

TABLE DES MATIERES - CONTENTS

	Pages
Obituary	
Pietronetta Le Corbeiller-Posthuma.....	1
Harrie Stewart Wilson Massey.....	2
XXI General Assembly: Open Symposium on Interactions of Electromagnetic Fields with Biological Systems..	4
News from Member Committees:	
Sweden - Radio Scientific Conference.....	5
Denmark - Danish URSI-Day.....	5
India - Workshop on Radio Science.....	5
Ionospheric Network Advisory Group: Report 1981-1984..	6
7th Symposium on Equatorial Aeronomy.....	9
Phenomena in Ionized Gases: Availability of Proceedings	13
Announcements of Meetings and Symposia:	
1985 North American Radio Science Meeting and Inter- national IEEE/AP-S Symposium.....	14
International Symposium on Antennas and EM Theory: First Announcement and Call for Papers.....	14
Names and Addresses of URSI Officers and Officers of Member Committees.....	17

OBITUARY

PIETRONETTA LE CORBEILLER-POSTHUMA

1894-1984

It is with very great regret that we announce the death, on 4 April 1984, of Mme Pietronetta Le Corbeiller-Posthuma at her home at Wassenaar near The Hague. The few surviving participants of the URSI General Assemblies of 40 or 50 years ago will recall her as a regular participant, first as Mme van der Pol and, after the death of her husband in 1958, as Mme Le Corbeiller.

In those early years, URSI was a much smaller, but certainly a no less active, Union than it is at present. The attendance at Assemblies seldom exceeded 200 and, in consequence, the senior delegates, such as Balth. van der Pol and Philippe Le Corbeiller, took a closer and a much more personal interest in the affairs of the Union than is possible nowadays. There can be little doubt that Mme Le Corbeiller considered it to be her personal duty to maintain the interest that Profs van der Pol and Le Corbeiller had both shown in URSI since the II General Assembly in 1927.

She endowed the Balth. van der Pol Gold Medal Fund in 1963, but she went much farther than this; on two occasions she made generous additions to the Fund, and she also purchased all the Medals that have been awarded up to the present, including that to be presented in Florence this year. As a result the Fund now has sufficient resources to permit the purchase of future Medals for an indefinite period.

But it would be quite wrong to think of Mme Le Corbeiller merely as a benefactor of URSI. For many years, and until recently, she kept in touch with the Secretariat, and she was always eager to have news of the activities of the Union, and especially of the newly-elected officers, many of whom she had known much earlier as young research workers. It was also a particular pleasure for her, after each Assembly, to hear from the most recent winner of the Balth. van der Pol Gold Medal.

Soon after my arrival in Brussels in 1968, Mme Le Corbeiller came to Brussels with her husband and spent some time in the URSI Secretariat with Mme Stevanovitch and myself. I have little doubt that she wished to find out whether the new Secretary General would be an acceptable successor to Col. Herbays,

who had been a close friend for many years. Since then it has been a pleasure for Mme Stevanovitch and myself not only to keep in touch with Mme Le Corbeiller, but also, from time to time, to accept her invitation to spend a day with her in The Hague. She had a remarkable memory and a keen sense of humour and during our visits she liked to recall past events and URSI personalities of the 1920's and 1930's. Indeed she was probably the last remaining direct contact with URSI's Founder President Gustave Ferrié, whom she had met on several occasions more than half a century ago.

The Balth. van der Pol Gold Medal Fund realised Mme Le Corbeiller's wish to commemorate her first husband's long and distinguished association with URSI. For those of us who knew her, it will, in addition, always be a reminder of the constant devotion of Mme Le Corbeiller herself to the well-being of our Union.

Mme Le Corbeiller is survived by her daughters Mrs Milnes and Mrs Ryckevorsel to whom we extend our deep sympathy.

C.M. Minnis

HARRIE STEWART WILSON MASSEY
1908-1983

We regret to announce the death of Sir Harrie Massey, FRS, on 27 November 1983. After having obtained degrees in Physics, Mathematics and Chemistry in Melbourne by 1929, he went to Cambridge and worked successively with Bullard and Mott on electron diffraction and atomic collisions. He spent the period from 1933-39 at the Queen's University of Belfast, and there laid the foundations of the present important Department of Applied Mathematics and Theoretical Physics.

Apart from his War service, Sir Harrie's later activities were centred in University College, London where he was appointed Professor of Applied Mathematics in 1939. From 1950 until 1975 he was Quain Professor of Physics.

His early theoretical work on atomic collisions later

found practical applications in research on the photochemistry of the upper atmosphere. His long experience in this field brought him into contact with URSI while he was a member of the Mixed Commission on the Ionosphere, in the 1950's, under the chairmanship of Sir Edward Appleton. When the XIII General Assembly of URSI was held in University College, London in 1960, he was a member of the Organizing Committee.

Sir Harrie quickly realised the importance of rockets and satellites as instruments for making in situ observations in space. As a result, he was extremely active as Chairman of the British National Committee for Space Research and, later, of the European Preparatory Commission for Space Research. In the wider international field, he was a member of the Bureau of the ICSU Scientific Committee for Space Research for many years.

Many of the scientific papers and books written by Sir Harrie, sometimes jointly with his collaborators, can be regarded as classics. It will suffice to mention only the recently published volume on *Atmospheric Physics and Chemistry* (Academic Press, 1982) edited by Sir Harrie and one of his earlier former students in Belfast, Sir David Bates. This volume and the four subsequent companion volumes, all bearing the general title *Applied Atomic Collisions*, seem to be destined to become important future sources of information and supporting data.

C.M. Minnis

XXI GENERAL ASSEMBLY
OPEN SYMPOSIUM ON INTERACTIONS OF ELECTROMAGNETIC
FIELDS WITH BIOLOGICAL SYSTEMS

This Symposium will be held from 27 to 30 August 1984. It is organized by URSI in cooperation with the Bioelectromagnetics Society, the International Radiation Protection Association and the Istituto Superiore di Sanita.

The second part, 29-30 August, is specifically included in the scientific programme of the General Assembly of URSI. A very substantial programme has been put together by the scientific committee, where URSI is represented by Prof. S. Rosenthal and Dr. M. Grandolfo. The outline of the activities is as follows:

Monday, 27 August

- Session 1: Interaction of Electromagnetic Fields with Biomolecules (Co-Chairers: W. Grundler and D.I. McRee)
- Session 2: Interaction of Electromagnetic Fields with Biomolecules (Co-Chairers: F.S. Barnes and A. Checcucci)
- Session 3: Interaction of Electromagnetic Fields at Cellular Level (Co-Chairers: A.J. Bertheaud and C.F. Blackman)
- Session 4: Interaction of Electromagnetic Fields with Biological Systems (Co-Chairers: C.K. Chou and H.R. Korniewicz)

Tuesday, 28 August

- Session 5: Responses of Biological Systems to Electromagnetic Fields (Co-Chairers: E.R. Adair and P. Vacchia)
- Session 6: Responses of Biological Systems to Electromagnetic Fields (Co-Chairers: L. Millanta and R.D. Phillips)
- Session 7: Characterization of Exposures to Electromagnetic Fields (Co-Chairers: J. Bach Andersen and S.W. Rosenthal)

Wednesday, 29 August

- Session 8: Diagnostic and Therapeutic Uses of Electromagnetic Energy (Co-Chairers: G. Mariutti and M.A. Stuchly)
- Session 9: Diagnostic and Therapeutic Uses of Electromagnetic Energy (Co-Chairers: B.F.M. Bosnjakovic and T.C. Rozzell)

Session 10: Safety Considerations and Standards for Electromagnetic Environments (Co-Chairers: P. Bernardi and A.W. Guy)

Thursday, 30 August

Session 11: Invited Review Papers (Co-Chairers: M. Grandolfo and E. Postow).

NEWS FROM MEMBER COMMITTEES

Sweden - Radio Scientific Conference

The 12th Scandinavian Radio Scientific Conference, co-sponsored by the URSI Committee in Sweden, was held in Linköping, Sweden, from 10 to 12 April 1984. The programme of the Conference, which was attended by some 500 delegates, consisted of about 250 papers, which covered the main recent avenues of progress in radio science. Some of the topics were: image processing, micro and millimeter waves, remote sensing, integrated circuits, underwater techniques and medical signal processing. Three general lectures were presented:

- The emerging rôle of custom LSI/VLSI (Dr. I. Höglund)
- Progress in optical fibers (Prof. S.T. Eng)
- Space as a business environment (Dir. F. Engström).

Denmark - Danish URSI-Day

The URSI Committee in Denmark organized an URSI Day on 27 April 1984 at the Technical University in Lyngby. The meeting was chaired by Prof. J. Bach Andersen, President of the Danish URSI Committee and Vice-Chairman of URSI Commission B. The programme consisted of 11 papers covering non-linear wave propagation, radar, optical communications and mobile communications.

India - Workshop on Radio Science

A Workshop on Radio Science was organized in New Delhi, India, from 12 to 13 March 1984, by the Indian URSI Committee under the auspices of the Indian National Science Academy. It

was aimed at reviewing the achievements in India in various areas of radio science, and their potential applications.

After the Welcome Address and Introductory Remarks by Dr. A.P. Mitra, President of the Indian URSI Committee, the Chairmen of the national Commissions presented reports on progress in radio science in India for the last three years.

Six invited lectures were presented:

- Four generations of optical fiber communications (Prof. A. Smolinski)
- Principles and applications of open waveguides (Prof. F. Gardiol)
- New experiments in time transfer through INSAT-1B, (Dr. B.S. Mathur)
- Microwave applications in remote sensing (Dr. O.P.N. Calla)
- Ionospheric research needed for future communications and positioning systems, (Dr. B.M. Reddy)
- VLBI INISSE aspects, Dr. V.K. Kapahi.

In the third part of the Workshop ten young scientists presented their achievements in short speeches. Some of them were on a really high level and were delivered in a very good English.

This Workshop showed the really high level of radio science in India.

A. Smolinski.

IONOSPHERIC NETWORK ADVISORY GROUP REPORT OF URSI WORKING GROUP G1 FOR 1981-1984

by W.R. Piggott, Chairman

The re-equipping of existing ionospheric observatories and the setting up of new ones has continued rapidly during the last three years. Over half the present network of about 130 stations have installed new equipment recently.

Ten issues of the *INAG Bulletin*, averaging 18 pages per issue, have been produced. These have included reports of nine meetings led by INAG members, one of which, at IAGA, Edinburgh, was reported verbally at the URSI General Assembly in Washing-

ton, D.C. There were:

		reported in
Edinburgh IAGA, UK	1981	INAG 34
Washington URSI, USA	1981	INAG 34
Irkutsk, USSR, Operators Conference	1981	INAG 35
Sydney, Australia, Operators Conference	1982	INAG 36
Fairbanks, Alaska, USQ	1982	INAG 37
Dourbes, Belgium	1982	INAG 37
Chilton, UK	1982	INAG 37
Hamburg IAGA, FRG	1983	INAG 40/1
Hong Kong ISEA	1984	INAG 43/4

The *Atlas of High Latitude Ionograms*, with notes in English, prepared by A.S. Bezprozvannaya and T.I. Shchuka, USSR, was reproduced in INAG 42. This is a very valuable aid to the interpretation of high latitude ionograms, complementing the *High Latitude Supplement to the URSI Handbook*.

INAG has started discussion on the problems of making more vertical incidence data available internationally through the World Data Centres in computer compatible form and on the special problems of digital ionosondes. Both of these present serious problems, which will take time to resolve. On the former, many stations at geophysically important sites do not have the local resources to collaborate fully and there are difficulties even at stations which use microcomputers or digital tables for their initial analysis. However, several important groups should have little difficulty in co-operating when a standard is agreed.

While the potential of digital ionosondes are well understood and many have been deployed, they have been used mainly for research purposes, or treated as if they were analogue machines, losing most of the special advantages of digital output. Thus, the problems which will arise in exploiting them synoptically have not been identified or investigated properly. INAG and the International Digital Ionosonde Group (IDIG, Working Group G10) have attempted to promote such studies, but the result of this prompting will not be known before the General Assembly of URSI in Florence. All IDIG reports have been reproduced in the *INAG Bulletin*.

Use of the simplified analysis rules agreed at Washington appears to be confined to the groups originally asking for changes, and most of the network is continuing with the full analysis as in the past.

With the support of the Royal Society, UK, and of many

local administrations, the Chairman has visited Australia, Belgium, the People's Republic of China, Hong Kong, Indonesia, New Zealand and the USA. In addition to discussing many local problems and helping to improve the standards of analysis, these visits have shown that there are many scientific problems which can be studied effectively using VI data. Many of these problems have not been discussed in the literature. For example, magnetically sub-tropical stations regularly record, but fail to recognise, typical auroral phenomena, apparently associated with the inner Van Allen belt. There appear to be many dramatic dynamic effects which are probably related to tidal phenomena near the same latitudes. Suggestions for research have been published in the *INAG Bulletin* and have provoked some re-examination of the data at a few stations.

The present circulation of the *INAG Bulletin* is about 350 copies per issue, but this could be improved. Both producers and users of data, who do not currently receive it, are invited to apply through the Secretary of INAG.

Many of the new stations in developing countries have been set up to improve knowledge and control of MF and HF communications. These groups need more guidance on the practical application of ionospheric data and the organisation needed to attain this end, in addition to the normal INAG assistance in obtaining the data and in local research. The great expansion of the use of HF, particularly in the Southern Hemisphere, is mainly due to the numerous relatively small organisations, aircraft, ships, fishing fleets and, in developing countries, the need to exploit the cheapness and limited engineering back-up needed to maintain HF links. In contrast, it is now possible to give CCIR more complex data from at least a few digital stations, e.g. the Doppler information that has been requested for many years. Guidance is needed on what is most useful and should be attempted first.

A new master list of VI stations was published in *INAG Bulletin* 37 and a map of those operating during the International Magnetospheric Study was reproduced in *INAG Bulletin* 39.

The workload on INAG officers is excessive and more active helpers are needed to maintain INAG services. New officers will be appointed at the URSI General Assembly in Florence.

7TH INTERNATIONAL SYMPOSIUM ON EQUATORIAL AERONOMY

For the first time in its 22-year history, the series of International Symposia on Equatorial Aeronomy was not graced by the presence of the creative, dedicated, and gentle Prof. S. Matsushita; shortly before the conference "Mat" passed away after a long illness; his dedication, leadership and interest will be missed.

Hosted by the Physics Department of the University of Hong Kong, under the direction of Prof. G.O. Walker, the Symposium was successful in reviewing recent work in equatorial studies of the upper and lower atmosphere and in setting aims and directions for the future. Meeting dates were from 22 to 29 March 1984. URSI was one of the sponsors of the meeting. 130 papers were listed in the Conference Digest; all of the papers were given if one of the authors was present.

The range of topics was considerably enlarged from previous meetings and covered such diverse subjects as the relationship of the solar wind and the magnetosphere to equatorial parameters as well as a review of the programme on Tropical Oceans Global Atmosphere. Emphasis was however on the Ionosphere and the Middle Atmosphere.

Subject areas included the following:

a. Rocket programmes—observations in Peru, Brazil, and India made use of the integration of in situ measurements with a host of ground observations ranging from optical depletion studies to incoherent and coherent radar studies.

b. Middle atmosphere experiments were in the area of in situ measurements and backscatter observations. Theoretical work on diurnal tidal modes was also discussed.

c. Plasma instability studies pulled together radar, rocket, and trans-ionospheric studies of irregularities and electron density.

d. Electrojet studies concentrated on plasma instabilities and irregularities.

e. Electric field papers reported on quiet and disturbed magnetic conditions.

f. Modelling of the equatorial ionosphere was discussed as a task apart from the modelling of global parameters.

Future paths in equatorial studies were suggested including the need for background studies of physics of the lower atmosphere. Topics which the main body of the attending scientists (approximately 100 in number) deemed to be of interest included additional observations using equipment such as MST radars (Mesosphere-Stratosphere-Troposphere) to measure middle atmosphere parameters and optical equipment to measure depletions. The latter equipment would be used in conjunction with scintillation and spread F measurements. Intensive studies of the relationship of solar wind and magnetospheric measurements to equatorial ionospheric parameters would be new initiatives.

An ionosonde workshop was held under the chairmanship of P. Wilkinson. Subjects covered included a concern about the continuance of the Huancayo sounder and an interest in establishing a joint study of travelling ionospheric disturbances within the SE Asia region.

15 April 1984

Jules Aarons

In addition, the following Resolutions and Comments have been received at the URSI Secretariat from Dr. H. Rishbeth, who attended the 7th International Symposium on Equatorial Aeronomy.

RESOLUTIONS

1. The ISEA *expresses its deep gratitude* to the University of Hong Kong for its hospitality, and to G.O. Walker, B. Gibson-Wilde and the members of the Local Organizing Committee for their endeavours, which made possible a stimulating, productive and friendly international gathering at Hong Kong involving representatives of several low-latitude countries active in the field of aeronomy.
2. The ISEA *wishes to thank* URSI, IUGG, IAGA, IAMAP, COSPAR, NCAR and AFGL for their sponsorship and support, without which the Symposium could not have been held.
3. The ISEA *recognises* the ionosphere as an important part of the solar-terrestrial environment, and stresses that there is a permanent need to monitor its periodic and secular changes, at a few selected sites at least. The ISEA *draws*

attention to the key rôle of the Huancayo Ionospheric Observatory in this respect, being an equatorial station in a key location with almost a half-century of operation, and *desires* that means be found to keep the Huancayo station in permanent operation.

4. *Considering* both the complexity and the economic importance of the middle atmosphere, the ISEA *believes* in the value of coordinated studies at low latitudes. The ISEA *commends* to the scientific organizations of low-latitude countries the ST radar technique, by which significant scientific results of international value can be obtained relatively cheaply.
5. The ISEA *considers* that valuable science could be achieved by an intensive study of ionospheric waves and disturbances by varied instruments, including communications-oriented ionosonde networks, especially in the East Asian sector and particularly in conjunction with satellite experiments. The period of the Space Shuttle ionospheric experiments planned for September 1984 would be particularly suitable for a trial study.
6. In connection with this proposed study, the ISEA *notes with pleasure* the offer by the Department of Physics, University of Hong Kong, to coordinate the observations and data analysis and looks forward to a major international cooperation. ISEA *hopes* that ionosondes will operate at 5-minute intervals during the study, and that an ionosonde will be established near the magnetic equator at Davao, Philippines.
7. The ISEA *notes with concern* the decreasing availability of solar wind and interplanetary magnetic field data, at a time when substantial progress is being made in understanding the links between solar-interplanetary conditions and the low latitude ionosphere, and *urges* that (a) the operation with appropriate data processing of IMP-8 be maintained as long as possible, (b) means be found to provide such monitoring into the late 1980's.
8. The ISEA *congratulates* those responsible for the success of the Condor Project and *looks forward* to a major international rocket campaign in the early 1990's and hopes that the ground-based studies necessary for the success of such a campaign will be maintained.

DIRECTIONS FOR THE 8th INTERNATIONAL SYMPOSIUM ON EQUATORIAL AERONOMY

Participants were invited to suggest major themes for the 8th ISEA which should take place about 1988. Many of them did so, and the following is a synopsis of both the written contributions and the discussion.

Equatorial Aeronomy is evolving and changing, like any other living branch of science. There is a growing interest in the middle atmosphere and a major thrust of ISEA-7 was in that direction. On the experimental side it was stressed that relatively cheap ST radars could be installed at a number of sites in low latitudes. Because of the complexity of atmospheric dynamics and the variety of spatial scales and timescales, a network of such radars is required. By setting them up and running them, developing countries could make a valuable contribution at a modest cost.

From the point of view of data analysis and theory, a major objective should be to understand the coupling between the ocean and atmosphere, and between the different parts of the lower, middle and upper atmosphere. These matters have considerable human and economic importance (as, for example, the effects of El Nino) as well as their scientific interest. While it would not be appropriate to devote ISEA-8 to tropical meteorology (a huge subject in its own right), it could be very fruitful to invite a few meteorologists and oceanographers interested in coupling problems to give review papers at ISEA-8.

The other major thrust of the science presented at ISEA-7 was 'the equatorial ionosphere as a plasma laboratory'. A variety of fascinating phenomena occur in the equatorial E-region electrojet and in spread F, and can be observed by a variety of radar, radio propagation, magnetic and optical techniques. Just as ISEA-7 provided an occasion for the presentation of early results from Project Condor - an international cooperation centred on the launch of 29 rockets from Peru on 8/9 March 1983 - so will the fully analysed results feature strongly in ISEA-8. If a further campaign takes place in about 1990, as was mooted at ISEA-7, it should be a major topic at ISEA-9. But, in any case, the comprehensive results obtained from the continuing Indian rocket programme should be as much a feature of the ISEA series in the future as they have been in the past.

In addition to the highlights of the Condor and middle atmosphere results, a range of ionospheric studies gave variety

to the ISEA-7 sessions. Incoherent scatter radar and optical interferometry continue to give new insights into the dynamics of the ionosphere and neutral thermosphere. The problems of day-to-day and spatial variability in the ionosphere, the Sq currents and the electrojet (and especially the counter-electrojet) continue to provide scope for interesting work. To what extent can the variability be classed as 'noise' and to what extent does it contain real physics?

Concern was felt that ionospheric studies should aim at extracting physics, and not just collecting statistics - apart from communications purposes, it being recognised that the communications needs provide the main justification for maintaining routine ionosondes. That said, many felt that some well-coordinated studies would be most valuable in tackling the still-remaining problems of the propagation of ionospheric waves and disturbances. Furthermore, the differences between northern and southern hemispheres are still not understood. The complex but fascinating chain of processes linking solar disturbances to equatorial atmospheric phenomena still contains much physics that needs unravelling. The East Asian sector seems a particularly suitable theatre for such studies and the degree of international cooperation needed to carry them out would be beneficial in itself.

30 March 1984

H. Rishbeth

PHENOMENA IN IONIZED GASES AVAILABILITY OF PROCEEDINGS

Copies of the Proceedings of the 16th International Conference on Phenomena in Ionized Gases, which was held in Düsseldorf (FRG) from 29 August to 2 September 1983 can be obtained at the price of 140 DM from:

Organizing Committee ICPIG 16
c/o Prof. K. Suchy
Institute for Theoretical Physics
University of Düsseldorf
D-4000 Düsseldorf 1, Fed. Rep. Germany.

Five volumes with together 786 pages contain 398 contributed papers, 56 of which are related to Waves in Plasmas. One volume with 318 pages contains 32 invited papers, 3 of which are related to Waves in Plasmas.

ANNOUNCEMENTS OF MEETINGS AND SYMPOSIA

1985 North American Radio Science Meeting

and

International IEEE/AP-S Symposium

The 1985 International Symposium, sponsored by the IEEE Antennas and Propagation Society (AP-S) and the North American Radio Science Meeting, sponsored by the Canadian and the United States Committees for the URSI, will be held on the campus of the University of British Columbia in Vancouver from 17 to 21 June 1985. The technical sessions for the IEEE AP-S and the North American Radio Science Meeting will be coordinated to provide a comprehensive and well-balanced programme.

The deadline for abstracts is 4 January 1985.

For more information, write to:

Mr. K. Charbonneau,
Conference Services,
National Research Council,
Ottawa, Canada K1A 0R6.

International Symposium on Antennas and EM Theory (ISAE)

First Announcement and Call for Papers

The International Symposium on Antennas and EM Theory (ISAE 1985) is planned to be held in Beijing, China on 24-26 August 1985. The Symposium is jointly sponsored by the Chinese Institute of Electronics Antenna Society (CIEAS) and the International Union of Radio Science (URSI) with the aim to provide an opportunity for discussing and exchanging information on

antennas and EM theory.

The Symposium will deal with a wide range of subjects on theory, design, practice and applications of antennas and EM theory. The suggested topics for ISEA 1985 are as follows:

- Aircraft and spacecraft antennas
- Antenna systems
- Antenna theory
- Conformal antennas
- Electromagnetic theory
- Environmental effects on waves
- HF techniques
- Lens and horn antennas
- Measurement techniques
- Microstrip antennas
- Millimeter-wave antennas and propagation
- Numerical techniques
- Phased arrays
- Radomes
- Reflector antennas and feeds
- Remote sensing
- Scattering and diffraction
- Surface and underground antennas and waves
- Transients
- Others.

The Symposium will be held in Beijing, a city with a more than one thousand years' history. Beijing as capital of China, welcomes every participant to the Symposium to visit its world famous Forbidden City, Summer Palace, Temple of Heaven and Great Wall, to name only a few.

Two Post-Symposium Tours will be arranged by the China Association for Science and Technology (CAST), one is Beijing-Shanghai-Hangzhou-Guangzhou, the other is Beijing-Xi'an-Guillin-Guangzhou.

The Registration Fee for the Symposium is about US\$250. The Co-Chairmen of the Technical Programme Committee are Prof. Mao Yukuan, Chairman of CIEAS and Prof. J. Bach Andersen, Vice-Chairman of URSI Commission B.

Authors who intend to submit papers are requested to send three copies of camera-ready papers (four pages A4 paper) not later than 30 November 1984. The acceptance will be sent to authors together with standard papers and type instructions before 15 January 1985.

Requests for Reply Forms and any inquiries regarding the Symposium should be addressed to:

Prof. Mao Yukuan,
Northwest Telecommunication Engineering,
Institute, Xi'an, Shannxi Prov., China.
Cable No 1331 Xi'an China.

NAMES AND ADDRESSES OF URSI OFFICERS AND OFFICERS OF MEMBER COMMITTEES

The amendments listed below refer to pages 33-78 of *URSI Information Bulletin* No 227 (December 1983). A full list of names and addresses will be published in the December 1984 issue. Member Committees are invited to notify the URSI Secretariat before 15 November 1984 of any amendments to the information given in Bulletin No 227 and the present Bulletin.

1. Member Committees

Czechoslovakia

President: Prof. V. Zima, Institute of Radio Engineering and Electronics, Czechoslovak Academy of Sciences, Lumumbova 1, 182 51 Praha 8.

2. URSI Commissions

Commission B

Portugal: Prof. Dr. Joao Figanier, Instituto Superior Tecnico de Lisboa, Lisboa.

Commission D

Canada: Dr. J.N.D. Cheeke, Département de Physique, Université de Sherbrooke, Sherbrooke, Québec J1K 2R1.

Commission G

German D.R.: Dr. Jürgen Bremer, Zentralinstitut für solar-terrestrische Physik, (Heinrich-Hertz-Institut), Observatorium für Ionosphärenforschung, GDR-2565 Kühlungsborn, Mitschurinstr.4.

3. List of Addresses: Changes and Corrections

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