

XII IAU HAMBURG 1964

DAILY NEWS BULLETIN



WEDNESDAY, AUGUST 26

SPEECHES OF INAUGURAL CEREMONY 24 AUGUST 1964

Senator Dr H. Biermann-Ratjen, Hamburg

Ladies and Gentlemen:

It is indeed a great honour for me to have been asked on behalf of the Senate of the Free and Hanseatic City of Hamburg to welcome the astronomers from fortytwo countries assembled here to attend the twelfth General Assembly of the International Astronomic Union. We are proud that our city has been chosen for a congress of such scientific eminence and hope that the liberal atmosphere of our city republic will prove beneficial to your discussions. In asking you to forbear with me in my capacity as Senator for Cultural Affairs, I should like to mention just a few points in justification of my presence here.

First, there is a direct link between my department and the world of astronomy. A very small sister of the big observatory — the planetarium — falls within my province, I am proud to say. Then I must confess to a personal though very modest association with astronomy. Ever since childhood I have been fascinated by the star-studded sky and this fascination has never left me. But my secret love has been confined more or less to the emotional plane, for the gateway to astronomy as a science has unfortunately remained closed to me. I do, however, follow

the movements of the planets; I am able to find the Andromeda Nebula, and I think I have even grasped what a Doppler effect is.

In 1910, as a little boy of nine, I spent hours on the banks of the Alster waiting for a glimpse of Halley's Comet but — how could it be otherwise — a typical Hamburg drizzle saw to it that our vigil was in vain. If I am lucky and live to be a very old man, I still have a very slender chance of witnessing the reappearance of the great comet I missed in 1910 — if it does not rain again, of course.

In the course of the next few days, you will have an opportunity of visiting our Hamburg observatory. It was founded thanks to private initiative and donations from wealthy citizens before the State generously provided further funds. Repsold and Bernhard Schmidt are illustrious names connected with its history.

But it cannot be denied that a blight is being cast on our observatory by the rapid growth of our great city, which is making the illuminated sky unsuitable for astronomic observations. It would therefore be amiss to congratulate ourselves on past achievements. In my words of welcome let me refer instead to the great tasks ahead of us. It is my sincere wish that this Congress may contribute to their accomplishment.

Prof Dr E. Sperner, Rector of Hamburg University

As the present Rector of the University of Hamburg I have the great honour and pleasure of welcoming you as guests within our walls.

Hamburg University is still fairly young. It was founded in 1919 by combining a group of institutes and hospitals as well as a number of other scientific institutions in this Hanseatic city. The establishment of a number of chairs ensured the widest possible range of research and teaching.

After 1945 a period of almost explosive growth set in. Many new buildings and extensions and the modernization of existing premises became necessary on a hitherto unprecedented scale.

I am delighted that it has been possible to place at your disposal a particularly favourably situated group of new buildings and I hope you will find everything to your liking.

As a mathematician, permit me to emphasize the longstanding bonds between our two branches of science. Hamburg is situated on the northern fringe of the area surveyed by Carl Friedrich Gauss. In Altona, formerly Danish and now part of the Hamburg area, he met Heinrich Christian Schumacher who founded the Altona Observatory and created the "Astronomische Nachrichten", for many decades a literary centre of the astronomic world. It numbered among its members men such as Bessel, Olbers and Hansen. Gauss, whose accomplishments in geodesy are known to you all, tied in the triangulation of the Kingdom of Hanover with that of Denmark from the Altona observatory. With the heliotrope he invented it was from Altona that objects in the vicinity, namely the "Grosse Michaeliskirche" (the great St. Michael's Church), the "Michaeliskirche" (Church of St. Michael's) at Lüneburg and the rising ground in the Lüneburg Heath were sighted.

To this day one of the principal instruments of the astronomer is mathematics. Joint interests are the orbits of satellites, non-linear hydrodynamic phenomena and singularities and topological connections of cosmological world models, to name but a few.

Computers have made this association a still closer one. Ever since its foundation the University of Hamburg has done much for the promotion of mathematics and astronomy. It will always bear in mind the close ties between the two fields.

We wish your Congress every possible success.

Ministerial-Direktor Dr H. Engelhardt, Bonn

The Federal Minister for Scientific Research is unfortunately not able to attend the 12th General Assembly of the International Astronomical Union. It is, therefore, on his behalf that I warmly welcome all participants in this Assembly in the Federal Republic of Germany.

May I express my great satisfaction that this year Germany has been given the opportunity for the first time to act as host country for a general assembly of the highly distinguished and successful International Astronomical Union which has been in existence for now 45 years.

The work of this Union has often been called an example for the

cooperation of many nations in the striving for an ambitious and common aim which, in this case, is scientific recognition. I cannot but strongly emphasize this statement and hope that the great ideals of peace and freedom will be aimed at and reached in a similarly exemplary manner. In early occidental thinking, that is in antiquity, a parallel was already drawn between the regulating principles of science and those which should settle social life. In this connection, it was the knowledge of astronomy of that time which influenced the conceptions of the ideal form of government. The Greek word "cosmos" with its two meanings "order" and "universe" can be considered a good example; and this word is now very often found in the technical language of astronomy.

In modern society, however, the relations between astronomy and government are not merely of a philosophical character. Astronomy is one of those branches of natural science which, for their further development, need the financial support of government or even the joint effort of several nations.

During the first quarter of this year the Federal Ministry for Scientific Research was able to record two events significant for astronomy in the international field:

1. the entry into force of the Convention for the Establishment of the **E**uropean **S**outhern **O**bservatory (ESO) and
2. the entry into force of the Convention for the Establishment of the **E**uropean **S**pace **R**esearch **O**rganisation (ESRO).

The European Southern Observatory was established at the demand of various European countries with the aim to build jointly an observatory which is situated in the southern hemisphere and which is equipped with efficient instruments. That demand resulted from the knowledge that much less is known about the southern firmament than about the northern one.

The European Space Research Organisation is to facilitate or promote the cooperation of European countries in the field of space research and in that of appertaining technology for peaceful purposes only. The programme of this Organisation is to a large extent devoted to extraterrestrial astronomy.

Due to World War II astronomy has, like many other branches of science in Germany, suffered considerable loss and was handicapped in its development. Therefore, backlog demand is very great. Membership in European organisations is to enable German science to carry out large and modern projects and to catch up with international development. The primary condition for an efficient participation on the international level is that intense promotion measures are taken on the national level.

Since scientific questioning determines the appropriate method for finding the answers, a branch of science is only then promoted in an ideal way if it is offered the possibility to use all methods and instruments which are necessary for further progress in the respective field. This ideal can only be reached by approaching it step by step; and, last but not least, the convergence of this approach depends on a country's financial resources.

I am convinced that the 12th General Assembly of the International Astronomical Union will demonstrate the progress achieved by the joint efforts of many nations in the whole field of astronomy.

May the Assembly take a good course and may the foreign guests have a pleasant stay in the Federal Republic of Germany.

Prof. Dr H. Haffner, Hamburg-Bergedorf

Ladies and Gentlemen:

In welcoming you here today, I have the honour of doing so in the name and on behalf of several groups:

First, there are the Hamburg astronomers who appreciate the fact that you have chosen Hamburg for this Congress. The Hamburg observatory with its wide range of equipment, whose staff has participated actively in international programmes during the past decade; the German Hydrographic Institute, whose astronomers have set up an exemplary time service, the staff of the Planetarium, and the administration of the European Southern Observatory have all asked me to extend a most cordial welcome to you. You will have an opportunity of visiting the

Hamburg observatory and will, it is hoped, convince yourselves that its development has by no means come to a standstill.

As you doubtless know, one of Hamburg's mainstays are her exports and one of the "commodities" it started to export long ago are astronomers. The first was **Friedrich Wilhelm Struve**, the founder of Pulkovo, who left here in 1808. In our time, **Walter Baade** twice declined to accept the post as head of a German observatory and went to Pasadena instead. Such exports are continuing still.

Then there is another Hamburg tradition I should like to mention: a tradition bound up with three generations of **Repsolds**, the firm that has supplied innumerable instruments to astronomers all over the world. These instruments are not of historical interest only. Many of the later ones were basically so well designed and of such skilled workmanship that they are used successfully to this day.

I should also mention **Bernhard Schmidt**. In the course of the next few days you will have an opportunity of seeing his first camera in Bergedorf. We felt that his work at Bergedorf alone justified to have a medal with his effigy struck for you in commemoration of this Congress.

I welcome you also in the name of the Council of West German Observatories, representing the institutes of Kiel, Hamburg, Göttingen, Bonn, Frankfurt, Bamberg, Heidelberg, Freiburg, Tübingen and Munich, which are all well known in the astronomical world. These names will doubtless strike a chord in the memories of many of you and may prompt you to pay a visit there. The task of the Council of West German Observatories is to discuss common problems and to co-ordinate a great variety of requests. The Council persuaded the Deutsche Forschungsgemeinschaft to issue a paper on the situation of astronomy in West Germany in which an attempt is made to investigate many questions of importance for the development of our science in this country. The Council extends its greetings to the I.A.U. in the name of all our astronomical institutes and bids you a hearty welcome. The Council, backed by the active **German astronomers**, consider it an honour and an encouragement that you have selected our country to be host to this Congress. May the work of the I.A.U. reach, in particular, the younger generation and help to keep their enthusiasm alive; may it encourage them to embark on fruitful international cooperation.

We also hope that this Congress will help to promote a number of big projects in optical and radio astronomy in our country.

Finally, let me welcome you also in the name of the Astronomische Gesellschaft. Following its foundation in 1863, it was for several decades the institution which set itself the task of promoting international cooperation on astronomical observation programmes too extensive to be handled by a single country. The many volumes of the first catalogue of the Astronomical Society bear witness to the scope of this undertaking. Later, the I.A.U. organized international cooperation along entirely new lines and placed it on a much broader footing. Today, the Astronomical Society devotes its efforts chiefly to the arrangement of meetings of astronomers from German-speaking areas and to training and assisting young astronomers.

Thanks to many generous donations, the Astronomical Society is today in the fortunate position of being able to hand to all members of the Union who have gathered in Hamburg a facsimile edition of Kepler's "Dissertatio cum Nuncio Sidereo". This booklet — accompanied by a German translation — will doubtless be of special interest in the Galilei year of 1964. It gives a detailed account of the exciting discoveries Galilei made with its first telescope in 1610 on the surface of the moon, discoveries which may well be analogised with what the cameras of Ranger VII spotted on the moon a few weeks ago. But in his dissertation, Kepler also gives his opinion about the best kind of scientific discourse — and in so doing, in my opinion, sends a very personal message to our Congress:

"There are many people who expound on their science with a deadly earnest mien to lend weight to their statements. While most of them get involved in heated arguments, it would appear to me that a sense of humour is a more pleasant spice for disputations".

May our discussions in Hamburg be inspired by the spirit of Kepler — earnest, but lightened by humour.

CHANGE OF PROGRAMME

The first meeting of Commission 35 (Stellar constitution) will be held on Wednesday 26 August at 14.00 hrs in room II F (and not at 10.45 hrs in room II C).

The meeting of Commission 31 (Time) on Thursday 27 August at 9.00 hrs will be held in room II D (and not in room II E as announced in the programme on page 38), jointly with Commission 19 (Variation of latitude).

Commission 9 will have an informal meeting on Telescopic Instruments on Friday 28 August from 14.00—15.45 in room II F.

Commission 7 (Celestial mechanics) will have an additional meeting (C) in the afternoon of Friday 28 August at 15.45 hrs in room II F.

Monday 31 August

14.15 Prof. J. H. Oort Invited Discourse Auditorium Maximum
(instead of 16.30)

16.00 Dr Kuiper Results of Ranger 7 Auditorium Maximum

19.30 Opera W. A. Mozart, Hochzeit des Figaro
(instead of 19.00)

Seats in the opera must be taken not later than 19.25

COMMUNICATIONS FROM THE LOCAL ORGANISING COMMITTEE

1. Meals in the Student Restaurant (Mensa II, entrance B only) can be taken between 12.00 and 14.00 and between 17.30 and 19.30. As the space in and near "Mensa II" is somewhat limited, we ask participants to take their meal in **two** groups, starting around either 12.00 or 13.00.
2. Participants who intend to join the excursion to Tautenburg and who have received a letter from the L.O.C. in July relating to this excursion are urgently requested to deposit their questionnaire and photos not later than Wednesday 26, 12.00.

COMMUNICATIONS ON SCIENTIFIC PROGRAMME

"DOCUMENTA ASTRONOMICA"

The exhibition of historical astronomical instruments and documents was opened at the Museum für Völkerkunde on Sunday, 23 August 1964.

At the official opening, Senator Dr Biermann-Ratjen welcomed the audience on behalf of the Freie und Hansestadt Hamburg. The introductory address was given by the Director of the Institut für Geschichte der Naturwissenschaften der Universität Hamburg, Prof. Dr B. Sticker under the title "Historical scientific instruments as cultural documents". Thereafter, the President of the Union Internationale d'Histoire et de Philosophie des Sciences, Division d'Histoire des Sciences, Prof. Dr V. Ronchi delivered his lecture "L'invention du télescope sous le point de vue technique et philosophique."

The exhibition is divided into four sections:

1. Instruments for computation, observation and demonstration of the 11th to 17th centuries
2. Modern measuring instruments of the 16th to 19th centuries
3. Telescopes as observation and measuring instruments in the 17th to 19th centuries
4. Manuscripts and documents

The exhibition, in the Hamburgisches Museum für Völkerkunde und Vorgeschichte, Rothenbaumchaussee 64, is open daily (except Monday) from 10 a. m. to 4 p. m. (Saturday to 1 p. m.). A catalogue is on sale in the Museum for DM 8.50.

Sticker

TO: The members of IAU Commissions 33, 34 and 40

FROM: Gart Westerhout, member, Organizing Committee

SUBJECT: Commission 40

GALACTIC RADIO ASTRONOMY at Hamburg

On the morning of Monday, August 31, a meeting of Commission 40 will be held which will be entirely devoted to galactic radio astronomy, possibly continuing into the afternoon. The meeting will be open for the presentation of papers in this field not read or submitted to other commissions (specifically 33 and 34).

In view of the limited amount of time available, preference will be given to review papers covering more than one specific investigation.

For example, one person should summarize the work in this field at his particular observatory, if possible. Such review papers can be up to 15 or even 20 minutes. Other papers will have to be limited to 5 minutes. All titles, with a one-sentence summary, should reach the organizer, Gart Westerhout (in his mail box at the meeting) not later than Thursday, August 27, at 17.00. A panel of three will then have to decide which papers will actually be read and which papers can be read by title only. This procedure unfortunately has to be followed since we expect many more contributions than time allows. Authors are strongly urged to bring abstracts of their papers for distribution at the meeting.

Papers are excepted on the following subjects:

- 21-cm line
- OH-line
- Continuum galactic background
- Polarization of the background
- Faraday rotation in the Galaxy
- Galactic sources

If possible, subjects clearly in the field of other commissions — interstellar matter, galactic structure — should be discussed in those commissions. Your attention is drawn to the Joint Discussions on September 1 (Orion) and on September 2 (local structure and motions in the Galaxy). If your work is presented there, it is probably unnecessary to present it in the meeting on August 31.

N o v a — H o g g

This congress of the IAU was actually introduced by the appearance of a nova on the skies of Australia. Yesterday, on the 20th August—A. R. Hogg from Camberra received a cable telling him, that he and Mrs. Hogg became grandparents of a girl called Catharine Elizabeth—the first grandchild of this General Assembly—and many happy returns.

TODAY'S COMMISSION MEETINGS

Wednesday, 26 August 1964

MORNING

Commission	Time	Room	Remarks
7A	Celestial mechanics	9-00—10-30	I 007
9A	Instruments	9-00—10-30	I H
12A	Solar radiation	9-00—10-30	II B
16A	Planets, physically	9-00—10-30	II D
			The solar spectrum
			Organisation of a center for planetary observation-data at Meudon and Lowell.
			Planetary research starting from documents of these centers.
22A	Meteors	9-00—10-30	II F
23A	Carte du ciel	9-00—10-30	I 008
25A	Photometry	9-00—10-30	II E
29A	Spectra	9-00—10-30	II C
33A	Galactic structure	9-00—10-30	II G
			Report on IAU-symposium No. 25
5A	Bibliography	10-45—12-00	I 007
6A	Telegrams	10-45—12-00	I 008
8A	Positions	10-45—12-00	II G
14A	Fundamental spectroscopic data	10-45—12-00	II E
			Standards, spectra of plasmas, oscillator strengths
21A	Night sky	10-45—12-00	II F
27A	Variables	10-45—12-00	I H
28A	Galaxies	10-45—12-00	II A
30A	Radial velocities	10-45—12-00	II B
35A	Stellar constitution	10-45—12-00	II C
43A	Magnetohydro-dynamics	10-45—12-00	II D

AFTERNOON

Commission	Time	Room	Remarks
4 A Ephemerides	14-00—15-30	II C	
16 B,C Planets, physically	14-00—17-00	II D	Development of observational programmes: photographic observations of Venus in UV, polarimetric observations of Mars, new suggestions for collective observations; administration: new organisation of a committee concerning a colloquium on the atmosphere of Jupiter
33 B Galactic structure	14-00—15-30	II G	Selected areas
34 A Interstellar matter	14-00—15-30	II B	Planetary nebulae
36 A Atmospheres	14-00—15-30	II A	
40 A Radio astronomy	14-00—17-00	I H	
41 A History	14-00—15-30	II E	
10 A Solar activity	15-45—17-00	II C	Forecasts, cooperation
15 A Comets, physically	15-45—17-00	II B	
19 A Variation of latitude	15-45—17-00	II E	
22 B Meteors	15-45—17-00	II F	
26 A Double stars	15-45—17-00	I 007	
27 B Variables	15-45—17-00	II A	
37 A Clusters	15-45—17-00	II G	Atlas, terminology, nomenclature of associations, p. m.-work
38 A Exchange of astronomers	15-45—17-00	I 008	Draft-report, Appendix II

XII IAU HAMBURG 1964

DAILY NEWS BULLETIN

2

THURSDAY, AUGUST 27

ADDRESS OF THE PRESIDENT OF THE UNION,

Prof Ambartsumian, at the opening ceremony

It is with keen anticipation that the astronomers inhabiting our planet look forward to the opening of the General Assembly of the International Astronomical Union once every three years. Astronomy is, indeed, an international science, and we are proud of the fact that cooperation among the scientists of various countries in our branch of science is arranged better than in most other contiguous fields. It was with exclusive interest that we have been looking forward to this year's General assembly. It is being convened in Germany for the first time, a country rich in noteworthy astronomical traditions.

The creative genius of the German people has achieved great results in all the domains of human activities. However, those who are assembled here today should, foremost of all, call to mind the names of the great astronomer Kepler, a German whose wonderful intellect was the first to penetrate into the exact laws of the real movements of planets (known as Kepler's laws) before the discovery of Newton's law of gravitation, and the famous K. F. Gauss, who gave the world the methods of practical solution of problems of theoretical astronomy and worked out, for the first time, the method of proper mathematical treatment of astronomical observations.

All the astronomers of the world are quite familiar with the German school of astrometry that has been showing, from the time of Bessel to our own days, patterns of precise observations, and whose work is in harmony with the fundamental works of the Pulkovo Observatory in Russia and the Greenwich Observatory in England.

The origin of our new branch of science—astrophysics—is considerably due to the investigations of Fraunhofer, Bunsen and Kirchhoff. The German scientists took to the development of this branch full of zeal. Karl Schwarzschild had become by the 20th century one of the founders of theoretical astrophysics. Here we can also mention the names of Seeliger, Max Wolf, and other eminent astronomers.

Actually, a great number of astronomical observatories and institutions are engaged in active research in the German Federal Republic. It is naturally impossible to enumerate here all the wonderful achievements they have scored. Nevertheless, we should like to dwell on the tremendous work being done at the Bergedorf Observatory in Hamburg. What can be achieved when serving science genuinely with relatively modest means available is best illustrated by such basic works of that observatory as the AG-2 Catalogue and the Bergedorf Spectral Durchmusterung. The invention of new astronomical telescopes—the Schmidt camera—relates to this observatory.

These telescopes are widely known over the world and are to be found in the observatories of the USA, USSR, Mexico, and of other countries. The Bergedorf Observatory itself has a fairly large instrument of this type. At the same time, it is pleasing to see that the astronomers of the German Democratic Republic managed to set up in Tautenburg a new telescope that is the most powerful instrument of its kind in the world. It is a pleasure to note that many members of the present assembly may avail themselves of the kindness of the German Academy of Sciences in Berlin and visit the Observatory in Tautenburg.

The German astronomers have always played a great role in assisting international astronomical works. I remember the time when "Astronomische Nachrichten" was almost the only international journal and, sending our first papers for publication to Professor Kobold in Kiel we, the young astronomers, received his encouraging answers regardless of the country from which the paper was dispatched to him.

The hospitality shown to our General Assembly by the government of the GFR, the city of Hamburg and the University of Hamburg will ever stay in our memory associated with the role of German science in

furthering astronomy. May I wish the people of the GFR peace. Let the international cooperation of astronomers mark our contribution to peaceful relations among the nations. Universal peace is, in its turn, the pledge for the advancement of international science.

During the last three years since the 11th General Assembly we have witnessed new remarkable discoveries in astronomy. The concept that the nuclei of at least part of the galaxies contain bodies of nonstellar nature and of a very large mass is gaining more and more scope. Sometimes these bodies show a great degree of activity. Simultaneously, we are apparently at the threshold of discoveries concerning the theoretically predicted baryon stars emitting X-rays.

I recall the 20's of the present century when the white dwarfs were discovered; then the 50's come to my mind when the radio nebulae were detected, that is, concentrations of plasma made up of particles of high energy.

It turns out that the pace of discovering basically new types of celestial bodies is speeded up. This is of vital importance to our branch of science, as it calls for fresh methods of research, the formulation of new theories, deepens interest in astronomy and enriches its scope to an incredible extent.

In the history of other branches of science we also specify periods of their rapid growth, revolutionary changes, epochs of "Sturm und Drang". Such periods usually cover a course of one or two decades. Most of us remember the remarkable story of the birth and growth of quantum mechanics (the physics of the atom) in the 20's—30's of the present century. Since the application of spectral methods in astronomy it is now a whole century that the remarkable era of great astronomical discoveries has been going on, and it seems that there is no end to this agelong era of "Sturm und Drang". This makes our science ever so dynamic.

New methods come into being in connection with observations from rockets and sputniks. I am fully optimistic as to the development of these methods. In this respect the new closeup pictures by the American rocket Ranger 7 of the moon's surface have promoted our expectations. Yet I should like to state that the new findings set so many tasks to the telescope located on this sinful earth that if observatories and large telescopes were increased even ten times in number, they would still be steeped in most interesting work.

The universe is infinitely rich and complex in the forms of existence of matter, in the structure and activity of its different parts. With every passing decade it comes into our view in a new hitherto unknown aspect. But to quicken its study the ever-growing cooperation of the astronomers of various countries is needed. Of course, the changes in the forms of work and organization of our Union are inevitable. And we are bound to adapt ourselves to those changes in our science. But I am confident of the bright future of our Union.

Thank you for your attention.

CHANGE OF PROGRAMME

The Invited Discourse by Professor J. H. Oort on Monday 31 August will start at 14.00 hrs. (and not at 14.15 as announced in News Bulletin 1).

COMMUNICATIONS

A meeting of the Canadian Astronomers will be held on Thursday 27 August at 13.30 in room II F.

Commission 12 will have a meeting on Eclipse Organization on Thursday 27 August at 14.30 hrs. in room II E.

The Nominating Committee will meet on Thursday 27 August at 20.30 hrs. in room II 751.

The Sub-Commission of Commission 28 on Galaxy Photometry will meet on Friday 28 August at 10.45 hrs. in room II 756.

The Southern Hemisphere Astronomers will have an **informal** meeting to discuss matters concerning the Southern Hemisphere Bulletin on Friday 28 August at 18.00 hrs. in room II 751.

Commission 22 (Meteors and Meteorites) will have an additional meeting for scientific discussion on Tuesday 1 September at 14.00 hrs. in room II F.

For up to 15 persons at a time there will be opportunities to see the computing centre of Hamburg University at the campus, and the working of the ALGOL-translator will be shown around 15.00 each day. Please, inscribe in room II 550.

Nova—Federer

Another new star was sighted, on our opening day, at Laconia, New Hampshire, USA, a daughter, Carol Ann, to Dr. and Mrs. C. Anthony Federer, a forester and onetime veteran of the Zurich and Dublin assemblies.

MEETING ON THE TEACHING OF ASTRONOMY

As announced in the Scientific Programme there will be a meeting on the Teaching of Astronomy on Saturday 29 August at 9.00 in the Auditorium Maximum (building III).

The programme will be as follows:

1. Introduction.
2. Summary of the "Preliminary Report on the Teaching of Astronomy"
Discussion of this report by B. J. Bok, Miss W. Iwanowska, V. Kourganoff, D. Layzer.
3. Short papers on special subjects.
 - I. Atanasijevic: Travaux pratiques d'astronomie au laboratoire.
 - M. Golay: La formation des astronomes en vue de l'aide internationale (Proposal concerning an internationally accepted minimum-programme).
 - H. M. Johnson: Astronomers in Industry.
 - H. G. Kienle: Experiences as a UNESCO-expert for Astronomy in the U.A.R.
 - L. Owren: The teaching of radio-astronomy.

M. H. Wrubel: Teaching astronomers the use of electronic computers.

4. General discussion.
5. Should a new Commission of the I.A.U. be organized on "The Teaching of Astronomy"?
Motives — Task — President and Organizing Committee — Recommendation to the Executive Committee.
6. Should the new Commission be asked to cooperate with the Inter-Union Committee for the Teaching of Science (IUCTS)?
Coordination between the teaching of mathematics and the different sciences. — Plans for action — Recommendation to the Executive Committee.

Copies of Professor Minnaert's "Preliminary Report on the Teaching of Astronomy" may be obtained in room 564, building II; they will also be available at the meeting.

TODAY'S COMMISSION MEETINGS

Thursday, 27 August 1964

MORNING

Commission	Time	Room	Remarks	
19 B and 31 A	Variation of latitude— Time	9.00—10.30	II D	Joint meeting
20 A,B	Minor planets Comets, etc.	9.00—12.00	II G	
21 B,C	Light of the night sky	9.00—12.00	II F	Zodiacal light
28 B,C	Galaxies	9.00—12.00	II A	
37 B	Star clusters	9.00—10.30	II B	Proper motions; photometry in H γ
42 A,B	Photometric double stars	9.00—12.00	II C	
44 A	Extra-terrestrial observations	9.00—10.30	I H	
9 B	Instruments	10.45—12.00	I H	Committee on image quality and site testing
12 B	Solar radiation	10.45—12.00	II D	Eclipse results
24 A	Stellar parallaxes	10.45—12.00	II E	
34 B	Interstellar matter	10.45—12.00	II B	Nature of interstellar grains, spectra of O and B stars and the interstellar gas.

AFTERNOON

Commission	Time	Room	Remarks	
12	Solar radiation	14.00—	II E	Eclipse organization

Two joint discussions 14.00—17.00

1. Radio Galaxies Auditorium Maximum III

Chairman: R. L. Minkowski

Organizing committee:

J. F. Denisse, G. C. McVittie, M. Ryle, B. E. Westerlund

Programme

1. A. T. Moffet: A radio Source Model based on polarization and brightness distribution observations.
 2. M. Schmidt: Properties of quasi stellar objects.
 3. H. Smith: Light variations of quasi stellar objects.
 4. V. Ambar-tsumian: Some remarks on the nature of nuclei of Galaxies.
 5. W. A. Fowler: The instability of massive stars.
 6. J. V. Jelley: Search for high energy γ rays in quasi stellar objects.
 7. G. C. McVittie: Summary.
2. The IAU System of Astronomical Constants I H
- Nominating Committee 20.30 II 751

XII IAU HAMBURG 1964

DAILY NEWS BULLETIN

3

FRIDAY, AUGUST 28

PRESENTATION OF RANGER VII RESULTS

Monday 31 August at 15.30 hrs. in the Auditorium Maximum.

With the cooperation of the National Aeronautical and Space Administration (NASA), the IAU is glad to be able to present an account of the preliminary results of the photography of the Moon by means of the Ranger VII project.

The Chair will be taken by the President, Professor V. A. Ambartsumian, who will introduce Dr. Urner Liddel, Assistant Director of NASA.

The following papers, the first two short, will be presented;

- 1) H. M. Schurmeier and R. L. Heacock (Jet Propulsion Laboratory): "The Ranger VII Mission".
- 2) G. M. Smith, D. E. Willingham and W. M. Kirhofer (Jet Propulsion Laboratory): "Cameras, Performance and Calibration".
- 3) G. P. Kuiper and E. A. Whitaker (University of Arizona): "The Surface of the Moon".
- 4) E. M. Shoemaker (U.S. Geological Survey): "Geological and Topographical Analysis".

The meeting will then be open for discussion. Will those wishing to participate in the discussion occupy the front seats and **limit their remarks to not more than three minutes.**

COMMUNICATIONS

Commission 44 meeting

Friday, 28 August, morning

Agenda:

- I. Election of Organizing Committee, other Matters
- II. Plans for Future Experiments
 - A) Invited Programme
 - 1) The Sun
 - 2) Stars and Stellar Systems
 - 3) Moon and Planets, Comets, Interplanetary Medium
 - 4) General Problems of ESRO
 - B) Contributed Programme
 - C) General Discussion

Commission 29 meeting

Friday, 28 August, morning

Agenda:

Nancy Roman, N.A.S.A., USA; Types of Orbiting Astronomical observatories and telescopes suitable for stellar spectroscopic observations.

Y. Fujita, Univ. of Tokyo, Japan, "Infrared spectroscopic observations of cool stars from outside the earth's atmosphere."

J. B. Oke, Calif. Institute of Technology, USA, Spectrophotometric Problems.

Commission 43 has been invited to the session of Commission 10, Friday 28 August room II D at 14.00.

The Sub-Commission of Commission 28 on Supernovae will have an informal meeting on Friday 28 August at 15.45 hrs in room II 756.

Commission 7 (Celestial Mechanics) will have an additional meeting (C) in the afternoon of Friday 28 August at 15.45 in room II F.

Commission 6 (Astronomical Telegrams) will have an additional meeting of an administrative nature on Saturday 29 August at 10.45 hrs. in room I 008.

The Sub-Commission of Commission 12 on Central Line Intensities will have an informal meeting on Monday 31 August at 9.00—9.30 hrs. in room II 506.

The meeting D of Commission 14 on Tuesday 1 September at 9.00 hrs. in room II E has been cancelled.

Visitors of the Computer TR 4 at the campus will gather at the entrance of building I at 14.45.

Discussion Meeting on Stellar Evolution in London September 7/8

The Royal Astronomical Society has arranged a meeting for discussion of stellar evolution, which will take place at the Society's apartment in Burlington House, London, on Sept. 7th and 8th, starting at 11 a.m. on September 7th.

The following are expected to be among the contributors to this meeting:

Dr. A. R. Sandage
Dr. D. Thackeray
Dr. O. J. Eggen
Dr. B. Westerlund

Enquiries concerning this meeting should be made to Dr. Eggen or to Dr. Graham Smith.

Nomination of Future Officers

At the first session of the General Assembly on Tuesday 25 August 1964 the President announced that the Executive Committee would formally propose the following names for election at the final session of the General Assembly on Thursday 3 September 1964:

- | | |
|------------------------------------|--|
| As President: | Professor P. Swings (Belgium) |
| As Vice-Presidents: | Professor W. N. Christiansen (Australia)
Professor W. Fricke (Germany)
Professor M. Schwarzschild (U.S.A.)
Professor A. B. Severny (U.S.S.R.) |
| As General Secretary: | Dr. J.-C. Pecker (France) |
| As Assistant
General Secretary: | Dr. L. Perek (Czechoslovakia) |

(All have agreed to serve if elected by the General Assembly)

The full Executive Committee will then consist of the above seven together with:

- | | |
|-----------------------------|---|
| Continuing Vice-Presidents: | Professor Y. Hagihara (Japan)
Dr. G. Haro (Mexico) |
| In an advisory capacity: | |
| Former President: | Academician V. A. Ambartsumian
(U.S.S.R.) |
| Former General Secretary: | Mr. D. H. Sadler (U.K.) |

Announcement:

Those astronomers who would like to make remarks relevant to the papers to be presented at Joint Discussion C (Close Binaries) on Tuesday 1 September are requested to inform Dr. J. Sahade (No. 755) before Monday 31 August.

Please indicate the nature of the remarks you propose to make, the approximate time required and after which paper they ought to be given.

Material for packing up parcels will be found in the „Dozentengarderobe“ next to the writing-room (building III) on and after Saturday, 29 August.

Note

Deadline for manuscripts to be included in the next issue (No. 4) Monday 31 August: Friday 28 August, 15.00.

TODAY'S COMMISSION MEETINGS

Friday 28 August 1964

MORNING

Commission	Time	Room	Remarks
7 B Celestial mechanics	9.00—10.30	II G	Orbits of natural celestial bodies
25 B,C Stellar photometry	9.00—12.00	II A	Problems of a standard multi-colour system
30 B Radial velocities	9.00—10.30	II C	
37 C Star clusters	9.00—10.30	II B	UV-excess, proper motions
40 Radio Astronomy	9.00—10.30	I 007	Large instruments
44 B,C Extra terrestrial observations	9.00—12.00	I H	Plans for future experiments in space
4 B Ephemerides	10.45—12.00	II G	
9 C Instruments	10.45—12.00	II B	Committee on image converters
35 B Stellar constitution	10.45—12.00	II C	Evolution extremely massive stars and radio sources

AFTERNOON

8 B Positional Astronomy	14.00—15.30	II G	Astrometric programmes
10 B,C Solar activity and 43 Magnetohydrodynamics	14.00—17.00	II D	Fine structure of active regions

Commission		Time	Room	Remarks
14 B	Fundamental spectroscopic data	14.00—15.30	II E	Transition probabilities
15 B,C	Physical study of comets	14.00—17.00	II A	Cometary physics and space research experiments
17 A	Motion and figure of the Moon	14.00—15.30	II B	
29 B,C	Stellar spectra	14.00—17.00	I H	Stellar spectrometry from outside the Earth's atmosphere
40	Radio Astronomy	14.00—17.00	II C	Radio galaxies, Galactic observations
7 C	Celestial Mechanics	15.45—17.00	II F	Additional meeting
16 D	Physical study of planets	15.45—17.00	II B	Atmosphere of Jupiter
31 B	Time	15.45—17.00	II G	
35 C	Stellar constitution	15.45—17.00	II C	Cepheids and RR Lyrae stars; fast rotation
41 B	History of astronomy	15.45—17.00	II E	Galilei and other anniversaries

EVENING

Meeting of Presidents of Commissions	17.45—	Mensa (IV)	
Invited discourse: Prof. L. Goldberg	20.30—	Audit. Maxim. (building III)	Some aspects of space astronomy.

XII IAU HAMBURG 1964

DAILY NEWS BULLETIN



MONDAY, AUGUST 31

COMMUNICATIONS

An informal meeting of all those interested in the supply and use of photographic plates, especially those of high sensitivity, will be held on Monday 31 August at 13.15 hrs. in room I 007.

The purpose of the meeting is to discuss the present position and to consider the appointment of a small working group:

- (a) to serve as a clearing house for information about the supply and best use of photographic material;
- (b) to assess the present needs of the astronomical community and to investigate alternative sources of supply.

The second meeting of the Finance Committee will be held on Monday 31 August at 12.15 hrs. in room II 751 (and not at 13.45 hrs. as announced in the programme).

Commission 40 — Radio Astronomy
Monday 31 August — Auditorium Maximum — Building III

Agenda:

- 9.00—10.45 Scientific Session Galactic Observations
10.45—11.45 Administrative Session
11.45—13.00 Scientific Session Continued

The meeting B of Commission 14 on Monday 31 August at 10.45 hrs. will take place in room II E:

Committee on Wavelength Standards, B. Edlén (Chairman).

Agenda:

- B. Edlén Comments on the Draft Report.
J. Terrien Temperature Dependence of the Wavelength of the Green Line of Hg 198.
A. H. Cook Current Work on Wavelength Standards at NPL.
C. J. Humphreys Interferometric Determinations of Wavelength in Ar, Kr 86 and Xe 136 in the 1.2—3.5 μ Region.
T. A. Littlefield Current Wavelength Work in Newcastle.

To be followed by Meeting of Organizing Committee.

C. Moore — Sitterly
President of Commission 14.

Commission 40 (Radio Astronomy) will have an additional meeting on Solar Radio Emission on Tuesday 1 September from 9.00 to 12.30 hrs. in room II F.

The Hermann Oberth-Gesellschaft (German Rocket-Society) jointly with the Amerika-Haus Hamburg, will present Dr. A. Steinhoff, a former collaborator of von Braun's in a lecture on

"Evaluation of extraterrestrial resources for astronautics"

(in German) 8 September 1964, 20.00 hrs., Tesdorpfstrasse 1.

Cards (in a limited number) can be received at the Registration Office.

ANNOUNCEMENT

Those astronomers who would like to make remarks relevant to the papers to be presented at Joint Discussion A (Local Structure and Motion in the Galaxy) on Wednesday September 2 are requested to inform Dr. A Blaauw (No. 74) before Tuesday September 1.

Please indicate the subject of your remark. A limit of 5, or at most, 10 minutes will have to be taken into account.

ERRATUM

In the printed Programme on page 31, please add, on the 7th line ("Summary and concluding remarks."): M. Schwarzschild.

N o v a — M i n k o w s k i — T h o m a s

26 August at Concord/Cal.

Jocelyn-Katrina

N o v a — F e a s t (I)

Born on 1964 August 22,

to Connie and Michael Feast at Pretoria, a daughter.

XII IAU HAMBURG 1964

DAILY NEWS BULLETIN

5

TUESDAY, SEPTEMBER 1

COMMUNICATIONS

An educational film in astronomy financed by the National Science Foundation will be shown in II A Tuesday 1 September at 15.30.

It is hoped that as many astronomers as possible will view it and offer comments and criticisms as a guide for future productions. Remarks in writing should be addressed to Dr. C. D. Shane (782).

Commission 16 will meet on Tuesday 1 September, room II D:

Agenda:

- 9.00—10.00 Lunar nomenclatur and cartography (16a)
- 10.15—12.30 Discussion on the nature and structure of the surface of the moon. New organisation of Committee 16b.

The Working-Group of Commission 12 on eclipses will have an informal meeting on Tuesday 1 September at 14.30 in room II 506.

Commission 22: Session for Scientific Papers,
Tuesday 1 September, 14.00. Room II F

Agenda:

1. L. Kresak: A relation between the orbits and magnitude distribution of meteors.
2. I. Halliday: The meteor programm of the Dominion Observatory Ottawa, Canada.
3. Z. Ceplecha: A spectroscopic analysis of a flaring meteor.
4. H. Oleak: Remarks on the previous paper.
5. P. M. Millman: Annual and diurnal variations in the flux of radio meteors.
6. A. Kizilirmak: Annual distribution of meteoritic dust.
7. C. L. Hemenway: Some comments on dust collection techniques.
8. B. U. Levin: The origin of meteorites.

The Working Group of Commission 29 on Be Stars will have a meeting on Tuesday 1 September at 17.30 in room II 506.

CARL ZEISS, OBERKOCHEN, informs the visitors that free copies of its new catalogue can be obtained at the Information-Centre (building I) and at its exhibition (Auditorium Maximum). Requests for sending catalogues by mail are also welcomed at the CARL-ZEISS-Exhibition.

ACKNOWLEDGMENT

List of contributors to the cost of the assembly; their donations are gratefully acknowledged:

Hauni, Bergedorf

Dr. Heidenhain, Traunreut

Jenaer Glaswerke, Mainz

Gesellschaft Deutscher Naturforscher und Ärzte

Deutsche Philips G.m.b.H.

Rohde und Schwarz

Carl Zeiß, Oberkochen

Zuse K.G., Hersfeld

ADVERTISEMENT

The University Izmir (called Smyrna in the times of Aristarch) offers the post of a lecturer in Astronomy. An observatory is being created there and it is anticipated that this observatory will grow rapidly under the Turkish sun. An annual amount of 320 clear nights is guaranteed as an average minimum. The upper limit may be 366 nights in leap-years.

Applicants may contact Dr. Kizilirmak (446).

Lost:

The IAU-Briefcase No. 1051 was lost during a Bergedorf trip. Please find it and bring it to the information centre!

XII IAU HAMBURG 1964

DAILY NEWS BULLETIN

6 WEDNESDAY, SEPTEMBER 2

COMMUNICATIONS

Joint Discussion A

Wednesday 2 September

Local Structure and Motions in the Galaxy

9.00 Morning session

1. A. Blaauw: Introduction

I. Local Properties of the Interstellar Matter

2. F. J. Kerr: Overall Properties
3. H. van Woerden: Cloud structure, local kinematic properties
4. J. H. Oort: High-latitude, high-velocity clouds
5. J. Borgman: Regional variations in the interstellar reddening law
6. A. Behr: Optical polarization observations
7. J. R. Shakeshaft: Radio polarization observations; Faraday rotation
8. D. Wentzel: Interpretation of the observations in terms of gas dynamics

14.00 Afternoon session

II. Interstellar Matter and Young Stars

9. G. Herbig: Small-scale phenomena (T-associations etc.)
10. Th. Schmidt-Kaler: Larger-scale phenomena in distribution and motions of stars as compared to those of the gas
11. L. Mirzoyan: Motions, distribution, and Rates of formation of O-B1 stars in stellar associations
12. M. Schmidt: Local rate of star formation in general

III. Properties of Young Stars

13. S. W. McCuskey: Distribution of the A, F stars; comparison with that of the youngest stars
14. O. J. Eggen: Young moving clusters and groups
15. B. Stromgren: Previous regions of star formation derived from stellar motions
16. B. J. Bok: Stellar distribution at high latitudes
17. K. E. Ogorodnikov: (on behalf of Kuzmin, Einasto and Eelsalu)
The gravitational acceleration in the z direction in the solar neighbourhood
18. R. v. d. R. Woolley: Summarizing paper

The Triple Commission for Spectroscopy (President: H. H. Nielsen) will have a meeting at Hamburg on Friday 4 September 1964, 9.00 hrs. at the morning in room I-007.

Agenda:

- T. G. Béné (Geneva) Developments and New Techniques in Nuclear Magnetic Resonance Studies of Non-Solid Substances.
- R. N. Jones (Ottawa) Some Current Spectroscopic Problems of Organic Chemistry.

- R. Tousey
(Washington, D.C.) The Extreme Ultraviolet Emission of the Sun between Lyman-alpha of H I and C IV.
- W. C. Price (London) Ionisation Potentials, Dissociation Energies and Electron Affinities of Molecules.
- S. Nikitine
(Strasbourg) The Present State of Exciton (or Solid State) Spectroscopy.

Mrs. C. Moore-Sitterly
President, Commission 14

The French version with english and russian summaries of Prof. Kourganoff's communication on "the International Cooperation in the Teaching of Astronomy" and Prof. B. J. Bok "Comments on Prof. Minnaert's Report on the Teaching of Astronomy" are available at the information centre.

A copy of Prof. Oort's lecture about "The Structure and Evolution of the Galactic System" will be available in room 550 (building II) on Wednesday 2 September between 16.00 and 18.00.

Sabotage by the Secret Service of the Selenits?

A hitherto unexplained breakdown of the film-projector caused much laughter during Kuiper's speech in spite of a perhaps sinister omen of the hidden moon's people. It is sincerely hoped that the astronauts will overcome any resistance against the conquest of the moon's surface with a smiling attitude.

ANNOUNCEMENT

CLOSING DINNER

At the Closing Dinner on Wednesday 2 September 1964, there will be no formal reception owing to the large number of participants. However, there will be facilities for informal meetings with the President and members of the Executive Committee from 7.30 p.m. onwards, when pre-dinner drinks may be purchased. Wine will be served with dinner, which will commence at 8.00 p.m.

After dinner there will be facilities for dancing.

