

**FORUM:** Disarmament and International Security (DISEC)

**TOPIC:** Prevention of an Arms Race in Outer Space

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**POSITION:** Head Chair

### **Introduction**

The Space Race began as a competition in the 20<sup>th</sup> century during the cold war between the US and the USSR to achieve superiority in spaceflight capability. While this led to the development of new technologies which have proven beneficial for all nations, it has also led to concerns regarding the placement of weaponry or weapons defence systems in space.

It is the belief of the United Nations that Space should be used in a peaceful manner and shared between all nations. In 1959, the General Assembly established the Committee on the Peaceful Uses of Outer Space (COPUOS) in Resolution 1472 (XIV). This committee helped the UN to identify areas for international cooperation in the peaceful uses of outer space, as well as devising programs that would be undertaken by the UN to ensure this cooperation. It also encouraged collective research on matters relating to outer space as well as the legal troubles that may arise from the exploration of outer space.

The COPUOS was aided during the 1960s and 1970s by a number of agreements that were adopted to prevent the weaponisation of outer space, including the Partial Test Ban Treaty (Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water) and the Outer Space Treaty (Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies) as well as other agreements. Although these treaties ban the placement of weapons of mass destruction (WMDs) in space, they do not prevent these member states from putting in place other forms of weaponry. Therefore, in order to protect outer space, and safeguard it as “the common heritage of mankind,” we must undergo negotiations in the Disarmament Committee in order to prevent such an arms race in outer space from ever happening.

In January 2007 the People’s Republic of China put into use an anti-satellite (ASAT) weapon with the purpose of destroying one of its defunct weather satellites. This test, apart from creating a dangerous amount of debris, highlighted China’s space warfare capabilities and therefore challenged international space power. More recently, after the Chinese missile launch into space in 2013, U.S. military space officials stated they would be taking steps to improve the resilience of security satellites in orbit. China’s actions, amid technological and scientific advances to which more and more countries have access to, bring the Prevention of Arms Race in Outer Space (PAROS) to the forefront of the international community’s attention.

It is necessary that we help to develop a framework that allows states to cooperate and the world to benefit from the opportunities that space exploration represents for mankind. The weaponisation of outer space is inextricably coupled to technological advances, therefore existing PAROS agreements—such as the Outer Space Treaty and the Moon Agreement—do not address more recent concerns. Furthermore, they allow for broad interpretations and do not lay out concrete actions. Clearly, the legal framework within which the international arena operates needs to be improved.

Bearing in mind the leverage that placing weapons in space would represent for a given state, the weaponisation of space would create large shifts in the current balance of military power and endanger the state of current arms control agreements.

In order to bring about transparency and cooperation between member states, confidence building measures must be put into place.

Finally, sustainability, safety and security of all future and current outer space activities must be taken into account while formulating long-term solutions to this problem.

### List of Acronyms

ABM	= Anti-Ballistic Missile	ITSS	= Tactical Integration of Satellite Systems
ADI	= Air Defense Initiative	GEO	= Geosynchronous Orbit
APSI	= Agency for the Processing of Satellite Image	KEWs	= Kinetic Energy Weapons
ASAT	= Anti-Satellite Weapons	KITE	= Kinetic Energy Kill Vehicle Integrated Technology Experiment
ASBM	= Air-to-Surface Ballistic Missile	MAD	= Mutual Assured Destruction
ATBM	= Anti-Tactical Ballistic Missile	MAS	= Mutual Assured Survival
BDA	= Bomb Damage Assessment	MOU	= Memorandum of Understanding
BM	= Ballistic Missile	NATO	= North Atlantic Treaty Organization
C	= Command, Control, and Communications	NEO	= Near-Earth Orbits
CD	= Committee on Disarmament (1979-1983)	NDEWs	= Nuclear-Driven Directed Energy Weapons
CD	= Conference on Disarmament (1984-)	NOSS	= Navy' Ocean Surveillance Satellites
CCD	= Conference of the Committee on Disarmament (1969-1979)	NPBs	= Neutron-Particle Beams
CBMs	= Confidence-Building Measures	NST	= Nuclear & Space Talks
CLs	= Chemical Lasers	NTMs	= National Technical Means
COPUOS	= Committee on Peaceful Uses of Outer Space	OTA	= Office of Technological Assessment (US)
DANASATs	= Direct-Ascent Nuclear Anti-Satellites	PAROS	= Prevention of an Arms Race in Outer Space
DSP	= Defense Support Programme (US)	PAXSAT	= Peace Satellite (Canada)
DEWs	= Directed Energy Weapons	RDT&E	= Research, Development, Testing and Evaluation
DST	= Defense & Space Talks	RORSAT	= Active Radar Ocean Reconnaissance Satellites
ENCD	= Eighteen Nations Committee on Disarmament (1962-1969)	RVs	= Reentry Vehicles
ELs	= Excimer Lasers	SAR	= Synthetic Aperture Radar
ELINT	= Electronic-intelligence	SBI	= Space-Based Interceptor
EORSAT	= ELINT Ocean Reconnaissance Satellites	SDI	= Strategic Defense Initiative
ERIS	= Exo-Atmospheric Interceptor System	SDIO	= Strategic Defense Initiative Organization
EDI	= European Defense Initiative	SLBM	= Sea-Launched Ballistic Missile
FELs	= Free Electron Lasers	SPOT	= Système Probatoire d'Observation de la Terra
HEDI	= High Endoatmospheric Defense Interceptor	START	= Strategic Arms Reduction Talks
HEO	= Higher-Earth Orbit	TBT	= Test Ban Treaty
HPRF	= High-Power Radio Frequency	TNCD	= Ten Nations Committee on Disarmament (1959-1961)
IAEA	= International Atomic Energy Agency	UHF	= Ultrahigh Frequency
ICBM	= Intercontinental Ballistic Missile	XrLs	= X-ray Lasers
IFOV	= Instantaneous Field of View	WTO	= Warsaw Treaty Organization
INF	= Intermediate-Range Nuclear Forces	GCD	= General and Complete Disarmament
IRBM	= Intermediate-Range Ballistic Missile	GLOM	= Global Low Orbiting - message Relay

### Definition of Key terms and Treaties

**Outer Space Treaty** – Acts as basis for space law. Came into force on 10 October 1967. It Bans WMDs from space, and states that no country can claim ownership of any space objects such as the moon. Finally, it states that Space should be used for peaceful purposes.

**Weapons of Mass Destruction (WMDs)** – A weapon of mass destruction (WMD) is a nuclear, radiological, chemical, biological or any other weapon that can kill and bring significant harm to a large number of humans or cause great damage to human-made structures (e.g., buildings), natural structures (e.g., mountains), or the biosphere.

**Outer Space** - “The physical universe beyond the earth’s atmosphere” (OED) Estimated by NASA and other agencies to start about 100 km above sea level.

**Anti-Satellite Weapons (ASAT)** - space weapons designed to incapacitate or destroy satellites for strategic military purposes. Several nations possess operational ASAT systems, with others in development or design. Although no ASAT system has yet been utilised in warfare, several nations

have shot down their own (defunct) satellites to demonstrate their ASAT capabilities in a show of force.

**Weaponisation of Outer Space** – The placement by a certain nation of weapons in outer space, consisting of both space-striking and earth-striking weapons, as well as weapons placed on the ground that have the ability to strike space.

**Militarisation of Outer Space** – Any usage of outer space for military purposes, including the usage of any space objects such as the moon being used to contain military weapons, operations or bases.

**Anti-Ballistic Missile (ABM)** - a generic term conveying a system designed to intercept and destroy any type of ballistic threat, however it is commonly used for systems specifically designed to counter intercontinental ballistic missiles (ICBMs).

**Intercontinental Ballistic Missile (ICBM)** - a guided ballistic missile with a minimum range of 5,500 kilometres (3,400 mi) primarily designed for nuclear weapons delivery (delivering one or more thermonuclear warheads). Similarly, conventional, chemical, and biological weapons can also be delivered with varying effectiveness, but have never been deployed on ICBMs.

**Space Object** – Any object or device that is launched into an orbit around any celestial body

**Artificial Satellite** – A spacecraft that has been designed to orbit around a larger astronomical body

### **Timeline of Events**

**1945** – End of Second World War

**1955** – US announces plan for Space Satellite

**1957** – USSR launches Sputnik

**1961** – Yuri Gagarin launches into space

**1962** – John Glenn orbits Earth

**1967** – Member nations sign Outer Space Treaty, banning WMDs in space and only allowing celestial bodies to be used for peaceful purposes

**1969** – Apollo 11 Moon Landing

**2007** – China uses ASAT to shoot down its own weather satellite

**2008** – The EU commences the drafting of a non-binding International Code of Conduct for Outer Space Activities

**2010** – Obama releases new US National Space Policy

**2007-Present** – Many nations such as Russia and the US follow in China's footsteps

**10 June 2014** – China and Russia propose the latest updated treaty banning outer space weapons (Prevention of the Placement of Weapons in Outer Space (PPWT)) which is met with hostility from the US.

### **Relevant UN Treaties, Resolutions and Events**

1. **Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies**
  - a. Forms the basis of international space law
  - b. Opened for signature in the US, UK and USSR on 27<sup>th</sup> January 1967 and entered into force on 10<sup>th</sup> October 1967
  - c. As of October 2018, 107 countries are parties to the treaty while another 23 have signed the treaty but have not yet ratified it
  
2. **Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water**
  - a. Prohibited all test detonations of nuclear weapons except for those conducted underground.
  - b. The PTBT was signed by the governments of the Soviet Union, United Kingdom, and United States in Moscow on 5 August 1963 before being opened for signature by other countries. The treaty formally went into effect on 10 October 1963.
  - c. Since then, 123 other states have become party to the treaty. Ten states have signed but not ratified the treaty.
  
3. **Treaty on the Non-Proliferation of Nuclear Weapons**
  - a. International treaty whose objective is to prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy, and to further the goal of achieving nuclear disarmament and general and complete disarmament.
  - b. Opened for signature in 1968, the treaty entered into force in 1970. As required by the text, after twenty-five years, NPT Parties met in May 1995 and agreed to extend the treaty indefinitely.
  
4. **Agreement Governing the Activities of States on the Moon and Other Celestial Bodies**
  - a. Multilateral treaty that turns jurisdiction of all celestial bodies (including the orbits around such bodies) over to the international community. Thus, all activities must conform to international law, including the United Nations Charter.
  - b. In practice it is a failed treaty because it has not been ratified by any state that engages in self-launched manned space exploration or has plans to do so (e.g. the United States, the larger part of the member states of the European Space Agency, Russia (former Soviet Union), People's Republic of China and Japan) since its creation in 1979, and thus has a negligible effect on actual spaceflight. As of January 2018, 18 states are parties to the treaty.

### **Questions to Consider**

- **Clearing up definitions that are unclear**
- **Compliance with existing agreements**
- **Transparency between all member states**
- **Safety, Security and Sustainability of Outer Space Activities**

### **Previous attempts to solve the issue**

Although treaties such as the Partial Test Ban Treaty, the Outer Space Treaty and the Moon Agreement have banned the placement of WMDs in space, they do not prevent states from placing other types of weapons in space. As a result, many states argue that existing treaties are insufficient for safeguarding outer space as “the common heritage of mankind.” For this reason, the Disarmament Committee in the UN General Assembly mandated that negotiations should take place in the Conference on Disarmament in order to prevent an arms race in outer space that are held in accordance with the spirit of the Outer Space Treaty.

The Conference on Disarmament established a committee in 1985 to identify and examine issues that were relevant to PAROS, such as the legal protection of nuclear power systems, satellites and various confidence-building measures. This committee convened each year through 1994.

Under the draft treaty submitted to the CD by Russia in 2008, State Parties would commit to refrain from placing objects carrying any type of weapon into orbit, installing weapons on celestial bodies, and threatening to use force against objects in outer space. State Parties would also agree to practice agreed confidence-building measures.

In 2002, despite a continued deadlock in the CD, certain states, particularly China and Russia, continued to push for negotiations regarding PAROS. A joint working paper on the “Possible Elements for a Future International Legal Agreement on the Prevention of the Deployment of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects” was submitted by China and Russia.

In 2005, on 16 August an open-ended meeting was hosted by China and Russia on issues relating to PAROS. In addition Russia introduced a resolution on transparency and confidence-building measures regarding outer space activities. This resolution enjoyed support from an overwhelming majority, with only Israel abstaining and the United States objecting. The UN General Assembly adopted two documents: A/C.1/60/L.27 (Prevention of an Arms Race in Outer Space) and A/C.1/60/L.30/Rev.1 (Transparency and Confidence-Building Measures in Outer Space Activities).

On 11 January 2007, the Chinese fired a missile to shoot down one of its own ageing weather satellites. This raised fears in the United States concerning a potential space race. Japan also strongly condemned the test, declaring concern over its national security and the possibility of an arms race in space. Despite condemning the test, the United States continued to pursue several space and missile defense projects, many of which have dual-use capabilities.

On 15 June 2007, the UN Committee on the Peaceful Uses of Outer Space adopted space debris mitigation guidelines.

Russia again introduced a resolution for transparency and confidence building measures for activities in outer space. In accordance with previous years all voted in favor of the resolution except for the United States (objection) and Israel (abstaining). Russia and China also produced a working paper (CD/1679). This working paper discusses the definitions of concepts such as Outer Space, Space Weapons, Space Objects and the Peaceful Use of Outer Space.

In the UNGA the Secretary General released a report on the “Transparency and confidence-building measures in outer space.” This report discussed the positions of Austria, Bangladesh, Kenya, and Portugal on behalf of the European Union. The European Union proposed the development of a comprehensive code of conduct on objects and activities related to space, and suggested general principles, scope and participation for such a code. On 18 September 2007, this code of conduct was attached to the Secretary General’s report on “Transparency and Confidence-Building Measures in Outer Space Activities.” (A/62/114/Add.1) In addition, the European Union is planning to submit this code of conduct to the CD. Two resolutions were passed in the UN: A/RES/62/20 on the “Prevention of an Arms Race in Outer Space” and A/RES/62/43 “Transparency and Confidence-Building Measures in Outer Space Activities.”

On 26 March 2009, Canada introduced a paper to the CD entitled “The Merits of Certain Draft

## Transparency and Confidence Building Measures and Treaty Proposals for Space Security.”

On 28 October 2009, the CD adopted draft resolution A/C.1/64/L.25 entitled “Prevention of an Arms Race in Outer Space.” The draft resolution was adopted by a vote of 176 in favour, none against, and two abstentions (the United States and Israel). This resolution had previously been blocked by the United States, which had voted against it since 2005. With Israel maintaining its abstention from previous years and the United States switching its vote to an abstention some progress was able to be made. The following day the CD adopted A/C.1/64/L.40, entitled “Transparency and Confidence-Building Measures in Outer Space Activities,” without a vote. For the first time in a decade, the CD reached agreement on a program of work. In their program, a working group was established for the “prevention of an arms race in outer space” in order to discuss “all issues related to the prevention of an arms race in outer space.” Unfortunately, no progress occurred due to the inability of the CD to implement its program of work for the year.

In January 2011, three resolutions related to outer space were passed by the UN General Assembly. Resolution 65/97, adopted without a vote, addressed international cooperation in peaceful uses of outer space, encouraging all states to become parties to relevant international treaties. Resolution 65/68 called for greater transparency and confidence-building measures in outer space activities and passed with a vote of 183 in favor, none against, and one abstention (the United States), while Resolution 65/44 encouraged states to continue efforts to assure the prevention of an arms race in outer space and passed with a vote of 178 in favor, none against, and two abstentions (Israel and the United States).

On 12 October 2011, Sri Lanka presented draft resolution A/C.1/66/L.14 to the UNGA First Committee on the prevention of an arms race in outer space. The draft resolution emphasized the need for verification measures to prevent an arms race and reaffirmed the CD’s role as the primary body for negotiating and drafting a treaty on the prevention of an arms race in outer space. It was adopted on 26 October by a vote of 171 in favour, none against, and two abstentions. On 2 December 2011, the United Nations General Assembly (UNGA) passed Resolution 66/27 on the Prevention of an Arms Race in Outer Space.

On 7 December 2015 the UN General Assembly adopted Resolution 70/27 on the no first placement of weapons in outer space.

### **Possible solutions**

- Promoting policies that encourage transparency between all member states, with the interest of increasing trust between nations and deterring covert militarisation of outer space
- Re-establishing an ad-hoc committee or some form of organisation in order to continue annual discussions on the topic
- Getting Russia and the US to engage actively in discussions, as well as convincing them to provide constructive help
- Ensuring that all member states sign and ratify the aforementioned treaties
- Guarantee that all member states that engage or have engaged in Space programmes in future, present or past, agree to stick to the standards that the UN has mandated
- Verifying compliance of all member states with those treaties that they have signed and/or ratified
- Advocating for the removal of harmful space debris
- Ensuring that no further research and development is conducted by member states, with the purpose of developing new weapons that may be used in Outer Space

### **Conclusion**

Generally, all member states agree that the development of space weapons and the problem of an arms race in outer space must be prevented at all costs. The issue predominantly requires member states to be thinking ahead of the curve, as solutions must circumvent future problems rather than act immediately.

Member states must consider dual-purpose satellites such as ASATs and the issues that may arise

through their usage.

Solutions to these problems must be innovative and require deep thought.

Finally, it is important that all member states cooperate in order to ensure that space is a safe place that all member states can enjoy the usage of without impeding on the sovereignty of others.

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