Forum: General Assembly (GA)

Question of: Addressing the Militarization of Space

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Introduction

The militarization of space is a prominent problem within the world that must be addressed. Military technology created specifically for use in space has been continuously developed by countries such as the United States of America, Russia, and others who seek to find a competitive advantage in the colonization of space. Through the 2018 National Space Strategy, the United States officially recognized space as a warfighting domain that its adversaries had created[1]. The implications of this decision is extremely severe, especially considering humanity's extremely limited understanding of space as a whole. In order to strengthen the bonds of unity holding the international community together and to collaborate within space for a better future, the militarization of space is an issue that must be addressed.

When considering the rapid militarization of nations and the consequences that these occurrences can hold, an arms race between countries should be considered. As defined by Merriam-Webster dictionary, an arms race is “a race between hostile nations to accumulate or develop weapons”[2] .Common reasons cited to motivate an arms race may be to gain military or political superiority over one another. A recent relevant example of an arms race is the Cold War, occurring between the United States of America and the Soviet Union, which was extremely costly to both nations[3]. Other examples of an arms race is the India-Pakistan arms race, Israel-Arab states arm race and the Greece-Turkey arms race[4]. These arms races each had a significant toll on both the relationships and were extremely costly for nations, an aspect that must be considered when addressing the militarization of space.

Concerning the militarization of space, the launch of the Sputnik satellite by the Soviet Union on October 4, 1957 may be cited as the starting point of this conflict. The launch of the satellite stunned the international community, igniting a sense of uncertainty around the world. The U.S was concerned about

[1] Logsdon, J. M.. "space exploration." Encyclopedia Britannica, July 15, 2022. https://www.britannica.com/science/space-exploration.

[2] Merriam-Webster.com Dictionary, s.v. “arms race,” accessed July 25, 2022, https://www.merriam-webster.com/dictionary/arms%20race.

[3] Britannica, T. Editors of Encyclopedia. "Cold War." Encyclopedia Britannica, March 1, 2022. https://www.britannica.com/event/Cold-War.

[4]Britannica, T. Editors of Encyclopedia. "Greco-Turkish wars." Encyclopedia Britannica, December 5, 2016. https://www.britannica.com/event/Greco-Turkish-wars.

the technological advances that the Soviet Union was making, and in retaliation they chose to invest more into their space program, aiding in the development of military technology as a whole.

More lately, an increasing number of nations have turned to space for military purposes. In March 2019, India tested anti-satellite weaponry, and in April 2019, Iran launched its first military satellite[5]. The Chinese PLA developed the Strategic Support Force, which manages the disciplines of space, cyber, and electromagnetic spectrum, as part of its reform in 2015. During that same year, Russia also established a separate Space Force. In response to these events, the U.S. founded the Space Force in December 2018 and France established the Space Command in September 2019. The rapid militarization of space is a concern for nations around the world, due to the crucial information and advantages that satellites may provide to nations in the context of war. Space is no longer an unexplored abyss, but a competitive advantage that nations can utilize.

The emergence of space as a battlefield in the post-Cold War era was sparked by a test of anti-satellite weapons (ASAT) conducted by China in January 2007[6]. In order to prepare for an anticipated contingency in the Taiwan Strait, China had to develop asymmetric capabilities in cyberspace and space. This test generated a lot of space debris and drew harsh criticism from throughout the world. Despite the fact that the Cold War saw the military employ space for decades, neither the United States nor the Soviet Union conducted these types of testing since reckless physical attacks may have a severe impact on all space operations. However, China, when conducting its tests, stepped into this sacred “sanctuary,” forcing the United States to recognize its vulnerabilities within space.

The space race may have unfavorable externalities, like space debris, in addition to sparking a scientific space race. The materialistic waste that is launched into the atmosphere or left in space comes from Earth. The term "debris" can apply to both huge items, such failed or abandoned satellites, as well as tiny objects, like stray pieces of debris or paint specks that have fallen off a spacecraft. As a result of activities taken to send nuclear and environmental garbage into space in order to prevent any natural disasters, space debris has greatly increased over the previous few decades. These types of debris have already had negative impacts to the travel in the Low Earth Orbit (LEO)[7], the creation of more space debris through the militarization of space may have detrimental effects upon the environment as a whole. Space debris can also be caused from the use of ASAT weapons and the destruction of satellites within orbit, and the creation of these types of debris may have significant consequences. There are a large

[5] HARRISON, TODD, KAITLYN JOHNSON, THOMAS G. ROBERTS, and C. ROBERT KEHLER. “IRAN.” SPACE THREAT ASSESSMENT 2018. Center for Strategic and International Studies (CSIS), 2018. http://www.jstor.org/stable/resrep22469.8.n

[6] Gottfried, Kurt, and Richard Ned Lebow. “Anti-Satellite Weapons: Weighing the Risks.” Daedalus 114, no. 2 (1985): 147–70. http://www.jstor.org/stable/20024983.

[7] Chen, Shenyan. “The Space Debris Problem.” Asian Perspective 35, no. 4 (2011): 537–58. http://www.jstor.org/stable/42704771.

number of potential negative effects from the creation of space debris from things as small as the inability to difficulties in both the launch and communication of satellites to the potential that the earth's orbit may even become impassable[8]. The dangers of the militarization of space lie within the space debris created by different actions such as but not limited to the destruction of satellites through the use of ASAT weapons.

Through the militarization of space there are also many concerns that may arise. Any satellites deployed in a region of space that is dominated by a single nation may cause fear and distrust for other nations that impose a certain advantage over them. With this control over space, nations might potentially discover precise quantities and information about nuclear weapons and other militaristic control in many nations, violating national sovereignty and privacy. The militarization of space may also prove to hold a variety of different negative effects for countries economically. The focus of resources upon extensive military expenditures are most likely to be faced by economic consequences, as seen in the case of the Soviet Union. A large portion of the economic difficulties in which the Soviet Union faced were exacerbated by the nation's unreasonable investment in the development of military technology, as these investments diminished potential opportunities of growth in infrastructure, job-opportunities and development of other sectors of the economy[9]. While there are potential opportunities of growth present within the militarization of space and focus on the development of weaponry (such as the development of military technology and researching facilities), as a whole the arms race caused by militarization proves to be detrimental to countries growth and development.

While the drafting of a resolution in which fully addresses and resolves the militarization of space is an extremely difficult task, drafting a comprehensive resolution in which member states can collaborate and work towards finding unity is of utmost importance.

Definition of Key Terms

Outer Space

The "space immediately outside the earth's atmosphere"[10] is referred to as outer space. By achieving spaceflight, humanity was able to explore the solar system and the rest of the cosmos, comprehend the numerous objects and phenomena that are more easily viewed from space, and take advantage of the resources and characteristics of the space environment for their own profit. Humanity has gained a deeper understanding of the universe over the past century thanks to advances in space

8 Gregersen, E.. "space debris." Encyclopedia Britannica, January 31, 2022. https://www.britannica.com/technology/space-debris.

9 Huntington, Samuel P. “The Clash of Civilizations?” *Foreign Affairs*, vol. 72, no. 3, 1993, pp. 22–49. *JSTOR*, https://doi.org/10.2307/20045621. Accessed 29 Jul. 2022.

10 Merriam-Webster.com Dictionary, s.v. “outer space,” accessed July 29, 2022, https://www.merriam-webster.com/dictionary/outer%20space.

technology and machinery; however, this vast expanse has also been negatively impacted by space exploration, including increased competition among different countries and a possible militarization of space. Humanity began the exploration of outer space in around the 20th century through the use of high-altitude balloon flights, but now technology has been advanced to the level of rockets and other varieties of aircrafts. Through the 1967 Outer Space treaty, the stationing of mass destruction weaponry has been prohibited[11]. These types of regulations regarding outer space are an important aspect to consider when addressing the militarization of space.

Militarization of Outer Space

The militarization of space refers to the use of space for military purposes by means of space-based operations and technologies[12]. There is general agreement that humankind should utilize space for beneficial purposes. However, other countries, like the United States, desire to militarize space in order to dominate yet another military domain and demonstrate their national prowess. The U.S. continuously contributes to the further study of space, demonstrating their proficiency in technological advancement to the rest of the world. The militarization of space is thought to be started through the launch of the Sputnik Satellite in 1957, marking the beginning and the realization of the importance that space may play within the context of military conflict. A potential application of space militarization currently within use is the global positioning system, or GPS. A satellite navigation system determining one's specific location through the use of space communication technologies, the GPS is a prime example of an extremely applicable piece of technology that has made significant impacts already. The effectiveness of the GPS system shows the dangers that space militarization may possess, not just in regards to weaponry but the use of information technology within combat situations. Another potential application may be through the use of military communication systems or military space planes, with the first being an extremely important device within the time of network centric warfare and the latter being an effective form of travel that may be able to be disguised from radars.

Weaponization of Outer Space

The weaponization of space, in contrast to the militarization of space, refers to the placement of actual weapons in space, such as chemical lasers, particle beams, and military spacecraft, which may cause harm to spacecraft[13]. Similar to the concept of militarization, the weaponization of space would only increase animosity between countries who are already at odds with one another and possibly lead to

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[11] Rajagopalan, Rajeswari Pillai. "The Outer Space Treaty: Overcoming Space Security Governance Challenges." Council on Foreign Relations, 2021. http://www.jstor.org/stable/resrep29986.

[12] Rosas, Allan. "The Militarization of Space and International Law." Journal of Peace Research 20, no. 4 (1983): 357–64. http://www.jstor.org/stable/424169.

[13] Chow, Brian G. "Space Arms Control: A Hybrid Approach." *Strategic Studies Quarterly* 12, no. 2 (2018): 107–32. http://www.jstor.org/stable/26430818.

conflict, which would not help to maintain peace between international organizations. This proves to be detrimental towards the overall success of the world, as demonstrated by many instances of the militarization of space. One example of this weaponry are intercontinental ballistic missiles (ICBM), weapons which suborbital space flight and then re-enter Earth's atmosphere. These types of weaponry allowed countries to extend the range and power of nuclear missiles by utilizing the ICBMs to carry payloads (nuclear warheads) to then release these missiles upon target locations. Other examples of weapons within outerspace include High-Altitude Electromagnetic Pulses (HEMP), first tested during the Starfish Prime test of 1962[14]. Contrasting to the commonly-used electromagnetic pulse (EMP), these electromagnetic pulses are created at an extremely high altitude. An EMP with a radius of 2200km, which is larger than that of the entire continent of the United States, can be created through nuclear weapons detonated at 400km[15].

Arms Race

A "pattern of competitive acquisition of military capability between two or more countries"[16] is referred to as an arms race. In other words, it's a race between countries to build up their military strength in order to outperform the competition. Increased enmity between nations and the inefficient use of public resources and cash, which significantly contribute to national debt, are two negative effects of arms races. The focus of resources upon extensive military expenditures are most likely to be faced by economic consequences, as seen in the case of the Soviet Union. A large portion of the economic difficulties in which the Soviet Union faced were exacerbated by the nation's unreasonable investment in the development of military technology, as these investments diminished potential opportunities of growth in infrastructure, job-opportunities and development of other sectors of the economy. While there are potential opportunities of growth present within the arms race (such as the development of military technology and researching facilities), as a whole participation within the arms race proves to be detrimental to countries growth and development.

Military Satellite

An artificial satellite utilized for military functions such as "communication, navigation, geodesy, nuclear test detection, surveillance, and research and technology"[17] is referred to as a military satellite. This is an illustration of the militarization of space, and a potential means to discover sensitive military

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[14] Maucione, Scott. "Rep. Franks: A Step Forward for EMP Defense: Lawmaker Praises DOD's New Anti-EMP Policy For Weapon Systems." *Inside the Navy* 27, no. 35 (2014): 10–10. http://www.jstor.org/stable/24851513.

[15] Sprenger, Sebastian. "'It Could Send Us Back a Century in Time': SEN. KYL VOWS TO REDIRECT CONGRESSIONAL ATTENTION TO EMP THREAT." Inside Missile Defense 11, no. 6 (2005): 1–7. http://www.jstor.org/stable/24784769.

[16] Perlo-Freeman, S.. "arms race." Encyclopedia Britannica, March 8, 2022. https://www.britannica.com/topic/arms-race.

[17]

information through the use of these satellites. There are a variety of different types of military satellites such as military reconnaissance satellites, navigation satellites, and military communication satellites, each of which operate to serve a different purpose. In the context of reconnaissance satellites, the first satellite is thought to have been developed in the mid 1950s, where satellites were injected with photographic film in order to collect information after the satellite descended back to Earth. As technology developed, the system in which these satellites utilized was changed to a digital imaging system, where the images collected by the satellites could be downloaded from Earth via encrypted radio channels.

Anti-Satellite Weapons (ASAT)

Anti-Satellite Weapons are weapons which are able to destroy satellites for strategic purposes. While ASAT systems have not yet been utilized in warfare, many countries possess these systems such as China, the United States, and India. There have been multiple successful demonstrations from countries such as the United States shooting down their own satellites with ASAT systems. Initial developments within ASAT technology was started by the U.S and the Soviet Union in the 1950s through the use of ground-launched missiles. However, in the current day there are a variety of different types of ASAT weapons including that launched by Russia just last year, called a direct ascent kinetic anti-satellite weapon. Usually launched from the ground or from a flying aircraft, these types of ASAT weapons target satellites by crashing into them at high speeds.

Space Technology

Space technology is always evolving and is defined as the "application of science and engineering to the exploration and usage of outer space."[18] Despite all of the drawbacks of space travel, it is feasible to employ space technology for good, such as discovering other planets that may harbor life and improving conditions on Earth. The committee's agenda advocates for both space exploration and peace in space. Therefore, it should be a goal to advance peaceful space exploration through the development of new space technology.

Space Debris

Defined as the “defunct human-made objects in space—principally in Earth orbit—which no longer serve a useful function”[19], space debris are pieces of objects that may prove to be detrimental to space travel and space exploration as a whole. Some examples of space debris include dead spacecraft,

[18] Merriam-Webster.com Dictionary, s.v. “technology,” accessed August 1, 2022, https://www.merriam-webster.com/dictionary/technology.

[19] Chen, Shenyan. “The Space Debris Problem.” *Asian Perspective* 35, no. 4 (2011): 537–58. http://www.jstor.org/stable/42704771.

lost equipment, boosters and weapons. There are a large number of potential negative effects from the creation of space debris from things as small as the inability to difficulties in both the launch and communication of satellites to the potential that the earth's orbit may even become impassable. The dangers of the militarization of space lie within the space debris created by different actions such as but not limited to the destruction of satellites through the use of ASAT weapons.

Timeline of Key Events

October 4, 1957 - Sputnik Launched

The Soviet Union launched Sputnik, the first man-made satellite, in 1957 [20]. This led to tensions between the U.S. and the Soviet Union at the time. The U.S. was worried about the Soviet satellite, which was much more advanced than the satellite it planned to launch on its own. The space race was ultimately started by the United States' efforts to catch up to what the Soviet Union had accomplished. In the greater scheme of things, the first man-made satellite brought about a number of advantages by enabling humankind to explore more of space. The Sputnik was a metal sphere with four external radio antennas to help communication with Earth. The satellite's unexpected successes sparked the start of the Cold War, as the U.S. was extremely surprised by the Soviet Union's unprecedented technological advancements. The Sputnik was developed under Soviet rocket scientist Sergei Korolev, and was extremely successful. The Sputnik was able to reach 940km away from Earth and circle the atmosphere for around 6 months. The first launch of the Sputnik was revolutionary, and paved the way for the launches of other satellites such as the Sputnik 2 in later years.

1958 - Establishment of the Committee on Space Research (COSPAR)

In order to efficiently conduct and compile research about space, as well as to give scientists a venue to debate any potential issues that may hamper their work, COSPAR was established in 1958. The committee plans meetings for the presentation of fresh research, engages the general public in research discussions, provides guidance to the UN and other organizations about space research. The committee was established “after the USSR launched its first Earth Satellite in 1957 and thereby opened the space age”[21], where the International Council of Scientific Unions (ICSU), now the International Science Council (ISC) established COSPAR during a meeting in London. The committee focuses on organizing simposium’s and similar scientific exhibitions, organizing the first Space Science Symposium in January

[20] “Sputnik.” *Science* 126, no. 3277 (1957): 739–40. http://www.jstor.org/stable/1754428.

[21] Technical Panel on the Earth Satellite Program, U.S. National Committee for the IGY, National Academy of Sciences. “Research in Outer Space.” *Science* 127, no. 3302 (1958): 793–802. http://www.jstor.org/stable/1756220.

1960. This committee's founding is significant since it fosters international cooperation for space exploration and research.

December 20, 1961 - Creation of General Assembly Resolution 1721

This resolution was created by the General Assembly in 1961 and focused on methods to maintain peaceful uses of space. It emphasized the fact that international law on Earth also extended to activities in space and urged the Committee on the Peaceful Uses of Outer Space (COPUOS) to monitor legal developments and maintain constant touch with governmental and non-governmental organizations involved in space exploration. The resolution had a significant influence since it provided information that was not publicly available before it was written, such as numerous strategies for maintaining peaceful uses of space.

October 10, 1967 - The International Space Law Drafted

Today, everyone, whether a government or organization, is expected to follow the laws and regulations of international space law when within space. Five international treaties with five sets of guiding concepts outline these laws governing space. It outlines rules including how space activities should benefit all countries and how no one entity can "control" a region of space. One of these treaties is the Outer Space Treaty. It explains that the use of space should be in the best interests of all nations, that it should be open to exploration, that it cannot be claimed by any country, that nuclear weapons are prohibited in space, etc. The pact does, however, still have certain flaws. For instance, it only forbids governments from claiming space, not any organization, and only limits the weaponization of space if it involves nuclear weapons. The core principles of the outer space treaty[22] are “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.”.

July 15, 1975 - Apollo-Soyuz Test Project (ASTP)

[22] Rajagopalan, Rajeswari Pillai. “The Outer Space Treaty: Overcoming Space Security Governance Challenges.” Council on Foreign Relations, 2021. http://www.jstor.org/stable/resrep29986.

The Apollo-Soyuz Test Project, which took place in 1975, was unequivocal evidence of efforts to repair relations between the two nations after the Soviet Union and the United States' prior achievements during the space race had sparked unfavorable feelings during the Cold War. A US Apollo spacecraft and a Soviet Soyuz spacecraft docked together in space for the first time during the ASTP mission, which was coordinated by the Soviet Union and the United States. This mission had great significance since it brought together two countries that had previously competed with one another in space exploration and set the way for future international collaborations[23]. Thomas P. Stafford, Vance D. Brand, and Deke Slayton, three American astronauts, and Alexei Leonov and Valeri Kubasov, two Soviet cosmonauts, carried out both group and individual scientific experiments, including a planned eclipse of the Sun by the Apollo module to enable equipment on the Soyuz to take pictures of the solar corona. For later joint American-Russian space missions, like the Shuttle-Mir program and the International Space Station, the pre-flight work gave engineers valuable expertise.

December 18, 1979 - Creation and ratification of the Moon Treaty

A resolution adopted by the General Assembly in 1979 that specifically called for expanding the scope of the Outer Space Treaty to include celestial planets like the moon gave rise to the Moon Treaty. During that time, it was agreed to secure the United Nations to keep an eye on these conditions, and all nations were compelled to disclose the purpose and location of any international space stations[24]. Additionally, it was decided at this treaty that all of the involved planets should be examined and researched peacefully. The specific details of the moon treaty are as follows[25]: “Bans any military use of celestial bodies, including weapon testing, nuclear weapons in orbit, or military bases; The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited;Provides a framework of laws to establish an international cooperation regime, including appropriate procedures, to govern the responsible exploitation of natural resources of the Moon; Bans altering the environmental balance of celestial bodies and requires that states take measures to prevent accidental contamination of the environments of celestial bodies, including Earth; The orderly and safe use of the natural lunar resources with an equitable sharing by all state parties in the benefits derived from those resources; The placement of personnel or equipment on or below the surface shall not create a right of ownership; There shall be freedom of scientific research and exploration and use on the Moon by any party without discrimination of any kind; Samples obtained during research activities, are hoped to be made available to all countries and scientific communities for research.”

[23] Ross-Nazzal, Jennifer. “Détente on Earth and in Space: The Apollo-Soyuz Test Project.” *OAH Magazine of History* 24, no. 3 (2010): 29–34. http://www.jstor.org/stable/25701419.

[24] Christol, Carl Q. “The Moon Treaty Enters into Force.” *The American Journal of International Law* 79, no. 1 (1985): 163–68. https://doi.org/10.2307/2202679.

[25] Christol, Carl Q. “The Moon Treaty Enters into Force.” *The American Journal of International Law* 79, no. 1 (1985): 163–68. https://doi.org/10.2307/2202679.

January 13, 2011 - Publishing of General Assembly Resolution A/RES/65/68

The resolution demanded increased openness and confidence in all space activities. It urged participating countries to keep working to maintain space peace and avoid an arms race. It was also the first organization to enact a GGEUnited Nations Group of Governmental Experts on Space.

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Position of Key Member Nations and Other Bodies

Russian Federation

In the 1900s, Russia participated in the Cold War as the Soviet Union and made significant contributions to advancing space exploration. The first man-made satellite, Sputnik, was launched by the USSR, demonstrating the advancement of space technologies from an early age.

The nation now contributes to efforts to explore uses for space. For instance, Russia is now working on a satellite for monitoring space debris, which will eventually make space exploration safer. Russia deploys satellites to monitor a variety of things, including natural resources, emergencies, and climate change, through its space agency Roscosmos State Corporation for Space Activities. On the subject of Russia's efforts to militarize space, the country has shown constant and recent interest in the development of space technologies[26]. Russia was recently faced with much controversy after the launch of an ASAT system destroying one of its satellites at an altitude above 300 miles of Earth's surface on November 15th, 2021. There have been 1500 pieces of space debris identified that may be fatal to other countries launch of satellites, pre-existing satellites and even the International Space Station and its operating officers. Many countries such as the United States, South Korea and more have openly criticized these actions of Russia.

United States of America

Major nations all around the world, including the Russian Federation and China, have mobilized space arms control as a result of U.S. action. Since the United States signed the "Outer Space Treaty" in 1967 and other agreements like the "Liability Convention" in 1972, the "Registration Convention" in 1975, and the "Convention On The International Maritime Satellite Organization (INMARSAT)" in 1985 [27], the country has altered its internal policies to achieve the appearance of global space dominance,

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[26] Catledge, Burton "Ernie," Jeremy Powell, Air Command and Staff College, and Space Research Electives Seminars. "Space History." *AU-18 Space Primer*. Air University Press, 2009. http://www.jstor.org/stable/resrep13939.8.

[27] Werth, Karsten. "A Surrogate for War—The U.S. Space Program in the 1960s." *Amerikastudien / American Studies* 49, no. 4 (2004): 563–87. http://www.jstor.org/stable/41158096.

despite appearing transparent on the international stage with regard to any spatial data and satellites used. In July 2010, the Obama administration unveiled the revised U.S. National Space Policy, stating that the U.S. shall pursue bilateral and multilateral transparency and confidence-building measures to encourage responsible action in, and the peaceful uses of space, while still following the foundations of the 2006 U.S. National Space Policy of the U.S. preserving their own rights and freedom in using space arms control, but in a more restricted and approved way. Since the U.S. currently asserts its political will through force, protection of its own space assets and the disturbance of others' is key to guaranteeing U.S. dominance in space, which is a blocking wall to equality and spatial immobilization, leading to nuclear disarmament. Development of technology such as satellites for locating navigation, intelligence, detecting dangers, etc, is mainly focused by the US to improve on.

The U.S. Space Force, America's newest independent military force, was established in significant part to counter the dangers that China and Russia posed to American and allies' space capabilities. The main goal of military space forces is to "protect U.S. interests through deterrence and, where necessary, the application of force,"[28] according to its first statement on doctrine. As the United States looks forward to employing space as a new military asset, their advancement in science and technology is crucial for them, and may differ from Russia or China for distinct reasons in terms of scientific competitiveness.

India

The Indian Space Research Organization (ISRO) is promoting the use of satellites for tele-communications, tele-education, tele-medicine, and disaster management as part of its efforts to participate in space research (Vision and Mission Statements). Additionally, the Indian Remote Sensing (IRS) system, the largest satellite constellation now in use by people worldwide, gives the government important data regarding the environment, natural resources, and natural calamities. Furthermore, India's Earth Observation (EO) satellites are well developed and capture high-quality images that enable the acquisition of new data. In the Asian space race, India competes against nations like Pakistan and China and is one of the major participants. India chose to establish the Defense Space Research Organization (DSRO) and the Defense Space Agency (DSA) in 2019[29], with the former being a research facility aimed at developing civilian military space technologies and the latter formulating strategy and collaborating with different military organizations of the country. Furthermore, in 2019, India conducted its first integrated space warfare exercise, utilizing information collected from space satellites to a variety of

[28] Farley, Robert. "Space Force: Ahead of Its Time, or Dreadfully Premature?" Cato Institute, 2020. http://www.jstor.org/stable/resrep28729.

[29] Gupta, Biswanath, and KD Raju. "Space Exploration by India and Socio-Economic Cooperation with SAARC Countries." *India Quarterly* 72, no. 3 (2016): 278–89. https://www.jstor.org/stable/48505507.

different Indian military assets. There are many opinions within India encouraging the establishment of a military space similar to that of the U.S's own space force, which further emphasizes the need for sound regulation of the militarization of space.

France

The French space program is one of the world's oldest space programs, being the third oldest after the U.S. and Russia's. It is the largest space program in Europe, and has continued to develop across recent years. In 2019 France announced its focus on the development of space technologies and the assurance of the security of space, releasing a national space defense strategy and launching its space command, Commandement de l'Espace[30]. The French nation's focus on space can also be seen through the renaming of the French Air Force to the French Air and Space Force. The French currently possess 18 satellites, and this number is consistently growing.

International Space Station (ISS)

Being the largest space station ever built, the ISS unites numerous foreign flight teams and promotes global cooperation. An international alliance of space agencies, led by those of the United States, Russia, Europe, Japan, and Canada, manages the station as a research facility for technologies in extreme environments[31]. One of the agreements that the defunct Soviet Union and the United States of America reached was the International Space Station (ISS) program, wherein the parties decided to have a vote on whether or not to share the scientific knowledge amassed in space with all other participating nations.

China

China is transforming into a space superpower extremely quickly. In 2003, it became the third nation to send a person into space, and ever since then, the nation's space programs have been continuously expanding. As part of the Beidou Navigation Satellite System, which serves as a navigation system, China successfully completed the launch of the last satellite in its constellation of Beidou satellites on its own in 2020. Additionally, Tianwen-1, China's first attempt to land on Mars, was recently launched on its mission.

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30 Groupe de Recherche de l'iedes. "COMMERCE EXTÉRIEUR ET ORGANISATION DE L'ESPACE: Un Essai de Typologie Des Espaces Dominés." *Revue Tiers Monde* 18, no. 70 (1977): 301–22. http://www.jstor.org/stable/23589204.

31 "International SPACE Station." *ASEE Prism* 8, no. 6 (1999): 8–9. http://www.jstor.org/stable/43529248.

Their focus on the nuclear business is a result of their substantial investments in scientific research and one of Asia's quickest technological advancements in history[32]. China sparked much controversy in 2007 after destroying an inactive Chinese satellite, demonstrating its ASAT system capabilities and becoming the 3rd country in the world to possess these powers. China operational satellites have almost doubled in size in the past two years, possessing almost 262 satellites combined.

This amounts to almost as much as the entire world combined, demonstrating China's rapid development of space technologies. In 2021, China demonstrated the threat of a sky-high nuclear detonation possessing possibilities to cause electro-magnetic damage, with the world's first hypersonic launch. China has developed an intercontinental ballistic missile with a hypersonic glide vehicle, with this launch "[demonstrating] the greatest distance flown (~40,000 kilometers) and longest flight time (~100+ minutes) of any Chinese land attack weapons system to date"[33].

NASA

Ever since the United States founded NASA in 1958, it has gained a reputation as a leading space organization. The agency gathers a lot of information and is in charge of science and technology pertaining to flight in the air or outer space by conducting research and constructing multiple missions focusing on various aspects of space exploration[34]. They generate new scientific technologies through ongoing research that advances space exploration and development, primarily for the benefit of the U.S., and that may potentially be employed for militaristic reasons.

Suggested Solutions

As outlined throughout the chair report, the militarization of space is an extremely nuanced and complex issue that must be addressed through consistent communication, collaboration and international efforts to ensure that a comprehensive solution in which takes into consideration all perspectives can be found. Effective solutions may only be found if the majority of all nations can agree upon these solutions, as the militarization and exploration of space as a whole is a problem which addresses all of humanity; the international community as a whole must come together in order to discover a solution to the question at hand.

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[32] Goswami, Namrata. "China in Space: Ambitions and Possible Conflict." *Strategic Studies Quarterly* 12, no. 1 (2018): 74–97. http://www.jstor.org/stable/26333878.

[33] Krepon, Michael, and Julia Thompson, eds. "Space and Nuclear Deterrence." *Anti-Satellite Weapons, Deterrence and Sino-American Space Relations*. Stimson Center, 2013. http://www.jstor.org/stable/resrep10894.6.

[34] Harrison, Todd, and Nahmyo Thomas. "NASA in the Second Space Age: Exploration, Partnering, and Security." *Strategic Studies Quarterly* 10, no. 4 (2016): 2–13. http://www.jstor.org/stable/26271527.

Promoting peaceful uses of space can be accomplished in three ways: increasing international collaboration for world peace; creating more reliable legal systems; and ensuring that space exploration has the capacity to further humankind's scientific creativity.

First, conferences where nations can discuss the most important topics relating to space exploration can be created to enhance international cooperation on the topic of the applications of space. Then, nations would produce reports to follow the advancements in space research and to determine if there had been any catastrophes involving the wrong use of space. Additionally, in order to effectively address this issue, international entities must agree on the degree of public awareness and education required. This is an essential first step in advocating peaceful usage of space since raising awareness motivates more people to take action.

Secondly, legalities regarding the issue should be managed effectively. For instance, there are many loopholes that governments and corporations can work around, such as the lack of clarity on the usage of weapons of mass destruction in space or the claiming of space territories. For example, in the Bogota Declaration of 1976, eight countries declared to have legal claims over particular areas in space that lay within the space above their land, stating that the area was still technically within their own country's borders[35] . While the previously established Outer Space Treaty has been successfully implemented thus far, it is a question whether it will continue to survive throughout the coming years. The issue with the treaty is that though it is binding to all nations that sign it, there is no practical way to enforce what the treaty stands for. Therefore, delegates must find ways to eliminate the textual ambiguities and room left for misinterpretation set in place by various treaties of the past and practically enforce means by which to maintain complete peace in the uses of outer space, specifically regarding the use of weaponry in space. This may include the creation of legal sanctions, for example, in order to tangibly punish nations that do not abide by what international law wishes them to follow. The sanctions would be placed on nations that indiscreetly use space forces and have malicious intent in their uses of space. Fines could be created, varying on the number of offenses a nation has made and the severity of the offense. The funds collected would be best allocated as monetary support for further endeavors in space exploration. The sanctions could extend to the limitation of resources and number of space forces that a nation would be able to bear.

Delegates must also keep in mind that space flight is increasingly being privatized. keeping in mind how important it is to include and integrate commercial enterprises in space exploration while guaranteeing that it is used for peaceful scientific research and space exploration and advancement of

[35] Waltz, Susan. "Universalizing Human Rights: The Role of Small States in the Construction of the Universal Declaration of Human Rights." *Human Rights Quarterly* 23, no. 1 (2001): 44–72. http://www.jstor.org/stable/4489323.

humanity. The development of large companies like SpaceX has revolutionized space travel. Having companies like these does, however, help in making the market more competitive. In some instances, the government has needs that the private sector can meet, and vice versa. versa. Delegates must therefore consider ways to more effectively incorporate private space exploration.

The militarization of space is a topic that encompasses many different layers and perspectives within it. Considering different aspects of implications that may follow the creation of certain treaties or agreements will be essential to the success of created solutions. Delegates are encouraged to create innovative solutions in order to ensure an effective international disarmament process.

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