# ***SYMPOSIUM PROGRAM:***

# **Monday, 19 September**

08:00 – 08:15 **Introduction**

**Session 1 : Solar and stellar dynamo as a driver of space climate (Conv. Kristof Petrovay)**

08:15 – 08:45 **Maarit Korpi-Lagg** (Invited review), Aalto University, Finland*Origin of long-term variations in solar and stellar dynamos*

08:45 – 09:15 **Jörn Warnecke** (Invited review), Max Planck Institute for Solar System Research, Germany*Solar and stellar dynamos as the driver of space climate*

09:15 – 09:30 **Sanghita Chandra**, Indian Institute of Science Education and Research Kolkata, India*Periodic behavior driven by meridional circulation during solar grand minima episodes*

09:30 – 10:05 **Coffee break**

**Session 2 : Long-term solar activity (Conv. Paul Charbonneau)**

10:05 – 10:35 **Alexei Pevtsov** (Invited review), National Solar Observatory, USA*Long-term solar activity*

10:35 – 10:50 **Shreya Bhattacharya**, Royal Observatory of Belgium, Belgium*Diagnosing and calibrating the multi-century Sunspot Number Series*

10:50 – 11:05 **Kristof Petrovay**, ELTE Eötvös Loránd University, Hungary*Solar activity in the 16th century*

11:05 – 11:35 **Frédéric Clette** (Invited review), Royal Observatory of Belgium, Belgium*Sunspot number, group number and F10.7: new insights*

11:35 – 11:55 **Victor Carrasco** (Solicited), University of Extremadura, Spain*On improvements in the future version of the revised collection of sunspot group numbers*

11:55 – 12:10 **Ilya Usoskin**, University of Oulu, Finland*Solar cyclic activity reconstruction now extends to cover the last millennium*

12:10 – 13:25 **Lunch**

**Session 3 : Special solar-terrestrial events and extremes (Conv. Hugh Hudson)**

13:25 – 13:55 **Florian Mekhaldi** (Invited review), British Antarctic Survey, UK*An ice-core perspective on extreme solar particle events*

13:55 – 14:15 **Nicolas Brehm** (Solicited), ETH Zürich, Switzerland*Detection of solar events by using radiocarbon in tree-rings*

14:15 – 14:35 **Hisashi Hayakawa** (Solicited), Nagoya University, Japan*Revisiting the Carrington space weather event with archival investigations*

14:35 – 14:50 **Alexander Mishev**, University of Oulu, Finland*Assessment of terrestrial effects during strong and extreme SEPs using neutron monitor records*

14:50 – 15:20 **Coffee break**

**Session 4 : Solar photosphere and chromosphere (Conv. Robertus Erdelyi)**

15:20 – 15:40 **Marianna Korsós** (Solicited), Aberystwyth University, UK*How the magneto-Rossby waves could be used to identify upcoming intense flare and CME seasons?*

15:40 – 15:55 **W. Dean Pesnell**, NASA Goddard Space Flight Center, USA*Properties of Polar Faculae in the HMI Era*

15:55 – 16:25 **Sami Solanki** (Invited review), Max Planck Institute for Solar System Research, Germany *Results from Remote-Sensing instruments on Solar Orbiter -* ***CANCELED***

16:25 – 17:00 **Kalevi Mursula**, University of Oulu, Finland*1-min review of posters*

**Reception talks**

17:00 – 17:30 **Michal Ostrowski**, Jagiellonian University, Poland*History of Astronomy in Krakow*

17:30 – 18:00 **Alexander Ruzmaikin**, Jet Propulsion Laboratory, California Institute of technology, USA *Space Climate Legacy of Joan Feynman*

18:00 **Reception and poster viewing**

# **Tuesday, 20 September**

**Session 5 : Solar corona and solar wind (Conv. Pete Riley and Kalevi Mursula)**

08:00 – 08:30 **Duncan Mackay** (Invited review), University of St Andrews, UK*Long-term Global Non-potential Simulations of the Solar Corona Using Magnetofrictional Techniques and MHD Simulations*

08:30 – 09:00 **Gordon Petrie** (Invited review), National Solar Observatory, USA*The Global Photospheric and Coronal Magnetic Field According to Different Synoptic Magnetographs: Comparisons and End-to-end Calibrations*

09:00 – 09:15 **Błażej Kuźma**, KU Leuven, Belgium*COCONUT MHD coronal model as a basis for EUHFORIA 2.0 space weather forecast*

09:15 – 09:30 **Karen Meyer**, University of Dundee, UK*The role of active region decay in energising the corona*

09:30 – 09:50 **Ken’ichi Fujiki** (Solicited), Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan*Reconstruction of the global solar wind structure using interplanetary scintillation observation and coronal magnetic field parameters obtained from PFSS extrapolation*

09:50 – 10:10 **Czeslaw Porowski** (Solicited), Space Research Centre of the Polish Academy of Sciences, Poland*A New 3D Solar Wind Speed and Density Model Based on IPS*

10:10 – 10:40 **Coffee break**

**Session 6 : Solar TSI/SSI (Conv. Natasha Krivova)**

10:40 – 11:10 **Erik Richard** (Invited review), Laboratory for Atmospheric and Space Physics, University of Colorado, USA*Advancements in Solar Irradiance Measurements and Long-term Data Continuity*

11:10 – 11:40 **Theodosios Chatzistergos** (Invited review), Max Planck Institute for Solar System Research, Germany*Irradiance reconstructions from modern and historical Ca II observations*

11:40 – 12:00 **Shin Toriumi** (Solicited), Japan Aerospace Exploration Agency, Japan*Sun-as-a-star observations to characterize stellar active regions and universal atmospheric heating mechanism*

12:00 – 12:15 **Martin Snow**, South African National Space Agency, South Africa*SORCE SOLSTICE: Seventeen Years, Eighteen Versions*

12:15 – 12:30 **Sowmya Krishnamurthy**, Max Planck Institute for Solar System Research, Germany*Solar irradiance variability in the near-UV Ca II H & K lines*

12:30 – 12:45 **Kalevi Mursula**, University of Oulu, Finland*Curious long-term increase of the visual band of the solar spectrum in TAV2 and TSIS-1 SIM datasets*

**Session 7 : Solar wind, HMF and CRs (Conv. Nat Gopalswamy)**

12:45 – 13:15 **Stefan Hofmeister** (Invited review), Leibniz Institute for Astrophysics Potsdam, Germany*Our current understanding of the solar wind*

13:15 – 13:35 **Diana Besliu-Ionescu** (Solicited), Astronomical Institute of the Romanian Academy, Romania*High-speed streams in the solar wind*

14:00 **Wieliczka Salt Mine Excursion**

19:00 **Conference Dinner**

# **Wednesday, 21 September**

**Session 7 :** **Solar wind, HMF and CRs (Conv. Nat Gopalswamy)**

08:00 – 08:15 **Anna Wawrzaszek**, Space Research Centre of the Polish Academy of Sciences, Poland*Dependence of Intermittency of Fast and Slow Solar Wind from the Radial Distance, Heliospheric Latitude, and Solar Cycle*

08:15 – 08:30 **Stefaan Poedts**, KU Leuven, Belgium*Advanced CME flux-rope models in EUHFORIA*

08:30 – 08:50 **Lan Jian** (Solicited), NASA Goddard Space Flight Center, USA*Solar Wind Stream Interaction Regions: Radial Evolution and Solar Cycle Variations*

08:50 – 09:10 **Grzegorz Michalek** (Solicited), Astronomical Obsrvatory of Jagiellonian University, Poland*The CME rate and implications for the heliospheric magnetic structure and space weather based on data from 1996*

09:10 – 09:25 **Nat Gopalswamy**, NASA Goddard Space Flight Center, USA*Properties of Coronal Holes Causing Intense Geomagnetic Storms in Solar Cycles 23 and 24*

09:25 – 09:40 **Renata Modzelewska**, Siedlce University, Poland*Periodic variations of GCR intensity and anisotropy related to solar rotation by ACE/CRIS, STEREO, SOHO/EPHIN and neutron monitors observations during solar minima 23/24 and 24/25*

09:40 – 09:55 **Marek Siluszyk**, Siedlce University, Poland*On Delay Time Problem of Galactic Cosmic Rays - Experimental and Theoretical Study*

09:55 – 10:10 **Jozsef Kota**, University of Arizona, USA*Galactic Cosmic Rays as Remote Probes of the Inner and Outer Heliosphere*

10:10 – 10:40 **Coffee break**

**Session 8 : Solar wind-magnetosphere-ionosphere interaction (Conv. Kalevi Mursula)**

10:40 – 11:10 **Rajkumar Hajra** (Invited review), Indian Institute of Technology Indore, India*Supersubstorms and Extremely Intense Geomagnetically Induced Currents in the Subauroral Region*

11:10 – 11:25 **Jan Lastovicka,** Institute of Atmospheric Physics, Czech Academy of Sciences, Czechia *What is happening with solar activity indices - and ionospheric implications?*

11:25 – 11:40 **Lidia Nikitina**, Natural Resources Canada, Canada*Extreme variations of the ionospheric total electron content in the course of a solar cycle - Statistical analysis*

11:40 – 11:55 **Agnieszka Gil**, Siedlce University, Poland*Relationships between strong geomagnetic storms and electric grid failures in Poland using the geoelectric field as a GIC proxy during the first half of the Solar Cycle 24*

11:55 – 12:10 **Hanna Rothkaehl**, Space Research Centre of the Polish Academy of Sciences, Poland*New possibilities of diagnostics of the near-Earth plasma environment*

12:10 – 12:25 **Dalia Burešová**, Institute of Atmospheric Physics, Czech Academy of Sciences, Czechia*Large-scale traveling ionospheric disturbances over eastern Europe*

12:25 – 12:40 **Marcin Grzesiak**, Space Research Centre of the Polish Academy of Sciences, Poland*Probing space plasma with LOFAR*

12:40 – 12:55 **Mariusz Pożoga**, Space Research Centre of the Polish Academy of Sciences, Poland*Scintillation spectral index measurements with PL610 LOFAR station*

12:55 – 14:00 **Lunch**

**Session 9 : Particle effects to climate and atmosphere (Conv. Miriam Sinnhuber)**

14:00 – 14:30 **Monika Szelag** (Invited review), Finnish Meteorological Institute, Finland*EPP effect on on stratospheric composition, dynamics and surface climate*

14:30 – 15:00 **Lynn Harvey** (Invited review), University of Colorado, USA *The role of the polar vortex in Sun-Earth coupling via the descent of EPP-produced NOx*

15:00 – 15:15 **Mikhail Vokhmianin**, University of Oulu, Finland*Long-term prediction of Sudden Stratospheric Warmings with Geomagnetic and Solar Activity*

15:15 – 15:30 **Miriam Sinnhuber**, Karlsruhe Institute of Technology, Germany*An assessment of the impact of radiation belt electron precipitation onto the middle atmosphere*

15:30 – 15:50 **Mario Bisi** (Solicited), UKRI STFC RAL Space, UK*Space-Weather Ground-Based Radio Observations in the Context of the Heliosphere-Earth system*

15:50 – 16:10 **Coffee break**

**Session 10 : Solar TSI/SSI effects to ground and stratosphere (Conv. Bernd Funke)**

16:10 – 16:40 **Annika Drews** (Invited review), Danish Meteorological Institute, Denmark*The Sun's role for decadal climate predictability*

16:40 – 17:10 **Wenjuan Huo** (Invited review),GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany *A pacemaker role of the 11-year solar cycle in tropical Pacific decadal variability*

**Session 11 : Special reviews**

17:10 – 17:40 **Sandra Chapman** (Invited review), University of Warwick, UK*Space weather variation within and across multiple solar cycles- a solar cycle 'clock'*

17:40 – 18:10 **Martin Mlynczak** (Invited review),NASA Langley Research Center, USA *Twenty years of observations of the energy budget of the mesosphere and lower thermosphere*

18:10 – 18:40 **Jiajia Liu** (Invited review), Queen's University Belfast, UK*Solar Coronal Jets: Energy, Twist and the Solar Cycle*

# **Thursday, 22 September**

**Session 11 : Special reviews**

08:00 – 08:30 **Fusa Miyake** (Invited review), Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan*Extreme solar energetic particle events recorded in cosmogenic nuclides data*

**Session 10 : Solar TSI/SSI effects to ground and stratosphere (Conv. Bernd Funke)**

08:30 – 09:00 **Sandip Dhomse** (Invited review), University of Leeds, UK*An Ambiguous Nature of Solar Cycle Signal in the Stratospheric Ozone*

**Session 12 : Solar effects to upper atmosphere and troposphere (Conv. Radan Huth and Martin Mlynczak)**

09:00 – 09:30 **Liying Qian** (Invited review), National Center for Atmospheric Research, USA*Solar Irradiance Effects on the Upper Atmosphere On Time Scales from Solar Rotation to Climate Change*

09:30 – 10:00 **Jose Vaquero** (Invited review), University of Extremadura, Spain*Searching the best data to understand Sun-Climate relationships*

10:00 – 10:30 **Coffee break**

10:30 – 10:50 **Mirela Voiculescu** (Solicited),University Dunarea de Jos Galati, Romania*How does Troposphere respond to Sun’s mood changes?*

10:50 – 11:05 **Jone Edvartsen**, University of Bergen, Birkeland Center for Space Science, Norway*The Mansurov Effect: Statistical significance, the role of autocorrelation and non-stationary behavior*

11:05 – 11:20 **Paweł Jujeczko**, Space Research Centre of the Polish Academy of Sciences, Poland*The lightning activity over Poland during different solar activity as seen from the ground and space*

11:20 – 11:35 **Radan Huth**, Institute of Atmospheric Physics, Czechia*Effects of the 11-year solar cycle on correlation and teleconnection structures in tropospheric circulation*

**Discussion Session**

11:40 – 12:30

14:00 **Krakow sightseeing with local guides**