

60th IISL COLLOQUIUM ON THE LAW OF OUTER SPACE

Session 1

9th NANDASIRI JASENTULIYANA KEYNOTE LECTURE
ON SPACE LAW & YOUNG SCHOLARS SESSION

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The Outer Space Treaty

Its First Fifty Years

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Against the extension of time in the age of the universe fifty years appears to be a relatively short time and covers an only infinitesimal period in its long history. On the other hand, these were a most eventful fifty years that has seen empires come and go and brought change to many spheres of human life on earth. There must therefore be a great deal of stability and solidity in a Treaty that has, seemingly, withstood so many changes and evolutions around it.

The question therefore arises what makes this Treaty so special and where are its strengths and specificities that distinguish it from many other similar legal documents.

And indeed, it appears to be a most unusual and original effort to provide a timely and highly appropriate answer to a new era, the space age in whose dawn it was created by visionary teams of lawmakers from many nations.

This effort is all the more remarkable as drafting this law was a move into unknown territory that had never before been the subject of legal rules and regulations and whose properties and specifics were hardly known, space research not to speak of space uses still being in its early beginnings. Drafting this law was therefore also an effort to project its provisions far into a future whose contours could only be vaguely imagined.

What makes this Treaty so special and with it other parts of new space law is the fact that, compared to other bodies of international law, it was written in a relatively short time, barely ten years after the first space object was launched into Outer Space.

It is true of course that 1967 was not really year zero in the history of space law as there were also some earlier, albeit rarer legal minds that foresaw the need to draft rules for spheres not covered by air law, such as spaces beyond its applications. Although no technological breakthrough was in sight, the first pioneers of rocket technology like Konstantin Tsiolkovsky or Hermann Oberth had made their mark and seemed to allow a glance into the future.

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It is generally Vladimir MANDL, a Czech lawyer from Plzen who is credited to have written the first monograph on space Law, “*Das Weltraumrecht, ein Problem der Raumfahrt*” published in Germany in 1932. A much broader academic discussion however started only in the years after the Second World War after rapid developments in the design and applications of rocket technology appeared and involved a growing number of scholars from both the East and the West of this period, their first interest being the definition of outer space and its legal status. These debates and controversies finally led in 1958 to the First Colloquium on the law of Outer Space held in The Hague under the auspices of the IAF which had been founded only a few years earlier in 1950. But their most important result was certainly, the founding at a Second Colloquium in London of today’s International Institute of Space Law, our IISL as a new international body for the development of space legal doctrines. Beginning with its first Presidents Eugene Pepin, Isabella Diederiks Verschoor and Manfred Lachs the Institute performed a vitally important task in this domain, later joined by other, older institutes like Institute of International Law or the Association.

While thus a certain consensus concerning basic principles of space law was emerging the question arose which mechanism would set them into legal rules to be respected by states. This question became all the more urgent after the successful launch of Sputnik in October 1957. Although they could have been drafted bilaterally between the two only space faring powers of that period, this task moved to the multilateral framework of the United Nations where every participating state could take part in decision making with its own vote.

The reasons, however, for the central role given to the United Nations of these years in the development of a new law of Outer Space must chiefly be seen in the geopolitics of this period, a difficult and dangerous moment of post war history characterized by increasing superpower rivalries and the chilly atmosphere of what was then known as the “Cold War”.

That no avenue would be left unexplored and that few limits would be respected became clear, not least through the rapid development of nuclear arms on both sides. While thus land, air and sea had already been the subject of military uses and military confrontation the question arose to what extent the arms race would also move into new media: and indeed early ballistic weapons developed by Nazi Germany towards the end of the Second World War had already begun to infringe upon humanity’s last frontier.

When thus one of the two super powers outmatched the other by first succeeding to put a manmade object into Outer Space it became clear that a new area of competition had been opened, the question remaining whether it would be limited to the civilian field or whether it would also become a military one.

What motivated these first two major players in Outer Space, except more general security concerns, is not easy to guess even today. If, in the end, there

was a clear turn towards more or less peaceful uses of Outer Space we can assume that next to political considerations there must also have been economic ones, such as the cost, even more prohibitive in those early days of moving and maintaining large military structures in Outer Space.

If in the end, therefore, such a more peaceful turn of events occurred, we can assume that next to political considerations there must also have been powerful economic ones such as the cost, even more prohibitive in these early days as today, of moving and maintaining large military structures into outer space. Finally space technology was still in its infant stage, lacking powerful launchers, sophisticated means of communications and intelligence.

As early as 1963 therefore and well before the conclusion of the first major outer space treaty general understandings were reached between the United States and the Soviet Union to ban the deployment of nuclear weapons and other weapons of mass destruction in outer space. Originally in the form of a bilateral agreement, it was later welcomed by the General Assembly of the United Nations in Resolution 1884 (XVIII), unanimously adopted on 17 October 1963.

The way was thus opened for entering into a much wider agreement on the principles that should henceforth govern the activities of states in the exploration and peaceful uses of outer space, and here again the General Assembly set out these principles in its historic Resolution 1962(XVIII) of 13 December 1963. This led to the negotiation and signing in January of 1967 of the Outer Space Treaty in London, Moscow and New York.

While geopolitical motives have thus had the strongest impact on the willingness of the international community of these, otherwise highly controversial and conflict-stricken years to arrive at such a wide-reaching agreement, this should not obscure other factors which promoted this innovative process.

As at the origins of air law, technological factors also had a large part to play and here interesting parallels between air and space law exist. Thus, as Isabella Diederiks-Verschoor notes in her now classical Introduction to Space Law, it was the Wright brothers' engine-powered flight in 1903 that eventually led to a first series of international conferences and agreements on rules and regulations for air traffic, in particular the famous Paris Convention of 1919, preceding the later Chicago Convention of 1944.

Similarly the first flights of man-made objects into outer space beginning with Sputnik called for an urgent need to develop the legal principles which the academic world had already requested earlier. Contrary to air law, however, the time span between a first technological breakthrough and a first legal reaction was cut by half.

As another leading expert on air and space law, Bin Cheng remarked in an essay published on the 30th anniversary of the Outer Space Treaty, "the treaty was drawn up not only in some haste within the space of less than 12

months but also less than ten years after the launch of the earth's first artificial satellite”.

The signing and entry into force, shortly thereafter, of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (usually referred to as Outer Space Treaty) thus signifies the creation of an entirely new branch of public international law, the law of outer space. This law is and remains of an original and innovative nature in many respects.

In subjecting the exercise of state sovereignty in outer space to new rules rarely to be found in the traditional pages of international law, much stronger marked by Realpolitik, the Outer Space Treaty creates a new ethic and an entirely new spirit in the cold relations between states. Most importantly perhaps, unlike the continents and seas newly discovered by European empires and their navies in previous centuries, outer space, including the moon and all other celestial bodies is not subject to national appropriation. And unlike the high seas which since Salamis and Actium have been among the preferred theatres of war and military, naval engagements, the exploration and uses of outer space were to be reserved for peaceful purposes only.

It is innovative also in the sense that to this day it has attempted, albeit not always successfully, to move ahead of technological developments and to try to create a secure legal environment for future scientific or economic activities.

This ambitious design is perhaps best exemplified by the visionary dispositions of such follow-up treaties as the 1979 Moon Agreement. By designating in its Article 11 the moon itself as well as its natural resources as the ‘Common Heritage of Mankind’ (echoing, incidentally, a similar disposition for natural resources in the deep sea-bed contained in the new law of the sea) a step was certainly made towards a future, more broadly designed regime for such resources. The scope for such a regime would even be wider as the provisions of the Moon Agreement are also applicable to other celestial bodies within the solar system other than the earth. Not surprisingly this treaty has, although adopted unanimously by the General Assembly of the United Nations and although it could enter into force some years later, found to this day only a handful of states willing to ratify it and thus endorse the principles it contains.

Among the many new and path-breaking principles contained in the 1967 Outer Space Treaty special attention is due to its Article VI which incorporated the principle of international responsibility of states for national space activities, whether such activities are carried out by governmental agencies or by non-governmental entities. It also stipulates that national space activities are carried out in conformity with the provisions of the Outer Space Treaty. The wording of this principle emerged as a compromise formula which reconciled the then strongly opposed views of those wishing

to reserve space activities to states only, like the Soviet Union and those, like the United States and other Western powers, advocating and allowing the access to space and space activities to non-state actors as well.

During the period of twelve years that followed the entry into force of the 1967 Outer Space Treaty four other major space treaties were concluded at the United Nations.

Here the finalization and signature of an Agreement on the Rescue of Astronauts, the Return of Astronauts and Return of Objects Launched into Outer Space, in short the 1968 Rescue Agreement, was accelerated by a tragic space event that occurred just on the day of the signature of the Outer Space Treaty.

The next and third of the space treaties originating from within the United Nations, the 1972 Liability Convention, is considered to be one of the most interesting instruments from a purely legal point of view. The Liability Convention is based on two different legal principles: the principle of absolute liability of the launching state which shall be obliged to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight; on the other hand it also contains the principle of liability based on fault in the event of damage caused elsewhere.

The fourth UN treaty, the 1975 Registration Convention, had as its main objective the implementation of the principles that had already been spelled out in less detail in Article VIII of the Outer Space Treaty.

When drafting in the late 1970s the terms of the fifth legal instrument, the 1979 Moon Agreement, negotiators again elaborated on a number of principles already found in the 1967 Outer Space Treaty. But when negotiating this Agreement, the drafters, in dealing with the status of the natural resources of the moon, were not in a position to rely on the Outer Space Treaty as, in this respect, the Treaty remains mostly silent.

As opinions on this matter diverged a generally acceptable compromise was found by joining confirmation of the freedom of scientific investigation, the exploitation and use of the moon as a right of all states with the stipulation to establish an international regime governing the exploitation of the natural resources of the moon, as such exploitation might become feasible.

With the conclusion of the Moon Agreement the early and dynamic phase of UN law making by treaties in the field of outer space had come to an end. This did, not, however, mean that efforts of the world organization to create multilateral rules for this new dimension of human activity had totally ceased. The United Nations now turned or rather returned to the practice of declaring legal principles for space by Resolutions of the General Assembly, a practice it had already employed in the period that preceded the adoption of the five outer space treaties.

But while the first of these Resolutions, in particular Resolution 1962(XVIII) of 13 December 1963, had the objective to launch the process of international cooperation in space and thus create a basis for a space

legislation process later, now the establishment of a number of sets of principles by UN General Assembly Resolutions had to regulate more special and more technical categories of space activities. In this way the sets of principles elaborated and adopted by the General Assembly included Principles governing television broadcasting (1982), remote sensing of the earth from space (1986), the use of nuclear power sources in outer space (1992) and a Declaration on international cooperation for the benefit and in the interest of all states, taking into particular account the needs of developing countries (1996). These sets of principles, while based to a large degree on the previous space treaties, particularly the Outer Space Treaty, are not legally binding; Resolutions of the General Assembly which are simply recommendations to member states lacking this force. Principles thus adopted – most of them by consensus – however still form a code of conduct and reflect a wide legal conviction of the present international space community on special categories of space activities.

These General Assembly Resolutions if followed, as is the case, by a constant practice of states and international organizations may play a significant role either in establishing customary rules of international law or serve as a basis for future international negotiations on treaties to regulate the same subjects but this time in a legally-binding manner.

An anniversary such as the one we are celebrating this year, a half century since the entry into force of the OST precisely on 10 October 1967, that is only a few weeks from now, of course raises the question to what extent it is still relevant today or whether considering the explosive growth of space science and space technology during these decades it is now obsolete.

The answer to this question is, as your President Kai-Uwe Schrogl said addressing the First International Space Forum in Trento last year, an emphatic NO. The principles set out in this treaty are as relevant and as important as never before and are now supported by no less than 107 countries as states parties, 23 more of them having signed it but not completed ratification yet, that is thus an overwhelming majority of members of the United Nations.

The Treaty has thus successfully withstood the test of times and many authors concur in the view that over the 50 years of its existence the Treaty has never actually been violated in any of its main principles, although challenges in many areas from the prohibition of ‘national appropriation’ to the cardinal principle of ‘peaceful uses’ abound.

To mention just a few, let me point for instance to the so-called Bogota Declaration of 1976, a group of equatorial countries claiming sovereignty over the geostationary orbit as it was supposed to be situated above their land. They claimed that this was not part of Outer Space but a ‘natural resource’ to which they had some rights. To this day this Declaration has remained without practical consequences apart from an item on the agenda of the Legal Subcommittee of COPUOS.

A much more recent challenge to the principle of non-appropriation has arisen with the advent of space mining as a new industry that raised the question of space resource rights. As the IISL has already taken up this matter not least with the issue of a major Background Paper on the Taking of Resources in Outer Space and on Celestial Bodies, I will not enter into a detailed discussion of this matter and will limit myself to a few general remarks in the context of the relevance of the Treaty.

While I believe that the Treaty and its article II are relevant also in this case, its rather general wording and question around the term ‘appropriation’ create some ambiguity on its application to resource mining. There is of course a much more detailed regulation on the use and exploitation of space resources in the Moon Treaty which however remains contingent on the establishment of an international regime that to this day has never been established. There is therefore a somewhat unsatisfactory legal situation that puts a heavy responsibility on states parties to the OST so as to avoid the emergence of an unregulated space industry that could easily select flags of convenience and operated from states which are not parties to the OST. As Tanja Masson-Zwaan and Neta Palkovitz have argued in an excellent analysis recently, states should make every effort to reach an international agreement on space resource rights, an agreement that could of course take many forms but should certainly emerge from a multilateral body like COPUOS which has recently started debate on this issue. Such an agreement would benefit all stakeholders and remove the legal uncertainties that cloud this issue.

In 2007 China was thought to have violated the Treaty when it shot down one of its own weather satellites with a ground based medium range ballistic missile. Although this was criticized by many countries, not least because of the massive debris cloud within the orbit this did not actually constitute a treaty violation as the missiles used did not come under the definition of ‘weapons of mass destruction’ whose placement in orbit is expressly prohibited by Article IV of the OST.

An incident of this kind, which might certainly be followed by others, reveals one of the basic shortcomings of the Treaty. While it rests on a number of general principles, one of the most important ones being that the Moon and other celestial bodies should be used for exclusively peaceful purposes only, the Treaty remains uncompleted as to the exact extent and scope to which these principles are to be respected. This is the reason why four other major space treaties, namely the Rescue Agreement, the Liability Convention, the Registration Convention and finally the Moon Agreement were concluded at the United Nations to create more concrete legal rules for the more general principles contained in the OST. This intention is also clearly spelled out by some of the preambular paragraphs of these follow-up Treaties. It is a less glorious page in the history of space law making however, that this effort to elaborate more effective international rules and procedures based on the OST

stopped short just twelve years after the conclusion of this basic Treaty. A growing reluctance by states to accept binding legal rules for their activities in Outer Space also became apparent by the lamentable fate of the Moon Treaty that, although unanimously adopted by the General Assembly of the United Nations by Resolution 34/68 of 5 December 1979, has until today only 18 parties to it, the other conventions having met a much higher degree of international acceptance.

Efforts to further develop space law and its principles did of course not entirely stop at this juncture, but even the new practice to design legal principles for space by simple, legally non-binding Resolutions of the GA, starting in 1982 with Principles on direct television broadcasting, practically ended in 1996 with a last Declaration on the special needs of developing countries in international cooperation in space. Another count could perhaps set the year 2013 as a concluding point as to present day there are therefore neither new international treaties nor any set of principles on the drawing boards of law making bodies such as the Legal subcommittee of COPUOS. It is true, on the other hand, that COPUOS has not completely given up the task of devising new rules and procedures for the exploration and use of Outer Space, although this effort has now come under the new heading of Long Term Sustainability of Space Activities. The fact that this activity to devise new rules of conduct for space activities has been placed under the aegis of the Technical and Scientific Subcommittee rather than its Legal Subcommittee shows the general reluctance of states members to enter into new binding legal obligations. But although many of the rules discussed in this context by a Working Group, despite their overwhelmingly technical nature, bear a distinct resemblance to legal rules such as rules on better registration of space objects and others, there is apparently a need to cloud them in a different context.

Against this glaring lack of new general, global international legal rules in space, there is on the other hand a proliferation of national space legislation as well as a host of bilateral or even multilateral space agreements that are not universally binding such as the OST and the other UN Space Treaties.

One of the reasons for the need for national space legislation was certainly the fact that private non-state actors assumed an increasing role in the exploration and uses of Outer Space. This was not foreseen, although never completely excluded by the authors of traditional space law that was only addressed to states and intergovernmental organizations without expressly covering private space activities.

In order to preserve the aims and principles established by the existing legal framework of public international law it was necessary therefore to enact national law which is applicable to such space activities carried out by private, non-governmental actors of various kind. As Irmgard Marboe rightly remarks in her contribution on national space law in the Handbook on Space

Law edited by Frans Von der Dunk and Fabio Tronchetti, this serves the interests of both the actors themselves and those of the general public.

In these instances national space law does not encroach on international space law but rather strengthens it and makes it directly applicable and enforceable which is not necessarily the case with obligations of public international law. But there are now apparently increasingly other instances in which national space legislation, particularly that of some of the major players in space affairs, threatens to replace international legal regulations in space by addressing issues that would need such a global approach but applying to them rules and regulations that are fashioned more to national than to international interests, more to commercial than to more global interests.

A case in point already discussed earlier is the issue of space resource rights that clearly shows how national legislation aims to anticipate the further development of international legal regulations, although the already existing examples of national legislation on this issue expressly state that activities undertaken in this field will be subjected to national as well as international law, thus also leaving open a later option to place these activities under a new international regime.

There are however developments in other fields of space research and uses that could place much more severe obstacles against development of further rules of international space law, as they concern questions that demand much more imminent action and do not lie so far in the future as the possibility of space mining. This concerns the now universally recognized need to develop rules for Space Traffic Management, an issue closely interlinked with other pressing concerns such as space debris and other space hazards and quite generally the issue of space security and the further sustainability of space activities. The technical prerequisite of STM is called SSA, that is the need to monitor and track man made space objects, space weather or NEOs. In this regard there now exists a host of national and international programs on SSA, the lead being held by the US, followed not too closely by Europe, that is ESA which has already established in 2008 a first SSA Programme to create its own European system.

While these programmes and systems on SSA have made enormous progress technically and now allow us to ascertain, in more or less precise fashion the number of space objects circling the earth or even the current volume of space debris that provides staggering features if one includes the smallest particles there are hardly any advances in the legal and governance field. This even appears to be the case in the leading space powers, including the United States. A report to the US Congress stating that it is “in the US national strategic and economic interest to have an improved domestic space traffic safety governance framework [...] that specifically aims to mitigate and reduce the risk of possible space traffic safety incidents” shows that even in the United States there is currently no national regulatory framework for

STM, the US Air Force providing satellite operators with warning of potential collisions but without the authority to order an operator to change orbits. The report shows a clear preference to give a civilian agency like the FAA responsibility for STM work but makes no concrete recommendation.

In Europe a similar situation exists as efforts to protect critical infrastructure from the growing risks of the space environment have multiplied, both within member states and at the European level, although so far approaches are fragmented and the infrastructures being established are not aligned. In addition Europe remains, to a large extent dependent on non-European data and services most notably in the SST domain. But there is currently no joint strategy or coordinated infrastructure that would provide efficient forecasting services for all European users. The development of such a system would of course require the pooling of resources of all interested European parties of ESA, the EU and their respective member states. Apparently still quite far from creating operationally a joint European SSA system, despite the long and unique experience of ESA in research and development in the space domain, including the integration of large space programmes, the question of the governance of such a system seems to be even farther away. This question is particularly complicated by the fact that for the moment competence in space affairs quite generally is split between the EU, ESA and member states, the Lisbon Treaty having given the EU certain but not exclusive competences in space affairs. This means that the regulatory aspects of much that exists in SSA systems in Europe today largely remains in the hands of member states as long as Europe does not acquire authority for STM for all its member states.

As this short look at the state of STM mechanisms in some of the current major players in space shows, a look that leaves out but should be complemented by a similar look at possible STM mechanisms of large space faring nations like China and India, there appear to be currently hardly any national models for STM which could serve as a basis for a later wider international system like a full-fledged Space Security initiative to encompass aspects of STM and also planetary defence.

While this might at first sight be good news as it shows that the field might still be open for an international effort, the question remains whether political will exists to incorporate national systems, after completion, into a wider international system. This is particularly true as for the moment not much movement towards building such an international system is visible, despite the undisputable urgency for addressing the issue of STM.

Fortunately however there is no lack of blue prints to achieve these goals and in this context I believe that one of the best recent studies on this subject is the recent IAA Cosmic Study of STM, some of whose authors are amongst us. I will therefore not deal in more detail with this exemplary and wide ranging study except to say that it appears to be one of the most realistic and

practicable studies in this matter, including its estimate that it could still take 15 years to its implementation.

Any serious discussion of the legal problems that have appeared in the first fifty years of the OST have shown, particularly in areas just mentioned like STM but also in others that there is an urgent need for the completion of the current body of international space law. In the intermediary some less satisfactory stopgaps like certain forms of national legislation and other forms of soft law have been developed, without however responding to the basic requirements of a real advance in the creation of new, global space law. Here the responsibility lies with all states parties to the OST but also with the United Nations as the universally recognized body for law making of course not only in the field of Outer Space. Here the record, as the record with states parties is a mixed one, as we have seen earlier. It is to the credit of the United Nations however that an effort is now underway to use the fiftieth anniversary of the Treaty to create stronger awareness of its importance as the undisputed cornerstone of space law. This effort will take the form of a Declaration on the 50th anniversary of the Treaty to be adopted by the next GA of the UN this autumn.

The Declaration, that incidentally was drafted not by members of the Committee but by the UN Secretariat but was then endorsed by COPUOS is quite outspoken in its longer preambular part when it expresses concern over the fragility of the space environment and addresses the need for joint efforts at the international, regional and interregional level to promote the safety, security and sustainability of outer space activities, including, *i.e.* the protection of space assets, space systems and critical infrastructures. The Declaration does not however follow this diagnostic as well as the affirmation of other highly relevant aspects of modern space activities, by a clear call for new space legislation including possible mechanisms and procedures. The Declaration only calls, as the Committee did on many previous occasions on states that have not yet done so, to become parties to the OST and requests those that are already parties to encourage its implementation and application. It is only in this context that there is, without going much further, a somewhat timid reference to the progressive development of international space law. A much clearer path is designed for developing countries where the competent part of the UN Secretariat is given a mandate to assist them in the development of national space policy and legislation. There is however no mandate concerning other forms of space law.

The question appears legitimate therefore to ask whether an anniversary such like this might not have been an excellent opportunity to go a little further than just make another call to ratify the OST by further member states of the UN. Here one could further question oneself what difference to the universal applicability and weight of this Treaty such further ratifications would make, considering that virtually all space fearing nations are already parties or have

at least signed it. This should of course not be in the least to be understood derogatory in the direction of such states that have perhaps not yet considered entering into space activities and with all the importance that their ratifications might carry it would not have the same effect than that of states already active in Outer Space, directly or indirectly through their private sectors.

There is of course another opportunity to consider the issue of the international legal foundation for space activities namely another major UN space conference UNISPACE+50 to be held in Vienna next year. And indeed global space governance will be one of the thematic priorities of UNISPACE+50.