

# Preventing the Militarization of Outer Space

*Old Dominion University Model United Nations Society*

## Introduction

Can the spread of war to new dimensions be stopped? That's the problem the UN has been facing for over sixty years. In many areas it has failed, most dramatically in *cyber space*, now a major battleground for every conflict.

Preventing the spread of war to *outer space* is a related problem, but not a new one. The UN has had successes promoting peaceful uses of outer space. But technological promise and competitive pressure between UN Member States raise ever greater fear that war cannot be kept out of the heavens for much longer.



How the *global commons* of outer space should be used?

Can outer space be preserved as a *global commons*, a dimension freely available to all, to be shared peacefully by all UN Member States? Or will it become yet another scene of weaponization and destruction? If the UN General Assembly can agree on new principles to slow or halt the militarization of outer space, principles that all Member States will follow, it will have achieved something extraordinary. But the barriers to agreement are sharp. Distrust and suspicion between major powers is as great as ever, worse now that there is active fighting pitting Russia and its allies against Ukraine and its allies.

It is at the United Nations that Member States have worked to prevent the expansion of warfare to new domains and environments. In the 1960s major treaties stopped deployment of nuclear weapons on the ocean floor, on the moon and other celestial bodies and in Antarctica.

What these treaties did not stop was other forms of militarization, such as stationing reconnaissance equipment on the ocean floor or in outer space, both which became routine in the 1960s. In effect, these treaties prohibit not *militarization* (military use) of these domains, but *nuclear weaponization*. Other forms of military use of space are accepted today, or have proven impossible to prohibit.

## Isn't space already militarized?

Military activity in outer space led the space race. The first successful artificial satellite, Sputnik, launched in 1957 by the Soviet Union (Russia), was of great symbolic importance in large part because it showed the Soviet Union could not only launch a satellite into orbit, but had the capability to send nuclear warheads anywhere on Earth. Any Intercontinental Range Ballistic Missile (ICBM) operates in outer space for much of its flight path.

ICBMs-type weapons became common place in the 1960s. Thousands are deployed today, on land and carried at sea in submarines, by China, France, Russia, the United Kingdom and United States. North Korea (Democratic Republic of Korea, DPRK) has demonstrated its ability to deploy ICBMs by test firing them far into space. India, the Islamic Republic of Iran, Israel, Pakistan, South Korea (the Republic of Korea)

and maybe Saudi Arabia have similar capabilities.



Intelligence gathering reconnaissance satellites are the most accepted and widespread militarization of outer space.

Space also is where rivals watch each other. All major powers, and many smaller countries, rely for their security on orbiting reconnaissance satellites. This technology also was proven in the 1960s and is widely accepted, providing intelligence of their rival's military capabilities and intentions, as well as early warning of attack. Reconnaissance satellites typically are operated by each country's armed forces, making their military controlled. Other military satellites are for communications, navigation, meteorology and remote sensing (commercial and scientific data gathering)

Today, there are over 4,800 artificial satellites of all kinds—civilian and military, commercial and scientific, operational and non-working— orbiting the Earth. Hundreds have been launched expressly for military purposes. This number is increasing rapidly as tech companies launch thousands of small satellites, creating huge

networks, for specific applications, mostly in communications.<sup>1</sup>

The **United States** has a fleet of 154 operational military satellites. If its dual-use (civilian-military) satellites are included, the U.S. currently has between 339 and 485. **Russia** is known to have 71 military satellites, and **China** 63. Other countries, such as **Colombia, Denmark, France, Germany, Italy, India, Japan, Mexico, Spain, Turkey, United Arab Emirates** and **United Kingdom** have between one and ten each.<sup>2</sup> Other sources say the numbers are much larger.<sup>3</sup>

More recently, the United States has led efforts to destroy attacking ballistic missiles and their warheads using missile defenses. While all current Ballistic Missile Defenses (BMD) are land and sea based, they operate partially in outer space. It is in outer space that they would destroy in-coming nuclear weapons. BMD planners envision fighting in space, although current programs are not space-based.

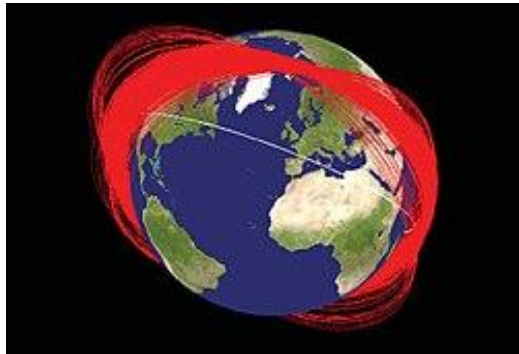
Currently, the US has 44 long-range, land-based BMD interceptor missiles deployed in Alaska and California, ostensibly to defend against an attack from North Korea, although they have some limited capability against China as well. Many more are based in US Navy ships. The American system is especially alarming to China and Russia, which fear it gives American unilateral advantages against their deterrent forces. They have made limited or dismantling American BMD a major foreign policy goal. Russia also has a large missile defense system of its own surrounding Moscow. Many other countries are trying to develop their own ballistic missile defenses, including China and India.

<sup>1</sup> Vivek Suresh Prasad, 'SmallSat Launch Market to Soar Past \$62 Billion by 2030', *Satellite Today*, July 2018, <https://interactive.satellitetoday.com/via/july-2018/smallsat-launch-market-to-soar-past-62-billion-by-2030/> 8

<sup>2</sup> Zulfikar Abbany, 'Modern spy satellites in an age of space wars', *Deutsche Welle*, 25 August 2020,

<https://www.dw.com/en/modern-spy-satellites-in-an-age-of-space-wars/a-54691887>

<sup>3</sup> Samuel Stebbins, 'This Is the Country With the Most Military Satellites', *24/7 Wall Street*, 21 April 2022, <https://247wallst.com/special-report/2022/04/21/this-is-the-country-with-the-most-military-satellites/>



An impression of debris created by the 2007 Chinese ASAT test.

A final major form of space militarization is *anti-satellite warfare* (ASAT). China, Russia and the United States are developing, and may have deployed, interceptor missiles capable of destroying satellites. A major issue with ASAT warfare is the side effect of destroying a satellite. The laws of physics make it impossible to shoot down a satellite. An interceptor fired from Earth will destroy a satellite by sending its innumerable small pieces flying upwards, into higher orbits, creating a debris field potentially deadly to civilian communications and weather satellites and manned space activity.

A Chinese ASAT test in 2007 used a land-based interceptor missile to destroy an orbiting target satellite. It created thousands of high-speed particles, all potentially destructive, still orbiting.<sup>4</sup> An Indian ASAT test in 2019 did the same.<sup>5</sup> None of this is prohibited under the 1967 Outer Space Treaty.

## Militarized, but not weaponized, so far

While all these technologies are *militarized*, they are not *weaponized*, or if they include weapons, they are not actually based in outer space. In this way, they directly militarize space, although they do not legally weaponize space in-and-of themselves. They are not prohibited by the 1967 Outer Space Treaty.

No country—as far as open sources reveal—has stationed weapons in space. This is largely because there is no advantage to stationing weapons there; it is expensive and makes maintenance difficult or impossible. But there is rising interest. There are military missions which might benefit from space basing, especially *anti-satellite warfare* and *destroying attacking ballistic missiles*. Basing these weapons in space has an engineering advantage; they can greatly reduce flight times to targets. The technical barriers are serious, but this would be permissible under the 1967 Outer Space Treaty (below) so long as they are not nuclear-armed; it does not prohibit basing non-nuclear weapons in space.

Under the leadership of President Ronald Reagan, the United States spent billions in the 1980s to develop the Strategic Defense Initiative (SDI). This failed effort envisioned stationing hundreds of satellite missile interceptors in space. It also created strong suspicions of American intentions, shaping global attitudes toward the United States ever since. Not nothing similar has been seriously considered since.

## The UN record

<sup>4</sup> '2007 Chinese anti-satellite missile test', *Wikipedia*, n.d., [https://en.wikipedia.org/wiki/2007\\_Chinese\\_anti-satellite\\_missile\\_test](https://en.wikipedia.org/wiki/2007_Chinese_anti-satellite_missile_test)

<sup>5</sup> Ashley J. Tellis, *India's ASAT Test: An Incomplete Success*. Washington, D.C.: Carnegie Endowment, 15 April 2019, <https://carnegieendowment.org/2019/04/15/india-s-asat-test-incomplete-success-pub-78884>

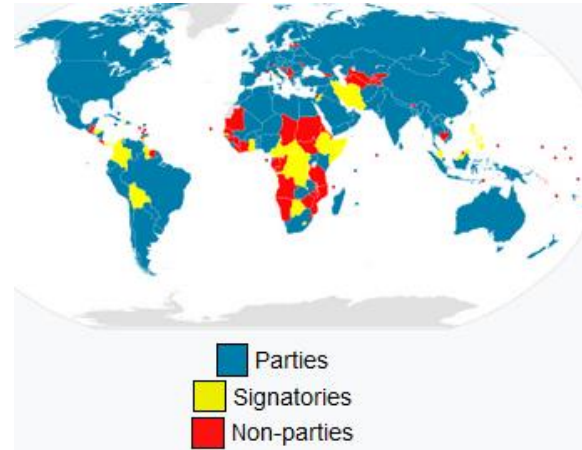
Most major powers among the 193 UN Member States are not interested in ending space militarization. They want to ensure the safety and operation of their space satellites, including military reconnaissance systems. But there is widespread interest in preventing further space weaponization.

The greatest accomplishment to help ensure the peaceful use of outer space is the *Outer Space Treaty* of 1967, negotiated in the General Assembly.<sup>6</sup> Among its most important provisions, it prohibits basing nuclear weapons in space. But it does not prohibit having weapons—including nuclear weapons—fly through space on their trajectory from one country to another. In 1967, no state wanted to based nuclear weapons in orbit, so the treaty was uncontroversial. To its critics, it did not change anything.

Today the treaty has 112 states party, countries that have signed and ratified.<sup>7</sup> The Parties include all nine countries with nuclear weapons; China, Democratic Republic of Korea (North Korea), France, India, Israel, Pakistan, Russia, United Kingdom and the United States. This leaves some 90 or so countries outside the treaty. The latter mostly are small states, not decisive in space activity, but they are still important to strengthen the principles of the treaty. Their signatures and ratification would be very meaningful.

The 1967 treaty, the treaty initiated the banning of signatories' placing of nuclear weapons or any other weapons of mass destruction in orbit of Earth, installing them on the Moon or any other celestial body, or to otherwise station them in outer space. The United States, the United

Kingdom, and the Soviet Union signed the treaty and it entered into force on 10 October 1967.



The 112 States Party to the 1967 Outer Space Treaty

The Outer Space Treaty established the following basic principles, making them part of international law. It's most important innovation was the forbid basing nuclear weapons or other weapons of mass destruction in space.:

- 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;

<sup>6</sup> Formally known as the *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies*, United Nations, 1967, <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html>

<sup>7</sup> 'The Outer Space Treaty at a Glance', Arms Control Association, 2020,

<https://www.armscontrol.org/factsheets/outerspace>. The text and list of signatories is at *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, Washington, D.C.: U.S. Department of State, n.d., <https://2009-2017.state.gov/t/isn/5181.htm>



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

Note the Outer Space Treaty does not prohibit basing all weapons in orbit or on the moon. It only bans basing nuclear weapons and other Weapons of Mass Destruction (WMD, biological, chemical or nuclear weapons) in space, not conventional weapons, or any weapon that just passes through space.

In an effort to correct the oversights of the 1967 treaty, the Member States of the European Union proposed a new treaty to prohibit stationing of any weapon in outer space. Their draft did not prohibit weapons from passing through space, either offensive ballistic missiles or defensive systems.

In February 2008, China and Russia co-sponsored their own alternative, a draft General Assembly resolution to create a new *Treaty on Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects* (PPWT). This aimed to prohibit all weapons in space, including conventional weapons and missile defenses. The draft forbids using space for missile defense as well. The US, suspecting this was intended to isolate and stop its efforts to create a national defensive system against ballistic missiles, opposed the draft treaty. The

American justification was the treaty violated the commitment in Article 51 of the UN Charter, declaring that all Member States have a right to self-defense.

Every year the UN General Assembly passes several resolutions on preventing further militarization of outer space. In their most recent versions, at the 77th Session of the UN General Assembly in December 2022, three resolutions were:

General Assembly resolution [A/RES/77/40](#), on *Prevention of an arms race in outer space*, ‘call[s] on all States, in particular those with major space capabilities, to contribute actively to the peaceful use of outer space, prevent an arms race there, and refrain from actions contrary to that objective.’ In previous years this resolution was controversial, passing in 2021 by a vote of 122 countries in favor to 4 against, with 50 abstentions. Many other countries simply did not show up for the vote, mostly smaller and weaker, a typical technique to avoid antagonizing anyone. Opposition was led by the United States and its allies, opposed to the resolution which they believed targeted its military programs.<sup>8</sup>

The most recent version of this resolution was carefully reworded for balance toward all sides. It stresses the principle of preventing a new arms race in outer space, without targeting any country’s specific programs. This makes it less meaningful, but more acceptable. In 2022 it passed by consensus, without a vote.

General Assembly resolution [A/RES/77/42](#), *No first placement of weapons in outer space*, emphasizes the prevention of an arms race in space and states that ‘other measures could contribute to ensuring that weapons were not placed in outer space.’ 126 countries voted in favor, 4 against (Georgia, Israel, Ukraine,

<sup>8</sup> *Approving \$3.12 Billion Programme Budget, General Assembly Adopts 26 Resolutions, 2 Decisions, as Main Part of Seventy-Sixth Session Concludes*, GA/12398, New York: United Nations, 24

December 2021, <https://web.archive.org/web/20170704040738/http://www.un.org/press/en/2014/ga11593.doc.htm>

United States), and 46 abstained (including the 28 Member States of the European Union and other US allies).<sup>9</sup>

General Assembly resolution [A/RES/77/250](#), *Further practical measures for the prevention of an arms race in outer space*, sounds from its title just like the previous two resolutions. In reality, it was the older, highly controversial resolution in a slightly different form.

Opposition was led by the United States and its allies, opposed to the resolution with was believed to target its military programs. It passed, with a narrow majority by UN standards, of 193 Member States, 115 voted in favor, 47 were opposed (mostly the US and its allies) and 7 abstained. Many other countries, mostly smaller and weaker, simply did not show up for the vote, a typical technique to avoid antagonizing anyone.<sup>10</sup>

These two annual resolutions reveal an important tendency in UN debates on this topic. China, Russia and many countries of the Non-Aligned Movement (NAM, the UN's largest voting bloc), favor broad and general principles, the kind of principles the General Assembly can most easily agree on. These principles are often opposed by the United States, which suspects that such statements are intended to limit its military programs—especially its efforts to build ballistic missile interceptors—while having no effect on the specific military programs of China, Russia and other potential adversaries.

While these annual resolutions pass by large majorities, they have lost support over the years. US diplomacy has been somewhat effective persuading Member States that resolutions that target only its programs are unbalanced, or unlikely to have an effect in the real world. While the General Assembly has proven it can forge large majorities to push through principled

<sup>9</sup> Ibid.

<sup>10</sup> On a similar vote in 2021, see *Adopting 55 First Committee Texts, General Assembly Addresses Myriad Security Threats, Urging Joint Action to Advance Stalled Denuclearization, Disarmament*

resolutions, these do not mean much in practice without the support of the United States and its allies. Meaningful resolutions would have to win their support. This would mean concessions to the US and its allies that the supporters of these resolution have not been willing to accept.



The source of much controversy. An American Ground-Based Interceptor, designed to destroy incoming Intercontinental ballistic missiles, is lowered into its silo at Fort Greely, Alaska, in 2004.

## Country and Block Positions

**China:** Chinese spokesmen consistently insist that China is opposed to arms race in outer space. Chinese Foreign Ministry Zhao Lijian, recently said his country advocates the peaceful use of outer space, opposes the weaponization of an arms race in outer space, and calls for the

*Efforts*, GA/12392, New York, United Nations, 6 December 2021, <https://press.un.org/en/2021/ga12392.doc.htm>



building of a community with a shared future in outer space. He stressed that China's exploration of outer space is to meet the legitimate needs of the country's economy, society, science and technology, and security.<sup>11</sup> China insists all its military space activity is entirely defensive and peaceful. China maintains that the United States, through its satellites, missile defenses and offensive programs, is destabilizing global security. China will not accept limits on its own peaceful programs, but would welcome a new treaty to ensure the peaceful uses of outer space, especially if it restricts what it sees as American militarism.<sup>12</sup>

**European Union (EU):** the 27 Member States of the EU strongly support efforts to strengthen the rule of international law in outer space. European states support universal principles that affect all states equally. Above all, they seek a treaty banning anti-satellite weapons (ASAT) from being based in outer space. European leaders insist that ASAT technology is inherently destabilizing, especially if based in outer space. But the EU does not support measures that would create permanent national advantages in outer space. They resent resolutions that pit one block against another, the use of UN resolutions on outer space to attack their own or American military programs, for example.

**Non-Aligned Movement (NAM):** the 120 Member States of the NAM the UN's largest voting bloc generally support any measure to preserve outer space as a global commons. They usually support initiatives from America, China and Russia, or the European Union. But the NAM also is preoccupied with that is in it for them. What the NAM wants most is access to the benefits of space exploitation. They will be most persuaded by agreements that includes

measures to ensure that poorer and less developed countries get free or subsidized use of communications, navigation and meteorological satellites. The NAM expects to be offered space access in exchange for their support. They also can be won over with other forms of economic assistance, such as general trade assistance and foreign aid projects.

**Russia** strongly supports the peaceful uses of outer space. It works with China and other allied states to stop hegemonic foreign powers in the West from perverting the global commons of outer space for their own narrow purposes.

**United States** announced in 2022 that it no longer will test anti-satellite weapons (ASAT) in space, and called on all other countries to do the same. This position has won great support among its allies in Europe and Asia, and even among the Non-Aligned Movement. It is opposed by countries led by China and Russia who view the American proposal as cynical ploy to lock in its strategic advantages.<sup>13</sup>

## Some Proposals for Action

**Start negotiations for a treaty to prohibit weaponization of outer space.** The treaty could ban basing of all kinds of weapons, WMD and conventional or simple hit-to-kill weapons, or it could ban specific categories of weapons from being based in space. This would potentially be supported by all major powers, if worded to serve their interests and not stop their specific weapons programs.

The resolution would need to say whether all 193 UN Member States are to be involved equally in the negotiations, or say how countries

<sup>11</sup> 'Preventing the Militarization of Outer Space', *The Peninsula*,

<sup>12</sup> Jess Thomson, 'China Accuses U.S. Of Trying to Turn Outer Space Into a Battlefield', *Newsweek*, 8 September 2022,

<https://www.newsweek.com/china-us-space-battlefield-nasa-argument-power-1740973>

<sup>13</sup> Jeff Foust, 'U.S. looking to encourage more countries to join ASAT testing ban', *Space News*, 31 August 2022, <https://spacenews.com/u-s-looking-to-encourage-more-countries-to-join-asat-testing-ban/>



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to be involved in the negotiations are to be selected. The powers of negotiating governments would have to be detailed as well. Do negotiations operate on the basis of *consensus*, so any negotiating state can block agreement? Or will it rely on *majority voting*, or super majorities (two-thirds or more)?

**Start negotiations for a treaty to *prohibit all use of outer space by weapons***, possibly including a ban on missiles and other weapons passing through outer space. This would greatly strengthen outer space as a global commons, for peaceful uses only. Such a treaty would in effect ban long-range ballistic missiles, and force countries to rely on slower weapons that pass through the Earth's atmosphere, such as cruise missiles and manned aircraft. This would be supported mostly by NAM countries, which do not have long-range ballistic missiles. It would be opposed by some or all major powers who rely on them today.

The resolution also would need to say whether all 193 UN Member States are to be involved equally in the negotiations, or say how countries to be involved in the negotiations are to be selected. The powers of negotiating governments would have to be detailed as well. Do negotiations operate on the basis of *consensus*, so any negotiating state can block agreement? Or will it rely on *majority voting*, or super majorities (two-thirds or more)?

**Authorize completion of new treaty to *prohibit specific kinds of weapons in outer***

**space**, those most destabilizing. The most popular choice for such a treaty would be to ban anti-satellite weapons (ASAT), including Earth/land and sea based interceptors and ASAT weapons base in space. This would ensure the safety of the global commons, while also permitting. Non-weaponized military tasks to be done there.

As before, the resolution also would need to say whether all 193 UN Member States are to be involved equally in the negotiations, or say how countries to be involved in the negotiations are to be selected. The powers of negotiating governments would have to be detailed as well. Do negotiations operate on the basis of *consensus*, so any negotiating state can block agreement? Or will it rely on majority voting, or super majorities (two-thirds or more)?

**Reaffirm the *absolute sovereignty of all UN Member States*** in outer space, leaving each state individually responsible for its own national decision-making on all matters of its security in space. This would reaffirm Article 51 of the UN Charter, the right of all states to self-defense. It would leave decisions about stationing weapons in space or deploying anti-satellite weapons entirely in each country's own hands. Such a measure would not protect the global common in space, but would be popular with governments determined to maximize their individual national advantages and assure their individual security against possible competitors and enemies.





## Bibliography

- Zulfikar Abbany, 'Modern spy satellites in an age of space wars', Deutsche Welle, 25 August 2020, <https://www.dw.com/en/modern-spy-satellites-in-an-age-of-space-wars/a-54691887>
- Arms Control Association, 'The Outer Space Treaty at a Glance', Arms Control Association, 2020, <https://www.armscontrol.org/factsheets/outerspace>
- Jeff Foust, 'U.S. looking to encourage more countries to join ASAT testing ban', Space News, 31 August 2022, <https://spacenews.com/u-s-looking-to-encourage-more-countries-to-join-asat-testing-ban/>
- Vivek Suresh Prasad, 'SmallSat Launch Market to Soar Past \$62 Billion by 2030', Satellite Today, July 2018, <https://interactive.satellitetoday.com/via/july-2018/smallsat-launch-market-to-soar-past-62-billion-by-2030/>
- Samuel Stebbins, 'This Is the Country With the Most Military Satellites', 24/7 Wall Street, 21 April 2022, <https://247wallst.com/special-report/2022/04/21/this-is-the-country-with-the-most-military-satellites/>
- Ashley J. Tellis, India's ASAT Test: An Incomplete Success. Washington, D.C.: Carnegie Endowment, 15 April 2019, <https://carnegieendowment.org/2019/04/15/india-s-asat-test-incomplete-success-pub-78884>
- Jess Thomson, 'China Accuses U.S. Of Trying to Turn Outer Space Into a Battlefield', Newsweek, 8 September 2022, <https://www.newsweek.com/china-us-space-battlefield-nasa-argument-power-1740973>
- United Nations. 'Approving \$3.12 Billion Programme Budget, General Assembly Adopts 26 Resolutions, 2 Decisions, as Main Part of Seventy-Sixth Session Concludes', GA/12398, New York: United Nations, 24 December 2021, <https://web.archive.org/web/20170704040738/http://www.un.org/press/en/2014/ga11593.doc.htm>
- United Nations. 'Adopting 55 First Committee Texts, General Assembly Addresses Myriad Security Threats, Urging Joint Action to Advance Stalled Denuclearization, Disarmament Efforts', GA/12392, New York: United Nations, 6 December 2021, <https://press.un.org/en/2021/ga12392.doc.htm>
- United Nations, Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, United Nations, 1967, <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html>
- U.N. General Assembly resolution. *Prevention of an arms race in outer space*, A/RES/77/40, New York: United Nations, 7 December 2022, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N22/739/41/PDF/N2273941.pdf?OpenElement>
- U.N. General Assembly resolution, *No first placement of weapons in outer space*, A/RES/77/42, New York: United Nations, 12 December 2022, <https://daccess-ods.un.org/tmp/2034788.72776031.html>
- U.N. General Assembly resolution, *Further practical measures for the prevention of an arms race in outer space*, A/RES/77/250, New York: United Nations, 30 December 2022, <https://www.undocs.org/A/77/385>
- U.S. Dept. of State. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Washington, D.C.: U.S. Department of State, n.d., <https://2009-2017.state.gov/t/isn/5181.htm>
- Wikipedia. '2007 Chinese anti-satellite missile test', Wikipedia, n.d., [https://en.wikipedia.org/wiki/2007\\_Chinese\\_anti-satellite\\_missile\\_test](https://en.wikipedia.org/wiki/2007_Chinese_anti-satellite_missile_test)