

1998 ANNUAL REPORT

SCIENTIFIC COMMITTEE FOR SOLAR-TERRESTRIAL PHYSICS (SCOSTEP)

Joe H. Allen, Scientific Secretary

INTRODUCTION:

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:

- 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.
- To define the data relating to these programmes that should be exchanged through the World Data Centres.
- To provide such advice as may be required by the ICSU bodies and World Data Centres concerned with these programmes. And,
- To work with other ICSU bodies in the coordination of symposia in solar-terrestrial physics, especially on topics related to SCOSTEP's programmes.

MEMBERSHIP:

SCOSTEP's Bureau consists of a President, Vice President, Scientific Secretary, and one representative each from the Participating Bodies (COSPAR, IAMAP, IAGA, IAU, IUPAP, and URSI). Current officers were elected in June 1994; they are: C.H. Liu (President), H. Oya (vice-president), and J.H. Allen (Scientific Secretary). The other Bureau members and the organizations they represent are: F. W. Sluijter (IUPAP), A. W. Wernik (URSI), D. J. Williams (IAGA), Y. Galperin (COSPAR), B. Schmieder (IAU), and R.A. Vincent (IAMAS).

The General Council consists of representatives from 29 subscribing Adherents. Scientific Discipline Representatives (SDRs) are chosen for expertise in the various disciplines related to solar-terrestrial physics and involving scientists from differing geographical locations (over 40 scientists from some 21 countries are SDRs). Other members are Steering Committee, Working Group, and Panel Chairmen, as well as members of the Finance and Awards Committees. In addition, there are Representatives of three World Data Centres for STP; Representatives of two Affiliates (IUWDS and WMO); Representatives from eight ICSU participating bodies, and an ICSU

Representative plus Correspondents from 12 countries. In total, some 367 scientists worldwide comprised SCOSTEP at the end of 1998. The distribution list for SCOSTEP publications includes some 3,850 currently active scientists. Both groups are volatile, and numbers change monthly. The SCOSTEP Directory of members is on-line on the World Wide Web at: <http://www.ngdc.noaa.gov/stp/SCOSTEP/scostep.html>.

VITAL STATISTICS:

Number of Members: Bureau Members: 9; Scientific Discipline Representatives: 41; Adherent countries: 29; Representatives from Affiliates: 2; World Data Centres: 3; ICSU: 1; Finance Committee: 2; Awards Committee: 4; Steering Committee and Working Group members 150; Honorary Members: 4 (Sir Granville Beynon died in 1995); Correspondents: 12. (Some persons hold more than one position.)

ORGANIZATIONAL MATTERS:

Scientific and Planning Meetings involving SCOSTEP support:

SCOSTEP approved affiliation with a number of disciplinary meetings during 1998. The following are those in which a major organizational role was played and/or in which SCOSTEP was officially represented by participants. Generally, meetings are announced in the quarterly "International SCOSTEP Newsletter" and summaries of results also are published there.

1. ICS-4 Lake Hamana Substorm Conference, 9-13 March 1998

This meeting, the 4th International Conference on Substorms, was organized by Prof. Y. Kamide (Nagoya Univ. and SRAMP) and colleagues. It was the fourth in the series of meetings devoted to the study of magnetic and auroral substorms. Proceedings were published in an elegant volume of over 800 pages by fall 1998. An article about the meeting and book is printed in the December 1998 issue of the international newsletter.

Members of the STEP-Results, Application and Modeling Phase (SRAMP) Post-STEP program took advantage of good attendance at Lake Hamana to convene the first meeting of their Space Weather Working Group.

2. DYSMER PSMOS meeting at Uji, Japan, 16-20 March 1998

Prof. T. Tsuda (Kyoto Univ. and PSMOS) was organizer and local host of the International Symposium on Dynamics and Structure of the Mesopause Region (DYSMER). It was held at the Kyoto Univ campus in Uji City. The symposium was organized primarily within the framework of the Planetary Scale

Mesopause Observing System (PSMOS) program of SCOSTEP. Some 126 scientists from 15 countries attended, and 51 were from outside Japan. SCOSTEP Vice-President,

Prof. H. Oya (Sendai Univ.) gave an opening talk in which he noted the importance of PSMOS within SCOSTEP's Post-STEP programs.

3. GOIN at Tsukuba City, Japan, 24-27 March 1998

Joe Allen was an invited speaker on Satellite Anomalies arising from disturbed Solar-Terrestrial conditions at the Global Observation Information Network (GOIN) meeting held at NASDA Headquarters. The session was organized by Prof. T. Araki (Kyoto University).

4. Extraordinary ICSU General Assembly in Vienna, Austria, 22-25 April 1998

Prof. C.-H. Liu (President SCOSTEP) attended the Extraordinary General Assembly of ICSU in Vienna, Austria representing SCOSTEP and as a member of the ROC (China, Taipei) delegation. He reported on developments there to the SCOSTEP Bureau during their July meeting in Chung Li, ROC.

5. Meridian Chain meeting in Beijing, China, 11-15 May 1998

SCOSTEP co-sponsored this meeting to assist Chinese scientists in organizing a global chain of magnetic and other geophysical instruments along a meridian chain running through Siberia and Asia.

6. CSTR-CSSP at Woods Hole, MA

SCOSTEP Scientific Secretary, Joe H. Allen, participated in the joint meeting of the US Academy of Sciences' Committee on Solar-Terrestrial Research (Prof. M. Kelley, Chair CSTR) and Committee on Solar & Space Physics (Prof. G. Siscoe, Chair CSSP). A primary topic of concern is the coming maximum in solar activity that will be reflected at Earth by increased geomagnetic storms and intense amplifications of the energetic particle population inside the magnetosphere. These events (collectively a part of "Space Weather") are likely to affect operational satellites and, especially, may endanger astronauts engaged in constructing the International Space Station during months around maximum.

7. ISCS Symposium in Nagoya, Japan, 11 July 1998

The International Solar Cycle Study (ISCS, Prof. S.-T. Wu Chair) convened a 1-day symposium in Nagoya before the start of the COSPAR General Assembly. It included papers from participants in each of the three Working Groups which make up ISCS: WG1 - "Solar Energy Flux Study: From the Interior to the

Outer Layer”; WG2 – “Solar Magnetic Field Variability Study: From the Lower Atmosphere through the Inner Corona”; and WG3 – “Solar Emissions: Origins and Transport through the Heliosphere”. M. A. Shea is editing a proceedings volume for this symposium.

8. COSPAR General Assembly, Nagoya, Japan, 12-17 July 1998

SCOSTEP co-sponsored several scientific sessions during the COSPAR General Assembly. Scientists who are active in SCOSTEP programs, e.g. SRAMP, were authors of papers in several sessions. Dr. H. Koskinen (Finland, SRAMP/SWx) convened a meeting of the Space Weather (SWx) Working Group of SRAMP to discuss activities of that part of SRAMP. J. Kozyra reported on the new Space Weather Clearinghouse WWW site established at the University of Michigan.

Su. Basu (NSF) reported on efforts to organize a Space Weather Campaign for the fall of 1999 (now set for September 1999). An effort will be made to have efficient communications of activity alerts, information about observations, and electronic transfer of data and images worldwide. Special effort will be made to see that scientists in developing countries have good access to timely data.

9. SCOSTEP Bureau, Chung Li, Taiwan, 18-19 July 1998

The SCOSTEP Bureau met at National Central University (NCU), hosted by Prof. C.-H. Liu (President NCU and SCOSTEP). Minutes from the meeting were published by the Secretariat in “STP Newsletter 1997/1998” (December 1998). This meeting was conveniently held after the COSPAR General Assembly in Japan and before the WPGM in Taipei, Taiwan (see below).

10. WPGM, Taipei, Taiwan, 20-24 July 1998

The Western Pacific Geophysics Meeting met in Taipei, Taiwan, ROC in the week following the COSPAR General Assembly in Nagoya, Japan. This scheduling helped an increased number of scientists from Europe and the USA to attend. SCOSTEP was well-represented among the participants, including several invited papers, Chairs of sessions, and an opportunity for ad hoc planning meetings. The SRAMP Steering Committee met in Taipei and identified the especially active solar period of April-May 1998 as a “Special Study Interval”. They encourage scientists involved in all aspects of solar physics, interplanetary and magnetospheric physics, upper atmosphere and middle atmosphere physics, and Space Weather topics to concentrate on phenomena recorded by the extensive array of satellites and ground-based facilities operating at this time.

The SRAMP SC also approved the Space Weather Website constructed at the Univ. of Michigan under the direction of J. Kozyra.

11. SPARC, Nagoya, Japan, 26-30 October 1998

Stratospheric Processes and Their Role in Climate (SPARC) is an activity jointly sponsored by SCOSTEP and WCRP (World Climate Research Program). It arose, in part, from middle atmosphere studies begun or emphasized during the Solar-Terrestrial Energy Program (STEP: 1990-1997). A number of SCOSTEP scientists attended the meeting in Japan in fall 1998.

12. COLAGE-V, San Jose, Costa Rica, 3-7 November 1998

The Fifth Latin-American Conference on Space Geophysics (V-COLAGE) assembled in Costa Rica for this well-attended meeting. Papers delivered included some 13 General Invited Lectures on topics from “Dusty Plasmas in the Solar System” to “Electric Discharges in the Upper Atmosphere”. A number of the invited speakers are active in SCOSTEP. Topics of sessions included: Aeronomy, Ionosphere, Magnetosphere, Cosmic Rays, Solar Physics, Solar Wind, and Workshops on Geomagnetic Variations; Latin American Scientific Satellites; Planets and Minor Bodies; and Space Weather.

13. Four new Post-STEP Programs Begin 5-year Terms

Four new Post-STEP scientific programs began in January 1998. Each is scheduled to run for five years. Their activities are reported in the pages of the quarterly “International SCOSTEP Newsletter” (March, June, Sept and Dec 1998) and summarized in annual reports to the Bureau and the SCOSTEP General Council (see “STP Newsletter 1997/98”, published December 1998). The programs are:

- (I) SRAMP (STEP Results, Applications and Modeling Program);
- (II) EPIC (Equatorial Processes Involving Coupling);
- (III) PSMOS (Planetary Scale Mesosphere Observing System); and
- (IV) ISCS (International Solar Cycle Study).

Each of the programs has one or more websites on WWW. All may be accessed through the SCOSTEP homepage at:

<http://www.ngdc.noaa.gov/stp/SCOSTEP>.

The new Space Weather website established during 1998 aspires to serve as a self-contained site on the topic, but also to provide a useful “clearinghouse” function to provide efficient access to both real-time monitoring and research sites devoted to Space Weather topics.

14. “STP Newsletter” Publication for 1997/98”.

The “STP Newsletter” was started in 1976, in support of the International Magnetospheric Study (IMS). From 1976-1979 it was a monthly hard-copy newsletter mailed directly to up to 4,000 persons worldwide. From 1980, it

became an annual publication printed and distributed for SCOSTEP by World Data Center-A for Solar-Terrestrial Physics at the end of each year. In 1995, the first full year for the Secretariat to operate from Boulder, Colorado, and under a new Scientific Secretary, it was not possible to maintain publication of the "STP NL" and begin publication of a quarterly "International STEP Newsletter." The series was slipped to a biennial publication on a schedule that covers the most recent General Meeting with reports from national Adherent Representatives. This series has value to individuals and for libraries and Adherent offices because it is the official record of minutes of Bureau and General Council meetings, and for meetings of program Steering Committees.

15. "Proceedings of the Eighth Workshop on Technical and Scientific Aspects of MST Radar".

The last School on Atmospheric Radar (SAR), Tirupati/Gadanki, India, 10-13 December and Eighth International Workshop (MST8), Bangalore, India, 15-20 December 1997, of the STEP Period were held in India in late 1997. STEP officially ended at the end of 1997. This final STEP publication from the SCOSTEP Secretariat was printed and distributed in July 1998. It was edited by Belva Edwards (Univ Illinois, ret. and former SCOSTEP Office Secretary). Belva has continued, on a contract basis, to edit and prepare the MST proceedings and other STEP Handbooks which she began working on in April 1989. She has given a world of service to STP and SCOSTEP by her work on this and the earlier MAP Handbook series. Dr. J. Roettger was Chairman of the MST8 workshop. Dr. P.B. Rao was Chairman of the Local Organizing Committee. The proceedings contain some 360 pages of scientific papers and information about participants.

Copies of all SCOSTEP 1998 publications are included with this annual report.

16. HONORS TO SCOSTEP Members:

- At the 1998 meeting of the European Geophysical Society (EGS) in Nice, France, Prof. Ch. Kennel (1997) and C.-G. Falthammar (1998) were awarded the EGS Hannes Alfvén Medals for outstanding contributions towards understanding of plasma processes in the solar system and other cosmical plasma environments.
- At the December 1998 meeting of the American Geophysical Union (AGU), Margaret A. (Peggy) Shea was awarded the Waldo E. Smith Award for service to Geophysics. She was noted for her many publications, extensive editorial work for scientific publications, and unselfish cooperation in research.

17. CONCLUSION AND FUTURE PLANS:

SCOSTEP is in transition from STEP observational programs to the new Post-STEP programs listed above. SRAMP is planning a comprehensive Conference to be held in Sapporo, Japan on 2-6 October 2000. SRAMP is continuing to encourage application of the extensive ISTP array of satellites operated by NASA, ESA, ISAS, and IKI and to try and include STP monitoring and effects information from satellites of NOAA (USA) and those of other countries. The Space Weather Working Group of SRAMP is attempting to provide a useful coordination among the various national space weather programs of many countries. So much is happening so quickly in this area that pulls together STP programs begun over 30 years ago, that it is difficult to assimilate the wide range of efforts documented on WWW. It is an objective of SCOSTEP to communicate the planning, observation, implementation and results of Solar-Terrestrial Physics studies and campaigns worldwide through printed publications mailed directly to participants (now some 4,000). In parallel, we are placing our publications and other information onto WWW in timely fashion so that those having electronic access can benefit directly. It is clear that much remains to be done to bring such access to scientists and administrators in developing countries. SCOSTEP hopes to play a positive role here.

EPIC will hold a major meeting in March 1999 in Hawaii. PSMOS members will participate, with EPIC and ISCS in the joint sessions of IUGG in July 1999, and expect to be part of the SRAMP Conference in Sapporo in October 2000.

A new President and Vice-President of SCOSTEP will be elected at the July 1999 General Meeting. We look forward to working with them in the new ICSU.