



## POST MEETING REPORT FORM

Deadline for Submission: within 1 month after the meeting

For Symposia the following documents should be attached:

- (i) Final scientific program, list of invited review speakers and session chairs;
- (ii) Summary of the scientific highlights of the meeting (1 page, to be published on the IAU website);
- (iii) List of participants, including their distribution by country and gender (double bar chart);
- (iv) List of recipients of IAU grants, stating the amount received, country and gender;
- (v) An Executive Summary of the Meeting (1-2 pages) to be published on the IAU website.

For Symposia the Post Meeting Report should be sent to the AGS.

For Focus Meetings the Post Meeting Report should include the documents referred to above in (i), (ii) and (v) and be sent to the GS.

For Regional Meetings the Post Meeting Report should include the documents referred above from (i) to (v), as well as a proposal for the next venue, and be sent to the GS.

1. Meeting Number: IAU Symposium 335
2. Meeting Title: Space Weather of the Heliosphere: Processes and Forecasts
3. Coordinating Division: Division E Sun and Heliosphere
4. Dedication of meeting (if any):
5. Location (city, country): Exeter, UK
6. Dates of meeting: July 17-21, 2017
7. Number of participants: 185, of which 38 received IAU grant support

8. List of represented countries: 30 countries listed below
9. Report submitted by: Claire Foullon, Chair SOC and LOC
10. Date and place: 23-10-2017, Exeter, UK
11. Signature of SOC Chairperson:

List of 30 represented countries:

Argentina  
Austria  
Belgium  
Brazil  
Canada  
China  
Ecuador  
Finland  
France  
Germany  
Greece  
Hungary  
India  
Ireland  
Italy  
Japan  
Mexico  
Morocco  
Nepal  
Netherlands  
Pakistan  
Russia  
South Africa  
South Korea  
Spain  
Sweden  
Thailand  
Turkey  
United States  
United-Kingdom

# POST MEETING REPORT

## IAU Symposium 335 *Space Weather of the Heliosphere: Processes and Forecasts*



Symposium photograph taken on 19<sup>th</sup> July 2017.

### Table of Contents

(i) Final scientific program	2
List of invited review speakers and session chairs	2
Oral Program	3
Poster Program	12
(ii) Summary of the scientific highlights	18
(iii) List of participants	19
(iv) List of recipients of IAU grants	25
(v) Executive Summary	26



## (i) Final scientific program, list of invited review speakers and session chairs

We list invited speakers and session chairs below and the next pages detail the scientific oral and poster programs, with any corrections from the published conference booklet.

### Invited speakers (in the order of the Scientific Program):

**Mike Hapgood**, Rutherford Appleton Laboratory, UK  
**Mark S. Miesch**, High Altitude Observatory/NCAR, USA  
**Dibyendu Nandi**, IISER Kolkata, India  
**Nicole Vilmer**, Observatoire Paris-Meudon/LESIA, France  
**Alexei Struminsky**, Space Research Institute, Moscow, Russia  
**Hebe Cremades**, UTN-FRM/CONICET, Argentina  
**Alisson Dal Lago**, National Institute for Space Research, Brazil  
**Aline A. Vidotto**, Trinity College Dublin, Rep. Ireland  
**Stephen A. Fuselier**, Southwest Research Institute, USA  
**David Brain**, LASP Colorado, USA  
**Mike Lockwood**, University of Reading, UK  
**Ian R. Mann**, University of Alberta, Canada  
**Aziza Bounhir**, Cadi Ayyad University, Morocco  
**Esa Turunen**, University of Oulu, Finland  
**Heather A. Elliott**, Southwest Research Institute, USA  
**Arnab R. Choudhuri**, Indian Institute of Science, India  
**Christopher T. Russell**, IGPP/UCLA, USA  
**Arik Posner**, NASA/HQ, USA  
**Mauro Messerotti**, INAF-Astronomical Observatory of Trieste, Italy  
**Huaning Wang**, National Astronomical Observatories/CAS, China  
**Masha Kuznetzova**, NASA/GSFC, USA  
**K.D. Leka**, NorthWest Research Associates, USA  
**Daikou Shiota**, Nagoya University, Japan  
**Hector Socas-Navarro**, Instituto de Astrofísica de Canarias, Spain  
**Terrance Onsager**, NOAA/NWS/Space Weather Prediction Center, Colorado, USA  
**Lee-Anne McKinnell**, SANSA Space Science, South Africa

### Session chairs (in the order of the Scientific Program):

Claire Foullon, University of Exeter, UK  
Francesco Berilli, Università di Roma Tor Vergata, Italy  
David Webb, Boston College/ISR, USA  
Sergio Dasso, Instituto de Astronomía y Física del Espacio, Argentina  
Patricia Reiff, Rice University, USA  
Olga Malandraki, IAASARS/National Observatory of Athens, Greece  
Ian R. Mann, University of Alberta, Canada  
Allan Sacha Brun, CEA Saclay, France  
Norma Crosby, Royal Belgian Institute for Space Aeronomy, Belgium  
David Jackson, Meteorological Office, Exeter, UK



# MON 17 - am

08:00 *Registration opens – Northcott Theatre*

08:30 *Arrival Coffee/Tea*

## Conference Introduction

Chair: Claire Foullon

09:00 Opening 1: Welcome by the Symposium Chair and Introduction by **Mike Hapgood**

## Session 1: Solar drivers and activity levels

Chair: Francesco Berrilli

09:15 **Mark Miesch** - *Modeling the Solar Cycle and Surface Flux Transport in 3D*

09:40 Jack Carlyle - *The 2015 St Patrick's Day Storm: Origins*

09:54 Valentin Martinez Pillet - *Vector magnetic fields of solar filaments and the prediction of Bz*

10:08 **Dibyendu Nandi** - *An Overview of Magnetic Activity in Solar-like Stars*

10:35 *Coffee Break*

11:00 Opening 2: Welcome from **Nick Talbot**, Deputy Vice-Chancellor for Research and Impact

11:05 Garyfallia Kromyda - *Statistical Analysis of Individual Solar Active Regions*

11:19 Han He - *Magnetic activity discrepancies of solar-type stars revealed by Kepler light curves*

11:33 **Nicole Vilmer** - *How to anticipate flares and super flares?*

11:58 Navin Chandra Joshi - *Chain of Reconnections Observed During Sympathetic Eruptions*

12:12 Sophie Murray - *Connecting Coronal Mass Ejections to their Solar Active Region Sources: Combining Results from the HELCATS and FLARECAST Projects*

12:30 *Lunch – Reed Hall*



13:25 *School Prize Ceremony – Northcott Theatre*

## Session 2: Solar wind and heliosphere

Chair: David Webb

- 13:35 **Alexei Struminsky** - *Gamma-ray Solar Flares and In-situ Particle Acceleration*
- 14:00 Hugh Hudson - *Solar Events with Extended Coronal Hard X-ray Emission*
- 14:14 Valentina Zharkova - *Effects of energetic particles of solar wind on Space Weather environment in the heliosphere*
- 14:28 **Hebe Cremades** - *Pursuing forecasts of the behaviour of solar disturbances through modeling and observations*
- 14:53 Vemareddy Panditi - *Comparison of Magnetic Properties in a Magnetic Cloud and Its Solar Source on 2013 April 11-14*
- 15:10 *Coffee Break*
- 15:35 Nandita Srivastava - *Interplanetary and Geomagnetic Consequences of Interacting CMEs of June 13-14- 2012*
- 15:49 Christina Kay - *The Effects of Deflection and Rotation on a CME's Near-Earth Magnetic Field Orientation*
- 16:03 Manuela Temmer - *Interplanetary space relaxation time from the impact of coronal mass ejections*
- 16:17 **Alisson Dal Lago** - *Effects of ICMEs on high energetic particles as observed by the Global Muon Detector Network (GMDN)*
- 16:42 Jinhye Park - *Dependence of the Peak Fluxes of Solar Energetic Particles on Coronal Mass Ejection Parameters from STEREO and SOHO*
- 16:56 Olga Khabarova - *Re-Acceleration of Energetic Particles In Large-Scale Heliospheric Magnetic Cavities—An Underestimated Factor Of The Space Radiation Environment*
- 17:10 *Welcome Reception - Reed Hall*



# TUE 18 - am

08:30 *Arrival Coffee/Tea*

## Session 2: Solar wind and heliosphere

Chair: Sergio Dasso

- 09:00 **Aline Vidotto** - *Winds of other Suns and their effects on exoplanetary systems*
- 09:25 Pauli Väisänen - *Long-term evolution of the power spectrum of galactic cosmic rays*
- 09:39 Jon Linker - *What Is The Best Use of Magnetic Maps for Coronal/Solar Wind Models?*
- 09:53 Rui Pinto - *New strategies for modelling and forecasting the background solar wind*

## Session 3: Impact of solar wind, structures and radiation on magnetospheres

Chair: Patricia Reiff

- 10:07 **Stephen A. Fuselier** - *USA Solar Wind-Magnetosphere Coupling and the MMS Mission*
- 10:35 *Coffee Break*
- 11:00 Davide Rozza - *Comparison And Time Evolution Of The Geomagnetic Cutoff At The ISS Position: Internal Vs External Earth Magnetic Field Models*
- 11:14 Caitriona Jackman - *Large-Scale Structure of the Solar Wind Upstream Of Jupiter and Saturn with Implications for Solar Wind-Magnetosphere Coupling*
- 11:28 **David Brain** - *The Response of the Martian Atmosphere to the Solar Wind*
- 11:53 Rok-Soon Kim - *Different Responses of Solar Wind and Geomagnetism to Solar Activity during Quiet and Active Periods*
- 12:07 Dominique Fontaine - *Implications of the magnetic structure of magnetic clouds for their interaction with the terrestrial bow shock and magnetopause*
- 12:25 *Extended Lunch – Reed Hall*



## Session 3: Impact of solar wind, structures and radiation on magnetospheres

Chair: Patricia Reiff

- 14:00 Galina Kotova - *Geomagnetopause position and shape dependence on solar wind plasma and IMF parameters: analytic model comparison with observations and 3-D MHD runs*
- 14:14 Sarah Glauert - *Modelling Extreme Events In The Earth's Electron Radiation Belts*
- 14:28 **Mike Lockwood** - *Centennial Variability of Space Climate*
- 14:53 Ruth Bamford in place of Ingrid Mann – *EISCAT Space Weather Research - Challenges And Strategic Research Plans For Earth And The Heliosphere*
- 15:07 **Ian R. Mann** - *On the Elegant Dynamics of the Ultra-relativistic Van Allen Radiation Belt: How ULF Wave Transport Explains an Apparently Diverse Response to Solar Wind Forcing*

## Poster Session – Reed Hall

- 15:35 *Coffee Break and Poster Viewing*



Reed Hall, a majestic Italianate Mansion built in 1867 and set within beautifully landscaped gardens on the Streatham campus.





# WED 19 - am

08:30 *Arrival Coffee/Tea*

## Session 4: Impact of solar wind, structures and radiation on ionospheres, atmospheres

Chair: Olga Malandraki

09:00 **Aziza Bounhir** - *Thermospheric Dynamics in quiet and disturbed conditions*

09:25

09:39 **Esa Turunen** - *Role of D-region Ion Chemistry in Atmospheric Forcing by Precipitating High-Energy Particles*

10:04 Delores Knipp - *Shock, Sheath And Ejecta Control Of Upper Atmosphere Heating And Cooling—When Nature Reigns In Storm Time Response Of The Thermosphere*

10:18 Tim Fuller-Rowell - *Modeling the thermosphere and ionosphere response to geomagnetic storms*

10:35 *Coffee Break*

11:00 Paulo Roberto Fagundes - *Ionosphere Space Weather Over The South America Region During The St. Patrick's Geomagnetic Storm On March 2015*

11:14 **Heather Elliott** - *Solar Wind Interaction with Pluto*

## Session 5: Long-term trends and predictions for space weather

Chair: Olga Malandraki

11:39 **Arnab Rai Choudhuri** - *Predicting A Solar Cycle Before Its Onset Using A Flux Transport Dynamo Model*

12:10 *Symposium Photograph – Reed Hall*

12:20 *Lunch – Reed Hall*

13:00 *Coaches departure – Excursion to Sidmouth*



# THU 20 - am

08:30 *Arrival Coffee/Tea*

## Session 5: Long-term trends and predictions for space weather

Chair: Olga Malandraki

09:00 Ching Pui Hung - *Estimating the Solar Meridional Flow and Predicting the 11-yr Cycle Using Advanced Variational Data Assimilation Techniques*

09:14 Kseniia Tlatova - *Reconstruction of the filaments properties- based on centenarians data daily observations of the Sun in H-alpha line*

09:28 Prantika Bhowmik - *Prediction of Solar Cycle 25 Using a Surface Flux Transport Model*

09:42 **Christopher T. Russell** - *The solar wind interaction with the solar system*

10:07 Kalevi Mursula - *Seasonal Solar Wind Speeds For The Last 100 Years: Unique Coronal Hole Structures During The Peak And Demise Of The Grand Modern Maximum*

10:21 Ralph Neuhaeuser - *Aurorae In The Deep Phase of the Maunder Minimum?*

10:35 *Coffee Break*

## Session 6: Challenges and strategic plans for Earth and the heliosphere

Chair: Ian Mann

11:00 Richard Horne - *Electron Acceleration Due To Wave-Particle Interactions in the Outer Radiation Belt for a Severe Space Weather Event Driven by a Fast Solar Wind Stream*

11:14 **Mauro Messerotti** - *Defining and Characterising Heliospheric Weather and Climate*

11:39 Arik Posner in place of Steven W. Clarke - *NASA Heliophysics Space Weather Research – Challenges and Strategic Plans for Earth and the Heliosphere*

11:53 **Arik Posner** - *Early Warning Of Solar Radiation Hazards – New Concepts, Capabilities, And Applications*

12:20 *Extended Lunch – Reed Hall*



## Session 6: Challenges and strategic plans for Earth and the heliosphere

Chair: Ian Mann

- 13:55 IAU TOWN HALL - *United Nations Expert Group on Space Weather: Strategy for Developing an International Framework for Space Weather Services (2018-2030)*
- 14:35 Irina Myagkova - *Control and Prediction of Radiation Environment in the Frame of Space Monitoring Data Center at Moscow State University*
- 14:49 Ralf Keil - *The SSA SWE Data Centre as a Tool Supporting the Space Weather Community*
- 15:03 Victor De la Luz - *The Mexican Space Weather Service – SCiESMEX*

## Session 7: Forecasting models

Chair: Allan Sacha Brun

- 15:17 **Huaning Wang** - *Numerical Short-term Solar Activity Forecasting*
- 15:45 *Short Coffee Break*
- 16:00 Antoine Strugarek- *A Physically-Based Sandpile Model for the Prediction of Solar Flares Using Data Assimilation*
- 16:14 Mathew Owens - *Empirical solar-wind forecasts: Why they still matter in a world of advanced physics-based numerical models*
- 16:28 Nat Gopalswamy - *A New Technique to Provide Realistic Input to CME Forecasting Models*
- 17:00 *Coaches departure – Conference Dinner in Torquay*



# FRI 21 - am

08:30 *Arrival Coffee/Tea*

## Session 7: Forecasting models

Chair: Allan Sacha Brun

09:00 **Maria Kuznetzova** - *Synergies in space weather modeling*

09:25 Janet Luhmann - *Prospects for Forecasting Solar Energetic Particle Events using ENLIL and SEP MOD*

09:39 **K.D. Leka** - *Forecasting Solar Flares: Present Status- Recent Advances- and Continued Challenges*

10:04 Marion Weinzierl - *Effect of non-potential coronal boundary conditions on solar wind prediction*

10:18 Silvia Dalla - *Application of Test Particle Simulations to Solar Energetic Particle Forecasting*

10:35 *Coffee Break*

11:00 **Daikou Shiota** - *Development of MHD simulation of interplanetary propagation of multiple coronal mass ejections with internal magnetic flux rope*

11:25 Mitsue Den - *High-Speed Solar Wind Forecast Model From The Solar Surface To IAU Using Global 3D MHD Simulation*

11:39 Stefano Della Torre - *The HelMod Monte Carlo Model for the Propagation of Cosmic Rays in Heliosphere*

## Session 8. Space weather monitoring, instrumentation, data and services

### 8a. Future Missions and Instrumentation

Chair: Allan Sacha Brun

11:53 **Hector Socas-Navarro** - *Next Generation Solar Telescopes*

12:18 Roberta Forte - *The MOTH II Doppler-magnetographs and data calibration pipeline*

12:35 *Lunch – Reed Hall*



# FRI 21 - pm

## 8a. Future Missions and Instrumentation

Chair: Norma B. Crosby

- 13:30 Mario Bisi - *The Worldwide Interplanetary Scintillation (IPS) Stations (WIPSS) Network in support of Space-Weather Science and Forecasting*
- 13:44 Sabrina Savage - *The Coronal Spectrographic Imager In The EUV (COSIE)*
- 13:58 Dipankar Banerjee - *The inner coronagraph on board Aditya L1 and automatic detection of CMEs*
- 14:12 Graziella Branduardi-Raymont - *SMILE: A Novel and Global Way to Explore Solar-Terrestrial Relationships*
- 14:26 Junga Hwang - *Small scale magNetospheric and Ionospheric Plasma Experiments; SNIPE*

## 8b. Data Handling and Assimilation & Relationships with the 'civil' society

Chair: Norma B. Crosby

- 14:40 **Terrance Onsager** - *Data Utilization for Space Weather*
- 15:05 **Lee-Anne McKinnell** - *Operational Space Weather Practices as a service to society in South Africa*
- 15:35 Coffee Break

## Round Tables

### Table 1. Data Handling and Assimilation – Northcott Theatre

Chair: David Jackson

- 15:55 Petrus Martens - *Data Handling and Assimilation for Solar Flare Prediction*
- Sean Elvidge - *Using The Local Ensemble Transform Kalman Filter (LETKF) For Upper Atmosphere Modelling*
- Michael Sharpe - *Space – The Final Verification Frontier?*
- Xinghua Dai - *Reconstruction And Propagation Of Coronal Mass Ejections Based On Genetic Algorithm*

### Table 2. Relationships with the 'Civil' Society – IAIS

Chair: Norma B. Crosby

- 15:55 Mario Bisi for Mike Hapgood - *Space Weather – What Is The Real Risk And How Do We Communicate That?*
- Suzy Bingham - *A citizen science magnetometer for measuring the effects of space weather*
- 16:55 **Terrance Onsager & Lee-Anne McKinnell** - Plenary Summaries of Round tables, Northcott Theatre Chair: David Jackson
- 17:05 Final Words from **Yihua Yan**, IAU Div E President
- 17:10 Conference Ends



## Poster Program

### Location of Posters in Reed Hall:

	Level	Room
Session 1	Ground Floor	Margaret Hewitt
Session 7		Ibrahim Ahmed
Sessions 2, 3 and 4	Upper floor	Upper Lounge
Session 5		Walter Dawn Room
Session 8		Upper Landing

Ref. Presenting Author Poster Title

### Session 1. Solar drivers and activity levels

PI-01	Mahender Aroori	Quiet sun radiation during solar cycle 23 and 24
PI-02	Allan Sacha Brun	The Solar Dynamo and its Many Variabilities
PI-03	Jack Carlyle	Weighing Silhouettes: The Mass of Solar Filaments
PI-04	Nai-Hwa Chen	Temperature of source regions of 3He-rich impulsive solar energetic particles events
PI-05	Bernhard Fleck	First Results from the 2016-2017 MOTH-II South Pole Campaign
PI-06	Tadhg Garton	Multi-Thermal Segmentation And Identification of Coronal Holes
PI-07	Gareth Hawkes	Magnetic Helicity Flux As A Predictor Of The Solar Cycle
PI-08	Andrew Hillier	Observations of MHD Turbulence in Solar Prominences
PI-09	Petra Kohutova	Simulating The Dynamics Of Coronal Plasma Condensations
PI-10	Konstantina Loumou	Solar flare association with the Hale Sector Boundary
PI-11	Helen Mason	Spectroscopic Diagnostics of small flares and jets
PI-12	Daniel Miller	Alignment as an indicator of changes to modal structure within the Roberts flow
PI-13	Karin Muglach	Photospheric Magnetic Field Evolution And Flow Field Of Coronal Hole Jets
PI-14	Irina Myagkova	Hard X-Ray Emission of Solar Flares Measured by Lomonosov Space Mission
PI-15	Aleksandra Osipova	The Waldmeier Effect For Two Populations Of Sunspots
PI-16	Vemareddy Panditi	Research on solar drivers of space-weather: sun-earth connection of Magnetic Flux Ropes
PI-17	Nandita Srivastava	On the Dynamics of the Largest Active Region of the Solar Cycle 24
PI-18	Jianfei Tang	Propagation and Absorption of Electron Cyclotron Maser Emission Driven by Power-law Electrons
PI-19	Erwin Verwichte	Excitation and evolution of transverse loop oscillations by coronal rain



PI-20	Nicole Vilmer	Reliability of Photospheric Eruptive Proxies Using Parametric Flux Emergence Simulations
PI-21	Maria Weber	Simulations of Magnetic Flux Emergence in Cool Stars
PI-22	Matthew West	Further Exploration Of Post-Flare Giant Arches
PI-23	Yan Yan	Comparative study on the statistical characteristics between solar-type star flares and solar flares

## Session 2. Solar wind and heliosphere

P2-01	Tanja Amerstorfer	Arrival Prediction of a Coronal Mass Ejection as observed from Heliospheric Imagers at L1
P2-02	Luke Barnard	Testing The Current Paradigm Of Space Weather Prediction With The Heliospheric Imagers
P2-03	Mario Bisi	The Worldwide Interplanetary Scintillation (IPS) Stations (WIPSS) Network October 2016 Campaign: LOFAR IPS Data Analyses
P2-04	Sergio Dasso	Superposed Epoch Study of Magnetic Clouds And Their Driven Shocks/Sheaths Near Earth
P2-05	Andrzej Fludra	Testing Models Of The Fast Solar Wind Using Spectroscopic And Heliospheric In Situ Observations
P2-06	Pavel Gritsyk	Electron acceleration in collapsing magnetic traps during the solar flare on July 19- 2012: observations and models
P2-07	Karine Issautier	Measuring the Solar Wind Electron Temperature Anisotropy using the Quasi-thermal Noise Spectroscopy method on WIND
P2-08	Daniel Johnson	Heliospheric Magnetic Field And Solar Wind Behaviour During Solar Cycle 23-24
P2-09	Olga Khabarova	Conic Current Sheets As Sources Of Energetic Particles In The High-Latitude Heliosphere In Solar Minima
P2-10	Olga Malandraki	Compositional Analysis Within The 'HESPERIA' HORIZON 2020 Project to Diagnose Large Solar Energetic Particle Events During Solar Cycle 23
P2-11	Pradiphat Muangha	Ground Level Enhancements in Solar Energetic Particles Observed by IceTop during 2011 to 2016
P2-12	Milton Munroe	A Behavioural Model Of The Solar Magnetic Cycle
P2-13	Nariaki Nitta	Earth-Affecting Coronal Mass Ejections Without Obvious Low Coronal Signatures
P2-14	Barbara Perri	Quasi-Static And Dynamical Simulations Of The Solar Wind Over An 11-Year Cycle
P2-15	Alexei Struminsky	Cosmic Rays near Proxima Centauri b
P2-16	Aline Vidotto	The Solar Wind Through Time
P2-17	David Webb	Understanding Problem Forecasts of ISEST Campaign Flare-CME Events

## Session 3. Impact of solar wind structures and radiation on magnetospheres

P3-01	Franklin Aldás	Analysis Of Variations Of Earth's Magnetic Field Produced By Equatorial Electro-Jets In Sudamerica
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P3-02	Thamer Alrefay	Testing the Earth'S Bow Shock Models
P3-03	Sergio Dasso	Statistical Analysis of Extreme Electron Fluxes in the Radiation Belts: Observations from ICARE-NG/CARMEN-I- SAC-D
P3-04	Yongqiang Hao	Detection Of Plasmaspheric Compression By Interplanetary Shock Using GPS TEC Technique
P3-05	Rungployphan Kieokaew	Magnetic Curvature and Vorticity Four-Spacecraft Analyses on Kelvin-Helmholtz Waves: a MHD Simulation Study
P3-06	Galina Kotova	Physics-based modeling of the density distribution in the whole plasmasphere using measurements along a single pass of an orbiter
P3-07	Stefania Lepidi	Ground And Space Observations To Determine The Location Of Locally Vertical Geomagnetic Field
P3-08	Stefania Lepidi	Determining The Polar Cusp Longitudinal Location From Pc5 Geomagnetic Field Measurements At A Pair Of High Latitude Stations
P3-09	Nigel Meredith	Extreme Relativistic Electron Fluxes in the Earth's Outer Radiation Belt: Analysis of INTEGRAL IREM Data
P3-10	Gabrielle Provan	Planetary Period Oscillations In Saturn's Magnetosphere: Examining The Relationship Between Changes In Behavior And The Solar Wind.
P3-11	Pat Reiff	MHD Modeling of MMS Reconnection Sites
P3-12	Davide Rozza	GeoMagSphere Model Applied During Solar Events: A Study Of Cosmic Rays Detector From The International Space Station

#### Session 4. Impact of solar wind structures and radiation on ionospheres atmospheres

P4-02	Binod Bhattarai	Effect Of Geomagnetic Super Substorm At Low Latitude Stations
P4-03	Aziza Bounhir	Climatology of thermospheric neutral temperatures over Oukaïmeden Observatory in Morocco
P4-04	Rimpei Chiba	Sputtering Of Wollastonite By Solar Wind Ions
P4-05	Yongqiang Hao	Changes Of Solar Extreme Ultraviolet Irradiance In Solar Cycle 23 and 24
P4-06	Nadia Imtiaz	Particle-in-cell Modeling of CubeSat and Ionospheric Plasma Interaction
P4-07	Jung Hee Kim	Possible Influence Of The Solar Eclipse On The Global Geomagnetic Field
P4-08	Mai Mai Lam	The temperature signature of an IMF-driven change to the global atmospheric electric circuit (GEC) in the Antarctic troposphere
P4-13	Alexander Rakhlin	About Factors Of Solar Radiation Influenced On The Ionosphere
P4-14	Olga Sheiner	Effect Of Solar Coronal Mass Ejections On The Ionosphere
P4-16	Manuela Temmer	Statistical analysis on how CME and SIR/CIR events effect the geomagnetic activity and the Earth's thermosphere





P4-17 Donghe Zhang The Variability Of The Solar EUV Irradiance And Its Possible Contribution To The Ionospheric Variability During Solar Flare

### Session 5. Long-term trends and predictions for space weather

P5-01 Melinda Dósa Long-term longitudinal recurrences of the open magnetic flux density in the heliosphere

P5-02 Heather Elliott Kp – Solar Wind Speed Relationship: Implications for Long-Term Forecasts

P5-04 Frederick Gent Interpreting a millennium solar – like dynamo with the test – field method

P5-05 Romaric Gravet Observed UV contrast of magnetic features and implications for solar irradiance modelling

P5-06 Norbert Gyenge On Active Longitudes and their Relation to Loci of Coronal Mass Ejections

P5-07 Ching Pui Hung Reconstructing the Solar Meridional Circulation from 1976 up to Now

P5-08 Mike Lockwood Effects of Solar Variability on Global and Regional Climates

P5-09 Sushant Mahajan Using Torsional Oscillations to Forecast Solar Activity

P5-11 Vaibhav Pant Kinematics of fast and slow CMEs in solar cycle 23 and 24

P5-12 Chris Russell Long-term Observations of Solar Wind Using STEREO Data

P5-13 Mikhail Vokhmyanin Sunspots areas and heliographic positions on the drawings made by Galileo Galilei in 1612

P5-14 Mikhail Vokhmyanin Regularities of the IMF sector structure in the last 170 years

P5-15 Valentina Zharkova Reinforcement of the double dynamo model of solar magnetic activity on a millennium timescale

### Session 7. Forecasting models

P7-01 Jordan Guerra Aguilera Modeling Ensemble Forecasts of Solar Flares

P7-03 Zouhair Benkhaldoun The Space Weather through a multidisciplinary scientific approach.

P7-04 Mitsue Den Physics-Based Modeling Activity From The Solar Surface To Atmosphere Including Magnetosphere And Ionosphere At NICT

P7-05 Mark Dierckxsens Assessing Space Weather Applications and Understanding: SEP Working Team and SEP Scoreboard

P7-06 Mark Dierckxsens The SEP Forecast Tool Within The COMESEP Alert System

P7-07 Sean Elvidge International Community-Wide Ionosphere Model Validation Study: foF2/hmF2/TEC prediction

P7-08 Sarah Glauert Validating the BAS Radiation Belt Model Forecasts of the Electron Flux at Medium Earth Orbit

P7-09 Daniel Griffin Numerical Effects Of Vertical Wave Propagation In Atmospheric Models



P7-10	Richard Horne	Forecasting Risk Indicators for Satellites By Integrating The BAS Radiation Belt Model and Radiation Effects Models
P7-11	Xin Huang	A deep learning based solar flare forecasting model
P7-12	Irina Knyazeva	Comparison Of Predictive Efficiency of LOS Magnetograms Topological Descriptors and SHARP Parameters in the Solar Flares Forecasting Task
P7-13	Marianna Korsos	On the evolution of pre-flare patterns in 3-dimensional real and simulated Active Regions
P7-14	Timo Laitinen	Forecasting Solar Energetic Particle Fluence with Multi-Spacecraft Observations
P7-15	KD Leka	Predicting the Where and the How Big of Solar Flares
P7-16	Olga Malandraki	The real-time SEP prediction tools within the framework of the 'HESPERIA' HORIZON 2020 project
P7-17	Olga Malandraki	Prediction of GLE events
P7-18	Aoife McCloskey	Flare Forecasting and Sunspot Group Evolution
P7-19	Gianluca Napoletano	A Probabilistic Approach To ICME Propagation
P7-20	Ljubomir Nikolic	PFSS-based Solar Wind Forecast and the Radius of the Source-Surface
P7-21	Naoto Nishizuka	Solar Flare Prediction with Vector Magnetogram and Chromospheric Brightening using Machine-learning
P7-22	Tomoya Ogawa	AMR-MHD Simulation of CME Propagation in Solar Wind generated on Split Dodecahedron Grid
P7-23	Rui Pinto	SWiFT-FORECAST: A physics-based realtime solar wind forecast pipeline
P7-24	Camilla Scolini	Study of the September 4- 2010 Coronal Mass Ejection: Comparison of the EUHFORIA and ENLIL Predictive Capabilities
P7-25	Olga Sheiner	Ground-based Observations of Powerful Solar Flares Precursors
P7-26	Olga Sheiner	Solar Radio Emission As A Prediction Technique For Coronal Mass Ejections' Registration
P7-27	Bill Swalwell	Solar Energetic Particle Event Forecasting Algorithms And Associated False Alarms
P7-28	Baolin Tan	Very Long-period Pulsations as a precursor of Solar Flares
P7-29	Yurdanur Tulunay	METU Data Driven Forecast Models: From the Window of Space Weather IAU Symposium 335
P7-30	Christine Verbeke	Assessing Space Weather Applications and Understanding: CME Arrival Time and Impact

## Session 8. Space weather monitoring instrumentation data and services

P8-01	Ciaran Beggan	SWIGS: a new research consortium to study Space Weather Impacts on Ground-based Systems
P8-02	Francesco Berrilli	SWERTO: a regional Space Weather service
P8-03	Francesco Berrilli	The Ionosphere Prediction Service



P8-04	Norma B. Crosby	ESA SSA Space Radiation Expert Service Centre: Human Space Flight
P8-05	Erwin De Donder	End User Requirements For Space Weather Services.
P8-06	Victor De La Luz	The Early Warning Mexican Space Weather System
P8-07	Richard Harrison	European-led Visible-light Coronal And Heliospheric Imaging Endeavours For An Operational Space Weather Mission
P8-08	Neil Hurlburt	Corona and the solar magnetic field observations for space weather forecasting
P8-09	Karine Issautier	CIRCUS CubSa
P8-10	David Jackson	The Met Office Space Weather Operations Centre (MOSWOC)
P8-11	Sophie Murray	Verification of Flare Forecasts at the Met Office Space Weather Operations Centre
P8-12	Danislav Sapundjiev	Advanced observatory for space-weather research and forecast at the Geophysical Center in Dourbes – Belgium
P8-13	Mike Thompson	COSMO: the Coronal Solar Magnetism Observatory
P8-14	Andrei Tlatov	Modeling and forecast of parameters of space weather based on ground observations of solar activity
P8-15	Vincenzo Vitale	The High-Energy Particle Detector on board of the CSES mission
P8-16	Yihua Yan	On Mingantu Spectral Radioheliograph for Space Weather Observations

**Full abstracts can be found on the conference webpage.**



## (ii) Summary of the scientific highlights of the meeting (1 page, to be published on the IAU website)

The recent [IAU Symposium 335 on “Space Weather of the Heliosphere: Processes and Forecasts”](#) held at the University of Exeter, UK in July 17-21 2017, linked various aspects of research in solar, heliospheric and planetary physics, emphasizing cross-disciplinary developments. The symposium brought together scientific experts from various pertinent disciplines to the meeting from all over the world around the topic of Space Weather. The overall scientific program was represented by 185 participants (36.8% women) from 30 different countries and a total of 204 abstracts. Of those presented abstracts, 122 were posters and 82 were in the oral program.

The goal of IAU Symposium 335 was to consider *Solar drivers and activity levels (session 1), Solar wind and heliosphere (2), Impact of solar wind, structures and radiation on magnetospheres (3), ionospheres and atmospheres (4), Long-term trends and predictions for space weather (5), Challenges and strategic plans for Earth and the heliosphere (6), Forecasting models (7), Space weather monitoring, instrumentation, data and services (8)*. All aspects pertaining to solar, heliospheric, geospace, atmospheric, stellar, and planetary sciences were included in the meeting's scope, while reaching a balance in the geographical, gender and seniority distribution of the speakers in the oral program and engaging interactions at all levels in the poster program. It was particularly important to encourage Early Career Scientists to present their work and network on an international scene.

The oral program consisted of 26 invited talks by leaders in the field and 56 oral contributed presentations, as well as the town hall and round-table discussions, plenary summaries, and a few opening and closing talks. 10 chairs led the sessions and provided lively question and answer sessions. In the last few years, we have seen transformations of the UK political landscape, all in response to space weather being on the national risk register (e.g. the Met Office centre). The Symposium opened with a Welcome Introduction by Mike Hapgood, chair of the Space Environment Impact Expert Group [SEIEG] that advises the Cabinet Office on Space Weather. Each of the session topics was then reviewed by 2 to 4 invited talks (25 minutes each) and time allowed for between 2 to 4 times as many additional oral contributions (14 minutes each). Space weather is increasingly recognised as an international challenge faced by several communities. In Session 6, Ian Mann (Canada) led a town hall session from the United Nations Expert Group on Space Weather: “Strategy for Developing an International Framework for Space Weather Services (2018-2030)”. On the last day, Session 8 included two parallel round tables RT1 “Data Handling and Assimilation” and RT2 “Relationships with the ‘civil’ society”, with the findings summarized in the plenary by invited speakers Terry Onsager (USA) and Lee-Anne McKinnell (South Africa). The ability to understand, monitor and forecast the space weather of the Earth and the heliosphere is of paramount importance for our high-technology dependent society and for the current rapid developments in our knowledge and exploration (robotic and human) of the Solar System. Space weather is not just important at Earth and this symposium brought a vast range of expertise together, discussing the activity and winds of other Suns and the effects on planets and other objects of the solar system such as Pluto.

To encourage interactions and networking between attendees, and to foster the excitement of younger colleagues in presenting their work, a poster competition for students was organised with judges assigned among the senior participants. The poster competition engaged 28 young scientists and 34 judges, and 5 worthy winners were celebrated during the conference dinner. The poster winners were: in joint fourth, Rimpei Chiba (Session 4 - Japan) and Vaibhav Pant (Session 5 - India); in joint second, Nadia Hussain (Session 4 - Pakistan & Canada) and Marianna Korsos (Session 7 - UK); and in first place, Sushant Mahajan (Session 5 - India & US).

The LOC and 14 of the participants have engaged and shared their enthusiasm about space weather with local young people (students), teachers and the general public in an active parallel education/public outreach program.



### (iii) List of participants

- including their distribution by country and gender (double bar chart)

Name	Affiliation	Country	Gender
Franklin Aldas Garcés	EPN	Ecuador	Male
Tanja Amerstorfer	Austrian Academy of Sciences- Space Research Institute	Austria	Female
Mahender Aroori	Osmania University	India	Male
Ruth Bamford	STFC Rutherford Appleton Laboratory	United Kingdom	Female
Dipankar Banerjee	Indian Institute of Astrophysics	India	Male
Luke Barnard	University of Reading	United Kingdom	Male
Ciaran Beggan	British Geological Survey	United Kingdom	Male
Benkhaldoun Zouhair	Oukaimeden Observatory- Cadi Ayyad University	Morocco	Male
Mitchell Berger	University of Exeter	United Kingdom	Male
Francesco Berrilli	University of Rome Tor Vergata	Italy	Male
Binod Bhattarai	St. Xavier's College	Nepal	Male
Prantika Bhowmik	Indian Institute of Science Education and Research Kolkata	India	Female
Suzy Bingham	Met Office	United Kingdom	Female
Mario Bisi	STFC- Rutherford Appleton Laboratory	United Kingdom	Male
Shaun Bloomfield	Northumbria University	United Kingdom	Male
Gert Botha	Northumbria University	United Kingdom	Male
Aziza Bounhir	UCA University	Morocco	Female
Dave Brain	University of Colorado	United States	Male
Graziella Branduardi- Raymont	University College London	United Kingdom	Female
Matthew Browning	University of Exeter	United Kingdom	Male
Allan Sacha Brun	CEA-Saclay	France	Male
Jack Carlyle	ESA/ESTEC	Netherlands	Male
Sophie Chabanski	Royal Belgian Institute for Space Aeronomy	Belgium	Female
Heon-Young Chang	Kyungpook National University	South Korea	Male
Nai-Hwa Chen	Korea Astronomy and Space Science Institute	South Korea	Female
Rimpei Chiba	Tokyo Institute of Technology	Austria	Male
Arnab Choudhuri	Indian Institute of Science	India	Male
Hebe Cremades	UTN-FRM and CONICET	Argentina	Female
Norma Bock Crosby	Royal Belgian Institute for Space Aeronomy (BIRA-IASB)	Belgium	Female
Xinghua Dai	National Astronomical Observatories- Chinese Academy of Sciences	China	Male
Alisson Dal Lago	INPE	Brazil	Male



Silvia Dalla	University of Central Lancashire	United Kingdom	Female
M. Chantale Damas	CUNY/Queensborough Community College	United States	Female
Sergio Dasso	IAFE	Argentina	Male
Sanja Danilovic	Stockholm University	Sweden	Male
Erwin De Donder	Royal Belgian Institute for Space Aeronomy	Belgium	Male
Victor De la Luz	SCIESMEX UNAM	Mexico	Male
Stefano Della Torre	INFN - Sez. Milano-Bicocca	Italy	Male
Mitsue Den	NICT	Japan	Female
Mark Dierckxsens	BIRA-IASB	Belgium	Male
Melinda Dósa	Wigner Research Institute for Physics	Hungary	Female
Heather Elliott	Southwest Research Institute	United States	Female
Sean Elvidge	University of Birmingham	United Kingdom	Male
Robertus Erdelyi	University of Sheffield	United Kingdom	Female
Paulo Roberto Fagundes	UNIVAP	Brazil	Male
Adam Finley	Physics and Astronomy University of Exeter	United Kingdom	Male
Bernhard Fleck	ESA	United States	Male
Andrzej Fludra	STFC	United Kingdom	Male
Dominique Fontaine	CNRS - LPP	France	Female
Roberta Forte	Università di Roma Tor Vergata	Italy	Female
Claire Foullon	University of Exeter	United Kingdom	Female
Merlin Fox	World Scientific Publishing	United Kingdom	Male
Tim Fuller-Rowell	Univ. of Colorado	United States	Male
Stephen Fuselier	Southwest Research Institute	United States	Male
Tadhg Garton	Trinity College Dublin	Republic of Ireland	Male
Frederick Gent	Aalto University	Finland	Male
Sarah Glauert	British Antarctic Survey	United Kingdom	Female
Nat Gopalswamy	NASA	United States	Male
Romaric Gravet	LPC2E- University of Orleans-CNRS	France	Male
Daniel Griffin	University of Exeter	United Kingdom	Male
Pavel Gritsyk	Sternberg Astronomical Institute-Lomonosov Moscow State University	Russia	Male
Jordan Guerra Aguilera	Trinity College Dublin	Republic of Ireland	Male
Norbert Gyula Gyenge	The University of Sheffield- SP2RC	United Kingdom	Male
Iain Hannah	University of Glasgow	United Kingdom	Male
Yongqiang Hao	Peking University	China	Male



Mike Hapgood	RAL Space	United Kingdom	Male
Richard Harrison	RAL Space	United Kingdom	Male
Gareth Hawkes	CEMPS- University of Exeter	United Kingdom	Male
Han He	National Astronomical Observatories- CAS	China	Male
Andrew Hillier	University of Exeter	United Kingdom	Male
Richard Horne	British Antarctic Survey	United Kingdom	Male
Xin Huang	National Astronomical Observatories- Chinese Academy of Sciences	China	Male
Hugh Hudson	School of Physics & Astronomy- University of Glasgow	United Kingdom	Male
Ching Pui Hung	Institut de Physique du Globe de Paris / CEA-Saclay- AIM	France	Male
Neal Hurlburt	LMATC	United States	Male
Junga Hwang	Korea Astronomy and Space Science Institute	South Korea	Male
Nadia Imtiaz	TPD/PINSTECH	Pakistan	Female
Karine Issautier	LESIA	France	Female
Caitriona Jackman	University of Southampton	United Kingdom	Female
David Jackson	Met Office	United Kingdom	Male
Daniel Johnson	Northumbria University	United Kingdom	Male
Navin Chandra Joshi	Kyung Hee University	South Korea	Male
Christina Kay	NASA GSFC	United States	Female
Ralf Keil	ESA/ESOC	Germany	Male
Barry Kellett	STFC RAL Space	United Kingdom	Male
Olga Khabarova	Institute of terrestrial magnetism (IZMIRAN)	Russia	Female
Rungployphan Kieokaew	University of Exeter	United Kingdom	Female
Jung Hee Kim	Kyungpook National University	South Korea	Female
Rok-Soon Kim	KASI	South Korea	Female
Josuha Knight	Space Operations RAF	United Kingdom	Male
Delores Knipp	University of Colorado Boulder	United States	Female
Irina Knyazeva	Pulkovo Observatory	Russia	Female
Petra Kohutova	University of Warwick	United Kingdom	Female
Marianna Korsos	University of Sheffield	United Kingdom	Female
Galina Kotova	Space Research Institute of RAS	Russia	Female
Garyfallia Kromyda	Aristotle University of Thessaloniki	Greece	Female
Maria Kuznetsova	NASA Community Coordinated Modeling Center	United States	Female
Timo Laitinen	University of Central Lancashire	United Kingdom	Male



Mai Mai Lam	University of Southampton	United Kingdom	Female
KD Leka	NWRA	United States	Female
Stefania Lepidi	Istituto Nazionale di Geofisica e Vulcanologia	Italy	Female
Sanjay Limaye	University of Wisconsin	United States	Male
Jon Linker	Predictive Science Inc.	United States	Male
Mike Lockwood	University of Reading	United Kingdom	Male
Konstantina Loumou	University of Glasgow	United Kingdom	Female
Janet Luhmann	SSL University of California-Berkeley	United States	Female
Sushant Mahajan	Georgia State University	United States	Male
Olga Malandraki	National Observatory of Athens-IAASARS	Greece	Female
Ian Mann	University of Alberta	Canada	Male
Petrus Martens	Georgia State University	United States	Male
Valentin Martinez Pilet	National Solar Observatory	United States	Male
Helen Mason	University of Cambridge	United Kingdom	Female
Aoife McCloskey	Trinity College Dublin	Republic of Ireland	Female
Lee-Anne McKinnell	South African National Space Agency (SANSA)	South Africa	Female
Nigel Meredith	British Antarctic Survey	United Kingdom	Male
Mauro Messerotti	INAF-Astronomical Observatory of Trieste	Italy	Male
Mark Miesch	HAO/NCAR	United States	Male
Daniel Miller	Exeter University	United Kingdom	Male
Diana Morosan	Trinity College Dublin	Republic of Ireland	Female
Pradiphat Muangha	Mahidol University	Thailand	Male
Karin Muglach	NASA GSFC	United States	Female
Milton Munroe	High Wycombe	United Kingdom	Male
Sophie Murray	Trinity College Dublin	Republic of Ireland	Female
Kalevi Mursula	University of Oulu	Finland	Male
Irina Myagkova	M.V.Lomonosov Moscow State University- Skobeltsyn Institute of Nuclear Physics (SINP MSU)	Russia	Female
Dibyendu Nandi	Center for Excellence in Space Sciences India	India	Male
Gianluca Napolitano	University of L'Aquila	Italy	Male
Ralph Neuhaeuser	AIU U Jena	Germany	Male
Ijubomir Nikolic	Natural Resources Canada	Canada	Male
Naoto Nishizuka	NICT	Japan	Male
Nariaki Nitta	Lockheed Martin Advanced Technology Center	United States	Male
Tomoya Ogawa	Kitasato University	Japan	Male



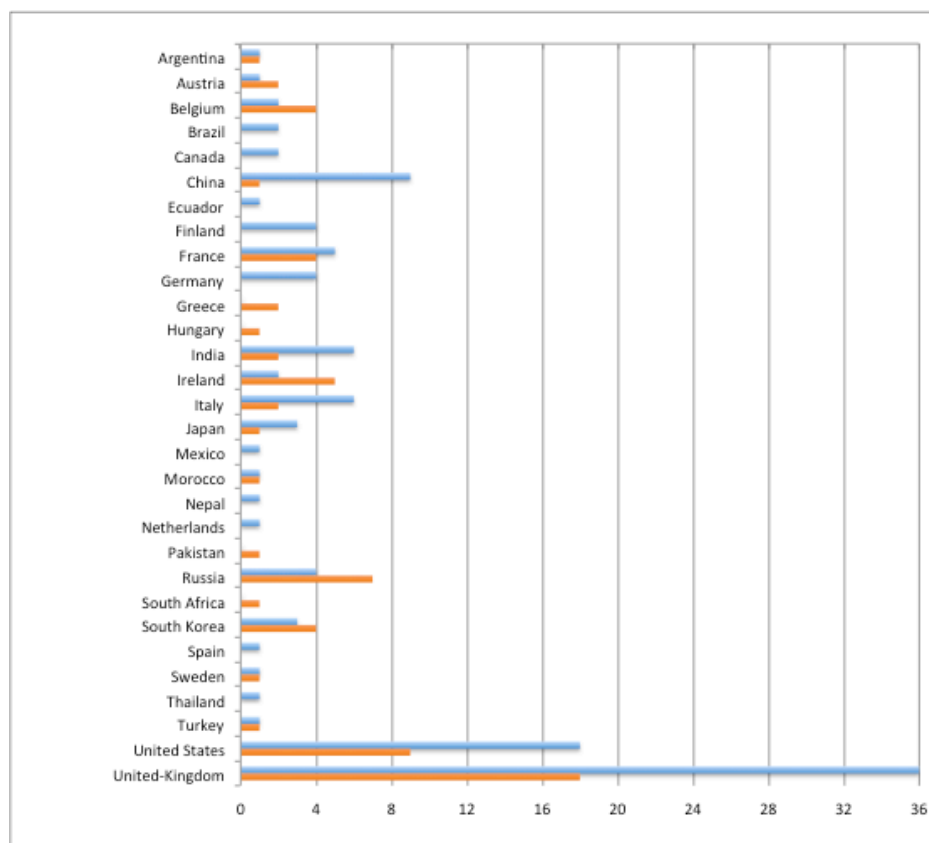


Terrance Onsager	NOAA Space Weather Prediction Center	United States	Male
Aleksandra Osipova	The Central Astronomical Observatory of the Russian Academy of Sciences at Pulkovo	Russia	Female
Mathew Owens	University Of Reading	United Kingdom	Male
Vema Reddy Panditi	Indian Institute of Astrophysics	India	Male
Vaibhav Pant	Indian Institute of Astrophysics	India	Male
Jinhye Park	Kyung Hee University	South Korea	Female
Barbara Perri	CEA Saclay- AIM	France	Female
Rui Pinto	IRAP - Institute of Research in Astrophysics and Planetology	France	Male
Dave Pitchford	SES	Germany	Male
Arik Posner	NASA	United States	Male
Gabby Provan	University of Leicester	United Kingdom	Female
Patricia Reiff	Rice University	United States	Female
Guenther Reitz	DLR (retired)	Germany	Male
Davide Rozza	INFN and University of Milano, Bicocca	Italy	Male
Chris Russell	UCLA	United States	Male
Danislav Sapundjiev	Royal Meteorological Institute of Belgium	United Kingdom	Male
Sabrina Savage	NASA Marshall Space Flight Ctr	United States	Female
Camilla Scolini	KU Leuven	Belgium	Female
Michael Sharpe	Met Office	United Kingdom	Male
Olga Sheiner	Radiophysical Research Institute	Russia	Female
Daikou Shiota	ISEE- Nagoya University	Japan	Male
Andrew Sibley	Met Office	United Kingdom	Male
Hector Socas-Navarro	Instituto de Astrofisica de Canarias	Spain	Male
Nandita Srivastava	Udaipur Solar Observatory- PRL	India	Female
Antoine Strugarek	CEA	France	Male
Alexei Struminsky	Space Research Institute	Russia	Male
Bill Swalwell	UCLAN	United Kingdom	Male
Baolin Tan	National Astronomical Observatories of CAS	China	Male
Jianfei Tang	Xinjiang Astronomical Observatory CAS	China	Female
Manuela Temmer	University of Graz	Austria	Female
Michael Thompson	National for Atmospheric Research	United States	Male
Andrei Tlatov	Kislovodsk mountain astronomical station	Russia	Male
Kseniya Tlatova	Kislovodsk mountain astronomical station	Russia	Female
S. Ersin Tulunay	ODTU-METU	Turkey	Female
Yurdanur Tulunay	Middle East Technical University Ankara Turkey	Turkey	Male
Esa Turunen	University of Oulu	Finland	Male
Pauli Väisänen	University of Oulu	Finland	Male



Christine Verbeke	KU Leuven	Belgium	Female
Erwin Verwichte	University of Warwick	United Kingdom	Male
Aline Vidotto	Trinity College Dublin	Republic of Ireland	Female
Nicole Vilmer	LESIA-Paris Observatory	France	Female
Vincenzo Vitale	ASI & INFN	Italy	Male
Mikhail Vokhmyanin	Saint Petersburg State University	Russia	Male
Huaning Wang	National Astronomical Observatories- CAS	China	Male
David Webb	Boston College/ISR	United States	Male
Maria Weber	University of Exeter	United Kingdom	Female
Marion Weinzierl	Durham University	United Kingdom	Female
Elisabeth Werner	Uppsala University	Sweden	Female
Matthew West	Royal Observatory of Belgium	United Kingdom	Male
Yan Yan	National Astronomical Observatories of China	China	Male
Yihua Yan	CAS Key Lab of Solar Activity-National Astronomical Observatories	China	Male
Donghe Zhang	Peking University	China	Male
Valentina Zharkova	Northumbria University	United Kingdom	Female

**Totals: 185 participants 30 countries 68 Female 117 Male**



## (iv) List of recipients of IAU grants

- stating the amount received, country and gender

Family Name	First Name	Gender	Country of work	IAU Grant awarded (€)
Aldás	Franklin	Male	Ecuador	1,095
Aroori	Mahender	Male	India	100
Banerjee	Dipankar	Male	India	496
Bhattarai	Binod	Male	Nepal	496
Bhowmik	Prantika	Female	India	496
Bounhir	Aziza	Female	Morocco	496
De la Luz	Victor	Male	Mexico	1,000
Dósa	Melinda	Female	Hungary	496
Forte	Roberta	Female	Italy	137
Garton	Tadhg	Male	Ireland	137
Gravet	Romarc	Male	France	137
Gritsyk	Pavel	Male	Russia	496
Guerra Aguilera	Jordan	Male	Ireland	137
Hung	Ching Pui	Male	France	137
Imtiaz	Nadia	Female	Pakistan	439
Jackman	Caitriona	Female	United Kingdom	439
Johnson	Daniel	Male	United Kingdom	137
Joshi	Navin Chandra	Male	South Korea	137
Khabarova	Olga	Female	Russia	496
Korsos	Marianna	Female	United Kingdom	137
Kotova	Galina	Female	Russia	496
Kromyda	Garyfallia	Female	Greece	496
Mahajan	Sushant	Male	United States	137
McCloskey	Aoife	Female	Ireland	137
Muangha	Pradiphat	Male	Thailand	496
Myagkova	Irina	Female	Russia	496
Napoletano	Gianluca	Male	Italy	496
Osipova	Aleksandra	Female	Russia	137
Panditi	Vemareddy	Male	India	496
Pant	Vaibhav	Male	India	496
Park	Jinhye	Female	South Korea	1,000
Scolini	Camilla	Female	Belgium	496
Sheiner	Olga	Female	Russia	496
Srivastava	Nandita	Female	India	439
Tlatov	Andrei	Male	Russia	137
Tlatova	Kseniia	Female	Russia	496
Verbeke	Christine	Female	Belgium	496
Vokhmyanin	Mikhail	Male	Russia	496
<b>Totals:</b>	<b>38 awards</b>	<b>19 Female 19 Male</b>	<b>17 countries</b>	<b>15,580</b>



## (v) An Executive Summary of the Meeting

The IAU Symposium 335 on “Space Weather of the Heliosphere: Processes and Forecasts” was one of the 9 approved by IAU for 2017 (of 33 valid proposals received). It has received the support from 5 out of 9 Divisions across IAU, including the Coordinating Division E Sun and Heliosphere. In July 17-21 2017, the University of Exeter, UK, welcomed 185 participants from 30 different countries and 21 accompanying persons, exhibitors or public lecturer. Particular noteworthy was the relatively high (36.8%) proportion of women attendees, one of the highest ever encountered at a large meeting in our field.

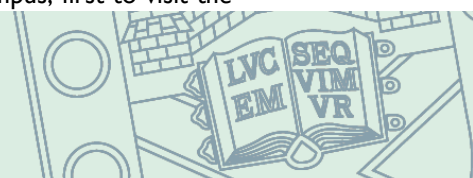
The scientific program consisted of 8 sessions, scheduled over 4.5 days. Each session topic was explored by 2 to 4 invited talks, contributed talks and poster sessions. All presentations were plenary, except for the last theme where we had a common plenary and a split in 2 round tables. Thanks to the rich representation and optimal (scientific, regional, gender) diversity of the SOC, balance was respected in the selection of the 26 invited speakers and the general scientific program. The symposium therefore gave a balanced international overview of the general advances in space weather, focusing on the key topics of solar drivers and activity levels (session 1); Solar wind and heliosphere (2); Impact of solar wind, structures and radiation on and within terrestrial and planetary environments (3 and 4); Long-term trends and predictions for space weather (5); Challenges and strategy plans for Earth and the heliosphere (6); Forecasting models (7); Space weather monitoring, instrumentation, data and services (8).

Thanks to IAU and cosponsors, we supported 47 scientists from around the world to come and present their work. The IAU was the Lead Sponsor and we had pleasure in acknowledging co-sponsorship from the European Space Agency (ESA), the SCOSTEP activity “Variability of the Sun and Its Terrestrial Impact” (VarSITI), the Science & Technology Facilities Council (STFC) Astronomy Division, the European Geophysical Union (EGU), the Royal Astronomical Society (RAS), the Committee on Space Research (COSPAR) and the International Association of Geomagnetism and Aeronomy (IAGA). These sponsors supported qualified scientists to whom only limited means of support were available, e.g. colleagues from economically less privileged countries, young scientists and participants with young children.

To facilitate participation, we offered campus accommodation at a preferential rate and affordable registration fees covering all conference costs including all day catering, scientific excursions, social events and conference dinner. Concession rates were offered to students. Several event funding supporters helped to further facilitate meeting attendance and inclusion in all social, cultural and educational events: the US Air Force Office of Scientific Research (AFOSR), the Royal Astronomical Society (RAS), the University of Exeter College of Engineering, Mathematics and Physical Sciences (EMPS), the Institute of Physics (IOP) Plasma Physics Group, the Journal *Frontiers in Astronomy and Space Sciences* and donation support from Cambridge University Press (CUP), Oxford University Press (OUP) and the DK publisher.

The main oral program took place in the Northcott Theatre, where over teas/coffees and sweet bakery in the foyer delegates could easily interact and network. The posters were on display in the nearby Reed Hall throughout the conference (until Friday lunch) to allow for sufficient visibility and scope of interactions. Poster sessions on each theme were organized into Reed Hall rooms accessible each day during lunch breaks, in the evenings and during the dedicated poster session on the Tuesday afternoon. Lunch buffets were served in the Reed Hall restaurant every day of the week, providing indoor and (weather permitting) outdoors seating. Reed Hall was also the venue for the welcome reception on the Monday evening and the backdrop for the IAU Symposium photograph taken on the Wednesday. Other social events included a choice of two (Tuesday or Thursday) early evening sea cruises and the Thursday conference dinner at the Imperial Hotel in Torquay.

A number of scientific excursions were organized to local facilities and places of interest throughout the week. Tuesday and Thursday had extended lunch hours, specifically to allow delegates the option of visiting (i) the UK Met Office space weather facilities (in Exeter, but requiring coach transportation), (ii) the Exeter High Performance Computing facilities or (iii) a local exhibition at the Bill Douglas Cinema museum on the Exeter campus. The half-day excursion on the Wednesday took all participants and accompanying persons in Sidmouth, about 12 miles from campus, first to visit the



Norman Lockyer Observatory (NLO), a public amateur observatory with rich historical heritage in solar physics; there a rich program of fun-fair demonstrations and shows were delivered for all to enjoy.

As modern society becomes increasingly dependent on ground- and space-based technology, it also becomes increasingly vulnerable to the effects of space weather. Not only it is important for the public to better understand space weather but it is also an area of astronomy and space physics that inspires the public with beautiful phenomena such as auroras. The following events took place: (i) Monday of workshops and poster competition for schools (with Poster judging and Prize ceremony); (ii) Tuesday CPD session for teachers; (iii) Space Weather public lectures and fun fairs: – on Tuesday, Exeter, two public lectures followed by a ‘fun fair’ with some hands-on demos for children and adults to use – on Wednesday, Sidmouth, demonstrations at the NLO followed by a public lecture, Kennaway House. This active parallel education/public outreach program on the first 3 days engaged 14 of the participants and members of the LOC to share their enthusiasm about space weather with schools, teachers and the general public (~300 people).

The all-inclusive excursions, local exhibitions and demonstrations were facilitated by an extensive number of Met Office and NLO staff associated to members of the LOC, as well as many Exeter staff across several departments and Colleges. As well as the theatre and catering staff, our LOC conference support team was in attendance at all times, stationed for the most part in the Northcott Theatre foyer (registration desk) but also checking on all attendees during the various excursions, and with a small team of local PhD students dedicated to provide some logistical and microphone support in the auditorium.



[www.exeter.ac.uk/iaus335](http://www.exeter.ac.uk/iaus335)

