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COURSE

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Inside
THE ISSUE

Article 1:

Solar–Stellar Connections working group: Understanding Our Sun in the Stellar Context

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Until the supernova explosion of 1572, the stars were widely believed to form a constant and unchanging celestial sphere. This event marked a turning point, challenging that long-held view and laying the foundation for the recognition that stars are inherently variable. Over the centuries, advances in both ground- and space-based observations have revealed that the Sun and other stars exhibit brightness variations across all observable wavelengths and over a vast range of timescales. Among these variable stars, the Sun occupies a unique position as our closest star and the primary driver of Earth's space environment. Decades of dedicated solar observations in combination with state of the art modeling approaches have shown that the brightness variations are mainly driven by surface magnetic fields and granulation. Despite these advancements, many questions remain about the mechanisms governing solar variability and its influence on planetary environments. Addressing these challenges requires placing the Sun into a broader stellar context, where comparisons with Sun-like stars provide critical insights into stellar magnetism and variability and their impact on the surrounding planets.

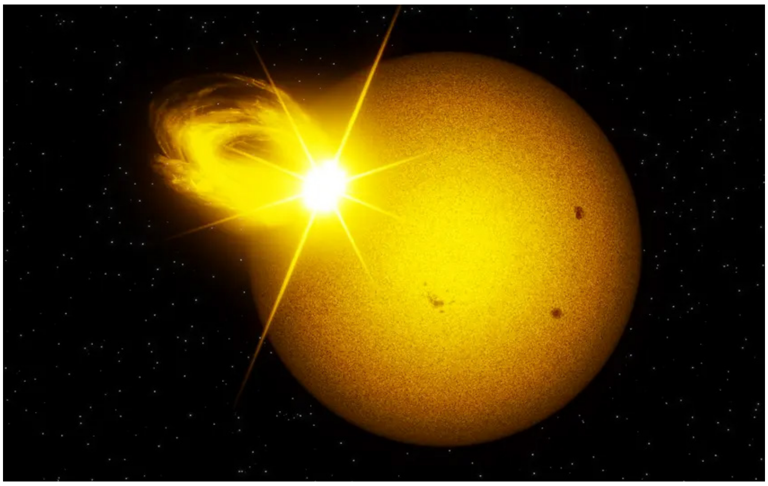

Figure 1. Artistic impression of a superflare event on a Sun-like star. Courtesy of Alexey Chizhik, Max Planck Institute for Solar System Research.

Our Solar–Stellar Connections Working Group (WG), operating under Focus Area 1: Sources of Space Weather and Space Climate, aims to place the Sun–Earth system in the broader context of Sun-like stars and their planetary environments. To achieve this, the WG focuses on key topics including 3D magnetohydrodynamic (MHD) simulations of photospheres and chromospheres, solar and stellar variability across different wavelengths and timescales, the drivers of flares and coronal mass ejections (CMEs), extreme-precision radial-velocity (EPRV) observations, star–planet interactions, and planetary atmosphere modeling.

By bringing together specialists in solar physics, stellar astrophysics, and exoplanet science, the WG creates a multidisciplinary framework for studying solar variability in its broader stellar and planetary context. The Sun provides an unparalleled laboratory where magnetic processes can be observed with unprecedented spatial and temporal resolution, while stellar observations reveal how these same processes vary with age, rotation rate, and activity level. Together, these complementary perspectives help us uncover the physical principles governing surface convection, magnetic activity, eruptive phenomena and their impacts on planetary environments, thereby addressing the questions outlined in Section 3.7 of Laurenza et al. (2025):

1. What is the full range of solar variability and activity levels?
2. Do superflares on Sun-like stars (Figure 1) represent the high-energy tail of the flare energy distribution observed on the Sun? Can the Sun produce a superflare?
3. Which and what fraction of stellar and solar (super-) flares are accompanied by CMEs and extreme solar particle events?

As a first step in building the community, the co-leaders of the WG will host its kick-off workshop, "Sun–Earth Connection through Stellar Analogs," at the University of Graz from 9–11 November 2026 with a small number of invited participants. The workshop will feature interactive discussions and short presentations designed to promote the exchange of ideas, methodologies, and datasets across disciplines. Particular emphasis will be placed on the insights gained by studying ensembles of Sun-like stars, exploring how stellar observations can improve our understanding of the Sun–Earth system, identifying opportunities for new collaborations, and developing future joint projects and observing campaigns within the SCOSTEP/COURSE programme.

We warmly invite researchers at all career stages who are interested in solar and stellar variability, magnetic activity, planetary environments, and related fields to join the WG and help shape this emerging community.

References:

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Article 2:

Ground-Based Magnetometer Observations and Database Development of Earth's Magnetic Field Components at CESPAR, Anchor University, Nigeria

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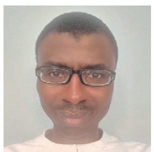
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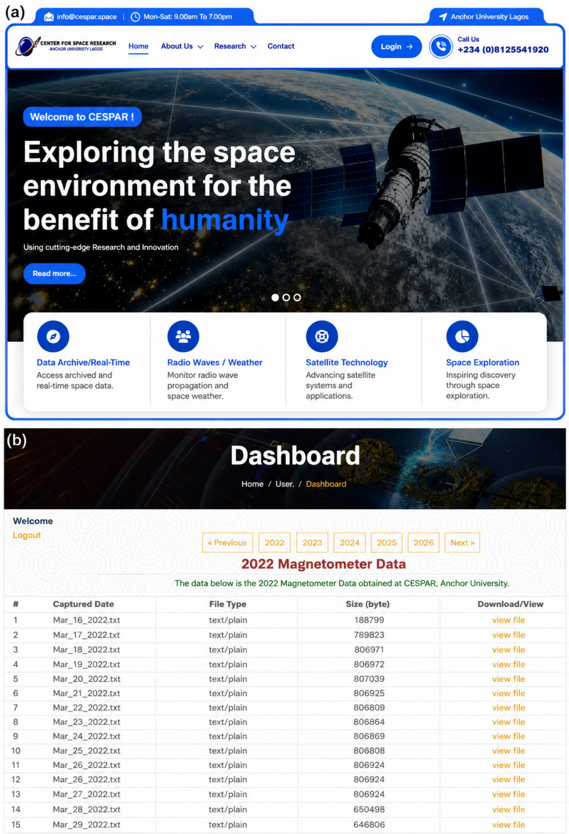
The Earth's magnetic field is a dynamic vector field that varies in strength and direction across space and time, arising primarily from the geodynamo operating in the liquid outer core, with additional contributions from ionospheric and magnetospheric current systems [1-3]. These variations provide valuable information on Earth's interior and the coupled Sun-Earth system. Ground-based magnetometers enable continuous monitoring of geomagnetic disturbances, magnetic pulsations, and storm-time currents driven by solar wind-magnetosphere interactions, making them indispensable tools for space weather research and operational monitoring [3,4]. Because geomagnetic signals originate from multiple overlapping sources, dense long-term observational networks are required to resolve their spatial and temporal characteristics [3,5]. However, geomagnetic observatories remain sparse across Africa [6-8], creating significant gaps in solar-terrestrial data coverage and limiting regional investigations of equatorial and low-latitude space weather processes.

Recognising the significant gaps in solar-terrestrial data coverage across Africa and the resulting limitations on regional space weather research, the Centre for Space Research (CESPAR), Anchor University, Lagos, has prioritised the deployment of ground-based observational facilities and the development of institutional and regional databases to support solar-terrestrial physics investigations (e.g., [7,8]). Since 2022, CESPAR has continuously acquired magnetometer measurements of the Earth's magnetic field components (Bx, By, and Bz), generating one of the few long-term geomagnetic datasets currently available in Nigeria. To strengthen data stewardship and accessibility, CESPAR successfully secured a SCOSTEP/PRESTO grant in 2025 for the establishment of a dedicated solar-terrestrial database. The grant facilitated significant upgrades to the Centre's web infrastructure, improving the functionality, reliability and accessibility of the CESPAR data portal. It also enabled the archival and cataloguing of magnetometer observations through a dedicated database interface, to ensure long-term preservation, efficient processing and public access to the data for researchers, educators and other stakeholders. Figure 1 shows the enhanced CESPAR web portal and the integrated magnetometer database interface. Beyond the database itself, the SCOSTEP/PRESTO support stimulated broader institutional commitment to space science activities. Notably, it contributed to the university's approval and construction of a mini-observatory facility (see, Fig. 2) that will serve as a hub for solar-terrestrial observations, data services, student training and future research collaborations in Nigeria and the wider African region.



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5	Mar_20_2022.txt	text/plain	807039	view file
6	Mar_21_2022.txt	text/plain	806925	view file
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Figure 1. The screenshots of the (a) enhanced CESPAR web portal, serving as the public interface for accessing archived and real-time solar-terrestrial observations and supporting research, education, and capacity building in space science and technology. (b) Integrated magnetometer database interface showing archived geomagnetic observations collected at CESPAR and data retrieval tools.

Figure 2. CESPAR mini-observatory facility (at final stage of completion) at Anchor University, Lagos, Nigeria. Inspired by the success of the SCOSTEP/PRESTO-supported magnetometer database project, the observatory was approved by the university to provide dedicated infrastructure for ground-based solar-terrestrial observations, data archiving, research activities and capacity building in space science and technology.

A representative example of the scientific value of CESPAR magnetometer observations is provided by the extreme geomagnetic storm of 10-11 May 2024. Figure 3 compares the X, Y, Z, and total field (F) components measured at CESPAR (Nigeria), with observations from Kourou (French Guiana) and Huancayo (Peru). The similar storm signatures recorded at the three stations demonstrate the capability of the CESPAR instrument to reliably detect and monitor space weather disturbances from the ground. To further validate the data quality and consistency of the observations, Figure 4 presents a more recent interval of relatively quiet geomagnetic conditions (during 1-3 February 2026), showing good agreement between CESPAR and two comparison stations. These observations are currently supporting ongoing studies of geomagnetic storms and equatorial electrodynamics, some of which have been accepted for presentation at the forthcoming 46th COSPAR Scientific Assembly in Florence, Italy. Notably, these measurements were obtained using a low-cost Raspberry Pi magnetometer, highlighting the potential of affordable instrumentation to contribute meaningfully to space weather research in under-sampled regions. Plans are underway to acquire and install a more advanced magnetometer in the new CESPAR observatory as funding opportunities become available. Future research will integrate magnetometer measurements with VLF observations, satellite data and numerical modelling to improve the understanding and forecasting of space weather processes. Added to these scientific outcomes, the SCOSTEP/PRESTO grant has strengthened institutional capacity at Anchor University, creating new opportunities for student training, research mentorship, and the development of expertise in solar-terrestrial physics, data science and space weather research.

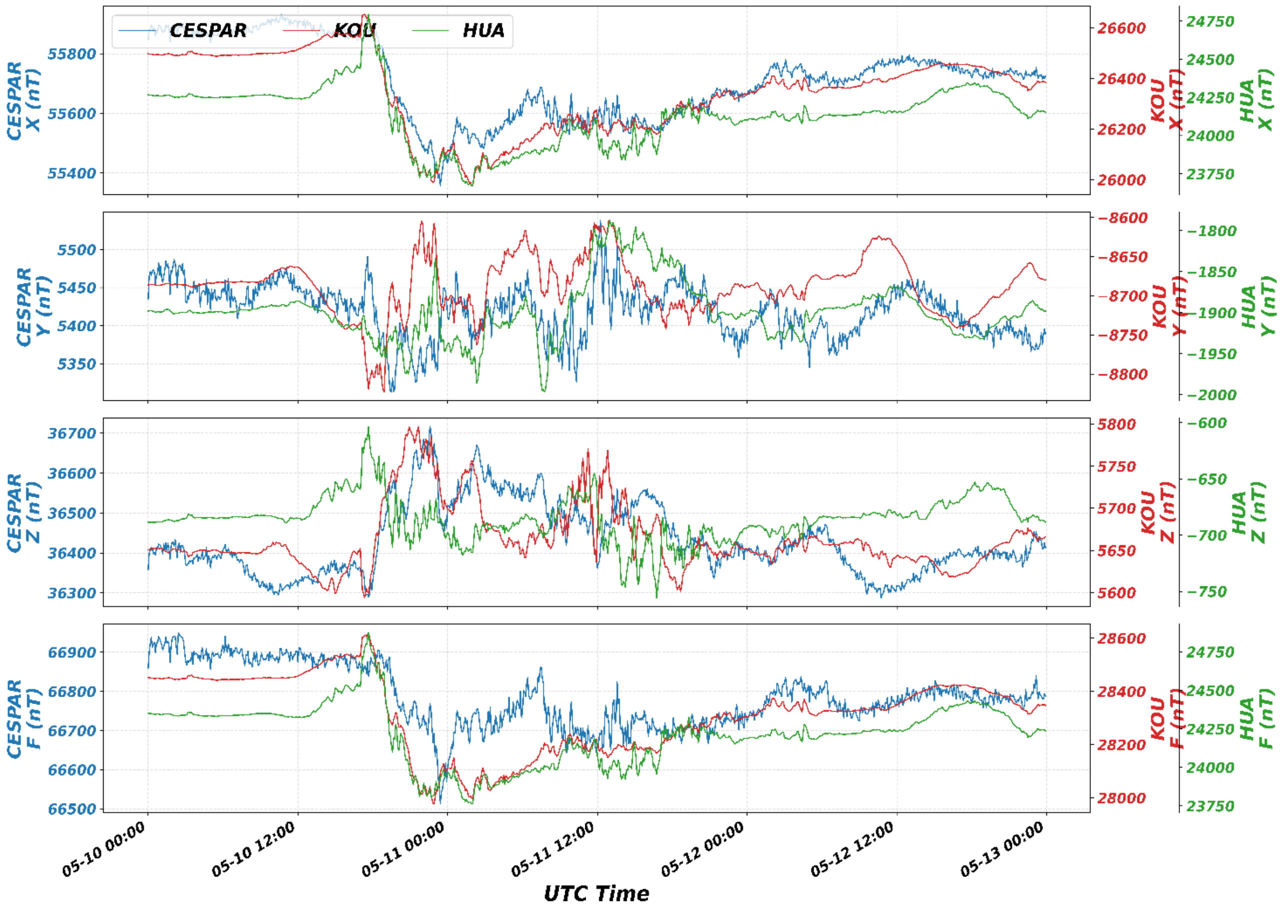

Figure 3. Geomagnetic storm signatures observed during the 10-12 May 2024 "Mother-day Storm" using the CESPAR magnetometer (blue) and compared with measurements from Kourou (red) and Huancayo (green). The clear storm-time perturbations in the X, Y, Z, and total field components demonstrate the successful operation of the CESPAR instrument.

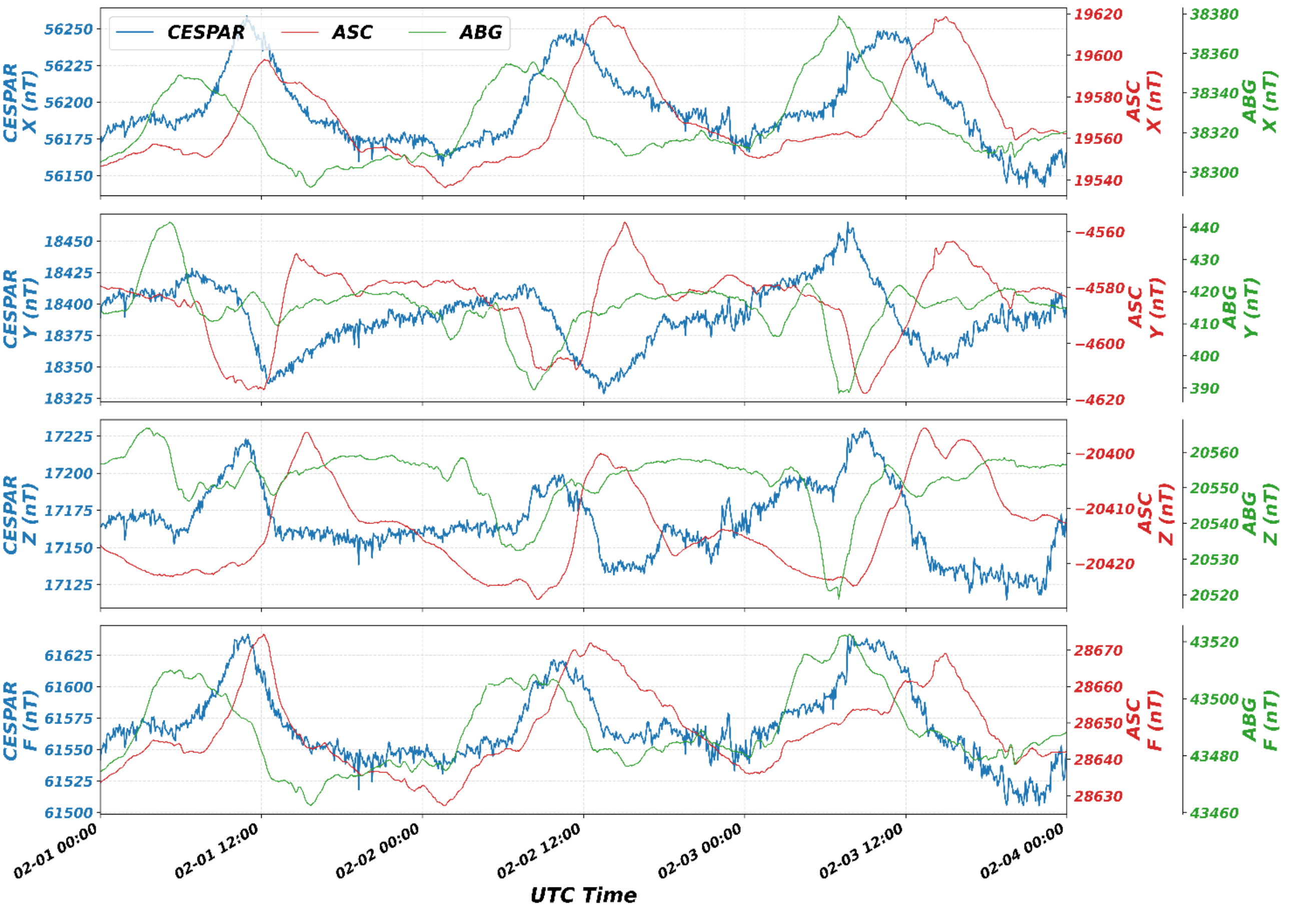

Figure 4. Comparison of the X, Y, Z, and total field (F) geomagnetic components measured at CESPAR, Nigeria, and at two comparison stations, Ascension Island (ASC) and India (ABG), during a relatively quiet geomagnetic interval (1-3 February 2026).

Acknowledgements:

The successful completion of the CESPAR Magnetometer Database was made possible through the generous support and collaboration of organisations and individuals. We sincerely acknowledge SCOSTEP/PRESTO for the grant that enabled the development of the database. We are deeply grateful to the Vice Chancellor, Prof. S. O. Bamidele, and the University Management Team for their unwavering commitment and institutional support throughout the project. We thank Prof. Viktor Fedun and his research team at The University of Sheffield, UK, for their sustained collaboration and invaluable contributions to research capacity building at CESPAR, and the German Aerospace Center (DLR-SO) for sponsoring the scientific cooperation visit of Dr. Victor U. J. Nwankwo. We also gratefully acknowledge the Dublin Institute for Advanced Studies (DIAS) for donating the Raspberry Pi magnetometer that underpins these observations, and Dr. Johnny Malone-Leigh (University of Otago, New Zealand) for his expert guidance and practical advice that contributed to the successful installation and commissioning of the instrument. We further appreciate the Physical Planning and Works (PPW) Department for their tireless work in supporting the observatory infrastructure, including Engr. F. I. Akpasa, Engr. Paul M., Qs. O. O. Okolie, Arch. W. C. Agbejimi (among others), as well as the Department of Physics, Anchor University, Lagos, for its continued academic partnership in advancing space weather research.

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Article 3:

The joint ISWI-SCOSTEP online seminars

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[1]Facultad de Ciencias Exactas y Tecnología (FACET), Universidad Nacional de Tucumán (UNT), Argentina
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Maria Graciela Molina


Geetashree Kakoti

Since 2020, SCOSTEP has organized a series of online seminars aligned with the objectives of its scientific programs. Invited speakers from a wide range of disciplines relevant to SCOSTEP have presented the latest scientific results and advances in their respective fields.

Meanwhile, in 2022, during the COVID-19 pandemic, the International Space Weather Initiative (ISWI) launched a series of monthly webinars to bring together the global space weather community. These webinars have provided a platform for invited experts to present their latest research and foster scientific exchange.

All seminars and webinars have been recorded and made publicly available, significantly expanding their reach by enabling asynchronous viewing. The recordings have attracted thousands of views, demonstrating the strong interest and impact of these initiatives.

During the development of the latest SCOSTEP-COURSE program and at the ISWI Steering Committee meeting, it was decided to combine the two successful seminar series. Beginning in 2026, the joint ISWI–SCOSTEP Online Seminar Series was launched as a bi-monthly program featuring presentations aligned with the three SCOSTEP-COURSE (Cross-scale cOUpling pRocesses in the Solar-tErrestrial system) focus areas while supporting the broader objectives of ISWI.

Webinar chair and committee members

To ensure the successful organization and continued development of the joint webinar series, a dedicated Webinar Committee has been established. The committee works collaboratively to coordinate the planning, speaker selection, scheduling, promotion, and overall execution of the webinars, helping to maintain a high-quality scientific program and broad community engagement.

Current committee members:

Sharafat Gadimova (UNOOSA, Vienna, Austria)

Nat Gopalswamy (NASA, GSFC, USA)

Babatunde Rabiu (NASRDA, Nigeria)

Nandita Srivastava (USO, Physical Research Laboratory, India)

Endawoke Yizengaw (Aerospace Corporation El Segundo, USA)

Alphonse Sterling (NASA MSFC, USA)

In addition, SCOSTEP/COURSE focus area leaders participate in the committee as well

(https://scostep.org/course-science-program/).

Webinar chairs:

Maria Graciela Molina (FACET-UNT/ CONICET, Argentina)

Geetashree Kakoti (ISEE, Nagoya University, Japan)

We would like to express our sincere gratitude to the former members of the ISWI Webinar Committee, **Shing F. Fung** and **George Maeda**, as well as to the former SCOSTEP Chair, **Claudia Martinez**, for their dedication and valuable contributions to the development and success of the webinar series. Their efforts have been instrumental in establishing the strong foundation on which the joint ISWI–SCOSTEP Online Seminar Series continues to build.

Resources

The seminars are recorded and publicly available through both, ISWI and SCOSTEP Webpages. You can find the past webinars and the new joint seminars at:

SCOSTEP - https://scostep.org/online-seminar-series/

ISWI - https://iswi-secretariat.org/home-page/meetings/iswi-webinars/

Highlight on Young Scientists 1:

Investigation of Concurrent Magnetosonic and High Frequency EMIC Waves Observed by Arase Satellite

Amrutha

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Recent studies have demonstrated the existence of a particular class of events in the Earth's inner magnetosphere: the concurrent observation of magnetosonic (MS) waves, anisotropic protons with energies below 1 keV, and high frequency electromagnetic ion cyclotron (HFEMIC) waves occurring very close to the local proton cyclotron frequency [Teng et al., 2019].

As part of an ongoing investigation, more than ten events involving concurrent MS and HFEMIC waves were identified from seven years (2017–2024) of publicly available Arase wave and particle data. The event selection was primarily based on the availability of Magnetic Field Experiment (MGF) and Low-Energy Particle Experiment–ion (LEPi) datasets, which provide magnetic field measurements and low energy proton fluxes, respectively. The Medium-Energy Particle Experiment–ion (MEP-i) provides ion fluxes in the keV energy range.

The observations consistently follow a characteristic sequence: the presence of a keV range proton population, followed by the appearance of MS wave harmonics or discrete wave packets, subsequently accompanied by anisotropic proton distributions in the eV energy range and the appearance of HFEMIC wave patches. An example is illustrated in Figure 1. Enhancements in oxygen and helium ion fluxes are also observed in the keV energy range. The eV range protons are found to be highly anisotropic, with anisotropy values reaching even above 10 in some cases, whereas the keV range proton population, which is responsible for the generation of MS waves, exhibit ring-like distributions.

The identified events span a wide range of substorm activity levels, characterized by the AE index, and occur across a wide range of magnetic local time (MLT) sectors, predominantly between noon and dawn. The events were found to be associated with non-storm conditions (SYM-H > -50 nT). These observations, currently under further investigation, may provide observational support for the cross-energy coupling mechanism by Asamura et al. [2021], and provide observational evidence for the same, under different geomagnetic conditions.

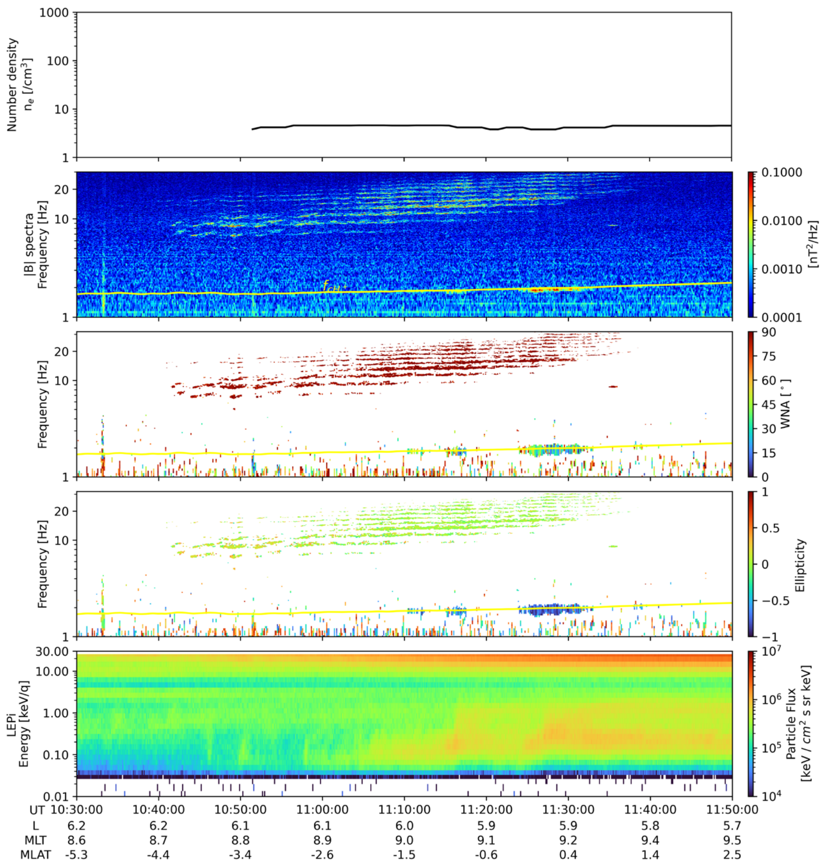

Figure 1. From top to bottom, the panels show the background plasma density, magnetic field power spectral density, wave normal angle, wave ellipticity, and low-energy proton fluxes measured by the LEPi instrument.

References:

Teng, S., Li, W., Tao, X., Ma, Q., Wu, Y., Capannolo, L., et al. (2019). Generation and characteristics of unusual high frequency EMIC waves. Geophysical Research Letters, 46 , 14,230–14,238. https://doi.org/10.1029/2019GL085220

Asamura, K., Shoji, M., Miyoshi, Y., Kasahara, Y., Kasaba, Y., Kumamoto, A., Tsuchiya, F., Matsuda, S., Matsuoka, A., et al. (2021). Cross-Energy Couplings from Magnetosonic Waves to Electromagnetic Ion Cyclotron Waves through Cold Ion Heating inside the Plasmasphere. Phys. Rev. Lett., 127, 245101. https://doi. org/10.1103/PhysRevLett.127.245101

Acknowledgements:

I thank SCOSTEP and ISEE, Nagoya University, for funding this visit and providing all the necessary infrastructure for this work. Special thanks are due to Professor Yoshizumi Miyoshi for his valuable guidance, support, and encouragement throughout this work.

Highlight on Young Scientists 2:

PgLis: a new model for long-term forecasting of GCR fluxes

David Pelosi

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Galactic cosmic rays (GCRs) reaching Earth are reshaped by the evolving conditions of the heliosphere, a process called *solar modulation*. PgLis is a new forecasting framework that solves the 1D Parker equation where the parameters describing GCR modulation have been calibrated against the smoothed sunspot number (SSN), which proxies the solar activity cycle. Cross-correlations between the time-delayed SSN and the modulation parameters allow the model to predict GCR fluxes at 1 AU from solar-activity indicators.

Species-dependent effects are accounted for by the local interstellar spectra, which represent the GCR flux before entering the heliospheric modulation region. This gives PgLis multi-species forecasting capability for all nuclei from protons to nickel. Coupling the model with published SSN prediction tools yields a full Solar Cycle 25 forecast and beyond, directly relevant for space-weather monitoring and radiation-dose assessment for astronauts.

Examples of the model's performances are shown in Figures 1 and 2.

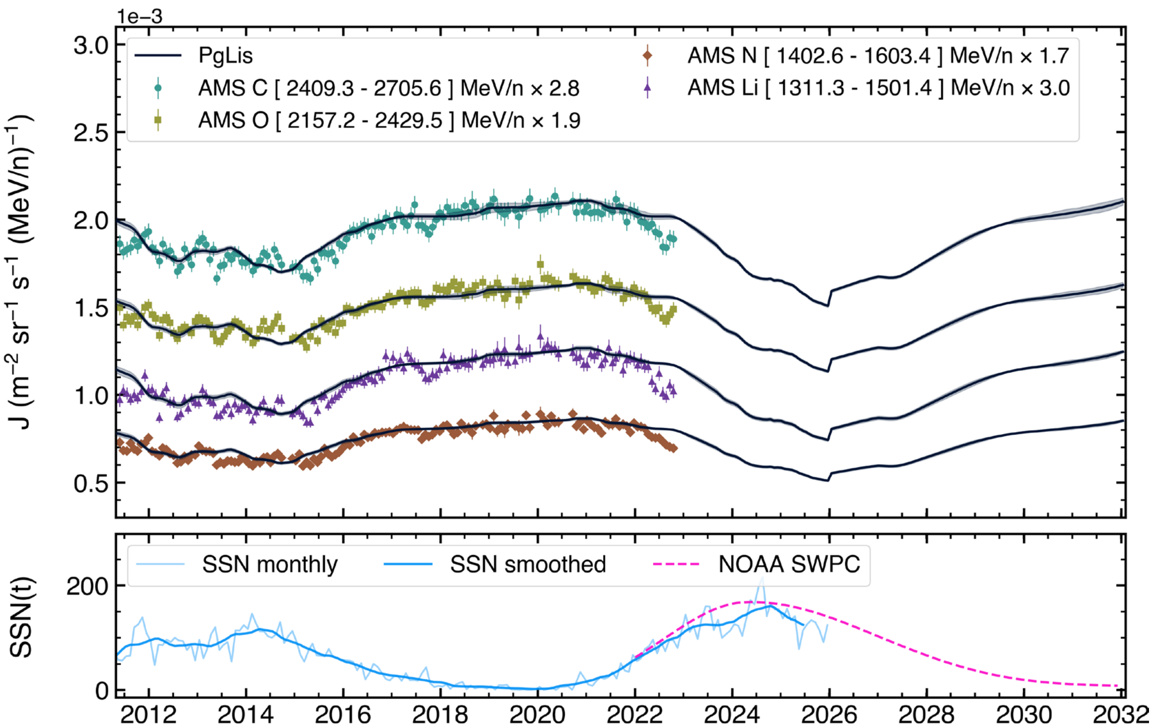

Figure 1. PgLis predictions compared with AMS-02 nuclei monthly fluxes (validation dataset.

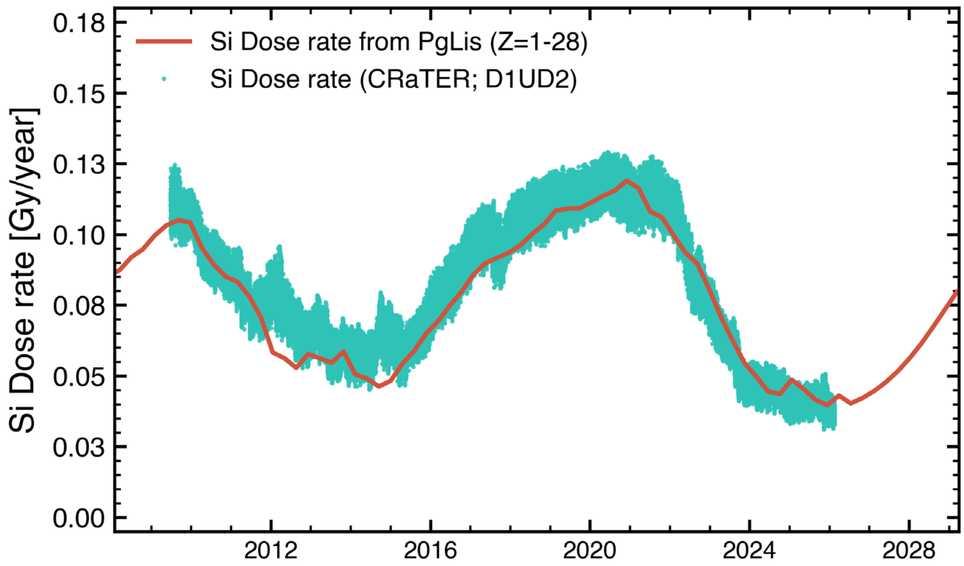

Figure 2. Silicon dose rate computed from PgLis input fluxes (Z=1-28) compared with CRaTER dose rate measurements.

The model is distributed as a ready-to-use Python package [1] built around pre-computed GCR flux tables. The only input required is the SSN: the package automatically downloads and keeps up to date both the observed and the predicted SSN from the NOAA Space Weather Prediction Center (SWPC). From that single input, users obtain GCR fluxes as a function of time and energy (or rigidity) in a few lines of code. Past, present, and future fluxes are all accessible within the same interface, making PgLis directly useful for mission planning, shielding design, dose rate estimation, and GCR ionization studies.

Acknowledgements

This work was mostly carried out under the SCOSTEP Visiting Scholar Program 2025 at Space Physics and Astronomy Research Unit at the University of Oulu, Finland.

[1] https://pypi.org/project/pglis/ (2026, May 28). PyPI.

Highlight on Young Scientists 3:

Energetic Particle Dynamics Within Kelvin–Helmholtz Waves

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Neetasha Arya

Kelvin–Helmholtz waves (KHW), generated by velocity shear between adjacent plasma flows, provide an efficient mechanism for plasma mixing, energy transport, and particle acceleration. During the May 2024 Gannon geomagnetic storm, the Magnetospheric Multiscale mission observed KHW together with multiple magnetic reconnection jets at the boundary of the coronal mass ejection (CME). One reconnection jet was associated with enhanced energetic particle fluxes propagating antiparallel to the magnetic field and exhibited a distinctive energy–time dispersion followed by an anti-dispersion signature (Figure1) [1]. Strong electromagnetic magnetosonic-whistler waves were detected between these particle signatures (Figure2), suggesting that MMS was located near an active particle acceleration region. Subsequently, an inverse pattern was observed in which lower-energy particles preceded higher-energy particles (Figure1(a-l)). Lower-energy protons coexisted with the wave turbulence, whereas higher-energy particles were largely absent from the turbulent interval [1].

Within the electron (Figure 1(a-f)) and ion (Figure 1(g-l)) signatures, the wave activity exhibits a transition in wave-normal angle from oblique to nearly parallel propagation (Figure 2(h)). Simultaneously, the waves become increasingly right-hand elliptically polarized at frequencies near twice the proton cyclotron frequency, indicating the presence of magnetosonic-whistler branch waves (Figure 2(i)). Their onset coincided with electron reconnection jets and reduced high-energy particle fluxes, demonstrating a close coupling between magnetic reconnection, wave generation, and energetic particle dynamics [1].

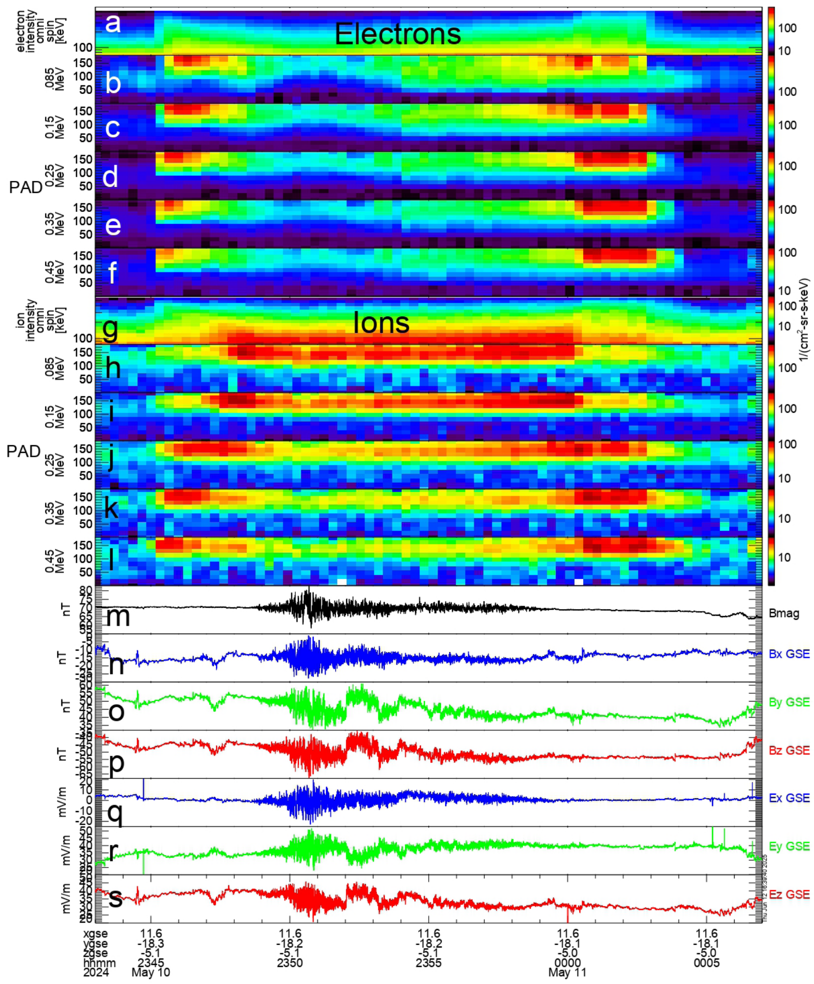

Figure 1. Overview of MMS detected anti-parallel streaming energetic particles between reconnection flows within CME ejecta (E1). Energetic electron (a-f) and ion (g-l) observations from MMS3 showing the energy fluxes (a,g) and PADs (b-f, h-l), respectively, at five different energy channels from 85 keV to 450 keV. The magnetic field magnitude (m) and components (n-p). Electric field (q-s).

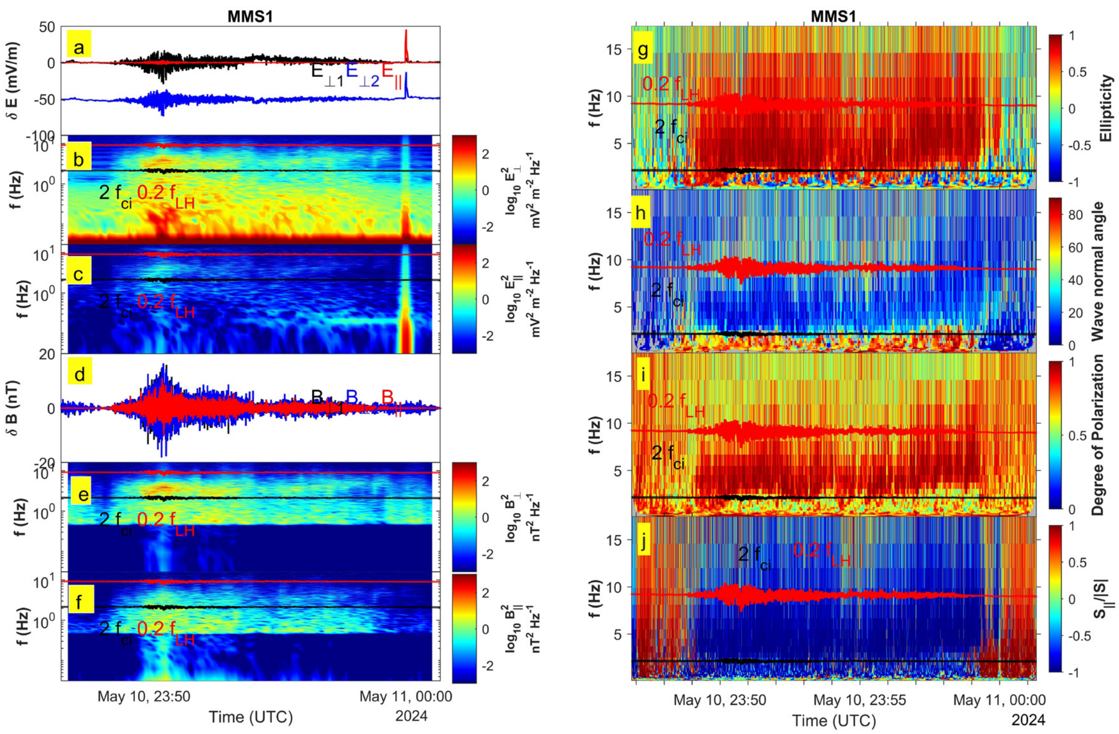

Figure 2. Overview of wave activity region occurred between particle dispersion and anti-dispersion signatures. Parallel and perpendicular wave electric field (a); Electric field fluctuation power perpendicular (b) and parallel (c) to magnetic field using Fast Fourier Transform (FFT); and same for the magnetic field (d-f). The wave ellipticity (g), wave normal angle (h), degree of polarization (i), and parallel to total Poynting flux ratio (j) for magnetic field fluctuations are shown on right.

These observations demonstrate the importance of continuous multi-spacecraft monitoring of the solar wind from the sub-L1 region, where the KHW source region for this event was located approximately 7 million km upstream of L1, through L1, lunar orbit, and Earth's bow shock and magnetosheath [2]. Since CMEs evolve through mesoscale instabilities that are not yet represented in global space weather models, observations beyond L1 are essential for accurately predicting energetic particle transport, interplanetary magnetic field variability, and space weather hazards at lunar and low Earth orbit.

Acknowledgement:

This work was conducted during a three-month visit to NASA Goddard Space Flight Center under the SCOSTEP Visiting Scholar Program. I gratefully acknowledge SCOSTEP for its support and express my sincere gratitude to Prof. Katariina Nykyri and Dr. David Sibeck for their guidance, encouragement, and invaluable discussions throughout this study. I also acknowledge the support of the Indian Institute of Geomagnetism through research funding under the MI-PEARL project, as well as support from the Embry-Riddle Center for Space and Atmospheric Research and the Magnetospheric Multiscale mission.

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2. K. Nykyri, "Giant Kelvin-Helmholtz (KH) Waves at the Boundary Layer of the Coronal Mass Ejections (CME) Responsible for the Largest Geomagnetic Storm in 20 Years," *Geophysical Research Letters*, vol. 51, p. e2024GL110477, 2024.

Meeting Report 1:

16th Quadrennial Solar-Terrestrial Physics Symposium (STP-16)

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The 16th Quadrennial Solar-Terrestrial Physics Symposium (STP-16) and School were held during May 30-31 (school) and June 1-5 (STP-16) 2026, at the Makedonia Palace Hotel, Thessaloniki, Greece. The Symposium also served as the kick-off meeting of the new COURSE program (Cross-Scale Coupling Processes in the Solar-Terrestrial System), which started in January 2026 and will last for five years (until 2030).

The School was composed of six sets of 1-hour lectures and 1-hour hands-on sessions on various topics from the Sun to the Earth's atmosphere.

The 5-day STP-16 symposium that followed the School had six sessions, i.e., 1) Cross-scale coupling processes in Sun-Earth relationship, 2) Sources of space weather & space climate, 3) Solar wind, magnetosphere, and ionosphere coupling, 4) External impacts and internal dynamics of the Earth atmosphere, 5) Modelling, data analysis tools, and data science, 6) Initiatives for ground- and space-based solar-terrestrial physics research. One-hundred and twenty-seven participants (including 27 students) from 26 countries and regions attended the symposium.

Photo 1. STP-16 group photo.

The STP-16 Symposium and School were organized by the SCOSTEP and its COURSE program, the National and Kapodistrian University of Athens, the Hellenic Space Center, and the Mariolopoulos-Kanaginis Foundation for the Environmental Sciences, and were sponsored by Hellenic Astronomical Society, ISEE, Nagoya University, International Association of Geomagnetism and Aeronomy (IAGA), International Science Council (ISC), Japan Society for the Promotion of Science (JSPS) (21H04518; 22K21345; 26H02086; JPJSCCB20240003), National Observatory of Athens, Planetek Hellas, Research Committee of Aristotle University of Thessaloniki, and Sotiria.

Meeting Report 2:

2nd European solar physics division (ESPD) summerschool

Mateja Dumbović

Mateja Dumbović[1]
[1]Hvar Observatory, Faculty of Geodesy, University of Zagreb, Zagreb, Croatia

2nd European solar physics division (ESPD) summerschool was the second summerschool after the pilot project that started in 2024. The school was organised in Dubrovnik, Croatia covering broad topics from solar photosphere, chromosphere, corona to heliosphere.The school was organised by ESPD led by the president Patrick Antolin, and more specifically Summerschool committee led by Jaime de La Cruz Rodriguez, with Mateja Dumbovic from Hvar Observatory Croatia as the main local organiser. The school hosted 10 lecturers, 40 students participating in person and 40 students participating online from 30 countries around the world. The school was sponsored by SCOSTEP, European Space Agency and European Physical Society. More information can be found at the school website: https://oh.geof.unizg.hr/index.php/en/espd-2026.

Photo 1. School photo (taken on Tuesday during coffee break).

Meeting Report 3:

Course on "The Heliospheric Space Plasma Physics in the Era of Multipoint Space Missions"

Giuseppe Consolini

Giuseppe Consolini[1]
[1]INAF – Istituto di Astrofisica e Planetologia Spaziali (INAF-IAPS), Rome, Italy

The International School "The Heliospheric Space Plasma Physics in the Era of Multipoint Space Missions" was held in L'Aquila, Italy, on 18-22 May 2026, organized by the Consorzio di Astrogeofisica and hosted by the Università dell'Aquila, under the direction of F. Berrilli (Università di Roma Tor Vergata), G. Consolini (INAF), and W. H. Matthaeus (University of Delaware), with the support of many national and international institution including SCOSTEP.

The school offered a comprehensive introduction to the role of multipoint measurements in understanding heliospheric plasma physics, from the Sun to Earth's magnetosphere, covering plasma turbulence, magnetic reconnection, shock wave formation, particle acceleration, and the three-dimensional structure of the solar corona, with a focus on future multipoint missions.

Lectures were from universities research institutions across Europe, USA and Africa. The school attracted more than 40 students from around the world, including graduate/PhD students, young scientists, and early-career researchers.

Photo 1. Attendees at the Palazzo Camponeschi, University of L'Aquila, Italy.

Meeting Report 4:

The 10th Space Climate Symposium (SC10)

Kseniia Golubenko

Kseniia Golubenko[1]
[1]University of Oulu, Oulu, Finland

The 10th Space Climate Symposium (SC10) was held in Mariehamn, Åland Islands, Finland, on 9–12 June 2026, as part of SCOSTEP/ COURSE -supported activities. The meeting brought together 104 participants from 58 organizations across 23 countries, covering solar physics, heliospheric physics, cosmic-ray research, and atmospheric sciences.

The symposium featured keynote and invited talks by leading international experts, including Mike Lockwood (UK); Delores Knipp (US); Lisa Upton (US); Nandita Srivastava (IN); Dibyendu Nandi (IN); Juan José Curto Subirats (ES); Francesco Berrilli (IT); Roelf Du Toit Strauss (ZA); Wenjuan Huo (DE); Oleksiy Agapitov (US); Nicolas Brehm (CH); Rajkumar Hajra(CN); Mykola Gordovskyy (UK); Timofey Sukhodolov (CH); Adam Finley (NL), Merav Opher (US), Slava Merkin (US), Sowmya Krishnamurthy (AT).

The scientific program focused on long-term solar variability, solar–terrestrial coupling, and extreme space weather events. Approximately 36% of participants were early-career researchers, who actively contributed through presentations and discussions.

Photo 1. SC10 participants.

The meeting fostered interdisciplinary exchange and new collaborations within the international Space Climate community and also contributed to public outreach in the Åland Islands.

The organizers thank SCOSTEP/COURSE for supporting this successful scientific meeting.

Upcoming meetings related to SCOSTEP

Conference	Date	Location	Contact Information
46th Scientific Assembly of the Committee on Space Research (COSPAR) and Associated Events	Aug. 1-9, 2026	Florence, Italy	https://www.cospar2026.org/
SCAR Open Science Conference	Aug. 8-19, 2026	Oslo Norway	https://scar2026.org/
International Colloquium on Equatorial and Low Latitude Ionosphere (ICELLI)	Aug. 31-Sep. 4, 2026	Ibadan, Oyo State, Nigeria	https://nspee.org/icelli/
VERSIM 2026 Workshop	Sep. 7-11, 2026 Summer School: Sep. 3-5, 2026	Sopron, Hungary	https://versim2026.epss.hu/
Data Science Training for Space Weather and Ionospheric Research	Sep. 25-29, 2026	Arua, Uganda	
First Workshop on Sun and Space Weather	Sep. 28-Oct. 2, 2026	Antalya, Turkey	https://sasw.akdeniz.edu.tr/tr/home-16264
Alliance Meeting	Oct. 19-21, 2026	Rome, Italy	https://indico.ict.inaf.it/event/3628/overview
The XXIst IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing	Oct. 25-30, 2026	Ishioka, Japan	https://kakioka2026.org/
European Space Weather Week 2026	Nov. 2-6, 2026	Florence, Italy	https://esww2026.eswan.eu/
Sun-Earth connection through stellar analogs	Nov. 9-12, 2026	Graz, Austria	https://lively-stars.uni-graz.at/de/neuigkeiten/upcoming-event-scostep-course-nov-2026/
10th HEPPA-SOLARIS Workshop	Jan. 11-15, 2027	Dunedin, New Zealand	https://www.solarisheppa.kit.edu/

Please send the information of upcoming meetings to the newsletter editors.

Announcement 1:

SCOSTEP Officer Nomination Committee

Kazuo Shiokawa[1] and Odele Coddington[2]
[1]Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Nagoya, Japan
[2]Laboratory for Atmospheric and Space Physics, University of Colorado Boulder, CO, USA


Odele Coddington


Kazuo Shiokawa

The next election of SCOSTEP President and Vice President (Officers) is scheduled in July 2027. To prepare for the election, the SCOSTEP Bureau assigned five members to the Officer Nomination Committee (hereinafter referred to as ONC) in July 2025. They are Dr. Ioannis Daglis (chair), Dr. Lucilla Alfonsi, Dr. Annika Seppala, Dr. Nandita Srivastava, and Dr. Nat Gopalswamy. The task of the ONC is to ensure sufficient nominations of candidates for the SCOSTEP Officers, i.e., President and Vice President. The ONC search for the President and Vice President will include the consideration of scientific achievements and perspectives of the candidates in solar-terrestrial physics and the balance of different scientific disciplines, gender, and geographical regions. The ONC may nominate candidates and/or contact electors to nominate candidates. Details of the ONC are available at https://scostep.org/about/governance/committees/.

As shown in the SCOSTEP constitution, electors are defined as National Adherent Representatives, Scientific Discipline Representatives, Bureau members, and Committee Chairs. Electors may nominate SCOSTEP officer candidates. Details of the SCOSTEP constitution are available at https://scostep.org/about/. The call for nomination of the SCOSTEP Officer candidates will be announced in late 2026 or early 2027 by the SCOSTEP Scientific Secretary.

Announcement 2:

SCOSTEP Outreach Support Fund

Kazuo Shiokawa[1] and Odele Coddington[2]
[1]Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Nagoya, Japan
[2]Laboratory for Atmospheric and Space Physics, University of Colorado Boulder, CO, USA


Odele Coddington


Kazuo Shiokawa

At the SCOSTEP Bureau meeting on June 2, 2026, the Bureau decided to introduce small grants to encourage public outreach activities associated with meetings and schools in solar-terrestrial physics. These grants support outreach programs aimed at the general public and are awarded in addition to SCOSTEP funding for meetings and schools. Examples include one-day outreach events, such as presentations or educational activities targeting elementary to high school students and their teachers, organized immediately before or after an international meeting or school supported by SCOSTEP. The SCOSTEP Outreach Fund provides up to US$500 per outreach activity. The fund may be used to fully or partially cover the expenses, such as, (1) travel costs, visa fees, accommodation, and per diem expenses for selected presenters participating in outreach activities, (2) personnel and manpower costs directly related to the implementation of the outreach activity, (3) consumable materials, including printing costs for SCOSTEP Comic Books and other outreach resources, and (4) development and publication of outreach materials, including websites, online content, and printed publications. Proposals should be submitted by organizers of meetings, schools, or outreach events related to solar–terrestrial physics, together with applications for SCOSTEP meeting or school support under SCOSTEP and its scientific programs. Completed proposals should be submitted to both the SCOSTEP President (shiokawa[at]nagoya-u.jp) and the SCOSTEP Secretariat(scostep[at]lasp.colorado.edu). The application guideline is available at https://scostep.org/scostep-course-grant-proposals/.

The purpose of the SCOSTEP/COURSE newsletter is to promote communication among scientists related to solar-terrestrial physics and the SCOSTEP's COURSE program.

The editors would like to ask you to submit the following articles to the SCOSTEP/COURSE newsletter.
Our newsletter has five categories of the articles:

1. Articles— Each article has a maximum of 500 words length and four figures/photos (at least two figures/photos).
   With the writer's approval, the small face photo will be also added.
   On campaign, ground observations, satellite observations, modeling, etc.
2. Meeting reports—Each meeting report has a maximum of 150 words length and one photo from the meeting.
   With the writer's approval, the small face photo will be also added.
   On workshop/conference/ symposium report related to SCOSTEP/COURSE
3. Highlights on young scientists— Each highlight has a maximum of 300 words length and two figures.
   With the writer's approval, the small face photo will be also added.
   On the young scientist's own work related to SCOSTEP/COURSE
4. Announcement— Each announcement has a maximum of 200 words length.
   Announcements of campaign, workshop, etc.
5. Meeting schedule

Category 3 (Highlights on young scientists) helps both young scientists and SCOSTEP/COURSE members to know each other. Please contact the editors if you know any recommended young scientists who are willing to write an article on this category.

To Submit an Article
Articles/figures/photos can be emailed to the Newsletter Secretary, Ms. Mai Asakura (asakura_at_isee.nagoya-u.ac.jp). If you have any questions or problem, please do not hesitate to ask us.

Subscription - SCOSTEP mailing list
The PDF version of the SCOSTEP/COURSE Newsletter is distributed through the SCOSTEP-all mailing list. If you want to be included in the mailing list to receive future information of SCOSTEP/COURSE, please send e-mail to "scostep_at_lasp.colorado.edu" (replace "_at_" by "@") with your name, affiliation, and topic of interest to be included.