons. The Outer Space Treaty was ratified on October 10, 1967.

The declaration has been signed by seven equatorial countries: Ecuador, Colombia, Congo, Zaire (in 1997 renamed to the Democratic Republic of the Congo), Uganda, Kenya, and Indonesia. These claims did not receive wider international support or recognition, and were subsequently largely abandoned. With the increase of private satellites and counter-space technologies since 2016, there have been calls for an update to the Outer Space Treaty. This topic, amongst others, was discussed in 2021 at the annual Outer Space Security Conference in Geneva, Switzerland.

The Rescue Agreement was ratified on December 3, 1968. The agreement's provisions elaborate on the rescue provisions set forth by the Outer Space Treaty. The agreement essentially requires that any state party to the agreement, upon becoming aware that the personnel of a spacecraft are in distress, must notify the launching authority and the Secretary General of the United Nations, and must provide all possible assistance to rescue the personnel of a spacecraft who have landed within that state's territory.

Moreover, if the distress occurs in an area that is beyond the territory of any nation, then any state party that is in a position to do so shall, if necessary, extend assistance in the search and rescue operation. At the time the agreement was drafted, rescuing travelers in space was unlikely, due to the limited launch capabilities of even the most advanced space programs. More recently, it has become more plausible.

The Rescue Agreement has been criticized for being vague, especially regarding the definition of who is entitled to be rescued and the definition of what constitutes a spacecraft and its component parts. With the recent

increase of commercial spaceflight providers, this distinction has become more relevant, raising questions as to whether space tourists are covered by the term "personnel of a spacecraft" used in the agreement. There have been calls to revisit these issues in international space law.

The Liability Convention was ratified on September 1, 1972. The treaty expands on the liability rules created in the Outer Space Treaty. Its provisions state that a state bears international responsibility for all space objects that are launched within their territory.

This means that regardless of who launches the space object, if it was launched from State A's territory, or from State A's facility, or if State A caused the launch to happen, then State A is fully liable for damages that result from that space object. In 1978, the crash of the nuclear-powered Soviet satellite Kosmos 954 in Canadian territory led to the only claim filed under the convention.

More recently, in July and October 2021, China's Tiangong space station, with three astronauts aboard, performed "evasive maneuver(s)" to avoid collision with SpaceX's Starlink satellites. The Liability Convention does not introduce legal penalties for leaving space debris in Earth's orbit. The Registration Convention was ratified on September 15, 1976. The convention's provisions require states to provide details such as date and location of launch, as well as basic orbital parameters to the United Nations for each space object.

The Moon Agreement was ratified on July 11, 1984. The agreement is a multilateral treaty that turns jurisdiction of all celestial bodies (including the orbits around such bodies) over to the participant countries. Thus, all activities would conform to international law, including the United Nations Charter. It has not been ratified by any state that engages in self-launched human spaceflight (e.g.

United States space policy is drafted by the Executive branch at the direction of the President of the United States, and submitted for approval and establishment of funding to the legislative process of the United States Congress. The President may also negotiate with other nations and sign space treaties on behalf of the US, according to his or her constitutional authority.

All treaties below except the Partial Test Ban Treaty were adopted by the UN General Assembly. The Partial Test Ban Treaty, being the first, was signed by the governments of the Soviet Union, the United Kingdom, and the United

States in Moscow on August 5, 1963, before it was opened for signature by other countries. The Partial Test Ban Treaty was entered into force on October 10, 1963.

Its terms bar nuclear test explosions in the atmosphere, in space, and beneath the seas.

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ABOUT THE AUTHOR

Aira Astralis is a science writer specializing in astronomy and space exploration. Her work spans the full breadth of humanity's relationship with the cosmos -- from the earliest naked-eye observations to the engineering marvels of modern space missions.

Her books are built on a foundation of primary sources: peer-reviewed research, mission archives, and direct engagement with the scientific community. She writes for readers who want to understand not just what we know about the universe, but how we came to know it.

She believes that the most important frontier is not out there but in the gap between what scientists discover and what the public understands. Her books exist to close that gap.