

Part III: Sun-Solar System Connection Impacts

Advancing U.S. Scientific, Education, Security, and Economic Interests

The **International Heliophysical Year** (ihy.gsfc.nasa.gov): The U.S. House of Representatives Science Committee approved House Con. Resolution 189: Celebrating the 50th anniversary of the International Geophysical Year (IGY) and supporting an International Geophysical Year-2 (IGY-2) in 2007-08. The resolution calls for a worldwide program of activities to commemorate the 50th anniversary of the most successful global scientific endeavor in human history - the International Geophysical Year (IGY) of 1957-58. The resolution also calls for an “IGY-2” that would be even more extensive in its global reach and more comprehensive in its research and applications.

U.S. External Partnerships and Relationships

As society becomes increasingly dependent on technologies that are affected by space weather, our vulnerabilities have become more obvious. The nation’s efforts to mitigate space weather effects have placed more urgency on the need to understand the Sun, heliosphere, and planetary environments as a single connected system. External constituencies requesting and making use of new knowledge and data from NASA’s efforts in this area include the Federal Aviation Administration (FAA), the Department of Defense (DoD), National Oceanic and Atmospheric Administration (NOAA), the power industry, and the industry of satellite manufacturers and operators.

Constituencies within NASA include the Exploration Systems Directorate, the Space Operations Directorate, the Deep Space Network, and the various satellite operations centers.

International Cooperation

International Living with a Star: In January 2002, the Interagency Consultative Group (IACG) established the International Living With a Star (ILWS) program. The IACG consists of the heads of the space science programs of the European Space Agency (ESA), the Japan Aerospace Exploration Agency (JAXA), the National Aeronautics and Space Administration (NASA), and the Russian Aviation and Space Agency (NASA). The charter for ILWS is to “stimulate, strengthen, and coordinate space research to understand the governing processes of the connected Sun-Earth System as an integrated entity”. More than 20 contributing organizations are listed at <http://ilws.gsfc.nasa.gov>.

Currently Operating SSSC Missions with significant International participation:

Solar Heliospheric Observatory (SoHO): partnership with ESA

Geotail: partnership with Japan/JAXA

Cluster: partnership with ESA

Ulysses: partnership with ESA

SSSC Missions in Development with significant International participation:

Solar-B: partnership with Japan/JAXA, ISAS, PPARC

STEREO: contributions from CNES, Switzerland, DLR, PPARC, ESA, Hungary

THEMIS: contributions from Canada, CNES, DLR, and Austria

MMS: contributions from recently-selected international partners

AIM: agreement with British Antarctic Survey, Australia

TWINS: contributions from DLR

Near- term Mission Concepts:

Solar Orbiter: possible partnership with ESA

LWS/Geospace: possible contributions from to-be-selected international partners

LWS/Sentinels: possible contributions from to-be-selected international partners