

## NEWSLETTER

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### **1. Message from the President**

Dear colleagues,

*Greetings!*

Hope you all had a great summer (at least those in the northern hemisphere).

First of all I would like to thank the SCOSTEP community for re-electing Franz-Josef and me for the second (and final) term. It is an honor to serve this wonderful community. I also take this opportunity to welcome all the Scientific Discipline Representatives recently appointed.

I am pleased to inform you that a compendium of 44 articles is being assembled in the form of a book. These articles have already been reviewed and published in *Earth, Planets and Space* (38 papers) and *Progress in Earth and Planetary Science* (6 papers). This volume will serve as a permanent record of the achievements of the CAWSES-II program. Also, a VarSITI special section is being readied in the *Journal of Geophysical Research* based on papers presented at STP<sub>13</sub> in Xi'An.

The SCOSTEP Visiting Scholar (SVS) Program committee headed by Dr. Nicole Vilmer has just completed the selections. In addition to the four selected, it is possible to select to more people within the allotted budget for the SVS program. This is an important example as to how SCOSTEP is able to leverage the funds to accomplish more for the community. The next round of applications is due in about 8 months, so if you are interested in hosting scholars next year, please contact the secretariat.

The SCOSTEP Awards Committee headed by Professor Archana Bhattacharyya had announced the

selection of Dr. Brigitte Schmieder for the 2015 SCOSTEP Service Award. The award ceremony was held during the IUGG meeting in Prague on June 26. Congratulations, Brigitte! Next year there will be two awards – one young scientist and one regular scientist. Please look around and nominate those who have made appreciable contribution to solar terrestrial physics personally and by enabling the research of others.

Please mark your calendars! SCOSTEP/COSPAR joint session will be organized during August 5-6, 2016 in Istanbul. This meeting will be important in assessing the progress in STP disciplines and discussing long-term strategy to grow SCOSTEP and identify future leaders. A joint program committee will be soon formed. If you are interested in helping with the organization, please feel free to contact me or the secretariat.

The VarSITI projects are progressing well and approaching the second anniversary in a few months. I congratulate the VarSITI co-chairs Katya and Kazuo for the wonderful job they are doing in promoting the program. To mark the midpoint of the program, the VarSITI team is planning a symposium in Bulgaria in June 2016. The next symposium will be VarSIT<sub>2017</sub> to be organized in Irkutsk to highlight STP research. VarSIT<sub>2017</sub> will be hosted by the Institute of Solar-Terrestrial Physics in Irkutsk. Canada has been chosen to host STP<sub>14</sub>, which is the all-encompassing symposium of the SCOSTEP community. Next year is going to be very busy with VarSITI 2016 and several other meetings in which SCOSTEP will play significant roles. Please stay tuned for announcements regarding these meetings.

Switzerland is the newest member of SCOSTEP. Dr. Marina Battaglia is the National Adherent Representative from Switzerland. Welcome Marina!

Last but not least, Dr. Dan Marsh will be the new Bureau member from IAMAS. Dan is not new to the SCOSTEP community. Welcome Dan!

Thank you all for going beyond your own research and serving the STP community!

Warm regards,  
Nat Gopalswamy  
SCOSTEP President

## 2. Editorial – SCOSTEP Distinguished Service Award - 2015

At a ceremony during SCOSTEP’s General Council Meeting, held on June 26, 2015, in Prague, Czech Republic, the SCOSTEP *Distinguished Service Award*



for 2015 was given to **Dr. Brigitte Schmieder** (Observatoire de Paris, LESIA, France) for her great and unique contributions to SCOSTEP activities and for her outstanding leadership and long service, spanning several decades, within the SCOSTEP community.

**Dr. Brigitte Schmieder** began her service to SCOSTEP in 1991 when she organized a SCOSTEP workshop on “Flare 22”. The content of the workshop has made a profound impact on the study of Flare Physics. She has served on the SCOSTEP Bureau as a representative of the International Astronomical Union (IAU) for ten years (1996 - 2006) and later as a Vice-President (2007 - 2011). She was the Chairperson of the SCOSTEP Long Range Planning Committee (LRPC) (committee members include Sunanda Basu, W. Baumjohann, J. Lean, T. Ono and R. A. Vincent) , which provided the motivation and early planning for the highly successful CAWSES and CAWSES-II programs of SCOSTEP. She has also been very active promoting the participation of early career scientists at the many meetings she has organized for SCOSTEP. The LRPC Committee, under Brigitte’s leadership, came up with a new approach for solar terrestrial physics and led to a multi-disciplinary program covering the global Sun-Earth System based on various time scales. Each sub-program covered a specific time-scale event set, from short time scales like solar eruptions (i.e. flares and CMEs) and space weather effects to long time scales such as solar cycle effects on climate. This new program combined different solar-terrestrial physics disciplines this enabling researchers in various scientific disciplines to work together in understanding the signatures of Sun on the Earth environment in both short and long time-scales. This program (CAWSES) was accepted by the SCOSTEP

Bureau in September 2002 at the Rio de Janeiro meeting.

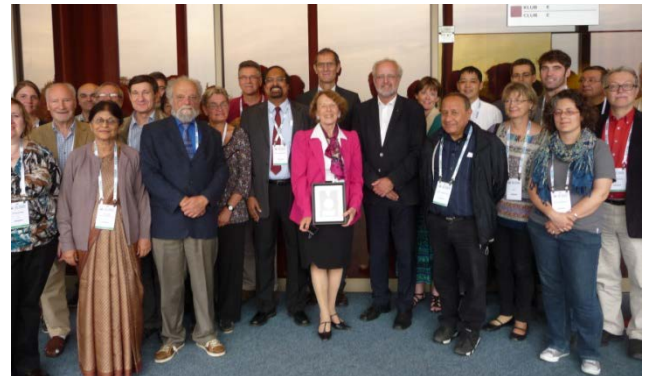


Photo 1: Group photo of some of the participants in the SCOSTEP Award Ceremony – June 26, 2015



Photo 2: Dr. Brigitte Schmieder addressing SCOSTEP’s General Council – June 26, 2015, Prague

As the Vice-President of SCOSTEP, Brigitte also played a leading role in formulating the CAWSES II Program (2009 - 2013).

In addition to her major participation in building and promoting the CAWSES programs, Brigitte Schmieder was involved in the organization of a number of SCOSTEP-related meetings, e.g. SCOSTEP/CAWSES Session at the IUGG General Assembly held in Melbourne, Australia (2011), STP-12 in Berlin (2012). In addition, Brigitte has played a significant role in promoting SCOSTEP and its programs in particular, using her professional association with other International Unions. The essential contributions given by Dr. Brigitte Schmieder to SCOSTEP are the formation of CAWSES and CAWSES II programs.

(For the full citation of Dr. Brigitte Schmieder please see [http://www.yorku.ca/scostep/?page\\_id=1356](http://www.yorku.ca/scostep/?page_id=1356))

### 3. Reports on Meetings

#### 3.1 *IsraSWAPS-2015*

The International conference “Super flares and activity of the Sun in the cycle formation epoch” was held in Kartzin and Tel Aviv, Israel in early May, 2015. For information on the conference please see [http://www.tau.ac.il/institutes/advanced/cosmic/Conferences/2015-VarSITI\\_Superflares/VarSITI-2015\\_ISR.html](http://www.tau.ac.il/institutes/advanced/cosmic/Conferences/2015-VarSITI_Superflares/VarSITI-2015_ISR.html)

#### 3.2 *IUGG 2015 Symposium “Energetic Particle Precipitation into the Atmosphere: Sources and Atmospheric Impact”*

The symposium “Energetic Particle Precipitation into the Atmosphere: Sources and Atmospheric Impact” was held on 26 June 2015, during the 26th IUGG General Assembly in Prague. The sixteen oral (including 2 invited) and three poster presentations addressed the precipitation drivers, the nature of the particle fluxes, and the impact of the precipitation on the ionosphere/atmosphere by means of satellite/ground-based observations, as well as theoretical investigations. A particular focus was given to observations of particle fluxes and atmospheric chemical changes caused by energetic particles. These topics are of high relevance for VarSITI’s ROSMIC and SPeCIMEN Projects. Invited speakers were Ethan Peck (USA) who reported on improving the use of POES electron fluxes, and Monika Andersson (Finland) who presented her work on OH and O<sub>3</sub> variations induced by energetic electron precipitation in the mesosphere, recently published in Nature Communications. Speakers in the session came from Europe, North America, South America and Oceania.

*After Bernd Funke (VarSITI Newsletter Vol. 6)*

#### 3.3 *IUGG 2015 Symposium A15 “Long-term Trends in the Stratosphere, Mesosphere, Thermosphere and Ionosphere” – June 2015*

Twelve oral presentations (including 4 solicited papers) and 10 posters were presented at this well-attended symposium (> 50 participants) organized by the joint WG II.F of IAGA/ICMA and SCOSTEP/VarSITI/ROSMIC WGs 3 and 4. The symposium reflected recent progress in the field and elucidated interesting new results, among others: 1) midlatitude ozone recovers to the 1980 level in coming decades;

Antarctic ozone in the mid-2100; total ozone changes in the tropics are less sensitive to the effect of greenhouse gases due to the dominant roles of production and transport in controlling ozone. Chemistry-climate models project total ozone at the tropics to remain below 1960 values throughout the 21st century (Hegglin). 2) Trends in the mesopause region winds changed substantially in the mid-1990, probably in response to change in ozone trend (Jacobi). 3) Measurements by SABER and ACE/FTS show that trends in CO<sub>2</sub> concentration are remarkably increasing with height at 80-110 km; at 100-110 km height the observed CO<sub>2</sub> trend is substantially stronger than the modeled one (Rezac). 4) Simulations by the GAIA model provide trends of neutral temperature T<sub>n</sub> in the thermosphere, 3-5 K/decade at 200 km and 6-8 K/decade at 300 km in reasonable agreement with observed trends in ion temperature T<sub>i</sub> (Miyashi). 5) The foF<sub>2</sub> was found to be a suitable parameter for studying trends of non-greenhouse origin, as hmF<sub>2</sub> is located close to the boundary (~ 300 km) between positive electron density trends below and negative trends above that boundary, suggesting different dynamic and geomagnetic drives (Lastovička).

*Jan Lastovička*

### 4. SCOSTEP News

#### 4.1 *SCOSTEP Election 2015*

Every four years an election is held for SCOSTEP Executive Officers, President and Vice-President. 2015 is that election year.

By December 31, 2014 there were five nominations submitted, including those of SCOSTEP’s current Executive Officers, President and Vice-President. All nominees were given one month to respond whether they would stand for election. By the deadline of January 31, 2015 three of these nominees declined and withdrew from the ballot, leaving the current Executives, Dr. Nat Gopalswamy (NASA, Goddard Space Flight Center, USA) and Prof. Franz-Josef Lübken (Leibnitz Institute of Atmospheric Physics, Germany). They have agreed to continue in their present respective positions, namely Dr. Nat Gopalswamy as SCOSTEP’s President and Prof. Franz-Josef Lübken as SCOSTEP’s Vice-President, leading to an election by acclamation for the period of 2015-2019.

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Information on SCOSTEP is regularly updated at the SCOSTEP site:

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

#### 4.2 SCOSTEP STP14 - 2018

At the recent SCOSTEP Bureau meetings (June 8, and June 15, 2015) and the General Council meeting (June 26, 2015), Canada's application for hosting SCOSTEP's 14<sup>th</sup> Quadrennial Solar-Terrestrial Physics Symposium (STP14) was approved. The STP14 to be held in 2018, will be of great importance for the entire STP community, as it will feature the achievements of SCOSTEP's Variability of the Sun and Its Terrestrial Impact (VarSITI) program, which is to end in 2018.

#### 4.3 SCOSTEP Visiting Scholar Programme Selection Results

In April 2015 SCOSTEP issued an AO (Announcement of Opportunity) for its new Visiting Scholar Programme (SVS). It invited applications to the SVS, a new capacity building activity of SCOSTEP, which complements the current scientific program, VarSITI (Variability of the Sun and its Terrestrial Impact) and SCOSTEP's public outreach activities. The objective of the SVS program is to provide training to young scientists and graduate students from developing countries in well-established solar terrestrial physics laboratories, for periods of between one and three months. This training will help the young scientists to advance their career in solar terrestrial physics using the technique/skill they learned during the training.

By 31 May 2015, the deadline for SVS applications, there were six applications which were sent to the SVS Selection Committee, chaired by Prof. Nicole Vilmer (France) (members: Maura Hagan (USA), A. Yoshikawa (Japan), Babatunde Rabiu (Nigeria), Jean-Pierre Raulin (Brazil)).

The SVS Selection Committee ranked the applicants as follow:

1. *Olufemi Adebisin* (Nigeria, to visit NASA GSFC)
2. *R. Selvakumaran* (India, to visit NASA GSFC)
3. *Le Minh Tan* (Vietnam, to visit STEL, Nagoya University)
4. *Elijah Oyeyemi* (Nigeria, to visit SANSa)
5. *Neethal Thomas* (India, to visit STEL, Nagoya University)
6. *George Erich Omonti* (Kenya, to visit SANSa)

For this first installment of the SVS SCOSTEP has decided to grant travel support to all applicants listed above.

We wish them all the best!

#### 4.4 New Appointments

The Council of the International Union of Geodesy and Geophysics (IUGG), at their meeting held during the 26<sup>th</sup> General Assembly in Prague, Czech Republic, appointed **Dr. Vladimir D. Kuznetsov** (IZMIRAN, Russia) as the representative of IUGG to the Scientific Committee on Solar-Terrestrial Physics (SCOSTEP). This appointment begins immediately and continues until the 27<sup>th</sup> General Assembly of IUGG to be held in 2019.



**Dr. Daniel R. Marsh** (NCAR, USA) has been



appointed as the new representative of IAMAS to the SCOSTEP Bureau, replacing Dr. David Siskind. Dr. Marsh is a Senior Scientist at the Atmospheric Chemistry Observations & Modeling Laboratory Global Chemistry Modeling, of the National Center for Atmospheric Research, Boulder, CO, USA.

Dr. Marsh's professional activities include: 1) President, International Commission on the Middle Atmosphere (ICMA) (2011-present), Vice-President of ICMA (2007-2010), an ICMA member since 2003. 2) Team Leader, International Space Science Institute International Team on "Quantifying Hemispheric Differences in Particle Forcing Effects on Stratospheric Ozone" (2012-2013). 3) Co-leader, SCOSTEP VarSITI/ROSMIC working group on "Trends in the MLT" (2014-present), and 4) Co-leader, SCOSTEP CAWSES-II Task Group "How will Geospace Respond to a Changing Climate?" (2009-2013).

## 5. Announcements - 2016

### 5.1 JASTP Special Issue "Effects of the solar wind and interplanetary disturbances on the Earth's atmosphere and climate"

The special issue will summarize the present level of knowledge and the new ideas about the effects of the solar wind and interplanetary disturbances on the Earth's atmosphere and climate, and the mechanisms by which these influences are transmitted from the top to the bottom of the atmosphere, including their long-term variability and the possible contribution to climate change. Papers are welcome which address both theoretical and empirical recent results, as well as model studies.

To submit a paper, please go to <http://ees.elsevier.com/atp/default.asp>, log in as author and choose Article type - SI: Solar wind and climate.

The deadline is October 1, 2015.

Katya Georgieva

### 5.2 Science for Space Weather - 2016 ILWS Workshop, January 23 - 29, 2016 in Goa, India

Understanding and being able to forecast space weather is an increasingly important aspect of our modern technology-reliant society. This workshop will treat all aspects of space weather, ranging from solar origins of transient events (CMEs, Flares, CIRs) to their propagation through the heliosphere and effects on Earth and planetary bodies, from particle energization to forecasting particle environment and its effects on technological and biological systems, as well as solar-cycle effects and coupling of space weather to atmospheric response. Metrics to assess predictions will also be discussed. The workshop is structured along the lines of the COSPAR space weather pathways and will include invited, contributed talks and posters, as well as panel discussions and tutorials.

This workshop is being jointly organized by the **International Living with a Star (ILWS) Program**, **Committee on Space Research (COSPAR)**, and the **SCOSTEP-VarSITI Program** and hosted by the **Center of Excellence in Space Sciences India (CESSI)**. The workshop will be held in the seaside town of Goa situated on the western coast of India.

For more information on the workshop please see <http://www.cessi.in/ssw/information.html>

### 5.3 1<sup>st</sup> VarSITI General Symposium, June 6 - 10, 2016, Bulgaria

The purpose of this first VarSITI General Symposium in 2016 (VarSITI2016) is to review the progress of various activities in the four projects at the midpoint of the five-year program, especially to promote the interconnection among these projects. There will be topical sessions such as 1) extreme solar events and their consequences on Earth, 2) long-term variation of the Sun and climate, 3) space weather prediction and applications, 4) campaign event study of recent CMEs and magnetic storms, 5) modeling connection, and 6) data archives. Ample opportunity will be given for discussions on the new results.

**Science Organizing Committee:** Annika Seppälä, Finnish Meteorological Institute, Finland; Craig Rodger, University of Otago, New Zealand; Dibendu Nandi, Indian Institute of Science Education and Research (IISER), Kolkata, India; Franz-Josef Lübken, Leibniz-Institute of Atmospheric Physics, Kühlungsborn, Germany; Jacob Bortnik, Dept. of Atmospheric and Oceanic Sciences, UCLA, USA; Jie Zhang, George Mason University, USA; Katya Georgieva, Space Research and Technologies Institute (SRTI), Bulgaria (co-chair); Kazuo Shiokawa, Solar-Terrestrial Environment Laboratory (STEL), Nagoya U, Japan (co-chair); Manuela Temmer, University of Graz, Austria; Nat Gopalswamy, Heliophysics Division, NASA/GSFC, USA; Petrus Martens, Georgia State University, USA; Vladimir Obridko, IZMIRAN, Russia, and William Ward, University of New Brunswick, Canada.

Further information about this meeting can be found at <http://www.varsiti.org/>

### 5.4 3<sup>rd</sup> International Symposium on Recent Observations and Simulations of the Sun-Earth System (ISROSES III), September 11-16, 2016, Varna, Bulgaria

The meeting is a continuation of the highly successful ISROSES symposia held in Varna, Bulgaria, during September 2006 and in Borovets, Bulgaria, during September 2011. The main objective of the symposium is to bring together scientists from the heliophysics communities worldwide to present and discuss recent advances in modeling and observations of the Sun-Earth System. A strong emphasis will be

put on solar-magnetosphere-atmosphere-ionosphere interactions and understanding the coupled geospace system.

The Science Organizing Committee includes: Gian Luca Delzanno, Los Alamos National Laboratory, Los Alamos, NM, USA; Michael Denton, Space Science Institute, Boulder, CO, USA; Katya Georgieva, Bulgarian Academy of Sciences, Sofia, Bulgaria; Jerry Goldstein, Southwest Research Institute, San Antonio, TX, USA; Richard Horne, British Antarctic Survey, Cambridge, UK; Craig Kletzing, University of Iowa, Iowa City, IA, USA; Benoit Lavraud, IRAP/CNRS/Université de Toulouse, France; Yoshizumi Miyoshi, STEL, Nagoya University, Nagoya, Japan, and David Sibeck, NASA Goddard Space Flight Center, Greenbelt, MD, USA.

Further information about this meeting can be found at: <http://www.isroses.lanl.gov/>

Vania Jordanova (Los Alamos National Laboratory, Los Alamos, NM, USA) & Joe Borovsky (Space Science Institute, Boulder, CO, USA)

#### 5.5 6<sup>th</sup> International HEPPA-SOLARIS Workshop, June 13-17, 2016, Helsinki, Finland

The 6<sup>th</sup> International HEPPA-SOLARIS Workshop will be held on 13-17 June, 2016, at the Finnish Meteorological Institute (FMI) in Helsinki, Finland.

The workshop continues the series of meetings organized since 2008 and will focus on observational and modeling studies of the **influences of solar radiation (SR) and energetic particle precipitation (EPP) on the atmosphere and climate**. Broad topics to be covered include: 1) the causes and phenomenology of SR and EPP variability; 2) mechanisms by which SR and EPP forcing affect atmospheric chemistry and dynamics; 3) contributions of SR and EPP forcing to variations in space, atmosphere, and climate, and 4) the current state of the art and outlook for relevant observations and models

**Scientific committee:** Scott Bailey, Bernd Funke, Kuni Kodera, Manuel López-Puertas, Katja Matthes, Jerry Meehl, Cora Randall, Aaron Ridley, Craig Rodger, Gabriele Stiller, Esa Turunen, and Pekka Verronen.

For information on the conference please see <http://heppa-solaris-2016.fmi.fi/>

#### 5.6 3<sup>rd</sup> ICGPSRO (International Conference on GPS Radio Occultation), March 9-11, 2016, Taipei, Taiwan

The primary objective of the International Conference on GPS Radio Occultation (ICGPSRO) is to promote and appeal more GPS RO applications to the meteorology, climate, and space weather scientists and the related research and application community. The ICGPSRO is intended to be held in Taiwan in parallel with the continuing FORMOSAT-3 / COSMIC and the upcoming FORMOSAT-7 / COSMIC-2 Data Users Workshop. The 3<sup>rd</sup> ICGPSRO will be held in conjunction with the 10<sup>th</sup> FORMOSAT-3 / COSMIC Launch Anniversary Celebration and the FORMOSAT-7 / COSMIC-2 Satellite Readiness Status Review for the first Launch in 2016 Q3. For more information on the conference please see <http://www.nspo.narl.org.tw/ICGPSRO2016/index.html>

## 6. Upcoming Events - 2015

**September 6 – 11, 2015:** Unsolved Problems in Magnetospheric Physics (UPMP) Workshop, Scarborough, UK, <http://spacescience.org/upmpw/>

**September 14 - 18, 2015:** 17<sup>th</sup> biennial EISCAT Symposium and 42AM Optical Meeting, Hermanus, Western Cape, South Africa, <https://events.sansa.org.za/eiscat-42am-information>

**September 15 – 17, 2015:** 8th International Atmospheric Limb Conference, Gothenburg, Sweden, <http://www.chalmers.se/en/conference/limb-workshop-2015/Pages/default.aspx>

**September 21 – 26, 2015:** African Geophysical Society Conference, Nairobi, Kenya, [www.afgps.org/conference](http://www.afgps.org/conference)

**September 28 – 30, 2015:** SCOSTEP-WDS Workshop-“Global Data Activities for the Study of Solar-Terrestrial Variability”, Tokyo, Japan, <http://isds.nict.go.jp/scostep-wds.2015.org/>

**October 5 – 9, 2015:** Coimbra Solar Physics Meeting (CSPM) “Ground-based Solar Observations in the Space Instrumentation Era”, Coimbra, Portugal, <http://www.mat.uc.pt/~cspm2015/>

**October 19 – 23, 2015:** 14<sup>th</sup> International Symposium on Equatorial Aeronomy, Bahir Dar University, Bahir Dar, Ethiopia, <http://www.bdu.edu.et/isea14/>

**October 26 – 30, 2015:** SCOSTEP/VarSITI International Study of Earth-affecting Solar Transients (ISEST/MiniMax24) Workshop, National Autonomous University, Mexico City, Mexico, <http://cintli.geofisica.unam.mx/congreso/>

**November 2 – 6, 2015:** Solar Variability and its Heliospheric Effects, Athens, Greece, <http://bbc-sws.astro.noa.gr/>

**November 2 - 13, 2015:** International Reference Ionosphere 2015 Workshop, Bangkok, Thailand, <http://www.iri2015.kmitl.ac.th>

**November 9 – 13, 2015:** 2<sup>nd</sup> Symposium of the Committee on Space Research (COSPAR): “Water and Life in the Universe COSPAR 2015”, Foz do Iguacu, Brazil, <http://cosparbrazil2015.org/>

**November 10-13, 2015:** Sun-Climate Symposium, Savannah, GA, USA, <http://lasp.colorado.edu/home/sorce/news-events/meetings/2015-sun-climate-symposium/>

**December 14-18, 2015:** AGU Fall Meeting, San Francisco, CA, USA, <http://fallmeeting.agu.org/2015/>

## 7. General Information about SCOSTEP

### 7.1 SCOSTEP Web Site

Information on SCOSTEP can be found at: <http://www.yorku.ca/scostep/>

### 7.2 SCOSTEP Contact

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

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