

International Scientific Radio Union

U. R. S. I.

INFORMATION BULLETIN

published with the financial help of the United Nations
Educational, Scientific and Cultural Organization (U.N.E.S.C.O.)

TABLE OF CONTENTS

| | Pages |
|---|-------|
| Xth. GENERAL ASSEMBLY : | |
| Publications | 3 |
| Sub-Commissions | 3 |
| Special Reports | 5 |
| NATIONAL COMMITTEES : | |
| Finland | 7 |
| Switzerland | 7 |
| COMMISSIONS : | |
| List of Official Members | 9 |
| Commission III | 17 |
| Communication from the Chairman | 17 |
| Sub-Commission IIIb | 17 |
| Finland | 17 |
| Commission IV | 18 |
| IONOSPHERIC STATIONS : | |
| New list | 19 |
| TIME SIGNALS : | |
| Bureau International de l'Heure | 30 |
| URSIGRAMS : | |
| European Ursigrams | 31 |
| Abbreviated codes of European Ursigrams (I)..... | 31 |
| French Ursigrams | 38 |
| INTERNATIONAL GEOPHYSICAL YEAR 1957-1958 : | |
| Note | 40 |
| List of National Committees (I) | 42 |
| Special Committees appointed by the International Unions | 45 |
| CALENDAR | 46 |

Published by the General Secretariat of U. R. S. I.
42, Rue des Minimes, BRUSSELS

Xth GENERAL ASSEMBLY

Publications

PROCEEDINGS

The Proceedings of the Xth. General Assembly will be published in eight fascicules ; the first will contain the administrative matters, the seven other fascicules will contain the work of each of the seven U.R.S.I. Commission.

Fascicule 1 was sent for distribution to National Committees, the others will follow as soon as they are printed.

Supplementary copies of Fascicule 1 are available at the price of 75 B. F.

STATUTES AND BY-LAWS

Copies of the new Statutes and By-laws were sent to National Committees, supplementary copies are available at the General Secretariat.

It should be noted that Statutes and By-laws are published in Fascicule 1 of Volume IX.

Sub-Commissions

SUB-COMMISSIONS APPOINTED OR CONFIRMED BY THE GENERAL ASSEMBLY

COMMISSION III

Sub-Commission IIIa — On Ionospheric Observations and Reduction of Data.

Mr. A. H. SHAPLEY, (*Chairman*),
with nominees from each National Committee.

Sub-Commission IIIb — On Wave Interaction.

Mr. E. PICAULT, (*Chairman*),
Prof. V. A. BAILEY, Dr. M. CUTOLO, Prof. L. G. H. HUXLEY,
Mr. J. A. RATCLIFFE.

Sub-Commission IIIc — On Study of Propagation Time of Radio Signals.

Prof. M. BOELLA, (*Chairman*),
Mr. E. L. HALL, P. LEJAY, Mr. J. C. W. SCOTT, Dr. R. L. SMITH-ROSE, Mr. J. J. VORMER, Dr. R. v. d. R. WOOLLEY.

Permanent Sub-Commission on Ursigrams.

Father P. LEJAY, (*Chairman*),
Mr. A. H. SHAPLEY, Dr. H. UYEDA.

COMMISSION IV

See Sub-Commission VIb.

COMMISSION V

Sub-Commission Va — On the World Chain of Solar Radio Observatories.

Mr. A. H. de VOOGT, (*Chairman*),
Mr. A. E. COVINGTON, Dr. A. K. DAS, Prof. H. ELLER, Mr. G. ERIKSEN, Dr. W. GORDON, Prof. Dr. Y. HAGIHARA, Prof. HATANAKA, Dr. M. LAFFINEUR, Dr. LINDQUIST, Mr. LITTLE, Prof. G. RIGHINI, Dr. M. RYLE, Prof. M. N. SAHA, Dr. SHEPLEY, Mr. S. F. SMERD, Dr. SMITH, Dr. J. L. STEINBERG, Prof. J. TUOMINEN.

Sub-Commission Vb — On Terminology and Units.

Dr. J. P. HAGEN, Mr. F. J. KERR, Mr. B. Y. MILLS and Dr. F. G. SMITH.

Sub-Commission Vc — On Basic Solar Activity Index.

Dr. M. LAFFINEUR, (*Chairman*),
Dr. R. N. BRACEWELL, Prof. S. CHAPMAN, Dr. J. H. PIDDINGTON.

COMMISSION VI

Sub-Commission VIa — On Information Theory.

Prof. Dr. B. VAN DER POL, (*Chairman*),
Prof. A. BLANC-LAPIERRE, Dr. D. GABOR, Lt. Col. LOCHARD,
Mr. J. LOEB, Dr. L. H. M. STUMPERS, Prof. Dr. J. VILLE,
Prof. Dr. WIESNER.

Sub-Commission VIb — (Jointly with Commission IV) —
On Parameters to describe Terrestrial Radio Noise.

Prof. B. D. H. TELLEGEN, (*Chairman*),

Prof. A. BLANC-LAPIERRE, Dr. H. BREMMER, Dr. TASNY-
TSCHIASSNY.

Sub-Commission VIc — *On Study of Fourier Transformers.*

Dr. R. C. SPENCER, (*Chairman*),

Prof. A. BLANC-LAPIERRE, Dr. H. BREMMER, Prof. G. A. WOONTON.

Sub-Commission VID — *On Circuit Theory and Antennas.*

Dr. L. C. VAN ATTA, (*Chairman*),

Members : Chairmen of National Commissions VI or their delegates.

Special Reports

SUBJECTS APPROVED AT THE GENERAL ASSEMBLY AND DRAFTING COMMITTEES

COMMISSION III

(a) *Ionospheric Storms.*

Dr. D. F. MARTYN, (*Chairman*),

Sir Edward APPLETON, Mr. PIGGOTT and Dr. UYEDA (or an alternative member to be proposed by the Japanese National Committee).

(b) *The Radio Investigation of Meteors* (to be drafted jointly with Commission V).

Dr. MCKINLEY, (*Chairman*),

Professors LOVELL and MANNING.

(c) *Ionospheric Wave Interaction.*

Professor E. V. BAILEY, (*Chairman*),

Dr. CUTOLO, Professor HUXLEY and Mr. RATCLIFFE.

Titles proposed for publications in the future.

(d) Ionospheric Phenomena during Solar Eclipses.

(e) Ionospheric Winds.

(f) Statistical Methods in the Analysis of Ionospheric Data.

COMMISSION V

(a) *Dynamics in Ionized Media*. Special Report n° 3. A draft was submitted at the General Assembly.

(b) *Interstellar Hydrogen*.

Dr. J. R. OORT, (*Chairman*),

Dr. E. M. PURCELL and Dr. J. L. PAWSEY.

(c) *Discrete Sources*.

Dr. J. G. BOLTON, (*Chairman*),

R. HANDBURY-BROWN and Dr. F. G. SMITH.

(d) *The Distribution of Radio Brightness on the Solar Disk*.

W. N. CHRISTIANSEN, (*Chairman*),

Dr. J. P. HAGEN, Dr. M. LAFFINEUR and Dr. F. G. SMITH.

NATIONAL COMMITTEES

Finland

The Finish Science Academy informed us of the constitution of a National Committee on Radio-Science and asked the adherence of this Committee to U.R.S.I.

MEMBERSHIP

- Eng. P. AHONEN, Laivanvarustajankatu 6, Helsinki.
Prof. Hj. BROTHNERUS, Polytechnical School, Abrahaminkatu 1-5, Helsinki.
Eng. U. BURMEISTER, Navigation Department, Vuorimiehenkatu 1, Helsinki.
Gen. L. EKBERG, Laivanvarustajankatu 6, Helsinki.
Eng. E. HEINO, P. T. T., Mannerheimintie 11, Helsinki.
Eng. H. NYSTEN, Helvar Oy, Pitäjänmäki.
Dr. J. POHJANPALO, Institute for Technical Research, Albertinkatu 40-42, Helsinki.
Dr. V. ROSSI, Central Meteorological Institute, Vuorimiehenkatu 24, Helsinki.
Eng. K. S. SAINIO, Broadcasting Cy, Fabianinkatu 15, Helsinki.
Prof. L. SIMONS, Physics Laboratory of the University, Siltavuorenpenger 20, Helsinki.
Prof. J. TUOMINEN, (*Vice-President*), Radio-Astronomical Station of the University, Siltavuorenpenger 20, Helsinki.
Prof. V. VÄISÄLÄ, Meteorological Institute of the University, Siltavuorenpenger 20, Helsinki.
Prof. V. YLÖSTALO, (*President*), Topeliuksenkatu 3a, Helsinki.
Eng. P. MATTILA, (*Secretary*), Institute for Technical Research, Albertinkatu 40-42, Helsinki.

Swiss National Committee

MEMBERSHIP

- Prof. Dr. J. LUGEON, (*Honorary President*), Directeur de la Station Centrale Suisse de Météorologie, Krähbühlstrasse 58, Zurich.
- Prof. Dr. F. TANK, (*President*), Institut de Hautes Fréquences de l'Ecole Polytechnique Fédérale, Sternwartstrasse, 7, Zurich.
- Prof. Dr. E. BALDINGER, Institut de Physique Appliquée de l'Université de Bâle, Klingelbergstrasse, 83, Bâle.
- Prof. E. BAUMANN, Institut de Physique Technique de l'Ecole Polytechnique Fédérale, Gloriastrasse, 35, Zurich.
- Dr. W. GERBER, Direction générale des P. T. T., Speichergasse, 6, Berne.
- W. KLEIN, Ing., Direction générale des P. T. T., Speichergasse, 6, Berne.
- Prof. Dr. H. KÖNIG, Directeur du Bureau Fédéral des Poids et Mesures, Wildstrasse, 3, Berne.
- Dr. F. LUDI, Privat-docent E.P.F., Susenbergstrasse, 96, Zurich.
- Prof. Dr. P. L. MERCANTON, 20, Avenue de l'Eglise Anglaise, Lausanne.
- Prof. Dr. R. MERCIER, Ecole Polytechnique de l'Université de et à Lausanne.
- Dr. A. A. RUSTERHOLZ, Ingénieur, Gladbachstrasse, 114, Zurich.
- Prof. Dr. R. SÄNGER, Secretary, Ecole Polytechnique Fédérale, Sternwartstrasse, 7, Zurich.
- Dr. N. SCHÄTTI, Section des Recherches Industrielles rattachée à l'Institut de Physique Technique de l'E.P.F., Gloriastrasse, 35, Zurich.
- Prof. Dr. M. WALDMEIER, Directeur de l'Observatoire Astronomique Fédérale, Schmelzbergstrasse, 25, Zurich.
- Prof. H. WEBER, Institut des Télécommunications de l'Ecole Polytechnique Fédérale, Sternwartstrasse, 7, Zurich.
- Dr. H. THIEMANN, Ing., Battelle Memorial Institute, Rue Mont Blanc, 3, Genève.
-

COMMISSIONS

List of Official Members

COMMISSION I

Chairman : Dr. R. L. SMITH-ROSE, Director, D.S.I.R. Radio Research Station, Ditton Park, Slough, Bucks.

Australia : J. F. LEHANY, Division of Electrotechnology (C.S.I. R.O.), National Standards Laboratory, University Grounds, Chippendale, N.S.W.

Canada : Dr. J. T. HENDERSON, National Research Council, Sussex Street, Ottawa, Ontario.

Denmark : Prof. J. Oskar NIELSEN, Royal Technical University, øster Voldgade, 10 G., Copenhagen, K.

Finland : Prof. L. SIMMONS, Professor of Physics, University, Helsinki.

France : P. ABADIE, Ingénieur en Chef, Laboratoire National de Radioélectricité, 196, rue de Paris, Bagneux, Seine.

Great Britain : C. W. OATLEY, University Lecturer, 89, Gilbert Road, Cambridge.

India : Dr. K. N. MATHUR, Head of the Division of Weights and Measures, National Physical Laboratory, Hillside Road, New Delhi.

Italy : Prof. E. VECCHIACCHI, Via Palestrina, 12, Milan.

Japan : Dr. Issac KOGA, Professor, Electrical Engineering Department, Faculty of Engineering, University of Tokyo, Bunkyo-ku Tokyo.

Morocco : Mr. ARZELIES, Professeur au Centre d'Etudes Supérieures Scientifiques, Avenue Biarnay, Rabat.

Netherlands : Ir. J. J. VORMER, Joh. Bildersstraat, 52, The Hague.

Spain : Ing. J. Rodriguez NAVARRE, Chef de la 1^{re} Section, Instituto Geografico y Cadastral, Madrid.

Sweden : Mr. H. BJÖRKLUND, Lt. Colonel, Director of Army Signal Laboratory, Stockholm, 61.

Switzerland : Prof. Dr. H. KÖNIG, Directeur du Bureau Fédéral des Poids et Mesures, Wildstrasse, 3, Berne.

Union of South Africa : Mr. F. J. HEWITT, Officer-in-Charge, Telecommunications Research Laboratory of the C.S.I.R., c/o Department of Electrical Engineering, University of the Witwatersrand, Johannesburg, Transvaal.

United States : Mr. F. J. GAFFNEY, General Manager, Polytechnic Research and Development Co, 55, Johnson Street, Brooklyn, N. Y.

Yugoslavia : Prof. A. DAMIANOVITCH, Conseil des Académies de la R.F.P.Y., Proleterskih Brigada, 51, Beograd.

COMMISSION II

Chairman : Dr. Ch. R. BURROWS, Director, School of Electrical Engineering, College of Electrical Engineering, Cornell University, Ithaca, N. Y., U. S. A.

Australia : A. H. CANNON, P.M.G. Research Laboratories, 59, Little Collins Street, Melbourne, Victoria.

Canada : Dr. J. S. MARSHALL, Physics Department, McGill University, Montreal, 2, Quebec.

Denmark : Prof. J. Oskar NIELSEN, Royal Technical University, øster Voldgade, 10 G., Copenhagen.

Finland : Prof. V. YLÖSTALO, Professor of Radio Technique, Finland's Institute of Technology, Helsinki.

France : Mr. J. VOGÉ, Ingénieur au Département Tubes et Hyperfréquences du C.N.E.T., 149, Boulevard Bineau, Neuilly s/Seine (Seine).

Great Britain : Dr. R. L. SMITH-ROSE, Director, Radio Research Station, Ditton Park, Slough, Bucks.

India : Dr. L. S. MATHUR, Meteorologist, India Meteorological Department, Lodi Road, New Delhi.

Italy : Mr. Ing. T. GORIO, Directeur, Institut Expérimental des Postes et Télécommunications, 189, Viale Trastevere, Rome.

Japan : Dr. HISANAO HATAKEYAMA, Director, Meteorological Research Institute, Mabashi, Suginami-Ku, Tokyo.

Morocco : Mr. G. BIDAULT, Géophysicien, Service de Physique du Globe et de Météorologie, 2, rue de Foucauld, Casablanca.

Netherlands : Drs. A. HAUER, Biltsestraatweg, 57, de Bilt.

Spain : Prof. Dr. F. MORAN, Faculté des Sciences, Université, Madrid.

Sweden : Dr. Mauritz Vos, Chief Engineer, L.M. Ericsson Co., Stockholm, 32.

Switzerland : Dr. W. GERBER, Direction Générale des P.T.T., 6, Speichergasse, Berne.

Union of South Africa : Mr. F. J. HEWITT, Officer-in-Charge, Telecommunications Research Laboratory of the C.S.I.R., c/o Department of Electrical Engineering, University of the Witwatersrand, Johannesburg, Tvl.

United States : Dr. A. W. STRAITON, Professor of Electrical Engineering, University of Texas, Austin, Texas.

Yugoslavia : Prof. A. DAMIANOVITCH, Conseil des Académies de la R.F.P.Y., Proleterskih Brigada, 51, Beograd.

COMMISSION III

Chairman : Sir Edward V. APPLETON, Principal and Vice-Chancellor of the University, The Old College, South Bridge, Edinburgh, 8, Scotland, U. K.

Australia : Dr. D. F. MARTYN, Radio Research Board, Canberra Section, c/o Commonwealth Observatory, Mount Stromlo, Canberra, A.C.T.

Canada : Mr. J. C. W. SCOTT, Defence Research Telecommunications, Establishment (Radio Physics Laboratory), Defence Research Board, Shirley Bay, Ontario.

Denmark : Prof. Jørgen RYBNER, Royal Technical University, øster Voldgade, 10 G., Copenhagen.

Finland : Prof. V. VAISÄLÄ, Professor of Meteorology, University, Helsinki.

France : Mr. P. LEJAY, Directeur du Bureau Ionosphérique Français, Laboratoire National de Radioélectricité, rue de Paris, 196, Bagneux (Seine).

- Great Britain* : Mr. J. A. RATCLIFFE, Cavendish Laboratory, Cambridge.
- India* : Prof. S. K. MITRA, University College of Science, 92, Upper Circular Road, Calcutta.
- Italy* : Prof. M. BOELLA, Istituto Elettrotecnico Nazionale « G. Ferraris », Corso Massimo d'Azeglio, 42, Turin.
- Japan* : Dr. Ken-ichi MAEDA, Professor of Electrical Engineering, Department of Electrical Engineering, Kyoto University, Yoshida, Kyoto.
- Morocco* : Mr. A. HAUBERT, 36, rue de Commercy, Casablanca.
- Netherlands* : Dr. J. VELDKAMP, Koninklijk Nederlandsch Meteorologisch Instituut, de Bilt.
- Spain* : Prof. Dr. J. BALTA, Facultad des Sciences, Université, Madrid.
- Sweden* : Mr. Sven GEJER, Director of Section, Board of Swedish Telegraphs, Brunkebergstorg, 2, Stockholm, 16.
- Switzerland* : Prof. Dr. R. MERCIER, Ecole Polytechnique de l'Université de Lausanne.
- Union of South Africa* : Mr. F. J. HEWITT, Officer-in-Charge, Telecommunications Research Laboratory of the C.S.I.R., c/o Department of Electrical Engineering, University of the Witwatersrand, Johannesburg, Tvl.
- United States* : Dr. H. G. BOOKER, School of Electrical Engineering, Cornell University, Ithaca, N. Y.
- Yugoslavia* : Prof. A. DAMIANOVITCH, Conseil des Académies de la R.F.P.Y., Proleterskih Brigada, 51, Beograd.

COMMISSION IV

- Chairman* : Mr. J. A. RATCLIFFE, Cavendish Laboratory, Cambridge, U. K.
- Australia* : Dr. G. H. MUNRO, Radio Research Board, c/o Electrical Engineering Department, The University, Sydney, N.S.W.
- Denmark* : Prof. Jørgen RYBNER, Royal Technical University, øster Voldgade, 10 G., Copenhagen.
- Finland* : Ph. D. V. ROSSI, Chief of the Aerological Department, Meteorological Office, Helsinki.

France : Mr. R. RIVAULT, Faculté des Sciences, 2, rue de l'Université, Poitiers (Vienne).

Great Britain : Mr. F. HORNER, Engineer, National Physical Laboratory, Teddington, Mdx.

India : Dr. S. K. BANERJE, 3, Ramani Chatterjee Lane, Calcutta.

Italy : Prof. V. GORI, Istituto Superiore P.T., 189, Viale Trastevere, Rome.

Japan : Dr. Atsushi KIMPARA, Professor in the Nagoya University, Director of the Research Institute of Atmospheric, Nagoya University, Ichida-cho, Toyokawa City, Aichi Prefecture.

Morocco : Mr. LEGRAND, Directeur de la Station d'Ecoutes des P.T.T., Avenue Biarnay, Rabat.

Netherlands : Mr. Ir. J. BLOEMSMA, Mient 551, The Hague.

Spain : Ing. Prof. E. NOVOA, Director, Escuela Oficial de Tele-
comunicacion, Madrid.

Sweden : Prof. H. NORINDER, Head, Institute of High Tension Research, Uppsala.

Switzerland : Prof. Dr. J. LUGEON, Directeur de la Station Centrale Suisse de Météorologie, Krähbühlstrasse, 58, Zurich, 744.

Union of South Africa : Dr. B. J. SCHONLAND, Director, Bernard Price Institute for Geophysical Res., University of the Witwatersrand, Johannesburg, Tvl.

United States : Mr. H. E. DINGER, Naval Research Laboratory, Radio 2, Bldg. 26, Room 200, Washington, 20 (D.C.).

Yugoslavia : Prof. A. DAMIANOVITCH, Conseil des Académies de la R.F.P.Y., Proleterskih Brigada, 51, Beograd.

COMMISSION V

Chairman : Mr. M. LAFFINEUR, Institut d'Astrophysique, 98bis, Boulevard Arago, Paris (14^e).

Australia : Dr. J. L. PAWSEY, Radiophysics Laboratory, University Grounds, Chippendale, N.S.W.

Canada : Dr. R. E. WILLIAMSON, David Dunlap Observatory, Richmond Hill, Ontario.

- Denmark* : Prof. Bengt STRØMGREN, Astronomiske Observatorium, øster Voldgade, 10 G., Copenhagen.
- Finland* : Prof. J. TUOMINEN, Professor of Astronomy, The University, Helsinki.
- France* : Mr. M. LAFFINEUR, Institut d'Astrophysique, 98bis, Boulevard Arago, Paris (14^e).
- Great Britain* : Dr. A. C. B. LOVELL, The Quinta, Swetenham near Congleton (Cheshire).
- India* : Prof. M. N. SAHA, F.R.S., University College of Science, 92, Upper Circular Road, Calcutta.
- Italy* : Prof. Giorgio ABETTI, Direttore dell' Osservatorio Astronomico, Arcetri-Firenze.
- Japan* : Dr. Yusuke HAGIHARA, Professor, University of Tokyo, Director of the Tokyo Astronomical Observatory, Mitaka near Tokyo.
- Morocco* : Prof. E. VASSY, Faculté des Sciences de Paris, Physique de l'Atmosphère, 1, Quai Branly, Paris (7^e).
- Netherlands* : Prof. Dr. M. G. MINNAERT, Zonnenburg, 2, Utrecht.
- Spain* : R. P. Dr. A. ROMANA, Directeur de l'Observatoire de l'Ebre, Tortosa.
- Sweden* : Prof. O. RYDBECK, Chalmers Institute of Technology, Gotheburg.
- Switzerland* : Prof. Dr. M. WALDMEIER, Directeur de l'Observatoire Astronomique Fédéral, Schmelzbergstrasse, 25, Zurich.
- Union of South Africa* : Mr. F. J. HEWITT, Officer-in-Charge, Telecommunications Research Laboratory of the C.S.I.R., c/o Department of Electrical Engineering, University of the Witwatersrand, Johannesburg, Tvl.
- United States* : Mr. A. H. SHAPLEY, Central Radio Propagation Laboratory, National Bureau of Standards, Washington, 25 (D.C.).
- Yugoslavia* : Prof. A. DAMIANOVITCH, Conseil des Académies de la R.F.P.Y., Proleterskih Brigada, 51, Beograd.

COMMISSION VI

Chairman : Dr. L. C. VAN ATTA, Technical Hughes Aircraft Co., Culver City (Calif.).

Australia : Prof. J. C. JAEGER, Professor of Geophysics, Australian National University, Canberra.

Canada : Dr. G. SINCLAIR, University of Toronto, Toronto, Ontario.

Denmark : Prof. Jørgen RYBNER, Royal Technical University, øster Voldgade, 10 G., Copenhagen.

Finland : Sc. D. J. POHJANPALO, Chief of the Radio Laboratory, The State Institute for Technical Research, Helsinki.

France : Mr. J. LOEB, Chef du Département Télécommande du C.N.E.T., 1, Avenue de la République, Issy-les-Moulineaux.

Great Britain : Mr. W. Proctor WILSON, British Broadcasting Corporation, Research Department, Kingswood Warren, Sadworth, Surrey.

India : Mr. B. V. BALIGA, Adviser, Wireless Planning and Coordination, Ministry of Communications, New Delhi.

Italy : Prof. Algeri MARINO, Via Guido d'Arezzo, 14, Rome.

Japan : Dr. Kiyoshi MORITA, Professor, Tokyo Institute of Technology, O-okayama, Maguro-ku, Tokyo.

Netherlands : Dr. C. J. BOUWKAMP, Goorstraat, 10, Eindhoven.

Spain : Prof. Dr. J. G. SANTESMASES, Facultad des Sciences, Madrid.

Sweden : Prof. Erik HALLEN, Royal Institute of Technology, Stockholm, 26.

Switzerland : Prof. Dr. E. BALDINGER, Institut de Physique Appliquée de l'Université de Bâle, Klingelbergstrasse, 83, Bâle.

Union of South Africa : Mr. F. J. HEWITT, Officer-in-Charge, Telecommunications Research Laboratory of the C.S.I., c/o Department of Electrical Engineering, University of the Witwatersrand, Johannesburg, Tvl.

United States : Dr. Samuel SILVER, Associate Professor of Electrical Engineering, University of California, Berkeley, Calif.

Yugoslavia : Prof. A. DAMIANOVITCH, Conseil des Académies de la R.F.P.Y., Proleterskih Brigada, 51, Beograd.

COMMISSION VII

Chairman : Prof. G. A. WOONTON, Professor of Physics, McGill University, Montreal, P.Q.

Australia : Mr. R. E. AITCHESON, Department of Electrical Engineering, The University, Sydney, N.S.W.

Canada : Dr. Pierre BRICOUT, Laval University, Quebec, P.Q.

Finland : Prof. E. LAURILA, Professor of Technical Physics, Finland's Institute of Technology, Helsinki.

France : Mr. G. LEHMANN, Ingénieur-Conseil, 105, Avenue Victor Hugo, Paris (16^e).

Great Britain : Prof. J. SAYERS, The University, Edgbaston, Birmingham, 15.

India : Dr. M. B. SARWATE, Director of Communications, Directorate General of Civil Aviation, New Delhi.

Italy : Prof. Nello CARRARA, Direttore del Centro di studio per la fisica delle microonde, 48, Viale Morgagni, Firenze.

Japan : Dr. Masao KOTANI, Professor, Faculty of Science, University of Tokyo, Bunkyo-ku, Tokyo.

Netherlands : Dr. Ir. J. L. H. JONKER, Broerelaan, 12, Eindhoven.

Spain : Ing. R. RIVAS, Directeur de « Radio Nacional », Madrid.

Sweden : Prof. Hannes ALFVÉN, Royal Institute of Technology, Stockholm, 26.

Switzerland : Dr. F. LUDI, Privat-docent E.P.F., Susenbergstrasse, 96, Zurich.

Union of South Africa : Mr. F. J. HEWITT, Officer-in-Charge, Telecommunications Research Laboratory of the C.S.I.R., c/o Department of Electrical Engineering, University of the Witwatersrand, Johannesburg, Tvl.

United States : Dr. J. A. MORTON, Bell Telephone Laboratories, 463, West Street, New York, 14, N.Y.

Yugoslavia : Prof. A. DAMIANOVITCH, Conseil des Académies de la R.F.P.Y., Proleterskih Brigada, 51, Beograd.

Commission III

COMMUNICATION FROM THE CHAIRMAN

The Chairman of Commission III wishes to draw the attention of the Official Members of his Commission to the possible use of standard frequency transmissions for propagation studies and would very much appreciate that any comments on this matter be sent to the General Secretariat of U.R.S.I.

SUB-COMMISSION IIIb

ON WAVE INTERACTION

European laboratories and observatories are kindly requested for their co-operation in the work carried out at present by the Sub-Commission :

1. General inquiry concerned with wave interaction observed in the above mentioned area.
2. Accurate electric measurements of interaction phenomena.

Members of National Committees and Scientific Organizations interested in such works may apply for the programme of work of the Sub-Commission, either to the Chairman of the Sub-Commission : Mr. Picault, 7, rue Huysmans, Paris (VI^e), or to the French National Committee (Comité National Français de Radioélectricité Scientifique), 196, rue de Paris, Bagneux (Seine), or to the Secretary General of U.R.S.I.

FINLAND

We have been informed by the Finnish National Committee of its wish to set up an ionospheric station in Finland. The National Committee would very much appreciate technical information from National Committees or from other interested organizations.

Letters may be sent either to U.R.S.I. General Secretariat or to the Secretary of the National Committee, Eng. P. Mattila, Institut de Recherches Techniques, Albertinkatu, 40-42, Helsinki.

Commission IV

We want to draw the attention of Members of the Commission on the following letter from the Radio Research Station of Slough :

17th. February, 1953.

Dear Sir,

Radio Research Board Bulletin C

I enclose a copy of the following paper describing work which has been carried out under the auspices of the Radio Research Board of the Department of Scientific and Industrial Research.

Paper N° RRB/C. 164

« Measurements of Atmospheric Noise at High Frequencies During the Years 1945-1951 », by F. Horner.

This report will be published by H. M. Stationery Office in due course. In the meantime the enclosed copy is sent for your personal use.

Now that this summary of observations is available we are discontinuing the monthly issue of our Bulletin C. Further summaries of results will be made at longer intervals and copies of these will be sent to you. Should you require detailed results for a particular month for a specific purpose, these will be provided on request.

Yours faithfully,

(sgd) R. L. SMITH-ROSE,
Director.

IONOSPHERIC STATIONS

In view of the fulfilment of resolutions adopted during the Xth. General Assembly, and in order to prepare the observations to be carried out during the International Geophysical Year 1957-1958, it was decided to prepare a complete table of ionospheric stations which should be substituted to the lists previously published in the Bulletin.

National Committees were requested to provide data concerning stations operated by their respective countries. Most Committees sent us such data and we acknowledge their co-operation.

On the other hand, the Radio Research Station (Slough) of the Department of Scientific and Industrial Research of the United Kingdom has calculated the latitude, longitude and dip values for all ionospheric stations from whom they regularly receive results of observations. Results of these calculations are given in Table n° 1 published with the agreement of the Radio Research Station ; we want to thank the Director of the Station and his co-workers for their help.

Some data given by National Committees on the location of stations (which are published in Table n° 2 appended) do not agree with the data of Table n° 1 ; we would very much appreciate to receive from the National Committees the changes that should, if needed, be brought to the published figures.

We ask National Committees and Organizations from countries not adhering to U.R.S.I. to provide us with suitable information.

Such a close co-operation should allow the drafting, for the next General Assembly, of a complete up-to-date list of ionospheric stations.

IONOSPHERIC STATIONS. TABLE N^o 1
POSITIONS 1952

Note. — Dip from 1922 admiralty map to nearest 0.5° magnetic latitude from $\tan^{-1} \left(\frac{1}{2} \tan. \text{dip} \right)$ to nearest 0.5°.

Geomagnetic latitude from McNish charts to nearest 0.1°.

| Station | Geographic | | Geoma- gnetic Lat. ^o | Magne- tic Lat. ^o | Dip ° |
|--------------------------------------|-------------------|--------------------|---------------------------------------|------------------------------------|----------|
| | Lat. ^o | Long. ^o | | | |
| Adak | 51.9 N | 176.6 W | 47.5 N | 46 N | 64 N |
| Akita..... | 39.7 N | 140.1 E | 29.5 N | 33.5 N | 53 N |
| Alma Ata | 43.5 N | 76.5 E | 33.8 N | 42 N | 61 N |
| Anchorage | 61.2 N | 149.9 W | 60.9 N | 60 N | 74 N |
| Bagneux | 48.8 N | 2.3 E | 51.3 N | 46 N | 64 N |
| Baker Lake | 64.3 N | 96.1 W | 73.8 N | 84 N | 87 N |
| Batavia | 39.1 N | 84.1 W | 50 N | 55.5 N | 71 N |
| Bâton Rouge La. S. ... | 30.5 N | 91.2 W | 41.2 N | 42 N | 61 N |
| Bocayua | 17.1 S | 43.8 W | 6.7 S | 3 S | 6 S |
| Bombay | 19 N | 73 E | 9.7 N | 12.5 N | 24 N |
| Boston | 42.4 N | 71.2 W | 53.9 N | 59.5 N | 73.5 N |
| Brisbane | 27.5 S | 153 E | 35.9 S | 36.5 S | 56 S |
| Buenos Aires | 34.5 S | 58.5 W | 23.1 S | 15 S | 28.5 S |
| Bukhta Tikhaya | 80.3 N | 52.7 E | 71.5 N | 74.5 N | 82 N |
| Calcutta | 22.6 N | 88.4 E | 11.9 N | 16.5 N | 31 N |
| Canberra | 35.3 S | 149 E | 44 S | 46.5 S | 64.5 S |
| Cape Site (Campbell Island) | 52.5 S | 169.2 E | 57.2 S | 61.5 S | 75 S |
| Cape Town | 34.2 S | 18.3 E | 33 S | 41.5 S | 60.5 S |
| Casablanca | 33.6 N | 7.6 W | 38.5 N | 31 N | 50.5 N |
| Christchurch | 43.5 S | 172.7 E | 48 S | 51 S | 68 S |
| Christmas Is..... | 1.9 N | 157.3 W | 2.1 N | 2.5 N | 5 N |
| Chungking | 29.4 N | 106.8 E | 17.9 N | 24.5 N | 42.5 N |
| Churchill..... | 58.8 N | 94.2 W | 68.6 N | 79 N | 84.5 N |
| Clyde B/L..... | 70.5 N | 68.6 W | 81.9 N | 80 N | 85 N |
| Cocoa | 28.2 N | 80.6 W | 39.4 N | 42 N | 61 N |
| Dakar | 14.6 N | 17.4 W | 21.6 N | 13.5 N | 26 N |
| De Bilt | 52.1 N | 5.2 E | 53.5 N | 48.5 N | 66 N |
| Deception Is. | 63 S | 60.7 W | 51.6 S | 36.5 S | 56 S |

| Station | Geographic | | Geoma- gnetic Lat.° | Magne- tic Lat.° | Dip ° |
|-------------------------|------------|---------|---------------------------|------------------------|----------|
| | Lat.° | Long.° | | | |
| Delhi | 28.6 N | 77.1 E | 18.9 N | 23.5 N | 41 N |
| Djibouti | 11.5 N | 43.1 E | 6.8 N | 2.5 N | 5 N |
| Domont | 49.1 N | 2.3 E | 51.4 N | 46.5 N | 64.5 N |
| Fairbanks (College) ... | 64.9 N | 147.8 W | 65.1 N | 65 N | 77 N |
| Falkland Is. | 51.7 S | 57.8 W | 40.4 S | 27.5 S | 46 S |
| Fiji | 18 S | 178.2 E | 22.1 S | 21.5 S | 38 S |
| Formosa | 25 N | 121.5 E | 13.7 N | 18.5 N | 34 N |
| Fort Chimo | 58.2 N | 68.3 W | 69.7 N | 78 N | 84 N |
| Freiburg | 48.1 N | 7.8 E | 49.4 N | 45 N | 63.5 N |
| Fukaura | 40.6 N | 139.9 E | 30.3 N | 34.5 N | 54 N |
| Gothenburg | 57.4 N | 12 E | 57.3 N | 53 N | 69.5 N |
| Graz | 47.1 N | 15.5 E | 47 N | 42.5 N | 61.5 N |
| Guam | 13.6 N | 144.9 E | 4 N | 7 N | 14 N |
| Hobart | 42.8 S | 147.4 E | 51.4 S | 56 S | 71.5 S |
| Huancayo..... | 12 S | 75.3 W | 0.6 S | 0 | 0 |
| Ibadan | 7.4 N | 4 E | 10.4 N | 1.3 S | 2.5 S |
| Inverness | 57.4 N | 4.2 W | 60.8 N | 54.5 N | 70.5 N |
| Johannesburg | 26.2 S | 28 E | 26.7 S | 40 S | 59 S |
| Kermadec..... | 29.2 S | 177.9 W | 32.2 S | 33.5 S | 53 S |
| Khartoum | 15.6 N | 32.6 E | 12.9 N | 6.5 N | 13 N |
| Kihei (Maui) | 20.8 N | 156.5 W | 20.7 N | 21.5 N | 38.5 N |
| Kiruna | 67.8 N | 20.5 E | 64.4 N | 62 N | 75 N |
| Lanchow..... | 36.1 N | 103.8 E | 24.7 N | 32.5 N | 52 N |
| Leyte | 11 N | 125 E | 0.2 S | 3 N | 6.5 N |
| Leningrad..... | 60 N | 30.3 E | 56.5 N | 54.5 N | 70.5 N |
| Lindau/H. | 51.6 N | 10.1 E | 52 N | 47.5 N | 65.5 N |
| Lulea..... | 65.6 N | 22.1 E | 62.8 N | 60 N | 74 N |
| Macquarie Is. | 54.5 S | 159 E | 61 S | 69 S | 79 S |
| Madras | 13 N | 80.2 E | 3.1 N | 5.5 N | 11 N |
| Moscow | 55.9 N | 37.3 E | 51.3 N | 51 N | 68 N |
| Nairobi | 1 S | 37 E | 4.2 S | 13 S | 25 S |
| Nanking | 32.1 N | 119 E | 20.7 N | 27.5 N | 46 N |
| Narsarsuak | 61.2 N | 45.4 W | 71.6 N | 66 N | 77.5 N |
| N. H. A. (Trang)..... | 12 N | 109 E | 0.5 N | 4 N | 8 N |
| Okinawa | 26.3 N | 127.8 E | 15.3 N | 20 N | 36 N |
| Oslo Kjellar..... | 60 N | 11.1 E | 60 N | 55.5 N | 71 N |
| Ottawa | 45.4 N | 75.7 W | 56.8 N | 62.5 N | 75.5 N |

| Station | Geographic | | Geoma- gnetic Lat.° | Magne- tic Lat.° | Dip ° |
|---------------------|------------|---------|---------------------------|------------------------|----------|
| | Lat.° | Long.° | | | |
| Palmyra | 5.9 N | 162.1 W | 5.3 N | 6 N | 12 N |
| Panama C. Z. | 9.4 N | 79.9 W | 20.7 N | 19.5 N | 35.5 N |
| Peiping | 39.9 N | 116.4 E | 28.5 N | 36.5 N | 56 N |
| Point Barrow | 71.3 N | 156.8 W | 68.2 N | 72.5 N | 81 N |
| Poitiers | 46.6 N | 0.3 E | 49.1 N | 44 N | 62.5 N |
| Port Lockroy | 64.8 S | 63.5 W | 53.4 S | 38.5 S | 58 S |
| Portage | 49.9 N | 98.3 W | 59.4 N | 66 N | 77.5 N |
| Prince Rupert | 54.3 N | 130.3 W | 58.5 N | 59.5 N | 73.5 N |
| Puerto Rico..... | 18.5 N | 67.2 W | 30 N | 31.5 N | 51 N |
| Raratowga | 21.3 S | 159.8 W | 21 S | 22.5 S | 38.5 S |
| Resolute Bay | 74.7 N | 94.9 W | 82.8 N | 88 N | 89 N |
| Reykjavik | 64.1 N | 21.8 W | 70 N | 63 N | 76 N |
| Rome | 41.9 N | 12.5 E | 42.4 N | 37.5 N | 57 N |
| Stanford | 37.4 N | 122.2 W | 44 N | 43 N | 62 N |
| San Francisco | | | | | |
| Schwarzenburg | 46.8 N | 7.3 E | 48.7 N | 43 N | 62 N |
| Shibata | 37.9 N | 139.3 E | 27.6 N | 31.5 N | 51 N |
| Singapore | 1.3 N | 103.8 E | 10.1 S | 8 S | 16 S |
| Slough..... | 51.5 N | 0.6 W | 54.3 N | 48.5 N | 66 N |
| St. Johns | 47.6 N | 52.7 W | 58.4 N | 58.5 N | 73 N |
| Sverdlovsk | 56.7 N | 61.1 E | 48.5 N | 55.5 N | 71 N |
| Tananarive..... | 18.8 S | 47.8 E | 23.8 S | 33 S | 52.5 S |
| Terre Adélie | 66.8 S | 141.4 E | 75.7 S | 84 S | 87 S |
| Tiruchirapalli..... | 10.8 N | 78.8 E | 1 N | 2.5 N | 5 N |
| Tokio | 35.7 N | 139.5 E | 25.5 N | 30 N | 49 N |
| Tomsk..... | 56.4 N | 85 E | 45.8 N | 57 N | 72 N |
| Townsville | 19.3 S | 146.8 E | 28.4 S | 27.5 S | 46 S |
| Trinidad | 10.6 N | 61.2 W | 22 N | 23.5 N | 41 N |
| Tromsø..... | 69.7 N | 19 E | 67 N | 64.5 N | 76.5 N |
| Upsala | 59.8 N | 17.6 E | 58.5 N | 54.5 N | 70.5 N |
| Wakkanai..... | 45.4 N | 141.7 E | 35.4 N | 40 N | 59 N |
| Washington | 38.7 N | 77.1 W | 50 N | 54 N | 70 N |
| Watheroo | 30.3 S | 115.9 E | 41.8 S | 45 S | 63.5 S |
| Whitesands | 32.3 N | 106.5 W | 41.1 N | 42 N | 61 N |
| Winnipeg | 49.9 N | 97.4 W | 59.7 N | 66 N | 77.5 N |
| Wuchang | 30.6 N | 114.4 E | 19.2 N | 26 N | 44 N |
| Yamagawa | 31.2 N | 130.6 E | 20.3 N | 25.5 N | 43.5 N |

IONOSPHERIC STATIONS. TABLE N° 2

Notes :

1) The stations are grouped according to the country of the controlling organizations.

2) Abbreviations :

CRPL : Central Radio Propagation Laboratory, National Bureau of Standards, Washington, D. C.

L.N.R. : Laboratoire National de Radioélectricité, rue de Paris, Bagneux (Seine) France.

B.I.F. : Bureau Ionosphérique Français, L.N.R.

S.P.I.M. : Service de Prévision Ionosphérique Militaire.

* Stations not mentioned in Table n° 1.

3) « Information on Publication of Results », contains the following informations :

Column 1 : M = only median values are published.

H = daily hourly (and median) values are published.

G = hourly values are available free of charge.

R = they are available but not free of charge.

Column 2 : Month and year of the beginning of publication.

Column 3 : A limited number of records available, free of charge (G) or not (R); records are not available X.

Column 4 : Publication in which results are issued.

| Controlling country | Station | Geographic | | Geomagnetic latitude ° | Magnetic dip ° | Power kW |
|----------------------------------|--------------------------|---------------|--------------|------------------------|----------------|----------|
| | | Latitude ° | Longitude ° | | | |
| Australia | Brisbane | 27°30' S | 153° E | 36.7 S | | 1.5 |
| | Canberra | 35°18' S | 149° E | 44 S | | 1.5 |
| | Hobart | 42°51' S | 147°51' E | 51.6 S | | 1.5 |
| | Macquarie (Is) | 54°30' S | 159° E | 61.1 S | | 1.5 |
| | Townsville | 19°18' S | 146°48' E | 28.6 S | | 1.5 |
| | Watheroo | 30°18' S | 115°54' E | 41.7 S | | 1.5 |
| Austria | Graz | 47°05' N | 15°27' E | 46.9 N | 63 N | 1 |
| Belgium | Léopoldville * | 4°19' S | 15°18' E | | 33.5 S | 1 |
| Canada | Baker Lake | 64°18' N | 96° W | 74 N | 86.7 N | 10 |
| | Churchill | 58°48' N | 94°12' W | 68 N | 85.4 N | 10 |
| | Fort Chimo | 58°06' N | 68°36' W | 68.5 N | 82.5 N | 10 |
| | Ottawa | 45°24' N | 75°42' W | 56.5 N | 74.9 N | 10 |
| | Prince Rupert | 54°36' N | 130°18' W | 58.5 N | 73.7 N | 10 |
| | Resolute Bay | 74°42' N | 94°54' W | 83 N | 89 N | 10 |
| | St Johns | 47°36' N | 52°42' W | 58 N | 70.8 N | 10 |
| | Winnipeg | 49°54' N | 97°24' W | 59.5 N | 77.7 N | 10 |
| Denmark | Godhavn * | 69°14'51'' N | 52°32'33'' W | 79.9 N | 81.6 N | 10 |
| France | Bizerte (1) * | 37°12' N | 9°48' E | | 52 N | 1 |
| | Dakar (1) | 14°36' N | 17°24' E | | 23.5 N | 1 |
| | Djibouti (1) | 11°30' N | 43°12' E | | 3 N | 1 |
| | Domont (2) (till 1-4-51) | 49°01'06'' N | 2°19'18'' E | 51.2 N | 65 N | 10 |
| | Freiburg (1) | 48°06' N | 7°48' E | | 63 N | 1 |
| | Kerguelen (1) * : (Is) | 49°12' S | 69°48' E | | 69 S | 1 |
| | Nha-Trang (1) | 12°12' N | 109°12' E | | 4.5 N | |
| | Poitiers (2) | 46°34'07'' N | 0°20'31'' E | 49.2 N | 63 N | 1.5 |
| | Tamanrasset (2) * | 22°47'25'' N | 5°31'38'' E | 25.1 N | 30 N | |
| | Tananarive (1) | 18°54' S | 47°36' E | | 54 S | 1 |
| Terre Adélie (2) (until 20-1-52) | 66°49'04'' S | 141°23'42'' E | 73.3 S | 89 S | 1.5 | |

| Frequency range Mc/s | Date of beginning of operation | Time used : U.T. or reference meridian | Information on publication of results | | | |
|-------------------------|--------------------------------|---|---------------------------------------|-------|-----|---|
| | | | (1) | (2) | (3) | (4) |
| 1-16 | 6-43 | 150° E | H | 6-43 | X | CRPL. D Series. |
| 1-16 | 3-37 | 150° E | H | 1-49 | X | Idem. |
| 1-13 | 12-45 | 150° E | H | 1-49 | X | Idem. |
| 1-13 | 6-50 | 150° E | H | 6-50 | X | Idem. |
| 1-16 | 1-52 | 150° E | H | 1-49 | X | Idem. |
| 1-16 | 7-35 | 120° E | M | | X | CRPL. F Series. |
| 2.5-12 1953: 1-20 | 1947 | 15° E | M-G | | G | « Ionospheric Data » Ionosphärenstation Graz University. CRPL. F Series. |
| 1-16 | 8-51 | U. T. | H | | G | |
| 1-25 | 1-49 | 90° W | M | 2-49 | G | CRPL. F Series. |
| 0.6-20 | 8-43 | 90° W | M | 8-43 | G | Idem. |
| 1-25 | 12-48 | 75° W | M | 4-49 | G | Idem. |
| 0.6-20 | 1-42 | 75° W | M | 5-43 | G | Idem. |
| 0.6-20 | 6-45 | 120° W | M | 6-45 | G | Idem. |
| 1-25 | 2-49 | 90° W | M | 2-49 | G | Idem. |
| 0.6-20 | 5-45 | 60° W | M | 5-45 | G | Idem. |
| 0.6-20 | 9-46 | 90° W | M | 9-46 | G | Idem. |
| 1-25 | 11-51 | 45° W | M | 11-51 | G | Idem. |
| 1.25-20 | 1953 | | H | 1953 | X | SPIM. O...B. |
| 1.25-20 | 5-49 | 175° W | H | 5-49 | X | SPIM. O35D. |
| 1.25-20 2-20 | 10-51 | variable | H | 10-51 | X | SPIM. O64Dj. |
| 1.5-15.2 | 10-3-50 | U. T. | H | 3-50 | G | Bulletin d'Information du L.N.R. |
| 1.25-20 | 7-46 | 7°5 E | H | 7-46 | X | SPIM. O1F. |
| 1.25-20 | 1953 | | H | 1953 | X | SPIM. O...K. |
| | 6-51 | 109°2 E | X | 6-51 | X | Limited distribution. |
| 1.5-16.5 | 1-7-48 | U. T. | H | 7-48 | G | Bulletin d'Information du L.N.R. |
| | 1953 | | | | | Idem |
| 1.25-20 | 11-51 | 47°5 E | H | 11-51 | X | SPIM. O65T. |
| 1.5-17 | 14-2-51 | U. T. | H | 2-51 | G | Bulletin d'Information de L.N.R. |

| Controlling country | Station | Geographic | | Geomagnetic latitude ° | Magnetic dip ° | Power kW |
|---------------------|-------------------|-------------|--------------|------------------------|----------------|----------|
| | | Latitude ° | Longitude ° | | | |
| Germany | Lindau/Harz | 51°39' N | 10°7'30" E | 52.3 N | 66.3 N | 10 |
| Great Britain (3) | Slough | 51°30' N | 0°36' W | 54.3 N | 66 N | 1 |
| | Inverness (5) | 57°24' N | 4°12' E | 60.8 N | 70.5 N | 1 |
| | Falkland (Is) | 51°42' S | 57°48' W | 40.4 S | 46 S | 1 |
| | Singapore | 1°18' N | 103°48' E | 10.1 S | 16 S | 1 |
| | Ibadan | 7°24' N | 4° E | 10.4 N | 2.5 S | 1 |
| | Khartoum | 15°36' N | 32°36' E | 12.9 N | 13 N | 1 |
| | Port Lockroy | 64°43' S | 63°30' W | 53.4 S | 58 S | 1 |
| Japan | Akita | 39°43'30" N | 140°08'12" E | 25.7 N | 53.48 N | 1 |
| | Kokubunji (Tokyo) | 35°42'04" N | 139°29'3" E | 25.4 N | 49.25 N | 1 |
| | Wakkanai | 45°23'36" N | 141°41'5" E | 35.3 N | 59.36 N | 1 |
| | Yamagawa | 31°12'05" N | 130°37'07" E | 20.3 N | 44.33 N | 1 |
| Morocco | Casablanca | 33°36'18" N | 7°38'19" W | 38.2 N | 50 N | 1.5 |
| Portugal | Macao * | 22°11'45" N | 113°32'39" E | | 30.3 N | 0.1 |
| New Zealand | Christchurch : | | | | | |
| | Lincoln | 43°36' S | 172°42' E | 48.1 S | 68.55 S | 2 |
| | Godley Head | 43°30' S | 172°48' E | 48 S | 68.47 S | 2 |
| | Campbell Island | 52°30' S | 169° 12' E | 57.3 S | 75.43 S | 0.5 |
| | Raratonga | 21°18' S | 159°48' W | 21 S | 38.12 S | 2 |
| Norway | Kjeller (Oslo) | 59°58' N | 11°06' E | 60 N | 72.8 N | 1.5 |
| | Tromsø | 69°40' N | 18°57' E | 67.7 N | 77.6 N | 1.5 |
| Sweden | Gothenburg : | 57°24' N | 11°55'12" E | 57.68 N | 71.38 N | 20 |
| | (Onsala) | | | | | |
| | Kiruna | 67°51' N | 20°14'24" E | 65.82 N | 77.05 N | 20 |

| Frequency range Mc/s | Date of beginning of operation | Time used : U.T. or reference meridian | Information on publication of results | | | |
|-------------------------|--------------------------------|---|---------------------------------------|-------|-----|---|
| | | | (1) | (2) | (3) | (4) |
| 1-16 | 1-1-48 | 15° E | M-G | 1-48 | G | F.T.Z. Editor : Joh. Wosnik, Düsseldorf, Issued by Fried Vieweg u. Sohn, Braunschweig. |
| | (4) | | | | | |
| 0.55-16.5 | 1-31 | U. T. | H | 9-43 | G | |
| 0.67-25 | 1-41 | U. T. | H | 3-48 | G | |
| | (Burghead) | | | | | |
| 0.67-25 | 8-47 | 60° W | H | 8-47 | G | |
| 0.67-25 | 10-48 | 105° E | H | 10-48 | G | |
| 0.67-25 | 12-51 | U. T. | H | 12-51 | G | |
| 0.67-25 | 2-52 | 30° E | H | 3-52 | G | |
| 1.1-16 | 3-48 | 60° W | H | 3-48 | G | |
| 1-17 | 12-49 | 135° E | H | 12-49 | G | Ionospheric data in Japan. |
| 1-17.2 | 12-45 | 135° E | H | 12-45 | G | Idem. |
| 1-15.5 | 3-47 | 135° E | H | 3-47 | G | Idem. |
| 1-22 | 12-46 | 135° E | H | 12-46 | G | Idem. |
| 1.5-16 | 1-9-51 | U. T. | H | 9-51 | G | Bulletin d'Information du L.N.R. |
| 5.5-6.5 | 3-50 | 120° E | X | X | X | |
| 1-13 | 11-44 | 172.5° E | H-G | | G | Median values published in CRPL. Hourly values printed each month and distributed free of charge. |
| 1-13 | 3-51 | 172.5° E | H-G | | G | |
| 1-15.5 | 4-44 | 165° E | H-G | | G | Median values published in CRPL. Hourly values come at hand every 6 month intervals. |
| 1.5-20 | 5-48 | 157.5° E | H-G | | G | As for Christchurch. |
| 0.67-25 | 11-48 | 15° E | H | 11-48 | G | CRPL. F Series. |
| 0.67-25 | 1-51 | 15° E | H | 1-51 | G | Idem. |
| 1-20 | 11-50 | 15° E | H | 11-50 | G | CRPL. Operated by Research Laboratory of Electronics Chalmers University of Technology. |
| 1-20 | 8-48 | 15° E | H | 8-48 | G | |

| Controlling country | Station | Geographic | | Geomagnetic latitude ° | Magnetic dip ° | Power kW |
|-----------------------|---------------|-------------|-------------|------------------------|----------------|----------|
| | | Latitude ° | Longitude ° | | | |
| | Luleå | 65°36' N | 22°07'12" E | 63.05 N | 75.57 N | 1 |
| | Uppsala | 59°48' N | 17°36' E | 58.5 N | 72.1 N | 5-10 |
| Switzerland | Schwarzenburg | 46°29'34" N | 7°12'22" E | 48.83 N | 61.95 N | 10 |
| Union of South Africa | Cape Town | 34°09' S | 18°19' E | 33 S | 64 S | 1 |
| | Johannesburg | 26°10' S | 28°05' E | 27 S | 62 S | 1 |
| | Nairobi | 1°17' S | 36°48' E | 4 S | 25 S | 1 |

(1) Station operated under the control of SPIM.

(2) Station operated under the control of B.I.F.

(3) Informations given applies as at 1st January 1953. These stations are operated under the D.S.I.R. Radio Research Organisation.

All communication should be addressed to Director, Radio Research Station, Ditton Park, Slough, Bucks, England.

| Frequency range Mc/s | Date of beginning of operation | Time used : U.T. or reference meridian | Information on publication of results | | | |
|-------------------------|--------------------------------|---|---------------------------------------|-------|-----|---|
| | | | (1) | (2) | (3) | (4) |
| 1.5-17 | 2-50 | 15° E | H | 2-50 | G | CRPL. Operated by the Royal Board of Telegraphs. |
| 1.4-17 | 1-52 | 15° E | H | 1-52 | G | CRPL. NPL. Operated by the Research Institute for National Defence. |
| 1-25 | 1-12-50 | 15° E | G | 12-50 | G | Bulletin Mensuel. |
| 1-20 | 15-7-48 | 30° E | G | 7-48 | G | Monthly Bulletin of Ionospheric Characteristics. |
| 1-20 | 3-5-46 | 30° E | G | 6-47 | G | Idem. |
| 1-20 | 22-2-52 | 45° E | G | 2-52 | G | Idem. |

(4) Early observations, intermittent or not complete.

(5) Present site of stations known as Burghead, Fraserburgh and Inverness.

TIME SIGNALS

OBSERVATOIRE NATIONAL DE PARIS

Bureau International de l'Heure

From 1st January 1953 onwards, international radio time signals from the Observatoire National, Paris (Bureau International de l'Heure) are transmitted by the Pontoise station according to the following schedule.

| Automatic U. T. | Rythmic U. T. | Call signals | Wavelengths m | Frequencies kc/s |
|--------------------|------------------|-----------------|------------------|---------------------|
| 0755-0800 | 0801-0806 | FYP TQC9 | 3300 27.84 | 90.9 10 775 |
| 0855-0900 | 0901-0906 | FYP FYA3 | 3300 40.39 | 90.9 7 428 |
| 0925-0930 | 0931-0936 | FYP TQG5 | 3300 21.62 | 90.9 13 873 |
| 1255-1300 | 1301-1306 | FYP TQG5 | 3300 21.62 | 90.9 13 873 |
| 1955-2000 | 2001-2006 | FYP TQC9 | 3300 27.84 | 90.9 10 775 |
| 2055-2100 | 2101-2106 | FYP FYA3 | 3300 40.39 | 90.9 7 428 |
| 2225-2230 | 2231-2236 | FYP TQG5 | 3300 21.62 | 90.9 1 387 |

URSIGRAMS

European Ursigrams

According to the project of unification of the codes used for Ursigrams adopted in Zurich in 1950, and confirmed in Sydney in 1952, France and Western Germany broadcast, since July, 1st., 1952, European Ursigrams through the Poitiers station. The following parts of the codes used were published by the Bureau Ionosphérique Français (Laboratoire National de Radioélectricité).

1. — Data on solar area and chromosphere activity.
2. — Variations of the cosmic radiation intensity.
3. — Data on monochromatic intensity of the solar corona.
4. — Data on Es critical frequency (fEs).
5. — Data on F2 critical frequency (f_oF2).
6. — Terrestrial magnetism.
7. — Ionospheric disturbance warnings.
8. — Observations on solar radio emission.

The codes of which a summary will be published in the Bulletin are available directly from the Bureau Ionosphérique Français (B.I.F.), 196, rue de Paris, Bagneux (Seine), or from the General Secretariat of U.R.S.I.

Abbreviated Codes for European Ursigrams (I)

1. — DATA ON SOLAR AREA AND CHROMOSPHERE ACTIVITY

« CHROM » Code

The « CHROM » message includes :

- 1° An identification group (5 figures).
- 2° The Wolf relative number related to sunspots, and general data on the number and importance of activity centers and prominences (5 figures).

3° The main characteristics of newly formed centers and the pattern of the contained sunspots according to Brunner's (Zurich) classification (a group of 5 figures for each center).

and, if necessary :

4° Data on sudden prominence disappearances (5 figures for each disappearance).

5° Chromospheric bursts observed by the observatories co-operating in the drafting of the message (two groups of 5 figures for each burst).

Usually the kind of observation is given by the first figure.

- „1" activity center in the W hemisphere at its 1st. transit.
- „2" activity center in the E hemisphere at its 1st. transit.
- „3" activity center in the W hemisphere at its 2nd. transit.
- „4" activity center in the E hemisphere at its 2nd. transit.
- „5" activity center in the W hemisphere at its 3rd. transit.
- „6" activity center in the E hemisphere at its 3rd. transit.
- „7" sudden disappearance of prominence in the W hemisphere.
- „8" sudden disappearance of prominence in the E hemisphere.
- „9" burst observed in the W hemisphere.
- „0" burst observed in the E hemisphere.

CODING

First group. — Identification.

Rank of the figures in the group.

- 1. } Date of observation.
- 2. }
- 3. Number of days between the observation and the preceding observation
- 4. }
- 5. } Observatory by which the message is drafted (N Code).

Second group. — General data on activity.

- 1. } Wolf's number according local observations (in the general
- 2. } message, Wolf's number is the mean of Wolf's numbers of
- 3. } each observatory).

4. General activity. 0 = null.
 1 = weak.
 2 = moderate.
 3 = rather great.
 4 = great.
 5 = very great.
 X = no observation.

Group beginning with „1” or „2”

1. Reference figure $\left\{ \begin{array}{l} \text{„1” activity center in the} \\ \text{W hemisphere} \\ \text{„2” activity center in the} \\ \text{E hemisphere} \end{array} \right\}$ age between 1 and 26 days
2. Angular distance to central meridian, code L } Values reduced
 3. Heliographic latitude code φ } to 1200 UT
4. In days, age of the center, when the observatory drafting the message knows the date of occurrence.
5. Sunspot pattern according to Brunner's (Zurich) classification (B code).

Group beginning with „3” or „4”

1. Reference figure $\left\{ \begin{array}{l} \text{„3” activity center in W hemisphere.} \\ \text{„4” activity center in E hemisphere.} \end{array} \right.$
- 2 and 3. See above.
4. In days, age of the center on the last day of visibility at its first transit, X when the date of formation is unknown.
5. See above.

Group beginning with „5” or „6”

1. Reference figure $\left\{ \begin{array}{l} \text{„5” Activity center in W hemisphere.} \\ \text{„6” Activity center in E hemisphere.} \end{array} \right.$
- 2-5. See above.

Group beginning with „7” or „8”

1. Reference figure $\left\{ \begin{array}{l} \text{„7” Sudden disappearance of a prominence} \\ \text{in W hemisphere.} \\ \text{„8” Sudden disappearance of a prominence} \\ \text{in E hemisphere.} \end{array} \right.$

- 2 and 3. As above (coordinates of prominence on the last day of visibility).
4. Time (in days) between the observation when the prominence disappeared and the last observation when it was observable. Disappearance between two observations „0”; between the observation and the day before „1”. When there is a two day interval due to a gap in observations : „2”; when the gap is greater the disappearance is not mentioned.
5. Importance of the prominence before it disappeared (scale 1-3).

Pair of groups beginning with „9” or „0”

First group.

1. Reference figure $\left\{ \begin{array}{l} \text{„9” Chromospheric burst in W hemisphere.} \\ \text{„0” Chromospheric burst in E hemisphere.} \end{array} \right.$
 2. Angular distance to central meridian. L code $\left\{ \begin{array}{l} \text{Values reduced} \\ \text{to 1200 UT} \end{array} \right.$
 3. Heligraphic latitude φ code $\left\{ \begin{array}{l} \text{Values reduced} \\ \text{to 1200 UT} \end{array} \right.$
 4. Duration in tens of minutes of the burst or observation (t code) $\left. \begin{array}{l} \text{The 5th figure indicates whether} \\ \text{the 4th refers to the duration of the} \\ \text{burst or of the observation.} \end{array} \right\}$
- | | | | |
|--|---|-------|---|
| | <i>Importance</i> | ↑ | ↑ |
| 5. Importance of the burst : 1-3 scale | $\left\{ \begin{array}{l} 1 \\ 2 \\ 3 \end{array} \right\}$ | given | $\left\{ \begin{array}{l} 1 \\ 2 \\ 3 \end{array} \right\}$ |
| | | by | $\left\{ \begin{array}{l} 1 \\ 2 \\ 3 \end{array} \right\}$ |
| | | | $\left\{ \begin{array}{l} 4 \\ 5 \\ 6 \end{array} \right\}$ |

Second group.

1. Reference figure stating whether the time given refers to the beginning of the observation „9” or of the burst „0”.
- 2-5. Time of the beginning (hours and minutes U.T.).

CODES

L. Angular distance from the center of the phenomenon to the central meridian

The figure refers to the number, from the central meridian, of the 10° zone containing the center, according to the following scale.

- | | | |
|------------|------------|------------|
| 1. 0°-10° | 4. 30°-40° | 7. 60°-70° |
| 2. 10°-20° | 5. 40°-50° | 8. 70°-80° |
| 3. 20°-30° | 6. 50°-60° | 9. 80°-90° |

φ. Heliographic Latitude

The figure refers to phenomena in N hemisphere or in S hemisphere according to the following scale.

| | |
|--------------------|--------------------|
| 1 = N area 0°-10° | 6 = S area 0°-10° |
| 2 = N area 10°-20° | 7 = S area 10°-20° |
| 3 = N area 20°-30° | 8 = S area 20°-30° |
| 4 = N area 30°-40° | 9 = S area 30°-40° |
| 5 = N area 40°-50° | 0 = S area 40°-50° |

N. Reference figures of observatories

| | |
|---|--|
| 01 = Arcetri-Firenze. | 19 = Stockholm. |
| 02 = Cambridge. | 20 = Mitaka. |
| 03 = Canberra. | 21 = |
| 04 = Greenwich. | 22 = |
| 05 = Huancayo. | 23 = |
| 06 = Kharkov. | 24 = |
| 07 = Kodaikanal. | 25 = |
| 08 = Mac Math. | 26 = |
| 09 = Mount Wilson. | 27 = |
| 10 = Meudon. | 28 = |
| 11 = Ondrejov. | 29 = |
| 12 = Edinburgh. | 30 = Arosa. |
| 13 = Tachkent. | 31 = U. S. Naval. |
| 14 = | 32 = Sacramento Peak. |
| 15 = Zurich. | 33 = Boulder. |
| 16 = Kanzelhöhe. | 34 = Climax. |
| 17 = Schauinsland. | 35 = Norikura. |
| 18 = Wendelstein. | 36 = Pic du Midi. |
| 60 = Whole of German Observatories. | 70 = Whole of French Observatories. |
| 80 = Whole of French and German Observatories. | 80 = Whole of European Observatories. |

(l) Burst or observation duration

| | |
|---------------------------|---------------------------|
| 0 = less than 10 minutes. | 5 = 51-60 minutes. |
| 1 = 11-20 minutes. | 6 = 61-70 minutes. |
| 2 = 21-30 minutes. | 7 = 71-80 minutes. |
| 3 = 31-40 minutes. | 8 = 81-90 minutes. |
| 4 = 41-50 minutes. | 9 = more than 91 minutes. |

Four cases may occur :

- | | | |
|--|---|--|
| 1° Times of beginning and of end of bursts observed | } | Figures „0” and „9” given in tens of minutes the life of the phenomenon : the 5th figure of the group (importance of the burst) is 1, 2 or 3 (see above). |
| 2° The beginning of the burst was observed not the end. | | The actual life of the burst is unknown, figures 0-9 give the observation duration ; distinction with the above case is made with the 5th figure of the group : 4, 5 or 6. |
| 3° The end of the burst were observed, not the beginning : | | see 2°. |
| 4° Neither the beginning or the end were observed : | | see 2°. |

(B) *Sunspot pattern according to Brunner's (Zurich) classification*

- | | | |
|----------------|----------------|----------------|
| 1 = A pattern. | 4 = D pattern. | 7 = G pattern. |
| 2 = B pattern | 5 = E pattern. | 8 = H pattern. |
| 3 = C pattern. | 6 = F pattern. | 9 = I pattern. |

German Observatories will use :

0 = facula area : the group describing the activity center will be followed by one of the following groups.

XXXX1 = K pattern. Compact facula area of medium or great brightness.

XXXX2 = L pattern. Scattered facula area, often constituted by small size facular points on very large zones.

2. — VARIATIONS IN COSMIC RADIATION INTENSITY « CORAY » Code

CODING

First group. Date and identification.

Rank of the figure in the group.

1-2. Day of observation.

3. Momentary X.

4-5. Observation station (N code).

Second group. Time of observation-Percentage.

1. Duration of the variation in hours ($0 = < 1$ h, $8 = 8-9$ h,
 $9 = > 9$ h).

2-3. Time of the beginning of variation U.T.

Increase : hour (without minutes) U.T.

Decrease : hour (without minutes) U.T. plus 50.

Normal daily variations. Minimum at midnight, maximum at noon, time of beginning given by „XX”.

4-5. *Variation percent.*

Third group. Variation pattern. Time of maximum. Measuring set type.

1. Variation pattern before the maximum.

1 = Slow decrease.

3 = Sudden decrease.

6 = Slow increase.

8 = Sudden increase.

9 = Normal daily variation (minimum at midnight ; maximum, at noon). In this case, the time of beginning (first group) and of maximum (2nd. groupe) are replaced by „X”.

2-3. Time of maximum (U.T. without minutes).

4. Variation pattern after the maximum (as before the maximum, see above).

5. Type of measuring device.

1 = Small ionization room, without screen.

2 = Small ionization room, with screen.

3 = Large ionization room, without screen.

4 = Large ionization room, with screen.

5 = „Neutron” measuring device.

6 = Coincidence Geiger counter.

CODE N

| Station | Device |
|-------------------------|---|
| 01 = Pr. Clay (Holland) | |
| 02 = Freiburg. | Ionization room of 500 l with screen. |
| 03 = | |
| 04 = Pic du Midi. | |
| 05 = Predigtstuhl. | Various 23-50 l rooms with or without screen. |
| 06 = | |
| 07 = | |
| 08 = Wallgau. | 4 l Kolhörster room with screen. |
| 09 = Weissenau. | two Geiger-Müller counter sets. |
| 10 = Zugspitze. | two Geiger-Müller counter sets. |
| 11 = Heidelberg. | Neutron measuring set. |

(To be continued).

French Ursigrams

We are informing the auditors of the French Ursigrams of the following modifications :

from January 1st., 1953, four broadcastings are transmitted simultaneously on two frequencies :

(a) on 90.9 kc/s (3 300.3 m) for the four transmissions,

(b) on one of the two new frequencies mentioned in the following table.

N. B. — The two frequencies 7 430 kc/s (40.38 m) and 12 855 kc/s (23.34 m) previously used are discontinued.

| Time U.T. | Transmitter | Call signal | Frequency kc/s | Wave-length m | Wave pattern | Transmitted data | European Codes July 1952 |
|-----------|-------------|-------------|----------------|-----------------|--------------|--|---|
| 1208 | Pontoise | FYP TQC9 | 90.9 10 775 | 3300.3 27.84 | A1 A1 | Last data received and repetition of the day-before message (see 2008 and 2108 U. T.) . | |
| 1308 | Pontoise | FYP TQG5 | 90.9 13 873 | 3300.3 21.62 | A1 A1 | { Idem. | |
| 2008 | Pontoise | FYP TQC9 | 90.9 10 775 | 3300.3 27.84 | A1 A1 | <i>Sun :</i> General activity Location of activity centers Chromospheric bursts Corona Radio energy Atmospheric enhancements Sudden fading Terrestrial magnetism F2 critical frequency Es critical frequency | } CHROM CORON SOLER } PERTU MAGNE FODEU ESFRE |
| 2108 | Pontoise | FYP FYA3 | 90.9 7428 | 3300.3 40.39 | A1 A1 | { Same as 2008 | |

INTERNATIONAL GEOPHYSICAL YEAR 1957 = 1958

Giving effect to various suggestions made since 1950, the General Assembly of the International Council of Scientific Unions, held in Amsterdam in October 1952, has approved decisions previously reached by its Executive Board to organize in 1957 and 1958 a world-wide study of certain geophysical and terrestrial phenomena.

All countries are requested to cooperate in a program of observations to be outlined by a special committee of the International Council of Scientific Unions, whose activities are concerned with the features to be investigated : astronomy, geography, geophysics, meteorology, radio-science.

In 1882 during the „First International Polar Year”, scientists cooperated to investigate geophysical phenomena, such as the aurora and magnetic storms.

During the „Second International Polar Year” organized in 1932-1933, investigations were directed particularly towards the magnetic storms.

For 1957-1958, an extension of the program is planned in order to investigate the whole earth and particularly the equatorial and polar regions. Such an extension of the program justifies the name of International Geophysical Year that has been given to this plan for simultaneous, international scientific experiment. Particular investigations will be directed to observation of the phenomena of the earth's outer atmosphere and will make possible the simultaneous observation of the behavior of the earth's atmosphere at a very large number of observation points. It is hoped also that other aspects of geophysics that depend for their understanding on scientific world-wide observations can also be investigated during the International Geophysical Year. In particular, special emphasis toward improved longitude determination is under consideration.

To coordinate the preparation of this scientific demonstration, the following special committee was set up by the International Council of Scientific Unions :

International Astronomical Union :

Professor N. E. NØRLUND (Denmark).
Dr. M. NICOLET (Belgium).
An alternate to be appointed by the Union.

International Union of Geodesy and Geophysics :

Professor J. COULOMB (France).
Dr. V. LAURSEN (Denmark).
One member to be appointed.

International Geographical Union :

Professor J. M. WORDIE (Great Britain).

International Scientific Radio Union :

Dr. L. V. BERKNER (U. S. A.).
Dr. W. J. G. BEYNON (Great Britain).
Professor BOELLA (Italy).

World Meteorological Organization :

Dr. J. VAN MIEGHEM (Belgium).
One member not yet appointed.

International Council of Scientific Unions :

Col. E. HERBAYS (Belgium). (Provisional Secretary, 42, rue des Minimes, Brussels).

Besides, Professor S. CHAPMAN (Great Britain) has been appointed as Member of the Special Committee.

At the first call issued by the Committee, fifteen countries gave a favorable answer, National Committees appointed are listed below.

The Special Committee will meet next July to draft a first investigation program and to consider the means needed for its fulfillment. It is the hope of the Committee that the preliminary reports of the Unions and the National Committees will be available at this meeting.

National Committees

FIRST LIST

Australia

Convener : Dr. D. F. MARTYN, F.R.S. Commonwealth Observatory,
Mount Stromlo, Canberra.

Members : Prof. R. V. D. R. WOOLLEY, Mr. J. M. RAYNER,
Mr. P. G. LAW.

Austria

President : Dr. Heinrich FICKER, Hohe Warte, 38, Wien 19.

Secretary : Hofrat Prof. Dr. Karl MADER, Hietzingen Haupt-
strasse, 123, Wien 13.

Members : Prof. Dr. Hans BENNDORF, Prof. Dr. Otto BURKHARDT,
Prof. Dr. Albert DEFANT, Privat Dozent Dr. Josef FUCKS,
Hofrat Prof. Dr. Heinrich MACHE, Dr. Franz SAUBERER,
Prof. Dr. Ferdinand STEINHAUSER, Privat-Dozent Dr. Max
TOPERZER.

Belgium

Secretary : Mr. M. NICOLET, 3, Avenue Circulaire, Uccle (Bruxelles).

Czechoslovakia

Secretary : Dr. F. LINK, Observatoire Ondrejov, u Prahy.

Denmark

President : Prof. Dr. N. E. NØRLUND.

Secretary : Helge PETERSEN, Director, Meteorologish Institut,
Gamle have allé, 8, Charlottenlund (Copenhagen).

France

President : Pierre LEJAY.

Secretary : M. COULOMB, Institut de Physique du Globe, 191, rue
St-Jacques, Paris (5^e).

Great Britain

Convener : Prof. S. CHAPMAN.

Members : Rear Admiral A. DAY, Dr. G. E. R. DEACON, Sir
HAROLD SPENCER JONES, Sir NELSON JOHSON, Prof. A. C. B.
LOVELL, Mr. J. PATON.

Communications should be addressed to :

Dr. D. C. MARTIN,
Assistant Secretary,

The Royal Society,
Burlington House, London W1.

India

Communications should be addressed to :

Dr. S. S. BHATNAGAR,
Secretary to the Government of India,
Ministry of Natural Resources and Scientific Research,
Director, Council of Scientific and Industrial Research.
New Delhi.

Israel

President : Mr. GOLDSMIDT, P. O. B. 667, Jerusalem.

Secretary : N. ROSNAN, P. O. B. 36, Hakirya.

Japan

Secretary : Dr. Takeshi NAGATA, Geophysical Institute, Faculty
of Science, University of Tokyo.

Netherlands

President : Prof. Dr. F. A. Vening MEINESZ.

Secretary : Dr. J. VELDKAMP, c/o Kon. Ned. Meteorological Institut,
De Bilt.

Members : Prof. Ir. H. P. BERLAGE, Jr., Prof. Dr. W. BLECKER,
Prof. Dr. J. CLAY, Dr. J. VAN HERK, Dr. J. HOUTGAST,
Prof. Dr. M. G. MINNAERT, Prof. Dr. J. H. OORT, Prof.
R. ROELOFS, Ir. A. H. DE VOOGT, Ir. C. J. WARNERS, Jhr.
Dr. Ir. Th. F. VAN DER WIJCK.

Norway

President : Prof. H. SOLBERG.

Secretary : Prof. L. HARANG, Forskningsstitutt, Kjeller.

Members : Dr. A. ELIASSEN, Ing. G. ERIKSEN, Th. HESSELBERG,
H. JELSTRUP, Prof. S. ROSSELAND.

Sweden

President : Prof. H. ALFVÉN.

Secretary : Dr. N. HERLOFSON, Department of Electronics, Royal
Institute of Technology, Stockholm 70 .

Members : Dr. B. BOLIN, Dr. N. AMBOLT, Prof. L. ASPLUND,
Prof. B. LINBLAD, Prof. H. PETTERSSON, Prof. C. G. ROSSBY,
Prof. O. E. H. RYDBECK, Dr. Y. ÖHMAN, Dr. A. ÅNGSTRÖM.

Switzerland

President : Prof. Dr. J. LUGEON, Directeur de la Station Centrale
Suisse de Météorologie, Krähbühlstrasse, 53, Zurich 7/44.

Members : Prof. Dr. C. F. BAESCHLIN, Prof. Dr. E. GUYOT, Prof.
Dr. R. HAFELI, Prof. Dr. HOUTERMANS, Dr. W. JOST,
Dr. W. MÖRIKOFER, Prof. F. TANK, Prof. Dr. M. WALDMEIER.

Union of South Africa

Communication should be addressed to :

President. Council for Scientific and Industrial Research,
P. O. Box 395,

Pretoria.

United States of America

President : Dr. J. KAPLAN, Institute of Geophysics, University
of California, Los Angeles.

Members : Dr. L. H. ADAMS, Dr. H. G. BOOKER, Dr. Lyman
W. BRIGGS, Dr. G. M. CLEMENCE, Dr. C. T. ELVEY, Dr. John
A. FLEMING, Dr. Nathaniel C. GERSON, Dr. Paul KLOPSTEG,
Dr. F. W. REICHELDERFER, Captain Elliot B. ROBERTS,
Dr. Alan H. SHAPLEY, Dr. Paul A. SIPLE, Dr. Otto STRUVE,
Dr. Merle TUVE, Dr. Lincoln WASHBURN.

Ex-Officio Members : Dr. Wallace W. ATWOOD, Jr., Dr. Lloyd
V. BERKNER, Dr. J. Wallace JOYCE, Mr. William W. RUBEY.

**Special Committees
of the International Astronomical Union**

Geophysical Side

M. NICOLET.
D. BARBIER.
M. A. ELLISON.
K. O. KIEPENHEUER.

Longitudes

Prof. NØRLUND.
A. DANJON.
DE GRAAFF HUNTER.
J. A. DUERKSEN.

Geophysical Side

A. B. MEINEL.
M. RYLE.
I. S. SHKLOVSKY.
H. C. VAN DE HULST.
M. WALDMEIER.
F. L. WHIPPLE.

Longitudes

Sir Harold Spencer JONES.
P. LEJAY.
F. MOREAU.
G. SILVA.
P. SOLLENBERGER.
N. STOYKO.

SPECIAL COMMISSION OF U.R.S.I.

Tropospheric Propagation :

Dr. Ch. BURROW.
Dr. H. BOOKER.

Ionospheric Propagation :

Sir Edward V. APPLETON (*Chairman*).
Dr. D. F. MARTYN.

Terrestrial Atmospheric :

Mr. J. A. RATCLIFFE.
Dr. RIVAULT.

Radio Astronomy :

Dr. E. LAFFINEUR.
Prof. A. C. B. LOVELL.

**SPECIAL COMMITTEE
OF THE WORLD METEOROLOGICAL ORGANIZATION**

Prof. C. E. PALMER (U. S.).
Dr. A. A. SOLOTOUKHINE (U. R. S. S.).
Prof. J. VAN MIEGHEM (Belgium).

CALENDAR OF FORTHCOMING INTERNATIONAL SCIENTIFIC CONFERENCES

| Date | Subject | Organizer | Location |
|--------------------------|--|---|-----------------------------|
| 1953 March 11-April 8 | World Meteorological Organisation. Commission for Synoptic Meteorology. | Secretary General, Dr. G. Swoboda, Campagne Rigot, Avenue de la Paix, Genève. | Washington |
| April 15-17 | IUPAP. Colloquium on Optical Problems of Vision. | Dr. L. Villena, Consejo Nacional de Fisica, Serrano 121, Madrid. | Madrid |
| April 20-21 | IUPAP. International Commission on Optics. | | Madrid |
| June 30-July 3 | ICSU. Special Committee for the International Geophysical Year 1957-1958. | E. Herbays, 42, rue des Minimes, Bruxelles. | Bruxelles |
| July 5-11 | IUPAP. Colloquium on Cosmic Rays | Prof. L. Leprince-Ringuet, 17, rue Descartes, Paris, 5 ^e . | Bagnères-de-Bigorre, France |
| July 6-10 | I.C.S.U. Executive Board | Dr. R. Fraser, Unesco House, Avenue Kléber, Paris. | Strasbourg |
| July 13-18 | UIA. Symposium on Gas Dynamics in Interstellar Clouds. | General Secretary M. P. Th. Oosterhoff, Leiden Observatory, Netherlands. | Cambridge, England |

| | | | |
|----------------------|---|---|------------------------|
| July 22-25 | UIA. Symposium on Coordination of Galactic Research. | Idem. | Groningen, Netherlands |
| August | International Astronomical Congress | | Zurich |
| September 2-9 | British Association for the Advancement of Science. Annual Meeting. | D. N. Lowe, Esq. Burlington House Piccadilly, London, W. 1. | Liverpool |
| September 4-13 | International Conference on Theoretical Physics. | Prof. M. Kotany, Dept of Physics, Tokyo University. | Kyoto, Japon |
| September 14-24 | IUPAP. Colloquium on Fundamental Physical Theory. | Dr. Y. Fujioka, Science Council of Japan, Uneo Park, Tokyo. | Idem |
| September | UTI-C.C.I.R. 7th Plenary Assembly. | International Telecommunication Union, Palais Wilson, Genève. | London |
| 1954 | | | |
| July 6-10 | IUPAP. 8th General Assembly. | Prof. P. Fleury, 3, Boulevard Pasteur, Paris, 15 ^e . | London |
| September | URSI. XIth General Assembly. | Secretary General, E. Herbays, 42, rue des Minimes, Bruxelles. | Netherlands |
| September | Joint Commission on the Ionosphere. | Idem. | Brussels |
| September (2nd half) | I.G.G.U. General Assembly. | Secretary General G. Laclavère, 30, Avenue Rapp, Paris 7 ^e . | Rome |
| September 1-8 | British Association for the Advancement of Science. Annual Meeting. | D. N. Lowe, Esq. Burlington House, Piccadilly, London, W. 1. | Oxford |

