

ISWI Data Subcommittee Report

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Discussion Topics

- ISWI (Open) Data Policy Status
- Enhancing ISWI Data Discoverability & Accessibility
- Opportunities for International collaboration and coordination
 - SCOSTEP/PRESTO
 - COSPAR/ISWAT
 - International Heliophysics Data Environment Alliance (IHDEA)

ISWI Data Policy Status

- The ISWI data policy has been established since November 2017
 - Instrument project data management plans (PDMPs) are integral to the policy
 - Promote international collaborations & coordination in data exchange to facilitate space weather research and capacity building
- Last updated on February 12, 2021 (version 1.3.8)
[website needs updating]
 - 20 ISWI instruments (see Projects under <http://www.iswi-secretariat.org/>)
 - PDMPs yet to be furnished:
 - AMMA
 - CIDR
 - RENOIR
 - SCINDA

Enhancing ISWI Data Discoverability & Accessibility

By leveraging existing data service infrastructure

- [NASA Heliophysics Data Portal](#)
- [Heliophysics Digital Observatory](#)
(formerly [Virtual Wave Observatory](#))

By using standard, uniform data description to enable interoperability

- [Space Physics Archive Search & Extract \(SPASE\) metadata model](#)
(now [recommended by COSPAR Panel on Space Weather](#))

By registering and sharing metadata on the [SPASE registry](#)

- [AWESOME](#) & [e-Callisto](#) are now registered

Web-Based SPASE EDITING Tool

<http://xmleditor.spase-group.org/>

Benefits to ISWI:

- 1) Data become more discoverable by broader user community
- 2) Searchable along with other related space-based & ground-based data resources

The screenshot shows the SPASE Metadata Editor interface. At the top, the title "SPASE Metadata Editor" is displayed. On the left, there is a sidebar with "Spase Document Type" set to "SPASE Metadata Editor", and buttons for "Spase" and "Export". The main area is titled "What resource type do you want to describe in 'SPASE'?" and contains a table of options. The "Version" is set to "2.4.0". On the right, there are sections for "Import existing SPASE descriptor file" (with "From desktop" and "From remote URL" options) and "Export incomplete SPASE descriptor file" (with a "Filename" field and "Export" button). At the bottom right, there are "Information icons" and "SPASE Tutorials" links, along with contact information for help and feedback.

What resource type do you want to describe in 'SPASE'?			
Please select a descriptor type below			
Version	2.4.0		
You must describe one of these options:			
Catalog	--	0	+ [arrow]
DisplayData	--	0	+ [arrow]
NumericalData	--	0	+ [arrow]
Document	--	0	+ [arrow]
Software	--	0	+ [arrow]
Granule	--	0	+ [arrow]
Instrument	--	0	+ [arrow]
Observatory	--	0	+ [arrow]
Person	--	0	+ [arrow]
Registry	--	0	+ [arrow]
Repository	--	0	+ [arrow]
Service	--	0	+ [arrow]

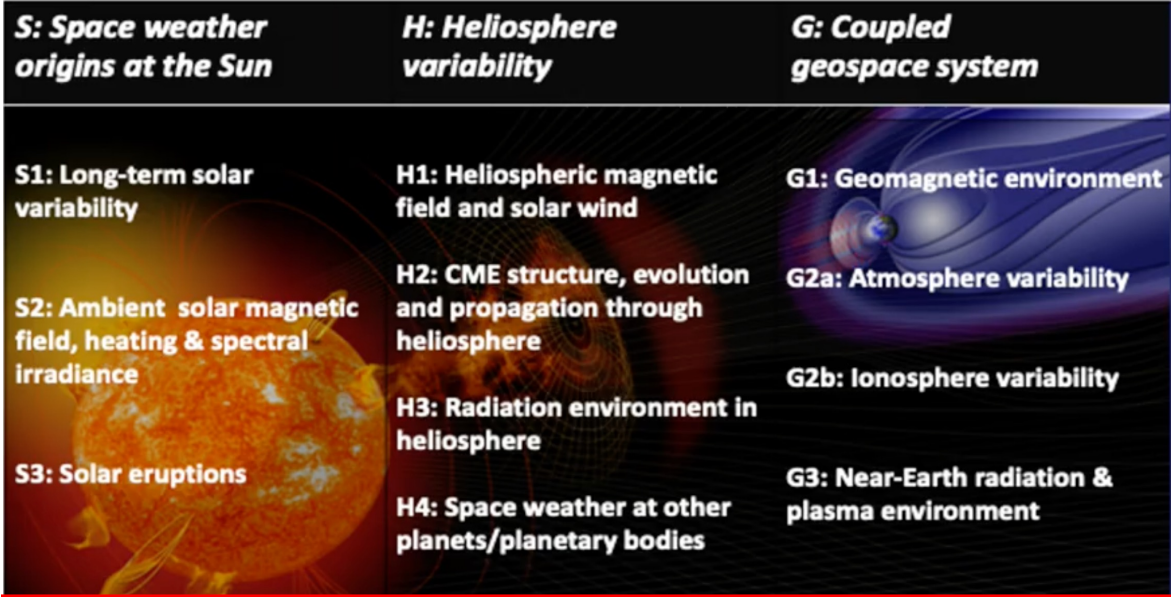
Collaboration and Coordination with SCOSTEP/PRESTO

- ISWI and SCOSTEP share similar goals in science, international collaboration, and capacity building.
- PRESTO, the current SCOSTEP project (2020-2024), has called (ended December 2021) for the creation of solar-terrestrial databases to support their 3 pillars of science studies:
 - i. Sun, interplanetary space and geospace
 - ii. Space weather and the Earth's atmosphere
 - iii. Solar activity and its influence on the climate of the Earth System
- **ISWI instruments should be valuable data resources for SCOSTEP/PRESTO.**

COSPAR International Space Weather Action Teams (<https://iswat-cospar.org/>): Preparing for Next COSPAR Space Weather Roadmap

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

- Space weather
 - Multi-disciplinary
 - Cuts across all Heliophysics domains
 - Requires the global community to work together.
- Action Teams
 - Community driven
 - Self-guided efforts
 - Organized into ISWAT Clusters (see chart).
- ISWI and ISWAT can collaborate to their mutual benefits.

<i>S: Space weather origins at the Sun</i>	<i>H: Heliosphere variability</i>	<i>G: Coupled geospace system</i>	<i>Impacts</i>
 <p>S1: Long-term solar variability</p> <p>S2: Ambient solar magnetic field, heating & spectral irradiance</p> <p>S3: Solar eruptions</p>	<p>H1: Heliospheric magnetic field and solar wind</p> <p>H2: CME structure, evolution and propagation through heliosphere</p> <p>H3: Radiation environment in heliosphere</p> <p>H4: Space weather at other planets/planetary bodies</p>	<p>G1: Geomagnetic environment</p> <p>G2a: Atmosphere variability</p> <p>G2b: Ionosphere variability</p> <p>G3: Near-Earth radiation & plasma environment</p>	<p><i>Climate</i></p> <p><i>Electric power systems/GICs</i></p> <p><i>Satellite/debris drag</i></p> <p><i>Navigation/Communications</i></p> <p><i>(Aero)space assets functions</i></p> <p><i>Human exploration</i></p>
<p>Overarching Activities:</p> <p><i>O1: Assessment</i> <i>O2: Information Architecture & Data Utilization</i></p> <p><i>O3: Innovative Solutions</i> <i>O4: Education & Outreach</i></p>			

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

2022 COSPAR Activities...cont.

- 44th Scientific Assembly (<https://www.cosparathens2022.org/>)
 - July 16- 24, 2022, Athens, Greece
 - Abstract submission deadline **February 18, 2022** (extended from Feb 11)
- ISWAT Meeting @ Coimbra University, Portugal
 - September 26-30, 2022

Collaborating with the International Heliophysics Data Environment Alliance (IHDEA; <https://ihdea.net>)

- Established in December 2019 with 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 on:
 - Fostering **coordinated development of heliophysics standards** for (i) data formats, (ii) metadata model, (iii) data services and (iv) analysis tools;
 - Promoting and assisting the adoption of data standards and “best practices” to enable interoperability of data systems; and
 - Enabling efficient access, exchange, and use of diverse digital resources from space-based and ground-based experiments, and models.
- ISWI will benefit directly from collaboration and coordination of information architecture in the international heliophysics data environment.