

SOME LEGAL ASPECTS OF THE RETURN TO THE MOON  
AND EXPECTED FLIGHTS TO OTHER CELESTIAL BODIES

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Abstract

The first wave of Moon exploration led to adoption of a set of legal principles to govern these activities. They were included in the 1967 Outer Space Treaty and later on elaborated in the 1979 Moon Agreement, both these instruments concluded under the auspices of the United Nations. While the 1967 Treaty received a general recognition of the international community, the 1979 Agreement has remained controversial, the main issue being the legal status of the Moon and its natural resources. The origin and substance of this issue are analyzed in the paper, and similarities and differences between the principle of common heritage of mankind as elaborated in the 1982 United Nations Convention on the Law of the Sea and the 1979 Moon Agreement are explained. The author then turns to the question whether the 1979 Moon Agreement can play an effective role in the years to come, or it should be rather replaced by a new agreement or agreements. In the light of some long-range space programmes in which the exploration of the Moon and other celestial bodies has been given a prominent place, and with particular attention to the possibility of establishing a permanent lunar base, he examines the nature of activities to be conducted on the Moon under the scope of these programmes. He comes to the conclusion that the substance of endeavours relating to the Moon and other celestial bodies will remain still for decades within the limits of exploration and use, which are fully in conformity with both the 1967 Outer Space Treaty and the 1979 Moon Agreement. It is

not necessary and advisable to reopen problems relating to the Moon until a better awareness of why, how and at what cost the development of Moon resources can be achieved. This may be done in about 20 years from now and then the appropriate time for reconsideration of the 1979 Moon Agreement may come. Such a reconsideration might coincide with an evaluation of the viability of the international regime and machinery provided in the 1982 Convention on the Law of the Sea for the sea-bed area and its resources, as well as the 1988 Wellington Convention on the Regulation of Antarctic Resources. This assessment is also valid regarding celestial bodies, such as Mars and asteroids, which may require special legal arrangements at an appropriate time. However, a realistic evaluation of all aspects of the return to the Moon remains the clue also to settlement of other legal issues relating to the manned exploration of our solar system.

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Introduction

Since the very beginning of the interest of humankind in outer space, the Moon as the single natural satellite of our own planet has been one of the main targets of space exploration. Only 2 years after the first launches of satellites into orbit around the Earth, the first man-made objects reached the surface of the Moon and photographed the far-side of the Moon; and 10 years later, the first manned lunar landing was accomplished. During the following years, additional manned and unmanned missions were effected. They helped us not only to increase our knowledge of the Moon, but also opened new horizons for its use in a more distant future. Unfortunately, changes in programme priorities of the main space-faring nations led to interruption of this hopeful trend, notwithstanding the investments already made, and the possibility to bring additional results and to increase the cost-effectiveness of all flights by completion of the original programme was lost. Nevertheless, this first wave of Moon exploration was suffi-

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ciently long to enable discussions on legal aspects of space activities relating to the Moon and even to negotiate the first legal principles to govern these activities.

The 1967 Outer Space Treaty - a legal basis for the exploration of outer space, including the Moon and other celestial bodies

In this context, it should be recalled that it was the government of the United States which suggested the conclusion of a "Moon Treaty" as early as 1966, when project Apollo was already under way, but still more than three years before the first manned mission to the Moon under this project was accomplished. <sup>1/</sup> A similar initiative was made shortly after by the government of the then USSR which, however, decided later to submit a draft Treaty in which some specific rules relating to the Moon were included in a wider set of principles to govern outer space activities in general. <sup>2/</sup> The United Nations Committee on the Peaceful Uses of Outer Space /COPUOS/ and its Legal Subcommittee, to which these initiatives were referred for consideration, reached agreement on the wider concept of the future treaty and in an incredibly short time, the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies emerged.

This fundamental instrument of the international law of outer space has established a number of general principles relating to activities to be undertaken anywhere in outer space, i.e. also on and around the Moon and other celestial bodies. In addition, however, the 1967 Outer Space Treaty included some principles which related only to the Moon and other celestial bodies. Article IV, for example, stipulated that the use of the Moon and other celestial bodies should be exclusively for peaceful purposes and established a demilitarized regime for them; Article I, Para. 2 guaranteed free access to all areas of celestial bodies; and Article XII opened all stations, installations, equipment and space vehicles on the Moon and other celestial bodies to representatives of other States Parties to the Treaty on a basis of reciprocity.

It should be recalled that the 1967 Outer Space Treaty enjoys the widest adherence among all United Nations space treaties, as 92 States, including all space-faring nations, have become Parties to this Treaty and moreover, 27 other States have signed it. <sup>3/</sup>

The unanimous adoption of the Outer Space Treaty in the United Nations General Assembly on 19 December 1966 and its entry into force on 10 October 1967 were

accomplished before the first manned mission to the Moon. Nevertheless, it was the successful development of Moon flights, effected by both manned and unmanned objects, which established certain practices observed during those activities and invoked at the same time the need for further development of the legal basis of these activities. This seemed to be indispensable also due to the fact that the other space treaties, adopted in the United Nations after the main 1967 Treaty, did not include any special provisions that would deal in specific terms with the conditions on the Moon, be it regarding assistance to astronauts on the Moon, liability for damage caused on the Moon, or jurisdiction over space objects, stations and other installations on the Moon or the personnel thereof.

The 1979 Moon Agreement and its problems

Initiated by a draft Treaty Concerning the Moon submitted by the government of the then USSR, which was accompanied by a number of other drafts presented in the COPUOS and its Legal Subcommittee, <sup>4/</sup> the elaboration of a new instrument proceeded smoothly at first, so that by the end of the 1972 session of the Legal Subcommittee a major part of the text was ready. This was due not only to the fact that this work was facilitated by the principles of the Outer Space Treaty, some of which could be incorporated into the new instrument world for world, but also to a constructive spirit that prevailed among the negotiators during this early stage of discussions on this topic. In this way, important provisions, including some new elements, were successfully drafted. They concerned different forms of international cooperation, relating, for example, to mutual assistance in the exploration of the Moon, establishment of manned and unmanned stations on the Moon, safeguards of life and health of persons conducting space activities, and last but not least, preservation of the Moon environment. For the first time in the history of space law, a formula promoting a comprehensive environmental protection was introduced into Article 7 of the Moon Agreement, providing that "In exploring and using the Moon, States Parties shall take measures to prevent the disruption of the existing balance of its environment, whether by introducing adverse changes in that environment, by its harmful contamination through the introduction of extra-terrestrial matter or otherwise." <sup>5/</sup> Without doubt, this was influenced by the efforts to promote the international cooperation in environmental protection in general, which culminated by the United Nations Conference on the Human Environment held in Stockholm in 1972.

Some improvements, in comparison with the 1967 Outer Space Treaty, were al-

so incorporated in the provisions of the Moon Agreement dealing with the peaceful character of activities on the Moon. While the opening sentence of Article 3 only reiterates the stipulation of the Outer Space Treaty by saying that "The Moon shall be used by all States Parties exclusively for peaceful purposes", a new provision with an explanatory meaning relating to the principal stipulation was added, according to which "any threat or use of force or any other hostile act or threat of hostile act on the Moon is prohibited". It is likewise prohibited to use the Moon in order to commit any such act or to engage in any such threat in relation to the Earth, the Moon, spacecraft, the personnel of spacecraft or man-made space objects.

Para. 3 of Article 3 of the Moon Agreement also has a more elaborate wording than a similar provision in the Outer Space Treaty. States Parties to the Moon Agreement are obligated not to place objects carrying nuclear weapons or any other kinds of weapons of mass destruction not only on or in the Moon, but also in orbit around or other trajectory to or around the Moon.

The last Para. of Article 3 reiterates specific prohibitions which were already expressed in the Outer Space Treaty, namely those concerning the establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on the Moon. Together with the main stipulation /the use of the Moon exclusively for peaceful purposes/ and the above-mentioned ban of any hostile acts, these prohibitions, in my opinion, established the legal basis for a complete demilitarization and neutralization of the Moon in the classical sense of this term. The only exception remains the use of military personnel for scientific research or for any other peaceful purposes and similarly the use of any equipment or facility /including the military one/ necessary for peaceful exploration and use of the Moon. 6/

Moreover, a certain progress was reached in the Moon Agreement in the field of settlement of differences concerning the fulfilling of obligations pursuant to the Moon Agreement and disputes which might arise from them. As in the 1967 Outer Space Treaty, consultations remain the basic means of settlement, but a State Party to the Moon Agreement is obligated to enter into such consultations without delay, and any other State Party which requests to do so will be entitled to take part in such consultations.

Finally, the increased role of the United Nations Secretary-General should

be recalled as another new element in the Moon Agreement. This role concerns both the promotion of international cooperation in the exploration of the Moon and the assistance of the highest officer of the United Nations in the settlement of differences.

A number of issues, however, remained unsolved and delayed the finalization of the Moon Agreement for several years. Of special importance were the question of scope of validity of the Moon Agreement and particularly the question of the legal status of the Moon and its natural resources.

The first question was whether, or to what extent, the Moon Agreement should govern celestial bodies other than the Moon. On the one hand, it was held that in accordance with the original initiative, the new legal instrument should deal specifically with the Moon. Others felt that the formula used in the 1967 Outer Space Treaty, namely "the Moon and other celestial bodies" should apply. A compromise solution inserted in Para. 1 of Article 1 of the Moon Agreement was finally agreed upon, according to which "the provisions of this Agreement relating to the Moon shall also apply to other celestial bodies within the solar system, other than the Earth". An important exception, however, was added, namely that this principle shall apply "in so far as specific legal norms enter into force with respect to any of these celestial bodies." This provision of the Moon Treaty may become particularly relevant in our consideration of the present situation and future developments regarding the exploration of the Moon, Mars and other celestial bodies of our solar system.

The second problem, which concerned the status of the Moon and its natural resources, became the central issue during the later stage of negotiations on the Moon Agreement. Only a fragile compromise reached in the last moment enabled the adoption of the text of this Agreement in the COPUOS and later on in the General Assembly in 1979. In order to understand correctly this issue and its solution in the Moon Agreement, it is necessary to move, at least briefly, to another area of the development of present international law, namely to the law of the sea.

In 1970, the United Nations General Assembly adopted a Declaration on Principles Governing the Sea-bed and Ocean Floor, and the Subsoil Thereof, Beyond the Limits of National Jurisdiction, 7/ in which this area and its resources were qualified as the "common heritage of mankind". Similarly, and analogously with the provisions of the 1967 Outer Space Treaty, which concerned outer space, the Moon and other celestial bodies, the sea-

bed area too was excluded from appropriation by States or persons, natural or juridical, by any means. No State was permitted to claim or exercise sovereignty or sovereign rights over any part thereof. And like the Moon and other celestial bodies, the sea-bed area should be open to use exclusively for peaceful purposes. Unlike Outer Space Treaty, however, the 1970 Sea-bed Declaration went further by proclaiming a principle according to which the exploration of the sea-bed area and exploitation of its resources should be effected under an international regime to be established, including appropriate international machinery.

By another resolution that was adopted on the same day, the General Assembly decided to convene the Third United Nations Conference on the Law of the Sea /which started its work in 1973/. This conference would not only elaborate an international regime including international machinery for the sea-bed area, but also deal with a broad range of other topics of the law of the sea. 8/

A new United Nations Convention on the Law of the Sea, signed by 115 nations on 10 December 1982, resulted from the long and difficult negotiations of the Conference, which lasted almost a decade. Divided into seventeen sizable Parts and accompanied by nine Annexes, the United Nations Convention on the Law of the Sea regulates the use of all parts of the sea and the exploration and exploitation of living and non-living resources of the sea and the sea-bed. 9/ It also establishes a new international organization, the Sea-bed Authority. Finally, it provides a comprehensive system for peaceful settlement of disputes concerning the interpretation or application of the provisions of the Convention.

It should be added that Part XI of this Convention and two of the Annexes relating to the area of the sea-bed and its resources, are the most extensive chapters of this comprehensive instrument. They are based on the principle declared in Article 126 of the Convention, according to which the Area of the sea-bed and its resources are the common heritage of mankind. A fairly complex system of prospecting, exploration and exploitation of resources was established and no State or natural or juridical person may claim, acquire or exercise rights with respect to minerals recovered from the Area except in accordance with this system.

During the negotiations that led to to the conclusion of the 1979 Moon Agreement, it was requested, by essentially the same group of States which had sponsored the principle of the common heritage of mankind and an international re-

gime based on it for the sea-bed and its resources, that the same principle should apply also to the Moon and its natural resources, whereas other groups of States were more or less reluctant to accept this principle and particularly its implications. As a compromise solution of this fundamental issue, the present wording of Article 11 of the Moon Agreement emerged which consists of the following elements:

1. The Moon and its natural resources are declared as the "common heritage of mankind", and States Parties to the Agreement undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the Moon. However, they are obligated to establish such regime only "as such exploitation is about to become feasible", and this obligation would be implemented by means of a review conference which should take into account any relevant technological developments.

2. The main purposes of such future regime, amongst them an equitable sharing by all States Parties in the benefits derived from these resources, are spelled out in Para. 7 of Article 11. Special consideration should be given to the interests and needs of the developing countries, but also to the efforts of those countries which have contributed either directly or indirectly to the exploration of the Moon, i.e. to the efforts of space-faring nations and other nations participating in these activities.

3. The Moon is not subject to national appropriation by any claim of sovereignty, by means of use or occupation, or by any other means. This principle, which was already included in Article II of the Outer Space Treaty, is amplified in the Moon Agreement by a new provision spelling out that "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 entity or of any natural person." This provision does not exclude the placement of personnel, space vehicles, equipment, facilities, stations and installations on or below the surface of the Moon, including structures connected with its surface or subsurface. However, such placement "shall not create a right of ownership over the surface or the subsurface of the Moon or any areas thereof" and shall also not prejudice international regime to be established sometime in the future.

4. Last but not least, the right of States Parties to the exploration and use of the Moon without discrimination of any kind, on the basis of equality and in accordance with international law and

the terms of the Moon Agreement, is explicitly confirmed in the same complex of provisions of Article 11.

Unlike the 1982 United Nations Convention on the Law of the Sea, which has already provided a fairly complex international regime including an international authority, which would enter into existence as soon as the Convention enters into force, a similar principle of the "common heritage of mankind" in relation to the Moon and its resources has been conceived only in general terms, and its establishment has been in fact postponed to an unidentified future time. Moreover, a rather ambiguous statement annexed to the declaration of this principle - namely that it finds its expression in the provisions of the Moon Agreement - can be also invoked for limiting the juridical meaning of this principle in its relevance to the Moon and its resources.

Another striking difference between the legal status of the Moon and its resources and that of the area of the seabed and its resources arises from the fact that the Moon Agreement requires only exploitation to be governed by the future international regime, while exploration and use of the Moon resources remain a right of all States Parties explicitly recognized both in the 1967 Outer Space Treaty and the 1979 Moon Agreement.

Finally, Article 11 of the Moon Agreement, though speaking of "appropriate procedures" to be included in the future international regime, does not mention the establishment of a special institutional machinery for ensuring the application of such regime, a counterpart of the Sea-bed Authority provided by the United Nations Convention on the Law of the Sea.

#### Do the new Moon/celestial bodies programs require a new agreement on legal status of these bodies ?

Notwithstanding the adoption of the compromise solution on this and other issues by consensus in the COPUOS, which was followed by the adoption of the Moon Agreement by the United Nations General Assembly on 18 December 1979 without vote, this instrument has attained so far only a limited adherence. According to the latest information, only 8 States have become Parties to the Moon Agreement by ratification or accession, while six other States have only signed but not yet ratified the Agreement. <sup>10/</sup> Striking is the absence of all space-faring nations among the States Parties, notably of the nations that have most actively participated in the exploration of the Moon and other celestial bodies.

Under these circumstances, can the 1979 Moon Agreement play any positive

role in the years to come, or should it be substantively revised or even replaced by a new agreement or agreements ? The Moon Agreement provides such an opportunity, for its Article 18 stipulates that ten years after the entry into force of this instrument, the question of its review shall be included in the provisional agenda of the United Nations General Assembly in order to consider, in the light of past application of the Agreement, whether it requires revision. Since the Moon Agreement entered into force on 11 July 1984, the decade provided in Article 18 will elapse in 1994 and the General Assembly at its 49th session will face this question. But will the past application and expected developments really justify such a revision ?

The 1979 Moon Agreement was finalized at a time when changing priorities cut short the exploration of the Moon, and space activities were reoriented to other goals, in particular to construction and operation of reusable space vehicles and orbital stations. This trend, which prevailed during the 1980s, continues still during the 1990s and should culminate in the construction of a major multinational space station towards the end of this century.

However, the changing geopolitical environment of recent years has opened the way for rethinking long-range space programmes in which the exploration of the Moon and other celestial bodies, considered as a logical continuation not only of the earlier efforts but also of the latest period of space activities, would be given a prominent place. Already in the report prepared by the United States National Commission on Space and published in 1986, one of the main recommendations was to return to the Moon, this programme to be effected in the first decade of the next century. Later, a manned expedition to Mars might be accomplished in the third decade of the 21st century. This blueprint has become US space policy goal declared by President Bush in July 1989, on the 20th anniversary of the first landing on the Moon, and in some follow-up statements and decisions.

This new development encouraged scientists, both as individuals and members of different organizations, to concentrate on the problems relating to the establishment of a permanent base on the Moon, missions to Mars and asteroids, and the exploration of our solar system in general. One of the first initiatives undertaken under this favourable climate was the establishment of an IAA Ad Hoc Committee "Return to the Moon" /headed by Professor H. Hermann Koelle of Germany/, which drafted a report, "The Case for an International Lunar Base". <sup>11/</sup> This report, completed in 1987, concentrated on strategies and policies for the development of a lu-

nar base programme, with the goal of exploring the use of extraterrestrial resources for the benefit of humankind. It was an attempt to consider all aspects of this goal which offered a multidisciplinary view of the main problems involved.

From among many thoughts and conclusions presented in this report, it is particularly important to take into account the time-table suggested for the construction and activities of the future lunar base, worked out on the assumption that the programme would have started in 1990. For the first phase, the goal would be the establishment of a manned lunar orbiting station by the year 2001. The role of this station was described as accelerated exploration of the lunar environment, resources and possible base locations by automated lunar satellites within national space programmes, then continued lunar exploration with automated roving vehicles and automated lunar stations, and finally construction and operation of a manned lunar orbit station with refuelling, maintenance and repair capabilities. The establishment of a lunar research laboratory would be accomplished, according to this plan, by 2010. During the third phase, the goal of which should be the development of a major production facility by 2025, the first aim would be construction of facilities to satisfy the requirements for lunar oxygen and most raw material requirements of the lunar base by 2015. The construction and assembly of a lunar factory complex was established as the target of the later part of the third phase, closer to 2025, "to get ready for the export of raw materials and propellants". And it would not be until the fourth phase that lunar settlement with a high degree of self-sufficiency could be envisaged, including "extensive use of lunar resources and the establishment of the first extraterrestrial civilization of several thousand people, most with permanent residence on the Moon." This phase would be extended up to the end of the 21st century. 12/

This brief summary plan for the establishment of a permanent lunar base, and still more the analysis of activities to be conducted on the Moon under the scope of this programme, leads us to the conclusion that the substance of the Moon endeavour will remain, at least for several decades, within the limits of exploration and use, not of exploitation. 13/ By exploitation we mean extraction of minerals and other resources for commercial purposes at the world market, bringing regular profit to investors. On the other hand, exploration tends to increasing knowledge, study of conditions, collecting of samples and evaluation of resources. Exploration is not yet exploitation, though it could enable it at a later stage. Neither would it be possible to qualify as exploitation the use of lu-

nar materials in space in support of lunar base operations or other space missions. When the development of lunar resources will reach the point of exploitation for export purposes will depend on many circumstances which still must be carefully pondered. There is little probability, however, that it could be effectively started before well into the 21st century.

This estimate seems to be justified by experience from another exotic place which is much closer and more easily accessible than the Moon and other celestial bodies. This place is Antarctica. Though scientific expeditions to this area have been accomplished for decades and several permanent stations of different nations have already been established there, and though the Antarctic Treaty which provides a legal basis for activities in this area was concluded more than 30 years ago, it was not until the end of the 1980s when further steps in the direction of exploration and exploitation of Antarctic resources were made. Still, the Convention on the Regulation of Antarctic Mineral Activities concluded in Wellington on 2 June 1988, the purpose of which was to enable and regulate prospecting, exploration and development /exploitation/ of mineral resources of this area, has not yet acquired sufficient support among the relevant States Parties to the Antarctic Treaty, which is necessary for the entry into force of this new instrument. 14/ And the most recent legal instrument concerning Antarctica, the Protocol on Environmental Protection to the Antarctic Treaty, which was finalized in 1991 and is now open for signature at Washington until 3 October 1992, prohibits in its Article 7 any activity relating to mineral resources, other than scientific research. 15/

Under these conditions, it does not seem advisable to reopen in a foreseeable future the problems that were not solved during the negotiations on the Moon Agreement in the 1970s. It is not necessary to do so, because the exploitation of the natural resources of the Moon is not yet about to become feasible. However, while there is little hope that a viable compromise on these issues could be attained now, the situation may change in some 20 - 30 years from now, when more exact data about the Moon, Mars and other celestial bodies will be collected and more experience gained. There will be also a better awareness of why, how and last but not least, at what cost, the development of Moon resources can be achieved. By this time, it may also become clear whether the international regime and machinery provided for the sea-bed and its resources in the 1982 United Nations Convention on the Law of the Sea is really viable or its substantive revision should be made. Its Antarctic analog enshrined in the 1988 Wellington Convention will also have to demonstrate its feasibility by this time.

Then the appropriate moment might also come for an attempt at reconsideration of the 1979 Moon Agreement or its implementation in additional agreements or arrangements.

In the meantime, the programmes for future missions to the Moon and other celestial bodies may continue on the basis of the freedom of outer space, including the Moon and other celestial bodies for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, the freedom of access to all areas of celestial bodies, and the freedom of scientific investigation in outer space, including the Moon and other celestial bodies, as solemnly declared in Article I of the 1967 Outer Space Treaty, which has been recognized by international community as a whole. These freedoms have been also restated in the 1979 Moon Agreement which speaks in its Article 11 about "the right to exploration and use of the Moon, without discrimination of any kind, on the basis of equality and in accordance with international law and the terms of this Agreement".

These provisions enable to carry out these new demanding programmes, which require the full involvement and cooperation of those countries which are in a position to effectively contribute to the exploration of the Moon and other celestial bodies by their skills, technology and resources. In my opinion, existing provisions also permit the conclusion of special agreements or arrangements among the most interested countries dealing with programmes and methods of Moon exploration.

On the other hand, the participation of non-space-faring nations should not be completely omitted, for according to the fundamental principle of space law enshrined in Article I of the Outer Space Treaty, the exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development and shall be the province of all mankind. It should be recalled in this context that a positive outcome of discussions in the Legal Subcommittee of the COPUOS on the new agenda item, the formulation of which is based on this principle of the Outer Space Treaty, <sup>16/</sup> might also facilitate the seeking of reasonable and effective solutions of the Moon issues in the future.

What has been said with regard to the Moon is also valid, mutatis mutandis, with regard to Mars and other celestial bodies of our solar system. The possibility of drafting an internation-

al agreement specifically for Mars, or selecting asteroids from among the other celestial bodies as a useful topic for appropriate legal arrangements, is also open. <sup>17/</sup> However, a realistic consideration of all aspects of the return to the Moon remains the basic task and the clue to settlement of the related issues.

### References

1. See the outline of points to be included in this instrument in Agreement Governing the Activities of States on the Moon and Other Celestial Bodies. Committee on Commerce, Science and Transportation, United States Senate, May 1980, Part 1 and 2, p.6.
2. As to greater details of these initiatives see Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Analysis and Background Data. Committee on Aeronautical and Space Sciences, United States Senate, March 1967, pp. 1 - 8.
3. See Status of Outer Space Treaties /as of 20 February 1992/, informal document prepared by the Secretariat of the Legal Subcommittee of the COPUOS for its 1992 session.
4. All proposals relating to the preparation of the Moon Agreement are reprinted in Annex I to the Report of the Legal Subcommittee on the Work of its Eleventh session /10 April - 5 May 1972/, UN Doc. A/AC.105/101 of 11 May 1972 and in the reports of the Legal Subcommittee from its subsequent sessions.
5. See the text of the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, as well as the texts of other space legal instruments concluded under the UN auspices in the United Nations Treaties on Outer Space, United Nations, New York, 1984.
6. As to the meaning of the use of the Moon exclusively for peaceful purposes see Manfred Lachs, *L'espace, la Lune et les autres corps célestes*, in UNESCO, *Droit international, Bilan et perspectives*, Tome 1, Paris, 1991, Chapitre XLIII, pp. 1037 - 1038.
7. See resolution 2749 /XXV/ of 17 December 1970, published in General Assembly Official Records: Twenty-fifth session, Supplement No. 28 /A/8028/, pp. 24 - 25.
8. See resolution 2750 /XXV/ of 17 December 1970, particularly its Part C, published ibidem, pp. 25 - 27.

9. See the official text of the Convention with Annexes, as well as the Final Act of the Third UN Conference on the Law of the Sea in The Law of the Sea, United Nations, New York, 1983.
10. The following States became Parties to the Moon Agreement up-to-day: Australia, Austria, Chile, Mexico, Netherlands, Pakistan, Philippines, Uruguay. The following States signed this Agreement: France, Guatemala, India, Morocco, Peru, Romania. See the document mentioned under reference 3.
11. See IAA Ad Hoc Committee "Return to the Moon", the Case for an International Lunar Base", in Acta Astronautica, Vol. 17, No.5, 1988, pp. 463 - 489. See also H. Hermann Koelle and collaborators, The first 1000 days of a future Lunar Base, Institut für Luft- und Raumfahrt, Technische Universität Berlin, ILR Mitt. 224 /1989/, pp. 23 ff. Many other papers on this subject have been published in Acta Astronautica and other specialized periodicals.
12. Ibidem, pp. 484 - 485.
13. In this context, it is relevant to note that the Report of the Advisory Committee on the Future of the U.S. Space Programme /December 1990/, when speaking about a "sustained program of manned exploration of the solar system", underlines that "the Space Exploration Initiative consists of robotic missions to the Moon and Mars, as well as the establishment of permanent outposts /not necessarily continuously inhabited/ on the Moon and, later, human exploration of Mars." To respond to this long-range exploration challenge, the report established a number of program elements, one of them being "extraterrestrial resource utilization systems". See the text of this document, p. 28. - The nature of activities to be developed with regard to and on the Moon and other celestial bodies in a foreseeable future has been also evident from both scientific papers presented at this Roundtable /Carl B. Pilcher, Space Exploration: Scientific and Technological Aspects; and Marcello Coradini, Exploration and Uses of Celestial Bodies of the Solar System/, as well as from the Cosmic Study, International Exploration of Mars, prepared by the IAA Subcommittee on Mars Exploration of the Committee on International Space Plans and Policies, chaired by George W. Morgenthauer. /See Draft Version 4 of this study, 1 August 1992, particularly Section 2.2 Benefits from Mars exploration./
14. The 1988 Wellington Convention included the following definitions of the terms "Prospecting", "Exploration" and "Development" in its Article 1:
 

"Prospecting" means activities, including logistic support, aimed at identifying areas of mineral resource potential for possible exploration and development, including geological, geochemical and geophysical investigations and field observations, the use of remote sensing techniques and collection of surface, seafloor and subice samples. Such activities do not include dredging and excavations, except for the purpose of obtaining small-scale samples, or drilling, except shallow drilling into rock and sediment to depths not exceeding 25 metres, or such other depth as the Commission may determine for particular circumstances.

"Exploration" means activities, including logistic support, aimed at identifying and evaluating specific mineral resource occurrences or deposits, including exploratory drilling, dredging and other surface or subsurface excavations required to determine the nature and size of mineral resource deposits and the feasibility of their development, but excluding pilot projects or commercial production.

"Development" means activities, including logistic support, which take place following exploration and are aimed at or associated with exploitation of specific mineral resource deposits, including pilot projects, processing, storage and transport activities.

/See Antarctic Treaty Special Consultative Meeting on Antarctic Mineral Resources, Wellington, 2 May - 2 June 1988, Doc. AMR/SCM/88/78 of 2 June 1988, pp. 3 - 4./
15. See Antarctic Treaty XIth Special Consultative Meeting, Madrid, 3 - 4 October 1991, Doc. XI ATSCM/2/3/2 of 3 October 1988, p.11.
16. The title of this item reads "Consideration of the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries". As to the latest stage of consideration of this item see Report of the Legal Subcommittee on the work of its Thirty-first session /23 March - 10 April 1992/, UN Doc. A/AC.105/514 of 20 April 1992.
17. See Eilene Galloway, Updating Space Treaties. Moon Agreement Due for U.N. Review in 1994. Space News, May 21 - 27, 1990, p. 22.