

The IAU Working Group on Coordination of Synoptic Observations of the Sun



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Brief Description of WG

WG was created at the end of 2011-early 2012; in 2015 after the IAU restructuring, it became “*Inter-Division B and E WG on Coordination of Synoptic Observations of the Sun*”.

Co-Chairs: Frederic Clette (Belgium) and Alexei Pevtsov (USA)

WG web pages:

http://www.iau.org/science/scientific_bodies/working_groups/255/

<http://www.nso.edu/IAU-Com12> - direct link to group page



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Inter-Division B-E WG Coordination of Synoptic Observations of the Sun

Description

The mission of this working group is to facilitate international collaboration in synoptic long-term solar observations, which includes past, current, and future synoptic programs, preservation, calibration, and access to synoptic solar data products. The working group provides a forum for discussion of all issues relevant to synoptic long-term observations of the Sun including (but not limited to) coordination between synoptic programs in different countries (both in respect to exchange of information and planning for future synoptic programs) and a proper calibration of historical data from different sources (e.g., sunspot drawings, CaK plage indices, magnetic field measurements etc).

Working Group Web Page

Working Group Members (53)

Under

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Co-Chairs

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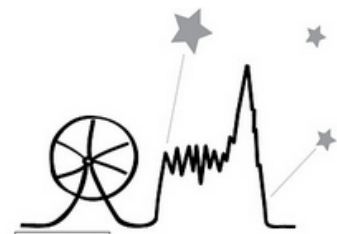


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Inter-Division B and E WG on Coordination of Synoptic Observations of the Sun

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To join the working group, please send email to IAU (iauinfos@iap.fr) requesting a membership in this working group.

WG Discussion Questions:

Following questions were posted for discussion by all members of the WG:

1. Synoptic data and data products: What kind of data and data products should be part of long-term synoptic programs?
2. Funding sources for long-term synoptic programs?
3. Should this IAU working group serve as an expert board for defining/recommending ground-based synoptic data standards?
4. How can we improve the compatibility of synoptic data collected at different times and different observatories?
5. How can we build better synergies between ground based synoptic observations and solar space missions?
6. What is the best way to provide synoptic data to users? Data preservation.



Role: Dissemination of Information

1. (Targeted) Meeting announcements (ILWS 2013, on role of groundbased observations in support of SW missions):

Sessions addressing heliospheric missions also addressed upcoming opportunities for coordinated science and a proposal was drafted for the creation of an ILWS working group. This group would consider opportunities for future scientific coordination in heliospheric studies with Solar Orbiter, Solar Probe Plus, Interhelioprobe and SPORT, together with missions in Earth orbit and ground based facilities (see proposal text by Stuart Bale and Milan Maksimovic).

In response to the workshop summary remarks, additional proposal was made by Dr. Yong Liu to form a separate Geospace observational working group, composed of representatives from both space and ground observations on magnetosphere, ionosphere and Earth atmosphere. This working group will facilitate the data sharing for ground stations like radar stations and the space missions including RBSP, CLUSTER and other current missions. The working group will also work on future missions including SWARM (ESA), MMS (USA), ERG (Japan) and MIT for the future campaigns of the coordinated observations on the geospace.

2. Announcements about activity related to WG. E.g. World Meteorological Organization (WMO) was developing a set of requirements for various areas including Space Weather: requirements : <http://www.wmo-sat.info/oscar/applicationareas/view/25>



The Solar Probe Plus Ground Based Network

V3

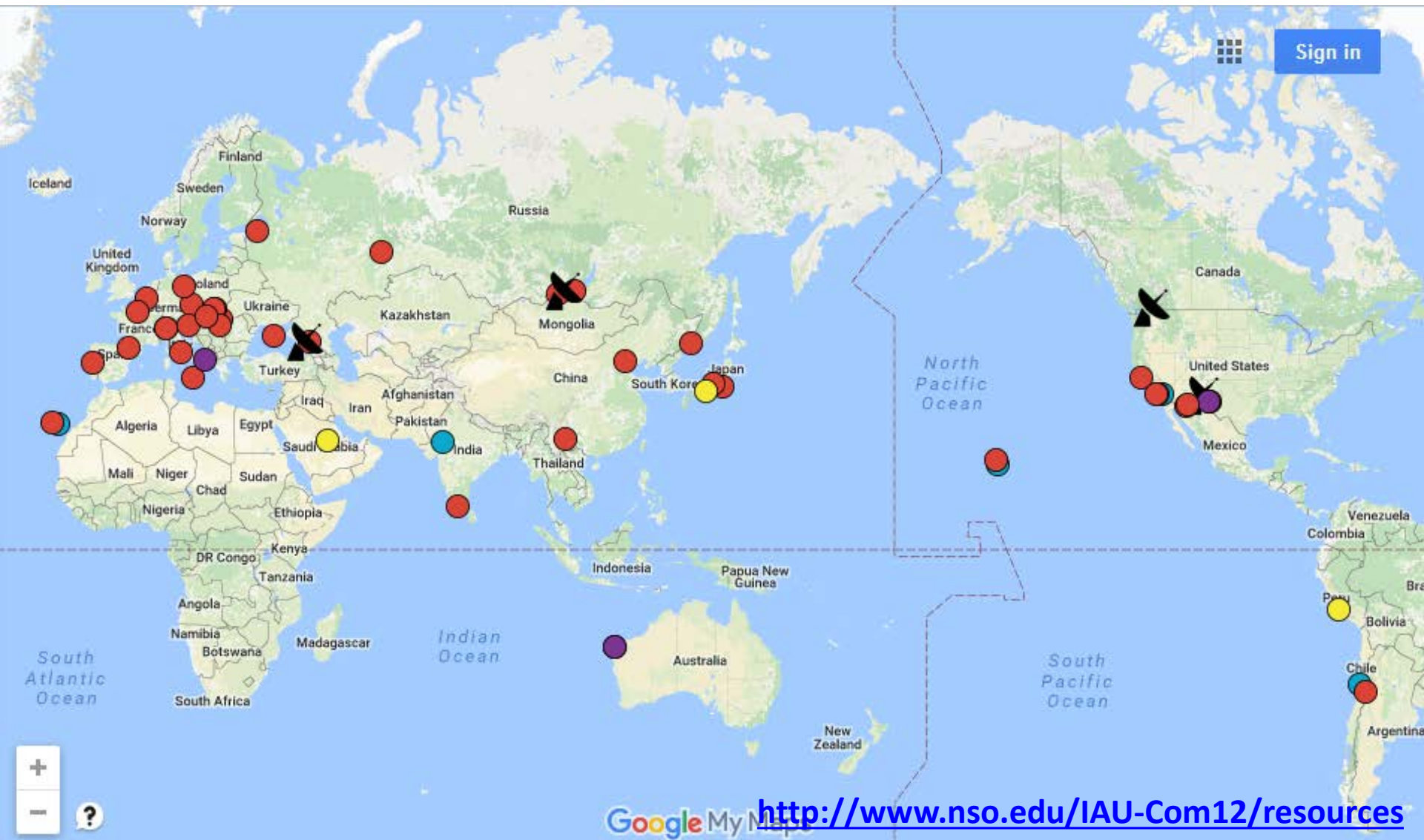
November 5, 2015

White Paper Authors: N. A. Schwadron, T. Bastian, J. Leibacher, D. Gary, A. Pevtsov, M. Velli, J. Burckpile, N. Raouafi, C. Deforest

SPP GBN Committee Members: N. Schwadron (Chair), T. Bastian (CoChair), R. Leamon, M. Guhathakurta, C. St. Cyr, K. Korreck, M. Velli, N. Fox, I. Roussev, A. Szabo, A. Vourlidas, J. Kasper, J. Burckpile, J. Leibacher, S. Habbal, H. Gilbert, T. Hoeksema, T. Rimmele, V. M. Pillet, A. Pevtsov, S. Fineschi, N. Raouafi, D. Gary

<http://sppgway.jhuapl.edu/sites/default/files/Pubs/SPP-GBN-WhitePaper-v5.0.pdf>

Role: Survey of Existing Solar Observatories/instruments





Role: Inform about New International Projects

- Lagrangian L5 mission (Carrington) - London, March 2017, Mario Bisi
- SPRING, Markus Roth
- Brazilian magnetograph (Luis Eduardo Antunes Vieira, Alisson Dal Lago)
- “Solar Service” in Russia (Yu. Nagovitsyn, A. Tlatov)

Role: Support for Preservation of Data

- Historical records of sunspot numbers, Ca K spectroheliograms (MWO (USA), Kodaikanal (India), other, sunspot field strength measurements
- Support for digitization of solar observations from historical archives: Zurich Library, ISSI, and Paris Observatory. Digitization of sunspot drawings by Honore Flaugergues (Paris Observatory) - Rainer Arlt, Jean Aboudarham.
- Sunspot drawings from Taipei Astronomical Museum (1941/1947-present) - An-Le Chen, José M. Vaquero, Frederic Clette, [Historical Archive of Sunspot Observations](#) (HASO) at the University of Extremadura (Spain)
- Digitization of synoptic maps created by Patrick McIntosh (project led by) David Webb:
http://www.ngdc.noaa.gov/docucomp/page?xml=NOAA/NESDIS/NGDC/STP/Solar/iso/xml/solar-imagery_composites_synoptic-maps_mcintosh.xml&view=getDataView&header=none).



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IAU Letter of Support for Digitization Projects of Historical Solar Data

To a curator of historical archives:

Dear Sir or Madam:

As we understand, you were contacted by a professional astronomer about providing access to your archives of historical astronomical materials related to observations of the sun and/or for permission to allow digitization of such data. This letter expresses a strong support for such a request.

Recent Developments:

Sunspot Time Series

- Problem for external community: too many sunspot time series
- Series of workshops held by “Sunspot Numbers” working group (led by F. Clette, E. Cliver, and L. Svalgaard).
- Re-calibration of International sunspot number series (V2). IAU PR : <http://www.iau.org/news/pressreleases/detail/iau1508/>
- 5 time series were selected for in-depth analysis (small groups, ISSI workshop) - F. Clette, E. Cliver, A. Munoz-Jaramillo, Thierry Dudok de Wit, D. Pesnell, A.A. Pevtsov
- Goal is to develop a single unified sunspot time series with uncertainties (error bars).
- IAU WG role: establishing procedures for designation of important data series as “standard” and for a more permanent long-term supervision process where the IAU, via the WG, monitors the output of our World Data Center.

Role: Support for Facilities

- Letters of support (Nobeyama Solar Radio Observatory, NAOJ, Debrecen Heliophysical Observatory, DHO).
- Support to continuation of the WDC-SILSO activities at the Royal Observatory of Belgium, in Brussels and other long-term projects, which continuation could be threatened.

Some current issues

- Long-term datasets are often *ad hoc* collections.
- Lack of coordination between national programs/observatories (non-uniform/duplicate data).
- No critical evaluation (what do we need to observe, what is missing etc).
- Lack of long-term planning (no well-defined goals, diminishing funding, aging facilities).
- Data preservation...