

# NEWSLETTER

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### 1. Editorial – SCOSTEP at UN COPUOS

On 18 December 2012, the UN General Assembly (GA), in its 67<sup>th</sup> plenary session granted SCOSTEP the status of a Permanent Observer to the UN Committee of the peaceful Uses of Outer Space (COPUOS).

SCOSTEP's first participation in the work of the COPUOS as a Permanent Observer was in the 50<sup>th</sup> session of the STSC (Scientific and Technical Subcommittee) held during February 11-15, 2013 in Vienna. SCOSTEP activities were featured by the display of 9 posters from SCOSTEP National adherent members, namely, Bulgaria, Canada, Germany, India, Japan, New Zealand, Norway, Russia, Slovakia, and USA. There was also a SCOSTEP poster highlighting current activities..



**Photo 1:** The flags of the countries participants in the ILWS Symposium (Photo - courtesy of George Maeda, ICSWSE, Japan)

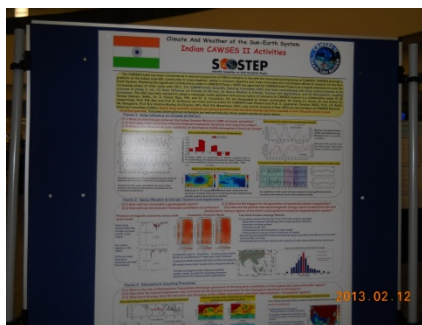
SCOSTEP also participated in the 10<sup>th</sup> Anniversary Symposium of the International Living With a Star (ILWS) Program, (<http://ilwsonline.org/tenthanniversary/>). All posters can be found on the SCOSTEP website.



**Photo 2:** SCOSTEP's poster at the ILWS 10<sup>th</sup> anniversary symposium (Photo - courtesy of George Maeda, ICSWSE, Japan)



**Photo 3:** The poster featuring the SCOSTEP/CAWSES activities in Bulgaria (Photo - courtesy of George Maeda, ICSWSE, Japan)



**Photo 4:** The poster featuring the SCOSTEP/CAWSES activities in India (Courtesy of George Maeda, ICSWSE, Japan)

On February 14 SCOSTEP's President Dr. Nat Gopalswamy made a technical presentation at the 50<sup>th</sup> STSC session and announced the MiniMax24

Campaign, which is SCOSTEPs' focus on the Weakness of the Current Solar Cycle. In his address N. Gopalswamy stated that SCOSTEP seeks focus on the peculiar state of the Sun by declaring the year 2013 as the year of "MiniMax24" to note that even though the Sun is going through activity maximum conditions, the activity is rather low. SCOSTEP will conduct year-long scientific and outreach activities to understand and explain the current behavior of the Sun and its potential impact on human society and Earth's space environment. The scientific activity will include a comprehensive "MiniMax24 Campaign" to observe and record the subdued activity of the Sun and compare it with that of previous cycles. In particular, events on the Sun will be recorded and tracked all the way to Earth's atmosphere along paths of mass and electromagnetic flows from the Sun. Outreach activities explaining the implications of the weak solar activity on space weather and Earth's climate. SCOSTEP encourages year-long activities to be led by national SCOSTEP committees and by task group leaders of the current SCOSTEP scientific program CAWSES (Climate and Weather of the Sun-Earth System).



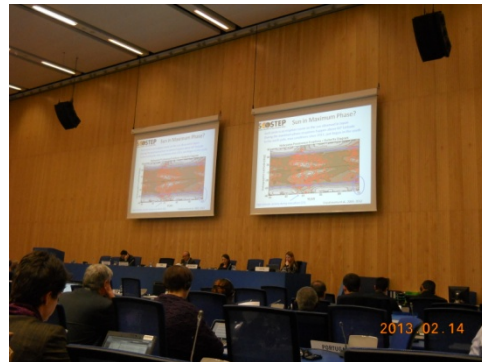
**Photo 5:** SCOSTEP's President Dr. Nat Gopalswamy at the 50<sup>th</sup> session of UN COPUOS announcing the MiniMax24 Campaign – February 14, 2013 (Photo - courtesy of George Maeda, ICSWSE, Japan)

A wiki page has been established to record all the MiniMax24 campaign activities:

[https://igamo2ws.uni-graz.at/mediawiki/index.php?title=Main\\_Page](https://igamo2ws.uni-graz.at/mediawiki/index.php?title=Main_Page).

Members of the scientific community have been encouraged to participate in the MiniMax24 campaign by registering in the wiki page and edit the

community portal in this wiki page to include information on daily variability in the solar terrestrial space. Dr. Manuela Temmer (University of Graz, Austria, [manuela.temmer@uni-graz.at](mailto:manuela.temmer@uni-graz.at)) is the coordinator for the MiniMax24 Campaign. Further information can also be obtained from the SCOSTEP web site ([www.yorku.ca/scostep](http://www.yorku.ca/scostep)).



**Photo 6:** A snapshot of SCOSTEP's President Dr. Nat Gopalswamy's presentation on the MiniMax24 Campaign at the 50<sup>th</sup> session of UN COPUOS – February 14, 2013 (Photo - courtesy of George Maeda, ICSWSE, Japan)

## 2. Reports on Meetings

### 2.1 Sunzclimate school: Impact of solar variability on the Earth's climate, Thessaloniki, Greece, Mar 10-15, 2013

COST (Cooperation in Science and Technology) Action TOSCA ("Towards a more complete assessment of the impact of solar variability on the Earth's climate") organized its first training school in Thessaloniki (Greece) based on the successful format of capacity building schools. The objective of this multidisciplinary event was to give young scientists a global understanding of the topical but also controversial role of solar variability in climate change. Students coming from 17 countries, with levels ranging from master to post-doc levels, participated in this school.

The main role of TOSCA is to foster interactions between different communities. TOSCA has 5 working groups

- WG1 impact of solar radiative forcing
- WG2 impact of interplanetary perturbations
- WG3 impact of energetic particles

- WG4 interfacing between upper and lower atmospheric layers and corresponding models
- WG5 outreach and dissemination (GHOST)

TOSCA is a pan-European action that brings together over 70 leading European scientists and aims at making progress on scientific understanding of the Sun-climate connection. This connection is a typical example wherein progress has been hampered by the lack of interaction between various scientific communities. For that reason, the multidisciplinary programme of this school addressed various aspects of the Sun-Earth system, emphasizing the need for a global view of the system.



*Photo 7: The participants in the COST/TOSCA Science School, Thessaloniki.*

28 students attended the school, coming from: Armenia (1), Bulgaria (2), China (1), Cyprus (1), Czech Republic (3), Finland (1), France (1), Germany (4), Greece (3), Hungary (1), Israel (2), Italy (1), Norway (1), Romania (1), Russia (3), Sweden (1), and Switzerland (1). We received at least twice as many applications and so a severe down-selection was needed. Participants were selected based primarily on the likely benefit they would derive from participating in that school, rather than on the match between their curriculum and the programme of the school. With this, we ended up with a very diverse sample of bright students with expertise in topics such as: lightning and atmospheric electricity, operational space weather, ocean dynamics, geomagnetism, neutron monitors, radiative transfer modeling, regional climate simulations, solar image analysis, and more. Most participants were second-year master students or PhD students. We were not far from having gender balance, with 12 women out of 28. The five-day programme featured lectures, a computer class, a

poster session, two movies and a debate, and a daily assessment. To improve the coordination between all lectures, speakers had been asked to share in advance their programme. One week before the school, slides had been made available to all, including the students.

Lectures addressed various aspects of the Sun-climate connection, with a blend of fundamental physical issues, key questions, and practical aspects such as existing sources of data. Several weeks before the school, each student had received from one lecturer a question related to one particular process or issue addressed in his/her lecture. This student was then asked to stand up during the lecture and present the answer when invited to do so. This exercise was meant to be a simple tool for getting students more deeply involved. One of its positive side effects was a welcome break in the lectures. Another positive effect –which was not immediately perceived by the students themselves –was that it forced all of them, some for the first time in their life, to openly answer a scientific issue. Some were hesitating, but all of them did a wonderful job. The absence of any evaluation and the supportive attitude of all the lecturers of course helped too.

The computer class was held at the University of Thessaloniki and was given by E. Tanskanen (Finnish Meteorological Institute, Helsinki, Finland). She introduced the students to the Substorm Zoo (<http://www.substormzoo.org>), an interactive web-based tool she used to teach the students how to handle solar-terrestrial data. That visit to the university was followed by an excursion through the old city of Thessaloniki and dinner downtown.

Two evenings were devoted to watching “The great global warming swindle” (directed by M. Durkin) and “An inconvenient truth” (by A. Gore) movies. These movies take quite opposed stands on the causes of climate change issue, with seemingly reasonable facts to support their position. On the third evening, a debate was organised: the students were split into two teams, each of which had to defend the message of one of the movies. Only scientific arguments were allowed, no personal attacks. The debate was animated but progressively got bogged down as it became hard to oppose facts with more facts. A positive outcome of this dissatisfying exercise was the increased awareness for the numerous pitfalls a debate can lead to, and the continuous need for keeping a critical look at all the information we receive. At the end of the debate,



Thierry Dudok de Wit showed a detailed argumentation on each approach.

The poster session allowed the students to present their *own* work and thereby reverse the otherwise unidirectional flow of information. Incidentally, such activities, together with the grouping of all participants in the same hotel (with no other guests at that time of the year) greatly helped foster interactions between the students, and between the students and the lecturers.

Finally, each day ended with a 30-minute assessment session, during which students were asked to express what they had learned during the day. This break was appreciated for helping to better assimilate the main message of the lectures.

Participation in this school was entirely free of charge, but students were encouraged to contribute at least partly to their travel expenses. Eventually, 13 students out of 28 asked for (and obtained) full reimbursement of their travel expenses. This brought the total budget of the school to approximately 35 kEuro, out of which 5.5 kEuro were provided by SCOSTEP, IUGG (ICMA) and COSPAR. The funding of this school turned to be a major challenge because COST has strict rules regarding the countries that are eligible for participation. However, thanks to additional support from SCOSTEP, IUGG and COSPAR, all selected participants could be supported, regardless of their country of origin.

For more information about the school, see <http://sun2climate.sciencesconf.org>. In particular, the lectures and additional material can be downloaded from that website (after registration).

*(Reported by Ilya Usoskin)*

### 3. SCOSTEP News

#### 3.1 SCOSTEP Bureau Meeting – May 6, 2013, Bern, Switzerland

On May 6, 2013 the SCOSTEP Bureau held a meeting in Bern, Switzerland prior to the ISSI/SCOSTEP Forum on the future SCOSTEP scientific program(s). The meeting was also attended by the CAUSES II co-chairs. The Bureau approved the SCOSTEP Annual Report for 2012 and the Minutes from the Bureau meeting in Vienna, Austria on April 22, 2012. Both documents can be found in the Archives at [http://www.yorku.ca/scostep/?page\\_id=40](http://www.yorku.ca/scostep/?page_id=40). Further information on the meetings in Bern will be made available on the SCOSTEP Website.

#### 3.2 ISSI/SCOSTEP Forum on New Science Program(s) – May 7-8, 2013, Bern, Switzerland

The current SCOSTEP scientific program CAUSES (the Climate and Weather of the Sun-Earth System) started in 2005 and will complete 2 consecutive 4-year terms at the end of 2013. SCOSTEP began discussing potential scientific programs that are timely for the 2014-2018 period. In September 2012 a call for white papers on the future scientific program(s) was released by SCOSTEP's President soliciting input from scientific bodies engaged in solar terrestrial physics issues and from the scientific community in general. These white papers were required to define the scientific program including the scientific question to be addressed, an objective that can be achieved over a period of four years, data sets to be used, modeling collaborations, and a team of scientists (international steering committee) to coordinate the project.

Nine white papers were submitted covering a number of issues of solar physics, effect of space weather on climate and atmospheric coupling.

A Forum of 25 scientists was created to review the white papers submitted and make recommendations to the SCOSTEP Bureau for the new scientific program(s) to succeed CAUSES II. The Forum was organized and hosted by the International Space Science Institute (ISSI) in collaboration with SCOSTEP and met for a two-day discussion during May 7-8, 2013 at the ISSI headquarters in Bern, Switzerland.



**Photo 8:** The participants in the ISSI/SCOSTEP Forum, Bern, May 7-8, 2013.

The lead authors of the nine white papers gave presentations at the meeting. Four major topics emerged as possible segments of the New Science Program, to follow the current CAWSES II, starting in 2014, as follows (all acronyms are tentative):

1. Specification and Prediction of the Coupled Inner-Magnetospheric Environment (SPeCIMEN).
2. Solar Evolution & Extrema (SEE)
3. Role of the MA/LT and the Sun in climate (ROSMIC)
4. International Study of Earth-Affecting Solar Transients (ISEST)

It was also decided that a combination of the MiniMax24 campaign and the Earth-Affecting Solar Transients (ISEST) program approved by the Bureau last year will continue as part of the New Scientific Program. The New Science Program) is tentatively named as “Variable Sun and Its Terrestrial Impact” or VarSITI. A summary of the VarSITI program can be found at [http://www.yorku.ca/scostep/?page\\_id=46](http://www.yorku.ca/scostep/?page_id=46).

As possible Co-chairs for the NSP N. Gopalswamy proposed Katya Georgieva (Bulgaria) and Kazuo Shiokawa (Japan). Additional suggestions are welcome from the SCOSTEP community.

Over the period of the next few months the definition and the structure of the New Scientific Program will be further discussed and refined and an announcement will be made at the General Council meeting on **November 23, 2013** in Nagoya, following the CAWSES II International Symposium.

### 3.3 International CAWSES II Symposium

The International CAWSES II Symposium will be held in Nagoya during **November 18-22, 2013**.

The Symposium will provide an excellent opportunity to discuss the scientific accomplishments of the CAWSES-II program and look forward to SCOSTEP’s future programs. The symposium will cover the six major CAWSES-II tasks: 1) What are the solar influences on the Earth’s climate? 2) How will geospace respond to an altered climate? 3) How does short-term solar variability affect the geospace environment? 4) What is the geospace response to variable inputs from the lower atmosphere? 5) Capacity Building, and 6) Informatics and eScience. The symposium features keynotes/lectures that will be of interest to all participants every morning and more specific sessions will be held in the afternoon.

All are welcome to Nagoya in the autumn when we will have the pleasure of being surrounded by beautiful colorful leaves of this season

<http://www.stelab.nagoya-u.ac.jp/cawses2013/>

### 3.4 SCOSTEP’s 13<sup>th</sup> Quadrennial Symposium on Solar-Terrestrial Physics STP13 – Xi’An, Shanxi, China

The STP 13 will be held in Xi’An, Shanxi, China during **October 13-17, 2014**. Information on the meeting can be found at

<http://stp13.csp.escience.cn/dct/page/1>.

## 4. Upcoming Events

**June 10-14, 2013:** IAUS300, Nature of prominences and their role in space weather, Paris, France

<http://iaus300.sciencesconf.org/>

**June 17-20, 2013:** International Study for Earth-Affecting Solar Transients (ISEST), Hvar, Croatia, <http://spaceweather.gmu.edu/meetings/ISEST/Home.html>.

**June 24-28, 2013:** International Living With a Star (ILWS) Workshop on Space Weather Research with Space and Ground-based Observations, Irkutsk, Russia, [http://en.iszf.irk.ru/ILWS\\_2013](http://en.iszf.irk.ru/ILWS_2013).

**June 24-28, 2013:** 10<sup>th</sup> AOGS (Asia Oceania Geosciences Society) meeting, Brisbane, Australia – CAWSES II Session ST29. <http://asiaoceania.org/aogs2013/public.asp?page=home.htm>

**July 14-17, 2013:** Workshop on Whole Atmosphere Coupling during Solar Cycle 24 National Central University, Jhongli, Taiwan <http://www.ss.ncu.edu.tw/~wam24/>

**August 26 – 31:** IAGA 2013, 12th Scientific Assembly. Medina, Yucatan, Mexico, <http://www.geociencias.unam.mx/iaga2013/>

## 5. General Information about SCOSTEP

### 5.1 SCOSTEP Web Site

Information on SCOSTEP can be found at:

<http://www.yorku.ca/scostep/>

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Information on SCOSTEP is regularly updated at the SCOSTEP site:

<http://www.yorku.ca/scostep/>

## 5.2 SCOSTEP Contact

The Scientific Secretary is the main point of contact for all matters concerning SCOSTEP.

Prof. Marianna G. Shepherd  
Centre for Research in Earth and Space Science  
(CRESS)  
York University  
Petrie Sci. & Eng. Bldg  
4700 Keele Street  
Toronto, ON M3J 1P4  
CANADA

Tel: +1 416 736 21 00 ext 33828

FAX: +1 416 736 5626

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