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XXII General Assembly of URSI
Programme

The XXII General Assembly of URSI will be held in Tel Aviv, Israel, from Saturday 22 August to Friday 4 September 1987. The Scientific Programme of the Assembly will run from Tuesday 25 August to Wednesday 2 September.

The following decisions and recommendations were made during the meetings held in April 1986 in Brussels, Belgium, by the Steering Group for the Coordination of URSI Scientific Programme, the Chairmen of Commissions, the Board of Officers and the President of the Israeli URSI Committee.

I. SCHEDULE FOR ADMINISTRATIVE MEETINGS

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<tr>
<td>Saturday 22 Aug</td>
<td>Board of Officers</td>
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<td>Sunday 23 Aug</td>
<td>AM Coordinating Committee</td>
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<td>PM Preparatory Meeting of the Council</td>
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<td>Monday 24 Aug</td>
<td>Council</td>
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<td>Thursday 3 Sept</td>
<td>AM Coordinating Committee</td>
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<td>PM Council</td>
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<tr>
<td>Friday 4 Sept</td>
<td>Board of Officers</td>
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II. SCIENTIFIC PROGRAMME

General Lectures

GL1 Future Communication Networks - H. Seguin (France)

GL2 Optical Signal Processing - J.E. Midwinter (UK)

GL3 Encounters with Comets - R.Z. Sagdeev (USSR) and W.I. Axford (New Zealand)
N.B.: (+) = Contributed papers  
(++) = Contributed posters

Open Symposia

OS1  Computer-aided design in radio science with emphasis on microelectronics  
Convener: J. Hénaff (France)  
(see Call for papers on p. 11)

OS2  Reconstruction, imaging and inverse scattering  
Convener: D.L. Jaggard (USA)  
(see Call for papers on p. 12)

OS3  Mm-wave techniques in telecommunications, remote sensing and radio astronomy  
Convener: J. Baars (FRG)  
(see Call for papers on p. 13)

Joint Symposia

JS1  Precise measurements in radio astronomy  
Conveners: R. Wielebinski (FRG), S. Hahn (Poland)

JS2  Optical fiber measurements  
Convener: H.G. Unger (FRG)

JS3  Laser measurements  
Conveners: J.L. Hall (USA), W.R.C. Rowley (UK)

JS4  Free-field antenna, Gain measurements and standards  
Convener: M. Kanda (USA)

JS5  Microwave metrology  
Convener: A.P. Anderson (UK)

JS6  Man-made noise measurements - limits, statistics  
Convener: F.L. Stumpers (Netherlands)

JS7  Antennas in plasmas  
(see p. 11)  
Convener: L.R.O. Storey (USA), R.G. Balmain (Canada)
JS18 Interaction of electromagnetic waves with biological systems
Convener: J.C. Lin (USA)

Tutorials

Commission A: Laser measurements 1968-1987 and beyond - W. Woliński (Poland)

Commission B: Waves and spectra: A modern perspective - L.B. Felsen (USA)

Commission C: Queuing and coding in multi-user communications: ideas, techniques and theory - S. Csibi (Hungary)
Commission D: Coherent optical fiber communications -
T. Okoshi (Japan)

Commission E: Recent research in lightning -
J. Hamelin (France)

Commission F: Present and future of research on wave propagation -
R.K. Crane (USA)

Commission G: Some aspects of ionospheric physics relevant to ionospheric radio propagation -
H. Rishbeth (UK)

Commission H: Present and future trends in research in waves in plasmas -
S.T. Shawhan (USA)

Commission J: Radio astronomy: new horizons -
J. Welch (USA)

**Scientific Sessions of the Commissions**

**Commission A - Electromagnetic Metrology**

A1-1 ) Time and frequency
Convener: J. Vanier (Canada)

A1-2 ) Recent progress in telecommunication measurements
Convener: J. Le Mézec (France)

A2 ) Microwave to submillimeter measurements and standards
Convener: M.W. Sinclair (UK)

A4 ) Dielectric measurements
Convener: J.R. Birch (UK)

A5-1 ) Quantum metrology and electronic methods in fundamental constants
Convener: V. Kose (FRG)

**Commission B - Fields and Waves**

B1 ) Solution methods in EM theory
Convener: D.C. Chang (USA), I.V. Lindell (Finland)
B2 Radiation and scattering. Analytical techniques
Conveners: S. Ström (Sweden), R.E. Kleinman (USA)

B3 Transients
Conveners: K.G. Langenberg (FRG), L.B. Felsen (USA)

B4 Radiation and scattering. Numerical techniques
Conveners: B.R. Wilton (USA), P.M. van den Berg (Netherlands)

B5 Numerical methods for inhomogeneous dielectric bodies
Conveners: J.W. Strohbahn (USA)

B6 Planar antennas
Conveners: N.G. Alexopoulos (USA), J.R. Mosig (Switzerland)

B7 Reflector antennas
Conveners: W.V.T. Rusch (USA), N.C. Albertsen (Denmark)

B8 Non-linear electromagnetics
Conveners: A. Scott (USA), J.A. Kong (USA)

Commission C - Signals and Systems

C1 Digital circuits and digital signal processing
Conveners: A. Fettweis (FRG)

C2 Digital technologies in radio communications systems
Conveners: K. Miyaushi (Japan)

C3 Multiple user channels
Conveners: not yet designated

C4 Computer networks
Conveners: T. Rom (Israel)

C5 Analog sampled data circuits
Conveners: G. Moschytz (Switzerland)

C6 Distributed parameter (microwave SAW) filters
Conveners: S.C. Dutta Roy (India)

C7 Constant envelope communications - theory and practice
Conveners: I. Bar David (Israel)
C8 Packet radio communications
Convener: A. Clamtach (Israel)

C9 Mobile radio systems
Convener: P.A. Matthews (UK)

C10 Coding and cryptography
Convener: not yet designated

C11 Performance limits in communication theory and practice
Convener: J. Skwirzynski (UK)

Commission D - Electronic and Optical Devices and Applications

D1 Electronic materials of the future
Convener: J. Hénaff (France)

D2 Quantum well devices and their applications
Convener: T. Sakaki (Japan)

D3 Photon counting and optical communication
Convener: T. Okoshi (Japan)

D4 Ultra fast electronics
Convener: J.W. Klein (FRG), B.G. Bosch (FRG)

D5 High speed optical detection
Convener: H. Melchior (Switzerland)

D6 Non-linear optics and phase conjugation
Convener: B. Fischer (Israel)

D7 Optical logic and computing
Convener: J.E. Midwinter (UK)

Commission E - Electromagnetic Noise and Interference

E1 Lightning: predischarge processes and associated radiation
Convener: D.E. Proctor (South Africa)

E2 Spacecraft charging and electromagnetic effects
Convener: J. Tailliet (France)

E3 Lasting effects of transients on equipment performance
Convener: V. Scuka (Sweden)
E4 Lightning: interaction with aircraft
Convener: G.A. Dubro (USA)

E5 Electromagnetic phenomena related to earthquakes
Convener: T. Yoshino (Japan)

E6 The composite noise environment
Convener: G. Hagn (USA)

E7 Non-linear effects in the field of EMC/EMP
Convener: H. Kikuchi (Japan)

E8 Lightning: cloud to ground discharges I and dI/dt and radiation
Convener: J. Hamelin (France)

E9 Satellite and planetary noise environment
Convener: E.K. Smith (USA)

Commission F - Wave Propagation and Remote Sensing

F1 Remote sensing of the atmosphere
Convener: J. Goldhirsh (USA)

F2 Radiopropagation effects on interference in radiocommunications
Convener: M.P.H. Hall (UK)

F3 Clear-air effects on terrestrial radiocommunications
Convener: A. Webster (Canada)

F4 Radiopropagation effects in land mobile radio systems
Convener: R.W. Lorenz (FRG)

F5 Remote sensing of land
Convener: A. Blomquist (Sweden)

F6 Remote sensing of ocean
Convener: A. Guissard (Belgium)

F7 Submillimeter and optical propagation
Convener: A. Consortini (Italy)
Commission G - Ionospheric Radio and Propagation

G1-1) Incoherent scatter studies of the ionosphere
G1-2) Convener: H. Rishbeth (UK), A. Richmond (USA)
(+)(++) (see Call for papers on p. 16)

G2-1) High latitude ionosphere
G2-2) Convener: T. Jones (UK), A. Wernik (Poland)
(+)(++) (see Call for papers on p. 17)

G3-1) Modelling and mapping of the ionosphere
G3-2) Convener: P. Bradley (UK), B.M. Reddy (India)
(+)(++) (see Call for papers on p. 17)

G4-1) The low latitude ionosphere and its effects on
telecommunications
G4-2) Convener: S. Radicella (Argentina)
(+)(++) (see Call for papers on p. 18)

G5) Ionospheric needs for telecommunication development 2000 - 2010
Convener: J. Aarons (USA), H. Rishbeth (UK)

Commission H - Waves in Plasmas

H1) Computer analysis of plasma waves
(+)(++) Convener: F. Lefevre (France)
(see Call for papers on p. 18)

H2-1) Waves in space plasmas
H2-2) Convener: R.L. Dowden (New Zealand)
(+)(++) (see Call for papers on p. 19)

H3-1) Waves induced particle precipitation
H3-2) U. Inan (USA)
(+)(++) (see Call for papers on p. 19)

H4-1) Computer simulation of man-made and natural
phenomena in space
H4-2) Convener: H. Matsumoto (Japan), M.A. Abdalla (USA)
(+)(++) (see Call for papers on p. 20)
Commission J - Radio Astronomy

J1 Radio astronomy in space
   Convener: R. Schilizzi (Netherlands)

J2 VLBI techniques
   Convener: B. Anderson (UK)

J3-1) Reports from observatories
   Convener: R. Wielebinski (FRG)

J3-2) Reports from observatories
   Convener: R. Wielebinski (FRG)

J3-3) Reports from observatories
   Convener: R. Wielebinski (FRG)

J4 Metre wave antennas (and results)
   Convener: G. Swarup (India)

J5 Submm wave observations
   Convener: H.P. Roeser (FRG)

J6 Data, signal and image processing
   Convener: R.H. Frater (Australia).

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III. Timetable

31 October 1986
- Deadline for submission of contributed papers
  (2 abstracts: 1 to URSI Secretariat; 1 to Convener)

30 November 1986
- All submitted papers are acknowledged by URSI Secretariat.

15 January 1987
- The Chairmen of Commissions and the Conveners of Open Symposia produce the lists of papers of their sessions and symposia (OS, JS, S).

15 February 1987
- All authors of papers have been notified about the acceptance of their contributions by the Commission Chairmen (S, JS) and the Conveners of Open Symposia (OS) with copies to URSI Secretariat.
- Invited speakers have provided their abstracts to the Conveners with copies to URSI Secretariat.

1 March 1987
- Full texts of General Lectures and Tutorials have been received.

31 March 1987
- Issuing of the 2nd Announcement of the Assembly.
- All abstracts have reached the Local Organizing Committee.
IV. CALLS FOR PAPERS

N.B.: (+) = Contributed papers

(++) = Contributed posters

CALL FOR PAPERS

(+) (++)

OPEN SYMPOSIUM (OS1)

Computer-Aided Design in Radio Science with emphasis on Microelectronics

Progress in computer technology has brought forth a dramatic change in the design technologies in various areas of radio science, such as the design of communication systems, radio equipments such as antennas, receivers and transmitters, radio components such as microwave waveguide components, and various electronic circuits and electron devices. Particularly noteworthy has been the rapid progress in the computer-aided design (CAD) of microelectronic devices such as IC, LSI and VLSI.

The Open Symposium has been planned to cover basically all the areas of the CAD in radio science. However, special emphasis is placed upon the CAD in microelectronics; papers describing recent achievements in the topological/structural design and computer simulation of IC/LSI/VLSI are particularly solicited.

Convener: J. HENAFF
CNET-DICET
38-40 rue du Général Leclerc
F-92131 Issy-les-Moulineaux
France.
CALL FOR PAPERS
(+)(++)

OPEN SYMPOSIUM (OS2)

Reconstruction, Imaging and Inverse Scattering

Inverse methods play an important role in many seemingly unrelated disciplines, ranging from geophysical seismic exploration to biomedical applications and to problems in electromagnetics and acoustics. However these disciplines possess many underlying similarities.

In the two-day symposium, common methodological techniques are to be addressed by invited and contributed papers. The objective is to review and discuss methods pertinent to various problems rather than to describe specific applications.

Papers are solicited on all aspects of reconstruction, imaging and inverse scattering. Guidance may be obtained from the following list of tentative topics:

1. Foundations of Inverse Scattering Theory
2. Target Identification and Classification
3. Profile Reconstruction
5. Multidimensional Imaging and Inverse Scattering
6. Signal Processing and Extrapolation Techniques for Imaging and Inverse Problems

Prospective authors are asked to submit a 1-page abstract before 31 October 1986 to the Symposium Organizer:

Dr. D.L. JAGGARD
The Moore School of Electrical Engineering
D2
University of Pennsylvania
Philadelphia 19104
USA,
CALL FOR PAPERS

OPEN SYMPOSIUM (OS3)

Mm-wave techniques in telecommunications, remote sensing and radio astronomy

The use of mm waves in telecommunications, medical science, radio astronomy, etc. has reached an advanced stage of maturity. The Open Symposium is intended to bring together scientists using mm-wave techniques in many areas of research.

Papers dealing with new advances in mm-wave techniques and applications of these techniques are invited.

Convener: J. BAARS
Max-Planck-Institut für Radioastronomie
Auf dem Hügel 69
D-5300 Bonn
Federal Republic of Germany.

CALL FOR PAPERS

JOINT SYMPOSIUM (JS7)

Antennas in Plasmas

Antennas have long been used in space plasmas for UHF communications and HF sounding, and antenna impedance measurements have been used to determine plasma properties. Although such work will be included in this Symposium, the main objective is to present the more recent use of the plasma itself as an antenna (e.g. electro-jet modulation) and of antennas specifically designed for VLF wave injection. This subject includes the passive and active use of very long wire (to tens of kilometers) antennas in space plasma.

Conveners: Dr. L.R.O. STOREY
STAR Laboratory
Stanford University
Stanford, CA 94305, USA.

Dr. K.C. BALMAIN
Dept. of Electronic Eng.
University of Toronto
M5S 1A4, Canada.
CALL FOR PAPERS

JOINT SYMPOSIUM (JS13)

Radar and Radio Studies of the Middle Atmosphere and Lower Ionosphere

To review and present results of the MAP Programme and other studies of the Middle Atmosphere and Lower Ionosphere.

Conveners:

Prof. S.A. BOWHILL
Aeronomy Laboratory
Dept. of Electrical Eng.
University of Illinois
Urbana, I11.61801
USA.

Dr. S. KATO
Radio Atmospheric Science Center
Kyoto University, Uji
Kyoto 61
Japan.

CALL FOR PAPERS

JOINT SYMPOSIUM (JS14)

Active Experiments in Space Plasmas

To cover both experimental results and theoretical studies for all active experiments in the ionosphere and magnetosphere involving waves or radio techniques. Topics will include ionospheric modification by RF transmitter heating, ground and space vehicle wave injection, charged particle beams and chemical releases, and unintentional man-made effects.

Conveners:

Prof. R.L. Dowden
Physics Department
University of Otago
P.O. Box 56
Dunedin
New Zealand.

Dr. G. Haerendel
MPI für Physik und Astrophysik
D-8046 Garching b. München
Federal Republic of Germany.
CALL FOR PAPERS

(++)

JOINT SYMPOSIUM (JS16)

Radio Waves in and from Planetary and Astrophysical Plasmas

As a result of the Voyager missions, the number of radio planets has now increased to four: Earth, Jupiter, Saturn and Uranus. Many of the radio waves observed within or from the magnetospheres of these planets have similar characteristics suggesting that their production mechanisms are important, not only within the solar system, but also possibly in the wider astrophysical context. The purpose of this Symposium is to highlight the similarities and differences between planetary radio emissions and to discuss the present theories for their creation. This will be balanced by similar presentations of the characteristics and theories of radio waves from sources outside the solar system, allowing the opportunity of comparing and contrasting the problems that are being tackled in both domains.

Conveners:

Dr. D. JONES
British Antarctic Survey
High Cross
Madingley Road
Cambridge CB3 0ET
England.

Dr. R. EKERS
National Radio Astronomical Observatory
Soccoro
New Mexico 87801
USA.

CALL FOR PAPERS

(+)

JOINT SYMPOSIUM (JS17)

Time Domain Waveform Measurements and Applications

The sessions are sponsored by all the Commissions of URSI and the Inter-Commission Working Group on Time Domain Waveform Measurements.

Contributed papers should be on measurements that employ time domain measurement methods and are distinctly relevant to
Typical topics include pulse or transient or waveform measurements, time series measurements for the extraction of signal, waveform or physical process information, or system estimation based upon data acquired by time domain methods, and time domain measurements of nonlinear physical phenomena such as soliton propagation.

Convéners:

Dr. N.S. NAHMAN  
Pico-second Pulse Labs Inc.  
P.O. Box 44  
Boulder, CO 80306, USA.

Dr. O. HARTAL  
P.O. BOX 2250  
87 Haifa 31021  
Israel.

CALL FOR PAPERS

COMMISSION G SYMPOSIUM (G1)

Incoherent Scatter Studies of the Ionosphere

To review and present recent results of incoherent scatter radars of ionospheric parameters at E layer and higher altitudes.

Convéners:

Dr. H. RISHBETH  
Rutherford Appleton Lab.  
Chilton, Didcot  
Oxfordshire OX11 OQX  
United Kingdom.

Dr. A. RICHMOND  
HAO/NCAR  
P.O. Box 3000  
Boulder, CO 80307  
USA.
CALL FOR PAPERS
(+) (++)
COMMISSION G SYMPOSIUM (G2)

The High Latitude Ionosphere

To review and present recent results of high latitude studies by techniques other than incoherent scatter. This would include HF and VHF backscatter, beacon satellite observations, HF soundings, etc. It would also include studies of magneto-ionospheric interaction.

Conveners:
Dr. T. JONES
Physics Department
University of Leicester
Leicester, LE1 7RH
United Kingdom

Dr. A. WERNIK
Space Research Center
Bartycka 18
Warszawa 00 716, Poland.

CALL FOR PAPERS
(+) (++)
COMMISSION G SYMPOSIUM (G3)

Modelling and Mapping of the Ionosphere

To review the many developing models and maps of the ionosphere. To find means of validating, comparing and integrating the models. The emphasis will be on models of interest to URSI needs in telecommunications.

Conveners:
Dr. P. BRADLEY
Rutherford Appleton Lab.
Chilton, Didcot
Oxfordshire OX11 OQX
United Kingdom

Dr. B.M. REDDY
Radio Science Division
National Physical Laboratory
Hillside Road
New Delhi 110012
India.
CALL FOR PAPERS
(+)(++)
COMMISSION G SYMPOSIUM (G4)

The Low Latitude Ionosphere and its Effects on Telecommunications

To review and present recent studies of equatorial and low latitude experiments with emphasis on their effects on telecommunications.

Convener: Prof. S. RADICELLA
PRONARP
Arenales 1446
6° "C"
1061 Buenos Aires
Argentina.

CALL FOR PAPERS
(++)
COMMISSION H SYMPOSIUM (H1)

Computer Analysis of Plasma Waves

To present advances in the techniques used for the determination and the interpretation of the main statistical parameters of plasma waves in space. Topics will include: spectral analysis of geophysical data using parametric models, detection of three waves non-linear interactions from bispectral analysis, fast determination of the polarization characteristics of plasma waves, and use of interferometric techniques in the study of plasma waves.

Convener: Dr. F. LEFEUVRE
CNRS/LPCE
3A, avenue de la Recherche Scientifique
F - 45045 Orléans Cedex
France.
CALL FOR PAPERS

(COMMISSION H SYMPOSIUM (H2))

Waves in Space Plasmas

To present contributions in the broad field which do not fit the specialist symposia of Commission H. Contributions will be arranged according to topic and some may be invited to be given as oral presentations.

Convener: Prof. R.L. DOWDEN
Physics Department
University of Otago
P.O. Box 56
Dunedin, New Zealand.

CALL FOR PAPERS

(COMMISSION H SYMPOSIUM (H3))

Wave Induced Particle Precipitation

To bring together and present a wide range of research relevant to wave induced particle precipitation causes and effects. This includes interactions between electrons and whistler-mode waves, electrostatic and electromagnetic ion-cyclotron waves and ions, non-linear electron and ion cyclotron wave growth, wave-particle-wave interactions such as ULF/VLF and VLF/VLF, the role of such interactions in the acceleration and loss of the radiation belt particles, ionospheric phenomena associated with wave-induced particle precipitation, and new techniques for measuring particle precipitation effects.

Convener: Dr. U. INAN
STAR Laboratory
Department of EE/SEL
Stanford University
Stanford, CA 94305
USA.
CALL FOR PAPERS

(+++)
COMMISSION H SYMPOSIUM (H4)

Computer Simulation of Man-Made and Natural Phenomena in Space

To present computer simulation studies relating to space plasma research which are becoming increasingly important. Topics to be covered by this Symposium are: computer simulation of active experiments in space (shuttle, rocket, satellite beam, wave and plasma injection), computer simulation of cometary physics (Halley, G-Z comets, global and microphysics), computer simulation of global magnetospheric physics (Earth, Jupiter, Saturn, etc...), and computer simulation of non-linear plasma waves and wave-particle interactions (acceleration, heating, precipitation, aurora, natural waves, etc...).

Conveners:

Dr. H. MATSUMOTO
RASC
Kyoto University
Uji, Kyoto 611
Japan.

Dr. M.A. ABDALLA
Department of Physics
IGPP, UCLA
Los Angeles, CA 90024
USA.
In April 1986, the Secretary General of URSI sent out a circular letter to the Presidents and Secretaries of Member Committees, and to the Chairmen and Vice-Chairmen of the Commissions inviting nominations for candidates for the four URSI Awards. These are as follows: Balth. van der Pol Gold Medal, J.H. Dellinger Gold Medal, Issac Koga Gold Medal and Appleton Prize. The Rules governing these awards are reproduced below.

It is to be noted that the URSI Board decided to shift the deadline for submission of names to 15 October 1986.

The Board wishes to encourage all Member Committees, as well as the Chairmen and Vice-Chairmen of Commissions, to make a special effort and to present worthwhile candidates, thereby giving a wide choice.

RULES FOR THE AWARD OF THE BALTH. VAN DER POL AND J.H. DELLINGER GOLD MEDALS

1. The Balth. van der Pol and the J.H. Dellinger Gold Medals honour the memory of two scientists who were closely associated with URSI for many years. The awards are made normally at intervals of three years on the occasion of the General Assembly of URSI. If the interval between two General Assemblies is considerably greater or less than three years, the Board of Officers is authorized to modify the date on which the next Medals will be awarded, the period referred to in Art. 2, and the dates referred to in Arts 3 and 5.

2. The Medals are awarded to outstanding scientists whose achievements in any of the branches of science covered by the Commissions of URSI have been particularly valuable. No member of the URSI Board of Officers shall be eligible. The work to which an award refers must have been carried out mainly during the six-year period ending one year before the General Assembly at which the award is to be made.

3. The names of not more than two candidates may be submitted by each of (a) the Member Committees of URSI, (b) the Chairmen and Vice-Chairmen of the URSI Commissions. The names
of the candidates must be received by the Secretary General of URSI not later than 30 September of the year preceding that of the URSI General Assembly.

4. The name of each candidate must be accompanied by:
   a) a general summary of the candidate's career and scientific activities;
   b) a review of his recent achievements, including references to the most important papers published by him, alone or jointly, during the six-year period referred to in Art. 2;
   c) an outline of the reasons for the nomination of the candidate.

5. As soon as possible after 30 September, copies of all the documents referred to in Art. 4 shall be sent by the Secretary General to the Awards Advisory Panel, the members of which shall be determined by the President of URSI in consultation with the Board of Officers. The Panel is authorized, when necessary, to consult non-members regarding the merits of the candidates, before submitting its own considered views to the Board of Officers not later than 31 January of the year of the General Assembly.

6. The Board of Officers has full authority to select the candidates to whom the awards will be made. In doing so it will take into account the information provided by the proposers of the candidates and also the views expressed by the Awards Advisory Panel. The Board of Officers will bear in mind that it is desirable to make the awards to candidates working in different branches of radio science, and that the J.H. Dellinger Medal should be awarded preferably for work in the field of radio wave propagation.

7. The Board of Officers has full authority to withhold one or both awards if, in the opinion of the members, there is an insufficient number of qualified candidates.
RULES FOR THE AWARD OF THE ISSAC KOGA GOLD MEDAL

1. The Issac Koga Gold Medal honours the memory of a scientist who was closely associated with URSI for many years. The Award is made normally at intervals of three years, on the occasion of the General Assembly of URSI. If the interval between two General Assemblies is considerably greater or less than three years, the Board of Officers is authorized to modify the date on which the next Medal will be awarded, the period referred to in Art. 2, and the dates referred to in Arts 3 and 5.

2. The Medal is awarded to a young scientist, of age not more than 35 on 30 September of the year preceding the General Assembly of URSI, who has made an outstanding contribution to any of the branches of science covered by the Commissions of URSI. No member of the URSI Board of Officers shall be eligible. The work to which the Award refers must have been carried out mainly during the six-year period ending one year before the General Assembly at which the Award is to be made. The Medal will be presented at the General Assembly.

3. The name of not more than one candidate may be submitted by each of (a) the Member Committees of URSI, (b) the Chairmen and Vice-Chairmen of the URSI Commissions. The names of the candidate must be received by the Secretary General of URSI not later than 30 September of the year preceding that of the URSI General Assembly.

4. The name of the candidate must be accompanied by:
   a) a general summary of the candidate's career and scientific activities;
   b) a review of recent achievements of the candidate including references to the most important papers, published alone or jointly, during the six-year period referred to in Art. 2;
   c) an outline of the reasons for the nomination of the candidate.

5. As soon as possible after 30 September, copies of all the documents referred to in Art. 4 shall be sent by the Secretary General to the Award Advisory Panel, the members of which shall be determined by the President of URSI in consultation
with the Board of Officers. The Panel is authorized, when necessary, to consult non-members regarding the merits of the candidates, before submitting its own considered views to the Board of Officers not later than 31 January of the year of the General Assembly.

6. The Board of Officers has full authority to select the candidate to whom the Award will be made. In doing so it will take into account the information provided by the proposers of the candidate and also the views expressed by the Award Advisory Panel. The Board of Officers will bear in mind that it is desirable to make awards to candidates working in different branches of radio science.

7. The Board of Officers has full authority to withhold the Award if, in the opinion of the members, there is not a qualified candidate.

RULES FOR THE AWARD OF THE APPLETON PRIZE

1. The Appleton Prize is awarded by the Council of the Royal Society of London and honours the memory of Sir Edward Appleton, F.R.S., President of URSI from 1934 to 1952. The Prize of £250 is awarded normally at intervals of three years on the occasion of the General Assembly of URSI. If the interval between two General Assemblies is considerably greater or less than three years, the Board shall consult the Royal Society before modifying the date on which the next award will be made, and the dates referred to in Articles 2, 3 and 5 below. The Council of the Royal Society reserves the right to discontinue the award.

2. The Appleton Prize is awarded for outstanding contributions to studies in ionospheric physics. The work to which the award refers must have been carried out mainly during the six-year period ending one year before the General Assembly at which the award is to be made. No member of the URSI Board of Officers shall be eligible.

3. The name of one candidate may be submitted by each of
the Member Committees of URSI and each of the Chairmen and Vice-Chairmen of URSI Commissions G and H. The names of the candidates must be received by the Secretary General of URSI not later than 30 September of the year preceding that of the General Assembly at which the award is to be made. The Board of Officers may also nominate a candidate.

4. The name of each candidate must be accompanied by:
   a) a general summary of the candidate's career and scientific activities;
   b) a review of his recent achievements, including references to the most important papers published by him, alone or jointly, during the six-year period referred to in Art. 2;
   c) an outline of the reasons for the nomination of the candidate.

5. As soon as possible after 30 September, copies of all the documents referred to in Article 4 shall be sent by the Secretary General to the Awards Advisory Panel of URSI. The Panel is authorized to seek additional advice from outside its membership, regarding the merits of the candidates, before submitting its own considered views to the Board of Officers not later than 31 January of the year of the General Assembly.

6. After considering the views submitted by the Awards Advisory Panel, the Board of Officers shall submit a short-list of candidates in order of preference, with reasons for the order, to the Royal Society and advise the Royal Society of the total number of candidates.

7. The Council of the Royal Society has full authority to select the candidate to whom the Prize will be awarded or to withhold it if, in its opinion, there is no sufficiently qualified candidate.
THIRD REVIEW MEETING OF ASIA PACIFIC METROLOGY PROGRAMME AND
REGIONAL WORKSHOP IN INDIVIDUALLY SELECTED FIELDS OF METROLOGY FOR DEVELOPING COUNTRIES

These meetings were organized by UNESCO, the Commonwealth Science Council and the National Physical Laboratory (CISR) at CISR from 2 to 13 December 1985. They were co-sponsored by CSC, UNESCO, IMEKO, BIPM and URSI.

The review meeting of the APMP was held from 2 to 4 December. A summary of adopted Recommendations is given below.

The Workshop was attended by 61 participants from 19 countries of the Asia Pacific region. The programme included:
(1) Ten review papers on selected metrology topics, given by the lecturers supported by the sponsoring agencies, and coming from 6 countries.
(2) Experimental work on one of two options:
   Option A: planned experimental demonstrations in mass, length, temperature, DC and AC electrical measurements.
   Option B: experimental work in any two selected areas out of mass, length, temperature, photometry and radiometry, force, pressure and vacuum, low-frequency, high-frequency and microwave electrical measurements.
(3) Visits to the laboratories of the Department of Weights and Measures and to the Indian Standards Institution in New Delhi.

Participants highly appreciated the review lectures as well as the experimental work. They generally felt that the workshop will be of great benefit to them in planning and development of their national laboratories.

Recommendations adopted during the Review Meeting
1. The information brochure entitled "Asia Pacific Metrology Programme - Aims, Objectives and Activities", which contains detailed information about the evolution of the
programme and its activities till 1985 was considered to be a very useful document. It was, however, suggested that the list of 'Contact Persons' from each country needs to be revised now. Each country was requested to give names and addresses of six 'Contact Persons' to be published in early 1986. It was also recommended that such information brochure should be brought out in revised form every three years at the time of Review Meetings.

2. The need for making two video films, one on 'SI Units' and the other on 'Need for Metrology' or 'Why Metrology' was again emphasized by all the participants. Efforts should be made to secure funds from UNESCO and CSC to produce these films in collaboration with Asia Pacific Institute for Broadcasting Development, Kuala Lumpur, Malaysia.

3. The compilation of a list of manufacturers of measuring instruments in the Asia Pacific Region was appreciated. Information from China and the Republic of Korea is yet to be received. After getting all the information, this list should be published as a 'Compendium'.

4. Good contacts have been established with various international agencies such as BIPM, OIML, ILAC, WECC, IMEKO and URSI. These contacts should be further strengthened through exchange of information, and by involving these organizations in collaborative Seminars/Symposia/Workshops, etc. to be arranged in future under APMP.

5. The 'Directory of Calibration Facilities in the Asia Pacific Region' is to be revised and will be published by the end of 1986.

6. Intercomparisons of standards have been going on very satisfactorily. Reports on 8 intercomparisons were published during 1985. Five intercomparisons are in progress. It was further decided to initiate three new intercomparisons and a few more to be repeated during 1986-87. The National Measurement Laboratories in Australia, China and India were identified as the nodal laboratories for international intercomparisons coordinated by BIPM.

7. A number of calibrations of reference standards of several countries have been completed by CSIRO, Australia. Some more are in progress at CSIRO, Australia and NPL, India. Requirements for future calibrations were projected by the participants which will be taken up during 1986 and 1987.
8. Requirements of Training and Consultancies were also projected by many countries. UNESCO, CSC support will be requested to provide Training Fellowships and Consultancy Missions. Efforts to organize Group Training Programme in Metrology on a regular basis should be continued through UNIDO. A 'Training Workshop' for the practising metrologists should be organized in a middle level metrological laboratory, preferably in the South East Asian Region during 1986/87.

9. The 'Model Metrological System for Small Island States' prepared by the Regional Coordinator was approved with some modifications.

10. A comprehensive UNDP Proposal on Asia Pacific Metrology Programme should be re-submitted through UNESCO.

11. It was strongly recommended that the Secretariat of APMP should continue to be with the Commonwealth Science Council.

12. The 'Logo' of APMP, as recommended at the Manila Steering Committee Meeting was approved. This 'Logo' will be used on all future publications, documents, letter-heads, etc.

13. The new Steering Committee of APMP for the period 1986-89 was elected. It will consist of representatives from Australia, India, China, Republic of Korea and Fiji. The Regional Coordinator from India continues until the next Steering Committee Meeting when a new Regional Coordinator will be elected. It was recommended that the next Steering Committee Meeting be held at Fiji in 1986.

14. The following is the Summary of Activities to be taken up during the next three years (1986-89):

   - Publication of the revised list of 'Contact Persons'.
   - Preparation of two video-films on metrology.
   - Publication of a 'Compendium of Manufacturers of Measuring Instruments in the Asia Pacific Region'.
   - Organization of a Seminar on a specific field of metrology in collaboration with IMEKO (to be hosted by China).
   - Publication of a revised 'Directory of Calibration Facilities'.
   - Intercomparisons of standards (in progress) to be completed; new intercomparisons to be started.
- Calibration of reference standards to be continued.
- Individual training and group training to continue. Training Workshop for practising metrologists in a middle level laboratory to be organized in one of the South East Asia Countries.
- Model Metrological System for Small Island State to be finalized and published as a document.
- UNDP Proposal on APMP to be resubmitted through UNESCO.
- Next Steering Committee to meet at Fiji in September/October 1986.
- Directory of Instrument Repair and Maintenance Facilities to be published.
ANNOUNCEMENTS OF MEETINGS AND SYMPOSIA

5TH INTERNATIONAL CONFERENCE ON ANTENNAS AND PROPAGATION

ICAP 87

The 5th International Conference on Antennas and Propagation will be held at the University of York, UK, from 30 March to 2 April 1987. It is organized by The Electronics Division of the Institution of Electrical Engineers in association with the International Union of Radio Science.

It is one hundred years since Heinrich Hertz conducted his classic series of experiments to prove the existence of radio waves. All topics in antennas and propagation have grown out of these experiments. A feature of the 5th International Conference on Antennas and Propagation will be a session devoted to the history of antennas and propagation to celebrate this centenary.

The close association with the International Union of Radio Science (URSI) is continued through cooperation with the British Committee for Radio Science who will be co-sponsoring sessions on Ionospheric Propagation and Millimetre Wave Remote Sensing.

ICAP-87 will promote interaction between those active in the fields of antenna theory and design and electromagnetic wave propagation. The entire radiowave spectrum used for telecommunications, radar, navigation, remote sensing and radioastronomy will be considered. Contributions are particularly welcome on topics of current and future interest such as conformal arrays, shaped beam spacecraft antennas, microwave holography, adaptive antennas, phased arrays and components, cellular radio propagation and propagation aspects of frequency management.

SCOPE

Antennas and Related Topics

- Adaptive antennas
- Array antennas
- Phased arrays
- Conformal antennas
- Microstrip antennas
- Wideband antennas
- Reflectors and lenses
- Horns and feeds
- Satellite antennas
- ELF to UHF antennas
- Broadcast antennas
- Mobile antennas
- Radomes
- Radio telescopes
- Measurement techniques
- Mechanical aspects of antennas
- Transients
- Electromagnetic theory
- Numerical techniques
- Scattering and diffraction
- Biomedical techniques
- Others.

Propagation and Related Topics

- Ionospheric propagation
- VHF and UHF propagation
- Land mobile propagation
- Urban propagation factors
- Tropospheric propagation
- Satellite communication propagation
- Millimetrewave propagation
- Remote sensing
- Radiometeorology
- Propagation aspects of frequency management
- System planning
- Others.

CONTRIBUTIONS

The Organizing Committee invites offers of contributions for consideration for the Programme. The synopsis should be about 500 words plus illustrations if required. It should be provided in sufficient detail to enable the Organizing Committee to assess the contribution and should be submitted to the ICAP-87 Secretariat by 5 September 1986.

The authors of selected synopses will be requested to provide a full typescript of not more than 4000 words (including illustrations) by 30 November 1986.
CONFERENCE PRIZE

The Organizing Committee will make two awards for the best papers at ICAP-87, one for antennas, the other for propagation. Both content and presentation of the papers will be judged and the award will be presented at the Opening Ceremony of the following event in the ICAP series.

For further information, contact:

ICAP 87 Secretariat
Conference Services
IEE
Savoy Place
London WC2R OBL
United Kingdom.

INTERNATIONAL WORKSHOP ON IONOSPHERIC INFORMATICS

The International Workshop on Ionospheric Informatics will be held in Novgorod, USSR, from 26 to 28 May 1987. It is sponsored by the USSR Academy of Sciences and URSI.

This Workshop is intended to be a good opportunity for ionospheric scientists from various countries to discuss together the results of research and practice in the modern computerized data analysis techniques, the reference ionosphere models and systems for ionospheric informatics. Discussion on the international ionospheric data exchange in a computer form via the World Data Centres (WDC) appears to be timely.

The proposed preliminary topics for discussion include:

(1) Development of architecture of the computer-driven systems specific for the ionospheric information processing and summarizing (hardware and software).

(2) Inter-relation of reference ionosphere models and flux of observational data in the ionospheric informatics.

(3) Ground-based and satellite-borne systems of digital ionosondes and other means for real-time monitoring the ionosphere.
(4) Development of Banks of ionospheric data.
(5) Use of the solar and geophysical controlling parameters in systems for the ionospheric data processing and reduction.

The Workshop will include invited and contributed presentations in English. Papers may be in oral or poster form.

The Programme Committee includes Prof. V.V. Migulin (Chairman), Prof. G.S. Ivanov-Kholodny, Dr. T.L. Gulyaeva, Prof. L. Bossy, Dr. C.M. Rush (to be confirmed), Dr. N.P. Danilkin, Dr. G.M. Emelianov, Dr. L.F. McNamara, Prof. K. Rawer, Dr. B.M. Reddy, Prof. K.B. Serafimov, Prof. V.V. Soroka, and Dr. A.V. Shirochkov.

The deadline for submission of abstracts of papers is 20 November 1986. They should be sent to:

Dr. T.L. Gulyaeva
IZMIRAN
USSR Academy of Sciences
142092 Troitsk
Moscow Region, USSR.
Telex: 412623 SCSTP SU

BOOKS PUBLISHED BY URSI PERSONALITIES

D.T. GJESSING (former Chairman, URSI Commission F)

Target adapted matched illumination radar, principles and applications

LIST OF URSI OFFICERS AND OFFICERS OF MEMBER COMMITTEES: AMENDMENTS

1. URSI Commissions

Commission A - Electromagnetic Metrology

Netherlands: Mr. R. Kaarls, Van Swijden Laboratorium, Postbus 654, 2600 AR Delft.

Nigeria: Dr. L.A. Buraimoh Igbo, University of Ife, Ile-Ife.

Commission B - Fields and Waves

Netherlands: Prof. Dr. A.T. de Hoop, Technische Hoogeschool, Afdeling Elektrotechniek, Postbus 5031, 2600 GA Delft.

Nigeria: Dr. L.B. Kolawole, Department of Physics, University of Ife, Ile-Ife.

Commission C - Signals and Systems

Netherlands: Prof. Dr. J.P.M. Schalkwijk, Technische Hoogeschool, Afdeling Elektrotechniek, Postbus 513, 5600 MB Eindhoven.

Nigeria: Dr. (Mrs) A.A. Nwabuzor, Department of Electrical Engineering, University of Ilorin, Ilorin.

Commission D - Electronic and Optical Devices and Applications

Netherlands: Dr. M.E.J. Jeuken, Technische Hoogeschool, Afdeling Elektrotechniek, Postbus 513, 5600 MB Eindhoven.

Nigeria: Prof. R.I. Salawu, Department of Electrical Engineering, University of Lagos, Akoka, Yaba, Lagos.
Commission E – Electromagnetic Noise and Interference

Netherlands: Mr. A. de Jong, Dr. Neher Laboratorium, St. Paulusstraat 5, 2264 XZ Leidschendam.

Nigeria: Dr. G.O. Ajayi, Department of Electronic and Electrical Engineering, University of Ife, Ile-Ife.

Commission F – Wave Propagation and Remote Sensing

Netherlands: Dr. L.P. Ligthart, Technische Hoogeschool, Afdeling Elektrotechniek, Postbus 5031, 2600 GA Delft.

Nigeria: Prof. I.E. Owolabi, Department of Electrical Engineering, University of Ilorin, Ilorin.

Commission G – Ionospheric Radio and Propagation

Netherlands: Mr. H. Kelder, KNMI, Postbus 201, 3730 AE De Bilt.

Nigeria: Prof. J.O. Oyinloye, University of Ilorin, Ilorin.

Commission H – Waves in Plasmas


Nigeria: Dr. J. Akinrimisi, Department of Physics, University of Lagos, Yaba, Lagos.

Commission J – Radio Astronomy

Netherlands: Mr. H.C. Kahlmann, Radiosterrewacht Westerbork, Schattenberg 1, 9433 TA Zwiggelte.

Nigeria: Prof. S.E. Okoye, Department of Physics and Astronomy, University of Nigeria, Nsuka.
2. CHANGE OF ADDRESS

PEEK, Dr. J.B.H., Natuurkundig Laboratorium Philips, Postbus 80.000, 5600 JA Eindhoven, Netherlands.

VANIER, Dr. J., Director, Basic Standards Laboratory, Division of Physics, National Research Council of Canada, Montreal Road Laboratories, Bldg. M-36, Ottawa, Ontario K1A OR6, Canada.