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Could an optional protocol be the way to stop the weaponization of outer space?

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Abstract

Since the early 1980s, the United Nations General Assembly and its affiliated forum, the Conference on Disarmament in Geneva, has had the Prevention of an Arms Race in Outer Space issue on its agenda. In the intervening years, the threat of weapons being introduced into the outer space realm has waxed and waned, but, in the main, a benign environment free from man-made threats has prevailed, allowing for great strides in the exploration and use of space. Recently, a renewal of great power rivalry including the development of offensive 'counter-space' capabilities has resurrected the spectre of armed conflict in space. With widespread political support for the non-weaponization of outer space, has the time come to give legal expression to this goal by means of an optional protocol to the 1967 Outer Space Treaty?

Keywords

space security, Outer Space Treaty, diplomacy, international space law, weaponization of outer space, space arms control, optional protocol

As a career diplomat in an earlier life with a professional focus on arms control and disarmament policy, I was always puzzled by an aspect of global attitudes towards security in outer space. In brief, I found difficult to understand the contrast between a clearly expressed wish to preserve outer space for peaceful use, including prevention of its weaponization, and the lack of purposeful state action to achieve this goal.

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The aspiration has been affirmed regularly and with wide support via a resolution which the UN General Assembly has adopted on an annual basis since 1981. Most recently, the 2020 vote in the General Assembly was 185 'yes', 2 'no' (the United States and Israel) and no abstentions.[1] This resolution entitled 'Prevention of an Arms Race in Outer Space' (or PAROS for short) specifies that prevention 'including the weaponization of outer space' should be the goal of 'further measures' by the international community.[2] The resolution also recognizes 'that the legal regime applicable to outer space by itself does not guarantee the prevention of an arms race in outer space' and that there is a need 'to consolidate and reinforce the regime and enhance its effectiveness'.[3]

The legal regime referred to is the 1967 *Outer Space Treaty*, one of the great achievements of multilateral diplomacy.[4] This foundational treaty imparted a special status to outer space as a form of 'global commons', beyond any 'national appropriation or claim of sovereignty'.[5] The conflict prevention significance of this status is better appreciated if one reflects on how many terrestrial conflicts occur over clashing claims of sovereignty or territorial disputes. The treaty further specified that the exploration and use of space should be for peaceful purposes and 'for the benefit and interests of all countries'.[6] The pacific orientation of the treaty also manifested in a prohibition on putting into orbit any weapon of mass destruction and a comprehensive ban on the 'militarization' of the moon and any celestial body.

The treaty's prohibition on placement of weapons in space was limited, however, to weapons of mass destruction, and, hence, it is not surprising that those supportive of the pacific aims of the Outer Space Treaty would see the need to extend this ban to all forms of weaponry. Such an extension would give legal expression to the political intent regularly affirmed in the PAROS resolution. Canada was a prominent champion of the non-weaponization of space goal. A very high-level expression of support for this action was voiced by the then Canadian Prime Minister Paul Martin in his September 2004 address to the UN General Assembly. He stated: 'What a tragedy it would be if space became one big weapons arsenal and the scene of a new arms race. In 1967, the United Nations agreed that weapons of mass destruction must not be based in space. The time has come to extend this ban to all weapons'.[7]

1. UN General Assembly Resolution 75/35 Prevention of an arms race in outer space A/RES/75/35 (16 December 2020), https://www.undocs.org/en/A/RES/75/35.
2. Ibid., 2.
3. Ibid., 3.
4. *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies, 1967,* New York, 19 December 1966, RES 2222 (XXI), https://www.unoosa.org/oosa/oosadoc/data/resolutions/1966/general_assembly_21st_session/res_2222_xxi.html.
5. Ibid., 13.
6. Ibid., 13.
7. Statement by Prime Minister of Canada Paul Martin to the General Assembly, document A/59/PV.5*, 22 September 2004, 30, https://undocs.org/en/A/59/PV.5.

Diplomatic initiatives on outer space security

Canada, of course, was not alone in considering what might be done to better secure a non-weaponized outer space in the future. Several states were compelled to further this diplomacy after the 2002 decision by the United States under the George W. Bush Administration to abrogate the 1972 Anti-Ballistic Missile (ABM) Treaty. The Bush Administration saw the treaty as an unacceptable constraint on its abilities to build up its national ballistic missile defences. The ABM Treaty had prohibited the deployment of space-based ABM systems; thus, these safeguards against space weaponization disappeared when the treaty was terminated. Shortly after the end of the ABM Treaty, at the Conference on Disarmament, China and Russia set out the initial elements for a proposed PAROS treaty. Building on these ideas, China and the Russian Federation presented at the 2008 Conference on Disarmament their proposal for a treaty to accomplish the aim of non-weaponization of outer space.[8] A revised version of the draft treaty was tabled at the Conference on Disarmament in 2014. This treaty on the *Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force Against Space Objects* (better known as the PPWT) has received something of a chilly reception. The United States, in particular, has criticized it for definitional deficiencies, lack of verification provisions and failure to cover ground-to-space weapons. The sponsors of the draft have provided a rebuttal to some of this criticism, but the Conference on Disarmament has not provided a forum conducive to further discussion of the PPWT because it has been in a state of gridlock for over 20 years. Meanwhile, China and Russia have so far not been prepared to take their treaty proposal elsewhere. These states favour the strict consensus procedure of the Conference on Disarmament, which ensures a veto-like control over proceedings. They may fear that taking their treaty proposal elsewhere would make it easier for the US to stand aloof from it.

Anti-satellite weapons (ASAT): A new impetus for diplomacy

External developments spurred further diplomatic thinking with the surprise ASAT test by China in January 2007 at an altitude that resulted in considerable enduring space debris. The next year, the United States demonstrated its ASAT capability via the destruction of one of its own satellites, although at a much lower altitude that minimized debris. In 2019, India followed suit with a similar ASAT test employing a direct ascent missile. The spectre of destructive ASAT tests exacerbating the already worrisome problem of space debris in low Earth orbit (LEO) brought attention once again to the lack of real progress in realizing the goals of the PAROS resolution, despite the

8. *Treaty on the Prevention of the Placement of Weapons in Outer Space and on the Threat or Use of Force against Space Objects,* CD/1679, 28 June 2002; CD/1839, 29 February 2008; CD/1985, 12 June 2014, https://www.ungeneva.org/en/disarmament.

apparent near universal support for these aims. The ASAT tests of 2007–2008 prompted a new round of diplomatic initiatives to safeguard space for peaceful purposes.

The most ambitious was the European Union's draft proposal for an International Code of Conduct for Outer Space Activities, first set out in 2008. The code consisted of a set of voluntary measures, some repackaged and some newly minted, which represented an effort (in the words of the preamble) 'to safeguard the continued peaceful and sustainable use of outer space for current and future generations'.[9]

Perhaps due to the complex intra-EU negotiations that gave rise to the initiative, the diplomatic management of the consultation process with other concerned states proved to be lengthy and plagued with problems. While the tempo and scope of consultations were increased in the 2013–2014 time frame, the attitude of several non-European spacefaring states towards the EU's handling of the initiative cooled markedly, although the idea of an international code of conduct as such was supported in principle.

Despite the signals of dissatisfaction on the part of several states, the EU decided that the draft was ready for a last round of multilateral negotiations to finalize and adopt the text. This meeting, convened in New York, 27–31 July 2015, failed to produce the desired outcome. In particular, the BRICS states (Brazil, Russia, India, China and South Africa) expressed major dissent. The BRICS issued a joint statement stipulating that 'the elaboration of such an instrument should be held in the format of inclusive and consensus-based multilateral negotiations within the framework of the United Nations, based on a proper and unequivocal mandate, without specific deadlines, and taking into account the interests of all states'.[10]

The EU voiced its disappointment that, after so much preparation, this attempt to finalize the text of the code had proven impossible. However, it did not seek a new UN mandate for an open-ended negotiation process at the UN General Assembly, as recommended by many. Although the code had some promising content (e.g. provision for institutional support and biennial meetings of states), it currently remains in a diplomatic limbo with no state willing to champion it.

As noted earlier, Canada was also active during this time period, following up on the political direction expressed by Prime Minister Martin with specific proposals on outer space security. These were contained in working papers submitted to the Conference on Disarmament in 2007 and 2009.[11] In the earlier paper, Canada proposed that (i) states make better use of the confidence-building measures contained in existing accords such as the Outer Space Treaty and the Hague Code of Conduct, (ii) a moratorium on ASAT tests be agreed and (iii) space situational awareness be conducted through a multilateral

9. European Union, Draft International Code of Conduct for Outer Space Activities, 31 March 2014, https://www.eeas.europa.eu/non-proliferation-and-disarmament/pdf/space_code_conduct_draft_vers_31-march-2014_en.pdf.
10. BRICS Joint statement regarding the principles of elaboration of international instruments on outer space activities, New York, 27 July 2015, https://www.rusemb.org.uk/fnapr/5145.
11. *Transparency and Confidence-Building Measures in Outer Space Activities*. CD working paper submitted by Canada, Conference on Disarmament, CD/1815, 20 February 2007 and CD/1865, 5 June 2009, https://www.unog.ch/disarmament.

monitoring centre. In the 2009 paper, Canada suggested that states unilaterally commit to specific security 'pledges', namely, a pledge not to place weapons in outer space, not to engage in destructive ASAT testing and not to use a satellite as a weapon. These ideas were pitched as representing a middle ground between a legally binding agreement like the PPWT, on the one hand, and the 'security-lite' character of the voluntary measures contained in the EU code, on the other. Although these ideas were in keeping with Canada's usual effort at bridge building amongst contending positions, they received little traction at the United Nations, and Canada failed to vigorously promote them. In 2020, Canada reiterated, in statements to the Conference on Disarmament and the UN General Assembly, its earlier suggestion advocating the negotiation of a ban on destructive ASAT tests.

Time for an alternative diplomatic solution: An optional protocol

Since the Sino–Russian PPWT proposal is not going anywhere at present, buried as it is at the Conference on Disarmament, and no one is picking up the dropped International Code of Conduct proposal or the Canadian ideas on security 'pledges', the time may be ripe for a totally different approach to provide legal reinforcement to the declaration against the weaponization of outer space.

In this context, a simpler vehicle could be employed to give legal expression to the non-weaponization goal, namely, an optional protocol to the *Outer Space Treaty*. An optional protocol is a legal instrument that supplements an existing international treaty. As the word 'optional' indicates, the protocol does not automatically bind the states parties of the original treaty but must be separately agreed to by the states concerned. Optional protocols have been widely used in international human rights law; for example, the Optional Protocol on Children in Armed Conflict (2000) supplements the 1990 *Convention on the Rights of the Child* by stipulating that no one younger than 18 should be recruited into the military and potentially take part in hostilities. Optional protocols have also featured in the arms control and disarmament realm, for example, the five protocols of the 1980 *Convention on Conventional Weapons* (CCW).

One of the advantages of this approach is that it provides a supplementary agreement to the widely supported *Outer Space Treaty* (currently 110 states parties) that is aligned with its pacific orientation and extends its existing weapons prohibition. The adoption of an optional protocol to the *Outer Space Treaty* would not entail 'opening up' the treaty itself, which could prompt undesirable amendments to the treaty. Rather, the negotiating process for an optional protocol could be undertaken using existing UN machinery, either through the Committee on the Peaceful Uses of Outer Space or, if consensus agreement was not possible in that body, via a UN General Assembly mandated process, or even by means of an ad hoc diplomatic conference. If kept simple, an optional protocol that extended the *Outer Space Treaty's* ban on weapons of mass destruction to all forms of weaponry should not be overly complicated to draft.

An objection to this approach could stem from the question of defining a 'space weapon', a concern that has been raised in the past, with respect to the PPWT for instance. At one level, any object in space capable of manoeuvre could theoretically be employed as a weapon against another object. This sort of objection tends to be cited, however, by those not interested in new restraints on military space activity. If there is sufficient interest in negotiating cooperative measures, there could be two ways of responding to such a definitional challenge: (i) offer up a definition or (ii) do not attempt to define the term. If the latter option seems odd, it is relevant to consider the approach taken by such central arms control and disarmament agreements as the Nuclear Non-proliferation Treaty (NPT) or the Comprehensive Test Ban Treaty (CTBT). Although the NPT is directed at preventing the proliferation of nuclear weapons and facilitating their elimination, one will search in vain for a definition of a 'nuclear weapon' in the NPT. Similarly, although the CTBT codifies a comprehensive ban on nuclear explosive testing, it does not define the term 'nuclear explosion'. The negotiators of these agreements decided it was best not to seek specific definitions of these key terms, yet their absence has not detracted from the wide support and high standing both of these treaties enjoy.

Alternatively, a suitable definition of 'weapon' could be developed that would be adequate in the eyes of most negotiators. The PPWT already offers one which reads in part: 'any outer space object or component thereof which has been produced or converted to destroy, damage or disrupt the normal functioning of objects in outer space …'[12] Such a definition could probably be improved upon, but it would seem to offer a reasonable basis for negotiation.

Verification could also be raised as a problem for the envisaged optional protocol as it was for the PPWT. Current verification capabilities, however, appear adequate to provide confidence that violations of the optional protocol could be detected. Both in the state realm and in the private sector, important progress has been made recently in the capabilities of monitoring technologies for space activity. These could be drawn on to verify compliance with a ban on weapon placement in outer space. It is noteworthy that a recent accusation by one leading power about a space object launched by a rival power and its subsequent suspicious action clearly relied on information derived from 'national technical means' available to the accusing party.[13] Barriers to accepting a verification regime for space arms control thus are more likely political than technical.

A further objection to the proposed optional protocol, as was raised against the PPWT, was that it fails to cover ground-to-space weapons, in particular terrestrial-based anti-satellite weapons (ASATs). Two approaches to this issue are possible: (i) ignore

12. *Treaty on the Prevention of the Placement of Weapons in Outer Space and on the Threat or Use of Force against Space Objects,* CD/1679, 28 June 2002; CD/1839, 29 February 2008; CD/1985, 12 June 2014, https://www.ungeneva.org/en/disarmament.
13. United States, Department of Defense, US Space Command Public Affairs Office, 'Russia conducts space-based anti-satellite weapons test'. Press release. 23 July 2020, https://www.spacecom.mil/MEDIA/NEWS-ARTICLES/Article/2285098/russia-conducts-space-based-anti-satellite-weapons-test/.

this category of weapon and focus only on weapons placed in space, or (ii) extend the ban on space weapons to cover ground-to-space systems as well. The former option could be embraced as representing an important step towards codifying the non-weaponization of space norm and one that would be easier to negotiate than one attempting to cover ground-to-space systems.

A salient problem in trying to cover ground-to-space systems is that an optional protocol would have to apply to existing terrestrial-based ballistic missile interceptors that possess an inherent ASAT capability. The United States has consistently rejected including its missile defense systems in strategic arms reduction negotiations. Thus, bringing them on board to a negotiation that would likely be premised on the elimination of these weapon systems appears to be a diplomatic bridge too far at present. Future developments relating to threats-to-space operations might lead to an eventual re-evaluation of this situation. Nevertheless, when one adds the potential of terrestrial-based cyber, laser and directed energy-type weapons, the negotiating challenges become daunting. That said options that cover all or some of the terrestrial-based systems should be explored as well, perhaps at a second stage of negotiations when some mutual trust has been established after successful observation of an initial optional protocol limited to space-based weapons. A diplomatic maxim is 'Don't let the "best" be the enemy of the "good"', and that saying is relevant to this question of what might be desirable as an initial outcome of negotiations.

To have an impact on the conduct of major space powers, an optional protocol to the *Outer Space Treaty* would have to attract significant support from the international community. Even if some of the current adversarial powers (such as the US, Russia and China) stand aloof from an optional protocol, uptake from the expanding number of states benefiting from space operations would begin to establish a non-weaponization norm that would be difficult to ignore. Advocacy by the private sector and civil society, actors with an ever increasing 'stake' in the peaceful uses of outer space, could generate significant pressure on recalcitrant governments to sign on. The fact that an optional protocol on non-weaponization is aligned with the foundational goals and spirit of the *Outer Space Treaty* could also provide momentum once a diplomatic initiative was launched. Such an initiative would require like-minded states acting in concert. Canada would be a natural leader for such an initiative given its past efforts on behalf of space security. Other 'middle powers' could figure in a cross-regional coalition to get the diplomatic 'ball' rolling on the path towards enshrining in law the non-weaponization of space.

Conclusion

Despite the many different diplomatic and strategic considerations underlying space security policy, at the core of this issue is a question of political will. Namely, are the more than 180 states that routinely endorse the PAROS resolution prepared to follow through and commit to a legally binding instrument to prevent the weaponization of outer space, or are they not? If they are willing, and the mounting 'counter-space'

threats and growth in space assets provide compelling motives to do so, an optional protocol to the *Outer Space Treaty* might afford an attractive means of achieving a non-weaponized status for outer space.

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