

Editors' Note

When the International Geophysical Year (IGY) started in 1957, there was no scientific discipline known as Space Science. The launch of Sputnik in 1957 opened the gate of in-situ observations, which started testing the ideas developed over several preceding decades on mass emissions from the Sun. Parker's prediction of the solar wind in 1957 was confirmed in 1962 by Mariner 2. What started as the exploration of the fluid envelope of Earth in 1957 has extended to the local interstellar medium, thus taking the humankind to the crossroads of Astrophysics and Space Science. IGY produced an unprecedented level of understanding of Earth's Space Environment, and saw the start of the Space Age with the birth of the discipline of Space Science. For the first time, it became possible to study the cosmos with in situ observations. The International Heliophysical Year (IHY), marking the fiftieth anniversary of IGY, is the logical step to expand our focus to include the heliosphere in which Earth and Sun have a central place. IHY runs from March 2007 to March 2009 continuing the tradition of international cooperation in scientific research and exploration. Science (coordinated investigation programmes or CIPs conducted as campaigns to investigate specific scientific questions), Instrument development (deploying instruments for space science in developing countries in collaboration with the United Nations), Public Outreach (to communicate the beauty, relevance and significance of the space science to the general public and students), and the IGY Gold programme (to identify and honour all those scientists who worked for the IGY programme).

The IGY 1957 was one of the driving events to establish the United Nations Committee on the Peaceful Use of Outer Space (UNCOPUOS) as well as many other scientific institutions that survive to this day. The IHY organization has joined hands with UNCOPUOS to promote heliophysical science activities throughout the world by deploying scientific instruments in the developing countries of the world. Under this collaborative programme known as the United Nations Basic Space Sciences (UNBSS) initiative, scientists from developed countries or those who are willing and able, donate small instruments to developing countries for studying heliophysical processes. These deployments will serve as nuclei for a sustained development of scientific activities in the host countries. UNBSS conducts annual workshops to support the instrument deployment efforts and provide necessary science background to the participants.

The second UNBSS workshop was held at the Indian Institute of Astrophysics, Bangalore during November 27 – December 1, 2006 to review the progress in the instrument deployment programme and plan for future activities. Discussions also included the development of research resources such as space science data, analysis tools, and scientific literature. About 150 participants from 28 countries participated in the workshop. The papers that appear in this special section are based on some of the contributions made at the workshop. The papers are from various IHY disciplines: Physics of solar-heliosphere,

magnetosphere, ionosphere, and atmosphere. Some papers concern the educational and outreach aspects of the IHY disciplines.

The papers are necessarily diverse because the scientific disciplines under heliophysics have grown independently over the past fifty years. In recent years, emphasis is being placed on cross-disciplinary issues and systems approach to Sun-Heliosphere connections, as evidenced by various efforts such as the international space weather research. These efforts have helped scientists appreciate the progress in the related disciplines and develop a better understanding of the Sun-Heliosphere system.

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