



Project Ploughshares

www.ploughshares.ca

Outer Space Institute

www.outerspaceinstitute.ca

Focal Point: Dr. Jessica West

Senior Researcher, Project Ploughshares

jwest@ploughshares.ca

Chapeau

Urgent governance initiatives are needed to ensure that the benefits of outer space are available and accessible to all, both today and by future generations. At the heart of this approach must be a renewed commitment to cooperation, not just among states, but also across thematic and institutional divides that have hindered effective governance of space by siloing discussions related to safety, sustainability, science, and security respectively. Also crucial is recognition of the linkages between sustainable, inclusive, and peaceful governance of outer space and our future here on Earth. In support of a holistic approach to the governance of outer space activities we suggest the following practical measures be considered by the Summit:

Chapter I. Sustainable development and financing for development

Recognize connections between sustainability on Earth and in space.

Our future on Earth is deeply tied to our future in outer space. Efforts to nurture sustainable development on Earth must involve similar efforts to assure peaceful and sustainable access to outer space and space-based services and data.

1. Integrate space data into the global digital compact.

The ability to access and use outer space is essential to sustainable development on Earth. The [Space2030 Agenda](#) makes clear that almost half of the 17 Sustainable Development Goals are enabled by Earth Observation (EO) and geolocation and timing (provided by Global Navigation Satellite Systems known as GNSS) systems; a figure that is poised to grow as technical capabilities and data applications rapidly expand. Space systems are also essential for being able to monitor and mitigate climate change and to identify and reduce global emissions.

Given this global dependency on outer space for social, economic, and environmental well-being on Earth, it is essential that access to and use of space-based data be included as a fundamental principle in

the development of a global digital compact. Any tools developed to facilitate an open, free, and secure digital future must include consideration for space derived data as part of a global digital commons that promotes cooperation, access, and capacity building and respects human rights in the means and methods by which space data are derived and used.

2. Adopt measures to enhance the sustainability of the outer space environment.

The use of outer space for sustainable development on Earth requires equal commitment to the sustainability of the fragile space environment. Practical initiatives to aid this effort include:

- a) Broad implementation of the 21 Guidelines for the Long-Term Sustainability of Space Activities, adopted by the UN Committee on the Peaceful Use of Outer Space (COPUOS) in 2019, which would contribute to both greater sustainability and confidence building among space actors (see below). Further efforts to enhance the participation of stakeholders in the work of COPUOS should be actively sought.
- b) The European Space Agency's [Zero Debris Charter](#), which aims to implement a “zero debris” approach to space missions, could serve as a guide to the further expansion and development of space-based capabilities and applications as well as capacity-building and technical assistance.
- c) Sustainable development cannot ignore threats to peace and security in outer space. A commitment to zero debris missions should also extend to military activities (see below).

3. Identify and mitigate harmful effects of space activities on Earth.

Sustainable development of outer space must also include efforts to mitigate and reduce potential harmful effects on Earth. Initiatives to this end include:

- a) A commitment to preserve [Dark and Quiet Skies](#) on Earth.
- b) A commitment to promote the [controlled re-entry](#) of rocket bodies and other space objects through negotiations on a controlled re-entry agreement, starting with rocket bodies, and to adopt national laws or regulations requiring controlled re-entries in the meantime.
- c) A commitment to minimize the [atmospheric](#) impacts of rocket launches and re-entering rocket bodies and satellites and to study the effects of these activities on the Earth's atmosphere.

4. Support a global framework to govern the exploitation of space resources.

Extraterrestrial mineral resources are a growing focus of both future development and governance. A 2020 [Open Letter](#) by the Outer Space Institute on Space Mining noted that “In the absence of a multilateral process for governing space resource exploration, exploitation and utilization, national approaches risk the development of possibly inconsistent governance frameworks.” While this topic has since been taken up by the Legal Sub-Committee of COPUOS, it risks being outpaced by rapidly advancing activities and capabilities in space. The Summit could provide momentum to this effort by:

- a) Encouraging early conclusion of work within COPUOS.
- b) Articulating core cooperative principles for a multilateral framework for space resource governance rooted in the Outer Space Treaty such as equal and sustainable access and use, environmental protection, and global benefit, and:
- c) Ensuring the protection and availability of pristine samples from early exploration activities for open scientific analysis, especially from sensitive areas such as the Permanently Shadowed Regions at the lunar north and south poles.

Chapter II. International peace and security

Reinvigorate commitments to peace and the prevention of an arms race in outer space (PAROS).

A renewed commitment to peace in outer space – rooted in practical initiatives to implement the UN mandate on PAROS – is essential. Yet the international community remains strongly divided between political, normative, and behavioural approaches to PAROS on the one hand, and legally binding restrictions on capabilities. The Summit should champion synergy across these approaches by identifying specific types of activities for which governance measures can improve mutual security. Priorities for this approach include:

1. Expand on commitments not to conduct destructive anti-satellite missile testing in outer space.

Restrictions on intentionally destructive actions that create space debris are in the interest of all space actors and bridge sustainability, security, and governance objectives. Adherence to such restrictions can also help to build trust toward more a more comprehensive ban on weapons. A growing number of states and [civil society organizations](#), including [Project Ploughshares](#), have been advocating for a ban on destructive testing of weapons in outer space, as has [industry](#). In 2021 the Outer Space Institute issued a widely-supported [Open Letter](#) calling for the UN to initiate negotiations on such a ban. United Nations General Assembly resolution [77/41](#) calls for states to commit not to conduct destructive direct-ascent anti-satellite missile tests; [37](#) states have done so.

The Summit should expand on this initiative by:

- a) Encouraging *all* states to join the voluntary commitment outlined in resolution 77/41.
- b) Expanding existing commitments to include *all* destructive tests of space-related technology and capabilities, whether based on Earth or in space.
- c) Initiating efforts to negotiate legally binding restrictions.

Advance mechanisms for transparency and confidence in space activities

Transparency and confidence building measures can enhance stability and predictability, particularly when accompanied by abilities to monitor or otherwise be confident of implementation. Such measures are also essential for promoting greater inclusion in space governance (see below). The consensus

[report](#) of the 2013 UN Group of Governmental Experts on transparency and confidence building measures generated a series of actionable items, some of which were further specified in the 2023 consensus [recommendations](#) at the UN Disarmament Commission. However, the means of implementing the recommended actions are lacking. To address this gap, the Summit should prioritize:

- a) Means and mechanisms to cooperate on the sharing of and access to space situational awareness data.
- b) Standards and procedures for rendezvous and proximity operations (RPOs) to promote safety and reduce perceptions of insecurity and conflict escalation.
- c) Points of contact and other communication mechanisms to facilitate actions such as prior notification of scheduled activities and maneuvers, and consultations.
- d) Reinvigorated practices associated with the UN Registration of Space Objects to improve timeliness and accuracy of information provided and increase its scope to account for new activities, such as relocation of objects, release of secondary objects, and activities beyond Earth orbit.

2. Champion the protection of civilians and civilian uses of outer space

Civilians are the majority of space users around the world, but this use is threatened by growing military competition, which not only impedes efforts at arms control but also puts civilian capabilities and services at risk through potential armed conflict and harmful interference with space systems. As a path to future peace and global well-being, the United Nations must champion the protection of civilian services in outer space. Two core means to do so are:

- a) To make clear that international humanitarian law (IHL) applies to outer space, and to clarify its applications.
- b) To champion restrictions on harmful interference (non-kinetic) against space objects that leads to a loss of operational control over or permanent loss of the space system or otherwise impairs the provision of space-based services to the public (see ICRC's [submission](#) to the Space Threats Open-Ended Working Group).

Chapter III. Science, technology and innovation and digital cooperation

See Chapter I. Sustainable development.

Chapter IV. Youth and future generations

See Chapter V. Transforming global governance.

Chapter V. Transforming global governance

Lead an inclusive approach to space governance.

Strategic military competition impedes efforts to enhance the global framework for peace and security in outer space. Progress requires leadership on more inclusive approaches that recognize the shared human and environmental imperatives of peace, enable participation in a strong and clear rules-based order for all stakeholders, and promote cooperation across UN bodies and mandates. This includes:

1. *Inclusive forums*

A peaceful and sustainable future in outer space requires the participation of all stakeholders and *perspectives*. Efforts to reinvigorate space governance for the future must include a commitment to forums that ensure access to and participation by all, including:

- All states, regardless of their capabilities related to outer space
- Civil society representatives and international organizations
- Commercial perspectives
- Women, youth, indigenous peoples, and other underrepresented groups

Beyond access, support for inclusive forums must include efforts to ensure that voices are heard, through consultations, rules of procedure, and capacity-building.

2. *Inclusive governance*

Governance of outer space must also be inclusive of the diverse uses and users of outer space. Commitments to consider:

- a) Governance initiatives must be inclusive of all, rooted in understanding of the different needs, uses, and impacts of outer space activities based on gender, sexuality, geographic, socio-economic and other qualities of people around the world.
- b) Governance measures must apply equally to all uses and users of outer space, including military activities and commercial and other non-government entities for which states are accountable.

3. *Cooperation across UN bodies and mandates*

Advancing objectives for a more peaceful and sustainable future in outer space requires a commitment to renewed cooperation across various bodies of the United Nations to overcome intra-institutional silos, turf wars, and forum blocking that current impede governance efforts. The Summit can aid this effort by articulating the pursuit of core objectives in the form of cross-body mandates and shared responsibilities.

A clear starting point is to pursue better coordination or eliminate the division of space governance issues between the First and Fourth Committees of the UN General Assembly.

4. *Institutional support*

Inclusive space governance requires resources for institutional support. The *Outer Space Treaty* lacks measures such as meetings of states parties, which are common in many multilateral contexts. We propose that the Summit begin by calling for a meeting of the states parties of the *Outer Space Treaty* to consider the current situation relevant to the treaty's aims and implementation.

Contributors

Jessica West, PhD

Senior Researcher, Project Ploughshares

Paul Meyer, Ambassador (retired)

Fellow, Outer Space Institute

David Kendall, PhD

Fellow, Outer Space Institute

Adam Bower, PhD

Senior Lecturer in International Relations, University of St Andrews

William (Mac) Evans, Member of the Order of Canada

Former President of the Canadian Space Agency

Aaron Boley, PhD

Canada Research Chair in Planetary Astronomy, University of British Columbia

Co-Director, Outer Space Institute

Michael Byers, PhD

Canada Research Chair in Global Politics and International Law, University of British Columbia

Co-Director, Outer Space Institute

Ram Jakhu, PhD

Project Director, McGill Manual of International Law Applicable to Outer Space (MILAMOS)

McGill University