An update of SCOSTEP's recent activities

(SCOSTEP President)

SCOSTEP Scientific Committee on Solar-Terrestrial Physics

An Affiliated Body of the International Science Council (ISC) and a permanent observer at UNCOPUOS.

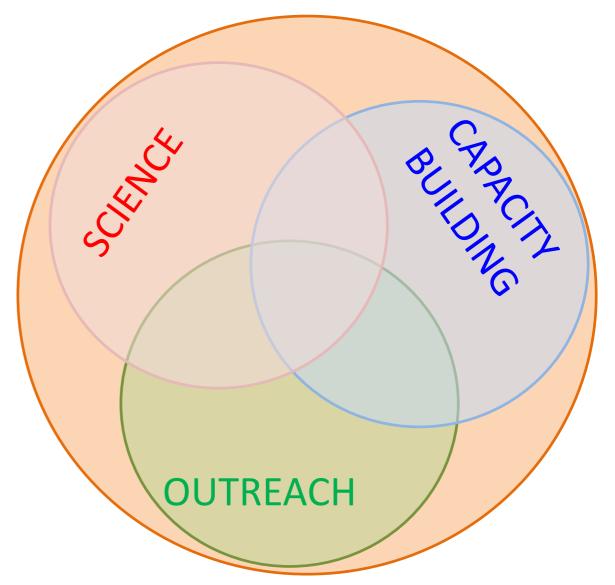
Runs long-term (4-5 years) international interdisciplinary scientific programs of solar terrestrial physics

Interacts with national and international programs involving solar terrestrial physics elements

Engages in Capacity Building activities such as the Space Science Schools with UNOOSA/ISWI.

Disseminates new knowledge on the Sun-Earth System and how the Sun affects life and society as outreach activities









International interdisciplinary programs in solar-terrestrial physics operated by SCOSTEP

1976-1979: IMS (International Magnetosphere Study)

1979-1981: SMY (Solar Maximum Year)

1982-1985: MAP (Middle Atmosphere Program)

1990-1997: STEP (Solar-Terrestrial Energy Program)

1998-2002: Post-STEP (S-RAMP, PSMOS, EPIC, and ISCS)

2004-2008: CAWSES (Climate and Weather of the Sun-Earth System)

2009-2013: CAWSES-II (Climate and Weather of the Sun-Earth System-II)

2014-2018: VarSITI (Variability of the Sun and Its Terrestrial Impact)

2020-2024: PRESTO (Predictability of the variable Solar-Terrestrial Coupling)





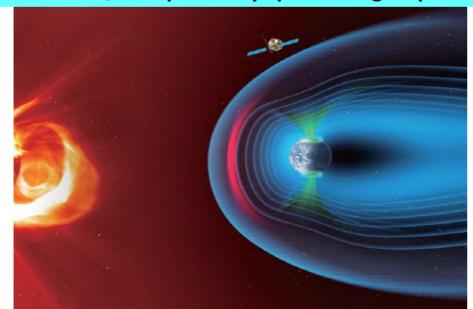
SCOSTEP's international program in 2020-2024

<u>PRESTO: Predictability of the</u>

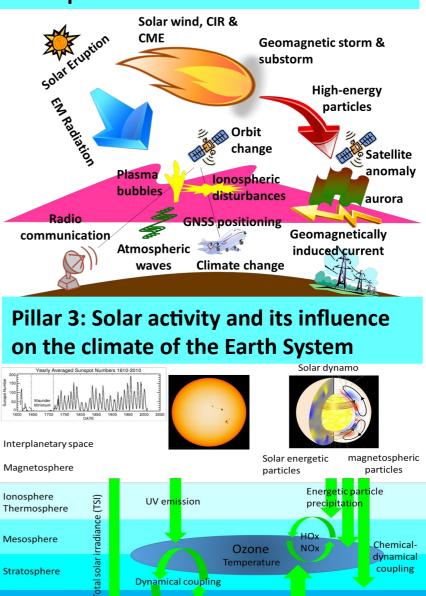
<u>variable Solar-Terrestrial Coupling</u>

PRESTO identifies predictability of the variable solar-terrestrial coupling performance metrics through modeling, measurements, and data analysis and to strengthen the communication between scientists and users

Pillar 1: Sun, interplanetary space and geospace



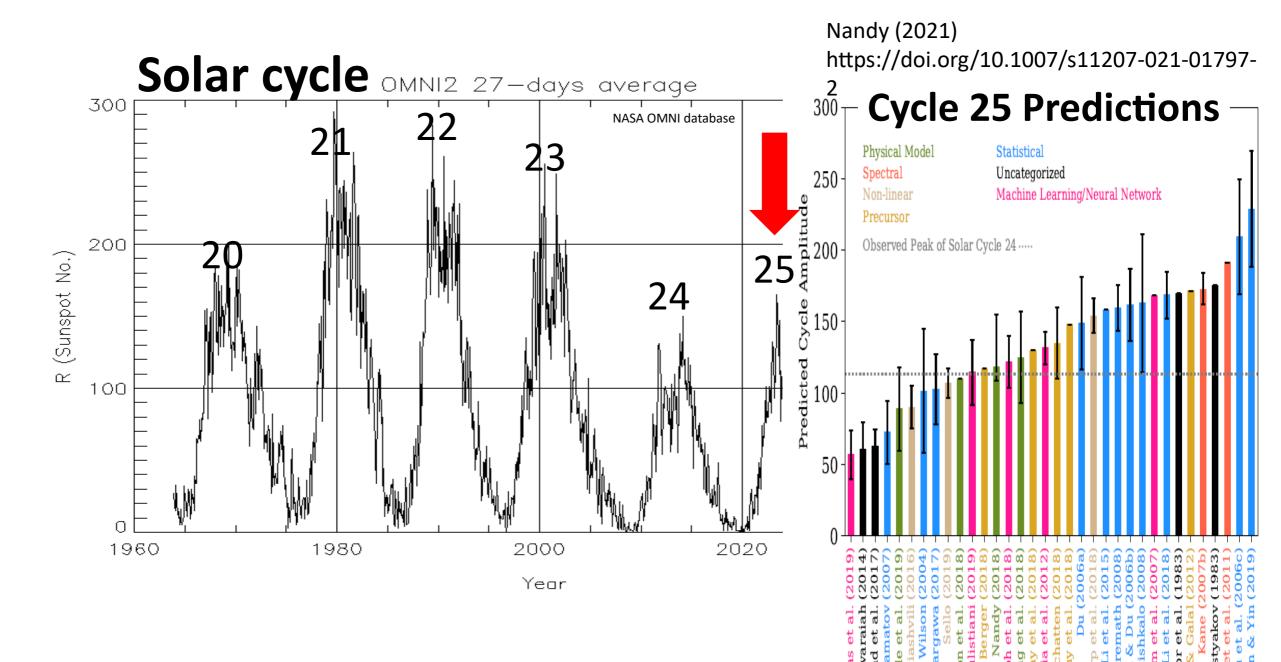
Pillar 2: Space weather and the Earth's atmosphere

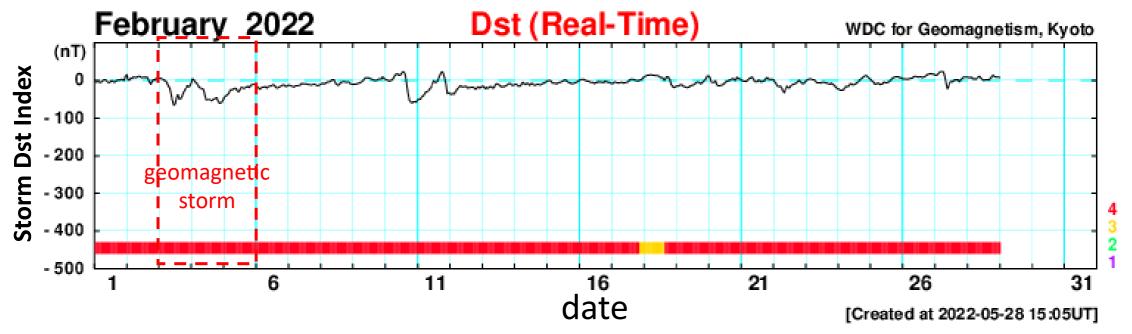


Troposphere

For subscription on the SCOSTEP-all mailing list, send e-mail to

Anthropogenic

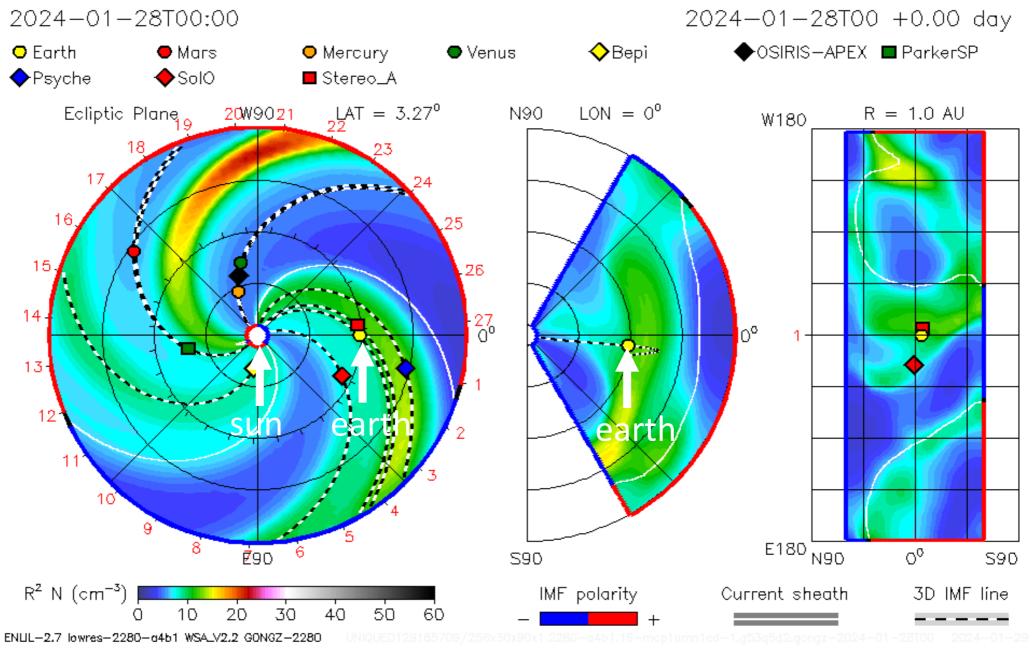




Small geomagnetic storm on Feb.3-5, 2022

- >Expansion of the upper atmosphere
- → Atmospheric drag increase.
- → Up to ~40 Starlink satellites of SpaceX is getting lost into the Earth's atmosphere (https://www.spacex.com/updates/, Feb. 8, 2022)





ENLIL model (Odstrcil and Pizzo, Solar Phys., 2009, DOI 10.1007/s11207-009-9449-z)

https://www.spaceweatherlive.com/en/solar-activity/wsa-enlil.html https://www.swpc.noaa.gov/products/wsa-enlil-solar-wind-prediction





SCOSTEP/PRESTO Funding Opportunities

 SCOSTEP/PRESTO provides financial support for organizing international campaigns, meetings, and database constructions.

2023: 7 meetings and 2 database

2024: 19 meetings and 4 database

 SCOSTEP also provides financial support for capacity building activities.

SCOSTEP-PRESTO ONLINE SEMINAR SERIES

icipants / number of registration irradiance and energetic particles: my way in science

Author: Dr. Eugene Rozanov (PMOD/WRC, Davos, Switzerland)

Date and Time: January 23, 2024, 13:00-14:00 UT 86/168

#18 Title: Geo-effectiveness of interplanetary coronal mass ejections: How much can be

affected due to their evolution in the heliosphere?

Author: Dr. Sergio Dasso (LAMP at Instituto de Astronomía y Física del Espacio, UBA-

CONICET, Buenos Aires, Argentina)

Date and Time: October 26, 2023, 12:00-13:00 UT 68/144

#17 Title: From Earth to the Edge of Space: How Data Assimilation Advances the Science

and Engineering of Forecasting Near Earth Space Environments

Author: Dr. Tomoko Matsuo (University of Colorado at Boulder, USA)

Date and Time: August 24, 2023, 13:00-14:00 UT 49/126

#16 Title: Atmospheric response to solar activity

Author: Dr. Annika Seppala (University of Otago, New Zealand)

Date/Time: April 19, 2023, 08:00-09:00UT 105/214

#15 Title: Forecasting the Extreme End of Solar Weather: Flares, Coronal Mass Ejections and

SEP Event Complexes

Author: Dr. Manolis K. Georgoulis (RCAAM of the Academy of Athens, Greece)

Date/time: September 23, 2022, 10:00-11:00 UT 61/214

SCOSTEP ONLINE CAPACITY BUILDING LECTURE SERIES

ts / number of registration prer onvening the mature or botton i tunies: Insights from Ground and Space

Observations

Speaker: Kyung-Suk Cho (Korea Astronomy and Space Science Institute, Daejeon, South,

Korea

Date/time: September 21 (Thu), 2023, 09:00-10:00 UTC 42/98

#18 Topic: Solar magnetic field and cycle: from understanding to making prediction

Speaker: Bidya Binay Karak, Indian Institute of Technology (BHU), Varanagituhedia ordinators

Date and Time: July 24 (Mon), 2023, 08:00-09:00 UTC 61/122

#17 Topic: Geospace Exploration Project: ERG/Arase: Recent highlights

Speaker: Yoshizumi Miyoshi, ISEE, Nagoya University, Japan

Date and Time: June 30 (Fri), 2023, 08:30-09:30 UTC 27/92

Claudia Martinez-

es

#16 Topic: Response of the Earth's middle atmosphere to solar particle forcingleron

Speaker: Pekka Verronen, FMI/SGO, University of Oulu, Finland

Date and Time: Oct 25 (Tue), 2022, 08:00-09:00 UTC 66/156

#15 Topic: Global properties of solar flares and some recent sun-as-a-star dig

Speaker: Hugh Hudson (Affiliation: University of Glasgow, Glasgow, UK)

Date/Time: September 08 (Thu), 2022, 09:00-10:00 UTC 99/194

Ishita Gulati

#14 Topic: Space weather ionospheric effects at high latitude

SCOSTEP/PRESTO Newsletter vol.27-



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New 14C-Based Reconstructions of 11-Year Solar Cycles: Longer Than a Millennium Now

It was known for a long time that dark ratios of about 11 years on average ranginges, consistently observable by maked ing from 8 to 16 years for instributal cycyets, can appear on the Stan but their as-time and even very belonging to the Sun berted by Radolf Worl sturing from 1749 was unclear. Scientifically, the sumport. The period covered by selectopic mapping water discovered and confirmed as such in observators since 1610, includes also the time earlier 172 entry (see a review by Manufer minimum, vit. the period of

Upcoming Meetings

Announcement 2: SCOSTEP 2022 Dis guished Scientist Award

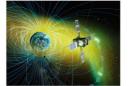
Similar patterns of tropical precipitation and circulation changes under solar and green-house gas forcing

In response to rather warming cased procupition increase at an inner final Total Soil Institute CISS versus great for 4 short 24-35 by the disper 4 flows of 1600 the 1600 the



SCOSTEP/PRESTO

A new journey of the Arase satellite to the 25th solar cycle



NEWSLETTER

SSSTEP

craft Magneto ter on GEO-KOMPSAT-2A Development of Very Low Frequenc (VLF) Radio Wave

Article 3:

Upcoming Meetings

Vol. 35, April 2023

SOSMAG - Service Oriented Spacecraft Magnetometer on GEO-KOMPSAT-2A





Figure 1. Impact of Space Weather, @ESA/Science Office, CC BY-SA 3.0 IGO

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Comprehensive Study of Plasma Wave Fluctua-tions in the Inner Helio-sphere: Towards DUWI Database Establishmen

Highlight on Young Scientists 1: Shannon Hill / USA

Meeting Report 2: The 18th Sun-Climate Sym-posium, Flagstaff, AZ, 16 -20 October 2023

SCOSTEP/PRESTO NEWSLETTER

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SWATNet - Space Weather and Doctoral Degree in Marie Curie Network

"University of Ioannins, Ioannins, Greece
"Eötvös Loránd University, Budapest, Hungary
PKU Leuven, Leuvem, Belgium / UMCS, Lublin, Pol



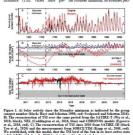
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Project "Role of the Middle Atmosphere in Climate": Phase 2

the state of the s

The Dimmest State of the Sun Article 1: The Dimmest State of the Sun

Upcoming Meetings 9



SSSTEP

The SafeSpace Project



weather project has been funded by the European Union in the finamework of the Horizon 2020 research and innovation funding programme. The objectives of SafeSpace are relevant and fully aligned with the SCOSTEP/RESTO program and in particular with its first pillar of research (Sun, interplanetary space and

Figure 1. The overall project logic covers the complete Sun - interplanetary space -



Interoperable Database for Citizen Science Observations of STEVE

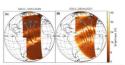
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New Findings on Equatorial Plasma Bub-



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SCOSTEP/PRESTO

Aditya-L1: Solar & Heliospheric Observato



A ditys, Sanskiri name for the Sun, is three in-situ experiments to study the Sun and local environment at L1. The mission lanks witch was lambeled on the half as the study of the study o



SCOSTEP Visiting Scholar (SVS) Program In 2023, 15 proposals were approved.

	Name	Home Institute	Host Institute
1	George Ochieng Ondede	The Technical University of Kenya	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, <mark>Japan</mark>
2	Chandan Kapil	Indian Institute of Geomagnetism, Navi Mumbai, <mark>India</mark>	Leibniz Institute of Atmospheric Physics, Germany
3	Akshay Shivaji Patil	Sanjay Ghodawat, University, Kolhapur, <mark>India</mark>	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, <mark>Japan</mark>
4	Ashish P. Jadhav	Indian Institute of Geomagnetism, Navi Mumbai, <mark>India</mark>	Leibniz Institute of Atmospheric Physics, Germany
5	Kshitiz Upadhyay	Physical Research Laboratory, Ahmedabad, <mark>India</mark>	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, <mark>Japan</mark>
6	Lalitha G Krishnan	Vikram Sarabhai Space Centre, Thiruvananthapuram, <mark>India</mark>	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, <mark>Japan</mark>
7	Yoshita Baruah	Indian Institute of Science Education and Research (IISER), Kolkata, India	NASA Goddard Space Flight Center (NASA/GSFC), USA
8	Akash Biswas	Indian Institute of Technology (BHU, India	NASA Goddard Space Flight Center (NASA/GSFC), USA
9	Manu Varghese	ShandongUniversity, China	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, <mark>Japan</mark>
10	TRAORE Ibrahim	University Norbert Zongo in Koudougou, <mark>Burkina Faso</mark>	Institute for Research in Astrophysics and Planetology (IRAP), Toulouse, France
11		Anchor University Centre for Space Research (CESPAR), Nigeria	South Africa National Space Agency (SANSA), South Africa
12	Ardra Kozhikottuparambi	National Institute of Technology(NIT), India	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, <mark>Japan</mark>
13	Rajesh Kumar Barad	Indian Institute of Geomagnetism, India	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, <mark>Japan</mark>
14	Florian Günzkofer	German Aerospace Center (DLR), <mark>Germany</mark>	Kyushu University, <mark>Japan</mark>
15	Prateek Mayank	Indian Institute of Technology Indore, <mark>India</mark>	South African National Space Agency (SANSA), South Africa











Applications for 2024 are on-going with the deadline of February 15, 2024.

Capacity Building Schools

Schools in 2023

- 2nd Iberian Space Science Summer School, SWE, University of Alcala (UAH),
 Spain, June 26-30, 2023
- International Colloquium on Equatorial and Low-Latitude Ionosphere (ICELLI), University of Ilorin, Nigeria, September 4-8, 2023
- The 2023 IMCP Space Weather School, National Space Science Center, Chinese Academy of Sciences, Beijing, China, September 14-23, 2023
- The International Space Weather Initiative School, Grand Palace Hotel in the city of Lusaka, Zambia, 26-20 September 2023
- COSPAR CAPACITY BUILDING WORKSHOP: Solar-Terrestrial Coupling Processes



SCOSTEP - Science Comic Books

https://scostep.org/













Summary

- PRESTO is the current SCOSTEP scientific program to run during 2020-2024 to understand Predictability of the variable Solar-Terrestrial Coupling
- Scientists from more than 70 countries & regions participate in the PRESTO program to understand predictability of space weather and solar effect on climate.
- Solar terrestrial science will reach as many developing countries as possible via SCOSTEP's capacity building and outreach activities.

PRESTO: Predictability of the variable Solar-Terrestrial Coupling

SCOSTEP: Scientific Committee on Solar-Terrestrial Physics