



UNITED NATIONS
Office for Outer Space Affairs

International Space Weather Initiative

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Outline

- ◆ **Space Weather**
- ◆ **International Space Weather Initiative (ISWI)**
- ◆ **ISWI Workplan (2010 – 2012)**
- ◆ **Unique Aspects of ISWI and Components of ISWI**
- ◆ **ISWI Workshops**
- ◆ **Information Dissemination**
- ◆ **Instrument Programme**
- ◆ **Sudden Ionospheric Disturbance Monitor (SID) operated by UNOOSA**



Space Weather

- ◆ **Galactic radiation and particles emitted by the Sun interact with the interplanetary magnetic field and planetary atmospheres**
- ◆ **The events and effects caused by this complex interaction are commonly referred to as space weather**
- ◆ **Space weather can adversely affect spacecraft, satellites, electronic components and power-plant facilities, radio communications and other infrastructure elements on which human society is increasingly dependent**
- ◆ **It is therefore essential to understand, model, observe and predict space weather**



International Space Weather Initiative

- ◆ **Implemented in 2010-2012 under a three-year work plan in the UN COPUOS Scientific and Technical Subcommittee**
- ◆ **Building on the work conducted under the**
 - ◆ **Basic Space Science (1991 – 2004)**
 - ◆ **International Heliophysical Year (2005 – 2009)**
- ◆ **Linked to other activities**
 - ◆ **United Nations Programme on Space Applications**
 - ◆ **International Committee on Global Navigation Satellite Systems**
 - ◆ **Space Weather Study on the International Academy of Astronautics**



ISWI Work plan (2010 – 2012)

- ◆ **2010: Consider reports on regional and international plans.**
 - ◆ *Encourage continued operation of existing instrument arrays and encourage new instrument deployments;*

- ◆ **2011: Consider reports on regional and international plans.**
 - ◆ *Identify gaps and synergies in ongoing activities;*
 - ◆ *Encourage continued operation of existing instrument arrays and encourage new instrument deployments;*

- ◆ **2012: Finalize a report on regional and international plans.**
 - ◆ *Encourage continued operation of existing instrument arrays and encourage new instrument deployments;*



Unique Aspects of ISWI and Components of ISWI

- ◆ **United Nations Endorsement**
 - ◆ *Opens new opportunities for collaboration in countries with little/no space physics by involving governments and universities or national labs*
 - ◆ *Encourages governmental response*
 - ◆ *Allows broad dissemination of information in six languages to 192 countries of the United Nations*

- ◆ *Workshops*
- ◆ *Information Dissemination*
- ◆ *Instrument Programme*



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ISWI Workshops

- ◆ *Co-sponsored and organized by the United Nations, National Aeronautics and Space Administration (NASA) and Japan Aerospace Exploration Agency (JAXA)*

- ◆ *2009: Republic of Korea (Asia and the Pacific)*
- ◆ *2010: Egypt (Western Asia)*
- ◆ *2011: Nigeria (Africa)*
- ◆ *2012: Ecuador (Latin America and the Caribbean)*



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Information Dissemination

- ◆ **ISWI Newsletter**
 - ◆ **Space Environment Research Centre**
 - ◆ **Kyushu University, Japan**
 - ◆ **To register send e-mail to ISWInewsletter-on@mail-list.com**

- ◆ **ISWI Website**
 - ◆ **Solar Terrestrial Influences Laboratory**
 - ◆ **Bulgarian Academy of Sciences, Bulgaria**
 - ◆ **www.iswi-secretariat.org**



Instrument Programme

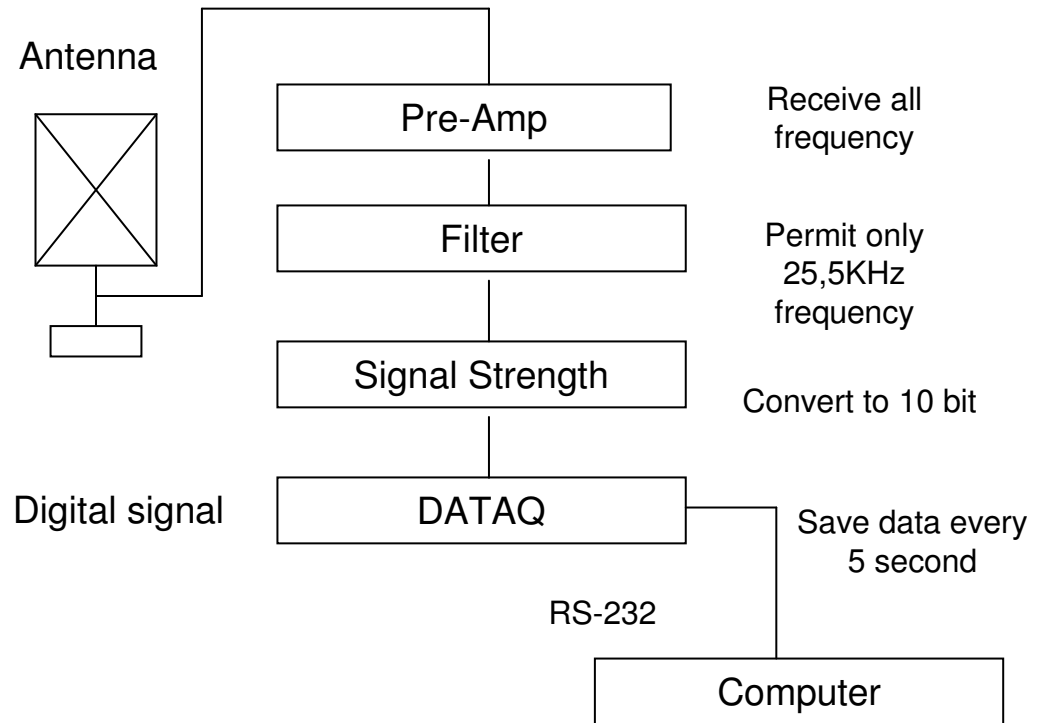
- ◆ **Develop the scientific insight necessary to understand the space science, and to reconstruct and forecast near-Earth space weather**
 - ◆ **Instrument and data analysis**
 - ◆ **Coordinate data products to provide input for physical modelling (joint with other more extensive modelling efforts)**
 - ◆ **Coordinate data products to allow predictive relationships to be developed (joint cooperation with space weather prediction organizations)**
- ◆ **Education – encourage and support space science courses and curricula in universities that provide instrument support**
 - ◆ **University and Graduate Schools**
 - ◆ **Public Outreach**



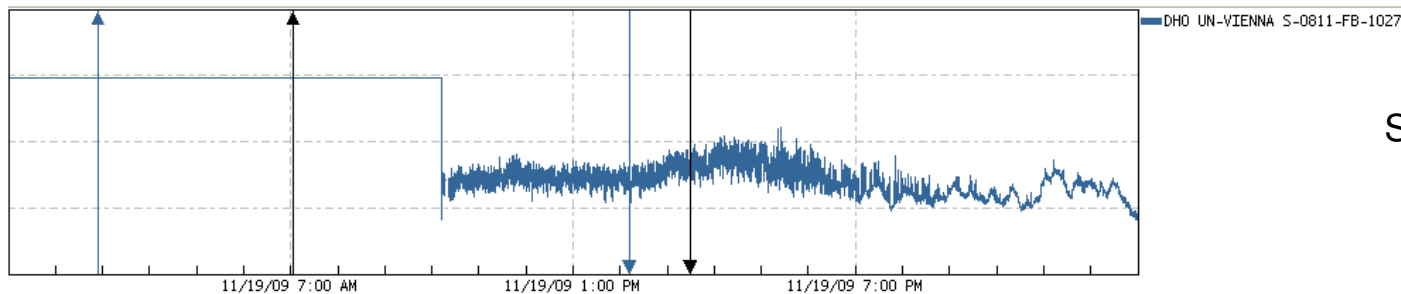
Instrument Programme

- ◆ **14 instrument arrays, five types of instruments, ~ 1000 instruments in operation – deployed during the IHY 2007 campaign (2005 – 2009)**
- ◆ **Lead scientist or principle investigator funded by his/her country provides instrumentation and data distribution**
- ◆ **Instrument 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 scientists participate in publications and scientific meetings where possible**

Sudden Ionospheric Disturbance Monitor (SID) operated by UNOOSA



Principle of SID monitor



Stanford Solar Centre

SID Data Access

11

www.stanford.edu



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