



General Assembly First Committee Topic Background Guide
Topic 1: Preventing an Arms Race in Outer Space¹

11 October 2011

Today, the world of international relations feels quite small. Since the demise of the Soviet Union and the end of the Cold War in 1990, the nations of the world have experienced unprecedented “globalization,” or economic and social interdependence. Today, it is possible to watch CNN, a US cable news channel, in China and Viet Nam. At the same time, one can read the *People’s Daily* (from China) in English in the US, and watch Al Jazeera (based in Qatar) almost anywhere in the world. Moreover, thanks to new communication and transportation technologies, people and products can move around the globe in ways that were just figments of someone’s imagination just 150 years ago.

Despite these advances in human connection, one of humanity’s yet-to-be-realized hopes is to live together in peace on planet Earth. Every year from 1816 to 2011, there has been at least one interstate or civil war. Since World War II, there have been more than 236 wars in 150 locations. More than half of those wars have occurred since 1988.² From 1990 to 2000, for example, there were 118 wars worldwide. In 1999, more than two thirds of armed conflicts had lasted for more than five years and “almost one third had lasted for more than 20 years.”³ Twentieth-century wars alone killed approximately 140 million people, both civilians and combatants.⁴

As communication and transportation technologies make it easier for humans to move into outer space, will this record of conflict and war spread from planet Earth into the solar system, galaxy and universe? Since Earth is the only planet known (by Earthlings, anyway) to have sentient life at this time, can and should Earth’s many nations agree now to rule out the use of force in outer space? If so, how can and should that be done?

History and Current Events

To understand the debate about preventing an arms race in outer space, it is necessary to define outer space and understand the history of its exploration and use by humans. Yet there is no internationally-accepted definition of “outer space.” What states have agreed is that each country has sovereignty over its own “air space,” and that each country’s air space extends 12 miles *laterally* beyond its borders (even if it overlaps with the air space of other states). This is the same way that a country’s “territorial waters” are determined. Each state has sovereignty over the water and submerged and continental shelf for 12 miles beyond its coastline. Beyond that are the “high seas,” which according to the Law of the Sea are for the use of all mankind.⁵

The problem with this approach to defining “air space” is that it does not address the vertical dimension. How far up “outer space” begins has never been agreed to by states. Even scientists are not sure where to draw the line because the Earth’s atmosphere does not suddenly end but just becomes thinner and thinner the higher one goes.

¹ This background guide was written by Karen Ruth Adams, faculty advisor, with contributions from John Schiltz (2006). Copyright 2011 by Karen Ruth Adams.

² Karen Ruth Adams, “The Causes of War,” in Robert Denemark et. al. eds. *The International Studies Compendium Project* (Oxford: Wiley-Blackwell and International Studies Association, 2010).

³ Wendy Vanasselt, “Armed Conflict, Refugees, and the Environment,” World Resource Institute, July 2003; available at http://earthtrends.wri.org/features/view_feature.php?fid=43&theme=10.

⁴ Adams, “The Causes of War.”

⁵ UN Law of the Sea Treaty Information Center, <http://www.unlawoftheseatreaty.org/>

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As a result, although there is a general consensus that outer space begins at the point where it is possible for objects to orbit the Earth, there are different ideas about where this point actually is. Moreover, where it is depends on prevailing technology. This is why the US State Department has argued that it would be counter-productive to define in concrete terms such as miles where outer space begins. According to the State Department:

... [O]ur position continues to be that the Legal Subcommittee should not take on this issue until practical problems have been identified so as to make it absolutely necessary to do so. ... Whatever definition or delimitation were ultimately agreed upon would by its nature be arbitrary at worst, or, at best, be constrained by the current state of technology. For example, technological advances have increased the height at which aircraft can sustain flight, while they have decreased the height at which the orbital flight of space vehicles is possible.⁶

If we use the scientific definition of outer space at the point where it is possible for objects to orbit the Earth, we can trace the history of human exploration of outer space by reviewing the earliest objects and people to be put into orbit.

The first man-made object to completely orbit the Earth was the Soviet satellite, Sputnik, which was launched in 1957. It was about “twice the size of a football” and orbited the Earth for 22 days, taking about 96 minutes to complete one cycle. In 1958, the US followed with the Explorer satellite.⁷ At the time, what was most significant about these launches was that they showed that each country had the capability to fire inter-continental ballistic missiles at the other. This took the terrestrial nuclear arms race, which began with the US development and use of nuclear weapons in 1945, to a new level.⁸

Since 1957, satellites have become important in their own right. As of 2007, there were at least 800 satellites in outer space, photographing the planet and the universe, and receiving and beaming signals for everything from radios, cell phones, computers, and televisions to telescopes, weather stations, navigational equipment, and military surveillance.⁹

The first human to enter outer space and orbit the Earth was the Russian pilot Yuri Gagarin, in 1971. In 1965, Alexie Leonov, a Russian, was the first person to float or “walk” outside of a spacecraft. The first person to walk on a celestial body other than the Earth was the American Neil Armstrong, who walked on the Moon in 1969. Armstrong characterized this event as “one small step for man, one giant leap for mankind.”¹⁰ Since 1969, Russia, Japan, China, and India have each conducted their own exploration of the Moon.¹¹ In addition, Russia, the US, Japan, and the EU have explored Venus,¹² and 13 countries have agreed to collaborate to explore Mars.¹³

⁶ “U.S. Statement, Definition and Delimitation of Outer Space and the Character and Utilization of the Geostationary Orbit, Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space,” Vienna, April 2001, available at <http://www.state.gov/s/l/22718.htm>

⁷ “Russia marks 50 years of Sputnik,” BBC News, 4 October 2007, available at <http://news.bbc.co.uk/2/hi/7027199.stm> See also “Sputnik’s 50th Anniversary: The Beginning of the Space Race, Facts and Timeline” thirteen ed online, Educational Broadcasting Service, available at <http://www.thirteen.org/edonline/sputnik/facts.html>

⁸ Roald Sagdeev, “Sputnik and the Soviets,” *Science* Vol. 318 (5 October 2007), pp. 51-2.

⁹ “Russia marks 50 years of Sputnik,” BBC News. See also John C. Mather, “Science and Sputnik,” *Science* Vol. 318 (5 October 2007), pp. 52-3.

¹⁰ “Sputnik’s 50th Anniversary: The Beginning of the Space Race, Facts and Timeline.” See also BBC, “On this Day: July 21, 1969: Man takes first steps on the Moon,” available at http://news.bbc.co.uk/onthisday/hi/dates/stories/july/21/newsid_2635000/2635845.stm

¹¹ NASA, “Who’s Orbiting the Moon?,” NASA News, 20 September 2008, available at http://science.nasa.gov/science-news/science-at-nasa/2008/20feb_orbitingthemoon/

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Since 1998, 16 countries have participated in the construction of, experiments at, and explorations from the International Space Station (ISS), which is about the size of a football field. The space station is composed of labs built by the North American Space Agency (NASA), Russia, the European Space Agency (ESA), and Japan. It is manned by a crew of up to 6 scientists and other individuals (including tourists) who are shuttled back and forth in Russian spacecraft, now that the US has ended its space shuttle program. This was not the first space station but is the largest to date and the first to involve extensive international cooperation in an effort to share costs.¹⁴ As of 2008, more than 150 individuals from 15 countries had visited the space station,¹⁵ including Mark Shuttleworth, a South African businessman, who became the first African in space in 2002.¹⁶

At the 10th anniversary of the ISS, Alan Thirkettle, the ISS Program Manager for the European Space Agency, remarked on the high level of cooperation that the 16 participating states have achieved:

Sixty years ago, people in Europe were fighting one another. Now, they're working together, working on spacecraft and space stations. Two decades ago, the Cold War was still going on and here we are working with the Russians, the Americans, the Japanese, the Europeans, everyone working together. It seems a far better thing to be doing than what we were doing 60 years ago.¹⁷

Since the Sputnik launch, outer space has also become a realm for corporate research and investment. In 2006, Bigelow Aerospace, which is based in Nevada, launched the first private space station, or habitat, called Genesis I. Its plan is to lease space to corporations and others interested in research and travel.¹⁸

Previous Committee Work on this Topic

Because space exploration began during the Cold War arms race and could not have occurred without improvements in missile technology, people worldwide worried that it would lay the foundation for a new kind of war in which the Earth would be just one battleground. Thus the UN General Assembly passed its first resolution on the topic in November 1957, just one month after Russia's first Sputnik launch. In Resolution 1148, the GA urged

¹² BBC, "Venus," available at http://www.bbc.co.uk/science/space/solarsystem/sun_and_planets/venus
See also NASA, "Japanese Spacecraft Approaches Venus," 16 August 2010, available at http://science.nasa.gov/science-news/science-at-nasa/2010/16aug_vco/

¹³ BBC News, "Space Agencies Will Coordinate," 31 May 2007, available at <http://news.bbc.co.uk/2/hi/science/nature/6708661.stm>

¹⁴ BBC, "International Space Station," available at http://www.bbc.co.uk/science/space/solarsystem/space_missions/international_space_station

¹⁵ NASA, "Nations Around the World Mark 10th Anniversary of International Space Station," 17 November 2008, available at http://www.nasa.gov/mission_pages/station/main/10th_anniversary.html

¹⁶ "First African in Space," <http://www.africaninspace.com/>

¹⁷ The European countries participating in the ISS under ESA are Belgium, Denmark, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden, Switzerland and the United Kingdom. NASA, "Nations Around the World Mark 10th Anniversary."

¹⁸ Todd Halvorson, "Space, Inc. moving closer to launch," *Florida Today*, 14 November 2010, available at <http://www.floridatoday.com/article/20101114/NEWS02/11140318/1006/NEWS01/Space%20%20Inc>

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“the joint study of an inspection system designed to ensure that the sending of objects through outer space shall be exclusively for peaceful and scientific purposes.”¹⁹

In 1959, in Resolution 1472, the GA established the Committee on the Peaceful Uses of Outer Space (CPUOS). The committee, which meets annually, is now made up of 70 UN member states. CPUOS is charged with studying measures to promote peaceful use of outer space.²⁰

In 1961, the GA asked states to report all launches of objects into outer space to the UN Secretary-General. In 1976, the GA adopted the Convention on Registration of Objects Launched into Outer Space. Since then, 51 states have joined the convention and regularly submit reports of launches originating in their territories.²¹ Since there are 192 UN member states, this is quite a small number of participants. However, many states, especially developing countries, have no space program.

In 1967, the GA adopted the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies. This treaty, which is referred to as the Outer Space Treaty, prohibits the placement of nuclear weapons and other weapons of mass destruction (such as chemical and biological weapons) in space. However, it does not prohibit the basing of conventional weapons there. States that ratify the Treaty agree to the following provisions:

- 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.²²

As of October 2011, 100 UN member states have ratified the Outer Space Treaty, and 26 states have signed but not ratified it. 60 states have never even signed it.²³

¹⁹ UN General Assembly, “Regulation, limitation and balanced reduction of all armed forces and all armaments,” Resolution 1148, 14 November 1957, available at <http://daccess-dds-ny.un.org/doc/RESOLUTION/GEN/NR0/119/31/IMG/NR011931.pdf?OpenElement>

²⁰ UN Office for Outer Space Affairs (UNOOSA), “United Nations Committee on the Peaceful Uses of Outer Space: History and Overview of Activities,” available at http://www.oosa.unvienna.org/oosa/en/COPUOS/cop_overview.html

²¹ UNOOSA, “Convention on Registration of Objects Launched into Outer Space,” available at <http://www.oosa.unvienna.org/oosa/en/SORegister/index.html>

²² UNOOSA, “Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,” available at <http://www.oosa.unvienna.org/oosa/SpaceLaw/outerspt.html>

²³ For a list of signatories, see UNOOSA, “Treaty Signatures,” available at <http://www.oosa.unvienna.org/oosatdb/showTreatySignatures.do>

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“Preventing an Arms Race in Outer Space” is a regular item on the GA’s agenda, and at least one resolution per year has been passed on the topic in recent years. In 2010, the resolution “was passed by a recorded vote of 178 in favour to none against, with 2 abstentions (Israel, United States).” In addition a second resolution on transparency and confidence-building measures in outer space activities “was adopted by a recorded vote of 183 in favour to none against, with 1 abstention (United States).”²⁴

The issue of transparency is especially important for less-developed countries, who do not have the capabilities to participate in space exploration and therefore have no way of monitoring the actions of more-developed countries. In the resolution on that topic, the GA called on the UN Secretary-General to establish an international working group with “equitable geographic representation” to make recommendations on how the countries that are active in outer space can be encouraged to report more fully on their activities.²⁵

At the CPUOS annual meeting in June 2011, some delegations expressed support for a draft treaty that Russia and China presented in 2008 to the UN Conference on Disarmament, which is the UN body that generally drafts disarmament treaties.²⁶ Instead of allowing states to base conventional weapons in outer space, then trying to limit how many can be based there (as the recurring resolution on “preventing an arms race in outer space” suggests), the proposed treaty would ban the basing of weapons of all kinds. In addition, it would make it illegal for states or other actors to shoot down peaceful objects based in outer space, such as satellites and space stations. Because no conventional weapons are currently based there, Russia and China argue that this treaty would not inconvenience anyone. However, under the terms of their proposed treaty, it would not be illegal to shoot down weapons that transit through space, such as inter-continental ballistic missiles or anti-ballistic missile (ABM) interceptors. Because the US is trying to develop ABM technology – and because it considers ABM technology to be defensive, not offensive in nature – this could be a sticking point in getting the US and countries that have agreed to have US ABM sites on their territory to agree to Russia’s and China’s proposed treaty. However, Russia and China say they are open to negotiations on this matter and that their primary aim is to avoid a new arms race in space that would be even more costly and could be far more deadly to human life and life beyond Earth than the Cold War nuclear arms race ever was.²⁷

Conclusion

Much remains to be done to define the terms of the debate about weapons in outer space, much less decide how and by whom they should be regulated. What can and should the GA do to address this challenge? As you research your country’s position on this issue, consider the following questions:

- Does your country have a space program? If so, what are its accomplishments and challenges? If not, why not?
- What is your country’s position on disarmament, both in general and in outer space? Has it signed and ratified the Outer Space Treaty and Convention on Registration of Objects Launched into Outer Space? Why or why not?
- How much does your country spend on the military, and what kind of weapons does it have? In what military conflicts is it currently involved?

²⁴ UN General Assembly, “General Assembly Notes New Strategic Relationship between Russian Federation, United States, Their Endeavour to Reduce Role, Importance Of Nuclear Weapons,” Press Release GA/11033, 8 December 2010, available at <http://www.un.org/News/Press/docs//2010/ga11033.doc.htm> For the text of these resolutions, go to UN General Assembly, 65th Session, Resolutions, available at <http://www.un.org/en/ga/65/resolutions.shtml>

²⁵ UN General Assembly, “General Assembly Notes New Strategic Relationship.”

²⁶ UN General Assembly, “Report of the Committee on the Peaceful Uses of Outer Space,” 54th session, A/66/20, 1-10 June 2011, p. 9, available at http://www.oosa.unvienna.org/pdf/gadocs/A_66_20E.pdf

²⁷ BBC News, “Russia Proposes Space Arms Treaty,” 12 February 2008, available at <http://news.bbc.co.uk/2/hi/europe/7240796.stm>

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- Should the GA encourage member states to work with CPUOS and the Conference on Disarmament to draft a new treaty banning or restricting weapons in outer space?
- In such a treaty, how should “outer space” and “weapon” be defined? With regard to the former, should there be a particular distance from sea level that is specified to be where outer space begins? With regard to the latter, how should the treaty deal with “dual use” technologies such as satellites that can be used to target weapons? Similarly, should it adopt the Russian and Chinese idea that weapons should be outlawed only if they are based in space and not if they pass through?
- Should conventional weapons (like nuclear and other weapons of mass destruction, which are banned by the Outer Space Treaty), be completely banned from outer space, or should conventional weapons simply be limited?
- Who should enforce a ban or other limitations? Should that be the role of the Security Council or of some other body?
- What can be done to minimize the gap between developed and less-developed countries in the peaceful exploration and use of outer space, as well as in the knowledge of any militarization that may be occurring?
- What can be done to ensure that the Moon and other celestial bodies do not become new locations of conflict?

Recommended Reading

BBC News. “Russia Proposes Space Arms Treaty.” 12 February 2008. Available at <http://news.bbc.co.uk/2/hi/europe/7240796.stm>

This recent article lays out the debate between the US, on the one hand, and Russia and China, on the other.

Reaching Critical Will. “Outer Space Militarization, Weaponization, and the Prevention of an Arms Race.” Available at <http://www.reachingcriticalwill.org/legal/paros/parosindex.html>

Reaching Critical Will is a non-governmental organization affiliated with the Women’s League for International Peace and Freedom, which has long been active in disarmament efforts. This site is a good source of information on the particular proposals that various states and organizations prefer.

Stockholm International Peace Research Institute (SIPRI). “The security dimension of European collective efforts in space” (2006) at <http://www.sipri.org/yearbook/2006/11/11> and “The paradox of space weapons” (2003) at <http://www.sipri.org/yearbook/2003/E3> and “The military uses of outer space” (2002) at <http://www.sipri.org/yearbook/2002/11>

SIPRI is a think tank that focuses on military and security matters. These links will take you to recent articles by SIPRI researchers on space weapons. On the SIPRI site you will also be able to find information about your state’s military spending and military conflicts.

UN General Assembly. “Report of the Committee on the Peaceful Uses of Outer Space.” 54th session. A/66/20. 1-10 June 2011. Available at http://www.oosa.unvienna.org/pdf/gadocs/A_66_20E.pdf

This report (especially pages 6-10) provide an excellent summary of recent debates about whether and how a new treaty on preventing an arms race in outer space or preventing the placement of weapons in outer space should be drafted and adopted. It is a good place to get an overview of the issues.

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UN Office for Outer Space Affairs (UNOOSA). “United Nations Committee on the Peaceful Uses of Outer Space: History and Overview of Activities.” Available at http://www.oosa.unvienna.org/oosa/en/COPUOS/cop_overview.html

UNOOSA is the part of the UN secretariat or bureaucracy that assists the GA and Security Council with their efforts to maintain peace and security in outer space. The UNOOSA website is a good source for background information and recent events. In addition, you can find out which of the outer space treaties your country has signed (see link in footnote 22).

Wolff, Johannes M. “‘Peaceful uses’ of outer space has permitted its militarization – does it also mean its weaponization?” *Disarmament Forum* 2003. Available at www.unidir.org/pdf/articles/pdf-art1883.pdf

This article by a British disarmament scholar does a good job of explaining that much of what is already in space has “dual use” aspects. As a result, space is already militarized. The question is how close developed countries are to taking the next step and basing weapons themselves there.