

STCE Newsletter

14 Sep 2026 - 20 Sep 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. Topical Issue - Space Climate: From Solar Variability to Terrestrial Impacts

The Journal of Space Weather and Space Climate (JSWSC - <https://www.swsc-journal.org/>) has opened a Topical Issue (TI) "Space Climate: From Solar Variability to Terrestrial Impacts".

This Topical Issue (TI) was initiated following discussions at Space Climate 10 (SC10, Mariehamn, Åland Islands, Finland, 9-12 June 2026), and the European Space Weather Week 2026 (ESWW 2026, Florence, Italy, 2-6 November 2026), specifically bridging sessions SCL1 (Long-term Solar Variability: Observations, Proxies, and Models) and SCL2 (Extreme Solar Events: From Solar Origin to Cosmogenic Isotope Signatures). However, the TI is not restricted to papers presented at these conferences and is open to any relevant submissions addressing the core themes of the issue listed below.

This TI invites contributions in fields of solar, magnetospheric, ionospheric, and atmospheric physics, with a focus on Space Climate. Of specific interest are contributions that advance understanding of the solar-terrestrial relationship using space- and ground-based observations, models, theories and analysis methods. In particular, contributions addressing the following research topics are encouraged:

- Sources of Space Weather and Space Climate;
- Solar Wind-Magnetosphere-Ionosphere Coupling and Its Role in Space Climate;
- Atmospheric responses to solar and geomagnetic forcing;
- Developments in ground- and Space-based initiatives for Space Climate physics research.

Manuscripts must be submitted through the JSWSC online submission system. Guidelines for manuscript submission and information about article processing charges are available on the JSWSC website under "Instructions for authors" (www.swsc-journal.org/author-information/instructions-for-authors).

Deadline: 31 March 2027

All manuscripts will be peer-reviewed according to the quality standards of international scientific journals. Contributions must be consistent with the scope and style of JSWSC. Manuscripts should present sufficient new insights, place the results in the context of appropriately referenced existing work, and provide adequate evidence to support the conclusions.

Papers will be published immediately upon acceptance, without waiting for the closure of the Topical Issue, in electronic format only, and will be freely available through the JSWSC website. JSWSC also offers the possibility of including electronic supplementary material, such as animations, movies, code, and datasets.

For questions regarding this Topical Issue, please contact the T-EiC. For questions concerning the submission process, please contact the Editorial Office (jsWSC@edpsciences.org).

Topical Editor-in-Chief (T-EiC):

Kseniia Golubenko (kseniia.golubenko@oulu.fi) - University of Oulu, Oulu, Finland.

Topical Editors (TE):

Pavle Arsenovic - University of Natural Resources and Life Sciences (BOKU), Vienna, Austria.

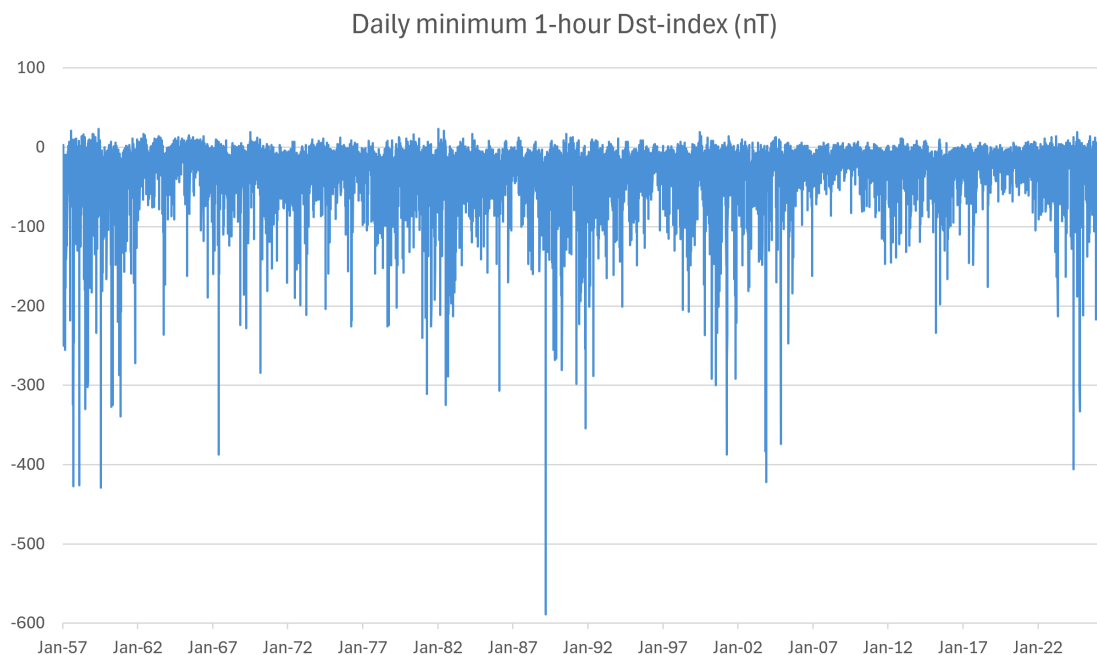
Theodosios Chatzistergos - Max Planck Institute for Solar System Research, Gottingen, Germany.

Shipra Sinha - University of Oulu, Oulu, Finland.

Chitradeep Saha - University of Reading, Reading, England.

Nandita Srivastava - Udaipur Solar Observatory, Physical Research Laboratory, Udaipur, India.

Sowmya Krishnamurthy - University of Graz, Graz, Austria.



Credits data: World Data Center for Geomagnetism, Kyoto (<https://wdc.kugi.kyoto-u.ac.jp/index.html>)

2. Open Door (14 Sep 2026 - 20 Sep 2026)

On Saturday 26 and Sunday 27 September 2026, the Space Pole in Uccle (the Royal Observatory of Belgium, the Royal Meteorological Institute of Belgium (RMI) and the Royal Belgian Institute for Space Aeronomy) opens its doors. On top of that, the Royal Observatory of Belgium celebrates it's bicentennial anniversary this year.

For one weekend, visitors will have the opportunity to discover places, instruments and activities that are normally not accessible to the public. But above all, they will have the chance to meet the people who make space science happen: scientists, engineers and other members of staff, ready to share their work, their expertise and their passion. An entire weekend of science and activities, for all ages in French, Dutch and English! Everyone is welcome! We hope to see you there.

<https://spacepole.be/en/open-days>



3. Review of solar and geomagnetic activity (14 Sep 2026 - 20 Sep 2026)

Solar Active Regions (ARs) and flares

At the beginning of the week, there were 7 active regions visible on the solar disk and 3 at the end. Ranging from SIDC sunspot group 939 (NOAA AR 4525) on 14 September to SIDC sunspot group 962 (NOAA AR 4534) on 20 September. Only minor C-class flaring was observed during the week, with 4 C-class flares. The largest flare was a C3.7 flare (SIDC Flare 8588) peaking on 20 September at 22:34 UTC, which was produced by SIDC Sunspot Group 964 (NOAA Active Region 4534).

Coronal mass ejections

No Earth directed CMEs were observed during the week.

Coronal Holes

At the beginning of the week, SIDC Coronal Hole 149 was located at mid to high latitude in the southern hemisphere, with a negative polarity, it crossed the central meridian on 11 September. SIDC Coronal Hole 142, with negative polarity, was also visible at mid to high latitude in the northern hemisphere; it crossed the central meridian on September 13. The equatorial extension of the southern polar coronal hole (SIDC Coronal Hole 159, positive polarity) crossed the central meridian on 19 September.

Proton flux levels

The 10 MeV proton flux on GOES-18 showed a slight increase on 14 September, but it did not pass the threshold.

Electron fluxes at GEO

The greater than 2 MeV electron flux, as measured by GOES-18 and GOES-19, were mainly slightly above the 1000 pfu alert on 14 and 15 September and below the rest of the week. The 24-hour electron fluence was at moderate levels on those 2 days and decreased to normal after that.

Solar wind

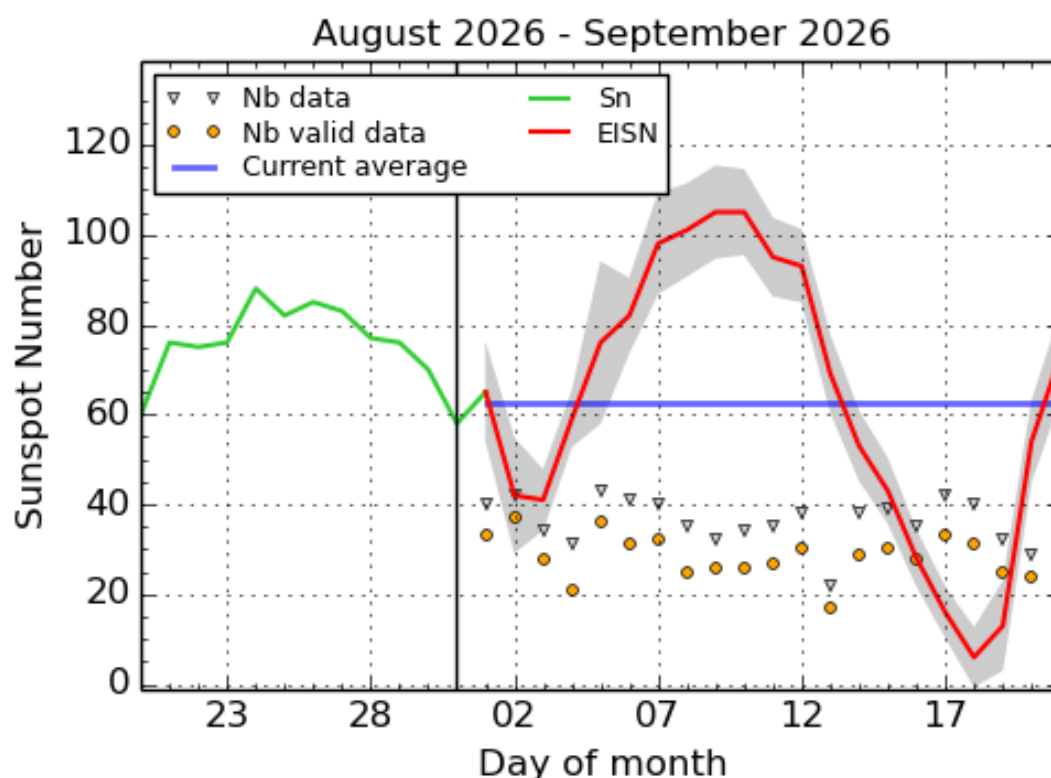
A weak shock was detected in the L1 solar wind at 02:25 UT on 14 September. The interplanetary magnetic field jumped from 4 to 8 nT, the solar wind speed from 260 to 350 km/s and its density from 1 to 4 particles per cubic centimeter. It was followed by a glancing blow from an ICME (corresponding to a CME from 9 September).

On 15 September at 11:30 UT an early arrival of the ICME associated with SIDC CME 721, from September 13, was observed. Solar wind speed reached 815 km/s, reflecting the transient's elevated speed, the interplanetary magnetic field remained at moderate levels (reaching 16 nT) with a mostly positive Bz. Shortly after, on 16 September, the solar wind at Earth was influenced by the arrival of a high-speed stream (HSS) from SIDC Coronal Hole 142 (negative polarity), reaching speeds around 600 km/s. From 17 September onwards, the solar wind at Earth returned to a slow solar wind regime.

Geomagnetism

Geomagnetic conditions were quiet to unsettled most of the week, except for a few periods with K_{Be} and K_p up to 4 on 14-16 September.

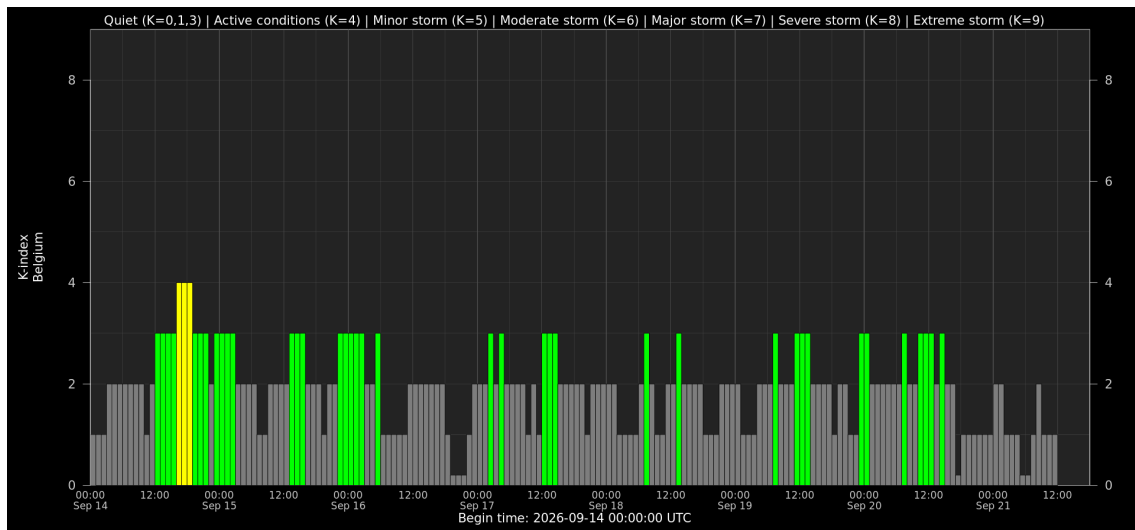
4. International Sunspot Number by SILSO



SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium, 2026 September 21

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.

5. 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/

6. SIDC Space Weather Briefing (14 Sep 2026 - 20 Sep 2026)

The forecaster on duty presented the SIDC briefing that gives an overview of space weather from 14 September 2026 to 20 September 2026.

The pdf of the presentation: <https://stce.be/briefings/>

SIDC Space Weather Briefing

14 September 2026-20 September 2026

Rodriguez Luciano

& the SIDC forecaster team



Solar Influences
Data analysis Centre
www.sidc.be

7. Action (14 Sep 2026 - 20 Sep 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 26-27, 2026, Open Days at the Space Pole, Ukkel, Belgium - <https://spacepole.be/en/open-days>
- * 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>