6 February 2012

English only

Committee on the Peaceful Uses of Outer Space
Scientific and Technical Subcommittee
Forty-ninth session
Vienna, 6-17 February 2012

Request for observer status with the United Nations Committee on the Peaceful Uses of Outer Space: application of the Scientific Committee on Solar-Terrestrial Physics

Note by the Secretariat

1. At its thirty-third session, in 1990, the Committee considered guidelines for granting observer status with the Committee to international intergovernmental and non-governmental organizations. The possible criteria suggested by the Outer Space Affairs Division to the Committee at the time were the following:

(a) As part of its programme, the organization should be concerned with matters falling within the competence of the Committee on the Peaceful Uses of Outer Space;

(b) The aims and purposes of the organization should be in conformity with the spirit, purposes and principles of the Charter of the United Nations;

(c) The organization should be a recognized international organization and should have an established headquarters, an executive officer, and a constitution, a copy of which is deposited with the Secretary-General of the United Nations. In the case of a non-governmental organization, it should be a non-profit organization.

2. Having considered the matter, the Committee at its thirty-third session, agreed, that in the future non-governmental organizations which request observer status with the Committee should have consultative status with the Economic and Social Council (ECOSOC) and should, as part of their programmes, be concerned with matters falling within the competence of the Committee.

3. At its fifty-third session, in 2010, the Committee agreed that observer status would be granted to non-governmental organizations on a provisional basis, for a period of three years, pending information on the status of their application for consultative status with the Economic and Social Council. The Committee also

V.12-50494 (E)

agreed that the provisional observer status could be extended for an additional year, if necessary. The Committee further agreed that it would grant permanent observer status to such non-governmental organizations upon confirmation of their consultative status with the Council.

4. While the Committee's decision did not specifically include the elements referred to in 2(c) above, it has been the practice of the Committee, since its decision in 1990, to have before it the constitution or statutes of the organization or entity requesting observer status.

5. On 19 October 2011 the Office for Outer Space Affairs received an application for observer status with the Committee on the Peaceful Uses of Outer Space from the Scientific Committee on Solar-Terrestrial Physics (SCOSTEP). The following related correspondence received from SCOSTEP is attached to this document:

(a) Letter from SCOSTEP stating its intention to become a permanent observer of the Committee;

(b) Bylaws/statutory documents confirming the status of SCOSEP as non-governmental organization;

(c) Mission statement and a brief presentation describing SCOSTEP's activities and explaining how SCOSTEP's activities are relevant to the mission of COPUOS;

(d) a brochure; and

(e) December 2011 Newsletter.

International Council for Science (ICSU)

SCIENTIFIC COMMITTEE ON SOLAR-TERRESTRIAL PHYSICS

President:
Dr. Nat Gopalswamy
Solar Physics Laboratory, Code 671
Heliophysics Division
NASA Goddard Space Flight Center
Greenbelt MD 20771
USA

Vice-President:
Prof. Dr. Franz-Josef Lübken
Leibniz Institute of Atmospheric Physics
Schloss-Str. 6
18225 Kühlungsborn
Germany

Scientific Secretary:
Prof. Marianna Shepherd
CRESS, York University
4700 Keele St
Toronto, ON M3J 1P3
Canada

MS. MAZLAN OTHMAN
DIRECTOR
Office for Outer Space Affairs
Room E-0952
United Nations Office at Vienna
Vienna International Centre
A-1400 Vienna
Austria

October 19, 2011

Dear Ms Othman,

I am writing to you on behalf of the President of the Scientific Committee on Solar-Terrestrial Physics (SCOSTEP). SCOSTEP was originally established in 1966 by the XIth General Assembly of the International Council of Scientific Unions (ICSU) as the Inter-Union Commission on Solar-Terrestrial Physics (IUCSTP.) At its XIVth General Assembly in September 1972, ICSU reorganized IUCSTP as a special committee with responsibility for interdisciplinary solar-terrestrial physics programs of finite duration. Since 1973, SCOSTEP has been charged with the long-term responsibility to promote international interdisciplinary programs in solar-terrestrial physics.

Solar variability and its impact on Earth's climate, atmosphere, and space environment has been a focus in many developed countries over the past decade, although the effort started during the famous International Geophysical Year (IGY 1957-58). The open data policies of space agencies and international cooperation in space missions have been extremely beneficial in making significant scientific progress in our field. Under the backdrop of the current economic downturn, it is important for the international community to pool their resources and avoid duplications in finding solutions to the outstanding problems. Efforts such as the International Living With a Star (ILWS) and the International Space Weather Initiative (ISWI) recognize the need for global cooperation. SCOSTEP activities are in synergy with other organizations such as ILWS and ISWI in promoting STP research and outreach. The current scientific program of SCOSTEP is Climate and Weather of the Sun Earth System (CAWSES). SCOSTEP is governed by a Bureau, whose members come from international scientific unions such as COSPAR, IAU, IUGG/IAGA, URSI, SCAR, IUPAP, and IAMAS. The general council of SCOSTEP consists of representatives from 36 member countries and 55 expert scientific discipline representatives. In addition to the scientific programs, SCOSTEP is heavily invested in Capacity Building in developing countries and training students at all levels.

SCOSTEP's objectives are in line with the United Nations Committee on the Peaceful Uses of Outer Space mission and we would like to develop a stronger relationship, participate in United Nations activities and implement UNOOSA principles and goals into SCOSTEP's mission. Therefore, we ask to be granted the status of an Observer to UNCOPUOS and its Subcommittees.
Thank you for your kind consideration.

Sincerely,

Prof. Marianna Shepherd
Scientific Secretary, SCOSTEP

President
nat.gopalswamy@nasa.gov
Tel: +1 301 286 5885
Mobile: +1 301 395 6711
Fax: +1 301 286 7194

Vice President
luebken@iap-kborn.de
Tel: +49 38293 680
Mobile: +49 173 6075 382
Fax: +49 38 293 6850

Scientific Secretary
mshepher@yorku.ca
Tel: +1 416 736 2100 ext 33828
Mobile: +1 647 236 8382
Fax: +1 416 736 5626

COSPAR . IAGA . IAMAS . IAU . IUPAP . SCAR . URSI

Bylaws/statutory documents confirming the status of SCOSEP as non-governmental organization

CONSTITUTION

1. RESPONSIBILITIES

In 1978, by virtue of an action of the 17th ICSU General Assembly, SCOSTEP (previously an Inter-Union Commission in 1966-72, and a Special Committee in 1972- 1978) became a Scientific Committee of ICSU with the following principal tasks:

(i) To promote international interdisciplinary programmes in solar-terrestrial physics, and to organize and coordinate such programmes of interest to and approved by at least two of the Participating Bodies (see Sec. 2.1). Each specific programme will normally be of finite duration.

(ii) To define the data relating to these programmes that should be exchanged through the World Data Centres.

(iii) To provide such advice as may be required by the ICSU bodies and World Data Centres concerned with these programmes.

(iv) To work with other ICSU bodies in the coordination of symposia in solar- terrestrial physics, especially on topics related to SCOSTEP's programmes. Where possible, such symposia will be held in association with meetings of interested ICSU organizations.

2. DEFINITIONS AND TERMINOLOGY

2.1 Participating Bodies, Adherents, Correspondents, and Affiliates to SCOSTEP:

(i) ***Participating Bodies.*** The Unions and other ICSU bodies that express an interest in some aspect of solar-terrestrial physics may be recognized by the Bureau as Participating Bodies (see Section 3.3). Initially these Participating Bodies are IAU, IUGG (IAGA), IUGG (IAMAS), IUPAP, URSI, and COSPAR.

(ii) ***Adherents.*** A scientific academy, research council, or other appropriate body in a country or geographical region that is representative of research in that country or region relevant to the programmes promoted by SCOSTEP may be recognized by the Council as an Adherent to SCOSTEP (see Section 3.2). (The terms body, country, and geographical region have the same meanings as those applied to them by ICSU.)

(iii) ***Correspondents.*** In any country or geographical region not represented by an Adherent, a Correspondent may be designated by the Bureau (see Section 3.3).

(iv) ***Affiliates.*** The World Data Centres A, B, C, and D shall be designated Affiliates of SCOSTEP. Other international bodies may also be designated Affiliates of SCOSTEP by the Bureau (see Section 3.3).

2.2 Composition of SCOSTEP

The composition of SCOSTEP is as follows:

(i) The Officers of SCOSTEP, namely the *President*, *Vice-President* and *Scientific Secretary*.

(ii) One Representative appointed by each Participating Body in consultation with the Bureau of SCOSTEP to assure geographic and disciplinary balance. These Representatives shall be responsible for maintaining close liaison with their respective organizations.

(iii) One Representative appointed by each Adherent. These Representatives shall be responsible for close liaison with their respective Adherents.

(iv) ***Scientific Discipline Representatives***, selected in such a way that their collective scientific expertise will cover the range of subdisciplines in solar-terrestrial physics, with as much provision for adequate geographic distribution as is possible. The Scientific Discipline Representatives will collectively serve as a source of scientific advice and proposals for new programmes, projects and the like, and as potential leaders and members of component bodies (see Sections 3.3 to 3.5).

(v) Chairmen of *Steering Committees* (see Section 3.4).

(vi) Chairmen of *Working Groups* established by the Bureau (see Sec. 3.5)

(vii) One Representative of each of the three sets of *World Data Centres A, B, and C*, appointed by the Centres.

(viii) One *Liaison Representative* of each international body affiliated with SCOSTEP, appointed by those organizations.

(ix) Correspondents. (For appointments, see Section 3.3.)

Persons serving in one or more of the capacities above are considered Members of SCOSTEP for the purposes of this Constitution.

3. ORGANIZATION

3.1 The structural units of SCOSTEP shall comprise:

- the Council,
- the Bureau,
- Steering Committees,
- Working Groups, and
- the Finance Committee.

3.2 The Council shall comprise the Adherent Representatives (see 2.2(iii)).

Correspondents appointed by the Bureau (Section 2.1) sit with the Council but do not vote. The President of SCOSTEP shall be Chairman of the Council. The Council shall:

(i) Review the scientific, financial and administrative activities of SCOSTEP and, if necessary, refer matters to the Bureau for further consideration.

(ii) Participate in the election of the President and Vice-President of SCOSTEP according to the method described in Article 5.

(iii) Appoint two members of the Finance Committee, naming one as Chairman (see Article 7).

(iv) Determine the scale of annual subscriptions for Adherents (see Article 7).

(v) Consider and act on the admission of Adherents.

3.3 The Bureau shall comprise:

- the President,

- the Vice-President,

- the Representatives of the Participating Bodies and

- the Scientific Secretary (ex officio).

The Bureau shall be responsible to the Council for the scientific, administrative, and financial direction of SCOSTEP's activities. The Bureau appoints:

(i) The Scientific Discipline Representatives, in consultation with the Participating Bodies. The number shall be determined by the Bureau.

(ii) The Chairmen of the Steering Committees and Working Groups, and additional members, if needed (see Section 3.4).

(iii) Correspondents (see Section 2.1).

(iv) The Scientific Secretary (see Article 8).

The Bureau also considers and acts on the admission of Participating Bodies and Affiliates.

3.4 Steering Committees

The task of planning, developing, and providing scientific and practical advice for the carrying out of major programmes may be delegated by the Bureau to Steering Committees, which shall be responsible to the Bureau for carrying out these tasks. A Steering Committee for a given programme shall include a representative of each Participating Body and each ICSU body interested in the objectives of the programme, appointed by that body. To assure geographic and disciplinary balance, this appointment should be made in consultation with the SCOSTEP Bureau. A chairman and, if needed, additional members shall be appointed by the Bureau. Major national and international agencies concerned with the execution of the programme may be invited by the Bureau to nominate liaison representatives.

3.5 Working Groups

Working Groups may be established by the Bureau on an ad hoc basis, with such memberships as are necessary for the task in hand: in particular, early planning of prospective programmes, or for the carrying out of programmes and projects not requiring major new resources.

3.6 Finance Committee

The Finance Committee shall comprise two members appointed by the Council. The duties of the Finance Committee are described in Article 7.

4. MEETINGS

4.1 General Meetings of SCOSTEP: The General Meetings of SCOSTEP (being meetings of SCOSTEP as defined in Section 2.2) shall normally be convened by the President at intervals of two years to determine scientific priorities, consider scientific proposals and review financial and administrative arrangements, and at alternate meetings to elect the President and Vice-President. The President of SCOSTEP shall preside over General Meetings of SCOSTEP.

4.2 The Bureau shall normally meet annually. If necessary, additional meetings may be convened by the President.

4.3 The Council and the Finance Committee shall meet during General Meetings.

4.4 For notice of meetings, see Section 8.3.

5. ELECTION AND TERMS OF OFFICE OF THE PRESIDENT AND VICE-PRESIDENT

5.1 All those listed in Section 2.2 except the Scientific Secretary and Correspondents appointed by the Bureau, shall be potentially eligible to participate in the nomination and election of the President and Vice-President, subject only to such qualifications as may be imposed by SCOSTEP. Eligible participants are referred to below as electors.

5.2 The offices of President and Vice-President will not be voted on separately. In the final ballot, the candidate receiving the largest weighted number of votes shall be declared President, and the candidate receiving the second largest weighted number of votes shall be declared Vice-President.

5.3 Nominations and elections shall be carried out according to procedures and schedules to be determined by SCOSTEP, and shall include the following steps:

(i) The Scientific Secretary shall call on the electors to nominate persons qualified to serve as President.

(ii) Electors desiring to make nominations shall send their nominations to the Scientific Secretary.

(iii) The Scientific Secretary shall compile a list of all nominees who have received the requisite number of valid nominations, and shall delete from his list all those who wish to withdraw their names from consideration. The remainder shall constitute the list of qualified candidates.

(iv) The Scientific Secretary shall distribute to the electors a presidential ballot on which the qualified candidates are listed, together with a report on the number of nominations that each has received.

(v) Each elector participating in the election shall indicate on the presidential ballot his first and second choice for President.

(vi) In counting the votes to determine the outcome described in Section 5.2, the first and second choices shall be tabulated separately and suitably weighted. A vote for first choice shall be counted as two votes for the candidate, a vote for second choice shall be counted as one vote.

5.4 Elections shall be conducted by secret ballot. Elections shall normally be conducted at a biennial General Meeting (see Section 4.1), but may be conducted by mail if necessary.

5.5 The Bureau shall appoint one or more scrutineers who are not candidates for election to oversee the preparation of ballots as described in Section 5.3 and the counting of ballots cast under Section 5.4.

5.6 The President and Vice-President shall normally serve for a term of four years, but may be re-elected in the same capacity for an additional term (consecutive or non- consecutive). In accordance with ICSU rules, no person other than a salaried Secretary may normally serve as an officer of SCOSTEP for a total period of more than eight years. The terms shall begin at the conclusion of a biennial General Meeting (see Article 4), and end at the conclusion of the biennial General Meeting four years later.

5.7 In case the office of Vice-President is vacated between elections, the Bureau may appoint a successor to fill the remainder of the unexpired term.

6. VOTING

Voting in elections has been described in Article 5. The following describes voting on matters other than elections.

6.1 At meetings of SCOSTEP or any of its component bodies, each member present and entitled to vote may cast only one vote, even if the member serves in more than one capacity. In meetings of SCOSTEP or the Council, Representatives of Adherents whose dues are in arrears by more than two years and Correspondents appointed by the Bureau (see Section 2.1) have a voice, but no vote, except as noted below.

6.2 Decisions shall be taken by a simple majority of the affirmative and negative votes of those present and taking a part in the vote. One-half the number of those eligible to vote plus one shall constitute a quorum. All those listed in Section 2.2, except the Scientific Secretary and Correspondents appointed by the Bureau, shall be eligible to vote on scientific questions.

Only the Representatives of Adherents not in arrears shall be eligible to vote on financial questions. The vote on financial questions shall be weighted according to a schedule related to the annual contributions (see Section 7.3) and determined by the Council.

On administrative questions, the President shall rule whether their financial implications are strong enough to warrant treating them as financial questions.

At all meetings, the President or Chairman has the deciding vote in case of ties.

7. FINANCES

7.1 Funds for the administration and activities of SCOSTEP may be provided by ICSU itself, by the Participating Bodies and Adherents, or other sources; or may be received by ICSU on behalf of SCOSTEP from UNESCO and other sources.

7.2 A scale of annual subscriptions for Adherents shall be determined by the Council. Each Adherent shall select the level at which it wishes to subscribe.

7.3 The Finance Committee (see Section 3.2, item iii), with whatever assistance it requires of the Scientific Secretary, shall at regular intervals prepare a budget of estimated income and expenditure for the Bureau's approval. The budget, when approved by the Bureau, shall be forwarded to ICSU by the Scientific Secretary. The Bureau is accountable to the Council for its financial operations, and shall submit annual accounts to it.

In addition, the Finance Committee shall at regular intervals scrutinize the accounts kept by the Scientific Secretary and, if they are in order, absolve him of liability.

7.4 The funds shall be administered according to the ICSU "Rules for Scientific and Special Committees".

8. SECRETARIAT

8.1 The Bureau shall appoint a Scientific Secretary, who shall receive a stipend and such other staff as it deems necessary.

8.2 The Scientific Secretary shall be responsible for the administration of the Secretariat, including servicing meetings of SCOSTEP and its component bodies, financial matters under the direction of the Bureau, the preparation of reports, and general correspondence.

8.3 The Scientific Secretary shall keep the Secretaries General of ICSU and the Participating Bodies and the Secretaries of the Adherents fully and promptly informed of the activities of SCOSTEP. The Scientific Secretary shall be responsible for giving at least four months' notice of the date, place, and provisional agenda of formal meetings of SCOSTEP or of the Bureau.

8.4 The Scientific Secretary shall attend all meetings of SCOSTEP, the Bureau and, as adjudged necessary by the President, other component bodies, without vote.

9. BY-LAWS

SCOSTEP and its constituent bodies may enact by-laws for their own operations.

10. AMENDMENTS TO THE CONSTITUTION

10.1 Any two members of SCOSTEP as defined in Section 2.2 may jointly propose amendments to this Constitution.

10.2 The Bureau, after having had an opportunity to analyse the potential consequences of a proposed amendment, shall submit it to the members as defined in Section 2.2 at least six months before the proposed date of adoption.

10.3 An amendment shall take effect if it is adopted by at least two-thirds of those entitled to vote and actually voting, and after it is ratified by the ICSU Executive Board.

10.4 The adoption of amendments shall normally take place at biennial General Meetings (see Section 4.1), but may be conducted by mail if necessary.

11. SUBSCRIPTION STRUCTURE

At the 1990 General Meeting, it was decided that for voting on SCOSTEP financial matters votes will be weighted by the category number in which adherent countries contribute to SCOSTEP, these categories, to become effective in 1993, correspond to:

CATEGORY	UNIT	SUBSCRIPTION (US$)
I	1	$500
II	2	$1,000
III	5	$2,500
IV	10	$5,000
V	20	$10,000
VI	35	$17,500
VII	50	$25,000

Mission statement and a brief presentation describing SCOSTEP's activities and explaining how SCOSTEP's activities are relevant to the mission of COPUOS

SCOSTEP organizes and conducts international solar-terrestrial programs (STP) programs of finite duration in cooperation with other International Council For Science (ICSU) bodies. ICSU is non-governmental so also is SCOSTEP. Results from these programs are shared with the community of SCOSTEP scientists by joining in conducting meetings, conferences, and workshops and by publishing newsletters, handbooks and special journal issues.

SCOSTEP's mandate is to seek opportunities for interaction with national and international programs involving Solar-Terrestrial Physics elements. It provides guidance to the STP discipline centres of ICSU's World Data Center system. It attempts 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 governing body of SCOSTEP is the SCOSTEP Bureau. The Bureau comprises of SCOSTEP's President, the Vice President, the Representatives of the ICSU Participating Bodies, and the Scientific Secretary (ex. officio). The Bureau directs scientific, administrative and financial activities. They select the Scientific Secretary who administers the Secretariat, organizes meetings, and conducts the financial business of SCOSTEP under the Direction of the Executive Officers and Bureau. The Bureau usually meets annually. If necessary, additional meetings may be convened by the President.

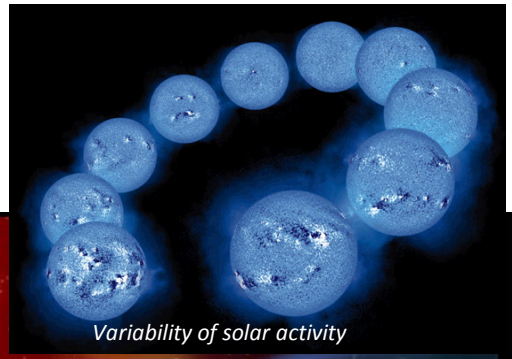
The SCOSTEP General Council comprises of Adherent Representatives, and is chaired by the President. The Council reviews the scientific, financial and administrative activities of SCOSTEP and, if necessary, refers matters to the Bureau for further consideration.

An international group of Scientific Discipline Representative provides advice to SCOSTEP about scientific programs and serves as links between national and regional activities in their fields and SCOSTEP international scientific programs. They lead within SCOSTEP and through other ICSU bodies to propose new programs and participate in the Steering Committees and projects of ongoing programs.

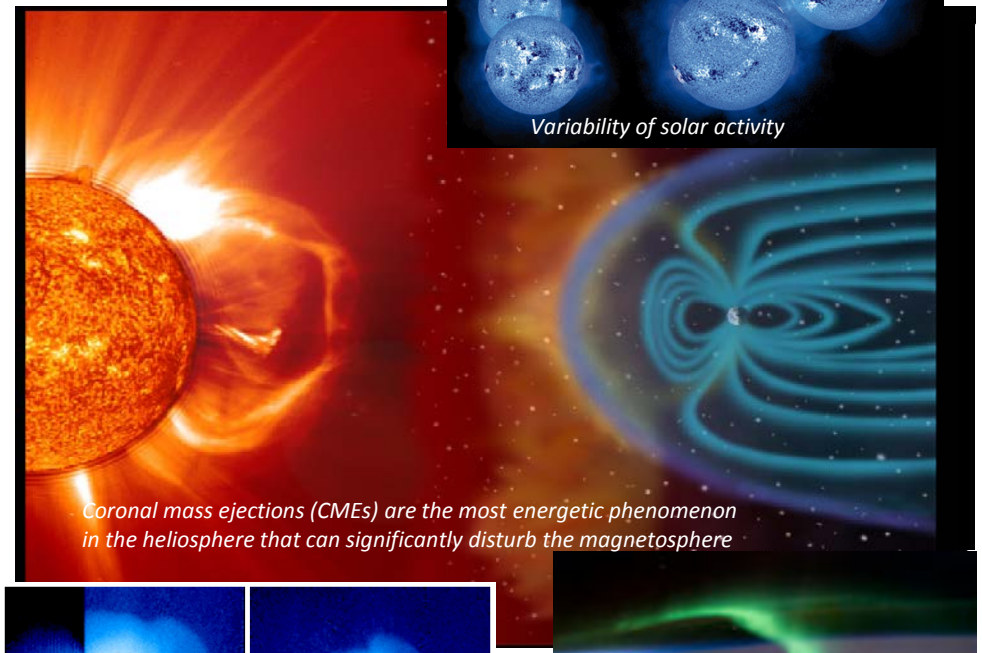
SCOSTEP: Understanding climate and weather of the Earth-Sun System

INTRODUCTION

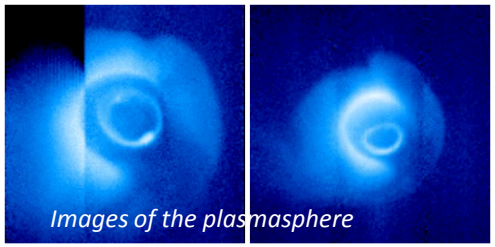
The Scientific Committee on Solar-Terrestrial Physics (SCOSTEP) was established in January 1966 by International Council of Scientific Unions (ICSU) as the Inter-Union Commission on Solar-Terrestrial Physics (IUCSTP). In September 1978, with the ratification of the current Constitution by the XVIIth 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 (2009 – 2013) is the Climate and Weather of the Sun-Earth System (CAWSES), which is described in this poster



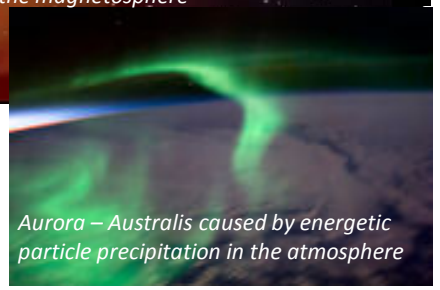
Variability of solar activity



Coronal mass ejections (CMEs) are the most energetic phenomenon in the heliosphere that can significantly disturb the magnetosphere



Images of the plasmasphere



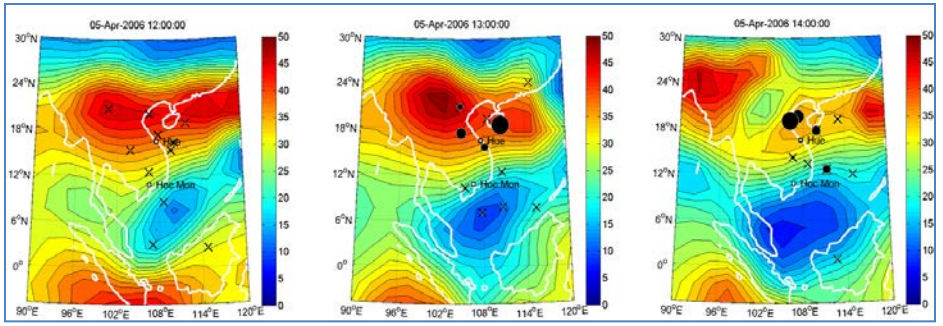
Aurora – Australis caused by energetic particle precipitation in the atmosphere

CLIMATE AND WEATHER OF THE SUN-EARTH SYSTEM (CAWSES)

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 CAWSES are organized around four Task Groups (TGs) that address four major scientific questions:

- **TG1. What are the solar influences on the Earth's climate?**
- **TG2. How will geospace respond to an altered climate?**
- **TG3. How does short-term solar variability affect the geospace environment?**
- **TG4. What is the geospace response to variable inputs from the lower atmosphere?**



Total Electron Content (contour plot) and scintillation occurrence (cross: lack of scintillation; black dot: scintillation) over Vietnam on April 2006.

Ionospheric scintillations monitoring and study is indispensable to forecast their occurrences and to mitigate their effects on navigation and communication systems.

Several countries have dedicated CAWSES programs, including France, Germany, India, Japan, and Taiwan. Science results are presented at the Quadrennial Solar Terrestrial Physics (STP) symposia. The most recent one was held in Berlin in 2010 (http://www.iap-kborn.de/SCOSTEP2010). Additional meetings are also held to highlight the current scientific program of SCOSTEP. For example, the 2007 CAWSES workshop in Kyoto, Japan, resulted in an excellent book, available on line: www.terrapub.co.jp/onlineproceedings/ste/CAWSES2007/index.html

OUTREACH

SCOSTEP has been sponsoring a series of 'Comic Books' designed to raise the awareness of the general public, and young people in particular, about issues in solar-terrestrial science. An initiative of Prof. Yosuke Kamide, Solar-Terrestrial Energy Laboratory, Nagoya University. Originally produced in Japanese, the books have been translated into English, French, German, Italian, Russian, Spanish, Hindi and Korean, with translation now ongoing into Chinese, Czech, Finnish, Hebrew, Marathi, Nigerian (Hausa, Igbo, Yoruba & Pidgin), Swedish and Thai. Blank drawings are available to translate the books into other languages.

Front covers of several comic books published by SCOSTEP/CAWSES

CAPACITY BUILDING

SCOSTEP/CAWSES cosponsors space science schools run by the International Space Weather Initiative (ISWI). The 2010 Summer School, was held from 28 October to 4 November 2010, in Bahir Dar, Ethiopia and was hosted by Bahir Dar University, Ethiopia and Boston College. Young scientists from the following African countries participated in the Summer School: Algeria, Cameroon, D. R. Congo, Ethiopia, Ivory Cost, Kenya, Madagascar, Malawi, Nigeria, Rwanda, South Africa, Sudan, Tanzania, Uganda, and Zambia.

The school was co-sponsored by NASA, USA, the European Office of Aerospace Research and Development (EOARD), UK; SCOSTEP/CAWSES, the International Center for Theoretical Physics (ICTP), Italy; Bahir Dar University, Ethiopia; Boston College, USA; Air Force Research Laboratory (AFRL), USA; University of Michigan, USA; Kyushu University, Japan; University of Calgary, Canada; Massachusetts Institute of Technology (MIT), USA; German Aerospace Center , Germany. SCOSTEP/CAWSES also cosponsored the just concluded 2011 ISWI School in Slovakia (20-27, August 2011).

International School on Atmosphere - Ionosphere Radars and Radio Sounding: Science and Applications, November 15-24, 2010, Taiwan

Japan-Peru: FMT Summer School and Data Analysis Workshop held July 20-27, 2011 at Hida Observatory, Kyoto University in Japan, and on July 28-31, 2011 at National Astronomical Observatory of Japan

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

SCOSTEP
Scientific Committee on Solar-Terrestrial Physics

DECEMBER 2011

NEWSLETTER

In this issue:

FOREWORD

This is the first issue of the SCOSTEP Newsletter after moving the SCOSTEP Secretariat to York University in Toronto, Canada in the summer of 2010. The year 2011 was a very active year for SCOSTEP (*Scientific Committee on Solar-Terrestrial Physics*) and its CAWSES (*Climate And Weather of the Sun-Earth System*) programme. In July 2011 the SCOSTEP General Council held an election for new SCOSTEP Executives, President and Vice-President during the IUGG General Assembly in Melbourne, Australia, June 27 – July 7. A summary on the results from this election is presented. There were also changes in the representation of various organizations like IUPAP, COSPAR, IAMAS, and URSI to the SCOSTEP Bureau. In September 2011 new Co-chairs for the CAWSES programme were appointed. Brief information on these appointments is also provided.

The issue contains information on the SCOSTEP supported scientific conferences and workshops during 2011.

Finally information on upcoming events is also given. More detailed information can be found on the SCOSTEP Website (http://www.yorku.ca/scostep/).

News on SCOSTEP-related activities is distributed via e-mail to all members of the General Council, including the Bureau, National Adherent Representatives, Science Discipline Representatives and the CAWSES Co-chairs and Theme Group Leaders. The issue may be freely distributed to the Solar-Terrestrial Community at large. A copy of the Newsletter is available to the general public at the SCOSTEP Website.

Marianna Shepherd
(Scientific Secretary)

1 MESSAGE FROM THE PRESIDENT

SCOSTP is functioning in full gear with a number of major accomplishments in the past six months. The SCOSTEP Bureau – the policy-making body of SCOSTEP – has several new members representing international scientific unions and organizations. The full Bureau already met in October 2011 and made important decisions regarding the growth and efficient functioning of SCOSTEP. The list of scientific discipline representatives (SDRs) has been updated to truly reflect the current developments in our scientific disciplines, keeping in mind the geographic and gender balance. SCOSTEP welcomes all the new SDRs and looks forward to working with them to accomplish the objectives of SCOSTEP. As you know, SCOSTEP promotes scientific advancement in solar terrestrial physics (STP) by providing the necessary scientific framework for international collaboration and dissemination of the derived scientific knowledge.

A constitutional committee has been established, which is busy working out details on the constitutional amendments needed for the efficient functioning of SCOSTEP, given the rapid growth of our community over the past several decades. Another committee was set up to develop a detailed procedure to honour members of our community recognizing their service in tirelessly promoting SCOSTEP and those who have made outstanding contributions to the advancement of STP science. Both these committees will submit their reports to the Bureau, which will discuss them during the next Bureau meeting to be held in Vienna, Austria adjacent to the EGU meeting in April 2012.

The current scientific program of SCOSTEP is the Climate and Weather of the Sun-Earth System (CAWSES), which is in the second and final phase to conclude by the end of next year (2013). New co-chairs were appointed who have already started working closely with the CAWSES Task Groups, making use of the modern virtual conference facilities. Only minor changes have been made to the Task Group leadership. Efforts are also underway in setting up the next SCOSTEP scientific program to take effect in 2014. CAWSES-India and

CAWSES-Japan are actively involved is organizing symposia in 2012 and 2013, respectively in Pune India and Nagoya Japan. The proposal from China to hold the next STP symposium (STP13) has been accepted by the Bureau. STP13 will take place in XiAn, China in August 2014. These meetings will highlight the accomplishments of the CAWSES program and reflect SCOSTEP's broader global collaboration with other international organizations such as the International Living With a Star (ILWS) and the International Space Weather Initiative (ISWI) that are involved in complementary aspects of STP research.

SCOSTEP has expanded its capacity building to include activities specific to the current scientific program (CAWSES) and STP in general. SCOSTEP is cosponsoring many sessions of interest to the STP community at the COSPAR Scientific Assembly in July this year in India. SCOSTEP is planning to display and distribute outreach and promotional materials during the assembly.

The SCOSTEP Newsletter you are reading is the newest channel to effectively communicate with the STP community. SCOSTEP has also a new web site (http://www.yorku.ca/scostep/). The web site already provides important links to on-line scientific literature and outreach material. Online resources specific to the CAWSES program will be available from http://www.cawses.org/wiki/index.php/Online_Resources The STP community is encouraged to contribute to these online resources.

SCOSTEP delegates participated in the deliberations of the 30th General Assembly of the International Council for Science (ICSU) held in Rome during late September 2011. SCOSTEP, as one of the interdisciplinary bodies of ICSU, conducts activities consistent with ICSU priorities and its mission to "strengthen international science for the benefit of society" in the STP area. ICSU has twenty interdisciplinary bodies representing various fields of science and SCOSTEP is uniquely positioned to promote solar-terrestrial and space science that have wide-ranging implications to the human society.

We have had a good start and are on the way to face challenges and accomplish a lot more to the continued growth and expansion of SCOSTEP.

Wish you all the very best for a great 2012!

Nat Gopalswamy

2 SCOSTEP GENERAL COUNCIL MEETING AND ELECTION

SCOSTEP organizes and conducts international solar-terrestrial physics (STP) programs of finite duration in cooperation with other International Council for Science (ICSU) bodies. Results from these programs are shared with the community of SCOSTEP scientists by joining in conducting meetings, conferences, and workshops and by publishing newsletters, handbooks and special journal issues.

The relevant ICSU bodies are represented in SCOSTEP by the Bureau members (IAU, IAGA, IAMAS, IUPAP, COSPAR, URSI, SCAR; IUGG has a liaison).

SCOSTEP is one of the 17 interdisciplinary bodies of ICSU, along with COSPAR and SCAR.

The general requirement for conducting a scientific program is that it be approved by at least two of the participating bodies. The current scientific programme supported by SCOSTEP is the Climate and Weather of the Sun-Earth System (CAWSES - Phase II).

There have been a number of changes in the SCOSTEP Secretariat since July 2010, when the Office was moved to York University, Toronto and is supported by the Canadian Space Agency and the Centre for Research in Earth and Space Science of York University. A number of activities were undertaken in preparation for the SCOSTEP Election of new Executive officers, which took place in July 2011. All members of the General Council were contacted and contact information verified (total 85); a new web site was created (http://www.yorku.ca/scostep/); a contest for a new SCOSTEP Logo was held, and all members of the GC received election kits with information on the candidate for Election of new SCOSTEP Executive Officers. The SCOSTEP Bureau met on July 2, 2011 in Melbourne, Australia during the IUGG General Assembly (June 28 – July 7, 2011) and reviewed the state of the organization to date. The Bureau thanked the SCOSTEP President Prof. Robert Vincent and Vice-President Dr. Brigitte Schmieder for their contribution to SCOSTEP. On July 3, 2011 a meeting of the General Council was held to elect new SCOSTEP Executive Officers, President and Vice-President. All members of the General Council cast their ballots by mail. From the 85 Members contacted, 75 voted, or 88% of the total, electing Dr. Natchimuthuk (Nat) Gopalswamy (NASA/GSFC) for SCOSTEP President and Prof. Dr. Franz-Josef Lübken (Leibniz Institute of Atmospheric Physics) – for Vice-President. The General Council also selected the new logo and the one receiving the most votes was approved as the new SCOSTEP logo.

In 2011 there were changes in the SCOSTEP Bureau as well, with new appointments for the ICSU bodies represented by: Mark Lester (IUPAP), Lee-Anne McKinnell (URSI), Takuji Nakamura (COSPAR), and David Siskind (IAMAS). (For more information on the SCOSTEP Bureau please see the SCOSTEP Website).

On October 9-10, 2011 the SCOSTEP Bureau held its first meeting after the Elections in Melbourne, which took place in Greenbelt, MD (near Washington, DC). Some of the decisions made are given below.

It was decided that the CAWSES Virtual Institute (VI) should be reorganized according to the current needs of the CAWSES programme. The basic concept of the VI was to serve as a forum for discussions and information on Solar-Terrestrial Physics. The concept for using the internet as a medium of outreach and training need be reconsidered and it was suggested that the VI be converted to an on-line resource database with links to other outreach sites (e.g. NASA, JAXA, CNES, CSA, …), which already have experience with the organization of the information and are easily accessible and free of charge. The idea has already been discussed with Dr. Janet Kozyra, who was responsible for the VI. (Some of these links are already available on the SCOSTEP website (http://www.yorku.ca/scostep/)). The links will be extended and updated as new information becomes available on an on-going basis. The new VI will consider including also information on meta-data and will be linked with Internet sites where such information is available. Tutorial lectures presented at various conferences and workshops will be recorded or compiled and made part of the VI, thus creating a virtual library. Using the Y-Tube as a medium for such tutorial lectures; all these are intended to be a part of the SCOSTEP/CAWSES Capacity building activity.

The time and sites of future SCOSTEP/CAWSES meetings were also selected as follows:

November 5 - 12, 2012: International symposium on Solar Terrestrial Physics: ISWI-CAWSES Joint meeting, Pune, India

November 18 - 22, 2013: International CAWSES symposium, Nagoya, Japan

August 25-28, 2014: STP13 Xi'an, China

Information about these conferences will be posted on the SCOSTEP Website as it becomes available.

3 CAWSES

In September 2011 the Bureau unanimously approved the appointment of new CAWSES Co-chairs, Dr. Joseph M. Davila (NASA/GSFC) and Prof. Toshitaka Tsuda (RISH/Kyoto University), who replaced Dr. Susan Avery (Woods Hole Oceanographic Institution) and Dr. Alan Rodger (British Antarctic Survey).

Joe Davila conceived and implemented the STEREO mission, has been Executive Director of the IHY Secretariat and is currently leading the ISWI. He was Principal Investigator for the Solar Extreme-ultraviolet R Telescope and Spectrograph (SERTS) and has conducted research on the structure of the solar corona.

Toshitaka Tsuda has been a Bureau member for many years; he was involved in the PSMOS programme and is familiar with SCOSTEP. He is the Director of Research Institute for Sustainable Humanosphere (RISH) in Kyoto University. He has also been working on atmospheric coupling processes as part of CAWESES II.

SCOSTEP is grateful for their willingness to serve.

At the SCOSTEP Bureau meeting in Greenbelt T. Tsuda and J. Davila presented an action plan for implementation in the remaining time of the CAWSES programme. As a part of this plan the CAWSES web page at www.cawses.org will be reactivated. The site will continue functioning until the end of the CAWSES programme in 2013.

The Co-chairs have divided the responsibilities for the CAWSES themes as follows: Joseph Davila is responsible for TG1 (Annika Seppälä) and TG3 (Kazunari Shibata & Joe Borovski), while Toshitaka Tsuda is responsible for TG2 (Daniel Marsh & Jan Laštovička) and TG4 (Jens Oberheide & Kazuo Shiokawa).

Combined meetings between several TG's will be encouraged in order to enhance interaction and mutual understanding. Significant effort will be invested in Capacity building by providing intensive lecture series, training courses, capacity building sessions as a part of a workshop, etc. These should also be addressed within the more general workshops wherever possible.

TG leaders will strongly be encouraged to propose a session(s) at various international assembly; AGU, EGU, AOGS, JpGU, thus broadening the SCOSTEP/CAWSES scientific outreach. It was suggested that the CAWSES TG leaders should have working meeting independently of the Bureau meeting and more frequently to review the CAWSES activities.

Collaboration between CAWSES and ISWI, ILWS, etc. will be promoted and increased.

4 REPORTS ON MEETINGS: SCOSTEP SUPPORTED OR WITH SCOSTEP INTEREST

4.1 4th International Space Climate Symposium, January 16-21, Goa (India)

The 4th International Space Climate Symposium, Space Climate was held in Goa, India between 16th —21st January, 2011. This meeting brought together researchers from around the world to discuss the causes of the long-term variability of the Sun and its consequences, including its modulation of climate and the radiative and particulate environment in the heliosphere. The symposium had a special session dedicated to observations and modelling of the unusual minimum in solar activity at the end of solar cycle 23.

The sessions were structured around tutorial lectures reviewing major sub-fields of Space Climate, invited lectures summarizing recent advances in our understanding in those fields, and contributed lectures and posters reporting relevant research. There were 92 participants in attendance drawn from Asia, Europe and North America. Further details on this meeting are available online at the websites:

http://www.iiserkol.ac.in/~spaceclimate4/

(Dibyendu Nandi)

4.2 4th IAGA/ICMA/CAWSES-II TG4 Workshop on Vertical Coupling in the Atmosphere/ Ionosphere System, February 14-18, Prague (Czech Republic)

The 4th IAGA/ICMA/CAWSES-11 TG4 Workshop on "Vertical Coupling in the Atmosphere/Ionosphere System" was held in Prague, Czech Republic, February 14- 18, 2011. The meeting was attended by a total of 75 senior and young scientists from 16 countries. During the 5-days workshop the participants presented 79 papers, from which 16 were solicited presentations. Before official opening of the workshop there were two public/educational lectures (By Esa Turunen and Mike Taylor) attended mainly by students from Prague grammar schools and university. The aim of the workshop was not only to address the physics behind the forcing mechanisms that originate in the lower atmosphere and play an important role on the upper atmosphere and ionosphere, but also to show the solutions of some of the problems which were only formulated during the 3rd IAGA/ICMA Workshop held in 2006 in Varna, Bulgaria. The meeting was designed so that research experts from both the middle and upper neutral atmosphere and ionosphere communities come together in order to present their work and assess/debate ongoing issues related to the theoretical, modelling and observational aspects of all kind of processes which transfer energy and momentum from the lower atmosphere to the upper atmosphere and ionosphere and vice versa. The programme focused on various aspects and topics of neutral dynamics as well as ionospheric electrodynamics and plasma physics. These included: 1) Coupling processes in the middle atmosphere, through planetary waves, mean flows and temperature variability; Gravity wave and tidal forcing of the middle atmosphere, and the role of dynamics, solar variability and greenhouse gasses on the chemical structure and feedback processes.
2) Coupling processes in the atmosphere/ionosphere system, due to: dynamical forcing of the ionosphere from below; and electrodynamic coupling and plasma instabilities; the role of electrical processes in the coupling.

Figure 1: *Group photo of the participants in the 4th IAGA/ICMA/CAWSES-II Workshop*

This workshop brought together a mix of scientists doing mostly independent research on the fields of the MLT neutral atmosphere and the ionosphere, that is, on two collocated "spheres" of the near earth environment which remain closely coupled and in a continuous interaction. The meeting provided an excellent opportunity for these research communities to interact in a supplementary manner in reviewing and debating the progress done to date in the field of the upper atmosphere/ionosphere and come up with suggestions and ideas for further research on the vertical coupling of the atmosphere-ionosphere system.

The presentations at this Workshop will be published in a special issue of JASTP. The team of Guest Editors includes: Dora Pancheva (Geophysical Institute, BAS, Sofia, Bulgaria), Petra Koucka Knızova (Institute of Atmospheric Physics, CAS, Prague, Czech Republic), Kazuo Shiokawa (Solar-Terrestrial Environment Laboratory, Nagoya University, Japan) and Weixing Wan

(Institute of Geology and Geophysics, Chinese Academy of Sciences, China).

(Petra Koučka Knižova)

4.3 Chapman Conference on Gravity Wave Effects on General Circulation and Climate, February 28 - March 4th, Honolulu (Hawaii)

Chapman Conference on "Gravity Wave Effects on General Circulation and Climate" was held from 28 February through 4 March, 2011 at the East-West Centre in Honolulu, Hawaii. The conference conveners were M. Joan Alexander, Kevin Hamilton and Kaoru Sato. The conference was attended by 87 scientists including 11 students from India, Argentina, Canada, England, Japan, Korea, Slovenia, France, Germany and The Netherlands. (http://www.agu.org/meetings/chapman/2011/ccall/)

(On behalf of Joan Alexander)

4.4 3rd International Workshop, Solar influences on the magnetosphere, ionosphere and atmosphere, June 6-10, Sozopol (Bulgaria)

The 3rd International workshop "Solar influences on the magnetosphere, ionosphere and atmosphere" was held in Sozopol, Bulgaria, during 6 - 10 June 2011. The scientific programme was comprised by the scientific program of the workshop: 1) Sun and solar activity, 2) Solar wind-magnetosphere-ionosphere interactions, 3) Solar effects in the ionosphere, 4) Solar influences on the lower atmosphere and climate, 5) The variable Earth radiation field and its impact on humans, 6) Instrumentation for space weather monitoring, 7) Data processing, modelling and e-science.

The program included invited lectures summarizing recent advances in our understanding in those fields, and contributed lectures and posters reporting relevant research. A total of 10 oral and 4 poster sessions were held at which 86 papers were presented, out of those 5 were invited, 40 were oral and 41 were given as poster presentations. For more information on the workshop please see:

http://www.stil.bas.bg/WS-sozopol/

(Katya Georgieva)

4.5 FTM-2Workshop, July 20-31, Kyoto/Hida Observatory (Japan)

The first FTM data analysis workshop at UNICA in Peru was held in November, 2010 (http://esi.igp.gob.pe/FMTworkshop/) to educate young students and researchers how to analyse solar data taken by FMT and how to use a spectroscope for solar observations. This workshop was partly supported by CAWSES-II, and was very successful.

Figure 2: *A lecture by Prof. K. Shibata, Jul 20, 2011 (left) and Summary report by Peruvian young scientists, Jul 27, 2011 (right)*

As a continuation of the previous FMT workshop, a second FTM Workshop "Japan-Peru: FMT Summer School and Data Analysis Workshop" was held during July 20-27, 2011 at Hida Observatory, Kyoto University in Japan, and during July 28-31, 2011 at National Astronomical Observatory of Japan (NAOJ) (http://www.kwasan.kyotou.ac.jp/CHAIN/WS/2011Jul/). The purpose of the summer school/workshop was to teach students and young researchers how to analyse solar data more deeply and to teach them how to write scientific papers by using solar data (http://cawses-ii-wg3.blogspot.com/2011/07/chain-peru-japan-fmt-workshop-hida.html). There were about 30 participants, including 5 Peruvian young scientists at the workshop held at Hida Observatory. This FMT-Workshop was hosted by Kwasan and Hida Observatories, Kyoto University, Japan and NAOJ, and was financially supported by CAWSES-II and STE Laboratory of Nagoya University, Japan.

Figure 3: *Group photo of FMT-WS at Hida Observatory (July 20, 2011)*

The workshop continued at Hida Observatory with lectures on solar physics, space weather physics, and

solar active phenomena especially related to FMT. There were also tutorial lectures on how to access (download) and analyse solar observational data not only by FMT, but also by other ground-based and space-born instruments. The young Peruvian scientists reported recent observation by FMT in Peru. In additions to the lecture the attendees concentrated on data analysis of targets events determined during the discussion. Work on the data analysis has continued after the WS, and the results will be presented as scientific papers in near future.

At NAOJ the participants learned how to use a spectroscope and carried out actual spectroscopic observation by using a Coelostat, as well as learned how to analyse spectroheliogram, so that they would be able to obtain the data by operating the Coelostat-spectroscope of UNICA in near future. During the workshop at NAOJ, the participants also attended an international solar physics seminar, on "Quiet Sun magnetic field".

(On behalf of Jose Ishitsuka & Kazunary Shibata)

4.6 ISWI-Europe Summer School in Space Science, Aug 21-27, Tatranská Lomnica (Slovakia)

The 2011 ISWI – Europe Summer School in Space was held from August 21 to August 27, 2011 at the Astronomical Institute of the Slovak Academy of Sciences, in Tatranská Lomnica, Slovakia. Twenty five scientists from 11 countries gave invited lectures on the Solar corona and the inner heliosphere; Solar Eruptions, CMEs and Space Weather; CMEs / Data Analysis; Effects of Solar Activity on Earth's Climate Solar Energetic Particles, Solar Radio Emission Processes, Long-term Trends in the Ionosphere and Upper Atmosphere and other space weather topics. The workshop was attended by 76 scientists from 26 countries including 46 students.

Figure 4: *Group photo of the participants in the ISWI-Europe Summer School 2011*

The lectures presented at the workshop could be found at (http://stara.suh.sk/id/iswi/summer_school/scientific_program). Photos from the event could be found at http://stara.suh.sk/id/iswi/summer_school/photos

(On behalf of Ivan Dorotovič)

4.7 IAU Symposium 286, Comparative Magnetic Minima: Characterizing quiet times in the Sun and Star, Oct 3-7, 2011, Mendoza (Argentina)

IAU Symposium 286, "Comparative Magnetic Minima: Characterizing Quiet Times in the Sun and Stars", was held in Mendoza, Argentina during October 3 - 7, 2011. The meeting was attended by 93 scientists from 23 countries, Argentina, Belgium, Brazil, Colombia, Costa Rica, Denmark, Finland, France, Germany, Hungary, India, Israel, Italy, Japan, Mexico, Peru, Romania, Russia, Turkey, Spain, Sweden, Switzerland, UK, and USA.

The goal of IAU S286 was to consider solar and stellar minima, from generative dynamo mechanisms, to in depth analyses from Sun to Earth for recent well observed and modelled minima, to the range in stellar cyclic activity, to outlier "grand minima". Solar, heliospheric, geospace, atmospheric, stellar, and planetary science were included in the meeting's scope.

Figure 5: *Group photo of the participants in the IAU S286 Symposium*

At the meeting, both invited and contributed presentations were given describing how magnetic fields can be cyclically generated in solar and stellar interiors via various dynamo processes. Numerical models have increased in complexity to the point where many observed aspect of cycles in the Sun and stars are captured, although mysteries still remain. The question of the origins and implications of Grand Minima, for the

Sun Earth system and also other stellar planetary systems, was the subject of several presentations. Both stellar observations and historical and cosmogenic records at the Earth were presented to form a basis of understanding of such fascinating intervals, and of solar/ stellar long term variability in general. The recent extended solar minimum was examined in detail from Sun to Earth, provoking discussions of the possibility of a trend in the Sun's current magnetic cycles towards a Grand Minimum, and the potential implications for the Earth's climate.

(Cristina Mandrini)

4.8 10th Layered Phenomena of the Mesopause Region, 24-27 October, Blacksburg Virginia (USA)

The 10th Layered Phenomenon of the Mesopause Region was held in Blacksburg Virginia, 24-27 October, 2011. This was the 10th symposium in a series which has become a regular biennial (triennial prior to 2007) catalyst for advancing our understanding of ice layers in the region of the mesopause and the environment in which they form. The workshop provides a forum for presentation and discussion of new results, new questions and new ideas ranging from the microphysics of mesospheric particles to the global processes controlling the state of the mesosphere. Researchers from all perspectives are invited to participate including ground-based, in-situ, and satellite measurements laboratory studies as well as modelling and theoretical studies on mesospheric ice phenomena and their coupled dynamical, radiative, chemical, and plasma environment. The workshop promotes discussion of the current state of knowledge and of future directions for international, interdisciplinary cooperation.

The workshop consist*ed* primarily of oral talks, some posters, and significant time for interaction and discussion. There were 40 scientists attending the workshop including 8 students. The focus areas of the Workshop were well within the scope of CAWSES-II and specifically related to Tasks 2 (Project 3) and 4. Project 3/Task 2 is "PMC/NLC altitude, frequency and brightness changes related to changes in dynamics and chemical composition". This is one of the overarching themes of LPMR and therefore the workshop. Project 1/Task 4 "How do atmospheric waves connect tropospheric weather with ITM variability?" is also highly relevant as mesospheric ice layers are very sensitive to wave forcing from below. This area has received increased interest in recent years and so will be central to the workshop.

The SCOSTEP support facilitated capacity building as it provided a unique forum bringing together researchers from a variety of approaches, both active and passive ground and space based observers as well as modelling and theoretical. It has always been an important aspect of all LPMR workshops to encourage young researchers and students to participate and interact with more senior researchers.

Figure 6: *The participants of the 10th LPMR Workshop at Virginia Tech. Not shown are invited keynote speaker John J. Olivero, James M. Russell III, Chad Fish, Justin Yonker, and David Fritz*

An important outcome of the workshop is the formation of six sub-working groups to attack focused areas where further work is needed. The topics are: unifying the many data sets; understanding observations of ice particle size distributions; the role of small scale forcing such as gravity waves and turbulence; the role of tides and local time variability; the role of metal layers and surface chemistry; and global connections.

A special issue of the Journal for Atmospheric and Solar Terrestrial Physics has been proposed to publish results from the workshop. The next LPMR workshop is planned for summer 2013 at the University of Leeds, England.

For further information on the workshop program please see
http://www.cpe.vt.edu/LPMR/LPMRprogram.pdf

(Scott Bailey)

4.9 2nd LISN Workshop, November 7-11, 2011, São José dos Campos (Brazil)

During the last few years, the Low latitude ionospheric sensor network (LISN) community has installed over 40 GPS receivers and 5 magnetometers across the South American continent. This instrumentation has spurred several innovative

investigations in aeronomy and space physics. LISN is about to start with the installation of 4 state-of-the-art ionosondes at locations closely aligned with the magnetic meridian that crosses the magnetic equator at 67° W. The new deployments will increase the capability of the LISN network to achieve a forecasting capability of the equatorial spread F (ESF) phenomena. The 2nd LISN workshop was organized to motivate the new members to learn about the LISN instrumentation and science and to engage them in scientific projects and campaigns. The LISN workshop also aimed at starting, and in other cases deepening, the collaborations between the US and South American members of the LISN community and a plan of scientific investigations in Space Weather was outlined. The Workshop was held at the campus of the Instituto Nacional de Pesquisas Espaciais (INPE) at Sao Jose dos Campos in Brazil between November 7 and 10, 2011. The workshop had four themes: (1) New instrumentation, their observable quantities and analysis techniques; (2) Discussions on the physics of the day-to-day variability of the low-latitude ionosphere and the development of a method to predict the initiation of equatorial spread F (ESF); (3) Talks and workshop discussions on space weather applications and the role of LISN on the development of an augmentation system in South America; (4) Define new projects and campaigns to achieve the scientific and forecasting goals.

Figure 7: *The participants in the 2nd LINS Workshop.*

One of the outcomes of the international conference has been to develop a plan for investigations and campaigns that will make it possible to forecast communication outages and to correct navigation errors. These projects will have a decisive influence on the development of emerging aeronautical navigation satellite systems in South America and will be part of a global navigation system.

For further information on LISN the reader is referred to: http://lisn.igp.gob.pe/

(On behalf of Cesar Vallidares)

5 UPCOMING EVENTS IN NEXT 3 MONTHS

March 12 – 17, 2012: 13th International Symposium on Equatorial Aeronomy, Paracas, Peru, http://jro.igp.gob.pe/isea13

March 19 – 23, 2012: 13th Workshop on Technical and Scientific Aspects of MST Radar (MST13), Kühlungsborn, Germany, http://www.iap-kborn.de/MST13/

6 GENERAL INFORMATION ABOUT SCOSTEP

6.1 SCOSTEP Web

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

6.2 SCOSTEP contact

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

Marianna G. Shepherd
CRESS
York University
Petrie Sci.& Eng. Bldg
4700 Keele Street
Toronto, ON M3J 1P4
CANADA