

**Co-Editors**

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Ram S. Jakhu  
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# McGill MANUAL

on International Law Applicable  
to Military Uses of Outer Space

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**Volume I - Rules**



The logo features the word "McGill" in red, positioned above the word "MANUAL" in black. A red orbital path with two red dots is superimposed over the text, looping around the "McGill" and "MANUAL" words.

Product of the McGill Project to draft the  
Manual on International Law Applicable to Military Uses of Outer Space  
(MILAMOS Project)

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## PROLOGUE: THE RULES OF THE MCGILL MANUAL

**C**onflict in outer space is not inevitable. Yet, as the human costs and devastating consequences of the possible extension of an armed conflict to outer space cannot be discounted, there is an imperative for all of us - the international community, academics and civil society - to do everything possible to ensure that outer space remains free from conflict and is explored and used in a safe, secure and sustainable manner, in accordance with the international rules-based order.

The reconvening of the United Nations Committee on Peaceful Uses of Outer Space (UNCOPUOS) Working Group on the Long-Term Sustainability of Outer Space Activities and convening of the UN Open-Ended Working Group on Reducing Space Threats Through Norms, Rules and Principles of Responsible Behaviours highlight a growing impetus and interest for meaningful consideration of the impacts of military uses of outer space. The McGill Manual is expected to contribute to the ongoing discussions on ways and means to further enhance the international rules-based order for the exploration and use of outer space.

The McGill Manual is the product of the McGill-led project to draft the Manual on International Law Applicable to Military Uses of Outer Space (MILAMOS Project). The MILAMOS Group of Experts arrived at consensus on key issues reflected in fifty-two Rules - which are set out in this *McGill Manual: Volume I* - covering a variety of international law subject matters particularly relevant to current and potential military uses of outer space. These are of critical importance to space activities conducted during peacetime and in time of tension that pose challenges to peace. This directed focus means that the scope of the McGill Manual does not extend to the law applicable during periods of armed conflict. Indeed, one of the purposes of the McGill Manual is to clearly set out the ways in which existing international law serves to restrain actions that might otherwise lead to the commencement of an armed conflict.

The McGill Manual is intended to support efforts to strengthen the safe, secure, and sustainable use of outer space by clarifying the international law applicable to military space activities. The Rules of the McGill Manual are the result of meticulous and rigorous efforts and consultations among a group of highly-qualified experts from around the globe, with both military and civilian backgrounds. These experts are well-recognised professionals, academics and publicists in various domains of international law, in particular international space law and international telecommunication law, as well as experts in space science and technology. The Rules reflect their understanding of the law as it existed at the time of this publication.

This volume contains only the Rules of the McGill Manual. The consolidated McGill Manual, comprising of the Rules with Commentaries, is published separately as *McGill Manual: Volume II - Rules with Commentaries*. The detailed Commentaries elaborate the legal basis for the Rules, break down elements of the Rules, and identify ongoing and future challenges.

We express our sincere gratitude to all the participants of the MILAMOS Project who have voluntarily contributed immense time and effort, especially during challenging times of the pandemic, towards completion of the McGill Manual. We hope that the McGill Manual will be an important research and reference point for everyone concerned with the promotion of the use and exploration of space exclusively for peaceful purposes and for the benefit of all humanity.

Ram S. Jakhu  
Steven Freeland  
(Co-Editors)  
Montreal/Sydney  
July 2022

## THE VISION OF THE MCGILL MANUAL

With funding from and in collaboration with various institutions from across the globe (see [ANNEX II](#)), the MILAMOS Project was launched in October 2016 to develop the McGill Manual that objectively articulates and clarifies existing international law applicable to military uses of outer space in time of peace, and periods of tension that pose challenges to peace. The MILAMOS Project was initiated with a vision of contributing to a future where all space activities are conducted in accordance with the international rules-based order, without disrupting, and preferably contributing to, the sustainable use of outer space for the benefit of present and future generations of humanity.

More information about the MILAMOS Project and the McGill Manual can be found on the dedicated website: [www.mcgill.ca/milamos](http://www.mcgill.ca/milamos)

## WHY A MANUAL ON INTERNATIONAL LAW?

With the proliferation of space actors and activities, outer space is, among other things, becoming increasingly competitive, congested and contested and thus vulnerable to significant adverse impacts from unlawful actions. In addition, in the context of the geo-politically and multi-polarised nature of the world today, there is widespread concern that the peaceful uses of outer space are increasingly under threat to the point where hostile action could extend to, or be initiated in, outer space. Hence, clarification of the law applicable to all space activities, including military space activities, in the exploration and use of outer space is imperative.

Though there have been various efforts to increase transparency and confidence-building measures and to prevent an arms race in outer space, these do not fully address the legal challenges presented by the range of military space activities currently being conducted or envisaged.

The McGill Manual is the first international collaborative and dedicated endeavour to determine and clarify the rules of international law applicable to a range of issues that have a bearing on space activities, including military space activities. It seeks to inform all actors involved in the progressive development of international law and support and enhance further efforts of States to promote international peace and security and the sustainability of outer space.

The contribution and value of manuals to articulate a more comprehensive understanding and application of international law have been affirmed by international courts and tribunals as well as States. Through a thorough research and rigorous consultation process with subject-matter experts, manuals such as the McGill Manual can provide useful guidance and clarification on the applicable law, particularly in areas where the relevant rules of international law are subject to diverse interpretations and/or where States are reluctant or unable to negotiate binding international agreements.

## PROCESS OF ARTICULATING THE RULES

The Rules of the McGill Manual are the result of eight rule-drafting and consensus-forming plenary meetings held by the entire MILAMOS Group of Experts, and twelve meetings of the Editorial Committee, over a period of six years (2016-2022). The involvement of a selected and highly-qualified group of legal and technical experts, including professionals from major emerging space-faring States, means that the McGill Manual uniquely captures the perspectives of a wide-range of expertise from around the world. The McGill Manual is the product of a collaborative effort of all the participants and is reflective of an independent, neutral, transparent and inclusive process, so as to enhance its universal relevance and acceptance.

Intensive in-person and online discussions have led to the adoption of the Rules through consensus, both at the plenary and Editorial Committee levels. In its discussions, the MILAMOS Group of Experts followed the Chatham House Rule of non-attribution. Accordingly, the findings of the McGill Manual are *not* attributed to any individual participants, their affiliations or to their State of nationality. State observers were invited to the consensus-forming process to provide input; however, the drafting of the Manual remains completely independent of any particular State, stakeholder, participating institution or collaborator. The long and meticulous drafting and consensus-forming process ensures that the Rules are expressed in clear and unambiguous language and are consistent with and reflect current international law. Prior to finalisation, to verify the accuracy of the content, the Rules have undergone scrutiny by independent external peer-reviewers.

## THE COMMENTARIES

Accompanying the Rules are the Commentaries that form a crucial and integral part of the McGill Manual. The Commentaries are published separately as *McGill Manual: Volume II - Rules with Commentaries*.

The Commentaries reflect points of consensus, disagreement, and, where possible, provide hypothetical examples to highlight the practical application of the relevant Rule to the specificities and realities of the space environment. The evidence-based analysis and discussions in the Commentaries provide the rationale for, and more detailed understanding of, the Rules and the relevant law as it stands, and also articulate on-going issues and future challenges with respects to various military uses of outer space.

The *McGill Manual: Volume II - Rules with Commentaries*, to be published by Springer, contains a glossary, selected treaties and other legal instruments, and a list of all participants of the MILAMOS Project. The *McGill Manual: Volume II - Rules with Commentaries* also captures discussion on three 'Issues of Critical Importance' – 'Protection of the Environment', 'Laser Dazzling' and, 'Interference with the Global Navigation Satellite System' - on which the Group of Experts could not reach consensus.

The Rules of the McGill Manual are drafted by, and adopted on the basis of consensus among, the Groups of Experts. The Commentaries are drafted by the McGill Team (comprising of Ram S. Jakhu, Kuan-Wei Chen and Bayar Goswami), based on the pre-existing collaboration and consultation with the Group of Experts and seek to reflect the collective efforts and views of the Group of Experts to the greatest possible extent. In addition, the comprehensiveness of the Commentaries to the Rules is achieved through a public consultation process.

## IDENTIFICATION OF *LEX LATA* (LAW AS IT IS)

The McGill Manual only identifies and clarifies the applicable *lex lata*, or the law as it is, governing space activities, including military uses of outer space. The McGill Manual does not seek to restate what the law *should* be or *should* become, nor is it a restatement of law according to the preferred policy or practice of any particular State or stakeholder involved in the exploration and use of outer space. As noted, it is instead a clear reflection of the existing law as analysed by an independent Group of Experts, and exclusively relying on the use of primary resources and official documents reflecting State practice.

## INTERNATIONAL SPACE LAW

International space law is the branch of international law that specifically governs space activities, including military space activities. As a branch of international law, the traditional ‘sources’ of international space law are the same as other areas of international law, namely, international conventions (treaties), rules of customary international law and general principles of law. The customary international rules of treaty interpretation, as codified in the 1969 Vienna Convention on the Law of Treaties, also apply equally to the UN treaties on space law. The most specific primary sources of international space law are the five space law treaties that have been negotiated and adopted under the auspices of the UN, namely:

- 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty);
- 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Rescue and Return Agreement);
- 1972 Convention on International Liability for Damage Caused by Space Objects (Liability Convention);
- 1975 Convention on Registration of Objects Launched into Outer Space (Registration Convention); and
- 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (Moon Agreement).

These treaties are supplemented by several other binding international treaties and regulations of international organisations, as well as by several non-binding UN General Assembly resolutions and guidelines adopted by consensus by the States Members of the UNCOPUOS.

In the McGill Manual, unless the context otherwise indicates, the term ‘international space law’ refers primarily to the law as specified in the five UN space law treaties. These treaties lay down the foundational and significant principles and rules of currently applicable international space law. In addition to these five treaties, the most important treaties applicable to military space activities include the 1945 Charter of the United Nations, the 1963 Partial Test Ban Treaty, the 1979 Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, and international telecommunication law constituting of the most recent, as amended, Constitution and Convention of the International Telecommunication Union (ITU) (as well as the ITU Radio Regulations), listed in [ANNEX I](#). The rules of international humanitarian law that apply only when an armed conflict exists are not relevant to the specific focus of the McGill Manual.

The term ‘States Parties’, ‘States’ or ‘State’ used in the McGill Manual refers only to those States that are bound by the relevant applicable international treaties, unless it is explicitly indicated that the Rule is reflective of customary international law applicable to all States.

## TARGET AUDIENCE

The McGill Manual is intended as a comprehensive reference resource to be used by, and provide clear guidance to governments, international organisations, non-governmental organisations, members of civil society, space operators, academics, stakeholders or any other interested party, even without the prerequisite legal knowledge or training. The target audience of the McGill Manual comprises of government officials, policy-makers, military and commercial space operators, academics, civil society and other stakeholders with an interest in the safety, security, sustainability and global governance of outer space. Given that our interaction with outer space is crucial for humanity, the McGill Manual reaches out to all layers of society within the governmental and non-governmental sectors.

Uniquely, the McGill Manual clarifies the fundamental rules applicable to military uses of outer space by both States and non-state actors in time of peace and in periods of tension that pose challenges to peace. The utility of the McGill Manual is to translate existing international law into clearly articulated rules applicable to space activities, including military space activities. This will enable States, non-governmental entities and all sections of civil society to assess the legality and consequences of any existing and potential activity, thereby enhancing and enforcing the transparency of all space activities. The McGill Manual may additionally assist myriad stakeholders to identify ambiguity, confusion, diverse views, perspectives or *lacunae* (gaps) in the *lex lata* that the international community may wish to further address.

## PARTICIPANTS IN THE MILAMOS PROJECT

With the input and participation of civilian, governmental and military experts, academics, observers, and stakeholder institutions worldwide, the MILAMOS Project has, throughout its duration, maintained a comprehensive balance in terms of geographic and gender representation, as well as the input of a diverse range of perspectives from across the globe. All experts and contributors to the McGill Manual have participated in their personal capacity and are independent of their professional affiliation or State of origin and/or nationality. This inclusiveness ensures that the McGill Manual maintains its independence, impartiality and relevance worldwide.

The MILAMOS Project is overseen by the **Board of Advisors**, which consists of prominent and experienced persons from various States and stakeholder institutions. The Board advises the MILAMOS Project Director regarding the strategic direction and management of the Project, so as to ensure that all relevant perspectives are adequately considered and reflected during the Manual-drafting process.

The **Group of Experts** forms the backbone of the rule-drafting and consensus-forming process, and the Manual reflects the carefully considered opinions of all members of this group. The Group of Experts is composed of **Core Legal Experts**, who are leading authorities in various aspects of international

law related to military activities and uses of outer space. The Core Legal Experts are supported by **Technical Experts** who are recognised scientists and experts who provide specialist technical expertise in all aspects of the space domain. **Associate Experts** are individuals who, whilst not responsible for the drafting of Rules, provide expertise as called upon on specific matters relating to their specialisation. The drafting and review processes in the MILAMOS Plenaries and Editorial Committee meetings were often attended by non-voting **Observers**, who actively provided their expert insights on specific Rules and Commentaries.

The Rules have undergone external peer-review by carefully selected international and independent **Reviewers** who are reputable legal, technical, and highly-qualified experts.

The complete list of Participants in the MILAMOS Project is attached as [ANNEX III](#).

## ABOUT THE CO-EDITORS



### Ram S. Jakhu

Ram S. Jakhu is tenured Full Professor at the Institute of Air and Space Law, Faculty of Law, McGill University. He is also Acting Director of the Institute of Air and Space Law and of the Centre for Research in Air and Space Law of McGill University. He teaches and conducts research in international space law, law of space commercialisation, space safety and security, national regulation of space activities, law of telecommunications, and public international law.

Ram Jakhu is the Editor-in-Chief & Project Director of the McGill Encyclopedia of International Space Law. He is Managing Editor of the Space Regulatory Series, and member of the Editorial Boards of *Space and Evolution*, *Annals of Air & Space Law*, *Astropolitics*, and *German Journal of Air & Space Law*.

Ram Jakhu was Principal Investigator of an international and interdisciplinary study entitled as *Global Space Governance: An International Study* (Springer, 2017). He served as Director of the McGill Institute of Air and Space Law; Director of McGill Centre for Regulated Industries; First Director of the Master of Space Studies Program of the International Space University; member of the Global Agenda Council on Space of the World Economic Forum; member of the Governance Group of the Space Security Index; Chairman of the Legal and Regulatory Committee of the International Association for the Advancement of Space Safety; member of the Advisor Group of Legal Experts on Optional Rules for Arbitration of Disputes Relating to Outer Space within the Permanent Court of Arbitration; member of the Board of Directors of International Institute of Space Law (IISL); and member of the Canadian Human Rights Tribunal.

He authored three books, over 130 articles, 70 research reports and edited 13 books, including the one that received the 2011 Book Award from the International Academy of Astronautics. In 2022, he received the “Excellence in Supervision and Mentorship Award” from Graduate Law Student Association of the Faculty of Law of McGill University, in 2016 the “Leonardo da Vinci Life-Long Achievement Award” from the International Association for the Advancement of Space Safety and in 2007 the “Distinguished Service Award” from the IISL for significant contribution to the development of space law.

Ram Jakhu holds Doctor of Civil Law (Dean’s Honours List) and Master of Laws (LL.M.) degrees from McGill University, Canada as well as LL.M., LL.B., and B.A. degrees from Panjab University, India.



### **Steven Freeland**

Steven Freeland is Emeritus Professor of International Law at Western Sydney University, where he was previously the Dean of the School of Law, and Professorial Fellow at Bond University. He also holds Visiting or Adjunct positions at various other Universities/Institutes in Copenhagen, Vienna, Toulouse, Hong Kong, Montreal, Mumbai, Kuala Lumpur and London. Prior to becoming an academic, he had a 20-year career as an international commercial lawyer and an investment banker.

He is a Member of the Australian Space Agency Advisory Board and has been an advisor to the Australian, New Zealand, Norwegian and several other Governments on issues relating to national space legislative frameworks and policy. He has represented the Australian Government at Committee on the Peaceful Uses of Outer Space (UNCOPUOS) meetings and has also been appointed by UNCOPUOS to co-chair a 5-year “Working Group on Legal Aspects of Space Resource Activities”. He has also been a Visiting Professional within the Appeals Chamber at the International Criminal Court, and a Special Advisor to the Danish Foreign Ministry in matters related to the International Criminal Court.

He is a Co-Principal of specialised space law firm Azimuth Advisory and is also a Director of the International Institute of Space Law, and a Member of the Space Law Committee of the International Law Association and previously also the Space Law and War Crimes Committees of the International Bar Association. In addition to co-editing the *Annotated Leading Cases of International Criminal Tribunals* book series, he also sits on the Editorial Board / Advisory Board of a number of internationally recognised academic journals.

As noted, Emeritus Professor Freeland has participated in the MILAMOS Project solely in his personal capacity and not on behalf of any institution of Governmental Agency.

# RULES

## CHAPTER I

## DEFINITIONAL RULES

### Rule 101 – Space Activities

Space activities are activities in the exploration and use of outer space, including the Moon and other celestial bodies.

Space activities may have or be intended to have direct effects:

- a. in outer space, including the Moon and other celestial bodies;
- b. on the operation of space infrastructure; and/or
- c. from outer space to another domain.

### Rule 102 – National Space Activities

A space activity is a ‘national space activity’ of a given State if:

- a. it is carried on by a governmental agency of that State;
- b. it is carried on by a non-governmental entity which is a national, either a natural or juridical, of that State, in accordance with the particular circumstances of each case under respective national legislation; or
- c. the activity has a territorial nexus with or is otherwise attributable to that State.

### Rule 103 – Military Space Activities

For the purposes of this Manual, military space activities are space activities of a military character. In the determination of the military character of a space activity, the actors involved in the activity, the aims of the activity, and the effects of the activity are to be taken into account, as appropriate.

### Rule 104 – Characterisation of Space Objects

As stated in the Liability Convention and the Registration Convention, a space object includes component parts of a space object as well as its launch vehicle and parts thereof.

### **Rule 105 – Launching State**

1. ‘Launching State’ means any of the following States:
  - a. a State which launches a space object;
  - b. a State which procures the launching of a space object;
  - c. a State from whose territory a space object is launched; and/or
  - d. a State from whose facility a space object is launched.
2. An international organisation may also qualify as a launching State.

### **Rule 106 – State of Registry**

The term ‘State of registry’ means a State on whose registry a space object, including a space object used in military space activities, is carried. Subject to certain conditions specified in the Registration Convention, a reference to the ‘State of registry’ shall be deemed to apply to international organisations which conduct space activities.

### **Rule 107 – Ground-based Space Infrastructure**

Ground-based space infrastructure consists of terrestrial facilities that directly support space activities, including military space activities.

### **Rule 108 – Definition and Delimitation of Outer Space**

The definition and delimitation of outer space have not been established in international law.

**CHAPTER II**

**APPLICABILITY OF INTERNATIONAL  
LAW AND NATIONAL LAW**

**Rule 109 – Applicability of International Law to Space Activities**

All space activities, including military space activities, shall be carried on in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international cooperation and understanding.

**Rule 110 – Application of National Laws to Space Activities**

A State may not rely on its national law as justification for failure to comply with its international obligations related to its space activities, including military space activities.

**Rule 111 – Applicability of International Law to International Organisations**

An international organisation that carries on space activities, including military space activities, shall comply with general international law, constituent instruments and other rules of that organisation, and international treaties in respect of which it has expressed its consent to be bound.

**Rule 112 – Cyber Activities that Constitute Space Activities**

Cyber activities that constitute space activities, including military space activities, are governed by international space law, as well as the applicable rules of general international law.

**CHAPTER III****SOVEREIGNTY AND JURISDICTION****Rule 113 – Non-Appropriation**

Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by any means by any State, international organisation or non-governmental entity.

**Rule 114 – Jurisdiction and Control over Space Objects**

1. A State on whose registry an object, including an object involved in military space activities, launched into outer space is carried shall retain jurisdiction and control over such object and over any personnel thereof, while in outer space or on a celestial body.
2. There are other bases or indicia under international space law and general international law that may give rise to jurisdiction over a space object, whether or not that space object is registered.

**Rule 115 – Passage or Transit through Foreign National Airspace**

No passage rights, or any form of right of transit, apply to space objects, including those involved in military space activities, whenever passing or transiting through foreign national airspace, without prejudice to any agreement with the relevant State.

**Rule 116 – Ownership of Objects in Outer Space**

1. Ownership of objects, including objects used for military space activities, launched into or constructed in outer space, including objects landed or constructed on a celestial body, and of their component parts, is not affected by their presence in outer space or on celestial bodies, or by their return to Earth.
2. The ownership of such objects and their component parts may be transferred when in outer space or on a celestial body, subject to applicable law.

**Rule 117 – Non-Intervention**

Space activities, including military space activities, shall be carried out in conformity with the principle of non-intervention under international law.

**CHAPTER IV****RIGHTS AND OBLIGATIONS OF  
STATE AND NON-STATE ACTORS****Rule 118 – Freedom of Exploration and Use**

Outer space, including the Moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies. States enjoy the freedom of exploration and use, including for military space activities, in accordance with international law, including international space law.

**Rule 119 – Peaceful Purposes**

1. International space law recognises the common interest of all humankind in the progress of the exploration and use of outer space for peaceful purposes. Such common interest encompasses all space activities, including military space activities.
2. The military character of space activities does not alter the principles and rules of international space law.
3. The Moon and other celestial bodies shall be used exclusively for peaceful purposes, and military activities thereon are forbidden as provided in the Outer Space Treaty and other applicable international law.
4. The use of military personnel for scientific research or for any other peaceful purposes is not prohibited.

**Rule 120 – Cooperation, Mutual Assistance and Due Regard**

In the conduct of space activities, including military space activities, States shall be guided by the principle of cooperation and mutual assistance and shall conduct such activities with due regard to the corresponding interests of all other States.

**Rule 121 – Prior Consultation**

1. If a State has reason to believe that an activity or experiment planned by it or its nationals in outer space would cause potentially harmful interference with activities of other States in the peaceful exploration and use of outer space, it shall undertake appropriate international consultations before proceeding with any such activity.
2. If a State has reason to believe that an activity or experiment planned by another State in outer space would cause potentially harmful interference with activities in the peaceful exploration and use of outer space, it may request consultation concerning the activity.

#### **Rule 122 – Provision of Information**

1. States shall immediately inform other States or the Secretary-General of the United Nations of any phenomena they discover in outer space, including the Moon and other celestial bodies, which could constitute a danger to the life or health of astronauts, whether or not those astronauts are involved in military space activities.
2. In order to promote international cooperation in the peaceful exploration and use of outer space, States Parties to the Outer Space Treaty agree to inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of the nature, conduct, locations and results of their space activities, including military space activities.

#### **Rule 123 – Authorisation and Continuing Supervision**

Authorisation and continuing supervision by the appropriate State is required for all space activities of non-governmental entities, including those in support of military space activities.

#### **Rule 124 – National Registration of Space Objects**

1. A State Party to the Registration Convention, which qualifies as launching State, shall establish and maintain an appropriate registry of objects launched into outer space.
2. When a space object, including a space object used in military space activities, is launched into Earth orbit or beyond, a launching State shall register the space object by means of entry in its appropriate national registry.
3. This Rule applies to international organisations that have declared their acceptance of the rights and obligations under the Registration Convention.

#### **Rule 125 – Registration of Space Objects with the United Nations**

1. States of registry which are States Parties to the Registration Convention and international organisations which qualify as ‘States of registry’ in accordance with the Registration Convention shall furnish to the Secretary-General of the United Nations, as soon as practicable, information, as specified in the Registration Convention, concerning each space object carried on their registries including space objects used for military space activities.
2. Other States which are not bound by the Registration Convention, may voluntarily submit, in accordance with United Nations General Assembly Resolution 1721B (XVI), information regarding their space objects, including space objects used in military space activities.

### **Rule 126 – Treatment of Astronauts**

1. Astronauts, including those involved in military space activities, shall be rendered all possible assistance in the event of accident, distress, emergency, or unintended landing in the territory under the jurisdiction of any State, in the exclusive economic zone of any State, on the high seas, or in any other place beyond national jurisdiction. In such event, astronauts shall be safely and promptly returned to the relevant State.
2. In carrying on activities in outer space and on celestial bodies, astronauts shall render all possible assistance to one another.

### **Rule 127 – Discovery, Recovery and Return of Space Objects**

1. Each State that receives information or discovers that a space object, including one involved in military space activities, has returned to Earth, either in its territory, in the exclusive economic zone of any State, or on the high seas or in any other place beyond national jurisdiction, shall notify the launching authority and the Secretary-General of the United Nations.
2. Upon request of the launching authority, a State shall take such steps as it finds practicable to recover a space object discovered in its territory. That State may request assistance in the recovery of that space object from the launching authority.
3. Upon request of the launching authority, a space object found beyond the territorial limits of the launching authority shall be returned to or held at the disposal of representatives of the launching authority, which shall upon request furnish identifying data prior to the return of the space object.
4. If a State has reason to believe that a space object it discovers in its territory or recovers elsewhere, is of a hazardous or deleterious nature, it may so notify the launching authority, which shall immediately take effective steps, under the direction and control of that State, to eliminate possible danger of harm.

### **Rule 128 – Natural Resources of Outer Space**

1. Subject to the rules of international law that apply to the exploration and use of outer space, including the Moon and other celestial bodies, States may explore and use natural resources of outer space in carrying on space activities, including military space activities.
2. In doing so, States shall take into account the obligation that the Moon and other celestial bodies be used exclusively for peaceful purposes. Natural resources of the Moon and other celestial bodies shall not be used for the establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on the Moon and other celestial bodies.

### **Rule 129 – Space Debris**

International law does not contain explicit rights and obligations regarding the creation of space debris. However, to the extent necessary to comply with other rules of international law, States and international organisations shall limit the creation of space debris when carrying on space activities, including military space activities.

**CHAPTER V****RESPONSIBILITY AND LIABILITY****Rule 130 – Responsibility for National Space Activities**

States shall bear international responsibility for:

- a. national space activities, including military space activities, whether such activities are carried on by governmental agencies or by non-governmental entities; and
- b. assuring that such activities are carried out in conformity with the provisions set forth in the Outer Space Treaty.

**Rule 131 – International Liability for Damage caused by a Space Object**

When conducting space activities, including military space activities, a State is internationally liable for damage to other States or to their natural or juridical persons, caused by a space object or its component parts, if and to the extent provided for under international law, including international space law.

**Rule 132 – Responsibility Related to Space Activities  
Carried on by an International Organisation**

1. An international organisation shall bear international responsibility for its internationally wrongful acts related to space activities, including military space activities.
2. States that are participating in an international organisation are responsible to assure that the organisation complies with the provisions of the Outer Space Treaty in the conduct of its space activities, including military space activities.

**Rule 133 – State Responsibility for an Internationally Wrongful Act**

Every internationally wrongful act of a State, including one related to a State's military space activities, entails the international responsibility of that State under the law of State responsibility.

**Rule 134 – Circumstances Precluding Wrongfulness**

The wrongfulness of an act of a State related to space activities, including military space activities, is precluded in specific circumstances of consent, countermeasures, *force majeure*, self-defence, distress or necessity, as they apply to outer space.

**Rule 135 – Reparation for Injury Caused by an Internationally Wrongful Act**

When a State is responsible for an internationally wrongful act related to space activities, including military space activities, it is under an obligation to make full reparation for the injury caused by the act.

**Rule 136 – Compensation for Damage**

A State may claim compensation for damage caused by another State's space activities, including military space activities. Such claim is governed by:

- a. the Outer Space Treaty and/or the Liability Convention;
- b. the law of State responsibility, for damage caused by an internationally wrongful act; and/or
- c. other relevant rules of international law.

**Rule 137 – Countermeasures under International Law**

An injured State may only take countermeasures, in accordance with international law, against a State which is responsible for an internationally wrongful act related to space activities, including military space activities, in order to induce that State to comply with its related obligations. Such countermeasures shall be terminated as soon as the responsible State has complied with its obligations.

**Rule 138 – Retorsion**

To the extent permissible under international law, a State may undertake an act of retorsion against another State to respond to its unfriendly acts or internationally wrongful acts, including retorsion measures that may affect such State's space infrastructure and/or space activities.

**CHAPTER VI****INTERFERENCE WITH SPACE ACTIVITIES****Rule 139 – Intentional Harmful Interference with Space Activities**

States shall, to the extent required by international law, refrain from intentionally causing either physical or non-physical harmful interference with space activities of another State in its peaceful exploration and use of outer space, including the Moon and other celestial bodies.

**Rule 140 – Use of and Access to Radio Frequencies and Associated Orbits**

In using frequency bands for radio services, including in the conduct of military space activities, States shall take into account that radio frequencies and any associated orbits, including the geostationary orbit, are limited natural resources. Such resources must be used rationally, efficiently and economically, in conformity with the provisions of the Radio Regulations and other applicable instruments of the International Telecommunication Union, so that countries or groups of countries may have equitable access to those orbits and frequencies, taking into account the special needs of the developing countries and the geographical situation of particular countries.

**Rule 141 – Harmful Interference Caused by Stations Using Radio Frequencies**

States shall ensure that stations within their jurisdiction which use radio frequencies are established and operated in such a manner as not to cause harmful interference to the radio services or communications of other States or of recognised operating agencies, or of other duly authorised operating agencies which carry on a radio service, and which operate in accordance with the provisions of the Radio Regulations of the International Telecommunication Union.

**Rule 142 – Military Radio Installations**

1. States retain their entire freedom with regard to military radio installations, in accordance with the Constitution of the International Telecommunication Union and subject to other applicable rules of international law, including international space law.
2. States shall ensure that such installations within their jurisdiction must, so far as possible, observe statutory provisions relative to giving assistance in case of distress, measures to be taken to prevent harmful interference, and the types of emission and the frequencies to be used, according to the nature of the service performed by such installations.
3. When such installations take part in the service of public correspondence or other services governed by the Administrative Regulations of the International Telecommunication Union, they must, in general, comply with the regulatory provisions for the conduct of such services.

**Rule 143 – Jamming and Spoofing of Communications**

In accordance with general international law, but without prejudice to provisions regarding military radio installations under the Constitution of International Telecommunication Union, States must refrain from intentionally causing harmful interference to communications within the jurisdiction and/or control of another State by means of jamming and/or spoofing of radio services.

**Rule 144 – Interference with Telemetry, Tracking and Command**

States must refrain from interfering with Telemetry, Tracking and Command (TT&C) operations of space objects under the jurisdiction and/or control of another State, including those used in military space activities.

**CHAPTER VII**

**WEAPONS, MILITARY INFRASTRUCTURE  
AND MILITARY MANOEUVRES**

**Rule 145 – Weapons of Mass Destruction**

1. Placement in orbit around the Earth of any object carrying weapons of mass destruction, installation of such weapons on celestial bodies, and the stationing of such weapons in outer space in any other manner are prohibited.
2. International law prohibits *inter alia* the testing of any chemical, biological or nuclear weapon in outer space, including on the Moon and other celestial bodies.

**Rule 146 – Weapons other than Weapons of Mass Destruction**

1. In addition to the prohibition on weapons of mass destruction, space activities involving other weapons shall be carried on in accordance with international law, including the Charter of the United Nations and international space law.
2. The Moon and other celestial bodies shall be used exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on celestial bodies are forbidden.

**Rule 147 – Prohibition of Military Bases, Installations,  
Fortifications, and Military Manoeuvres**

1. States shall not establish military bases, installations and fortifications on the Moon and other celestial bodies.
2. States shall not conduct military manoeuvres on the Moon and other celestial bodies.
3. The use of any equipment or facility necessary for peaceful exploration of the Moon and other celestial bodies is not prohibited.

**Rule 148 – National Technical Means of Verification**

States Parties to applicable arms control agreements are prohibited from interfering with national technical means of verification, including space-based means, to the extent required by such agreements.

**Rule 149 – Rendezvous and Proximity Operations**

States shall conduct rendezvous and proximity operations, including as military space activities, in accordance with international law, in particular the Charter of the United Nations, and applicable international space law.

**CHAPTER VIII**

**SETTLEMENT OF DISPUTES**

**Rule 150 – Peaceful Settlement of Disputes**

States are obliged to settle their international disputes related to space activities, including military space activities, by peaceful means in such a manner that international peace and security, and justice, are not endangered.

**CHAPTER IX**

**USE OF FORCE**

**Rule 151 – Prohibition of the Threat or Use of Force**

In carrying out space activities, including military space activities, States shall refrain from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the purposes of the United Nations.

**Rule 152 – Right of Self-Defence**

1. Under international law, including the Charter of the United Nations, an inherent right of individual or collective self-defence exists if an armed attack occurs against a State, until the Security Council of the United Nations has taken measures necessary to maintain international peace and security. This remains the case where the armed attack occurs in or from, or is directed through or towards, outer space.
2. The physical and legal characteristics of outer space must be taken into account in any exercise of a State's right of self-defence.

# ANNEX I

## LIST OF IMPORTANT TREATIES AND OTHER LEGAL INSTRUMENTS

1. ***The Charter of the United Nations***, 24 October 1945, 1 UNTS XVI [*UN Charter*], <https://www.un.org/en/about-us/un-charter/full-text>

2. **United Nations Treaties on Outer Space**

*Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, 27 January 1967, 610 UNTS 205, (entered into force on 10 October 1967) [*Outer Space Treaty*], <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/outerspacetreaty.html>

*Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space*, 22 April 1968, 672 UNTS 119, (entered into force 3 December 1968) [*Rescue and Return Agreement*], <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/rescueagreement.html>

*Convention on International Liability for Damage Caused by Space Objects*, 29 March 1972, 961 UNTS 187, (entered into force 1 September 1972) [*Liability Convention*], <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/liability-convention.html>

*Convention on Registration of Objects Launched into Outer Space*, 14 January 1975, 1023 UNTS 15 (entered into force 15 September 1976) [*Registration Convention*], <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/registration-convention.html>

*Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*, 5 December 1979, 1363 UNTS 3, (entered into force 11 July 1984) [*Moon Agreement*], <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/moon-agreement.html>

3. **United Nations Resolutions and Guidelines Related to Outer Space**

*Declaration of Legal Principles Concerning the Activities of States in the Exploration and Use of Outer Space*, GA Res 1962 (XVIII), UNGAOR, 18th Sess, UN Doc A/RES/18/1962 (1963) [*Declaration of Legal Principles*], <https://www.unoosa.org/oosa/en/ourwork/spacelaw/principles/legal-principles.html>

*Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting*, GA Res 37/92, UNGAOR, 37th Sess, UN Doc A/RES/37/92 (1982), <https://www.unoosa.org/oosa/en/ourwork/spacelaw/principles/dbs-principles.html>

*Principles relating to Remote Sensing of the Earth from Space*, GA Res 41/65, UNGAOR, 41st Sess, UN Doc A/RES/41/65 (1986), <https://www.unoosa.org/oosa/en/ourwork/spacelaw/principles/remote-sensing-principles.html>

*Principles Relevant to the Use of Nuclear Power Sources in Outer Space*, GA Res 47/68, UNGAOR, 47th Sess, UN Doc A/RES/47/68 (1992), <https://www.unoosa.org/oosa/en/ourwork/spacelaw/principles/nps-principles.html>

*Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries*, GA Res 51/122, UNGAOR, 51st Sess, UN Doc A/RES/51/122 (1996), <https://www.unoosa.org/oosa/en/ourwork/spacelaw/principles/space-benefits-declaration.html>

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UNGA, *Recommendations on enhancing the practice of States and international intergovernmental organizations in registering space objects*, UN Doc A/RES/62/101 (2008), [https://www.unoosa.org/pdf/gares/ARES\\_62\\_101E.pdf](https://www.unoosa.org/pdf/gares/ARES_62_101E.pdf)

UNGA, *Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space*, 2010, [https://www.unoosa.org/res/oosadoc/data/documents/2010/stspace/stspace49\\_0\\_html/st\\_space\\_49E.pdf](https://www.unoosa.org/res/oosadoc/data/documents/2010/stspace/stspace49_0_html/st_space_49E.pdf)

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UNGA, *Guidelines for the Long-term Sustainability of Outer Space Activities*, UN Doc A/74/20 (2019), Annex III, [https://www.unoosa.org/res/oosadoc/data/documents/2019/a/a7420\\_0\\_html/V1906077.pdf](https://www.unoosa.org/res/oosadoc/data/documents/2019/a/a7420_0_html/V1906077.pdf)

UNGA, *Prevention of an arms race in outer space*, UN Doc A/RES/76/22 (2021), <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N21/377/75/PDF/N2137775.pdf?OpenElement>

#### 4. International Treaties Governing Telecommunications

*Constitution and Convention of the International Telecommunication Union, Collection of the basic texts adopted by the Plenipotentiary Conference Edition of 2019*, March 2019 [ITU Constitution], [https://www.itu.int/dms\\_pub/itu-s/opb/conf/S-CONF-PLEN-2019-PDF-E.pdf](https://www.itu.int/dms_pub/itu-s/opb/conf/S-CONF-PLEN-2019-PDF-E.pdf)

International Telecommunication Union, *Radio Regulations*, Edition of 2020, (entered into force on 1 January 2021) [*Radio Regulations*], <https://www.itu.int/pub/R-REG-RR-2020>

#### 5. Other International Treaties

*Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water*, 5 August 1963, 480 UNTS 43 (entered into force 10 October 1963) [PTBT], <https://treaties.un.org/doc/Publication/UNTS/Volume%20480/volume-480-I-6964-English.pdf>

*Convention on the Prohibition of Military or Any Hostile Use of Environmental Modification Techniques*, 18 May 1977, 1108 UNTS 151 (entered into force 5 October 1978) [ENMOD], [https://treaties.un.org/doc/Treaties/1978/10/19781005%2000-39%20AM/Ch\\_XXVI\\_01p.pdf](https://treaties.un.org/doc/Treaties/1978/10/19781005%2000-39%20AM/Ch_XXVI_01p.pdf)

*Vienna Convention on the Law of Treaties*, 23 May 1969, UN Doc A/Conf.39/27, 1155 UNTS 331, (1969) (entered into force 27 January 1980) [*Vienna Convention on the Law of Treaties*], [https://legal.un.org/ilc/texts/instruments/english/conventions/1\\_1\\_1969.pdf](https://legal.un.org/ilc/texts/instruments/english/conventions/1_1_1969.pdf)

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