

STCE Newsletter

20 Jul 2026 - 26 Jul 2026



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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. Game of the Goose... for Satellites!

The Game of the Goose (Juego de la Oca / Jeu de l'Oie / Ganzenbspel) is a classic board game of pure chance played with two dice and a track of 63 spaces. The "Game of the Goose... for Satellites!" is a special, educational version of this game to illustrate the numerous space weather impacts on satellites. For this game, these impacts have been aggregated over the various orbits. In real life of course, atmospheric drag will e.g. not impact satellites in GEostationary Orbits (GEO), whereas satellites in a Low Earth Orbit (LEO) will e.g. not be impacted by a magnetopause crossing. Special cases such as the destruction by an anti-satellite weapon or the impact from a nuclear detonation (e.g. Starfish Prime) have been omitted.

There are 10 special spaces that mention adverse space weather effects. These usually result in a "punishment" such as skipping a turn. Space weather effects from solar flares, solar energetic particles and geomagnetic effects are included. The pdf documents with the "Board" and the "Rules" are available in the online version of this newsitem at <https://www.stce.be/news/831/welcome.html>

Have fun!



2. E-SWAN medals: Call for Nominations

Call for nominations: International Space Weather and Space Climate Medals 2026

Dear Colleagues,

The E-SWAN Awards Committee is happy to announce the 2026 contest for the three International Space Weather and Space Climate Medals. The medal recipients will be announced during the Medal Ceremony on 2nd November 2026 at the European Space Weather Week in Florence (Italy). Each winner will be invited to give a 20-minute lecture about his/her research in a dedicated session on the

following day. Moreover, medallists are invited to serve on the Awards Committee in the following three years, and they are offered free E-SWAN membership for those three years.

All three prizes are prestigious recognitions of the recipients' major contributions in the field of Space Weather and Space Climate. Medal recipients' achievements must have been documented via publications in peer-reviewed journals or book chapters, or must be technological contributions that have led to a fully implemented and documented new Space Weather or Space Climate capability. Medal recipients' work must be internationally recognized in the field of Space Weather and/or Space Climate.

In addition to the above common criteria, there are the following specific requirements for each of the three medals:

The Kristian Birkeland Medal for Space Weather and Space Climate:

The Kristian Birkeland Medal is awarded for outstanding achievements in combining basic and applied research, and in developing essential Space Weather and/or Space Climate products used across scientific disciplines and/or even outside the research community. The work must have led to a better physical comprehension of the solar-terrestrial phenomena, to a crucial improvement of Space Weather and/or Space Climate modelling, or to a new generation of observational techniques or instruments.

The Baron Marcel Nicolet Medal for Space Weather and Space Climate:

The Baron Marcel Nicolet Medal is awarded for outstanding achievements in educating and serving the Space Weather and Space Climate community, for binding it together in a spirit of peace and friendship, fostering collaboration and cooperation, and/or for going even beyond the Space Weather and Space Climate research community by engaging larger audiences.

The Alexander Chizhevsky Medal for Space Weather and Space Climate:

The Alexander Chizhevsky Medal is awarded to an early career scientist in recognition of outstanding achievements in Space Weather and Space Climate with an innovative approach. The nominee must be an early career scientist within eight (8) years of receiving his/her first PhD or an equivalent degree at the time of nomination. This period may be increased for confirmed career breaks (such as periods of sickness, military service, parental leave, and other care duties which took them away from their scientific work).

How to nominate?

In order to nominate a person for one of the International Space Weather and Space Climate Medals, please send one single pdf document which includes:

- Your full name and professional address.
- The full name and professional address of the person that you nominate (the nominee).
- Which of the three medals the nominee is nominated for (only one medal type is allowed for each nominee).
- Reasons for the nomination (two pages maximum). Please make sure that these reasons should relate to Space Weather and/or Space Climate and fulfill the criteria listed above.
- A full CV of the nominee (three pages maximum).
- Letters of support from two colleagues, preferably outside your own or the candidate's institution. You may also include those two colleagues as co-signatories on the nomination proposal. For the Chizhevsky prize, a recommendation letter from the PhD advisor (in case the PhD supervisor is not the person submitting the nomination) is advised.
- Up to five references (journal articles, prizes, patents, etc.) of the nominee's work.

Self-nominations are not allowed. Any individual can only nominate one person for a medal. Note that the medal committee members cannot nominate or be nominated.

Send the documents by email to: medals@lists.eswan.eu

The deadline for the nominations: 15th September 2026.

Composition of the Awards Committee in 2026:

== Previous winners: ==

- Charles N. Arge (2023 Birkeland)
- Claudio Cesaroni (2023 Chizhevsky)
- Yoshizumi Miyoshi (2024 Birkeland)
- Theodosios Chatzistergos (2024 Chizhevsky)
- Erika Palmerio (2025 Chizhevsky)

== Ex-officio members: ==

- Ronald van der Linden: Representative of the E-SWAN Executive Board.
- Piers Jiggins: Representative of the ESWW Programme Committee.
- Ilya Usoskin: Representative of the E-SWAN Publication Committee.

== The Awards Committee is chaired by Andrea Opitz. ==

For further information on the history and the scientists behind the medals, please refer to:

<https://eswan.eu/index.php/organs/committees/awards-committee>



3. Review of solar and geomagnetic activity

WEEK 1334 from 2026 Jul 20

Solar Active Regions (ARs) and flares

The solar flaring activity over the past week was at low to moderate levels with daily C-class flaring and six M-class flares registered. Five of the M-class flares were produced on July 20 - July 22 by SIDC Sunspot Group 920 (NOAA Active Region 4493), which quickly grew into being the largest and most complex region on the visible solar disk. Classified as magnetic type beta-gamma-delta it was responsible for the majority of the registered flaring activity, including an M3.6 flare (SIDC Flare 8244) with peak time at 06:35 UTC on July 22. The second strongest event was an M3.2 flare (SIDC Flare 8274) recorded on July 26, with peak time 15:28 UTC. It was produced by SIDC Sunspot Group 886 (NOAA Active Region 4494), which was classified as magnetic type beta-delta and towards the end of the week started to exhibit some new flux emergence and growth. Other notable regions contributing to the low levels of activity throughout the week were the returning region SIDC Sunspot Group 860 (NOAA Active Region 4492), briefly classified as magnetic type beta-gamma, and SIDC Sunspot Group 922 (NOAA Active Region 4495), classified as magnetic type beta.

Coronal mass ejections

A slow and faint CME (SIDC CME 699) related to a filament eruption became first visible in LASCO/C2 data around 04:49 UTC on July 24. The bulk of the CME was travelling south-eastwards, yet it appeared to be deflected by the presence of a large positive polarity coronal hole nearby, the recurrent SIDC Coronal Hole 159. It has been modelled to possibly have an Earth-directed component with low chances for an arrival late UTC on July 27 or early UTC on July 28. No other Earth-directed CMEs were detected in the available coronagraph imagery throughout the week.

Coronal holes

Several coronal holes were present on the visible disc throughout the week. Different fractions of the recurrent L-shaped negative polarity coronal hole, marked as SIDC Coronal Hole 149 and SIDC Coronal Hole 142, have crossed the central meridian on July 19 and late on July 20 respectively. High-speed streams related to these coronal holes were registered in the in-situ solar wind data throughout the week. A recurrent positive polarity coronal hole (SIDC Coronal Hole 159) started crossing the central meridian on July 25. The location of the coronal hole suggest low chances for a related high-speed stream arrival at Earth.

Proton flux levels

The greater than 10 MeV GOES proton flux as measured by GOES 18 was at nominal levels throughout the entire week.

Electron fluxes at GEO

The greater than 2 MeV electron flux as measured by GOES 18 and GOES 19 was exceeding the 1000 pfu threshold at the start of the week, then decreased to background levels influenced by a high-speed stream arrival on July 21 and has started to further occasionally exceed the 1000 pfu threshold from July 24 onwards. The corresponding 24-hour electron fluence varied between moderate and nominal levels.

Solar wind

The solar wind conditions (as measured by ACE) at the beginning of the week reflected background slow solar wind regime. On July 21 the solar wind conditions registered a connection to an anticipated high-speed stream (HSS) arrival related to a fraction of an L-shaped recurrent negative polarity coronal hole, marked as SIDC Coronal Hole 149. The interplanetary magnetic field increased up to 17 nT with a minimum Bz component of -13 nT. The phi angle switched to the negative sector (directed towards the Sun) reflecting the polarity of the geo-effective coronal hole and remained predominantly in the negative sector for the rest of the week. The solar wind speed was relatively low with values below 500 km/s until

July 23, which marked the arrival of a HSS related to another fraction of the L-shaped negative polarity coronal hole, namely SIDC Coronal Hole 142. This second arrival brought a faster stream with speeds up to 749 km/s. The HSS influence was waning on July 25 with a gradual return towards slow solar wind conditions by the end of July 26.

Geomagnetism

The geomagnetic conditions were globally quiet at the beginning and towards the end of the week, with quiet to unsettled levels registered locally over Belgium. Predominantly unsettled to active conditions were observed from July 21 until July 25 with minor storm levels registered late UTC on July 23 as a result of a high speed stream arrival.

4. Noticeable Solar Events

DAY	BEGIN	MAX	END	LOC	XRAY	OP	10CM	TYPE	Cat	NOAA
20	1429	1436	1440		M2.5					4493
20	1908	1920	1926		M1.1			VI/2		4493
20	2215	2225	2231		M3.4					4493
21	1716	1727	1730		M1.9				82	4493
22	0627	0635	0637		M3.6				82	4493
26	1517	1528	1532		M3.2			II/2I/2 1	87	4494

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

5. PROBA2 Observations (20 Jul 2026 - 26 Jul 2026)

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>

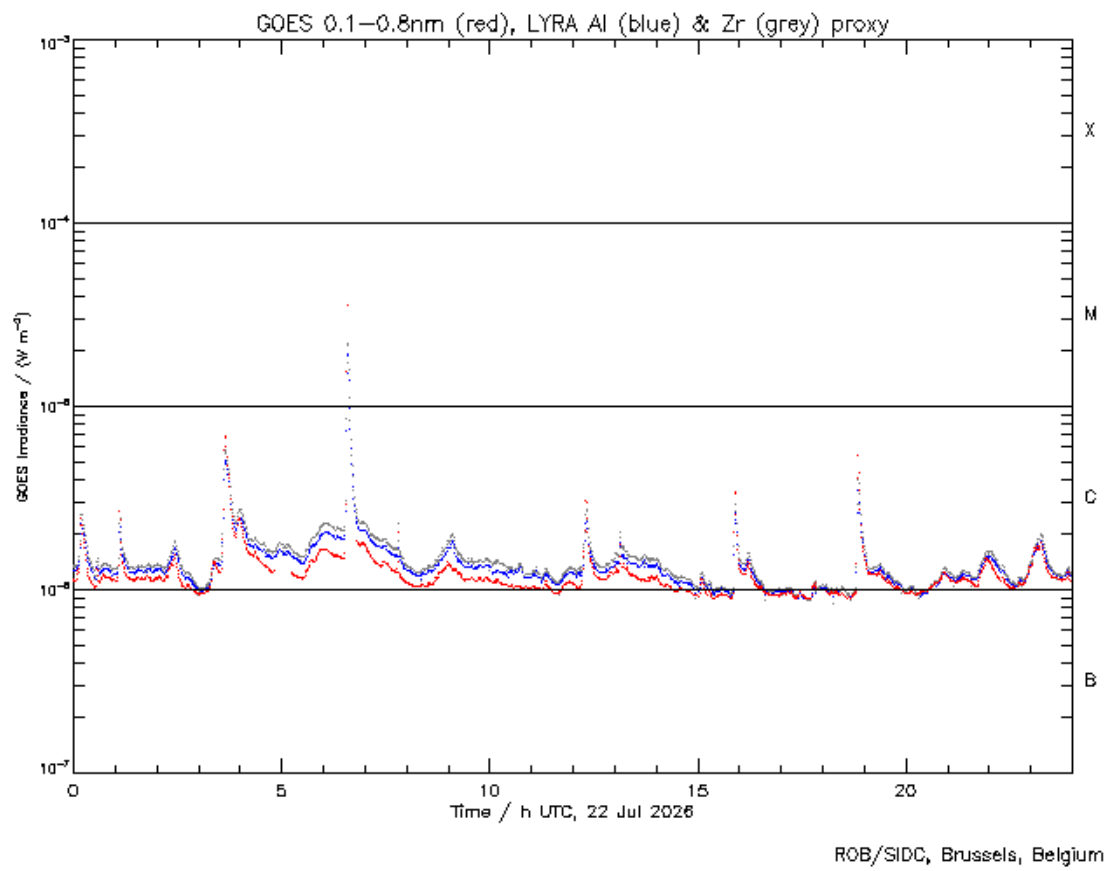
This page also lists the recorded flaring events.

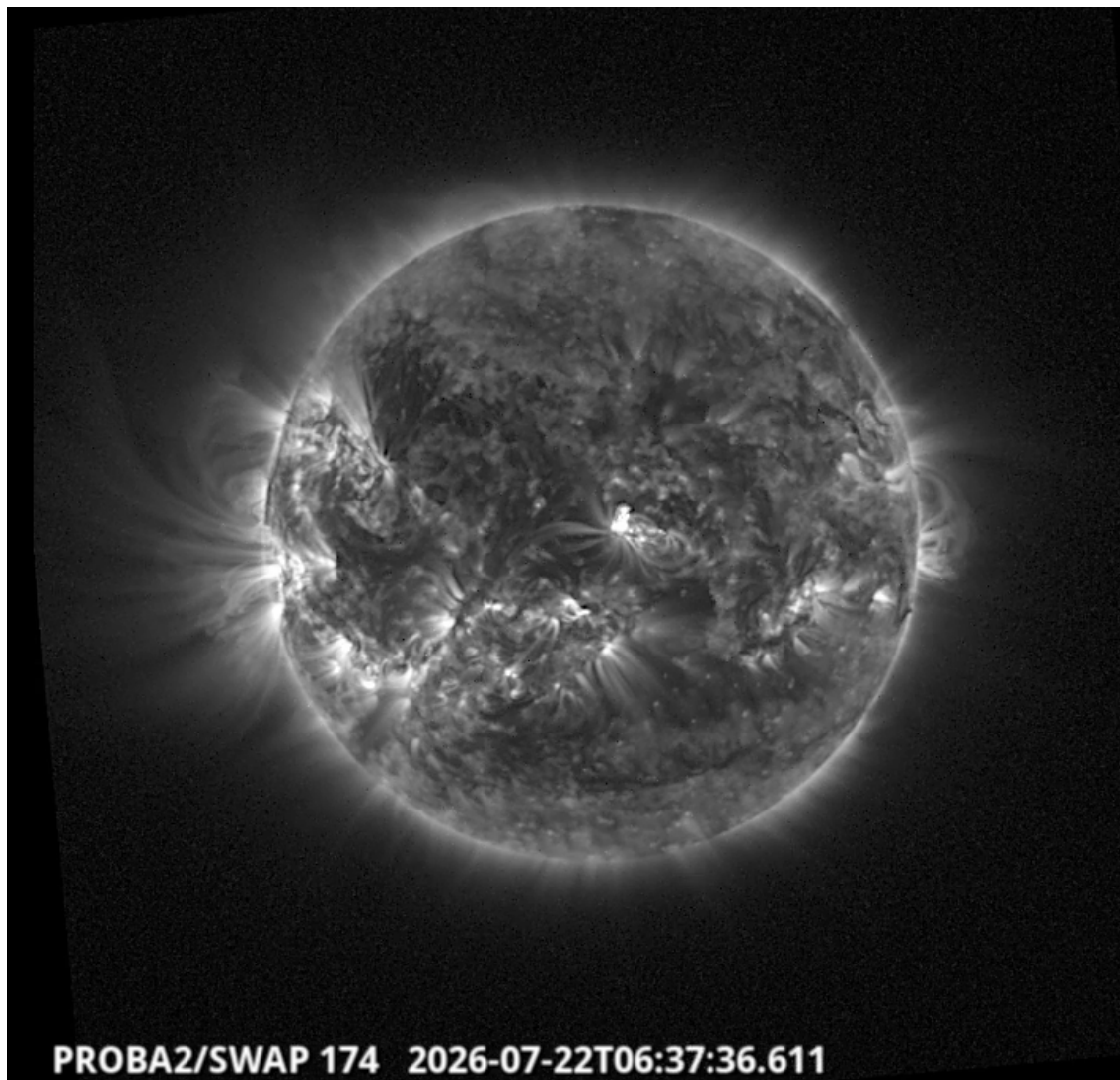
A weekly overview movie can be found at https://proba2.sidc.be/swap/data/mpg/movies/weekly_movies/weekly_movie_2026_07_20.mp4 (SWAP week 852).

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

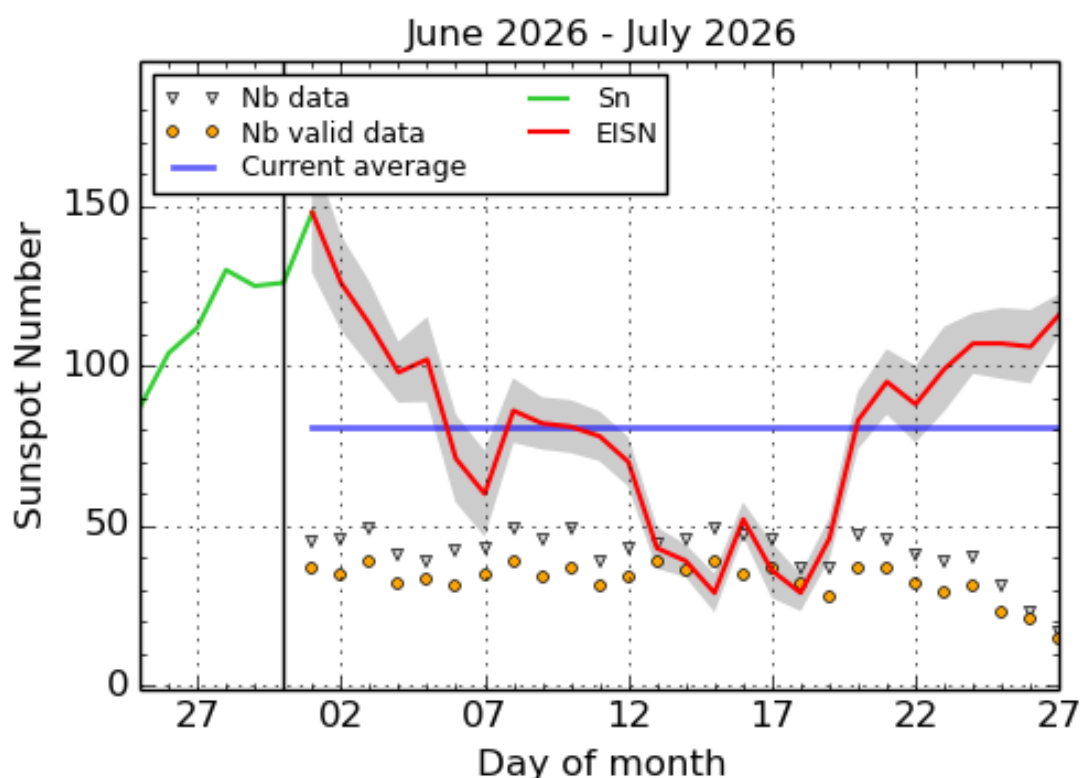
Wednesday July 22





The largest flare of this week was an M3.6, and it was observed by LYRA (top panel) and SWAP (bottom panel). The flare peaked on 2026-Jul-22 at 06:35 UT and occurred at the center of the Sun, originating from active region NOAA4493 (SIDC SSG 920). Find a SWAP movie of the event at https://proba2.sidc.be/swap/movies/20260722_swap_movie.mp4.

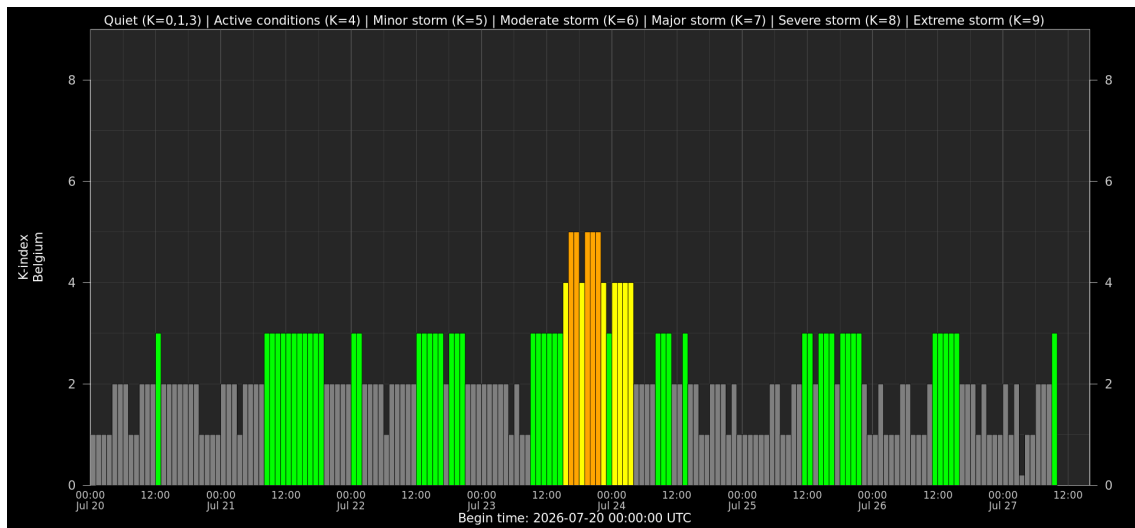
6. International Sunspot Number by SILSO



SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium, 2026 July 27

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.

7. Geomagnetic Observations in Belgium



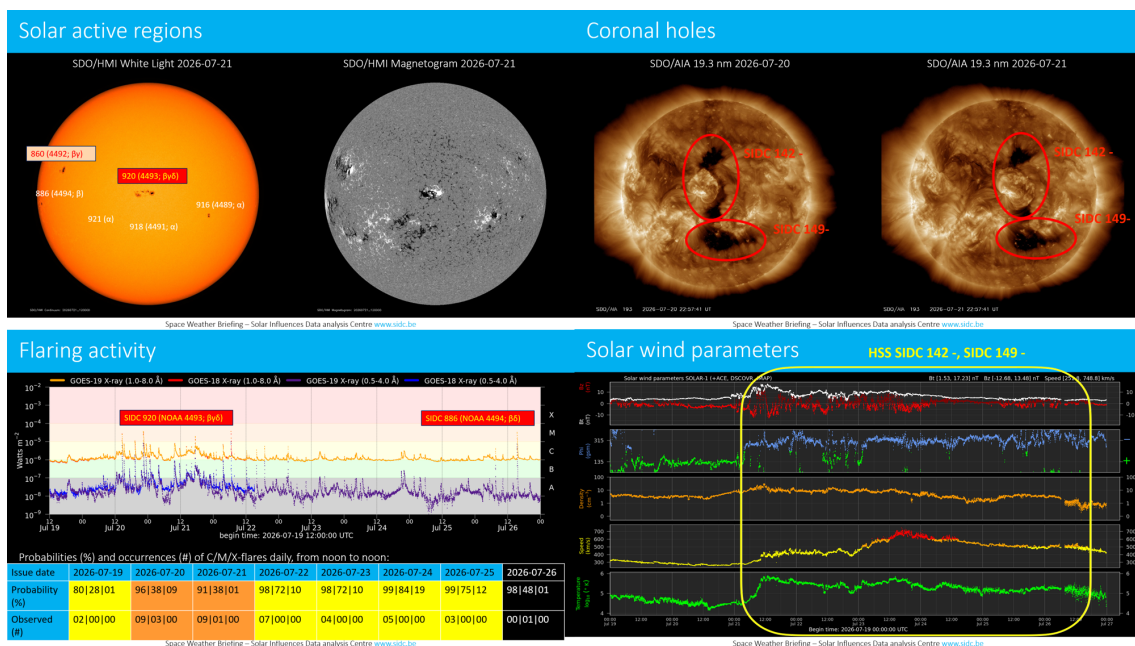
Local K-type magnetic activity index for Belgium based on data from Dourbes (DOU) and Manhay (MAB). Comparing the data from both measurement stations allows to reliably remove outliers from the magnetic data. At the same time the operational service availability is improved: whenever data from one observatory 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/

8. SIDC Space Weather Briefing

The forecaster on duty presented the SIDC briefing that gives an overview of space weather activity from 20 July to 26 July 2026.

The pdf of the presentation: https://www.stce.be/briefings/20260727_SWbriefing.pdf



9. Upcoming Activities

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.

- * Aug 3, 2026, STCE seminar: Magnetosphere-Ionosphere Coupling in the Auroral Zones of Earth and Jupiter, Brussels, Belgium
- * Aug 6, 2026, Watching the Sun: a 200 year journey, public visits of the solar physics and space weather department, NL/FR/EN, Brussels, Belgium - <https://200year.observatory.be/en-gb/coupole>
- * Aug 12, 2026, Solar eclipse and night sky viewing, Humain Radioastronomy Station, Belgium - <https://200year.observatory.be> - register: <https://events.spacepole.be/event/294/>
- * 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 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 23-25, 2026, STCE course: Role of the ionosphere and space weather in military communications, Brussels, Belgium - register: <https://events.spacepole.be/event/259/>
- * Dec 7-9, 2026, STCE Space Weather Introductory Course for Aviation, Brussels, Belgium - register: <https://events.spacepole.be/event/262/>
- * Feb 15-17, 2027, STCE Space Weather Introductory Course, Brussels, Belgium - register: <https://events.spacepole.be/event/296/>
- * Mar 15-17, 2027, STCE course: Role of the ionosphere and space weather in military communications, Brussels, Belgium - register: <https://events.spacepole.be/event/300/>
- * Apr 12-14, 2027, STCE Space Weather Introductory Course, Brussels, Belgium - register: <https://events.spacepole.be/event/297/>
- * May 24-26, 2027, STCE Space Weather Introductory Course, Brussels, Belgium - register: <https://events.spacepole.be/event/298/>

