June 8 (MON)

address: DINO'S BAR & GRILL, STRANDGATAN 12

18:00 - Voice breaking party led by Prof. Kalevi Mursula

June 9 (TUE)

address: Alandica Culture and Congress Center, STRANDGATAN 33

9:00 - Registration and coffee, presentation collection for Day 1 (please prepare your file in .pdf or .pptx)

9:45 - Opening ceremony + Acknowledgements

10:00 – "Long-term evolution of the magnetic field in the inner heliosphere" - keynote talk by Mike Lockwood (Reading U., UK)

10:30 - Session 1.1 Dynamo

10.30-10.50 – "Solar Dynamo as the Driver of Space Climate" Invited review by **Dibyendu Nandi** (IISER, IN)

10.50-11.10 – "Fluctuations in Babcock-Leighton dynamos: magnetic backreaction on differential rotation and long-term amplitude modulation" solicited talk by **Alexandre Lemerle** (Université de Montréal, CA)

11.10-11.22 – "A qualitative model for the occurrence of grand minima based on superadiabaticity perturbations in the tachocline" contributed talk by **Antonio Ferriz-Mas** (University of Vigo and IAA-CSIC, ES)

11.22-11.34 – "Uncovering the small-scale footprint of the global solar dynamo" contributed talk by **Michele Berretti** (Rome Tor Vergata U., IT)

11.34-11.46 – "Historical Eclipse Reports as Spot References for Space Climatology Back to 709 BCE" contributed talk by **Hisashi Hayakawa** (Nagoya U., JP)

11.46 - 11.58 "Magnetic Variability of Solar-Like Stars Extends Far Beyond the Solar Range" contributed talk by **Alexander Shapiro** (University of Graz, AT)

11:58 - Posters. Part 1.

13:10 - Lunch

14:00 - Session 1.2 Long-term evolution of the global structure of solar magnetic fields

14.00-14.20 – "How Flux Emergence Shapes the Sun's Large-scale Magnetic Field and Heliosphere" review talk by **Adam Finley** (ESA, NL)

14.20-14.40 – "Reconstructing the International Sunspot Number: progress and current status" solicited talk by **Laure Lefevre** (Royal Observatory of Belgium, BE)

14.40-14.52 – "Polar Filaments as Indicators of High-Latitude Solar Field Interactions and Sunspot Cycle Strength before Polar field Precursors" contributed talk by **Srinjana Routh** (ARIES, IN)

14.52-15.04 – “Historical Measurements of Solar Magnetic fields” contributed talk by **Alexei Pevtsov** (US National Solar Observatory, US)

15.04-15.16 – “Longitudinal Structuring of Solar Magnetic Activity from Cycle 23 to 25” contributed talk by **Marianna Korsos** (University of Sheffield, UK)

15.16-15.31 – “Phase analysis of solar-cycle reconstructions based upon 14C data” solicited talk by **Eckhard Weisshaar** (U. of Applied Sciences, Wiesbaden, DE)

15.31-15.43 – “Active regions and the large-scale magnetic field of solar cycle 24” contributed talk by **Ismo Tähtinen** (Oulu U., FI)

15:45 - Group photo

16:00 Coffee time

16:20 - “Observing and Predicting Solar Cycle Variability” - keynote talk by Lisa Upton (Southwest Research Institute, US)

16:50 - Posters. Part 2.

19:00 – Welcome

June 10 (WED)

address: Åland Maritime Museum, HAMNGATAN 2

9:00 - presentation collection for Day 2, 3 and 4 (please prepare your file in .pdf or .pptx)

9:20 - Session 1.3 Long-term TSI/SSI variability

09.20-09.40 – “The changing Sun: a review of TSI and SSI variability across time scales” Invited review by **Francesco Berrilli** (Rome Tor Vergata U., IT)

09.40-10.00 – “Secular Trends in Solar Irradiance: From Direct Measurements to Model Reconstructions” solicited talk by **Theodosios Chatzistergos** (Max Planck Institute for Solar System Research, DE)

10.00-10.12 – “Updates (Including Two ‘Final’ Final Updates) to Total Irradiance Monitor Data and a Survey of Solar Flare Observations in TSI” contributed talk by **Greg Kopp** (Colorado U., US)

10.12-10.24 – “Reconstruction of annual solar irradiance over three millennia” contributed talk by **Duresa Temaj** (Max Planck Institute for Solar System Research, DE)

10.24-10.36 – “Comparing direct and indirect proxies of centennial solar EUV irradiance” contributed talk by **Kalevi Mursula** (Oulu U., FI)

10:36 - Coffee time

11:00 - Session 1.4 Solar activity and eruptions in the long-term prospective

11.00-11.20 – “Solar energetic particle acceleration and escape into the heliosphere” review talk by **Mykola Gordovskyy** (U. of Hertfordshire, UK)

11.20-11.32 – “Historical Records for Space Climate Studies: Some Recent Advances” contributed talk by **José Manuel Vaquero** (Universidad de Extremadura, ES)

11.32-11.44 – “Energetic Particles from Strong Interplanetary Shocks in November 2025 and January 2026” contributed talk by **Nariaki Nitta** (Lockheed Martin Solar and Astrophysics Laboratory, US)

11.44-11.56 – “Prospects of Spectral Microwave Observations of the Sun in Latvia” contributed talk by **Dmitrijs Bezrukovs** (VIRAC, LV)

11:56 - Sessions 1.5 Solar-stellar relations and 3.5 Space climate at other planets

11.56.-12.16 – “Solar and stellar magnetic activity and variability” review talk by **Sowmya Krishnamurthy** (University of Graz, AT)

11.16.-12.36 “Active Regions and Variability Across Main-Sequence stars” solicited talk by **Veronika Witzke** (University of Graz, AT)

12.36-12.48 – “Modeling granulation induced variability in spectral lines: lessons from the Sun” contributed talk by **Sowmya Krishnamurthy** (University of Graz, AT)

12.48-13.08 – “Local and Galactic scale factors of habitability of Earth and exoplanets, from a Space Climate perspective” review talk by **Merav Opher** (Boston University, US)

13:08 – Lunch (Restaurang Nautical, Hamngatan 2)

14:00 - Free time

15:00 - Excursions

June 11 (THU)

Address: Åland Maritime Museum, HAMNGATAN 2

9:00 - Session 2.1 Cosmic rays and modulation

09.00-09.20 – “Long-term solar modulation of cosmic rays” Invited review by **Roelf Du Toit Strauss** (NWU, ZA)

09.20-09.40 – “Short-term modulation of galactic cosmic rays by interplanetary transients” solicited talk by **Simone Benella** (INAF-IAPS, IT)

09.40-09.52 – “Ground level enhancements of Solar Cycle 25” contributed talk by **Alex Mishev** (Oulu U., FI)

09.52-10.04 – “First Ground-Level Enhancement (GLE) events #1–4 digitized from historical sources” contributed talk by **Stepan Poluianov** (Oulu U., FI)

10.04-10.16 – “Analysis of the energy spectrum of the long-term GCR variations based on the AMS-02 data” contributed talk by **Agnieszka Gil-Swiderska** (Siedlce U., PL)

10.16-10.28 – “The near-Earth modulation (NEM) index in high cadence for study of global cosmic ray modulation and space climate” contributed talk by **Pauli Väisänen** (Oulu U., FI)

10:30 - Coffee time

10:50 - Sessions 2.2 Long-term evolution of CMEs and solar wind and 2.3 Geomagnetic storms and superstorms

10.50-11.10 – “Space Weather Impacts of Coronal Mass Ejections” Invited review by **Nandita Srivastava** (Udaipur Solar Observatory, IN)

11.10-11.30 – “Magnetic Structure and Topology of CMEs: From Realistic Ejecta Representation to Helicity Decomposition” solicited talk by **Nada Alhaddad** (University of New Hampshire, US)

11.30-11.42 – “Voyager observations of 48 years of solar wind and its effects on the interstellar medium” contributed talk by **John Richardson** (MIT, US)

11.42-11.54 – “Coronal Mass Ejections: What We Now Know from 5 Solar Cycles of In-Situ Measurements about their Properties and Impact” contributed talk by **Noé Lugaz** (University of New Hampshire, US)

11.54-12.14 – “Superstorm and Supersubstorms of May 2024” Invited review by **Rajkumar Hajra (USTC, CN)**

12.14-12.34 – “Exploring Stormtime Geospace as a Complex System” Invited review by **Slava Merkin** (JHU APL, US)

12.34-12.46 – “Perfect-storm simulation vs. the 2003 Halloween storm: geoelectromagnetic response to sudden storm commencements” contributed talk by **Elena Marshalko** (FMI, FI)

12:46 – Lunch (Restaurang Nautical, Hamngatan 2)

13:45 Session 3.1 Extreme events and worst-case scenarios

13.45-14.05 – “Four Millennia of Solar Activity from ^{14}C in Tree-Ring” Invited review by **Nicolas Brehm** (ETH, CH)

14.05-14.25 – “Multi-Regional Radiocarbon Evidence for Unusual Solar Behaviour in the Late Middle Holocene” solicited talk by **Jian Wang** (University of Groningen, NL)

14.25-14.45 – “Bridging the gap between extreme and modern SEP events: high-precision 14C analysis of the 1279 CE event” solicited talk by **Fusa Miyake** (Nagoya U., JP)

14.45-14.57 – “Assessing the Strength and Timing of Extreme Solar Particle Events from $\Delta^{14}C$ Data via SOCOL:14C-Ex Climate-Chemistry Model” contributed talk by **Sergey Koldobskiy** (Oulu U., FI)

14.57-15.09 – “New millennial scale reconstruction of solar magnetic activity at annual resolution from cosmogenic proxies” contributed talk by **Chitradeep Saha** (University of Reading, UK)

15.09-15.21 – “High-latitude evidence for a rapid 14C onset of the ~660 BC event” contributed talk by **Joonas Uusitalo** (Helsinki U., FI)

15.21-15.33 – “Radiocarbon variations in tree rings of Patagonia around SPE 1956: what can we learn about the extreme solar eruption?” contributed talk by **Irina Panyushkina** (University of Arizona, US)

15.33-15.45 – “Are signals from historical supernovae observable in the radiocarbon record?” contributed talk by **Timothy Jull** (University of Arizona, US)

15:45 - Coffee time

16:05 - Session 3.3 Historical proxy and 3.4 Predictability in space climate

16.05-16.25 – “Solar flare effects in retrospect” Invited review by **Juan José Curto Subirats** (Observatori de l’Ebre, ES)

16.25-16.45 – “Improving our knowledge of the solar diameter: a new look involving the leptocline” solicited talk by **Jean-Pierre Rozelot** (Université Côte d’Azur, FR)

16.45-16.57 – “Solar cycles over a millennial timescale: Reconstruction and statistics” contributed talk by **Ilya Usoskin** (Oulu U., FI)

16.57-17.09 – “When do observations become historical?” contributed talk by **Alexander Pevtsov** (US National Solar Observatory, US)

17.09-17.29 – “Solar effects on El Niño and its potential predictability” Invited review by **Wenjuan Huo** (GEOMAR, DE)

17.29-17.49 – “Can the EEP direct effect on mesospheric ozone change the global atmospheric dynamics?” solicited talk by **Hilde Nesse** (University of Bergen, NO)

17.49-18.01 - “Predicting geomagnetic activity in the ascending and declining phases of the solar cycle” contributed talk by **Timo Qvick** (Oulu U., FI)

18.01-18.13 - “Space climate effects in the stratosphere as a source of improved winter weather predictability” contributed talk by **Mikhail Vokhmianin** (Oulu U., FI)

18:15 - Free time

19:00 - Dinner (Restaurang Nautical, Hamngatan 2)

June 12 (FRI)

Address: Åland Maritime Museum, HAMNGATAN 2

9:00 - Session 2.4 Magnetosphere-ionosphere-thermosphere and space climate hazards

9.00-9.20 – “The Critical Influence of Cold Plasma Density for Rapid Radiation Belt Dynamics during Intense Geomagnetic Storm Events” Invited review by **Oleksiy Agapitov** (California Berkeley U., US)

9.20-9.40 – “Insights into the Electrodynamic Properties of Meso-Scale Auroral Morphologies Through Self-Supervised Learning” solicited talk by **Dogacan Ozturk** (Alaska Fairbanks U., US)

9.40-9.52 – “Role of Pc5 pulsations and KH instability in the Sun-Earth coupling during extreme geomagnetic storms” contributed talk by **Eija Tanskanen** (FI)

9.52-10.04 – “Revisiting the Tsyganenko 1989 Magnetosphere Model and its Extension to Storm Conditions” contributed talk by **Nicholas Larsen** (Nagoya U., JP)

10.04-10.16 – “Evolution of open magnetic flux during substorms: the effects of dipole tilt angle” contributed talk by **Achuthan Nair** (Oulu U., FI)

10.16-10.28 – “Hemispheric and dawn-dusk asymmetries of Kelvin-Helmholtz waves driven by dipole tilt and IMF By” contributed talk by **Lauri Holappa** (Oulu U., FI)

10.28-10.40 – “Long-term observations of mid-latitude thermospheric winds” contributed talk by **Qian Wu** (NCAR, US)

10:40 - Coffee time

11:10 – “Solar Wind Dynamic Pressure Pulses and their influence on Solar Wind-Geospace Coupling and the Designation of Superstorms” - keynote talk by Delores Knipp (Colorado Boulder U., US)

11:40 - Session 3.2 Climate and atmospheric effects. Part 1

11.40-12.00 – “Energetic particle precipitation impacts on the atmosphere and climate in idealised time-slice simulations” Invited review by **Timofei Sukhodolov** (PMOD/WRC, CH)

12.00-12.12 – “Energetic particle influence on polar vortex revealed by 300-year-long climate model simulations and re-analysis data” contributed talk by **Timo Asikainen** (Oulu U., FI)

12.12-12.24 – “11-year solar cycle shapes the north-south contrast of summer precipitation in China” contributed talk by **Liang Zhao** (Institute of Atmospheric Physics, Chinese Academy of Sciences, CN)

12.24-12.36 – “Atmospheric and Climate Impacts of an Extreme Solar Particle Event Under the Reconstructed Laschamps Geomagnetic Field” contributed talk by **Pavle Arsenović** (BOKU, AT)

12.36-12.48 – “Atmospheric implications of a potential transition of the Sun to a high-activity regime” contributed talk by **Anna Shapiro** (Graz U., AT)

12.48-13.00 – “Volcanic modulation of Beryllium-10 atmospheric transport” contributed talk by **Andrin Jörimann** (PMOD/WRC, CH)

13:00 - Lunch (Restaurang Nautical, Hamngatan 2)

14:00 - Session 3.2 Climate and atmospheric effects. Part 2

14.00-14.12 – “Galactic cosmic rays, clouds, and atmospheric dynamics: a reinterpretation of the connection” contributed talk by **Brian Tinsley** (Texas U., US)

14.12-14.24 – “Importance of Interactive Chlorine Chemistry for Modelling Cosmogenic 36-Cl” contributed talk by **Kseniia Golubenko** (Oulu U., FI)

14.24-14.36 – “Energetic electron precipitation weakens the southern polar vortex via chlorine deactivation” contributed talk by **Antti Salminen** (Oulu U., FI)

14.36-14.48 –“Atmospheric dynamical responses to geomagnetic storms: from case studies to statistical analyses” contributed talk by **Jia Jia** (FMI, FI)

14.48-15.00 – “Polar mesospheric NOx transport in 21st century WACCM-D simulations” contributed talk by **Niilo Kalakoski** (FMI, FI)

15.00-15.12 – “Association of solar activity with atmospheric circulation: Long-term analysis based on Hess-Brezowsky catalogue of circulation types” contributed talk by **Radan Huth** (Charles U., CZ)

15:12 - Award ceremony and the end of SC10

15:45 - Free time