UN Office for Outer Space Affairs

International Heliophysical Year 2007

First Meeting of the ICG
1-2 November 2006
UNOV, Vienna

Second Meeting of the ICG
4-7 September 2007
Bangalore, India
International Heliophysical Year 2007 (IHY)

- 50th anniversary of IGY 1957
- 50th session of UNCOPUOS
- 40th anniversary of Outer Space Treaty
- 50th anniversary of Sputnik 1

- Putting the 'I' in IHY by coordinating with institutions in all 192 UN Member States (178 UNDP, 185 PM)

- Regional and international workshops on IHY jointly organized by UNOOSA and IHY Secretariat (2005-2009)

IHY: UNCOPUOS and UNGA

UNCOPUOS three-year Work Plan 2006-2008

The United Nations General Assembly,
in its resolution 60/99 of 2005

“Also notes with satisfaction
the contribution being made by the
Scientific and Technical Subcommittee and
the efforts of Member States and
the Office for Outer Space Affairs to
promote and support the activities being organized within
the framework of the
International Heliophysical Year 2007"
IHY Outreach

- Workshop Reports (UN docs)
- Flyer
- Poster
- Brochure
- 50-page Booklet

IHY Follow-up Projects

- Studying global phenomena on the largest possible scale with simultaneous observations from low-cost ground-based world-wide arrays of instruments and space-borne data (GPS)
UN/ESA Workshops on Basic Space Science (1991-2004)

- **Regional:**
  India, Costa Rica, Colombia, Nigeria, Egypt

- **Inauguration of optical telescopes:**
  Sri Lanka, Honduras, Jordan

- **International:**
  Germany, France, Mauritius, Argentina

- **Review of all workshops:**
  P.R. China
BSS TRIPOD: Telescope, Observing, Teaching

- **Government of Japan:**
  - Japanese Cultural Grant Aid
    - 45cm reflecting telescope
  - CCD & computer equipment
  - Building/dome/maintenance provided by local institution
  - Bolivia, Pakistan, Ethiopia on-going

- **American Association of Variable Star Observers (AAVSO):**
  - Hands-on Astrophysics
  - Setting Up a Variable Star Observing Programme

- **Astrophysics for University Physics Courses**

Telescope ⇒ Observing ⇒ Teaching ⇒ Data Analysis ⇒ Data Transfer ⇒ Telescope Networking
First UN/NASA Workshop on IHY in November 2005
“succeeded…beyond expectations!”

- **UN, ESA, NASA, UAE Government sponsored**, attendance by His Highness Sheikh Al-Nahayan Minister of Education and the Chancellor of the UAE University
- **Instrument Donors Attending:**
  USA, Canada, UK, Switzerland, Japan, Brazil, Armenia
- **Potential Hosts Attending:**
  Georgia, India, Pakistan, Indonesia, Malaysia, Iraq, Iran, Sudan, Saudi Arabia, Algeria, Egypt, Libya, Cape Verde, Jordan, Ivory Coast, Cameroon, Nigeria, Eritrea, South Africa, …

Second UN/NASA Workshop on IHY
IIA, November 2006, Bangalore, India

Third UN/NASA Workshop on IHY
NAOJ, June 2007, Tokyo, Japan
IHY: GPS Applications in Low-cost, Ground-based, World-wide Instrument Arrays

1. **Global Positioning System in Africa** (France)
   Increase number of real-time dual-frequency GPS stations for ionospheric studies

2. **RENOIR: Remote Equatorial Nighttime Observatory for Ionospheric Regions** (U Illinois, USA)
   Study equatorial/low-latitude ionosphere/thermosphere system

3. **SCINDA: Scintillation Network Decision Aid** (Hanscom AFRL, USA)
   Prediction of communications degradation due to ionospheric scintillation

4. **SEVAN: Space Environment Viewing and Analysis Network**
   (Alikhanian PI, Armenia)
   Neutron-muon detecting system for cosmic ray secondary fluxes

5. **CiDR: Coherent Ionospheric Doppler Radar** (U Texas, USA)
   Measure line-of-sight relative electron content using radio beacons

6. **Rutherford Appleton Laboratory Low-Cost Ionosonde** (RAL, UK)
IHY: GPS: Africa

Dr. Christine Mazaudier
Terrestrial and Planetary Environment Research Center (CETP) of the French National Center for Scientific Research (CNRS)


UN IHY Policy: Communicate with providers/hosts through PM (185) and UNDP(178)

Equipment: GSV 4004B GPS Ionospheric Scintillation and TEC Monitor and Optional GPS702 Antenna

Research Field: atmospheric studies, ionospheric studies, geomagnetic storms, equatorial anomaly, …
IHY TRIPOD: Instrument Array, Data, Teaching

- Since 2005, deploying small inexpensive instruments such as magnetometers, radio antennas, GPS RECEIVERS, all-sky cameras, etc. around the world to make global measurements of ionospheric, magnetospheric, and heliospheric phenomena

- Partnership between instrument providers and instrument host nations

- Lead scientist/engineer provides instrumentation
  Host institution provides manpower, facilities, and operational support

- Data taking, sharing, analysis, publication

- Using data in teaching space science at university level
The Regional Centres for Space Science and Technology Education were created under the auspices of the United Nations through its Office for Outer Space Affairs (UNOOSA).

Goal: to develop, through in-depth education, an indigenous capability for research and applications in the core disciplines of:

- Remote Sensing & GIS,
- Satellite Communications,
- Satellite Meteorology and Global Climate,
- Space and Atmospheric Sciences as well as data management.

Regional Centres located in:

- African region: CRASTE-LF (Morocco), CSSTE-E (Nigeria)
- Asia and the Pacific region: CSSTEAP (India)
- Latin America and the Caribbean: CRECTEALC (Brazil and Mexico)
THANK YOU!

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