

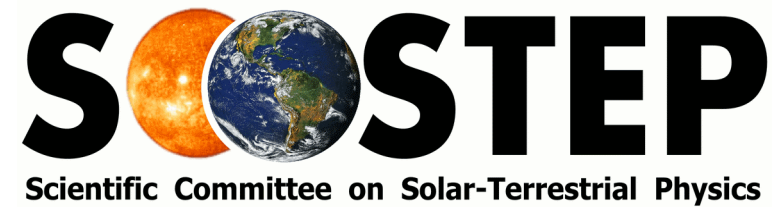
The background of the slide is a composite image. On the left, there is a bright, glowing orange and yellow structure resembling a solar flare or a cross-section of a plasma ring. In the center, the Earth is visible, surrounded by its blue magnetic field lines, which are depicted as concentric loops. A small satellite with blue solar panels is shown in orbit above the Earth. The overall background is a deep red, suggesting the solar wind or the interplanetary medium.

An update of SCOSTEP's recent activities

**Kazuo Shiokawa
(SCOSTEP President)**

SCOSTEP

Scientific Committee on Solar-Terrestrial Physics



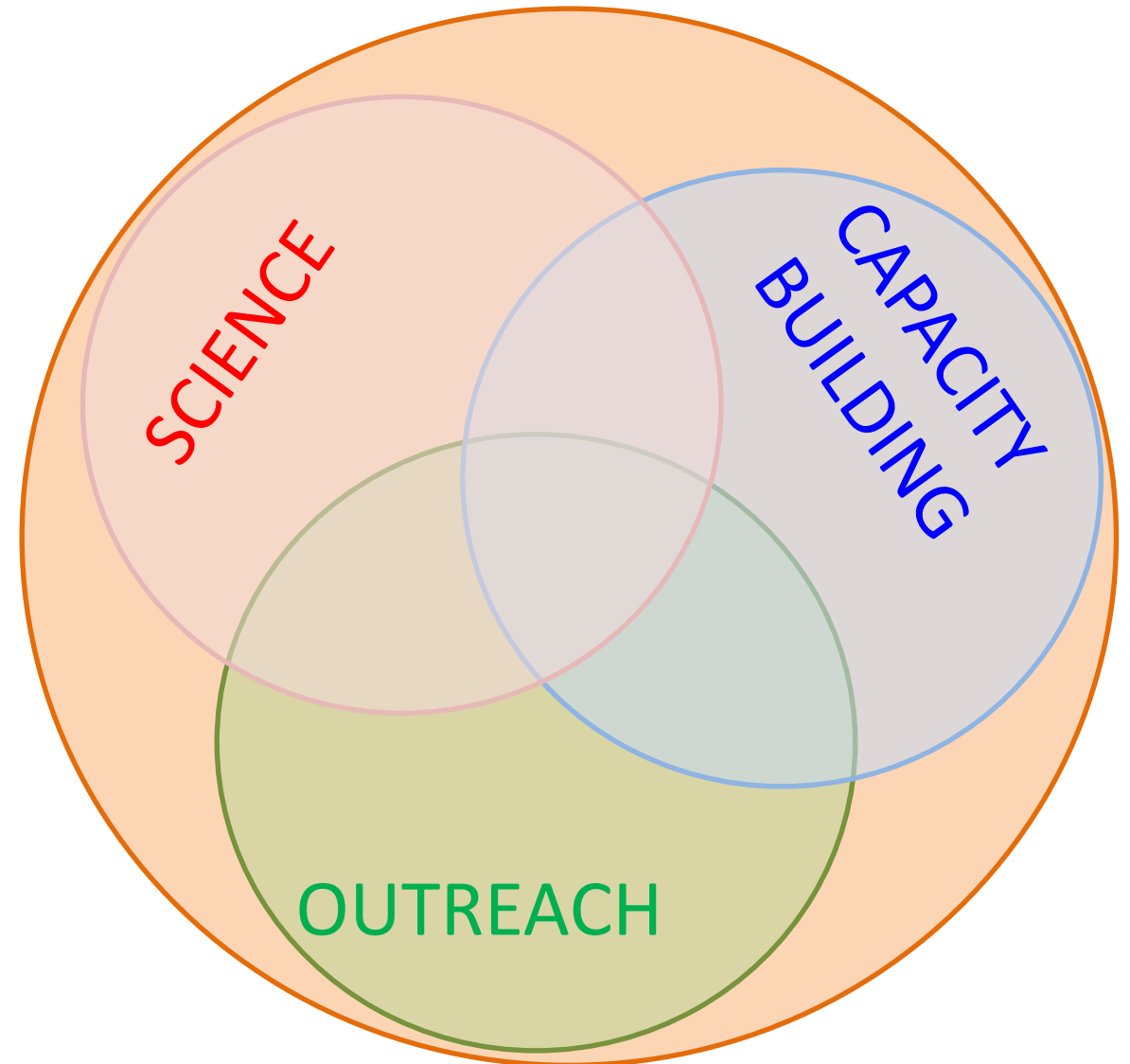
An Affiliated Body of the International Science Council (ISC) and a permanent observer at UNCOPUOS.

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)

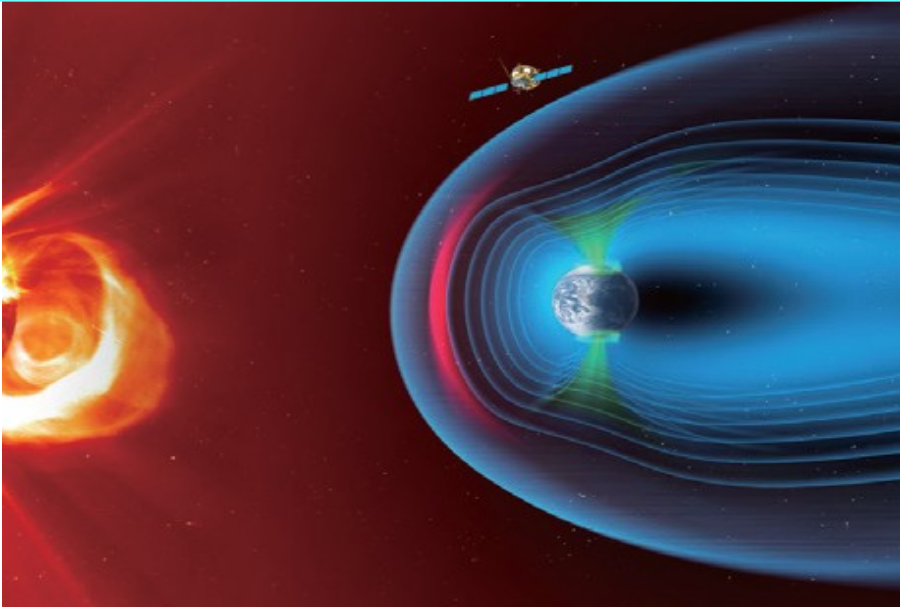


SCOSTEP's international program in 2020-2024

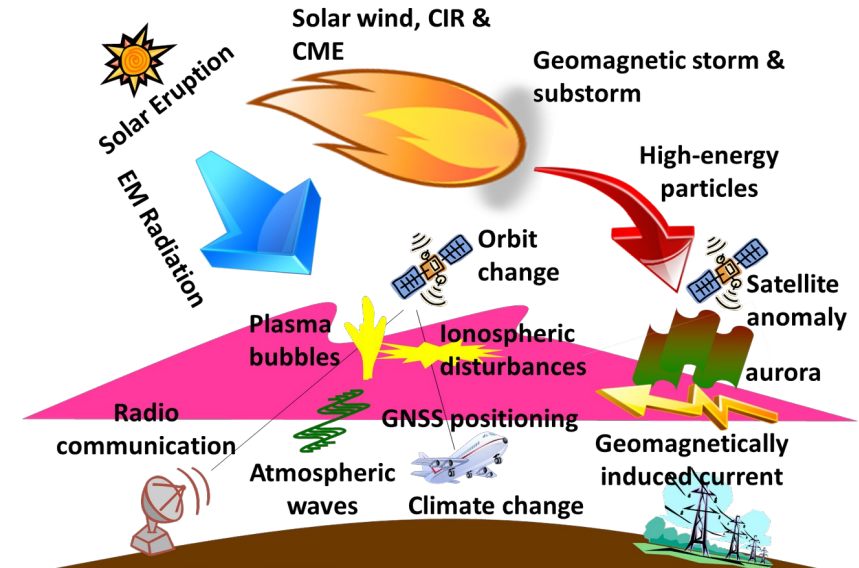
PRESTO: Predictability of the variable Solar-Terrestrial Coupling

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**

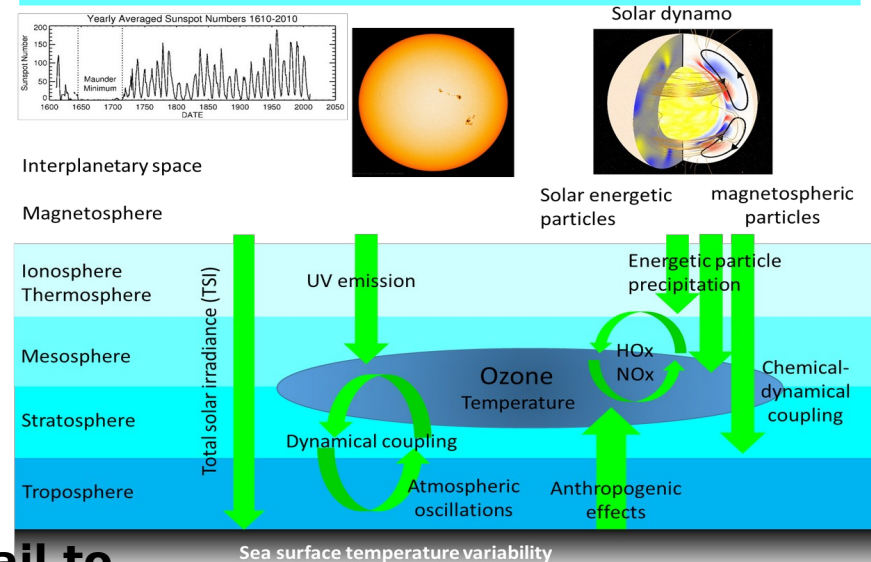
Pillar 1: Sun, interplanetary space and geospace



Pillar 2: Space weather and the Earth's atmosphere



Pillar 3: Solar activity and its influence on the climate of the Earth System

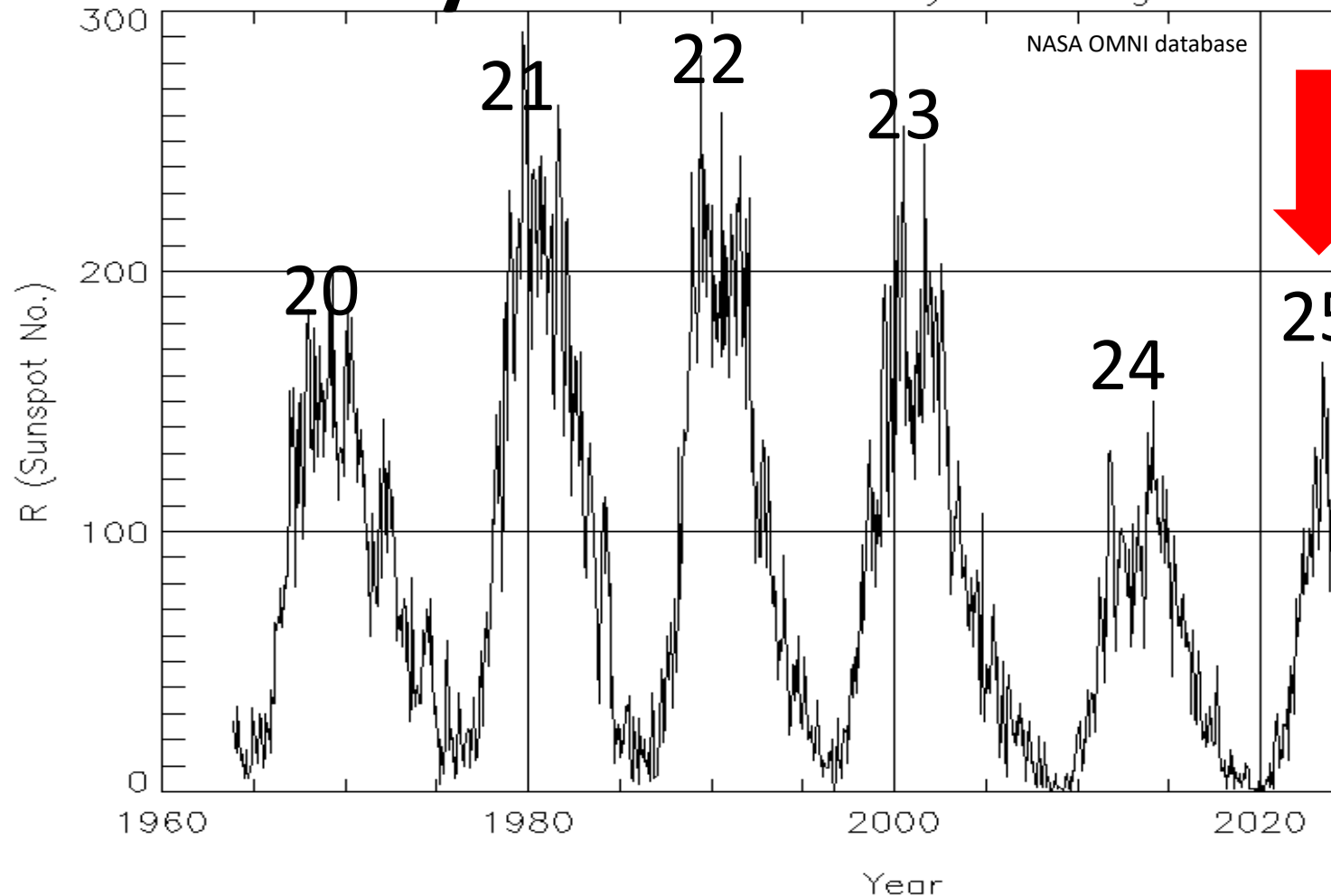


Modified from Gray et al. (2010)

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

Solar cycle

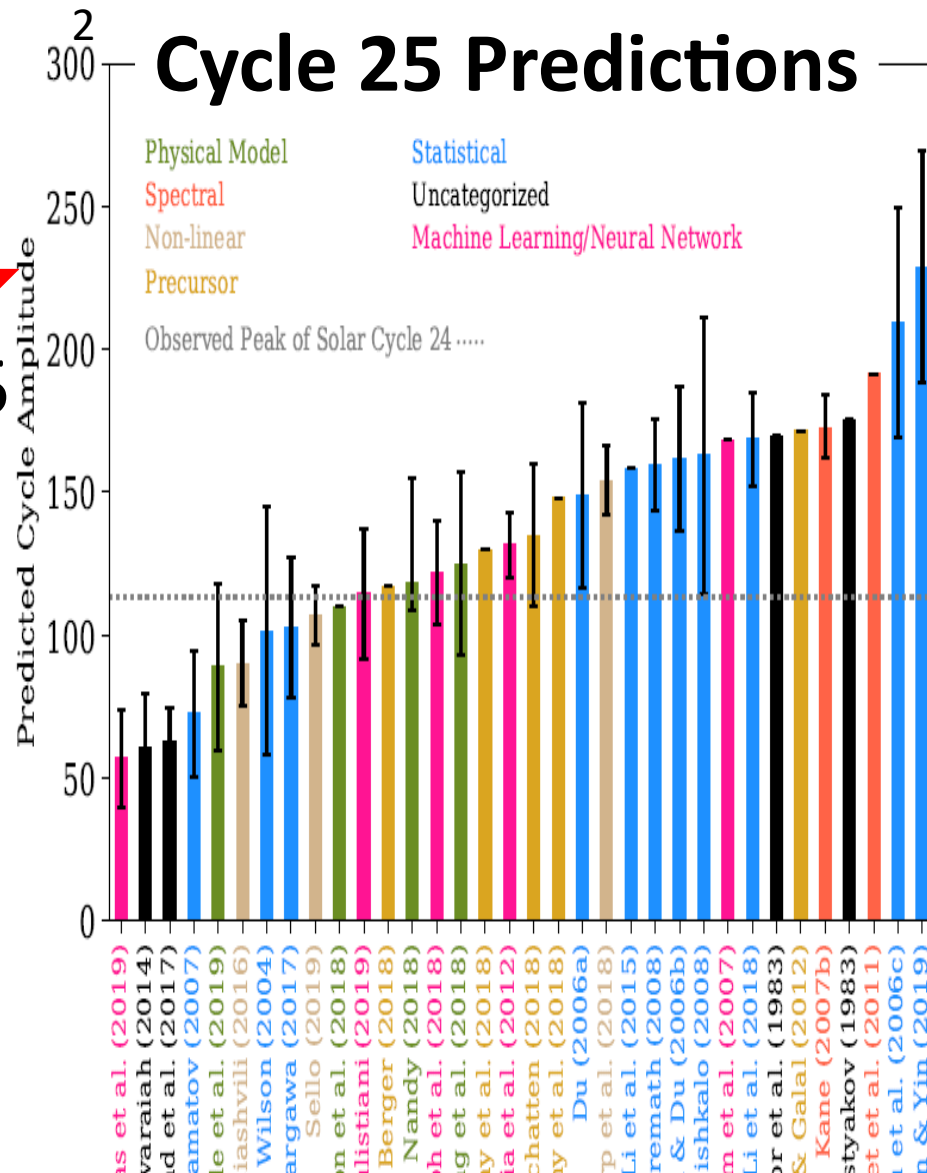
OMNI2 27-days average

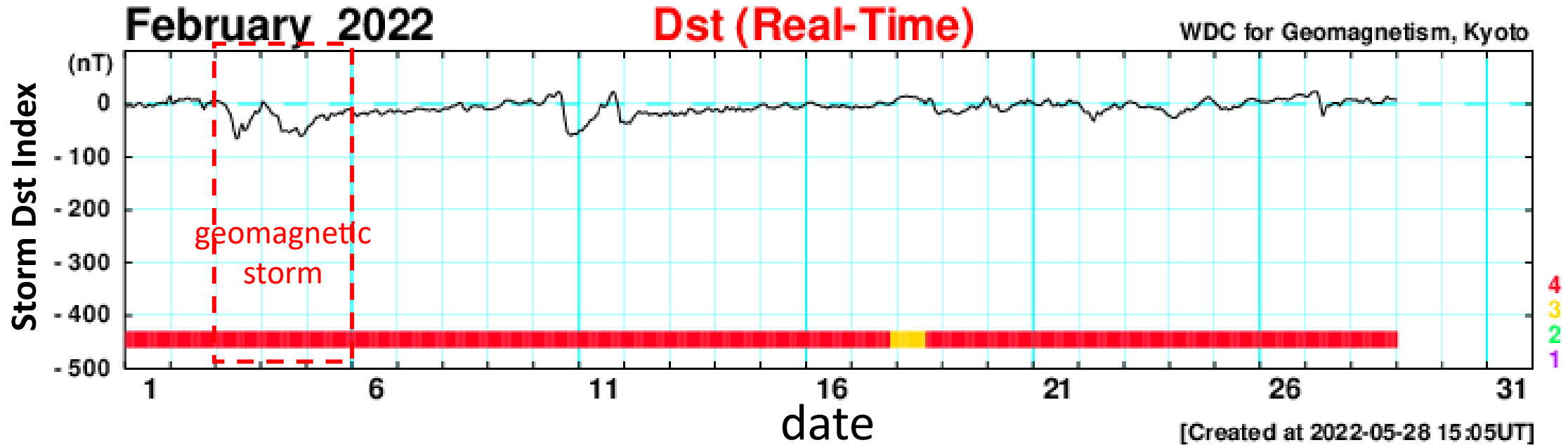


Nandy (2021)

<https://doi.org/10.1007/s11207-021-01797->

Cycle 25 Predictions





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)



2024-01-28T00 +0.00 day



<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

Participants / number of registration

#19 Title: Climate Implications of Solar 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

#19 Topic: **Unveiling the Nature of Solar Flares: 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), Varanasi, India

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-Calderon

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

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

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



Ishita Gulati

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

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

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

#14 Topic: **Space weather ionospheric effects at high latitude**

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, Japan
2	Chandan Kapil	Indian Institute of Geomagnetism, Navi Mumbai, India	Leibniz Institute of Atmospheric Physics, Germany
3	Akshay Shivaji Patil	Sanjay Ghodawat, University, Kolhapur, India	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan
4	Ashish P. Jadhav	Indian Institute of Geomagnetism, Navi Mumbai, India	Leibniz Institute of Atmospheric Physics, Germany
5	Kshitiz Upadhyay	Physical Research Laboratory, Ahmedabad, India	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan
6	Lalitha G Krishnan	Vikram Sarabhai Space Centre, Thiruvananthapuram, India	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan
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	Shandong University, China	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan
10	TRAORE Ibrahim	University Norbert Zongo in Koudougou, Burkina Faso	Institute for Research in Astrophysics and Planetology (IRAP), Toulouse, France
11	Oluwaseun Victoria Fatoye	Anchor University Centre for Space Research (CESPAR), Nigeria	South Africa National Space Agency (SANS), South Africa
12	Ardra Kozhikottuparambi	National Institute of Technology(NIT), India	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan
13	Rajesh Kumar Barad	Indian Institute of Geomagnetism, India	Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan
14	Florian Günzkofer	German Aerospace Center (DLR), Germany	Kyushu University, Japan
15	Prateek Mayank	Indian Institute of Technology Indore, India	South African National Space Agency (SANS), 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 Alcalá (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 and Space Weather, University of Lagos, **Nigeria**, 9-20 October 2023



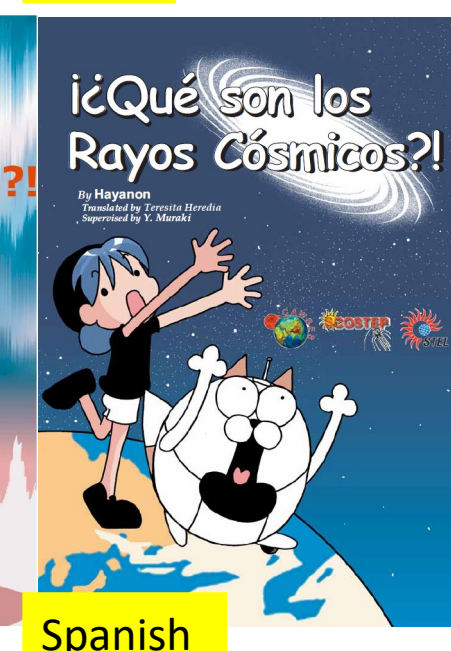
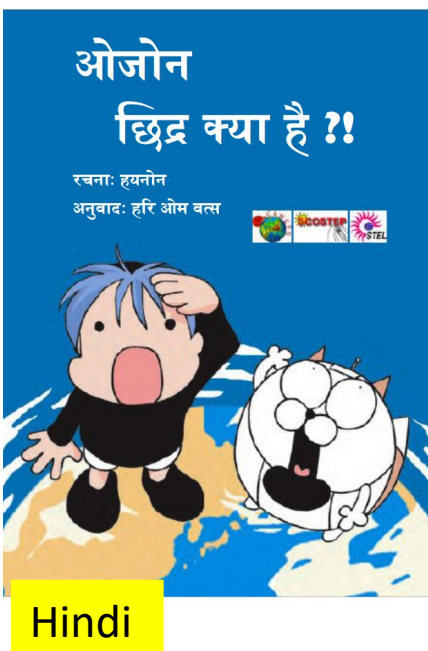
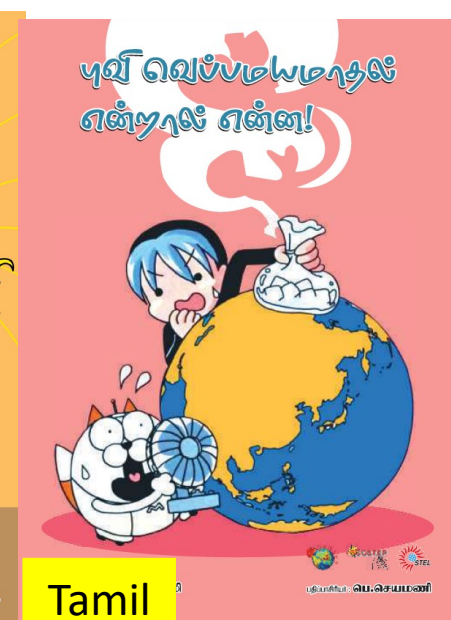
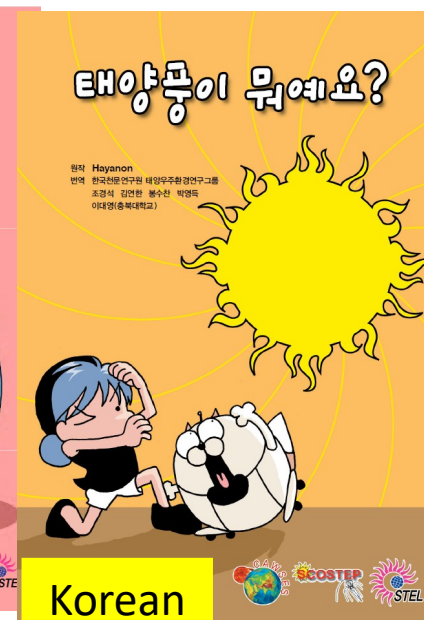
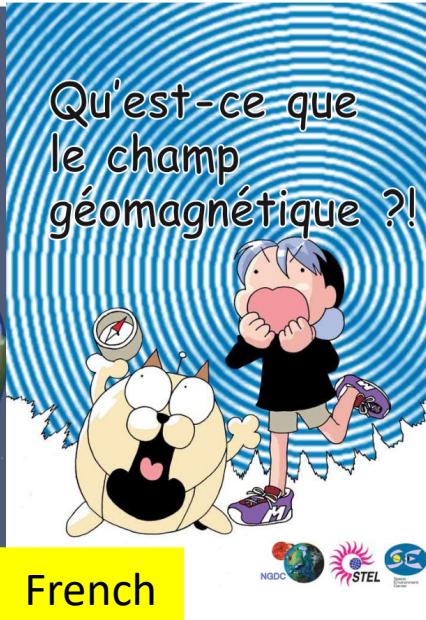
Iberian Space Weather School



The 2023 IMCP Space Weather School



International Colloquium on Equatorial and Low-Latitude Ionosphere (ICELLI)



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