International Polar Year 2007-2008
Progress/Activity report

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International Polar Year 2007-2008 is continuing

• IPY 2007-2008, an intensive and internationally coordinated campaign of high quality research activities and observations in Polar Regions started on 1 March 2007 and will continue until 1 March 2009.

• WMO/ICSU Joint Committee for IPY (co-chairs Drs I.Allison and M. Beland) and its three Sub-Committees worked actively to facilitate implementation of IPY projects that are consistent with the six themes given in the Scope of Science for IPY 2007-2008 (WMO/TD-No1364, 2008).

• WMO Inter-commission Task Group on IPY (chair Prof D.Qin) and technical commissions addressed the IPY preparation at their sessions and developed relevant actions to facilitate the effective IPY implementation.
IPY field phase (1)

- IPY projects on the continents were carried out in 2007 and their implementation is continued in 2008 in both Polar Regions, studying of atmospheric processes, polar oceans, glaciers and ice sheets, permafrost, hydrological cycle, the ecosystems, circumpolar human societies, etc.

- Studies of the polar atmosphere were intensified by the establishment of new Arctic international environmental observatory Tiksi (Russia, USA, Finland), by modernization of equipment at several observing stations in the Arctic and Antarctica, by establishment of new manned station (Belgium) in Antarctica, and deployment of new AWS in the Arctic and Antarctica.
Atmospheric Arctic Observing Sites

- Cherskii, Russia
- Tiksi, Russia
- Sodankylä, Finland
- Abisko, Sweden
- Barrow, Alaska
- Alert, Canada
- Eureka, Canada
- Summit, Greenland
- Ny-Ålesund, Svalbard
Station Queen Elisabeth in Antarctica, 70S 23E
(Courtesy IPF, Belgium)
AWS Installation in Antarctic inland during IPY by CMA  (Courtesy CMA)
Increase of the number of reports

The successful start of IPY was resulted in an increase of the number of reports from traditional observational networks of atmosphere in Polar Regions. According to results of the WWW monitoring from 1 to 15 July 2007 (compared with the same period of 2006)

in the Arctic the number of synoptic stations transmitting 90-100% reports increased by 8 stations located on the coast and islands of the Euro-Asian sector,
in Antarctica - by 2 stations,
AMDAR reports in the Arctic - by 22 271.
Availability of SYNOP reports received at MTN centres

Annual Global Monitoring (AGM) period:
1 to 15 October 2006
IPY field phase (2)

- International multidisciplinary marine expeditions were carried out in July - September 2007 in the Arctic Ocean, implementing of IPY projects related to studies of physical and chemical oceanic processes, sea-ice properties and changes, physical and chemical interaction between atmosphere, sea-ice and ocean, marine geology and biology.
- The deployment of 156 oceanographic moorings and arrays as well as new underwater and under-ice mobile observing facilities was done across the Arctic Ocean during 2007.
- IPY project “Climate of Antarctica and Southern Ocean (CASO)” (1stage) was carried out in the Antarctic in January- March 2008
Cruise tracks of F/S Polarstern and R/V Academic Fedorov in summer 2007 (courtesy of R. Dickson)
CASO Hydrographic Sections
Increase of the number of reports from observational networks of oceans in Polar Regions according to results of the WWW monitoring from 1 to 15 July 2007 (compared with the same period of 2006) was as follows:

In the Arctic the number of BUOY reports has increased by 1096,

In the Antarctic the number of BUOY reports has increased by 18 150 (five times more),

the number of TESAC reports has increased by 39,

in particular due to deployment of Argo floats at the Southern ocean.
Drifting buoys, August 2007
Argo, September 2007
Southern Elephant Seal with instrumentation to measure Global position, depth of location, water temperature and salinity (courtesy of M. Fedak, Sea Mammal Research Unit, St. Andrews, Scotland)
IPY Space Activities

To meet the requirements of IPY projects for satellite data and products the IPY Space Task Group (STG) was formed in December 2006 by Space Agencies on request of the Executive Heads of ICSU and WMO. The STG has introduced individual concepts of IPY data portfolios for free and easy data access by IPY science community. Portfolios prepared by six Space Agencies in 2007 were placed at the GIIPSY web-site and a link was established to IPY web-site.

Satellite data and products produced by Space Agencies during IPY are used for the cryosphere studies and improved sea-ice data coverage in the Arctic and the Antarctic. They will be also used for further development of the GCOS Terrestrial Network for Permafrost (GTN-P) and GCOS Terrestrial Network for Glaciers (GTN-G) as components of future Global Cryosphere Watch.
The Alaska Satellite Facility (ASF) downlinks and mosaics Canadian Space Agency (CSA) RADARSAT-1 images of the western Arctic Ocean every three days. These synthetic aperture radar (SAR) images are acquired both day and night regardless of weather conditions. The data are used for research and operational monitoring of changes in sea ice cover. The animation to the right shows changing sea ice conditions from mid-July to mid-September and documents the evolution of a record minimum extent in 2007. The transparent blue mask indicates the sea ice edge as determined by analysts at the National Ice Center (NIC).
IPY data management activities -1

The most important legacy of IPY 2007-2008 will be the preservation and availability of IPY data and observations into the future. However there is inconsistent understanding of the IPY data policy amongst many investigators, and although identification of IPY data is in progress, it is slow. The IPY Sub-Committee on Policy and Data Management aims to educate and provide advice to investigators in order to gather all metadata by June 2009. The IPY Data and Information Services (IPYDIS) have been developed and are now available at www.ipydis.org

This aims to provide the ‘yellow pages’ for IPY data so Project Coordinators can find what services and archives are available. IPYDIS also has a function that allows the Project Coordinators to add their data information.
IPY data management activities -2

All IPY data should be accompanied by a full set of metadata that completely document and describe the data. The present metadata profile for IPY was described as a bare minimum.

At STG 2 an appropriate short-term goal was discussed in terms of how to initiate implementation of this task via links between O.Godoy, IPY Data Coordinator and Agency representatives to investigate in further detail what could be accomplished.

So far Agency points of contact responsible for implementing metadata standards are:

1. Jolyon Martin (ESA-ESRIN)  jolyon.martin@esa.int
2. Bernhard Buckl (DLR-DFD)  Bernhard.Buckl@dlr.de.
3. Martha Maiden (NASA)  martha.e.maiden@nasa.gov
4. Frank Lindsey (NASA)  francis.lindsay-1@nasa.gov
5. Expert (NOAA)

Please provide names from other Agencies
IPY data management activities - 3

• At present one of the main deficiencies in IPY implementation is the lack of any formal support or system that would ensure quick, easy and reliable discovery of and access to IPY data, as well as the lack of a formal pathway for IPY scientists to archive their data and make available metadata to ensure their future access and archival.

• The WMO Inter-commission Task Group supported the proposal made by the IPY JC to consider the Canadian ArcticNet portal and its associated searchable metadata as an IPY portal, which would meet most of the needs of a great majority of the IPY scientists to provide access to data through searchable metadata related to their projects.

• The ITG recommended that these activities would be highly useful as a pilot project to demonstrate an operational national contribution to WIS. In light of this, WIS should work closely with ArcticNet to ensure it became fully compliant with the WIS portal and metadata standards.
IPY legacy

- IPY SCOBS is developing a roadmap that provides a way towards a creation of consolidated vision of the legacy of IPY observing systems that based on the outcomes of series of meetings related to various IPY observing systems;
- The outcomes of meetings related to various IPY observing systems, such as SCAR/GOOS workshop on the Southern Ocean Observing System (Bremen, October 2007), AC/IASC IPY workshops on a Sustained Arctic Observing Network (Stockholm, November 2007, Edmonton, April 2008), IPY STG meetings (Geneva, January 2007, Darmstadt, November 2007, Frascati, 5-6 May 2008) are available for this purpose.
- In perspective there will be SAON meetings (St. Petersburg, July 2008, Helsinki, October 2008), WMO/GEO/WCRP/CliC IPY workshop on legacy of IPY observing systems related to the future GCW (Geneva, 3-5 December 2008), and others.
EC Panel On Polar Observations and Research (proposal)

WMO technical commissions will be actively involved in process to secure the IPY legacy within their areas of responsibility through the expert teams and panels related to the evolution of the GOS, WIS development, GAW, AMDAR, GOOS and WHYCOS implementation.

For effective coordination of these activities ITG recommended that EC should establish an EC Panel on Polar Observations and Research that would consist of experts on atmospheric, oceanographic, hydrological and cryospheric processes in Polar Regions and work in close collaboration with international Programmes and organizations.
First IPY Conference: Polar Research – Arctic and Antarctic Perspectives in the International Polar Year

- The First IPY Conference will take place in St. Petersburg, Russian Federation from 8 to 11 July 2008
- One of the most important of 30 Conference sessions is the session 4.3 that will take place on 9 July (morning):
  
  “Observations form Space & Advanced Observing Technologies”

- Co-chairs M. Drinkwater, K. Jezek, T. Mohr, E.Sarukhanian

WELCOME!
Thank you!