THE INTERNATIONAL HELIOPHYSICAL YEAR (IHY)
February 2007-2009

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NASA-Goddard Space Flight Center

February 2009
IHY Objectives

- Develop the basic science of heliophysics through cross-disciplinary studies of universal processes.
- Determine the response of terrestrial and planetary magnetospheres and atmospheres to external drivers.
- Promote research on the Sun-heliosphere system outward to the local interstellar medium - the new frontier.
- Foster international scientific cooperation in the study of heliophysical phenomena now and in the future.
- Preserve the history and legacy of the IGY on its 50th Anniversary.
- Communicate unique IHY results to the scientific community and the general public.
IHY Participation

- 71 countries with National committees

IHY (http://ihy2007.org)
IHY Participation

- UNBSS
  - 17 Distributed instrument observatory programs
  - 5 New data analysis programs for space data

IHY (http://ihy2007.org)
IHY Research Participation

- 200 Observatories
- 65 Coordinated Investigation Plans (CIPs)
- Thousands of scientists

IHY (http://ihy2007.org)
Four Elements of the IHY Program

1. Science of Universal Processes
   – Coordinated Investigation Programs (CIPs) Scientific Research

2. Distributed small instrument program
   – New observational capability

3. Education, outreach
   – Promoting space science

4. IGY History preservation
   – Preserving the history of space physics

International Campaigns

Total Eclipse
2006 Mar 29

Saros 139

Russia
Georgia
Turkey
Egypt
Libya
Nigeria
Ghana

Mag. = 1.052
Gam. = 0.384

Alt. = 67°
Dur. = 4m 0s

Whole Heliosphere Interval

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Distributed Instruments:
Basic Concept

- The lead scientist or principle investigator will provide instrumentation (or fabrication plans)
- The host country provides the workforce, facilities, and operational support typically at a local university.
- Host scientists become part of science team
- All data, and data analysis activity is shared
- All participate in publications and meetings
- UN-BSS dedicated to the program at least thru 2009
Space Weather Monitor Sites

IHY Distribution 2007-2009

- AWESOME research monitors (26)
- SID student monitors (300)

Countries and Regions:
- USA
- Germany
- Mexico
- Nigeria
- Ethiopia
- China
- Romania
- Lebanon
- Thailand
UN-NASA Workshop Series

- **First Workshop**
  - *UN, ESA, NASA, and UAE sponsored*

- **Second Workshop**
  - *UN, NASA and India sponsored*

- **Third Workshop**
  - *UN, JAXA, NASA and Japan*

- **Fourth Workshop**
  - *UN, ESA, NASA, JAXA, and Bulgaria*

- **Fifth Workshop (Final in the Series)**
  - *UN, ESA, NASA, and South Korea*

*These Workshops have been highly successful at establishing new collaborations between instrument providers and hosts*
## Instrument Contributors

<table>
<thead>
<tr>
<th>INSTRUMENT</th>
<th>CONTACT</th>
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<tbody>
<tr>
<td>CALLISTO</td>
<td>C. Monstein (Switzerland)</td>
</tr>
<tr>
<td>H-alpha Telescope</td>
<td>K. Shibata, S. Ueno (Japan)</td>
</tr>
<tr>
<td>MAGDAS Magnetometers</td>
<td>K. Yumoto (Japan)</td>
</tr>
<tr>
<td>GPS Scintillations</td>
<td>C. Amory-Mazaudier (France), and T. Rowell (USA)</td>
</tr>
<tr>
<td>SCINDA GPS</td>
<td>K. Groves (USA)</td>
</tr>
<tr>
<td>CIDR</td>
<td>T. Garner (USA)</td>
</tr>
<tr>
<td>VLF Radio</td>
<td>U. Inan (USA)</td>
</tr>
<tr>
<td>RENOIR</td>
<td>J. Makela (USA)</td>
</tr>
<tr>
<td>SEVAN Particle Detectors</td>
<td>A. Chillingarian (Armenia)</td>
</tr>
<tr>
<td>AMBER-AGREES</td>
<td>E. Yizengaw (USA)</td>
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<tr>
<td>SAVNET</td>
<td>J.-P. Raulin (Brazil)</td>
</tr>
<tr>
<td>Low-cost Ionosonde</td>
<td>J. Bradford (UK)</td>
</tr>
<tr>
<td>IHY Mag</td>
<td>I. Mann (Canada)</td>
</tr>
<tr>
<td>Low-frequency Radio Array</td>
<td>J. Kasper (USA)</td>
</tr>
<tr>
<td>Muon Network</td>
<td>K. Munakata (Japan)</td>
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• Professional development
• Strengthening space science research in universities
• Education
• **Activities**
  – *Yuri’s night*
  – *Summer schools in US, Europe, Asia, South America*
  – *World-wide observatory open house June 10, 2007*
  – *Science outreach to youth*
Outreach

- Documentary released on historic US-Libya eclipse collaboration
- “Science Eclipses Politics” (EOS) and other articles published
- Open Doors day
- Traveling exhibits in Germany and France
- Summer schools in US, Europe, Asia, South America
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197 IHY Gold Certificates have been handed out to IGY participants.
Recipients include Alan Shapley, James Van Allen.
And Prince Philip in the UK.
A special meeting organized in India.

IHY (http://ihy2007.org)
Activities and Future Plans

- IHY officially ends Feb 2009
- A brief closing ceremony will be held today 4:30 pm in Rotunda
- Coordinate follow-on activities for the study of space weather

*On behalf of the Secretariat,*

Thanks to the Distinguished Chairman and Delegates of this Committee for their support during the IHY
“… science is the most powerful means we have for the unification of knowledge, and a main obligation of its future must be to deal with problems which cut across boundaries, whether boundaries between the sciences, boundaries between nations, or boundaries between man’s scientific and his humane concern.”

-- John F. Kennedy