



14th National Congress of the Australian Institute of Physics

Adelaide University, South Australia:
December 10 — 15, 2000



**Driving Technology Through Discovery,
Understanding and Innovation**

INDIVIDUAL CONFERENCE PROGRAM

VERSION 2
(Excludes plenary sessions)

To find an author, or topic, select the
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SOLAR, TERRESTRIAL & SPACE PHYSICS (STSP)

Monday, December 11, 2000

2:00 pm — 3:30 pm VENUE: CINEMA, LEVEL 5 Chairperson: Dick Thomas

- 2:00 pm Prof Peter DYSON La Trobe University
900 *An overview of the Tasman International Geospace Environment Radar (TIGER)*
- 2:18 pm Dr Murray PARKINSON La Trobe University
901 *HF digital ionosonde and TIGER backscatter radar observations of magnetospheric electric fields penetrating the southern-hemisphere mid-latitude ionosphere*
- 2:36 pm Dr Murray PARKINSON La Trobe University
902 *Rates of occurrence of TIGER HF radar echo parameters sorted according season, the KP index and the interplanetary magnetic field at sunspot maximum*
- 2:52 pm Prof Peter DYSON La Trobe University
903 *TIGER backscatter ionogram observations*
- 3:10 pm Dr Fred MENK University of Newcastle
904 *TIGER HF radar observations of ULF waves near the plasmopause*

4:00 pm — 5:30 pm VENUE: CINEMA, LEVEL 5 Chairperson: Fred Menk

- 4:00 pm Prof Brian FRASER University of Newcastle
905 *Are electromagnetic ion cyclotron waves bouncing wave packets?*
- 4:18 pm Dr Pavlo PONOMARENKO University of Newcastle
906 *Spatial integration and Pc5 ULF azimuthal wavenumbers observed on the ground*
- 4:36 pm Mr Paul MANUSIU University of Newcastle
907 *Propagation characteristics of electromagnetic ion cyclotron waves propagating in the magnetosphere: CRRES Poynting Vector observations*
- 4:54 pm Mr Sean ABLES University of Newcastle
908 *Transient ULF wave signatures at the cusp*
- 5:12 pm Mr Tim HOWARD University of Newcastle
909 *Propagation of ULF (10 – 50 mHz) waves into the high latitude magnetosphere*

Tuesday, December 12, 2000

11:00 am — 12:30 pm VENUE: CINEMA, LEVEL 5 Chairperson: Robert Stening

- 11:00 am Dr Dave NEUDEGG Rutherford-Appleton Lab
910 *High-latitude geospace coupling: Preparing for Cluster II operations with Equator-S and SuperDARN observations*
- 11:18 am Dr Murray SCIFFER University of Newcastle
911 *Mixed ULF wave modes and HF Doppler oscillations*
- 11:36 am Mr Phillip WEBB La Trobe University
912 *Comparisons of the Global Plasmasphere Ionosphere Density (GPID) model to direct observations of the plasmasphere*
- 11:54 am Dr Robert GARDINER-GARDEN Defence Science and Technology Organisation
913 *Real time modelling of ionospheric electron density (in the Australian region)*

Tuesday, December 12, 2000

11:00 am — 12:30 pm **SOLAR, TERRESTRIAL & SPACE PHYSICS (STSP)**

12:12 pm Dr Chris COLEMAN Adelaide University

- 914** *Feynman integration techniques applied to the analysis of radio wave propagation in the atmosphere and ionosphere*

2:00 pm — 3:30 pm VENUE: CINEMA, LEVEL 5 Chairperson: Elizabeth Essex

2:00 pm Dr Richard M THOMAS DSTO

- 915** *Equatorial scintillation on GPS links during 2000*

2:18 pm Dr Manuel CERVERA DSTO

- 916** *Observations of equatorial ionospheric radio-wave scintillation in South East Asia*

2:36 pm Dr Lech HAJKOWICZ Queensland University

- 917** *Simultaneous observations of ionospheric quasiperiodic scintillations from short and long meridional baselines using VHF transmissions from transit satellites*

2:54 pm Dr Gordon BOWMAN University of Queensland

- 918** *Similarities between equatorial and mid-latitude spread-F, as recorded by ionograms*

**4:00 pm — 5:30 pm STSP POSTER SESSION
VENUE: GAMES, LEVEL 5**

MT 171 Dr Anthony BREED Australian Antarctic Division

Digisonde observation at Casey, Antarctica on the "Day the Solar Wind Almost Stopped", May 10-12, 1999

MT 172 Dr Laurence CAMPBELL Adelaide University

Identification and analysis of meteor reflections

MT 173 Dr Russell CLARKE

A study of equatorial sporadic-E

MT 174 Dr Junhu DU IPS Radio and Space Services

A comparison between ISM measurements and TEC fluctuations in South East Asian regions

MT 175 A/Prof Geoffrey GOODWIN University of South Australia

Rainfall measurement using a piezo-electric technique suitable for weather stations

MT 176 Dr Hedley J HANSEN ESST Group

The remote sensing of objects using thermal signatures at millimetre wave frequencies (94 GHz)

MT 177 Mr Longsong HE La Trobe University

Geospace effects at Zhongshan sStation (L=13.9) during solar storms: Initial results

MT 178 Dr Didier MONSELESAN IPS Radio and Space Services

Digital ionosonde observations of E/F - Regions during intense lacuna conditions at polar cap latitude: Implications for drift velocity determination

MT 179 Dr Didier MONSELESAN IPS Radio and Space Services

Simultaneous observations of E and F region drift at Canberra and Camden, two mid-latitude stations

MT 180 Dr Phil WILKINSON IPS Radio & Space Services

A review of the space weather month, September 1999

Thursday, December 14, 2000

11:00 am — 12:30 pm VENUE: CINEMA, LEVEL 5 Chairperson: TrevorHarris

11:00 am Dr Stuart ANDERSON DSTO Salisbury

- 919** *Radiowave signatures of dynamical processes in the ionosphere*

11:18 am Dr Dan MEEHAN DSTO

- 920** *Dealiasing range/doppler ambiguous HF ground backscatter*

11:36 am Dr Didier MONSELESAN IPS Radio and Space Services

- 921** *CADI and DPS ionospheric drift measurements at Casey Station, Antarctica*

11:54 am Miss Larisa LINDSAY DSTO

- 922** *Comparison of maximum-usable-frequencies obtained from oblique ionograms with those predicted by monthly median ionospheric models*

Thursday, December 14, 2000

11:00 am — 12:30 pm **SOLAR, TERRESTRIAL & SPACE PHYSICS (STSP)**

12:12 pm Mr Brett NORTHEY DSTO

923 *A comparison of DSTO and UK DERA background noise measurement systems with the CCIR noise model*

2:00pm — 3:30 pm PLASMA & SPACE JOINT SESSION

VENUE: CINEMA, LEVEL 5

Chairperson: Brian Fraser

2:00 pm Prof Peter ROBINSON University of Sydney

936 *Stochastic growth of localized plasma waves*

2:30 pm Prof Manfred HELLBERG University of Natal

937 *Waves in plasmas with power-law distributions*

2:45 pm Dr Murray SCIFFER University of Newcastle

938 *One dimensional model for ULF wave propagation in the ionosphere*

3:05 pm Mr Phillip WEBB La Trobe University

939 *The Global Plasmasphere Ionosphere Density (GPID) model*

4:00 pm — 5:30 pm VENUE: CINEMA, LEVEL 5

Chairperson: Ray Morris

4:00 pm Dr Fred MENK University of Newcastle

924 *Mapping the plasmopause using ULF waves*

4:18 pm Dr Anthony BREED Australian Antarctic Division

925 *Polar patch studies above Casey, Antarctica*

4:36 pm Prof Brian FRASER University of Newcastle

926 *Pc3-5 ULF wave observations from a triangular network of closely spaced magnetometers near Davis Station, Antarctica*

4:54 pm Dr Pavlo PONOMARENKO University of Newcastle

927 *Spectral structure of Pc3 ULF wave energy at high latitudes*

5:12 pm Mr Michael TERKILDSEN University of Newcastle

928 *Southern hemisphere imaging riometer observations of impulsive transients in the high-latitude ionosphere*

Friday, December 15, 2000

11:00 am — 12:30 pm VENUE: CINEMA, LEVEL 5

Chairperson: Phil Wilkinson

11:00 am Dr Ken LYNN Ionospheric Systems Research

929 *Low latitude negative storm effects observed in the daytime ionospheric F2 region*

11:18 am A/Prof Robert STENING University of NSW

930 *The lunar tide in the equatorial ionospheric electric field*

11:36 am Ms Frances PHILLIPS Australian Antarctic Division

931 *Determining temperatures from the Hydroxyl (8-3) band*

11:54 am Dr John INNIS Australian Antarctic Division

932 *Thermospheric gravity waves in the southern polar cap*

12:12 pm A/Prof Robert STENING University of NSW

933 *Simulating the lunar geomagnetic variations*

2:00 PM — 2:36 pm VENUE: CINEMA, LEVEL 5

Chairperson: Iain Reid

2:00 pm Dr Gary BURNS Australian Antarctic Division

934 *Southern hemisphere noctilucent clouds*

2:18 pm Mr John FRENCH Australian Antarctic Division

935 *Seasonal and trend results from seven years of hydroxyl airglow rotational temperatures at Davis Station (68.68S, 78.08E), Antarctica*
