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The Controversial Rules of International Law Governing Natural Resources of the Moon and Other Celestial Bodies

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Abstract

In 2010, at the 53rd Colloquium on the Law of Outer Space (IISL, Prague), the present writer addressed the shortcomings of the Moon Agreement and reasons for the fragile support from the international community to this instrument. Indeed its provisions are open to a wide range of interpretations, some of them highly controversial. In some countries a general feeling appears to indicate that the 1967 Outer Space Treaty (OST) is sufficient to govern these matters today, and that there are no valid reasons to ratify the Moon Agreement which fails to bridge the gaps left by the 1967 OST.

In 2015 this discussion continues and, far from beginning to see daylight, ideas – let alone innovative suggestions – remain immersed in a penumbra of doubt. In the meantime, space technology is growing exponentially.

This article explores the current situation on the basis of new discoveries and programmes in progress on the Moon and Mars. It includes, among others, issues surrounding possible rights of property in those areas, the legal status of natural resources and the very thorny question of asteroid mining in light of contemporary international law.

Moreover this paper will analyse, in new light, the longstanding debate surrounding the scope and implications of Article 11.1 of the Moon Agreement which – unlike the title of this Agreement – leaves out all reference to ‘other celestial bodies’ when providing that the moon and its natural resources are the common heritage of mankind. In fact, so does Article 14 of this Agreement, when addressing international responsibility, and confines its meaning to activities on the moon alone.

Finally, the conflicting views concerning the reach of Article 11.5 of the Moon Agreement shall be examined with a view to establishing what does this provision really imply in today’s international settings when speaking of the establishment of an international regime to govern the exploitation of the natural resources of the moon as such exploitation is about to ‘become feasible’. This provision lends itself to a myriad of debatable interpretations.

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In addressing the foregoing matters a document by this author submitted to the 54th Session of the LSC on 22 April 2015 will be taken as basis.¹ The answers – to be developed further in this paper – were written in reply to a questionnaire by Jean F. Mayence, chair of the LSC Working Group on Status and Application of the Five United Nations treaties.

In the first place a short – and by no means exhaustive – list of landmarks achieved in the discussion of these problems will be highlighted as follows.

I. The Early Days (1968-2002)

1.1. *Journal de Droit International*, Paris 1968

At the dawn of the space age, shortly after the coming into force of the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space – hereinafter the OST – in October 1967, Bin Cheng's article in the *Journal de Droit International* (Paris 1968) went a long way in shedding light on the most controversial sections of the OST and major issues involved, particularly the legal status of the moon and celestial bodies and their natural resources. It should be noted that Cheng's views on these questions remain valid today.

It should be borne in mind from the outset that the OST does not use the term 'exploitation' one single time. As to 'sovereignty' the term is only used to deny any such possibility in outer space, the moon and other celestial bodies by means of use or occupation, or by any other means (Article II).

On this basis Cheng concludes that

“as there is to be no territorial jurisdiction in those areas there can be no private ownership of parts of outer space or celestial bodies, which presupposes the existence of a territorial sovereign itself competent to confer titles of such ownership. In this sense, outer space and celestial bodies are not only not subject to national appropriation, but also not subject to appropriation under private law”.²

As previously stated, this position is still valid in the present time. In 2009 it was written into a statement from the Board of Directors of the International Institute of Space Law (IISL) made that year at the 48th Session of the Legal Subcommittee of COPUOS. These thoughts were confirmed in a presentation by the present writer in the UN/Iran Workshop on International Legal Framework Governing Space Activities – Current Status and Trends³ and again in 2013 as a speaker on an interdisciplinary panel presided over by

1 Doc. A/AC.105/C.2/2015/CRP.25, 54th Session of the Legal Subcommittee of COPUOS. The answers included in this document were prepared by the present author in her individual capacity. Within the ILA Space Law Committee opinions remain divided regarding the legal status of natural resources of the moon and celestial bodies.

2 See *Journal de Droit International* 1968, N°3, Editions Techniques S.A., Paris, 574.

3 Williams, M 'Declarations and Legal Principles on Outer Space Today', November 2009, Tehran.

cosmonaut Valentina Tereshova in commemoration of the fifty years of women in space.⁴

Be that as it may, the legal nature of the natural resources of outer space, the moon and other celestial bodies remains undefined so far, in spite of Cheng's authoritative opinion expressed in 1968 whereby

“[...] to the extent to which outer space and celestial bodies constitute ‘res extra commercium’, by analogy with the rules underlying the freedom of the high seas, the appropriation of the natural resources thereof merely forms part of the freedom of exploration and use, and is not prohibited”.⁵

Yet, and with due respect to the Master, the analogy with the freedom of the high seas as applied to resources from outer space, the moon and other celestial bodies, is far more complex than in 1968 – a time when Cheng's contention may have been better understood and accepted. In fact, the appropriation of natural resources from the high seas is referring to a limited area on planet Earth whereas in the case of outer space and celestial bodies the area is incommensurable. In today's world, particularly when the Moon Agreement confirmed by its title it would cover ‘other celestial bodies’ as well – whether discovered or otherwise – the international community fell into a penumbra of doubt regarding a possible application of the first come-first served criterion to incommensurables. One cannot escape the fact that, from the very beginning of the space era, industrialised states championed the idea of full freedom of appropriation of natural resources, a contention strongly questioned by the developing world.

As experience and the doctrine have shown there still is a lot to be said about this permissibility concerning natural resources from outer space. Interpretations, as observed earlier, lend themselves to an increasing number of conflictive views in the current scenarios. Indeed, the outreaching possibilities, in the field of energy, of Helium 3 on the moon surface, coupled with announcements from private companies planning to engage in the mining of asteroids, are no longer a matter of science fiction.

1.2. The Principle of Non-Appropriation in the Space Law Committee of the ILA: The 1970 Hague Conference and the Legal Subcommittee of COPUOS

If we turn the pages of history to the early days of space exploration, the Fifty-Fourth Conference of the International Law Association (ILA 1970) held in The Hague, provides an interesting illustration. At that time the Space Law Committee of this institution – chaired by Daan Goehuis – was involved in

4 Fifty-Sixth Session of the UN Committee on the Peaceful Uses of Outer Space, 12-21 June 2013, N°2, Vienna, Opening Session on 12 June 2013.

5 ‘Journal de Droit International...’, op. cit. note 2 *supra*, 574.

establishing the meaning and implications of the principle of non-appropriation as laid down in Article II of the OST and the permissibility of the appropriation of resources.⁶ A questionnaire, which excelled for its depth when addressing questions of substance, was circulated among the members and, after going into subtleties such as a non-appropriation of outer space 'stricto sensu' and an appropriation of resources of outer space 'sensu lato', revealed that the doctrine was sharply divided.⁷

That same year a Draft Agreement on the Principles Governing Activities in the Use of the natural Resources of the Moon and other celestial bodies was submitted to COPUOS⁸ whereby the Moon and other celestial bodies would be the 'common heritage of mankind'. To date, and in spite of the doctrine having directed its efforts to defining the scope and legal implications of this formula, the question is so far unresolved.

I.3. 28 March 1973: Legal Subcommittee of COPUOS

Heated arguments were registered within the Legal Subcommittee of COPUOS (LSC) over the meaning of 'common heritage of mankind' in a discussion of historical interest. At that time the then Soviet Union submitted a Working Document to the LSC where the concept of reference was severely questioned holding that, in accordance with the OST, the moon and other celestial bodies could not become anyone's property. Moreover, it was stated that the idea of 'common heritage' was closely interwoven with the right of ownership or property, arguing further that if something was nobody's property it could never become someone's heritage.⁹ In turn, the Argentine delegation expressed its views in a similar document analysing the meaning of a number of terms related to property, ownership, heritage, succession and so forth, contained in different legal systems around the world and recommending the replacement of the formula 'province of all mankind' (as stated in Article I of the OST) with 'common heritage of mankind' as appeared in the 1970 Draft Agreement on the Moon under discussion at that 1973 Session of the LSC.

I.4. The 2002 ILA New Delhi Conference

The meeting focused, inter alia, on the 1979 Moon Agreement and came under the heading 'Review of Space Law treaties in view of Commercial Space Activities – Concrete proposals'. The controversial issues surrounding the moon and its natural resources were revisited in a Final Report of the Space Law Committee to the 2002 ILA Conference prepared by the present

6 Report of the Fifty-Fourth Conference of the International Law Association, The Hague 1970, 408-415.

7 See *ibid.* 424.

8 UN Doc. A/AC.105/C.2/L.75, June 1970.

9 Doc. A/AC.105, 24-25.

writer.¹⁰ In this framework Frans von der Dunk had contributed a special report on the Moon Agreement examining ‘the need to improve it or discard it’. Having in mind the timid support of the international community to this document, following its adoption in 1979,¹¹ a few changes were suggested, particularly to Article 4.1 and Article 11.1, 11.2, 11.3, 11.5 and 11.7.¹² The *raison d’être* was, no doubt, to keep the Moon Agreement afloat by means of a ‘Revised Text’ or, perhaps better, an international separate instrument. The Committee members were, however, cautious in considering amendments to this multilateral treaty which would amount, in practice, to agreeing on an altogether new agreement.

Hence the New Delhi Conference Resolution, inasmuch as the 1979 Moon Agreement was concerned, went no further than saying that

“[...] the common heritage of mankind has developed today as also allowing the commercial uses of outer space for the benefit of mankind and that certain adjustments are suggested to Article XI of this Agreement concerning the international régime to be set up for the exploitation of moon resources, which will make it more realistic in today’s international scenario”.

Even though the common heritage concept continued to be explored by the doctrine and discussed within governmental and private contexts, no concrete steps were taken as a consequence of the 2002 ILA Resolution, to define the legal essence of natural resources in those regions – and from those regions – in practical terms.

So far the selection of classical examples chosen by this writer from a large list of thought-provoking suggestions and contributions voiced on the international arena in 1968-2002. At that point in time the discussion over the legal nature of natural resources from outer space and celestial bodies – in spite of scholarly contributions from the doctrine – seemed to be losing its political momentum [...]

II. The Aftermath (2009)

II.1. Statement of the Board of Directors of the International Institute of Space Law (IISL)

The year 2009 marked the dawn of a new era. The search for realistic legal solutions to meet the advances of science and technology in the exploration

10 See ‘Review of Space Law Treaties in View of Commercial Space Activities – Concrete Proposals’, Report of the Seventieth Conference of the International Law Association, New Delhi 2002, 192-227, published by the International Law Association, London 2002.

11 The 1979 Moon Agreement entered into force on 11 July 1984. By 2002, at the time of the ILA New Delhi Conference, only 13 states had ratified this Agreement.

12 *Ibid.* 201-2007.

and use of other planets and their resources became, at that time, a major challenge. One of the main targets was to fill the serious gaps left by the five UN Space Treaties.

In this framework a statement from the Board of Directors of the International Institute of Space Law (IISL) on 22 March 2009 began showing the way. The objective of this document was to clarify frequent misleading views from the press and, at the same time, reaffirm fundamental principles underlying the law of outer space, such as the freedom of exploration and use and the unlawfulness of any claims of sovereignty, as no territorial jurisdiction exists in outer space or celestial bodies. Regarding the rights of ownership over the moon and other celestial bodies the Statement follows and confirms Bin Cheng's position depicted in 1968 – and to which reference has been made in Part I.1 of this paper. In fact it expresses, in no uncertain terms, that no claims of private ownership over those areas and parts thereof are possible as this would presuppose the existence of a territorial sovereign competent to confer any such titles of ownership. The Statement observes that no international space legislation includes detailed provisions on the exploitation of natural resources of outer space, the moon and other celestial bodies but it does provide a general framework for the conduction of all space activities, including those of private persons and companies, regarding such natural resources. And, interesting for its implications, the IISL considers that a specific legal régime for the exploitation of those resources should be elaborated on the basis of present international space law, for purposes of clarity and legal certainty in the near future.¹³

The Statement of the IISL Board of Directors has opened a new chapter in the law of outer space. It eases the way for achieving more certainty on the legal status of resources from the moon and other celestial bodies making the matter less controversial. In the interest of continuity a follow up of to this Statement appears essential, especially in response to the recent announcements, both from governments and private companies, on the mining of asteroids and other related activities on the moon and other celestial bodies.

Finally, an encouraging reaction to the IISL 2009 Statement was the prompt response from the doctrine. In fact, the following year, on the occasion of the 53rd Colloquium on the Law of Outer Space (Prague 2010), a number of papers addressing these problems in new light, and showing innovating ideas, were submitted to the Session 2 of the Colloquium, under the heading '30 Years of the Moon Agreement: Perspectives'.

13 The full text of the Statement of the IISL Board of Directors may be found on its website, at www.iislweb.org/publications.html.

III. State-of-the-Art (2015)**III.1. UN DOC. A/AC.105/C.2/2015/CRP.25 (54th Session of the Legal Subcommittee of COPUOS)**

In light of the foregoing overview, and as announced at the outset, comments will follow on a questionnaire by the Chair of the Working Group on ‘Status and Application of the Five United Nations treaties’, Jean F. Mayence, circulated during the 2015 Session of the Legal Subcommittee of COPUOS in April 2015. These comments will be strictly confined to the sections of CRP.25 addressing the legal status of the natural resources from outer space, the moon and other celestial bodies. The present author has summarised – and updated where appropriate – her answers to the questionnaire of reference.

III.2. Points of Contention and Responses by the Present Writer**1. Effectiveness of the provisions of the 1967 OST for application to the use and exploration of the Moon and other celestial bodies, as compared to those of the Moon Agreement**

On general lines they are effective, in spite of some gaps left by the OST which are open to interpretation and which the Moon Agreement has failed to cover. The provisions of the Moon Agreement could be seen as slight step forward in the progressive development of international law but still have not solved some lacunae left by the OST. First, the longstanding debate over rights of ownership on the Moon, as embodied in Article II of the OST, is still unclear. Secondly, the definition and legal status of natural resources on the moon and celestial bodies is unresolved. This is a matter of concern given the outstanding technological development and programmes – both underway and envisaged for the short and medium terms – regarding the exploration, exploitation and possible mining activities on the moon and other celestial bodies. It is no exaggeration to insist that, at all times, the scope and application of the OST and the Moon Agreement extend to outer space, the Moon and other Celestial Bodies as well.

Moreover, Article 11 of the Moon Agreement has introduced elements of doubt when stating that the Moon and its resources are the common heritage of mankind. In addition, paragraph 5 of this Article, when speaking of an ‘international régime, including appropriate procedures to govern the exploitation of the natural resources of the Moon’, inspired – doubtless – in the provisions of Part XI of the 1982 Convention on the Law of the Sea when dealing with the ‘Area,’ was untimely then and possibly today as well. As experience has often shown, states appear reluctant to engage in further binding obligations on the international arena when they do not know exactly what the balance sheet will be as technology continues to develop.

Another drawback shown not only by the Moon Agreement but by all five UN Space Treaties was that dispute settlement mechanisms were only open to sovereign states and international intergovernmental organisations. This situa-

tion, even at the time, was inconsistent with the regional and international settings where commercial space activities were growing exponentially. Thus the reason for the ILA having embarked in 1998 in the drafting of a 'Revised Convention on the Settlement of Disputes Related to Space Activities' which included provisions enabling the access of private parties to the dispute settlement procedures specified in that Convention This document was approved by the Sixty-Eighth ILA Conference without dissent (ILA Report to the Sixty-Eighth Conference, in book format, Space Law Committee, 239-298).

Following this line of thought on 6 December 2011 the Permanent Court of Arbitration (PCA) adopted the 'Optional Rules for Arbitration of Disputes Relating to Outer Space Activities' open to states, international organisations and private parties as well, thus reflecting a sign of the times. These Rules, procedural in nature, stand out for their flexibility and are seen as a significant step forward which brought to an end the above mentioned limitations underlying the UN Space Treaties in the field of dispute resolution procedures. Perhaps these Rules could help at some stage in shedding light on controversy over the legal nature of natural resources from space.

2. Benefits of being a party to the Moon Agreement

This depends very much on the country or group of countries we are thinking of. Among the fifteen States having ratified the Moon Agreement so far examples of both developing and industrialised States may be found. The existence of a '*quid pro quo*' should therefore be established in a case by case examination taking into account the different elements converging in each particular instance. Some of the States Parties to the OST are on solid grounds to say that joining the Moon Agreement at this stage would hardly be an advance in the development of international law. Thus, the legal framework provided by the OST would appear good enough for the exploration and use of the Moon and Other Celestial Bodies.

3. Provisions of the Moon Agreement that should be clarified or amended to enable wider adherence thereto

The weak support given to the Moon Agreement is possibly linked to some of the reasons listed above which are standing in the way of wider adherence to the Moon Agreement, On this point it may be added that the low number of ratifications required for the coming into force of the UN Space Treaties was unrealistic, especially in the specific example of the Moon Agreement – where very few of its provisions reflect customary international law. This led to conflicting views and interpretations still unresolved.

At this point in time it is recommended to review this Agreement in new light taking into account current state practice and the recent developments of space activities and their impact on regional and international settings.

4. Could non-compliance with General Assembly Resolutions or instruments adopted by subsidiary bodies related to space activities be considered to constitute 'fault'?

Only in cases where the UNGA Resolution is declaring customary international law, namely a general practice plus an *opinio juris generalis*, would a non-compliance with the UNGA Resolution constitute a breach of international law.

5. International customary law in outer space: provisions in the five United Nations Space Treaties forming part of international custom

Numerous examples in the previous comments are clearly indicating that customary international law has a fundamental role in the field of Space Law. Pride of place is given to international cooperation, a common denominator in the five United Nations Treaties, Principles and Declaration to which good faith, self defence, international responsibility and others may be added.

The OST stands out as model of the kind. By and large the rules of customary law ingrained therein override those of conventional law. One of the few exceptions is Article II when addressing the principle of non-appropriation and banning claims of sovereignty over those regions. This Article carries elements of customary law and conventional law as well. From the early days this provision was not seen with favour by some of the delegations to COPUOS, particularly France when pointing out certain ambiguities in its interpretation.¹⁴ Belgium, for its part, supported the general idea that 'non-appropriation' covered both the establishment of sovereignty and the creation of titles of property in private law.¹⁵ Opinions were harshly divided in the Legal Subcommittee of COPUOS at the time.

To be precise, Article II is reflecting customary international law only when referring to outer space *stricto sensu* which, by nature, and by analogy with the high seas, cannot be appropriated. Article II only lays down new rules when applied to the moon and other celestial bodies which before the OST were *res nullius* and, therefore, claims of sovereignty would have been legitimate pursuant to the traditional rules of international law governing occupation and claims of sovereignty on Earth.

When the OST came into force the legal status of the moon and other celestial bodies changed radically. To quote Bin Cheng once again, there is no territorial jurisdiction in outer space or celestial bodies so it follows that there could be no private ownership of parts thereof which presupposes the existence of a territorial sovereign itself competent to confer any such titles.¹⁶

Yet, the precise legal nature of natural resources is still an open question, and this is a recurrent note throughout this paper. It may be argued that article 11

14 See Doc. A/AC.105/PV.44, p. 41, 19-09-66.

15 See Doc. A/AC.105/C.2/SR.719 and Add.1, p. 7, 04-08-66.

16 See Journal de Droit International 1968, N°3, Editions Techniques S.A., Paris, 574.

of the Moon Agreement goes beyond Article II of the OST in that it speaks of the 'Moon and its natural resources' in Art. 11.1. However, when banning claims of sovereignty by means of use, occupation or by any other means, only the Moon is mentioned (in 11.2) but not its resources. On the other hand, Article 11.6 of this Agreement envisages the possibility of collecting Moon samples which could be interpreted as a kind of 'right of property' on the part of the State collecting those samples in spite of, as Bin Cheng points out, that the word 'property' has been cautiously avoided.¹⁷ It is interesting observe that the OST does not use the term 'exploitation' one single time whereas the Moon Agreement does in 11.5 when referring to the 'exploitation of the natural resources of the Moon'. As part of the doctrine concurs, this possibility is envisaged for the future in accordance with article 11.5, when stating 'when such exploitation is about to become feasible'.

It therefore follows that the way ahead is long and turbulent when trying to define these concepts with precision. However, we cannot ignore the fact that the Moon Agreement sheds no light on what should be considered 'natural resources' from a legal optic. Indeed, the OST suffices.

If the prevailing view today is to keep the Moon Agreement afloat, the points of contention brought up in these comments and perceptions, particularly on Article 11 and the outstanding issues surrounding natural resources and mining activities on the moon and celestial bodies, would be best included in a separate document, replacing – and indeed overriding – the limited reach of the Memorandum of Understanding 'annexed' to the Moon Agreement. This Memorandum may have been useful for clarification purposes at the time of adoption of the Agreement but is very rarely attached to the Agreement when circulated or published.

Time seems ready – although perhaps not the political moment – to give Article II of the OST and the controversial sides of the Moon Agreement a more positive spin. In this quest a down-to-earth discussion surrounding some special kind of 'ownership' appears opportune – perhaps using different or new terminology to avoid confusion and misinterpretations. This would help addressing the problem in its prime colours as distinct from the infinity of cross shades held by the doctrine, where lines of fracture are expected to continue. Likewise, and for practical reasons, a watching brief should be kept over current state practice regarding the Moon Agreement.

So this is where we stand now. As once suggested by this author¹⁸ the moment has come for discussing some kind of *sui generis* right of ownership – using perhaps different terminology to avoid confusion – in view of the

17 See 'The Moon Treaty', Current Legal Problems, Stevens & Sons, London 1980, Vol. 33, 213-237.

18 Williams, M. 'The Moon Agreement in the Current Scenarios', 117-125, 53rd Colloquium on the Law of Outer Space, Prague 2010, Published by the American Institute of Aeronautics and Astronautics 2011.

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growth of space activities and new technologies at speeds without precedent. This is a reality of our time and it is for international law to have the last word in providing suitable answers.

