Forum: GA4 Special Political and Decolonization

Issue: International Cooperation in the Peaceful Uses of Outer Space

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Introduction

Humans have been exploring the study of objects in space – astronomy – since the prehistoric era. For several centuries, philosophers, mathematicians, and physicists looked up at the night sky and wondered what world is like outside of Earth's atmosphere. Although our fascination with astronomy has existed for long, it was only in the early 20th century with the development of liquid-fueled rocket engines that space exploration became a possibility.

In the early stages, space exploration was used as a proxy competition for rivalries such as the Cold War: the "Space Race" was sparked between the United States of America and the Soviet Union. October 4th, 1957, the Soviet Union launched the first artificial satellite, Sputnik 1, into orbit around the Earth. Later, on July 20th, 1969, American Neil Armstrong became the first man to walk on the moon.

One year after the successful launch of *Sputnik*, the United Nations (UN) General Assembly discussed the question of outer space for the first time. One year later, the UN established the Committee on the Peaceful Uses of Outer Space which took on the responsibility of monitoring outer space affairs and international cooperation.

The exploration of outer space opens up a world of opportunities. From satellite technologies that assist disaster management and prevention on Earth to the extraction of the virtually infinite supply of minerals on asteroids, the use of outer space can benefit humanity in unimaginably numerous ways. However, there are many risks associated with outer space affairs. The most significant risk is surprisingly not proposed by the environment of space but instead by ourselves. It is the possibility of conflict and war between nations in the process of exploiting outer space that is the largest threat to the use of outer space. Without peace and security in outer space, nations will not only fail to benefit from outer space but they may in fact be severely damaged by it.

For these reasons, it is crucial that the United Nations secures peace and international cooperation in the uses of outer space.

Definition of Key Terms

Outer space

The physical universe beyond the Earth's atmosphere

Space law

The body of rules, principles, and standards of international (and also national) regulations that govern outer space affairs. The term 'space law' often refers to the five international treaties and five principles established under the supervision of the United Nations

Space colonization

The permanent habitation of humans in outer space

Space mining

The exploitation of raw materials from asteroids and other minor planets

Space weapons

The weapons used in space warfare to attack space systems in orbit (e.g. artificial satellites)

Background Information

Outer space colonization

Outer space colonization refers to the permanent human habitation in outer space. In an era where natural resources of the Earth are being consumed at a near irreversible rate, several organizations and administrations are turning to space colonization. The National Aeronautics and Space Administration (NASA) suggests that if problems such as the "medical consequences of microgravity and increased level of radiation" can be addressed to protect humans outside of Earth's atmosphere, space colonization will be an effective solution to the current resource crisis. The mining of the moon and other minor planets will replenish the minerals that the Earth has been consuming rapidly. Along with the construction of beamed power satellites which could support or even replace the power plants on Earth. Colonists will be able to explore and take advantage of the vacuum, unlimited solar power and an abundant supply of raw materials. International agreements regarding space colonization must be clarified in order to monitor the space activities of states.

Space law

Space law is the term used to describe the body of law governing space-related activities. Similar to international law, space law includes many international treaties, agreements, conventions, rules and regulations of international organizations and resolutions passed by the United Nations. There are five major international treaties and five sets of regulations developed under the UN. Many nations that explore outer space abide by these treaties and agreements in addition to the regulations set by the national legislation that monitors space-related activities.

The space law is primarily interested in "the preservation of the space and Earth environment; the settlement of disputes; the rescue of astronauts; the liability for damages caused by space objects; the sharing of information about potential dangers in outer space; the use of space-related technologies; and international cooperation" (United Nations Office for Outer Space Affairs - UNOOSA).

The core of space law and all regulations set to guide the uses of outer space is that space is "the province of all humankind" (UNOOSA). Hence, all states deserve the freedom to explore and use outer space. In addition, the principle of non-appropriation of outer space is to be strictly protected.

Outer Space Treaty

Upon the consideration by the Legal Subcommittee and agreement in the General Assembly (resolution 2222), the Outer Space Treaty was established in 1966. The treaty consisted mostly of legal principles "governing state activities in the exploration and use of outer space" (UNOOSA). The treaty provides the foundation of international space law and discusses the following principles listed by UNOOSA:

- "the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind;
- outer space shall be free for exploration and use by all States;
- outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means;
- States shall not place nuclear weapons or other weapons of mass destruction in orbit or on celestial bodies or station them in outer space in any other manner;
- the Moon and other celestial bodies shall be used exclusively for peaceful purposes;
- astronauts shall be regarded as the envoys of mankind;
- States shall be responsible for national space activities whether carried out by governmental or non-governmental entities;

- States shall be liable for damage caused by their space objects; and
- States shall avoid harmful contamination of space and celestial bodies."

Resources in outer space

The mining of natural resources in outer space has only existed in sci-fi novels and our imagination for decades. However, the rapid advancements in technology have caused the rise of the industry of space mining in the past few years. According to Consumer News and Business Channel (CNBC), the minerals that lie in the asteroid belt between Mars and Jupiter hold mineral wealth of equivalent to approximately 100 billion US dollars for every individual on Earth. The lack of legal clarity, at an international and national level, is preventing the beginning of this significant industry: the ambiguity and the vagueness of space law and other international treaties must be clarified.

Space technology to prepare for future catastrophes

Climate change has caused increased natural disaster frequency. According to the United Nations International Strategy for Disaster Reduction, the number of natural disaster events in 2000-2005 surpassed that of the whole 1990s.The utilization of artificial satellites in outer space can allow states an effective early warning and prevention mechanism that can mitigate the damage and impact of such disasters. Weather patterns can be recorded through satellite technology and analyzed by meteorologists to accurately predict the likelihood of future catastrophes including tsunamis, earthquakes, and hurricanes: this is an example of how the use of outer space can bring immediate benefits to life on Earth. Developing nations, in particular, have emphasized how significant a role space-information can play in reducing devastating consequences. Previously, most of these nations did not have access to such valuable information and turned to the United Nations to promote and strengthen the international communication and transmission of space-information for disaster management. The United Nations General Assembly agreed on the 14th December 2006 to establish the "United Nations Platform for Space-based Information for Disaster Management and Emergency Response" (UN-SPIDER). The UN-SPIDER program aims to become the gateway to space information for disaster management support for all states – but in particular the developing nations. Their mission statement is as follows: "Ensure that all countries and international and regional organizations have access to and develop the capacity to use all types of space-based information to support the full disaster management cycle."

International Space Station (ISS)

The International Space Station is a collaborative project that five space agencies across the globe participated in. These five agencies are the National Aeronautics and Space Administration (NASA), Roscosmos, Japanese Aerospace Exploration Agency (JAXA), European Space Agency (ESA), and Canadian Space Agency (CSA). The ISS – which was launched on 20th November 1998 – serves as a research laboratory where crew members conduct experiments in biology, physics, astronomy, meteorology and other fields in a microgravity environment. The ISS has come to symbolize international cooperation in the exploration and study of outer space. Dumitru Prunariu, a representative of the Romanian space agency, referred to the International Space Stations as “the brightest example of long and fruitful cooperation by space agencies.”

Involvement of the United Nations

1958, one year after the launch of the first satellite *Sputnik*, the United Nation General Assembly discussed the issue of outer space for the first time. Two items were proposed to be included in the agenda for this first meeting. The first was proposed by the USSR regarding "the Banning of the Use of Cosmic Space for Military Purposes, the Elimination of Foreign Bases on the Territories of Other Countries, and International Cooperation on the Study of Cosmic Space." The second item was proposed by the United States of America regarding the issue of "Program for International Cooperation in the Field of Outer Space.”

While the USSR prioritized the ban on armaments in space with hopes of dismantling of overseas US military bases, the USA dismissed this issue altogether and emphasized the focus of ensuring the use of outer space in a peaceful manner. After debate and negations, the General Assembly established a 24-nation committee on the Peaceful Uses of Outer Space (UNCOPUOS). The membership was expanded to 53 states in 1980 and in 2002 to 64 states. The committee divided itself to two subcommittees: the Scientific and Technical Subcommittee (STSC) and the Legal Subcommittee (LSC).

The Scientific and Technical Subcommittee (STSC) convenes annually for two weeks to discuss the scientific and technical aspects of space activities. Topics of discussion involves “space weather, near-Earth objects, the use of space technology for socioeconomic development, or for disaster management support, global navigation satellite systems, and the long-term sustainability of outer space activities” (UNOOSA).

The Legal Subcommittee (LSC) convenes annually for two weeks to discuss the legal questions related to the exploration and use of outer space. Topics of discussion include the “status and application

of the five United Nations treaties on outer space, the definition and delimitation of outer space, national space legislation, legal mechanisms relating to space debris mitigation, and international mechanisms for cooperation in the peaceful exploration and use of outer space" (UNOOSA). Both subcommittees publish the agenda, papers, and final reports every year on the UNOOSA website.

Major Countries and Organizations Involved

Russia

Despite the difficulties that the Russian Federal Space Agency went through due to the economic downfall after the collapse of the Soviet Union in 1991, the agency has recovered and currently stands as one of the most prospering and developing projects. Roscosmos, the state corporation of Russia, was established to monitor and implement "a comprehensive reform of the Russian space industry" (Roscosmos). Roscosmos facilitates the implementation of the Russian government's space program and its legal regulation. Roscosmos is also relied on for international space cooperation.

Canada

The Canadian Space Agency (CSA) is an independent federal space agency of Canada that is responsible for managing all of Canada's space-related activities. Their mission statement is to "advance the knowledge of space through science and use its discoveries for the good of Canadians and all of humanity" (ASC-CSA). Established in 1989, the CSA has actively engaged in conferences and debates to promote peaceful cooperation in outer space. CSA is also one of the five agencies that were involved in the International Space Station project.

United States of America

The National Aeronautics and Space Administration (NASA) is the space program of the United States of America. It is one of the most famous organizations due to its advanced technology and leadership in the innovation of various space activities and exploration. NASA's accomplishments are innumerable: starting with landing the first man on the moon to the Pioneer, Voyager, and Spitzer missions. In addition to NASA, however, the US has several other organizations and groups that monitor the legal regulations and facilitate international cooperation in space.

India

Established in 1969, the Indian Space Research Organization (ISRO) has risen as one of the most developed space agencies in the world. ISRO constructed India's first satellite, Aryabhata, which was launched on April 19th, 1975. The founder of ISRO, Dr. Vikaram Sarabhai, claimed that the aim of

ISRO is not to compete against economically developed countries and their space programs but to inspire the youth of India. On November 5th, 2013, ISRO launched the Mars Orbiter Mission (MOM) – also known as 'Mangalayaan' – which successfully entered Mars' orbit on September 24th, 2014. This accomplishment made India the first country to enter Mars orbit in the first attempt.

China

China's national space program is the China National Space Administration (CNSA). CNSA is responsible of verifying governmental agreements in space and enforcing national space policies. In addition, CNSA aims to develop national space science, technology and industry. In 2007, China was criticized for their test of medium-range ground-based missiles to destroy an old weather satellite. Nevertheless, China is committed to adhere to the Outer Space Treaty and the peaceful use of outer space.

Japan

On October 1st, 2003, Japanese Aerospace Exploration Agency (JAXA) was established as a combination of three pre-existing Japanese space agencies. Their rapid development in technology has allowed them to launch multiple artificial satellites outside of Earth's atmosphere. Some operations JAXA successfully completed include Infrared imaging satellite, X-ray astronomy satellite, and Aurora observation satellites.

European Union

In 1975, the European Space Agency (ESA) was established as an intergovernmental organization responsible for creating a "unified space and related industrial policy" (ESA). ESA also aims to integrate national programs of European states into the European program.

Timeline of Events

Date	Description of event
October 4th, 1957	Successful launch of the first artificial Earth satellite *Sputnik* by the Soviet Union
July 29th, 1958	National Aeronautics and Space Administration (NASA) program established

April 12th, 1961	First human to travel into space (Yuri Gagarin)
December 12th, 1967	Establishment of the United Nations Committee on the Peaceful use of Outer Space
January 27th, 1967	Outer Space Treaty
July 20th, 1969	First human to step on the moon (Neil Armstrong)
December 18th, 1979	Moon Treaty
November 20th, 1998	International Space Station (ISS) Launch
December 21st, 2015	Successful landing of first reusable rocket – Falcon 9 (Space X)

Relevant UN Treaties and Events

- Establishment of the United Nations Committee on the Peaceful use of Outer Space, 12 December 1959
- Outer Space Treaty, 27 January 1967
- Anti-Ballistic Missile Treaty, 30 May 1972
- The Moon Treaty, 18 December 1979
- Establishment of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), 14 December 2006

Previous Attempts to solve the Issue

The most significant attempt to made to progress towards international cooperation in the peaceful use of outer space is the creation of the Outer Space Treaty. The treaty effectively established the foundation for international collaboration and cooperation in space exploration and various other space activities. Signed by more than 100 parties, it is certainly the most accepted treaty of those regarding outer space affairs. However, the treaty's vagueness renders it ineffective.

Another attempt that the United Nations made to promote international cooperation is the creation of offices and committees that promote continuous communication and collaboration between states. These include the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) and the

United Nations Office for Outer Space Affairs (UNOOSA). The resolutions and reports that have resulted from the collaboration between states have shown some progress in clarifying the vagueness involved in the Outer Space Treaty.

Advanced space agencies such as NASA, CSA, JAXA, and ESA are constantly collaborating through joint projects and exchange programs. Such international programs allow for larger scale space projects and missions which would not be possible with the budget of one space agency. More importantly, however, peaceful collaboration between states fosters positive relationships between nations and promotes constructive competition, advancing our space-technology.

Last but not least, the establishment of UN-SPIDER is a major step that the UN took in the progression towards peaceful cooperation in the use of outer space. The benefits of space technology have been made more accessible to developing nations that are prone to detrimental damages by natural disasters such as hurricanes and earthquakes.

Possible Solutions

To further promote international cooperation in the peaceful uses of outer space, the United Nations must continue updating the Outer Space Treaty with respect to recent developments. Although the treaty has been revised and discussed for clarity on an annual basis, the process has been slow relative to the rapid advances in new technology and legal developments. Currently, there are only five major United Nations treaties on outer space. It is essential, therefore, that the Outer Space Treaty is supplemented with new treaties and regulations to more clearly guide various space-activities.

Joint projects and exchange programs are abundant between large, developed space agencies such as NASA and CSA. However, nations with developing space programs rarely get the opportunity to collaborate or develop in tandem with large space agencies. One possible solution to foster peaceful cooperation in the uses of outer space is to establish a mentor-mentee program in which renowned, developed space agencies conduct workshops or joint projects with less-developed space agencies. Establishing peaceful conversation and collaboration in such ways will not only benefit the small space agencies that will develop with the assistance from experienced veterans but also will benefit the larger space agencies that are increasingly faced with tight budgets for large space missions.

Another essential solution that may resolve the issue of the distribution of space-resources is to collect more ratifications for The Moon Agreement. The Moon Agreement states that the exploitation of the natural resources on the moon (and other celestial bodies) are a “common heritage of mankind” and thus an international regime must be established to govern the extracted resources when it becomes

accessible. Establishing clearer guidelines of how to distribute the product of space mining could be instrumental in collecting the ratifications to make the agreement effective. Suggesting that the distribution of the extracted resources vary depending on the state or agency's contribution to the process could potentially convince more states to be in favor of the agreement. The establishment of other agreements and treaties to further specify the details of cooperation in outer space can only help the progression towards peaceful cooperation.

Strengthening the communication between states regarding space technology and legal questions of outer space affairs is another responsibility of the United Nations. One approach to foster constructive collaboration and discussion is to establish United Nations programs that are similar to UN-SPIDER in which nations with developed space programs can assist nations with developing space programs. The continuation of conversation regarding space affairs is instrumental for nations to share common beliefs regarding the uses of outer space. There are various approaches to encourage conversation and discussion between nations.

Additionally, the United Nation must strengthen the international law to monitor any potential breaches to the Outer Space Treaty. In particular, the United Nations must ensure that no nation is working on the creation of space weapons used for mass destruction in orbit or on celestial bodies. Although reportage of such case is yet to be heard, it is of paramount importance that the United Nations prevent the militarization of space which may escalate international conflicts at a destructive rate. The method of monitoring nations and space agencies can take various forms.

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