

STCE Newsletter

24 Aug 2026 - 30 Aug 2026



Published by the STCE - this issue : 4 Sep 2026. Available online at <https://www.stce.be/newsletter/> .

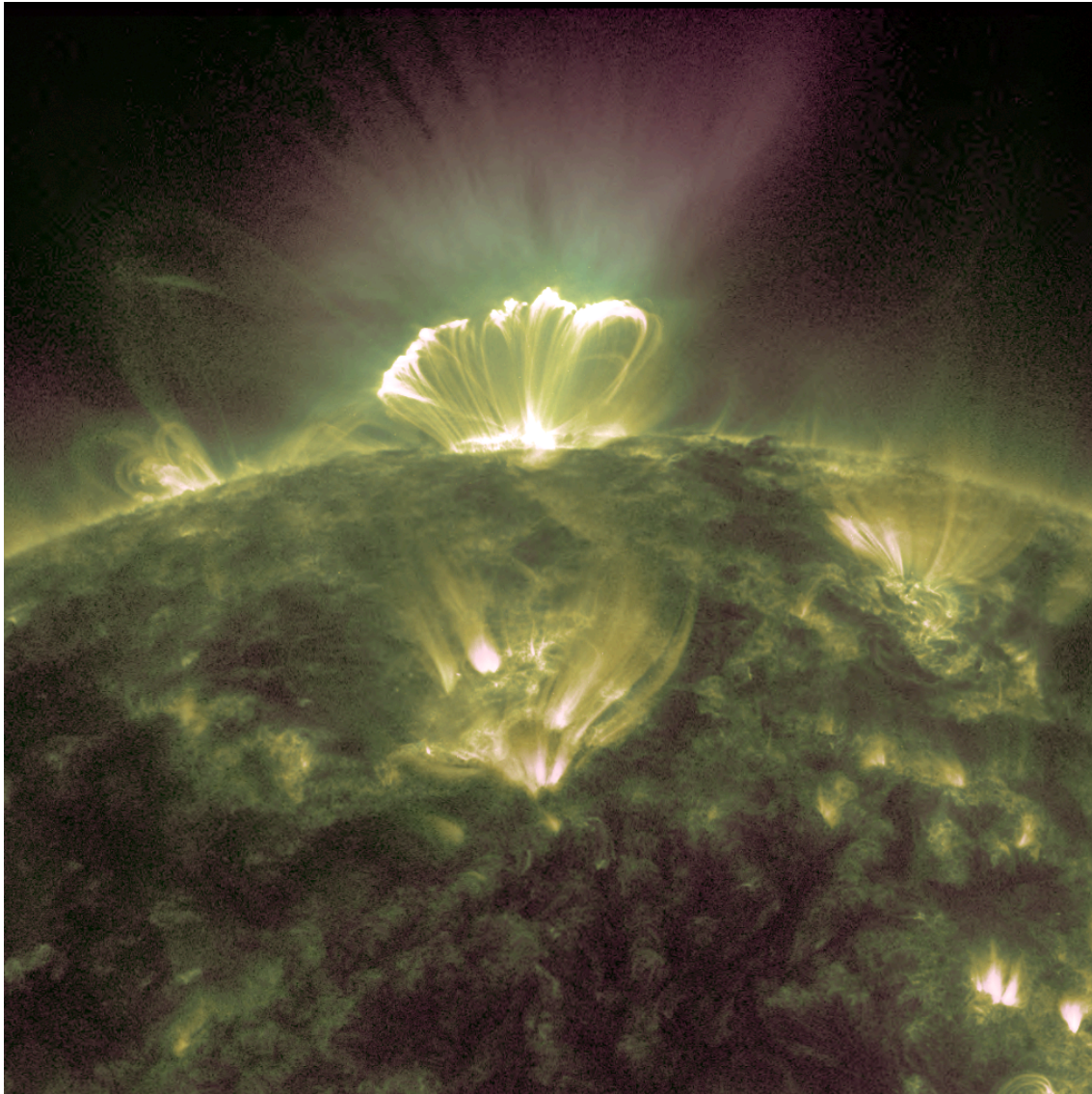
The Solar-Terrestrial Centre of Excellence (STCE) is a collaborative network of the Belgian Institute for Space Aeronomy, the Royal Observatory of Belgium and the Royal Meteorological Institute of Belgium.

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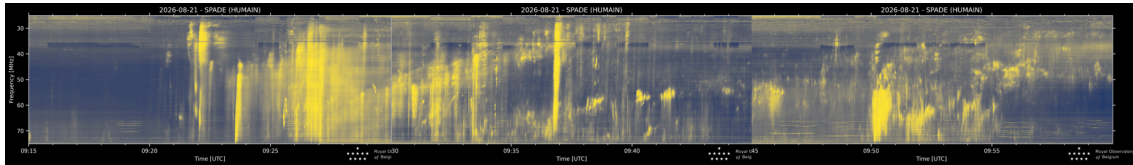
1. Lovely loops

SIDC Sunspot group 940 (NOAA 4507; <https://www.sidc.be/services/event-chains/sunspots>) was a rather large region that produced C-class flares while transiting the solar disk. On 21 August, while rounding the west limb, it produced an M1.6 flare peaking at 10:17 UTC. The flare lasted from 09:09 UTC until 11:49 UTC, making it a long-duration event. The SDO imagery underneath show extreme ultraviolet (EUV) images at two different temperatures laid over each other. Green is SDO/AIA 171 at temperatures around 700.000 degrees, and pink is a SDO/AIA 131 image showing the Sun at temperatures of several million degrees. Note the images have been rotated by 90 degrees, with west on top and north to the left.

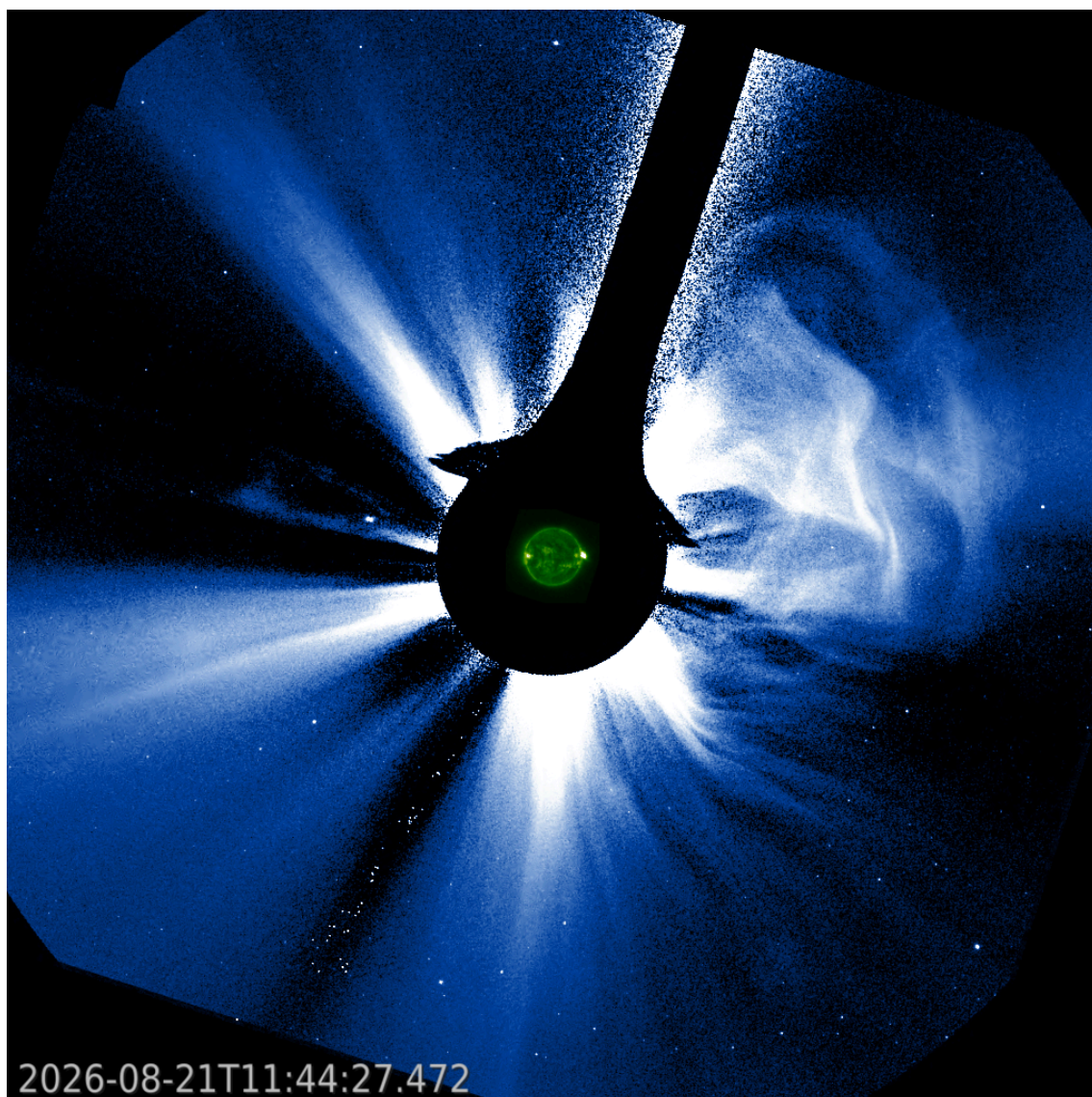


Following the eruption, an arcade (series of coronal loops) started to develop, topped by supra-arcade downflows, i.e. the "tadpoles" flowing downwards towards the top of the coronal loops. More info on these features as well as a sketch can be found in this STCE newsitem at <https://www.stce.be/news/630/welcome.html> In this case, the coronal loops would eventually reach a height of about 200.000 km, slightly more than half the Earth-Moon distance. Particularly high coronal loops were observed during an eruption on 15-16 October 2014 (see this STCE newsitem at <https://www.stce.be/news/274/welcome.html>), where the top of the loops was well outside SDO/AIA's field-of-view.

The eruption was also associated with some radio emission, in particular at very high frequencies (30-300 MHz). The SPADE instrument (Small Phased Array DEMonstrator) at the HumaIn Radioastronomy Station (HuRaS - https://www.sidc.be/humain/spade_latest) was able to track the disturbance. In the plot underneath, the frequency is on the vertical axis (range between 25 and 75 MHz, with the lowest frequency on top), while time is on the horizontal axis (from 09:15 UTC until 10:00 UTC). Interesting is that all of the radio emission took place prior to the flare's maximum intensity in soft x-rays.



Associated with the M1.6 flare was a fast (1200 km/s) partial halo Coronal Mass Ejection (SIDC CME 713 - <https://www.sidc.be/spaceweatherservices/applications/eventchains/cme.php>) observed in SOHO's LASCO/C2 coronagraph imagery starting from around 09:36 UTC on 21 August, directed mainly to the west and to the northwest. The SIDC space weather forecaster expected that the bulk of the CME was going to miss Earth, but a glancing blow arrival around August 24 could not be excluded. Over the next few days however, the solar wind parameters did not show any obvious signature of a passing CME. The image underneath shows GOES/SUVI 131 (EUV; green) solar imagery overlaid onto GOES/CCOR1 coronagraphic imagery (white light; bluish). Here, north is on top and west is to the right. The little white dot on the Sun's west limb ("right") is the actual eruption which the CME was associated with. Clips of this event can be found in the online version of this newsitem at <https://www.stce.be/news/834/welcome.html>



2. Review of solar and geomagnetic activity (24 Aug 2026 - 30 Aug 2026)

Solar Active Regions (ARs) and flares

Solar flaring activity was at low to moderate levels at the beginning of the week, increased to high levels on August 25, and remained low from August 27 onwards. Over the course of the week, twenty-one C-class flares and seven M-class flares were recorded, with no X-class flares. Seven active regions were observed on the visible solar disk over the week. SIDC Sunspot Group 929 (NOAA Active Region 4513) was the main driver of the flaring activity throughout the week and produced all M-class flares. The region was the most complex active region on the solar disk at the beginning of the week, with a beta-gamma-delta magnetic configuration, before gradually decreasing in magnetic complexity towards the end of the week. The largest flare was an M6.9 flare (SIDC Flare 8465), peaking at 10:02 UTC on August 25, associated with SIDC Sunspot Group 929. Type II radio emission was detected at 09:59 UTC during this flaring activity. Low-level C-class flaring was also produced by SIDC Sunspot Group

948 (NOAA Active Region 4517), SIDC Sunspot Group 949 (NOAA Active Region 4518), and active regions behind the east limb.

Coronal mass ejections

Several coronal mass ejections (CMEs) were detected in the available coronagraph imagery over the past week, one of which was estimated to have a possible Earth-directed component. SIDC CME 714 was detected in SOHO/LASCO-C2 coronagraph data from around 11:00 UTC on August 25, directed primarily towards the east from Earth's perspective and associated with the M6.9 flare, produced by SIDC Sunspot Group 929. A glancing-blow arrival at Earth was expected on August 28. However, no clear ICME signature associated with this CME were identified in the available solar wind data.

A halo CME (SIDC CME 715) was observed in SOLAR-1/CCOR-2 coronagraph imagery from around 18:00 UTC on August 27. This CME was deemed to be backside, and no impact on the solar wind conditions near Earth was expected. No other Earth-directed CMEs were detected in the available coronagraph imagery over the past weeks.

Coronal Holes

A positive polarity coronal hole (SIDC Coronal Hole 159) started to cross the central meridian on August 24.

Proton flux levels

The greater than 10 MeV proton flux, as measured by GOES-18 and GOES-19, remained below the 10 pfu threshold throughout the week. It was slightly elevated at the beginning of the week, but stayed well below the threshold and returned to near-background levels by mid-week.

Electron fluxes at GEO

The greater than 2 MeV electron flux, as measured by GOES-18 and GOES-19, was fluctuating around the 1000 pfu alert threshold during the first part of the week, mainly until August 28, and remained below the threshold for the rest of the week. The 24-hour electron fluence was at moderate levels at the beginning of the week and decreased to normal levels towards the end of the period.

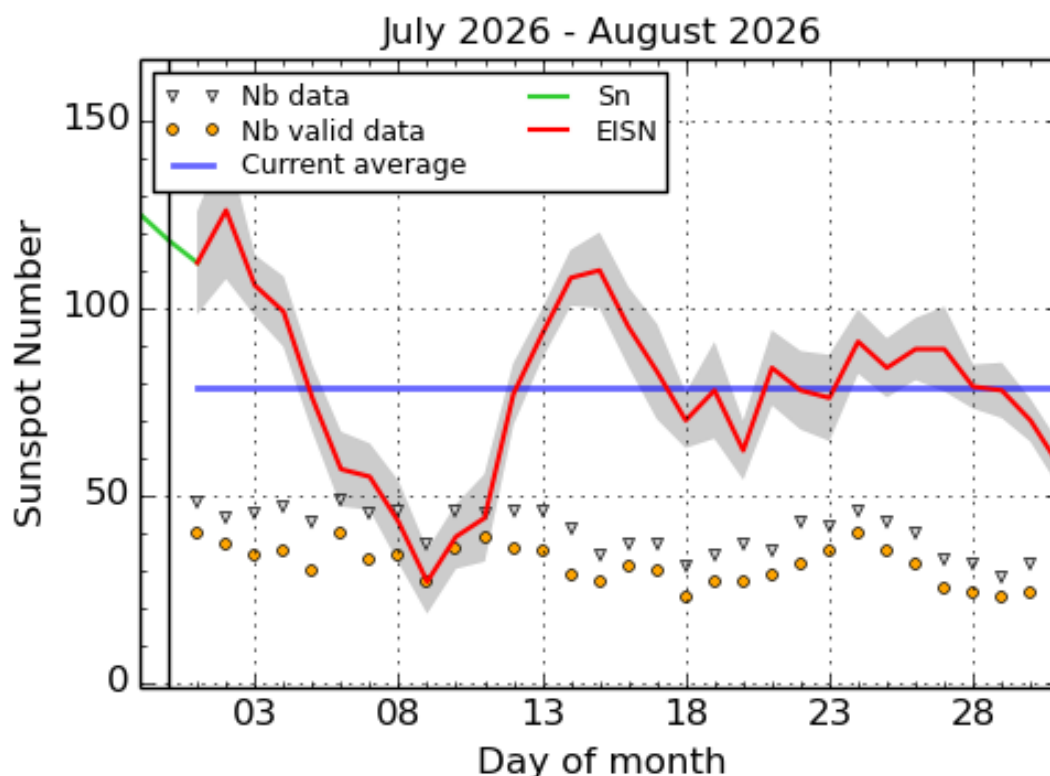
Solar wind

At the beginning of the week, solar wind parameters reflected slow solar wind conditions. The solar wind speed decreased from about 390 km/s to around 260 km/s by August 27. The interplanetary magnetic field remained weak, below 6 nT, and the magnetic field orientation was predominantly in the negative sector, with the field directed towards the Sun. From August 28 until the end of the week, solar wind conditions were slightly disturbed. The interplanetary magnetic field reached values up to about 14 nT on August 29, and the north-south component of the interplanetary magnetic field, B_z , reached a minimum value of about -13 nT. The solar wind speed gradually increased from about 290 km/s to around 470 km/s by August 30. The magnetic field orientation was predominantly in the positive sector, with the field directed away from the Sun. These slightly disturbed solar wind conditions were most likely associated with the high-speed stream influence from the positive polarity coronal hole SIDC Coronal Hole 159.

Geomagnetism

Geomagnetic conditions were quiet to unsettled at the start of the week (NOAA Kp = 1 to 3; K-Bel = 1 to 3). From late August 28 until the end of the week, geomagnetic conditions became mostly unsettled to active both globally and locally over Belgium, following the arrival of a high-speed stream from the positive polarity coronal hole SIDC Coronal Hole 159.

3. International Sunspot Number by SILSO



SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium, 2026 August 31

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), a few days more than one solar rotation. The horizontal blue line shows the current monthly average. The yellow dots give the number of stations that provided valid data. Valid data are used to calculate the EISN. The triangle gives the number of stations providing data. When a triangle and a yellow dot coincide, it means that all the data is used to calculate the EISN of that day.

4. PROBA2 Observations (24 Aug 2026 - 30 Aug 2026)

Solar Activity

Solar flare activity fluctuated from low to moderate during the week.

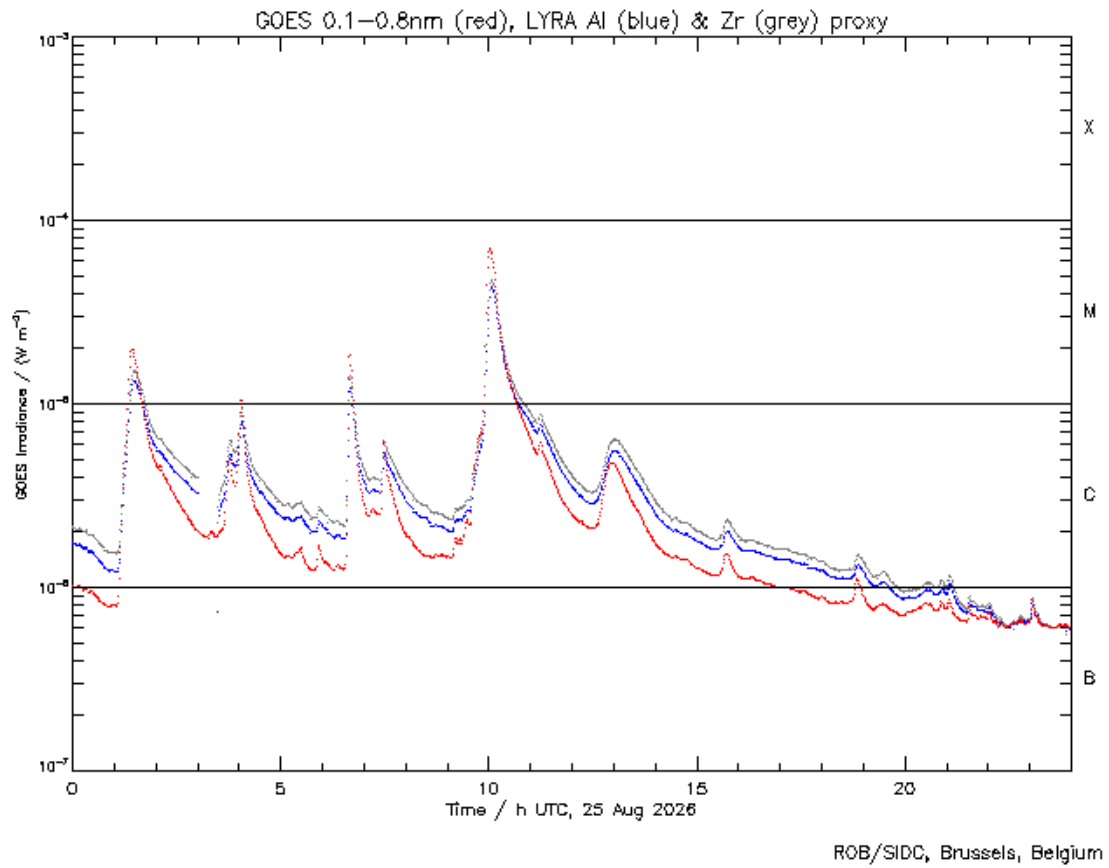
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: <https://proba2.oma.be/ssa>
This page also lists the recorded flaring events.

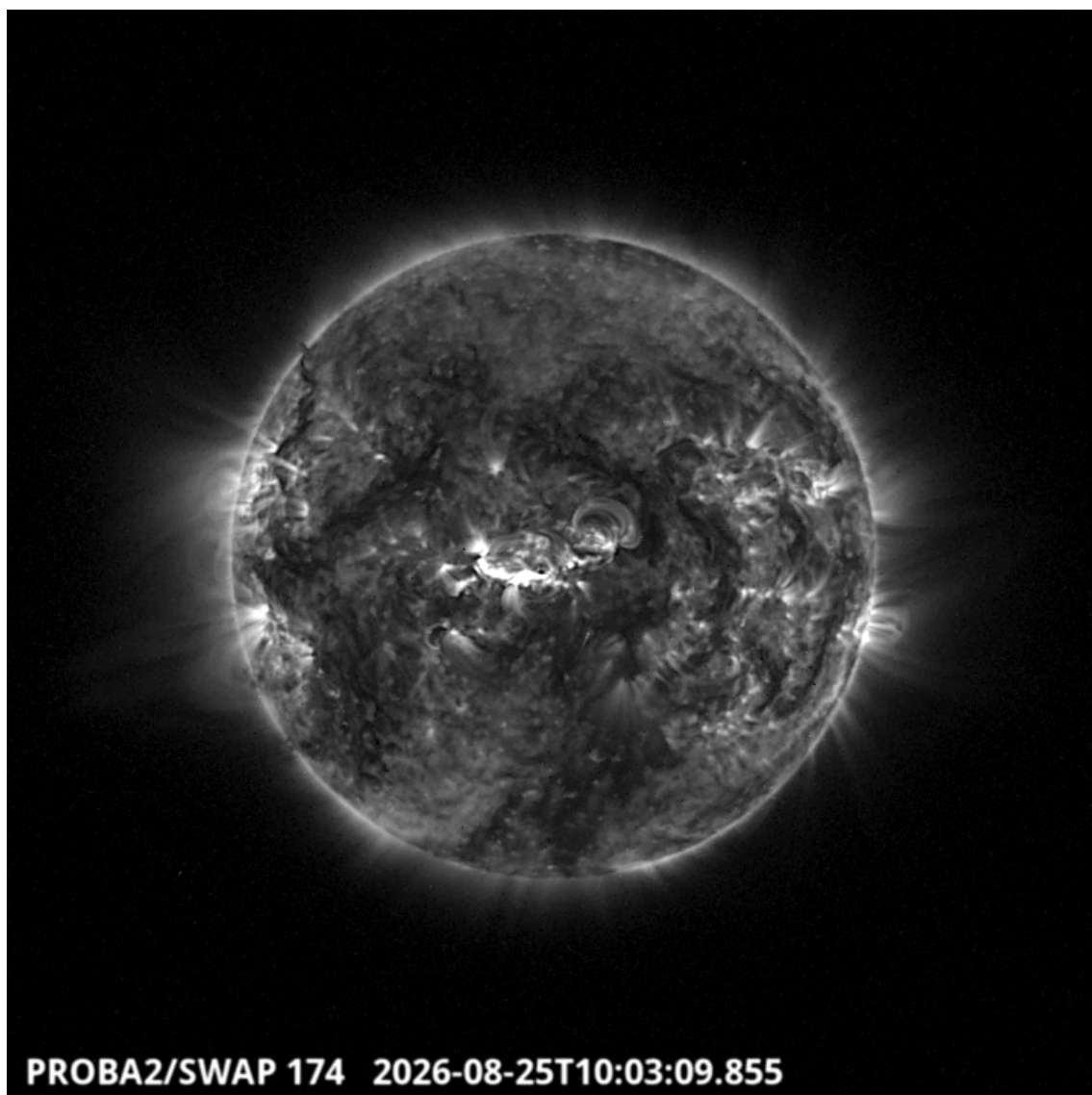
A weekly overview movie (SWAP week 857) can be found here: https://proba2.sidc.be/swap/data/mpg/movies/weekly_movies/weekly_movie_2026_08_24.mp4.

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: <https://proba2.oma.be/swap/data/mpg/movies/>.

Tuesday August 25





The largest flare of this week was an M6.9, and it was observed by LYRA (top panel) and SWAP (bottom panel). The flare peaked on 2026-Aug-25 at 10:02 UT and occurred close to the center of the Sun, originating from active region NOAA4513 (SIDC 929).

Find a SWAP movie of the event here: https://proba2.sidc.be/swap/movies/20260825_swap_movie.mp4.

5. Noticeable Solar Events

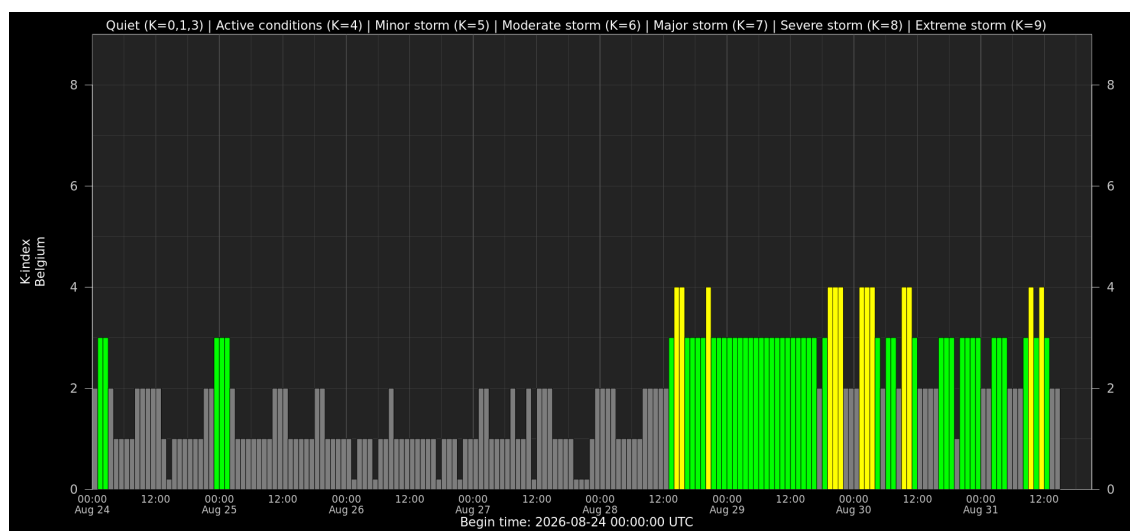
DAY	BEGIN	MAX	END	LOC	XRAY	OP	10CM	TYPE	Cat	NOAA
24	1851	1936	1954	N6E12	M1.7	1B			13	4513
25	0104	0126	0140	N3E11	M1.9	1N			13	4513
25	0355	0402	0407	N4E14	M1.0	SN			13	4513
25	0630	0640	0646	N4E12	M1.8	1N			13	4513
25	0932	1002	1013	N3E6	M6.9	1B		II/3	13	4513
26	0629	0634	0638	N4E15	M2.2	1B		III/1II/2	13	4513

26	1206	1214	1222	N5W5	M1.0	SF	13	4513
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LOC: approximate heliographic location
 XRAY: X-ray flare class
 OP: optical flare class
 10CM: peak 10 cm radio flux

TYPE: radio burst type
 Cat: Catania sunspot group number
 NOAA: NOAA active region number

6. Geomagnetic Observations in Belgium



Local K-type magnetic activity index for Belgium based on data from Dourbes (DOU) and Manhay (MAB). Comparing the data from both measurement stations allows to reliably remove outliers from the magnetic data. At the same time the operational service availability is improved: whenever data from one observatory is not available, the single-station index obtained from the other can be used as a fallback system.

Both the two-station index and the single station indices are available here: http://ionosphere.meteo.be/geomagnetism/K_BEL/

7. Review of solar activity (24 Aug 2026 - 30 Aug 2026)

The forecaster on duty presented the SIDC briefing that gives an overview of space weather from 24 August 2026 to 30 August 2026 .

The pdf of the presentation: https://www.stce.be/briefings/20260831_SWbriefing.pdf

SIDC Space Weather Briefing

24 August 2026-30 August 2026

Daria Shukhobodskaja

& the SIDC forecaster team



Solar Influences
Data analysis Centre
www.sidc.be

8. Upcoming Activities (24 Aug 2026 - 30 Aug 2026)

Courses, seminars and events with the Sun-Space-Earth system and Space Weather as the main theme. We provide occasions to get submerged in our world through educational, informative and instructive activities.

* Sep 3, 2026, Watching the Sun: a 200-year journey, guided tour Solar Physics, Ukkel, Belgium - register <https://events.spacepole.be/category/2/>

* Sep 26-27, 2026, Opendoors Space Pole, Ukkel, Belgium

* Oct 12-14, 2026, STCE Space Weather Introductory Course, Brussels, Belgium - register: <https://events.spacepole.be/event/257/> - Fully booked

* Oct 15, 2026, Post Space Weather Introductory Course, Brussels, Belgium - register: <https://events.spacepole.be/event/286/>

* Oct 16, 2026, Watching the Sun: a 200-year journey, guided tour Solar Physics, Ukkel, Belgium - register <https://events.spacepole.be/category/2/>

* Oct 29 - Nov 1, 2026, Prior to ESWW2026 - Space Weather Training Course in Firenze, Italy - Applications closed

* Nov 2-6, 2026, European Space Weather Week, Florence, Italy, <https://esww2026.eswan.eu/>

* Nov 13, 2026, Watching the Sun: a 200-year journey, guided tour Solar Physics, Ukkel, Belgium - register <https://events.spacepole.be/category/2/>

* Nov 23-25, 2026, STCE course: Role of the ionosphere and space weather in military communications, Brussels, Belgium - register: <https://events.spacepole.be/event/259/>

* Nov 30, 2026, Watching the Sun: a 200-year journey, guided tour Solar Physics, Ukkel, Belgium - register <https://events.spacepole.be/category/2/>

* Dec 7-9, 2026, STCE Space Weather Introductory Course for Aviation, Brussels, Belgium - register: <https://events.spacepole.be/event/262/> - Fully booked

To register for a course and check the seminar details, navigate to the STCE Space Weather Education Center: <https://www.stce.be/SWEC>

If you want your event in the STCE newsletter, contact us: [stce_coordination at stce.be](mailto:stce_coordination@stce.be)



Space Weather Education Centre

Website: <https://www.stce.be/SWEC>