

# The International Space Weather Initiative (ISWI): A Global Partnership in Creating a Space-Weather Awareness



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# What is ISWI?

- ISWI is a program of international cooperation to advance the space weather science by a combination of instrument deployment, analysis and interpretation of space weather data from the deployed instruments in conjunction with space data, and communicate the results to the public and students.
- ISWI is the follow-up activity to the successful IHY, focusing exclusively on space weather
- The goal of the ISWI is to develop the scientific insight necessary to understand the science, and to reconstruct and forecast near-Earth space weather. This includes instrumentation, data analysis, modeling, education, training, and public outreach.



The three activities of ISWI are closely related: Science involves deploying space weather instruments, obtaining data, data analysis by combining ground and space data, and publishing results. Capacity building involves training PhD students and scientists to work on space weather data via workshops and advanced schools.

Outreach involves teaching science teachers to teach space weather material to school students. ISWI scientists giving public lectures in the vicinity of capacity building venues.



ISWI science activities involve the two primary aspects of space weather: production of large solar energetic particle (SEP) events and large geomagnetic storms.

# **ISWI Instruments**

ISWI instruments are low cost instruments deployed in developing countries. ISWI data are combined with data from space missions to study space weather events.



The above picture shows a type II radio burst observed by one of the ISWI instruments CALLISTO (Compound Astronomical Low-cost Low-frequency Instrument for Spectroscopy and Transportable Observatory). The radio burst starts at the time of shock formation seen in EUV images of the associated CME.

#### Space Science Schools and Workshops

ISWI exploits the overlapping objectives of other international organizations such as SCOSTEP (Scientific Committee on Solar Terrestrial Physics) and COSPAR in running the schools and workshops.



For more information see: http://iswi-secretaritat.org

## **ISWI and the United Nations**

ISWI supports the space weather agenda of the United Nations Committee on Peaceful Uses of Outer Space (UNCOPUOS). ISWI Steering Committee meeting is held on the margins of the Science and Technology Subcommittee meetings of COPUOS.



INSTRUMENT OBSERVATION EDUCATION

ISWI works with the United Nations Office of Outer Space Affairs in conducting the Capacity building activities under United Nations Basic Space Science and GNSS programs. This year's workshop will be held in Boston to celebrate the achievements over the past decade (IHY +10), UNISPACE + 50 and global response to space weather events (https://iswi2017.bc.edu/)

## **ISWI Secretariat**

ISWI has a distributed secretariat with the overall management at NASA Goddard Space Flight Center's Solar Physics Laboratory. ISWI also promotes open data policy so that data from all 17 ISWI instrument groups are freely available to the space weather community.

The ISWI web site is run by the Bulgarian Academy of Sciences. The web site serves as repository of presentations and lectures from ISWI Capacity Building activities. (<u>http://iswi-secretariat.org</u>).

The ISWI Newsletter is supported by the Kyushu Institute of Technology in Japan. ISWI workshop coordination is done by Boston College