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Regulation of the Outer Space Environment Through International Accord: The 1979 Moon Treaty

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REGULATION OF THE OUTER SPACE ENVIRONMENT THROUGH INTERNATIONAL ACCORD: THE 1979 MOON TREATY

INTRODUCTION

Outer space has always fascinated mankind. Access to outer space has immense potential for material benefits,¹ including industrial, military, and scientific advancement.² Outer space is the evolving frontier of an evolving society.³ Government and private space activities, including preparation and follow-up, "have grown immensely in recent years in volume and diversity,"⁴ and space exploration is only in the embryonic stage.⁵ The impending transformation of outer space will require redefinition of the rights and responsibilities of citizens and governments alike in the development of this near virgin environment.⁶

Since 1967, the world has attempted to meet this challenge⁷ through a series of international treaties and agreements.⁸ The most recent pact, "The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies,"⁹ addresses not only the exploration of the Moon, but exploration of all celestial bodies within our solar system.¹⁰ It sets forth specific aims and guidelines in an attempt to achieve equitable,

1. K. BOCKSTIEGEL *SPACE LAW: CHANGES AND EXPECTATIONS AT THE TURN TO COMMERCIAL SPACE ACTIVITIES*, 8 *Forum Internationale* 3 (1986).

2. See N. GOLDMAN, *AMERICAN SPACE LAW* 3-23 (1988).

3. *Id.* at 3.

4. 1 *SPACE LAW: BASIC LEGAL DOCUMENTS* at XIII (K. Bockstiegel & M. Benko ed. 1990).

5. N. Goldman, *AMERICAN SPACE LAW* 186 (1988).

6. N. GOLDMAN, *supra* note 2, at 3.

7. Although a number of accords dealt with various facets of air and space travel, the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *done on* Jan. 27, 1967, [hereinafter cited as the Space Treaty] was the first major international accord in the area of space law promulgated by the United Nations.

8. The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, *done on* Dec. 5, 1979, is the fifth international accord on space law chartered by the United Nations. The others are the Space Treaty, the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, *done on* Apr. 22, 1968, 19 U.S.T. 7570, T.I.A.S. No. 6599, 672 U.N.T.S. 119, the Convention on International Liability for Damage Caused by Space Objects, *done on* Mar. 29, 1972, 24 U.S.T. 2389, T.I.A.S. No. 7762, and the Convention on Registration of Objects Launched into Outer Space, *done on* Jan. 14, 1975, 28 U.S.T. 695, T.I.A.S. No. 8480. The Moon Treaty appears in full in the Appendix to this Note.

9. Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, *done on* Dec. 18, 1979, xvii I.L.M. 1434 [hereinafter cited as the Moon Treaty].

10. See STAFF OF SENATE COMM. ON COMMERCE, SCIENCE, AND TECHNOLOGY, 96th CONG., 2nd SESS., S262-9 AGREEMENT GOVERNING THE ACTIVITIES OF STATES ON THE MOON AND OTHER CELESTIAL BODIES, at VII-VIII (Comm. Print 1980) [hereinafter cited as Comm. Print].

cooperative, and harmonious exploration and development in space among terrestrial states.¹¹

The United Nations Committee on the Peaceful Use of Outer Space (UNCOPUOS)¹² had constructed four major space law international treaties prior to the Moon Treaty.¹³ Each of these treaties took significant steps towards establishing a working guide for conduct and responsibility of states venturing into space. There is a continuing question of whether the Moon Treaty makes important inroads in comparison to other treaties, or is merely a compilation of treaties past. An additional question is whether it adequately addresses areas that have caused the greatest concern and confusion.¹⁴ While it would be impossible to foresee all matters in space that will require new legal treatment, the law should seek to solve those problems and correct omissions that have already been identified and need to be addressed.¹⁵

This Note examines the value and effectiveness of the Moon Treaty in comparison with space treaties that have preceded it. Part I of this Note looks at some of the objectives offered as reasons for development of the Moon Treaty and discusses the underlying purposes that prompted its creation. Part II of the Note highlights both positive and negative parts of the treaty and provides an overview of the substance of several articles. Part III discusses the potential effectiveness of the Moon Treaty and its additions to existing accords on space law. The Note concludes by arguing that although the Moon Treaty introduces a few potentially valuable concepts, it fails to make a significant contribution to the existing law and should therefore not be ratified by the majority of COPUOS States.

I. STATED OBJECTIVES AND THE UNDERLYING PURPOSE IN DEVELOPING THE MOON TREATY

A. *Stated Objectives*

Since ratification of the Outer Space Treaty in 1967,¹⁶ the main objec-

11. *See id.* In international space law the term "state" refers to a terrestrial nation or sovereignty.

12. The United Nations Committee on the Peaceful Use of Outer Space is commonly called UNCOUOS or COPUOS. Created in 1958, COPUOS is the United Nations committee responsible for investigating and promulgating international space law. The committee currently has fifty-three member countries. COPUOS approves proposed treaties by a consensus vote. After clearing COPUOS, a treaty must then be voted on and approved by the General Assembly of the United Nations. The document is then submitted to the States (countries) for ratification. Each treaty indicates the number of nations necessary to ratify the document for it to become binding on the nations that ratified it.

13. *See supra* note 9 and accompanying text.

14. Van Traa-Engelman, *The Moon Treaty: Legal Consequences and Practical Aspects*, 23 COLLOQUIUM ON THE LAW OF OUTER SPACE PROC., 73 (1980). *See also* E. VAN BOGAERT, *ASPECTS OF SPACE LAW* 94 (1986).

15. Although there were specific reasons given for promulgation of the Moon Treaty, this Note discusses the more likely motivations behind the reasons.

16. The Outer Space Treaty has been signed by almost one hundred nations since its

tive of subsequent treaties has been to meet problems that have since developed.¹⁷ Just as "[l]aw changes to reflect other changes in our society,"¹⁸ space law "continues to expand and change as the activities that it oversees expand and change."¹⁹ As activity in space has increased,²⁰ international space law has become more complex, thus escalating difficulty in reaching accords on international space treaties.²¹

The primary stated objective of the 1979 Moon Treaty is to provide the necessary legal principles for governing the behavior of states, international organizations, and individuals who explore celestial bodies other than Earth, as well as administration of the resources that exploration may yield.²² The specifically stated objectives include: enhancement of opportunities and conditions for evaluation, research and exploration of the natural resources of celestial bodies;²³ promotion of exchange of scientific results;²⁴ the assurance of exclusively peaceful use of celestial bodies;²⁵ and increased participation in seeking the objectives of earlier treaties.²⁶

B. Underlying Purposes

The major purpose in development of the Moon Treaty was to assure developing countries and non-space powers that they would not be excluded from reaping the resource benefits of space exploration.²⁷

ratification. Many of the tenets in the treaty's seventeen articles have been expanded in later accords, but the treaty remains the backbone of space law today.

17. G. REYNOLDS & R. MERGES, *OUTER SPACE: PROBLEMS OF LAW AND POLICY* 122 (1989) (quoting Galloway, *Issues in Implementing the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*, 23 *COLLOQUIUM ON THE LAW OF OUTER SPACE PROC.* 19, 22 (1980)).

18. N. GOLDMAN, *supra* note 2, at 4.

19. *Id.* at 185.

20. *See generally* G. REYNOLDS & R. MERGES, *OUTER SPACE: PROBLEMS OF LAW AND POLICY* 247-305 (1989). In addition to increased exploration and communications flights by various governments, private parties are launching communications satellites, and both government and private groups are planning civilian tour flights.

21. *Id.* at 10-11.

22. Comm. Print, *supra* note 10, at vii.

23. G. REYNOLDS & R. MERGES, *OUTER SPACE: PROBLEMS OF LAW AND POLICY* 112 (1989) (quoting Nash, *Contemporary Practice of the United States Relating to International Law*, 74 *AM. J. INT'L. L.* 419, 421-26 (1980)). *See also* C. OKOLIE, *INTERNATIONAL LAW OF SATELLITE REMOTE SENSING AND OUTER SPACE* 42-43 (1989).

24. Comm. Print, *supra* note 10, at 316.

25. *Id.*

26. *Id.* at 317-18.

27. While the Outer Space Treaty determined that space could not be appropriated, some parties to the treaty interpreted the restriction as only applying to resources still imbedded in the celestial bodies. The United States and the Soviet Union both believe that resources removed from the environment become the property of the party that removes them. This is an unacceptable theory to many of the non-space powers, because state parties without space travel capability would never have claims to the resources found in space. Those states believed that in developing a new Moon Treaty and including the phrase "Common Heritage" to describe the outer space environment, they would have a claim to the celestial resources, regardless of their incapacity for space exploration.

Although the 1967 Outer Space Treaty had deemed the Moon and other celestial bodies useable only for peaceful purposes and to be *Res Extra commercium*,²⁸ many non-space powers wanted to add terminology that would give them unquestioned rights to the natural resources found in space.²⁹ The utilization of outer space remained on the agenda of successive meetings of the Legal Sub-Committee of the United Nations Outer Space Committee. The agenda included proposals for a new agreement concerning the activities on the Moon. Proposals on administration of resources from the Moon and other celestial bodies continued to be proffered after 1967.³⁰

Dr. Aldo Armando Cocca, a representative of Argentina, a non-space power, introduced the foundations of the Moon Treaty as a draft.³¹ The proposal, presented to COPUOS on July 3, 1970, argued that the Space Treaty of 1967 was deficient because it did not specifically regulate the use of the Moon's natural resources.³² The Argentinean proposal had five articles relating to the use of the Moon's natural resources, the benefits derived from them, and the nature of the laws which should govern their use.³³ In 1971 the Soviet Union proposed a more narrowly drawn draft as COPUOS prepared to consider an international treaty concerning the Moon.³⁴ The Soviet draft as well as many others were introduced and failed between 1971 and 1979, when COPUOS adopted the Moon Treaty. Most of the disagreement centered on the use of the phrase "Common Heritage of Mankind" (or "Common Heritage")³⁵ a controversial phrase because it ostensibly would give greater rights to non-space powers than they previously enjoyed.³⁶ During that eight year period, a myriad of working papers, policy proposals, and draft treaties

28. This phrase, found in Article 2 of the Space Treaty, is latin for "areas legally not susceptible to national appropriation."

29. Cheng, *The Moon Treaty: Agreement Governing the Activities of States on the Moon and Other Celestial Bodies Within the Solar System Other Than Earth*, 33 CURRENT LEGAL PROBLEMS 213 (1980).

30. *Id.*

31. Comm. Print, *supra* note 10, at 7.

32. The preamble of Dr. Cocca's proposal makes this point, but it is not specifically mentioned in the approved draft of the Moon Treaty. *See also*, Comm. Print, *supra* note 10, at 7. At this point in space exploration, Moon dirt and rock samples have been brought back and undergone basic geological testing. The real concern is the possibility that someday resources will be brought back that will have significant value of one kind or another.

33. *Id.* This draft and others were debated and discussed within COPUOS and eventually tabled.

34. Cheng, *supra* note 29, at 213-215. The Soviet draft concerned only the Moon and did not discuss its resources or other celestial bodies. These were issues that played significant parts in delaying accord on the substance of the Moon Treaty for nine years. By the time there was a final agreement, the United States had submitted at least 16 of its own proposals.

35. *Id.* at 216.

36. Unispace '82, A CONTEXT FOR INTERNATIONAL COOPERATION AND COMPETITION, A TECHNICAL MEMORANDUM, 26 (1983). This phrase was borrowed from the Law of The Sea Treaty, where it played an integral part in formulation of the treaty.

were considered within COPUOS in repeated attempts to resolve the disagreement over inclusion of the phrase "Common Heritage."³⁷ The continuing disagreement over the rights of each country to the natural resources of the Moon illustrates the underlying purpose of the Moon Treaty: to formally and finally determine the legal status of the celestial bodies' natural resources.³⁸ Those entities desiring that the final document address this matter constructed rather broad proposals on sharing celestial body benefits which included those proposals in the eventual Moon Treaty without ever specifying the proposals' true objectives.³⁹ Even the United States, a strong supporter of the "Common Heritage" theme during negotiations and perhaps, the force behind its eventual inclusion in the Moon Treaty, did not envision the eventual ramifications of adopting this broad theory. Indeed the United States has since reversed its position on the Moon Treaty based on the "Common Heritage" theory.⁴⁰ The United States now advocates possessive rights to proceeds removed from the celestial bodies, under the theory that "Common Heritage" only applies to the actual space environs themselves and not the actual resources once they are removed from those environs.⁴¹

A second underlying purpose for the Moon Treaty was to regulate activity of states and entities in outer space through a general legal order.⁴² As science and technology of space exploration expand, the law must continue to change to keep pace and meet new and growing needs.⁴³ Space exploration and development are evolving at such a rapid pace that existing laws are inadequate to address emerging legal issues.⁴⁴ Although the Space Treaty is still the foundation of international space law,⁴⁵ the evolution and change of humankind's status in space must be addressed with an evolving law.⁴⁶

Other underlying purposes for the formation of the Moon Treaty were: to legally define what constitutes "Outer Space";⁴⁷ to designate the legal

37. Comm. Print, *supra* note 10, at 9-43.

38. Paper, *Review of Recent Discussions Relating to Aspects of Article I of The Outer Space Treaty*, 32 COLLOQUIUM ON THE LAW OF OUTER SPACE PROC. 9 (1989).

39. *Id.* at 11. By using broad language in their proposals, developing nations and those without space-flight capabilities were able to win acceptance for the basic idea that all nations have a claim to space and the celestial bodies. After the idea's adoption, those nations claimed that the idea extended to natural resources of the celestial bodies no matter where they were or who aquired them.

40. Unispace '82, A CONTEXT FOR INTERNATIONAL COOPERATION AND COMPETITION, A TECHNICAL MEMORANDUM 26 (1983).

41. Paper, *Transition of Confusion in the Law of Outer Space*, INTERNATIONAL SPACE POLICY, 157, 164 (1985).

42. Developing states perceived a need for a formal legal system to handle the legal issues and questions generated by space exploration. Comm. Print, *supra* note 10, at VII.

43. See G. ZHUKOV & Y. KOLOSOV, INTERNATIONAL SPACE LAW, at xii-xiv (1984).

44. N. GOLDMAN, *supra* note 2, at 3.

45. See *infra* Part III; see also G. ZHUKOV & Y. KOLOSOV, INTERNATIONAL SPACE LAW, at xiv (1984).

46. G. ZHUKOV & Y. KOLOSOV, INTERNATIONAL SPACE LAW, 1-10 (1984).

47. Cf. G. REYNOLDS & R. MERGES, *supra* note 17, at 11-12 (1989).

status of Earth's synchronous geostationary orbit (GEO),⁴⁸ and to provide a foundation for specific guidance in space station construction and space colonization.⁴⁹

II. THE MOON TREATY: NEW TERRITORY OR SETTLED GROUND?

Although many countries are now entering into and relying on bilateral agreements on space activities,⁵⁰ international efforts necessarily continued in an attempt to effect global control over space exploration.⁵¹ In accordance with this aim, COPUOS developed and implemented its fifth major agreement, the Moon Treaty.⁵² Although a large scale international effort, this latest accord falls short of achieving a major legal advancement in international space law because many of the Moon Treaty's provisions simply restate themes from older international treaties.⁵³ Further, where the Moon Treaty does attempt to expand on the themes of the Outer Space Treaty, many of its phrases lack meaningful and unequivocal definitions.⁵⁴ Some commentators even suggest that the Moon Treaty was superfluous and therefore unnecessary.⁵⁵ However, others believe the Moon Treaty is very significant and that its benchmark proviso, "Common Heritage of Mankind," makes it the most significant treaty to date.⁵⁶ Although the Moon Treaty does not precisely define this phrase, it attempts to provide for the interests of non-space powers in the eventual benefits reaped from space and celestial body exploration, excavation, and even eventual colonization.⁵⁷

48. See generally 20 COLLOQUIUM ON THE LAW OF OUTER SPACE PROC. (1978) (Collection of notes and papers which chronicle the efforts of several non-space equatorial states to have the synchronous geostationary orbits which exist in the plane above their respective states as a natural part of those states' domains, and thus not part of the outer space environment).

49. Gorove, *Legal Ties Of A Space Community To Earth*, 20 COLLOQUIUM ON THE LAW OF OUTER SPACE PROC. 241, 243 (1978).

50. N. GOLDMAN, *supra* note 2, at 185.

51. See generally 1 SPACE LAW: BASIC LEGAL DOCUMENTS (K. Bocksteigel & M. Benko ed. 1990) (a chronicled collection of the foremost international accords on space law).

52. Finch & Moore, *The 1979 Moon Treaty Encourages Space Development*, 23 COLLOQUIUM ON THE LAW OF OUTER SPACE PROC. 13 (1981).

53. Note, *Space Law - Agreement Governing The Activities of States on The Moon*, 21 HARV. INT'L. L.J. 579, 584 (1980). This is especially true of the 1967 Outer Space Treaty. The Moon Treaty tracks the Space Treaty almost entirely, with very little actual change in content.

54. No legend provides specific meanings for pivotal phrases such as "province of all mankind," "equitable sharing of benefits from exploitation," "celestial bodies," "international regime," and "common heritage of mankind." Galloway, *Issues in Implementing the Agreement Governing Activities of States on the Moon and Other Celestial Bodies*, 23 COLLOQUIUM ON THE LAW OF OUTER SPACE PROC. 19 (1981).

55. Wolcott, *Reaching For The Moon*, 23 COLLOQUIUM ON THE LAW OF OUTER SPACE PROC. 87 (1981).

56. Cheng, *supra* note 29 at 220.

57. C. OKOLIE, INTERNATIONAL LAW OF SATELLITE REMOTE SENSING AND OUTER SPACE 46 (1989).

The Moon Treaty introduces some significant themes within its tenets even though it has not yet been, and may never be, signed by enough States for those objectives to reach fruition. For example, the Moon Treaty introduces the idea of protecting the Moon's natural environment by requiring that exploring parties consider the repercussions of their activities in space, and the environmental changes that might follow. This also is the first space law treaty to specifically mandate that space parties consider the interests of present and future generations, and to identify a general need to promote higher standards of living. The Moon Treaty even requires space parties to advise the U.N. Secretary-General of any radioactive materials deposited on the Moon and the purpose for such deposits, when feasible.⁵⁸ The question is whether these items are significant enough, however, to justify ratification of this treaty as the newest space law document, especially in light of the extensive redundancy of past treaties.⁵⁹

The Moon Treaty consists of twenty-one articles. A comparison of major articles and provisions of both the Moon Treaty and the Space Treaty reveals the following:⁶⁰

58. See generally Cheng, *supra* note 29, at 213.

59. Note, *Space Law - Agreement Governing The Activities of States on the Moon and Other Celestial Bodies*, 21 HARV. INT'L. L. J. 579, 582 (1980).

60. Analysis of other articles determined the following: Article 2, while it does highlight some specific agreements, basically calls for international law to govern in space. The Space Treaty also calls for international law to govern in space. Article 4 requires observation of the mandate to give "due regard to . . . present and future generations" and to "promote higher standards of living conditions . . .," but the main thrust of article 4 is notice of the theory "province of all mankind." The theory "province of all mankind" is also set out in the Space Treaty. Article 5 requires that countries inform the U.N. Secretary-General of their space activities and of any potentially harmful space phenomena. Article 5 also sets forth a requirement that countries going into space in the same time period advise each other of their prospective locations. Except for the last proviso, the Space Treaty also promulgates the substance of article 5. Article 6 provides for the "freedom of scientific investigation," and determines that countries can collect and keep, use, or disburse samples from the Moon. It also suggests scientific manpower swapping among countries for observation purposes. Article 8 gives countries specific logistical permission, including allowing excavation on or below the Moon, to place and launch personnel and equipment, etc. on and from the Moon, and prohibits interference with another country's Moon activities. The Space Treaty does not mention specific excavation allowances, but does cover in substance the balance of article 8 in its own article VIII through XII. Article 9 permits countries to erect space stations on the Moon, and requires such parties to keep the U.N. Secretary-General advised and aware of the status of such a station. Article 9 also requires that free access to all areas of the Moon by other countries not be impeded. Article 12 provides that countries retain jurisdiction and ownership over all equipment on the Moon, that "found" equipment is governed by the 1968 Rescue and Return of Astronauts Agreement, and that countries' members may use the facilities and equipment of another country in an emergency situation, however, prompt notification to the U.N. is required. Article V of the Space Treaty requires that "[a]ll possible assistance" be given to an astronaut of another country, while article VIII of the same treaty provides that countries retain jurisdiction over their possessions and personnel in space or on celestial bodies. Article 13 requires a country with knowledge to report any crash or forced landing to the Secretary-General of the U.N. Article 14 assigns liability to countries for both the country and its citizens' activities on the Moon. This

Article 1 applies the Moon Treaty to all celestial bodies within this solar system (excluding Earth).⁶¹ The Space Treaty also provides for this, as most of its articles specifically refer to outer space, the Moon, and the other celestial bodies.⁶²

Article 3 bans specific types of weapons from space and calls for only peaceful utilization of the Moon.⁶³ The Space Treaty calls for peaceful purpose and use of the Moon as well as other celestial bodies.⁶⁴

Article 7 prohibits disruption of the existing balance of the environment, and mandates taking precautions against same, requiring the parties to inform the U.N. Secretary-General of what precautions were taken prior to engaging in space activity. Article 7 further requires parties to notify the U.N. Secretary-General when they introduce any radioactive materials into space, and to advise other State Parties and the U.N. Secretary-General of any area of the Moon which has "special scientific interest."⁶⁵ Excepting the last proviso, the Space Treaty provides for the entire substance of article 7 in its own article IX.⁶⁶

Article 10 requires that State Parties regard all persons they come into contact with on the Moon as spacecraft personnel, following the provisions of the Agreement on The Rescue of Astronauts, The Return of Astronauts and The Return of Objects Launched into Space. This article also requires State Parties to offer food and shelter to those in distress.⁶⁷ Article 10 is covered under the Space Treaty and the 1968 Rescue and Return of Astronauts Agreement.⁶⁸

Article 11 provides that the Moon and its natural resources are the "Common Heritage of Man," which cannot be appropriated or

article also provides notice of the possible need to amend this article in the future. The 1972 Convention on International Liability for Damage Caused by Space Objects discusses completely the substance of this article. Article 15 declares that the properties of one country on the Moon are open to inspection by other countries, within certain parameters and provides specifications for a forum for grievances arising from the provisions of this article. The substance of this provision can be found in articles IX and XII of the Space Treaty. Article 16 makes this entire treaty applicable to any international agency, providing such agency agrees to be bound. The provisions of this article are contained in entirety within article XIII of the Space Treaty. Article 17 provides for any countries who are members of this agreement to suggest amendments and guidelines. Article XV of the Space Treaty also allows member countries to propose amendments. Article 18 provides parameters for review of this agreement by the UNCOPUOS. Article 19 covers the ratification procedures to enact this agreement. Article 20 provides the policy and guidelines for a member's withdrawal. Article 21 prescribes the method to be used in the storage and keeping of this treaty.

61. See the Moon Treaty, *supra* note 9, art. I, subdivision 1.

62. See *Generally*, the Space Treaty, *supra* note 7.

63. See the Moon Treaty, *supra* note 9, art. III.

64. See the Space Treaty, *supra* note 7, art. IV, para. 2.

65. See the Moon Treaty, *supra* note 9, art. VII.

66. See the Space Treaty, *supra* note 7, art. IX.

67. See the Moon Treaty, *supra* note 9, art. X.

68. See the Space Treaty, *supra* note 7, art. V, para. 2; the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, *supra* note 8.

owned, and also that all State Parties have exploration rights on the Moon. The article requires the State Parties to establish an "international regime" to govern space activities, and sets forth policy and guidelines for that regime.⁶⁹ While it does not use the term "Common Heritage," article I of the Space Treaty does require that exploration of space, the Moon, and other celestial bodies be "for the benefit of all countries," and that they are "the province of all mankind." Further, article II of the Space Treaty states that "Outer space, including the Moon and other celestial bodies, is not subject to national appropriation . . . by any . . . means."⁷⁰

III. EFFECT ON EXISTING SPACE LAW

A. *Fresh and Valuable Aims*

Despite its shortcomings, the Moon Treaty prescribes some valuable and previously unaddressed objectives. The requirement of signatories to the treaty to consider the possible repercussions of their actions in space and their effect both on the present and future generations' quality of life is a significant new objective.⁷¹ Absent such a responsibility, a nation-state or intergovernmental group might engage unchecked in reckless depletion of valuable resources either on Earth,⁷² or someday, of other celestial bodies. Similarly, the provision charging the signatories with a duty to prevent forward and reverse contamination⁷³ during space exploration and travel is also necessary and commendable,⁷⁴ and previously unmentioned. The proposal of an "international regime" to "govern the exploration of natural resources of the Moon" will be essential in some form or another when earnest space exploration and Moon excavation begin.⁷⁵ Even now, in the mere preparation stages, negotiations for management and administration responsibilities over a proposed future intergovernmental space project have been difficult because of conflicts over the roles to be played.⁷⁶ As previously noted, many of the negotiating

69. See the Moon Treaty, *supra* note 9, art. XI.

70. See the Space Treaty, *supra* note 7, arts. I & II.

71. See the Moon Treaty, art. 4 para. 1. In fact, none of the four other major agreements make reference to this point, although the accord on liability addresses present damages.

72. The Moon Treaty does not directly address space travel-related activities on Earth. However, space traveling states are required to consider the possible repercussions of activities related to their space travel without specifically stating that the area to be protected is space and/or the celestial bodies.

73. Forward contamination refers to the possibility of explorers bringing contaminants to the new environment. Conversely, reverse contamination refers to explorers carrying contaminants from the new environment to their home environment.

74. Moon Treaty, *supra* note 9, at art. 7, para. 1.

75. *Id.* at art. 11, paras. 5, 6, and 7. Effective regulation of this mining will require fair and impartial treatment. This will most likely require administration by a large and diverse group of representatives from the governments of the various state parties.

76. N. GOLDMAN, *AMERICAN SPACE LAW*, 186 (1988). One concern is how the facility and benefits will be shared by the parties involved. Another concern is whose law

parties within COPUOS recognize the theme of "Common Heritage of Mankind" as morally and equitably appropriate. These provisos of the Moon Treaty represent, without question, some of the matters which need to be addressed as progress continues and the existing space law foundations are expanded and improved.

B. Drawbacks

The major drawback of the Moon Treaty is that the document is mostly a compilation of dictates from the past agreements.⁷⁷ The only truly new proposals of law set forth in this document are those discussed above. Only six of the twenty-one articles of the Moon Treaty contain provisions which a previous space law accord does not effectively address.⁷⁸ In addition to the dearth of new ideas, the areas that are novel lack the clarity necessary to make an effective difference, and would probably be settled during the normal course of space exploration.⁷⁹ Many commentators believe that COPUOS could have adopted the few important new ideas in the Moon Treaty as amendments to the Space Treaty.⁸⁰ This is significant because, as presently constructed, it is very unlikely that the Moon Treaty will ever be signed by enough parties to make it effective space law. Moreover, it is highly unlikely that the United States or the Soviet Union will become signatories in any event. Thus, those new, laudable proposals introduced in the Moon Treaty will most likely not take effect. If those ideas were proposed as amendments

will govern on the space station and modules. These are points that must be settled before the proposed space station is completed.

77. See *supra* note 29. This fact, combined with the current opposition to the "Common Heritage" theme, represents the most objectionable aspects of the Moon Treaty. If it were an entirely new legal doctrine, the Treaty might have garnered the support needed to be signed by the requisite number of States to become effective.

78. See *generally* note 60.

79. Those areas are: 1. The differences in article 4 as discussed above. 2. Article 5, para. 2 - requires countries going into space simultaneously to advise one another of their perspective locations in space. Even without this mandate, space powers aware of one another's convergent plans would most likely communicate their respective intentions. Even if they did not, space flights would probably be tracked by other countries with space flight capability. 3. Article 6 allows exploring countries to administer collected samples however they see fit. In the absence of this treaty, prior space law would not preclude such actions. This article also suggests exchanging personnel for scientific observation. Previous space law requires facilities be open to inspection by other countries. 4. Article 7 requires countries to advise the U.N. Secretary-General of any areas of "special scientific interest" on the Moon. Since it is clear that any type of appropriation would be disallowed, all areas of the Moon and other celestial bodies are open for all to survey. 5. Article 8 specifically gives permission to excavate on or below the surface of the Moon. Existing space law would not preclude this in the absence of the Moon Treaty. 6. Article 9 gives countries express permission to erect edifices on the Moon, and requires keeping the U.N. advised of their status. Countries are also prohibited from impeding free access to any part of the Moon from any other countries. Again, erecting space stations would not be prohibited by the existing space accords and the non-appropriation doctrine would preclude any country from interfering with another country's access to any part of the Moon.

80. See the Moon Treaty, *supra* note 9, Article xv.

to the Space Treaty, however, they would be unbridled by the "Common Heritage" doctrine. The ideas would then have a very good chance of being adopted into the existing space law. This is an unlikely scenario, however, as such action would mean relinquishing the "Common Heritage" claim, at least for now. That seems to be a concession non-space parties will not make.

CONCLUSION

The first universal convention establishing rules applicable to outer space was the Space Treaty of 1967.⁸¹ Until that time, no international space law existed to avert space conflicts, or to guide nations embarking on space travel capability.⁸² Of even more significance is the effectiveness quotient of the Space Treaty; it was borne of a rapidly growing need, filling a developing vacuum in the law. While general principles of international law existed, they could not and would not have equalled the task of regulating the journey into space.⁸³ In this respect, the Space Treaty brought a new kind of law into existence; the kind capable of guiding activities in this new and different frontier. However, due to rapidly advancing technology and other factors, one agreement, or even several, will not be durable and malleable enough to always meet the problems which accompany this development,⁸⁴ hence the creation of the Moon Treaty.

As discussed above, the real motivation behind the treaty was the objective of third world and non-space powers to reserve for themselves a share of resource wealth secured through future space exploration.⁸⁵ However, even if the absence of the "Common Heritage" idea was a fault in the existing space law, the Moon Treaty will not necessarily rectify the problem. In hindsight, the inclusion of the "Common Heritage" idea, although not adequately defined in the treaty, is what will most probably doom the treaty.⁸⁶

Further, this document does not adequately address those areas which most need clarification: establishing a legal order in space, defining "outer space" and the regulation of GEO, and setting up guidelines for space colonization.⁸⁷ Overall, the Moon Treaty lacks legal precision because its key terms are never defined and are left open to the interpretations of the individual signatories.⁸⁸ The proposition that the Moon Treaty "clarifies other existing agreements . . . with regard to the explo-

81. E. VAN BOGAERT, *ASPECTS OF SPACE LAW*, 25 (1986).

82. *Id.*

83. *Id.* at 26.

84. G. REYNOLDS & R. MERGES, *supra* note 17, at 44-45.

85. *See supra* notes 25-47, and accompanying text. The first representative to suggest borrowing the phrase "Common Heritage of Mankind" from the Law of The Sea Treaty and applying it to space law was a non-space power member.

86. G. REYNOLDS & R. MERGES, *supra* note 17, at 116.

87. *See supra* notes 41-47, and accompanying text.

88. *Id.*

ration and exploitation of outer space . . ."⁸⁹ is not valid. If anything, the Moon Treaty is more confusing than any of the former accords.⁹⁰ It is not surprising that many in the space law field are of the opinion that the Space Treaty of 1967 still "enjoys the broadest subscription and the highest regard."⁹¹ The Space Treaty still stands as the foundation and operative law of space exploration.

One of the specifically stated objectives discussed above has been addressed adequately; the promotion of exchange of scientific results could be earnestly effected following the article 6 proviso requiring consideration by State Parties of the exchange of personnel for scientific investigation purposes. However, this treaty does not enhance opportunities and conditions for the evaluation, research, and exploration of the natural resources of celestial bodies. Further, it does nothing more to assure exclusively peaceful use of celestial bodies than the Space Treaty of 1967 had already done. The great irony of the Moon Treaty is that the actual reason for its creation, to implement the theory of "Common Heritage of Mankind," is the very barrier to its ratification by the great space powers.

For the space arena to develop, a body of law must support its growth.⁹² Most impressive about the Outer Space Treaty may be the absence of mandates harmful to space law development.⁹³ We are still in the very early stages of extra-terrestrial exploration, and it will still be a number of years before the people of Earth are able to utilize the resources of celestial bodies. The current state of the Moon Treaty offers no substantial cures to the long-term areas of concern in space exploration.

However, the future promises to present new challenges. The United States is proposing the construction of a space station in the 1990's⁹⁴ under a near-equal partnership among a number of space powers.⁹⁵ Eventual development of space communities is inevitable.⁹⁶ A forward-reaching international body of law must be in place and capable of meeting the complex problems that colonization will present. When this time comes, the world's nations should meet the need for a new, substantial space accord with a legitimate space challenge panacea, not a document offering a "shadowy legitimacy in law."⁹⁷

James R. Wilson

89. C. OKOLIE, INTERNATIONAL LAW OF SATELLITE REMOTE SENSING AND OUTER SPACE, 49 (1989).

90. Comm. Print, *supra* note 10, at 78-79 (1979).

91. G. REYNOLDS & R. MERGES, *supra* note 17, at 62.

92. *Id.* at xvi.

93. *Id.* at 49.

94. N. GOLDMAN, *supra* note 2, at 186.

95. *Id.*

96. G. REYNOLDS & R. MERGES, *supra* note 17, at 307 (excerpt from a 1987 address by Justice William J. Brennan Jr. to the American Law Institute).

97. Cheng, *supra* note 29, at 213.

APPENDIX

**Treaty Governing the Activities of States
on the Moon and Other Celestial Bodies
(The Moon Treaty) 1979****Article I**

1. The provisions of this Agreement relating to the moon shall also apply to other celestial bodies within the solar system, other than the earth, except insofar as specific legal norms enter into force with respect to any of these celestial bodies.
2. For the purposes of this Agreement reference to the moon shall include orbits around or other trajectories to or around it.
3. This Agreement does not apply to extraterrestrial materials which reach the surface of the earth by natural means.

Article II

All activities on the moon, including its exploration and use, shall be carried out in accordance with international law, in particular, the Charter of the United Nations, and taking into account the Declaration of Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations, adopted by the General Assembly on 24 October 1979, in the interests of maintaining international peace and security and promoting international co-operation and mutual understanding, and with due regard to the corresponding interests of all other States Parties.

Article III

1. The moon shall be used by all States Parties exclusively for peaceful purposes.
2. Any threat or use of force or any other hostile act or threat of hostile act on the moon is prohibited. It is likewise prohibited to use the moon in order to commit any such act or to engage in any such threat in relation to the earth, the moon, spacecraft, the personnel of spacecraft or man-made space objects.

3. States Parties shall not place in orbit around or other trajectory to or around the moon objects carrying nuclear weapons or any other kinds of weapons of mass destruction or place or use such weapons on or in the moon.

4. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on the moon shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration and use of the moon shall also not be prohibited.

Article IV

1. The exploration and use of the moon shall be the province of all mankind and shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development. Due regard shall be paid to the interests of present and future generations as well as to the need to promote higher standards of living and conditions of economic and social progress and development in accordance with the Charter of the United Nations.

2. States Parties shall be guided by the principle of co-operation and mutual assistance in all their activities concerning the exploration and use of the moon. International co-operation in pursuance of this Agreement should be as wide as possible and may take place on a multilateral basis, on a bilateral basis or through international intergovernmental organizations.

Article V

1. State Parties shall inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of their activities concerned with the exploration and use of the moon, information on the time, purposes, locations, orbital parameters and duration shall be given in respect of each mission to the moon as soon as possible after launching, while information on the results of each mission, including scientific results, shall be furnished upon completion of the mission. In the case of a mission lasting more than 60 days, information on conduct of the mission, including any scientific results, shall be given periodically at 30 days' intervals. For missions lasting more than six months, only significant additions to such information need be reported thereafter.

2. If a State Party becomes aware that another State Party plans to operate simultaneously in the same area of or in the same orbit around or trajectory to or around the moon, it shall promptly inform the other state of the timing of and plans for its own operations.

3. In carrying out activities under this Agreement, States Parties shall promptly inform the Secretary-General, as well as the public and the international scientific community, of any phenomena they discover in outer space, including the moon, which could endanger human life or health, as well as of any indication of organic life.

Article VI

1. There shall be freedom of scientific investigation on the moon by all States Parties without discrimination of any kind, on the basis of equality and in accordance with international law.

2. In carrying out scientific investigations and in furtherance of the provisions of this Agreement, the States Parties shall have the right to collect on and remove from the moon samples of its mineral and other substances. Such samples shall remain at the disposal of those States Parties which caused them to be collected and may be used by them for scientific purposes. States Parties shall have regard to the desirability of making a portion of such samples available to other interested States Parties and the international scientific community for scientific investigation. States Parties may in the course of scientific investigations also use mineral and other substances of the moon in quantities appropriate for the support of their missions.

3. States Parties agree on the desirability of exchanging scientific and other personnel on expeditions to or installations on the moon to the greatest extent feasible and practicable.

Article VII

1. In exploring and using the moon, States Parties shall take measures to prevent the disruption of the existing balance of its environment whether by introducing adverse changes in that environment, by its harmful contamination through the introduction of extraenvironmental matter or otherwise. States Parties shall also take measures to avoid harmfully affecting the environment of the earth through the introduction of extraterrestrial matter or otherwise.

2. States Parties shall inform the Secretary-General of the United Nations of the measures being adopted by them in accordance with paragraph 1 of this article and shall also, to the maximum extent feasible, notify him in advance of all placements by them of radioactive materials on the moon and of the purposes of such placements.

3. States Parties shall report to other States Parties and to the Secretary-General concerning areas of the moon having special scientific interest in order that,

without prejudice to the rights of other States Parties, consideration may be given to the designation of such areas as international scientific preserves for which special protective arrangements are to be agreed upon in consultation with the competent bodies of the United Nations.

Article VIII

1. States Parties may pursue their activities in the exploration and use of the moon anywhere on or below its surface, subject to the provisions of this Agreement.

2. For these purposes States Parties may, in particular:

(a) Land their space objects on the moon and launch them from the moon;

(b) Place their personnel, space vehicles, equipment, facilities, stations and installations anywhere on or below the surface of the moon.

Personnel, space vehicles, equipment, facilities, stations and installations may move or be moved freely over or below the surface of the moon.

3. Activities of States Parties in accordance with paragraphs 1 and 2 of this article shall not interfere with the activities of other States Parties on the moon. Where such interference may occur, the States Parties concerned shall undertake consultations in accordance with article XV, paragraphs 2 and 3 of this Agreement.

Article IX

1. States Parties may establish manned and unmanned stations on the moon. A State Party establishing a station shall use only that area which is reasonable for the needs of the station and shall immediately inform the Secretary-General of the United Nations of the location and purposes of that station. Subsequently, at annual intervals that State shall likewise inform the Secretary-General whether the station continues in use and whether its purposes have changed.

2. Stations shall be installed in such a manner that they do not impede the free access to all areas of the moon by personnel, vehicles and equipment of other States Parties conducting activities on the moon in accordance with the provisions of this Agreement or of article I of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

Article X

1. States Parties shall adopt all practicable measures to safeguard the life and health of persons on the moon. For this purpose they shall regard any person on the moon as an astronaut within the meaning of article V of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies and as part of the personnel of a spacecraft within the meaning of the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space.
2. States Parties shall offer shelter in their stations, installations, vehicles and other facilities to persons in distress on the moon.

Article XI

1. The moon and its natural resources are the common heritage of mankind, which finds its expression in the provisions of this Agreement and in particular in paragraph 5 of this article.
2. The moon is not subject to national appropriation by any claim of sovereignty, by means of use or occupation, or by any other means.
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 non-governmental 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 foregoing provisions are without prejudice to the international regime referred to in paragraph 5 of this article.
4. States Parties have the right to exploration and use of the moon without discrimination of any kind on a basis of equality, and in accordance with international law and the terms of this Agreement.
5. States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the moon as such exploitation is about to become feasible. This provision shall be implemented in accordance with article XVIII of this Agreement.

6. In order to facilitate the establishment of the international regime referred to in paragraph 5 of this article, States Parties shall inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of any natural resources they may discover on the moon.
7. The main purposes of the international regime to be established shall include:
 - (a) The orderly and safe development of the natural resources of the moon;
 - (b) The rational management of those resources;
 - (c) The expansion of opportunities in the use of those resources;
 - (d) An equitable sharing by all States Parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries which have contributed either directly or indirectly to the exploration of the moon, shall be given special consideration.
8. All the activities with respect to the natural resources of the moon shall be carried out in a manner compatible with the purposes specified in paragraph 7 of this article and the provisions of article VI, paragraph 2, of this Agreement.

Article XII

1. States Parties shall retain jurisdiction and control over their personnel, vehicles, equipment, facilities, stations and installation on the moon. The ownership of space vehicles, equipment, facilities, stations and installations shall not be affected by their presence on the moon.
2. Vehicles, installations and equipment or their component parts found in places other than their intended location shall be dealt with in accordance with article V of the Agreement on Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space.
3. In the event of an emergency involving a threat to human life, States Parties may use the equipment, vehicles, installations, facilities or supplies of other States Parties on the moon. Prompt notification of such use shall be made to the Secretary-General of the United Nations or the State Party concerned.

Article XIII

A State Party which learns of the crash landing, forced landing or other unintended landing on the moon of a space object, or its component parts, that were

not launched by it, shall promptly inform the launching State Party and the Secretary-General of the United Nations.

Article XIV

1. States Parties to this Agreement shall bear international responsibility for national activities on the moon, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in this Agreement. States Parties shall ensure that non-governmental entities under their jurisdiction shall engage in activities on the moon only under the authority and continuing supervision of the appropriate State Party.

2. States Parties recognize that detailed arrangements concerning liability for damage caused on the moon, in addition to the provisions of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies and the Convention on International Liability for Damage Caused by Space Objects, may become necessary as a result of more extensive activities on the moon. Any such arrangements shall be elaborated in accordance with the procedure provided for in article XVIII of this Agreement.

Article XV

1. Each State Party may assure itself that the activities of other States Parties in the exploration and use of the moon are compatible with the provisions of this Agreement. To this end, all space vehicles, equipment, facilities, stations and installations on the moon shall be open to other States Parties. Such States Parties shall give reasonable advance notice of a projected visit, in order that appropriate consultations may be held and that maximum precautions may be taken to assure safety and to avoid interference with normal operations in the facility to be visited. In pursuance of this article, any State Party may act on its own behalf or with the full or partial assistance of any other State Party or through appropriate international procedures within the framework of the United Nations and in accordance with the Charter.

2. A State Party which has reason to believe that another State Party is not fulfilling the obligations incumbent upon it pursuant to this Agreement or that another State Party is interfering with the rights which the former State has under this Agreement may request consultations with that Party. A State Party receiving such a request shall enter into such consultations without delay. Any other State Party which requests to do so shall be entitled to take part in the consultations. Each State Party participating in such consultations shall seek a mutually acceptable resolution of any controversy and shall bear in mind the rights and interests of all States Parties. The Secretary-General of the United

Nations shall be informed of the results of the consultations and shall transmit the information received to all States Parties concerned.

3. If the consultations do not lead to a mutually acceptable settlement which has due regard for the rights and interests of all States Parties, the parties concerned shall take all measures to settle the dispute by other peaceful means of their choice and appropriate to the circumstances and the nature of the dispute. If difficulties arise in connection with the opening of consultations or if consultations do not lead to a mutually acceptable settlement, any State Party may seek the assistance of the Secretary-General, without seeking the consent of any other State Party concerned, in order to resolve the controversy. A State Party which does not maintain diplomatic relations with another State Party concerned shall participate in such consultations at its choice, either itself or through another State Party or the Secretary-General as intermediary.

Article XVI

With the exception of articles XVII to XXI, references to this Agreement to States shall be deemed to apply to any international intergovernmental organization which conducts space activities if the organization declares its acceptance of the rights and obligations provided for in this Agreement, and if a majority of the States members of the organization are States Parties to this Agreement and to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies. States members of any such organization which are States Parties to this Agreement shall take all appropriate steps to ensure that the organization makes a declaration in accordance with the foregoing.

Article XVII

Any State Party to this Agreement may propose amendments to the Agreement. Amendments shall enter into force for each State Party to the Agreement accepting the amendments upon their acceptance by a majority of the States Parties to the Agreement and thereafter for each remaining State Party to the Agreement on the date of acceptance by it.

Article XVIII

Ten years after the entry into force of this Agreement, the question of the review of the Agreement shall be included in the provisional agenda of the General Assembly of the United Nations in order to consider, in the light of past application of the Agreement, whether it requires revision. However, at any time after the Agreement has been in force for five years, the Secretary-General of the United Nations, as depository, shall, at the request of one third of the States

Parties to the Agreement and with the concurrence of the majority of the States Parties, convene a conference of the States Parties to review this Agreement. A review conference shall also consider the question of the implementation of the provisions of article XI, paragraph 5, on the basis of the principle referred to in paragraph 1 of that article and taking into account in particular any relevant technological developments.

Article XIX

1. This Agreement shall be open for signature by all States at United Nations Headquarters in New York.
2. This Agreement shall be subject to ratification by signatory States. Any State which does not sign this Agreement before its entry into force in accordance with paragraph 3 of this article may accede to it at any time. Instruments of ratification or accession shall be deposited with the Secretary-General of the United Nations.
3. This Agreement shall enter into force on the thirtieth day following the date of deposit of the fifth instrument of ratification.
4. For each State depositing its instrument of ratification or accession after the entry into force of this Agreement, it shall enter into force on the thirtieth day following the date of deposit of any such instrument.
5. The Secretary-General shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or accession to this Agreement, the date of its entry into force and other notices.

Article XX

Any State Party to this Agreement may give notice of its withdrawal from the Agreement one year after its entry into force by written notification to the Secretary-General of the United Nations. Such withdrawal shall take effect one year from the date of receipt of this notification.

Article XXI

The original of this Agreement, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations, who shall send certified copies thereof to all signatory and acceding States.

