

## INTERNATIONAL ASTRONOMICAL UNION

Report on the meetings of the Executive Committee,  
Herstmonceux, 7-9 September 1959.

The meetings were held in the Library of H.M. Nautical Almanac Office, at the Royal Greenwich Observatory, Herstmonceux, as follows: Monday 7 September, 10.30 a.m. and 3.30 p.m.; Tuesday 8 September, 10.00 a.m.; and Wednesday 9 September, 9.30 a.m.

The following were present: J. H. Oort (President); L. Goldberg (Vice-President); O. Heckmann (Vice-President); B. V. Kukarkin (Vice-President); B. Sternberk (Vice-President); R. H. Stoy (Vice-President) and D. H. Sadler (General Secretary). P. G. Kulikovsky attended the meeting as interpreter to Dr. Kukarkin, and Miss Splinter attended as Assistant Secretary.

Apologies for absence were received from R.M. Petrie (Vice-President), A. Danjon (former President) and P. Th. Oosterhoff (former General Secretary).

Introductory note: The following report is intended primarily as a record of the decisions taken by the Executive Committee at the above meeting; it is not intended to be a complete report of all the proceedings, and it contains accounts of the discussions only when these are considered of some permanent value as a record.

For convenience of reference, the report on each item is recorded under the item number in the following list of agenda, independently on the order in which it was taken at the meeting.

### Agenda

1. President's opening remarks.
2. General Secretary's report.
3. Financial statement.
4. Application for membership from Taiwan.
5. Selection of Special Nominating Committee to consider nominations for the new Executive Committee.
6. Date and place of next meeting.
7. Memorandum by the General Secretary on the functions and structure of the Union.
8. Draft "Notes for the Guidance of Presidents of Commissions".
9. Consideration of grouping and membership of Commissions.
10. Separation of organizational and scientific content of meetings of Commissions.
11. Organization of General Assemblies to avoid too many and overlapping meetings.
12. Revision of Statutes and By-Laws.
13. Continued publication of I.A.U. Symposia in current astronomical journals.

14. General consideration of plans for the 11th General Assembly at Berkeley in August 1961.
15. Overall plans for Commission and other meetings during the General Assembly.
16. Choice of subjects and speakers to give "Invited Discourses" during the General Assembly.
17. Choice of symposia to be held immediately before or after the General Assembly.
18. Protection of frequencies for Radio Astronomy.
19. Bibliography of Astronomy, 1881-1898.
20. Site-Testing.
21. Appointment of members of Commission 44 (Astronomical Observations from Space Vehicles).
22. Consideration of requirements for enhanced international co-operation when observations from artificial satellites become a regular feature of astronomical research.
23. Symposia in 1960.
24. Report of the meeting of F.A.G.S., Paris, May 1959.
25. Future of the International Latitude Service.
26. Joint Commission on Solar and Terrestrial Relationships.
27. Joint Commissions on Spectroscopy and on the Ionosphere.
28. Consideration of agenda for 11th meeting of the Executive Board of I.C.S.U.
29. Inter-Union Committee for International Co-operation in Geophysics and Allied Sciences.
30. Any other business.

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1. In his opening remarks the President welcomed those present and explained the reasons why Dr. Petrie, Professor Danjon and Professor Oosterhoff had been prevented from attending. On his proposal it was agreed to send appropriate messages to each of these.

2. The General Secretary gave a brief account of the administrative work of the Union during the past year. He referred to the considerable amount of work associated with the organizations under the International Council of Scientific Unions (I.C.S.U.), particularly in connection with the now superseded Joint Commissions.

He drew attention to the difficulty in deciding between the financial responsibilities of the Executive Committee and those of the Advisory Finance Committee; it was agreed that the Executive Committee could take decisions on small and urgent matters, and also on other matters subject to the later confirmation of the Advisory Finance Committee.

The General Secretary referred to the large number of appointments of I.A.U. representatives to committees and other bodies, and requested discretion to make such appointments, after consultation with the President, subject to subsequent confirmation of the Executive Committee. This was agreed.

It was agreed that the Information Bulletins should be extended to contain more information from Commissions, that they should be circulated to institutions on the I.A.U. mailing list as well as to members, and that they should appear more frequently.

The General Secretary reminded the Executive Committee that a proposal by R.v.d.R. Woolley for the coordination of solar research was still outstanding. He had now referred the whole matter to A. B. Severny, President of I.A.U. Commission No. 10.

3. The General Secretary referred to the financial statement and budget for the years 1959-1961 that had been circulated to both the Advisory Finance Committee and the Executive Committee on 23 February 1959 (letter # 712), and gave details of minor amendments to the figures quoted. On balance it was clear that these made little difference to the overall position, so that, from the point of view of broad policy, the budget could be regarded as a suitable basis for decision.

4. Consideration was given to the application for membership of the Union from the Republic of China in Taipei, Taiwan. The General Secretary reported on the exchange of correspondence between himself, the Acting Director General of the Academia Sinica (Taipei, Taiwan) and the President and General Secretary of the Astronomical Society of the Republic of China (Taipei, Taiwan); he stated that the application formally conformed to the requirements of the Statutes of the Union for adherence under Statutes, Section II, No. 3 (b), with the Astronomical Society of the Republic of China acting as the National Committee of Astronomy, appointed by Academia Sinica, and with membership in Category 1.

Discussion, initiated by Kukarkin and supported by Sternberk, arose on the extent of astronomical activity in Taiwan as reported in the letter from the General Secretary of the Astronomical Society of the Republic of China of 10 April 1959. Although the Executive Committee agreed that this activity was very low, the point was made that the Statutes of the Union do not allow for the setting up of standards of competence; examples of admission of other countries in which astronomical activity is at a low level were quoted as precedent. Kukarkin reiterated his opposition to the application on the grounds that astronomical activity in Taiwan was not independent and that admission should be judged solely on scientific rather than on

political grounds; his arguments were opposed by other members of the Executive Committee (these arguments, both for and against, are not given here in detail). The possibility was mentioned by Kukarkin that the People's Republic of China (Peking) might find it necessary to withdraw from the Union if the Executive Committee accepted the Republic of China (Taipei) as a member; he stressed the importance to Astronomy of retaining China with its great and increasing activity in Astronomy rather than of accepting Taiwan with its extremely low level of astronomical activity. This point was appreciated by the Executive Committee, but it was pointed out that a decision as to the admission of Taiwan must be based on the Statutes of the Union and not on the "hypothetical" consequences of such a decision.

After considerable discussion the President put the admission of Taiwan to the ballot; it was agreed to admit Taiwan to membership of the Union by 5 votes for to 2 against.

The General Secretary then proposed the following resolution, designed to obviate the possibility of confusion between China and Taiwan; this resolution was put to the ballot and agreed by 5 votes for to 2 against.

"Whereas there is the possibility of confusion in the descriptions variously accorded to the two Republics of China, both of which adhere to the Union, and

in order to indicate unambiguously the two geographical areas in which independent astronomical activity has been developed,

it is resolved that short names, as indicated below, shall be used for all purposes of the Union, with the exception of formal correspondence and descriptions in which the use of the official titles of the two countries is desirable.

1. Official title of country: The People's Republic of China  
Site of Government: Peking, China  
Adhering Organization: National Committee of Astronomy (Nanking)  
Date of Adherence: 1935  
Geographical area in which astronomers are represented: The mainland of China  
Short name: , China (in French: Chine)
  
2. Official title of country: The Republic of China  
Site of Government: Taipei, Taiwan  
Adhering Organization: The Astronomical Society of the Republic of China (Taipei), recognized as a National Committee of Astronomy by the Academia Sinica

2. Adhering Organization (cont.) (Taipei), through which organization the Republic of China adheres to the International Council of Scientific Unions.

Date of Adherence: 1959

Geographical area in which astronomers are represented: Taiwan (Formosa)

Short name Taiwan (in French: Taiwan)"

The General Secretary reported that he had received from the Astronomical Society of the Republic of China a list of proposed members of the I.A.U., supported by details of their publications. It was agreed that normal procedures should be followed so that these candidates could not be considered for membership prior to the meeting of the Nominating Committee at the General Assembly in 1961.

Subsequent to the decision on this item of agenda, Kukarkin requested permission to make a formal statement on his position on this matter. This statement, which was supported by Sternberk, reads as follows:

"Vu que je désapprouve catégoriquement la décision du Comité Exécutif de l'U.A.I. votée par 5 contre 2, d'admettre Taiwan à l'Union Astronomique Internationale,

Partant du fait que l'astronomie chinoise qui se développe rapidement est représentée à l'U.A.I. par l'Académie des Sciences de la République Populaire de la Chine,

Soulignant qu'il n'existe pas au Taiwan d'activité scientifique indépendante dans le domaine de l'Astronomie, et par conséquent la décision du Comité Exécutif est prise contradiction avec le sens exact du Statut de l'U.A.I.,

Etant persuadé que la décision mentionnée porte détriment aux intérêts et au prestige de l'U.A.I. et à la collaboration internationale des astronomes,

Je crois nécessaire et même obligatoire pour moi de m'adresser à l'Assemblée Générale de l'U.A.I. de 1961 pour lui demander de reviser la question de l'admission de Taiwan à l'U.A.I.

En connection de cela je propose la conservation du status quo jusqu'à l'Assemblée Générale de 1961."

In reply the President pointed out that the matter had been fully discussed and that, in particular, other members of the Executive Committee did not agree with Kukarkin in respect of the independence of scientific activity in Taiwan and the interpretation of the Sta-

tutes of the Union; the majority clearly considered that the astronomical activity in Taiwan was independent and that the Statutes of the I.A.U. did not permit rejection of the application, either on this ground or on the low level of astronomical activity. He said that Kukarkin was quite free to raise this matter again before the General Assembly in 1961, but that he could not accept the proposal to reverse the decision just taken; this decision to admit Taiwan as a member must stand.

5. Of the two possible compositions for the Special Nominating Committee, appointed by the General Assembly to consider nominations for the new Executive Committee, the following was chosen:

J. H. Oort  
A. Danjon  
B. V. Kukarkin  
G. M. Clemence  
Y. Ohman  
A. D. Thackeray  
F. Zagar.

6. The General Secretary called attention to the standing invitation from P. Swings to meet at Liège. The President, however, said that it would be better if the Executive Committee did not meet twice in the same place within a short time and proposed that the General Secretary should write to Professor Swings accordingly, expressing the Committee's appreciation of the invitation.

Sternberk, on behalf of the Czechoslovakian Academy of Sciences (subject to confirmation, which he was certain would be forthcoming), invited the Executive Committee to meet in Prague in 1960. This invitation was accepted unanimously. No dates were fixed, but there was a general consensus of opinion that dates early in July would be the most convenient.

7. Discussion took place on the memorandum by the General Secretary on the functions and structure of the Union. His views, many of which are incorporated in the "Notes for the Guidance of Presidents of Commissions" received general agreement. In other cases the views expressed will be taken into account in the final draft of the "Notes for the Guidance of Presidents of Commissions" and will also form the background of future policy statements for discussion by the committee.

The policy of reducing the membership of Commissions until they become small working groups was criticized on the grounds:

a) that it was better to include non-active members on Commissions than to exclude active members;

b) that the amount of additional labour involved with larger Commissions did not warrant severe reduction of membership;

c) that membership of a Commission could mean a great deal to individuals, who would thereby have a greater feeling of active participation in the work of the Union.

The general consensus of opinion was that, while it would not be proper or desirable to reverse the agreed policy of the Union in this respect, the rate of reduction should be slowed down and no attempt should be made to reduce Commissions to small working groups. The General Secretary was asked to amend the paragraphs in the "Notes for the Guidance of Presidents of Commissions" accordingly.

In particular it was agreed that there should be no questionnaire to individual members, requesting the Commissions to which they wish to belong. Presidents would, however, be given a clear statement of the Executive Committee's policy in this matter and asked to make their recommendations for membership accordingly.

Attention was drawn to the fact that the former Executive Committee had remitted to this meeting the question of setting up standards for candidature for general membership. It was agreed that this was an exceptionally difficult matter, but that if possible some guidance should be given to National Committees when making proposals for general membership. (The General Secretary will endeavour to submit drafts of statements to Presidents and to National Committees for confirmation by the next meeting of the Executive Committee).

It was generally agreed that the procedure regarding resolutions submitted to the General Assembly required overhaul and that the possibility of a Resolutions Committee should not be overlooked.

8. Consideration was given to the draft "Notes for the Guidance of Presidents of Commissions and Sub-Commissions", prepared by the General Secretary. The idea of this was welcomed and its general purpose, presentation and content were approved. However, the General Secretary was asked to modify paragraph 4 (Commission Membership) in the light of the discussion and agreement reported in the previous section (No. 7).

In connection with the rotation of membership of Commissions it was suggested that a re-selection should take place every six years; this implies that every six years all members of a Commission would automatically retire and would have to be specifically re-appointed if they are to continue. (If this is formally agreed, it is suggested that each President should be asked to re-select the members of his Commission at the expiration of his first period of three years as President).

9. The Committee considered the whole question of the grouping and membership of Commissions in the light of a short memorandum by the General Secretary and of proposals for a complete revision of the commission structure of the Union which had been received from E. Schatzman and J. C. Pecker. The General Secretary gave the broad outlines of somewhat similar proposals that have been made on previous occasions by L. H. Aller and others. Although the discussion ranged widely it was ultimately concentrated on the Schatzman-Pecker proposals.

There was a considerable measure of support for the principles underlying these proposals, notably for the two-dimensional classification of astronomers according to the object of their astronomical studies on the one hand and the techniques used on the other. Apart from minor criticisms of the proposed grouping of scientific commissions and technical groups, the view was strongly expressed that no grouping of commissions could remain representative after a period of time and that the present grouping, although clearly containing many imperfections, had served its purpose well.

It was agreed that the Schatzman-Pecker proposals merited the closest attention; a committee consisting of Oort, Oosterhoff and Sadler were asked to discuss the matter further with Schatzman and Pecker and to present a detailed report to the next meeting of the Executive Committee.

The General Secretary was asked to inform Dr. Schatzman and Dr. Pecker of this decision and to request that they should not, for the time being at least, press for their scheme to be circulated for comment to all members of the Union.

10. The sections on the organization of meetings of Commissions given in the draft "Notes for the Guidance of Presidents of Commissions" were generally approved. In particular the Executive Committee supported very strongly the suggestion that Presidents should prepare and circulate an agenda for their meetings well in advance. It also approved a suggestion that there should be a physical separation between members and non-members at Commission meetings, possibly obtained by the reservation of seats for members.

The discussion ranged over all aspects of Commission meetings to the reporting of these meetings in the Transactions; a suggestion that the Transactions should be published in two volumes (one for administrative matters, the other for scientific discussions) did not meet with general acceptance, but it was agreed that as far as possible the proceedings of the purely scientific discussions should be reported in summary only in the Transactions and published in extenso elsewhere.



11. The General Secretary had put forward the following guiding principles regarding the organization of General Assemblies to avoid too many and overlapping meetings:

a) that symposia should not normally be organized to take place during the General Assembly;

b) that Joint Discussions should be replaced by joint meetings of Commissions;

c) that not more than half the time available for Commission meetings should be allocated in the printed programme, in order to allow for the arrangement of additional meetings;

d) that even more intensive planning of Commission meetings should be undertaken to ensure that there is the minimum overlap between meetings covering similar subjects; Presidents are to be encouraged to consult together in order to hold their scientific meetings jointly;

e) that in place of the symposia a number of distinguished astronomers should be invited to give "invited discourses" on some fields of astronomy in which they will review the state of the subject and its probable future developments. These "invited discourses" will be regarded as the highlights of the General Assembly and will provide a common scientific meeting ground for the great majority of those attending the General Assembly.

After some discussion the above were agreed as a general guide.

It was suggested that the "Invited Discourses" should be held at the same time as the Commission meetings, in order to discourage non-Commission members from overcrowding Commission meetings. The Executive Committee agreed that this was not the purpose of "invited discourses" and they should be arranged at times when all members could attend.

12. The General Secretary proposed that: "In view of the fact that the present Statutes and By-Laws of the Union suffer from many imperfections of detail, the Executive Committee:

(a) authorize the General Secretary to prepare a first draft of the Statutes and By-Laws of the Union, revised in accordance with such directives as the Executive Committee may give;

(b) appoint a small committee to consider the General Secretary's draft and to prepare a final draft for submission to the Executive Committee at its next meeting."

This proposal was agreed by the Executive Committee, which appointed a committee consisting of Professor Danjon, Professor Oosterhoff and the General Secretary to prepare a final draft for submission to the Executive Committee at its next meeting.

In the course of the discussion the question was raised as to the desirability of amending Statute II, section 3 in respect of the definition of the word "country". Dr. Kukarkin stated that he did not

agree with the proposed re-definition. The General Secretary said that special attention would be given to this point and that no alteration will be made without the fullest consultation with the Executive Committee.

13. The General Secretary reported on the action he had taken to explore the possibility of publishing the proceedings of at least the smaller I.A.U. symposia by arrangement with current astronomical and astrophysical journals. Favourable replies had been received from the editors of the *Astronomical Journal*, the *Astrophysical Journal*, *Annales d'Astrophysique* and *Bulletin Astronomique*. Although details of financial arrangements are still rather indefinite, it would generally be expected that the I.A.U. would not pay the whole cost of printing; the terms from *Bulletin Astronomique* were particularly favourable. As regards the three symposia held in 1958, No. 9 "Paris Symposium on Radio Astronomy" had been published commercially by the Stanford University Press (in this connection, tribute was paid to the great efforts of the Editor, Dr. R. N. Bracewell, in ensuring publication in so short a time, and the General Secretary was asked to convey to Dr. Bracewell the appreciation of the Executive Committee); No. 10 "The Hertzsprung-Russell Diagram" was being published in *Annales d'Astrophysique*; and No. 11 "The Rotation of the Earth and Atomic Time Standards" had already been published in the *Astronomical Journal*. For both No. 10 and No. 11 reprints, suitably indicating that they are I.A.U. Symposium No. 10 and No. 11, would be available to members of the Union at very favourable prices.

Discussion took place on the future policy for publication of the proceedings of I.A.U. symposia. The alternative to publishing in astronomical journals was to enter into agreement with a publisher such as Pergamon Press for the commercial publication of a uniform series of volumes containing all I.A.U. symposia. It was recalled that such a series had been started by the Cambridge University Press; this had been discontinued mainly on the grounds of delay in publication, but also because the highly-priced volumes were less accessible to astronomers.

A suggestion was made to consider agreements with continental printers and publishers, who could guarantee faster publication than the Cambridge University Press. However, it was agreed that the present policy should be continued, namely that publication of smaller symposia should be arranged through the current astronomical journals.

The question of whether and where to print the "invited discourses" was considered; it was generally agreed that, subject to the approval of the speakers, these discourses should be published and could well be included in the Transactions.

Consideration was also given to the increasing bulk, cost and delay of the Transactions. The General Secretary said that he was about to negotiate a new printing contract with the Cambridge University Press; the Executive Committee emphasized the importance of

ensuring speedy publication and the possibility of using continental printers was again mentioned. A suggestion was made that the Draft Reports should be printed in advance of the remainder of the Transactions and possibly sold to the public in this form. The General Secretary undertook to examine this and other suggestions and to make definite proposals for consideration by the Executive Committee at its meeting next year.

14. The President recalled that the Executive Committee had already agreed to accept the formal invitation from the President of the University of California to hold the 11th General Assembly of the I.A.U. in Berkeley in August 1961. He summarized the exchange of views that had already taken place by correspondence between himself and the General Secretary on the one hand, and the local organizing committee in the U.S.A., consisting of C. D. Shane as chairman, I. S. Bowen, L. Goldberg and O. Struve, on the other. Most of the detailed planning for the meeting, such as the arrangements for living accommodation, meeting rooms, secretarial arrangements, excursions and entertainments need not concern the Executive Committee; they will be adequately organized by the local committee.

There are however some points on which the opinions of the Executive Committee will be of great assistance to the organizing committee.

The dates of 15-24 August had been originally suggested by the local organizing committee, but the General Secretary had said that he would slightly prefer these to be advanced by one day. After discussion it was agreed that it would be easier in regard to travel to adhere to the original dates of 15-24 August.

The President referred to the possibility of a considerable grant towards travelling expenses from the U.S. National Science Foundation and requested general views as to how such a grant might be administered. Dr. Goldberg explained that, although the money could not actually be handed over to the Executive Committee, the wishes of the Committee would be followed. Some of the grant could undoubtedly be used to defray the travelling expenses of invited participants at the symposia to be held immediately before or after the General Assembly. The relative merits: of making individual grants on the recommendation of National Committees; of assisting all members with travel expenses in the U.S.A.; or of assisting all members with subsistence expenses, were discussed. The President and the General Secretary were asked to continue discussions with the U.S. authorities and to keep the Executive Committee informed.

15. In view of the decision in Section 11 there was little discussion on the overall plans for Commission and other meetings during the 11th General Assembly.

It was agreed that the published time-table should be as rigid as possible, and that Presidents of Commissions should be urged to make known their definitive requirements for meetings as early as possible. They should also (see Section 10) prepare and circulate an agenda for all meetings. The necessity for ad hoc meetings was recognized and it was suggested that each member of the Union should be provided with a "diary" providing space for each hour of each day.

In connection with the General Assembly many suggestions were made to reduce the number of resolutions brought forward by the Commissions; in particular it was suggested that only resolutions that had been included in the Draft Reports could be accepted. The difficulties of this were mentioned by the General Secretary, who undertook to look into the feasibility of this and similar suggestions and to make a full report to the Committee at a later date.

16. The President stated that it had already been agreed (see Section 11) to arrange a number of "invited discourses" during the next General Assembly. After discussion it was agreed that there should be a minimum of two and a maximum of three such discourses in Berkeley in 1961.

The following subjects and speakers were suggested:

a) "Astronomical Observations from Artificial Satellites and Rockets", to be given jointly by A. van Allen and L. I. Sedov. This suggestion was generally agreed, even though neither speaker was a member of the Union.

b) "Problems of Extra-Galactic Research" by V. A. Ambartsumian.

c) "Modern Instrumental Techniques" by A. Lallemand.

d) "Stellar Evolution" by F. Hoyle, or M. Schwarzschild or A. Sandage.

e) "Galactic Research" by the President; the President did not think that he would be able to do this in addition to his Presidential duties.

f) "Cosmological Theories in the U.S.S.R." by L. I. Semiov? This suggestion was subsequently withdrawn on the understanding that Cosmogony of external galaxies would be covered in b).

Discussion also took place concerning the question of publication and it was agreed that, subject to the approval of the speakers, these discourses should be published in the Transactions.

It was agreed to defer a decision on both the number and the choice of discourses and speakers until the next meeting.

17 and 23. Consideration was given to the selection of subjects for symposia to be held in 1960 and in connection with the General Assembly in 1961. For convenience of reference the following list gives abbreviated titles and reference numbers for all subjects seriously suggested for either 1960 or 1961:

1. Aerodynamical Phenomena
2. International Latitude Service
3. Galactic Star Clusters
4. Double Stars
5. The Galaxy and the Magellanic Clouds
6. Extra-galactic Research
7. Solar Corona
8. Stellar and Solar Magnetic Fields
9. Astrometry
10. Stellar Motions and Stellar Dynamics
11. The Moon
12. Radio Astronomy
13. Flare and Prominence Spectra
14. Instrumentation
15. Ephemerides and Celestial Mechanics

It was agreed that no symposia should be held during the General Assembly itself.

After considerable discussion it was decided to adopt numbers 1, 2 and 3 as symposia to be held in 1960; these will become Symposia Nos. 12, 13 and 14 respectively. Details are given below.

It was also decided to have three symposia in 1961 immediately before or after the General Assembly: Nos. 6 and 7 in the above list will become I.A.U. Symposium No. 15 and No. 16, while No. 4 will become I.A.U. Symposium No. 17. Details are given below.

It was agreed to defer No. 5 until 1962 or 1963. The Committee viewed the proposal to hold such a symposium in Australia with considerable favour, but considered it rather inappropriate for 1960 or 1961; they referred it to their successors after 1961 for sympathetic consideration.

It was thought that much of the substance of suggestion No. 8 could be combined with No. 7 in Symposium No. 16; it was agreed that those interested in No. 8 should be kept fully informed.

Suggestions No. 9 and No. 10 were considered at this stage as more suitable as the basis of a Joint Discussion to be held during the General Assembly and to be organized mainly by the Presidents of the Commissions most directly interested.

Similarly it was agreed that suggestions No. 13 and No. 14 would be adequately covered by Joint Discussions held during the General Assembly.

Suggestions No. 11 and No. 12 were not proceeded with, it being noted that a considerable part of suggestions No. 12 would in fact be covered by Symposium Nos. 15 and 16.

The General Secretary announced that suggestion No. 15 had been withdrawn and would be met by joint meetings of the Commissions concerned.

The following list thus gives the agreed position regarding I.A.U. Symposia to be organized in 1960 and in 1961.

Nos. 12, 13, 14 in 1960

No. 12. "Aerodynamical Phenomena in Stellar Atmospheres", to be held jointly with the International Union of Theoretical and Applied Mechanics.

Organizing Committee: Representatives of I.A.U.: M. G. J. Minnaert (chairman), G. Righini, A. B. Severny, R. N. Thomas and A. Unsöld; Representatives of I.U.T.A.M.: J. M. Burgers, H. W. Liepmann, L. I. Sedov.

Place and Time: the symposium will be held in Varenna, Italy in July or August 1960.

A sum of 1500 dollars has already been agreed by the Executive Committee.

No. 13. "The Future of the International Latitude Service", to be held jointly with the International Union of Geodesy and Geophysics.

Organizing Committee: Representatives of the I.A.U.: E. P. Fedorov and W. Markowitz; Representatives of the I.U.G.G.: P. Tardi and another.

Place and Time: to be held in Helsinki on 27-31 July 1960 during the meeting of Section III of the International Association of Geodesy.

Many I.A.U. members will be attending the I.U.G.G. meeting so that the expenses of this symposium will not be heavy.

The proceedings will be published in Bulletin Géodésique and reprints will be available in the I.A.U. symposium series as I.A.U. Symposium No. 13.

A sum not exceeding \$ 1000 should be made available for travel expenses of I.A.U. participants.

No. 14. "Galactic Star Clusters in Galactic Research".

The Organizing Committee was agreed to be: W. Becker, A. Blaauw, H. Haffner (chairman), H. L. Johnson, P. N. Kholopov, A. Sandage, M. F. Walker.

Place and Time: Basle in September or October 1960.

The number of participants was suggested to be about 25 and it was thought that a full two days would be required.

No proposals have yet been made for publication.

It was agreed to allocate a maximum of \$ 2500 for the travelling and organizational expenses for this symposium; but as it was a relatively small one it was hoped that a smaller sum would suffice.

Nos. 15, 16, 17 in 1961

No. 15. "Problems of Extragalactic Research".

The Organizing Committee was selected as: V. A. Ambartsumian, W. Baade, R. Hanbury Brown, O. Heckmann, N. U. Mayall and A. Sandage.

The Executive Committee did not appoint a chairman on the Organizing Committee, but ruled that all correspondence in connection with the symposium should be addressed to the Hamburg Observatory.

It was suggested that G. C. McVittie might later be added to the Committee to act as secretary during the meeting and possibly as editor.

Place and Date: Opinion was divided as to whether the symposium should be organized before or after the General Assembly, but with a preference for after; Santa Barbara was suggested as a suitable location. Three full days would be required.

The Executive Committee agreed that this symposium should cover the widest possible scope including: problems of cosmology, radio astronomy, rotations, velocities, radio sources.

The suggestion that the symposium should be organized jointly with the Statistical Laboratory of the University of California in Berkeley was considered; however it was agreed that the subject should be considered primarily as an astronomical problem and that the organization should be in the hands of astronomers. The organizing committee will doubtless invite statisticians to participate.

It was suggested that there should be about 75 invited participants with a maximum attendance of about 100.

The Committee was informed that the Institut Henri Poincaré wishes to hold some kind of symposium on relativity and cosmology in the U.S.A. in 1961, so that the possibility of joint participation should be considered; it was agreed that the Institut Henri Poincaré should be kept fully informed of the plans for the I.A.U. Symposium, but there should be no joint organization.

No. 16. "The Solar Corona".

Organizing Committee: It was decided to ask W. O. Roberts and A. B. Severny to make definitive proposals.

As regards the place, Boulder or Sacramento Peak were suggested, but this is a matter which will have to be discussed with the local organizing committee.

It was agreed that details of the suggestion No. 13 above should be sent to Dr. Roberts and Dr. Severny so that some, at least, of the proposals therein could be incorporated.

The subject should be enlarged to include interplanetary matter and zodiacal light, as well as aspects of radio astronomy.

No. 17. "Visual Double Stars".

Organizing Committee: P. van de Kamp (chairman), A. Danjon, O. J. Eggen, W. S. Finsen, P. Muller and R. M. Petrie.

The place and time of the meeting to be fixed after consultation with the local organizing committee. It was considered that two days would suffice for this small symposium.

In regard to the symposia in 1961 the Executive Committee made no recommendations as to financial support. It is assumed that travelling expenses for participants will be met as part of the general expenses of the General Assembly.

18. The President summarized the action that had already been taken regarding the protection of frequencies for Radio Astronomy, and the representation of U.R.S.I. (International Scientific Radio Union) and I.A.U. at the Ordinary Administrative Radio Conference of the International Telecommunication Union at Geneva. The Executive Committee had authorized the preparation of I.A.U. documents on this subject and had agreed to its representation in Geneva. The President referred to the excellent work that had been done initially by Balth. van der Pol and it was with regret that he had to announce that illness had made it temporarily impossible for van der Pol to continue. He himself was presenting a lecture on Radio Astronomy to the delegates and Ch. L. Seeger had been helping with technical advice. He went on to say that the protection of such frequencies was vital for the whole future of Radio Astronomy and that it was of paramount importance that the case for this protection should be adequately presented at Geneva; the expenses of sending representatives should be shared with U.R.S.I. and should be considered small in relation to the fact that the whole future of Radio Astronomy largely depends on the outcome.

Members of the Executive Committee expressed themselves in complete agreement with the President's view and agreed that the I.A.U. should take such steps as were considered necessary to bring the needs of Radio Astronomy to the notice of the delegates at Geneva.



19. In regard to the Bibliography of Astronomy, 1881-1898, the General Secretary reported as follows: "Commission 5 submitted a resolution at the Moscow General Assembly recommending that the Union should finance the publication of the Bibliography of Astronomy, 1881-1898, which has been prepared in Belgium under the present direction of A. Dermul. The estimated printing costs are \$ 3000 for each of the ten volumes. In view of the magnitude of this project the Executive Committee referred the matter to the Advisory Finance Committee, appointed by the General Assembly in Moscow. The Advisory Finance Committee has now studied this matter and recommends (in summary):

- a) that it is most desirable that the Bibliography be published;
- b) that the I.A.U. should provide partial financial aid to the project of a total sum not exceeding about \$ 5000;
- c) that the I.A.U. cannot take upon itself the responsibility for printing and publication;
- d) that the compilers should inquire about the probable number of subscribers before the first number is sent to the printer, in order that a clear idea can be obtained of the income from sales."

Acting on these recommendations the General Secretary had considerable correspondence with A. Dermul and with W. Fricke, concerning the likely sale of such a publication. He proposed, and the Executive Committee approved, the following resolution:

"The Executive Committee gives its strong support to the publication of the Bibliography of Astronomy for the years 1881-1898; it offers to lend its active support in appealing for financial aid and to provide assistance in investigating potential sales, in obtaining lists of subscribers, and generally in forming a reliable estimate of the net cost of publication.

Provided that publication of the projected ten volumes can reasonably be assured, the Executive Committee is prepared to promise a total subvention not exceeding 5000 dollars."

The Executive Committee considered it the responsibility of Dr. Dermul to plan the investigation into potential sales etc., and to prepare a realistic appreciation of the total net cost.

20. The Executive Committee had before it recommendations from J. S. Hall, President of Sub-Commission 9b, and G. E. Kron, President of Commission 9, concerning Site Testing. These recommendations may be summarized as:

- (a) that the I.A.U. undertake a study of site testing;
- (b) that such study be organized as part of Commission 9, possibly as a Sub-Commission;

- (c) that the President of the Sub-Commission or other group be J. Rösch;
- (d) that the President be given freedom to select or approve of the membership of his group.

After discussion the Executive Committee gave its general approval to these recommendations with the following specific interpretation: A temporary working group of Sub-Commission 9b (on Seeing) be set up with the following membership: J. Rösch, I. S. Bowen, G. Keller, A. R. Hogg, O. A. Melnikov, A. Danjon and H. Siedentopf.

This temporary working group is to remain in being until the General Assembly of 1961 by which time it is hoped that it, in conjunction with the Presidents of Commissions 9 and 9b, will have made specific proposals either for the integration of the working party into Sub-Commission 9b or for some other form of organization.

The General Secretary was asked to write to Dr. Keller asking him whether he was willing to serve in view of his connection with the National Science Foundation, which might be asked for financial assistance in this project.

21. Consideration was given to the membership of the new Commission 44, which had been approved by correspondence, and of which it had been agreed that P. Swings should be the first President. It was agreed to change the name of the Commission to: "Astronomical Observations from outside the Terrestrial Atmosphere" (Observations astronomiques au dehors de l'Atmosphère terrestre).

The membership of the Commission was then agreed as follows: H. E. Friedman, T. Gold, G. Herzberg, H. Kienle, A. C. B. Lovell, Mrs. A. Masseur, A. B. Meinel, A. A. Mikhailov, Miss N. Roman, A. B. Severny, L. Spitzer, O. Struve, V. P. Tsessevich, H. C. van de Hulst, F. L. Whipple, I. D. Zhongolovich.

It was further agreed that copies of correspondence should be sent to V. V. Fedynsky and Z. Svestka.

22. Goldberg, who had originally raised this item of agenda, stated that he considered the requirements for enhanced international co-operation fully met by the appointment of Commission 44 as in section 21.

23. See section 17.

24. The General Secretary reported that the report of the Fourth Meeting of the Council of the Federation of Astronomical and Geophysical Permanent Services (F.A.G.S.) had been circulated and that he had little further comment to make. Danjon had been unable to attend the meeting, but M. Waldmeier had done so and had expressed himself as being satisfied with the allocation he had received for the Quarterly Bulletin on Solar Activity.

25. In view of the fact that Symposium No. 13 (See section 17) would be devoted entirely to this subject (the International Latitude Service) the Executive Committee thought it appropriate to leave discussion until after that symposium. It was however stressed that it was important that astronomers should play an adequate part in the future of the Service and that it should not be entirely in the hands of the geophysicists.

26. In common with all the Joint Commissions of I.C.S.U., the Joint Commission on Solar and Terrestrial Relationships was discontinued by a decision of the Executive Board of I.C.S.U. in October 1958, in spite of this action being opposed by the I.A.U. The future organization of this work had been referred to a small committee on which C. W. Allen represented the I.A.U. The preliminary recommendations of this committee are:

"That the Joint Commission on Solar and Terrestrial Relationships be taken over by one of the Unions, but that the joint character of the Commission be preserved by: -

- (a) Co-option of members from other Unions.
- (b) The independent issue of its report which could be more comprehensive than those of the I.A.U. Commissions (for example)."

There was a difference of opinion in the committee as to which should be the parent union. The Executive Committee expressed a wish that this should be the I.A.U. It was noted that, should this be agreed by the Executive Board of I.C.S.U., it should be necessary to agree a composition for this Commission with the International Scientific Radio Union (U.R.S.I.) and the International Union of Geodesy and Geophysics (I.U.G.G.).

27. The General Secretary summarized the history of the negotiations that had followed the discontinuation of the Joint Commission on Spectroscopy (see section 26). It had been agreed that the work of the Joint Commission be taken over by an Inter-Union Commission under the International Union of Pure and Applied Physics (I.U.P.A.P.). The Executive Committee of I.U.P.A.P. has approved the following recommendations and proposed the following membership:

- a) "That a new spectroscopy commission be established by I.U.P.A.P. to continue the work of the former Joint Commission of Spectroscopy as recommended by the Adhoc Committee of I.C.S.U."
- b) "That in order to maintain and emphasize the inter-union character of the new commission the three unions concerned (I.U.P.A.P., I.U.P.A.C., I.A.U.) be equally represented in the new commission. In this way it is expected that the new Commission will be recognized by all three unions as a coordinatory body which will consider all problems which affect work in spectroscopy in all three unions."

	<u>Members</u>	<u>Correspondents</u>
International Union of Pure and Applied Physics	S. Frisch G.B.B.M. Sutherland	R. S. Mulliken
International Astronomical Union	G. Herzberg (tempo- rary President) C. M. Sitterly	G. Racah
International Union of Pure and Applied Chemistry	S. Mizushima H. W. Thompson	R. N. Jones

The Executive Committee approved the composition of this Commission and gave its approval to the choice of representatives suggested by I.U.P.A.P.

With regard to the successor of the Joint Commission on the Ionosphere the General Secretary reported that U.R.S.I. had drawn up a draft constitution for an Inter-Union Committee on the Ionosphere and the Exosphere, under U.R.S.I. as the parent union. (This constitution was circulated under item 30 of the agenda).

This draft constitution was considered by the Executive Committee and approved.

It calls for the appointment of four members from the I.A.U., and consideration was given to their nominations. R. N. Bracewell, V. G. Fesenkov and J. L. Pawsey were nominated as members of this committee, but the General Secretary was asked to consult with the General Secretary of U.R.S.I. and with specialists in the field before nominating a fourth member.

28. The preliminary agenda for the 11th meeting of the Executive Board of I.C.S.U. had been circulated. The Executive Committee felt unable to give any special instructions to its representatives (the President and General Secretary) at this meeting, but some considerable discussion took place on the general aims and methods of operation of I.C.S.U.

Two specific points were mentioned. Firstly the Committee agreed to place before the Executive Board its view that acceptance of donations to the I.C.S.U. Capital Fund from private foundations should be conditional on there being no restrictions of a non-scientific nature. The second point concerned the proposal that annual dues from national members should be collected centrally by I.C.S.U. for all Unions and remitted by I.C.S.U., without service charges, to the Unions concerned. The Executive Committee raised no objections to this proposal provided that it was not operated in relation to countries that did not adhere to I.C.S.U.

29. The General Secretary reported on the steps that had been taken to propose the formation of an Inter-Union Committee for International Co-operation in Geophysics and Allied Sciences, generally to act as a successor to the Special Committee of I.C.S.U. for the International Geophysical Year. The history was long and complicated: At the General Assembly of I.C.S.U. in October 1958 a Special Committee for Geophysics (S.C.G.) had been set up to undertake these tasks. At its first meeting the members of S.C.G. agreed that its constitution was not entirely suitable and unanimously recommended that it be replaced by an Inter-Union Committee, in strong preference to an alternative suggestion by the Bureau of I.C.S.U. for a Special Committee for International Co-operation in Geophysics (S.C.I.C.O.G.). The Executive Board was now asked to give its agreement to the draft constitution of the Inter-Union Committee for International Co-operation in Geophysics and Allied Sciences, to be organized under the International Union of Geodesy and Geophysics (I.U.G.G.) as parent union. On the recommendation of the General Secretary, the Executive Committee approved this proposal, agreed to participate in the work of the Committee and approved the draft constitution.

Furthermore, it confirmed the appointment of M. A. Ellison as discipline member for Solar Activity; it also nominated M. A. Ellison as the I.A.U. candidate for the list, according to paragraph 5 of the constitution, from which the Committee will elect the President and the two Vice-Presidents.

It was noted, by comparison with C.S.A.G.I., that there were no discipline members for latitudes and longitudes, on the grounds that these activities were fully covered by the existing organizations of the International Latitude Service and the Bureau International de l'Heure. The General Secretary had consulted E. P. Fedorov and A. Danjon on whether it would be desirable to have discipline members in these two fields. Owing to illness, Danjon had not replied, but it was assumed that no additional representation for longitudes would be required. In regard to latitudes Fedorov had expressed a desire that there should be a separate discipline member for latitudes on the Inter-Union Committee; but this view was not agreed by the representatives of the I.U.G.G. In view of the fact that the whole future of the International Latitude Service was being reviewed in 1960, and that there was provision for the later addition of further disciplines, it was agreed to defer a request for the addition of a discipline member for latitudes until after the symposium in 1960.

30. A letter had been received from the General Secretary of U.R.S.I. concerning the appointment of a single Advisory Committee for the Steering Committee of the International World Days Service and for the Central Committee on Ursigrams of U.R.S.I.; this Advisory

Committee would be consulted by correspondence. The Advisory Committee would consist of specialists in particular branches of the subjects concerned, and the I.A.U. had been asked to appoint astronomers on this committee for a number of subjects. It was agreed to nominate the following:

Sunspots: M. Waldmeier

Flares: M. A. Ellison

Corona: W. O. Roberts

Other solar optical phenomena: E. R. Mustel

Solar radio phenomena on metre wave-lengths: A. D. Fokker

Solar radio phenomena on short waves: A. E. Covington

Localization of solar radio sources: P. Simon

Spectra: J. P. Wild

Polarization: T. Hatanaka.

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The meetings terminated at 1 p.m. on Wednesday 9 September, with an expression of appreciation to the Astronomer Royal for having invited the Committee to meet at Herstmonceux, and for the excellence of the arrangements for the Committee's meetings, transport and entertainment.

Royal Greenwich Observatory  
Herstmonceux

D. H. Sadler  
General Secretary

October 1959