

Polar Gateways

Arctic Circle Sunrise 2008

International Polar Year
International Heliophysical Year

Barrow, Alaska
Jan. 23-29, 2008



Barrow 1881 - 1884



Barrow 2007 - 2009



Arctic Circle Sunrise 2008 Information:
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History of Barrow and Polar Exploration, IPY to IGY
Present and Changing Polar Earth and Space Environments
Polar Gateways to Solar System Exploration and Habitation

Polar Gateways Conference at Barrow, Alaska, January 23-29, 2008

An Interdisciplinary Science and Global Outreach Workshop on Polar Gateways of Understanding to Solar System Exploration for IPY-IHY Arctic Circle Sunrise 2008

The U.S. and international polar earth and space science communities now stand figuratively at the gateways of the ongoing international years, the **International Polar Year** and **International Heliophysical Year 2007-2009**, looking backward toward human progression from early circumpolar exploration and global continental habitation to the presently complex and electronically interconnected worlds of changing polar Earth and space environments. From the present we also look forward to the next fifty years and beyond of exploration and habitation for extreme extraterrestrial environments in the solar system. How have we arrived from this journey from the first IPY in the 1880's, and from earlier polar journeys of exploration and migration, to the present IPY-IHY epoch? What do we really understand from Earth, heliophysics, and planetary science perspectives about the dramatic changes occurring in the Earth-Sun-Heliosphere system as driven by the changing polar and connected heliophysical space environments? And, *quo vadis*, how are we to proceed towards what we might later call the International Planetary Year 2057-2059 in exploration and eventual human habitation of other polar and icy worlds in the solar system? And, finally, what critical insights might we expect to gain from these off-world journeys of exploration that might ultimately increase our understanding of optimal future directions for continuing survival and prosperity on Earth?

These questions can be addressed in a suitably polar environment at Barrow, Alaska through the Polar Gateways conference to be hosted by the **Barrow Arctic Science Consortium** in the modern new facility of the **Barrow Global Climate Change Research Facility**. Leadership, and much of the membership, for the science organizing committee of this conference is being provided from the **ICESTAR/IHY** (Interhemispheric Conjugacy Effects in Solar Terrestrial and Aeronomy Research) and **GIIPSY** (Global Inter-agency IPY Polar Snapshot Year) international science teams of IPY. ICESTAR/IHY leads the conference organization through Dr. John F. Cooper from NASA Goddard Space Flight Center and serves as the IPY-IHY science bridge for polar, heliophysics, and planetary research. GIIPSY supports remote sensing of Earth's polar environments from space through utilization of remote sensing satellites in coordination with ground-based research campaigns. Globally linked aspects of the conference are proposed for these teams as part of the **Arctic Circle Sunrise (ARCSUN)** epoch for beginning of Arctic daytime through March 2008 and the final quarter of the 1st year of IPY-IHY activity. The Barrow program consists of "on-the-ice" orientation to local Arctic land and sea environments, invited presentations, group discussions on key science challenges, science system (e.g., ice core sampling, robotics) testing, native cultural orientation, and science outreach in association with the Barrow township and North Slope Borough communities.

Science Organizing Committees

Polar Gateways / USA

Dr. John F. Cooper, NASA Goddard Space Flight Center, Greenbelt, Maryland

Dr. Glenn W. Sheehan, Director, Barrow Arctic Science Consortium, Barrow, Alaska

Dr. Roger W. Smith, Director, Geophysical Institute, Univ. Of Alaska at Fairbanks, Alaska

Dr. Allan Weatherwax, U.S. ICESTAR/IHY Lead; Siena College, Loudonville, New York

Dr. Kenneth Jezek, U.S. GIIPSY Lead; Byrd Polar Research Center, Ohio State University, Columbus, Ohio

Dr. Barbara J. Thompson, IHY Secretariat; NASA Goddard Space Flight Center, Greenbelt, Maryland

Arctic Circle Sunrise 2008 / International

Dr. Kirstie Kauristie, ICESTAR/IHY Lead; Finnish Meteorological Inst., Helsinki, Finland

Dr. Nikolai Østgaard, University of Bergen, Norway

Dr. Ingrid Sandahl, Swedish Institute of Space Physics, Kiruna, Sweden

Dr. Eric Donovan, University of Calgary, Canada

Dr. Maurizio Candidi, Scientific Committee on Antarctic Research (SCAR); Istituto Nazionale di AstroFisica, Rome, Italy

Dr. Richard Stamper, IHY Secretariat; Rutherford Appleton Laboratory, United Kingdom

POLAR GATEWAYS CONTRIBUTORS WANTED

“FOR HAZARDOUS JOURNEY. SMALL WAGES, BITTER COLD, LONG MONTHS OF COMPLETE DARKNESS, CONSTANT DANGER, SAFE RETURN DOUBTFUL.”

“HONOUR AND RECOGNITION IN CASE OF SUCCESS.”

As Quoted From Sir Ernest Shackleton

Local Host

Barrow Arctic Science Consortium (BASC), Barrow, Alaska

<http://www.arcticsscience.org/>

Sponsors

ICESTAR/IHY and GIIPSY Science Teams for IPY

NASA Goddard Space Flight Center

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