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COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

VERBATIM RECORD OF THE ONE HUNDRED AND FIFTEENTH MEETING

Held at Headquarters, New York,
on Monday, 11 September 1972, at 10.30 a.m.

Chairman: Mr. JANKOWITSCH (Austria)

- Expression of welcome to United States representative
- Granting of observer status to the European Space Research Organisation (ESRO) and the European Space Vehicle Launcher Development Organisation (ELDO)
- Consideration of the reports of
 - (a) The Legal Sub-Committee (continued)
 - (b) The Scientific and Technical Sub-Committee, including the summary of the preparatory session of the Working Group on Remote Sensing of the Earth by Satellites (continued)

This record is issued in final form pursuant to the decision taken by the Committee in September 1970 (see Official Records of the General Assembly, Twenty-fifth Session, Supplement No. 20 (A/8020, para. 10)).

EXPRESSION OF WELCOME TO UNITED STATES REPRESENTATIVE
GRANTING OF OBSERVER STATUS TO THE EUROPEAN SPACE RESEARCH ORGANISATION (ESRO)
AND THE EUROPEAN SPACE VEHICLE LAUNCHER DEVELOPMENT ORGANISATION (ELDO)

The CHAIRMAN: Before the Committee continues the general debate on the agenda item before it I wish to say a word of welcome to a new representative who has arrived this morning - Congressman Frey from the state of Florida. I mention this because the presence here of a representative from a state known for its space activities is both welcome as a sign of interest in the work of this Committee and welcome also in view of the interest in our work shown by public bodies such as parliaments and assemblies.

As I had the opportunity of informing this Committee last week, we have also had welcome signs of interest from international bodies with interests similar to ours on a regional scale, namely ESRO and ELDO, which have both asked this Committee for observer status. I have put this request to the Committee, and I understand from consultations with all delegations represented here that there is no objection to the granting to ESRO and ELDO of observer status in the Committee on the Peaceful Uses of Outer Space, and I will therefore, with the members' permission, inform those two bodies that their request has been received, that no objection has been raised and that they will therefore be welcome to follow the work of our Committee as observers. I think this must be welcomed as a sign of growing interest also in regional bodies in the work of our Committee

CONSIDERATION OF THE REPORTS OF

- (a) THE LEGAL SUB-COMMITTEE (A/AC.105/101) (continued)
- (b) THE SCIENTIFIC AND TECHNICAL SUB-COMMITTEE (A/AC.105/102), INCLUDING THE SUMMARY OF THE PREPARATORY SESSION OF THE WORKING GROUP ON REMOTE SENSING OF THE EARTH BY SATELLITES (continued)

The CHAIRMAN: Before we continue the general debate, I wish to put before the Committee a suggestion I have received from some members and discussed with various delegations concerning the progress of work on an important matter -- namely the treaty on the moon and other celestial bodies -- put to us by the

Legal Sub-Committee. I understand from the suggestions and consultations that there is a wish among delegations to discuss some of the aspects of this treaty informally among themselves. I would therefore suggest to the Committee that perhaps those delegations that wish to take part in those informal consultations should meet, perhaps this morning, in the room adjacent to this chamber, which is at their disposal, and see what eventual progress they might make in discussions among themselves in, as I have said, an informal manner. I am sure the Committee will be grateful for all progress that can be achieved and will note with gratitude any results that may thus be arrived at. If delegations should wish to take up one or another important question before this Committee I am sure that the informal character of the group would certainly not prevent that.

That is a suggestion I wish to put before members. I understand that the technical arrangements have been made for the provision of a room for the informal consultations, and I should therefore be happy if as many delegations as possible would make use of these facilities for setting up an informal working group.

If this suggestion meets with the Committee's approval -- and from the lack of objection I take it that it does -- I would now ask those members who wish to take part in the working group now to make use of these facilities. The rest of the Committee can commence the general debate on the agenda item, and I call first on the representative of Egypt.

Mr. ABDEL MEGUID (Egypt): The delegation of Egypt would like to associate itself with those delegations that have extended to you, Mr. Chairman, congratulations on your assuming the Chairmanship of the Committee on the Peaceful Uses of Outer Space.

We should also like to congratulate Ambassador Datcu of Romania on his election as Vice-Chairman of this Committee.

Turning now to the agenda item, I should like to make some remarks with regard to, first, the report of the Legal Sub-Committee, second, the report of the Scientific and Technical Sub-Committee, including the Working Group on Remote Sensing, and third, the Swedish proposal on reactivating the Working Group on Direct Broadcasting Satellites.

(Mr. Abdel Meguid, Egypt)

With regard to the report of the Legal Sub-Committee, my delegation welcomes the progress in the preparation of the provisions of the draft of the international treaty concerning the moon. In proposing the first draft treaty, the Soviet Union made a significant contribution to our work here.

My delegation would hope that all pending problems of the draft international treaty on the moon will be solved during the current resumed session of this Committee or, at the latest, before the First Committee of the General Assembly discusses the outer space questions at the coming session. For the benefit of all States, the provisions of the treaty concerning the moon should clearly state that the natural resources of the moon shall be the common heritage of all mankind. It is equally important that the treaty should guarantee that the moon's resources should be exploited by an international régime to be appropriately established. Due regard should also be paid to the participation of all States, developed and developing, in sharing, on an equitable basis, the benefits of the exploitation of the natural resources of the moon. Having said that, we would like to refer to the working paper submitted to the Legal Sub-Committee by my delegation, together with the delegation of India, which appears on page 17 of annex I to the report of the Legal Sub-Committee.

Turning now to the draft convention on registration of objects launched into outer space, the delegation of Egypt warmly supports the joint efforts of Canada and France concerning the registration of objects. Such a proposed system would help in identifying space objects once they had been marked with a registration number and other pertinent information. My delegation expresses its hope that the Legal Sub-Committee will be able to complete its work on the draft convention during its next session, in 1973.

With regard to the Scientific and Technical Sub-Committee, we attach a great deal of importance to the United Nations programme on space applications, especially for the benefit of developing countries. It is desirable that such a programme should be expanded and more funds allocated to it. My delegation shares the view expressed by other delegations in this Committee that the Working Group on Remote Sensing of Earth Resources by Satellites has contributed, by its work in May 1972, to the future success of the

(Mr. Abdel Meguid, Egypt)

efforts that are being made in this field. In leading the meetings of that Working Group, Mr. Franco Fiorio has demonstrated once again a high quality of organization and skill in tackling the problems under consideration in that body. However, we recognize that the Working Group has to deal with a number of technical problems concerning the new technology and expected exploitation of the remote sensing satellites. To conform with the principle of sovereignty, the consent of the State in question is indispensable before the survey of its national resources by remote sensing is started.

We stress the importance of releasing the technical data gathered about the natural resources of different countries in order that these countries could benefit as much as possible from this new technology. This spirit of technical co-operation and assistance would contribute to the future success of the work of the Working Group on Remote Sensing. On the other hand, in its work, that body should pay attention not only to technical aspects but also to other, related aspects, and legal and political aspects.

Turning now to the Working Group on Direct Broadcasting by Satellites, we share the views expressed by the delegation of Sweden that the time has come for this Working Group to be reactivated. Egypt was among the first countries to propose the creation of such a Working Group to deal with problems of an interdisciplinary nature, touching upon a number of legal, political and technical problems. We agree with Sweden that certain material of substance has become available for the consideration of the Working Group: First, the decisions and recommendations adopted by the International Telecommunication Union at the World Administrative Radio Conference for Space Telecommunications in 1971, and in particular the decisions dealing with the allocation of frequencies for all kinds of space communications, including satellite broadcasting and the technical and administrative regulation concerning the establishment and operation of satellite communication systems.

Second, the materials resulting from the efforts of UNESCO and WIPO in so far as the protection of television signals by satellites is concerned.

(Mr. Abdel Meguid, Egypt)

The Working Group, in performing its work, should take into account the UNESCO draft declaration of guiding principles on the use of satellite broadcasting for the free flow of information, spread of education and greater cultural exchange. This draft declaration is a result of a great deal of work and efforts undertaken by UNESCO and it would be advisable for the Working Group to take it into consideration in its future work. Sovereignty and non-interference in the domestic affairs of States should always be taken into account in this respect.

The item which the USSR has requested be included in the agenda of the twenty-seventh session of the United Nations General Assembly, namely the elaboration of an international convention on the principles of the use of artificial earth satellites by States for direct television broadcasting, should be referred to the Outer Space Committee and its Legal Sub-Committee for discussion of the interrelated legal and political problems. Moreover, we believe that the Working Group on Direct Broadcast Satellites is also entitled to discuss that item because of its interdisciplinary character, where the technical aspects are to be co-ordinated together with the legal and political ones.

Finally, we wish to pay a tribute to Mr. Ricciardi for the impressive work of high quality which he has done in the application of space technology to development, and we hope that his successor will be appointed very soon to fulfil the task entrusted to him, in co-operation with the Outer Space Affairs Division.

Before concluding, Mr. Chairman, I should like to refer to your opening statement, which contains a number of valuable remarks. I would like at this stage to express my delegation's support of your idea that the Committee on the Peaceful Uses of Outer Space should take more initiative and not limit its work to the formal adoption of the reports of its two Sub-Committees.

Mrs. JOKA-BANGURA (Sierra Leone): Mr. Chairman, my delegation would like to associate itself with those delegations which have congratulated you on your election as Chairman of this Committee. The Committee on the Peaceful Uses of Outer Space has in past years enjoyed the leadership and guidance of distinguished and experienced men from your country, and it was to continue this happy state of affairs that the Committee unanimously chose you as its Chairman.

(Mrs. Joka-Bangura, Sierra Leone)

We are confident that in spite of the fact that the Committee's work will become elaborate as time goes by, your wise and experienced leadership will sustain and guide us. My delegation pledges its full support and co-operation to you, Mr. Chairman.

We would also like to congratulate Ambassador Datcu of Romania on his election as Vice-Chairman, which in our view is a testimony of the Committee's continued confidence in the ability and capability of the Romanian delegation.

I cannot personally resist the temptation to refer to the Rapporteur of this Committee. I would like to express my gratification at seeing him still holding the post of Rapporteur. I can recall that the very first statement I ever made at the United Nations was a very short one endorsing his nomination in 1969. I am pleased that because of his services he has merited re-election. I congratulate him.

(Mrs. Joka-Bangura, Sierra Leone)

My delegation would like to make very brief comments on the reports submitted to this Committee by the Legal and Scientific and Technical Sub-Committees.

Due to circumstances beyond its control, the delegation of Sierra Leone could not attend the meetings of the Legal Sub-Committee held in Geneva in April and May this year. Nevertheless we closely followed the work of that Sub-Committee and we should now like to take this opportunity to thank and to congratulate its Chairman and members for having achieved so much within so short a time.

We should like to express appreciation to the delegation of the USSR for its proposed draft treaty on the moon and especially for its spirit of co-operation in taking into account the viewpoints of other members of the Sub-Committee and in not insisting on provisions and formulations to which it attached great importance. We should also like to thank those delegations, principally that of the United States, whose proposals have contributed greatly to what is now the final draft treaty on the moon.

With particular reference to the scope of the draft treaty, that is, whether the draft treaty should be so formulated that it applies also to other celestial bodies, my delegation is inclined to favour the suggestion mentioned in the foot-note of the report that

"The provisions of this Treaty shall apply to celestial bodies in addition to the Moon until such time as provision is made by other treaties in relation to specific celestial bodies. To the extent that provision is so made, this Treaty shall then cease to apply to those bodies."

(A/AC.105/101, p. 6, para. 21, foot-note 4)

My delegation has deliberately used the words "inclined to favour" because we wish to be flexible and will easily go along with the majority view.

As the Chairman of the Legal Sub-Committee pointed out in his statement, there are existing differences as far as the formulation of the text goes and further deliberations on the part of Governments would lead in the near future to complete success. My delegation completely shares the views expressed by the Canadian delegation that there is no compelling need for haste, anxious as we may be to conclude this particular aspect of our work. We, too, feel that the final text will benefit from a further year of contemplation and consultations.

(Mrs. Joka-Bangura, Sierra Leone)

We should like to extend our appreciation to the delegations of France and Canada, first for their separate draft conventions on registration of objects launched into space and, secondly, for their willingness to accommodate each other's view and their joint efforts which produced the text on the question of registration of space objects. All members of the Committee do agree that in view of preceding treaties the timing of this draft convention is both logical and appropriate.

We also believe, as others do, that

"... an adequate system of international registration of space objects would establish a legal link between a State and the space objects it launches and would assist in identification; and that such a system of adequate registration would facilitate the application of the evolving legal régime for outer space activities." (110th meeting, p. 38)

We are aware that some delegations have expressed reservations on the draft convention because of the technical problems it will raise. We are, however, convinced that with further consultations the Legal Sub-Committee will reach a final draft convention acceptable to all, as it has done on previous occasions.

Before concluding my delegation's remarks on the report of the Legal Sub-Committee, we should like to endorse the proposal put forward by the delegations of Egypt and India that the natural resources of the moon should be considered the common heritage of man. This is a proposal which every non-space Power will endorse, and my delegation is particularly gratified by the fact that many developed countries take a favourable view of it.

Turning now to the report of the Scientific and Technical Sub-Committee, my delegation would like to join other delegations in expressing its appreciation to Professor Ricciardi, the United Nations Expert on Space Applications, for the work he has done, especially in his efforts to share and to spread his knowledge and experience particularly with the developing countries. We are confident that the work he has started will be continued by his successor.

Our appreciation also goes to the delegations of Brazil, France, Italy, the United Kingdom, the United States of America and Japan for their offer of scholarships and fellowships in the field of space applications.

(Mrs. Joka-Bangura, Sierra Leone)

In his opening statement the Chairman outlined the most important events in space technology during the past year. My delegation would like to congratulate all those nations whose efforts -- single and joint -- have enabled us to realize more and more the great benefits mankind can derive from technical development in space studies.

We are pleased too at the increasing co-operation between the United States and the Soviet Union, which, we believe, has opened the way to international space co-operation.

Conscious of the fact that many developing countries have not fully appreciated the benefits that could be derived from the application of space technology, and conscious also of the fact that it is the developing countries which urgently need space technology, especially in the areas of communications and surveys of national resources and so on, my delegation gives its full support to the Expert's biennial programme, which, we believe, will open our eyes to the inherent possibilities of space technology.

Mr. BAVAND (Iran): Mr. Chairman, may I join with previous speakers in offering my delegation's warmest congratulations on your election to the chairmanship of the Outer Space Committee. May I also extend my most cordial greeting to our Vice-Chairman, Ambassador Ion Datcu of Romania. We are confident that under your wise leadership the work of the Outer Space Committee will be marked with greater successes and further achievements.

Since the last session of our Committee in September 1971, we have witnessed most significant scientific and technological achievements in the field of exploration and use of outer space. The world applauded the increasing trend of co-operation in this field between the major space Powers. It is our earnest hope that the scope of this co-operation will be further extended and that all States equally will enjoy the benefits derived from the exploration and use of outer space.

This technical and scientific development of the past year was to some extent matched by progressive development in space law. The report of the Legal Sub-Committee is, indeed, an eloquent testimony to that fact. It is with feelings of relief and satisfaction that we received the report of the

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Sub-Committee, in which the draft treaty on the moon and the draft convention on registration of objects launched into outer space are commended for our further deliberation and possible completion. Although these two drafts remain unfinished, they nevertheless have made a major contribution to the codification and progressive development of space law. In this connexion my delegation would like to pay a special tribute to the wise leadership of the Chairman of the Legal Sub-Committee, Mr. Wyzner of Poland, whose dedication, objectivity and impartiality kept the spirit of compromise and accommodation alive and led the work of the Sub-Committee to these successive results.

I should like now to comment briefly on the draft treaty and the draft convention under consideration.

With reference to the draft convention on registration of objects launched into outer space, my delegation wishes first of all to offer its congratulations to the delegations of Canada and France for their initiative in submitting a joint proposal on this subject. It is our firm belief that, in the light of the increasing intensity of the uses of space and the proliferation of objects launched into outer space, there is an urgent need for the development of an international registration system, because it is essential to be able to identify the objects that have been launched and to establish legal ties between the owner of spacecraft and objects for the purposes provided for in the Convention on International Liability and in the Agreement on the Rescue of Astronauts, the Return of Astronauts and Objects Launched into Outer Space.

(Mr. Bavand, Iran)

To that end the voluntary registration provided for in General Assembly resolution 1721 B (XVI) is inadequate, as has been correctly pointed out by the Scientific and Technical Sub-Committee. The new international registration system, in order to be effective, should be compulsory, standardized, co-ordinated, complete and public at the international level, and also the United Nations should keep a central register which would be accessible to all nations. As far as the issue of marking is concerned, my delegation has a flexible attitude. In our view markings, if they do not lead to technical difficulties in the operation of the objects and do not create too heavy a technical and economic burden for the particular countries, should be made an essential element in the comprehensive registration system. Otherwise it should be accepted with certain qualifications.

May I now turn to the draft convention on the moon and present my delegation's views on its most important provisions.

With regard to the scope of the treaty, namely, whether it should apply to the moon alone or to other celestial bodies as well, we continue to believe that it should encompass other celestial bodies because, practically speaking, a number of celestial bodies such as Mars, Venus and Jupiter have already come under the sway of man's scientific investigations. Besides, the provisions of the draft treaty, particularly those concerning denuclearization, demilitarization, peaceful uses, freedom of scientific research and many others, a great part of which have been transplanted from the outer space Treaty, are of such a general nature that the logical assumption is that they would necessarily be incorporated in any treaty concerning celestial bodies. We do not believe that the extension of the scope of the treaty will prevent us from producing detailed draft regulations on any particular celestial body. Whenever such a need arises in the future, we have no objection to including a provision to effect, as has been suggested by a number of representatives. We are also of the opinion that the treaty should incorporate the principle that the natural resources of the moon and other celestial bodies are the "common heritage of mankind".

(Mr. Bavand, Iran)

In view of the fact that this concept has already gained the legal status of erga omnes and that its modalities have been somehow elaborated, its inclusion in the treaty provides a legal foundation for the future development of an international régime and machinery to govern the exploitation of our common heritage.

With regard to the advance notification of missions to the moon, we support the compromise formula advanced by the Canadian delegation in the Legal Sub-Committee to the effect that the word "completed" in article IV, subsection 3, should be deleted, and that the individual States should be allowed to exercise their own judgement in deciding when to provide information.

With respect to the non-appropriation clause, we should also like to see an express reference to the prohibition of claim or exercise of sovereignty or sovereign rights over the moon and other celestial bodies. We also believe that in article II concerning the principles and rules of international law, reference should be made to the provisions of the treaty and the applicable principles of international law rather than to international law per se. In other words, this article which has been transplanted in toto from the outer space Treaty is to be changed in accordance with the existing realities of the space law.

I should now like to present the view of my delegation on the work of the Scientific and Technical Sub-Committee. First, we fully support and appreciate the conclusions and recommendations contained in the report. It is our earnest hope that with the effective co-operation of Member States, particularly the space Powers, the outer space Committee will be able to carry out successfully the programmes called for in 1973 and 1974. In this connexion my delegation would like to express its special gratitude to Professor Ricciardi for the excellent service he has rendered to the United Nations and to the Member States, particularly the developing countries. We fully endorse the Sub-Committee's appreciation of his outstanding work. We deeply regret that Professor Ricciardi will be unable to continue in the service of the United Nations and we extend to him our best wishes and success in his future activities.

(Mr. Bavand, Iran)

May I now express my delegation's satisfaction with the organizational meeting held by the Working Group on Remote Sensing of the Earth by Satellite. This meeting prepared the ground for the future work of the Working Group. The recent launching of the ERTS-1 Satellite and its follow-up, namely, the reading out and processing of its data, will enormously facilitate the task of the Working Group. In this connexion my delegation congratulates the United States on its significant achievement. We hope that this new technological vista which has been opened up for mankind will be used effectively for the benefit of all nations.

With regard to the future task of the Working Group, of course the logical expectation is that the Working Group should concentrate primarily on assessing the technical results of the ERTS-1 experiments. However, in our view, this engagement should in no way prevent it from dealing with the legal implications and organizational requirements of remote sensing.

I should now like to make a passing comment on the subject of direct broadcasting of television from satellites. In our view, this important subject should be approached from a broader perspective rather than from a specific angle. The central issue in this subject is the free flow of information and its corollaries, namely, the dissemination of education and the intensification of cultural exchanges. This is one of the areas in which technology and development are going to shed new light on the concept of human rights, individual freedom and, last but not least, the openness of the international community. In other words, once again, technological development is forcing us to move towards further humanization of our relationships both in national and international scales. Nevertheless, this fortunate development, like many other developments in technological progress, is not absent from negative side-effects, as has been reflected in the draft declaration and the draft convention before us.

With respect to the cultural side-effects of the subject, it is believed that the growing concentration of the sophisticated means of space communications in the hands of the technologically advanced countries, if not checked and regulated internationally, might inevitably lead to a one-sided flow of socio-cultural values. In other words, it would change the existing balance of

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cultural exchanges and interaction into the one-way process of acculturation. As a result the international community would be faced with a breakdown of cultural integrity on a national scale and the scrambling out of cultural diversities on the international level. Now UNESCO is addressing itself to this particular side-effect and to that end has produced a set of guidelines in the form of draft declarations. In this connexion my delegation deeply appreciates and welcomes the outstanding work of UNESCO. It is our earnest hope that this set of declaratory principles which has no apparent binding force should be viewed positively and should be regarded as a prologue for subsequent development of regulatory norms and principles.

(Mr. Bavand, Iran)

Having said that, we firmly believe that any declaratory international instrument as such, in order to be effective, should strike a balance between the conservation and preservation of cultural integrity and diversities on the one hand and the free flow of ideas and information on the other. In other words, we should be cautious enough not to impede or distort the fortunate prospect that space technology has produced for mankind.

In that spirit my delegation would like to address itself also to the political side effect of direct broadcasting. In this connexion, we congratulate the delegation of the Soviet Union for its pioneering spirit, and we hope to express our views on this very important issue at the General Assembly session. However, in passing it is to be noted that, unlike the cultural side-effect, which is a long-term, latent and gradual process, the political side-effect is immediate, visible and highly complicated. As such it is to be viewed with much greater caution and vigilance. Particularly at this stage, when we have not yet realized the fruit of direct broadcasting, it might be somewhat hasty to engage in legal niceties and to formulate too detailed and rigid a set of regulations. Instead, it might be advisable to establish a legal framework of a highly general nature, as was done when the outer space Treaty was adopted.

With those principles in mind, my delegation supports the procedural approach suggested by the representative of Sweden: namely, to reconvene the Working Group on Direct Broadcast Satellites to deal with the organizational and legal aspects of that subject.

Mr. FRAZAO (Brazil): Mr. Chairman, first of all let me apologize for taking the floor for the second time in this general debate. I assure you that I will be very brief.

Since many delegations speaking after my own have dealt with the question of direct satellite broadcasting, I feel compelled to place on record the general guidelines which orient the position upheld by my Government regarding this most important issue.

Both in this Committee and in the Working Group on Direct Broadcast Satellites, my delegation has repeatedly expressed its readiness to co-operate in the task of establishing international mechanisms capable of exercising strict control over direct satellite broadcasts. In my Government's considered opinion, the utilization of this revolutionary means of communication shall always take into account the sovereign rights of States, especially receiving States, and should not in any way reflect exclusive commercial or political interests of the broadcasting country.

The establishment of such control mechanisms is undoubtedly warranted, since satellites are located in outer space. Being the province of all mankind, as agreed upon in the Treaty of 1967, outer space is to be utilized for the benefit and in the interest of all countries. Activities carried out in outer space should, according to the letter and the spirit of international treaties, contribute to promoting international understanding and co-operation on the basis of equality among States.

It is a matter of concern for my delegation that a régime of absolute and unrestricted freedom in space communications might very well be a source of misunderstandings and, eventually, disputes among nations, given not only the existing gap between space and non-space Powers, but also the diverse and conflicting cultural values prevailing in different regions of the world.

In the view of the Brazilian Government, these international mechanisms of control should be applied to satellite broadcasts, both of governmental and private nature. Adequate provision should also be made in order to protect national television and radio companies from indiscriminate competition with foreign companies technically and economically more powerful.

(Mr. Frazao, Brazil)

With those considerations in mind the Brazilian delegation welcomes the timely initiative taken by the delegation of the Soviet Union in submitting to the twenty-seventh session of the General Assembly a draft "Convention on Principles Governing the Use by States of Artificial Earth Satellites for Direct Television Broadcasting".

I am not prejudging my delegation's position on the specific wording of the Soviet draft convention. May I simply express the hope that the General Assembly will take it into consideration and recommend its examination on the basis of priority by the Legal Sub-Committee. In this connexion I should also wish to express my delegation's full support for the proposal made by the Swedish delegation concerning the reconvening of the Working Group on Direct Broadcast Satellites to study the new substantive material now available in its field of competence and to examine, in particular, the draft convention on direct television broadcasting.

Before concluding, I should like to avail myself of this opportunity to convey my delegation's gratitude for the generally favourable reception which the Committee has awarded to the suggestions I had occasion to submit in my previous statement regarding the draft moon treaty. I trust that the Brazilian proposals will be taken into account when the Legal Sub-Committee resumes its deliberations on the draft moon treaty.

It is my delegation's firm conviction that the Committee, given a further period of consultation and reflection, and without any undue haste, will be in a position to make progress on this question and eventually produce a text embodying true advancements in terms of elaboration and codification of international law.

And now I should like to offer some remarks on the constructive observations put forward by my colleague from Austria when commenting on my previous statement.

Referring to the speech I had delivered at the beginning of the general debate, my colleague from Austria pointed out what, according to his views, could be construed as some inaccuracies in my analysis of the text of the draft moon treaty. I am sure that he is provided with the sharp eyes which I could

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very well be lacking. Deprived by age of such sharpness, I had recourse to my glasses, these very glasses through which I have accumulated some experience in studying our working documents. Did they, these poor glasses of mine, betray me when I saw the similarities and duplications I alluded to between the draft moon treaty and other international treaties in force?

If they did, here and now I want to make a candid amende honorable. But not at all wishing to enter into polemics, let us very briefly examine the documents.

My colleague from Austria has mentioned, if I am not mistaken, 10 examples of provisions to be found in the draft moon treaty which, in his opinion, would represent real progress in terms of elaboration of international law. With your permission, Sir, I should like to indicate the provisions of the outer space Treaty which cover, if not with the same words, at least with the same concepts, most of the points mentioned by the Austrian delegation as advancements:

(Mr. Frazao, Brazil)

First, prohibition of the threat or use of force, this appears in article IV. Second, interests of present and future generations this appears in article I. Third, co operation among States; this is the subject of article IX. Fourth, release and exchange of information; this appears in article XI. Fifth, preservation of the balance of environment this is mentioned in article IX. Sixth, obligation to offer shelter to astronauts in distress; this enters into the provisions of article V. Seventh, obligation to release information on matters capable of endangering human life on the moon, this also appears in article V. Eighth, use of equipment of other States in emergencies; there is reference to this point also in article V, and, of course, in the astronaut Treaty.

Only two of the provisions cited by the Austrian representative are not specifically contemplated in the outer space Treaty. They are, according to our examination, first, the right to collect and remove samples of mineral and other substances, and second, the desirability of exchanging scientific and other personnel on expeditions and installations on the moon.

But again that does not change my contention because, first, the right to collect and remove samples -- article V, paragraph 1 of the draft moon treaty -- is implicit in article I of the outer space Treaty, which states that "There shall be freedom of scientific investigation in outer space" (General Assembly resolution 2222 (XXI)), a provision which is repeated in the same article V, paragraph 1 of the draft moon treaty, and second, the desirability of exchanging personnel is also implicit in the principle of co-operation among States -- article IX of the outer space Treaty; besides, the draft does not express an obligation, but merely a desire.

Finally, I wish to reassure members of the Committee that the sole intent of the Brazilian delegation in presenting its criticism of the text of the draft moon treaty is to contribute to its improvement. We fully recognize that the text, as it stands now, contains some advancements. Our contention is simply that these advancements, being of a technical and administrative character, so far do not seem to justify the completion of a treaty. Let us therefore go on working on the text and hopefully present to the General Assembly in due course a document which will be able to arouse interest and support among all. Let us not forget that it took this Committee eight years to finalize the liability Convention.

The CHAIRMAN: I thank the representative of Brazil for his sharp-eyed remarks, if I may use the image to which he alluded.

Mr. REIS (United States of America): I had not planned to speak this morning, but I wonder, in view of what has just been stated by the representative of Brazil, Ambassador Frazao, whether I might take just five minutes of the Committee's time to reply. I think that what he has said is, as always, of great interest and some comment from my own delegation would not be amiss.

As my delegation stated earlier last week, we do not believe that the immediate need for a satisfactorily completed moon treaty is so intense that we should in this Committee take extraordinary steps to complete it now. We believe that there is a need for a treaty laying down rules and procedures in respect of activities in relation to the moon and other celestial bodies because we think that international scientific co-operation would be stimulated by the conclusion of a treaty of this character, and we have expressed optimism that such a treaty can be completed next spring when the Outer Space Legal Sub-Committee holds its 1973 session. To that extent we are in entire agreement with the representative of Brazil.

I must say, however, that my delegation would, unhappily, not be able to agree with his analysis that only on the two points which he identified this morning does what has been agreed upon constitute an advance over the 1967 outer space Treaty. As members know, last spring the United States Government introduced a variety of proposals substantial in their weight and scope, and, I should like to think, substantial in their content, designed to make the moon treaty project one which would in fact stimulate international scientific co-operation and further the hopeful trends one discerns in international relations towards stimulating co-operation among States across the board. These hopeful trends are obviously not the only trends, but one does well to try to build on what is hopeful.

If one looks at the outer space Treaty it is true that one may find, for example -- as Ambassador Frazao has suggested -- in article IX a provision of a certain general character with regard to potential interference in the space activities of one country by another, and one finds as well something about the problem of contamination of the environment of the moon and other celestial bodies.

(Mr. Reis, United States)

But if one looks at what has been agreed upon in the Legal Sub-Committee at Geneva on this point one finds an expansion of those principles which constitutes more than what has been described as mere administrative or technical improvements. One finds that the purpose of what has been agreed upon is to stimulate international co-operation. Let me give some examples just to be specific, without going into undue lengths in this body.

As I recall, article IX of the outer space Treaty states that country A is obliged to consult with country B if country A believes that the outer space activities which it is planning may potentially have a harmful impact on the outer space activities of country B. This is a very useful provision of law and it certainly marked a step, in 1967, well beyond the law which already existed.

With regard to these provisions, the United States introduced in the spring further principles designed to implement them, because the United States believed that article IX of the outer space Treaty was not complete.

(Mr. Reis, United States)

For example, article 9 did not make it quite clear that if country B felt that its activities might be interfered with country A would be obliged to enter into these consultations and that the purpose of the consultations would be to find a mutual accommodation which would not adversely affect the interest of any other State. And in the outer space Treaty in the case of a wronged country B -- that is, a country B which felt that the consultation process had not gone well or that country A had not behaved properly and had for some reason or pretext refused to participate in the consultations -- there was no provision of the sort that we have now moved towards agreeing upon to enable country B in that situation to ask, unilaterally and without seeking the consent of country A, for the good offices of the Secretary-General in resolving any dispute that might exist.

In terms of the settlement of disputes, and I think also in terms of international co-operation in the peaceful uses of outer space, this provision, if agreed, would represent a considerable advance. It is true that it is not a radical new advance in international law; it does not proclaim some great new legal principle. But, nevertheless, even on this rather smaller level, it seems to us that provisions of this kind would, if agreed and if the treaty had useful provisions on other aspects, mark an advance which the Members of the United Nations could, quite generally and without dissent, accept.

I should like to give one further example of an area in which the United States at least has tried to make this project of a moon treaty -- which, as representatives know, we want to have applied to man's activities on all celestial bodies -- a positive contribution. The outer space Treaty, in article 1, says rather generally that outer space and celestial bodies ought to be used for the benefit of mankind. It is certainly by no means clear what this means, and it is perfectly clear that of all the provisions of the 1967 outer space Treaty this is perhaps the provision most subject to subjective and, therefore, differing views.

(Mr. Reis, United States)

We proposed at the Geneva meetings this spring that one ought to look forward to the day -- and it may be very far off indeed; the possibility may be remote -- when there may be some possible economically realizable use of the natural resources of celestial bodies. As I have said, we do not think that day is very close. If one thinks of something rather primitive and simplistic like mining on the moon, it is perfectly obvious that the return costs of such projects would be enormous and, therefore, one does not imagine the kind of commercially viable activities in connexion with lunar or other celestial-body resources which one can imagine in different parts of the earth.

Nevertheless, it has seemed to us that we ought now, in advance of real exploitation possibilities, to do what can reasonably be done to try to secure agreement in the international community. But if this possibility comes about countries parties to the new treaty should meet to try to work out agreed and mutually acceptable arrangements for translating the rather general hope of the outer space Treaty that celestial bodies ought to be used for the benefit of mankind in some realistic way. For example, it is perfectly obvious that as that time nears people will have to think about investment, security of investment, encouragement of investment; but they will also have to think about the common interest of mankind and about practical modes for sharing the promise which real exploitation may some day hold.

It was for this reason -- to get down to texts -- that the United States introduced at Geneva a text of a certain complexity for what was then article VIII, which said that:

"The natural resources of the moon and other celestial bodies shall be the common heritage of mankind."

We also proposed that the parties should agree here and now in this treaty that they would be willing when practical exploitation seems to be becoming a reality to meet "and seek to agree on international sharing arrangements" with regard to those new resources. That was a new proposal; it did move beyond the outer space Treaty -- indeed, I suspect that is why it has occasioned some objection -- and I think that if it were agreed it would indeed be something additional to the law we now have.

(Mr. Reis, United States)

I have cited only those two small examples, but in its statement last week my delegation spelled out, I think in some detail, the proposals we had made.

We want to take this opportunity to say that although we agree with the delegation of Brazil that this treaty effort has to be treated, in terms of timing, with the priority it deserves -- which does not mean a priority above all others -- still we do think that the project is well launched and I suppose, therefore, we emerge as defenders of the project. I would only, in this connexion, reiterate that we want to make it an even better treaty, and that is precisely why we have continued, with regard to the three problem areas of the treaty which remain to be solved, to insist that we do not want a mere duplication of the outer space Treaty of 1967 but, indeed, do need a really progressive and useful document which can be accepted world-wide.

The CHAIRMAN: I am sure representatives will bear in mind that we should not now embark upon a too detailed discussion of the items before us.

Mr. FRAZAO (Brazil): As I listened to the first part of the statement by my colleague from the United States -- I think I am quoting him correctly as saying that he was going to reply to my small observations -- I thought there was going to be a reply, but I am very happy to see that, on the contrary, we both adopt exactly the same stance. My colleague has only poured water in my small "glass of argumentation". I do not see any difference between what he has said and what I said a few minutes before. I shall quote myself -- not out of vanity, but in order to make clear our own position. I said:

"We fully recognize that the text, as it stands now, contains some advancements." (Supra, p. 26)

That is our basic contention.

The second contention is that there are some similarities between this draft moon text and other already accepted international documents dealing with similar questions.

(Mr. Frazao, Brazil)

We also stress that we saw in the advancements mentioned by the representative of the United States more of a technical and administrative improvement. After his statement I would say technical, administrative and procedural improvements, because he really mentioned two or three questions of pure procedure that I would not consider to be properly rules of substantive international law.

Abiding by your suggestion, Mr. Chairman, I do not want to go into a very detailed examination of the texts now, because we consider that that should be done in the Legal Sub-Committee. My intention was to substantiate some remarks that I had made, taking advantage of the constructive observations of the representative of Austria. I tried to point out that the 10 points he had mentioned were, in our view, implicitly or explicitly already taken care of in other documents. But it is also our view that we need this treaty and that by elaborating on it we can transform the text into a very useful one.

Mr. MAIORSKI (Union of Soviet Socialist Republics) (interpretation from Russian): I promise my colleagues that I shall take only a few minutes of their time. My delegation is very grateful to the delegation of Brazil and the delegation of the United States for the very interesting exchange of views that has just taken place concerning the content of the draft treaty on the moon. We should like in particular to thank the delegation of Brazil for the very detailed and interesting analysis of the provisions of the treaty that it has just presented.

At the outset of his statement, the representative of Brazil considered the problem of combining texts and spoke about his eyesight. We know that people who have the same degree of acuteness of vision can see the same things in a different light. I should like to remind representatives that the question of what should be the content of the treaty on the moon and its relationship to the main Treaty of 1967 dealing with outer space was examined in very great detail in the meetings of the Legal Sub-Committee at Geneva. Indeed, that is quite clear from the statements of the representatives. The hypothesis is that the principal purpose of the document that we are drafting concerning the moon is to spell out, define and develop the provisions of the basic Treaty of 1967 and apply those provisions to the treaty on the moon.

(Mr. Maiorski, USSR)

Therefore, it is quite natural that we should have a certain amount of repetition. I would not say "duplication", because I think that would be an exaggeration. I believe that for historic reasons the word "duplication" has certain pejorative overtones. But I think it is inevitable for a certain amount of repetition to occur in the principal treaty and in the treaty on the moon. It really could not be otherwise. That is quite natural, because we do not have to give up forever repeating everything that has been said in the past. The question is to decide whether to include references to certain articles and paragraphs of the treaty on outer space in the treaty on the moon. Should we do that, or should we repeat provisions that are particularly important with respect to the moon?

In the Legal Sub-Committee we thought that it would be better to repeat certain provisions so that the reader of the draft treaty on the moon would not constantly have to refer back to the other treaty, because the main ideas, of course, would appear in the principal treaty. This is the same position that exists with respect to the Treaty on the rescue of astronauts and the principal treaty of 1967. The main provisions are repeated in the former Treaty. We considered in the Legal Sub-Committee that it would be necessary to include certain provisions in the treaty on the moon.

I should not like to go into a lengthy discussion of what has just been said by the representative of Brazil. I merely wish, in my capacity as a representative who had attended the session of the Legal Sub-Committee in Geneva and who was present at the discussions of this question, to express what in my view had happened.

Secondly, I wish to state that the representative of Brazil concluded his statement more or less as follows: that the Convention on International Liability for Damage Caused by Space Objects took eight years to work out and that the draft treaty on the moon had perhaps been prepared unduly hastily. I should like to tell the representative of Brazil that the last session of the Legal Sub-Committee proved quite an extraordinary session, because of its constructive, realistic and practical deliberations and because of the results that were achieved. We can consider to some degree that our Legal Sub-Committee succeeded in reaching the necessary conclusions -- that it drew the necessary conclusions from the history of the Convention on International Liability for Damage Caused by Space Objects. We worked effectively in a spirit of

(Mr. Maiorski, USSR)

co-operation, and the results are proof of that. I think that the proposal made by the representative of Brazil and the analysis he has given us and his statement that we should try successfully to conclude our work on the draft treaty on the moon were possible because the session of the Legal Sub-Committee had been so very fruitful. That is why he ventured to make his suggestion. All representatives co-operated at that session. There was no doubt whatsoever that the work would be completed in a fairly brief period of time.

With respect to my delegation's position, we continue to hold that view. We are still of that opinion. I should like once again to stress what I have already said, namely, that we are fully prepared to enter into contact with any delegation or group of delegations that might have constructive proposals to make concerning the continued drafting of the provisions of the treaty on the moon.

The CHAIRMAN: I wish to thank the representatives who have just spoken for the constructive spirit in which they made their remarks. I am sure that our debate on this important item before us has thus been stimulated and enriched by new aspects. I am sure that our Committee needs such remarks to affirm its role and provide sufficient guidance for other organs of our Committee and perhaps for organs of the General Assembly when they deal with the items now before us. I therefore welcome the exchange of views which has just taken place.

I understand that several of the specialized agencies represented here as observers would like to speak. With the permission of the members of the Committee, I shall call on them in the order in which they have asked to speak. I should like, however, to appeal to representatives of the agencies to bear in mind the fact that the Committee is now in its second week of work, that time is running short and that we may wish to conclude the general debate with their remarks during the course of this meeting. I am not sure whether that will be possible, but perhaps an effort to that end can be made; otherwise, we shall have to use some portion of this afternoon's meeting to conclude the general debate.

I now call on the representative of the United Nations Educational, Scientific and Cultural Organization.

Mr. SOMMERLAD (United Nations Educational, Scientific and Cultural Organization): My statement will not be a lengthy one.

UNESCO has been pleased to participate actively in the work of the Scientific and Technical Sub-Committee during the past year, and at the last session presented a report to the Committee on UNESCO's on-going programme on the use of communication satellites for education and training.

We have worked in close co-operation and harmony with the United Nations expert in space applications, and add our regrets to those already expressed by many delegations that he will shortly leave the United Nations service. We look forward to collaborating closely with his successor, and hope that the programme in space applications can continue to develop in co-operation with the specialized agencies and in accordance with the guidelines already established by the Committee.

As is noted in the report of the Scientific and Technical Sub-Committee, UNESCO responded to an invitation of the Sub-Committee by including in its draft programme and budget for 1973-1974 provision for two regional meetings, one in Africa and one in Asia, to be held in conjunction with the United Nations and on a shared-cost basis, as part of the programme of panel meetings on the application of space technology of particular interest to developing countries.

We have noted with great interest the suggestion of the representative of Sweden, supported by many other delegations, that the Working Group on Direct Broadcast Satellites should meet again in 1973. Should the Committee decide to reconvene the Working Group, UNESCO will, of course, be very pleased to participate in its meetings, as it did at the three previous sessions. We will be able to report on the preliminary surveys carried out since the last session of the Working Group in the Arab States and in Africa south of the Sahara on the potentialities of space communication for education and development in those regions. We will also provide a progress report on the very large feasibility study of a regional system of tele-education for the countries of South America, which is now in full course. This is being funded by the United Nations Development Programme and is being carried out in association with the International Telecommunication Union and involves a detailed study by twenty international experts of all the implications of a regional satellite system for education, information and culture, and a comparison of costs with alternative systems using other communication technologies.

(Mr. Sommerlad, UNESCO)

We would also complete in time for submission to the Working Group the studies already requested of UNESCO on the use of space communication for education, culture and development, and on its social and cultural impact.

UNESCO is very pleased that the draft declaration on satellite broadcasting has been brought to the Committee's attention so that we may have the benefit of any comments it may wish to make.

As the Committee will be aware, from the very inception of UNESCO's space communication programme in 1964 we have enjoyed the closest collaboration of the United Nations and of the International Telecommunication Union in all aspects of the programme.

The present declaration of guiding principles on the use of satellite broadcasting for the free flow of information, the spread of education and greater cultural exchange stems from a decision of the UNESCO General Conference in 1968, which was, incidentally, it might be noted, held before the first meeting of the Working Group on Direct Broadcast Satellites took place.

It was an intergovernmental meeting in 1969 on arrangements in the space communication field that provided the basis for the declaration through its discussion of the issues raised by satellite broadcasting which would need to be resolved by international co-operation.

In the preparation of the text of this draft particular attention has been paid to views expressed at the third session of the Working Group on Direct Broadcast Satellites in May 1970 and to the international legal principles discussed at that meeting to the extent that they fall within the competence of UNESCO. It may be recalled that the Working Group noted at its third session the report of the UNESCO representative that the draft programme for the period 1971-1972 provided for the formulation of general principles applicable to direct satellite broadcasting for information, education and culture.

The UNESCO observer also made a statement to the Legal Sub-Committee in 1971, on progress in the preparation of a text of the Declaration. The Sub-Committee has not, however, as this Committee is of course aware, given priority to the item on its agenda concerning the various implications of space communications.

As the report accompanying the draft declaration indicates, extensive consultations have taken place over the past two years with broadcast organizations and others in an endeavour to arrive at a text which had wide acceptance. At

(Mr. Sommerlad, UNESCO)

three meetings held within that period we were pleased to have the participation of representatives of the United Nations and the International Telecommunication Union. The final meeting of the series, held only last May, attended by experts from twelve Member States -- a widely representative group -- reached unanimous agreement on the text of a declaration, and that, we felt, was quite a significant achievement.

The document submitted to this meeting for information and possible comment, consisting of the draft declaration and the background to its preparation, has been circulated to all UNESCO member States and is on the agenda of the seventeenth session of the General Conference, which meets next month, for consideration and adoption. The comments of the Secretary-General of the United Nations, conveyed to UNESCO as a result of this meeting, will be formally submitted to the General Conference.

As will be realized, it is now four years since the UNESCO General Conference first authorized the preparation of a declaration of guiding principles on the use of satellite broadcasting for the free flow of information, the spread of education and greater cultural exchange. Should the forthcoming General Conference postpone the adoption of a Declaration, it would be a further two years before its next session could consider it -- a delay we believe many Member States may consider unfortunate.

A number of delegations have referred to the initiative of the Soviet Union in requesting the General Assembly to include on its agenda the question of an international convention on the principles of the use of artificial earth satellites by States for direct television broadcasting. The consideration of such a convention by the United Nations should not, in our view, make any less appropriate the adoption by the UNESCO General Conference of a declaration of guiding principles in the field of its competence. As a number of representatives have pointed out, the declaration is not, of course, a binding legal instrument. It is a formal statement of principles. Though modest in its scope and objectives, nevertheless we hope it is a useful contribution to the formulation of principles relating to the use of outer space.

The CHAIRMAN: I now call on the Chairman of the Committee on Space Research.

Mr. De JAGER (Committee on Space Research); Mr. Chairman, I thank you for the kind words of welcome you extended to me on Friday last. I feel deeply honoured by the privilege of being present and making a statement at this meeting, and like my predecessor, Professor Roy, I should be pleased if COSPAR could be of assistance in the difficult and important tasks of your Committee. I am very much looking forward to our co-operation with you and with your Secretariat in the years to come.

On this occasion I should certainly like to mention the constant and cordial co-operation COSPAR has already had for so many years with the Chief of the Outer Space Affairs Division, Mr. Abdel-Ghani, whose advice has ever been important to us and whose presence at our plenary meetings has always been greatly appreciated.

My personal relations with the Expert on Space Applications, Professor Humberto Ricciardi, go back to my first visit to his country, when we had the pleasure of discussing a series of rocket launchings my institute was going to carry out in South America. I can only regret that he is leaving his present post, but I wish him all good luck in his future professional career.

I hope I may for a moment discuss some matters dealing with the monitoring of the earth's environment and remote sensing. It gives us satisfaction that in the course of the past year COSPAR has strengthened its ties with SCOPE, the Special Committee for Problems of the Environment, and another special committee of the Council of Scientific Unions.

(Mr. De Jager, COSPAR)

Furthermore, I am proud to report that preparations are now very well under way for organizing, at the same time as COSPAR's sixteenth plenary meeting next year in Konstanz, the Federal Republic of Germany, a major international scientific symposium on the general problems of surveying the earth by spacecraft and the monitoring of the environment. The main part of the organization will be in the hands of COSPAR, but because of the far-reaching importance of the subject matter to be dealt with at this meeting, and the close relations to so many other fields of human activity, we have, in co-operation with the International Council of Scientific Unions, also extended invitations to participate in the scientific preparation of the symposium to a few bodies outside the ICSU family, such as the World Meteorological Organization (WMO), the Food and Agriculture Organization (FAO), and so on.

In deciding to have this important meeting included in COSPAR's programme for the next year, our Executive Council was guided principally by the consideration that the monitoring of the earth's environment is not only a matter of highest importance for every man's life today, but also by the growing interest attached by scientists and engineers to the scientific and technical aspects of this problem. We are aware that, notwithstanding recent successes, environmental monitoring is still in its infancy. We see the many problems the many possibilities of enhancing the quality of the observations and of improving the techniques for an automatic computerized handling of the enormous flux of data to be expected. A great amount of results may be available next year for a discussion on a truly international level.

Briefly, what we think we need and hope to obtain is both a large-scale review of what has been done so far and a well prepared anticipated outlook of the technical and scientific possibilities for the future, all to be given by the world's best experts. In connexion with this, COSPAR has noted with satisfaction the successful launch, on 23 July of this year, of ERTS-1, the first satellite for global remote sensing of our environment and for surveying of the earth's resources. Satellites like the present one will enable one to collect precise information -- for instance on large-scale plant diseases; the temperature of our surface waters; the extent of warm and cold sea currents related to the

(Mr. De Jager, COSPAR)

occurrence of agglomerations of sea-life; the local heating of rivers by pollution due to industrial plants, and so on. Furthermore, all this will be known to us almost in its day-to-day variation.

But at the same time we should have an open eye for the far-reaching consequences of using earth survey satellites for geological surveying and for the collection of information on large underground reserves of minerals. This capability, of course, will be an enormous advantage to mankind, but at the same time this puts those who have primary access to such data far ahead of those who have not. Private companies that would process such geological data would be in a dominating competing condition with regard to others that do not have them and thus there might be another danger of increasing the gap between developing countries and those in possession of satellite-surveying data, if no suitable measures and guarantees are given beforehand that the wealth of countries where such minerals are detected will remain in the hands of such countries.

The Committee is certainly aware of these kinds of problems and would be the only body in the world to develop a clear system of international guarantees against any use of satellite data that would not be to the advantage of the country in possession of space-detected geological minerals.

I feel, Mr. Chairman, that I have already taken a great deal of your time and indulgence. Nevertheless, I hope that you will allow me to make a few observations regarding some other matters of concern to the Committee. I have read with great interest the report of the Legal Sub-Committee on the work of its eleventh session, particularly with regard to the draft treaty for the moon. I was greatly interested by the remarks made by Mr. Wyzner, the Chairman of the Legal Sub-Committee, and by the statements of representatives with regard to this item.

It strikes me that an important point still under consideration is whether the draft treaty should be extended to other celestial bodies or not. I would be inclined to suggest a possible solution: namely, if extension to other celestial bodies is considered, to formulate the relevant parts as an extension only to "other bodies of the planetary system", and not to "other celestial bodies" in general.

(Mr. De Jager, COSPAR)

This suggestion is based on several arguments. First of all, an extension to other celestial bodies, quite generally speaking, could be misunderstood as including also the stars, their planets, and other remote objects in the universe, and it would implicitly be based on the assumption that these objects are within reach of the present or following generations. Even for the most nearby star to be reached within the travel time of, say, no more than 20 years return flight, and by a capsule only ten times larger than the Apollo moon vehicle -- which is as a matter of fact far too small for such a long journey -- it would demand a total energy to be carried by the spaceship equivalent to about 1 million hydrogen bombs as well as the application of energy conversion techniques presently unknown to us, perhaps not even in our most daring imagination.

Furthermore, certain celestial bodies outside our planetary system may be inhabited by intelligent beings. If so, then the proposed extended text of article X, subparagraph 1, stating that "the natural resources of... celestial bodies shall be the common heritage of all mankind" would involve a return to a kind of colonialism, happily no longer of our days.

For those reasons, I would suggest that the Committee consider the alternative proposal mentioning only "other bodies of the planetary system". Of these, we know with fair certainty that they are not inhabited by intelligent beings. Furthermore, the planet Mars may be visited by man before 1990. Whether the surface of other planets may ever be touched by human beings is an open question, to say the least.

With regard to the availability of natural resources on the moon and other bodies of the planetary system, I have one brief comment on this matter. Any scientist -- and I may be the spokesman of them -- will be happy to read in the draft of article VI that all explorations of the moon should be carried out in such a way that the lunar environment be protected and kept as far as possible in its original state. The scientific importance of the moon, being a body that presumably originated simultaneously with the earth, cannot be underestimated, particularly not for yielding a clue to the problem of the origin of the earth-moon system, as well as for the general problem of the origin of large solid bodies in space, which is one of the crucial problems of today's science.

(Mr. De Jager, COSPAR)

I have one small remark in connexion with the draft treaty. The representative of France mentioned the difficulty of defining circumlunar space. As far as the practical definition goes, the lower boundary of outer space is usually defined as the region where aircraft propulsion, making use of the surrounding air, is no longer possible, or, alternatively, where a satellite could not move in a stable orbit due to air drag. On the basis of this definition, circum-terrestrial space would start at a height level somewhere between 50 kilometres, which is the highest level at which balloons can float, and 200 kilometres, which is the lowest height for satellites to fly in stable orbits.

(Mr. De Jager, COSPAR)

However, circumlunar space would begin just a few kilometers above the lunar surface because the moon has no atmosphere. This level, then, can be defined fairly exactly. Also, the outer boundary of circumlunar space can be defined to a reasonable degree of exactness because, due to the disturbing influence of the earth, moon satellites at too great a distance from the moon will not move in a stable orbit but will soon -- just how soon will depend on their distance -- deflect into outer space and will henceforth move in an orbit around the sun or the earth. At present there is no precise data available about the outer boundary of circumlunar space, but, as I stated, the critical distance to the moon above which no lunar orbiters can stay for a time longer than one or two revolutions -- hence, the outer boundary of circumlunar space -- is computable and can be made available.

There is one other item, not on your agenda, of which I should like your Committee to be informed. This is the matter of the naming of lunar and other extraterrestrial features. This is related to the field of work of your Committee, and the international scientific community is going to take a few decisions on it in the course of this year. I refer to the matter of the assignment of names to newly-discovered lunar or planetary craters and other surface structures, a subject that for nearly ten years has been one of great importance to many scientists involved in lunar and planetary studies. My personal involvement in this matter is related to the fact that, apart from my presidency of COSPAR, I have also the honour of being the General Secretary of the International Astronomical Union, one of the oldest international scientific organizations, with affiliated national adhering bodies in 44 countries and approximately 2,600 personal members. The main aim of that Union is the promotion of international co-operation in the study of our universe and all that is therein beyond the earth, particularly the study of the moon and the planets.

The naming of lunar structures, such as craters, mountain tops, rills and large plains, was initially based on observations by astronomers made with increasingly powerful telescopes from the seventeenth to the twentieth centuries. The assignment of names to the features was initially

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the private initiative and privilege of the discoverer, but at an early date -- in the course of the eighteenth and nineteenth centuries -- some international agreement mainly based on personal contacts was gradually reached. In order to resolve the last disagreements, the International Astronomical Union in the early 1930s asked its Commission for the Moon to study the matter. Thus, in 1938 the International Astronomical Union was able after its general assembly in Stockholm to present to the international scientific community a comprehensive, unified and internationally accepted list of names of lunar features on the near side of the moon. The traditional procedure on this list is the naming of lunar craters after deceased famous astronomers or other natural scientists, while other rules exist for the other features.

After the great achievements in detailed lunar photography by Soviet and United States scientists during the last decades, the need came up for establishing a similar list for the far side of the moon. A working party, under Professor Donald H. Menzel of the United States of America -- the other members were the late Professor Minnard of the Netherlands, Professor Dollfus of France and Professor Michaillov and, later, Professor Levin of the USSR -- was established in 1964. Its final report was accepted in 1970 at the general assembly of the International Astronomical Union in Brighton, the United Kingdom. The names suggested were collected on the basis of a world-wide request for suggestions from the world's academies of science. The list has since been published and lunar maps have been printed on the basis of the Brighton agreement.

In the meantime, other international scientific organizations, such as COSPAR, the Union of Geology, that of geodesy and geophysics and others, became interested in moon studies. In order to guarantee the international co-operation between the various scientific bodies which is so necessary in these matters, the International Council of Scientific Unions established in 1970 its Inter-Union Commission for the Study of the Moon (IUCM), under the presidency of Professor Dollfus of France. This small but efficient Commission has already done excellent work, and it is now also contributing to the work of the aforementioned working group for the naming of lunar features so that it can now be said that this work is being supported by and based on the entire relevant segment of the scientific community.

(Mr. De Jager, COSPAR)

I gave that brief history of lunar naming because the assignment of names to lunar markings has not yet been completed. First of all, there is a smaller number of unnamed features -- which is still fairly large -- mainly on the near side of the moon, that up to now have just been related in their designation to nearby larger features by simply giving them the name of that feature, followed by additional Roman letters -- A, B, and so on. The desirability has sometimes been mentioned of also renaming such structures, but the drawback is, of course, that many names are already well known in scientific literature and a change of name would certainly produce undesirable confusion in the literature of lunar problems. If, however, it were decided to assign names to these structures, another request for suggestions could be sent to the academies of science of the world. Using the names also of deceased famous persons of the world's cultural traditions might be considered.

There is another problem. The names existing at present do not go beyond the scale necessary for defining lunar landing sites. However, at the recent Apollo landings the astronauts were, obviously, confronted with the necessity of assigning names to relatively small structures in the vicinity for simple identification purposes. These names, which were sometimes given in a fairly lucid way, mostly violated the standard system for lunar nomenclature. They included, in one case, the name of a feature already assigned, and even vulgarities. Here we therefore meet with the problem of whether or not these names should be legalized -- a problem that will certainly become more and more urgent when, in the years to come, lunar excursions will be far more frequent and of longer duration and extend over larger areas than has up to now been the case.

It was the initial belief that such names would soon disappear, but, like the whole impressive history of these great events, it now appears they will remain, not least because of the extensive publicity given to the lunar landings. No official decision has yet been taken with regard to this problem, but, clearly, astronauts are in a way in a similar position as that of the early great discoverers on our own earth who also had and used the privilege of assigning names to their discoveries. I believe that when the time comes the members of the International Council of Scientific Unions family will be interested

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to hear the opinion of this Committee on this last-mentioned problem, which obviously goes beyond the legal competence of the scientific bodies involved.

Finally, I should like to mention that also for the planet Mars, for which wonderful photographs are now available, covering nearly the whole of its surface, a detailed naming has now to take place. A decision in that direction, as well as with regard to the extension of the lunar list, will presumably be taken at the fifteenth general assembly of the International Astronomical Union, to be held in August 1973 in Sydney, Australia.

Mr. Chairman, I apologize for having taken so much of the Committee's time. However, I hope that my remarks will be of some use to the Committee, and I gladly reiterate my readiness to assist and advise in any aspect of its work where it might be considered useful or necessary.

The CHAIRMAN: I thank the Chairman of COSPAR for his most valuable remarks and I wish to thank him on the Committee's behalf for his readiness and willingness to co-operate with this Committee in the performance of its tasks. I am sure that the remarks he made this morning will be of great assistance to us in our work, as will the co-operation of COSPAR for our future activities.

The meeting rose at 12.55 p.m.