STCE Newsletter

22 Aug 2016 - 28 Aug 2016

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The Solar-Terrestrial Centre of Excellence (STCE) is a collaborative network of the Belgian Institute for Space Aeronomy, the Royal Observatory of Belgium and the Royal Meteorological Institute of Belgium.

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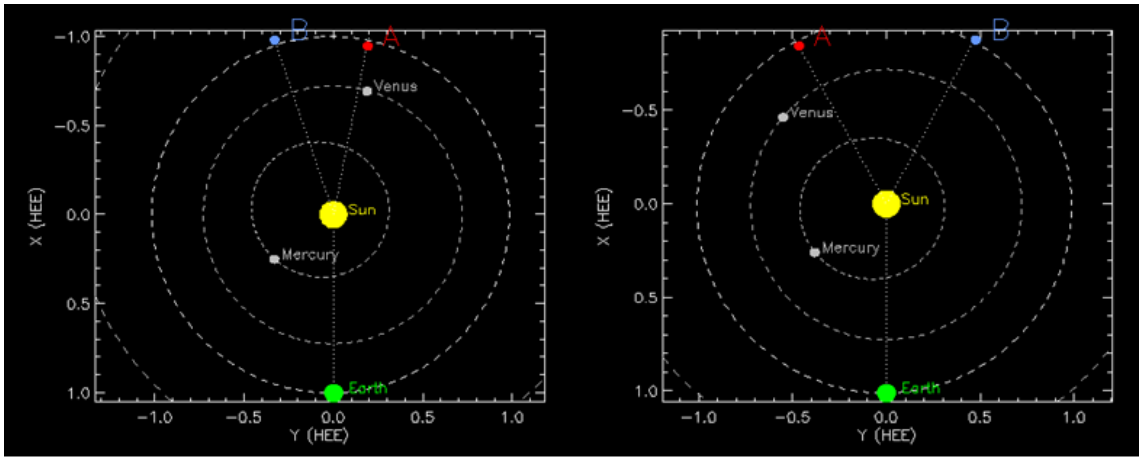
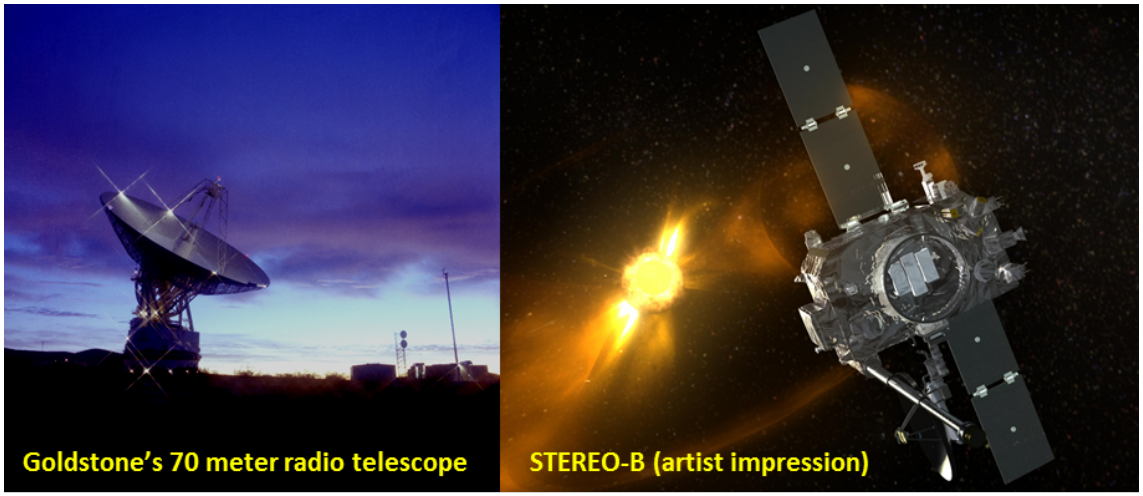
1. Resuscitating STEREO-B

On 1 October 2014, communications with the STEREO-B spacecraft were interrupted during a planned test in anticipation of its solar conjunction at the Sun's farside (see image underneath for positions relative to Earth). Despite intense recovery efforts in the subsequent months, contact could not be re-established and the spacecraft seemed to be lost. More background information can be found in the news items of 4 June 2014 (http://www.stce.be/news/253/welcome.html) and 29 July 2015 (http://www.stce.be/news/315/welcome.html).



1 October 2014 **21 August 2016**

So it came as a big surprise when late on 21 August, during its monthly recovery operation, the NASA Deep Space Network (DSN) managed to lock on a frequency transmitted by STEREO-B's low gain antenna. In the subsequent days, analysis revealed the spacecraft was in a complex spin, with its fuel tanks frozen and the battery state of charge at 30%. The prime goal is now to fully recover battery power and gradually thaw STEREO-B's instruments and fuel tanks from its deep freeze. It may be clear that the spacecraft is still in a critical condition and that it will take quite some time before imagery, such as those from its twin STEREO-A, will be available again.



It is interesting to note that, once again, the Goldstone radio telescope played a crucial role in re-establishing contact with a lost spacecraft. Indeed, back in 1998, it was also this 70-meter radio "dish"

that in cooperation with the Arecibo telescope (305 meter, Puerto Rico) managed to get an echo from the -at that time- silent SOHO. Eventually, recovery was succesful and SOHO became one of the finest solar observatories ever. See http://soho.nascom.nasa.gov/about/Recovery/docs/recovery_diary.html for the entire story on "SOHO's holiday". Though STEREO-B has been deep-freezed much longer than SOHO (resp. nearly 22 months vs. about 2 months), hopes are that STEREO-B's recovery will be as fortunate as SOHO. The latest in STEREO-B's revival can be found at http://stereo-ssc.nascom.nasa.gov/new.shtml

One of the last STEREO-B images... for the moment!

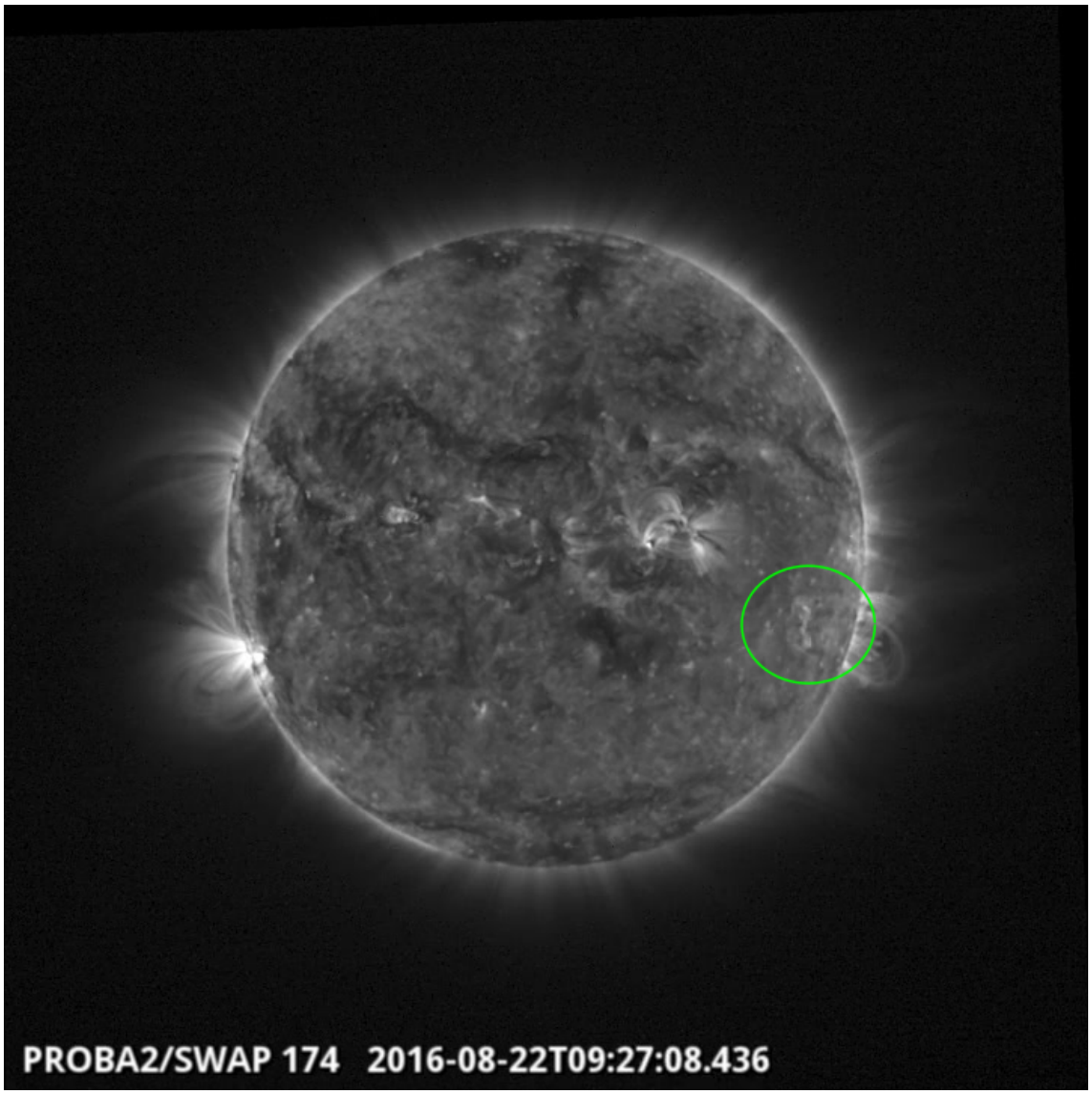
2. PROBA2 Observations (22 Aug 2016 - 28 Aug 2016)

Solar Activity

Solar flare activity fluctuated between very low and low during the week.
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: http://proba2.oma.be/ssa
This page also lists the recorded flaring events.
A weekly overview movie can be found here (SWAP week 335).
proba2.oma.be/swap/data/mpg/movies/weekly_movies/weekly_movie_2016_08_22.mp4

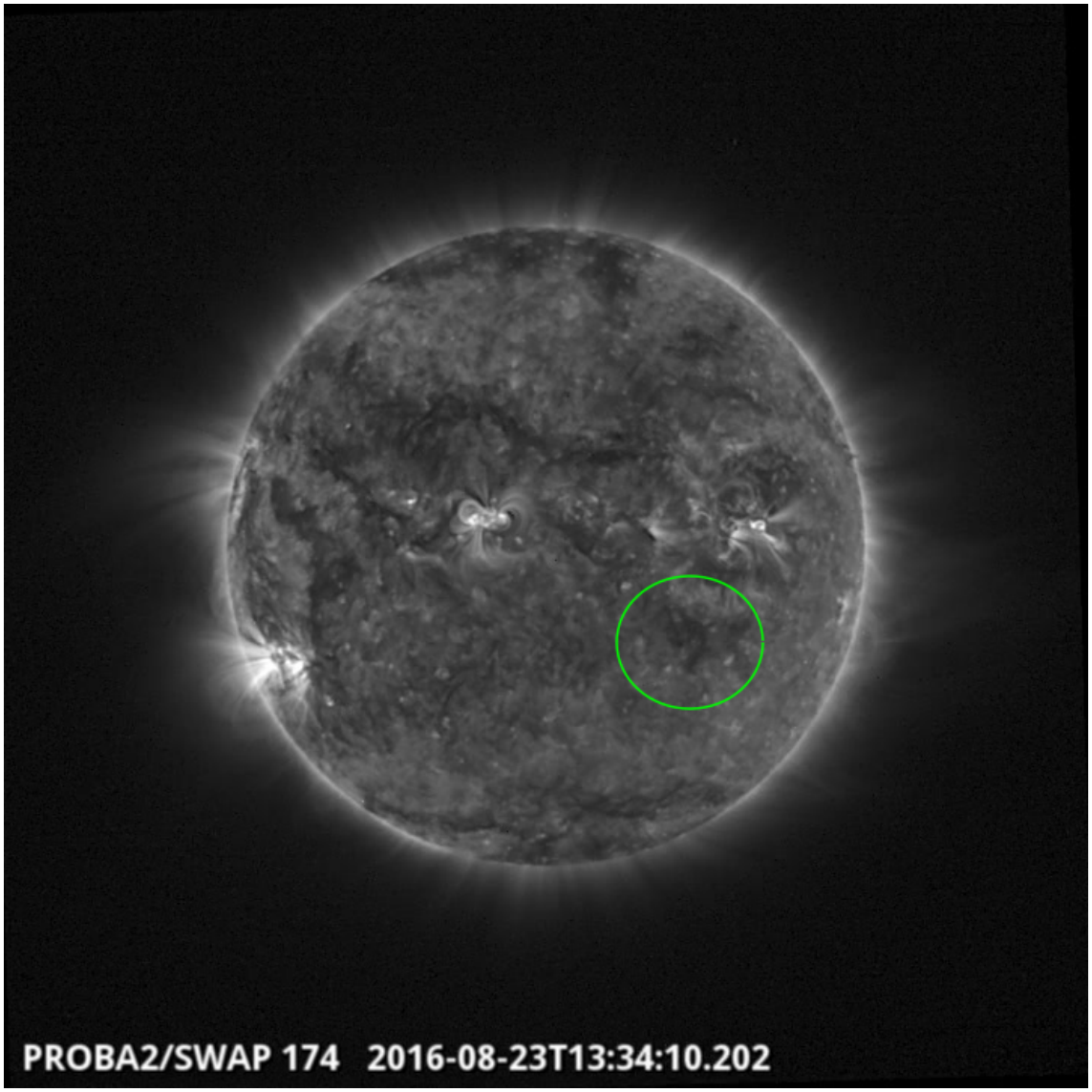
Details about some of this week's events, can be found further below.
If any of the linked movies are unavailable they can be found in the P2SC movie repository here http://proba2.oma.be/swap/data/mpg/movies/

Monday Aug 22



An eruption was observed by SWAP in the western hemisphere of the Sun on 2016 Aug 22 at 09:27 UT
Find a movie of the event here (SWAP movie)
http://proba2.oma.be/swap/data/mpg/movies/20160822_swap_movie.mp4

Tuesday Aug 23

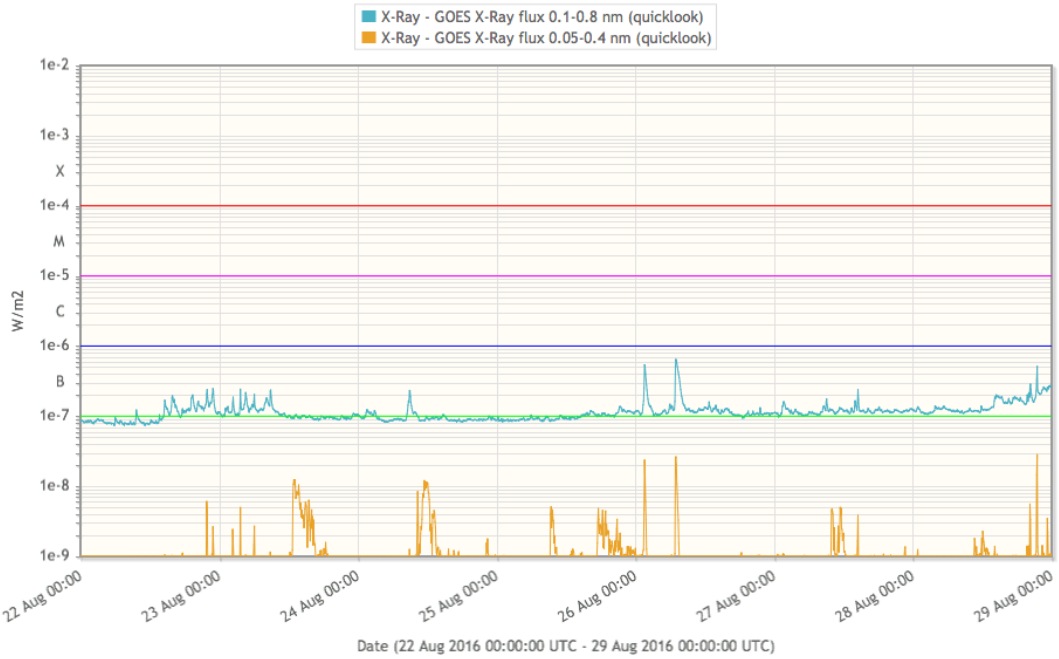


A coronal hole was observed by SWAP in western hemisphere of the Sun on 2016 Aug 23 at 13:34 UT, the associated High Speed Stream increased the ambient solar wind speed at Earth enhancing geomagnetic activity.
Find a movie of the event here (SWAP movie)
http://proba2.oma.be/swap/data/mpg/movies/20160823_swap_movie.mp4

3. Review of solar and geomagnetic activity

Solar Activity

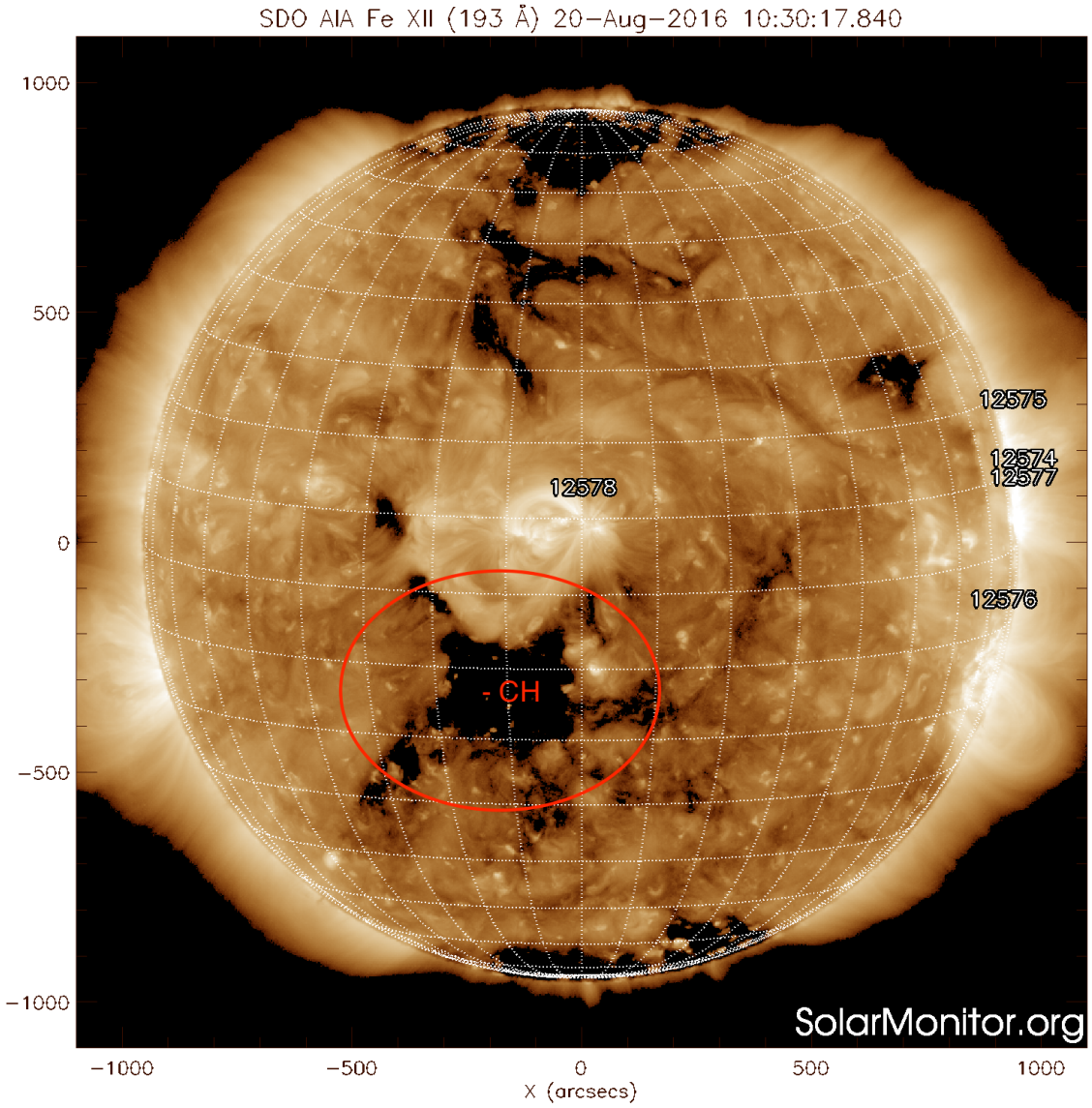
Solar activity was very low throughout the week with X-ray flux remaining below C level.

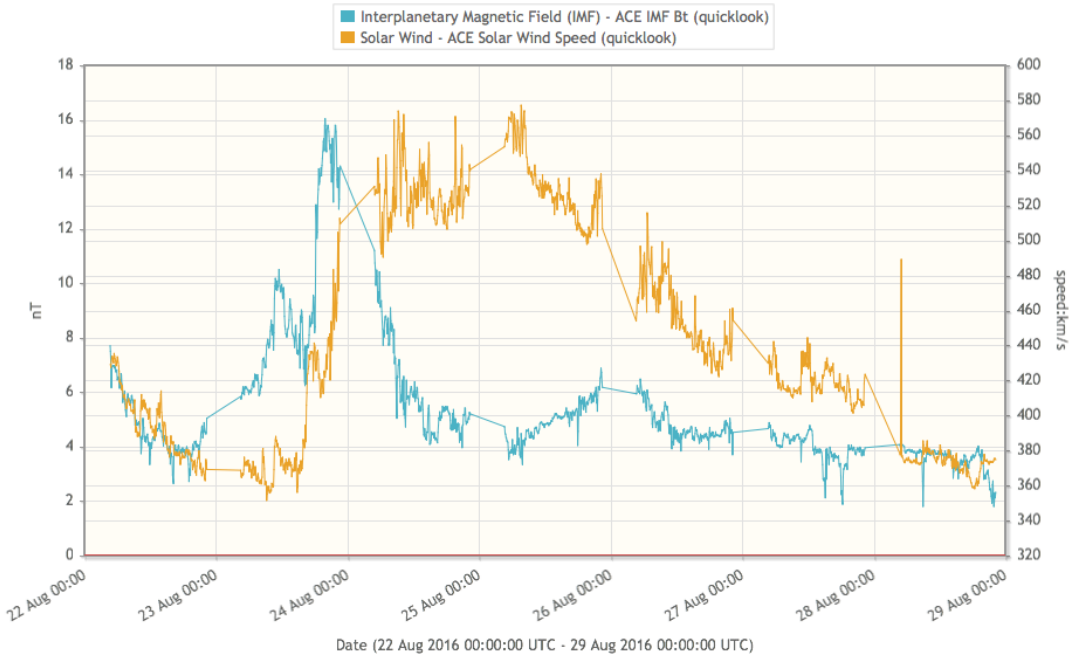


No Earth directed CMEs were recorded and solar proton fluxes remained at background levels.

Geomagnetic Activity

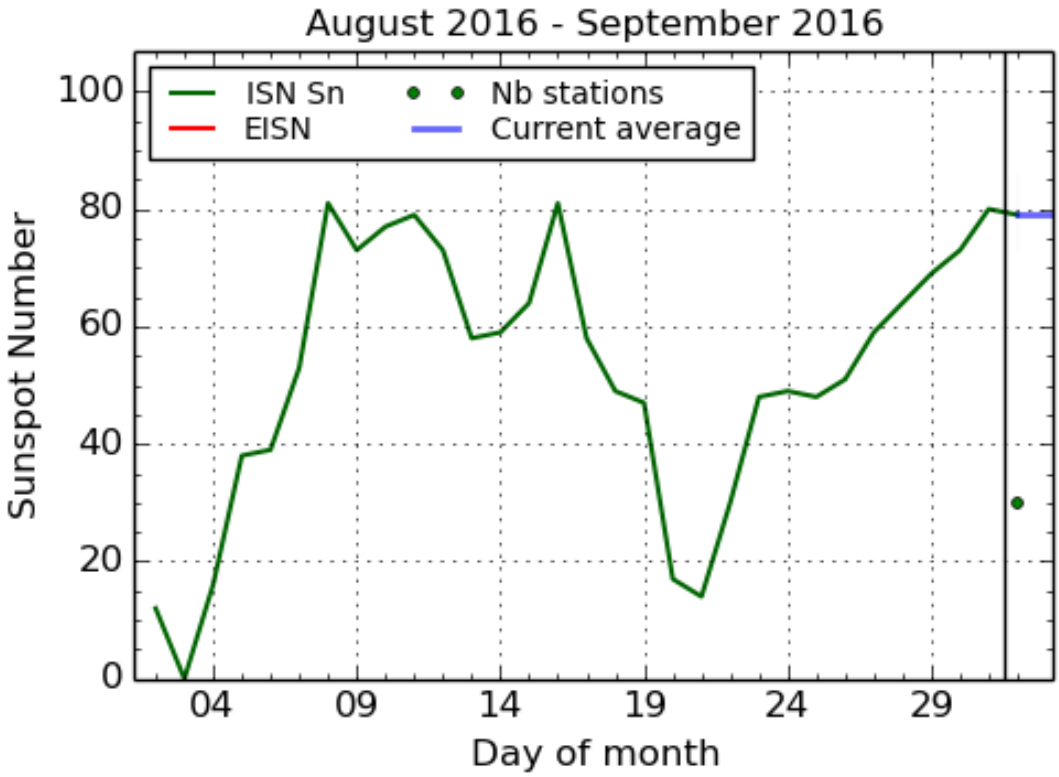
Solar wind was dominated by a negative polarity coronal hole high speed stream setting in late August 23.


SDO AIA Fe XII (193 Å) 20-Aug-2016 10:30:17.840
1000
500
0
-500
-1000
12575
12574
12577
12578
12576
CH
SolarMonitor.org
-1000
-500
0
500
1000
X (arcsecs)



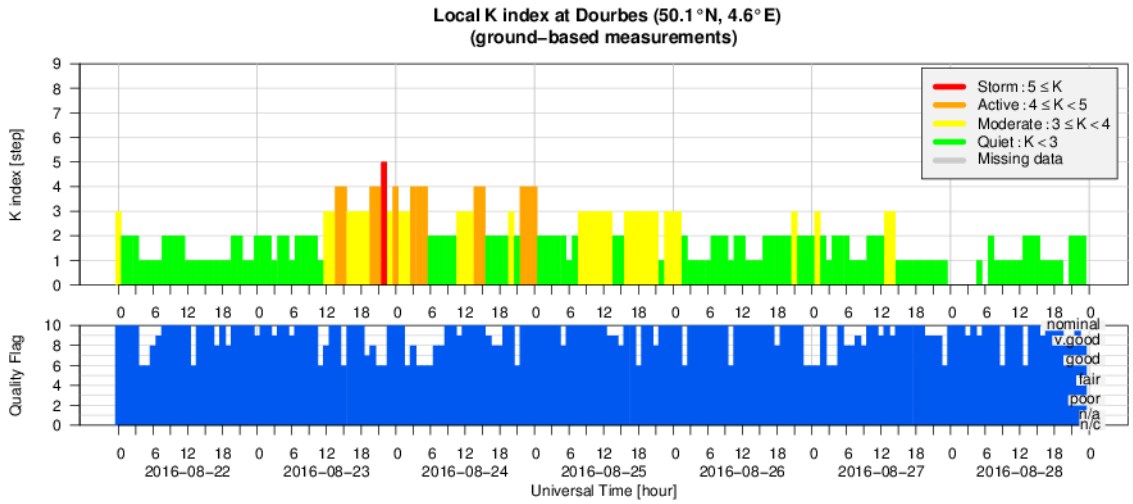
Solar wind speeds reached peaks of close to 700 km/s and some periods of pronounced negative Bz down to -13nT. Associated periods of minor geomagnetic storm levels were recorded around midnight August 23/24. Afterwards a gentle decline to moderate solar wind conditions was recorded.

4. The International Sunspot Number



The daily Estimated International Sunspot Number (EISN, red curve with shaded error) derived by a simplified method from real-time data from the worldwide SILSO network. It extends the official Sunspot Number from the full processing of the preceding month (green line). The plot shows the last 30 days (about one solar rotation). The horizontal blue line shows the current monthly average, while the green dots give the number of stations included in the calculation of the EISN for each day.

5. Geomagnetic Observations at Dourbes (22 Aug 2016 - 28 Aug 2016)



6. Future Events

For more details, see http://www.spaceweather.eu/en/event/future

Horizon 2020 Space Work Programme 2018-2020 Stakeholder Consultation Workshop, in Brussels, Belgium

Start : 2016-09-26 - End : 2016-09-28
In the context of preparing the Horizon 2020 Space work programme 2018-2020, the European Commission organises a dedicated stakeholder consultation workshop. The main objective of this event is to further involve all relevant European stakeholders in the definition of the next Horizon 2020 Space work programme, highlighting the main priorities and trends.
The participation to the workshop is free and open to all relevant stakeholders, limited only by the capacity of the conference rooms. Delegations, European associations and other stakeholder groups are encouraged to forward this invitation to their respective constituents and members.
Website:
https://h2020-space-wp-2018-20.teamwork.fr/en/programme

4th Asia Oceania Space Weather Alliance (AOSWA) Workshop, in Jeju, Republic of Korea

Start : 2016-10-24 - End : 2016-10-27
Website:
http://aoswa4.spaceweather.org/index.php

Global Modelling of the Space Weather Chain in Helsinki, Finland

Start : 2016-10-24 - End : 2016-10-28
This event brings together solar, heliospheric, magnetospheric, and ionospheric communities to discuss the current state and future challenges in global modelling of the entire space weather chain. Major developments in forecasting space weather, and understanding the effects of solar eruptions requires increased communication and collaboration of these often rather distinct communities. We welcome submissions from these modelling communities and also synergetic studies utilising both observations and numerical models.

Website:
https://pnst.ias.u-psud.fr/sites/pnst/files/global_modelling_space_weather_oct2016.pdf

European Space Weather Week in Ostend, Belgium

Start : 2016-11-14 - End : 2016-11-18
The ESWW is the main annual event in the European Space Weather calendar. It is the European forum for Space Weather as proven by the high attendance to the past editions. The agenda will be composed of plenary/parallel sessions, working meetings and dedicated events for service end-users. The ESWW will again adopt the central aim of bringing together the diverse groups in Europe working on different aspects of Space Weather.
Website:
http://www.stce.be/esww13/

4th SOLARNET Meeting: The Physics of the Sun from the Interior to the Outer Atmosphere, in Lanzarote (Spain)

Start : 2017-01-16 - End : 2017-01-20
The IV SOLARNET MEETING 'The physics of the Sun from the interior to the outer atmosphere' will take place in Lanzarote (Spain) from 16th to 20th of January 2017, organized by the Instituto de AstrofÃ-sica de Canarias (IAC).
SOLARNET (High-resolution Solar Physics Network) is an EU-FP7 project coordinated by IAC with the aim of bringing together and integrating the major European research infrastructures in the field of high-resolution solar physics. SOLARNET involves all pertinent European research institutions, infrastructures, and data repositories. Networking activities, access to first-class infrastructures and joint research and development activities are being covered under SOLARNET to improve, in quantity and quality, the service provided by this European community.
The purpose of this conference is to provide a coherent picture of the Sun as a single physical system playing all the underlying physical processes measured and observed in the solar atmosphere to date.
Website:
http://www.iac.es/congreso/solarnet-4meeting/

Solar Orbiter Workshop 7: Exploring the solar environs in Granada, Spain

Start : 2017-04-03 - End : 2017-04-06
This event will be hosted by the Instituto de Astrofisica de Andalucia - CSIC. Please mind that on April 7th the 20th SWT meeting will take place at the same venue.
Website: Unkown