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**A presentation titled:**

**Celestial Bodies and Interstitial Space  
in Current Law,**

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## **Celestial Bodies and Interstitial Space in Current Law** by SE Doyle

### ***Introduction***

Following a 3-day International Interdisciplinary Workshop on Policy and Law Relating to Outer Space Resources, held at McGill University in June 2006, the McGill Institute of Air and Space Law published a summary of the Workshop. After reading a draft of that summary, Dr. Eilene Galloway offered four supplemental ideas, which were the stimulus for the convening of this day of discussion and deliberation. Dr. Galloway's ideas were:

1. We ensure that international space law covers outer space, space itself and is not confined to celestial bodies orbiting in space.
2. Do not assume that all agreements on the Moon and Mars are applicable to other celestial bodies. Formulate definitions of "other celestial bodies."
3. Be prepared for the legal effects on sovereignty of machines invented to operate both in air and outer space.
4. Difficulties are created by people who assume that the outer space environment, including planets, etc., are just like the Earth, air, and sea, and can be used in the same ways. Potential economic and legal issues must be evaluated on basic scientific and technological facts.

This paper addresses the question "What is the law currently applicable to outer space, including the Moon and other celestial bodies?" Although a relatively simple question to ask, it elicits an extremely complex answer. We could spend all our allotted time today discussing the questions: "What is outer space, and what are celestial bodies?" Let us agree, for this discussion, that outer space and all in it comprises everything in existence beyond the sentient atmosphere, which scientists tell us ceases totally to have aeronautical support or life support properties somewhere near or beyond 100 kilometers. Let us stipulate that if one is more than 62.5 miles above the Earth, one is in outer space. Following this presentation, Dr. George Robinson will look beyond what law exists today, to describe some of the implications and problems for law in outer space being driven by emerging, accelerating technologies.

Before describing the presently applicable legal framework, I want to say a few words about the environment in which that framework exists. Perhaps the single most ubiquitous aspect of international law during the past century, whether international law applied to the air, the sea, sea beds, telecommunications, technical standards, labor, human rights, or outer space, is the accelerating aspect of change. In all international legal areas in which the community of nations seeks to establish standards of behavior and mutual accommodation, we find significant change not only occurring but accelerating. Dr. Robinson will help explain that observation.

Change in law is brought on by multiple factors including increased population, emerging technologies, expanding world trade, greater international intercourse among nations, political and social responses, as well as the needs of national and international security.

In the four decades from 1961 to 2000, nations of the world established by agreement a substantial body of largely unprecedented laws relating to activities involving spacecraft, spaceflight, and activities in outer space, as distinguished from activities on Earth. Even activities in terracentric applications programs, such as communications, navigation, meteorology, remote sensing, defensive early warning systems, and treaty verification systems, to the extent they involve resources and activity beyond the "atmosphere," are subject to the legal conditions imposed by the law of outer space, or *corpus juris spatialis*, the body of the law of space.

So, what is that body of law? The most widely accepted, signed, and ratified treaty among states relating directly to outer space is the *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies*, which entered into force on October 10, 1967. Article III of that 1967 Treaty reads:

"States Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the moon and other celestial bodies, 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."

Thus we see four major elements of the stated applicable law;

- 1) international law,
- 2) the Charter of the United Nations,
- 3) maintenance of international peace and security, and
- 4) promotion of international cooperation and understanding.

Let us briefly consider each of these four elements.

### ***1. International Law Generally Considered***

When lawyers and diplomats use the term "international law" speaking to each other, they are using shorthand to encompass a broad scope of rules in a simple expression. An appropriate analogy might be to say that we consider all the ways of preparing foods in the various cuisines of the different cultures of our world as encompassed in the phrase "the art of cooking." This term is certainly inclusive, but it doesn't tell us much.

Traditionally, and in current practice, it is fair to say that "international law" includes all of the following subject areas and multiple subdivisions within each area:

- International Conventions (treaties), general or particular,
- International Custom, as evidence of a general practice accepted as law,
- General Principles of Law recognized by civilized nations,
- Agreed use of equitable resolution of disputes,
- Procedures for Arbitration, Accommodation, or Conciliation
- State Sovereignty and Jurisdiction (over persons or territory)
- Recognition of States
- Nationality (of citizens or vessels)
- State Responsibility and Liability (fault-based or absolute)
- International Organizations (public or private)
- Rules of War and Neutrality
- Restraints on Use of Force
- Conventions, Charters and Contracts (public and private)
- Provisions for posts, telecommunications, aviation, other international commerce
- Salvage on the High Seas
- Conflicts of Laws
- Judicial Decisions and Arbitral Findings as "precedents"
- Criminal Law (piracy, slavery, terrorism, etc.)
- Intellectual Property Laws (patents, copyrights, trade marks)
- Property Law (on movable property-chattels, or immovable property-real estate)
- Expropriation or Nationalization
- Customs and Duties on Goods in Commerce
- Embargoes
- Biological Quarantine (plants, animals, persons)

This is a representative, topical survey of international law, in accordance with which States Parties shall carry out activities in outer space, according to Article III of the 1967 Space Treaty. In addition, the specific terms of the Outer Space Treaty apply. We shall consider some of these provisions in a moment.

We need also mention that there are a number of additional particular agreements, which apply among the States which are signatories thereto; and then there are a series of United Nations General Assembly Resolutions containing Declarations of Principles applicable to certain types of activities in outer space. Particular space law agreements include:

- *The Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space* of 1968;
- *The Convention on International Liability for Damage Caused by Space Objects* of 1972;
- *The Convention on Registration of Objects Launched into Outer Space* of 1976; and
- *The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies* of 1984.

In addition, we have the following series of declarations, adopted by the UN General Assembly:

- *The Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space* of 1962;
- *The Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting*, adopted December 10, 1982;
- *The Principles Relating to Remote Sensing of the Earth from Space*, adopted December 3, 1986;
- *The Principles Relevant to the Use of Nuclear Power Sources in Outer Space*, adopted on December 14, 1992; and
- *The Declaration on International Cooperation in 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*, adopted on December 13, 1996.

There exist, in addition, a modest but notable list of international treaties, primarily between the United States and the former USSR, now the US and Russia, directly related to the use of space launch capabilities for potential intercontinental or regional delivery of military warheads. These weapon delivery systems have been dealt with under the following treaties, which entered into force (e.i.f) on the dates indicated:

- 1972 Anti Ballistic Missile Treaty and Interim Agreement e.i.f. 26 May 1972
- 1973 Prevention of Nuclear War Agreement e.i.f. 22 Jun 1973
- 1973 Anti Ballistic Missile Protocol e.i.f. 3 Jul 1974
- 1979 US/USSR Agreement on Limitation of Strategic Offensive Arms e.i.f. 18 Jun 1979
- 1987 US/USSR Treaty on Elimination of Intermediate- and Shorter-range Missiles e.i.f. 8 Dec 1987
- 1988 Ballistic Missile Launch Notification Agreement e.i.f. 31 May 1988

Also related to military activity in space is the 1963 Treaty Banning Nuclear Weapon Tests in outer space and elsewhere e.i.f. 10 Oct 1963

We could list here, but in the interest of time and attention, we will simply reference the substantial number of organizational charters which have been created to establish organizations primarily focused on space activities, usually space technology applications on the Earth. These international institutional conventions and charters also form part of the applicable body of international law relating to activities conducted in outer space.

## **2. *The Charter of the United Nations***

This often referred to, frequently invoked, usually ignored, and largely ineffectual instrument contains a great deal of information describing the intentions of the founders of the United Nations, and many provisions

intended to carry out those intentions. Objectively considered, the Charter of the United Nations may be one of the worst implemented instruments of international law ever devised by the community of nations.

The Charter was formulated by the United Nations Conference on International Organization concluded in San Francisco in June 1945. It entered into force on October 24, 1945. The Charter has 19 chapters and is heavily oriented to the interdiction or neutralization of historic causes of international conflict. It has been amended several times since its adoption for administrative reasons, but its basic provisions have survived essentially as adopted in 1945.

Because this instrument is made expressly applicable to outer space, including the Moon and other celestial bodies, we should consider at least its broadest and most fundamental aspects.

The Preamble to the Charter states, in part:

*We the Peoples of the United Nations Determined*

- To save succeeding generations from the scourge of war, ...
- To reaffirm faith in fundamental human rights, ...
- To establish conditions under which justice... can be maintained, and
- To promote social progress and better standards of life in larger freedom,

*And for these Ends*

- To practice tolerance and live together in peace ...
- To unite our strength to maintain international peace and security,
- To ensure ... that armed force shall not be used, save in the common interest, and
- To employ international machinery for the promotion of economic and social advancement

*Have resolved to combine our efforts to accomplish these aims.*

Chapter One of the Charter contains Purposes and Principles, and Article 1 explains means to be employed to: 1) maintain international peace and security, 2) develop friendly relations among nations, 3) achieve international cooperation, and 4) for the UN to be a center for harmonizing the actions of nations. Historically, these principles have been ignored, and actions taken or that fail to be taken, are often inconsistent with these stated purposes. Succeeding chapters of the Charter describe membership (II), organs (III), the General Assembly (IV), the Security Council (V), means for pacific settlement of disputes (VI), actions with respect to threats to the peace, breaches of the peace, and acts of aggression (VII), regional arrangements (VIII), international economic and social cooperation (IX), the Economic and Social Council (X), a declaration regarding non-self-governing territories (XI), the international trustee system (XII), The Trusteeship Council (XIII), the International Court of Justice (XIV), the Secretariat (XV), miscellaneous provisions (XVI), transitional security arrangements (XVII), amendments (XVIII), and provisions for ratification and signature (XIX).

Chapter VII may be considered the heart of the Charter, because it addresses threats to the peace, breaches of the peace, and acts of aggression. The most cursory examination of history for the past sixty years clearly shows that the UN Charter has been far more often breached than employed, and we most assuredly do not have a world at peace, enjoying friendly relations among nations, international cooperation, and harmonization of the actions of nations. To the extent there is any peace or stabilization of relations among States, it can be said that balance or imbalance of power is the most employed means of seeking or maintaining order in our world, and we are not doing that very well. By the terms of Article III of the 1967 Space Treaty, this largely ineffectual Charter is declared applicable to relations among States in outer space. This is not a reassuring situation.

### ***3. The Maintenance of International Peace and Security***

The 1967 Outer Space Treaty undertakes to ensure that international peace and security will extend to outer space, and that international cooperation there should be encouraged. We can see by reviewing a few key

provisions, how the drafters of the treaty attempted to accomplish the maintenance of international peace and security in space.

Article I provides, among other provisions, that space shall be free for exploration and use by all States, on a basis of equality and in accord with international law. There shall be freedom of scientific investigation and States shall facilitate and encourage international cooperation in such investigation. Article II declares that outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means. Article III redundantly directs that States shall carry out activities in space in accord with international law, including the UN Charter, in the interest of maintaining international peace and security and promoting international cooperation and understanding.

Article IV, the primary source of constraints on military activities and weapons in space, reads:

**States Parties to the treaty undertake not to place in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner.**

**The Moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations or fortifications, the testing of any type of weapons and the conduct of military maneuvers on celestial bodies shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use any equipment of facility necessary for peaceful exploration of the moon and other celestial bodies shall also not be prohibited.**

Article V confers upon astronauts the status of “envoys of mankind.” It also provides that any necessary or appropriate assistance shall be provided to astronauts, including to other astronauts, and if forced to land in a foreign territory, they shall be returned promptly to their homeland.

Acknowledging that activities in space may be carried on by non-governmental entities, Article VI provides that States bear international responsibility for their nationals in outer space. States are to authorize and supervise activities of non-governmental entities. Responsibility for activities by international organizations shall be borne by the organization and by the States Parties participating in the organization.

The desire for “demilitarization” of space, underlying the provisions of Article IV, was not successful in precluding the defensive, indirect and monitoring uses of space by States for military purposes, but for the first half century of spaceflight, it appears that the international community has been content to avoid placing of weapons in space or on celestial bodies, and States have avoided conduct of military maneuvers there. Concerning the maintenance of international peace and security, one could say “So far, so good.” This appears to be a fragile mutual accommodation. One may hope it will last.

#### ***4. Promotion of International Cooperation and Understanding***

Provisions of Article VII describing responsibility for damage caused by space objects has been substantially elaborated by the Space Liability Convention of 1972, referred to above.

Article VIII declares the jurisdiction and authority of States Parties over their personnel and objects launched into outer space or on a celestial body. Where objects launched have returned to earth, in their entirety or in pieces, there has been substantial compliance with the provisions relating to return of the national assets to the territory of the State of origin. The one major catastrophic unplanned reentry of a space object on the territory of another states, namely the landing of the USSR’s Cosmos 954 spacecraft in Canada, resulted in an amicable

resolution of the matter through diplomacy and accommodation, substantially in compliance with the Liability Convention of 1972.

Articles IX and X declare in legal formality that states should seek to be nice to one another and respect one another's rights in space. If there is a perceived problem, consult about it. Each State shall accommodate another's requests for visits or to witness launches. The nature and conditions of observation shall be agreed between the States involved.

The balance of the treaty provides for giving notice of activities to the UN Secretary General and generally keeping the international community informed about what is going on and what discoveries are made. The Treaty concludes with standard "boiler plate provisions," for signature, ratification, entry into force, depositaries, amendment, withdrawal, official languages, and signature. The Treaty emphasizes and repeatedly reiterates the drafters' desires to maintain peace and security in space and to recommend international cooperation, good will, and accommodation among all States active in spaceflight activities. During the first half century of spaceflight it is ostensibly the case that nations have complied with these desires of the drafters.

### **5. *The Relevancies of "International Law"***

In the declaration of the applicability of "international law" to activities in space, it is important to keep in mind what this phrase entails. Spaceflight is in many ways dependent upon successful radio communication. Control signals, navigation systems and corrections, data telemetry, information transfer, and vehicle and personnel health monitoring are all important aspects of spaceflight. None of these requisite services can be successfully conducted in an environment devoid of radio control.

The International Telecommunication Union has a body of regulations and a table of international allocations of radio frequencies, which, when complied with, provides the order necessary to ensure successful radio operations in space. Thus, whether an object is in its launch phase, approaching orbital insertion, in orbit around the earth, transferring into translunar space, approaching or orbiting the Moon, or transiting to cislunar space, and outward into the Solar System, the Milky Way Galaxy or beyond, maintenance of radio order is essential to the accomplishment of successful communication and successful near space and deep space missions.

It may appear a small point, but this single aspect of application of and respect for international law in outer space is a fundamentally enabling legal regime, without which chaos would prevail. It is impressive to consider how much we accomplish when we choose to cooperate, and how much we deny ourselves and destroy when we decline to cooperate.

I undertook to present to you a survey of the nature of the law applicable to outer space today, the *corpus juris spatialis* of our time. I want to repeat my view that it is a delicate fabric existing on the basis of cooperation. But even as we choose to cooperate to maintain the law, the technology overtakes us and causes us to reconsider what we are doing and what we are about to do. Consider the accelerating rates of change in almost every area of interest to activities in outer space. Dr. George Robinson will address some of the anticipated changes ahead, and what those changes may require in our thinking.

Thank you.