

# Myths of the Moon Agreement

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Since nothing has happened on the Moon since 1979, except for the deorbiting of a few spacecraft, there has been no hurry to ratify the Moon Agreement. It cannot be said that events have passed the treaty by, since there have been none of significance since it was opened for signature. Perhaps the agreement is not dead, but merely sleeping, for with the recently developed interest of the US in returning to the Moon, the time may be approaching when the agreement should be reawakened.

There is far more to the Moon Agreement than meets the eye. Just as in reading the Constitution of the United States one must at least be cognizant of the settled law that has provided the generally-agreed interpretation of that document, one must read the Moon Agreement with a knowledge of other documents that illuminate its language. The most detailed analysis of the text of the Moon Agreement, without reference to the record of negotiations and the uncontradicted statements of delegations, misses the mark. An examination of the record of the negotiation history will show that the United Nations Committee on the Peaceful Uses of Outer Space laid to rest major differences in interpretation and that it achieved consensus before submitting the agreement to the General Assembly. Most remaining controversy over interpretation arises after the fact from those who have not considered the negotiating history.

There are four principle points of controversy regarding the Moon Agreement, that it:

- **Imposes a moratorium on exploitation of the resources of the moon and other celestial bodies until the establishment of a governing regime.**
- **Requires establishment of a governing regime.**
- **Prohibits private resource property rights.**
- **Allows a governing regime to tax private enterprises.**

**This paper debunks these myths.**

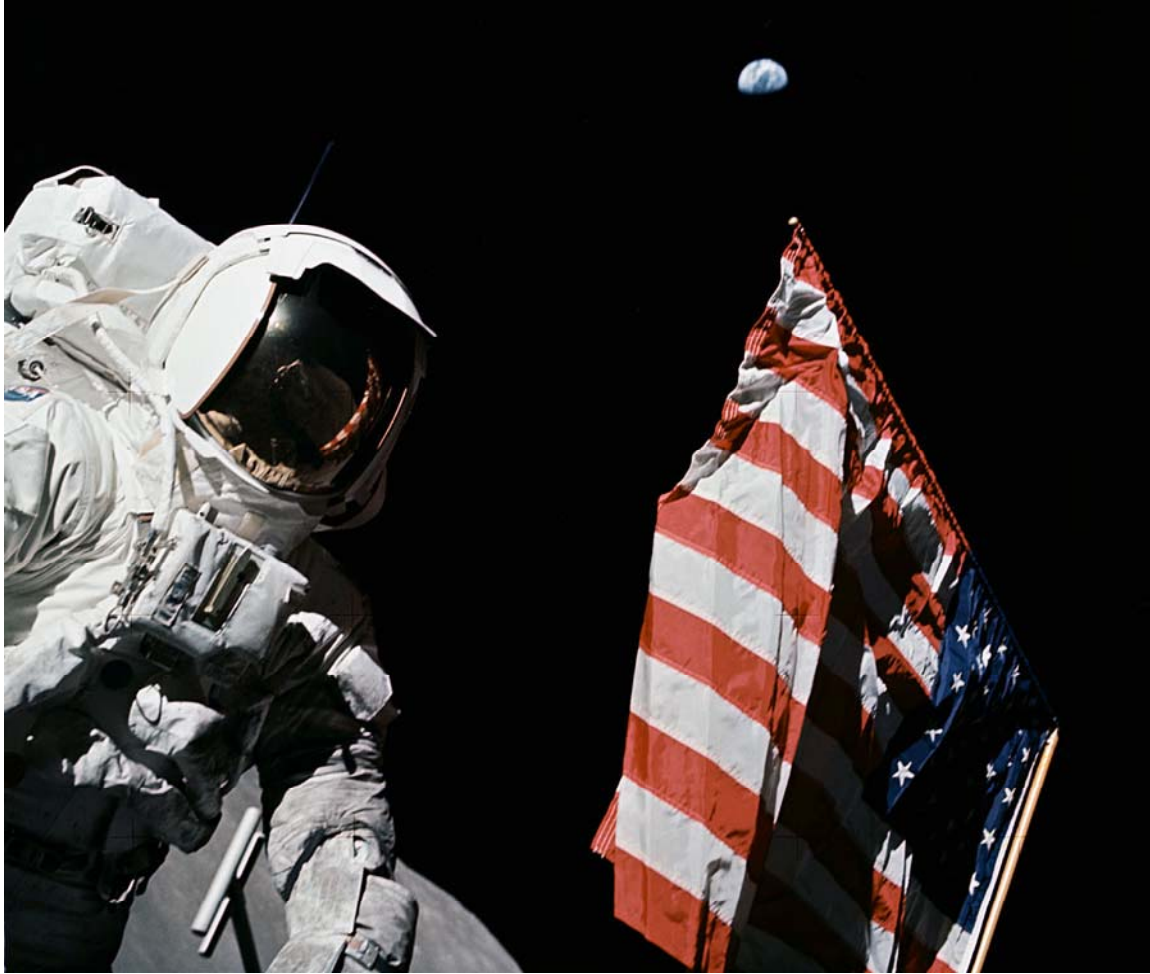
## I. Introduction

Testifying before the Senate Space Subcommittee on 6 November 2003, former *Apollo 17* Lunar Module Pilot and former Senator Harrison H. Schmitt states:

On the question of international law relative to outer space, specifically the Outer Space Treaty of 1967, that law is permissive relative to properly licensed and regulated commercial endeavors. Under the 1967 Treaty, lunar resources can

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**Figure 1. Apollo 17 LM Pilot Harrison Schmitt at Taurus-Littrow, December 1972.** Source: NASA.

be extracted and owned, but national sovereignty cannot be asserted over the mining area. If the Moon Agreement of 1979, however, is ever submitted to the Senate for ratification, it should be deep sixed. The uncertainty that this Agreement would create in terms of international management regimes would make it impossible to raise private capital for a return to the Moon for helium-3 and would seriously hamper if not prevent a successful initiative by the United States Government (Schmitt 2003).

Like many people who have been around the space community for several decades, my impression of the Moon Agreement was negative because everything I had ever read about the agreement was negative. I was a member of the L-5 Society in the late 1970s and early 1980s. Some of my dues funded Leigh Ratiner's lobbying campaign to defeat the Moon Agreement. Then, 25 years later, I did something crazy: I read the actual agreement. Most importantly, I also read its negotiating history and the commentators on both sides. As Martin Menter, vice-president of the International Institute of Space Law (IISL), put it:

A reading of the [Moon Agreement], without consideration of its negotiated history, reflects some key words or phrases that are without definition, infer a meaning other than intended, ambiguous or not clear in intent. In the COPUOS and its two subcommittees, agreement on a matter under consideration is obtained by consensus; that is agreement is not obtained until no further objection is made. As objections are made, piecemeal changes are suggested. While the intent of a change would be clear at the time it was made, a reader of the entire provision not having the benefit of the detailed consideration accorded the total effort may arrive at a conclusion not in accord with the intent of the provision (Menter 1980).

In other words, there is far more to the Moon Agreement than meets the eye. Just as in reading the Constitution of the United States one must at least be cognizant of the settled law that has provided the generally-agreed interpretation of that document, one must read the Moon Agreement with a knowledge of other documents that illuminate its language. Article 32 of the Vienna Convention on the Law of Treaties states:

Recourse may be had to supplementary means of interpretation, including the preparatory work of the treaty and the circumstances of its conclusion, in order to confirm the meaning resulting from the application of article 31 ["General Rule of Interpretation"], or to define the meaning when the interpretation according to article 31:

- (a) leaves the meaning ambiguous or obscure; or
- (b) leads to a result which is manifestly absurd or unreasonable.

It may be pointed out that the US signed the Vienna Convention in 1970, but has never ratified it. At the time the Moon Agreement hearings in the US Senate in July 1980, Senator Adlai E. Stevenson III, Chairman of the Subcommittee on Science, Technology, and Space, Senate Committee on Commerce, Science and Transportation, asked Robert B. Owen, State Department legal adviser, how that affected the position he had taken on the interpretation of the Moon Agreement in the hearings. Owen's written response, dated 13 August 1980, was:

While the United States has not yet ratified the Vienna Convention on the Law of Treaties, we consistently apply those of its terms which constitute a codification of customary international law. Most provisions of the Vienna Convention, including Articles 31 and 32 on matters of treaty interpretation, are declaratory of customary international law.

As a matter of judicial and executive practice, negotiating history, like the legislative history of a statute, is frequently relied upon in U.S. domestic law and in international law to interpret treaties (USS 1980, 19).

Thus the most detailed analysis of the text of the Moon Agreement, without reference to the record of negotiations and the uncontradicted statements of delegations, misses the mark. An outstanding example of this is University of West Florida political science professor David S. Myers' analysis of the agreement. One of his many erroneous conclusions is:

It may be that because of the apparent meaning attached to the "common heritage of mankind" principle, private industry will have little incentive to take the initiative in outer space ventures. That is, if profits from natural resources mining must immediately be passed on to all states, non-governmental entities will be reluctant to become involved. Moreover, the requirement that an international regime be created when exploitation becomes feasible suggests that any private venture in progress would be subject to additional restraints, thus reducing its freedom to an even greater extent. Logically, the apparent legal barriers to freedom of activities for private industry established by this provision will limit the form of economic system in outer space to one of a socialist variety and ultimately to a single, international monopoly. It is surprising that states with a private enterprise tradition have given their initial consent to this provision (Myers 1980).

It surprises Myers only because he has focused solely on the text of the agreement to the exclusion of the historical record of its development, thus he has been led to a result that is manifestly absurd and unreasonable. Another opponent of the Moon Agreement, Stanley B. Rosenfield, also does a great deal to muddy the waters. In addressing the problem of "radically opposed interpretations," to use Danilenko's phrase once again:

In each of these problem areas the question is whether the United States view or some other view should prevail. The question is why cannot Art. XI be drafted so that the rights and obligations of all parties are understood in the same manner by all parties? The objection is to an agreement in which major provisions are subject to different interpretations by different states. The objection is to differences which are evident today, but the resolution is left to future speculation (Rosenfield 1980).

An examination of the record of the negotiation history will show that COPUOS laid to rest major differences in interpretation and that it achieved consensus before submitting the agreement to the General Assembly. Most remaining controversy over interpretation arises after the fact from those who have not considered the negotiating history. As to resolution left to future speculation, any adjudication process regarding future disputes would find the agreed interpretation at the time of submittal in the negotiation history and would be obliged to rule on that basis, except where subsequent international agreements had superseded specific provisions of the Moon Agreement in question.

The presentation of Theodore E. Wolcott, a professor at the Hastings College of Law, University of California, is particularly egregious. Barely more than a page of text, it argues no legal points at all; rather, it is a tirade of irrelevancies and errors of fact that would not earn a passing grade in a lower division class. Most of this single page can be boiled down to a stream of condescending unconsciousness:

...the Moon Agreement can be rejected as unrealistic and unsettling....

The final draft has not succeeded on quieting the controversies over the interpretation of its terms and clauses... such as "Common heritage of mankind;" "use" and "exploitation of the natural resources of the moon;" "to establish an international regime" to govern the foregoing and assure the "equitable sharing of benefits" with "special consideration" to "the interests and needs of the developing countries as well as the efforts of those countries which have contributed to the exploration of the moon..." Keeping pace with a succession of drafts, a spate of learned papers with differing interpretations on the above issue have long poured forth. It may be said with reasonable confidence that the latest version promises grist for the scholarly and other mills for years to come.

It would not be an oversimplification to state that the issues boil down to whether the developed and big countries must wait upon and defer to the developing and small states.



**Figure 2. US Apollo CSM/LM Spacecraft and Saturn V Launch Vehicle.** Source: NASA.



**Figure 3. Soviet Soyuz 7K-LOK/LK Spacecraft and N1 Launch Vehicle.** Source: RKK Energiya.

Assuming but not conceding that the time is ripe for some sort of treaty solely dealing with the moon and its environment, it remains questionable whether it would serve any useful purpose to go much further than the principles treaty of 1967. At a minimum Article XI should be omitted as creating nothing but a source of international bickering while at the same time impeding initiative for future development of the moon resources....

Compare the demands of a number of equatorial countries that are claiming sovereignty over and the sole right to that part of outer space above their territories that can be occupied by satellites in geostationary orbit. It is also pertinent to note that whereas the principles treaty provides that outer space should be used only for peaceful purposes, a substantial number of satellites with obvious military implications have been placed in orbit by states party thereto....

The recommendation by the General Assembly that states ratify the Agreement should be weighed in light of its membership. We are constantly witness to the selective manner in which certain special interest groups, regions and blocs operate in the General-Assembly and in some of the agencies of the U.N (Wolcott 1980).

If nothing else, one may appreciate Wolcott's rhetorical flair, but his paper is a mission without a plan; he has flown over a number of targets without inflicting much damage on any of them. As usual, such invective reveals more about the author than about the subject. Wolcott's antipathy for the Third World and the United Nations is flagrant. His misunderstanding of the role of military space systems is also blatant, and although it is outside the focus of this work, Wolcott's remarks deserve a brief refutation by someone who has worked on some of these military programs. Article IV of the Outer Space Treaty and Article 3 of the Moon Agreement both declare that the Moon and other celestial bodies shall be used "exclusively for peaceful purposes." Additionally, Article IV of the Outer Space Treaty provides:

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

Therefore, military systems are permitted in Earth orbit so long as they do not carry weapons of mass destruction, and Wolcott's implication that states have routinely violated the Outer Space Treaty is patently false. Nor is a military system necessarily a non-peaceful use of outer space. For example, the 1963 Partial Nuclear Test Ban Treaty, the 1972 Strategic Arms Limitation Treaty (SALT I), the 1972 Anti-Ballistic Missile (ABM) Treaty, the 1979 Strategic Arms Limitation Treaty (SALT II), the 1991 Strategic Arms Reduction Treaty (START I), and the 1993 Strategic Arms Reduction Treaty (START II) all rest on each state's "national means of verification," in other words, surveillance from outer space (the 1987 Intermediate-range Nuclear Forces or INF Treaty, provides for on-site inspection). These military space systems have made nuclear deterrence more stable and less expensive in that they have enabled the rolling back of the arms race and have kept either side from making a fateful strategic miscalculation. These spacecraft have contributed to a more secure and more prosperous world.



**Figure 4. Soviet Soyuz 7K-L1 Spacecraft and UR-500 Launch Vehicle.** Source: RKK Energiya.

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A common refrain from the Moon Agreement's opponents is to link its language and provisions to those of the 1982 United Nation Convention on the Law of the Sea (UNCLOS III). Richard G. Darman, who in 1980 was at the John F. Kennedy School of Government, and who in 1989 would become George H. W. Bush's director of the Office of Management and Budget, issues a fair challenge to the agreement's proponents:

I end up saying that the probability of the regime to be negotiated if the Moon Treaty were ratified turning out like the emerging seabed treaty is a very high probability; and the burden of argument should be on those who would assert that this is not the case.

It is, however, not a certainty that it would end up like the deepsea mining regime (USS 1980, 166).

This paper takes up Darman's challenge.

## **II. The Common Heritage of Mankind**

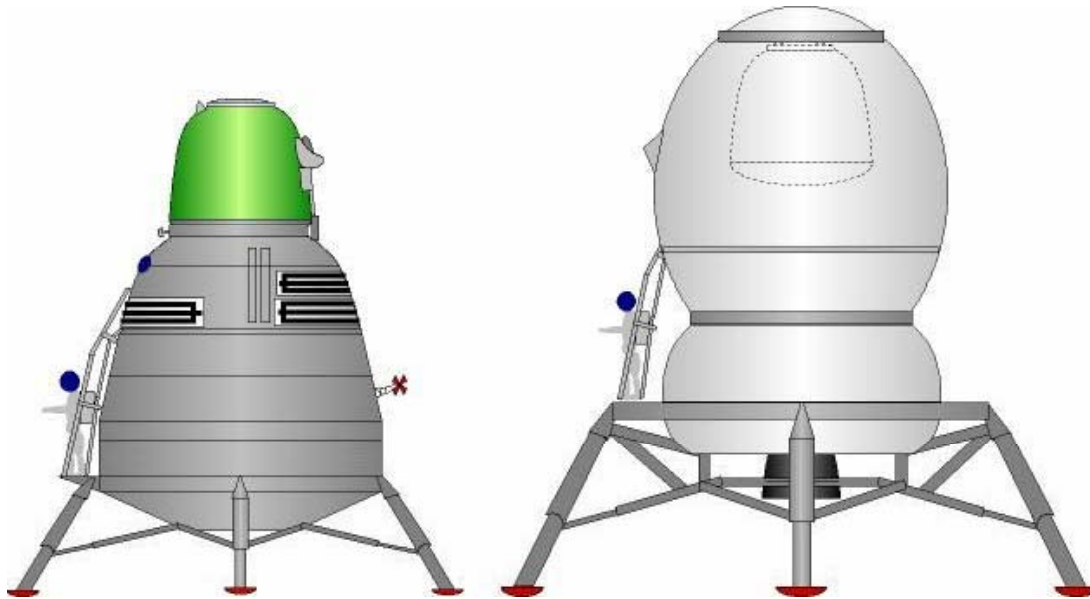
At the time of his Congressional testimony against the Moon Agreement, Leigh Ratiner was a partner in the law firm of Dickstein, Shapiro, and Morin. Prior to that, he had been in the US government for 15 years, serving in a number of federal agencies including the Department of the Interior and the Federal Energy Office. From 1969 to 1977 he was a member of the US delegation to the Law of the Sea Conference and for four of those years he was the principal US negotiator for seabed mining issues. As he explains to the Subcommittee on Space Science and Applications, House Committee on Science and Technology:

It is in part because of this experience at the Law of the Sea Conference that the L-5 Society asked me to appear before you today on their behalf and share with you some thoughts on the recently concluded moon treaty, with particular regard to its relationship to the Law of the Sea Convention which may itself be concluded next year after eleven years of negotiation.

That treaty, Mr. Chairman, gives us the roadmap to the meaning and interpretation which the moon treaty will have, should it ever become the law of the land (USHR 1979, 101).

Ratiner's years of experience in dealing with Third World negotiators really shines through in his sensitive retelling of the story of decolonization:





**Figure 5. 1970 and 1972 Soviet L3M Designs for Extended Lunar Missions.** Despite the failures in their L3 program to place a cosmonaut on the Moon for a few hours' stay, the Soviets planned more ambitious follow-on missions. Source: astronautix.com.

It has only been since the late 1960's that roughly 90 of the developing countries—there are now about 120 developing countries in the world—became sovereign states, they found that there were economic jeopardies attached to being free. They no longer had the mother countries to provide for their economies. Freedom tasted very good, and all of them opted to remain free and not go back under the wing of the mother country. But they had economic problems of gargantuan proportions (USHR 1979, 109-110)....

Thus did the white man unburden himself.

...and understandably, in the early 1970's, they began to realize that only through concerted political action in the United Nations could they begin to acquire the strength—the voice, if you will—that traditionally had been held by the western industrialized countries and the socialist countries.... In 1973, when OPEC taught the whole world a lesson about what collective power can do with respect to the transfer of wealth from the wealthy to the poor, it gave this growing developing country movement in the United Nations tremendous impetus to really begin a rallying cry for the transfer of wealth from industrialized countries to developing countries.

Now, that rallying cry took many different forms in the United Nations organizations where developing countries were represented through this coalition (which came to be called the group of 77, because when the developing countries formed that coalition there were 77)....

The Group of 77 in the United Nations developed a manifesto called the New International Economic Order. It is a charter that if I can summarize it—perhaps unfairly, because it's a very long and very complex document—essentially says that those in this world who use the raw materials from those who supply them are going to have to pay for those raw materials dearly.

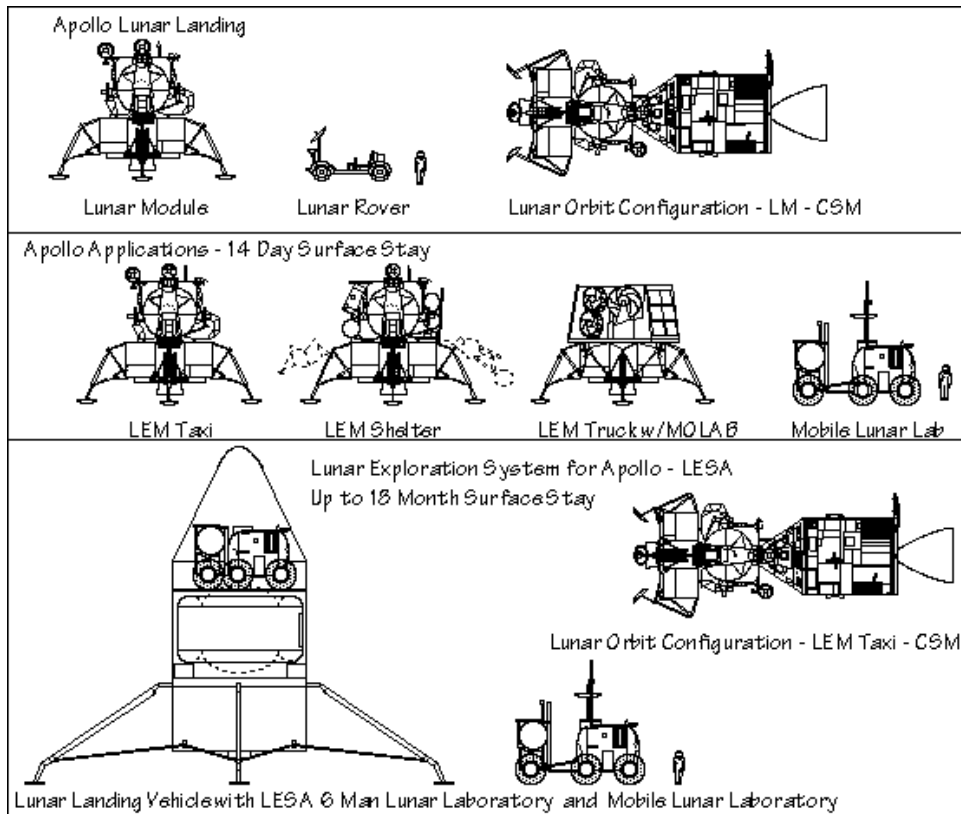
The New International Economic Order then spread out. Developing country representatives in every different United Nations forum where an opportunity arose adopted that declaration and began to try to proselytize its main features and principles (USHR 1979, 110).

The lesson that Ratiner draws from history is clear: if the Senate ratifies the Moon Agreement, the Third World will force future generations of Americans to wait in lines for hours to pay ten dollars per gallon at the gasoline pump.

Finally, Mr. Chairman, let me say that, in the context of this treaty, there is absolutely no justification for conceding to Third World control the resources of our solar system (USHR 1979, 114).

...[I]f we sign this treaty and ratify it, we will be sacrificing an interest we cannot even calculate today in terms of the source of the world's resources in the next 100 years. Will they come from outer space, what will those resources be, and what happens to mankind's whole reach for outer space if we essentially put under an international socialist system the development of all the resources in the solar system beyond Earth (USHR 1979, 116)?

And at the root of this international socialist threat to the American way is the "common heritage of mankind."



**Figure 6. Apollo Applications for Long-Duration Lunar Missions.** Most of NASA's plans for extended manned lunar surface missions went unfunded. The exception was the "J" mission (*Apollo 15* through *Apollo 17*), in which an improved Lunar Module enable a three-day stay on the surface and carried the Lunar Roving Vehicles. Source: astronautix.com.

Mr. Chairman, the draft moon treaty uses as its legal precedent the 1970 UN Declaration of Principles on the Seabed and Ocean Floor Beyond the Limits of National Jurisdiction which declared the resources of that area to be the "common heritage of all mankind." If we are to fully understand that concept... we must first understand the historical context in which it arose and how it fits into a complex international negotiating scenario which is now sweeping through all UN bodies and conferences concerned with economics.

It is therefore incumbent on all of us to scrutinize with the utmost care how the principle that resources are the common heritage of mankind has been interpreted in the Law of the Sea Convention to determine whether the U.S. should now sign a treaty on the moon that contains a significant risk that all of the natural resources of our solar system will be subject to the same international regime as is being contemplated for the bottom of the oceans (USHR 1979, 101-104).

In testimony before the Senate Space Subcommittee, Ratiner suggests that the only way to make sure that the American interpretation of the "common heritage of mankind" prevails for all time is to insist on negotiating a protocol to the Moon Agreement explicitly defining the term before signing and ratifying the agreement. He also makes it clear that in his understanding of global economics, "it would not be possible to do so (USS 1980, 118)." Thus, insisting on an impossible protocol is just another way of killing the treaty.

Ratiner does a masterful job. Not having a background in space law, rather than argue directly against the Moon Agreement, he plays to his strong suit (and to the House and Senate Space Subcommittees' weak suit) by indicting the Convention on the Law of the Sea (on which he had worked for eight years), particularly the development of the meaning of the "common heritage of mankind" in that venue, and he implicated the Moon Agreement as guilty by association. Moreover, the Moon Agreement was the nose of the camel under the flap of the tent; if the Senate ratified it, it would find it difficult to reject the Convention on the Law of the Sea (UNCLOS III):

Mr. Chairman, I could perhaps, since I've spent so many years of my life on this subject, go on all day giving you examples of what has happened to the doctrine, common heritage.... What we are faced with is a treaty on the Moon that is about to be opened for signature by the United Nations. At least the Law of the Sea Convention is a year of more away (USHR 1979, 113).

Representative John Breaux (D-LA) followed his friend Ratiner later in the day, beginning his testimony to the House Space Subcommittee with:

You might wonder why someone who's chairman of a fisheries subcommittee has any interest in appearing before your subcommittee (USHR 1979, 142).

Well, his purpose certainly was not to discuss fisheries in the Sea of Tranquility, although opponents of the Law of the Sea Convention were so hell-bent on killing the Moon Agreement that one might wonder that they did not try to assert a direct connection to the lunar maria. In any case, the big money on the street (K Street in Washington, DC) was laid out against UNCLOS III; the L-5 Society's beef against the Moon Agreement was just a little action on the side.

The technical problem with Ratiner's testimony is that:

- It does not interpret the Moon agreement "in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose," as required by Article 31, paragraph 1 of the Vienna Convention on the Law of Treaties. The agreement is clear on this point: the term "common heritage of mankind" is to be interpreted in the context of the agreement itself.
- It does not examine "supplementary means of interpretation, including the preparatory work of the treaty and the circumstances of its conclusion," as required by Article 32 of the Vienna Convention on the Law of Treaties.
- It does not discuss the Moon Agreement in the context of the previous space treaties that it references, which might constitute "supplementary means of interpretation" (the list in Article 32 is inclusive, not exclusive).

Rather, Ratiner's testimony refers to a draft treaty, not yet finalized, having nothing to do with the Moon, the negotiation of which had no connection with the negotiation of the Moon Agreement. Although the Moon Agreement has some superficial similarities to UNCLOS III, in that both include the phrase "common heritage of mankind" and both include provisions for international regimes to manage the exploitation of resources in the commons, this is not to say that "common heritage of mankind" has the same meaning in both treaties or that the two envisioned regimes will be identical in scope, purpose, structure, practice. The "relationship to the Law of the Sea Convention" that Ratiner alleges simply does not exist. His assertion that "the draft moon treaty uses as its legal precedent the 1970 UN Declaration of Principles on the Seabed and Ocean Floor Beyond the Limits of National Jurisdiction" is untrue; the Moon Agreement cites its legal precedents in its preamble, and the Seabed Declaration is not among them:

*Recalling the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, the Convention on International Liability for Damage Caused by Space Objects, and the Convention on Registration of Objects Launched into Outer Space....*

Unable to argue against the Moon Agreement using the best evidence (the Article 31 test), the second-best evidence (the Article 32 test), or even the third-best evidence to be found elsewhere in the body of outer space law, he does the only thing he can: he argues that irrelevant issues are in fact relevant. Most of his testimony hinges on the meaning of the "common heritage of mankind" as developed in the Law of the Sea Conference; however, since the "common heritage of mankind" language in the Moon Agreement finds its expression in the provisions of the agreement itself, whatever it means in UNCLOS III is irrelevant. Whatever the International Seabed Authority turns out to be is irrelevant, as the Moon Regime, dealing with an entirely different environment, might well evolve in an entirely different direction.<sup>†</sup> Ratiner presents no legal case at all, but rather a political case. He panders to the fear of "an international *socialist* system" despite the fact that it was the Union of Soviet *Socialist* Republics that objected the most strongly to the inclusion of the "common heritage of mankind" in the agreement (Gangale 2008). He also panders to the fear of Third World resource embargoes in an America still reeling from the oil shocks six years earlier, using that experience to build resentment for the newly-independent, underdeveloped nations of the world's economic periphery; this despite the fact that it was Argentina (a semi-peripheral industrialized state, independent since 1816) that introduced the "common heritage of mankind" term to space law, with the support of the United States (a core industrialized state, independent since 1776) and France (another core industrialized state, independent since 486). It should also be noted, in light of the 1994 Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea, which changes the character of the International Seabed Authority more to the US's liking (although it still has not signed UNCLOS III), that even the political

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<sup>†</sup> Indeed, UNCLOS III has evolved away from its earlier New International Economic Order planned-economy orientation toward the prevailing neoliberal, laissez-faire market-economy tenets of the World Bank/International Monetary Fund "Washington Consensus." This is most dramatically illustrated by the 1994 Agreement Relating to the Implementation of Part XI, which significantly rewrote the seabed mining rules.



arguments that Ratiner raises directly against UNCLOS III and indirectly against the Moon Agreement are certainly not valid now.

Not that they were valid then, either. Ratiner insists on either negotiating a protocol to the agreement, or renegotiating the agreement outright:

The solution... is to negotiate an agreed definition of “common heritage” before accepting it as a binding legal principle (USS 1980, 122).

However, the term was never accepted as a “binding legal principle” in the Moon Agreement, thus Ratiner’s insistence on an agreed definition, outside of the language of the agreement itself, is moot. What possible purpose does such insistence serve, except to obfuscate the fact that the term has no independent meaning and is not a “binding legal principle?”<sup>‡</sup> Ratiner repeatedly dismisses provisions of the Moon Agreement against which he can field no argument as being either “merely hortatory” or their “advantage is outweighed by the costs of other provisions,” yet it is obvious that his primary objection to the agreement—the common heritage clause—is the most hortatory provision of all (USS 1980, 124-130).

Darman’s written statement to the Senate Space Subcommittee discusses the various legal and political meanings of the “common heritage” phrase:

As a theoretical matter, the phrase might mean anything. If one were to take the plain English language connotation, one might suggest that all of human civilization could be construed as in some sense the common heritage of mankind—although it is not at all clear that one should then leap to the conclusion that all of human civilization must therefore be regulated by a negotiated international regime....

In one were to look for legal clarification, one would find that—at least for the time being—the phrase has no formal, widely accepted legal meaning (USS 1980, 168).

The American Bar Association’s Section of International Law reports:

There is no generally accepted definition of this term; furthermore, this or any other term may be specifically defined for the purposes of a particular text in which it is used. Although Article 11 does not say expressly what “common heritage” means, it does clearly state that the meaning is to be drawn from the provisions of the Agreement. Particularly as there are numerous relevant provisions within the Agreement to which reference can be made, this explicit direction to derive the definition only from within this text would seem to be legally sufficient to counter any assertion that the draft Law of the Sea Convention must be used as a precedent for the development of the future lunar resources regime....

The essence of the concept of common heritage in the context of this Agreement lies in the existence of common, that is, equally shared, rights to explore and use the moon and its natural resources. It does not, however, connote specific implementing criteria or procedures.

Following Robert B. Owen’s testimony, the Senate Space Subcommittee sent him written questions:

*Question 1:* Is the phrase the “common heritage on mankind” as used in the Moon Treaty in any way related to the use of that phrase in the negotiating text of the Law of the Sea Convention?

Answer: The phrase “common heritage on mankind” finds its meaning only in each particular context in which it is used. Its use in the Moon Treaty is related to the same phrase in the Law of the Sea context in a very general sense; the two negotiations have been largely contemporaneous and, in both, the phrase deal with depletable resources outside the limits of national sovereignty, to be exploited for the benefit of all. However, the detailed meaning and implications of the phrase “common heritage on mankind,” as used in the Moon Treaty, are not legally established or determined by the meaning and implementation of that phrase as applied in the negotiating text of the Law of the Sea Convention. Article 11, paragraph 1, of the Moon Treaty expressly denies such a relationship, stating that the phrase as applied to the moon and its natural resources “finds its meaning in the provisions of the agreement (USS 1980, 19-20).”

Just for curiosity’s sake, one might ask, how is the phrase “common heritage of mankind” defined in the Law of the Sea Convention? The Senate asked this very question of Marne A. Dubs, chairman of the Committee on Undersea Mineral Resources of the American Mining Congress, and vice-president of the mining firm, Kennecott Development Corporation, who replied:

The phrase “common heritage of mankind” is not defined in the draft Law of the Sea Convention (USS 1980, 143).

If this were a comedy, at this point the person on-camera would express surprise by spraying his beverage in uncontrollable laughter. Ignoring for the sake of argument that the Moon Agreement mandates that the “common heritage of mankind” must find its meaning in the agreement itself, if the phrase is not defined in the Law of the Sea Convention, that convention has no meaning to convey to the Moon Agreement!

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<sup>‡</sup> The debate over the meaning of “common heritage” in space law continues to evolve. Harminderpal Singh Rana (1994) accommodates a more market-oriented interpretation, while V. S. Mani (1996) adheres to the centrally-planned NIEO vision of space development. The relevance of this debate to the Moon Agreement is suspect, however, since the agreement requires that the term “finds its expression in the provisions of this Agreement,” and in that context, has been characterized as hortatory by many commentators.

**Table 1: Natural Resources Retrieved From the Moon**

<b>Mission</b>	<b>Earth Launch</b>	<b>Lunar Landing</b>	<b>Lunar Launch</b>	<b>Earth Landing</b>	<b>Returned Material (kg)</b>
<i>Apollo 11</i>	16-Jul-1969	20-Jul-1969	21-Jul-1969	24-Jul-1969	21.55
<i>Apollo 12</i>	14-Nov-1969	18-Nov-1969	19-Nov-1969	24-Nov-1969	34.35
<i>Luna 16</i>	12-Sep-1970	20-Sep-1970	21-Sep-1970	24-Sep-1970	0.10
<i>Apollo 14</i>	31-Jan-1971	5-Feb-1971	6-Feb-1971	9-Feb-1971	42.28
<i>Apollo 15</i>	26-Jul-1971	30-Jul-1971	2-Aug-1971	7-Aug-1971	76.80
<i>Luna 20</i>	14-Feb-1972	21-Feb-1972	22-Feb-1972	25-Feb-1972	0.06
<i>Apollo 16</i>	16-Apr-1972	21-Apr-1972	24-Apr-1972	27-Apr-1972	95.71
<i>Apollo 17</i>	7-Dec-1972	11-Dec-1972	14-Dec-1972	19-Dec-1972	110.52
<i>Luna 24</i>	9-Aug-1976	18-Aug-1976	19-Aug-1976	22-Aug-1976	0.17
US Subtotal					381.21
USSR Subtotal					0.33
Total					381.54

Source: en.wikipedia.org/

Another interesting exchange in Owen’s Q&A follow-up with the Senate Space Subcommittee regards the stance of the only other state to have retrieved natural resources from the Moon (see Table 1):

*Question 4:* What is the Soviet Union’s interpretation of the phrase “common heritage on mankind?”

Answer: Early in the Moon Treaty negotiations, the Soviet Union had taken the position that the “common heritage on mankind” was a philosophical, not a legal concept. In its 1973 working paper, the Soviet Union states that celestial bodies are available for the undivided and common use of all States, but are not jointly owned by them. The statements made by their representatives in 1976 and 1977 indicated that they considered the phrase “common heritage on mankind” to be juridically and politically vague, and its inclusion in the treaty “solves no problems.” The Soviet Union in 1976 rejected the notion “that space activities should be internationalized and a supra-State nature should be given to whatever body guides those activities.” The Soviet representative said that compromise on this matter should be sought through “very accurate interpretation of the concepts used in the draft treaty, on the basis of due respect for the sovereign rights of States participating in space activities.” The compromise which was accepted by the Soviet Union in 1979 specifically restricted the meaning of the phrase “common heritage on mankind,” as used in Article 11, to the terms of the Moon Treaty itself. The Soviets apparently consider it a political concept devoid of specific legal content and expect the phrase to take on any further content through negotiation (USS 1980, 21).

From this it is obvious that not only is all of this hand-wringing over the “common heritage of mankind” without any legal foundation, it is preposterous as a political argument. No opponent of the agreement ever mentions the Soviets’ adamant objection to the term.

### **III. Establishment of a Governing Regime**

It is interesting to note that while some critics of the Moon Agreement argue the lack of necessity for an agreement governing activities that are not likely to occur for decades, others argue against agreeing to the future establishment of an international regime “as such exploitation is about to become feasible.” Some even argue both points: it’s too soon to agree on anything now, and we shouldn’t agree now to the principle of future negotiation on an agreement. Now, what is so wrong about agreeing that one might talk about something in the future?

The truth is that there is no “requirement that an international regime be created,” as Myers asserts. Rosenfield makes the same error, and one of Wolcott’s (1980) few references is Rosenfield:

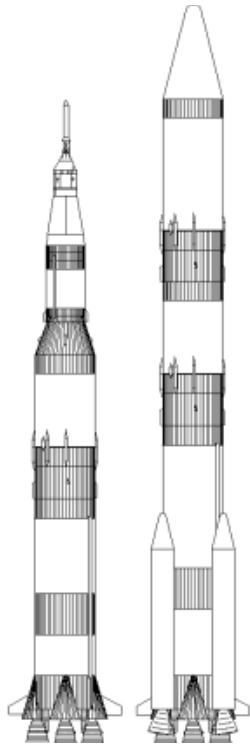
What type of authority is to be set up? Such will not be known until negotiation under these provisions is complete. A state party is bound to an international regime, without knowledge of when such will be established, or the contents of such regime (Rosenfield 1980).

Ratiner is also in error in his testimony before the House Space Subcommittee:

Article XI, paragraph 5, of the moon treaty commits the parties “to establish an international regime (USHR 1979, 104).”

This is simply incorrect, as a reading of the text of the Article 11, paragraph 5 immediately reveals:

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 18 of this Agreement.



**Figure 7. US Saturn V and Proposed Saturn V-25(S)U Launch Vehicles.** An extended Saturn V augmented with solid boosters and a NERVA nuclear upper stage was designed to launch astronauts on a Mars landing mission.

It is in his testimony before Senate Space Subcommittee that Ratiner outdoes himself describing in amazing detail “the Assembly of the International Space Authority” (“the plenary body”), “the Council of the International Space Authority” (“the executive body”), “its Tribunal,” and their voting procedures (USS 1980, 188). The entities to which Ratiner refers appear in no document; rather, they are the products of his overactive imagination. This is not even good science fiction; it is space opera.

Ernst Fasan of the IISL states regarding such misperceptions:

We will have to make clear that states *undertake* to establish such a regime and that this means that *not* such a regime would have been established by our agreement. To “undertake to establish” may mean that such a task is performed successfully by states in a certain space of time, but it also may mean that such an undertaking fails (Fasan 1980).

It also means that the US government need not negotiate under the gun, and can hold out for the best deal it can make to protect American private interests. Okolie envisions that one of the powers that the Moon regime would have would be to execute a mining rights contract with a corporation after the discovery of a resource had been reported, such contract specifying a zone of exclusive operation for the company. On Earth, such an arrangement would be transacted between a government and a mining company. In the absence of such a Moon Regime, there would be no administrative office with which an enterprise could file a mining claim, thus there would be nothing to prevent another enterprise from tapping into the same resource elsewhere in the same general area so long as there were no interference or threat to safety. In a working paper submitted in COPUOS on 17 April 1972, the US stressed the need for states to “recognize the importance of concluding agreements” regarding extraterrestrial natural resources for the purposes of:

...economic advancement and for the encouragement of investment and efficient development if utilization of the resources of the Moon and other celestial bodies becomes a reality (COPUOS 1972).

The Moon Agreement is such an agreement. What the agreement is not is a carbon copy of the Law of the Sea Convention. This becomes obvious in Darman’s written response to the Senate Space Subcommittee’s question, “In what ways does the deep sea mining regime emerging from the U.N. Conference on the Law of the Sea (UNCLOS) differ from the free access regime originally preferred, proposed, and expected by the United States?”

The institutional arrangements for the proposed new International Seabed Authority do not protect U.S. interests to the extent intended or anticipated (USS 1980, 169).

The Moon Agreement contains no such institutional arrangements for the proposed regime. These details are left to future negotiation of a second treaty.

Production is directly limited and may be limited further indirectly. (USS 1980, 169).

The Moon Agreement contains no direct limitations on production. An indirect limitation might be implied by the requirement to “take measures to prevent the disruption of the existing balance of its environment.”

The UNCLOS regime involves a system of mandatory technology transfer (USS 1980, 170).

The Moon Agreement contains no such mandate; it merely states that one of the purposes of the regime to be negotiated shall be “the expansion of opportunities in the use of... resources.

Access to natural resources is highly limited (USS 1980, 170).

The Moon Agreement contains no limitations on access except for the requirement that states parties “not interfere with the activities of other States Parties.”

[UNCLOS establishes] a globally chartered “Enterprise” in competition with state-sponsored entities on highly advantaged terms (USS 1980, 170).

The Moon Agreement contains no mention of such an “Enterprise.”

Unable to complain about the presence of such objectionable specifics in the Moon Agreement, its opponents instead complain about the absence of favorable specifics. This starts out as a far weaker argument as a direct criticism of the Moon Agreement, and it ends up with the logic of this position collapsing on itself. In his arguments against the Moon Agreement in general and the regime in particular, Ratiner insists on vastly greater specificity for such a regime:

States would have absolute and restricted rights to explore for, recover and use space resources;

Each state would determine whether its own nationals could engage in resource activities but would have the responsibility of controlling national activities to ensure compliance with safety, environmental and due diligence requirements of the regime;

States would acquire title to specific resource bodies upon discovery and notification to an international registration office;

Other states would only be bound to respect such resource claims, however, where they satisfied agreed international criteria relating to size, duration and noninterference with other uses;

Disputes over any State’s compliance with the regime would be submitted to binding international arbitration;

The States Parties to the regime would engage in periodic consultations concerning scientific and technological developments with a view towards developing recommended standards and practices for avoiding environmental harm and protecting human life and health in carrying out resource activities in space; and

Decision-making procedures would ensure that individual States exercised influence commensurate with their economic interests (USS 1980, 123).

Ratiner insists on specifics that the Moon Agreement never intended to address; rather, the agreement specifically intended for these details to be left for the future negotiation of a Moon Regime when, in NASA Administrator Robert A. Frosch’s words, everyone “understands what they are talking about.” The essence of Ratiner’s case is that the future Moon Regime is a bogeyman in the dark, and we should all be afraid of it unless we can make absolutely sure right now that the bump in the night is really just our puppy dog. It is ironic that the space enthusiasts who aspire to boldly go where no one has gone before fear the outcome of a future negotiation in Vienna. But then, Ratiner’s words are not inspired by the pioneering spirit of the High Frontier, but by the acquisitive instincts of the corporate world. For all the vague talk of “close parallels” by opponents of the Moon Agreement between it and the Law of the Sea Convention, the closest parallel of all is between Ratiner’s shopping list and that of Dubs:

Guarantee States and their companies unrestricted rights to explore for, exploit, and use space resources;

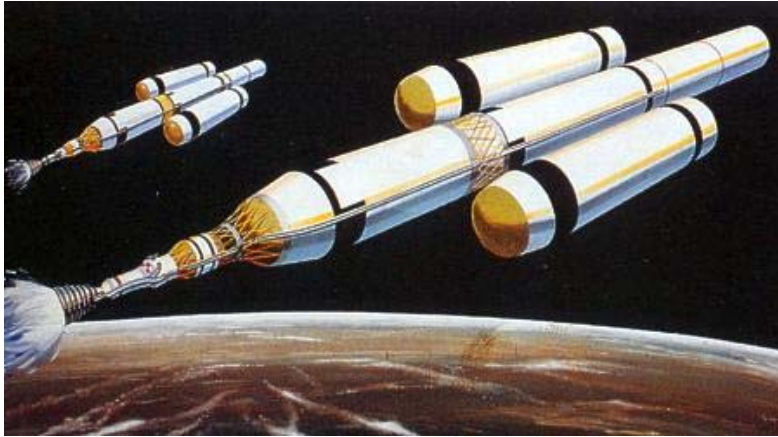
Allow each State to establish and enforce the basic terms and conditions governing such activities;

Create mechanisms for international decisionmaking which give these countries with an economic stake influence commensurate with their interests....

Finally, a satisfactory treaty would have to establish agreed and effective procedures for the settlement of disputes (USS 1980, 136).

The two shopping lists are similar because they are drawn up to feed the one and the same appetite. This detailed list of specifications for the regime in effect demands that the regime be precisely defined—in a word, “established”—not as an outcome of a second Moon Agreement, but of the first Moon Agreement. Yet, Dubs believes that “this agreement is premature (USS 1980, 137).” The logic of this position is that additional premature specificity makes the agreement less premature. There goes another beverage....

Meanwhile, although some opponents allude to the Moon Agreement as a Soviet plot, it was the Soviet Union that expressed the greatest opposition to the immediate establishment of a regime, but it agreed that the treaty might call for the future establishment of such a regime (COPUOS 1975). Meanwhile, the official US position was that an international institutional arrangement would at some point be essential to incentivizing commercial development. Before the idea of a regime became part of the draft agreement, the US proposed that a future conference would be convened:



**Figure 8. 1969 NASA Concept for a Mission to Mars Leaving Earth Orbit.** Source: NASA.

...with a view to negotiating arrangements for any international sharing of the benefits of such utilization of the resources of the celestial bodies, bearing in mind not only the goals of economic advancement, but also to encourage investment and the efficient development of those resources (COPUOS 1972b).

Several years of good-faith negotiations ought to produce the international regime envisioned by the Moon Agreement, together with the arrangements regarding the utilization of the resources that it would be charged with administering. As the Canadian representative to COPUOS stated:

...an international regime providing for generally acceptable institutional arrangements would eventually have to be worked out to govern the exploitation of those resources (COPUOS 1972a).

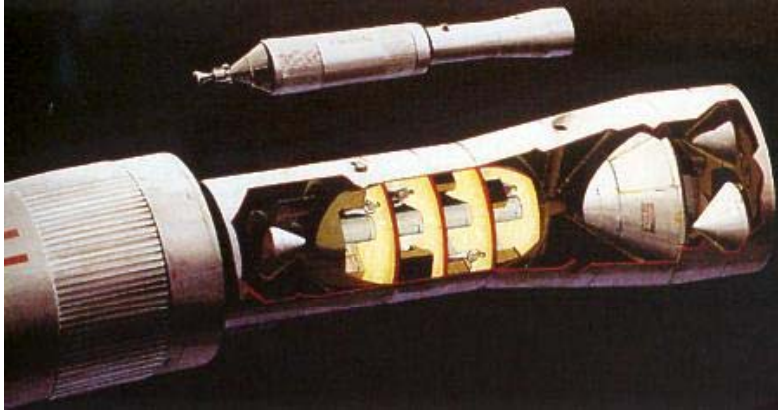
Carl Q. Christol recounts that the chances for a draft agreement being reported out of the Legal Subcommittee looked bleak in 1978. The breakthrough occurred the following year as a result of two compromises. One was the limitation of the meaning of the “common heritage of mankind” to the provisions of the agreement; the other was a consensus to defer the establishment of the Moon Regime to a later, undefined date. Thus the major space powers felt that their interests in exploiting the Moon in the pre-regime period were adequately protected. However, Christol deems Article 11, paragraph 5 to be the heart of the agreement:

Without the prescription for a future international regime it would not have been possible to achieve the main or other purposes of the Moon Treaty. Without the further provision for the future identification of appropriate procedures there would have been no assurance that machinery would be available to effect the practical dispositions contemplated by the regime’s purposes. The agreement that there should be both an international legal regime and an operative instrumentality to advance the specified goals was both logical and practical.... [W]ithout Article 11, par. 5, the attempt to bring an orderly legal structure to this aspect of the international law of the space environment would have been incomplete. Without the provision for the regime and the appropriate procedures it would have been possible to speculate that there might not be pursuant to the provisions of Article 11, par. 7, an “orderly and safe development of the natural resources of the Moon,” that there might not be a “rational management of those resources,” that there might not be an “expansion of opportunities in the use of those resources,” that there might not be the creation of a formula for “an equitable sharing by all States Parties in the benefits derived from those resources,” and that there might not be an open and orderly process to convert the resources of the Moon and celestial bodies to the service of the values, interests, wants, and needs of mankind (Christol 1980a).

Following Owen’s testimony, the Senate Space Subcommittee sent him written questions. Question 12 and Owen’s answer are:

*Question 12:* How can the Senate be clear and definitive on the point that another agreement dealing with an international regime must come before the Senate for separate consideration and that if the Senate should give advice and consent to the ratification of the Celestial Bodies Agreement, this does not permit the Executive Branch at some future time to conclude an executive agreement concerning an international regime?

*Answer:* The Executive Branch has made clear to the United Nations and the Senate that the agreement establishing an international regime would be submitted to the Senate for its advice and consent to United States ratification, just as we have sought and obtained advice and consent to United States ratification of the space treaties currently in force. The Senate Foreign Relations Committee should clearly and definitively state its view on the matter in a variety of ways. It might put on the record a statement that advice and consent to the Moon Treaty would not constitute authorization for the Executive Branch to adhere to an agreement concerning an international regime (USS 1980, 24).



**Figure 9. 1969 NASA Concept for a Mission En Route to Mars.** Source: NASA.

What is an issue here is whether a second Moon Agreement would be handled as a treaty, which requires a two-thirds vote of the Senate, or as an executive agreement, which has no such requirement. Were an understanding included in the Senate's instrument of ratification to the effect that a second Moon Agreement to establish the Moon Regime would require the advice and consent of the Senate, it would remove any legal obligation for the United States to ratify such a future agreement and become subject to such a regime. No legal principle can be construed as obligating the Senate to a preordained course of action. Even without such a formal understanding, Ratiner believes:

From a practical point of view, I doubt that the second lunar resource agreement envisioned under Article XI of the Moon Treaty would fail to be submitted to the Senate for its advice and consent. To develop a resource regime, such an agreement would inevitably impose important international obligations upon the United States. In light of the probable substance of these obligations, any Administration would be very unlikely to attempt to implement the agreement without Senate advice and consent, whether or not it could be classified as a "treaty" for the purpose of United States Constitutional requirements (USS 1980, 132).

Since Ratiner allows that the Senate could reject a second Moon Agreement, he demolishes his argument that the U.S. would be obligated to establish the Moon Regime. Still, he attempts to frighten the Senate with the bogeyman in the dark:

If we ratify this moon treaty, then we will be obligated under Article XI, paragraph 5, to "establish" a resource exploitation regime. If we then reject the subsequent regime the majority of States Parties negotiate, the political pressure on the U.S. to go along will be tremendous (USS 1980, 129).

Indeed? In view of the many international treaties that have gained wide acceptance and to which the US is not party, it hardly seems as though the home of the brave allows itself to be pushed around by the rest of the world and caves in to political pressure to go along.

Now, to get back to one of Rosenfield's questions, "What type of authority is to be set up?" In his response to a question from the Senate Space Subcommittee, Hosenball writes:

[COPUOS] did not set forth in the treaty nor in the negotiating history what form such a regime should take. What it is to be, its form, its procedures are to be decided at some future time. In French law, it means a system of rules and regulations, but it may also be more generally defined so as to include organizational arrangements (USS 1980, 66).

As an analogy, the General Agreement on Tariffs and Trade (GATT) established a system of rules to regulate international trade, and in that sense it was a regime; however, the International Trade Organization envisioned at the Bretton Woods conference in 1944 did not materialize at the time. The GATT evolved without a standing organization through several rounds of negotiations from 1944 until 1995, when the World Trade Organization was created by the Uruguay Round of GATT negotiations (Stiglitz 2002, 11-16). Given that the global trade system operated for half a century without an administrative organization, it certainly cannot be presumed that the Moon Regime would necessarily take the form of a formal organization at the outset, rather it might evolve into one in the course of many decades as administrative needs evolve. In any case, trepidation over the shape of things to come is not an appropriate basis for opposing the agreement. Ronald F. Stowe, chairman of the Aerospace Law Committee, Section of International Law, American Bar Association, testifying before the Senate Space Subcommittee regarding the Moon Agreement and its purposes, states:

In the event we are unable to obtain an acceptable outcome from the resource regime negotiations, the United States must be determined enough and independent enough to refuse to become a party to that regime. But we can make that decision later. There is no advantage or justification for making it now. It is not the present treaty which threatens our interests, but the worst case potential of a future one (USS 1980, 70).



Or as Kennedy phrased it in his inaugural speech:

Let us never negotiate out of fear. But let us never fear to negotiate (Kennedy 1961).

#### IV. A Mining Moratorium

Gennady M. Danilenko aptly refers “radically opposed interpretations” of the Moon Agreement. In particular:

While the Outer Space Treaty proclaims freedom in the use of outer space, which, as generally recognized, includes the freedom to exploit its resources, the Moon Treaty is regarded by many as imposing a moratorium on exploitation of the resources of the moon and other celestial bodies (Danilenko 1989).

Dula uses a semantic analysis of the word “undertake” to construe such a moratorium:

It is arguable that “undertake in Article XI, Paragraph 5, should be read in its obligatory sense. This would place an obligation on the signatory states to establish an international regime that would be equal to their clear obligation to abide by the regime’s main purposes. As a practical matter, states engaging in activities affecting the natural resources will determine whether or not their activities are compatible with the major purposes set forth in Article XI, Paragraph 7 either by participating in an existing international regime or by making such determinations unilaterally. In the former case, the international regime must be established before any use may be made of space natural resources other than for the scientific uses specifically permitted by Article VI. In the latter case each state can do whatever it wishes with space resources, which clearly contradicts the purpose of the treaty. Thus, in order to give meaningful effect to the obligations of Article XI, Paragraph 8, the Moon Treaty *as a whole* contemplates the creation of an international regime prior to allowing the use of space natural resources for the other than scientific and “pilot plant” purposes (Dula 1979, 8-9).

However, as discussed earlier, the word “undertake” does not have the obligatory sense that Dula imputes. The United States stated in COPUOS “that the agreement establishing an international regime would be submitted to the Senate for its advice and consent (USS 1980, 24).” This is part of the agreement’s negotiation record. No obligation to consent can be presumed; otherwise the “consenting” party is not a free entity, and consent is superfluous. Given that Dula’s construction of “undertake” is incorrect, his construction of a moratorium is baseless.

Other discussions of a supposed moratorium surround the meaning of the words “exploitation” and “feasible.” Haanappel reasonably construes “exploitation” to mean profit as the principal purpose of the activity, as distinct from experimental exploitation, and asks:

When is exploitation about to become feasible?

It seems that exploitation about to become feasible, when exploration and experimental exploitation have proven that commercial exploitation is technically and economically possible. It is submitted that the technical and economic aspects must go hand in hand. If exploitation becomes technically possible, but its costs would be prohibitive, it seems that further research, exploration and technological developments are required to arrive at the stage of true feasibility....

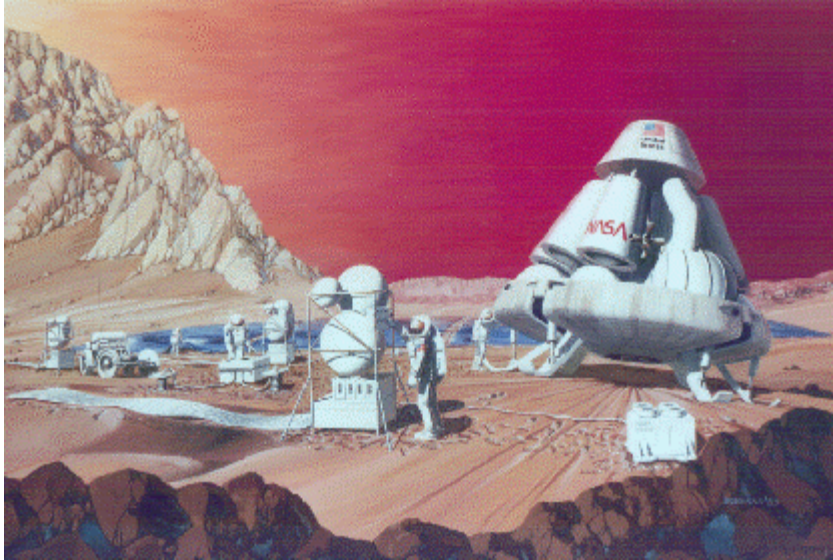
Thus, once there is feasibility, States undertake to establish an international regime....

The question then remains, whether full-scale or commercial exploitation of the natural resources of the moon is permissible pending the establishment of an international regime or in the event that States cannot agree on such a regime. In other words, does paragraph 5 contain a moratorium on exploitation (Haanappel 1980)?

Another question, which Haanappel does not ask, is how does one know that commercial exploitation is feasible except by the fact of commercially successful exploitation? Therefore, a moratorium is logically incompatible with the requirement to undertake the establishment of a governing regime “as such exploitation is about to become feasible.” Furthermore, what enterprise would engage in such a venture in the expectation that, once having demonstrated the profitability of its operation, it would then be required to suspend its operation and await the pleasure of the international lawyers and diplomats to establish a regime before it could resume its operation? Since a moratorium would preclude the establishment of feasibility and therefore the establishment of a regime, a moratorium cannot possibly be implied by the language of the agreement. Such an interpretation is manifestly absurd and unreasonable. Yet, Ratiner uses this *ad absurdum* argument, not to *falsify* a null hypothesis, but, against all logic, to *verify* it!

In our judgment, the Moon Treaty will be a potentially crippling disincentive to investment in these R. & D. activities. Corporations will see it in their investment [sic] to await the conclusion of the second lunar resource negotiation before moving forward to design and test resource exploitation concepts. Unfortunately, by the terms of the Moon Treaty, these subsequent negotiations will not commence until exploitation is “about to become feasible”—in other words, until private enterprises or governments make the very financial commitments to R. & D. programs which are deterred by the uncertainties inherent in the provision for a future agreement exacerbated by the adoption of the common heritage and related principles (USS 1980, 120).

Since the Moon Agreement clearly anticipates the eventual feasibility of exploiting lunar resources, it cannot have the intent of foiling that eventuality. If it cannot have that intent, any interpretation that leads to that effect is incorrect. Any other conclusion is absurd on its face.



**Figure 10. 1969 NASA Concept for a Mission on Mars.** Source: NASA.

Article 6, paragraph 2 of the agreement sets forth the clear right of the extraction of natural resources for specific purposes, thereby codifying what had been established as customary law by American control of Apollo mission samples and Soviet control of Luna mission samples:

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.

If exploitation means that the principal purpose of the activity is profit, commercial exploration counts as exploration and not exploitation, and is therefore permitted. The purpose of such missions would be to explore the feasibility of exploitation, not exploitation per se, thus they would be permitted to “use mineral and other substances of the moon in quantities appropriate for the support of their missions.” This is a form of “scientific investigation” in that it is science applied to the purpose of making a profit some time in the future. Applied science is science, every bit as much as pure science is. It must also be considered that this paragraph not only refers to “carrying out scientific investigations,” but to the “furtherance of the provisions of this Agreement.” It is only logical to construe the latter phrase to mean activities that further the objective of advancing technology to the point at which “exploitation is about to become feasible,” a state of affairs that key provisions of the agreement are clearly meant to address.

Additionally, as Haanappel observes, “in the event that the treaty drafters would have wished to create a moratorium, they would have done so in more explicit terms.” Still, despite the obvious illogic of a moratorium, were the subject never raised during negotiations, there would remain some room for doubt, but this is not the case. Early on in the negotiations, statements by the COPUOS representatives of Mexico, India, and Iran put forward the claim that the obligation to establish an international regime amounts to recognition of the moratorium (COPUOS 1973; 1974; 1976). But from beginning to end, the US opposed any suggestion of a moratorium:

The treaty relating to the Moon could not reasonably require that exploitation must await the establishment of the treaty-based regime (COPUOS 1973b).

Finch and Moore state:

Two factors lead to the conclusion that no moratorium on the exploitation of lunar resources was either intended or established. First, neither this Article nor the Treaty establishes the right of States to exploit lunar resources. That right was recognized in Article 1 of the 1967 Outer Space Treaty. Paragraph 5 cannot, therefore, be read as a conditional grant of a new right, and it does not purport to be a limitation of an existing one. Second, if the drafters had intended to adopt a moratorium, they could easily have done so. The issue was expressly discussed before the Legal Subcommittee and the [COPUOS]. However, a review of the negotiating history reveals that language specifically calling for a moratorium was, in at least two instances, rejected during negotiation of the Moon Treaty (Finch and Moore 1980).

Also, any attempt to construe a moratorium where none is explicitly imposed runs counter to the basic principle of international law: that which is not prohibited is permitted. Nowhere in the Moon Agreement is the exploitation of natural resources prohibited in advance of the establishment of a governing regime, therefore such exploitation is permitted.

Rosenfield, an opponent of the agreement, states:

Whether Art. XI(5) requires the international regime to be in place before resources can be exploited is still being debated, The United States position is that it does not, as indicated by the statement of the U.S. representative delegate place in the record.... Not all states agree with the U.S. interpretation (Rosenfield 1980).

However, Rosenfield fails to document when the statement he cites was placed into the record, nor does he cite which states did not agree, and when any statements of disagreement were made and in what forum. This much is fact: the statement of US representative S. Neil Hosenball on 16 July 1979, once the committee had finalized the text of the agreement, was the last word on the subject in the official record of the negotiations:

[The agreement] places no moratorium upon the exploitation of the natural resources on celestial bodies, pending the establishment of an international regime. This permits orderly attempts to establish that such exploitation is in fact feasible and practicable, by making possible experimental beginnings and, then, pilot operations, a process by which we believe we can learn if it will be practicable and feasible to exploit the mineral resources of such celestial bodies (COPUOS 1979a; USHR 1979, 86).

As Hosenball testifies before the House Space Subcommittee:

These statements by the United States were not contradicted and constitute a part of the legislative history of the treaty negotiations (USHR 1979, 86).

The only place where Ratiner even comes close to making a legal argument in his House Space Subcommittee testimony is where he claims that in Hosenball's statement:

His own definition of the Moon Treaty excludes the permissibility of exploitation, and there is no question, using the civil law principle of *a contrario sensu* or the American legal principle of negative pregnant, that in this statement alone we have probably said to the rest of the world we do not think exploitation is permitted under the Moon Treaty (USHR 1979, 115).

However, Ratiner offers no explanation of this assertion, and since what he says is contrary to a common sense reading of Hosenball's statement, his negative interpretation miscarries. Dula takes another crack at it and comes to an equally erroneous conclusion regarding Hosenball's statement:

The United States' effort to preserve its legal rights to engage in resource development under the treaty clearly stops short of full-scale exploitation. Moreover, there is a strong legal inference, arising from paragraph of Article VI and paragraph 8 of Article XI, that commercially-oriented enterprises are even barred from engaging in the kind of experimental or pilot operations in Mr. Hosenball's statement above. The treaty permits the use of resources in "scientific investigations." To the extent that it excludes research and development activities undertaken by a commercial entity in the hope of future profit, paragraph 2 of Article VI would prohibit such an entity's using resource samples collected from the Moon and other celestial bodies either for research and development or for support of its missions. Paragraph 8 of Article XI reinforces this apparent prohibition on the conduct of interim resource activities by states and persons who are not pursuing scientific purposes (Dula 1979, 18-19).

Apparently, Dula believes that "scientific investigation" and "commercial research" are mutually exclusive terms. From this, we may confidently conclude that neither Nikola Tesla nor Guglielmo Marconi were scientists because they conducted their research the hope of future profit.

And, what possible motivation would the US have for "stopping short" in preserving its legal rights? Dula's interpretation certainly makes no sense from a policy standpoint. It also flies in the face of a fundamental legal principle: that which is not prohibited is permitted. Simply because "commercial exploitation" or "full-scale exploitation" is explicitly permitted is no basis for asserting that they are prohibited. In Dula's case, the source of the error is clear; he simply misrepresents Hosenball's statement by omitting his assertion that the agreement "places no moratorium upon the exploitation of the natural resources." This includes whatever adjective one cares to place before "exploitation:" "commercial," "full-scale," *et cetera*.

From this, Galloway concludes:

It is clear that there is no legal moratorium in the Moon Agreement prohibiting the exploitation of natural resources of the Moon and other celestial bodies between the present time and the establishment of an international regime, but some would argue that it would be even more certain if the wording of paragraph 56 had been included in the treaty text (Galloway 1980).

Following Owen's testimony, the Senate Space Subcommittee sent him written questions. Question 7 and Owen's answer are:

Question 7: If the United States signed and ratified the agreement, would this give other nations any control over the timing and direction of the U.S. private sector engaging in and expanding the commercial uses of space?

Answer: No. The Agreement establishes no legal moratorium on resources exploitation of other commercial uses of outer space and gives no other nation or group of nations control over the timing and direction of United States space

programs. The United States would not be obligated to adhere to a future international regime for resource exploitation if it contained unacceptable provisions in this or any other respect, and nonadherence to such a regime would not in any other way limit the right of the United States to exploit nonterrestrial natural resources (USS 1980, 22).

Hosenball's statement in COPUOS regarding the absence of a moratorium was uncontradicted:

The draft agreement... as part of the compromises made by many delegations, places no moratorium upon the exploitation of the natural resources on celestial bodies, pending the establishment of an international regime. This permits orderly attempts to establish that such exploitation is in fact feasible and practicable, by making possible experimental beginnings, then, pilot operations, a process by which we can learn if it will be practicable and feasible to exploit the mineral resources of such celestial bodies (COPUOS 1979; USHR 1979, 86)."

Dula remarks that Hosenball's statement seems "intended to contradict the clear language of the treaty regarding exploitation of space natural resources (Dula 1979, 10)." Here Dula defends the clarity of a document that elsewhere he dismisses as "vague (Dula 1979, 8)." More importantly, Dula entirely misses the significance of Hosenball's statement. Since the statement was uncontradicted and appears in the COPUOS final report on the Moon Agreement, it represents the consensus of COPUOS regarding the interpretation of the agreement and, pursuant to Article 32 of the Law of Treaties, this interpretation takes precedence over any other interpretation regarding a moratorium.

Ironically, one of the strongest claims staked out by Moon Agreement opponents is espoused by those who shy from asserting that there is a *de jure* mining moratorium, but at the same time theorize that it creates a *de facto* moratorium. They claim that the ambiguity of the phrase "common heritage of mankind," and of the power and scope of the regime to be born of future negotiation, and their possible link to the Law of the Sea Convention, combine to create so much uncertainty as to deter private enterprise from making the tremendous capital investments necessary to develop extraterrestrial resources. The reason it is such a strong claim is not that it is based on anything real, but that it is not; that it has the character of a self-fulfilling prophesy, as when Federal Reserve chairman Alan Greenspan spooks Thomas Friedman's (1999) "electronic herd" by asking:

[H]ow do we know when irrational exuberance has unduly escalated asset values, which then become subject to unexpected and prolonged contractions as they have in Japan over the past decade (Greenspan 1996)?

It can hardly be denied that at some level, economies operate as a confidence game; when investors lack confidence, they are hesitant to play the game. Thus, the more that Moon Agreement opponents say that the uncertainties about the agreement create a *de facto* moratorium, the more likely it is to be true, because they are doing as much as anyone to create these uncertainties in the minds of investors regarding their protections in the Moon Agreement.

## V. Resource Property Rights

Hosenball made the US position on resource property rights clear early in the negotiation of the Moon Agreement:

...[T]he words "in place"... are intended to indicate that the prohibition against assertion of property rights would not apply to natural resources once reduced to possession through exploitation either in the pre-regime period or, subject to the rules and procedures that a regime would constitute, following establishment of the regime (COPUOS 1973).

Oddly, Dula portrays Hosenball's statement as unilaterally contradicting "the clear meaning of the words 'in place (Dula 1979, 12);'" however, Dula does not say what he believes that "clear meaning" to be in a document he accuses of being vague, nor why Hosenball's statement contradicts it. Seemingly, the only unilateral interpretation permitted by Dula is his own, whatever that might be. In any case, as Dula himself states, Hosenball's statement "drew no response, and this silence is... a part of the history of the treaty." This fact proves that Hosenball's statement was not "unilateral;" rather, it expressed the consensus of the COPUOS Legal Subcommittee. An uncontradicted statement captures the consensus.

H. L. van Traa-Engelman of the Netherlands, who favors the Moon Agreement, nevertheless expresses concerns that it will put a damper on commercial exploitation:

Following the context of the relevant articles in the Moon Treaty there exists no explicit prohibition to exploit the moon resources before the existence of an international regime. But the expressed impossibility to obtain property rights outside of an international regime, imposed by Article XI.3 together with the acceptance of "the Common Heritage of Mankind" principle of Article XI.1 will definitely inhibit actual exploitation by any nation, party to this treaty or private enterprise in any state, party to this treaty (van Traa-Engelman 1980)....

But, is there an "expressed impossibility to obtain property rights outside of an international regime?" The legality of resource appropriation (as opposed to real property rights) can be—and has been—derived indirectly from the Outer Space Treaty; however, the Moon Agreement specifies in Article 11, paragraph 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.

Since the prohibition only applies to resources in place, resourced extracted from the Moon may become property. Haanappel comments:

The words “in place” are of paramount importance. An *a contrario* reasoning shows that natural resources on the moon, once no longer in place but removed, may become the property of States, organizations and natural persons. This may happen both during the pre-regime period pursuant to Article XI(4) and Article VI(2), and during the regime period pursuant to Article XI (5) (7), but during this latter period as qualified by the terms of the international regime (Haanappel 1980).

When Hosenball proposed the insertion of the term “in place” on 17 April 1973, he explained that the purpose was:

...to indicate that the prohibition against assertion of property rights would not apply to natural resources once reduced to possession through exploitation either in the preregime period or, subject to the rules and procedures that a regime would constitute, following the establishment of the regime (COPOUS 1973a)....

The committee accepted the American amendment without objection to Hosenball’s statement, thus this interpretation reflects the consensus of the committee, and any contradictory interpretation is incorrect.

Shortly after the Moon Agreement was opened for signature, Soviet law professor R. V. Dekanosov avers:

As regards the resources of celestial bodies, their juridical nature differs from that of the celestial bodies proper. The juridical nature of the latter is determined by principles of non-appropriation and common use. It is quite different with the resources of celestial bodies. The principle of non-appropriation applies to them, in particular, solely until they have not [sic] been extracted. It is this interpretation that should be given to Art. XI, para. 3 of the 1979 [Moon] Agreement....

What is implied here, as testified by the words “natural resources in place” and the general meaning of Art. XI, are natural resources which have not yet been alienated from the lunar territory, lunar surface or subsurface and make up with them one whole. Evidently, those resources which have already been extracted may be considered property (Dekanosov 1980).

So we see that the only two states that had at that point—and have ever—extracted resources from the Moon were in complete agreement regarding the legitimacy of such resources as property.

Furthermore, Article 6, paragraph 2 provides in part:

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.

Even Moon Agreement opponent Rosenfield admits, albeit with some demurral:

This is the first outer space treaty specifically granting the right to collect and remove and use substances from outer space. While minerals are not specifically mentioned in the 1967 Outer Space Treaty. It must also be noted that the practice to date has established the custom of collection and removal of samples (Rosenfield 1980).

Nevertheless, the provision is a clear statement of for property rights over extracted resources that is lacking in the Outer Space Treaty. Haanappel believes that the Moon Agreement is stronger on both explorative and exploitative resource property rights than the Outer Space Treaty is:

...the right of exploitation is recognized, something that the Outer Space Treaty had not done specifically. Article I(2) of the Outer Space Treaty recognizes the right to exploration and use, but is silent on the question of exploitation giving rise to different interpretations in this respect.

Finally... Article VI(2) [clarifies] the status of samples removed from the moon. Under the regime of the Outer Space Treaty and before the drafting of the Moon Treaty the right to collect samples was not universally recognized (Haanappel 1980).

Menter concurs:

It has been the reported position of some States and attorneys that exploitation of the natural resources of the moon would not be lawful under the present state of Space Law. Stated another way, the doubt that existed as to the lawfulness of exploitation of the moon’s resources will be removed by the [Moon Agreement’s] providing for exploitation. Hopefully, this will encourage private sector investment in such endeavor. The need to encourage such investment has been noted as a must item for subsequent conferences seeking to establish the international regime (Menter 1980).

Hosenball’s 1979 statement in COPUOS was uncontradicted:

...Article XI, paragraph 8, by referring to Article VI, paragraph 2, makes it clear that the right to collect samples of natural resources is not infringed upon and that there is no limit upon the right of States parties to utilize, in the course of scientific investigations, such quantities of those natural resources found on celestial bodies as are appropriate for the support of their missions. We believe that this, in combination with the experimental and pilot programs, will foster and further, and perhaps speed up, the possibility of the commercial or practical exploration of natural resources (COPUOS 1979; USHR 1979, 86).

Regarding Article 11, paragraph 5 and its implications for private enterprise, Okolie adds:

...we do not read any meaning into these lines that could be interpreted as barring participation of national and transnational corporations. By calling for a universal conception of the common ownership of outer space by all sovereigns, the treaty seems to give rise to a legal interpretation that exploitation of the natural resources of the Moon

should be conducted through the aegies [sic] of national government or through the operation of the law of the place of legal existence of such corporations, namely a state party to this treaty. Thus, the meaning we derive from this paragraph is that transnational corporations have the right to participate in space exploration and exploitation, but must do so through and with the protection of a state party to the treaty (Okolie 1980).

However, Ratiner warns of the detrimental effect on commercial activity coming from the duty to “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:”

Article XI, paragraph 6, of the moon treaty does require States Parties to disclose resources discovered on celestial bodies. This provision is arguably only a slight expansion of the existing obligation under Article XI of the Outer Space Treaty to inform of the results of outer space activities. To the extent the moon treaty makes the disclosure obligation more specific with respect to resources, however, it is probably detrimental to U.S. interests in commercial resource development. The reason is that mandatory disclosure of resource discoveries is a disincentive to private exploration for resources for commercial purposes (USS 1980, 132).

This is yet another Ratiner “worst case” reading of the agreement’s language. Is it not true that when a private entity files a mining claim, it informs a public entity, to the greatest extent feasible and practicable, of any natural resources it may have discovered? If there is no public disclosure, there can be no legal protection. One of the purposes of disclosure “to the greatest extent feasible and practicable” is to characterize the extent of the discovered resources and to delineate the claim thereto. This purpose is inherent in the right to be free from interference under Article 8, paragraph 3. Although Ratiner disagrees on this point:

I agree that the principle in Article IX, paragraph 1, which limits the size of areas needed for stations could prove a useful foundation for requiring in a later regime that resource claims must be diligently worked (USS 1980, 132).

Ratiner is so intent on picking apart the Moon Agreement that he fails to see the whole picture: Article 11, paragraph 6 provides for public disclosure, which establishes the basis of a claim; Article 9, paragraph 1 limits the size of a claim to that necessary to the mission of the station; and Article 8, paragraph 3 establishes the right to be free from interference while working the claim.

Regarding the protections that the Moon Regime might provide, Hosenball testifies:

...[A]rticle 9, paragraph 1, taken in conjunction with article 9, paragraph 2—shall not impede free access to all areas of the Moon—article 8, paragraphs 1, 2, and 3—pursuit of activities anywhere on or below its surface; place facilities, stations and installations on or below the surface of the Moon; and states shall not interfere with activities of other state parties on the Moon—and article 11, paragraphs 2 and 3—no sovereignty, no ownership—if applied to a mining facility in effect establishes procedures which I believe parallel mining operations on public lands in the United States; that is, locating an area having potential mineral resources, staking out the claim, filing the location of the claim with a central office, and the requirement to work the claim or it is considered abandoned.

The filing of the location of a claim does not transfer ownership of the public land to the claimant and similarly under the Moon Treaty the use and occupancy of an area of the Moon does not transfer ownership of that area of the Moon.

The noninterference provision of the treaty does in effect give the state party, or private enterprise party acting under authority of a state party, the equivalent of an exclusive privilege to mine the claim at the location reported to the Secretary General.

These treaty provisions also limit the area that can be mined to that which is required to conduct the mining operation, thus preventing a single state from excluding others from areas it is not using for such operations. Thus the Moon Treaty does contribute to the continuing development of space law and does provide more certainty than currently exists under the 1967 Outer Space Treaty (USS 1980, 50).

Viewed from this perspective, the failure of the Moon Agreement to be widely ratified has left unsolved a problem for prospective planetary enterprises that their governments will need to address at a future date: the ability of entities to acquire clear title to extracted natural resources.

## VI. Death And Taxes

Opponents of the Moon Agreement raise the concern that the Third World will demand such a large piece of the action that no private interests will invest in a lunar mining venture. In other words, the fear of being taxed to death will discourage investment. In his testimony before the Senate Space Subcommittee, Frosch voices skepticism with respect to the argument that general principles such as “common heritage of mankind” and “for the benefit and in the interests of all countries” would have a chilling effect on private investment:

Only if you insist on being chilled. I am not all that sympathetic with that. It is so general a statement that it is hard to be certain that it is, in fact, something that will be chilling. Subject to future negotiation. Everything is subject to tax somewhere and all taxes in the United States are subject to the future actions of the U.S. Congress. So no investor is sure of what will happen to his investment 5 years from now or 10 years from now. It is simply not clear to me that this general statement that you should be for the general good, is in fact, a more chilling thing than the prospect of future taxes in the United States.



But I presume, if I understand the structure of the treaty, that whatever regime were to be negotiated, would be a treaty matter and that in itself would have to be ratified by the U.S. Senate. That is, it would not simply be a matter of ratifying this treaty and then all else following automatically without reference to Congress. In that sense, it would be a matter of Congressional legislation (USS 1980, 42-43).

While Ratiner, Rosenfield, Wolcott, and others decry America being taken to the cleaners by the Third World in the Moon Agreement, Wadegaonkar, writing from the Third World, voices the opposite criticism:

...[I]t can be seen that the concessions made by the Space Powers to the demands of the developing countries for establishment of an international regime does not represent more than an appeasement in quest of that elusive concept, namely, consensus. Even the concept of equitable sharing is already circumscribed by the proviso inserted by the Space Powers that special consideration would be given to the Space Powers whilst apportioning the expected benefits. In other words, the Space Powers were reluctant to let go of their pound of flesh (Wadegaonkar 1984, 37).

Is it reasonable to look for the truth somewhere between these two extreme positions?

Before considering the agreement language itself and its implications, two points can be considered: one retrospective, one prospective.

First, in the latter half of the 20th century, the history of technological development is that in the eastern Asian “tiger economies” of Thailand, Singapore, Taiwan, and South Korea, and in the free-market industrial states of Japan, North America, and western Europe, governments have often created tax incentives—and in some cases have provided investment capital—to stimulate the development of new technologies for economic development. Indeed, in eastern Asia this strategy has been raised to a fine art, and has led to the rise of the term “developmental state” to describe the formerly underdeveloped Third World states that have graduated into the industrialized First World. Thirty years ago, when the Moon Agreement was being negotiated, the only example of a developmental state was “Japan, Inc. (Ishinomori 1988),” which was not a Third World country, but a First World country which had recovered from the devastation of the Second World War. In view of the intervening three decades of economic history, are the fears that were expressed by opponents of the Moon Agreement (whether or not valid then) valid today? If the New International Economic Order is to legitimately hold onto its first adjective “new,” it must be updated to take into account the “developmental state” experience. Likewise, the “common heritage of mankind” concept, whatever it might have meant to particular delegations and commentators when the Space Shuttle was still on the drawing boards, is going to have a different meaning in the future.

This leads to the second point: the Third World of the future that might demand, in whatever form, a piece of the action on the Moon and other celestial bodies. In the course of the past three decades of economic globalization, the Third World has been shrinking. The eastern Asian “tigers” are now First or Second World states, the Chinese economy will surpass the US economy in the near future, and India is a launching state as well as software developer to the world. So, when the exploitation of the Moon “is about to become feasible” and the negotiation of a governing regime can begin, who will still be in the Third World? Of course, this is not to suggest that there do not remain regions of crushing poverty, and malnutrition, and lack of education, and that there are not problems of uneven economic development remaining to be addressed, only to suggest that if these problems are not substantially reduced when the time arrives to negotiate a governing regime to manage lunar resources, we have not been doing a very good job of managing Earth’s resources.

Turning now to the language of the Moon Agreement and its various interpretations, Article 11, paragraph 7(4) states:

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.

Dula speculates:

...[T]he principle of “equitable sharing of benefits” could be interpreted to require a system of international taxation of any profits made by commercial resource developers. Since the term “benefits” is not restricted to the financial realm, the principle could dictate mandatory transfer to all countries of the technology used to exploit the resources (Dula 1979, 20).

Maybe it could, but it need not, and such speculation does not build a persuasive case. Again, the Moon Agreement contains no language regarding technology transfer; rather this is an issue that has been speciously transferred from the Law of the Sea Convention, which does contain such provisions. It is noted with interest that Dula cites as the source of this speculative argument Leigh Ratiner’s 15 August 1979 letter to L-5 Society president Carolyn Henson.<sup>§</sup>

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<sup>§</sup> Ratiner’s letter is cited in seven footnotes to Dula’s article. It is odd that a non-scholarly source would be relied upon so heavily in a law journal article. Dula also cites the House Space Subcommittee hearings of 5 and 6 September 1979, by which time the L-5 Society had hired Ratiner to lobby against the Moon Agreement.

Finch and Moore conclude that the Moon Agreement's language concerning "sharing benefits" and "equitable sharing" refer to an international ordering of an international resource," as opposed to national appropriation, which is forbidden by the Outer Space Treaty:

In general, the Moon Treaty envisages few limits on the exploitation of lunar resources beyond the protection of the environment and safety. An international ordering by a future regime is just the sort of climate which should encourage investments (Finch and Moore 1980).

Haanappel notes that "equitable sharing" does not mean "equal sharing," and that paragraph 7(4) "makes it clear that a balance may be struck in terms of benefits between developing countries on the one hand and countries having participated in the exploration of the Moon (Haanappel 1980)." Galloway observes:

Equitable sharing is not the same as equal sharing, and in this context suggests some arrangement such as that in the Convention on the International Maritime Satellite Organization (INMARSAT), which provides, in Article 8, that "The Organization shall be financed by the contributions of Signatories. Each Signatory shall have a financial interest in the Organization in proportion to the investment share which shall be determined in accordance with the Operating Agreement (Galloway 1980)."

Thus, a State Party's "equitable share" in the extraterrestrial mining regime would be proportional to its investment. Menter arrives at a similar conclusion:

...Justinian is said to have defined "equity" as "to live honestly, to harm nobody and to render every man his due." While the subsequent agreement for the international regime may establish criteria, it is conceivable that the share "due" to a non-contributing state may be determined to be zero (Menter 1980).

All of this suggests that just as here on Earth, on the Moon, "There ain't no such thing as a free lunch.... One way or other, what you get, you pay for (Heinlein 1966)."

A final observation regards the power of the United Nations (or any regime that might be established under its auspices) over states, juridical persons (corporations), and natural persons. States are subjects of international law; generally speaking, juridical persons and natural persons are not, the exceptions being certain trade agreements (e.g., under the North America Free Trade Agreement [NAFTA], Methanex Corporation, a Canadian manufacturer of methyl tertiary-butyl ether [MTBE] was able to bring a \$970 million suit against the state of California when it banned the carcinogen as a fuel additive [CIEL 2004]) and international crimes (e.g., the prosecution of former Yugoslav president Slobodan Milosevic [ICTY 2002]). Thus, were the United States to become party to the Moon Agreement, and were an international regime to be established to govern the exploitation of resources on the Moon and other celestial bodies, such a regime would apply directly only to the US government. The Moon Regime would apply only indirectly to juridical persons and natural persons under the jurisdiction of the US, in that the US would bear international responsibility for the activities of such persons. If the US were to incur a financial obligation under the Moon Regime, it would not be obliged to pass that obligation onto the private interest conducting the actual mining operation on the Moon; rather, that would be at the discretion of the US government. The US government might well decide to pay whatever was due to the Moon Regime, and let the private American interests off the hook in order to incentivize lunar development. The US government might also provide tax incentives, loan guarantees, and study grants for lunar development. In short, the US might well choose to craft a policy as a transplanetary developmental state. All of this is possible under the Moon Agreement.

Dula, a patent lawyer, focuses on the minutia of his field and entirely misses the larger issues:

It may be suggested that investors could simply call whatever activities they decide to undertake in space or on the Moon "research and development," "experimentation," or "pilot plant operations." Unfortunately, this is not advisable because of differences in the legal consequences of experimental and commercial use. United States tax laws and regulations controlling investment in commercial operations differ greatly from the rules that apply to investment in experimental research or pilot plant operations.... If an operation consistently returns a profit to its owner, then it is commercial for the purpose of U.S. tax and investment law.

U.S. patent laws also differentiate between commercial and experimental purposes (Dula 1979, 14).

Although Dula may be well-versed in the patent law and tax code of 1980, he certainly has no idea how these might be tailored to incentivize commercial development on the Moon in 2020 or some other point in the future.

As Hosenball points out, risk is in the eye of the beholder:

I believe it is up to industry, frankly, to decide what risk they are willing to take. There is nothing in this treaty that prohibits them or restricts them from taking that risk. I think they will have to decide at what point in time, based in investment, they would be willing to take the risk (USS 1980, 52).

Space enthusiasts are fond of saying, "The meek shall inherit the Earth; the rest of us will go to the stars." But, it would seem, only if the heavens are tax havens.

The Moon Treaty, if ratified, would be U.S. Federal law and could be enforced by the Federal courts. A group... could bring suit to obtain an injunction against the U.S. Government, the company involved, or both (Dula 1979, 14)....

Can Dula point to any provision in the Moon Agreement that is self-executing? If the agreement is non-self-executing, any affect on US private legal persons would only come from whatever Federal statutes were enacted to give effect to the Moon Agreement in municipal law. Absent this, no suit would have legal standing.

The disincentives to private investment that opponents of the Moon Agreement point to are more perceived than real, by those who are predisposed to misperceive. The truth is that it is up to private industry to step up to the plate and take the risks to develop the Moon and other celestial bodies, which it will do when it sees a reasonable probability of an adequate return on investment over an acceptably short period of time. As a credible level of interest in such activities develops, private industry is certainly capable of using—and certainly will use—its lobbying influence to obtain federal legislation shielding it to an acceptable degree from whatever concerns it might have with regard to the Moon Regime. But just as there should be no free lunch for nonparticipating states, neither should there be a free lunch for private enterprises operating on the Moon and other celestial bodies. Governments have gone to some effort and expense to establish a legal regime that provides certainty in which private enterprises can extract profits, and governments can legitimately expect a return on their investment in the form of taxing those profits, as well as levy taxes to defray the continuing cost of administering the regime and providing other public goods that facilitate profitable operations. Anything less would not be “equitable.” As Robert A. Heinlein’s unruly lunar colonists put it, “TANSTAAFL!”\*\* That acronym cuts more ways than one.

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\*\* “There ain’t no such thing as a free lunch.”

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