

1997 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, SCAR, 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). Names of new Bureau members beginning in 1997/98 are underlined.

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 316 scientists worldwide comprise SCOSTEP at the end of 1997. However, the distribution list for SCOSTEP publications includes some 3,700 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: 45; Adherent countries: 29; Representatives from Affiliates: 2; World Data Centres: 3; ICSU: 1; Finance Committee: 2; Awards Committee: 4; Steering Committee, Working Group and Panel Chairmen: 15; 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:

1. 9th Quadrennial STP Symposium, Uppsala, Sweden. Each 4 years SCOSTEP holds a symposium devoted to international progress in Solar-Terrestrial Physics. In 1997, the STP Symposium was held jointly with the IAGA Scientific Assembly and the IAMAS-MAC scientific sessions in Uppsala, Sweden. In order to avoid potential for overlap with the other sessions, SCOSTEP restricted itself to six tutorial lectures by senior scientists spanning the range of STP programs. In addition, six half-day topical review sessions, corresponding to the discipline areas of the six Working Groups of STEP, were held as part of the Symposium. All speakers were by invitation. The reviewed proceedings will be published in a special JASTP issue. Some 300 participants attended Symposium presentations daily during the week.
2. Special Space Weather Meeting. SCOSTEP helped organize a special evening session at Uppsala to: "Consider International Space Weather Issues." The United States has formally initiated a National Space Weather Program (US NSWP). It was presented together with similar reports from representatives of a number of other countries which have space assets and desire to understand and forecast disturbances in near-Earth space that affect their operation. After the meeting, the group (over 500 participants) voted to ask SCOSTEP to lead an oversight effort to provide a coordinated international space weather program. This will be done as part of SRAMP) STEP: Results, Applications and Modeling Phase), a new program adopted by SCOSTEP in 1994 for the period 1998-2002.
3. STEP Ends. After 7 years, the Solar-Terrestrial Energy Program (STEP) came to its scheduled end in December 1997. Over this period (which was

extended because of delays in launching key satellites planned for the space part of the program) thousands of scientists took part in hundreds of campaigns and monitoring efforts to record significant aspects of the integrated Sun-Earth system. The theme of the STP Symposium in Uppsala was "Progress in Solar Terrestrial Physics during the STEP Period." The STEP International Scientific Coordinator, Prof. Juan Roederer, made trips to developing and developed countries around the world to interact with governments, universities and scientific establishments to promote cooperative STP work. His reports are published in the "International STEP Newsletter". The STEP Steering Committee, chaired by Prof. Gordon Rostoker, guided the research campaigns and helped develop the special services provided to participants. Six Working Groups and four Panels, divided along discipline or activity lines, performed the work. Newsletters were published in Japan and the USA. For the last 3 years, the SCOSTEP Secretariat prepared a quarterly International STEP Newsletter with financial support from an ICSU Grant from UNESCO. Distribution was directly by fast mail to some 4,000 scientists and administrators worldwide. Electronic versions of the NL were placed on SCOSTEP's WWW site pages. Special financial support was received from Germany, Sweden, Norway, Taiwan and Japan. Special services were provided by the Secretariat host, NOAA. The December issue of the newsletter commemorated the end of STEP.

4. SCOSTEP supported the IGAC/SPARC Conference on Global Measurement Systems for Atmospheric Composition, Toronto, Ontario, Canada, 20-22 May.

5. The Scientific Secretary assisted NASA and international researchers in compiling information about the solar activity and waves of particles and fields propagating to Earth from the active Sun in early January. The events were tracked by the ISTP satellites from earliest solar activity and happened during a space weather meeting at NASA. Satellites were affected by the conditions.

6. Copies of NASA's "Sun-Earth Connections" document were released in early 1997 at a joint meeting of the US NAS Committee on Solar-Terrestrial Physics (CSTR) and Committee on Solar & Space Physics (CSSP). This "road map" will guide solar research and space physics in the USA as one of the major NASA themes. CSTR is the USA Adherent Representative body for SCOSTEP and invites our participation at these meetings.

7. Radar School and Workshop in India. SCOSTEP cosponsored the School on Atmospheric Radar (SAR) during the week before the 8th Workshop on Technical and Scientific Aspects of MST Radar. The program for the school included tutorial lectures by eminent scientists who also attended MST-8. Students and young scientists from developing countries were especially encouraged to attend. The papers from the Workshop will be published in 1998 in a continuing SCOSTEP series.

8. Four new Post-STEP Programs Begin 5-year Terms. After approval by the General Council, new 5-year programs were organized in 1997 and will begin implementation during 1998. Details were published in the newsletters. The program names 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).

9. SCOSTEP Gives Recommendation on Proposed US Polar Cap Observatory. After presentations by US scientists about a US National Science Foundation effort to build and operate a Polar Cap Observatory in northern Canada, SCOSTEP drafted a scientific justification resolution in support of the plan. The project has become a political issue in the US Congress.

10. SCOSTEP Supports ICSU Position on “Free & Open Access to Data and Information”. H. Rishbeth and J. Allen helped alert SCOSTEP to the threat to traditional free and open access to data and information arising from US national and European Community efforts to gain revision of the Berne Copyright Agreement and implement restrictive laws allowing copyright and sui generis rights to be applied to databases and products derived from such data. The position taken by these groups and by WIPO (World Intellectual Property Organization) have potential to severely inhibit operation of ICSU’s World Data Center System and to reverse the historical position that scientific data do not have “commercial value”.

11. COSTED Meeting Supported. Prof. J. Roederer represented SCOSTEP at the 3rd Executive Committee meeting of COSTED-IBN. He provided an important summary for SCOSTEP participants that was published in the December 1997 International STEP Newsletter.

12. “STP Newsletter” Publication for 1995/1996. 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 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 sustain publication of a quarterly “International STEP Newsletter.” Finally, in mid-1997, the Secretariat managed to prepare a combined issue for 1995 and 1996. 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.

Copies of all SCOSTEP 1997 publications are included with this annual report.

ACTIVITIES UNDERTAKEN DURING 1997:

SCOSTEP maintains an extensive WWW “homepage” on the node operated in Boulder by the US National Geophysical Data Center. The address is:

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

It has proven to be very convenient for many people to access. Separate statistics are not kept for parts of NGDC STP Division pages on WWW (where the SCOSTEP entries are located); however, the number of accesses per year by external users who penetrated to at least a second level of information and copied one or more pages of data or information in 1996 totaled some 600,000.

INTERNATIONAL STEP COORDINATOR'S REPORT:

1. Participation in COSTED-IBN

As the Corresponding Member of SCOSTEP in COSTED-IBN, Juan G. Roederer participated actively in the 1995 and 1997 meetings of the COSTED Executive Committee (for a report on the 1995 meeting, see International STEP Newsletter 1, No. 3, p. 3; a report on the 1997 meeting in Jordan is published in Newsletter 3, No. 4, pp. 9-11, December 1997).

We believe that SCOSTEP's participation in COSTED is of fundamental importance, for two main reasons: (I) There is a need for an active participation of developing countries in SCOSTEP programs, given the importance of upper atmosphere and near-earth space observations at low latitudes; (ii) SCOSTEP is the only ICSU body with major cooperative projects on space physics that critically depend on networks of ground-based observatories. While most participants in COSTED meetings, and the research projects therein discussed, deal with capacity building in the applied sciences, particularly, those related to the development of renewable resources, the active participation of SCOSTEP in COSTED discussions helps bringing in an important element of capacity building in fundamental science.

Programs like STEP and the post-STEP projects involve networks of research groups in dozens of developing countries, and, in many of them, formal participation of local funding agencies. Given the long-time experience in the organization of such programs, an active participation of an inter-union body like SCOSTEP in COSTED-IBN will help implement the fundamental goals of this committee, defined at its recent meeting in Jordan: to serve as a clearing house for research in developing countries between the ICSU Unions, and to serve as a matchmaker between science and funding.

Role of the International STEP Coordinator

Although STEP is winding down, Juan Roederer continued in his role of "Ambassador for STEP". Main focus during recent months was to develop international interest in what for the moment is mainly a US project, the Space Weather Program. Clearly, such a program should have an international component; it will allow developing countries, for the reasons given in 1. above, to get involved in state-of-the-art space science with modest means. It should be remembered that the concept of "weather and climate in space" was one of the fundamental practical goals set for STEP, and that it is most directly related to the objectives of STEP Working Group 5.

BRIEF REPORT ON USE OF 1997 GRANT FROM ICSU AND UNESCO:

The combined ICSU Grant to SCOSTEP for 1997 was \$8K for two program areas: (1) International STEP Coordinator support (\$3.9K); and (2) Publication of the "International STEP Newsletter" (\$4.1K). Both are described in some detail above. The International STEP Coordinator was particularly active in connection with the final STEP Steering Committee meeting, Bureau meetings, and STP Symposium in Uppsala, Sweden in August 1997.

CONCLUSION AND FUTURE PLANS:

SCOSTEP is in a transition period as we leave STEP campaigns behind, but try to extract maximum benefit from the body of data and knowledge arising from STEP observational programs and phenomena during the STEP period. This was a rich time for energetic solar activity during the maximum and declining phase of Solar Cycle #22. Post-STEP programs are becoming active in 1998 as participants plan to take part in meetings in Japan, Taiwan, Canada, and Africa. The International Conference on Substorms #4, DYSMER, COSPAR Assembly, and Western Pacific Rim AGU meetings will involve SCOSTEP participation. Planning has begun for the 1998 Bureau meeting in Taipei, and the 1999 Bureau and General Meetings in Birmingham, UK, in conjunction with IUGG. Distant planning is in progress for the 10th STP Symposium in 2001, but the site and dates are not set. Already Solar Cycle # 23 is rising at a rate that is the equal or faster than Cycle # 22. If predictions of a high solar maximum are realized, SCOSTEP members will be extraordinarily busy scientists for the next five years. We also will watch with interest the ICSU Extraordinary General Assembly in April in Vienna, Austria, because the outcome of that meeting may significantly affect the future of SCOSTEP and its programs.