

STCE Newsletter

15 Aug 2016 - 21 Aug 2016



Published by the STCE - this issue : 26 Aug 2016. Available online at <http://www.stce.be/newsletter/>.

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. PROBA2 Observations (15 Aug 2016 - 21 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 334).

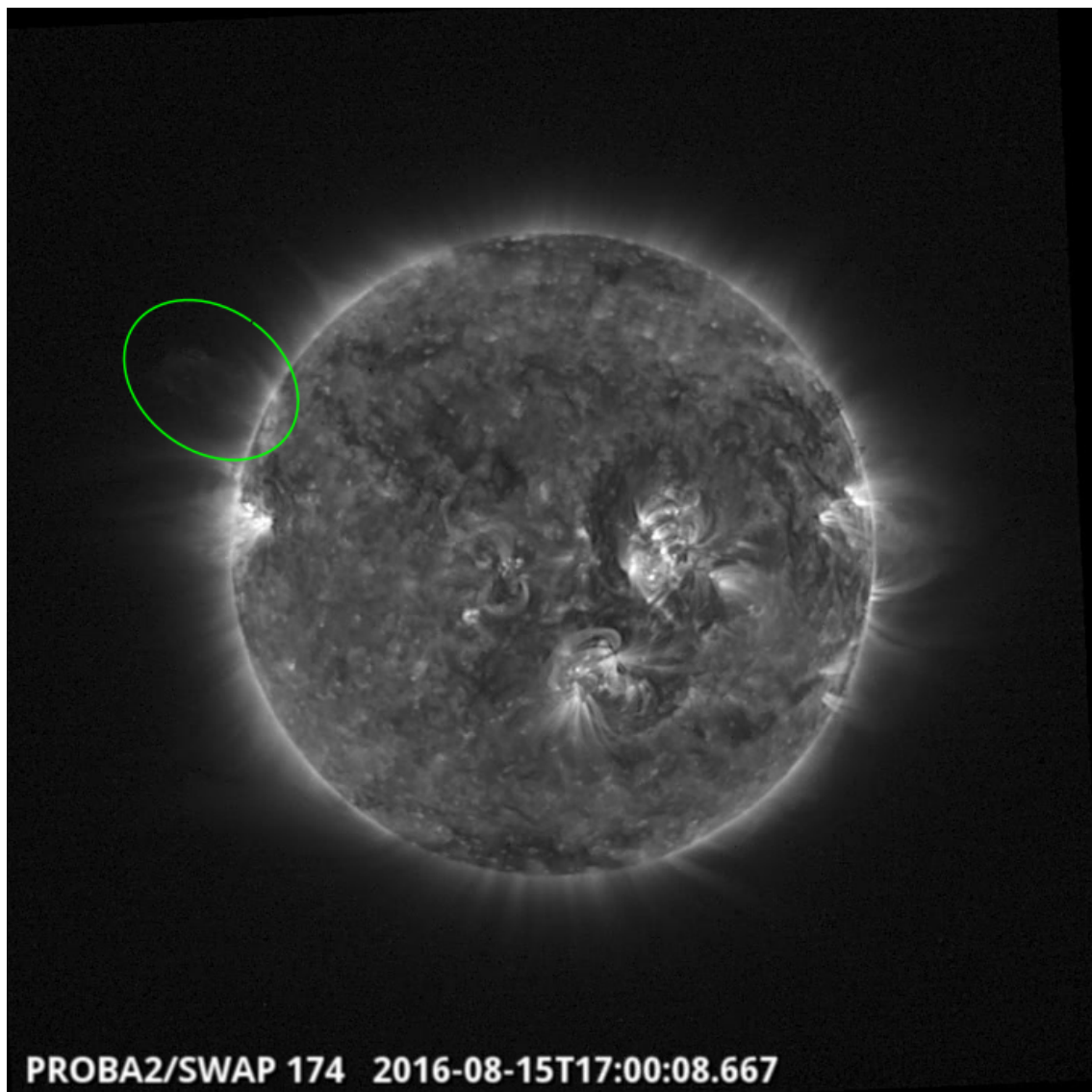
http://proba2.oma.be/swap/data/mpg/movies/weekly_movies/weekly_movie_2016_08_15.mp4

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 15



An eruption was observed by SWAP on the north east limb of the Sun on 2016Aug15 at 17:00

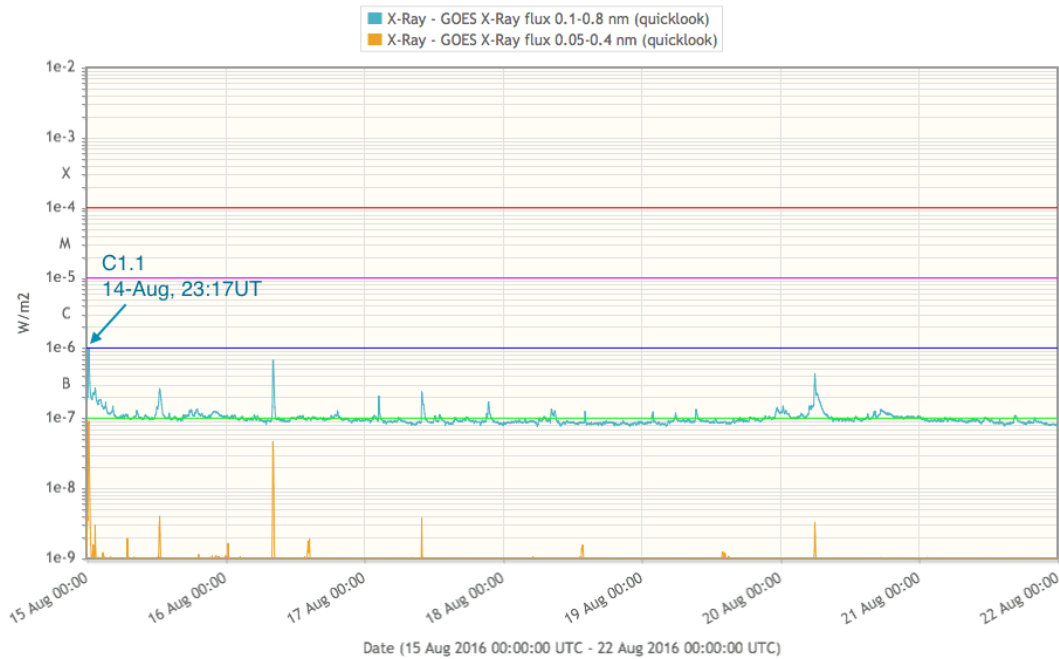
UT

Find a movie of the event here (SWAP movie)

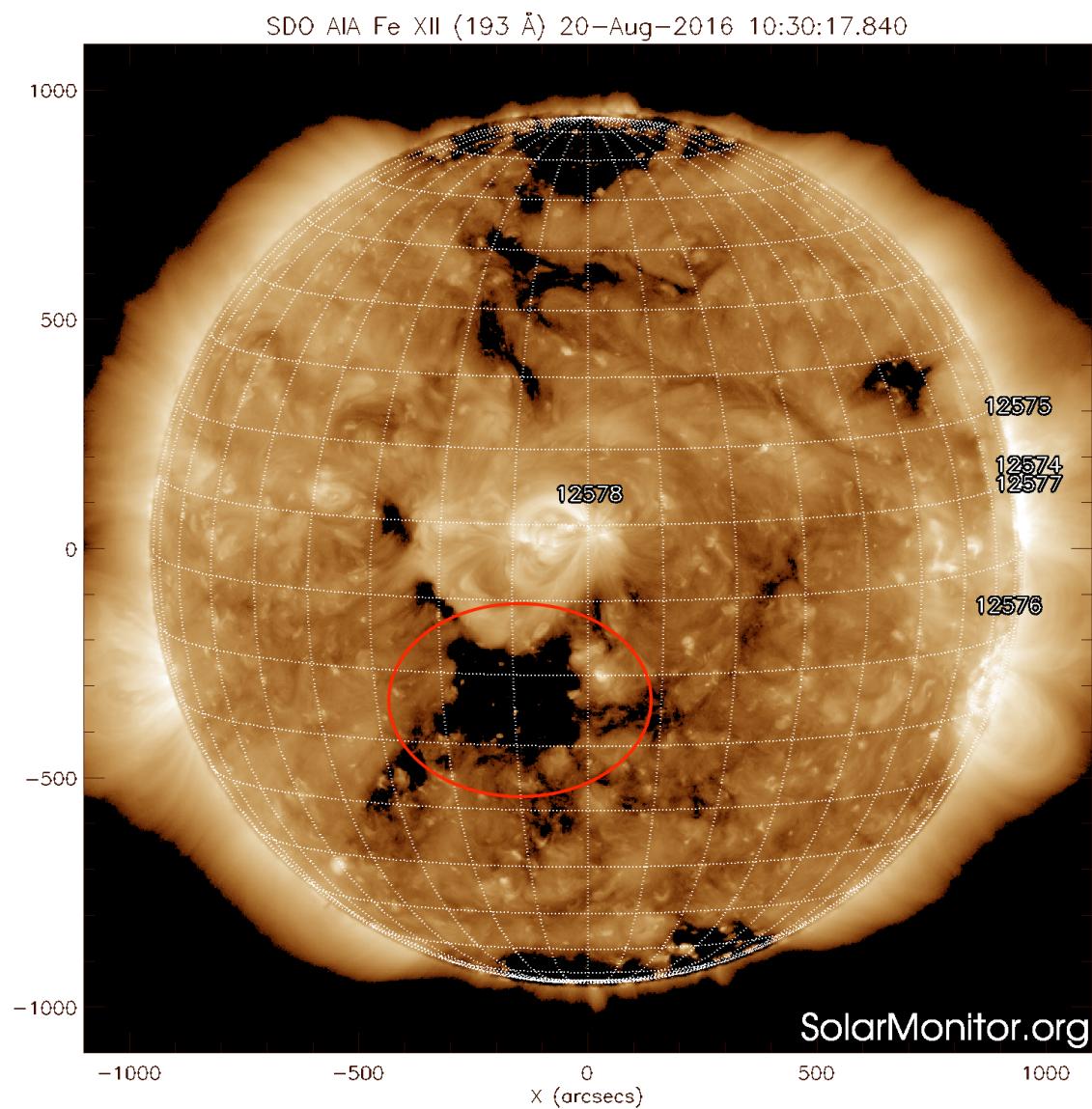
http://proba2.oma.be/swap/data/mpg/movies/20160815_swap_movie.mp4

2. Review of solar activity

Solar activity was very low. Only background B-class flares were observed. (Two C1.1 flares were however observed from active region NOAA AR 2578 peaked at 19:36 UT and 23:17 on 14-Aug-2016).

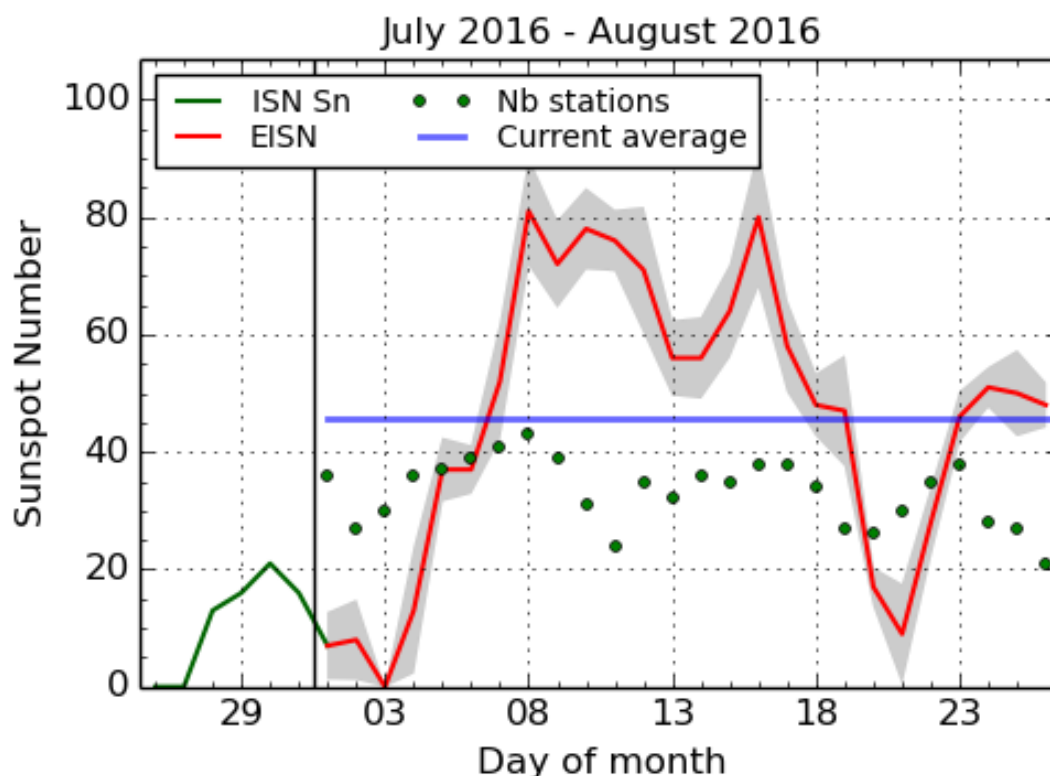


Four active regions were observed on the visible side of the solar disc. Their photospheric magnetic field configuration was simple (alpha and beta configuration). By the end of the week, only NOAA AR 2578 with a alpha magnetic configuration remained on the solar disc.



A low latitude coronal hole in the southern hemisphere with negative polarity was present. No Earth-directed CMEs were observed. Solar proton flux intensity remained at the background levels.

3. The International Sunspot Number

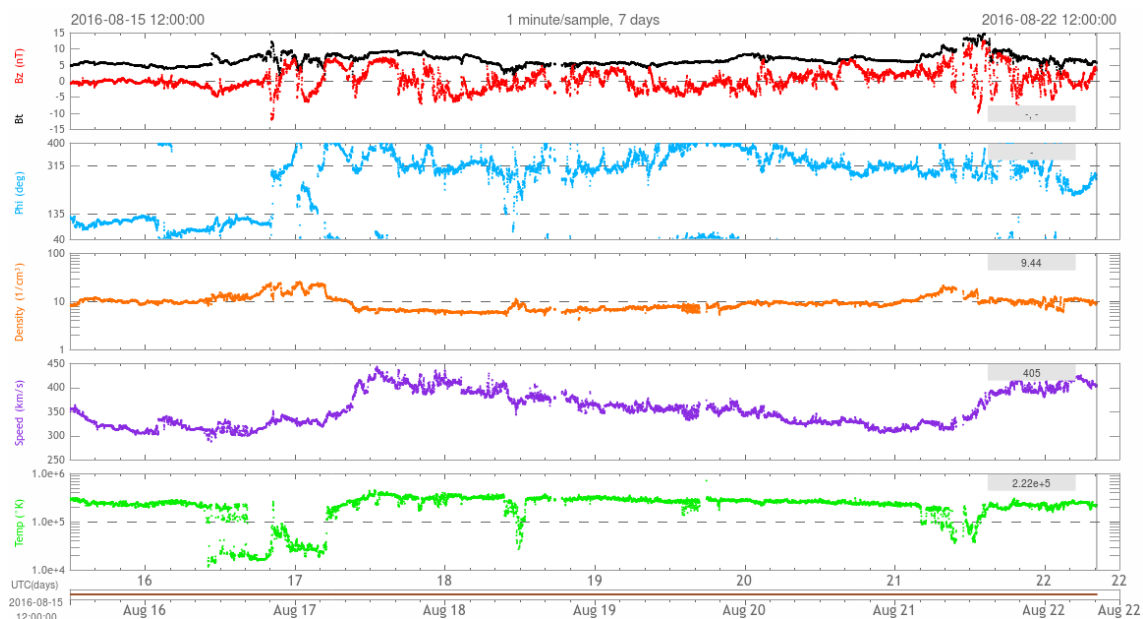


SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium, 2016 August 26

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.

4. Review of geomagnetic activity

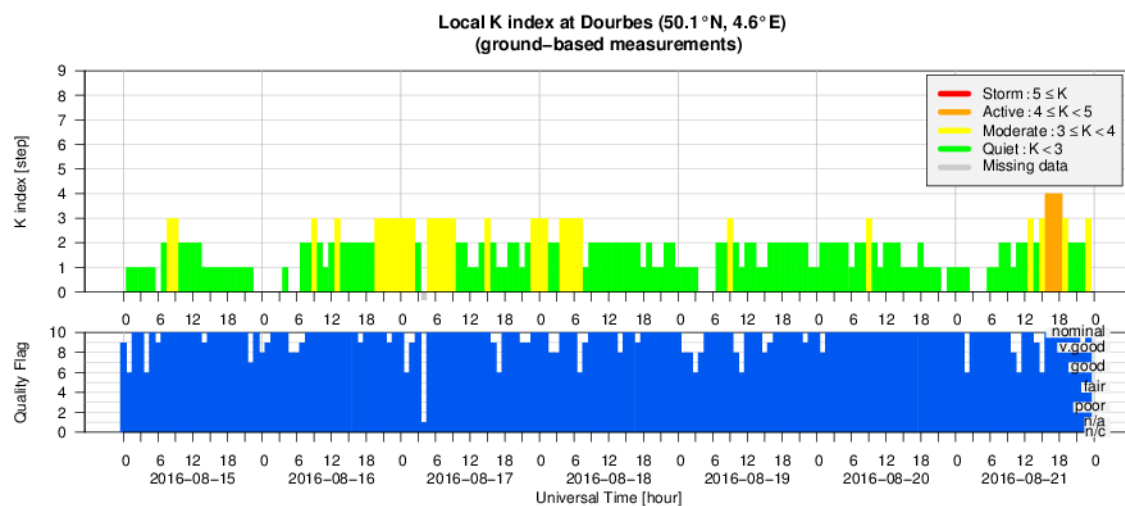
The variations of the solar wind parameters were weak. Solar wind speed remained below 400 km/s during most of the time (except midnight on 21-Aug-2016, when the speed increased till about 450 km/s. The magnitude of the Interplanetary Magnetic Field (Bt) were below 8 nT most of the time (again except midnight on 21-Aug-2016) while Bz component were fluctuating between about ± 6 nT.



The geomagnetic conditions have been quiet (K Dourbes between 1 and 3; NOAA Kp between 1 and 3). No geomagnetic storms were observed. Only once Kp index elevated till Kp=4 on 21-Aug-2016.

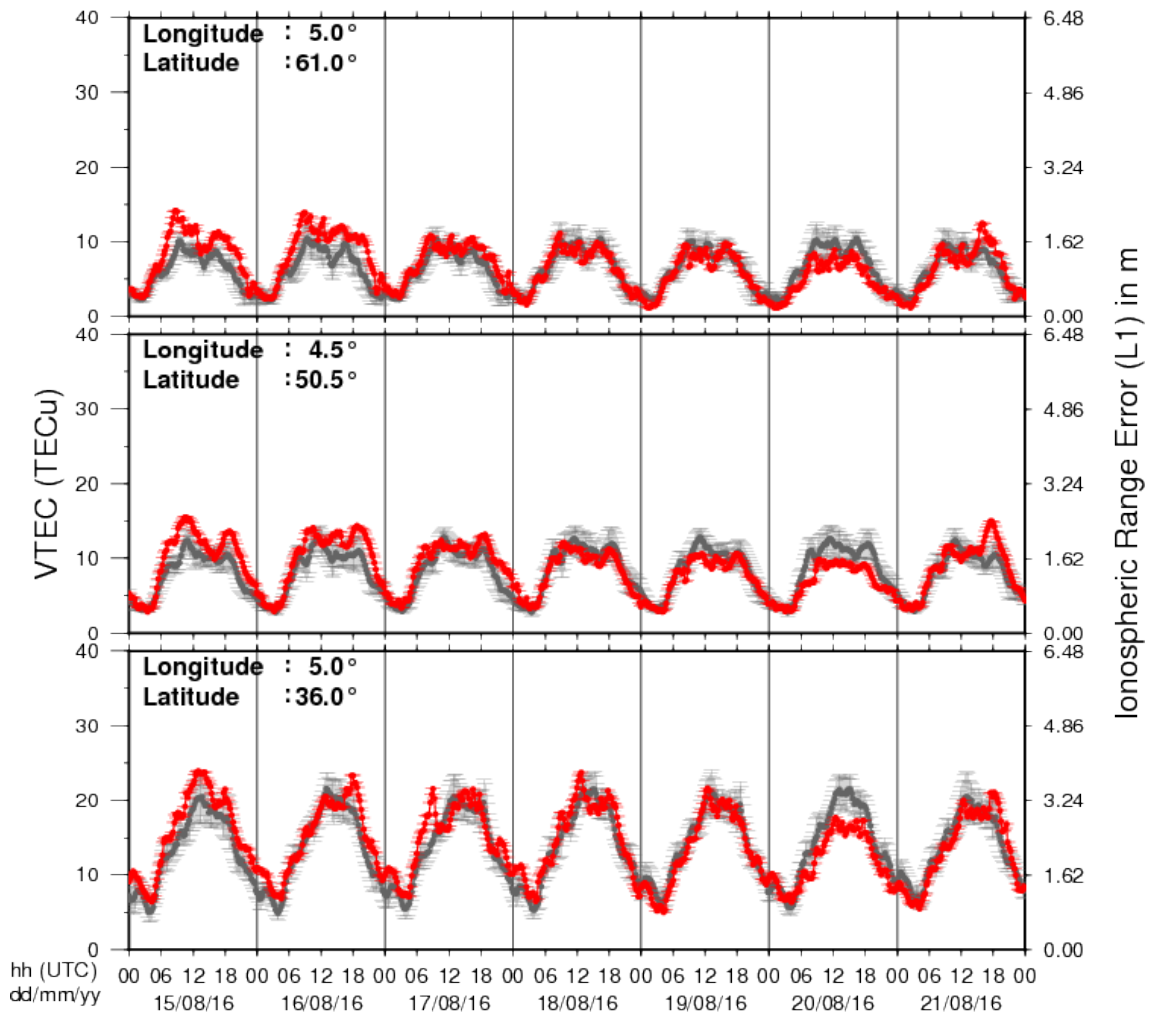
The fast wind catching up the slow wind, sparked aurora in the early night of August 24: check <http://www.stce.be/node/315>

5. Geomagnetic Observations at Dourbes (15 Aug 2016 - 21 Aug 2016)



6. Review of ionospheric activity (15 Aug 2016 - 21 Aug 2016)

VTEC Time Series



The figure shows the time evolution of the Vertical Total Electron Content (VTEC) (in red) during the last week at three locations:

- a) in the northern part of Europe(N61°, 5°E)
- b) above Brussels(N50.5°, 4.5°E)
- c) in the southern part of Europe(N36°, 5°E)

This figure also shows (in grey) the normal ionospheric behaviour expected based on the median VTEC from the 15 previous days.

The VTEC is expressed in TECu (with $\text{TECu} = 10^{16}$ electrons per square meter) and is directly related to the signal propagation delay due to the ionosphere (in figure: delay on GPS L1 frequency).

The Sun's radiation ionizes the Earth's upper atmosphere, the ionosphere, located from about 60km to 1000km above the Earth's surface. The ionization process in the ionosphere produces ions and free electrons. These electrons perturb the propagation of the GNSS (Global Navigation Satellite System) signals by inducing a so-called ionospheric delay.

See http://stce.be/newsletter/GNSS_final.pdf for some more explanations ; for detailed information, see http://gnss.be/ionosphere_tutorial.php

7. 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 Astrofísica 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 Astrofísica de Andalucía - CSIC. Please mind that on April 7th the 20th SWT meeting will take place at the same venue.

Website: Unkown