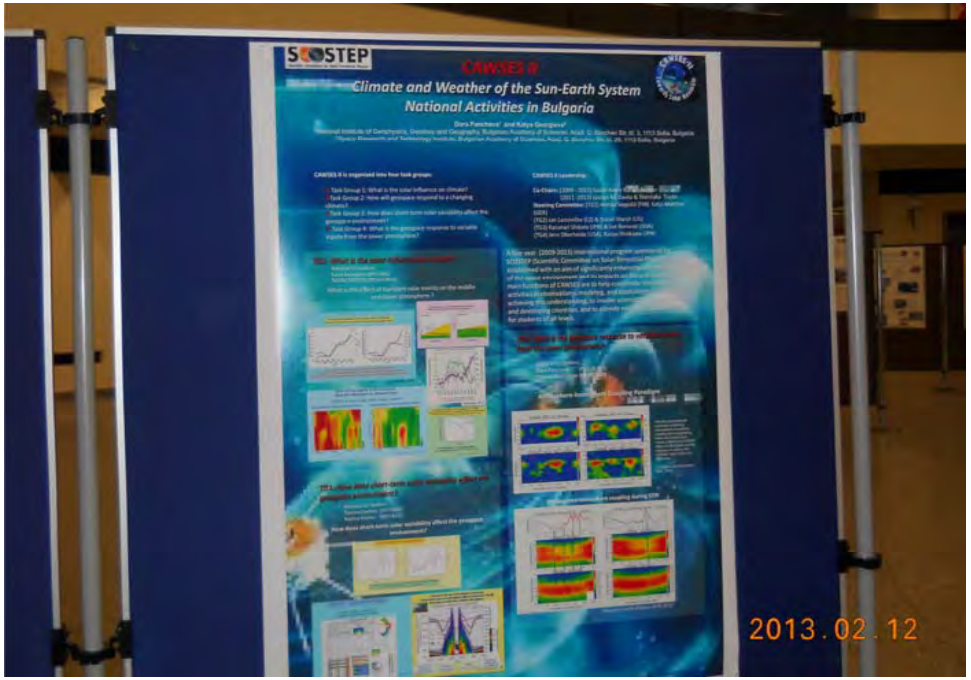
SPACE WEATHER
IMPACTS
in 2013
Prospects and Desirable Approaches
2013년 우주환경재난 전망과 대응
17 March 2011 PM 1:00~6:00 AIRFORCE Club, Seoul, Korea
2013.02.12

SCOSTEP
CAWSES II
STUDIES ON SOLAR-TERRESTRIAL PHYSICS IN RUSSIA
2013.02.12

International Space Weather Initiative (ISWI)
Space Science Schools
SCOSTEP
Scientific Committee on Solar-Terrestrial Physics
Space Science Schools: General
Space Science School in Ethiopia
Space Science School in Slovakia
Space Science School in Indonesia
INSTRUMENT
OBSERVATION
EDUCATION
For more information see:
http://iswi-secretariat.org
2013.02.12

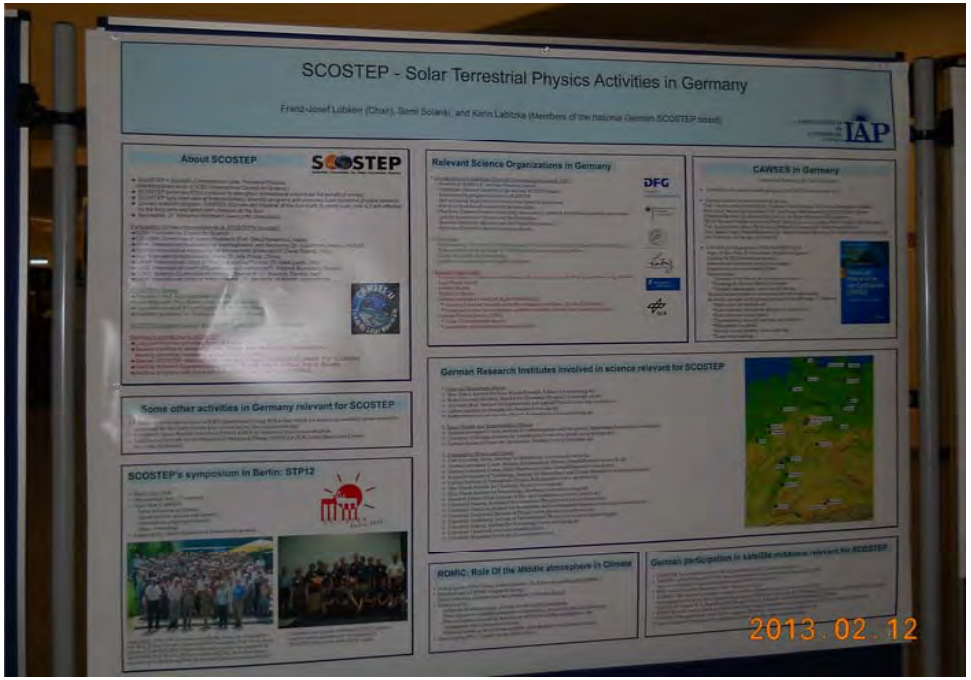
SPACE WEATHER
IMPACTS
in 2013
2013.02.12

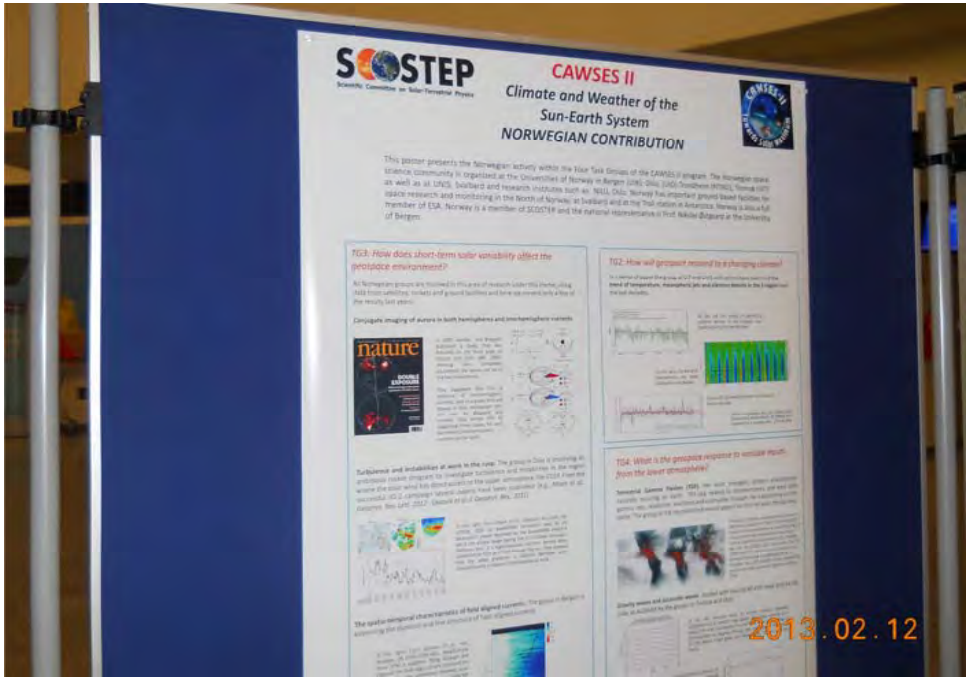

SCOSTEP
CAWSES II
Climate and Weather of the Sun-Earth System
National Activities in Bulgaria
2013.02.12

SCOSTEP
Japanese CAWSES-II Activities
2013.02.12

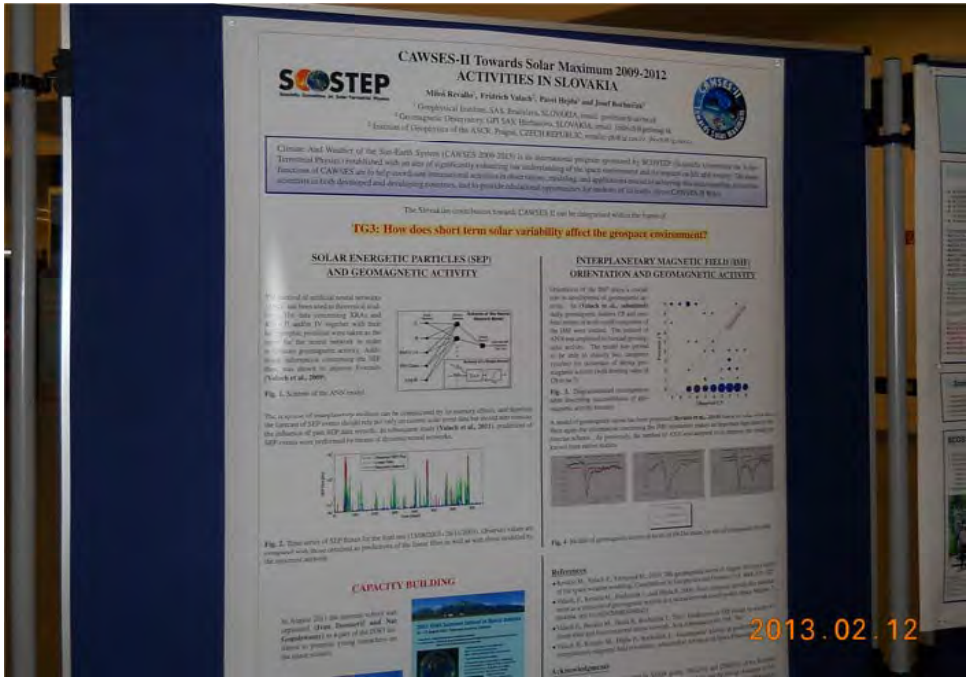
Climate And Weather of the Sun-Earth System
Indian CAWSES II Activities
SCOSTEP
2013.02.12

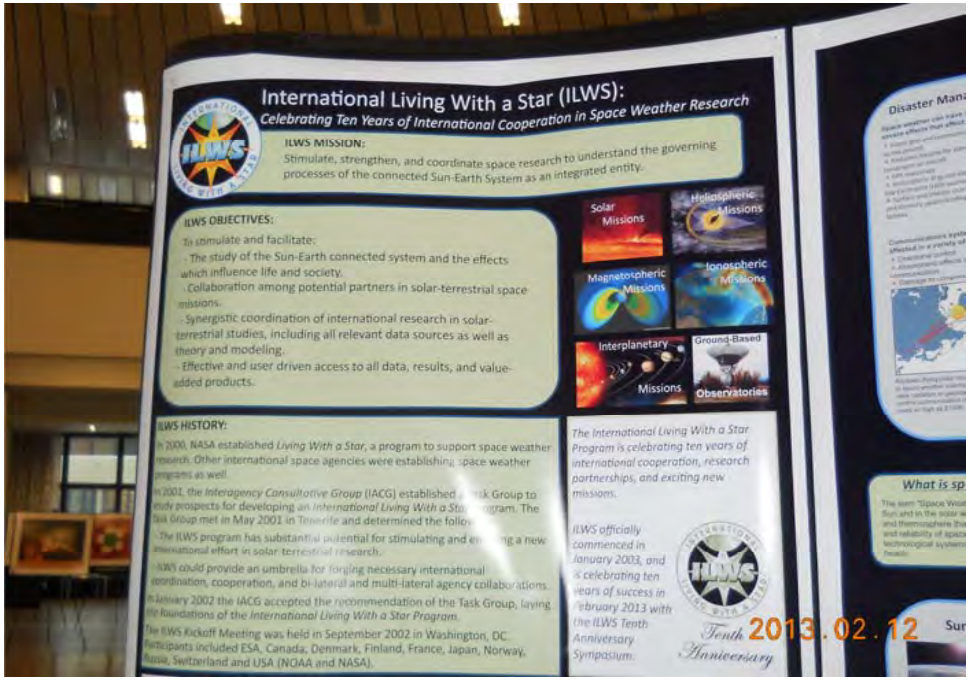
SCOSTEP
2013.02.12

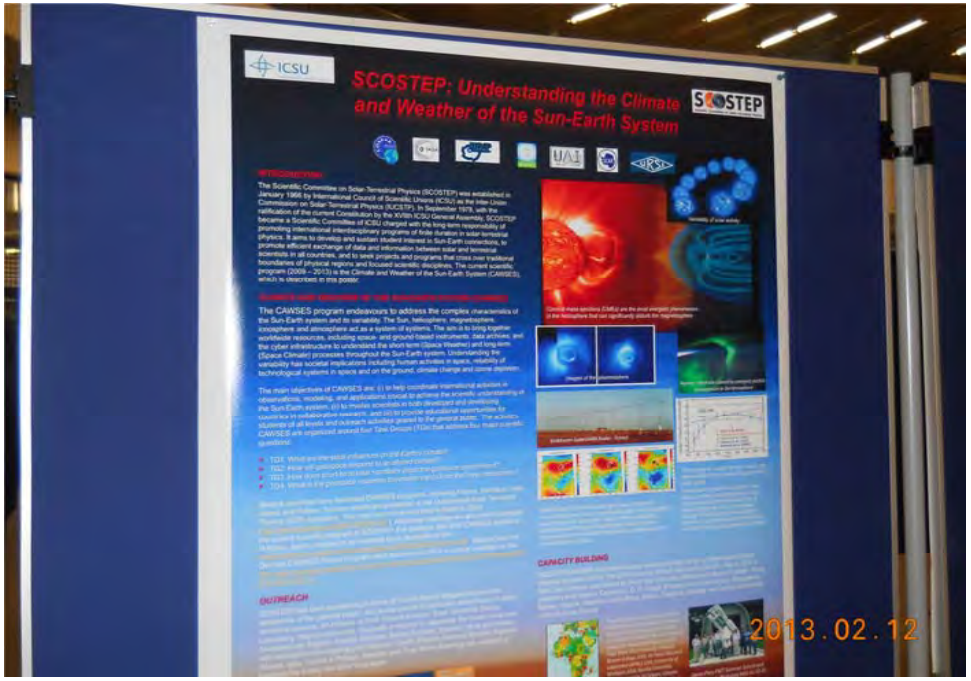

SCOSTEP - Solar Terrestrial Physics Activities in Germany
About SCOSTEP
Relevant Science Organizations in Germany
CAWSES in Germany
Some other activities in Germany relevant for SCOSTEP
SCOSTEP's symposium in Berlin: STP12
German Research Institutes involved in science relevant for SCOSTEP
ROMIC: Role Of the Middle atmosphere in Climate
German participation in satellite missions relevant for SCOSTEP
2013.02.12

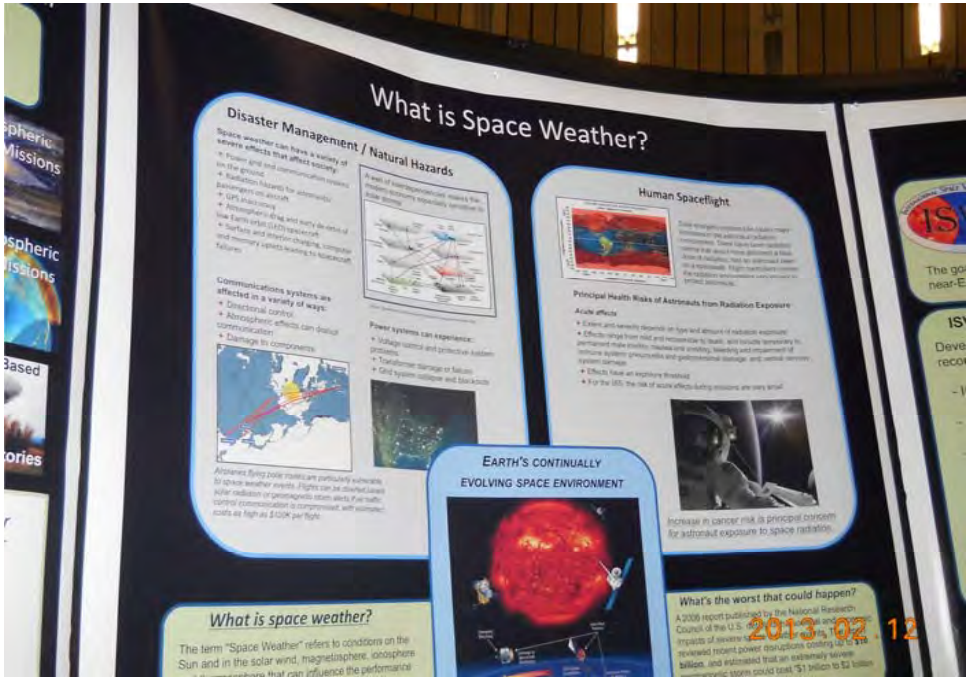

SCOSTEP
CAWSES II
Climate and Weather of the Sun-Earth System
NORWEGIAN CONTRIBUTION
nature
2013.02.12

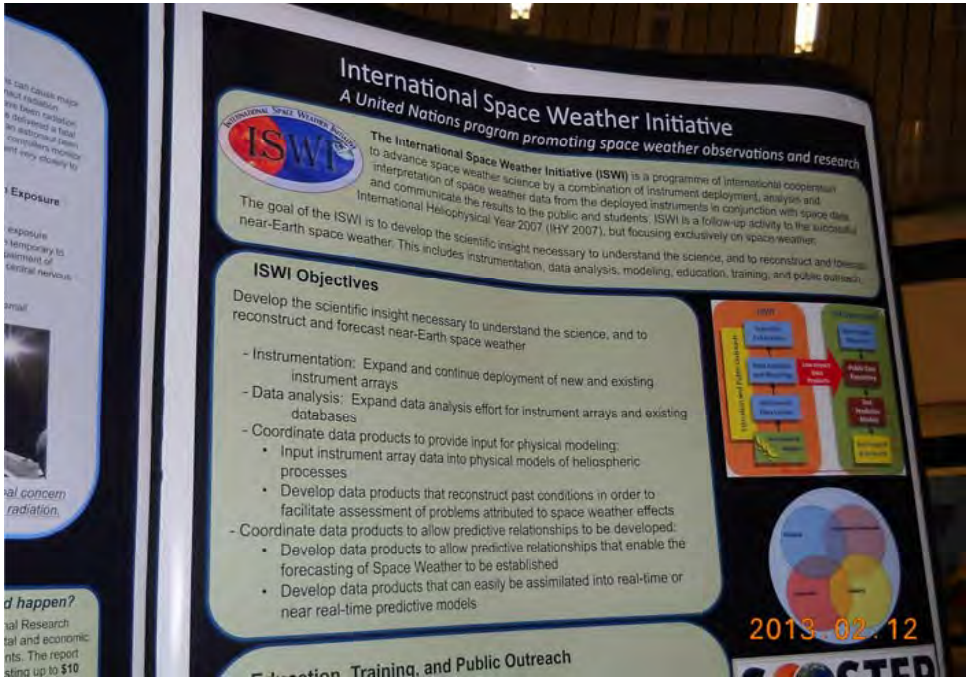
SCOSTEP
CAWSES II
Climate and Weather of the Sun-Earth System
Research Contributions from New Zealand
2013.02.12


SCOSTEP
CAWSES-II Towards Solar Maximum 2009-2012
ACTIVITIES IN SLOVAKIA
TG3: How does short term solar variability affect the geospace environment?
SOLAR ENERGETIC PARTICLES (SEP) AND GEOMAGNETIC ACTIVITY
INTERPLANETARY MAGNETIC FIELD (IMF) ORIENTATION AND GEOMAGNETIC ACTIVITY
CAPACITY BUILDING
2013.02.12

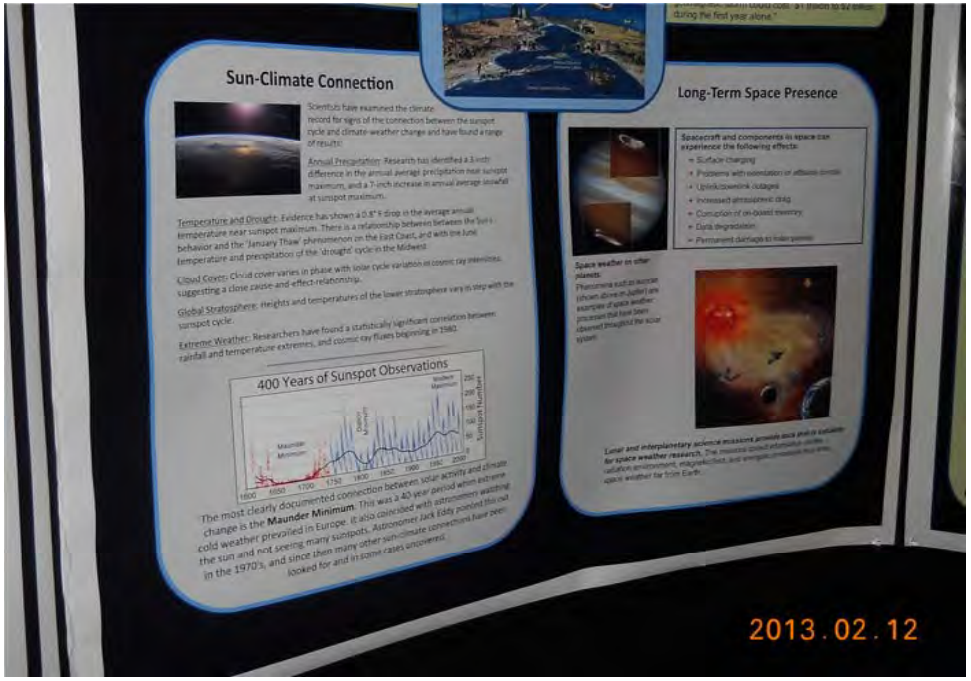


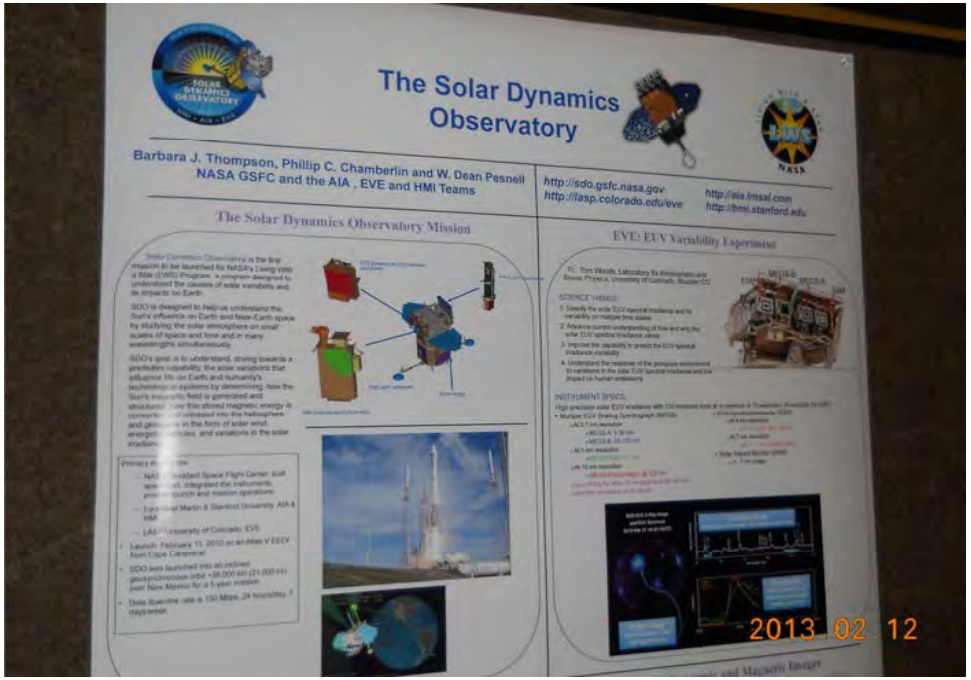

ICSU
SCOSTEP: Understanding the Climate and Weather of the Sun-Earth System
SCOSTEP
INTRODUCTION
The Scientific Committee on Solar-Terrestrial Physics (SCOSTEP) was established in January 1966 by International Council of Scientific Unions (ICSU) as the Inter-Union Commission on Solar-Terrestrial Physics (IUCSTP). In September 1978, with the ratification of the current Constitution by the XVIth ICSU General Assembly, SCOSTEP became a Scientific Committee of ICSU charged with the long-term responsibility of promoting international interdisciplinary programs of finite duration in solar-terrestrial physics. It aims to develop and sustain student interest in Sun-Earth connections, to promote efficient exchange of data and information between solar and terrestrial scientists in all countries, and to seek projects and programs that cross over traditional boundaries of physical regions and focused scientific disciplines. The current scientific program (2008 – 2013) is the Climate and Weather of the Sun-Earth System (CAWSES), which is described in this poster.
The CAWSES program endeavours to address the complex characteristics of the Sun-Earth system and its variability. The Sun, heliosphere, magnetosphere, ionosphere and atmosphere act as a system of systems. The aim is to bring together worldwide resources, including space- and ground-based instruments, data archives, and the cyber infrastructure to understand the short-term (Space Weather) and long-term (Space Climate) processes throughout the Sun-Earth system. Understanding the variability has societal implications including human activities in space, reliability of technological systems in space and on the ground, climate change and ozone depletion.
The main objectives of CAWSES are: (i) to help coordinate international activities in observations, modeling, and applications crucial to achieve the scientific understanding of the Sun-Earth system, (ii) to involve scientists in both developed and developing countries in collaborative research, and (iii) to provide educational opportunities for students of all levels and outreach activities geared to the general public. The activities of CAWSES are organized around four Task Groups (TGs) that address four major scientific questions:
TG1: What are the social influences on our Earth's climate?
TG2: How will geological response to solar variability affect our environment?
TG3: How does proof-by-prediction solar variability drive Earth's weather and climate?
TG4: What is the physical roadmap to predictive capability in Space Weather?
Research Commission, International Commission, Scientific Commission, Commission on Solar Terrestrial Physics, Commission on Solar Terrestrial Physics (IUCSTP), Scientific Committee on Solar-Terrestrial Physics (SCOSTE

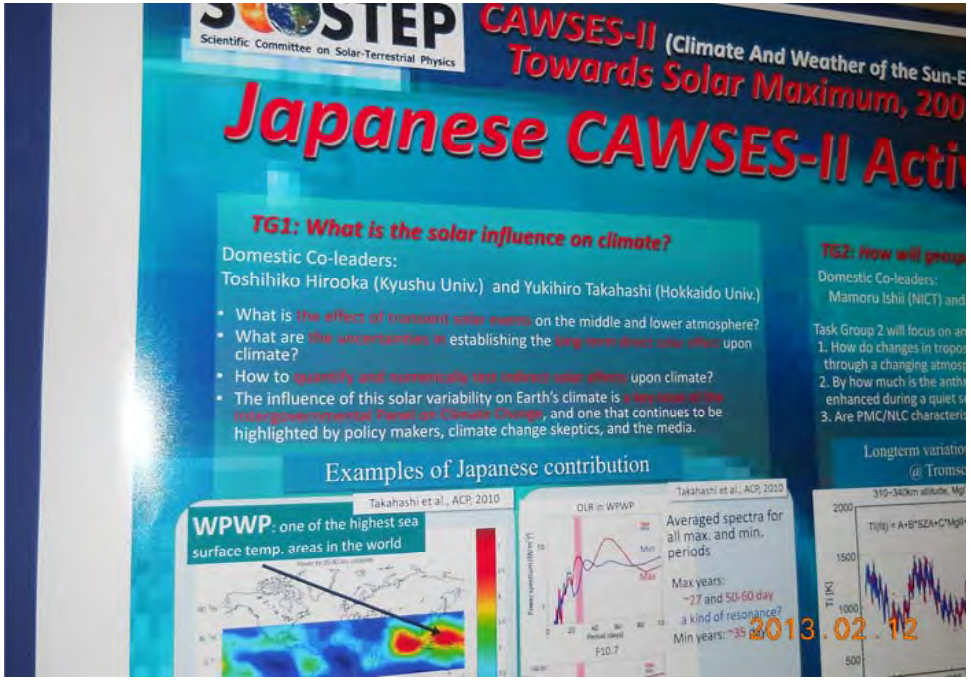

What is Space Weather?
Disaster Management / Natural Hazards
Human Spaceflight
Earth's continually evolving space environment
What is space weather?
What's the worst that could happen?
2013.02.12

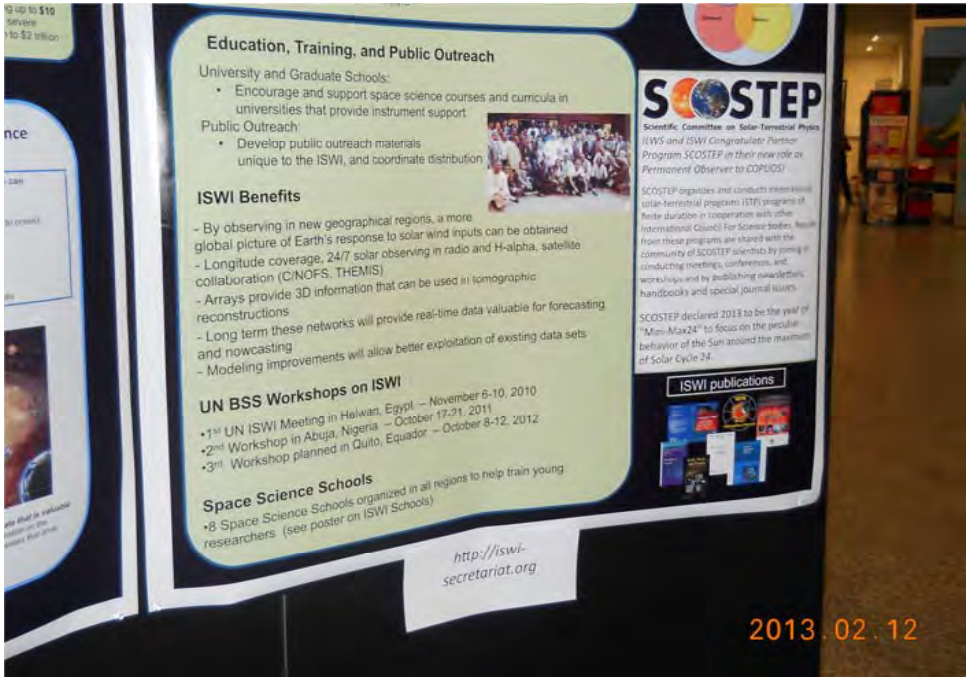

International Space Weather Initiative
A United Nations program promoting space weather observations and research
ISWI
ISWI Objectives
Develop the scientific insight necessary to understand the science, and to reconstruct and forecast near-Earth space weather
- Instrumentation: Expand and continue deployment of new and existing instrument arrays
- Data analysis: Expand data analysis effort for instrument arrays and existing databases
- Coordinate data products to provide input for physical modeling:
• Input instrument array data into physical models of heliospheric processes
• Develop data products that reconstruct past conditions in order to facilitate assessment of problems attributed to space weather effects
- Coordinate data products to allow predictive relationships to be developed:
• Develop data products to allow predictive relationships that enable the forecasting of Space Weather to be established
• Develop data products that can easily be assimilated into real-time or near real-time predictive models
Education, Training, and Public Outreach
2013.02.12

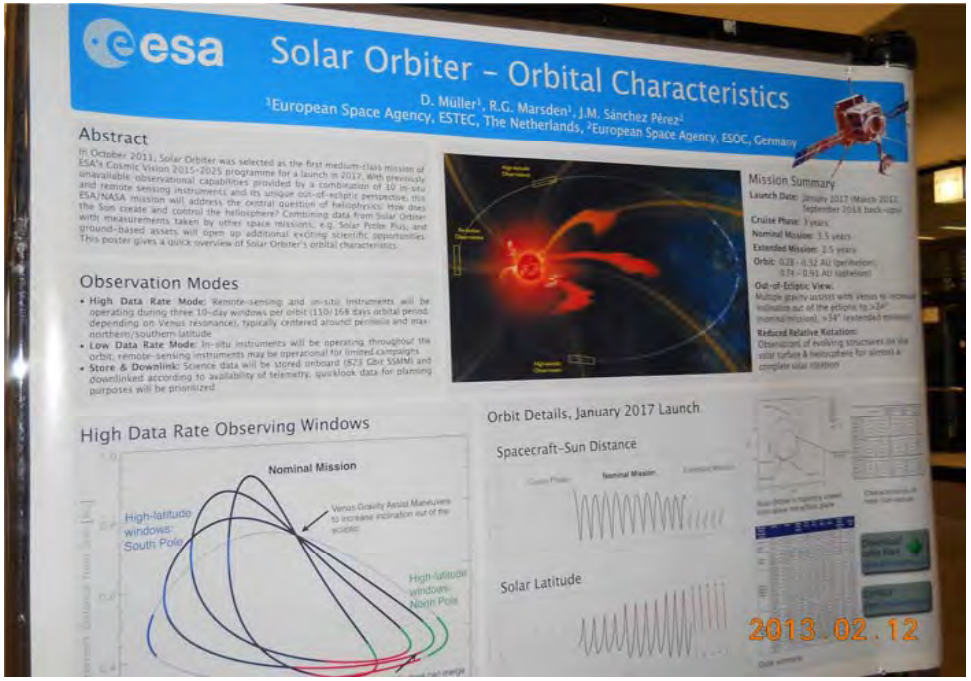
January 2003, and is celebrating ten years of success in February 2013 with the ILWS Tenth Anniversary Symposium.
Tenth Anniversary
ILWS Participating Space Agencies
http://ilwsonline.org
2013.02.12

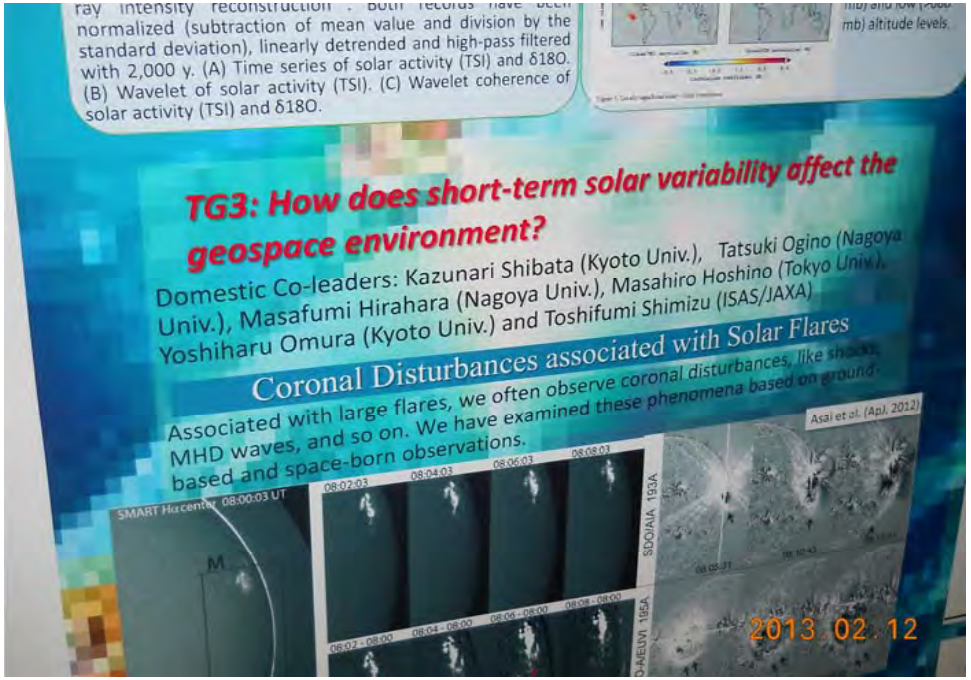

Sun-Climate Connection
Long-Term Space Presence
400 Years of Sunspot Observations
2013.02.12


The Solar Dynamics Observatory
Barbara J. Thompson, Phillip C. Chamberlin and W. Dean Pesnell
NASA GSFC and the AIA , EVE and HMI Teams
http://sdo.gsfc.nasa.gov
http://lasp.colorado.edu/eve
http://aia.lmsal.com
http://hmi.stanford.edu
The Solar Dynamics Observatory Mission
EVE: EUV Variability Experiment
2013.02.12


SCOSTEP
Scientific Committee on Solar-Terrestrial Physics
CAWSES-II (Climate And Weather of the Sun-E
Towards Solar Maximum, 200
Japanese CAWSES-II Acti
TG1: What is the solar influence on climate?
Domestic Co-leaders:
Toshihiko Hirooka (Kyushu Univ.) and Yukihiro Takahashi (Hokkaido Univ.)
What is the effect of transient solar events on the middle and lower atmosphere?
What are the uncertainties in establishing the long-term direct solar effect upon climate?
How to quantify and numerically test indirect solar effects upon climate?
The influence of this solar variability on Earth's climate is a key issue of the Intergovernmental Panel on Climate Change, and one that continues to be highlighted by policy makers, climate change skeptics, and the media.
Examples of Japanese contribution
WPWP: one of the highest sea surface temp. areas in the world
Takahashi et al., ACP, 2010
Averaged spectra for all max. and min. periods
Max years: ~27 and 50-60 day
a kind of resonance?
2013.02.12

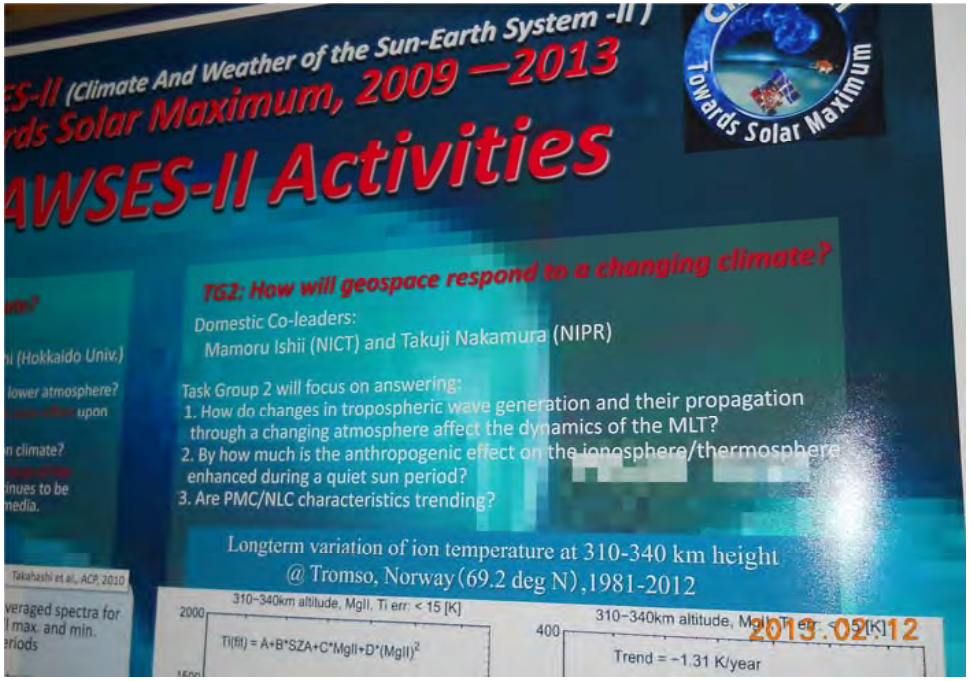
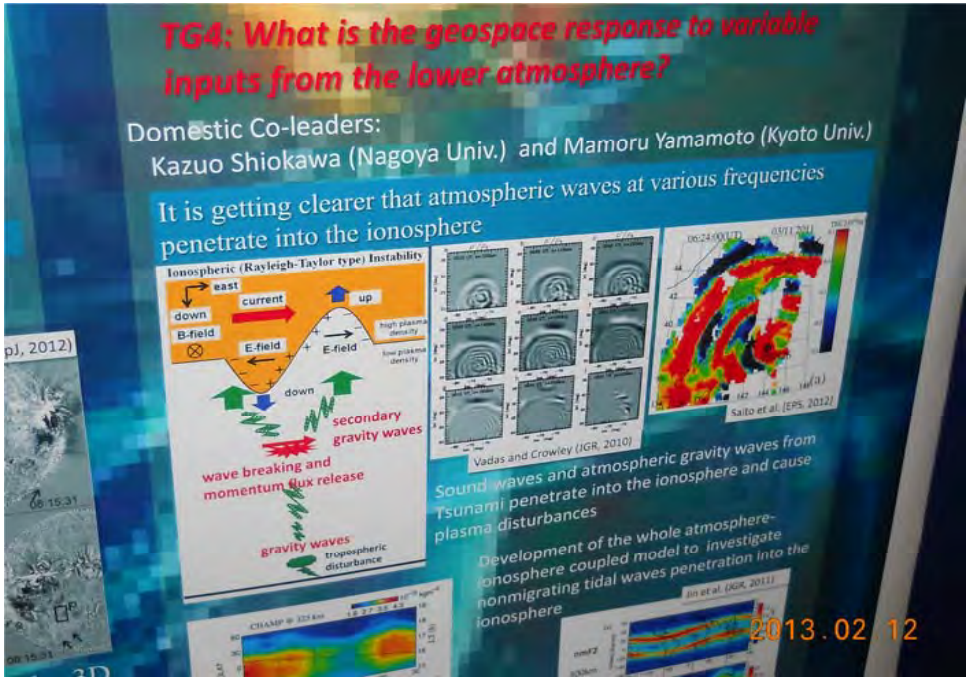

Education, Training, and Public Outreach
University and Graduate Schools:
Encourage and support space science courses and curricula in universities that provide instrument support
Public Outreach:
Develop public outreach materials unique to the ISWI, and coordinate distribution
ISWI Benefits
- By observing in new geographical regions, a more global picture of Earth's response to solar wind inputs can be obtained
- Longitude coverage, 24/7 solar observing in radio and H-alpha, satellite collaboration (C/NOFS, THEMIS)
- Arrays provide 3D information that can be used in tomographic reconstructions
- Long term these networks will provide real-time data valuable for forecasting and nowcasting
- Modeling improvements will allow better exploitation of existing data sets
UN BSS Workshops on ISWI
•1st UN ISWI Meeting in Helwan, Egypt – November 6-10, 2010
•2nd Workshop in Abuja, Nigeria – October 17-21, 2011
•3rd Workshop planned in Quito, Equador – October 8-12, 2012
Space Science Schools
•8 Space Science Schools organized in all regions to help train young researchers (see poster on ISWI Schools)
SCOSTEP
Scientific Committee on Solar-Terrestrial Physics
ISWI publications
http://iswi-secretariat.org
2013.02.12


esa
Solar Orbiter – Orbital Characteristics
D. Müller[1], R.G. Marsden[1], J.M. Sánchez Pérez[1]
[1]European Space Agency, ESTEC, The Netherlands, [2]European Space Agency, ESOC, Germany
Abstract
Observation Modes
Mission Summary
High Data Rate Observing Windows
Nominal Mission
High-latitude windows: South Pole
High-latitude windows: North Pole
Orbit Details, January 2017 Launch
Spacecraft-Sun Distance
Solar Latitude
2013.02.12



This pdf was circulated in

Published by SERC of Kyushu University

ISWI Newsletter

under the auspices of the United Nations