

Multi- Experiment Data and Operation Center



Missions de MEDOC

- Opérations des instruments en orbite
- Archivage et mise à disposition de données spatiales solaires, ainsi que de produits à «valeur ajoutée»
- Développements d'outils logiciels pour l'analyse et l'interprétation
- Collaboration entre centres nationaux
- Organisation d'ateliers, colloques pour l'analyse et l'interprétation des données

1996

Création du centre d'opération et de données MEDOC autour de la mission spatiale SOHO (ESA/NASA)

D'autres missions spatiales solaires viennent enrichir MEDOC: TRACE, STEREO, SDO...

2012

MEDOC devient un Pôle Thématique National «Données Spatiales Solaires», avec le label CNES/INSU/PSud

D'autres projets actuels et futurs enrichissent et enrichiront MEDOC: Picard, Solar Orbiter

Interfaces

The screenshot shows the IAS Data Center search interface. At the top, there is a banner with the SOHO logo, the text 'SOLAR web data access', and logos for OXs, CNRS, IAS, and MHDCC. Below the banner is a navigation menu with links for HOME PAGE, AVAILABLE DATA, DATA SEARCH, CONTACT, and RESOURCES. The RESOURCES section lists SOHO and STEREO missions with their respective web sites and archives. The main content area is titled 'Search data objects' and contains a 'Common search criteria' section with a search button. The search criteria include: Date from and Date to (DD-MM-YYYY) with time selection; Data type (ANY, Imagery, Spectrometry, Magnetometry, Particle flux); Spectral range (ANY, EUV (50 - 500 Angstrom), UV (800 - 3500 Angstrom), Visible (3000 - 9000 Angstrom)); Wave Min (Angstrom) and Wave Max (Angstrom) input fields; Instrument Detector (ANY, CDS, CDS/GIS, CDS/NIS, CELIAS); JOP number (with an example of 31 and a note 'Currently defined JOPs'); Coordinates (Center position in arcsec) with input fields for Center position X and Y (From and To), and radius (From and To) calculated as $\sqrt{x^2 + y^2}$; and SOHO Object (ANY, full FOV, FULL FOV, N/A, partial FOV).

SOHO SOLAR web data access

OXs CNRS IAS MHDCC
IAS Data Center

IDC Search data objects

Common search criteria

Date from (DD-MM-YYYY) h. m. s.

Date to (DD-MM-YYYY) h. m. s.

Data type
ANY
Imagery
Spectrometry
Magnetometry
Particle flux

Spectral range
ANY
EUV (50 - 500 Angstrom)
UV (800 - 3500 Angstrom)
Visible (3000 - 9000 Angstrom)

Wave Min (Angstrom)

Wave Max (Angstrom)

Instrument Detector
ANY
CDS
CDS/GIS
CDS/NIS
CELIAS

JOP number Ex: 31
Currently defined JOPs

Coordinates
Center position (arcsec)

Center position X From
To

Center position Y From
To

radius: $\sqrt{x^2 + y^2}$ From
To

SOHO Object
ANY
full FOV
FULL FOV
N/A
partial FOV

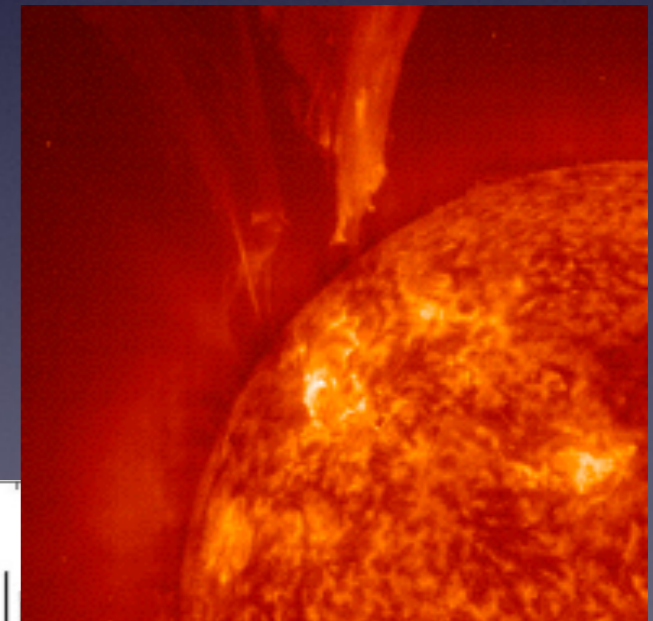
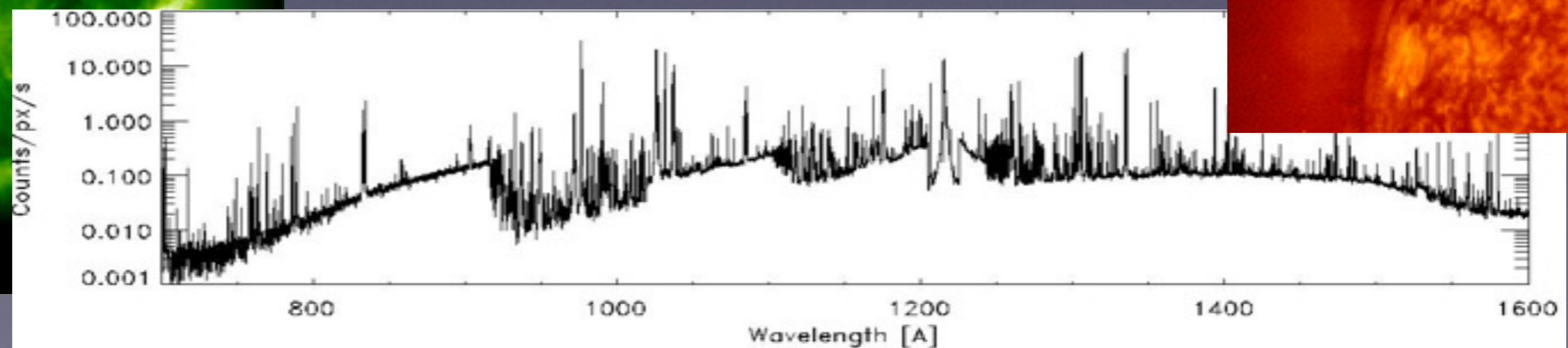
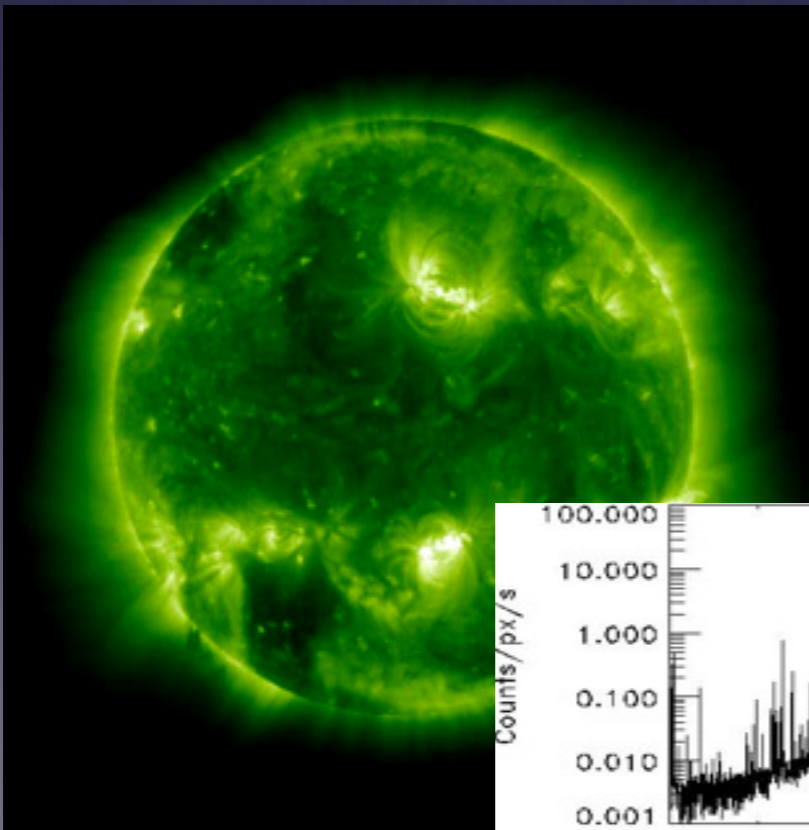
- HOME PAGE
- AVAILABLE DATA
- DATA SEARCH
- CONTACT

- RESOURCES
 - SOHO Mission
 - IAS web Site
 - ESA web site
 - NASA web site
 - STEREO Mission
 - IAS web Site
 - NASA web site
 - NASA STEREO Science Center
 - NASA STEREO Mission
 - SECCHI - Naval Research Laboratory
 - IAS EIT MPEG Movies Archive
 - CNRS web site

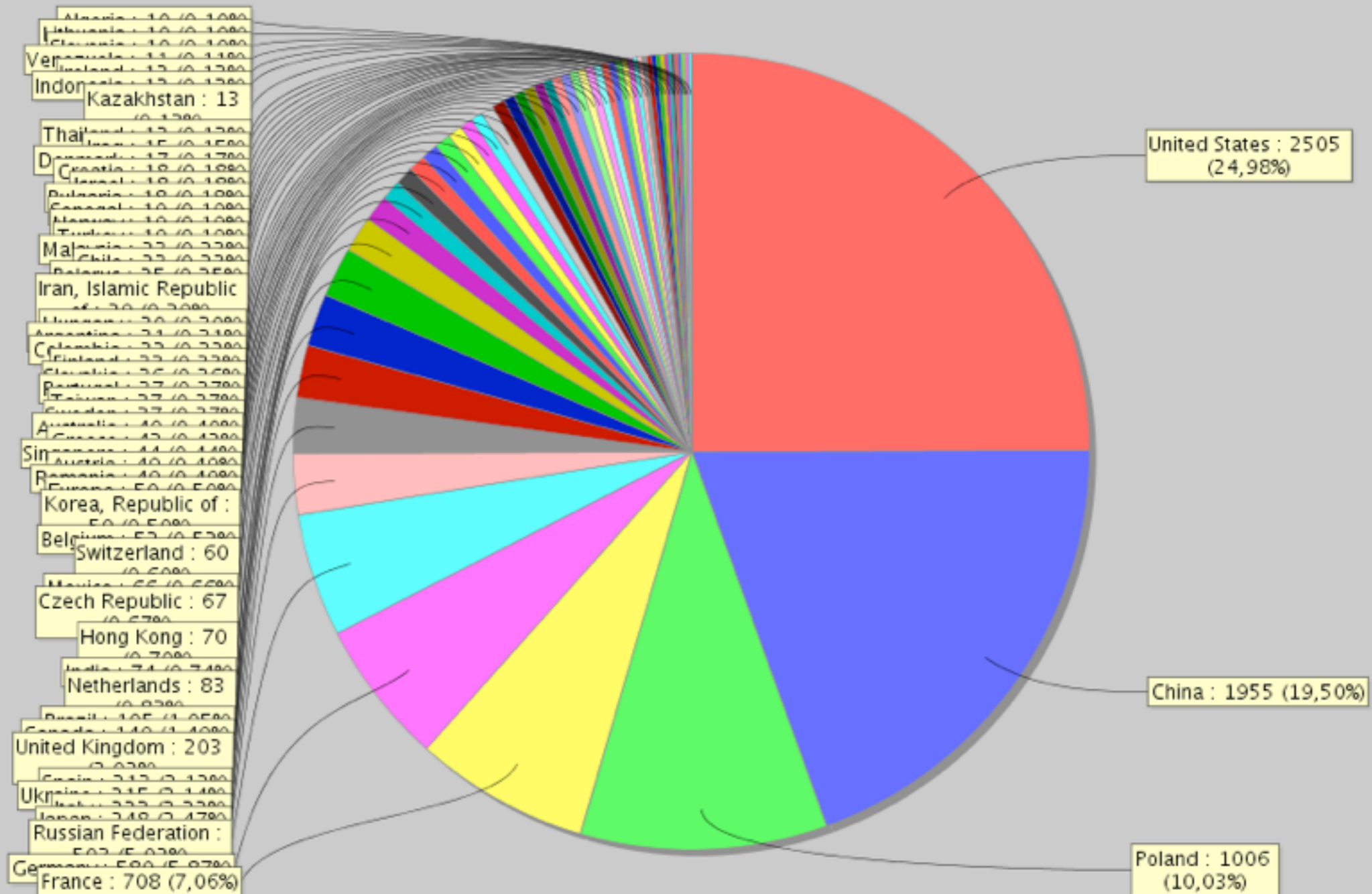
Interfaces

Depuis 2007:

- 58000 requêtes
- 11300 téléchargements par l'interface
- disponibilité des données hors interfaces (ftp, IDL, Py...)



[solar] Répartition des connexions (>= 10) par pays



- United States
- China
- Poland
- France
- Germany
- Russian Federation
- Japan
- Italy
- Ukraine
- Spain
- United Kingdom
- Canada
- Brazil
- Netherlands
- India
- Hong Kong
- Czech Republic
- Mexico
- Switzerland
- Belgium
- Korea, Republic of
- Europe
- Romania
- Austria
- Singapore
- Greece
- Australia
- Sweden
- Taiwan
- Portugal
- Slovakia
- Finland
- Colombia
- Argentina
- Hungary
- Iran, Islamic Republic of
- Belarus
- Chile
- Malaysia
- Turkey
- Norway
- Senegal
- Bulgaria
- Israel
- Croatia
- Denmark
- Iraq
- Thailand
- Kazakhstan
- Indonesia
- Ireland
- Venezuela
- Slovenia
- Lithuania
- Algeria

Au delà des données

- outil de visualisation combinée de plusieurs instruments
- code de calcul de paramètres du vent solaire
- code de calcul de paramètres physiques de la couronne
- code d'extrapolation du champ magnétique

The image displays a collage of screenshots related to the FESTIVAL project. On the left, the 'EIT MPEG Movies Archive' shows a grid of solar images with file names and sizes. In the center, the 'Solar Wind model' interface is shown, featuring a 'DataBase of 1D Solar Wind model calculations by VP code' and various input fields for parameters like 'ry1a0', 'F_MHO', and 'nu2'. On the right, the 'FESTIVAL' website's 'Movie gallery' is visible, listing various solar events and providing a grid of solar images labeled 'Chiz Distribution', 'Mesure d'émission', 'Température', 'Largeur gaussienne', and 'EUVICOR1'.

Produits «à valeur ajoutée»

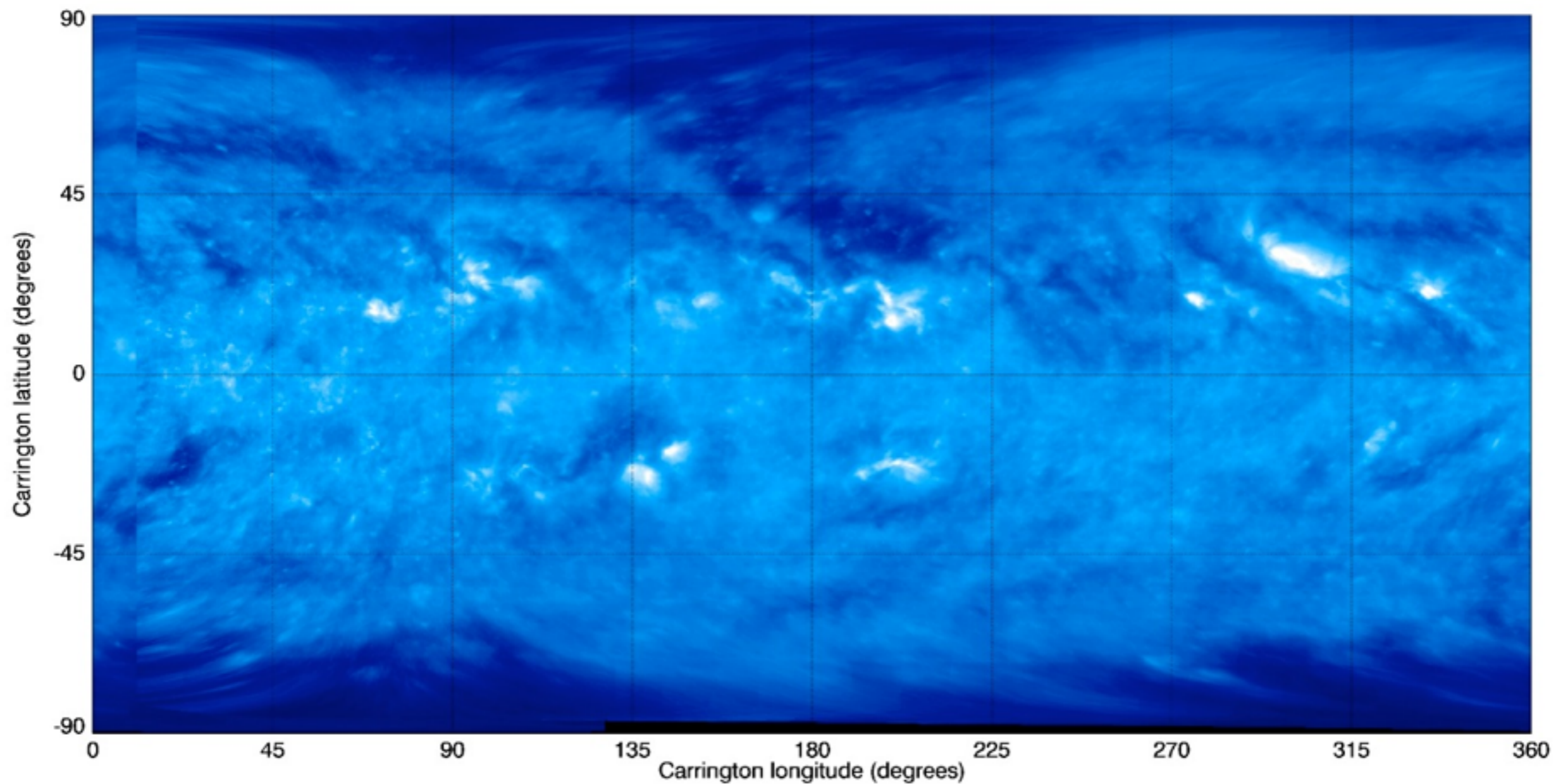
Festival:

un outil pour
visualiser une
combinaison
d'instruments



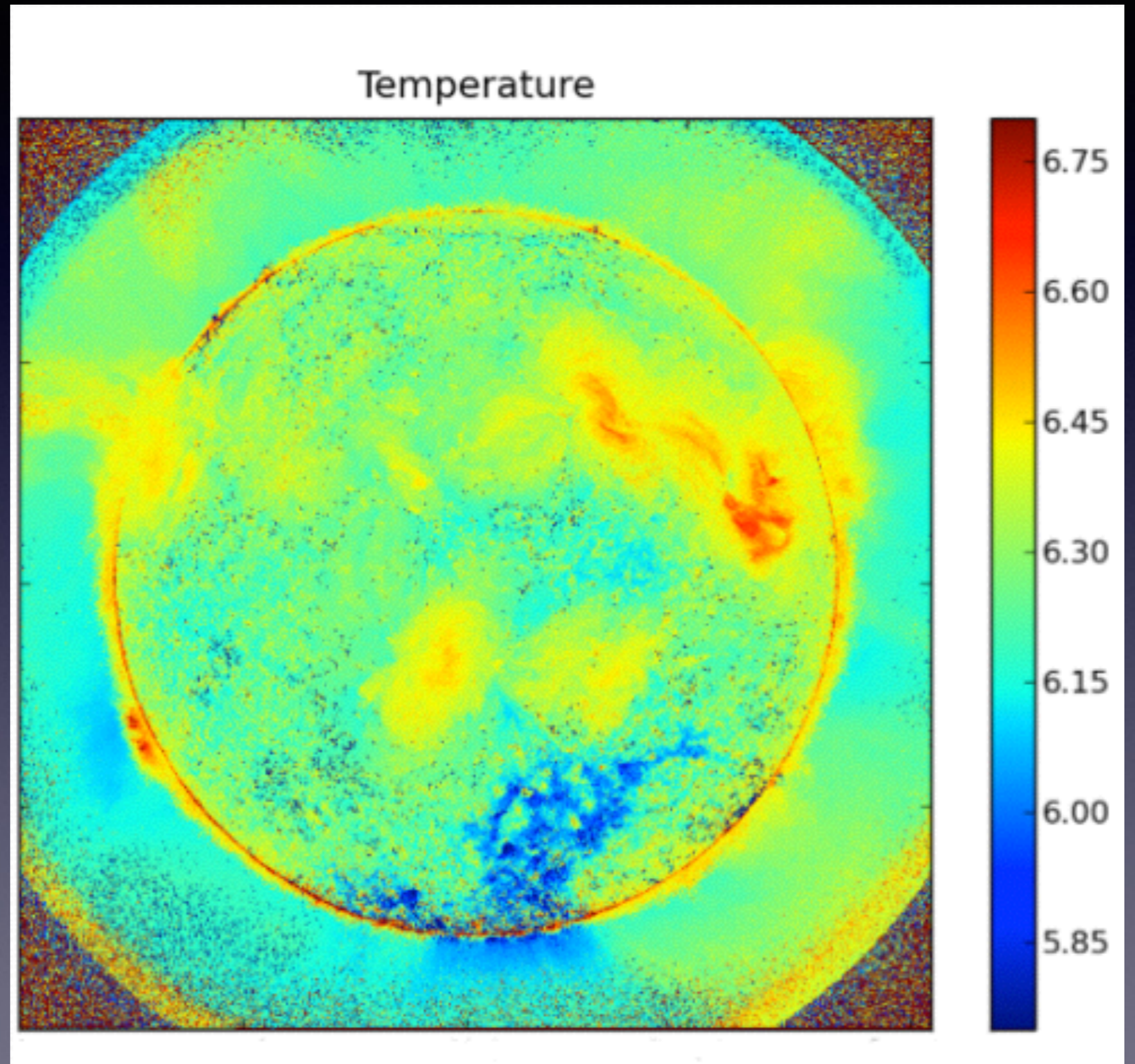
Produits «à valeur ajoutée»

Données synoptiques du Soleil en EUV



Produits «à valeur ajoutée»

Cartes de paramètres physique de la couronne solaire

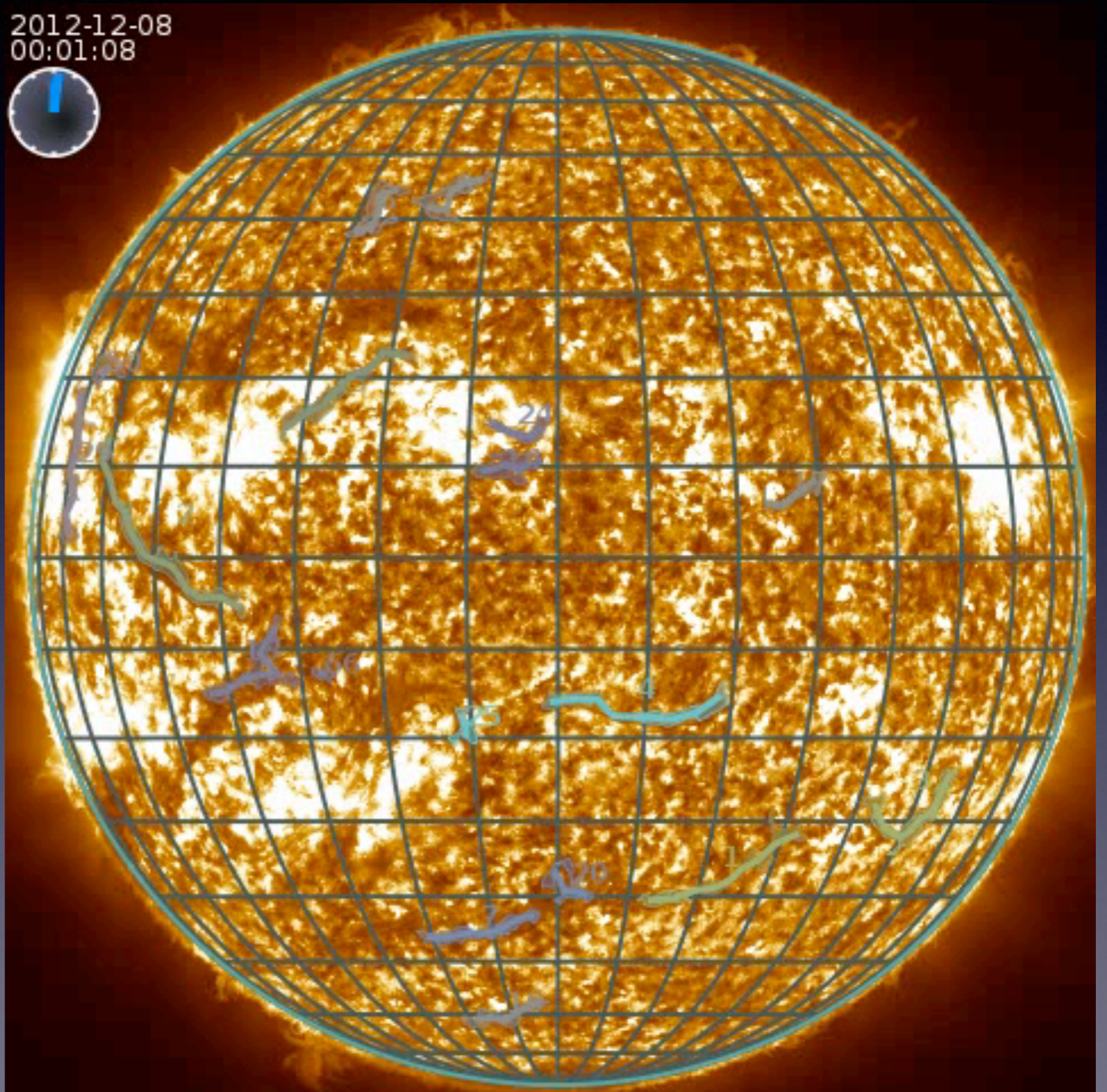


Produits «à valeur ajoutée»

2012-12-08
00:01:08

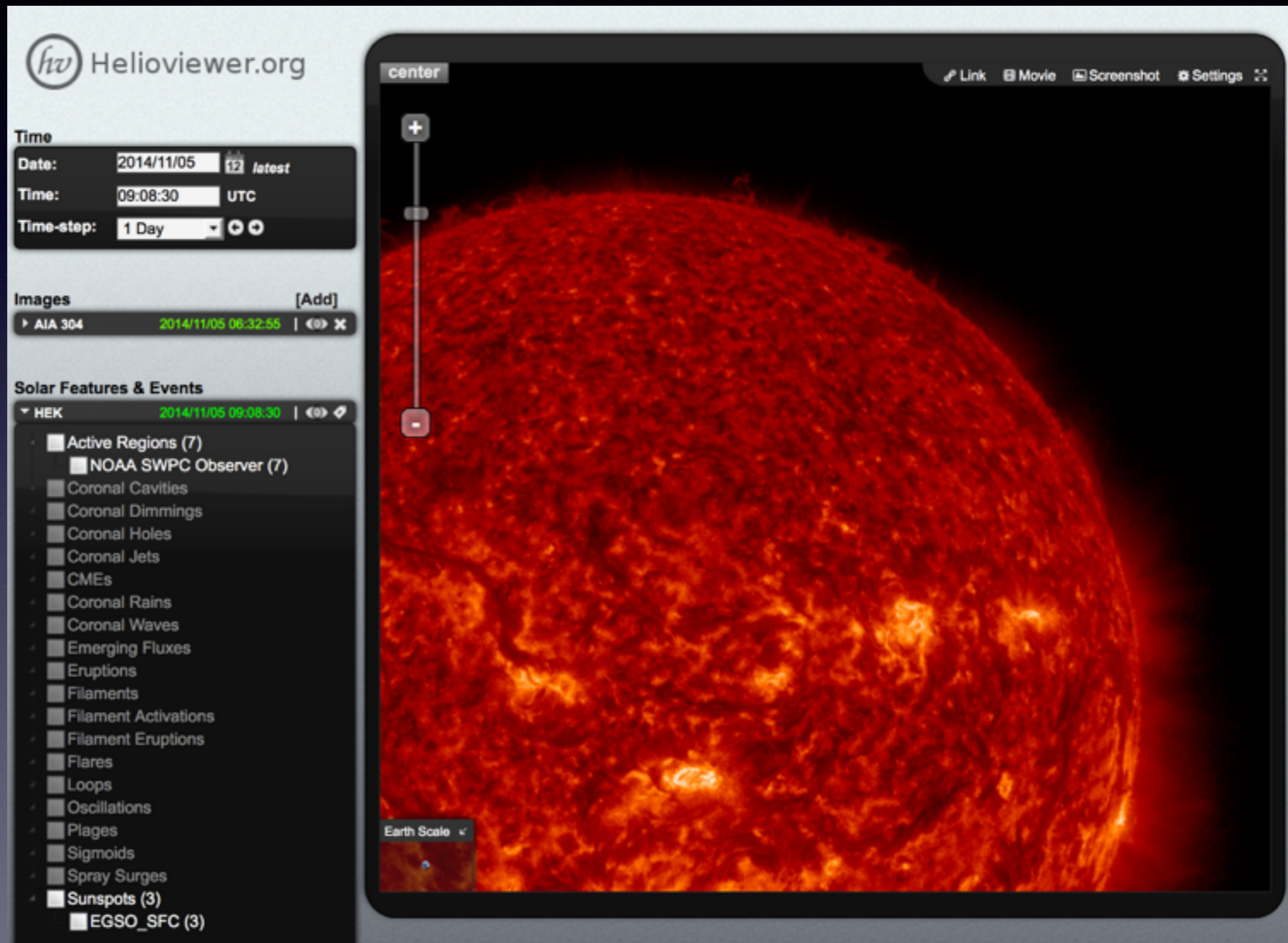


Détection
automatique
de filaments



Produits «à valeur ajoutée»

Outils de
visualisation
bis



The screenshot displays the Helioviewer.org interface. On the left, there are control panels for 'Time' (Date: 2014/11/05, Time: 09:08:30 UTC, Time-step: 1 Day), 'Images' (AIA 304, 2014/11/05 06:32:55), and 'Solar Features & Events' (HEK, 2014/11/05 09:08:30). The 'Solar Features & Events' panel lists various solar phenomena with checkboxes, including Active Regions (7), NOAA SWPC Observer (7), Coronal Cavities, Coronal Dimmings, Coronal Holes, Coronal Jets, CMEs, Coronal Rains, Coronal Waves, Emerging Fluxes, Eruptions, Filaments, Filament Activations, Filament Eruptions, Flares, Loops, Oscillations, Plages, Sigmoids, Spray Surges, Sunspots (3), and EGSO_SFC (3). The main panel on the right shows a large, high-resolution solar image in red and orange, with a vertical zoom slider and a 'center' label. A small 'Earth Scale' inset is visible in the bottom left corner of the image area.

Nouveau site web

<https://idoc.ias.u-psud.fr/MEDOC>

Multi Experiment Data & Operation Center



MEDOC is a National Center for Space Solar Physics Data, approved by [CNES](#), in the frame of an agreement between [CNRS/INSU](#), [Université Paris-Sud](#) and [CNES](#).

It was initially created (in 1995) and developed as a european data and operation center for the [SOHO](#) mission. Later, it got enriched with new data from other space based solar observations from [TRACE](#) (NASA), [Spirit/CORONAS](#) (Russian Federal Space Agency), [STEREO](#) (NASA). It became a national data center in 2012 and in parallel continued to enrich its data contents with [AIA/SDO](#), [Picard](#) (CNES) and a close future should see data from Solar Orbiter included in MEDOC (a summary of the instruments –and their main characteristics– which data are available at MEDOC can be found [here](#)). MEDOC is more than a repository for data. First, it also operates some instruments observing the Sun (such as SOHO observation campaigns). Second, the scientists

from the [Institut d'Astrophysique Spatiale](#), which hosts MEDOC, have a good expertise about most of the instruments which data are available at MEDOC and can provide some valuable information about the use and interpretation of these data (use the contact link below). Finally, some products with added values and other services are also available at MEDOC, such as visualization tools, interpretation tools (plasma parameter diagnostic for example) or software and models to help analyzing and interpreting the data.

MEDOC is also open on the whole scientific community and has for natural partners the [Centre de Données de Physique des Plasmas](#) and [BASS2000](#).

[Most recent images of the Sun](#)

[Data summary](#)

[Access to Data](#)

[Access to analysis tools and related products](#)

[Publications using MEDOC data](#)

SoIO@MEDOC

Implication de l'équipe «Physique solaire & stellaire» de l'IAS:

- EUI (coPI + cols)
- PHI (lead col + cols)
- SPICE (cols)

SoIO@MEDOC

- Opérations SPICE
- Synergie entre les 3 instruments EUI, PHI et SPICE
- Synergie remote/in-situ
- Synergie avec CDPP

SoIO@MEDOC

Opérations SPICE

- MEDOC partenaire dans un consortium IAS/RAL/UiO pour opérations SPICE?
- MEDOC = outil de visualisation (combinant plusieurs instruments) pour pointage fin SPICE (FESTIVAL, Heliviewer)
- MEDOC = outils d'implémentation des séquences d'observations