PERSPECTIVES OF SPACE LAW

*Eilene Galloway**

During the past twenty-three years, a body of space law has come into existence and is now recognized as a specialized branch of international law. The legal guidelines for States to observe in the conduct of their space activities have been formulated to avert conflicts among nations as well as to provide procedures designed to solve or mitigate problems. During this time the law has kept abreast and even ahead of space science and technology as numerous applications developed to improve functions of worldwide benefit to society. A point has now been reached where current forecasts portend even greater advances in uses of the space environment for earth-oriented activities and consequently compels a reexamination of assumptions and policies underlying space law. *Perspective* is defined as "the relationship or proportion of the parts of a whole, regarded from a particular standpoint or point in time." Today is our point in time and the perspective on the past, present and future is my own, resulting from experience with national and international developments since 1957 when the space age began.

The deep roots of space law can be traced for several decades prior to 1957. Many legal articles had been published before that time, largely by authors motivated by their need to define the upper limit of sovereign airspace and make philosophical comparisons with debatable boundaries of territorial seas.[1] Pre-satellite articles were based not merely on hypothetical situations, however, because considerable knowledge had been produced by scientists and engineers who wanted to explore the Universe. Early predictions were even made on the practical benefits likely to revolutionize communications and meteorology. They were simply awaiting advances in the art of rocketry.

Ideas and concepts for the governance of outer space as a fourth environment—added to land, air and sea—had already been generated long before spacecraft were launched into earth orbit. Space law was not only for outer space as a separate and distinct spatial area but also for operations performed there for functional uses on the Earth. Between 1958 and 1963, space law concepts were embodied in United Nations resolutions.[2] They had been nurtured during the International Geophysical Year (IGY) when 67 nations cooperated in scientific experiments from July 1, 1957 to December 31,

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*Honorary Director, International Institute of Space Law; President of the Theodore Von Kármán Memorial Foundation, Inc.; Member, International Academy of Astronautics; Member of the International Astronautical Federation Committee for Liaison with the United Nations Committee on the Peaceful Uses of Outer Space and its Subcommittees; Consultant on international space activities for the U.S. Senate and Office of Technology Assessment.

[1] "Space Law: A Symposium," prepared at the request of Senator Lyndon B. Johnson, Chairman, Special Committee on Space and Astronautics; prepared by Eilene Galloway. Senate Special Comm. on Space and Astronautics, 85th Cong. 1st Sess., at 573 (Comm. Print. 1958).

[2] U.N.G.A. Resolutions: 1348/XIII (Dec. 13, 1958); 1378/XIV (Nov. 20, 1959); 1472/XIV (Dec. 12, 1959); 1721/XVI (Dec. 20, 1961); 1802/XVII (Dec. 19, 1962); 1884/XVIII (Oct. 17, 1963); 1962/XVIII (Dec. 13, 1963); 1963/XVIII (Dec. 13, 1963).

1958.[3] In fact, the first U.S.S.R. and United States satellite programs were undertaken as part of the IGY whose planning was dominated by mission-minded scientists and engineers dedicated to international cooperation for peaceful purposes.[4] Political policymakers were able to garner a quick harvest of ideas to incorporate in the first formulation of space law. By October 10, 1967, basic space law concepts were already in force according to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies.[5] Furthermore, a procedure was set in motion to expand legal coverage in new treaties when technological advances required additional regulation. Now, more than two decades later, the quality of foresight exercised at that time can be evaluated. What future problems were perceived and how were they solved or mitigated by preventive measures?

This question can be answered by examining the major positive features of the 1967 Treaty on Outer Space.

1. Space activities have been carried out "in the interest of maintaining international peace and security and promoting international cooperation and understanding." (Article III). For more than a generation this new activity has been free from destructive aggression with hostile intent. Emphasis has been continuously upon peaceful benefits, *e.g.*, global communications, worldwide meteorological services, improved navigation for ships and planes, land management, health and medical advances, exploration of celestial bodies and deep space probes. We have not had a war in outer space or hostilities directed to the Earth. Reconnaissance satellites collect data as part of a peacekeeping function and must be regarded as a use of space technology to deter any outbreak of hostile activities, especially patterns of aggression that might be formed on the Earth. Even though Article IV of the Treaty is limited in prohibiting earth-orbiting objects "carrying nuclear weapons or any other kinds of weapons of mass destruction" and States Parties agree not to "install such weapons on celestial bodies, or station such weapons in outer space in any other manner," the practice for more than two decades has gone far beyond this injunction and no nation, whether or not a party to the Treaty, has carried out hostilities with weapons of less than mass destruction. This situation derives not only from compliance with the spirit of the 1967 Treaty but also from the global nature of space technology which necessitates a high degree of international cooperation in order to achieve operational efficiency. When it is considered that space science and technology can be used for both peace and war, it is no mean achievement to have built up a 23-year historical record of peaceful space functions which have benefited many people and nations. Fear that this measure of arms control, not achieved for land, air and sea, may not endure for outer space can be a positive influence gained from this perspective of the past in compelling continued and greater concentration on disarmament provisions designed for the future.

2. When the 1967 Treaty was being formulated, claims of sovereignty over outer space and celestial bodies were seen as the source of future conflicts which could disrupt

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[3]International Cooperation and Organization for Outer Space. Senate Committee on Aeronautical and Space Sciences. 89th Cong. 1st Sess. 353-354 (Doc. No. 56, 1965).

[4]*Id.* at 361-62, 372.

[5][1967] 18 U.S.T. 2410, T.I.A.S. 6347, 610 U.N.T.S. 205.

international cooperation and lead to hostilities. One of the great achievements at this time was the acceptance of Article II prohibiting national appropriation by claim, use, occupation or "any other means." Legal form was given to a customary practice. To imagine the opposite of this principle—that each State could and would make sovereign claims—is to deduce instantly the resulting chaotic international situation and to conclude that the framers of the 1967 Treaty were especially gifted with foresight in dealing with the question of sovereignty to this extent. Again, the nature of space science and technology made an indelible imprint on politics because the rapidity of orbiting satellites with global functions demanded new attitudes toward sovereignty in an unclaimed environment.

3. The third remarkable example of foresight was the inclusion of the *use* of outer space for peaceful purposes. Early drafts dealt only with *exploration* and had they prevailed, the Treaty's provisions would not have applied to all the uses of the space environment for activities performed on the Earth. By providing for the uses of outer space, all functions developed then and thereafter are covered by the Treaty, including communications, weather prediction, remote sensing, navigation, etc. Some late comers to outer space activities have assumed that the Treaty covers only those functions in existence at the time the Treaty went into force and that its provisions are not applicable to such specific functions as direct television broadcasting satellites and remote sensing by satellites. Such misconceptions may arise from lack of knowledge of space science and technology, specialization in only one type of space activity and unawareness of the total history of space applications. Lack of comprehension of the applicability of the 1967 Treaty has led to proposals which are unnecessary and therefore confuse the analysis of essential tasks that lie ahead. It is not necessary to abandon the past, explicitly the 1967 Treaty when it does not mention every conceivable use; rather, this Treaty is a foundation to be built upon when such appreciable scientific and technological advances have been made as to require more specific guidance to States in the conduct of their space activities.

4. Freedom for scientific investigation became a guideline coupled with equal access of nations to participate in space activities without discrimination. These provisions produced practical results for scientists and nations as can be seen from a study of the texts of official agreements on projects involving international cooperation.[6] Freedom for scientists to conduct research is a right which has deep roots in the past and indeed the concept is embodied in recent treaties, particularly notable in the Antarctic Treaty of 1959.[7] A concomitant feature is the privilege of disseminating the results of research. At the beginning of the space age it was assumed that any nation could contribute scientists and engineers to the enlargement of beneficial space activities and opportunities have been made available during the past twenty-three years. Similarly, Article I of the 1967 Treaty also is based upon according opportunities for all States to enjoy the freedom to explore and use outer space.

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[6]United States International Space Programs: Texts of Executive Agreements, Memoranda of Understanding, and Other International Arrangements, 1959-1965. Sen. Comm. on Aeronautical and Space Sciences. 89th Cong. 1st Sess., 575 (Doc. No. 44, 1965).

[7]Antarctic Treaty, December 1, 1959, [1959] 12 U.S.T. 794, T.I.A.S. 4780, 402 U.N.T.S. 71, entered into force for the United States on June 23, 1961.

The original two space powers—the United States and the U.S.S.R.—did not seek, either individually or jointly, a monopoly on space exploration and use. The concept that space activities "shall be the province of all mankind" was implemented by launching spacecraft and space experiments for other nations. The United States has consistently followed a policy of making its launching facilities available for peaceful purposes to numerous nations as well as to international organizations such as INTELSAT and the European Space Agency.[8] The results of U.S. space research have also been made available to the United Nations, and, in the case of LANDSAT data alone, more than 104 countries have been involved. The Soviet Union has also launched satellites for other countries and regularly reports satellite data to the United Nations.

Nevertheless, there is an assumption by the representatives of a few nations that they cannot have equal access unless they have their own launching facilities. Often such allegations are made because the spokesmen do not know the facts concerning the availability and use of launching facilities for projects conducted by their own nations. Studies could be made of individual countries that have had outstanding space programs during the past two decades and yet have not had national launching capabilities. It can also be demonstrated that it would not be economically prudent or technologically desirable for each nation in the world to build its own launching facility. Although launching capabilities can and are being expanded, there must be some accommodation between nations with due regard for cooperation in harmony with scientific and technological imperatives. This particular perspective of the past and present should enable us to make an objective study of practicable plans for launching satellites, economic and political factors, fair and equitable arrangements for guaranteeing "equal access" to activities designed to bring worldwide benefits from using outer space. This multidisciplinary problem cannot be appropriately handled by legal words alone but must be based on factual information regarding past policy and performance, a realistic appraisal of the present situation, and an appropriate plan for the future.

5. The 1967 Treaty anticipated the possibility of damage from space accidents and included provisions which were further developed by the Convention on International Liability for Damage Caused by Space Objects which entered into force on October 9, 1973.[9] Originally it was thought that a malfunctioning space object would burn up entirely in the atmosphere, and had this estimate been scientifically accurate, no legal problem would have been created; however, experience proved that space objects had "component parts" and this term is included in the 1967 Treaty as well as the Liability Convention. That this was a foresighted provision was evident when the U.S.S.R. Cosmos 954 satellite fell on Canada on January 24, 1978, scattering radioactive debris over an area the size of Austria.[10] Legal guidelines for handling this situation had been worked out prior to the creation of the problem.

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[8]Space Law: Selected Basic Documents, 2d ed., Sen. Comm. on Commerce, Science, and Transportation, 95th Cong. 2d Sess., 600. (Comm. Print. 1978). U.S. Launch Assurance Policy at 557.

[9][1973] 24 U.S.T. 2389, T.I.A.S. 7762.

[10]Galloway, "Nuclear Powered Satellites: the U.S.S.R. Cosmos 954 and the Canadian Claim," 12 Akron L. Rev. 401 (1979). *See also* Galloway, "United Nations Consideration of Nuclear Power for Satellites," Proc. 22nd Colloquium on the Law of Outer Space 131 (1980).

6. The 1967 Treaty expressed the strong motivation of scientists, engineers, politicians and the general public to protect the Earth and outer space from contamination and avoid harmful consequences from space activities. Protection of the environment has become a consistent policy enunciated in relevant international agreements.

7. State responsibility and the role of international governmental organizations were identified and added to the structure designed to head off future difficulties which might arise. Because of the analysis that had gone into the provisions on these subjects, it was easier to work out the relationships between nations and such organizations as the European Space Agency, INTELSAT, etc.

8. The framers of the 1967 Space Treaty also foresaw the possibility of an expanding role for the Secretary General and the United Nations, and in subsequent treaties on astronauts, liability, registration, the Moon and other celestial bodies, the trend has been to enlarge responsibilities, thus creating a central international point on which to focus.

9. Finally, it should be noted that while the provisions of the 1967 Treaty on Outer Space are general guidelines, they are sufficiently specific to elicit agreement concerning their meaning. Compromise has not been achieved by such ambiguity that phrases can be accorded diametrically different meanings. Success has been achieved by the method of taking a general principle and delineating it in greater detail in space treaties subsequently formulated by the Legal Subcommittee and the Committee on the Peaceful Uses of Outer Space. This practice proved its wisdom as compared to that used in the Law of the Sea negotiations where multitudinous problems and functions are incorporated in a lengthy document containing so many issues that agreement is difficult to achieve.[11] Separate attention successively applied to specific problem areas has proved its worth in achieving consensus on legal guidance for astronauts, liability for damage, registration and celestial bodies.

There were additional positive factors influencing the formation of space law which benefited from early establishment of institutions to deal with problems requiring multidisciplinary knowledge essential to working out legal solutions. International law embodying guidance for future operations cannot be shaped in a vacuum but must depend upon the interaction of other factors—scientific, technological, political, economic, and cultural. The U.N. Committee on the Peaceful Uses of Outer Space and its two subcommittees—the Scientific and Technical and the Legal—have outstanding records of accomplishment in dealing with outer space situations, particularly when compared with other specialized categories of international law. Their procedure of decisionmaking by consensus ensures the equality of all members since any one can object to a proposal, and the ultimate support of all nations represented on the Committee guarantees a firm foundation of compliance.[12] The Outer Space Affairs Division and arrangements for coordination of space activities within the United Nations are also evidence of foresight rewarded through the years by accountable results.

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[11]Informal Composite Negotiating Text/Revision 1. United Nations Third Conference on the Law of the Sea. Eighth Sess., Geneva, March 19 to April 27, 1979. Doc. A/CONF.62/WP.10/Rev. 1, 140 pp., 7 Annexes (April 28, 1979).

[12]Galloway, "Consensus Decisionmaking by the United Nations Committee on the Peaceful Uses of Outer Space," 7 J. Space L. 3 (1979).

Established international institutions for specific functions, particularly the U.N. specialized agencies, adopted space science and technology as a tool to improve their performance. The International Telecommunication Union expanded its role to include space technology for global communications. The World Meteorological Organization was ready to exercise responsibility when space technology wrought a revolution in weather prediction and associated services. UNESCO took account of the opportunities to be derived from using space technology for educational purposes. The Food and Agriculture Organization expanded its programs on the basis of information supplied by spacecraft. Ships and planes have increased safety because of space navigation projects. In fact, space technology permeated every function that could be advanced by its use.

Although the record reveals unusual and rapid adjustment internationally to concepts and institutions following the inauguration of the space age, there have been criticisms of space law and organizations. Had these criticisms come into focus in 1958 it is unlikely that the record of accomplishment could have been as strong as that which developed. The criticisms have arisen in recent years, usually in relation to problems which have not yet been solved. And these problems, which involve hard core issues not easily dissolved by compromise, come to a head in the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space. Satellites for international direct television broadcasting and remote sensing of the Earth have been under consideration for some years without achieving a consensus on total rules for international guidance. Both subjects are examples of the use of outer space and are therefore subject to the 1967 Treaty on Outer Space. To expand regulation beyond this Treaty, and beyond applicable provisions in other international law, would require a resolution of the issue of prior consent demanded by some countries which wish to approve programs before they are broadcast and give advance consent to the dissemination of remotely-sensed data. This issue stems from basic cleavages in the philosophy of government: the United States favoring the free flow of information and ideas whereas the U.S.S.R. insists upon controlling program content and data collected by remote sensing. There are adherents for each side of this question in the Legal Subcommittee.

Another question which has been discussed for many years is the definition of outer space. This question was set aside when the 1967 Treaty on Outer Space was formulated, and for some time thereafter, because it was assumed that any object in orbit was in outer space: the framers were not responsible for determining where sovereign airspace ends, scientific and technical information could not provide the basis for a decision, and no problems arose which could have been solved by an arbitrary line between airspace and outer space. The statement of the question as it now appears on the agenda of the Legal Subcommittee is practically impossible to solve because a number of elements have been added and one proposed solution will not cover all the combined aspects. Beginning with the simply-stated question of the relation of sovereign airspace and prohibitions against sovereignty in outer space, the agenda expanded the item to "Questions relating to the definition and/or delimitation of outer space and outer space activities, also bearing in mind questions relating to the geostationary orbit." This statement commingles the functional approach with the spatial question and is worded so that it can be interpreted as an effort to delimit space activities. If a purely legal approach is taken toward delimiting space activities, unnecessary prohibitions could impede desirable progress in applications of space technology. All the questions

concerning uses of the geostationary orbit cannot be solved by drawing a legal boundary line between airspace and outer space, leading to the conclusion that the geostationary orbit should be a separate agenda item. Curtailing space activities by means of a boundary line between airspace and outer space could not be the sole means of regulating international space programs or national programs with international characteristics.

It should be noted that the 1967 Treaty on Outer Space includes both spatial and functional concepts in such a manner that each or both can serve as the basis for legal guidance related to a specific objective. This is not a case of either/or spatial and functional concepts but of both being used simultaneously. There is nothing unusual about this as the same pattern exists on the Earth where identifiable functions are performed in designated geographic areas. Almost all the nations represented on the Committee on the Peaceful Uses of Outer Space are on record that the 1967 Treaty places the geostationary orbit in outer space and thus denies claims of equatorial countries to segments of that orbit. In fact, it does not seem that the Legal Subcommittee can achieve a consensus on solutions to all these related problems, many of which are not in its sole jurisdiction. The International Telecommunication Union performs a crucial function in relation to the geostationary orbit by allocation of frequencies and policy statements concerning its status as a limited natural resource. The International Civil Aviation Organization, which is undoubtedly concerned about the upper height of sovereign airspace, is evidently waiting for a request from some nation to study this matter. The agenda item on the Legal Subcommittee needs to be worded with regard to the objectives sought by defining outer space, *i.e.*, what purposes will a boundary achieve and how can these purposes be attained without impeding desirable advances in space science and technology?

This perspective on the present situation should enable us to examine possibilities concerning the future course of formulating space law within the United Nations. Looking toward the year 2000 and beyond, the objective should be to formulate a basic body of space law with the widest international acceptance. The record of the Legal Subcommittee should not be graded on the number of treaties agreed upon in the shortest period of time. General Assembly directions to the Committee on the Peaceful Uses of Outer Space and its Legal Subcommittee need not be based upon the assumption that each assigned subject should result in a resolution and/or a treaty. Some subjects should be placed on the agenda for discussion and analysis. New subjects might include legal provisions for coordination of existing institutional arrangements, a plan well suited to the expertise of official observers from United Nations specialized agencies and other international organizations. Options could be studied for the international regime envisaged by the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies which was opened for signature at the United Nations on December 18, 1979.[13] The success and failure of methods employed by different international organizations could be analyzed in order to propose effective

[13]"Agreement Governing the Activities of States on the Moon and Other Celestial Bodies: History and Analysis," prepared at the request of Senator Howard W. Cannon, Chairman, Committee on Commerce, Science, and Transportation, by Eilene Galloway. U. S. Sen., 96th Cong. 2d Sess. (Comm. Print, 1980). Resolution adopted by the General Assembly on the report of the Special Political Committee (A/34/664) and on Agreement Governing the Activities of States on the Moon and Other Celestial Bodies. (A/RES/34/68 at 1-2, Annex at 3-12 (December 14, 1979).

plans for the future. Solar power satellites could receive more study in connection with possible legal proposals. Legal arrangements for space colonies could be outlined. The national space laws of each nation need to be compiled and disseminated together with information now furnished the United Nations on national space activities. Participants in the Committee on the Peaceful Uses of Outer Space and its two subcommittees should become familiar with the science and technology of space programs and interrelationships with other factors of which the law is only one. Additional effort could be made to integrate the work of the Scientific and Technical Subcommittee with that of the Legal Subcommittee. If the Legal Subcommittee meets for one month each year and considers only subjects that are basically irreconcilable, the member delegates will become frustrated over inability to form a consensus. International space problems cannot be settled by majority vote, but if consensus is reached by broad generalities which have different meanings for different nations, space law cannot be strengthened.

The most essential task for the immediate future is to increase the number of States that are Parties to the space treaties. Of the 47 nations represented on the Committee on the Peaceful Uses of Outer Space, only 14 have ratified or acceded to the four space treaties in force: Bulgaria, Canada, Czechoslovakia, France, German Democratic Republic, Federal Republic of Germany, Hungary, Mexico, Niger, Poland, Sweden, U.S.S.R., United Kingdom and the United States. Thirteen of the COPUOS members have not ratified the 1967 Treaty on Outer Space: Albania, Benin, Chad, Chile, Colombia, India, Indonesia, Iran, Kenya, Morocco, Nigeria, Philippines and Sudan. Twelve COPUOS members have not ratified the Astronaut Agreement; twenty are not parties to the Liability Convention; and 31 have not yet ratified the Registration Convention. By April, 1980, of the approximately 150 nations, the 1967 Treaty on Outer Space had been ratified by only 76 countries; the 1968 Astronaut Agreement by 71; the 1973 Liability Convention by 58, and the 1976 Registration Convention by 26.[14]

This tabulation was made prior to November 3, 1980 when the UN General Assembly by Resolution 35/16 increased the COPUOS membership by adding China, Greece, Spain, Syria, Upper Volta, Uruguay and Viet Nam, making a total of 53. Greece and Turkey will alternate membership every three years as will Spain and Portugal.

This raises another legal problem to which the Legal Subcommittee might give its attention: what is considered customary international space law? Answers to this question vary from considering the whole or part of the 1967 Treaty on Outer Space as customary international law to those who think only States are bound by each treaty they ratify. We are in the anomalous situation of having formulated a substantial body of international space law which has not been ratified on a worldwide basis and yet the practice of nations has been to abide by some principles recognized as customary international space law. Although the Legal Subcommittee should have some items on its agenda which are not being pressured into assuming treaty form, nevertheless it is a treatymaking body and should have continuous summary records of its proceedings. It is important to have the history of treaty negotiations in order to interpret provisions, and it is essential that delegates, particularly when they are newly assigned to the Legal Subcommittee, be able to inform themselves of the past history and status of current

[14]The Byelorussian S.S.R. and Ukrainian S.S.R. are listed separately as ratifying the space treaties, but the United States considers that they have been covered by U.S.S.R. ratification.

negotiations on each agenda item. It is fortunate that the summary records, abandoned during 1980 in an attempt to reduce costs, will be restored in the future.[15]

The paramount priority should be accorded to continuing and maintaining outer space for peaceful purposes. Control of armaments and the settlement of outer space disputes should be high on the list of objectives to attain in the future. The foresight we exercise for the future should equal and go beyond that with which we so successfully approached the opening of the outer space frontier.

[15]Budget Committee Votes in Favor of Restoring Services of Summary Records to Seven Subsidiary Organs of Assembly. Thirty-fifth General Assembly, Fifth Comm. U.N. Press Release, GA/AB/1980, (Oct. 24, 1980).