



*Promoting Cooperative Solutions for Space Sustainability*

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May 22, 2017

To: U.S. Senate Committee on Commerce, Science, and Transportation  
Senator John Thune, Chairman  
Senator Bill Nelson, Ranking Member

CC: U.S. Senate Subcommittee on Space, Science, and Competitiveness  
Senator Ted Cruz, Chairman  
Senator Edward Markey, Ranking Member

**Subject: Letter for the record for the hearing on “Reopening the American Frontier: Exploring How the Outer Space Treaty Will Impact American Commerce and Settlement in Space”**

Mr. Chairman, Ranking Member Nelson, and Members of the Committee,

The Secure World Foundation (SWF) is a non-governmental organization dedicated to ensuring the long-term sustainable use of outer space. We believe that strong, predictable, and coherent governance frameworks which take into account the long-term interest of all stakeholders are fundamental to ensuing sustainability and progress in space activities. As such, SWF has a keen interest in the topics to be discussed at the hearing organized by your Subcommittee on May 23, 2017. We submit the following letter in support of the Subcommittee’s deliberations.

### **1. The United States was the driving force behind the Outer Space Treaty**

The U.S. government was the driving force behind the negotiation and drafting of the 1967 Outer Space Treaty, in large part because it supported U.S. national security interests. At the time, a major U.S. policy objective was to enable the use of satellites to gather intelligence on the Soviet Union, and the principle of ‘peaceful uses’ supported that goal. In May 1966, President Lyndon Johnson instructed Ambassador to the U.N. Arthur J. Goldberg to bring to the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) a draft treaty on space for its expedient negotiation and finalization.<sup>1</sup> Borrowing from previous instruments, the American draft formed the majority of the final text of the Treaty. The Treaty was subsequently sent to the U.N. General Assembly in December

<sup>1</sup> The American Presidency Project, *Lyndon B. Johnson — Statement by the President on the Need for a Treaty Governing Exploration of Celestial Bodies*, 7 May 1966. Available at: <http://www.presidency.ucsb.edu/ws/?pid=27581>.

1966 for adoption in U.N. Resolution 2222, and opened for signature in Washington, London, and Moscow. A signing ceremony was held at the White House on January 27, 1967,<sup>2</sup> where President Johnson commended the Treaty as a step towards the peaceful uses of space.<sup>3</sup> At the U.S. Senate Foreign Relations Committee hearings on ratifying the Treaty, Secretary of State Dean Rusk and Ambassador Goldberg testified to the Treaty's worth as both an arms control measure that protects U.S. national security and ensured private sector access to space.<sup>4</sup> The Treaty entered into force in October 1967, and the United States serves as one of the Depository Governments for signatures by states becoming party to the Treaty. As 2017 is the fiftieth anniversary of the Outer Space Treaty, the United States can rightly be proud of its international treaty-making effort, which continues to serve as the foundation of the international legal framework for all space activities.

## **2. Private space activities were ensured, protected through U.S. negotiation**

During the negotiations of the Outer Space Treaty, the United States was able to secure the right of the private sector to engage in space activities. The language in the Outer Space Treaty permitting non-governmental private actors to explore and use space is taken from an earlier U.N. Resolution on space, the 1963 Principles Declaration.<sup>5</sup> In that Resolution's negotiation phase, a draft submitted by the Soviets would have prohibited all non-governmental private activities in space. The Soviet proposal read "all activities of any kind pertaining to the exploration and use of outer space shall be carried out solely and exclusively by states."<sup>6</sup> The American counterproposal offered a compromise which assigned responsibility and liability to a state for launches from its territory and for launches to which it gave assistance or permission.<sup>7</sup> The Soviets accepted this compromise permitting private non-governmental entities, and three years later this language from the 1963 Principles Declaration made its way unmodified into Article VI of the Outer Space Treaty. In summary, the legality of commercial uses of outer space is a success of American foresight and diplomatic skill.

## **3. The Outer Space Treaty is part of a permissive, open system**

The Outer Space Treaty creates a legal framework that is inherently permissive in its nature. The full title of the Outer Space Treaty is the 'Treaty on Principles Governing the Activities of States in the

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<sup>2</sup> British Pathé, *Space Treaty Signed in Washington (1967)*. Available at: <https://youtu.be/086Ygv-4ras> and <https://youtu.be/s8OICpkSzZA>. See also: The LBJ Library, *The President-January 1967*. Available at: <https://youtu.be/gF5OZ7nANTI?t=25m55s>.

<sup>3</sup> The American Presidency Project, *Lyndon B. Johnson — Remarks at the Signing of the Outer Space Treaty*, 27 Jan. 1967. Available at: <http://www.presidency.ucsb.edu/ws/?pid=28205>.

<sup>4</sup> *Treaty on Outer Space: Hearings Before the S. Comm. on Foreign Relations*, 90th Cong., 7, 27-29 (1967) (Statements of Sec. of State Dean Rusk and Arthur J. Goldberg, Ambassador). Available at: <http://bit.ly/2qyy5fr>.

<sup>5</sup> UN General Assembly Resolution 1962 (XVII), 13 Dec. 1963, *Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space*, Principle 5. Available at: <http://www.un-documents.net/a18r1962.htm>.

<sup>6</sup> UNITED NATIONS, COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE, UNION OF SOVIET SOCIALIST REPUBLICS: DRAFT DECLARATION OF THE BASIC LEGAL PRINCIPLES GOVERNING THE ACTIVITIES OF STATES PERTAINING TO THE EXPLORATION AND USE OF OUTER SPACE, A/AC.105/L.2 (1962) pg. 2, para. 7. Available at: [http://www.unoosa.org/pdf/limited/1/AC105\\_L002E.pdf](http://www.unoosa.org/pdf/limited/1/AC105_L002E.pdf).

<sup>7</sup> UNITED NATIONS, COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE, LETTER DATED 8 DECEMBER 1962 FROM THE REPRESENTATIVE OF THE UNITED STATES OF AMERICA TO THE CHAIRMAN OF THE FIRST COMMITTEE, A/C.1/881, at para. 6. Available at: [http://www.unoosa.org/pdf/garecords/A\\_C1\\_881E.pdf](http://www.unoosa.org/pdf/garecords/A_C1_881E.pdf). See also Michael Gerhard, *Article VI*, in COLOGNE COMMENTARY ON SPACE LAW-VOL. 1, 105 (Hobe, Schmidt-Tedd & Schrogl eds., 2009).

Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.’ As the title shows, this Treaty is a treaty of principles, rather than an exhaustive and comprehensive delineation of precise rights and obligations in every circumstance,<sup>8</sup> and it is focused on enabling *use* of outer space.

The Treaty’s articles contain a finite body of obligations which serve as limits to the freedom established in Article I. They include the duty to render assistance to foreign astronauts and to return both them and foreign space objects to their launching state (Art. V), the duty to bear international responsibility for all national space activities (Art. VI), the duty to authorize and continually supervise the activities of non-governmental actors (Art. VI), and the duty of international liability to other States Parties to the Treaty for damage from launched space objects (Art. VII). Additionally, articles prohibit the placement of nuclear weapons or other weapons of mass destruction into space or on celestial bodies (Art. IV), the prohibition on space activities causing harmful contamination of celestial bodies and adverse changes in the Earth’s environment (Art. IX), and the prohibition on the national appropriation of outer space, including the Moon and other celestial bodies (Art. II). This short list of obligations are the only limits to the freedoms enshrined in Article I.

The Outer Space Treaty is the foundation of subsequent international law on space. The Outer Space Treaty’s Article V, protecting astronauts, was expanded and its provisions clarified in the 1968 Astronaut Rescue and Return Agreement. Articles VI and VIII were expanded and clarified in the 1972 Liability Convention. Lastly, Article VIII dealing with registration was expanded and clarified with the 1975 Registration Convention. In 1986 the UN General Assembly adopted a resolution describing Principles Relating to Remote Sensing of the Earth from Space, providing non-binding yet generally accepted guidelines clarifying the relationship of space-based remote sensing activities to international law. This further work was done within COPUOS and led by the United States, and these efforts demonstrate that the Outer Space Treaty is the foundation of a system which is open to expansion, clarification, and modification.

Aside from this short list of finite obligations, the framework established by the Outer Space Treaty is quite permissive. A general presumption in international law is the *lotus principle*, or that ‘that which is not explicitly prohibited is therefore permitted.’<sup>9</sup> Taking into account that the Outer Space Treaty refrains from directly addressing or regulating various emerging and prospective activities in outer space, applying the *lotus principle* to the gaps in the Treaty demonstrates that the Outer Space Treaty does not clearly restrict any of the commercial activities that so excite and inspire the American space community.

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<sup>8</sup> See also footnote 4, testimony of Dean Rusk “The treaty is not complete in all possible details. It does not deal with all problems that may develop. But it is responsible to those problems that can be described and forecast today.” (pg. 4).

<sup>9</sup> See generally IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 291 (7th ed.) (2008) “Restrictions upon the independence of States cannot be presumed”; HUGH THIRLWAY, THE LAW AND PROCEDURE OF THE INTERNATIONAL COURT OF JUSTICE, Vol. 1, 505 (2016).

#### **4. The Outer Space Treaty has supported 50 years of commercial activity**

Over the last five decades, the Outer Space Treaty has enabled commercial uses of outer space to become a global and multibillion dollar industry. In 2015, worldwide revenues from commercial space products, services, manufacturing, and infrastructure surpassed \$247 billion, according to annual figures compiled by the U.S. Space Foundation.<sup>10</sup> Much of this activity is conducted by U.S. companies and individuals: the United States leads the world in the number of satellites manufactured, and, in 2015, the United States conducted more commercial space launches than any other country.<sup>11</sup> Sources of capital that are enabling innovative space start-up activity are concentrated in the United States as well: a 2016 industry report found that 66% of the more than 250 identified investors in space start-ups are U.S.-based, while the remaining 34% were distributed through 25 different countries.<sup>12</sup>

These commercial uses of outer space have developed—indeed flourished—under domestic law developed in consistency with the system of international space law, of which the Outer Space Treaty is a foundational component. Working under the principles of the Outer Space Treaty, the United States and other governments have developed and implemented domestic legal and regulatory frameworks to enable several categories of commercial activities. It cannot be said that the Outer Space Treaty has hindered the commercial uses of outer space that have developed and expanded so dramatically in the previous decades.

At the moment, the main restrictions on further innovation and commercial development of space come largely from U.S. national law, not the Outer Space Treaty. U.S. export controls on satellites have already caused the U.S. space sector to lose a significant portion of global market share. Several categories of remote sensing and on-orbit activities are heavily restricted, or, in some cases, have historically been off limits for U.S. commercial entities, enabling foreign competitors to leap ahead and establish global markets. And there are several types of commercial space activities planned for the near future that do not clearly fall under any of the existing national licensing authorities. These gaps create uncertainty that gives rise to real-world challenges for start-up companies trying to secure investors and insurers, a phenomenon many new space companies are struggling with.

#### **5. The U.S. has more effective avenues to further encourage commercial space**

It would be extremely difficult, and likely counterproductive, for the United States to withdraw from or seek amendment to the Outer Space Treaty. As of 2017, 105 countries have ratified the Outer

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<sup>10</sup> U.S. Space Foundation, *The Space Report 2016 – Overview*. Available at:

[https://www.spacefoundation.org/sites/default/files/downloads/The\\_Space\\_Report\\_2016\\_OVERVIEW.pdf](https://www.spacefoundation.org/sites/default/files/downloads/The_Space_Report_2016_OVERVIEW.pdf).

<sup>11</sup> Bill Canis, *Commercial Space Industry Launches a New Phase* (Congressional Research Service Report R44708), Dec. 12, 2016, 2. See also Federal Aviation Administration, *The Annual Compendium of Commercial Space Transportation 2016*, Available at:

[https://www.faa.gov/about/office\\_org/headquarters\\_offices/ast/media/2016\\_Compendium.pdf](https://www.faa.gov/about/office_org/headquarters_offices/ast/media/2016_Compendium.pdf).

<sup>12</sup> The Tauri Group, *Start-up Space*, 2016.

Space Treaty.<sup>13</sup> These include all of the historically spacefaring states such as the United States, Russia, China, India, Brazil, Japan, and all the Member States of the European Space Agency (ESA). A further 25 countries have signed the Treaty, which expresses their intention to ratify it in the future, or at least to not take actions contrary to the purposes of the Treaty. Additionally, many of the foundational provisions of the Outer Space Treaty are so well respected that they are considered to have passed into the realm of customary international law.<sup>14</sup>

As a consequence of this wide international success, an attempt to amend the Treaty is likely to be extremely difficult, and it is not certain it would advance U.S. interests. First, if the United States officially broaches the subject of amending the Outer Space Treaty, it is likely that other countries would identify issues of their own they would like addressed, not all of which would be aligned with U.S. interests. Moreover, given the diversity of countries that are States Parties to the Outer Space Treaty, reaching the threshold of 53 required to amend the text (via Art. XV) is a serious obstacle.

However, other avenues exist to clarify and define the rights and obligations of states under the broad principles already established by the Outer Space Treaty. The first is through national space law and regulation. Here, the United States has a significant opportunity to take a leadership role in the international community. Historically, other countries have modeled their national policy and regulation on the examples provided by the United States. Thus, how the United States approaches the current issue could have widespread international implications. Additionally, the United States can also shape the interpretation and implementation of the Outer Space Treaty through multilateral initiatives. Over the last few decades, the United States has played a leadership role in establishing international non-binding norms and guidelines regarding satellite broadcasting, space debris mitigation, nuclear power sources for use in space, and the long-term sustainability of space activities. This work is done both within COPUOS and elsewhere. For example, governments have cooperated through the Inter-Agency Space Debris Coordination Committee (IADC) to coordinate discussion of technical and policy matters related to space debris mitigation. This process represents the development of additional clarifications without require amendment to any existing treaty. These multilateral efforts are seen as conducive to the creation of norms and best practices which can receive widespread acceptance and adherence.

## **6. Conclusion**

We strongly believe that continuing to support the Outer Space Treaty and further enhancing U.S. national oversight frameworks will be the best method for promoting commercial development in

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<sup>13</sup> UNITED NATIONS, COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE, LEGAL SUBCOMMITTEE, STATUS OF INTERNATIONAL AGREEMENTS RELATING TO ACTIVITIES IN OUTER SPACE AS AT 1 JANUARY 2017, A/AC.105/C.2/2017/CRP.7 (2017). Available at: [http://www.unoosa.org/res/oosadoc/data/documents/2017/aac\\_105c\\_22017crp/aac\\_105c\\_22017crp\\_7\\_0\\_html/AC105\\_C2\\_2017\\_CRP07E.pdf](http://www.unoosa.org/res/oosadoc/data/documents/2017/aac_105c_22017crp/aac_105c_22017crp_7_0_html/AC105_C2_2017_CRP07E.pdf).

<sup>14</sup> FRANCIS LYALL & PAUL B. LARSEN, SPACE LAW—A TREATISE 418. See also Adam Mann, *Who's in Charge of Outer Space?*, WALL ST. J., May 19, 2017, quoting Sagi Kfir, General Counsel of Deep Space Industries: “[The Outer Space Treaty] is so fundamental that its principles have become customary international law even for those countries that aren’t signatories.” Available at: <https://www.wsj.com/articles/whos-in-charge-of-outer-space-1495195097>.

space. As more countries acquire the capability to engage in commercial space activities, it will be important for U.S. companies to be working inside a predictable international legal framework that can encourage and protect investments. The Outer Space Treaty provides the foundational level of certainty in the international system that commercial space entrepreneurs, businesses, and capital sources require to develop further innovative activities.

Rather than an arduous and unpredictable international amendment process, domestic space law is often the best avenue to address any gaps or needs for further clarity, especially regarding emerging activities in space such as space debris removal, satellite servicing, and celestial resource use. Activities which engender international apprehension might also be pursued on a multilateral basis in the form of new instruments that augment, rather than replace, the Outer Space Treaty. Modification or withdrawal from the Outer Space Treaty leaves, on balance, too many uncertainties in outcome, with little clear actual utility, either political or legal.

The Secure World Foundation would like to once again commend the Subcommittee for focusing on such an important issue, and express our support for U.S. governmental efforts to respond to the needs of the commercial space sector while ensuring a sustainable international governance framework in outer space.

Respectfully,



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