

INTERNATIONAL HELIOPHYSICAL YEAR

The International Heliophysical Year (IHY), an international program of scientific collaboration to understand the external drivers of planetary environments, will be conducted in 2007. This will be a major international event of great interest to the member States. The IHY will involve the deployment of new instrumentation, new observations from the ground and in space, and an education component.

The IHY 2007 will coincide with the fiftieth anniversary of the International Geophysical Year (IGY) in 1957. The IGY was organized to study global phenomena of the Earth and Geospace involving about 60,000 scientists from 66 nations, working at thousands of stations, around the world to obtain simultaneous, global observations from the ground and space.

Building on results obtained during IGY 1957, the IHY will expand to the study of universal processes in the solar system that affect the interplanetary and terrestrial environments. The study of energetic events in the solar system will pave the way for safe human space travel to the Moon and planets in the future, and it will serve to inspire the next generation of space physicists.

Specific objectives of the IHY are to

1. Provide benchmark measurements of the response of the magnetosphere, the ionosphere, the lower atmosphere and Earth surface to identify global processes and drivers which affect the terrestrial environment and climate
2. Global study of the Sun-heliosphere system outward to the heliopause to understand the external, and historic drivers of geophysical change
3. Foster international scientific cooperation in the study of Heliophysical phenomena now and in the future
4. Communicate the unique scientific results of the IHY to the interested scientific community and to the general public

The IGY 1957 was one of the driving events to establish UNCOPUOS as well as many other scientific institutions which survive today. The IHY will provide an opportunity of COPUOS and other relevant organizations to review their achievements over the last 50 years.

The IHY strongly complements the International Living With a Star (ILWS) program, providing more attention nationally, regionally, and internationally for the ILWS program through support of STSC.

The United Nations Basic Space Science Initiative (UNBSSI) has a major role to play, to put the "I" into "IHY". A major thrust of the IHY is to deploy arrays of small instruments such as magnetometers, radio antennas, GPS receivers, all-sky cameras, etc. around the world to provide global measurements of heliospheric phenomena. Scientific teams will be organized through UNBSS, which will consist of a lead scientist who will

provide the instruments or fabrication plans for instruments in the array. Scientists from UNBSS member states will participate in the instrument operation, data collection, analysis, and publication of scientific results. Support for local scientists, facilities and data acquisition will be provided by the host nation. Support in-kind and in-cash by the STSC is needed for the organization and deployment of these instrument arrays. In addition, support at the Government level is needed for local scientists to participate in the IHY instrument array program.

To complement the ground based data, huge amounts of data from space based missions on Earth and heliospheric phenomena are freely accessible and need to be analyzed in the course of IHY. Support at the Government level is needed for local scientists to participate in the analysis and interpretation of this data is needed.

This work has already begun. UNBSSI, since June 2004, in cooperation with IHY Organizers has begun a worldwide outreach to disseminate basic information on IHY (IHY website, IHY newsletter, IHY/UN flyer, UNOOSA website). These websites provide basic information on the IHY, and are particularly useful for scientists in developing nations.

The timeline for the IHY is as follows.

- **2005:** Synthesis from regional to international plans, merging of science working groups and campaigns, "backfilling" missing initiatives; Planning and UNBSS Workshops
- **2006:** Research prototyping, review and finalize campaign proposals, proposals to national funding agencies; Planning and UNBSS Workshops
- **2007:** IHY campaigns, establish data bases and tools; Kickoff and UNBSS Workshops
- **2008-2009:** Workshops (Topical and UNBSS), publications, archives

A five-year agenda item on IHY/ILWS would provide the opportunity to update the Subcommittee on the International Heliophysical Year program, and the efforts already taking place around the world to plan this important event.