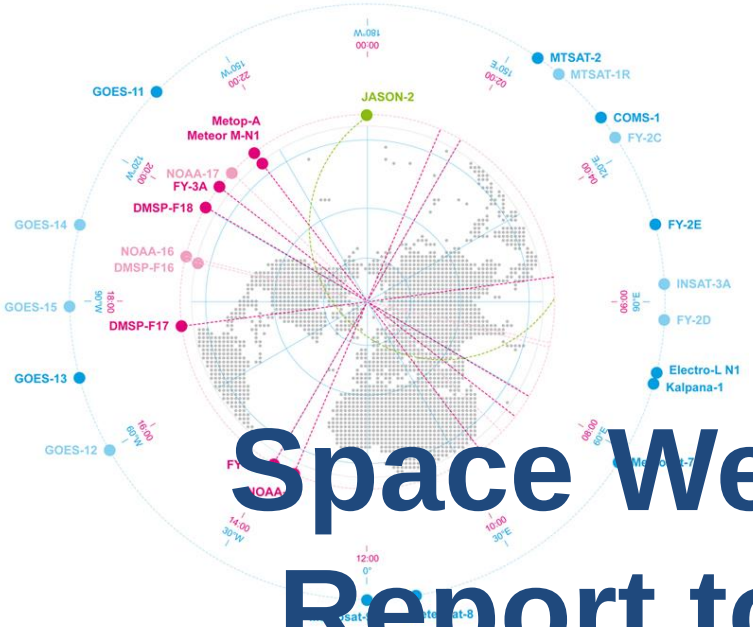

Space Weather Task Team Report to CGMS Plenary

Presented to CGMS-46 Plenary

Co-Chairs: Elsayed Talaat (NASA), Tsutomu Nagatsuma (NICT)

Special thanks to Matt Butler (NOAA), Acting Rapporteur

Coordination Group for Meteorological Satellites

CGMS

Overview of Session

~33 participants
Sunday 9.00-12.30
18 WPs
14 Agencies participated

SWTT/1: Objectives
SWTT/2: Review of actions and recommendations from previous meetings - 1WP
SWTT/3: Discussion and recommendation of Terms of Reference for a permanent CGMS Space Weather Coordination Group (SWCG) - 1WP
SWTT/4: Updates on space-based observational capabilities - 5 WPs
- *CMA, NOAA, EUMETSAT, NASA, ESA*
SWTT/5: Updates on space weather activities - 4 WPs
- *ROSHYDROMET, NOAA, NICT, KMA*
SWTT/6: UN COPUOS Space Weather Expert Group Update - 1 WP
SWTT/7: WMO space weather activities update - 1WP
SWTT/8: Update on the CGMS baseline - 1 WP
SWTT/9: Results of the space weather anomaly survey - 1 WP
SWTT/10: Anomaly reporting and database discussion- 1 WP
SWTT/11: Review and updating of the HLPP - 2WPs

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UN COPUOS Update

- UNISPACE + 50 Initiative to be commemorated in 2018
  - Celebrate 50th anniversary of United Nations Conference on the Exploration and Peaceful Uses of Outer Space
  - Serve as a blueprint for shaping the "Space 2030" agenda
- Seven Thematic Priorities identified for UNISPACE+50
  - **Priority 4: *International framework for space weather services***
  - Develop a space weather roadmap for coordination and information exchange on space weather events and mitigation
- UN COPUOS Space Weather Expert Group met on the margins of UN COPUOS STSC, February, 2018, and proposed to establish an international coordination group for space weather and steps to define it.
- First intersessional meeting held during Space Weather Workshop, April 2018 which began discussion on Mandate, Terms of Reference, and Membership of the coordination group. An additional two intersessional meetings planned.
- Final roadmap to be submitted to COPUOS in 2019

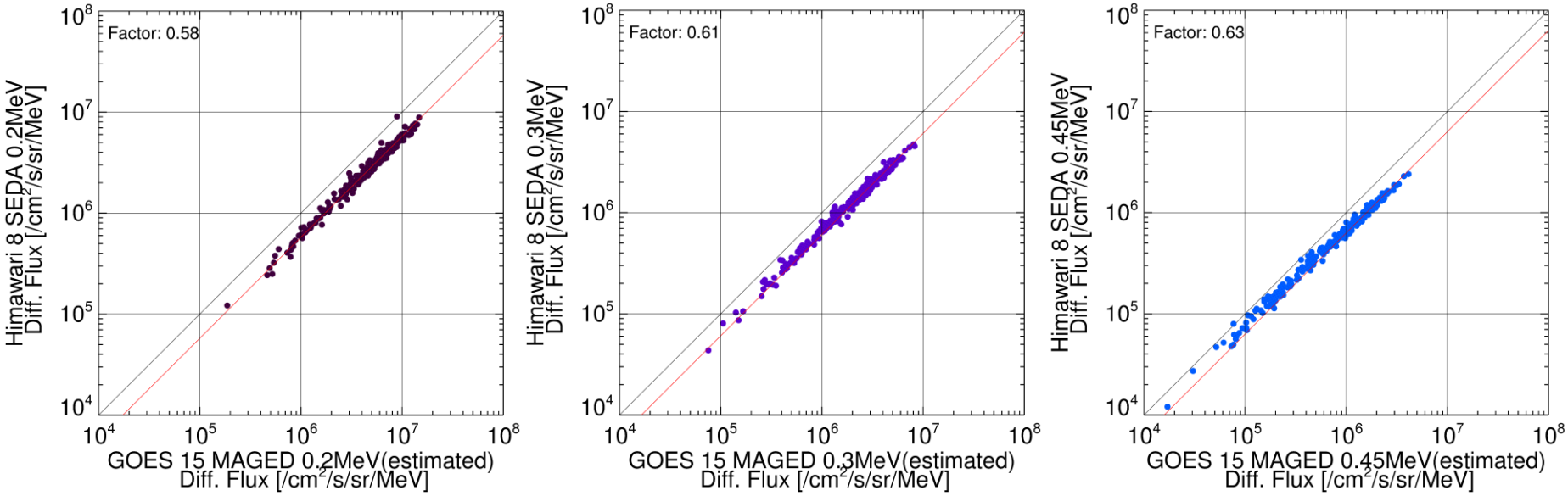
International Organizations Engaged in Space Weather Activities

Numerous other groups are active in space weather research (COSPAR, ISWI, ILWS, IAU, URSI, SCOSTEP, etc.)

Next steps for HLPP Implementation

5.2	**Space Weather**		
5.2.1	Establish dialogue with Space Weather User Community and define the future framework for continuing this dialogue.	Action proposed for CGMS to invite representative from ISES to be permanent observer to SWTT (**Action A46.04**) Interactions between SWTT and Space Weather community were had at European Space Weather Week and at UN-COPUOS, where CGMS and its space weather activities were presented. Link to ISES also established.	

Inter-calibration between Himawari-8/SEDA and GOES 15 particle detector



There are good correlations between Himawari-8 and GOES 15 observations in general. However, the flux level is slightly lower than that observed by GOES 15 in these channels.

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Next steps for HLPP Implementation

5.2	**Space Weather**		
5.2.2	Investigate feasibility of a consistent inter-calibration for energetic particle measurements using instruments with adequate in-orbit calibration and vicarious methods, using GSICS methodology as reference.	Action proposed for CGMS Members to nominate representatives to participate in a task group on space weather calibration (**Action A46.09**) Discussions ongoing between SWTT co-chairs and GSICS. SWTT presented status of intercalibration of energetic electrons at 2018 GSICS-EP meeting. SWTT members reviewed GSICS activities and deliver recommendations for its use as a framework for space weather sensor inter-calibration activities. SWTT invited a GSICS representative to the next SWTT inter-sessional meeting; and to a topical discussion during the European Space Weather Week Nov-Dec 2017 in Oostende, Belgium.	

Space Weather Anomaly Survey

- A seven-question survey was distributed to CGMS Working Group I members
- Results obtained from EUMETSAT, JMA, NASA, and NOAA
- Overall Key Findings:
  - No preventative actions are taken by operations prior to a solar event; though certain instruments have thresholds to safe themselves, e.g. CALIPSO laser system, AURA MLS, Chandra
  - Space Weather information is consulted more frequently for LEO, Lunar, and Earth trailing mission orbits but typically during anomaly resolution investigations
  - Additional support from L1, and better modeling to determine impact to satellite at its time and space location
- CGMS/SWTT organized session at ESWW to discuss anomalies resulted in NOAA NCEI investigation of CGMS space weather anomaly database and recommendations

Next steps for HLPP Implementation

5.2	**Space Weather**		
5.2.3	Evaluate existing operational space weather products and services in support of CGMS members' spacecraft operations and recommend additional services as appropriate.	Proposed action for SWTT to review the contents related to space weather stored in OSCAR/Space database (**Action A46.01**) Proposed actions for SWTT working with WMO to clarify what information needs to be provide in each field of the space weather anomaly form (**Action A46.02**) and inputs to include full investigations when available and when possible (**Action A46.03**) Proposed action for SWTT to survey CGMS Members to identify cross-member use of space weather data (**Action A46.05**) and Proposed action for WG-I and SWTT to develop strategies to increase reporting into the space weather anomaly database through joint intersessional meetings (**Action A46.07**) Proposed action for SWTT from WG-I to provide use case(s) from space weather anomaly analyses and any recommendations to operators arising (**Action A46.08**) SWTT developed operator survey regarding space weather anomalies and WG-I distributed the survey and collated results. SWTT organized session at ESWW to discuss anomalies resulted in NOAA NCEI investigation of CGMS space weather anomaly database and recommendations.	

Next Steps for HLPP Implementation

1.1	**Coordination of observing systems**	**WG-III**
1.1.9	Identify the baseline space-based space weather observational system and review with respect to the WIGOS 2040 vision for space-based global observing system;	SWTT will remain engaged with WMO IPT-SWeISS on future Gap Analysis SWTT identified the baseline space-based space weather observations and these will be included in the revised CGMS baseline, as coordinated with WG-III

Next Steps for HLPP Implementation

2	**COORDINATION OF DATA ACCESS AND CONTRIBUTION TO THE WMO INFORMATION SYSTEM**	**WG-IV**
2.9	Document current data formats for space weather observations	Proposed action for SWTT to investigate issues (e.g., access, calibration, format) regarding data dissemination and use of space weather data by end users (**Action A46.06**). Proposed action to WGIV to determine data formats of space weather measurements use by CGMS Members, particularly particle sensor data (GEO and LEO) and magnetic field data (GEO) (**Action A46.10**)
2.10	Improve the near-real-time access to and global exchange of space weather data from instruments hosted on meteorological satellites	

To be considered by CGMS:

- For endorsement:
  - Andrew Monham to serve as Rapporteur for SWTT/SWCG