

The Geosynchronous Orbit and the Outer Limits of Westphalian Sovereignty

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There is no strife, no prejudice, no national conflict in outer space as yet. Its hazards are hostile to us all. Its conquest deserves the best of all mankind, and its opportunity for peaceful cooperation many never come again.

— President John F. Kennedy**

I. Introduction

With the advent of new technologies, places that previously seemed off limits to human exploration have at times become the subjects of international tension. Just as maritime, and later, airspace sovereignty issues spurred the development of *sui generis* regimes of international law to govern their parameters, outer space is in need of a strong international legal regime in order to avoid looming conflict and disaster.¹ The Outer Space Treaty of 1967 provides that outer space is the province of all humankind and is to be used for the benefit of all countries.² But as Professor Nina Tannenwald points out, “the current legal regime in space is increasingly fragmented and

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** “Moon Speech,” delivered at Rice Univ., Texas (Sep. 12, 1962), *available at* <http://er.jsc.nasa.gov/seh/ricetalk.htm> (last visited Feb. 15, 2011).

1. “Regimes may be defined as a set of implicit or explicit principles, norms, rules and decision-making procedures around which actors’ expectations converge in a given area of international relations.” STEPHEN D. KRASNER, *Structural Causes and Regime Consequences: Regimes as Intervening Variables*, in INTERNATIONAL REGIMES 2 (Stephen D. Krasner ed. New York, Cornell Univ. Press 1983).

2. See OGUNSOLA O. OGUNBANWO, INTERNATIONAL LAW AND OUTER SPACE ACTIVITIES 63 (The Hague, Martinus Nijhoff 1975).

inadequate to meet the challenges of the intensifying use of space.”³ Indeed, the very positivist nature of international law weakens the little adequacy that does exist in the current body of space law.⁴

One particular area of concern in the administration of outer space is the allocation of highly desirable “real-estate” in the geosynchronous orbit (GSO) among the various countries. This is because the GSO is composed of a set of vantage points around the Earth’s equator from which satellites have the “best seat” to communicate with the planet below.⁵ Counting only satellites officially indexed by the United Nations Office for Outer Space Affairs (UNOOSA), there have been approximately 6,260 satellites launched into space, beginning with the launch of the first human-made satellite—Sputnik I—in 1957.⁶ Approximately 854 of these satellites were positioned in geosynchronous orbit, and 516 are currently active.⁷

In recent years, “parking spots” in the geosynchronous orbit have become an increasingly hot commodity.⁸ According to the National Aeronautics and Space Administration (NASA),⁹ since the

3. Nina Tannenwald, *Law Versus Power on the High Frontier: The Case for a Rule-Based Regime for Outer Space*, 29 YALE J. INT’L L. 363, 370 (2004).

4. International law is a consent-based system subservient to the sovereignty of nation states. For a discussion of legal positivism and the positivist nature of international law, see Hans J. Morgenthau, *Positivism, Functionalism, and International Law*, 34 AM. J. INT’L L. 260 (1940), see also Michael Milde, *Considerations on Legal Problems of Space Above National Territory*, 5 REV. OF CONTEMPORARY L. (Brussels) 5 (1958) (reprinted in LEGAL PROBLEMS OF SPACE EXPLORATION: A SYMPOSIUM 1102-31, 1102 (Washington D.C., S. Comm. on Aeronautical & Space Sciences 1961)) (acknowledging that the positivist nature of international law did not preclude the declaration of sovereignty over outer space in the pre-UN era).

5. See T.S. Kelso, *Basics of the GSO*, SATELLITE TIMES (May 1998), <http://celestrak.com/columns/v04n07/> (last visited Feb. 15, 2011).

6. *Soviet Fires Earth Satellite into Space; It is Circling the Globe at 18,000 M.P.H.; Sphere Tracked in 4 Crossing Over U.S.*, N.Y. TIMES, Oct. 5, 1957, at 1.

7. As of March 2010, a total of 854 satellites in geosynchronous orbit have been indexed by UNOOSA; 338 of these satellites have either decayed or have an unknown functionality status. See UNOOSA, Online Index of Objects Launched into Outer Space, <http://www.oosa.unvienna.org/oosa/showSearch.do> (last visited Feb. 15, 2011). These figures do not account for unreported objects.

8. See, e.g., Frederik Balfour, *China Scores Major Coup in Satellite Space Race*, BUSINESSWEEK (Mar. 23, 2009), http://www.businessweek.com/globalbiz/blog/eyeonasia/archives/2009/03/china_scores_ma.html.

9. NASA came into being through passage of the National Aeronautics and Space Act of 1958 primarily as a response to the launch of Sputnik I. 72 Stat. 426-38 (1958) (codified as amended at 42 U.S.C. § 2452 (2006)). For a first-hand account of the creation of NASA see Dr. Eilene Galloway, *Sputnik and the Creation of NASA: A Personal*

launch of the first television satellite into a geosynchronous orbit in 1964, the number of objects in Earth's orbit has steadily increased to over 200 new additions per year.¹⁰ This increase was initially fueled by the Cold War, during which space was a prime area of competition between the United States and the Soviet Union.¹¹ Yet over two decades after the end of the US-Soviet space race, even the global financial crisis that began in 2007 does not seem to have diminished the demand for telecommunications satellites positioned in GSO.¹² This ongoing scramble to place satellites in GSO prompted some developing equatorial countries to assert sovereignty over the outer space "above" their territorial borders,¹³ presumably with the hope of extracting rent from the developed countries that circulate their technologies overhead. So far, the international community has rejected this notion, but the legal status of the GSO remains in limbo.¹⁴

The inevitability of technological and scientific progress promises a future full of challenges for *space lawyers*, who will ultimately be responsible for the composition of (and adherence to) international law in this new frontier. In this Note, I will explore a topic that may initially seem like a plot out of *Star Trek*, but is very much real, and will become even more relevant as humanity ventures farther from home.

The question confronting us today is: who *owns* the GSO? Arguably, our modern notions of sovereignty, as attributed to the signing of the Peace of Westphalia in 1648, have not been extended to outer space, including the Moon and other "celestial bodies."¹⁵ This is partly because the inception of space law took place under the auspices of the United Nations with the participation of new countries that were former colonies, and partly because the technology needed

Perspective, 50TH MAGAZINE (Aug. 2007), available at http://www.nasa.gov/50th/50th_magazine/gallowayEsay.html (last visited Feb. 15, 2011).

10. For a graphic illustration, see NASA, Image of the Day, available at http://www.nasa.gov/multimedia/imagegallery/image_feature_1283.html (last visited Feb. 15, 2011).

11. See generally DEBORAH CADBURY, *SPACE RACE: THE EPIC BATTLE BETWEEN AMERICA AND THE SOVIET UNION FOR DOMINION OF SPACE* (N.Y., Harper Collins 2006).

12. *The Satellite Industry Goes into Orbit*, THE ECONOMIST (US) 64 (Oct. 10, 2009).

13. Lawrence D. Roberts, *A Lost Connection: Geostationary Satellite Networks and the International Telecommunication Union*, 15 BERKELEY TECH. L.J. 1095, 1126 (2000).

14. NANDASIRI JASENTULIYANA, *INTERNATIONAL SPACE LAW AND THE UNITED NATIONS 2* (The Hague, Kluwer Law Int'l 1999).

15. For our purposes, "celestial bodies" are "all-natural" objects in space, not including the Earth.

to “conquer” space was novel at the time of this inception.¹⁶ In this Note, I start in Part I analyzing some of the past and present controversies surrounding the notion of sovereignty and its application to the GSO. In Part II, I briefly discuss the origins of our notion of sovereignty and its epidemic spread in the post-colonial era. Part III explores our current space law regime, including the Outer Space and Moon treaties. In Part IV, I address past and possible future attempts to declare sovereignty over the geosynchronous orbit. Part V, considers other territorial dominions of international law—land, sea, air, and Antarctic law—since these are often cited as analogies from which to construct a body of outer space law. Finally, this Note argues that rather than determining the future of outer space by analogy to our traditional notions of sovereignty, it is beneficial to acknowledge that outer space is inherently different and in need of its own *sui generis* legal regime.

II. Sovereignty: 1648 in Outer Space?

The familiar notion of the sovereign nation-state is commonly attributed to the conclusion of the Peace of Westphalia in 1648.¹⁷ Since this notion was born in Europe, initially only the European powers enjoyed their self-endowed sovereign status.¹⁸ These powers declined to extend the privilege to their colonies and territories until a wave of independence swept the globe during the 1960s and 70s.¹⁹ By then, the idea of sovereign nation-states with political independence and territorial integrity took on the characteristic of *jus cogens*, a peremptory norm of international law from which derogation is not permitted, and that is equally applicable to all countries.²⁰

16. See discussion *infra*, parts II & IV.

17. Leo Gross, *The Peace of Westphalia, 1648-1948*, 42 AM. J. INT'L L. 20, 20 (1948).

18. See Iver B. Neumann & Jennifer M. Welsh, *The Other in European Self-Definition: An Addendum to the Literature on International Society*, 17 REV. OF INT'L STUDIES (Cambridge), 327, 338–39 (Oct. 1991).

19. In 1960, the United Nations helped to encourage the process of decolonization with the Declaration on the Granting of Independence to Colonial Countries and Peoples, which called for “bringing to a speedy and unconditional end colonialism in all its forms and manifestations” G.A. Res. 1514 (XV), 15th Sess., 947th plen. mtg. (Dec. 14, 1960).

20. Ali Khan, *The Extinction of Nation-States*, 7 AM. U.J. L. & POL'Y 197, 198 (1992) (internal citation omitted). *Jus Cogens* or peremptory norms are norms of international law from which nation-states cannot deviate. See *Prosecutor v. Furundzija*, 121 I.L.R. 213 (Int'l Crim. Trib. for the Former Yugoslavia 2002).

International relations scholars often argue that these newly independent countries have embraced the import of sovereignty even more than their European originators.²¹ Indeed, during the wave of independence, S. Prakash Sinha observed: “Sovereignty is the most treasured possession of the newly independent States. On the one hand, it makes them the master of their own house and, on the other hand, it provides them with a legal shield against foreign incursions [by] stronger States.”²² The newly independent states have a strong attachment to their sovereignty perhaps because it is all (or almost all) they have in the wake of their post-colonial experience. Certainly, the newly independent countries have sought to establish a new international order—one in which their former silence is replaced by input into the future of humankind.²³

These countries have and continue to criticize the current body of international law as “a product of relations among imperialist States and of relations of an imperial character between imperialist States and colonial peoples.”²⁴ Thus, it is in this unique context of rapid technological development and the assumption of legal personality by the former colonies that international space law has developed, and it is in this environment that it continues to evolve.

During the early 1960s, before the existence of any international space treaties, some commentators argued that the space directly above a country’s earthly territory is that country’s sovereign space. Professor Michael Milde of the Institute of Air and Space Law at McGill University argued that “the principle of national sovereignty over the space above national territory represents an ancient principle firmly based on customary international law.”²⁵ However, the United Nations thought it otherwise when, through the Outer Space Treaty of 1967, it prohibited the national appropriation of outer space, including the Moon and other celestial bodies.²⁶ But even the Outer Space Treaty places objects and personnel launched by state-parties under the exclusive jurisdiction and control of the launching country, essentially creating small pockets of sovereignty in

21. S. Prakash Sinha, *Perspective of the Newly Independent States on the Binding Quality of International Law*, 14 INT’L & COMP. L.Q. (Cambridge), 121, 127 (Jan. 1965).

22. *Id.*

23. *See Id.* at 121.

24. *Id.*

25. Milde, *supra* note 4.

26. *See* discussion *infra* Part III.A.

outer space.²⁷ In these “pockets” of sovereignty, countries can extend their laws to protect, for instance, their intellectual property. For example, American patent law applies onboard space vehicles over which the United States has jurisdiction or control.²⁸ What is evident here is that the notion of state sovereignty is deeply rooted in the global psyche, and as space law demonstrates, any attempt to deviate from this norm will not be easy.

III. The Sputnik Regime

Although space law did not exist as such before the launch of Sputnik I, there was already debate and conjecture over the legal problems that could arise should humanity venture into outer space. Vladimír Mandl, the father of space law, first published on the issue in 1932, and Welf Heinrich, Prince of Hanover, submitted the first doctor of laws thesis on space law in 1953.²⁹ Countries such as Germany, the United States, and the Soviet Union made progress in the realm of space technology before World War II, but it was the War itself that truly catalyzed the field.³⁰ The visionary scholarship of Mandl and Heinrich concerning outer space became a reality in 1957, when the Soviet Union launched Sputnik I.³¹

27. See Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, art. VII, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter *The Outer Space Treaty*]. See also I.H. PH. DIEDERIKS-VERSCHOOR & V. KOPAL, AN INTRODUCTION TO SPACE LAW 29 (The Netherlands, Wolters Kluwer, 3d ed. 2008).

28. The US Patent Act provides:

Any invention made, used, or sold in outer space on a space object or component thereof under the jurisdiction or control of the United States shall be considered to be made, used or sold within the United States for the purposes of this title, except with respect to any space object or component thereof that is specifically identified and otherwise provided for by an international agreement to which the United States is a party, or with respect to any space object or component thereof that is carried on the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space.

35 U.S.C. § 105(a) (2006).

29. JASENTULIYANA, *supra* note 14.

30. DIEDERIKS-VERSCHOOR & KOPAL, *supra* note 27, at 1.

31. See Kelso, *supra* note 5. The term “satellite” encompasses all objects orbiting a planet. Some satellites such as the Moon are natural; the term “artificial” is used to denote satellites launched into space by humans. See *Artificial Satellite*, DICTIONARY.COM, <http://dictionary.reference.com/browse/ArtificialSatellite> (last visited Feb. 15, 2011).

The new global concern was reflected in the UN General Assembly's establishment of the Committee on the Peaceful Uses of Outer Space ("UNCOPUOS"),³² whose goal is to "promote energetically the fullest exploration and exploitation of outer space for the benefit of mankind" in a peaceful manner and for peaceful purposes.³³ UNCOPUOS's role also includes investigating how "space-related programs could be undertaken under [UN] auspices and to study the legal problems that might arise from the exploration and use of outer space."³⁴ In 1961, a mere four years after the launch of Sputnik I, Yuri Gagarin became the first man to complete a space flight.³⁵ By 1969 Neil Armstrong had left the first human footprints on the lunar surface.³⁶ It was in this climate of technological explosion in the shadows of WWII, and in the midst of the Cold War, that the international space regime came into being. According to Professor John Hickman:

Fear gave birth to the international legal regime for outer space: the ever-present fear of a nuclear war between the United States and Soviet Union, the fear that either superpower would achieve a decisive military technological advantage over the other in outer space, the fear that competition for the best "real estate" on celestial bodies might itself result in war between the

32. International Co-operation in the Peaceful Uses of Outer Space, G.A. Res. 1472 (XIV), 14th Sess., 856th plen. mtg., U.N. Doc. A/RES/48/39 (Dec. 12, 1959).

33. Question of the Peaceful Use of Outer Space, G.A. Res. 1348 (XIII), 13th Sess., 792d plen. mtg., U.N. Doc. A/4090 (13 Dec. 1958). The resolution called for an *ad hoc* committee formed by Argentina, Australia, Belgium, Brazil, Canada, Czechoslovakia, France, India, Iran, Italy, Japan, Mexico, Poland, Sweden, the Soviet Union, the United Arab Republic, the United Kingdom and the United States to study various issues that may arise in outer space and to report their findings to the General Assembly. *Id.* at ¶ 1. Among the issues to be studied were "[t]he future organizational arrangements to facilitate international co-operation in [space] within the framework of the United Nations . . ." and "[t]he nature of legal problems which may arise in the carrying out of programmes to explore outer space" *Id.* at ¶ 1(c)-(d). The General Assembly periodically adopts resolutions to reaffirm its goal of ensuring the peaceful use of outer space, to which it has added the objective of sustainable development. *See e.g.*, International Cooperation in the Peaceful Uses of Outer Space, G.A. Res. 64/86, U.N. Doc. A/RES/64/86 (Jan. 13, 2010).

34. STEPHEN GOROVE, *Sources and Principles of Space Law, in SPACE LAW: DEVELOPMENT AND SCOPE* 45-58, 46 (Nandasiri Jasentuliyana ed., Praeger, 1992).

35. DIEDERIKS-VERSCHOOR & KOPAL, *supra* note 27.

36. *Id.*

superpowers, and the fear that the superpowers might cooperate in a duopoly over all of outer space.³⁷

The body of law that was born out of this *mise-en-scène* consists of a series international treaties and agreements³⁸ overseen by UNOOSA, which was formed in 1968 and had its origins in the 1958 UNCOPUOS Resolution.³⁹

From its seat in Vienna, UNOOSA's role is to implement the decisions of the General Assembly and to discharge various administrative functions, including maintenance of the "Register of Objects Launched into Outer Space."⁴⁰ The most successful of the space agreements (measured in terms of signatories) is the Outer

37. John Hickman, *Still Crazy After Four Decades: The Case for Withdrawing From the 1967 Outer Space Treaty*, THE SPACE REVIEW (Sep. 24, 2007), available at <http://www.thespacereview.com/article/960/1>.

38. See generally UNOOSA, available at <http://www.oosa.unvienna.org/oosa/en/SpaceLaw/index.html> (last visited Feb. 15, 2011). The treaties and agreements are:

(1) *The Outer Space Treaty of 1967*, supra note 27 (98 ratifications and 27 signatures);

(2) Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, Apr. 22, 1968, 19.6 U.S.T. 7570, 672 U.N.T.S. 120 (90 ratifications, 24 signatures, and 1 acceptance of rights and obligations) [hereinafter *the Rescue Agreement*];

(3) Convention on International Liability for Damage Caused by Space Objects, Mar. 29, 1972, 24.2 U.S.T. 2389, 961 U.N.T.S. 187 (86 ratifications, 24 signatures, and 3 acceptances of rights and obligations) [hereinafter *the Liability Convention*];

(4) Convention on Registration of Objects Launched into Outer Space, Jan. 14, 1975, 1023 U.N.T.S. 15 (25 signatures and 54 Parties) [hereinafter *the Registration Convention*];

(5) Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, Dec. 18, 1979, 1363 U.N.T.S. 3 (14 ratifications and 11 signatures) [hereinafter *the Moon Agreement*].

39. International Co-operation in the Peaceful Uses of Outer Space, G.A. Res. 1472 (XIV), 14th Sess., 856th plen. mtg., U.N. Doc. A/RES/48/39 (Dec. 12, 1959).

40. See generally UNOOSA, supra note 38. The agency's other functions include "assisting developing countries in using space technology for development" and following "legal, scientific and technical developments relating to space activities, technology and applications in order to provide technical information and advice to Member States, international organizations and other United Nations offices." *Id.* These functions were outlined in the Convention on the Registration of Objects Launched into Outer Space Annex. G.A. Res. 3235 (XXIX), U.N. GAOR, 29th Sess., 2280th plen. mtg., U.N. Doc. A/9620 (Nov. 12, 1974). Since December of 2007, UNOOSA is directed by Ms. Mazlan Othman, of Malaysia. The agency and has two sections: the Space Application Section and Committee Services and Research Section. <http://www.oosa.unvienna.org/oosa/en/OOSA/index.html>.

Space Treaty,⁴¹ while the least accepted is the Moon Agreement of 1979.⁴² There has been much debate over whether space law is a separate branch of international law or whether it is an extension of air law, especially since the boundary between outer space and the air has yet to be defined.⁴³ In other words, today it is legally uncertain where the sky ends and outer space begins.⁴⁴ Nonetheless, as Professor I. H. Ph. Diederikus-Verschoor has argued, this debate is largely moot now because space law is “manifestly distinctive from air law which governs the airspace and the law of the sea which is concerned with the seas and the oceans.”⁴⁵ As the newest branch of international law operating within the Westphalian regime of sovereign countries, the common threads in space law to date have been the “maintenance of international peace and security and the promotion of international co-operation and understanding,” and deviation from national sovereignty⁴⁶ as evidenced by the Outer Space Treaty of 1967 and the Moon Agreement. These agreements are most relevant to the topic of territorial sovereignty—or lack thereof—in outer space, so let us explore each in turn.

A. The Outer Space Treaty of 1967

Proclaimed the “Magna Carta of international space law,”⁴⁷ ninety-eight countries, including the U.S., Russia, and most of Europe have signed and ratified the Outer Space Treaty as of 2011.⁴⁸ A chief accomplishment of the Treaty is the establishment of a regime for freedom of exploration, and free access to the celestial bodies, but this freedom is in fact limited by a number of the Treaty’s provisions.⁴⁹ Before considering the Outer Space Treaty further, it is helpful to list some of its core principles:

41. *The Outer Space Treaty of 1967*, *supra* note 27.

42. *The Moon Agreement*, *supra* note 38.

43. DIEDERIKS-VERSCHOOR & KOPAL, *supra* note 27.

44. *Id.*

45. *Id.*; see discussion *infra*, part III.A.

46. JASENTULIYANA, *supra* note 14.

47. GOROVE, *supra* note 34.

48. UNOOSA, Treaty Status Index, available at <http://www.oosa.unvienna.org/oosa/tdb/showTreatySignatures.do> (last visited Feb. 15, 2011).

49. GOROVE, *supra* note 34.

- (1) The exploration of outer space, including the Moon and other celestial bodies shall be carried out for the benefit and in the interest of all countries.
- (2) Outer space shall be free for exploration and use by all states on a basis of equality.
- (3) Outer space shall not be subject to appropriation by claim of sovereignty, by means of use or occupation, or by any other means.
- (4) Activities in the exploration and use of outer space must be carried out in accordance with international law, including the Charter of the United Nations, in the interest of maintaining peace and security.
- (5) No nuclear weapons or any other kinds of weapons of mass destruction shall be . . . placed in orbit around the Earth.
- ...
- (10) State Parties on whose registries the space objects are carried keep jurisdiction and control over such objects and the personnel thereof recorded in their registries.⁵⁰

Article I of the Treaty requires that exploration, while free, “shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.”⁵¹ Article I also requires that space exploration be conducted on an equal footing without discriminating against countries.⁵² In a significant break with the Westphalian regime, Article II prohibits the appropriation of the Moon and other celestial bodies by any one country, either through claims of sovereignty or through use or occupation.⁵³ Diederiks-Verschoor and Kopal characterize this ban as “an absolute legal barrier in the realization of every kind of space activity.”⁵⁴ This is in sharp contrast to air law and the law of the sea, which embrace the construct of national sovereignty.⁵⁵ The Treaty also bans the placement of nuclear weapons or weapons of mass destruction in Earth’s orbit, on the celestial bodies, or anywhere else in outer

50. DIEDERIKS-VERSCHOOR & KOPAL, *supra* note 27, at 24.

51. G.A. Res. 2222 (XXI), U.N. Doc. A/6431 (Dec. 19, 1966).

52. *Id.*

53. *Id.*

54. *Id.*

55. DIEDERIKS-VERSCHOOR & KOPAL, *supra* note 27, at 26.

space.⁵⁶ Article V declares that astronauts are “envoys of mankind” and must be aided by other countries when in distress.⁵⁷ In other relevant articles, the Treaty holds launching countries liable for damage caused by their space objects⁵⁸ and imposes a duty to avoid “harmful contamination” of the Earth’s environment by the introduction of extraterrestrial substances.⁵⁹

It is important to note that the Outer Space Treaty applies only to countries and does not directly apply to non-state entities such as corporations. This is because the assumption that only states or government-supported organizations are capable of mustering the resources needed to navigate space is one of the “salient” features of space law as it stands today.⁶⁰ Such an assumption has made space law largely “conventional;” that is, it has consisted of “rules laid down in international conventions, treaties, accords, or whatever other title international agreements may carry.”⁶¹ Article VI holds national governments directly responsible for supervising and approving the activities of their respective non-governmental entities.⁶² These general principles established in the Outer Space Treaty have been subject to elaboration and legal evolution in subsequent international agreements. The last and least successful of these is the Moon Agreement.

B. The Moon Agreement of 1979

The primary force behind the Moon Agreement was a well-intentioned desire to elaborate on the body of space law established by the Outer Space Treaty of 1967.⁶³ Perhaps the best-known and most successful contribution of space law to international law is the

56. G.A. Res. 2222 (XXI), art. V, U.N. Doc. A/6431 (19 Dec. 19, 1966).

57. G.A. Res. 2222 (XXI), art. V, U.N. Doc. A/643.

58. *Id.* at art. VII. Articles VII and VIII outline a set of rules on liability for damage caused by space objects and jurisdictional issues. These rules were elaborated by later international Conventions. See *the Liability Convention* and *the Registration Convention*, *supra* note 38.

59. *Id.* at art. IX.

60. See DIEDERIKS-VERSCHOOR & KOPAL, *supra* note 27, at 23.

61. *Id.*; see generally C.Q. Christol, *The Moon Treaty and the Allocation of Resources*, XXII-II ANNALS OF AIR & SPACE L. 31, 31–52 (1997).

62. *The Outer Space Treaty*, *supra* note 38, at art. VI.

63. Francis Lyall, *On the Moon*, 26 J. SPACE L. 129, 132 (1998).

concept of the “common heritage of [hu]mankind,”⁶⁴ which appears for the first time in the Moon Treaty.⁶⁵ This notion, which was originally introduced to the international polity during the 1967 negotiations on outer space by the Argentine and Maltese ambassadors to the UN,⁶⁶ is now enshrined in the Moon Treaty,⁶⁷ and its use has increased exponentially in international agreements—especially in those having to do with the environment.⁶⁸

Traditionally, international law divided the world into national territory, or *res nullius* (areas which may be appropriated as national territory), and *res extra commercium* (areas which may not be appropriated as national territory). The areas not subject to national appropriation—the high seas, the sea bed, Antarctica, and outer space—are commonly referred to as the *global commons*.⁶⁹ The common heritage of humankind added a fourth dimension to the status quo by creating a category for areas which not only may not be appropriated as national territory, “but the fruits and resources of which are also deemed to be the property of [hu]mankind at large.”⁷⁰ In addition to requiring the international management of resources through international cooperation, the most controversial aspect of this doctrine has been the mandate that benefits derived from the use and exploitation of natural resources in common heritage areas (such as the Moon) must be shared among all countries.⁷¹ Realizing that “they do not command the technology to take advantage of resources in these hard-to-reach places,” developing countries place emphasis on this provision as a means for the equitable allocation of benefits derived from our common heritage.⁷²

64. The term as used in the Moon Agreement is “common heritage of mankind.” I substitute “mankind” with the more gender-neutral term “humankind” throughout this Note.

65. DIEDERIKS-VERSCHOOR & KOPAL, *supra* note 27, at 50.

66. JASENTULIYANA, *supra* note 14.

67. *The Moon Treaty*, *supra* note 38, Art. 11(1) (stating, “[t]he moon and its natural resources are the common heritage of mankind . . .”)

68. See e.g., KEMAL BASLAR, *THE CONCEPT OF THE COMMON HERITAGE OF MANKIND IN INTERNATIONAL LAW* 103–05 (The Netherlands, Kluwer Law Int’l 1998).

69. DAVID HUNTER, JAMES SALZMAN & DURWOOD ZAELEKE, *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* 482 (3d ed., N.Y., Foundation Press 2007).

70. BIN CHENG, *STUDIES IN INTERNATIONAL SPACE LAW* 357 (Oxford, Clarendon Press 1997).

71. *Id.* at 358.

72. HUNTER ET AL., *supra* note 69.

The Moon Treaty declares: “The Moon and its natural resources are the common heritage of [hu]mankind, which finds its expression in the provisions of this Agreement, in particular in paragraph 5 of this article.”⁷³ Paragraph 5 in turn calls for the establishment of an international management regime “to govern the exploitation of the natural resources of the Moon as such exploitation is about to become feasible.”⁷⁴ This paradigm, which does not extend to the GSO, was one of the principal reasons behind the Moon Agreement’s failure.⁷⁵

The Moon Agreement encountered a great deal of controversy at the UN, causing particular tension over the issue of lunar resources.⁷⁶ The trouble with the common heritage doctrine is its quality as a resource sharing principle. It goes far beyond the non-appropriation principle of the Outer Space Treaty, calling for the allocation of profits from space amongst all UN member countries in “what might be termed ‘dividing the pie.’”⁷⁷ While the impetus of the developing countries is to benefit from the common heritage concept, the conflicting concern of the developed countries might be termed “collecting the apples that go into the pie.”⁷⁸ It was this conflict over the common heritage doctrine that caused the Moon Agreement to become a peripheral agreement of little importance. This last attempt at refining the Outer Space Treaty was not ratified by a single space-faring country,⁷⁹ and irrespective of this, it did nothing to clarify the status of open space or the GSO under international law.⁸⁰ Indeed, it is difficult to conceive that any space-capable country will ever subscribe to the common heritage doctrine and that this doctrine will ever apply to the GSO. Countries that invest in research, development, and deployment of spacecraft will not realistically want to share the fruits of their labour with the rest of the world. It is also probable that this doctrine—if accepted—would make space

73. *The Moon Treaty*, *supra* note 38, art. 11(1). The Agreement extends the definition of the Moon to include all celestial bodies other than the Earth. See BIN CHENG, *STUDIES IN INTERNATIONAL SPACE LAW* 374 (Oxford, Clarendon Press 1997).

74. *Id.* at art. 11(5).

75. See e.g. Lyall, *supra* note 63.

76. DIEDERIKS-VERSCHOOR & KOPAL, *supra* note 27, at 51.

77. GLENN H. REYNOLDS & ROBERT P. MERGES 135 (Boulder, Colo., WestviewPress 1997).

78. *Id.*

79. UNOOSA, *Treaty Signatures*, available at <http://www.oosa.unvienna.org/oosatdb/showTreatySignatures.do>.

80. See *The Moon Agreement*, *supra* note 33.

exploration less profitable, removing at least some of the motivation for venturing out beyond planet Earth. Scott Shackelford has proposed that a viable alternative is to grant countries limited property rights in the common heritage realms so that they have an incentive for investment in the exploitation of these resources.⁸¹ This proposition echoes what is already a provision of the Outer Space Treaty: Article VIII's grant of jurisdiction and control of spacecraft and objects constructed on a celestial body to the launching state.⁸² The problem with such a proposition is that countries that are not space-capable would likely be unable to partake in this grant of limited sovereignty (or property rights). Had the UN drafted a different treaty, one that declared open space and the GSO common heritages of humankind, the concept may have had a better prospect of gaining international acceptance because, after all, the issue of resource extraction from *empty* space is not likely to be controversial. Such a treaty may have at least indirectly alleviated some of the concerns over ownership of the GSO by clarifying its status under international law as a common heritage of humankind. This would have made no practical difference since there is (as yet) no resource extraction from empty space, and geosynchronous satellites and their benefits would remain with the launching states. Such a provision may have, however, paved the way for later inclusion of the common heritage doctrine in documents such as the Moon Agreement.

We have arguably established that the GSO is not a common heritage of humankind, but that it is *res extra commercium* under the current international legal regime.⁸³ One might logically think that (with the exception of Article VIII jurisdiction and control rights) no country may appropriate any portion of the GSO; still, the lack of a definite boundary between air and space leaves open a large loophole that may yet provide an avenue for national appropriation of the GSO.

81. Scott J. Shackelford, *The Tragedy of the Common Heritage of Mankind*, 27 STAN. ENV. L.J. 101, 110 (2008).

82. "A State Party to the Treaty on whose registry an object 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. Ownership of objects launched into 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 a celestial body or by their return to the Earth . . ." *The Outer Space Treaty*, *supra* note 27, at art. VII.

83. Neither the Moon Agreement nor any other international agreement declares the geosynchronous orbit a common heritage area.

IV. Sovereignty over the GSO?

The GSO is the orbit around the Earth's equator at an altitude of approximately 35,785 km (22,236 miles); the orbit takes twenty-four hours to complete.⁸⁴ From this position, an orbiting satellite can "see" about one third of the planet's surface at a time.⁸⁵ According to NASA, this altitude allows for a "broad view" that, when combined with "the ability to hover over a single equatorial location," has made the GSO very popular for communications relay and weather monitoring spacecraft.⁸⁶ Satellites in the GSO that appear to remain stationary in the sky when viewed from the ground are called "geostationary."⁸⁷ This is an especially desirable position for telecommunications satellites since they can maintain a constant link with their contact point on the Earth from these parking spots.⁸⁸ Satellite communications is an immensely profitable enterprise.⁸⁹ There is a long queue for access to the GSO, comprised of "companies proposing new services (such as direct-to-home broadcast television and mobile communications for trucking or airline fleets) and representing newcomers, particularly developing countries, now entering the market for satellite services."⁹⁰ This queue is administered by the Space Services Department of the International Telecommunication Union (ITU) under the auspices of the UN.⁹¹

It is no surprise, then, that the "commodification" of these vantage points in space and their relative allocation among the

84. NASA, *What is a Geosynchronous Orbit*, available at <http://www.gsfc.nasa.gov/gsfeduc/fyeo/faq/gorbit.htm>

85. *Id.*

86. *Id.*

87. *Lockheed Martin Corp. v. Space Systems/Loral Inc.*, 249 F.3d 1314, 1316 (Fed. Cir. 2001).

88. *Id.*

89. Francis Lyall, *Law of Satellite Communications*, in *SPACE LAW: DEVELOPMENT AND SCOPE* 114-25, 123 (Nandasiri Jasentuliyana ed., Praeger, 1992).

90. Thomas Gangale, *Who Owns the GEO?*, 31 *ANNALS OF AIR & SPACE L.* 425, 427 (2006) (quoting Molly K. Macauley, *Allocation of Orbit and Spectrum Resources for Regional Communications: What's at Stake?*, Resource for the Future, Discussion Paper 98-10, (Dec. 1, 1997), available at <http://www.rff.org/Documents/RFF-DP-98-10.pdf> (last visited Feb. 15, 2011)).

91. Founded in 1865, the ITU is based in Geneva and headed by Secretary General Dr Hamadoun I. Touré. See ITU, available at <http://www.itu.int/net/about/index.aspx> (last visited Feb. 15, 2011). For further discussion of the ITU, see Yvon Henri, *Long-Term Efficiency of the Space Regulatory Framework*, available at <http://www.itu.int/ITU-R/information/promotion/e-flash/2/article6.html> (last visited Feb. 15, 2011).

various countries is a point of international dispute.⁹² Even the drawing of a boundary between the air and outer space has been controversial because the classification could potentially push the GSO into the province of air law rather than space law. Imposition of an internationally recognized, definitive boundary between air and space could cause a shift in the treaties applicable to the GSO.⁹³ You will recall that the basic premise of space law is to promote the exploration and exploitation of outer space for the benefit of humankind, free from the normative notion of sovereignty.⁹⁴ This proposition is rather different from that of air law, which (like the law of the sea) is based on the Westphalian model of sovereign nation-states. The Paris Convention of 1919 on international air law was premised on the idea that “[p]arties recognize that every Power has complete and exclusive sovereignty over the airspace above its territory.”⁹⁵ Exclusive sovereignty over airspace is now the norm, and has been codified by many countries: in 1920, for example, the United Kingdom Parliament declared, “[t]he full and absolute sovereignty and rightful jurisdiction of His Majesty extends, and has always extended, over the air.”⁹⁶ Similarly, in 1957 the US Congress declared that “[t]he United States Government has exclusive sovereignty of the airspace of the United States.”⁹⁷ For our purposes, we will think of the GSO as part of space rather than the air,⁹⁸ but some countries have already (and may again) challenge this definition and attempt to assert sovereignty over the GSO as their “territorial outerspace” under international air law.⁹⁹

A. The Bogotá 8

Controversy over ownership rights and sovereignty over this finite space resource has not been entirely lacking. Up to now, the United States, Russia, and a few other developed countries have

92. See MARIETTA BENKÖ, ET AL., *SPACE LAW IN THE UNITED NATIONS* 137–38 (The Netherlands, Martinus Nijhoff Publishers 1985).

93. See JASENTULIYANA, *supra* note 14.

94. See *e.g.*, G.A. Res. 1472 (XIV), *supra* note 33.

95. MICHAEL MILDE, *International Air Law and ICAO*, in *ESSENTIAL AIR AND SPACE LAW* 11 (Marietta Benkö ed., Vol. 4, The Netherlands, Eleven Int'l, 2008) (internal quotation marks omitted).

96. Air Navigation Act, 1920, 1 & 11 Geo. 5, c. 80, Preamble (U.K.).

97. 49 U.S.C. § 40103 (2006).

98. See discussion, *infra*, part IV.

99. See Declaration of the First Meeting of Equatorial Countries, Dec. 3, 1976, ITU Doc. WARC-BS-81-E.

enjoyed the most “space” in the GSO.¹⁰⁰ The U.S. has about 339 satellites in the GSO,¹⁰¹ six of which, for example, served DirecTV satellite television company as of 2004.¹⁰² During the decolonization wave of the 1970s, developing countries became cognizant that their former colonizers’ use of the GSO for telecommunications could hinder their ability to access this resource in the future.¹⁰³ Lawrence D. Roberts writes that, “[o]f even greater concern to the developing states were the uses to which communication technologies were being put. Distribution of news and other information to developing populations was perceived as former colonial powers foisting inappropriate and dangerous perceptions and values on the citizens of developing states.”¹⁰⁴ In other words, the former colonies were foreshadowing the threat to their sovereignty by Western cultural imperialism, which has now ironically become an established by-product of globalization.¹⁰⁵

By 1976, a group of eight equatorial countries led by Colombia (the “Bogotá 8”) sought to secure the rights to the geostationary positions directly over their territories¹⁰⁶ by extending their sovereignty to “outerspace.”¹⁰⁷ The 1976 Bogotá Declaration encapsulated their aspirations, though it was difficult for the equatorial group to make their claim of sovereignty given the Outer Space Treaty’s express abrogation of national sovereignty over outer space.¹⁰⁸ A further problem was that since none of the Bogotá 8 countries were space-capable at the time, a legal violation of the Outer Space Treaty on their part would have probably prompted the space-faring countries to take advantage of the opportunity and assert

100. Roberts, *supra* note 13, at 1125.

101. Index, UNOOSA, *available at* <http://www.oosa.unvienna.org/oosa/showSearch.do> (last visited Feb. 15, 2011).

102. *Directv, Inc. v. Morris*, 357 F. Supp. 2d 966, 968 (E.D. Tex. 2004).

103. Roberts, *supra* note 13.

104. *Id.*

105. “Since decolonization, the principle of radiation outward from an imperial center has retained its structure, but changed its meaning from positive to negative” JAN NEDERVEEN PIETERSE, *GLOBALIZATION AND CULTURE: GLOBAL MÉLANGE* 59 (Maryland, Rowman & Littlefield 2009).

106. Roberts, *supra* note 13, at 1126.

107. The eight countries were Brazil, Colombia, Congo, Ecuador, Indonesia, Kenya, Uganda, and Zaire. Declaration of the First Meeting of Equatorial Countries, Dec. 3, 1976, ITU Doc. WARC-BS-81-E; *reproduced in* 6 J. SPACE L. 193–96 (1978) [hereinafter *Bogotá Declaration*].

108. See *The Outer Space Treaty*, *supra* note 27 and Part III.A and accompanying notes.

their own claims of sovereign rights over other parts of space.¹⁰⁹ To elude this possibility, the group of eight argued for a special exception for the GSO:

Reasoning that the orbital arcs above each declaring nation were fixed, the declarants argued that those arcs should not be considered a part of outer space at all, but rather should be considered a natural resource arising directly out of terrestrial gravitational phenomena. Since each nation has a right of control over its own natural resources, they argued, the portions of geostationary arc should be controlled by those nations having territory directly underneath.¹¹⁰

As discussed earlier, commentators have long pointed to a loophole in the Outer Space Treaty caused by the lack of a clear line of demarcation between airspace and outer space. The Bogotá 8's argument that the GSO arises directly from the Earth's gravity implied that everything that lies in Earth's gravitational field is airspace and hence should not be governed by space law but rather by air law.¹¹¹ This reasoning allowed the Bogotá 8 to make claims of sovereignty without contravening international law, and without prompting space-capable countries to follow suit. In the Bogotá Declaration of 1976, the equatorial countries asserted that the placement of satellites in their respective portions of the GSO required "express authorization on the part of the concerned State."¹¹² The Bogotá 8 restated their claims to geostationary sovereignty at the 1977 World Radio Conference held in Geneva, Switzerland, and later that same year at the UN Outer Space Legal Subcommittee.¹¹³ In a statement by the Colombian delegate E. Gaviria, the group maintained that their proclamation of sovereignty over their respective segments of the GSO was not in conflict with the Outer Space Treaty and that this Treaty "did not take account of the

109. See Roberts, *supra* note 13, at 1126.

110. *Id.* (internal citations omitted).

111. Lieutenant Colonel Patrick W. Franzese, *Sovereignty in Cyberspace: Can It Exist*, 64 A.F. L. REV. 1, 26 (2009). The current rule of thumb is that a country's airspace ends and outer space begins at the lowest altitude where a satellite "can continually remain in orbit without disintegrating." DAVID J. BEDERMAN, INTERNATIONAL LAW FRAMEWORKS 121 (2d ed. 2006).

112. *Bogotá Declaration*, *supra* note 107.

113. Andrej Gorbziel, *The Legal Status of GSO: Some Remarks*, 6 J. SPACE L. 171, 174 (1978).

interests of developing countries.”¹¹⁴ During the meeting, Kenyan delegate J. Simani pointed to the need for a definition of the boundary between the air and space that was sensitive to “the special position of equatorial countries with respect to the GSO forming part of their natural resources.”¹¹⁵ Essentially, Mr. Simani argued that the GSO should be considered a part of airspace, and hence, immune from the Outer Space Treaty regime.

Not surprisingly, the equatorial countries’ arguments did not go over well at the Outer Space Legal Subcommittee. The Soviet delegate, Mr. B.G. Maiorski, argued that the GSO was part of outer space and that the coincidental location of the equatorial countries did not create any rights in the orbit.¹¹⁶ In the end, the overwhelming consensus at the Subcommittee was that claims of sovereignty over the GSO or any other part of outer space are incompatible with the express and implied spirit of the Outer Space Treaty and should be dismissed.¹¹⁷ However, to deflate the situation and bring temporary resolution to the issue, the ITU agreed to set aside certain GSO “parking spaces” for future use by non-space-faring countries.¹¹⁸

Nonetheless, the question of whether the GSO is part of outer space or the air remains unanswered. Professor Andrej Gorbiel, who was the Polish delegate at the Outer Space Legal Subcommittee in 1977, has written that the main objective of the Outer Space Treaty was to promulgate rules to govern the activities of countries in their outer space adventures.¹¹⁹ He argues:

[t]his use encompasses objects launched into outer space and in particular artificial earth satellites placed in orbit around the earth. Therefore, the implementation of the [Outer Space Treaty] is possible on the assumption that its provisions concern those regions of space in which the . . . satellites are placed.¹²⁰

114. Gorbiel, *supra* note 113, at 174 (quoting ITU Doc. 266/Rev. 1/-E (1977)).

115. Gorbiel, *supra* note 113, at 175 (quoting U.N. Doc. A/AC.105/C.2/SR.277 at 2 (1977)).

116. *Id.*

117. DIEDERIKS-VERSCHOOR & KOPAL, *supra* note 27, at 100.

118. ITU Radiocommunication Regional Conference, *Orbit/Spectrum Allocation Procedures Registration Mechanism*, (Abu Dhabi Apr. 22-26, 2007) (on file with author).

119. Gorbiel, *supra* note 113, at 177.

120. *Id.*

Gorbiel concludes that to argue otherwise would deprive the Outer Space Treaty of the reason for its existence.¹²¹ In 2001, at its 44th session, UNCOPUOS agreed that “[t]he GSO, characterized by its special properties, is part of outer space.”¹²² In line with our assumption that space law governs the GSO, it would seem that, thus far at least, the orbit is immunized from dissection by equatorial sovereigns.

B. The Bogotá ___?¹²³

You may question the relevance of the events of 1976 in today’s rapidly changing world, but the issue of the ownership of the GSO is not likely to fade away anytime soon. While from a Western perspective the failure of the Bogotá 8 to garner support for their Declaration may appear to be in the best interest of humanity, the current system lacks an element of fairness for the developing world. In this sense, the Bogotá Declaration may be thought of as not only a demand for sovereignty over portions of the GSO, but as a symbolic disapproval of the current “first come, first served”¹²⁴ arrangement in space, where wealthy countries disproportionately enjoy the benefits of new space technologies.¹²⁵

At present, developing countries are more reliant on telecommunications satellites than the developed world because they have limited telephone networks and less infrastructure.¹²⁶ Wealthier countries, on the other hand, have an abundance of networks that serve their robust mobile telephone and broadband Internet markets. These services are delivered mainly via less expensive low Earth orbit satellites and terrestrial networks rather than geostationary sources.¹²⁷

121. *Id.*

122. U.N. Comm. on the Peaceful Uses of Outer Space [UNCOPUOS] Report, U.N. GAOR, 56th sess., Supp. No. 20/A/56/20/, ¶126 (2001).

123. This blank denotes an unknown future number of countries.

124. DIEDERIKS-VERSCHOOR & KOPAL, *supra* note 27, at 21.

125. The “first come, first served” arrangement is an extension of the Anglo-American “first-in-time, first-in-right” property rule. *See* Pierson v. Post, 3 Cai. 175 (N.Y. Sup. Ct. 1805). “Under such a rule, all other things being equal, the chronologically first possessor has the better title.” D. BARLOW BURKE & JOSEPH SNOE, *EXAMPLES & EXPLANATIONS: PROPERTY* 16–17 (3d ed. 2008).

126. *See* THE ECONOMIST, *supra* note 12.

127. *See id.* Low Earth Orbit or LEO is a satellite orbit that is 100 to 1,000 nautical miles . . . above the surface of the Earth in contrast to the 22,236 miles of altitude needed to achieve a geosynchronous orbit. James L. Reed, *The Commercial Space Launch Market and Bilateral Trade Agreements in Space Launch Services*, 13 AM. U. INT’L L. REV. 157, 173 n.93 (1997).

As demand for information services increases in developing countries, the spirit of the Bogotá Declaration is likely to linger.

In 1991, Colombia, the principal actor of the Bogotá 8, promulgated its new constitution. In defiance of international law, article 101 sets out the regions over which Colombia enjoys sovereignty. Paragraph 4 of the article reads:

Also part of Colombia is the subsoil, the territorial sea, the contiguous zone, the continental shelf, the exclusive economic zone, the airspace, *the segment of the GSO*, the electromagnetic spectrum and the space in which it operates, in accordance with international law *or the laws of Colombia in the absence of international regulations*.¹²⁸

This constitutional declaration illustrates that Colombia still disputes the existence of international regulations applicable to the GSO or, that the GSO falls within the ambit of the Outer Space Treaty. This assertion enables Colombia to claim that its declaration of sovereignty over the GSO is “in accordance with international law.”¹²⁹

Arguably, it is not just developing countries that wish to acquire territorial rights in the space above their land. Despite having ratified the Outer Space Treaty in 1983,¹³⁰ an “increasing number of publications by influential Chinese authors (are) advancing the principle that China’s sovereignty extends through outer space,” reasoning that there is still no legal line of demarcation that would prevent such an extension.¹³¹ With the continuing classification of the GSO as *res extra commercium* and the resulting advantage to wealthy space-faring countries, it is likely that the Bogotá 8 will grow and make a comeback as the Bogotá _ _ _ . Thomas Gangale argues that many “entities have contracted with [satellite] launching States to

128. CONSTITUCION POLITICA DE COLOMBIA art. 101 ¶4 (emphasis added). Unofficial translation *available at* http://confinder.richmond.edu/admin/docs/colombia_const2.pdf (last visited Feb. 15, 2011).

129. *Id.*

130. UNOOSA, Treaty Signatures, *supra* note 79.

131. See Franzese, *supra* note 111 (quoting Peter A. Dutton, China’s Views of Sovereignty and Methods of Access Control, Testimony before the U.S.-China Economic & Security Review Commission, (Feb. 27, 2008), *available at* http://www.uscc.gov/hearings/2008hearings/written_testimonies/08_02_27_wrts/08_02_27_dutton_statement.php) (internal quotation marks omitted).

131. See THE ECONOMIST, *supra* note 12.

place their own satellites in the [GSO], and this number will only grow as more States develop the need for positions in the [orbit].”¹³² However, if countries must rely on a contractual relationship to benefit from satellite technology, this may exacerbate access and sovereignty issues in relation to the GSO, and may be viewed as a form of space neocolonialism. To avoid this scenario, it is necessary to find an alternative classification for the GSO.

IV. Analogies to Other Territorial Norms

Freedom of the seas, or rather the ownership of the seas, has been a topic of discussion since antiquity.¹³³ In the pre-Christian era, freedom of the seas posed problems for interstate politics, but it was not yet “a matter of formal international law.”¹³⁴ Today, the Law of the Sea is a well-developed branch of international law. To this, we have added Air Law, as well as an Antarctic regime. These separate branches of international law are often used as the rationales for arguments for or against sovereignty in outer space. According to Lieutenant Colonel Patrick W. Franzese, during the initial development of international sea and air law there were calls for establishing sovereignty-free regimes, but “state interests, such as trade and national security, combined with a state’s technological capabilities, ultimately prevailed over these arguments and determined the current legal status of these domains.”¹³⁵ In the following sections, we shall look briefly at these bodies of law because they have each confronted the issue of national sovereignty and they provide insight into various possible “ownership” avenues for the GSO.¹³⁶

A. The Land Analogy

Thomas Gangale asks: “[c]ould segments of the [GSO] above the territories of the equatorial states be considered as analogous to land, and therefore subject to territorial claim?”¹³⁷ He argues that the

132. Gangale, *supra* note 90, at 445–46.

133. See PITMAN B. POTTER, *THE FREEDOM OF THE SEA IN HISTORY, LAW, AND POLITICS* 11–35 (Buffalo N.Y., Hein, 2002).

134. *Id.* at 35.

135. Franzese, *supra* note 111, at 29.

136. One disclaimer is in order here: the following discussion presents a very basic picture of other areas of territorial law as relevant to the topic of this Paper. This discussion should not be construed as comprehensive.

137. Gangale, *supra* note 90, at 432–33.

answer is “no,” because the equatorial countries neither “discovered” nor were the first to “possess,” “use,” or “occupy” the orbit, as required by traditional modes of acquisition of land.¹³⁸ What’s more, land is a physical phenomenon whereas outer space and the GSO lack physicality. The land analogy therefore seems farfetched.

B. The Sea Analogy

Much like space law, the Law of the Sea establishes the “high seas” as *res communis*¹³⁹ or *res extra commercium* with “equality of access for all nations.”¹⁴⁰ While the high seas are often thought of in terms of their commercial value (mineral extraction, fishing, etc.), outer space is thought of as having mostly military value—and more recently—communications value.¹⁴¹ Despite these differences, many concepts from the Law of the Sea (“freedom of use, access, registration, etc.”)¹⁴² are now a part of the outer space regime. Yet the Law of the Sea does grant sovereignty to states in the form of territorial waters and exclusive economic zones.¹⁴³ Can we draw an analogy between territorial waters or exclusive economic zones and the GSO? Gangale rightly argues that sovereignty over territorial waters and exclusive economic zones assumes and requires contiguity to the territory of a country, and the 35,785 km (22,236 miles) between terrestrial land and the GSO can hardly satisfy this requirement.¹⁴⁴

C. The Air Analogy

As discussed in Part IV, the question of the boundary between air and space is a controversial and unresolved issue.¹⁴⁵ This is significant because the two bodies of law have markedly different

138. Gangale, *supra* note 90, at 433–35.

139. Defined as “things that cannot be owned or appropriated, such as light, air, and the sea.” BLACK’S LAW DICTIONARY 1333 (8th ed., West 2004).

140. S. HOUSTON LAY & HOWARD J. TAUBENFELD, THE LAW RELATING TO ACTIVITIES OF MAN IN SPACE 57 (Univ. of Chicago Press 1970). See United Nations Convention on the Law of the Sea of 10 December 1982, Nov. 16, 1994, 1836 U.N.T.S. 3, art. 87-89 (stating, “[n]o State may validly purport to subject any part of the high seas to its sovereignty” and “[t]hese freedoms shall be exercised by all States with due regard for the interests of other States in their exercise of the freedom of the high seas”)

141. *Id.*

142. *Id.* at 59.

143. See 1836 U.N.T.S. 3 parts II & V.

144. Gangale, *supra* note 90, at 435–36.

145. See discussion *supra*, part IV.

approaches to sovereignty. You will recall that under air law, every country “has complete and exclusive sovereignty over the airspace above its territory”¹⁴⁶ but under outer space law there is no similar national sovereignty.¹⁴⁷ The problem is that these two distinct bodies of law have no clear line of demarcation; neither air law nor outer space law demarcate a specific height at which the air ends and space begins.¹⁴⁸ In practice, countries regard an area up to 30 kilometers (18.6 miles) above their territory as their sovereign airspace.¹⁴⁹ The Equatorial countries never claimed sovereignty over the space between that 30 km zone and the GSO, so there is a gap and a break in contiguity between their airspace and the GSO. Gangale argues that because of this, “the analogy to airspace does not fly.” Additionally, UNCOPUOS has agreed that the GSO is part of outer space,¹⁵⁰ and its discussion of airspace has generally been restricted to a height of 90 to 110 km (56 to 68 miles) above Earth.¹⁵¹

D. The Antarctic Analogy

The 1959 Antarctic Treaty states “Antarctica shall be used for peaceful purposes only,”¹⁵² but does not recognize nor dispute any territorial claims over Antarctica.¹⁵³ Article IV paragraph 4 of the Treaty provides that “[n]o new claim, or enlargement of an existing claim, to territorial sovereignty shall be asserted while the present Treaty is in force.”¹⁵⁴ Attempts by countries to lay new claims to the GSO by analogy to the Antarctica Treaty are thus expressly prohibited—at least while the Treaty it is in force—and therefore fail.

146. See Milde, *supra* note 95 and accompanying text.

147. See *supra* part III.A.

148. *Id.*

149. See Gangale, *supra* note 90, 437–38.

150. See UNCOPUOS *supra*, note 119 and accompanying text.

151. See Gangale, *supra* note 90, at 437.

152. The Antarctic Treaty, Dec. 1, 1959, 12.1 U.S.T. 794, 402 U.N.T.S 71 art. I.

153. *Id.* at art. IV. ¶1-2.

154. *Id.* at art. IV. ¶2.

E. A Summary

The table below sets forth the sovereignty stances of four different areas of international law.¹⁵⁵

Law	Principles	Norms	Source/ Administration
Sea ¹⁵⁶	The high seas should be open to every country, although countries have valid territorial interests beyond their coasts	The sovereignty of a coastal country extends beyond its land and internal waters	Law of the Sea & International Tribunal for the Law of the Sea
Air ¹⁵⁷	The air above a country is part of the territory of the underlying country	Every state has complete exclusive sovereignty over the airspace above its territory	Chicago Convention & International Civil Aviation Organization
Antarctica ¹⁵⁸	Antarctica is to be used for peaceful and scientific purposes	No recognition, dispute, or establishment of national sovereignty, but new claims of sovereignty may not be asserted	Antarctic Treaty System Antarctic Treaty Secretariat
Outer Space ¹⁵⁹	Outer space is the province of all humankind	Outer space, including the Moon and the celestial bodies are immune from national appropriation	Outer Space Treaty & Committee on the Peaceful Uses of Outer Space

155. Reproduced partly from Franzese, *supra* note 111, at 27.

156. See e.g., R.R. CHURCHILL & A.V. LOWE, *THE LAW OF THE SEA* (3d ed. Manchester Univ. Press 1999).

157. See e.g., I.H. PH. DIEDERIKS-VERSCHOOR, *AN INTRODUCTION TO AIR LAW* (8th ed. Brussels, Kluwer L. Int'l 2006).

158. The Antarctic Treaty art. IV, Dec. 1, 1959, 12.1 U.S.T. 794, 796, 402 U.N.T.S. 71.

159. See discussion *supra* part III and accompanying notes.

Because the technological capabilities of states in relation to space remain in their infancy, it is probable that space law will evolve to accommodate change. However, arguments for changing sovereignty over the GSO by analogy to current bodies of international law is both difficult and logically flawed. Such arguments conflict with technological development in less developed countries because they restrict the orbit to the current space-faring countries. Rather than attempting to determine the ownership of the GSO by analogizing to traditional notions of national sovereignty, we should acknowledge that outer space is a new human venture that needs its own *sui generis* legal regime. An alternative system—a system in which national sovereignty is not the core norm—has the potential of promoting unity among human beings and may ultimately provide us with an alternative to our arguably outmoded Westphalian system of sovereign and separate nation-states.

I do not propose a specific system for the fair administration of the GSO, nor do I advocate a sovereignty-free GSO for the benefit of current space-faring countries. I only suggest that the notion of a world divided in piecemeal fashion among various countries is not the only—nor the best—guideline for establishing an outer space regime. I do not advocate a chimerical idealism—for we all face the many inescapable realities of the world—but outer space is an opportunity for humankind to establish new realities and new legal regimes. Attempts by the Bogotá 8 to extend national sovereignty into outer space not only undermine the Outer Space Treaty's prohibition of sovereignty, but also undermine the possibility of a gradual shift away from nationalism and toward supranational solutions.

V. Conclusion

Starting with Sputnik I in 1957, technology has progressed rapidly. The first human beings landed on the Moon in 1971, and an unmanned spacecraft landed on Venus that same year.¹⁶⁰ Dennis Tito, the first space tourist, blasted off from Earth in a Russian Soyuz rocket in 2001.¹⁶¹ Today, a myriad of Earth objects circulate in space and the International Space Station is under construction in low

160. See J.E.S. Fawcett, *Outer Space: New Challenges to Law and Policy* 115 (Oxford, Clarendon Press 1984).

161. *First Space Tourist: Dennis Tito's Flight to Station Alpha*, SPACE.COM, <http://www.space.com/dennistito/> (last visited Feb. 15, 2011).

Earth orbit.¹⁶² Despite these accomplishments, humanity has not yet achieved the level of space sophistication that would make the promulgation of a definitive body of international outer space law an urgent necessity. As the exploration of outer space intensifies, however, lawyers and politicians have the opportunity to create a relatively novel body of law with the benefit of historical hindsight. In a more advanced future space age, it is feasible that our Westphalian model of sovereignty will eventually be outmoded, although such a development is difficult to fathom from our own early twenty-first century perspective.¹⁶³

In 1795, Prussian philosopher Immanuel Kant wrote, “the right to the earth’s surface . . . belongs to the human race in common,” and envisioned that through increased contact between the peoples of the various countries, the Earth will eventually enjoy a “cosmopolitan constitution.”¹⁶⁴ With its fundamental principle of non-appropriation, space law may provide a model which may one day make Kant’s vision a reality. Irrespective of the current political makeup of Earth, we have much to learn from space law and its aims of promoting global unity and peace.

An international response to the possibility of space travel during the post-war era produced the current regime governing outer space. The Bogotá 8 challenged this regime’s prohibition on the appropriation of outer space, but space law has thus far stood the test of time. The Moon Agreement’s precept of a common heritage of humankind may have gone too far to gain acceptance in a world composed of independent and self-interested sovereign countries, but the growing interdependence of all countries may pave the way for widespread international acceptance of such a forward-thinking precept in the future. This emerging issue will take years to resolve, and will require a degree of openness to change. As space historian Robert Zimmerman has written, “[j]ust as the colonial movement dominated much of 19th century politics and history, the growing

162. See NASA, International Space Station, available at http://www.nasa.gov/mission_pages/station/main/index.html

163. Former German Foreign Minister Joschka Fischer has alluded that the transfer of national power from European countries to the supranational European Union is a sign that the Westphalian model of sovereignty is eroding. See Joschka Fischer, German Foreign Minister, From Confederacy to Federation—Thoughts on the Finality of European Integration, Address at Humboldt University, Berlin (May 12, 2000) (transcript available at http://centers.law.nyu.edu/jeanmonnet/papers/00/joschka_fischer_en.rtf).

164. IMMANUEL KANT, TO PERPETUAL PEACE, A PHILOSOPHICAL SKETCH 16, (Ted Humphrey, trans., Cambridge, Hackett 2003).

desire by nations today to settle and control the solar system is also likely to dominate human history for centuries to come.”¹⁶⁵

165. Robert Zimmerman, *The New Colonial Movement*, UPI (May 11, 2005) <http://behindtheblack.com/space-watch/the-new-colonial-movement>.