

U.R.S.I.

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HERBERT DAENE

1906 - 1975

With deep regret we announce the death of Professor Dr. Herbert Daene, formerly Official Member for URSI Commission V in the German Democratic Republic, who died in December 1975.

Professor Daene, born in 1906 at Berlin, received the Dr. phil. degree at the University of Berlin in 1929. After many years work in laboratories of the electrical and electronic industries, he joined the Potsdam Astrophysical Observatory in 1951, being among the first to recognize the broad scientific aspects of radio astronomy as a tool for exploring the Sun's atmosphere. With extreme energy and perseverance he pursued the construction of the Observatory of Solar Radio Astronomy at Potsdam-Tremsdorf, now attached to the Central Institute of Solar-Terrestrial Physics of the Academy of Sciences of the German Democratic Republic. An important part of Prof. Daene's activity was devoted to the extension of the observational programme over a wide range of frequencies, including measurements of polarization, and to the participation of the Observatory in the URSI international programme for the absolute calibration of solar flux densities. In 1971, he received the title of Professor. After his retirement, although already suffering from a serious illness, he kept up a continuing active interest in the further development of his Observatory, which will continue his life's work.

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XIXe ASSEMBLEE GENERALE DE L'URSI

Helsinki, Finlande; juillet-août 1978

A l'invitation de son Comité Membre en Finlande, l'Union Radio-Scientifique Internationale tiendra sa XIXe Assemblée Générale à l'Université de Technologie d'Helsinki, à Otaniemi. Un aperçu du programme est donné ci-dessous.

1978

28-30 juillet Séances (fermées) du Conseil, du Bureau et des Présidents des Commissions de l'URSI.

30 juillet (lundi)	Séance d'ouverture (matinée) Séances administratives des Commissions (après-midi).
1 - 4 août (mardi-vendredi)	Séances scientifiques parallèles organisées par les 9 Commissions de l'URSI (toute la journée).
5 août (samedi)	Séances scientifiques de quelques Commissions (matinée).
6 août (dimanche)	Libre.
7 août (lundi)	Séances scientifiques et dernières séances administratives des Commissions (toute la journée) Séance du Conseil, 17h00.
8 août (mardi)	Dernières séances scientifiques (matinée) Séance du Conseil (matinée) Séance de clôture (après-midi).

Les séances d'ouverture et de clôture, ainsi que toutes les séances scientifiques dans la période du 31 juillet au 8 août seront ouvertes à tous les intéressés. La participation n'est plus limitée, comme auparavant, aux seules délégations officielles des Comités Membres de l'Union.

Le droit d'inscription à l'Assemblée générale a été provisoirement fixé à 40 dollars pour les participants, et à 20 dollars pour les personnes qui les accompagnent.

Les séances scientifiques seront organisées soit par une, soit par deux ou plusieurs Commissions, selon la nature des sujets. Ces séances seront, pour la plupart, d'un des deux types suivants:

- des colloques où seront présentées des communications acceptées par un Comité du programme,
- des séances ayant pour but de faire le point des avances réalisées dans un domaine donné et de déterminer les tendances futures de la recherche; la plupart des exposés seront faits par des conférenciers invités par les Présidents des Commissions.

Les Commissions de l'URSI couvrent les branches suivantes de la radioélectricité scientifique:

- Commission A: Métrologie électromagnétique, y compris les étalons radioélectriques et les interactions entre les radiations électromagnétiques et les systèmes biologiques.
- Commission B: Théorie et expériences électromagnétiques, y compris les antennes et les guides d'ondes.
- Commission C: Systèmes de communication, théorie des systèmes, y compris les circuits; théorie de l'information et traitement du signal, y compris les problèmes de fluctuation statistique.
- Commission D: Electronique physique et dispositifs.
- Commission E: Environnement du point de vue des brouillages électromagnétiques.
- Commission F: Phénomènes ondulatoires dans les milieux non-ionisés, y compris la radio-météorologie, la radio-océanographie et la télédétection des milieux non ionisés.
- Commission G: Propagation des ondes radioélectriques dans l'ionosphère, y compris les communications ionosphériques et la télédétection des milieux ionisés.
- Commission H: Ondes dans les plasmas.
- Commission J: Radioastronomie, y compris la télédétection des corps célestes.

Des listes détaillées des sujets qui figureront au programme des différentes séances sont en cours de préparation.

La Première Annonce concernant le programme de l'Assemblée générale et l'organisation locale à Helsinki sera diffusée par le Comité finlandais de l'URSI d'ici quelques mois. Chaque Comité Membre de l'Union en recevra un certain nombre d'exemplaires pour diffusion parmi ses membres et autres personnes intéressées. Pour les personnes n'ayant pas un contact direct avec le Comité Membre de l'URSI dans leur pays, ou bien les personnes de pays où il n'existe pas encore de Comité Membre, la Première Annonce de la XIXe Assemblée générale de l'URSI pourra

être obtenue sur demande, en s'adressant au :

Prof. M. Tiuri
Président du Comité finlandais de l'URSI
Université de Technologie d'Helsinki
Département E.E.
Otakaari 5 A
SF - 02150 ESPOO 5, Finlande,

ou au

Secrétariat de l'URSI
Rue de Nieuwenhove 81
B-1180 Bruxelles, Belgique.

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XIX GENERAL ASSEMBLY OF URSI

Helsinki, Finland: July - August 1978

The XIX General Assembly of URSI will be held, at the invitation of the URSI Committee in Finland, at the Helsinki University of Technology, at Otaniemi. The outline timetable is as follows:

1978

28 July - 30 July	Meetings (closed) of the URSI Council, the Board of Officers and the Chairmen of Commissions.
31 July (Monday)	Opening Meeting (morning) Business Meetings of Commissions (afternoon).
1 - 4 August (Tuesday-Friday)	Parallel Scientific Sessions organised by the 9 Commissions of URSI (all day).
5 August (Saturday)	Scientific Sessions organised by a few Commissions (morning).
6 August (Sunday)	Free
7 August (Monday)	Scientific Sessions and final Business Meetings of Commissions (all day) URSI Council, 17h00.
8 August (Tuesday)	Last Scientific Sessions (morning) URSI Council, if necessary (morning) Closing Meeting (afternoon).

The Opening and Closing Meetings, and all the Scientific Sessions from 31 July to 8 August, will be open to anyone who wishes to attend. Participation in these meetings is no longer restricted to the official delegations of the Member Committees of the Union.

The Registration Fee (subject to confirmation) for the Assembly is US\$40 for participants, and US\$20 for ladies or other persons accompanying participants.

Each of the Scientific Commissions will be responsible for organising a series of scientific sessions, some of them jointly with one or more of the other Commissions. These sessions will be mainly of two types:

1. Small-scale symposia, including contributed papers selected by a Programme Committee,
2. Sessions designed to assess recent progress in a given field and to consider the direction of future research. The speakers at such sessions will normally be invited by the Chairmen of the respective Commissions.

The branches of radio science covered by the URSI Commissions are as follows:

Commission A: Electromagnetic metrology, including radio standards and interactions between electromagnetic radiation and biological systems.

Commission B: Electromagnetic theory and practice, including antennae and waveguides.

Commission C: Communications systems and system theory, including circuits; information theory and signal processing, including statistical fluctuation problems.

Commission D: Physical electronics and devices.

Commission E: The electromagnetic interference environment.

Commission F: Wave phenomena in non-ionized media, including radio-meteorology, radio-oceanography and the remote sensing of non-ionized media.

Commission G: Propagation of radio waves in the ionosphere, including ionospheric communications and the remote sensing of ionized media.

Commission H: Waves in plasmas.

Commission J: Radioastronomy, including the remote sensing of celestial objects.

More detailed lists of the topics to be discussed in each of the Commissions are at present being prepared.

The First Announcement concerning the Assembly, and local hotel and other arrangements in Helsinki, will be circulated by the URSI Committee in Finland within the next few months. Each Member Committee of URSI will receive a supply of copies of the Announcement for distribution among their members and interested persons. For persons who have no direct contacts with the URSI Member Committee in their countries, and persons in countries where there is no Member Committee at present, the First Announcement of the XIX General Assembly of URSI will be available on request from:

Professor M. Tiuri,
President, Finnish URSI Committee,
Helsinki University of Technology,
E.E. Department,
Otakaari 5 A,
SF - 02150 ESPOO 5, Finland,

or

URSI Secretariat,
Rue de Nieuwenhove 81,
B - 1160 Brussels, Belgium.

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WHAT IS A GENERAL ASSEMBLY?

What is a General Assembly?...In the ordinarily accepted sense of the term, a General Assembly is the occasion on which the members of an organisation, or their accredited representatives, are convened in order to discuss the recent and current activities of the organisation, and to make decisions regarding its programme and objectives for the period ending with the next Assembly.

What is a General Assembly of URSI?... Anyone who has participated in one will know that, during a period of about 10 days, the programme of an URSI Assembly includes meetings of the URSI Council (in which the Member Committees are represented), the Board of Officers, the Officers of the Scientific Commissions, and the Official Members of these Commissions. In addition, there are, at

present, nine series of scientific sessions, each organised almost independently by one of the Commissions, which vary widely in character: sessions at which survey papers are presented by a few experienced invited speakers, small-scale symposia at which short papers are presented by a relatively large number of speakers who have offered to make contributions, small informal working groups, etc.

However, this mere list of the items in the programme can not be regarded as a satisfactory answer; it seems more appropriate to reword the question and to ask: What is the purpose of an URSI General Assembly? It is much more difficult to provide an acceptable answer to the question in this form, because experience tends to show that opinions relating to the correct answer vary with time, and also because many people hold differing personal opinions.

Let us admit, first of all, that the primary objective of the Assembly is to permit the representatives of the 36 URSI Member Committees (the URSI Council) to assess the activities of the Union during the preceding three years, and to make decisions and recommendations relating to the next three-year period. This statutory requirement could be satisfied by a meeting of the Council lasting only two, or perhaps three, days. We must, therefore, pose our question with greater precision and ask: What is the purpose of the scientific sessions that are organised in conjunction with the statutory, and largely administrative, meetings of the URSI Council?

Whatever location is chosen for a meeting of the URSI Council, it is obvious that some of the members must necessarily travel very long distances and it would be difficult to justify the expense incurred if a General Assembly were strictly limited to a two-day meeting of the Council. On the other hand there are valid reasons for holding the administrative and the scientific meetings, which together make up a typical URSI Assembly, at the same time. These reasons were given in an earlier article with the same title (URSI Inf. Bull. No 170, March 1969):

"Decisions of an administrative or organisational nature ultimately react on research. Hence it is desirable that those who make these decisions should do so in an appropriate scientific atmosphere, even if they themselves are not directly engaged in research. At the same time, it is desirable that active scientists should

"take some interest in administrative and organisational questions so as to ensure that, when decisions of an administrative character are made, they take into account informed scientific opinion".

Although this statement was made eight years ago, it still appears to provide a reasonable justification for the combination of both administrative and scientific elements in the programme of an URSI General Assembly. On the other hand, it would probably be impossible at present to make any generally acceptable statement describing the optimum type of scientific programme for an Assembly.

Until about 1969, the consensus of opinion was that the scientific sessions at an Assembly ought to provide an occasion for the examination of progress over the broad field of radio science during the preceding three-year period, and that they should aim at the identification of factors likely to influence the future direction of research in each Commission. It was considered that symposia were too specialised and too detailed in their approach to be of material help in achieving these objectives, and that it was necessary to make a clear distinction between an URSI Assembly and a symposium, each of which served a different purpose.

It was considered also that the most effective type of scientific session for an Assembly was one made up of carefully prepared reviews, selective and critical in character, in each of which the author attempted to assess and to place in perspective the current state of research in a given field. Such reviews were not intended merely to be superficial recitals of historical facts, and those which concentrated too much on the achievements of the author himself, or of his laboratory, were deprecated.

It is important to recall that, until 1975, attendance at URSI Assemblies was restricted, with a few exceptions, to the delegations which represented the Member Committees of the Union. In consequence, most of the participants tended to come from the more experienced scientists in the middle and upper age groups. After 1969, there was already a growing feeling that it would be preferable to lift the restrictions on attendance at the Assembly and to permit anyone to participate irrespective of his age and experience, and even if he had no associations with any of the Member Committees of the Union.

It was suggested also that the younger research

workers ought to be given the opportunity of participating actively in the Assembly programme through the presentation of papers describing their own recent work. At the 1975 Assembly, several symposia, consisting mainly of contributed papers, were organised in place of the more usual review sessions and the experiment will be repeated in some Commissions in 1978. However, it would be incorrect to conclude that, because of a swing of the pendulum, the "review concept" of the Assembly has now been superseded by the "symposium concept". Even if it is admitted that there may be some justification for the organisation of open symposia, designed to interest a broader spectrum of the scientific community in the activities of the URSI Commissions, it does not necessarily follow that such symposia can be successfully grafted on the normal programmes of scientific sessions organised by the Commissions in the context of URSI Assemblies.

If all the Commissions decided to organise open symposia in connection with the Assemblies, the total number of participants would rise to levels which have led URSI to criticise the Assemblies of other Unions, where the numbers attending are three or four times greater than those of URSI Assemblies. In so far as the Assembly is concerned, there is room for discussion about the desirability, or otherwise, of giving up a large part of the time that is available to a Commission for making considered judgements, and filling it with an open symposium designed to cover, in detail, some or all of the scientific topics with which the Commission is concerned.

In this connection, it will be interesting to follow up the experiment which Commission F (Wave phenomena in non-ionized media) is conducting during the period 1975-1978. This Commission decided, in 1975, that it would organise a full-scale open symposium in 1977, and that the objective should be to cover the principal topics in the Commission's terms of reference in considerable detail. The Organising Committee wisely decided to allow at least 25 minutes for the presentation of each paper, including time for discussion. In the event, the Symposium attracted over 200 participants, and approximately 140 papers were presented, a great many of them by the younger generation of research workers. The proportion of the total number of participants actually present at the sessions was consistently high except, obviously, when two sessions were held in parallel. Moreover, a notable feature of the sessions was the very lively discussion that followed

most of the papers, and which often had to be terminated by the Chairmen so as not to infringe on the time allotted to the following speakers.

A report on the Symposium, by the Chairman of Commission F and those who organised it, is not yet available. However, it seems safe to conclude that the event was very successful: first, in attracting and holding the interest of a representative international cross-section of the scientists concerned with the activities of Commission F; and second, in providing an excellent opportunity for looking in considerable detail at current research over practically the whole field of the Commission.

It would have been impossible to accommodate this Symposium within the timetable of an URSI Assembly, except at the cost of considerable curtailment of programme of the Symposium and a consequent reduction in its value and, also, serious disruption of the normal activities of the Commission at an Assembly. Such a Symposium can be successfully held probably only as a specially organised event between two Assemblies.

No attempt was made at this Symposium to draw final conclusions from the many contributions made there, or to look at the broader perspective of research in the field of the Commission. It is intended to do so over the coming months, and also during the meetings of the Commission to be held during the Assembly in 1978. This task will be greatly facilitated by the provisional Proceedings, containing 4-5 page extended summaries of the papers presented, copies of which were available to everyone at the Symposium. The information contained in this volume is sufficiently detailed to represent a valuable aid in the preparation of a preliminary considered assessment of the future directions in which research should be directed after 1978.

Many of the younger participants at this Symposium will probably not be present at the Commission F sessions in 1978, but this ought not to be regarded as a ground for criticism; the Symposium permitted them to make contact with URSI and to make useful personal contributions on a scale that would not have been possible at an Assembly. These contributions will, however, be of great help at the Commission F sessions in 1978 when, probably, a somewhat older and more experienced cross-section of scientists concerned with the Commission will make decisions and recommendations relating to the future.

Conclusion

During the past decade, the place occupied by the General Assembly within the overall programme of activities of URSI has received attention on many occasions. No final conclusions have been reached, since the discussions often tend to be somewhat superficial, or to become obscured by questions of secondary importance. The aim of the present article has not been to provide definitive answers to the questions that have been posed on this subject. The objective has been rather to pose questions which seem likely to provoke a more penetrating examination of the real points at issue.

It is not satisfactory to treat the scientific programme of the General Assembly, and the activities of the Commissions between Assemblies, as two separate and unrelated events. They should be regarded as complementary to each other and as part of a coherent three-year programme of events. Although some of the recommendations of the former Board of Officers concerning this and other related questions were adopted at the Assembly in 1975, the present Board has recently suggested that some fresh consideration of these recommendations may be desirable.

The views of the URSI Member Committees, and also of individual scientists, on these matters would be most welcome. The time available between now and the Assembly in 1978 will provide opportunities for further reflection and for an appraisal of the needs of URSI during the period 1979-1981.

1 June 1977

C.M. MINNIS

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THE URSI AWARDS 1978

In February 1977, the Member Committees of URSI and the Chairmen and Vice-Chairmen of the URSI Commissions were invited to propose candidates for the three URSI Awards: the Balzh. van der Pol and the J.H. Dellinger Gold Medals, and the Appleton Prize. The last date for the receipt of these proposals is 30 September 1977.

The Awards will be made in accordance with the Rules (reproduced below) which supersede those published in URSI Inf. Bull. No 175 (June 1970).

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 authorised 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 the 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 authorised, 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 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 £100 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 Article 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 authorised 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.

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URSI FINANCES

In accordance with the recommendation of the URSI Finance Committee in Lima in 1975, the audited accounts of income and expenditure for the year 1976 are published in this issue of the Bulletin (see URSI Inf. Bull.No 198 for the accounts for the year 1975).

Expenditure on administration in 1976 was about 4% greater than the amount envisaged by the Finance Committee, but this can be accounted for by several non-recurring items, including the transfer of the Secretariat to its new location and losses on exchange.

During the year, the value of the dollar (relative to the Belgian franc) fell by 5.1%. Its value at the end of 1976 was 2.6% less than the value used in Lima for the preparation of the budget for the years 1976-78.

It is concluded that the financial situation of URSI does not differ significantly from that envisaged by the Finance Committee in Lima and that there is no reason to consider any modification in the unit contributions recommended by the Committee, namely:

1977	\$350
1978	\$400.

W.E. Gordon (Treasurer)

C.M. Minnis (Secretary General)

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INTERNATIONAL UNION OF RADIO SCIENCE (URSI)

INCOME AND EXPENDITURE ACCOUNT
FOR THE YEAR ENDED 31st DECEMBER, 1976.

<u>INCOME</u>	<u>U.S.\$</u>	<u>U.S.\$</u>	<u>U.S.\$</u>
Subscriptions from Member Committees		62,855	
Special Contribution		<u>800</u>	63,655
Interest - Gross - in Belgian Francs	6,766		
<u>Less: Tax</u>	<u>1,304</u>		
	5,462		
Interest - in U.S. Dollars	<u>138</u>	5,600	
<u>Less: Interest attributable to:</u>			
Pension Fund - Secretary General	853		
Balsh, van der Pol Gold Medal Fund	<u>300</u>	<u>1,153</u>	4,447
Sales of Publications:			
URSI Bulletin		390	
Review of Radio Science		<u>181</u>	571
Allocation from UNESCO Subvention to ICSU			<u>8,000</u>
			76,673
<u>EXPENDITURE</u> (for further details see schedule attached)			
Meetings		5,621	
Publications		11,045	
Scientific Activities:			
Symposia, etc.	451		
Grants	<u>1,550</u>	<u>2,001</u>	
TOTAL EXPENDITURE ON SCIENTIFIC ACTIVITIES			18,667
Administration:			
Salaries and Pensions (including Social Security)	39,463		
Office and General Expenses	<u>8,210</u>		
TOTAL EXPENDITURE ON ADMINISTRATION			47,673
I.C.S.U.			
Dues for 1976		<u>1,571</u>	
TOTAL EXPENDITURE FOR THE YEAR			<u>(67,911)</u>
EXCESS OF INCOME OVER EXPENDITURE FOR THE YEAR			8,762
BALANCE IN HAND AT 1st JANUARY, 1976.			
B.F. 2,083,531 @ 37	56,312		
B.F. 2,083,531 @ 39	53,424		
Profit on Devaluation	<u>\$ 2,888</u>		
Balance as per Accounts at 31st December, 1975.		\$ 53,424	
<u>Add: Profit on Devaluation - as above</u>		<u>2,888</u>	
Revised Balance in Hand at 1st January, 1976.			56,312
BALANCE IN HAND AT 31st DECEMBER, 1976.			<u>\$ 65,074</u>

INTERNATIONAL UNION OF RADIO SCIENCE (URSI)

INCOME AND EXPENDITURE ACCOUNT

FOR THE YEAR ENDED 31st DECEMBER, 1976. (CONT.)

SUPPLEMENTARY SCHEDULE SHOWING FURTHER

DETAILS OF CERTAIN ITEMS OF EXPENDITURE

	<u>U.S.\$</u>	<u>U.S.\$</u>	<u>U.S.\$</u>
<u>Meetings</u>			
Board of Officers		4,533	
Miscellaneous Travel		389	
Representation of URSI		<u>699</u>	5,621
<u>Publications</u>			
Proceedings of General Assembly, 1975.		4,386	
URSI Bulletins Nos. 196-200		5,064	
INAG Bulletins (Grant)		500	
List of Standards Laboratories		164	
URSI Brochure		<u>931</u>	11,045
<u>Scientific Activities</u>			
<u>Symposia, etc.</u>			
Calls for papers	51		
Radio Oceanography - Hamburg	<u>400</u>	451	
<u>Grants</u>			
IUCAF	1,250		
IUCRM	<u>300</u>	<u>1,550</u>	<u>2,001</u>
TOTAL EXPENDITURE ON SCIENTIFIC ACTIVITIES			<u>\$ 18,667</u>
<u>Administration</u>			
<u>Salaries and Pensions</u>			
Salaries and Social Security		37,193	
Supplementary Pension Provision		<u>2,270</u>	39,463
<u>Office and General Expenses</u>			
Office Rent, Heat, Repairs, etc.			
Place Emile Danco	727		
Rue de Nieuwenhove	<u>2,088</u>	2,815	
Stationery and Office Supplies		371	
Insurance		1,107	
Telephone		462	
Postage		708	
Bank Charges		242	
Entertainment		189	
Audit and Accountancy		1,351	
Transfer of Office		444	
Miscellaneous		53	
Loss on Exchange (Net)		<u>468</u>	8,210
TOTAL EXPENDITURE ON ADMINISTRATION			<u>\$ 47,673</u>

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INTERNATIONAL UNION OF RADIO SCIENCE (URSI)

<u>BALANCE SHEET</u>	<u>31st DECEMBER, 1976.</u>		
<u>ASSETS</u>	<u>U.S.\$</u>	<u>U.S.\$</u>	<u>U.S.\$</u>
<u>Bank Balances:</u>			
On Deposit Account			
In Belgian Francs	16,216		
In American Dollars	<u>15,000</u>	31,216	
On Current Account			
In Belgian Francs	8,641		
In American Dollars	<u>4,824</u>	<u>13,465</u>	44,681
Belgian Government Securities			64,069
Petty Cash and Stamps			141
Sundry Debtors			<u>1,629</u>
			<u>110,520</u>
<u>Less: Creditors:</u>			
IUCAF		7,910	
IUCRM		415	
IUWDS		2,025	
Sundry		<u>17,522</u>	<u>(27,872)</u>
			82,648
<u>Special Funds:</u>			
Balth. van der Pol Gold Medal Fund		4,441	
Pension Fund - Secretary General		<u>13,133</u>	<u>(17,574)</u>
 NET TOTAL OF URSI FUNDS			 <u>\$ 65,074</u>

Represented By:

As at 1st January, 1976.	U.S.\$ @ \$1	U.S.\$ @ \$1	<u>Reserve Fund:</u>		As at 1st January, 1977.	U.S.\$	U.S.\$
= B.F. 37	= B.F. 37						
38,919			Closure of Secretariat		43,919		
			Funds for Scientific Activities				
	4,730		XVIII General Assembly		-		
	-		XIX General Assembly		8,700		
17,027	<u>12,297</u>		Meetings and Symposia in 1977		<u>12,162</u>		20,862
366			Unallocated				<u>293</u>
<u>\$ 56,312</u>			Total URSI Balances				<u>\$ 65,074</u>

Note:

In certain cases where Receipts or Payments represent amounts originally quoted in U.S. Dollars, these Receipts or Payments have been shown in the amounts so quoted. In other cases the figures shown on the above Balance Sheet and attached Income and Expenditure Account, represent the amounts actually received or paid in Belgian Francs or the equivalent thereof at the Official United Nations rate of exchange ruling at the date of the Receipt or Payment concerned and all such amounts have, for the purposes of these Accounts, been converted into U.S. Dollars at the Official United Nations rate of exchange ruling at 31st December, 1976.

REPORT OF THE AUDITORS TO THE MEMBERS OF THE
INTERNATIONAL UNION OF RADIO SCIENCE (URSI)

In our opinion the above Balance Sheet and attached Income and Expenditure Account give a true and fair view of the state of the affairs of the International Union of Radio Science at 31st December, 1976, and of the excess of Income over Expenditure for the year ended on that date.

Jimson & Co.

22-24, Buckingham Palace Road,
LONDON, SW1W 0QP.
29th April, 1977.

GIMSON & CO.
Chartered Accountants.

EQUATORIAL INCOHERENT SCATTER MEASUREMENTS

As from 1 April 1977, Dr. Pablo Lagos Enriquez has been appointed Director of the Jicamarca Radio Observatory of the Instituto Geofísico del Perú. He will be assisted by Dr. Hernan Montes Ugarte.

The results of past experiments on equatorial incoherent scatter at Jicamarca are already well known and similar work will be continued in the future. The Director General of the Instituto Geofísico would be glad to hear from any other research organisations that may be interested in undertaking cooperative research programmes in this field.

Enquiries about such programmes should be addressed to:

Dr. A.A. Giesecke,
Director General,
Instituto Geofísico del Perú,
Apartado 3747,
Lima 100, Perú.

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SYMPOSIA, ETC. ALREADY ANNOUNCED
(see URSI Inf.Bull.No 201)

1. 5th Summer Symposium on Circuit Theory

Near Prague, 5 - 9 September 1977.

Topics: Discrete signal processing, active filter theory and practice, computer-aided circuit design, phase locked loops and frequency-synthesis theory.

Further information from:

Organising Committee SSCT 77,
Institute of Radioengineering and Electronics,
Czechoslovak Academy of Sciences,
Lumumbova 1,
180-88 Praha 8, Czechoslovakia.

2. European Microwave Conference

Copenhagen, 5-8 September 1977.

Topics: Antennas, sub-nanosecond and gigabit electronics, tubes and solid-state devices,

navigational aids, communication systems, etc.

Further information from:

Prof. Preben Gudmandsen,
Electromagnetics Institute,
348 Technical University of Denmark,
DK - 2800 Lyngby, Denmark.

3. Biological Effects of Electromagnetic Waves

Airlie (near Washington D.C.), 30 October - 4 November 1977.

Topics: Sensory and behavioral effects, mutagenic and developmental effects, dosimetry, instrumentation, hyperthermia, standards, etc.

The objective is to bring together scientists from both the physical and the biological disciplines.

Further information from:

Professor A.W. Guy, Technical Program Chairman,
Bioelectromagnetic Research Laboratory,
Department of Rehabilitation Medicine,
University of Washington,
Seattle, Washington 98195, USA.

Measurements in Telecommunications

Lannion (NW France), 4-6 October 1977.

Topics: Basic measurement techniques, characteristics of transmission systems, characterization of signals within transmission systems, audio and video signals, measurements for monitoring performance, etc.

The main objective is to bring together both measurement experts and telecommunication specialists with the intention of generating a synthetic view of the problem of measurement.

Further information from:

M. J. Le Mézec,
Colloque URSI - Mesures,
CNET,
F - 22301 Lannion, France.

5. Scientific Basis of Telecommunications and Remote Sensing

Boulder, USA, 9 - 13 January 1978.

The theme will be the common basis of telecommunications and of remote sensing in so far as the influence of the environment is concerned.

Further information from:

Professor S.W. Maley,
Department of Electrical Engineering,
University of Colorado,
Boulder, Colorado 80309, USA.

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INTERNATIONAL REFERENCE IONOSPHERE 1977

by

K. Rawer, S. Ramakrishnan and D. Bilitza
Institut für Physikalische Weltraumforschung
Freiburg, FR Germany

This 60-page volume will be published by URSI in September 1977 and results from the work of a joint URSI-COSPAR Steering Committee under the Chairmanship of Professor K. Rawer.

The volume will contain mathematical expressions permitting the compilation of profiles of various ionospheric characteristics and tables of numerical parameters for insertion in these expressions relating to selected geographical locations, seasons and times of day, and solar activity. Computer programmes in ALGOL and FORTRAN are also included.

A profile can be obtained a) as a set of independent functions each referring to a particular range of heights and based strictly on observational data; b) as a single analytical function fitted for each individual profile, covering the whole range of heights.

Orders for International Reference Ionosphere 1977 should be sent to:

URSI Secretariat,
Rue de Nieuwenhove 81,
B - 1180 Brussels, Belgium.

Price: US\$3.50 (130,- Belgian francs), including surface postage. There is a supplementary charge of US\$0.50 (20,- Belgian francs) for dispatch by air mail.

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PRECISE ELECTRICAL MEASUREMENT: EUROMEAS 77

A Conference on Precise Electrical Measurement is being organised by the Institution of Electrical Engineers, London. It will be held from 5 - 9 September 1977 at the University of Sussex, England. Its aim is to meet the need for a European forum for the presentation and discussion of progress and problems in the field of accurate electrical measurements: radio-frequency, microwave, millimetre and sub-millimetre measurements; time and frequency; time domain and pulse measurements; electrical metrology services, etc.

The working language will be English.

Registration forms can be obtained from:

Institution of Electrical Engineers,
Savoy Place,
London WC2R 0BL,
England.

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ELECTROMAGNETIC COMPATIBILITY - WROCLAW 1978

The 4th Wroclaw EMC Symposium will be held during the period 13 to 15 September 1978. A brief report on the previous Symposium appeared in URSI Inf. Bull. No 201.

Requests for announcements regarding the 1978 event should be addressed to:

Mr. W. Morón,
Institute of Telecommunications,
ul. Kopernika 11,
51-622 Wroclaw, Poland.

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INFORMATION THEORY AND SYSTEM THEORY
IN DIGITAL COMMUNICATIONS

An International Conference on the above subject will be held in Berlin from 18 to 20 September 1978. It is being organised by Section 1 of the Nachrichtentechnische Gesellschaft of VDE in cooperation with the URSI Committee in the Federal Republic of Germany, the German Section of IEEE, and the Elektrotechnische Verein, Berlin.

The topics of special interest will be:

- Source models and source encoding
- Channel models and channel encoding
- Digital transmission
- Synchronization and stability of transmission networks
- Optimization and simulation of transmission networks.

Contributions in English or German are invited and the time available for presentation will be 25 minutes. Summaries (not exceeding two A4 pages 18. cm x 29,2 cm) must be received by the Conference Chairman not later than 30 November 1977. Contributors will be notified of the selection of their papers by 15 January 1978.

The full text of papers accepted must be received, in a form ready for printing, not later than 31 May 1978.

Summaries and manuscripts should be sent to:

Conference Chairman

Dr. H. Ohnsorge,
c/o Heinrich-Hertz-Institut,
Einsteinufer 37,
D - 1000 Berlin 10.

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URSI MEMBER COMMITTEES AND COMMISSIONS

URSI Inf. Bull. No 200 (December 1976) included the names and addresses of the Presidents, Secretaries and Official Members of URSI Committees according to information received up to 15 November 1976. The names and addresses given below represent later additions or modifications to this earlier list.

A full list will be published in Bulletin No 204 (December 1977) and any additions or modifications should be notified to the URSI Secretariat before 15 November 1977.

URSI Member Committees

AUSTRALIA:

President: Dr. B.J. Robinson, CSIRO, Division of Radio-physics, P.O. Box 76, Epping N.S.W. 2121.

GERMAN D.R.:

President: Prof. (em) Dr.-Ing. E.h. H. Frühauf, Technische Universität, Helmholtzstrasse 18, DDR-8027 Dresden.

Secretary: Dr. V. Kempe, Institut für Elektronik, Rudower Chaussee 6, DDR-1199 Berlin-Adlershof.

URSI Commissions

Commission A - Electromagnetic Metrology

Official Members:

German D.R.: Dr. K. Möbius, Amt für Standardisierung, Messwesen und Warenprüfung, Bereich Messwesen, Wallstr.16, DDR-102 Berlin.

Netherlands: Mr. R. Kaarls, Van Swinden Laboratorium, Alphons Diepenbroekhof 2, 's Gravenhage.

Commission B - Fields and Waves

Official Members:

German D.R.: Prof. Dr.-Ing. M. Kummer, Technische Hochschule Ilmenau, DDR-63 Ilmenau.

United Kingdom: Prof. A.L. Cullen, Department of Electrical Engineering, University College London, Torrington Place, London WC1E 7JE.

Commission C - Signals and Systems

Official Members:

German D.R.: Prof. Dr.-Ing. F. Wiegmann, Technische Universität Dresden, Sektion Informationstechnik, Mommsenstr. 13, DDR-8027 Dresden.

Commission D - Physical Electronics

Official Members:

German D.R.: Prof. Dr. J. Auth, Humboldt-Universität zu Berlin, Sektion Physik, Hessische Str.2, DDR-104 Berlin.

United Kingdom: Prof. E.A. Ash, Electrical Engineering Department, University College London, Torrington Place, London WC1E 7JE.

Commission E - Interference Environment

Official Members:

German D.R.: Dr. B. Schäning, Observatorium für Ionosphärenforschung, Mitschurinstr. 4/6, DDR-2565 Kühlungsborn.

Netherlands: Mr. A. de Jong, Dr. Neher Laboratorium, St Paulusstraat 4, Leidschendam.

Commission F - Wave Phenomena in Non-ionized Media

Official Members:

German D.R.: Dr. U. Kühn, Rundfunk- und Fernsehtechnisches Zentralamt, DDR-1601 Kolberg Krs. Königs-Wusterhausen.

Commission G - Ionospheric Radio and Propagation

Official Members:

German D.R.: Prof. Dr. K. Sprenger, Observatorium für Ionosphärenforschung, Mitschurinstr. 4/6, DDR-2565 Kühlungsborn.

Commission H - Waves in Plasmas

Official Members:

German D.R.: Dr. Chr.-U. Wagner, Zentralinstitut für solar-terrestrische Physik, Bereich Physik der Sonne und Magnetosphäre, Telegrafenberg, DDR-15 Potsdam.

Commission J - Radio Astronomy

Vice-Chairman: Prof. H. Tanaka, Tokyo Astronomical Observatory, University of Tokyo, Mitaka, Tokyo 181, Japan.

Official Members:

German D.R.: Dr. A. Krüger, Zentralinstitut für solar-terrestrische Physik, Rudower Chaussee 5, DDR-1199 Berlin-Adlershof.

