

GENERAL ASSEMBLY

*Meeting of August 11, 1948, 15.00, in the Auditorium Maximum of the
Swiss Federal Institute of Technology*

SIR HAROLD SPENCER JONES, President, in the Chair

The president opened the meeting with the following words:

It is a great privilege for me to declare open the seventh General Assembly of the International Astronomical Union. We are very grateful to our Swiss colleagues for the invitation to meet in Zürich in these delightful surroundings. We recognize that there are special difficulties at the present time in the organization of arrangements for a congress such as this. It has meant a great deal of hard work for the Local Committee, under Dr Waldmeier, and to them we express our thanks. Almost exactly ten years have passed since the last General Assembly of the International Astronomical Union terminated. On that occasion Sir Arthur Eddington, who had been elected President but was not able to be present at the concluding meeting, sent a message in which he said:

My uppermost feeling is a great responsibility to deserve the trust you have placed in me. We cannot foresee what may happen before we meet again in Zürich. On the astronomical side we can make some guess. The 200-inch reflector will be completed or nearing completion. The marvellous advance in the photography of the corona and prominences, which has been so memorable a feature of this meeting, will bear fruit in advancing knowledge. And our numerous commissions will patiently extend their researches. But on the international side no one dares prophesy. But, if in international politics the sky seems heavy with clouds, such a meeting as this at Stockholm is as when the sun comes forth from behind the clouds. Here we have formed and renewed bands of friendship which will resist the forces of disruption.

The skies, indeed, were heavy with gathering storm clouds at that time and a year later the storm burst. Astronomers in many parts of the world left their telescopes and laid aside their books and their calculations to devote their skill and talent to fighting the forces of evil that had been let loose. The peaceful pursuit of knowledge was slowed down and the forces of destruction held sway. Yet, often in spite of incredible difficulties, astronomical research was continued and the reports of the Commissions, presented at this meeting, show that much was achieved. One consequence of the war was, perhaps, unexpected. Under black-out conditions many saw the skies as they had never seen them before; and it was consoling, in a war-torn world, to find distraction in the contemplation of the order and majesty of the Universe. Never before, I think, has there been such a widespread general interest in astronomy.

The ten years that have elapsed since we last met have taken a heavy toll of our colleagues, including many who have occupied an eminent position in astronomy and in the Union. First among these I mention Sir Arthur Eddington, President of the Union, whose untimely death while still in the fulness of his powers was an irreparable loss to our science and our Union. We also have to deplore the deaths of Prof. Frank Schlesinger and of Sir Frank Dyson, both past Presidents of the Union, and of Prof. Alfred Fowler, the first General Secretary. These three men, all eminent in astronomy and friends of many present to-day, took a great share in the formation of the International Astronomical Union; to their wisdom in establishing it on sure foundations and to their guidance in steering it in the right direction the success of the Union is in no small measure due. I should like to refer also to Dr H. Deslandres, former Vice-President of the Union and the doyen of astronomers, whose name was honoured not only in France but throughout

the astronomical world, and to Prof. Elis Strömgren, who in the face of great difficulties carried on through the war the Astronomical Telegram Bureau and who was the host at the meeting of the Executive Committee and representatives of a number of countries held in Copenhagen in 1946. Mention must also be made of Dr A. Lambert, who was brutally murdered by the Nazis, and of Dr A. de Sitter and Dr W. C. Martin, who succumbed to starvation in a Japanese concentration camp.

To these names there is unfortunately a very long list to be added. Time will not permit the list to be read in full. It includes many whose names are known throughout the astronomical world and many whose faces have been familiar at past assemblies. Amongst them are Prof. Emilio Bianchi, Prof. Charles Fabry, and Prof. H. F. Newall, former Vice-Presidents of the Union; Dr Felix de Roy, Prof. R. S. Dugan, Dr H. Kimura, Prof. M. Maggini, General Perrier, Presidents of Commissions; E. M. Antoniadi, Dr J. M. Baldwin, Prof. A. Bemporad, Dr G. Bennett, Miss M. A. Blagg, Prof. H. Buisson, Dr Annie Cannon, Dr A. C. D. Crommelin, Prof. H. D. Curtis, Prof. F. M. da Costa Lobo, Dr N. Dneprovsky, Prof. P. Emanuelli, Prof. R. Emden, M. H. Grouiller, Mr J. C. Hammond, Dr W. E. Harper, Mr A. R. Hinks, Prof. K. Hirayama, Prof. Shin Hirayama, Prof. A. Ivanov, Sir James Jeans, M. N. V. Komendantoff, Dr J. Krassowski, Dr G. N. Neuymin, Prof. T. Niethammer, Prof. C. Parvulesco, Rev. T. E. R. Phillips, Dr J. S. Plaskett, Prof. H. C. Plummer, Father Luis Rodés, Prof. R. A. Sampson, Prof. F. Slocum, Prof. J. Svoboda, Dr A. van Maanen, Dr J. Woltjer Jr., Dr H. E. Wood.

I ask you to stand for a few moments in silent tribute to the memory of all the colleagues whom we have lost since we last met.

After the death of Sir Arthur Eddington, I had the honour to be elected President by the Executive Committee. Prof. Fabry, Prof. Bergstrand and Prof. Brunner retired after the end of the war from the office of Vice-President, at their own request. The Executive Committee elected Prof. Danjon, Prof. A. A. Mikhailov, and Prof. G. Tiercy in their place.

We regret that Dr W. S. Adams, late Director of the Mount Wilson Observatory and a Vice-President of the Union is unable to be present. I propose that a telegram should be sent to Dr Adams on behalf of this General Assembly conveying our greetings and good wishes. The Executive Committee has elected Prof. Stebbins as a Vice-President for this meeting. I propose also that telegrams of greetings and good wishes should be sent to Miss Eddington; to Prof. Esclanong, former President of the Union; and to Prof. Russell, Dr van Rhijn, and Prof. Carnera, Director of the Central Latitude Bureau, who have been unable to be with us because of ill-health.

Since the last General Assembly Australia, Chile, Eire, Finland, Hungary and India have joined the Union, making a total of thirty-one countries adhering to the Union.

When the end of the war arrived, international co-operation had been sadly interrupted and there was a need for new arrangements to be made for the organization of certain fields of work, particularly in variable stars and minor planets. As difficulties of travel and of obtaining hotel accommodation were too great to permit a General Assembly to be called, the Executive Committee met in Copenhagen in March 1946, together with other representatives from thirteen countries in order to discuss questions on which decisions could not be deferred. The decisions which were reached are set out in full in the report of the Executive Committee and require the formal approval of this General Assembly, though it has been necessary to take action on many of the decisions. The Union has assumed the responsibility, through Commission 27, for the naming of variable stars and for the publication of name-lists, and for the publication every five years of the *Catalogue and Ephemerides of Variable Stars*. The offer of the Academy of Sciences of the U.S.S.R. and of the Sternberg Astronomical Institute to prepare the name-lists and to prepare and publish, under the auspices of the Union, both the Catalogue and Ephemerides was gratefully accepted.

Arrangements for the organization of the work on minor planets have been satisfactorily made. The Union is much indebted to M. Delporte and to Prof. Brouwer for the detailed planning of the work, in accordance with the general decisions of the Executive Committee. A centre of information has been established at the Cincinnati Observatory,

under the direction of Prof. Paul Herget; the minor planet circulars issued from Cincinnati give announcements of new discoveries, observed positions of minor planets, computed orbits and other relevant information. This service is one of great value and the Union is very much indebted to Prof. Herget for the efficient way in which the centre is conducted, without any grant from the funds of the Union.

At the meeting in Copenhagen a new standing commission was appointed, under the presidency of Prof. Stratton, for facilitating the exchange of astronomers. The Commission has already proved to meet a real need; a wide and useful field of work lies before it, which cannot fail to assist in promoting international understanding and thus to serve the cause of peace.

The question of the establishment of an international observatory, suggested independently by the Polish delegation and by Prof. Harlow Shapley, was also discussed at Copenhagen. The project was strongly supported in principle and Prof. Shapley undertook to interest U.N.E.S.C.O. in it. A new standing commission, under the Presidency of Prof. Shapley, has been formed by the Executive Committee to deal with this project and to formulate plans in greater detail. The matter has been referred to U.N.E.S.C.O. and has received wide support as a means of promoting good will among scientists the world over. Though U.N.E.S.C.O. has not been able to give the proposal the highest priority, the establishment of an international observatory not being a matter of vital urgency, it stands high on the list of U.N.E.S.C.O. priorities.

The International Council of Scientific Unions was formerly the parent and controlling body of the various international scientific unions. But as the Unions became well organized and reached maturity, they found the need to develop along individual lines, in the way that seemed best to meet their requirements. They became free from the control of the International Council. The Council, under the able guidance of Prof. Stratton, has found a new field of usefulness as a co-ordinating body. Thus, for instance, there are many borderline subjects in science which concern two or more Unions. The establishment of Joint Commissions to deal with such subjects, on which the Unions concerned shall each be represented, is a useful function of the International Council. The International Astronomical Union and the International Union for Geodesy and Geophysics saw the advantage of such Joint Commissions many years ago and, under their own auspices, formed Joint Commissions on Time, on Longitudes, and on Latitude Variation. The International Council has recently formed a Joint Commission on the Ionosphere, to which each of the Unions of Astronomy, Geodesy and Geophysics, Radio Science, and Physics nominates four members.

The International Council forms also a co-ordinating body for discussions with U.N.E.S.C.O. on matters concerning individual Unions. As the result of discussions between the International Council and U.N.E.S.C.O. it has been agreed that U.N.E.S.C.O. shall assume the financial responsibility for international scientific organizations which are of a permanent and substantial nature. The Bureau de l'Heure and the Central Bureau of the International Latitude Service have been accepted by U.N.E.S.C.O. as coming into this category. These Bureaus were formerly supported jointly by the Unions of Astronomy and of Geodesy and Geophysics. U.N.E.S.C.O. now makes grants, through the two Unions, to these two Bureaus, thereby relieving the budget of the two Unions. The Unions retain full control of the scientific work of these Bureaus. U.N.E.S.C.O. has also made grants to our Union for publications, for the Commission on the Exchange of Astronomers, and towards the travelling expenses of Presidents of Commissions attending this General Assembly. Particularly valuable has been a block grant towards the travelling expenses of a number of younger astronomers from war-damaged countries. There is naturally a general tendency for the official delegates to a General Assembly from the various countries adhering to the Union to be selected from the senior astronomers and from those holding official positions. The younger astronomers are often not able to defray the expenses of coming to a General Assembly, though it will be agreed, I think, that it must be a great stimulus for a young astronomer to have the opportunity of meeting astronomers from all parts of the world. I am very glad to welcome here

the young astronomers, whose attendance has been made possible by the grant from U.N.E.S.C.O.

U.N.E.S.C.O. has appointed a Scientific Liaison Officer, M. Establier, through whom matters affecting the Unions can be discussed with U.N.E.S.C.O.

The Union appoints two representatives to the Executive Committee of the International Council. Because of the increased importance of the Council in relation to the Union, it was decided by the Executive Committee at Copenhagen, as a matter of principle, that in future the President and General Secretary should represent the Union but that, if either of them was unable to attend a meeting of the Council, he should designate another member of the Union to take his place. The representatives of the Union to the International Council are appointed by the General Assembly, the Executive Committee will submit nominations in accordance with this decision at the final General Assembly.

Besides delegates from most of the countries adhering to the Union there are present also at this General Assembly, by invitation, some astronomers from Germany and Austria. I extend a cordial greeting to them and particularly to Prof. Kopff, who, I am glad to say, has sufficiently recovered from a serious illness to be able to be present. We look forward to the renewal of collaboration with German and Austrian colleagues.

The President next invited Miss Kluyver, and Messrs Kourganoff, Minnaert and Swings as recorders and interpreters for the meeting. He next formally moved the adoption of the report of the Executive Committee.* The adoption of this report implies the approval by the General Assembly of the decisions made by the Executive Committee at the meeting in Copenhagen.

It was accepted without alterations.

The following astronomers were then nominated by the official delegates of their respective countries to act as members of the Finance Committee:

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| <i>Argentina</i> | Mr S. MANGARIELLO |
| <i>Australia</i> | Dr R. v. D. R. WOOLLEY |
| <i>Belgium</i> | Prof. J. F. COX |
| <i>Canada</i> | Dr C. S. BEALS |
| <i>China</i> | Mr TCHENG MAO LIN |
| <i>Czechoslovakia</i> | Dr V. V. HEINRICH |
| <i>Denmark</i> | Miss J. M. VINTER HANSEN |
| <i>Egypt</i> | Dr M. R. MADWAR |
| <i>Eire</i> | Prof. H. A. BRÜCK |
| <i>Finland</i> | Prof. G. JÄRNEFELT |
| <i>France</i> | Dr A. COUDER |
| <i>Great Britain</i> | Mr D. H. SADLER |
| <i>Greece</i> | Prof. S. PLAKIDIS |
| <i>Hungary</i> | Dr L. DEZSÖ |
| <i>Italy</i> | Prof. F. ZAGAR |
| <i>Netherlands</i> | Prof. H. ZANSTRA |
| <i>Norway</i> | Mr L. OWREN |
| <i>Poland</i> | Prof. E. RYBKA |
| <i>Portugal</i> | Dr G. S. DA COSTA LOBO |
| <i>South Africa</i> | Dr W. H. VAN DEN BOS |
| <i>Spain</i> | Dr R. CARRASCO |
| <i>Sweden</i> | Dr Y. ÖHMAN |
| <i>Switzerland</i> | Prof. M. SCHÜRER |
| <i>U.S.A.</i> | Prof. J. J. NASSAU |
| <i>U.S.S.R.</i> | Prof. E. K. KHARADZE† |
| <i>Vatican City State</i> | Dr J. JUNKES |

The President then nominated Dr Beals to act as chairman of the Finance Committee.

* This report may be found on pp. 27-52 of the present volume.

† Nominated August 12.

It was announced that the Executive Committee had appointed a committee on the personnel of the standing commissions consisting of Prof. Struve (chairman) and Messrs P. Couderc, Dziewulski, Greaves, J. Jackson, Lindblad, Mangariello, Mikhailov,* Minnaert, Nechvile,† Pearce, Silva, Strömngren, Swings, Tinoco, Waldmeier and Woolley.

The President remarked that, although according to the by-laws of the Union chairmen of commissions are re-eligible, the Executive Committee took the view that it was not desirable in general that presidents of commissions serve during more than two periods. It should, however, be possible to make exceptions to this rule, hence no change of by-laws was proposed.

The President reported that four presidents of commissions were unable to attend the General Assembly. The General Secretary then announced that the Executive Committee had nominated Dr Bourgeois to act as president of Commission 5 for the time of the meeting, and similarly Dr Watts for Commission 8, Prof. Oort for Commission 32 and Prof. Milne for Commission 35.

The General Secretary read a telegram from Prof. Lundmark, expressing his good wishes for the meeting.

The following motions submitted by National Committees of Astronomy and by the Executive Committee were then presented for discussion:

(a) That Statute IV, 9 shall be replaced by the following: There shall be eight categories of membership of the Union, numbered 1 to 8. Each adhering country shall pay annually a number of units of subscription equal to the number of its category of membership. A country offering to adhere to the Union shall specify in which category it proposes to be classed. The offer to adhere may be refused by the Executive Committee if the proposed category is judged to be manifestly inadequate. In each country the organization adhering to the Union shall be responsible for the payment of the contribution.

That Statutes III, 5 and 6 shall be replaced by the following:

5. On scientific matters, each delegate present shall have one vote. In questions of administrative or of mixed administrative and scientific character, not involving questions of finance, voting shall be by countries, each country having one vote, with the provision that its subscription shall have been paid up to the end of the year preceding the voting.

In questions involving finance, voting shall be by countries, with the same provision as for administrative questions. The number of votes for each country shall be one greater than the number of its category of membership, as defined in article IV, 9.

6. No delegate shall represent more than two countries. An adhering country not represented by a delegate may forward by post its vote on any specific question of the agenda. (Great Britain.)

(b) Que l'Union accorde un appui financier à la Bibliographie Mensuelle de l'Astronomie. (France.)

(c) Que l'Union entreprenne des démarches auprès de la Commission Economique Interalliée de Berlin pour que les recherches soient continuées en vue de retrouver le télescope Zeiss, de un mètre d'ouverture de l'Observatoire Royal de Belgique, réquisitionné par l'armée allemande en juin 1940. (Belgique.)

(d) Que l'U.A.I. organise la radiodiffusion des nouvelles astronomiques scientifiques. (Pologne.)

(e) That a Commission be created to revise the structure of the standing commissions of the Union, so that by 1951 plans may be proposed for a new and more effective organization of the standing commissions. (U.S.A.)

(f) That the first paragraph of By-Law I, 1, which now reads:

The Union shall be composed of three classes of members: (a) all the members of the National Committees of Astronomy of countries adhering to the Union, (b) members nominated

* At Prof. Mikhailov's suggestion Dr Ambartsumian later took his place on this committee.

† As Dr Nechvile did not attend the Assembly, he was later replaced by Dr Link.

by adhering organizations or by National Committees, and (c) all the members of the standing committees of the Union.

be changed as follows:

The Union shall be composed of two classes of members: (a) all the members of the standing committees of the Union, and (b) members nominated by adhering organizations or by National Committees. (Executive Committee.)

(g) The International Union of Radio-Science draws the attention of the I.A.U. to the importance of precise measures of the velocity of transmission of long waves, and requests the astronomical observatories to co-operate with the radio-technicians, in order to organize common experiments of the highest possible precision. In particular, it would be desirable to organize experiments on either side of the Atlantic, which would permit measuring differences between the times of transmission in the two directions.

(h) Que l'Union se charge de donner une définition plus exacte de l'unité de temps. (Bureau National, Scientifique et Permanent des Poids et Mesures, Paris.)

(i) Que l'U.A.I. considère de nouveau la résolution prise au congrès de 1928 sur la désignation du temps civil de Greenwich, donne à cette résolution une rédaction plus nette, et lui donne la publicité nécessaire pour la faire admettre universellement. (Comité Exécutif.)

(j) That the I.A.U. recommend that an abstract in English or French be attached to all scientific astronomical publications. (Executive Committee.)

Speaking for the British delegation the President commented on resolution (a) proposed by the British National Committee. The change in the statutes was intended to enable countries with a large population but with relatively few astronomers, and similarly countries that had been seriously impoverished by the war, to join the Union on a more reasonable financial basis than was possible under the present statutes.

Prof. Struve moved the acceptance of the resolution, which was then carried unanimously.

The President proposed to refer (b) to Commission 5. This being accepted he invited one of the Belgian astronomers to speak on the resolution (c) proposed by the Belgian National Committee of Astronomy. Dr Moreau explained that during a visit to Germany in the autumn of 1947 in order to locate the instruments which were taken away from the Uccle Observatory by the German occupation forces, he had recovered the Uccle meridian circle, which had been installed at the Leipzig Observatory. No trace, so far, had been found of the 40-inch mirror. He thought that action by the Union with the Interallied Economic Council in Berlin might be of help in this matter. The President in expressing the immense regret that all members of the Union must feel concerning the loss caused to the Uccle Observatory, assured the Belgian Delegation that the Executive Committee would take action in the matter.

With regard to (d) the President remarked that this is a very difficult thing to realize in practice. Asked for comments Dr Rybka explained that a radio distribution of astronomical discoveries would serve a useful purpose. The General Secretary said that the Union's Telegram Bureau in Copenhagen takes care of the more urgent astronomical news. The President was of the opinion that the Union could take no action on this proposal; he suggested, however, that whenever this seemed desirable, astronomers make endeavours to have discoveries distributed by the radio stations in their own countries.

The next resolutions on the agenda were not received in time to be circulated with the agenda four months before the meeting. Consent of at least half of the countries represented was required before these could be considered. As nobody opposed the proposal to proceed with these discussions, the further resolutions were then considered.

The President remarked that (e) involved many technical discussions. His proposal to leave this in the hands of the Executive Committee, which appears to be the natural body to deal with this matter, met with no objection.

(f) The President said that each country should have full freedom to appoint a National Committee in the way it thinks best. The result is that some countries have very small

National Committees of Astronomy, others very large ones. In order not to increase unduly the membership of the Union it was proposed that members of National Committees be no longer automatically members of the Union. But the National Committees retain the power to nominate members of the Union. The resolution was accepted without discussion.

The President announced that the Executive Committee proposed to refer resolution (*g*) to Commissions 18 and 31 for further consideration, (*h*) to Commissions 4 and 31, and (*i*) to Commission 4.

A vivid discussion then developed around the recommendation (*j*), proposed by the Executive Committee. Shapley considered that the resolution would be untimely; if it were insisted upon he would propose to add German and Russian, but he would prefer to drop it altogether. Minnaert proposed to add Esperanto. Milne desired to omit the specifications English or French. Answering Shapley's comments the President said that it had not at all been intended to be discriminatory; the only purpose of the resolution was to enable astronomers all over the world to learn something of the work of their colleagues. Jackson then proposed to change the wording of the resolution, so that it would express satisfaction over what is already being done in this direction and would encourage further extension of this practice. It was decided that the Executive Committee should reformulate the resolution in this sense, and bring the amended resolution before a subsequent General Assembly.

After the General Secretary had announced that Dr Lyot had installed his new monochromatic filter at the Federal Observatory and that all members interested were invited to observe the Sun through this filter, the President adjourned the General Assembly.

Meeting on August 18, 1948, 10.30, in the Eidgenössische Technische Hochschule

Opening the Assembly the President announced that replies had been received from Miss Eddington, Mrs van Rhijn and Messrs Carnera and Russell to the messages sent after the General Assembly of August 11.

He next announced the recommendations which the Executive Committee wished to make in order to fill the vacancies in this Committee arising because Dr Adams, Prof. Mikhailov, the President himself and the General Secretary would retire, according to the By-Laws, at the end of this meeting. Profs. Ambartsumian and Struve were proposed as new Vice-Presidents for the next two terms, and Prof. Strömgren as new General Secretary.

The Executive Committee proposed to elect Prof. Lindblad as President for the following three years.

In the absence of Dr Beals, who had presided over the Finance Committee, the following report of this Committee was presented by its vice-chairman Dr Sadler:

In accordance with the Statutes (Section IV, no. 8) the Finance Committee presents separate reports on the accounts for the years 1938-47 and on the estimates for 1948-51. The following report, prepared by a sub-commission, has been unanimously adopted by the full committee:

We have examined the account of Income and Expenditure for the years 1938 to 1947 in conjunction with the Auditor's certificate and with the books and vouchers made available to us; we are satisfied that they represent a true account of the operations of the Union during that period.

The circumstances have necessarily been difficult and we would wish to record our appreciation of the manner in which the General Secretary has handled the accounts of the Union; he has afforded us all facilities.

For the first time, the accounts have been audited professionally; this has greatly simplified our work. It would seem to us that the activities of the Union would be more