



# ISWI Data Subcommittee Report

***Chair:*** Shing Fung, NASA Goddard Space Flight Center, USA

***Members:*** Christine Amory, LPP UPMC Polytechnique, CNRS, France

*Keith Groves, Boston College, USA*

*Christian Monstein, Istituto Ricerche Solari Locarno (IRSOL), Switzerland*

*Terry Onsager, NOAA SWPC, USA*

*Babatunde Rabiou, NASRDA, Nigeria*

*George Maeda, Kyushu Institute of Technology, Japan*

*Jesper Gjerloev, Johns Hopkins University Applied Physics Lab, USA*

ISWI Steering Committee Meeting, Vienna, Austria, February 7, 2020

# Discussion Topics

- ISWI (Open) Data Policy Status
- Increasing ISWI Data Accessibility
- Data collaboration opportunities
  - International Heliophysics Data Environment Alliance (IHDEA)
  - 2020 COSPAR activities
    - International Space Weather Action Teams (ISWAT)
    - 43rd Scientific Assembly

# ISWI Data Policy Status

- The ISWI data policy has been established to
  - Facilitate unrestricted flow of ISWI data across geo-political and organizational boundaries;
  - Promote international collaboration & coordination in data exchange to enable space weather research and capacity building.
- ISWI data policy incorporates instrument PDMPs (last update on Jan 27, 2020)
  - 19 ISWI instruments
  - 4 Instrument PDMPs are still missing (latest queries to instrument Pls: January 4, 2020)
    - CIDR
    - RENOIR
    - SCINDA
    - AMMA

# Increasing ISWI Data Accessibility

- Utilize existing data discovery & distribution systems, such as virtual observatories
  - e.g, VWO for e-Callisto, AWESOME
  - Enabled by providing metadata in SPASE
- Advantages to ISWI:
  - Data become more discoverable by broader user community
  - Accessible along with other related data resources (space missions, other ground observatories, etc.)

**Virtual Wave Observatory**

version: 3.0

– QUERY + TUTORIALS + EDUCATION + ANNOTATION + EVENTS + RESOURCES

+ Home

**VWO Query Builder**

Data Source Selection

Magnetospheric State

Location

Keywords

View Intersection Times

Run Query

**VWO Query Builder**

Restrict your query to the following available Data Sources then press Apply This Condition button

Double click on a data source element to view its metadata.

Apply The Following Conditions Reset

**Time Range**

Start: 2000-01-01T00:00:00.000Z Stop: 2000-01-02T23:59:59.999Z + Events

-1 day | -1 hr | +1 hr | +1 day -1 day | -1 hr | +1 hr | +1 day

**Measurement Type**

☒ Passive ☒ AC Electric Antenna ☒ Ground-based

☒ Active ☒ AC Magnetic Antenna ☒ Space-based

☐ Frequency Range - From: 0 To: 0 kHz

**Data Set Selection**

VWO VHO VMO VSO VIRBO VITMO VMR

Observatory	Instrument
THEMIS-A	THEMIS-B
THEMIS-B	THEMIS-C
THEMIS-C	THEMIS-D
THEMIS-D	THEMIS-E
THEMIS-E	Ulysses
Ulysses	Voyager 1
Voyager 1	Voyager 2
Voyager 2	Wind
Wind	e-Callisto
e-Callisto	Network Spectrometers

**Data Product**

**Network Spectrometers**

CALLISTO Quicklook Solar Spectrogram Plots

CALLISTO Solar Spectrogram FITS files

# International Heliophysics Data Environment Alliance (IHDEA)

- Establishment announced formally in December 2019
  - See newsletters from ISWI, AGU SPA, and the ESDC
- IHDEA vision: To enable the international heliophysics and space weather research community to seamlessly find, access, & use all electronically accessible HP/SW data sets in accordance with the *FAIR principles* (*Findable, Accessible, Interoperable, and Reusable*).
- IHDEA focuses are on:
  - Enabling efficient exchange of and access to the diverse data products obtained from space missions, ground-based experiments, and models;
  - Fostering coordinated development of existing and future heliophysics standards for data, metadata, and services to enable interoperability; and
  - Promoting and assisting the adoption of the above standards.
- Through its international collaboration and coordination, the IHDEA can help promote and distribute ISWI instrument data.

# 2020 COSPAR Activities

- International Space Weather Action Teams (ISWAT; <https://iswat-cospar.org/>)

- Space weather
  - Multi-disciplinary
  - Cuts across all domains
  - Requires the global community to work together.
- Action Teams
  - Self-guided collaborative efforts
  - Organized into [\*ISWAT Clusters\*](#).

The COSPAR ISWAT initiative is a global hub for collaborations addressing challenges across the field of space weather.

S: Space weather origins at the Sun	H: Heliosphere variability	G: Coupled geospace system	Impacts
S1: Long-term solar variability  S2: Ambient solar magnetic field, heating and spectral irradiance  S3: Solar eruptions	H1: Heliospheric magnetic field and solar wind  H2: CME structure, evolution and propagation through heliosphere  H3: Radiation environment in heliosphere  H4: Space weather at other planets/planetary bodies	G1: Geomagnetic environment  G2a: Atmosphere variability  G2b: Ionosphere variability  G3: Near-Earth radiation and plasma environment	Climate  Electric power systems/GICs  Satellite/debris drag  Navigation/Communications  (Aero)space assets functions  Human Exploration
<b>Overarching Activities:</b> Assessment    Information Architecture    Data Utilization    Education/Outreach			

Collaboration and exchange of ideas. The sum is worth more than its parts.



# 2020 COSPAR Activities...cont.

- ISWAT Inaugural Working Meeting (<https://iswat-cospar.org/wm2020>)
  - February 10-14, 2020, Port Canaveral, Florida
  - Parallel sessions for action plan development by Clusters/Action Teams
  - Plenary sessions for collaboration discussions
    - Among ISWAT Clusters/Action Teams
    - Other science organizations (ISWI, SCOSTEP/PRESTO,...etc.)
  - ISWI can contribute by
    - Providing instrument data
    - Joining Science Clusters/Action Teams
    - Participating in Overarching Clusters
      - Information Architecture
      - Data Utilization
      - Education Outreach

# 2020 COSPAR Activities...cont.

- 43<sup>rd</sup> Scientific Assembly (<https://www.cospar2020.org/>)
  - August 15-23, 2020, Sydney, Australia
  - Abstract submission deadline, Feb 14, 2020 (next Friday)
  - COSPAR-20-PSW.4: Space Weather Information Architecture and Its Roles in Enhancing Data Access and Utilization
    - [https://www.cospar-assembly.org/admin/session\\_cospar.php?session=968](https://www.cospar-assembly.org/admin/session_cospar.php?session=968)
    - Confirmed invited speakers (in no particular order): Aaron Roberts (*NASA GSFC*), Bob Candey (*NASA GSFC*), Harri Laakso (*ESDC*), Jack Ireland (*NASA GSFC*), Michele Cash (*NOAA SWPC*), Richard Marshall (*BOM/ASWS*), Darren De Zeeuw (*UMichigan/CCMC*), and Mamoru Ishii (*NICT, Japan*)