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Preserving Apollo: H.R. 2617 and the Creation of the Apollo Lunar Landing Sites National Historic Park

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**PRESERVING APOLLO:
H.R. 2617 AND THE CREATION OF THE APOLLO
LUNAR LANDING SITES NATIONAL HISTORICAL PARK**

*Kyle Ellis**

INTRODUCTION

On July 8, 2013, Representatives Donna Edwards [D-MD] and Eddie Johnson [D-TX] introduced H.R. 2617, The Apollo Lunar Landing Legacy Act, to the House of Representatives.¹ With H.R. 2617, Representatives Edwards and Johnson sought to protect and preserve the sites where the United States' Apollo program landed men and machines on the Moon.² In its nine (9) sections, the bill provides for the incorporation of those sites into the National Parks System, their administration by the National Aeronautics and Space Agency (NASA), and their preservation through international recognition as a World Heritage Site.³ Upon its introduction, the bill was referred to committee, seeking approval by the House Natural Resources Committee as well as the House Science, Space, and

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1. Apollo Lunar Landing Legacy Act, H.R. 2617, 113th Congress, (2013) [hereinafter *H.R. 2617*], available at <https://www.govtrack.us/congress/bills/113/hr2617/text>, archived at <https://perma.cc/CG6P-6ETQ>.

2. *Id.*

3. *Id.*

Technology Committee.⁴ The bill remained in committee throughout the previous Congress' term, and currently has minimal prospects for enactment in the newly-elected Congress. Despite these setbacks, as well as the legally and practically daunting nature of such a bill, there are signs that a bill creating a lunar addition to the National Parks System would benefit from popular support.⁵

The introduction of H.R. 2617 has been another step in a series of Congressional moves towards a greater recognition of the importance

4. See *Apollo Lunar Landing Legacy Act (2013; 113th Congress H.R. 2617)*, GOVTRACK.US, <https://www.govtrack.us/congress/bills/113/hr2617> (last visited Feb. 15, 2015), archived at <https://perma.cc/45UC-3G2A>.

5. There was already significant interest in the protection of the Apollo landing sites before H.R. 2617 was introduced, see, e.g., *California 'protects' Apollo 11 landing site on Moon*, BBC NEWS, Jan. 30, 2010, <http://news.bbc.co.uk/2/hi/8488783.stm>, archived at <http://perma.cc/AAS7-AXEV>; NAT'L AERONAUTICS AND SPACE ADMIN., NASA'S RECOMMENDATIONS TO SPACE-FARING ENTITIES: HOW TO PROTECT AND PRESERVE THE HISTORIC AND SCIENTIFIC VALUE OF U.S. GOVERNMENT LUNAR ARTIFACTS, (2011) (Detailing guidelines intended to preserve the equipment left on the Moon by the Apollo program), available at http://www.nasa.gov/pdf/617743main_NASA-USG_LUNAR_HISTORIC_SITES_RevA-508.pdf, archived at <http://perma.cc/WXP9-8ZUE>; Kenneth Chang, *To Preserve History on the Moon, Visitors Are Asked to Tread Lightly*, N.Y. TIMES, Jan. 10, 2012, <http://www.nytimes.com/2012/01/10/science/space/a-push-for-historic-preservation-on-the-moon.html>, archived at <http://perma.cc/26SL-3WH7>; Amy Teitel, *NASA's Apollo Landing Sites Will Be Protected*, DISCOVERY NEWS, May 28, 2012, <http://news.discovery.com/space/history-of-space/nasa-will-preserve-apollo-landing-sites-120528.htm> (Reporting that the Google Lunar X Prize Foundation will require all participating prize contestants to adhere to the guidelines released by NASA for approaching the Moon and preserving the Apollo landing sites), archived at <http://perma.cc/BNE6-NP3K>. However, after the introduction of the bill there has been even more interest generated in how the landing site may be protected and whether the bill could pass international scrutiny, see, e.g., Miriam Kramer, *How to Preserve Historic Moon Landing Sites for Posterity*, SPACE.COM, Dec. 2, 2013, <http://www.space.com/23769-historic-moon-landing-sites-preservation.html>, archived at <http://perma.cc/386P-RD6S>; Michael Lemonick, *Hands Off Our Lunar Landing Sites? Not So Fast: A new paper argues against the wisdom of the U.S. declaring sovereignty over parts of the moon*, TIME MAGAZINE, Nov. 28, 2013, <http://science.time.com/2013/11/28/hands-off-our-lunar-landing-sites-not-so-fast/>, archived at <http://perma.cc/N6U8-5Y44>; Leonard David, *Protection of Apollo moon landing sites creates a dust-up*, NBC NEWS, Jul. 29, 2013, <http://www.nbcnews.com/science/space/protection-apollo-moon-landing-sites-creates-dust-f6C10783695>.

of commercial space industries in the United States.⁶ One indication of the growing recognition comes from Congress' acknowledgments of the achievements of private industry in both manned and unmanned spaceflight through House and Senate resolutions recognizing the accomplishments of private industry.⁷ Another indication comes from the NASA initiative that provided funding to commercial companies for the resupply of the International Space Station (ISS) starting in 2006, and culminating in resupply contracts being awarded to two companies whose missions began in 2012 and continue through the present.⁸ A third indication comes from the continued development of the laws and regulations concerning space, and the reorganization of space-related laws into Title 51 of the United States Code in 2010.⁹

The Congressional recognition of the importance of space-based industries has been mirrored, and in some ways surpassed, by other countries and the commercial sector.¹⁰ The explosive growth both in

6. Such moves have included official recognition of private achievements in space industry and the beginning of legal regulations on private uses of space, *see, e.g.*, S. Res. 458, 108th Cong. (2004) (enacted).

7. *See id.*; H.R. Res. 820, 108th Cong. (2004); H.R. Res. 411, 111th Cong. (2009); S. Res. 242 111th Cong. (2009).

8. *See* NASA, 2006 NASA STRATEGIC PLAN 17-18 (2006), *available at* www.nasa.gov/pdf/142302main_2006_NASA_Strategic_Plan.pdf, *archived at* <http://perma.cc/K3BA-Q7AR>; Press Release, NASA, NASA Awards Space Station Commercial Resupply Services Contracts (Dec. 23, 2008), *available at* http://www.nasa.gov/home/hqnews/2008/dec/HQ_C08-069_ISS_Resupply.html, *archived at* <http://perma.cc/6PUF-BVB2>; Alan Boyle, *Private ventures vie to service space station: old and new players respond to NASA's call for orbital transport*, NBC NEWS, Mar. 20, 2006, <http://www.nbcnews.com/id/11927039/page/2/#.U0Gc6TiYaUk>, *archived at* <http://perma.cc/8T5K-YP7Z>; Press Release, NASA, SpaceX, NASA Target Oct. 7 Launch For Resupply Mission To Space Station (Sept. 20, 2012), *available at* http://www.nasa.gov/mission_pages/station/main/spacex-crs1-target.html, *archived at* <http://perma.cc/N8CG-6PF3>; NASA, SPACE X BLOG, <http://blogs.nasa.gov/spacex/>, *archived at* <http://perma.cc/AF2G-BP2L>.

9. National Aeronautics and Space Act of 1958, Pub. L. No. 111-314, 124 Stat. 3328 (2010).

10. In particular the participation of private teams hailing from various nations in private space-based competitions and prize funds, *see, e.g.*, Alan Boyle, *SpaceShipOne wins \$10 million X Prize*, NBC NEWS, Oct. 5, 2004, <http://www.nbcnews.com/id/6167761/#.UwAezLRFBgg>, *archived at* <http://perma.cc/6E95-Z2CL>; Leonard David, *SpaceShipOne Wins \$10 Million*

industry and in government space programs can also be seen occurring in Russia,¹¹ India, China, Japan, Europe, and other countries, where each country has expanded its space program in their own unique ways.¹² Private space programs and prize funds have further spurred the development of commercial space activities worldwide.¹³ The sights set by both governments and industry are high - encompassing both unmanned and manned space travel, with rising stakes and rising interest worldwide.¹⁴

Ansari X Prize in Historic 2nd Trip to Space, SPACE.COM, Oct. 4, 2004, <http://www.space.com/403-spaceshipone-wins-10-million-ansari-prize-historic-2nd-trip-space.html>, archived at <http://perma.cc/CWR4-7BCZ>; THE GOOGLE LUNAR X PRIZE, <http://lunar.xprize.org/> (last visited Feb. 9, 2015), archived at <http://perma.cc/7GMX-GSEX>.

11. Although there has been some doubt about continued cooperation between the Russian space programs and those of Europe and the United States due to the problems in the Ukraine, Russia has played a vital role in maintaining the International Space Station and other ventures, see Kenneth Chang, *NASA Hitches a Ride on a Russian Craft, and Begins a New Dependent Phase*, N.Y. TIMES, Nov. 12, 2011, http://www.nytimes.com/2011/11/13/science/space/nasa-and-russia-begin-new-chapter-in-space.html?_r=0, archived at <http://perma.cc/LAR7-Q6YA>; Kenneth Chang & Peter Baker, *NASA Breaks Most Contact With Russia*, N.Y. TIMES, Apr. 2, 2014, <http://www.nytimes.com/2014/04/03/world/europe/nasa-breaks-most-contact-with-russia.html>, archived at <http://perma.cc/5AVT-VSGA>.

12. For a summary of these activities up to 2008, see Carl E. Behrens, *Space Launch Vehicles: Government Activities, Commercial Competition, and Satellite Exports*, in SPACE POLICY AND EXPLORATION (William N. Callmers, ed., 2008).

13. Although Google's Lunar X Prize is the most well-known, well-funded, and well-regarded prize currently in contention, other prizes and programs have been developed within the last few decades, see THE GOOGLE LUNAR X PRIZE, *supra* note 10; Past Centennial Challenges, NASA, http://www.nasa.gov/directorates/spacetech/centennial_challenges/pastchallenges/index.html#.U0HzK4Xihgg (last visited Feb. 9, 2015), archived at <http://perma.cc/Z89L-N83N>; About Mars One, MARS ONE, <http://www.mars-one.com/about-mars-one> (last visited Feb. 9, 2015), archived at <http://perma.cc/2BPJ-C8EE>; LiftPort Group - LiftPort Group, LIFTPORT GROUP, <http://liftport.com/we-are-liftport/> (last visited Feb. 9, 2015); Overview, PLANETARY RESOURCES, <http://www.planetaryresources.com/company/overview/#our-vision> (last visited Feb. 9, 2015), archived at <http://perma.cc/4LT3-E5PM>.

14. The rising stakes can be seen in the astonishing growth of the space industry over the last several years. According to the Space Foundation's 2013 Report, the world's space-based economy has grown by 37% between 2007 and 2012, with 6.7% growth during 2012, see Press Release, Space Foundation, Space Foundation's 2013 Report Reveals 6.7 Percent Growth in the Global Space

As the enthusiasm of both government and industry grow, there are fundamental legal problems with the development and growth of a robust commercial space industry.¹⁵ Although technical problems pose some of the difficulties in accessing space, legal challenges cannot be overcome through engineering and ingenuity when they remove the incentive to develop engineering solutions in the first place.¹⁶ There are three fundamental legal problems facing space commercialization: (1) the legal prohibition against ownership of real estate in space, (2) the prohibition against extending national sovereignty to outer space, and (3) the prohibition against extending national legal jurisdiction to outer space.¹⁷ These same problems also affect the ability of Representatives Edwards and Johnson to pass H.R. 2617 and incorporate the Apollo landing sites as part of the National Park System. H.R. 2617 faces all three problems head-on because the bill calls upon the U.S. government to (1) take ownership of real estate on the Moon, (2) extend its sovereignty to those sites on the Moon, and (3) establish the Apollo Lunar Landing Sites National Park under the legal jurisdiction of the United States.¹⁸

Economy in 2012 (Apr. 2, 2013), available at <http://www.spacefoundation.org/media/press-releases/space-foundations-2013-report-reveals-67-percent-growth-global-space-economy>, archived at <http://perma.cc/6TJZ-JLBP>; SPACE FOUND., THE SPACE REPORT 2013 5-6 (2013), available at http://www.spacefoundation.org/sites/default/files/downloads/The_Space_Report_2013_overview.pdf, archived at <http://perma.cc/SY42-YP8D>.

15. O. Schachter, *A Preview of Space Law Problems Warning: Early Unilateral Positions*, B. BULL. N.Y. COUNTY LAW. ASS'N, 345-48 (1958); Benjamin David Landry, *A Tragedy of the Anticommons: The Economic Inefficiencies of Space Law*, 38 BROOK. J. INT'L L. 523 (2012-2013); A.W. Salter and P.T. Leeson, *Celestial Anarchy*, 34 CATO JOURNAL 581 (2014); Kelly M. Zullo, *The Need to Clarify the Status of Property Rights in International Space Law*, 90 GEO. L.J. 2413 (2001-2002); M.J. Listner, *The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims*, 1 REGENT J. INT. L. 75, 75-94 (2003); Lynn M. Fountain, *Creating Momentum in Space: Ending the Paralysis Produced by the Common Heritage of Mankind Doctrine*, 35 CONN. L. REV. 1753 (2002-2003).

16. Landry, *supra* note 15, at 524-26 (Arguing that the 'common heritage of mankind' and the 'shared benefit to all nations' doctrines in the Outer Space Treaty's Articles I and II actively prevent the development of commercial uses of outer space).

17. See *infra* note 78.

18. H.R. 2617, *supra* note 1.

This essay will address how these fundamental legal challenges affect H.R. 2617, and how they should be addressed by the Congress of the United States.¹⁹ Part I will provide the history necessary for understanding how the three fundamental problems in space law developed, and how they have changed in the last several decades. Part II will provide an analytical framework for each of the three fundamental problems and explain how they interact with one another to create the body of space law that currently exists. Part III will review H.R. 2617 and analyze the terms of the bill within the context of the three fundamental problems. Part IV will provide three possible models of Congressional action that could be used to implement the bill in a modified form. The final section will propose that the best course of action at this time would be to regulate the acts of United States citizens and companies and pursue bilateral negotiations with other space-faring nations to the benefit and protection of the Apollo landing sites.

I. THE DEVELOPMENT OF SPACE LAW

Humankind's general understanding of its relationship with space has been defined by stories about the Space Race, satellite communication, and knowledge gained from atmospheric sciences.²⁰ However, our legal relationship with space has been guided by a series of restrictive laws that limited the use of space during the Cold War, a turbulent era of international relations.²¹ The primary source of international space law is the Outer Space Treaty, developed in the General Assembly of the United Nations in the early 1960's, ratified at the height of the Space Race, and signed as an international accord in 1967.²² The principles of the Outer Space Treaty were later

19. See *infra* Section III.

20. See, e.g., Roger D. Launius, *Public Opinion Polls and Perceptions of US Human Spaceflight*, 19 SPACE POLICY 163, 163-175 (2003); Mark E. Byrnes, POLITICS AND SPACE: IMAGE MAKING BY NASA (1994).

21. See generally P.P.C. HAANAPPEL, THE LAW AND POLICY OF AIR SPACE AND OUTER SPACE (2003); FRANCIS LYALL AND PAUL LARSON, SPACE LAW: A TREATISE (2009); Ronald L. Spencer, Jr., *State Supervision of Space Activity*, 63 A.F. L. REV. 75 (2009).

22. The Treaty on Principles Governing the Activities of States in the Exploration and Use of Space, Including the Moon and Other Celestial Bodies, G.A. Res. 2222 (XXI), U.N. Doc. A/RES/2222(XXI) (Jan. 21, 1967) [hereinafter

elaborated in the 1979 Moon Agreement, but because the treaty was not widely adopted, its effect on international diplomacy is muted.²³ With the decline and fall of the Soviet Union and the rise of modern telecommunications, space law began to develop as a practical outgrowth of the problems facing businesses and governments whose satellites vie for the same orbits.²⁴ Some of the most recent and innovative changes in space law have occurred on the state level in the United States, specifically with New Mexico's push to become the home of the developing commercial market for space tourism.²⁵ But even with these developments there are significant problems that are inherent to the international treaties developed in the 1960s and the 1970s, and which cannot be easily overcome through local, regional, or national legislation.

A. *The 1967 Outer Space Treaty*

Underwriting the past fifty years of legal precedent in space law is the 1967 Outer Space Treaty, which has defined the legal

Outer Space Treaty]; David Davies Memorial Institute, *Draft Code of Rules on the Exploration and Uses of Outer Space*, 29 J. AIR L. AND COMM. 141, 141-50 (1963).

23. Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, G.A. Res. 34/68, U.N. Doc. A/RES/34/68 (Dec. 5, 1979) [hereinafter *Moon Agreement*]. As of 2014 there are only fifteen nations that have ratified the treaty, and four signatory nations, see Comm. on the Peaceful Uses of Outer Space, Legal Subcomm., *Status of International Agreements relating to activities in outer space as at 1 January 2014*, U.N. Doc. A/AC.105/C.2/2014/CRP.7 (Mar. 20, 2014), available at http://www.unoosa.org/pdf/limited/c2/AC105_C2_2014_CRP07E.pdf [hereinafter *Status of International Agreements*], archived at <http://perma.cc/D6ZP-LRS4>.

24. Although there are a series of treaties about satellite use before the fall of the Soviet Union, the character of satellite usage dramatically changed in the 1990s and 2000s to one that is primarily dominated by private rather than government interests. See generally Behrens, *supra* note 12.

25. See Regional Spaceport District Act, N.M. Stat. Ann. § 5-16-1; Space Flight Informed Consent Act, N.M. Stat. Ann. § 41-14-1. Although it should be noted that other states, including California, Alaska, Texas, Oklahoma, and Virginia, have permitted and encouraged the creation of spaceports within their own state, see Doug Messier, *Spaceports, Spaceports, Everywhere a Spaceport (But Very Little to Launch)*, PARABOLIC ARC (Feb. 12, 2013), <http://www.parabolicarc.com/2013/02/12/spaceports-spaceports-everywhere-a-spaceport-but-very-little-to-launch/>, archived at <http://perma.cc/7E5E-KT2Q>.

commitments of its signatories since beginning of the Cold War.²⁶ The reason that the treaty was created has its roots in the Space Race and the desire of both the United States and the Soviet Union to set ground rules before the first man set foot on the Moon.²⁷ Both the United States and the Soviet Union feared that the other nation would claim sovereignty over a celestial body such as the Moon, place weapons there, and exclude the other from those same privileges by virtue of being first.²⁸ For these and other reasons, the drafting committees from both countries agreed to treaty language based on their prior experiences with the Partial Nuclear Test Ban Treaty²⁹ and the Antarctic Treaty.³⁰

The parts of the 1967 Outer Space Treaty modeled after the Antarctic Treaty are provisions used to limit the use and ownership of the Antarctic continent to custodial and scientific uses.³¹ The features of the Antarctic Treaty that played a key role in the development of the Outer Space Treaty emerge from the First International Geophysical Year in 1957, when scientists all over the

26. See Lyall and Larson, *supra* note 21; *Outer Space Treaty*, *supra* note 22.

27. Ivan A. Vlastic, *The Space Treaty: A Preliminary Evaluation*, 55 CAL. L. REV. 507, 507-508 (1967).

28. *Id.* at 512; Paul Dembling and Daniel Arons, *The Evolution of the Outer Space Treaty*, 33 J. AIR L. & COM. 419, 420-421 (1967).

29. Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, Oct. 10, 1963, 14 U.S.T. 1313, 480 U.N.T.S. 43, available at <https://treaties.un.org/doc/Publication/UNTS/Volume%20480/v480.pdf>, archived at <https://perma.cc/T5YS-E4A8>. The creation of this treaty would not have occurred without the pressured of the Cuban Missile Crisis of 1962, see Harold K. Jacobson, *The Test-Ban Negotiations: Implications for the Future*, 351 THE CHANGING COLD WAR 92, 96 (1964).

30. Vlastic, *supra* note 27, at 509-12; Dembling and Arons, *supra* note 28, at 422-24 (1967).

31. The Antarctic Treaty, art. III, Dec. 1, 1959, 12.1 U.S.T. 794, 402 U.N.T.S. 71 [hereinafter *The Antarctic Treaty*]. The treaty is not universally recognized, and there are seven nations that claim portions of the Antarctic continent as part of their nation, see GEOFFREY W. G. LEANE AND BARBARA VON TIGERSTROM, INTERNATIONAL LAW ISSUES IN THE SOUTH PACIFIC: POLICIES AND PRACTICES 200-207 (2005); Adam G. Quinn, *The New Age of Space Law: The Outer Space Treaty and the Weaponization of Space*, 17 MINN. J. INT'L L. 475 (2008); Margaret Race, *Policies for Scientific Exploration and Environmental Protection*, in SCIENCE DIPLOMACY: ANTARCTICA, SCIENCE AND THE GOVERNANCE OF INTERNATIONAL SPACES 143-152 (S.D. Berkman et al. eds., 2011); Rip Bulkeley, *The Political Origins of the Antarctic Treaty*, 46 POLAR REC. 9 (2010).

world attempted to take a scientific ‘picture’ of the Earth.³² In particular, the Antarctic Treaty preserved the continent for scientific, cooperative, and transnational efforts by legally seeking to prevent the expansion of national interests (and the Cold War) to Antarctica.³³ The effects of the Antarctic Treaty on the Outer Space Treaty can clearly be seen in the outcomes of government sponsored expansion into space, which has been almost exclusively scientific, cooperative, and transnational in nature.³⁴

The most striking aspect of the 1967 Outer Space Treaty is the language in Articles I and II, which borrows heavily from the ideals of the Antarctic Treaty.³⁵ Article I requires that all “exploration and use of outer space... shall be carried out for the benefit and in the interest of all countries... and shall be the common province of all mankind.”³⁶ Article II similarly requires that “[o]uter space,

32. For an explanation of the role of geosciences in the Cold War, and the International Geophysical Year as a notable exception to Cold War hostility, see Ronald E. Doel, *Constituting the Postwar Earth Sciences: The Military’s Influence on the Environmental Sciences in the USA after 1945*, 33 SOC. STUDIES OF SCI. 635, 647-648 (2003).

33. *The Antarctic Treaty*, *supra* note 31, at art. III; see also *id.*; Vlasic, *supra* note 27, at 507-08.

34. The clearest example would be the International Space Station, which has been a transnational cooperative venture to fund scientific work in space. For the types of scientific work created on the station, see Donald Pettit, *Exploring the Frontier: Science of Opportunity on the International Space Station*, 153 PROC. OF THE AM. PHIL. SOC’Y 381 (2009). For information about the creation of the International Space Station, see Memorandum of Understanding between the National Aeronautics and Space Administration of the United States of America and the Russian Space Agency Concerning Cooperation on the Civil International Space Station, U.S.-RUSS., Jan. 29, 1998, 1998 U.S.T. 303, available at http://www.nasa.gov/mission_pages/station/structure/elements/nasa_rsa.html, archived at <http://perma.cc/6BYZ-KZND>. For the current status of the International Space Station, see International Space Station, NASA, http://www.nasa.gov/mission_pages/station/main/index.html (last visited Feb. 9, 2015), archived at <http://perma.cc/7EFF-BQP2>.

35. *Outer Space Treaty*, *supra* note 22; *The Antarctic Treaty*, *supra* note 31, at art. III; see also Christopher C. Joyner, *Legal Implications of the Concept of the Common Heritage of Mankind*, 35 INT’L & COMP. L.Q. 190, 190-99 (1986); Lyall and Larson, *supra* note 21; Stephen Gorove, *The Concept of Common Heritage of Mankind: A Political Moral Or Legal Innovation?*, 9 SAN DIEGO L. REV. 390 (1971-1972).

36. *Outer Space Treaty*, *supra* note 22.

including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”³⁷ The plain language of these two sections delineate strong propositions that prevent the exploitation and appropriation of space resources except in ways that allow equal access to all mankind - which is not easily accomplished.³⁸ These two sections are analogous to the Antarctic Treaty’s Articles III and IV, which grant the benefit of the scientific use of Antarctica to all mankind³⁹ and prevent any “new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica... while the present Treaty is in force.”⁴⁰

While the language in Articles I and II prevented the machinations of the Cold War from spreading to space, that same language now serves to inhibit the burgeoning commercial uses of space and the United States government’s ability to protect important space resources like the Apollo landing sites.⁴¹ While there was some enthusiasm for the language of the Outer Space Treaty at the time of its adoption by legal scholars,⁴² modern scholars have identified the much-lauded language of Articles I and II as the source of present concern and future problems.⁴³ As one of the most widely adopted treaties related to outer space,⁴⁴ the 1967 Outer Space Treaty is both foundational to international space law and should be a serious concern for lawmakers wishing to legislate on matters related to outer

37. *Id.*

38. Joyner, *supra* note 35, at 190-99; *see also* Vlastic, *supra* note 27, at 508 n. 6 (The sentiment at the time of creating the Outer Space Treaty was that that any commercial exploitation of space was so far in the future that the drafters of the Treaty need not concern themselves with considering the effects of the language on commercial interests).

39. *The Antarctic Treaty*, *supra* note 31, at art. III.

40. *Id.* at art. IV.

41. *See generally* Gorove, *supra* note 35; *Outer Space Treaty*, *supra* note 22.

42. *See, e.g.*, Vlastic, *supra* note 27.

43. *See generally* Ricky J. Lee, *Reconciling International Space Law with the Commercial Realities of the Twenty-First Century*, 4 SING. J. INT’L & COMP. L. 194, 234-42 (2000); Julie A. Jiru, *Star Wars and Space Malls: When the Paint Chips Off a Treaty’s Golden Handcuffs*, 42 S. TEX. L. REV. 155, 166-73 (2001).

44. To see the status of the treaties related to space worldwide, *see Status of International Agreements*, *supra* note 23.

space.⁴⁵ But beyond just the Outer Space Treaty, there are other laws that should be considered, including the 1979 Moon Agreement.⁴⁶

B. The 1979 Moon Agreement

After the adoption of the 1967 Outer Space Treaty, the General Assembly of the United Nations considered and passed the 1979 Moon Agreement.⁴⁷ The intended purpose of the Moon Agreement was to build on the terms of the Outer Space Treaty and increase protections for the Moon, our nearest celestial neighbor.⁴⁸ The 1979 Moon Agreement sought to address concerns about the consequences of resource extraction on the Moon, while also seeking to uphold and expand the original, strong, language of the Outer Space Treaty.⁴⁹ The Agreement specifically contemplated the consequences of commercial uses of the Moon in light of the language in Articles I and II of the Outer Space Treaty, expanding the limitations to explicitly state that no entity or natural person may appropriate property in a celestial body or resource through its use.⁵⁰ Moreover,

45. Although the United States has not declared its acceptance of the right and obligations pursuant to the treaty formally, it has ratified the treaty, *see id.*

46. *See id.*

47. Because of the high costs of diplomatic conferences to prepare treaties, the United Nations has substituted General Assembly review of agency-proposed drafts and treaties, *see Moon Agreement, supra* note 23; Lyall and Larson, *supra* note 21.

48. *See Lyall and Larson, supra* note 21, at 56-7.

49. *Moon Agreement, supra* note 23; J.R. Wilson, *Regulation of the Outer Space Environment through International Accord: The 1979 Moon Treaty*, 2 FORDHAM ENVTL. L. REP. 173, 173-94 (2011); J.L. Zell, *Putting a Mine on the Moon: Creating International Authority to Regulate Mining Rights in Outer Space*, 15 MINN. J. INT. L. 489, 489-519 (2006); S. Doyle, *Using Extraterrestrial Resources under the Moon Agreement of 1979*, 26 J. SP. L. 111, 111-28 (1996); A. Dula, *Free Enterprise and the Proposed Moon Treaty*, 2 HOUS. J. INT'L. L. 3, 33 (1972).

50. *Moon Agreement, supra* note 23, at art. 11(3) (“Neither the surface nor the subsurface of the Moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or non-governmental organization, national organization or nongovernmental entity or of any natural person. The placement of personnel, space vehicles, equipment, facilities, stations and installations on or below the surface of the Moon, including structures connected with its surface or subsurface, shall not create a right of ownership over the surface or the subsurface of the Moon or any areas thereof”).

the Moon Agreement maintained the prohibition against national appropriation through “means of use or occupation, or by any other means.”⁵¹

For reasons beyond the scope of this essay, the 1979 Moon Agreement failed to enjoy wide adoption, and, as of the writing of this essay, only seven nations have ratified the agreement - the United States not being one of those nations.⁵² However, even if the United States is not legally obligated to follow the terms of the 1979 Moon Agreement, it would stand to generate international ill-will by failing to adhere to the spirit of the agreement, which largely mirrors the express terms of the Outer Space Treaty.⁵³ However, even with the limitations, the passage of H.R. 2617 or a similar bill is not impossible. All that is required is for us to look at more recent standards in international space law than the 1967 Outer Space Treaty and 1979 Moon Agreement.

C. Modern Commercial Space Laws

International space law has developed together with the creation and use of commercial satellites, along with the attendant problems arising from their use.⁵⁴ This trend can be seen in the development of

51. *Id.*

52. *Status of International Agreements*, *supra* note 23 (In fact, only Austria, Chile, Morocco, the Netherlands, Peru, the Philippines, and Uruguay have ratified the treaty to date; and only the Netherlands has space capability out of the nations that are signatories).

53. For comparison between the treaty and the agreement, *see generally* Lyall and Larson, *supra* note 21, at 179-83.

54. U.S. GOV'T ACCOUNTABILITY OFF., GAO-07-16, FAA NEEDS CONTINUED PLANNING AND MONITORING TO OVERSEE THE SAFETY OF THE EMERGING SPACE TOURISM INDUSTRY REPORTS 7-15 (2006), available at <http://www.gao.gov/products/GAO-07-16>, archived at <http://perma.cc/B5FL-VJUK>; Philippa Maister, *SpaceWorks Engineering rides on rocket business*, DAILY REP., Apr. 24, 2007, <http://www.dailyreportonline.com/id=1202552605046/> SpaceWorks-Engineering-rides-on-rocket-business?slreturn=20150111002218, archived at <http://perma.cc/NH3Z-AJSX>; Sonia E. Miller, *An Attorney's Guide to Space Travel; Technology Today*, N.Y.L.J. September 18, 2007, <http://www.newyorklawjournal.com/id=900005491245/An-Attorneys-Guide-to-Space-Travel?slreturn=20150111002359>, archived at <http://perma.cc/K7BV-XPUS>; Mary Dittmar, *Commercial Avenues for Space Utilization*, in AIAA SPACE 2003 CONFERENCE AND EXPOSITION 6234 (2003), available at <http://arc.aiaa.org/doi/abs/10.2514/6.2003-6234>, archived at <http://perma.cc/S7B6-2PWN>; M. Menter, *Commercial Space Activities under the*

international norms through the United Nations, which have been adhered-to in private agreements between non-government organizations.⁵⁵ Satellites have been in use since the late 1950s, and decades of experience with resolving disputes related to satellites has allowed for the creation and modification of a robust set of international agreements,⁵⁶ including contract and dispute resolution between private parties.⁵⁷ One of the key changes to international norms has been the establishment of jurisdiction over satellites launched from a particular nation, or owned by citizens and companies of a particular nation.⁵⁸

Currently, there are proposed rules and regulations that would expand the international commercial regime to encompass all commercial activities in space, and not only those related to

Moon Treaty 7 SYRACUSE J. INT'L. L. & COM., 213, 213-38 (1979); P.P.C. Haanappel, *A Competitive Environment in Outer Space*, 32 J. SPACE L., 1, 1-14 (2006).

55. These treaties include the 1975 Convention on Registration of Objects Launched into Outer Space, the 1974 Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite, the 1971 Agreement Relating to the International Telecommunications Satellite Organization (ITSO), the 1971 Agreement on the Establishment of the INTERSPUTNIK International System and Organization of Space Communications, the 1976 Agreement of the Arab Corporation for Space Communications (ARABSAT), the 1976 Convention on the International Mobile Satellite Organization, the 1982 Convention Establishing the European Telecommunications Satellite Organization (EUTELSAT), the 1983 Convention for the Establishment of a European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), and the 1992 International Telecommunication Constitution and Convention. *See Status of International Agreements*, *supra* note 23.

56. An indication of this is the fact that old agreements have been amended and updated. *See id.*

57. *See* Setsuko Aoki, *Current Status and Recent Developments in Japan's National Space Law and Its Relevance to Pacific Rim Space Law and Activities*, 35 J. SPACE L., 363, 368-70 (2009); Meghan R. Plantz, *Orbital Debris: Out of Space*, 40 GA. J. INT'L & COMP. L., 585, 613-18 (2011); *see generally* Gerardine Meishan Goh, *Softly, Softly Catchee Monkey: Informalism and the Quiet Development of International Space Law*, 87 NEB. L. REV. 725 (2008). For a discussion of how our collective experiences with commercial satellites can prepare us for tourism, *see* Steven Freeland, *Up, up and ... Back: The Emergence of Space Tourism and Its Impact on the International Law of Outer Space*, 6 CHI. J. INT'L L., 1, 6-11 (2005).

58. Although these norms have their own problems. *See, e.g.,* Lee, *supra* note 43, at 229-33.

commercial satellites.⁵⁹ However, some of the proposals conflict with the foundations of international space law as outlined in the Outer Space Treaty and the Moon Agreement.⁶⁰ The proposals seek to change some of the most restrictive terms of the Outer Space Treaty and Moon Agreement while simultaneously holding open the door to outer space for all humankind. This trend can be seen in some of the laws proposed and passed within the United States, both on the federal and state levels.⁶¹

D. Space Law of the United States

Within the United States, the federal government has ventured into more robust forms of legislation and regulation for commercial space activities and has recently chosen to treat space law as a unique area of law separate from the other sections of the United States Code.⁶²

59. Charity Trelease Ryabinkin, *Let There Be Flight: It's Time to Reform the Regulation of Commercial Space Travel*, 69 J. AIR L. & COM., 101, 130-37 (2004); Jinyuan Su and Zhu Lixin, *The European Union Draft Code of Conduct for Outer Space Activities: An appraisal Space Policy*, 30 SPACE POL'Y, 34, 34-39; John S. Lewis and Christopher F. Lewis, *A Proposed International Legal Regime for the Era of Private Commercial Utilization of Space*, 37 GEO. WASH. INT'L L. REV., 745, 745-67 (2005); Zach Meyer, *Private Commercialization of Space in an International Regime: A Proposal for a Space District*, 30 NW. J. INT'L L. & BUS. 241, 258-61 (2010); Byron C. Brittingham, *Does the World Really Need New Space Law?* (January 2010) (unpublished article) (on file with Expresso as part of the Selected Works of Byron Brittingham), available at http://works.bepress.com/bryon_brittingham/1/, archived at <http://perma.cc/72HS-KZ9S>.

60. Indeed, the solutions proposed amount to exhortations for private parties to ignore the Outer Space Treaty in its entirety, see, e.g., Salter and Leeson, *supra* note 15, at 583-84; C.R. Buxton, *Property in Outer Space: The Common Heritage of Mankind Principle vs. the First in Time, First in Right Rule of Property*, 69 J. AIR L. AND COMM. 689, 702-05(2004).

61. In particular within New Mexico, see *infra* Section I(D).

62. See NATHAN C. GOLDMAN, *AMERICAN SPACE LAW: INTERNATIONAL AND DOMESTIC* (1996); U.S. DEP'T OF COMM., NAT'L OCEANIC AND ATMOSPHERIC ADMIN., U.S. LEADERSHIP IN SPACE COMMERCE: OFFICE OF SPACE COMMERCIALIZATION 2007 STRATEGIC PLAN (2007), available at <http://www.space.commerce.gov/wp-content/uploads/NOAA-2007-Space-Commercialization-Strategic-Plan-6-pages.pdf>, archived at <http://perma.cc/F96N-FHRD>; Will Tress, *Lost Laws: What We Can't Find in the United States Code*, 40 GOLDEN GATE U. L. REV., 129, 138 (2009). For a brief description of U.S. Federal space law up until 2012, see Benjamin Perlman, *Grounding U.S. Commercial*

The main step in this process has been to reorganize the United States Code to include a new Title dedicated to space law - Title 51.⁶³ Title 51 includes the authorization for NASA, funding for space-related programs, as well as authorization and funding for an agency known as the Office of Space Commercialization.⁶⁴ The official reorganization of the United States Code marks a sea change towards greater recognition and expansion of commercial activities in space, and their regulation by the United States federal government.

But while the federal government has taken some steps in the direction of regulating commercial activities in space, the state of New Mexico has sought to establish and promote space-based industries within its borders through far more aggressive legislative means.⁶⁵ There have been two rounds of legislative action within the state that display the commitment of New Mexico's government to the use of New Mexico as a site for commercial space activities. The first round saw the creation of a regional spaceport district, which was a successful initiative to draw the space tourism industry into the

Space Regulation in the Constitution, 100 GEO. L.J. 929, 934-37 (2011); see also Surya Gablin Gunasekara, *Other Transaction Authority: NASA's Dynamic Acquisition Instrument for the Commercialization of Manned Spaceflight or Cold War Relic*, 40 PUB. CONT. L.J. 893, 895-98 (2010) (Describing NASA's ability to act independently of Congressional direction regarding certain transactions).

63. H.R. 3237, 111th Cong. (2009) (enacted).

64. 51 U.S.C. §§ 10101 et seq. (2012) (for the general terms of the Title); 51 U.S.C. §§ 50701 et seq. (2012) (Regarding the Office of Space Commercialization).

65. Michael Tse, *One Giant Leap [Backwards] for Mankind*, 79 BROOK. L. REV. 291, 291-320 (2013); Michael C. Mineiro, *Law and Regulation Governing U.S. Commercial Spaceports: Licensing, Liability, and Legal Challenges*, 73 J. AIR L. & COM. 759, 792-93 (2008); Thomas Brannen, *Private Commercial Space Transportation's Dependence on Space Tourism and NASA's Responsibility to Both*, 75 J. AIR L. & COM. 639, 656-59 (2010); Zhao Yun, *A Legal Regime for Space Tourism: Creating Legal Certainty in Outer Space*, 74 J. AIR L. & COM. 959, 962-64 (2009); Regional Spaceport District Act, N.M. Stat. Ann. § 5-16-1 to § 5-16-13 (2006); Space Flight Informed Consent Act, N.M. Stat. Ann. § 41-14-1 to § 41-14-4 (2006).

Although the trend in New Mexico of supporting the commercial space industry may be reversing, see Mike English, *With no launch in sight, NM legislator wants to sell Spaceport*, BUSINESS JOURNALS, Jan. 30, 2015, <http://www.bizjournals.com/albuquerque/blog/morning-edition/2015/01/with-no-launch-in-sight-nm-legislator-wants-to.html>, archived at <http://perma.cc/V8EG-384G>.

state by making it possible for that industry to operate according to clearly established rules.⁶⁶ The second round of legislative action came more recently, and seeks to protect the growth of the burdening space tourism industry in New Mexico by shielding businesses from liability from certain negligent acts.⁶⁷ The effects of these actions on international law has been negligible, but the fact that all of the laws passed by New Mexico fall well within the explicit terms of the Outer Space Treaty show that it is possible for a government to take decisive steps to both promote and regulate their commercial space industry without violating the terms or spirit of the Outer Space Treaty and Moon Agreement.

However, even New Mexico's foray into lawmaking, no matter how aggressive or innovative, is not the area of space law showing the greatest growth in the last few decades: that honor lies with the academe.⁶⁸ In the last couple of decades there have been numerous proposals, ideas, and articles written about the present state of space law and its future needs.⁶⁹ In part, this has been due to the changed makeup of who is going into outer space where an increasing number of responsibilities and opportunities have fallen into the hands of private and commercial interests rather than remaining with governments.⁷⁰ This has also been due to the failure of outer space law to develop and change as quickly or as thoroughly as academics expect, predict, and desire.⁷¹ Primarily, this has been due to the three fundamental problems in space law remaining unresolved.⁷²

66. N.M. Stat. Ann. § 5-16-1-13 (2006).

67. See N.M. Stat. Ann. § 41-14-4 (2006) (Providing that "a space flight entity is not liable for injury to or death of a participant resulting from the inherent risks of space flight activities so long as the warning contained in Section 41-14-4 NMSA 1978 is distributed and signed as required").

68. See, e.g., M.S. Smirnoff, *The Role of the IAF in the Elaboration of the Norms of Future Space Law*, 2 PROC. IISL 151 (1959); MANFRED LACHS, *THE LAW OF OUTER SPACE: AN EXPERIENCE IN CONTEMPORARY LAW-MAKING* (2010); Zhao Yun, *Revisiting Selected Issues in the Draft Protocol to the Cape Town Convention on Matters Specific to Space Assets*, 76 J. AIR L. & COM. 805 (2011).

69. See, e.g., *supra* note 15; *infra* note 131.

70. See Behrens, *supra* note 12, at 8; *supra* note 14; see also, *supra* note 8.

71. See generally *supra* note 15.

72. See generally Jiru, *supra* note 43.

*E. The Failure to Address the
Three Fundamental Problems in Space Law*

A persistent theme in papers and books published in the last several decades has been an identification of the failure of laws and treaties to provide incentives for commercial space activities.⁷³ Some scholars have argued that Articles I and II of the Outer Space Treaty impede the development of the commercial space industry, and of human access to space generally, by removing economic incentives for businesses to spend the money needed to access space.⁷⁴ They argue that no business wants to invest money developing a habitat on the Moon or mining operation on an asteroid with the prospect that Article I of the Outer Space Treaty means that any profit they receive must be apportioned out to “all mankind.”⁷⁵ An analysis of these currently theoretical questions reveals that three distinct problems emerge from the academic literature: the three fundamental problems of property, sovereignty, and jurisdiction.

The failure of space law to adequately address real property rights, the status of sovereign nations in space, and the ability of nations to extend their legal jurisdiction into space has posed significant

73. See generally Graham Nicholson, *The Common Heritage of Mankind and Mining: An Analysis of the Law as to the High Seas, Outer Space, the Antarctic and World Heritage*, 6 N.Z. J. ENVTL. L. 177 (2002); Joanne Irene Gabrynowicz, *One Half Century and Counting: The Evolution of U.S. National Space Law and Three Long-Term Emerging Issues*, 4 HARV. L. & POL’Y REV. 405 (2010); Jennifer Frakes, *The Common Heritage of Mankind Principle and Deep Seabed, Outer Space, and Antarctica: Will Developed and Developing Nations Reach a Compromise*, 21 WIS. INT’L L.J. 409 (2003); Blake Gilson, *Defending Your Client’s Property Rights in Space: A Practical Guide for the Lunar Litigator*, 80 FORDHAM L. REV. 1367 (2011); S. G. Sreejith, *Whither International Law, Thither Space Law: A Discipline in Transition*, 38 CAL. W. INT’L L.J. 331 (2007); Tanja Masson-Zwaan and Steven Freeland, *Between heaven and earth: The legal challenges of human space travel*, 66 ACTA ASTRONAUTICA 1597, 1597-1607 (2010).

74. See, e.g., Ty S. Twibell, *Space Law: Legal Restraints on Commercialization and Development of Outer Space*, 65 UMKC L. REV., 589, 610-619 (1996) (Focusing on the detrimental effects of Article II, but covering the consequences of all the relevant Articles of the Outer Space Treaty throughout the essay).

75. *Id.* Or, indeed, to anyone other than themselves and their investors.

problems for commercial interests.⁷⁶ Those same limitations have made H.R. 2617, a relatively straightforward bill to protect the Apollo landing sites, legally complex. But while the legal framework created by the Outer Space Treaty makes straightforward ownership difficult, it may still allow for some sovereign and jurisdictional interest in the Apollo landing sites.⁷⁷

II. THE FUNDAMENTAL PROBLEMS OF PROPERTY, SOVEREIGNTY, AND JURISDICTION

The three fundamental problems in space law come from the language in Articles I, II, and VIII of the Outer Space Treaty, which explicitly prohibit the extension of property ownership, sovereignty, and legal jurisdiction over celestial objects.⁷⁸ Because manmade objects launched into space are not defined as celestial objects, these restrictions have not posed a significant obstacle to the development of satellite technology,⁷⁹ or the creation of the ISS.⁸⁰ On account of their earthly origins, those craft fall under the full possession, sovereignty, and legal jurisdiction of the countries involved in their manufacture, ownership, or launch.⁸¹ This exception to the terms of the Outer Space Treaty would not apply to any plan to establish a permanent legal presence on a celestial body, as H.R. 2617 contemplates.⁸²

76. See, e.g., *id.* at 610-19; Nicholson, *supra* note 73, at 190; Gabrynowicz, *supra* note 73, at 420-25; Frakes, *supra* note 73, at 410-15; Gilson, *supra* note 73, at 1388-94; see generally Sreejith, *supra* note 73; Masson-Zwaan and Freeland, *supra* note 73.

77. See *infra* note 110.

78. *Outer Space Treaty*, *supra* note 22; see also Stephen Gorove, *Interpreting Article II of the Outer Space Treaty*, 37 FORDHAM L. REV. 349 (1968-1969); Landry, *supra* note 15; Salter and Leeson, *supra* note 15; Thomas R. Adams, *The Outer Space Treaty: An Interpretation in Light of the No-Sovereignty Provision*, 9 HARV. INT'L. L. J. 140 (1968); Zullo, *supra* note 15.

79. See *supra* Section I(C).

80. See *infra* Section II(A).

81. See Lee, *supra* note 43, at 229-33. This stands in contrast to any attempt at transforming or appropriating resources from outer space, which would be prohibited under the treaty, see Gorove, *supra* note 78.

82. H.R. 2617, *supra* note 1.

The conceptual basis to the practical restrictions outlined in the Outer Space Treaty is the idea that the Moon and all other celestial bodies are part of the common heritage of mankind.⁸³ While there is no single or clear definition of what it means for something to be the common heritage of mankind, the concept embraces the idea that there are some types of property that belong to all people in common, rather than just to those people with the ability to immediately exploit or appropriate them.⁸⁴ Proposing, however, that the normal rights to property, the rule of law, and the relationship between a government and its people do not apply in space has caused confusion and paralysis in legal action that would address property rights, national jurisdiction, and national sovereignty in space.⁸⁵

A. Property

The first and most restrictive implication of the common heritage doctrine for the development and regulation of space-based commercial activities lies in its restrictions on the acquisition and development of real property in space.⁸⁶ While there are some provisions in the Outer Space Treaty and other international agreements that allow for a property interest in vehicles, satellites, and other manmade objects in space, there is no clear indication of whether transformation of space resources into such objects would

83. The origin of these limitations was recognized early on. See O. Schachter, *Who Owns the Universe?* COLLIERS WKLY., Mar. 1952, 36, 70-1; ACROSS THE SPACE FRONTIER 118 (C. Ryan, ed., 1952); Schachter, *supra* note 15. And continues to be recognized by modern scholars, see JULIAN HERMIDA, LEGAL BASIS FOR A NATIONAL SPACE LEGISLATION (2004); Listner, *supra* note 15; E.J. Reinstein, *Owning Outer Space*, 20 NW. J. INT. L. & BUS. 59, 59-98 (1999).

84. For an attempt at a working definition of what the common heritage of mankind means, see Frakes, *supra* note 73, at 411-13. In addition it should be noted that there are many other means to understand property rights, see generally Rosa Congost, *Property Rights and Historical Analysis: What Rights? What History?*, 181 PAST & PRESENT 73 (2003).

85. Indeed, paralysis of economic activity that typically follows alongside confused market actors, see Fountain, *supra* note 15, at 1754.

86. Job Abraham, *Concept of Private Property in Space - An Analysis*; Cherian, *Jijo George*, 2 J. INT'L COM. L. & TECH. 211 (2007); Malay Adhikari, *Space Tourism—Legal Issues and Challenges with Special Reference to India*, 1 NULD CURRENT DEV. IN AIR AND SPACE L. 385 (2012).

confer ownership rights.⁸⁷ There has also been debate about whether the Outer Space Treaty only bans direct ownership of land or whether it prohibits the ownership of resources extracted from outer space; this lack of clarity is a cause for concern among legal scholars.⁸⁸ The ultimate result of the common heritage language in the Outer Space Treaty has been to effectively prohibit the ownership of any naturally occurring object in outer space: which means that no company, country, or individual⁸⁹ can legitimately claim ownership of outer space real estate.⁹⁰ The lack of clarity on this issue also poses a significant question for the creation H.R. 2617's Apollo Lunar Landing Sites National Park.

The most recognized way scholars have asked the questions raised in H.R. 2617 has been to ask "who owns the Moon?"⁹¹ In the case of H.R. 2617 this is a practical question, but it is more often posed as a rhetorical device to explore the contours of real estate law in outer space.⁹² The problem of real property ownership in space is one that has been understood since the adoption of the Outer Space Treaty and has received elaboration by scholars over the years as more of

87. Henry R. Hertzfeld and Frans G. von der Dunk, *Bringing Space Law into the Commercial World: Property Rights without Sovereignty* 6 CHI. J. INT'L L. 81, 81-84 (2005-2006); David Johnson, *Limits on the Giant Leap for Mankind: Legal Ambiguities of Extraterrestrial Resource Extraction* 26 AM. U. INT'L L. REV. 1477, 1510-1513 (2010-2011).

88. Rosanna Sattler, *Transporting a Legal System for Property Rights: from the Earth to the Stars*, 6 CHI. J. INT'L L. 23, 28-29 (2005-2006).

89. Gregor William, *Nemitz v. The United States of America et al.*, no. CV-N-0300599 HDM-RAM (D. Nev. filed Nov. 6, 2003); R. Kelly, *Nemitz v United States, A Case of First Impression: Appropriation, Private Property Rights and Space Law before the Federal Courts of the United States*, 30 J. SP. L. 297, 297-309 (2004).

90. Sarah Coffey, *Establishing a Legal Framework for Property Rights to Natural Resources in Outer Space*, 41 CASE W. RES. J. INT'L L. 119, 120-121 (2009); *H.R. 2617*, *supra* note 1.

91. See, e.g., J.C. Cooper, *Who Will Own the Moon? The Need for an Answer*, UNIVERSITY: A PRINCETON QUARTERLY, Winter 1966; V. POP, UNREAL ESTATE: THE MEN WHO SOLD THE MOON (2006); V. Pop, *The Men who Sold the Moon: Science Fiction or Legal Nonsense?*, 17 SPACE POL'Y 195, 195-203 (2001).

92. *H.R. 2617*, *supra* note 1; Lyall and Larson, *supra* note 21, at 175-97.

them have come to recognize the inevitability of commercial space travel.⁹³

The common heritage doctrine at the heart of the Outer Space Treaty is understood in light of Article II, which includes a clause prohibiting private or national appropriation of outer space or celestial bodies.⁹⁴ In light of the no-appropriation clause, scholars have recognized the problem between wanting to exploit the Moon in ways requiring real property ownership, and not being able to get past the planning phase because of the Outer Space Treaty.⁹⁵ One method used by governments to mitigate the problems of property ownership posed by the Outer Space Treaty has been to differentiate natural objects from man-made objects. An example of this strategy can be seen in the ownership of the ISS.⁹⁶ Each country owns different pieces of the ISS but no country owns the entire station.⁹⁷ This means that the station's parts remain under the ownership, sovereignty, and jurisdiction of the country that created them.

The fact that the ISS was built in space holds some implications for the non-appropriation clause even though the creation of ownership rights on the station is a result of politics and not treaty obligations.⁹⁸ Because the ISS is an object residing in space, built in space, owned by multiple governments on Earth, but which no single nation wholly owns, it effectively precludes any one nation from violating the 'no-

93. For early recognition of the problems posed by the Outer Space Treaty, see Cooper, *supra* note 91. For more recent sources, see Pop, *supra* note 91; Ryan Hugh O'Donnell, *Staking a Claim in the Twenty-First Century: Real Property Rights on Extra-Terrestrial Bodies*, 32 U. DAYTON L. REV. 461 (2006-2007).

94. See *Outer Space Treaty*, *supra* note 22, at art. II; *Status of International Agreements*, *supra* note 23.

95. Charles Geisler, *Ownership in Stateless Places*, in *CHANGING PROPERTIES OF PROPERTY* 40-57 (Franz von Benda-Beckmann et al. eds., 2006); O'Donnell, *supra* note 93.

96. Rochus Moenter, *The International Space Station: Legal Framework and Current Status*, 64 J. AIR L. & COM. 1033 (1998-1999); David C. Stewart, *Resolution of Legal Issues Confronting the International Space Station Project: A Step Forward in the Development of Space Law*, 29 VA. J. INT'L L. 745 (1988-1989).

97. *Id.*

98. Recalling the language in Article II of the Treaty prohibiting national appropriation of outer space itself - this arguably has occurred through the creation of a permanent space station, see *Status of International Agreements*, *supra* note 23.

appropriation' clause of the Outer Space Treaty, and similarly precludes any one government from appropriating ownership interest in outer space through the ISS.

Recognition of private property interests for man-made objects has also occurred in a private, commercial setting for satellites.⁹⁹ The common heritage doctrine would seem to require that all satellites operate for the good of humankind, as not for-profit objects, but the proliferation of paid satellite services and international recognition of their private ownership and profit does violence to the Outer Space Treaty.¹⁰⁰ If seen in the light of the Space Station Agreement, then the Outer Space Treaty can be interpreted to allow for-profit use of outer space only if the objects profited from were made and launched from Earth. This interpretation of the treaty is based on the fact that satellites are made of Earth resources, on Earth, and subject to Earth-based rules, regulations, and ownership rights. That those satellites are subsequently thrown into space do not interfere with established property rights. But while this is a workaround to the problems posed by the common heritage doctrine and the non-appropriation clause, it offers no resolution for the inability to establish property rights to real estate in space.

B. Sovereignty

More than just prohibiting the creation of *property interest* in celestial objects, the Outer Space Treaty also prohibits the extension

99. K.A. Baca, *Property Rights in Outer Space*, 58 J. AIR L. AND COMM. 1041, 1085 (1993); M.J. Listner, *The Challenges of Current Claims*, 1 REGENT J. INT. L. 75, 75-94 (2003); Zullo, *supra* note 15 at 2413-44; Davin Widgerow, *Boldly Going Where No Realtor Has Gone Before: The Law of Outer Space and a Proposal for a New Interplanetary Property Law System*, 28 WIS. INT'L L.J. 490 (2010-2011); W. Whyte, *Nemitz v US – the First Real Property Case in the United States Courts*, 47 PROC. INT'L INST. OF SPACE L. 339, 339-51 (2004); P.M. Sterns and L.I. Tennen, *Privateering and Profiteering on the Moon and Other Celestial Bodies: Debunking the Myth of Property Rights in Outer Space*, 45 PROC. INT'L INST. OF SPACE L. 56, 56- 67 (2002).

100. Although scholars do not have a particularly clear or uniform understanding of what the common heritage of mankind doctrine means, it seems unlikely to provide for the private use and profit of businesses. *See, e.g.*, Fountain, *supra* note 15; Joyner, *supra* note 35, at 190-99; Gorove, *supra* note 35, at 392, 398.

of *state sovereignty* to celestial objects.¹⁰¹ The practical effect of this prohibition is to ban the existence of a country as a legal entity in outer space, limiting the existence of countries to Earth.¹⁰² To give an analogy, if we were to compare the Earth to territorial waters of an ocean and outer space to international waters, then the Outer Space Treaty prohibits the existence of any countries on islands within international waters. Were citizens of a nation to travel to an island on international waters, never to return, then their nation would not be able to ‘follow’ them to that island, and nothing they do on that island - from destroy it to establish a city - could be attributed to their home nation. Moreover, if those residents of the island desired to form their own sovereign nation, the terms of the Outer Space Treaty would prohibit signatory nations from recognizing it as a sovereign. And while the idea of sovereign existence comingles with property and jurisdiction, it should be noted that the prohibition of sovereign status serves a different purpose in the Outer Space Treaty than the prohibition on real property ownership and jurisdiction.¹⁰³

The purpose behind this prohibition was to prevent the creation of sovereign claims to lands and objects that no state should, or reasonably could, own.¹⁰⁴ At the dawn of the Space Age, with the Cold War and Space Race in full swing, the last thing the United Nations wanted was for the United States or the Soviet Union to plant its flag on the Moon as a symbol of a sovereign claim to the entirety of the Moon.¹⁰⁵ The intention was to prevent the arms race from spreading to space, and prevent the Cold War from turning hot on the basis of sovereign claims to celestial lands.¹⁰⁶ In this context, the

101. See *Status of International Agreements*, *supra* note 23; see also Adams, *supra* note 79; C.W. Jenks, *International Law and Activities in Space*, 5 INT. LAW QUART. 99 (1956).

102. Although the purpose and effect has been as such, this has not limited practical application of sovereignty in outer space. See *infra* Section II(B); E. Husby, *Sovereignty and Property Rights in Outer Space*, 3 J. INT. L. & PRACT. 359 (1994).

103. See *infra* note 113.

104. At the time of the passage of the Outer Space Treaty, anyway. See Adams, *supra* note 78 (“Claims of sovereignty over celestial bodies probable could not be made for some time since effective control cannot yet be established”).

105. *Supra*, note 27, at 513-15.

106. See, e.g., *id.*; Adams, *supra* note 78.

Outer Space Treaty achieved its goals,¹⁰⁷ but the failure of the United Nations to elaborate conditions under which sovereignty could legitimately be established has been noted as one of the reasons for the slow growth of space industries other than satellites.¹⁰⁸

Even though the goals of the Outer Space Treaty were accomplished, the treaty has failed to achieve its explicitly stated ends: there has been an extension of national sovereignty into space in spite of its explicit prohibition.¹⁰⁹ The treaty establishing the ISS skirts the terms of the Outer Space Treaty by extending national sovereignty to the portions of the ISS owned by each government.¹¹⁰ Under the Space Station Agreement, each section of the ISS is under the control and jurisdiction of the nation that built it, which is

107. Evidenced by the fact that the Cold War did not result in space militarization, or national claims of ownership over the Moon.

108. Compare Hertzfeld, *supra* note 87 (“Sovereignty, therefore, is not the issue... Profits are the issue, and unless and until a way of assuring private enterprises that their investments in research and development, equipment, and operations in space can be recovered, the insecurity and risks of not having an operating mechanism for establishing these rights will impede the fast growth of commercial space”); with Adhikari, *supra* note 86 (Arguing the need for a national space policy to address the lack of sovereignty of India in outer space); and Husby, *supra* note 102.

109. See e.g. Husby, *supra* note 102 (Arguing that there has been an expansion of national sovereignty in outer space). Compared to even the more recently stated ends of US sovereignty in space, which hold fast to the ideals of the Outer Space Treaty, see PRESIDENT BARACK OBAMA, NATIONAL SPACE POLICY OF THE UNITED STATES OF AMERICA 3 (2010), available at http://www.whitehouse.gov/sites/default/files/national_space_policy_6-28-10.pdf, archived at <http://perma.cc/8WF8-QGAP>; PRESIDENT GEORGE W. BUSH, UNITED STATES NATIONAL SPACE POLICY 1 (2006), available at <https://www.fas.org/irp/offdocs/nspd/space.pdf>, archived at <http://perma.cc/BF6K-ACZA>; PRESIDENT WILLIAM CLINTON, THE WHITE HOUSE NATIONAL SCIENCE AND TECHNOLOGY COUNCIL: FACT SHEET NATIONAL SPACE POLICY 1 (1996), available at <http://history.nasa.gov/appf2.pdf>, archived at <http://perma.cc/47Z8-D4NP>.

110. Compare Mary B. McCord, *Responding to the Space Station Agreement: The Extension of U.S. Law into Space*, 77 GEO. L. J. 1933, 1939-1942 (1988-89) (Arguing that the extension of jurisdiction in the Space Station Agreement is functionally the functional equivalent of extending sovereignty to outer space); with Moenter, *supra* note 96 (Arguing that the Space Station Agreement does not violate the sovereignty provision of the Outer Space Treaty because extensions of national jurisdiction to craft like the International Space Station are contemplated in Article VIII of the treaty).

complicated by a series of overlapping national criminal and civil jurisdictions to the same sections of the ISS.¹¹¹ Even the purely mechanical parts of the ISS owned by other governments have extended national sovereignty of those nations with ownership of those parts.¹¹² The Space Station Agreement uses two methods to justify the extension of sovereign power to outer space: the first is to rename their extension of sovereignty as a legitimate extension of jurisdiction under the Outer Space Treaty, and the second is to treat objects made on Earth and assembled in space as the same as any other craft, despite indications that treaty may not allow such an interpretation.¹¹³ Maintaining a permanent space station with a fixed, if confusing, extension of national sovereignty may violate Article II of the Outer Space Treaty, which prohibits national appropriation of “outer space” through means of occupation, which has occurred here due to the permanence of the ISS.

Looking at the legal treatment of both property and sovereignty over the course of the last several decades, it is clear that provisions of the Outer Space Treaty are being selectively interpreted and ignored to allow for the continued development and use of space.¹¹⁴ The reason for this is obvious: the Outer Space Treaty no longer reflects a valid interpretation of how outer space should be managed in a world that increasingly relies on outer space for commerce. Nonetheless, the Outer Space Treaty is a valid and duly agreed-to treaty, and, as signatories to the treaty, the United States has a responsibility to adhere to its terms until such a time when it is

111. Stewart, *supra* note 96, at 753-61.

112. Agreement Concerning Cooperation on the International Space Station art. 5, Jan. 29, 1998, T.I.A.S. No. 12927 [hereinafter *ISS Agreement*], available at <http://www.state.gov/documents/organization/107683.pdf>, archived at <http://perma.cc/UM8H-CK3G>; see also Stewart, *supra* note 96, at 753-54 (“Article 5 of the agreement provides that ‘each nation shall retain jurisdiction and control over the elements it registers’”).

113. See *Outer Space Treaty*, *supra* note 22.

114. For a recent example see Andrew Tinkang, *These Aren't the Asteroids You Are Looking For: Classifying Asteroids in Space as Chattels, Not Land*, 35 SEATTLE U. L. REV. 559, 579-587 (2011-2012) (Arguing that asteroids may be interpreted under the Outer Space Treaty as chattel property rather than real property, allowing for private appropriation); see also Frakes, *supra* note 73, 433-34; Husby, *supra* note 102, at 372; McCord, *supra* note 110, at 1957.

amended, repealed, or superseded.¹¹⁵ This is true for all of our obligations under the treaty regarding property, sovereignty, and jurisdiction.

C. Jurisdiction

The result of prohibiting both real property ownership and the extension of national sovereignty into outer space is that nations are not allowed to extend their legal jurisdiction into space.¹¹⁶ The sole explicit exception to this rule is in Article VIII of the Outer Space Treaty, allowing governments to retain jurisdiction over registered objects and people sent to space.¹¹⁷ Other than this narrow exception, Article II of the treaty issues a blanket prohibition to any form of “national appropriation” including an extension of legal jurisdiction to space or a celestial body.¹¹⁸ The effect of these terms of the Outer Space Treaty is that governments and businesses are able to build and use satellites, create the ISS, and conduct scientific activities under Article VIII of the treaty. Everything else is prohibited.¹¹⁹

The prohibition against extending national jurisdiction into outer space has unraveled over the last several decades as the necessities of the commercial use of space have demanded mechanisms for dispute resolution.¹²⁰ When only governments had the ability to place

115. Which has not occurred in such a way that allows the extension of sovereign power into outer space, see Comm. on the Peaceful Uses of Outer Space, Legal Subcomm., *Report of the Committee on the Peaceful Uses of Outer Space, Fifty-seventh session*, U.N. Doc. A/69/20 (Jun. 11-20, 2014), available at http://www.unoosa.org/pdf/gadocs/A_69_20E.pdf, archived at <http://perma.cc/5DLB-6SE5>.

116. For a more thorough examination of what nations may extend their jurisdiction over pursuant to the Outer Space Treaty, and the problems the treaty encounters, see P.J. Blount, *Jurisdiction in Outer Space: Challenges of Private Individuals in Space*, 33 J. SPACE L. 299 (2007); Marc M. Harrold, *Asylum-Seekers in Outer Space, a Perspective on the Intersection between International Space Law and U.S. Immigration Law*, 32 J. SPACE L. 15 (2006); Masson-Zwaan and Freeland, *supra* note 73, at 1597-1607; Adhikari, *supra* note 86, at 385-98.

117. See *Outer Space Treaty*, *supra* note 22.

118. *Id.*

119. And, as discussed above, even these activities run afoul some of the other terms of the Outer Space Treaty, see *supra* Sections II(A) and (B).

120. See Lyall and Larson, *supra* note 21, at 380-85.

objects into space there was little need to worry about what would occur if and when private industry sought to profit from outer space.¹²¹ However, when private businesses began to have the ability to reach space, new treaties were enacted requiring those companies register, effectively bringing them under the purview of the Outer Space Treaty.¹²² With the modern advent of space tourism and other forms of space commercialization, Articles II and VIII have become out of date with what is necessary to administer a space-based sector of the economy.¹²³

To date, the clearest precedent for extending national jurisdiction into space has been the Space Station Agreement.¹²⁴ The primary innovations of the Space Station Agreement regarding jurisdiction were discussed in the previous sections.¹²⁵ Its importance to this section lies in the bilateral recognition of national jurisdiction in outer space through the Space Station Agreement. This recognition offers insight into the trend towards disregarding the terms of the Outer Space Treaty that interfere with human access to space.¹²⁶

The trend can also be seen in private, commercial, agreements. Such agreements require that the jurisdiction of a particular sovereign apply automatically to objects created or launched from that sovereign's territory, or that private dispute resolution systems are in

121. See Blount, *supra* note 116, at 301 (Eloquently stating that “the laws of the early days of space exploration were sufficient to precede States into space, but now new laws must be developed in order to precede the growing private sector into space”).

122. *Id.*

123. What happens when there is a tort in space, or a crime like murder, or a dispute over tourist routes? The Outer Space Treaty does not offer any answers, especially if they occur in places where there is no sovereign jurisdiction, like a permanent, privately-owned space station, or spaceship launched from international waters *see* Blount, *supra* note 116, at 306-19 (2007) (Discussing jurisdiction over crimes in outer space).

124. Although others include the extension of jurisdiction of satellite orbits to several international agencies, which fall in a grey area in regards to the Outer Space Treaty, *see generally* Lyall and Larson, *supra* note 21, at 319-87.

125. *See supra* Section II(B); *see also* *ISS Agreement*, *supra* note 112; Hans P. Sinha, *Criminal Jurisdiction on the International Space Station*, 30 *J. SPACE L.* 85 (2004); McCord, *supra* note 110; Moenter, *supra* note 96; Stewart, *supra* note 96.

126. *See supra* Section II(B).

place prior to launch.¹²⁷ The registration requirements listed in Article VIII of the Outer Space Treaty encompass many of the current requirements, but there are other jurisdictional issues for private launches that the treaty does not contemplate.¹²⁸ Some of those issues have been considered in detail through international agreements and contracts,¹²⁹ but there are still numerous problems that may pose significant questions about jurisdiction.¹³⁰

D. Proposed Changes

While there are any number of possible approaches to resolve the three fundamental problems in outer space law, a significant number of scholars agree that the Outer Space Treaty needs to be amended, repealed, or superseded in order to create a legal system that incentivizes both commercial activity and the safe use of space.¹³¹

127. Compare Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Space Assets, Mar. 9, 2012, available at <http://www.unidroit.org/english/conventions/mobile-equipment/spaceassets-protocol-e.pdf>, archived at <http://perma.cc/XN3R-SDYX>; with Lyall and Larson, *supra* note 21, at 319-87.

128. Zhao Yun, *Revisiting the 1975 Registration Convention: Time for Revision*, 11 AUSTL. INT'L L.J. 106, 111-113 (2004).

129. See Lyall and Larson, *supra* note 21, at 319-87.

130. *Supra* note 128.

131. Although not an exhaustive list, all of the following articles propose some new system to replace the current treaties, see, e.g., Widgerow, *supra* note 99; David Collins, *Efficient Allocation of Real Property Rights on the Planet Mars*, 14 B.U. J. SCI. & TECH. L. 201 (2008); John Adolph, *The Recent Boom in Private Space Development and the Necessity of an International Framework Embracing Private Property Rights to Encourage Investment*, 40 INT'L LAW. 961 (2006); Jonathan Thomas, *Privatization of Space Ventures: Proposing a Proven Regulatory Theory for Future Extraterrestrial Appropriation*, 1 INT'L L. & MGMT. REV. 191 (2005); Gruner, *A New Hope for International Space Law: Incorporating Nineteenth Century First Possession Principles into the 1967 Space Treaty for the Colonization of Outer Space in the Twenty-First Century*, 35 SETON HALL L. REV. 299 (2004-2005); Buxton, *supra* note 60, at 689-707 (2004); 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 (2004); Lawrence L. Risely, *An Examination of the Need to Amend Space Law to Protect the Private Explorer in Outer Space*, 26 WEST. ST. UNIV. L. REV. 47, 47-70 (1999); R.P. Merges and G.H. Reynolds, *Space Resources, Common Property and the Collective Action Problem*, 6 N.Y. U. ENV. L.J. 107 (1997); Christopher C. Miller, *To the Moon & Beyond: The United*

Some scholars have focused on the legal questions surrounding the issues of sovereignty or jurisdiction in outer space,¹³² but the most popular issue in space law has been real property rights.¹³³ In addressing real property, scholars typically view the establishment of property rights as the first step in extending national sovereignty and jurisdiction into space.¹³⁴ One of the more commonly discussed solutions to the issue of private property in outer space has been the creation of a system based on the “first in time” homesteading principles used in the Nineteenth Century in the United States.¹³⁵ Other systems would see a more systematic approach to apportioning property rights in outer space,¹³⁶ or even a complete moratorium on colonization until all humankind has equal access to space travel and colonization.¹³⁷ Finally, a small number of scholars contend that the Outer Space Treaty can work as it is currently written, so long as

States and the Future of International Space Law, 35 SUFFOLK TRANSNAT'L L. REV. 121 (2012).

132. See, e.g., Tannenwald, *supra* note 131.

133. Looking through the sources of footnote 131 will reveal that almost all of them prioritize private property rights as the essential element in any proposed amendments to outer space law.

134. For scholars that are specifically concerned with the issue of national appropriation of space assets, see Widgerow, *supra* note 99; Collins, *supra* note 131; Thomas, *supra* note 131; Gruner, *supra* note 131. For scholars primarily interested in private property rights, see, e.g., Adolph, *supra* note 131; Buxton, *supra* note 60, at 689-707; Risely, *supra* note 131, at 47-70.

135. The primary argument is that it would encourage (and require) people and companies to physically move to outer space in order to reap the rewards for doing so, with the risk and reward tied up in their ability to physically appropriate celestial objects. See, e.g., Gruner, *supra* note 131. For more information about homesteading in the 19th Century, see An Act to secure Homesteads to actual Settlers on the Public Domain, 12 Stat. 392 (1962) (The Second Session of the 37th Congress authorized the bill in order to provide a mechanism for U.S. citizens to settle on unincorporated public lands, which they could purchase after they occupied the land for a period of five years), available at <http://www.loc.gov/law/help/statutes-at-large/37th-congress/c37.pdf>, archived at <http://perma.cc/2MPQ-AUJV>.

136. See, e.g., Collins, *supra* note 131 (Arguing that there must be a system to allocate private and sovereign ownership of real property on Mars, before the first humans arrive, in order to create appropriate incentives and limits to ownership).

137. See Buxton, *supra* note 60, at 689-707 (Arguing that such a moratorium should be implemented to facilitate the application of the common heritage fairly across all nations and people).

proper international organizations are established to administer the use of outer space resources.¹³⁸

Whichever proposal, if any, is eventually adopted into international law, the principles of national sovereignty and jurisdiction will be required to adapt to the established system of property rights. The current system recognizes property rights for the people or groups that create, launch, or purchase ships, satellites, and space stations: the jurisdiction and sovereignty of governments over that property emerges from the citizenship of the owner or launching state.¹³⁹ A system that recognizes another form of property rights will create a new ecosystem of laws that emerge from those ownership principles. However, under the current legal ecosystem, it is possible to achieve the goals of H.R. 2617 without amending, revoking, or superseding the Outer Space Treaty in its current form.¹⁴⁰

E. Current state of Space Laws

The key question to ask in preparation of our discussion of H.R. 2617 is this: what are the contours of modern space law and how can

138. Such scholars include authors that argue for the creation of an international licensing system that could comply with the Outer Space Treaty, and others urge that the full adoption of the Moon Agreement would resolve the most pressing issues of resource extraction. See Ricky Lee, *Creating a Practical Legal Framework for the Commercial Exploitation of Mineral Resources in Outer Space* (Dec. 4, 2009) (unpublished Ph.D. dissertation, Murdoch University), available at <http://researchrepository.murdoch.edu.au/1665/2/lee02Whole.pdf>, archived at <http://perma.cc/A648-UKJE>; Kali N. Murray, *Of Gardens and Streets: A Differentiated Model of Property in International and National Space Law*, 32 J. SPACE L. 361 (2006); Hertzfeld and von der Dunk, *supra* note 87; Paul Tobias, *Opening the Pandora's Box of Space Law*, 28 HASTINGS INT'L & COMP. L. REV. 299 (2004-2005).

Another option is also explored where the Outer Space Treaty only speaks to nations, not individuals, and would not preclude nations from recognizing private ownership of spatial real estate. See Alan Wasser and Douglas Jobes, *Space Settlements, Property Rights, and International Law: Could a Lunar Settlement Claim the Lunar Real Estate It Needs to Survive?*, 73 J. AIR L. & COM. 37, 37-78 (2008).

139. Although it is not quite so straightforward in international law, see Lee, *supra* note 43, at 229-33.

140. See *infra* Section IV.

modern legal developments be understood in light of the requirements of the Outer Space Treaty?¹⁴¹

The first and most important principle in modern space law is the ability for anyone to own manmade objects launched into space, and the total prohibition of real estate ownership on celestial objects. The second principle is that ownership, sovereignty, and jurisdiction all exist in outer space under certain conditions. It exists when there is a man-made object launched into space from Earth, but then only that object and any people on board it can be subject to the sovereignty and jurisdiction of the launching state. The definition of what constitutes object made on Earth and sent to space, or which government may claim jurisdiction over which objects and people is up for debate, but sovereignty and jurisdiction are available. The third and final principle is that governments can work together through bilateral means to create agreements that do not violate the Outer Space Treaty. Such agreements are able to be far clearer in their definition of the rights, sovereignty, and jurisdiction than the Outer Space Treaty, as was demonstrated with the Space Station Agreement. Each of these points will be considered in our analysis of H.R. 2617.

III. H.R. 2617 AND THE THREE FUNDAMENTAL PROBLEMS

The stated purpose of H.R. 2617 is to preserve, protect, and improve public understanding of the Apollo landing sites, and the artifacts left behind on the Moon.¹⁴² Alongside this general purpose, the statute has six provisions that list the means through which Representatives Edwards and Johnson seek to achieve their goal.¹⁴³ This section will not exhaustively examine each provision of the bill, but look at those parts that directly implicate the Outer Space Treaty

141. In addition to the sources cited above; *see also* Gabriele Wohl, *Outer Space, Inc.: Transmitting Business, Ethics, and Policy Across the Universe*, 111 W. VA. L. REV. 311 (2008-2009); R. Berkeley, *Space Law versus Space Utilization: The Inhibition of Private Industry in Outer Space*, (1996-7) 15 WIS. J. INT'L L.J. 221-43; Statement of the Board of Directors of the International Institute of Space Law (IISL) On Claims to Property Rights Regarding the Moon and Other Celestial Bodies (2004), *available at* http://www.iislweb.org/docs/IISL_Outter_Space_Treaty_Statement.pdf, *archived at* <http://perma.cc/32AZ-HS4L>.

142. *H.R. 2617*, *supra* note 1, at § 3.

143. *Id.*

and the three fundamental problems. By examining each provision in turn, this section will highlight the parts of the bill that need to change in order to adhere to the Outer Space Treaty.

A. H.R. 2617

The primary problem facing H.R. 2617 is Section 4, the definitions section of the bill. The definition of the Apollo Landing Sites National Historical Park would include “all areas of the Moon where astronauts and instruments... touched the lunar surface.”¹⁴⁴ This definition clearly violates the terms of the Outer Space Treaty and implicates all three fundamental problems. First, it implicates the prohibition against owning property by claiming ownership of real estate on the Moon by the United States. Second, it implicates the prohibition against extending national sovereignty to outer space by explicitly extending the sovereignty of the United States to portions of the Moon. Finally, it implicates the prohibition against extending a nation’s jurisdiction to space by proposing that portions of the Moon should fall under the jurisdiction and control and laws of the United States.

Section 5 of the bill backs away from the language in Section 4 by listing the parts of the park that would consist exclusively of the “artifacts on the surface of the Moon” associated with the Apollo missions without any reference to the definition established in Section 4.¹⁴⁵ The exclusion of Section 4’s definition in Section 5 does not resolve the definition in the first instance, nor does it resolve the problems under the Outer Space Treaty in extending national sovereignty to the Moon. In addition, even if Section 5 is read to be compliant with the Outer Space Treaty, then it creates the unprecedented establishment of a national park made up solely of chattel property, which may present unanticipated problems in administering the proposed National Park.

In the following section, Section 6(a)(3) presents a legal quandary by requiring the administering agency to follow all applicable international treaties.¹⁴⁶ Under this section, the applicable portions of the Outer Space Treaty would appear to require the administering

144. *Id.* at § 4.

145. *Id.* at § 5.

146. *Id.* at § 6.

agency to disband itself in order to prevent the United States from extending its sovereignty and jurisdiction to the Moon's surface. Alternatively, it would require the agency to ignore or redefine Section 4's definition of the park to one that is compliant with the Outer Space Treaty's prohibition on the extension of United States ownership, sovereignty, and jurisdiction to the Moon's surface. In other words, Section 6(a)(3) would require the administering agency to either violate the terms of the Outer Space Treaty, or violate the terms of H.R. 2617, which is not a position that an agency should be placed.

Finally, Section 8 of the bill requires that the administering agency submit the Apollo Lunar Landing Sites National Park for consideration to the United Nations Educational, Scientific, and Cultural Organization (UNESCO) as a possible World Heritage Site.¹⁴⁷ The requirements for becoming a World Heritage Site include that the site is one of either cultural or natural world heritage. This is defined to mean that the site is a monument, group of buildings, a combined work of nature and man, or some outstanding natural site of universal value.¹⁴⁸ While the Apollo landing sites would undoubtedly qualify under the definition, an additional requirement is that the site must be owned by a country; a requirement that implicates both the Outer Space Treaty and the three fundamental problems on the same basis as Section 4.¹⁴⁹ While it is laudable to seek international approval for the protection of the Apollo landing sites, it is counterproductive to claim ownership of parts of the Moon against the express terms of the Outer Space Treaty.

147. *Id.* at § 8.

148. See U.N. Educ., Sci., and Cultural Org., Intergovernmental Comm. for the Prot. of the World Cultural and Natural Heritage, Operational Guidelines for the Implementation of the World Heritage Convention 13, WHC 13/01, (2013), available at <http://whc.unesco.org/archive/opguide13-en.pdf>, archived at <http://perma.cc/W8RG-PNG4>.

149. The idea that a World Heritage Site could be located on an un-owned territory is not contemplated in the treaty text. See Convention Concerning the Protection of the World Cultural and Natural Heritage art. 3-5, Nov. 16, 1972, 27 U.S.T. 37, T.I.A.S. No. 8226, available at <http://whc.unesco.org/archive/convention-en.pdf> [hereinafter *World Heritage Convention*], archived at <http://perma.cc/E9A6-G2K9>.

*B. Fundamental Problems and the
Apollo Lunar Landing Sites National Historical Park*

There are three questions that must be answered about the legal status of the Apollo landing sites before the United States may incorporate those sites as a new national park: (1) can the United States own the property used to create the park, (2) may the United States extend its sovereignty to the property used to create the park, and (3) does the United States have jurisdiction to enforce the creation of the park?¹⁵⁰ As to the first question, it is indisputable that the Outer Space Treaty prohibits ownership of real property on the Moon, but allows for the ownership of the devices left behind by the Apollo astronauts.¹⁵¹ As to the second question, the United States would be able to extend its sovereignty to the devices left behind by the Apollo astronauts, but not to the surface of the Moon.¹⁵² As to the third question, it may be possible to consider the devices left behind by the Apollo astronauts as jurisdictionally part of a national park, but this status alone will not be able to protect and preserve the devices *in situ* on the Moon.

Even though the United States can legitimately extend its sovereignty, laws, and ownership over the devices left on the Moon by the Apollo astronauts under the Outer Space Treaty, H.R. 2617's attempt to protect both the devices and the Moon's surface overreaches. In order to adhere to the Outer Space Treaty, the bill would need to remove Section 4's definition of the park as inclusive of real property on the Moon. The main problem with such an edit is that there are footsteps and other changes to the surface of the Moon from the Apollo astronauts' trips that would not be preserved without a property interest in lunar real estate, because the way to preserve those effects would be to physically protect the Moon's surface.

Under the Outer Space Treaty, the United States is explicitly prohibited from extending its sovereignty to include celestial objects.¹⁵³ But while the plain language would preclude the United

150. Ultimately, the question is "is it moral or ethical to claim the land, whatever the terms of the Outer Space Treaty?"

151. *See supra* note 87.

152. *See supra* note 101.

153. *Outer Space Treaty*, *supra* note 22; *see also* Adams, *supra* note 78; Jenks, *supra* note 101.

States from claiming sovereignty over the real property of the Moon,¹⁵⁴ this prohibition becomes less clear under the precedent set by the Space Station Agreement and the recognition of sovereign interests in satellites.¹⁵⁵ There is an implied claim to legitimate sovereign interest inherent in and around the Apollo objects; not enough to extend national sovereignty permanently, but enough to safeguard the objects owned by the United States while they remain on the Moon.

In the context of H.R. 2617, the United States would only have jurisdiction over the artifacts themselves, not the lunar real estate.¹⁵⁶ However, this jurisdiction would extend to United States citizens and businesses visiting the artifacts,¹⁵⁷ as well as any other person directly interacting with them.¹⁵⁸ This situation provides the United States the ability to achieve the desired results of H.R. 2617 without owning the Moon in contravention of the Outer Space Treaty.¹⁵⁹

In order to comply with international treaties, the language of H.R. 2617 would need to be modified to specifically exclude any interest in real property on the Moon, including that real property that the artifacts rest on. Unfortunately, according to NASA's report on what is needed to safeguard the Apollo landing sites, a far greater degree of regulation and control would be required.¹⁶⁰ The only legitimate option that would allow the goals of H.R. 2617 to be achieved under the Outer Space Treaty would be to regulate the ships and the people who may visit the Apollo landing sites. There are three possible ways to achieve this goal under current treaties.

154. *Id.*

155. *See supra* Section II(B) and (C).

156. *See supra* Section II(C).

157. Pursuant to the terms of the Outer Space Treaty. *See Outer Space Treaty, supra* note 22.

158. The jurisdiction would not extend to the Moon's surface, *see supra* Section II(C).

159. *See infra* Section IV(C).

160. NAT'L AERONAUTICS AND SPACE ADMIN., *supra* note 5.

IV. MODELS OF CONGRESSIONAL ACTION FOR RESOLVING THE FUNDAMENTAL PROBLEMS

The three methods that the United States can pursue in order to resolve the fundamental problems facing the establishment of the Apollo Lunar Landing Sites National Historical Park are: (1) international cooperation, (2) bilateral agreement with interested nations, and (3) domestic action that has international effect.

A. International Cooperation

One of the popular proposals for protecting the Apollo landing sites is establishing the landing sites as a World Heritage Site under the purview of UNESCO.¹⁶¹ As outlined above, the qualifications for becoming a World Heritage Site requires that a nation owns and maintains the site, which would be prohibited under the Outer Space Treaty.¹⁶² This requirement is demonstrated by the creation of the 2001 Convention on the Protection of Underwater Cultural Heritage, which separately protects underwater cultural landmarks where no government may claim ownership, sovereignty, or jurisdiction over seafloor.¹⁶³ A similar convention on the protection of outer space heritage could be created under the purview of UNESCO, but would

161. See generally, THE POLITICS OF WORLD HERITAGE: NEGOTIATING TOURISM AND CONSERVATION (David Harrison and Michael Hitchcock, eds., 2005); Singh Rana Harminderpal, *The Common Heritage of Mankind &(and) the Final Frontier: A Revaluation of Values Constituting the International Legal Regime for Outer Space Activities*, 26 RUTGERS L.J. 225, 225 (1994-1995); Dirk Spennemann, *Extreme cultural tourism from Antarctica to the Moon*, 34 ANNALS OF TOURISM RES. 898, 898-918 (2007); T. F. Rogers, *Safeguarding tranquility base: why the Earth's Moon base should become a World Heritage Site*, 20 SPACE POL'Y 5, 5-6 (2004); Dirk Spennemann, *The ethics of treading on Neil Armstrong's footprints*, 20 SPACE POL'Y 279, 279-90 (2004); Dirk Spennemann, *Out of this World: Issues of Managing Tourism and Humanity's Heritage on the Moon*, 12 INT'L J. OF HERITAGE STUD. 356, 356-71 (2006); Christopher Hearsey, *Universal conservationism: a proposal to establish world heritage sites beyond Earth*, in AIAA SPACE 2009 CONF. PROC. (2009); Justin Walsh, *Protection of humanity's cultural and historic heritage in space*, 28 SPACE POL'Y 234, 234-43 (2012).

162. Compare *World Heritage Convention*, supra note 149, at art. 3-5; with *Outer Space Treaty*, supra note 22, at art. II.

163. See *Convention on the Protection of Underwater Cultural Heritage* art. 1, Feb. 11, 2001, 41 I.L.M. 40, 2562 U.N.T.S. 51 [hereinafter *UCH Convention*].

require an international effort to achieve, not a bill in the United States House of Representatives.

Furthermore, the act of seeking an international solution may call the current treaties and agreements into question, which could result in the amendment, supersession, or revocation of those treaties. While some scholars would welcome this as an opportunity to reconfigure space law to something more accommodating to private industry, and to the ultimate benefit of the Apollo landing sites,¹⁶⁴ the process of amending treaties is not straightforward and may not lead to the results hoped for by scholars, nor by Representatives Edwards and Johnson. There may be a time and a place for an international realignment towards different principles of space exploration and exploitation, but international treaty re-negotiation it is not necessary to achieve the protections sought in H.R. 2617. Moreover, other possibilities exist that are under the direct control of the United States rather than the United Nations.

B. Bilateral Agreement

There is legal precedent for the establishment of internationally protected areas through bilateral negotiations in lieu of international treaties.¹⁶⁵ The bilateral establishment of protected areas may be seen in the mutual administration, protection, and management of the Saint Croix Island International Historic Site.¹⁶⁶ The St. Croix site was created with the cooperation of both the United States and Canadian governments when it was recognized that St. Croix held important historic value to both countries.¹⁶⁷ Both sides negotiated the site's joint protection under the United States and Canadian

164. *See supra* note 131.

165. *See, e.g.*, José A. Cisneros and Valerie J. Naylor, *Uniting La Frontera: the ongoing efforts to establish a transboundary park*, 41 ENV'T: SCI. & POL'Y FOR SUSTAINABLE DEV. 12, 13-14 (1999) (Discussing US-Canadian parks and a proposed US-Mexican park); Jim Johnston, *Cross-Border Approaches to Protected Areas, Heritage Conservation, and Tourism: A Parks Canada Perspective*, in PROCEEDINGS OF THE PARKS RESEARCH FORUM OF ONTARIO 75 (2006) (Stating that over 188 such trans-border protected areas exist).

166. *See* U.S. DEP'T OF THE INTERIOR, NAT'L PARK SERV., FACILITIES DEVELOPMENT PLAN FOR SAINT CROIX ISLAND INTERNATIONAL HISTORIC SITE 2-3 (2009).

167. *Id.*

governments,¹⁶⁸ and although no other countries were part of the negotiations, both countries were able to establish a well protected, preserved, and managed International Park.¹⁶⁹ On this basis the St. Croix park could serve as an example to the United States on how it might establish similar protections for the Apollo landing sites.

Unlike the requirements of a UNESCO World Heritage Site, a bilaterally negotiated and administered system to preserve the Apollo landing sites would only require the interest and desire of other nations to create those protections.¹⁷⁰ With the Apollo landing sites being of such historic significance to all people on Earth, there should be the sufficient interest to protect them through a bilateral treaty. All that would be required is for the United States to enter into negotiations with other space-faring nations in order to protect those sites.

The one outstanding problem with this proposal is that having the Apollo landing sites fall under a coalition of governments may still violate the terms of the Outer Space Treaty unless careful consideration is given to what is required under the treaty. The investigation into whether some form of collective ownership of lunar real estate would pass scrutiny under the Outer Space Treaty would be an interesting topic for scholarly discussion, but not the one explored in this essay.¹⁷¹ It is sufficient to say that this would be a good option under the circumstances, but that a better option would be to proceed through domestic legislation first.

C. Domestic Action

The course of conduct advocated in this essay is one that would swiftly achieve the goals of H.R. 2617 and also comply with the

168. *Id.*

169. *Id.*

170. As demonstrated by the fact that Saint Croix Island is protected by the US and Canada, but not on the list of World Heritage Sites, receiving only a brief mention in UNESCO's 500 page 2012 report on sites being considered for World Heritage Status, see U.N. Educ., Sci., and Cultural Org., World Heritage Comm., Evaluations of Nominations of Cultural and Mixed Properties to the World Heritage List 26, WHC-12/36.COM/INF.8B, 36th Sess. (2012), available at <http://whc.unesco.org/archive/2012/whc12-36com-8B1inf-en.pdf>, archived at <http://perma.cc/T6F2-CE9G>.

171. Although mention is made of the topic, see *supra* Section II(D).

terms of the Outer Space Treaty. A purely domestic approach could provide for the protection of the Apollo landing sites by placing restrictions on the citizens and corporations of the United States. This would allow the United States government to pursue legal action against individuals over whom they already have jurisdiction. By doing so they could monitor, protect, and control the space around the Apollo landing sites in a manner that complies with the Outer Space Treaty. Once such restrictions are in place, the United States would be able to engage in bilateral negotiations with other space-faring nations, asking them to similarly restrict their own citizens and businesses. This course of action would require that the current text of H.R. 2617 be replaced with a new notion of what is to occur: no longer focusing on the formation of a national park, but on regulating the actions of citizens and businesses seeking to visit the Apollo landing sites. What wording the change may use is up to Congress, but it could be as simple as empowering an agency to promulgate regulations about such activities¹⁷² or as complex as adopting the suggested regulations of NASA.

This option would be wholly under the control of the United States, apart from our obligations under the Outer Space Treaty. Moreover, a similar course of action has been effective in the past. There is a significant success story in the protection of the R.M.S. *Titanic* that is based upon this option, and shows how domestic legislation can be expanded to include both bilateral and international agreements.¹⁷³ It reflects how the United States may take appropriate action now, and continue pursuing bilateral and international solutions.¹⁷⁴ Moreover, this course of action would facilitate

172. Such as NASA, the Office of Space Commercialization, the Federal Aviation Administration, or even the creation of a new administrative agency. Although it appears that the Federal Aviation Administration may be moving towards such regulatory authority in the absence of explicit Congressional authorization, see Irene Klotz, *Exclusize – The FAA: regulating business on the moon*, REUTERS (Feb. 3, 2015, 8:08am), <http://www.reuters.com/article/2015/02/03/us-usa-moon-business-idUSKBN0L715F20150203>, archived at <http://perma.cc/HWL7-NVGW>.

173. See generally Section IV(C).

174. Insofar as appropriate action has and may be take on behalf of the *Titanic*, see, e.g., Matthew E. Zekala, *Liability and Salvage: Titanic Jurisprudence In United States Federal Court*, 16 LEWIS & CLARK L. REV. 1075 (2012); Margaret E. Leshikar-Denton, *Cooperation is the Key: We Can Protect the Underwater*

international cooperation since we would be modeling the behavior we seek for other nations to emulate rather than claim ownership of real estate that is forbidden under the Outer Space Treaty.

The success of the *Titanic*'s protection emerges from a domestic act of Congress, the R.M.S. *Titanic* Maritime Memorial Act of 1986.¹⁷⁵ The act requires that the United States will work with other countries to preserve the resting site of the *Titanic*, and prohibit any person under United States jurisdiction from altering, disturbing, or salvaging anything from the site.¹⁷⁶ The act limits the United States' ability to enforce the act except to those over whom it already has legitimate jurisdiction, expressly disclaiming any extension of ownership, sovereignty, or jurisdiction over the R.M.S. *Titanic*.¹⁷⁷ Under this act, the *Titanic* became protected from any person, company, or organization based in the United States that sought to salvage or disturb the *Titanic* in any way.¹⁷⁸ The success of the act domestically helped to foster the involvement of other nations.¹⁷⁹

Negotiations following the passage of the 1986 Act eventually lead to the 1997 bilateral negotiations that lead to the creation of the Agreement Concerning the Shipwrecked Vessel RMS *Titanic* of 2003.¹⁸⁰ As a bilateral agreement between the United States, Canada,

Cultural Heritage, 5 J. OF MAR. ARCHAEOLOGY 85, 85-95 (2010); Marian Leigh Miller, *Underwater Cultural Heritage: Is the Titanic Still in Peril as Courts Battle over the Future of the Historical Vessel*, 20 EMORY INT'L L. REV. 345 (2006); Sarah Dromgoole, *The International Agreement for the Protection of the Titanic: Problems and Prospects*, 37 OCEAN DEV. & INT'L L. 1, 1-31 (2006); Ole Varmer, *RMS Titanic*, in HERITAGE AT RISK 14 (2006).

175. R.M.S. *Titanic* Maritime Memorial Act of 1986, 16 U.S.C. § 450rr *et seq.* (1986), available at <http://www.gc.noaa.gov/documents/TitanicMemorialAct.pdf>, archived at <http://perma.cc/LGA4-79AJ>; see also Guidelines for Research, Exploration and Salvage of RMS *Titanic* 66 FR 18,905 (Apr. 12, 2001).

176. 16 U.S.C. § 450rr(b)(2).

177. 16 U.S.C. § 450rr-6.

178. 16 U.S.C. § 450rr-5.

179. 16 U.S.C. § 450rr-3; 16 U.S.C. § 450rr-4.

180. Agreement Concerning the Shipwrecked Vessel RMS *Titanic*, U.S.-Can.-Fr.-U.K., Nov. 6, 2003, available at <http://www.gc.noaa.gov/documents/titanic-agreement.pdf> [hereinafter *Titanic Agreement*], archived at <http://perma.cc/ZP2L-8V9M>. The agreement was signed by the United States on June 18, 2004, see U.S. DEP'T OF STATE, OFFICE OF THE LEGAL ADVISOR, DIGEST OF UNITED STATES PRACTICE IN INTERNATIONAL LAW 715-16 (2004), available at

France, and the United Kingdom,¹⁸¹ it requires that the parties to the agreement take “all reasonable measures” to conserve both the Titanic and its artifacts.¹⁸² It is notable that even though the agreement is limited to the four signatories, and is not binding on other nations, it has the effect of safeguarding the Titanic from the people most likely to have the technology and desire to collect salvage from the Titanic.

The international attention drawn from the domestic legislation and the bilateral negotiations lead to the creation of the UNESCO Convention on the Protection of the Underwater Cultural Heritage of 2001.¹⁸³ It should be noted that the resting site of the *Titanic* is not a World Heritage Site, but it has some of the same features of one under the mechanisms of the treaty, which protect Underwater Cultural Heritage sites in international waters.¹⁸⁴ The *Titanic's* status under the UNESCO convention provides important international recognition and protection to the *Titanic*, at the same time much of the practical protections come from the bilateral treaty between the nations with the technology, interest, and ability to go to the site of the R.M.S. *Titanic*.¹⁸⁵

The key to the success of the first R.M.S. *Titanic* Maritime Memorial Act of 1986 was that it did not purport to establish a strong property interest in the R.M.S. *Titanic*. Rather, the law sought to protect and preserve the site from citizens of the United States and did so through means that did not challenge the legitimacy of international interest in the sea floor. The same results are possible for the Apollo landing sites in a revised H.R. 2617.

<http://www.state.gov/documents/organization/139391.pdf>, *archived* *at*
<http://perma.cc/UZ86-67BG>.

181. *Titanic Agreement*, *supra* note 180, at 6.

182. *Id.* at art. 3, 4.

183. See *UCH Convention*, *supra* note 163, at art. 1; see also Mariano J. Aznar and Ole Varmer, *The Titanic as Underwater Cultural Heritage: Challenges to its Legal International Protection*, 44 OCEAN DEV. & INT'L L. 96, 96-112(2013); Ole Varmer, Jefferson Gray, and David Alberg, *United States: responses to the 2001 UNESCO convention on the protection of the underwater cultural heritage*, 5 J. OF MAR. ARCHAEOLOGY 129, 129 (2010).

184. See generally *UCH Convention*, *supra* note 163.

185. Especially since the US is not a signatory to the UN Convention, see Varmer, Gray, and Alberg, *supra* note 183.

H.R. 2617 will not protect the Apollo landing sites when it takes an approach that is contrary to international treaties, agreements, and conventions by claiming national ownership over parts of the Moon. If this bill were to take the same approach as the R.M.S. *Titanic* Maritime Memorial Act of 1986, it could be far more successful. Such a bill would protect the Apollo landing sites from the citizens and businesses of the United States, those protections would start immediately, the bill could serve to advance bilateral and international negotiations, and the law would not violate the terms of the Outer Space Treaty.

CONCLUSION AND RECOMMENDATION

Because it is only a matter of time before the occurrence of private space travel to the Apollo landing sites, there needs to be some restrictions in place to properly preserve the sites for future generations. Those protections must be as robust and as forward-looking as possible but at the same time fit within our existing laws. Under our treaty obligations, the best option is for space-faring nations to take the responsibility upon themselves and begin issuing protections for those sites just as Representatives Edwards and Johnson have sought to accomplish.

Ultimately, the type of protection that is necessary to preserve the Apollo landing sites will require that the Outer Space Treaty and others to be repealed, amended, or superseded. Because ownership rights in outer space real estate, once it becomes practical, will be inevitable, a system of laws that anticipates and encourages responsible development would be welcome. This desire, however, does nothing to mitigate the treaties that are currently in place. It is our responsibility to adhere to these laws until they are changed, and we cannot do so by enacting a bill that violates some of the fundamental elements of the Outer Space Treaty.

Because it is possible to preserve the Apollo landing sites under the present laws, we should do so. H.R. 2617 needs to be changed in focus and in form. Instead of a being a bill that seeks to extend the jurisdiction of the United States to the Moon, it should seek to restrain domestic companies and individuals from damaging those sites. Instead of a being a bill that seeks to establish a national park and engage international bodies at the same time, it should determinedly seek to protect the Apollo landing sites from the only

people it has the authority to protect them from: citizens and businesses of the United States. By doing so, the United States will set an example of what may be achieved under the restraints of the Outer Space Treaty, and may foster the adoption of similar legislation worldwide. The United States should once more be a leader in a race to the Moon, by protecting the achievements of the first Space Race for many generations to come.