Monday September 26

Monday Opening
9:00-9:05 Conf. Organisers

Monday AM Plenary I
10:00-10:30 Kerrie Dougherty, B. Hall, R. B. Warrington, P. Fisk Space Science Education in Australia: where is it now? What paths could it take?

10:30-11:00 Morning Tea

Monday National Context
11:00-11:30 Michele Clement National Space Policy
11:30-12:00 Clare McLoughlin Roadmap 2011
12:00-12:20 Brett Biddington Brett Biddington Getting the Narrative Right: Next Steps in the Australian Space Journey
12:20-12:40 Phil Diamond Phil Diamond The Square Kilometre Array: project status and Australia’s bid to host the telescope
12:40-13:00 Russell Boyce Russell Boyce and the National Committee for Space Science NCSS & Decadal Plan

13:00-14:00 Lunch

Monday Space Capabilities, Education and Hazards
14:00-14:15 Roy Sach Roy Sach Where is Space?
14:30-14:45 Lisa Fogarty, S. Xiao The i-INSPIRE Satellite
11th Australian Space Science Conference

15:00-15:15
Mark Gargano, Marjan Zadnik, David Blair, Fred Deshon, Mzamose Gondwe, Auriol Heary, Nancy Longnecker, Marina Pitts, Grady Venville, Brad Whitaker
Earth and Space Sciences Professional Development: Does it make a real difference to the classroom experiences of you and your students?

15:15-15:30
Jizhang Sang, Craig Smith
An Analysis of Observations from EOS Space Debris Tracking System

15:30-15:45
Duncan Steel
Space Debris: Quantifying and Mitigating the Impact Hazard

15:45-16:00
James Bennett, Jizhang Sang
Modelling the evolution of the Low Earth Orbit debris population

Monday

Planetary I

14:00-14:15
Nicole Zellner
Impacts on the Moon: Understanding the Record of Lunar Impact Glasses

14:15-14:30
Marc Norman
The Lunar Impact Record: Greatest Hits and One Hit Wonders

14:30-14:45
Robert Pidgeon, Alexander Nemchin, Marion Grange
The earliest history of the Moon and the Earth: zircon geochronological evidence

14:45-15:00
Trevor Ireland
Samples from the Hayabusa Mission to Itokawa-25143

15:00-15:15
Paolo Sossi, Oliver Nebel
Metal – Silicate Fractionation of Iron Isotopes in Chondritic Meteorites

15:15-15:30
Yuri Amelin
A supernova-induced irradiation event in the early Solar System not confirmed by new 176Lu-176Hf data

15:30-15:45
Daniel Bunker, Jason Held
A Tether Deployment System for Picosatellites

15:45-16:00
Jason Held, Alex Green, Daniel Bunker
Vostok “4-Pines” Stout, the First Space Beer: The Flight Test and Research Plan

16:00-16:30
Afternoon tea

Tuesday September 27

Government Units IPS

Tuesday

9:00-9:20
David Neudegg
David Neudegg, Phil Wilkinson
The Bureau of Meteorology Space Weather Services

9:20-9:40
Kimberley Clayfield
Kimberley Clayfield
CSIRO Space Sciences and Technology Program

9:40-10:00
Andrew Klekociuk
Australia’s Antarctic Interests in Remote Sensing

10:00-10:20
Tony Lindsay
Tony Lindsay
DSTO Space R&D – A National Partnership

10:20-10:40
Adam Lewis
Adam Lewis, Gary Johnston
Geoscience Australia and its interests in space activities and data
11th Australian Space Science Conference

10:40-11:00  Morning Tea

Tuesday  Plenaries II
11:00-11:30  Enrico Flaminii  Enrico Flaminii  The Italian Space Agency's science projects
11:30-12:00  Tanya Vladimirova  Tanya Vladimirova  Microelectronics Design and Embedded Systems for Small Satellites
12:00-12:30  Sergio Leon-Saval  Hawthorn  Space Photonics: a new era of space instrumentation
12:30-13:00  Fred Menk  Fred Menk, John Devlin  The Next Generation OTH Radar

13:00-14:00  Lunch

Tuesday  Space Physics I
14:00-14:15  Zahra Bouya  Zahra Bouya, Mike Terkildsen  Empirical Orthogonal Function (EOF) analysis applied to Australian regional ionospheric Total Electron Content, based on GPS observations and Spherical Cap Harmonic Analysis (SCHA).
14:15-14:30  Thomas Kane  Thomas Kane, Roman Makarevich, John Devlin  HF radar observations of ionospheric backscatter during geomagnetically quiet periods
14:30-14:45  Brett Carter  Brett Carter  B. A. Carter, R. A. Makarevich, J. C. Devlin and A. Mcdonald  An analysis of the electric field dependence of the E-region irregularity phase velocity using a new HF radar configuration
14:45-15:00  Murray Sciffer  Murray Sciffer, Colin Waters  Frederick Menk, Craig Rodger, Mark Clilverd  Estimating ULF wave equatorial electric fields from ground magnetic field measurements
15:00-15:15  Fred Menk  Fred Menk  Y. H. Liu, B. J. Fraser, F. W. Menk  Relationship Between the Earth’s Radiation Belts and the Atmosphere
15:15-15:30  Fred Menk  Fred Menk  Clilverd  Electromagnetic Ion Cyclotron Waves Observed by Cluster near the Plasmapause

Tuesday  Space Tech I
14:00-14:15  Muhammad Esa Attia  Muhammad Esa Attia, Ali Haydar Goktogan, Salah Sukkarieh  Martian Rovers ’Pathways To Space’ Technical Paper
14:15-14:30  Ken Ho  Ken Ho, Thierry Peynot, Salah Sukkarieh  Analysis of Terrain Geometry Representations for Traversability of a Planetary Rover
14:30-14:45  Sin Ting Angela Lui  Sin Ting Angela Lui, Salah Sukkarieh  Decentralised Decision Making with Hard Constraints for Multi-Wheeled Rovers
15:00-15:15  Johanne Thibault  Johanne Thibault, Ali Haydar Göktoğan  A Manipulator Development for an Experimental Mars Rover
15:15-15:30  Jayde Livingstone  Jayde Livingstone  Rosenfeld  Detectors for Micro- and Nanodosimetry in Space Radiation Fields
11th Australian Space Science Conference

15:30-16:00 Afternoon tea

Tuesday

Hypersonics

16:00-16:15 Neil Mudford

16:15-16:30 Amit Saha

16:30-16:45 Yedhu Krishna

16:45-17:00 James Barth

17:00-17:15 Sean O'Byrne

17:15-17:30 David Petty

17:30-17:45 Neil Mudford

17:45-18:00 Dawid Preller

Tuesday

ASRP I

16:00-16:24 Kerrie Dougherty

16:24-16:48 Elias Aboutanios

16:48-17:12 Glenn Frankish

17:12-17:36 Kefei Zhang

17:36-18:00 Andrew Clark

Albert K. Chong, David Buttsworth, Neil Mudford, Michael Jokic, Sudantha Balage, Sean O'Byrne,

Andrew Neely


Yedhu Krishna, Joseph John Kurtz, Sean O'Byrne, James Barth, Vincent Wheatley,

Michael Smart

Varun Prakash, Sean O'Byrne, D. J. Petty, V. Wheatley, M. K. Smart

Neil R. Mudford, Sean O'Byrne, David Buttsworth and Sudantha Balage

Kerrie Dougherty, Carol Oliver and Jennifer Fergusson

Elias Aboutanios

Glenn Frankish, Simon Oliver , Leo Lymburner and Medhavy Thankappan

Kefei Zhang

Andrew Clark, Denis O'Brien, David Griffith, N. Jones, and P. Rayner

Photogrammetric application at USQ Ludwig tunnel facility

LEARNING FROM EVOLUTIONARY-ALGORITHM BASED DESIGN OPTIMISATION OF AXISYMMETRIC SCRAMJET INLETS

Diode Laser Measurement of Mach Number and Angle of Attack in a Hypersonic Inlet

Effects of Ethylene Combustion in a Hypersonic Turbulent Boundary Layer

In-model free-flight instrumentation for hypersonic shock tunnel testing

A Parametric Study of Oxygen Enriched Scramjet Combustion

Aerodynamic Coefficients in Hypersonic Flight Determined from Free Flight in a Wind Tunnel

Longitudinal Control Strategy for Hypersonic Accelerating Vehicles

Pathways to Space: a Mission to Foster the Next Generation of Scientists and Engineers

A Comprehensive Tertiary Education Program in Satellite Systems Engineering

Unlocking the Landsat Archive: a national capability for Earth observation data analysis.
The Australian Space Research Program Project - Platform Technologies for Space Atmosphere and Climate

Preliminary Results and Objectives of the ASRP Greenhouse Gas Monitor Program
Wednesday September 28

Plenary III
9:00-9:30  William Klipstein  NASA's GRAIL Mission to the Moon and Related Gravity-Sensing Instruments
9:30-10:00  Naomi Mathers  Teaching STEM Using Scenario-based Learning: Mission Programs at VSSEC
10:00-10:30  Harvey Butcher  Mt Stromlo capabilities and interests in space science
10:30-11:00  Morning Tea

Remote Sensing & Geodesy
11:00-11:15  Denis Margetic  Adapting and developing multi-spectral satellite imagery at the Bureau of Meteorology
11:15-11:30  Alan Forghani  The application of remote sensing to assess water quality monitoring in the Murray Darling Basin
11:30-11:45  Victor Fok  Using a Genetic Algorithm to Optimise Maritime Surveillance Performed by Space-based Sensors
11:45-12:00  Tzu-Pang Tseng  Precise orbit determination of low earth orbiters: analysis of orbit errors and quality assessment of receiver oscillators
12:00-12:15  Brett Carter  An investigation of the factors controlling the ionospheric scintillation levels observed by space-based and ground-based GPS receivers
12:15-12:30  Xiuping Jia  Hyperspectral Imaging and Feature Mining
12:30-12:45  Md. Ali Hossain  Supervised Feature Reduction Based on a Mutual Information Measure for Hyperspectral Image Classification
12:45-13:00  Hai Tung Chu  Integration of textural information from multispectral and Synthetic Aperture Radar (SAR) data for land cover classification

Student Space Research
11:00-11:15  Jiraporn  AUSROC Nano Stage1 Propulsion Sub-system
11:15-11:30  Pariwat Witthawatpong  Stage 1 Engine Regenerative Cooling Design of AUSROC Nano
11:30-11:45  Amrat Srisajjalertwaja  AUSROC Nano stage one engine cooling system
11:45-12:00  Pakpoom Oraphin  Nose and Fairing Payload Design of AUSROC NANO Launch Vehicle
12:00-12:15  Kalun Chow  Kalun Chow, Lachlan Thompson  Finite Element Analysis on Ausroc Nano Launch Vehicle
12:15-12:30  Angelo Villarosa  Angelo Villarosa, Aubrey Keller  Aerodynamic Analysis of AusROC Nano using CFD and Wind Tunnel Testing
12:30-12:45  Jiro Funamoto  S. Xiao  Engineering the i-INSPIRE satellite

13:00-14:00  Lunch

Wednesday  ASRP II

14:00-14:30  Daniel Shaddock  The GRACE Follow-on Mission
14:30-15:00  Steve Tsitsas  Garada - SAR formation flying
15:00-15:30  Russell Boyce  ScramSpace

Wednesday  Planetary II

14:00-14:30  Roberto Orosei  Angioletta Coradini and Roberto Orosei  Planetary Science in Italy: An Overview
14:30-14:45  Jon Clarke  Jonathan Clarke, Michael West  Australian planetary analogues and their global context: a status report
14:45-15:00  Duane Hamacher, Andrew Buchel  The Palm Valley Depression, Central Australia: Diagnosing small impact craters
15:00-15:15  Joseph Leach  Base Surge Eruption in the Tuff Rings of South East Australia: Possible implications for the interpretation of Martian surficial geology.
15:15-15:30  Steven Hobbs  GIS, Erosion and Mars: What Lake George Gullies can Tell us about Mars
# 11th Australian Space Science Conference

## Thursday September 29

**Thursday**

**Plenary IV**

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker(s)</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00-9:30</td>
<td>Mike Wheatland, Stuart Gilchrist, Pat Noble, Paul Cally, Alina Donea, Aimee</td>
<td>Solar flares, active regions, and associated Australian research</td>
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<tr>
<td>9:30-10:00</td>
<td>Iain Reid</td>
<td>Upper atmosphere and near space research at Buckland Park</td>
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<tr>
<td>10:00-10:30</td>
<td>Marc Norman</td>
<td>Planetary Science In Australia:2011</td>
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<tr>
<td>10:30-11:00</td>
<td>Morning Tea</td>
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<tr>
<td>11:00-11:15</td>
<td>Iver Cairns</td>
<td>Automatic Recognition of Complex Magnetic Regions on the Sun in GONG Magnetogram Images and Prediction of Flares: Techniques for the Flare Warning Program Flarecast</td>
</tr>
<tr>
<td>11:15-11:30</td>
<td>Robert T. Duffin</td>
<td>Type III-L Solar Radio Bursts and their Associations with Solar Energetic Proton Events</td>
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<tr>
<td>11:30-11:45</td>
<td>Bo Li</td>
<td>Type III Solar Radio Bursts Perturbed by Coronal Shocks</td>
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<tr>
<td>11:45-12:00</td>
<td>Brett Layden</td>
<td>Exact quadratic longitudinal response of a Maxwellian plasma and its application to the rate of electrostatic decay</td>
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<tr>
<td>12:00-12:15</td>
<td>Daniel Graham, Iver Cairns, Peter Robinson</td>
<td>Beam-driven turbulence and localized structures</td>
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<tr>
<td>12:30-12:45</td>
<td>Andrew Layden, Iver Cairns, Peter Robinson</td>
<td>Electrostatic decay in a magnetized plasma with applications to polarized Langmuir waves in the solar wind</td>
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<tr>
<td>12:45-13:00</td>
<td>Edhem Custovic, Wu, J. Whittington, and J. Devlin</td>
<td>Next generation Over The Horizon HF radars the and determination of foF2 in real-time</td>
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<td>11:00-11:30</td>
<td>Gian Gabriele Ori, Gian Gabriele Ori</td>
<td>Title TBD</td>
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<tr>
<td>11:30-11:45</td>
<td>Jeremy Bailey, Jeremy Bailey</td>
<td>Methane and Deuterium in Titan's Atmosphere</td>
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</tbody>
</table>
| 11:45-12:00   | Daniel Cotton, Daniel V. Cotton and Jeremy Bailey | Quantifying Carbon Monoxide Variation Below Venus’ Clouds
<p>| 12:00-12:15   | Elyse Schinella, Craig O'Neill           | Constraining weathering processes on Venus from particle size distributions and Magellan Synthetic Aperture Radar (SAR) |</p>
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<tr>
<td>12:15-12:30</td>
<td>Eriita Jones, Graziella Caprarelli, Jonathan Clarke, Franklin Mills, Rathini Mahendran, Graziella</td>
<td>Remote Identification of Soil and Moisture Variation at Gale Crater, Mars</td>
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<tr>
<td>12:30-12:45</td>
<td>Rathini Mahendran Caprarelli Maria Lugaro, Amanda I. Karakas, Carolyn Doherty, Kurt Liffman, and Sarah Maddison</td>
<td>A new approach to impact crater dating of Martian surfaces</td>
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<tr>
<td>12:45-13:00</td>
<td>Maria Lugaro</td>
<td>Radioactivity in the early Solar System</td>
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<td>13:00-14:00</td>
<td>Lunch</td>
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<tr>
<td><strong>Thursday</strong></td>
<td><strong>Space Technology II</strong></td>
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<td>14:00-14:15</td>
<td>Eamonn Glennon, Nagaraj Shivaramaiah, Peter Mumford and Kevin Parkinson Jeremy Davis, Kumaravelu Ganesan, Susanna Guatelli, Marco Petasecca, Jayde Livingstone, Michael Lerch, Dale A. Prokopovich, Mark I. Reinhard, Rainer N. Siegele, Steven Prawer, David Jamieson, Zdenka</td>
<td>A GPS Receiver Designed for Cubesat Operation</td>
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<td>14:30-14:45</td>
<td>Chris Betters, Monger, S.Z. (A.) Xiao Tanya Vladimirova, Nigel P. Bannister, John Fothergill, George W. Fraser, Mark Lester, Darren Wright, Michael</td>
<td>Instrumentation of the i-INSPIRE satellite.</td>
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<td>14:45-15:00</td>
<td>Tanya Vladimirova J. Pont, David J. Barnhart</td>
<td>CubeSat Mission for Space Weather Monitoring</td>
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<tr>
<td>15:00-15:15</td>
<td>Jiro Funamoto, J. Funamoto, J. Khachan, A. Israel R. Samuels, B. Davidson, and M. Funamoto</td>
<td>The Charge Exchange Thruster</td>
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<td>15:15-15:30</td>
<td>Richard Samuels Blair</td>
<td>ASRI Small Sounding Rocket Program</td>
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<td>15:30-15:45</td>
<td>Kirby Ikin / SPACEX</td>
<td>Microgravity Research on board the SPACEX Dragon</td>
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<tr>
<td><strong>Thursday</strong></td>
<td><strong>Planetary IV</strong></td>
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<td>14:00-14:15</td>
<td>Alice Gorman</td>
<td>Skylab vs Wresat 1: space icons in Australian social memory</td>
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</tbody>
</table>
14:15-14:30  Aditya Chopra  Aditya Chopra and Charles Lineweaver  What can the elemental abundances tell us about the site of the origin of life?
14:30-14:45  Charles Lineweaver  Charles Lineweaver and Aditya Chopra  What can life on Earth tell us about life in universe?
14:45-15:00  Duncan Steel  Duncan Steel  A hypothesis for Mercury’s high metal content
15:00-15:15  Jonti Horner  Jonti Horner, Barrie Jones  Jupiter - Friend or Foe? An answer…
15:15-15:30  Jonti Horner  Jonti Horner, Patryk Sofia Lykawka  Are two of the Neptune Trojans dynamically unstable?
15:30-15:45  Raquel Salmeron  Raquel Salmeron  The environment and processing of solids in the early solar system

15:45-16:15  **Afternoon tea**

16:15-17:00  **Closing/Future/Feedback**
### Posters - Monday afternoon

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<tr>
<td>Eriita Jones,</td>
<td>NEW UNSUPERVISED CLASSIFICATION OF THE MARTIAN SURFACE</td>
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<td>Graziella Caprarelli,</td>
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</table>
Leon Stepan, Robert Earl
Simulation and Modelling of Nanosatellites

Tanya Vladimirova
Bo Li, Iver Cairns, Yihua Yan, Peter
Hardware Acceleration of the Karhunen-Loéve Transform for Compression of Hyperspectral Satellite Imagery

Bo Li
Robinson
Predictions of Decimetric Type III Solar Radio Bursts

Brett Carter
B. A. Carter, T. A. Kane, A. C. Kellerman, R. Norman, C. Wang, Y. Li and K. Zhang
The ionospheric variability leading up to the Japanese Tohoku earthquake

Joseph Leach
Joseph Leach, Patryk
Some Possible Victorian Analogues of the Flat Topped Volcanoes of Venus

Jonti Horner
Sofia Lykawka, F.P. Mills, M. Sundaram, Shunmuga M. Allen
Are two of the Neptune Trojans dynamically unstable?

Franklin Mills
Preliminary modelling of odd nitrogen photochemistry on Venus

Hagen Schulte in den Baeume
Cairns, Peter A. Robinson
Nonzero azimuthal magnetic fields at the solar source surface: Extraction, model, and implications

Raquel Salmeron
Raquel Salmeron
The environment and processing of solids in the early solar system