

*SIDC Space Weather Operation Center*

# ESA Space Weather Service Network from a forecaster's perspective

Yana Maneva/SIDC SWOP team



Royal Observatory  
of Belgium

ESA SWESNET workshop, Feb 05 2026

Solar Influences  
Data analysis Centre  
[www.sidc.be](http://www.sidc.be)



# Space Weather Services at SIDC

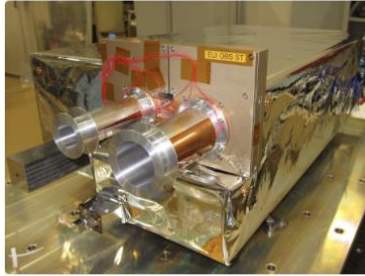
## Ground Observations



The SIDC monitors the level of solar activity from the photosphere to the corona with ground based instruments located in Uccle and Humain.

[Read more](#)

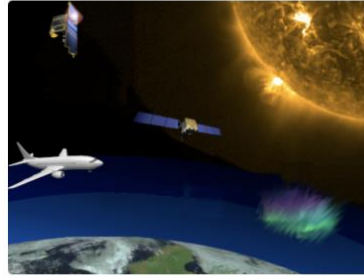
## Space Instruments



To avoid the disturbing or blocking effect of the Earth atmosphere, EUV observations of the solar corona need to be made from space...

[Read more](#)

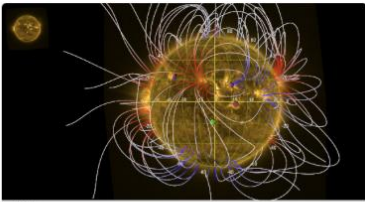
## Space Weather & Climate



We monitor and forecast solar variability to provide information services to society and industry about the influence of space weather and climate.

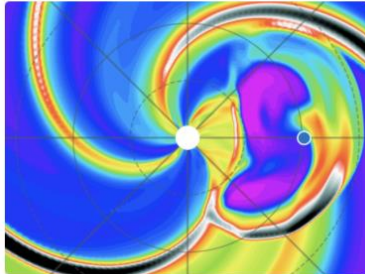
[Read more](#)

## Data Processing & Distribution



Data processing is necessary to extract relevant information for research studies, whereas data distribution and visualization are part of ROB open data policy.

## Modeling



Modelling of Solar phenomena allows scientists to test theories and to predict Space Weather phenomena and their impact on Earth.

[Read more](#)

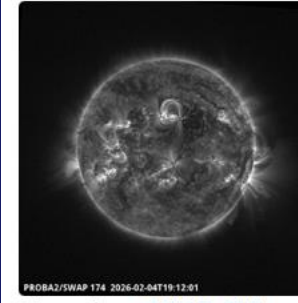
## Supporting Research



The SIDC shares and expands its expertise through interaction with both upcoming and experienced researchers.

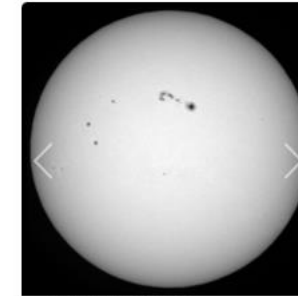
[Read more](#)

## Space Based Imaging



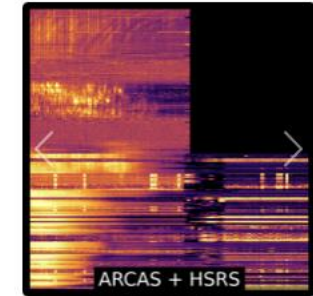
More data: [SWAP](#), [EUI](#)

## Ground Based Imaging

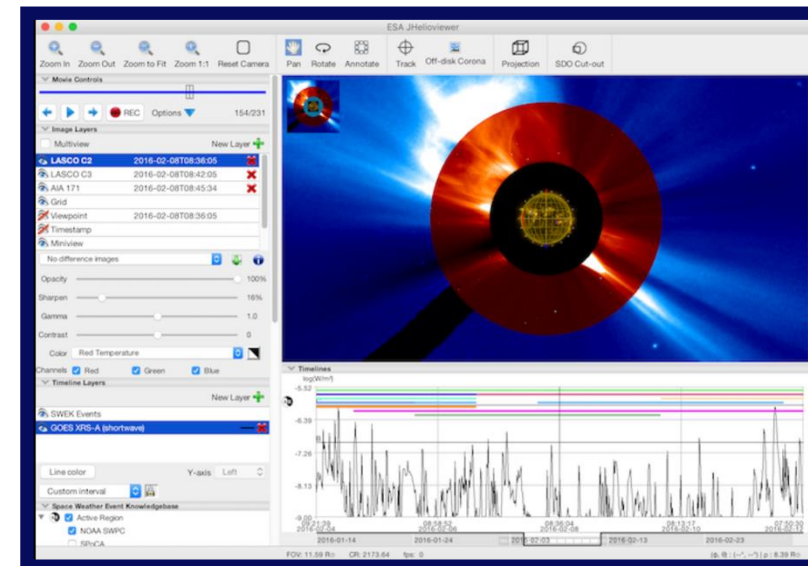


More: [H- \$\alpha\$](#) , [WL](#), [Ca-IIK](#), [Drawings](#)

## Ground Based Radio



More: [ARCAS+HSRS](#), [CALLISTO](#)





# Space Weather Services at SIDC

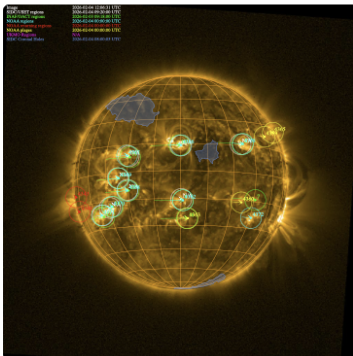
## Space Weather Services

### Detections

**Solardemon**  
**2026-02-04 13:27 B2**  
**flare**

**CACTus**  
**2026-02-02 00:24**  
**318km/s**

### Solar Map



### Latest Alerts

Presto 2026-02-04

A shock was observed in the solar wind at L1 in ACE data at 14:20 UTC. The interplanetary

Flaremail 2026-02-04

A class X4.2 solar X-ray flare occurred on 2026/02/04 with peak time 12:13UT

CACTus Halo 2026-02-04

A halo or partial-halo CME was detected with the following characteristics: t0 |

### Forecasts

|                  |                                            |
|------------------|--------------------------------------------|
| Flare:           | <b>M-class flares (≥50%)</b>               |
| Protons:         | <b>Quiet</b>                               |
| Geomagnetic:     | <b>Active conditions (A&gt;=20 or K=4)</b> |
| All quiet:       | <b>False</b>                               |
| Provisional SSN: | <b>155</b>                                 |



### Solar Activity

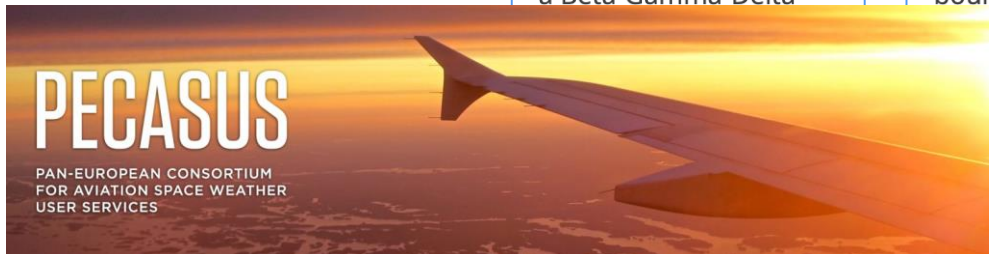
URSIgram 2026-02-04

A total of 9 numbered sunspot groups were identified on the disk over the past 24 hours. There was one X-class flare and numerous M-class flares in the past 24 hours. All the major solar activity originates at SIDC Sunspot Group 784 (NOAA Active Region 4366) currently located at N13E07, with a Beta-Gamma-Delta

### Solar Wind

URSIgram 2026-02-04

Geomagnetic conditions have been quiet in the last 24 hours (Kp and K\_BEL up to 2). Moderate storm levels (K up to 6) can be expected with the ICME (from the 2 February CME) arrival on 5 February. The solar wind speed at Earth is currently low, around 330 km/s. A sector boundary crossing was observed on February 3 30 UTC, during the planetary magnetic



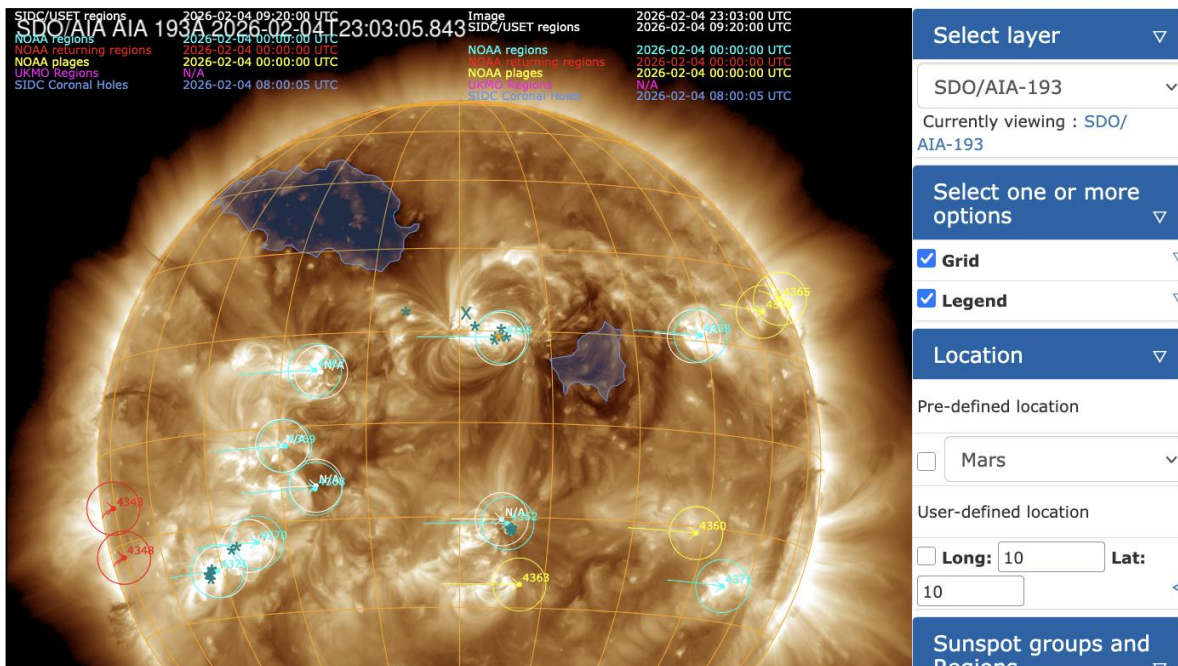
# Space Weather Services at SIDC: S-ESC



[Help](#) [Similar products](#) [Related products](#) [Latest](#) [Query](#)

## SIDC Solarmap

This service allows the user to display solar features (such as sunspot groups, coronal holes, filaments, flares, and coronal mass ejections) on the solar disc. The user can select features and navigate back and forth in time: the closest available observations and images will be displayed. A Heliocentric Earth equatorial (HEEQ) grid of 15 degrees can also be added to refine the feature location on the surface. Additional characteristics of the features (such as time of observation, coordinates of the specified locations, etc.) are also indicated. Additionally, the user can overplot specific locations of interest onto the solar disc. A viewpoint other than Earth can also be specified from a pre-defined list of planetary and spacecraft locations.



[Help](#) [Similar products](#) [Related products](#) [Latest](#) [Query](#)

## SIDC Latest Moderated Solar Weather Event list

This service provides a list of solar weather events (sunspot groups, solar flares, and coronal holes) compiled daily by the forecaster on duty at the SIDC (RWC Belgium) starting from existing reference event lists.

### SIDC Latest Moderated Solar Weather Event List

#### SIDC Sunspots

| Sunspot Group | First Time [UTC]      |                  | Last Time [UTC]  |                  |                  |          |
|---------------|-----------------------|------------------|------------------|------------------|------------------|----------|
| 0779          | 2026-01-28 09:25      |                  | 2026-02-03 00:00 |                  |                  |          |
| V             | Evaluation Time [UTC] |                  | Location         | Growth           | McIntosh         | Magnetic |
|               | 2026-01-28 09:25      |                  | S19E36           | Growing          | Bxo              | Beta     |
|               | 2026-01-29 08:53      |                  | S19E25           | Decreasing       | Axx              | Alpha    |
|               | 2026-01-30 08:53      |                  | S22E11           | Stable           | Axx              | Alpha    |
|               | 2026-01-31 08:49      |                  | S21E01           | Stable           | Hrx              | Alpha    |
|               | 2026-02-01 00:30      |                  | S21W09           | Decreasing       | Axx              | Alpha    |
|               | 2026-02-02 00:30      |                  | S22W23           | Stable           | Axx              | Alpha    |
| V             | Flare                 | Start Time [UTC] | Peak Time [UTC]  | End Time [UTC]   | GOES X-ray class | Location |
| 0789          | 2026-02-04 00:30      |                  |                  | 2026-02-04 08:41 |                  |          |
| V             | Evaluation Time [UTC] |                  | Location         | Growth           | McIntosh         | Magnetic |
|               | 2026-02-04 08:41      |                  | N24W44           | Growing          | Bxo              | Beta     |
| V             | Flare                 | Start Time [UTC] | Peak Time [UTC]  | End Time [UTC]   | GOES X-ray class | Location |
| 0778          | 2026-01-28 00:30      |                  |                  | 2026-02-04 09:20 |                  |          |
| V             | Evaluation Time [UTC] |                  | Location         | Growth           | McIntosh         | Magnetic |
|               | 2026-01-28 09:25      |                  | S14E59           | Growing          | Bxo              | Beta     |
|               | 2026-01-29 08:53      |                  | S14E46           | Decreasing       | Bxo              | Beta     |
|               | 2026-01-30 00:30      |                  | S14E37           | Growing          | Bxo              | Beta     |
|               | 2026-01-31 08:49      |                  | S15E20           | Stable           | Bxo              | Beta     |
|               | 2026-02-01 00:30      |                  | S14E09           | Stable           | Bxo              | Beta     |
|               | 2026-02-02 09:20      |                  | S15W08           | Decreasing       | Bxo              | Beta     |
|               | 2026-02-03 00:00      |                  | S15W17           | Decreasing       | Bxo              | Beta     |



Royal Observatory  
of Belgium

Solar Influences  
Data analysis Centre  
[www.sidc.be](http://www.sidc.be)

# Space Weather Services at SIDC

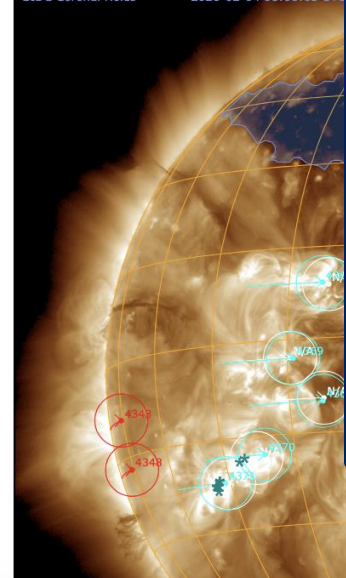


Help Similar products Related products Latest Query

## SIDC Solarmap

This service allows the user to display solar disc. The user can select features and Heliocentric Earth equatorial (HEEQ) grid. The features (such as time of observation, locations of interest onto the solar disc, and locations.

SIDC/USEP regions  
SDO/AIA 193A 2026-02-04T  
NOAA regions  
NOAA predicting regions  
NOAA plagues  
UKMO Regions  
SIDC Coronal Holes



## SIDC Coronal Mass Ejections (CMEs)

Start Time: 15/01/2026, 00:00

End Time: 04/02/2026, 15:17

SIDC #:

- ☐ All ☐ Has >C flares ☐ Has >M flares ☐ Has >X flares  
☐ All ☐ Speed > 600 km/s ☐ Speed > 1000 km/s

Show Table

### SIDC CME [625](#)

Launch Time: 2026-02-02T04:00:00

Issue Time: 2026-02-02T14:14:30

Backsided: No

Width: 50°

Speed: 700 km/s

LAT LON: N25E22

Time at 21.5 R<sub>☉</sub>: TBD

JHelioviewer:

| 2D Detections: | TIME [UTC]       | SPEED (KM/S) | PRINCIPAL ANGLE (°) | WIDTH (°) | RADIAL DIST.      | INSTRUMENT | METHOD                                   | PROPERTIES |
|----------------|------------------|--------------|---------------------|-----------|-------------------|------------|------------------------------------------|------------|
|                | 2026-02-02 04:00 | 300 km/s     | 45°                 | 150°      | 10 R <sub>☉</sub> | LASCO C3   | Evaluation based on LASCO C3. [LASCO C3] |            |

| 3D Evaluations: | TIME [UTC]       | SPEED (KM/S) | WIDTH (°) | PRINCIPAL DIRECTION | METHOD                         |
|-----------------|------------------|--------------|-----------|---------------------|--------------------------------|
|                 | 2026-02-02 07:33 | 700 km/s     | 50°       | N25E22              | Evaluation based on STEREOCAT. |

| Forecasts: | ISSUE TIME[UTC]  | ESTIMATED ARRIVAL TIME[UTC] | CONFIDENCE (%) |
|------------|------------------|-----------------------------|----------------|
|            | 2026-02-02 14:16 | 2026-02-05 06:00 ± 12 hours | 75 %           |

Long: 10

Lat: 10

Sunspot groups and Regions



Help Similar products Related products Latest Query

## Event list

al holes) compiled daily by the forecaster on duty at the

Time [UTC]

-02-03 00:00

| with     | McIntosh | Magnetic |
|----------|----------|----------|
| wing     | Bxo      | Beta     |
| creasing | Axx      | Alpha    |
| ole      | Axx      | Alpha    |
| ole      | Hrx      | Alpha    |
| creasing | Axx      | Alpha    |
| ole      | Axx      | Alpha    |

Time [UTC] GOES X-ray class Location

-02-04 08:41

| rowth  | McIntosh | Magnetic |
|--------|----------|----------|
| rowing | Bxo      | Beta     |

Time [UTC] GOES X-ray class Location

-02-04 09:20

| with     | McIntosh | Magnetic |
|----------|----------|----------|
| wing     | Bxo      | Beta     |
| creasing | Bxo      | Beta     |
| wing     | Bxo      | Beta     |
|          | Bxo      | Beta     |
|          | Bxo      | Beta     |
|          | Bxo      | Beta     |
|          | Bxo      | Beta     |



# Space Weather Services at SIDC

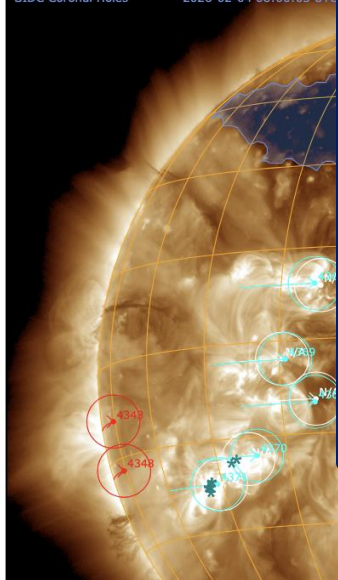


Help Similar products Related products Latest Query

## SIDC Solarmap

This service allows the user to display solar disc. The user can select features and Heliocentric Earth equatorial (HEEQ) grid and the features (such as time of observation, locations of interest onto the solar disc, and locations).

SIDC/SET regions  
SDO/AIA AIA 193A 2026-02-04T  
NOAA regions  
NOAA predicting regions  
NOAA plagues  
UKMO Regions  
SIDC Coronal Holes



## SIDC Coronal Mass

Start Time: 15/01/2026, 00:00

End Time: 04/02/2026, 15:17

SIDC #:

☐ All ☐ Has  $\geq C$  flares ☐ Has  $\geq$   
☐ All ☐ Speed  $\geq 600$  km/s ☐ Sp

Show Table

## SIDC CME 625

Launch Time: 2026-02-02T04

Issue Time: 2026-02-02T14

Backsided: No

Width: 50°

Speed: 700 km/s

LAT LON: N25E22

Time at 21.5  $R_{\odot}$ : TBD

JHelioviewer:

2D Detections: TIME [UTC]

2026-02-02 04

3D Evaluations:

| TIME [UTC]       | SPEED (KM/S) | WIDTH (°) | PRINCIPAL DIRECTION | METHOD                         |
|------------------|--------------|-----------|---------------------|--------------------------------|
| 2026-02-02 07:33 | 700 km/s     | 50°       | N25E22              | Evaluation based on STEREOCAT. |

Forecasts:

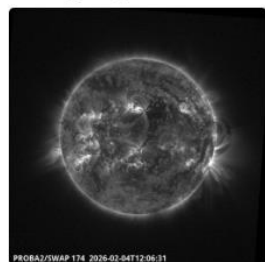
| ISSUE TIME [UTC] | ESTIMATED ARRIVAL TIME [UTC]    | CONFIDENCE (%) |
|------------------|---------------------------------|----------------|
| 2026-02-02 14:16 | 2026-02-05 06:00 $\pm$ 12 hours | 75 %           |

## Solar Influences Data Analysis Center

Home Observations Services Research Activities

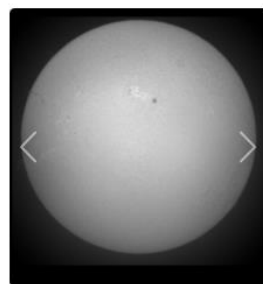
## Observations

### Space Based Imaging



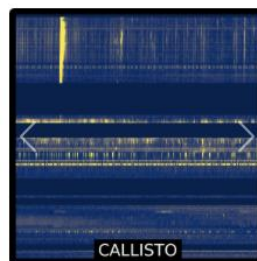
More data: [SWAP](#), [EUI](#)

### Ground Based Imaging



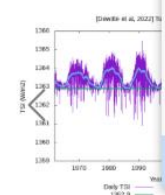
More: [H- \$\alpha\$](#) , [WL](#), [Ca-IIK](#),  
[Drawings](#)

### Ground Based Radio



More: [ARCAS+HSRS](#),  
[CALLISTO](#)

### Space Based Timelines



More data: [LYRA](#), [TSI](#)

Bulletins & Forecast

Real-Time Alerts

Solar Map

SOLARNET Virt. Obs.

All Our Products

Register

Event chains

Our new event chains

Flares

Coronal holes

Coronal Mass Ejections

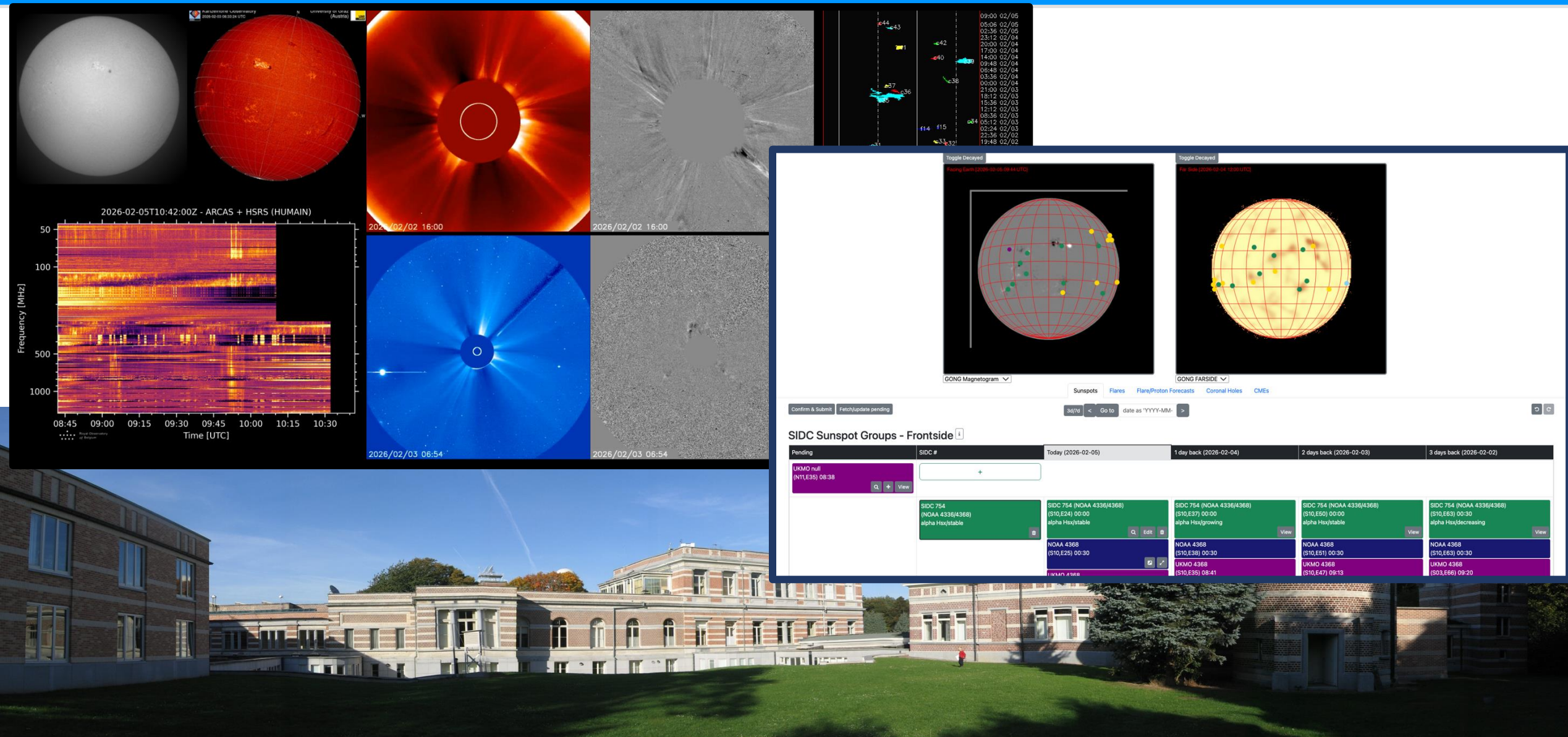
## Space Weather Services

2026-02-04 09:20

| with             | McIntosh | Magnetic       |
|------------------|----------|----------------|
| wing             | Bxo      | Beta           |
| creasing         | Bxo      | Beta           |
| wing             | Bxo      | Beta           |
| 2026-01-31 08:49 | S15E20   | Stable Bxo     |
| 2026-02-01 00:30 | S14E09   | Stable Bxo     |
| 2026-02-02 09:20 | S15W08   | Decreasing Bxo |
| 2026-02-03 00:00 | S15W17   | Decreasing Bxo |



# Space Weather Operations at SIDC



# SWESNET portal: great assets, wide areas of interest

Great job!



big thanks to all involved



## EXPERT SERVICE CENTRES

... ESC Solar Weather

... ESC Heliospheric Weather

... ESC Space Radiation

... ESC Ionospheric Weather

... ESC Geomagnetic Conditions



Royal Observatory  
of Belgium

Designed by Graphiqastock / Freepik

Solar Influences  
Data analysis Centre  
[www.sidc.be](http://www.sidc.be)



# Great assets covering wide areas of interest

Great job!

big thanks to all involved



## EXPERT SERVICE CENTRES

- ... ESC Solar Weather
- ... ESC Heliospheric Weather
- ... ESC Space Radiation
- ... ESC Ionospheric Weather
- ... ESC Geomagnetic Conditions

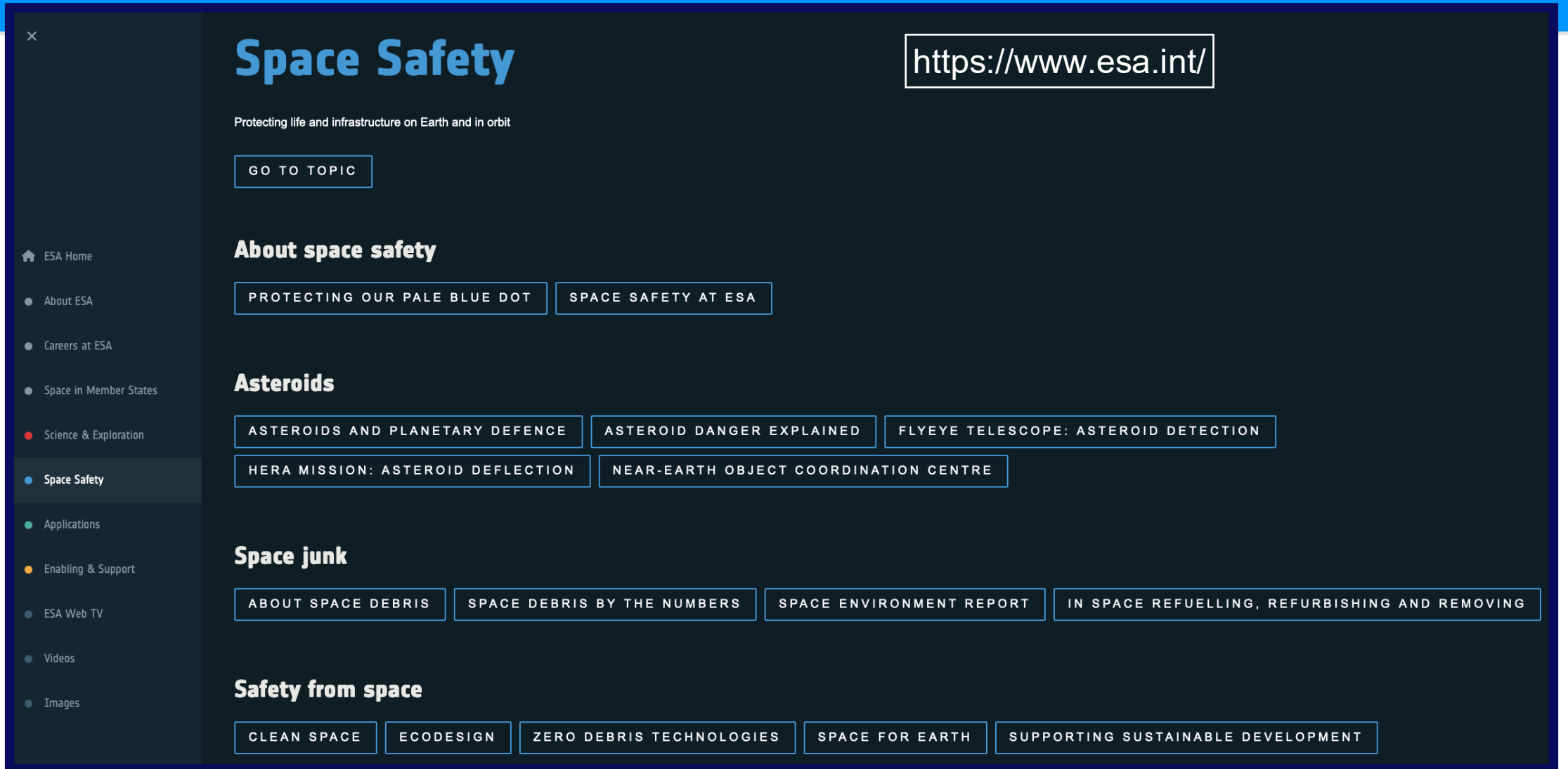


Royal Observatory  
of Belgium

Designed by Graphiqastock / Freepik

Solar Influences  
Data analysis Centre  
[www.sidc.be](http://www.sidc.be)

# Easy to find?



The screenshot shows the ESA Space Safety website. On the left is a dark sidebar with a close button (X) at the top and a list of navigation items: ESA Home, About ESA, Careers at ESA, Space in Member States, Science & Exploration, Space Safety (highlighted with a blue dot), Applications, Enabling & Support, ESA Web TV, Videos, and Images. The main content area has a dark background. At the top right, the URL `https://www.esa.int/` is displayed in a white box. Below the 'Space Safety' title, the tagline 'Protecting life and infrastructure on Earth and in orbit' is shown, followed by a 'GO TO TOPIC' button. The page is organized into sections: 'About space safety' with buttons for 'PROTECTING OUR PALE BLUE DOT' and 'SPACE SAFETY AT ESA'; 'Asteroids' with buttons for 'ASTEROIDS AND PLANETARY DEFENCE', 'ASTEROID DANGER EXPLAINED', 'FLYEYE TELESCOPE: ASTEROID DETECTION', 'HERA MISSION: ASTEROID DEFLECTION', and 'NEAR-EARTH OBJECT COORDINATION CENTRE'; 'Space junk' with buttons for 'ABOUT SPACE DEBRIS', 'SPACE DEBRIS BY THE NUMBERS', 'SPACE ENVIRONMENT REPORT', and 'IN SPACE REFUELLING, REFURBISHING AND REMOVING'; and 'Safety from space' with buttons for 'CLEAN SPACE', 'ECODESIGN', 'ZERO DEBRIS TECHNOLOGIES', 'SPACE FOR EARTH', and 'SUPPORTING SUSTAINABLE DEVELOPMENT'.

**Space Safety**

Protecting life and infrastructure on Earth and in orbit

[GO TO TOPIC](#)

**About space safety**

[PROTECTING OUR PALE BLUE DOT](#) [SPACE SAFETY AT ESA](#)

**Asteroids**

[ASTEROIDS AND PLANETARY DEFENCE](#) [ASTEROID DANGER EXPLAINED](#) [FLYEYE TELESCOPE: ASTEROID DETECTION](#)

[HERA MISSION: ASTEROID DEFLECTION](#) [NEAR-EARTH OBJECT COORDINATION CENTRE](#)

**Space junk**

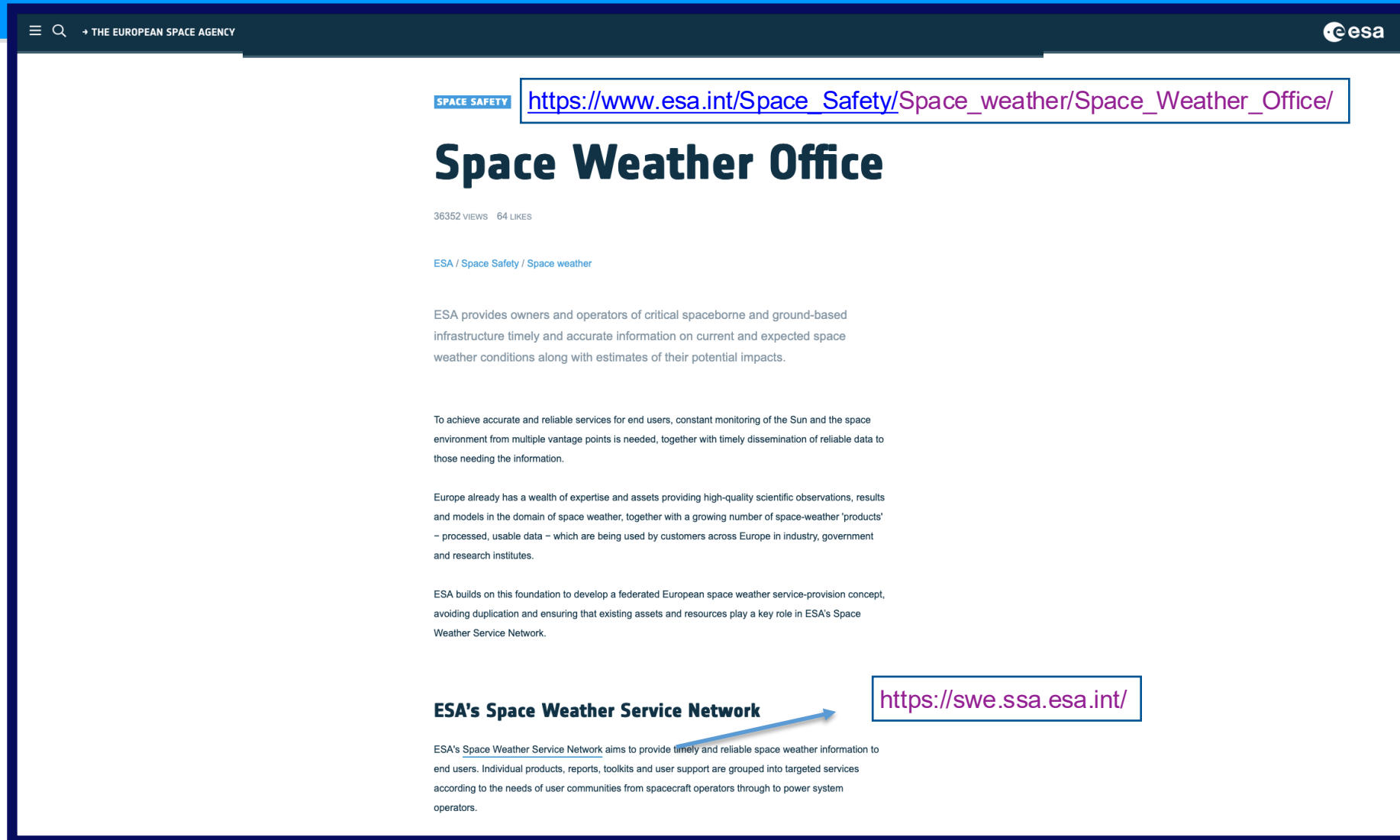
[ABOUT SPACE DEBRIS](#) [SPACE DEBRIS BY THE NUMBERS](#) [SPACE ENVIRONMENT REPORT](#) [IN SPACE REFUELLING, REFURBISHING AND REMOVING](#)

**Safety from space**

[CLEAN SPACE](#) [ECODESIGN](#) [ZERO DEBRIS TECHNOLOGIES](#) [SPACE FOR EARTH](#) [SUPPORTING SUSTAINABLE DEVELOPMENT](#)



# Easy to find?



The screenshot shows the ESA website header with a search icon and the text "THE EUROPEAN SPACE AGENCY". The main content area features a "SPACE SAFETY" tag and a URL box containing [https://www.esa.int/Space\\_Safety/Space\\_weather/Space\\_Weather\\_Office/](https://www.esa.int/Space_Safety/Space_weather/Space_Weather_Office/). Below this is the title "Space Weather Office" and statistics "36352 VIEWS 64 LIKES". A breadcrumb trail reads "ESA / Space Safety / Space weather". The text describes ESA's role in providing space weather information and mentions the "ESA's Space Weather Service Network". A second URL box contains <https://swe.ssa.esa.int/>, with a blue arrow pointing from the text "ESA's Space Weather Service Network" to it.

→ THE EUROPEAN SPACE AGENCY

esa

SPACE SAFETY [https://www.esa.int/Space\\_Safety/Space\\_weather/Space\\_Weather\\_Office/](https://www.esa.int/Space_Safety/Space_weather/Space_Weather_Office/)

## Space Weather Office

36352 VIEWS 64 LIKES

ESA / Space Safety / Space weather

ESA provides owners and operators of critical spaceborne and ground-based infrastructure timely and accurate information on current and expected space weather conditions along with estimates of their potential impacts.

To achieve accurate and reliable services for end users, constant monitoring of the Sun and the space environment from multiple vantage points is needed, together with timely dissemination of reliable data to those needing the information.

Europe already has a wealth of expertise and assets providing high-quality scientific observations, results and models in the domain of space weather, together with a growing number of space-weather 'products' – processed, usable data – which are being used by customers across Europe in industry, government and research institutes.

ESA builds on this foundation to develop a federated European space weather service-provision concept, avoiding duplication and ensuring that existing assets and resources play a key role in ESA's Space Weather Service Network.

### ESA's Space Weather Service Network

ESA's Space Weather Service Network aims to provide timely and reliable space weather information to end users. Individual products, reports, toolkits and user support are grouped into targeted services according to the needs of user communities from spacecraft operators through to power system operators.

<https://swe.ssa.esa.int/>



# Useful overview

WELCOME TO THE ESA SPACE WEATHER SERVICE NETWORK

Please note that all ESA-SWE Services are under review/construction

https://swe.ssa.esa.int/

CURRENT SPACE WEATHER

SPACE WEATHER SERVICES

Spacecraft Design

Spacecraft Operation

Human Spaceflight

Launch Operation

Transionospheric Radio Link

Space Surveillance and Tracking

Power Systems Operation

Aviation

Resource Exploitation System Operation

Pipeline Operation

Auroral Tourism

General Data Service

Preview Dashboard

ESA SPACE WEATHER DATA

SPACE WEATHER AT ESA

Current Space Weather /

WELCOME TO THE ESA SPACE WEATHER SERVICE NETWORK

This dashboard provides a snapshot of the current space weather conditions based on the latest products from the SWE Network.

For a detailed overview of the current conditions, as well as access to forecasts, archives, alerts and interactive tools, we encourage you to register as a user and explore the full range of products and data available in our different Service Domains:

What is space weather?

Spacecraft Design

Spacecraft Operation

Human Spaceflight

Launch Operation

Transionospheric Radio Link

Space Surveillance and Tracking

Power Systems Operation

Aviation

Resource Exploitation System Operation

Pipeline Operation

Auroral Tourism

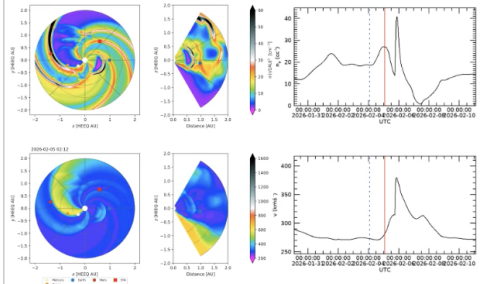
General Data Service

Interplanetary medium

Near-Earth solar wind forecasts

(EUHFORIA)

EUHFORIA (Earth) - 2026-02-05T02:12:35



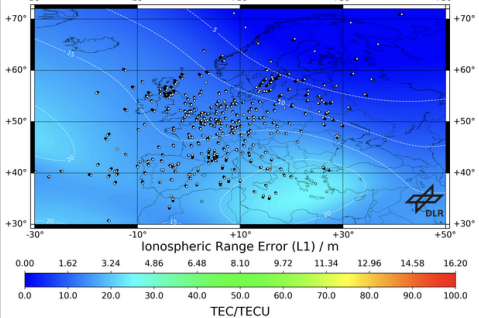
Full product

Provided by: STFC, RAL Space

Earth's Ionosphere and Thermosphere

TEC map (Europe), current

Total Electron Content (TEC) 2026-02-04T21:10:00 UT



Full product

Provided by: German Aerospace Center

Earth's Atmosphere and Geomagnetic Environment

Forecasts of dB/dt

65°N

Forecast issued 2026-02-04 21:16:25 UTC

Latest solar wind 21:14 UTC

Forecast valid 21:39 UTC to 22:09 UTC

60°N

# Useful over

CURRENT SPACE WEATHER

SPACE WEATHER SERVICES

Spacecraft Design

Spacecraft Operation

Human Spaceflight

Launch Operation

Transionospheric Radio Link

Space Surveillance and Tracking

Power Systems Operation

Aviation

Resource Exploitation System Operation

Pipeline Operation

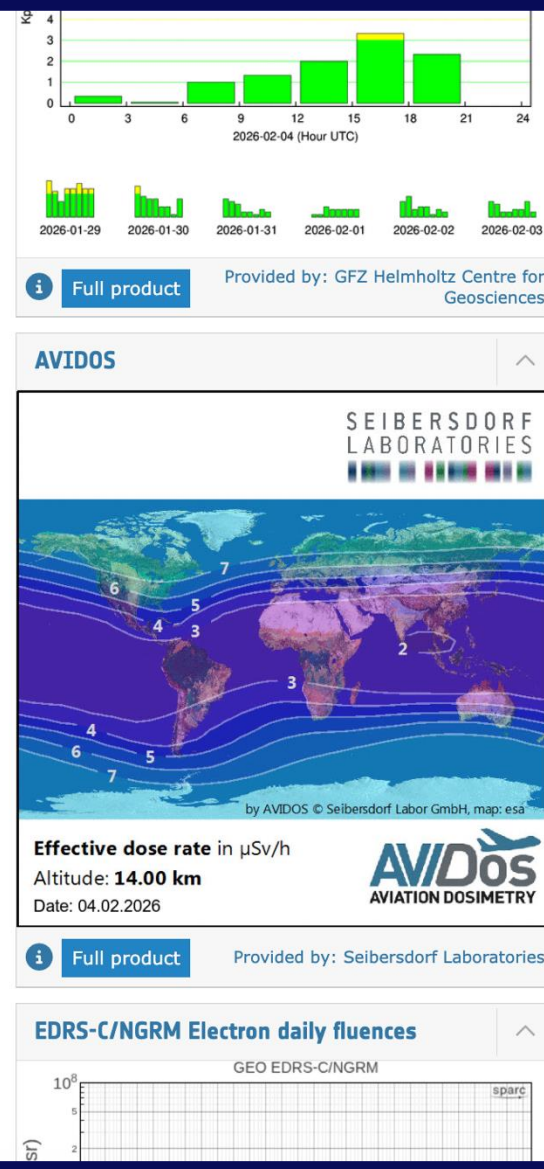
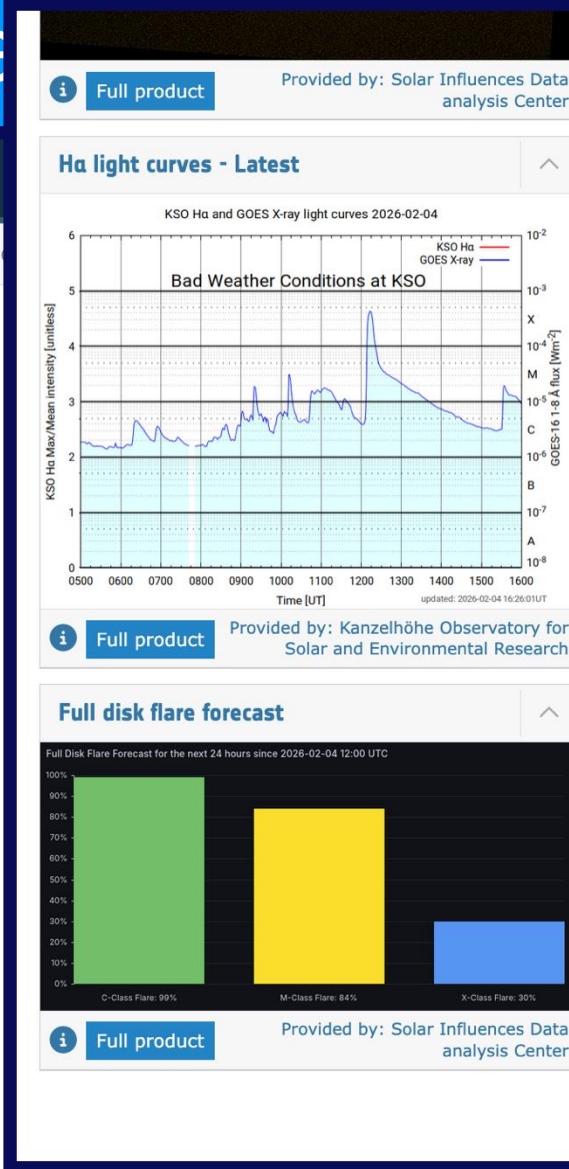
Auroral Tourism

General Data Service

Preview Dashboard

ESA SPACE WEATHER DATA

SPACE WEATHER AT ESA



Latest News and Updates

Latest Bluesky Post

esaspaceweather

@esaspaceweather.esa.int

The @esa.int SWE Service Network Workshop took place between Feb 3 - 5, 2026!

More than 400 participants sharing & exchanging new insights into ESA SWE products current & future!

[swe.ssa.esa.int/current-spac...](https://swe.ssa.esa.int/current-spac...)

☀️ contributes with an X4.2 solar flare!

SDO/AIA AIA 94Å 2026-02-04T12:21:02.320

February 4, 2026 at 3:54 PM

Royal Observatory  
of Belgium

Solar Influences  
Data analysis Centre  
[www.sidc.be](http://www.sidc.be)



# User Support Provided

WELCOME TO THE ESA SPACE WEATHER SERVICE NETWORK

Please note that all ESA-SWE Services are under review/construction

CURRENT SPACE WEATHER

SPACE WEATHER SERVICES

ESA SPACE WEATHER DATA

SPACE WEATHER AT ESA

EXPERT SERVICE CENTRES

INFORMATION FOR USERS

User Opportunities

Manuals and Tutorials

Upcoming Events

Portal Status

Service Preferences

USER FEEDBACK

CONTACT THE HELPDISK

TERMS OF USE

FAQ

Current Space Weather /

WELCOME TO THE ESA SPACE WEATHER SERVICE NETWORK

This dashboard provides a snapshot of the current space weather conditions based on the latest products from the SWE Network.

For a detailed overview of the current conditions, as well as access to forecasts, archives, alerts and interactive tools, we encourage you to [register](#) as a user and explore the full range of products and data available in our different Service Domains:

What is space weather?

Spacecraft Design

Spacecraft Operation

Human Spaceflight

Launch Operation

Transionospheric Radio Link

Space Surveillance and Tracking

Power Systems Operation

Aviation

Resource Exploitation System Operation

Pipeline Operation

Auroral Tourism

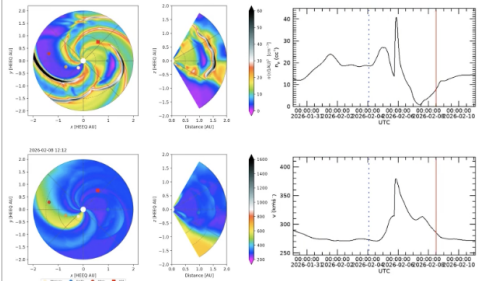
General Data Service

Interplanetary medium

Near-Earth solar wind forecasts

(EUHFORIA)

EUHFORIA (Earth) - 2026-02-08T12:12:50



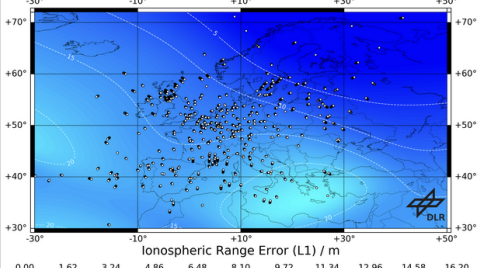
Full product

Provided by: STFC, RAL Space

Earth's Ionosphere and Thermosphere

TEC map (Europe), current

Total Electron Content (TEC) 2026-02-04T21:10:00 UT



Full product

Provided by: German Aerospace Center

Earth's Atmosphere and Geomagnetic Environment

Forecasts of dB/dt

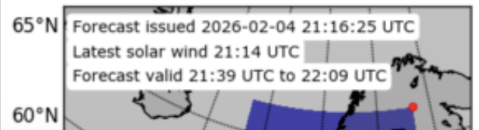
65°N

Forecast issued 2026-02-04 21:16:25 UTC

Latest solar wind 21:14 UTC

Forecast valid 21:39 UTC to 22:09 UTC

60°N



# Very useful tutorials!

→ THE EUROPEAN SPACE AGENCY

es

Welcome to the ESA Space Weather Service Network

Please note that all ESA-SWE Services are under review/construction

CURRENT SPACE WEATHER

SPACE WEATHER SERVICES

ESA SPACE WEATHER DATA

SPACE WEATHER AT ESA

EXPERT SERVICE CENTRES

INFORMATION FOR USERS

Manuals and Tutorials

Upcoming Events

Portal Status

CONTACT THE HELPDESK

TERMS OF USE

FAQ

Information for Users / Manuals and Tutorials /

## Learn how to use the portal

On this page you can find user manual and tutorials that intend to help you make the most out of the ESA SWE Portal experience. We regularly run webinars covering a large range of topics - keep an eye out for these via the Helpdesk mailing list, upcoming events or our X page @esaspaceweather.

## Product Catalogue

Product Catalogue Portfolio

## Tutorials

Get started with the ESA Space Weather Portal

Making the most of Data Download and APIs on the Space Weather Portal

ESA Space Weather Services: exploring the portal and highlights from release 3.7

ESA Space Weather Service for Planetary Mission Operations

## User Manuals

### General

ESA Space Weather Portal: Browse and Visualise Time Series Data with ESA's SWE Data Browser

Terminology Glossary

### Products and tools

Service Oriented Spacecraft Magnetometer on GEO-KOMPSAT-2A

Next Generation Radiation Monitor (NGRM) on MTG-S1 Level 1 Data Description

Next Generation Radiation Monitor (NGRM) on MTG-I1 Level 1 Data Description

Next Generation Radiation Monitor (NGRM) on Sentinel 6 Level 1 Data Description

Next Generation Radiation Monitor (NGRM) on EDRS-C Level 1 Data Description

HotBird-13F and HotBird-13G / ICARE-NG<sup>2</sup> Level 1 data description

Accessing SOSMAG and NGRM Data via the Programmatic Interface (HAPI)

## Major Event Reports

Major space weather event report from ESA space weather network

pdf / 2025-10-14 / i24r0 / [SSA-SWE-SSCC-TN-0011]

release 3.1 / 2020-10-06 / [video - 10 mins]

release 3.6 / 2023-05-25 / [video - 40 mins]

release 3.7 / 2023-07-27 / [video - 50 mins]

release 3.7 / 2023-09-07 / [video - 35 mins]

pdf / 2020-09-23 / SSA-SWE-SWEP-SUM-0001

web / 2024-03-12 / S2P-SWE-S1SW256-NETW-TN-0002

pdf / 2024-01-23 / i1r7 / (SOSMAG-DD)

pdf / 2025-09-22 / i1r0 / (SPARC-MTGS1-NGRM)

pdf / 2025-06-18 / i1r0 / (SPARC-MTGI1-NGRM)

pdf / 2023-11-03 / i1r2 / (SPARC-S6MF-NGRM)

pdf / 2022-02-28 / i1r0 / (SPARC-EDRSC-NGRM)

pdf / 2024-04-23 / i1r0 / (HotBird-13F-13G-ICARE-NG<sup>2</sup>)

pdf / 2025-01-15 / i1r7 / (SWE-HAPI)

pdf / 2025-02-06 / i1r2 / (S2P-SWE-S1SW256-PROJ-RP-0003)



The ESA SWE Service Network Addresses a Wide-Range of User Communities

© ESA



# Easy to access?

 → THE EUROPEAN SPACE AGENCY



Welcome to the ESA Space Weather Service Network  
Please note that all ESA-SWE Services are under review/construction

CURRENT SPACE WEATHER

SPACE WEATHER SERVICES ▾

ESA SPACE WEATHER DATA ▾

SPACE WEATHER AT ESA ▾

EXPERT SERVICE CENTRES ▾

INFORMATION FOR USERS ▾

CONTACT THE HELPDESK

TERMS OF USE

FAQ

Login Required /

Login Required

The ESA SWE Network has created a series of domain specific dashboards designed to enhance the users' experience and allow easy access to the latest data. These dashboards, as with the products provided, are restricted to registered users. Please **sign in** or **register** in order to view the page you are attempting to display.

If you would like more information about the services and products available before you register, please see the information provided in the links below:

Service Application Matrix

Transionospheric Radio Link Services

The purpose of the Transionospheric Radio Link dashboard is to present an overview of the current and forecasted ionospheric conditions with the different types of available data (measurement, nowcast, and forecast) at a global or local level.

Further products, data and archives can be found in the specific services of this domain, which are listed below.

Near Real-Time TEC Maps

Forecast TEC Maps

Quality Assessment of Ionospheric Correction

Near Real-Time Ionospheric Scintillation Maps

Forecast of Ionospheric Disturbances

Read more

Resource Exploitation System Operation Services

The purpose of the Resource Exploitation System Operation dashboard is to provide nowcast and forecast information about geomagnetic and ionospheric activity. Geomagnetic disturbances primarily affect directional drilling and aeromagnetic surveys and ionospheric disturbances primarily affect positioning and GNSS-based activities.

Further products, data and archives can be found in the specific service listed below.

Service to Resource Exploitation System Operators

Pipeline Operation Services

The purpose of the Pipeline Operation dashboard is to provide an overview of Space Weather conditions relevant to Pipeline Operators such as local and global forecast of geomagnetic activity and solar wind data.

Space Surveillance and Tracking Services

The purpose of the Space Surveillance and Tracking dashboard is to present an overview of the current and forecasted conditions of objects in Earth orbit.





# Accessibility: finding the right browser

## Some challenges for operational use

The screenshot displays the ESA Space Weather Services dashboard. On the left is a sidebar menu with categories: SPACE WEATHER SERVICES, SPACE WEATHER DATA, SPACE WEATHER AT ESA, EXPERT SERVICE CENTRES, and INFORMATION FOR USERS. The main content area is divided into three columns. The first column, 'Aviation Services', contains text about the dashboard's purpose and a 'Service to Aviation' button. The second column, 'RADIATION', features a world map titled 'AVIDOS Current cosmic radiation map' with a color scale from 0 to 10  $\mu\text{Sv/h}$ . The third column is split into 'GNSS' and 'HF COMMUNICATION' sections, each with a 'Latest ICAO Space Weather Advisory browser' and a login form for 'esa space situational awaren'. Below these are sections for 'TEC map (Europe), current' and 'Ionospheric activity index at ionosonde locations'. The dashboard is provided by the Solar Influences Data analysis Center.

ESA / Science & Exploration / Space Science / Solar Orbiter

ESA's Sun-exploring mission Solar Orbiter will take the closest ever images of the surface of our parent star. During its 21-month cruise, the spacecraft will take advantage of the gravity of Earth and Venus to place itself into the correct orbit around the Sun. Solar Orbiter's elliptical science orbit, with a closest point at 42 million km from the star's surface, will take the spacecraft within the orbit of the planet Mercury.

During its operations, Solar Orbiter will remain in sync with Venus. Using Venus' gravity will help the operators to get closer to the Sun and gradually tilt the spacecraft's orbit in order to look at the Sun's surface from higher latitudes. Thanks to these manoeuvres, scientists will be able for the first time to get a good view of the Sun's poles, which play an important role in the generation of its magnetic field.

The interactive '[Where is Solar Orbiter](#)' tool below allows you to explore the mission's trajectory including the gravity-assist flybys and follow the position of the spacecraft every single day of its journey.



# Accessibility: finding the

## Some challenges for operational use

The screenshot displays the SIDC website interface, which is designed for operational use. The layout includes a sidebar on the left with navigation links, a main content area with several sections, and a right sidebar with a search bar and a loading spinner.

**Left Sidebar:**

- CURRENT SPACE WEATHER
- SPACE WEATHER SERVICES
  - Spacecraft Design
  - Spacecraft Operation
  - Human Spaceflight
  - Launch Operation
  - Transionospheric Radio Link
  - Space Surveillance and Tracking
  - Power Systems Operation
  - Aviation
  - Resource Exploitation System Operation
  - Pipeline Operation
  - Auroral Tourism
  - General Data Service
  - Preview Dashboard
- ESA SPACE WEATHER DATA
- SPACE WEATHER AT ESA
- EXPERT SERVICE CENTRES
- INFORMATION FOR USERS

**Main Content Area:**

- Aviation Services**
  - The purpose of the Service to Aviation dashboard is mainly to provide graphical information about the impact of solar activity on the radiation environment and ionospheric conditions. The dashboard is organised in three sections (columns) according to the main impact domains i.e. Radiation – GNSS – HF communication.
  - Further products, data and archives can be found in the specific service listed below.
  - Service to Aviation
- RADIATION**
  - AVIDOS Current cosmic radiation map
  - SEIBERSDORF LABORATORIES
  - Effective dose rate in  $\mu\text{Sv/h}$
  - AVIDOS AVIATION DOSIMETRY
- GNSS**
  - Latest ICAO Space Weather Advisory browser
  - esa space situational awareness
  - Sign i
  - User Name:
  - Password:
  - Remember
  - Full product
  - Provided by: Solar Influences Data analysis Center
- TEC map (Europe), current**
- Ionospheric activity index at ionosonde locations**
  - The image could not be loaded now. Please try again later.
  - Full product
  - Provided by: Ionospheric Group of the National Observatory of Athens

**Right Sidebar:**

- Expert Service Centres / ESC Space Radiation / noa-hesperia-federated /
- Federated products from the Institute for Astronomy, Astrophysics, Space Applications & Remote Sensing (NOA)
- Loading...
- every single day of its journey.

# Accessibility: right browser found

CURRENT SPACE WEATHER

SPACE WEATHER SERVICES

Spacecraft Design

Spacecraft Operation

Human Spaceflight

Launch Operation

Transionospheric Radio Link

Space Surveillance and Tracking

Power Systems Operation

Aviation

Service to Aviation

Resource Exploitation System Operation

Pipeline Operation

Auroral Tourism

General Data Service

Preview Dashboard

ESA SPACE WEATHER DATA

SPACE WEATHER AT ESA

EXPERT SERVICE CENTRES

INFORMATION FOR USERS

USER FEEDBACK

CONTACT THE HELPDESK

Space Weather Services / Aviation /

Aviation Services

The purpose of the Service to Aviation dashboard is mainly to provide graphical information about the impact of solar activity on the radiation environment and ionospheric conditions. The dashboard is organised in three sections (columns) according to the main impact domains i.e. Radiation – GNSS – HF communication.

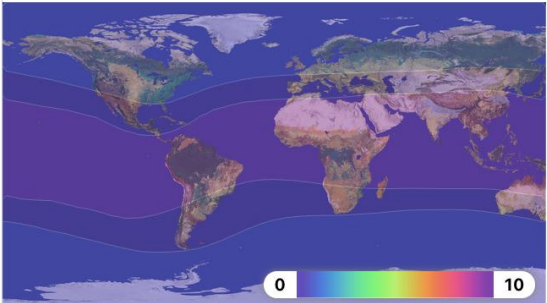
Further products, data and archives can be found in the specific service listed below.

Service to Aviation

RADIATION

AVIDOS Current cosmic radiation map

SEIBERSDORF LABORATORIES



Effective dose rate in  $\mu\text{Sv/h}$   
Altitude: - km  
Last Update: 04.02.2026 22:11

AVIDOS AVIATION DOSIMETRY

GNSS

Latest ICAO Space Weather Advisory browser

Latest GNSS Advisory:

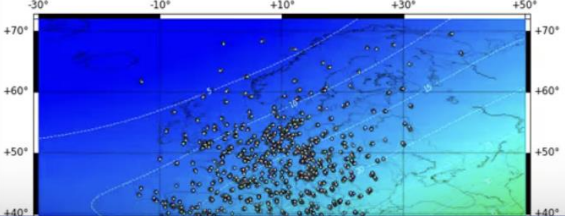
0000048301  
FNXX01 EFKL 020455  
SWX ADVISORY  
DTG: 20260202/0454Z  
SWXC: PECASUS  
SWX EFFECT: GNSS  
ADVISORY NR: 2026/53  
NR RPLC: 2026/52  
OBS SWX: 02/0452Z NO SWX EXP  
FCST SWX +6 HR: 02/1100Z NOT AVBL  
FCST SWX +12 HR: 02/1700Z NOT AVBL  
FCST SWX +18 HR: 02/2300Z NOT AVBL  
FCST SWX +24 HR: 03/0500Z NOT AVBL  
RMK: SPACE WEATHER EVENT  
(IONOSPHERIC SCINTILLATION) HAS ENDED.  
NXT ADVISORY: NO FURTHER ADVISORIES=

Full product

Provided by: Solar Influences Data analysis Center

TEC map (Europe), current

Total Electron Content (TEC) 2026-02-04T06:50:00 UT



HF COMMUNICATION

Latest ICAO Space Weather Advisory browser

Latest HF Advisory:

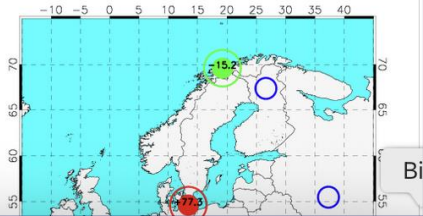
0000035501  
FNXX02 KWNP 041234  
SWX ADVISORY  
DTG: 20260204/1234Z  
SWXC: SWPC  
SWX EFFECT: HF COM  
ADVISORY NR: 2026/70  
NR RPLC: 2026/68  
OBS SWX: 04/1233Z NO SWX EXP  
FCST SWX +6 HR: 04/1900Z NO SWX EXP  
FCST SWX +12 HR: 05/0100Z NO SWX EXP  
FCST SWX +18 HR: 05/0700Z NO SWX EXP  
FCST SWX +24 HR: 05/1300Z NO SWX EXP  
RMK:  
NXT ADVISORY: NO FURTHER ADVISORIES=

Full product

Provided by: Solar Influences Data analysis Center

Ionospheric activity index at ionosonde locations

Real Time Activity Index Map 2026/02/04 20:15 UT







# Usability: multiple steps in between

Heliospheric Weather / ccpp-amda-federated /

## Federated products from the Centre de Données de la Physique des Plasmas (CDPP)



**Amda**

Versatile web tool for Space Physics

MULTI DATASET VISUALISATION AND DOWNLOAD

VISUAL AND AUTOMATED EVENT SEARCH AND DATA MINING

CATALOGUE GENERATION AND EXPLOITATION

REMOTE ACCESS TO DATA MODEL AND IMAGE CENTRES VIA VO TOOLS AND STANDARDS

First visit, demo tour

Rules of the road

Login

Contact us

CDPP

airap cmts cnes Observatoire UNIVERSITÉ TOULOUSE III PAUL SABATIER 2022 OMI eur@PLANET Heub mpeX

This web page forms part of the European Space Agency's network of space weather services and service development activities, and is supported under ESA contract number 4000134036/21/D/MRP.  
For further product related information or enquiries contact the helpdesk. E-mail: [helpdesk.swe@esa.int](mailto:helpdesk.swe@esa.int). All publications and presentations using data obtained from this site should acknowledge CDPP and The ESA Space Safety Programme.  
For further information about space weather in the ESA Space Safety Programme see: [www.esa.int/spaceweather](http://www.esa.int/spaceweather).  
Access the ESA SWE portal here: [swe.esa.int](http://swe.esa.int).

Expert Service Centres / ESC Heliospheric Weather / ccpp-proptol-federated /

## Federated products from the Centre de Données de la Physique des Plasmas (CDPP)

Download installation file for your OS:

| File                            | OS            | arch | Size   |
|---------------------------------|---------------|------|--------|
| PropagationTool-install.msi     | Windows       | x86  | 37MB   |
| PropagationTool-install.deb     | Debian/Ubuntu | x86  | 27MB   |
| PropagationTool-install.rpm     | RedHat/Fedora | x86  | 39.8MB |
| PropagationTool-arm-install.dmg | MacOS         | arm  | 39.5MB |
| PropagationTool-x86-install.dmg | OSX           | x86  | 36.5MB |

The CDPP Propagation Tool allows users to track solar storms, streams and energetic particles in the heliosphere.

Main functionalities are described in the reference paper recently published in Planetary and Space Science.

The propagation tool allows users:

- to propagate solar eruptions (CMEs) radially sunward or anti-sunward (**Radial Propagation**),
- to propagate corotating structures (CIRs) in the heliosphere (**Corotation**),
- to propagate solar energetic particles along magnetic field lines sunward or anti-sunward (**SEP Propagation**).

The START and END points can be the Sun, planets or probes situated in the interplanetary medium. The times of propagation between the START and END points are based on simple analytic calculations.

Please read the Help Page for details on the specific functions of the tool and how to operate them.

**Propagation Tool Caveats**

Please note the following caveats related to the current release of the Propagation Tool:

- The availability of the Carrington map background images in the Radial Interface tab is currently limited. These are only used for reference so does not impact the operation of the propagation models which may be used on any time interval. You may however see "Image not available!" warnings when trying to select any Carrington map for more recent years. Work is ongoing to improve the availability and this caveat will be updated once progress has been made.
- The links at the bottom right of the tool (Helioviewer, CDPP Interface and APIS) give access to tools/websites that are outside the control of ESA SSA/SWE network. These are provided as a convenience to the user, as is, and without specific or implied support from the Agency.

The Propagation Tool has been developed by CDPP with contributions from a number of institutes and support from a number international projects.

cmts cnes UNIVERSITÉ TOULOUSE III PAUL SABATIER 2022 gfi eur@PLANET

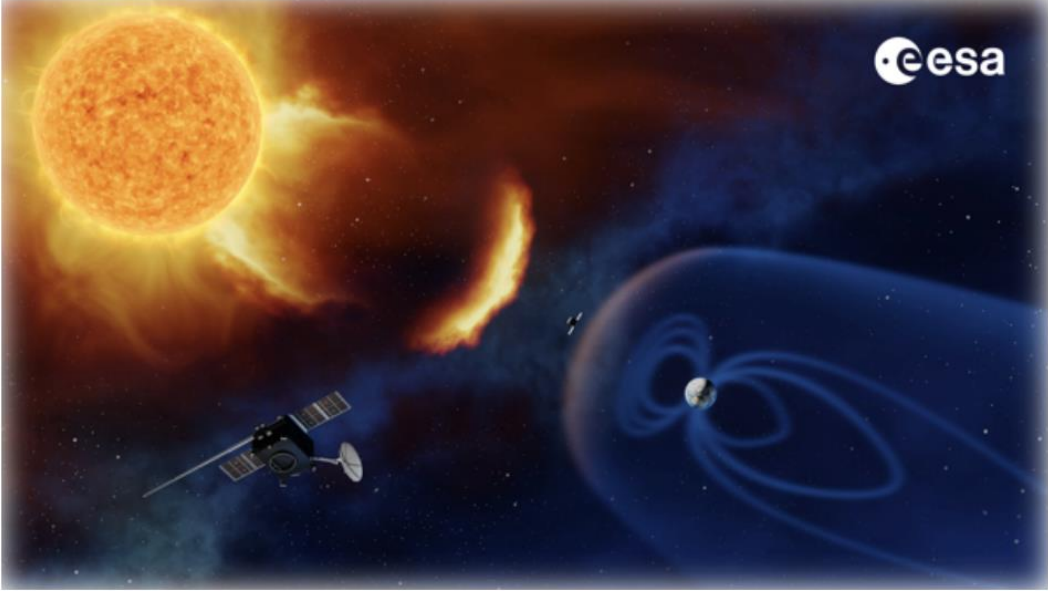
# Usability: multiple steps in between

## Federated products from the Centre for mathematical Plasma-Astrophysics (KUL)

Virtual Space Weather Modelling Centre⋮ HISTORY+ NEW RUN

### Welcome to the VSWMC

The Virtual Space Weather Modelling Centre (VSWMC) is a full scale, open end-to-end (meaning from the Sun to the Earth) space weather modelling, enabling to combine (*couple*) various space weather models in an integrated tool, with the models located either locally or geographically distributed. Hence, the VSWMC brings together models for different components of the space weather in an integrated environment that enables to run them and to couple them.



i About VSWMC⌕ Full-size

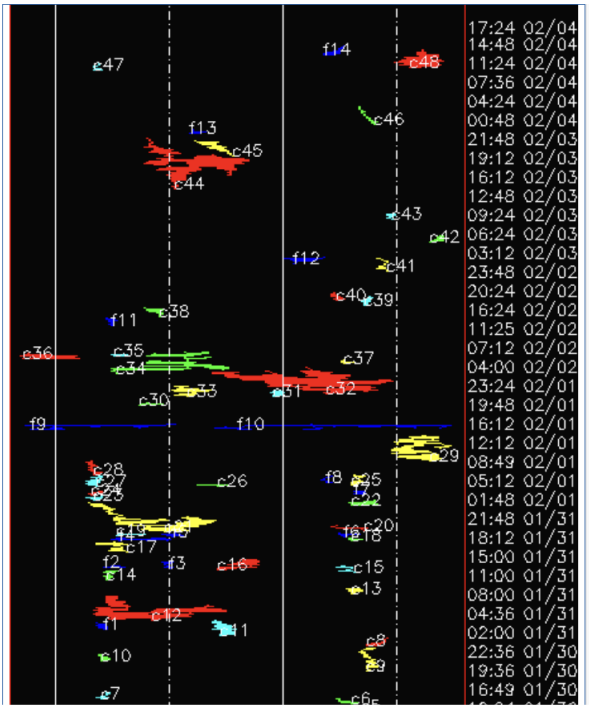
# Interactive use and archive browsing

[Help](#) [Similar products](#) [Related products](#) [Latest](#) [Query](#)

## SIDC/CACTus Automated near-real-time CME detection

CACTus is a software routine that autonomously detects coronal mass ejections (CMEs) in image sequences from SOHO/LASCO. The output is a list of events, similar to the classic catalogs, with principal angle, angular width and velocity estimation for each CME.

**Run Information**  
Run time **2026-02-04T19:32:37**  
first-last file (c2) First: 2026-01-29T00:00:33.591  
Last: 2026-02-04T17:24:24.141  
first-last file (c3) First: 2026-01-29T04:30:25.398  
Last: 2026-02-04T05:54:10.736  
Runid 63887148  
Version 2.5.0  
Instruments [LASCO c2, LASCO c3]  
Minimal CME Width 5 degrees



[Help](#) [Similar products](#) [Related products](#) [Latest](#) [Query](#)

## SIDC/CACTus Automated near-real-time CME detection

CACTus is a software routine that autonomously detects coronal mass ejections (CMEs) in image sequences from SOHO/LASCO. The output is a list of events, similar to the classic catalogs, with principal angle, angular width and velocity estimation for each CME.

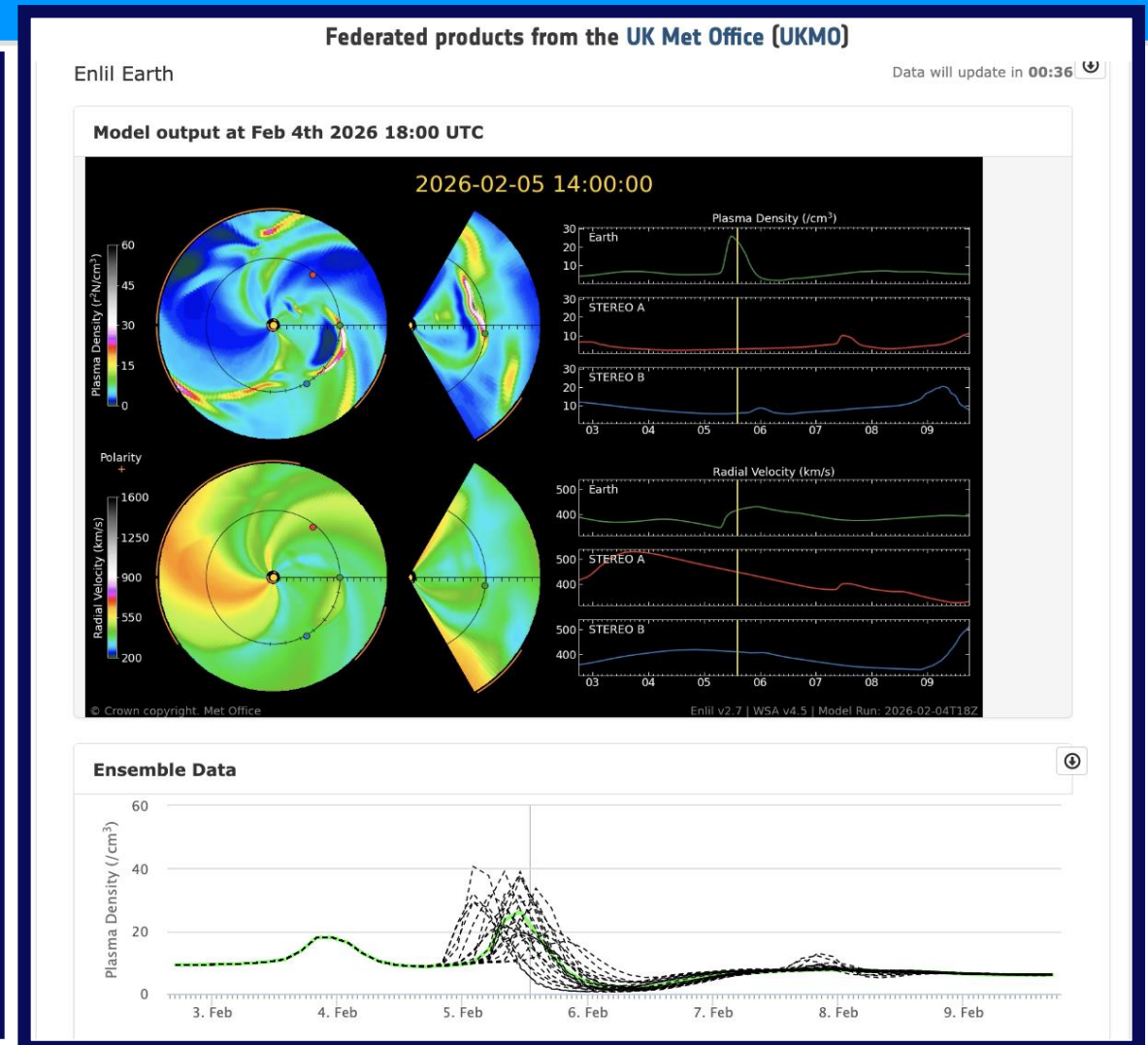
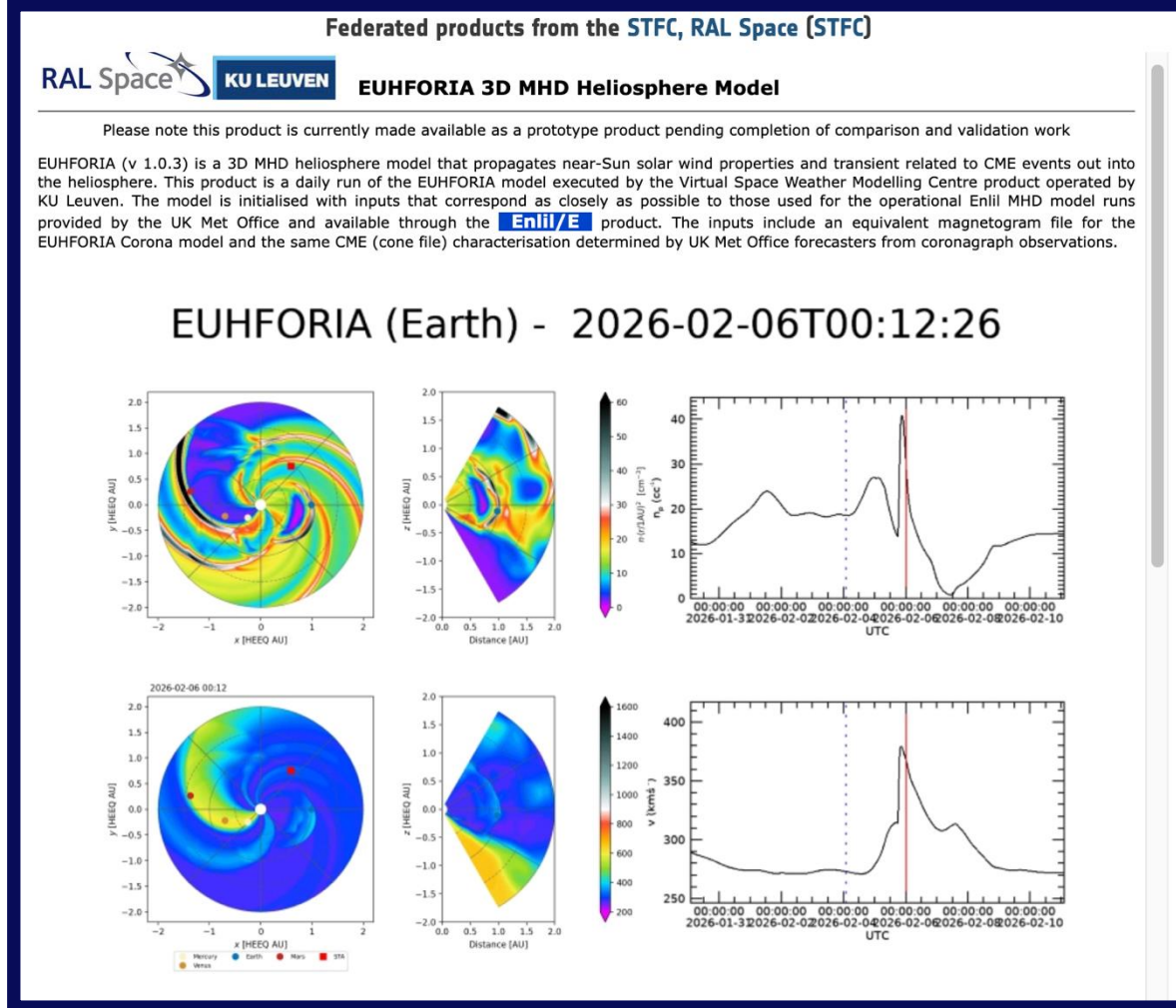
Please enter a start and end date.  
CACTus archive has data between 2016-05-11T00:00:00Z and 2026-02-04T21:58:47Z

**Run Information**  
Run time **2026-02-03T19:32:19**  
first-last file (c2) First: 2026-01-28T00:00:33.915  
Last: 2026-02-03T14:24:33.595  
first-last file (c3) First: 2026-01-28T00:42:09.386  
Last: 2026-02-03T12:30:25.699  
Runid 63857943  
Version 2.5.0  
Instruments [LASCO c2, LASCO c3]  
Minimal CME Width 5 degrees

|     | type                    | start                   | end | principal angle<br>[degrees] | angular width<br>[degrees] | speed<br>[km/s] | speed<br>(min)<br>[km/s] | speed<br>(max)<br>[km/s] | halo? |
|-----|-------------------------|-------------------------|-----|------------------------------|----------------------------|-----------------|--------------------------|--------------------------|-------|
| CME | 2026-02-03T05:48:23.608 | 2026-02-03T06:48:23.608 | 122 | 10                           | 482                        | 429             | 792                      |                          |       |
| CME | 2026-02-03T01:48:23.556 | 2026-02-03T02:48:23.556 | 78  | 6                            | 118                        | 113             | 278                      |                          |       |
| CME | 2026-02-02T20:24:33.586 | 2026-02-02T20:24:33.586 | 45  | 8                            | 595                        | 578             | 612                      |                          |       |
| CME | 2026-02-02T17:00:25.101 | 2026-02-02T20:00:25.101 | 255 | 20                           | 200                        | 189             | 208                      |                          |       |
| CME | 2026-02-02T16:48:33.708 | 2026-02-02T18:48:33.708 | 67  | 8                            | 173                        | 110             | 230                      |                          |       |
| CME | 2026-02-02T12:12:24.805 | 2026-02-02T14:12:24.805 | 47  | 8                            | 726                        | 127             | 823                      |                          |       |
| CME | 2026-02-02T07:24:19.011 | 2026-02-02T07:24:19.011 | 50  | 10                           | 1298                       | 1040            | 1298                     |                          |       |
| CME | 2026-02-02T07:12:33.419 | 2026-02-02T08:12:33.419 | 278 | 46                           | 1646                       | 1301            | 1734                     |                          |       |
| CME | 2026-02-02T05:48:33.378 | 2026-02-02T07:48:33.378 | 271 | 40                           | 1385                       | 1039            | 1952                     |                          |       |
| CME | 2026-02-02T05:43:54.882 | 2026-02-02T06:43:54.882 | 307 | 16                           | 1743                       | 1355            | 1839                     |                          |       |
| CME | 2026-02-02T05:12:33.604 | 2026-02-02T06:12:33.604 | 176 | 46                           | 1040                       | 165             | 1953                     |                          |       |
| CME | 2026-02-02T04:48:38.821 | 2026-02-02T05:48:38.821 | 232 | 14                           | 1734                       | 329             | 1952                     |                          |       |
| CME | 2026-02-02T00:24:33.409 | 2026-02-02T03:24:33.409 | 288 | 30                           | 303                        | 190             | 363                      |                          |       |
| CME | 2026-02-01T23:24:17.452 | 2026-02-02T05:24:17.452 | 15  | 144                          | 258                        | 164             | 381                      | IT                       |       |



# Interactive use and archive browsing



# Forecaster-friendly tool example

Federated products from the Institute of Physics (UNIGRAZ)



## Drag-Based (Ensemble) Model - DBM / DBEMv4 (probabilistic) model for heliospheric propagation of CMEs

DBM input **DBM results** DBEM uncertainties Documentation

### DBM output:

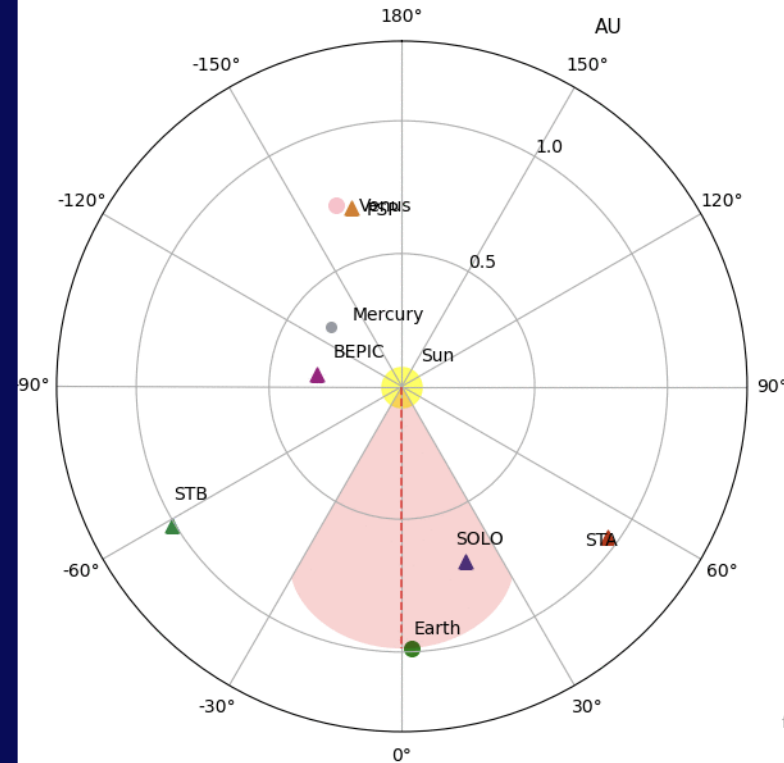
**CME arrival time** (in UTC) at Earth: **07-02-2026 00:01**  
**Transit time:** **49.13** hours.

**CME speed** at Earth: **637** km/s  
**CME acceleration** at Earth: **-0.696** km/s

[Proceed to DBEM uncertainties](#)

### DBM input parameters:

|                                                                                        |                                                                  |
|----------------------------------------------------------------------------------------|------------------------------------------------------------------|
| CME date & time (in UTC): <b>04-02-2026 22:54</b> h                                    |                                                                  |
| Drag parameter, $\gamma$ : <b><math>0.2 \times 10^{-7}</math> km<math>^{-1}</math></b> | Solar wind speed, $w$ : <b>450</b> km/s                          |
| Starting speed of CME, $v_0$ : <b>1000</b> km/s                                        | CME starting radial distance, $R_0$ : <b>20</b> $r_{\text{Sun}}$ |
| CME's angular half-width, $\lambda$ : <b>30</b> deg                                    | Long. CME source region, $\phi_{\text{CME}}$ : <b>0</b> deg      |
| Target: <b>Earth</b>                                                                   |                                                                  |



### Animation info

Date: 07 Feb 2026  
Time: 00:01 h  
Transit time: 49.13 h  
Speed,  $v$ : 636 km/s  
Distance: 0.99 AU

### DBM results

CME arrival (at Earth)  
Date: 07 Feb 2026  
Time: 00:01 h  
Transit time: 49.13 h  
Speed at target: 636 km/s  
Distance (target): 0.99 AU

### Input parameters

CME date: 04 Feb 2026  
CME time: 22:54 h  
Drag,  $\gamma$ :  $0.2 \times 10^{-7} \text{ km}^{-1}$   
SW speed,  $w$ : 450 km/s  
Radial dist.,  $R_0$ : 20  $r_{\text{Sun}}$   
CME init. speed,  $v_0$ : 1000 km/s  
CME half-width,  $\lambda$ : 30.0 deg  
CME long.,  $\phi_{\text{CME}}$ : 0.0 deg  
Target: Earth

figure generated with DBEMv4



Royal Observatory  
of Belgium

Solar Influences  
Data analysis Centre  
[www.sidc.be](http://www.sidc.be)

# Forecaster-friendly tool example

## Federated products from the Institute of Physics (UNIGRAZ)



### Drag-Based (probabilistic) model

DBM input DBM results

#### DBM output:

**CME arrival time** (in UTC) at Earth: **07-02-2026 00:01**  
**Transit time:** **49.13** hours.

**CME speed** at Earth: **637** km/s  
**CME acceleration** at Earth: **-0.696** km/s

Proceed to D

#### DBM input parameters:

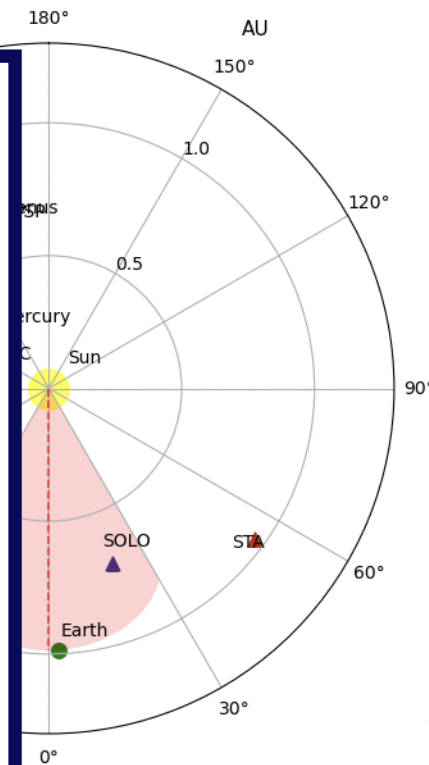
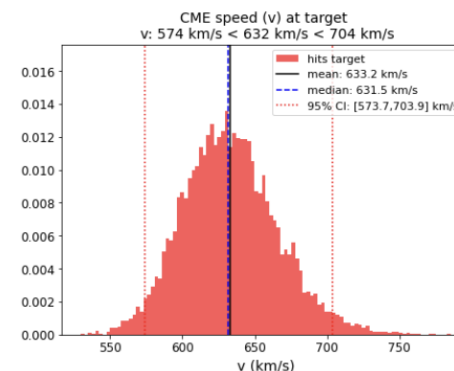
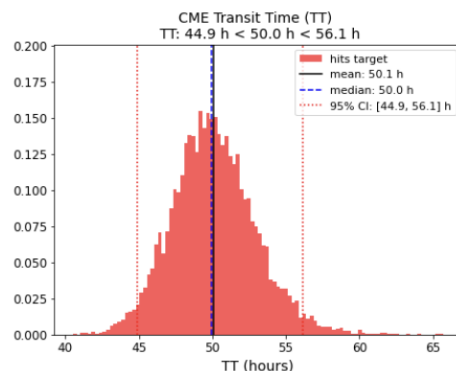
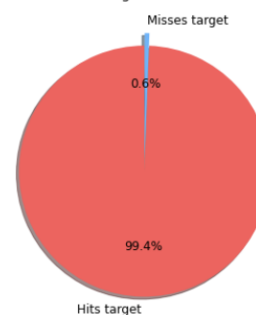
CME date & time (in UTC): **04-02-2026 22:54**  
 Drag parameter,  $\gamma$ :  **$0.2 \times 10^{-7} \text{ km}^{-1}$**   
 Starting speed of CME,  $v_0$ : **1000** km/s  
 CME's angular half-width,  $\lambda$ : **30** deg  
 Target: **Earth**

#### DBEM results:

**Arrival time: 06-02-2026 19:46 < 07-02-2026 00:52 < 07-02-2026 07:03**  
 based on 10000 DBM runs, calculated in 1.41 seconds

| Input parameters          |                  |             |
|---------------------------|------------------|-------------|
|                           | input value      | uncertainty |
| CME date&time             | 04-02-2026 22:54 | 30.0        |
| $\gamma$                  | 0.2              | 0.1         |
| SW speed (w)              | 450.0            | 50.0        |
| CME speed ( $v_0$ )       | 1000.0           | 200.0       |
| CME h-w ( $\lambda$ )     | 30.0             | 15.0        |
| CME lon. ( $\phi_{CME}$ ) | 0.0              | 30.0        |
| $R_0$                     | 20.0             |             |
| Target                    | Earth            |             |

#### Hit target statistics



#### Animation info

Date: 07 Feb 2026  
 Time: 00:01 h  
 Transit time: 49.13 h  
 Speed, v: 636 km/s  
 Distance: 0.99 AU

#### DBM results

CME arrival (at Earth)  
 Date: 07 Feb 2026  
 Time: 00:01 h  
 Transit time: 49.13 h  
 Speed at target: 636 km/s  
 Distance (target): 0.99 AU

#### Input parameters

CME date: 04 Feb 2026  
 CME time: 22:54 h  
 Drag,  $\gamma$ :  $0.2 \times 10^{-7} \text{ km}^{-1}$   
 SW speed, w: 450 km/s  
 Radial dist.,  $R_0$ :  $20 r_{Sun}$   
 CME init. speed,  $v_0$ : 1000 km/s  
 CME half-width,  $\lambda$ : 30.0 deg  
 CME long.,  $\phi_{CME}$ : 0.0 deg  
 Target: Earth

figure generated with DBEMv4



Royal Observatory  
of Belgium

Solar Influences  
Data analysis Centre  
[www.sidc.be](http://www.sidc.be)



# Summary

Great assets to support science and forecasting!

Could improve in general:

- products visibility and accessibility (SSO, browser-dependent, multiple logins)
- individual product browsing (grouping per type vs provider?)

<https://swe.ssa.esa.int/product-to-service-component-mapping>

- group into (pre-)operational and scientific?
- harmonize archive browsing across products

Specific products/tools:

- interactive tools (action upon request)
- user-friendly data manipulation

Portal training sessions

# THANK YOU!