

“SIDC Tools”

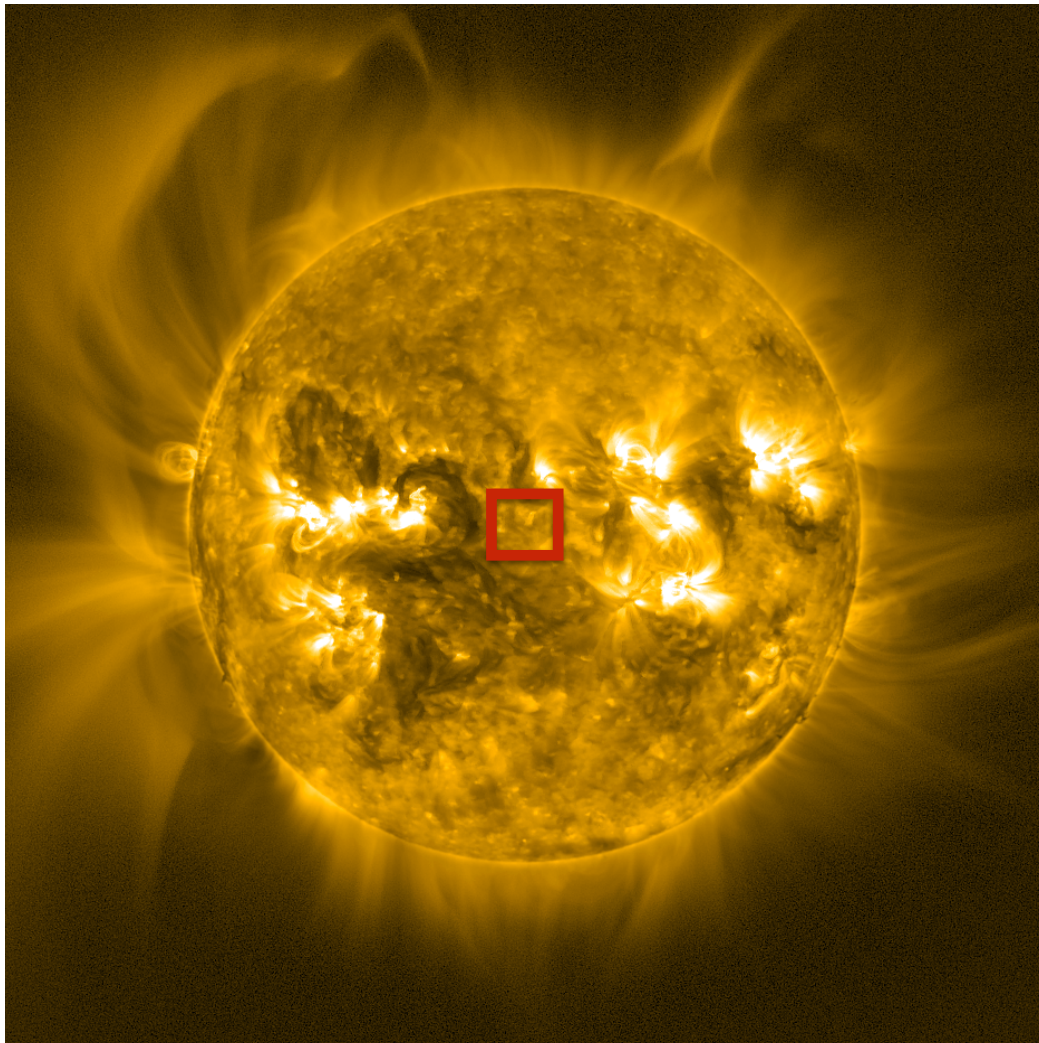
D. Berghmans
Royal Observatory of Belgium

better title

“EUI data center: preparing Solar Orbiter pointing”

D. Berghmans
Royal Observatory of Belgium

EUI High Resolution Imagers



FOV:

17'x17'

@ 0.28 AU = $(0.16 R)^2$

resolution:

1 arcsec on 2 pixels

@ 0.28 AU = 200km

What do we want Solar
Orbiter to point to?

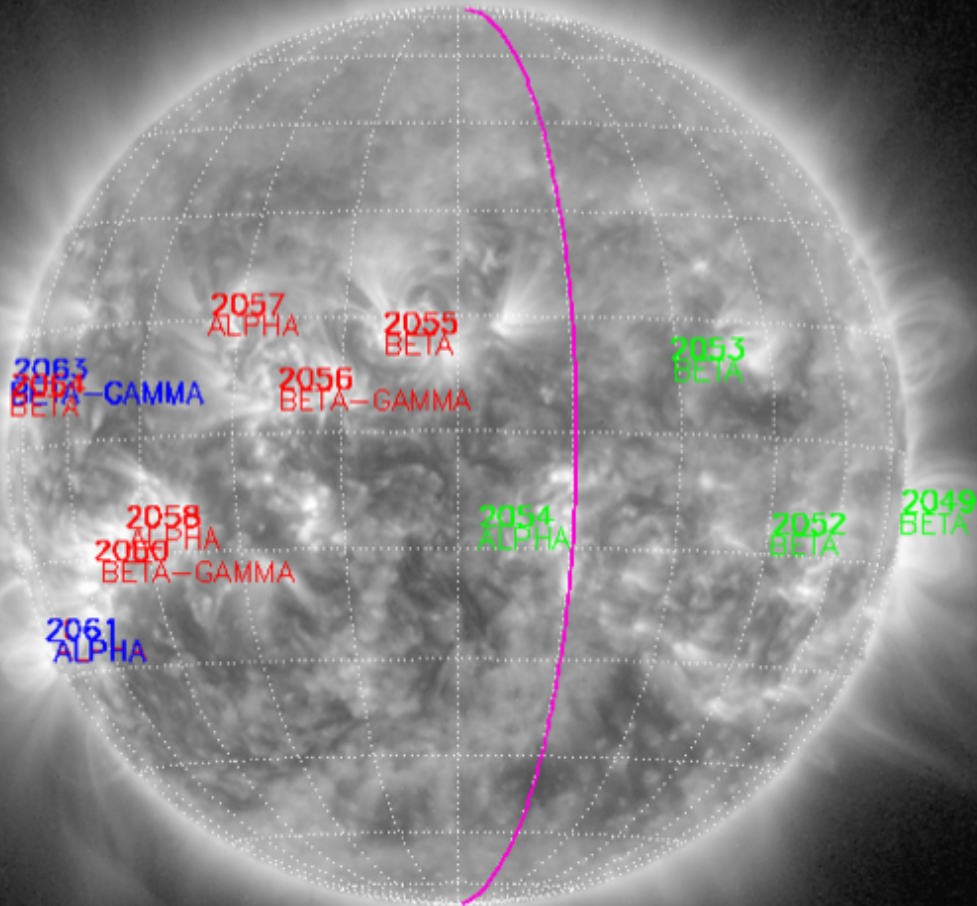
What will the corona look like
as seen from Solar Orbiter,
in a couple of days/weeks
from now?

ESA/SSA services to
Venus Express
Aerobraking manoeuvre

Solar corona as seen from Venus 2014-05-16

Earth viewing side

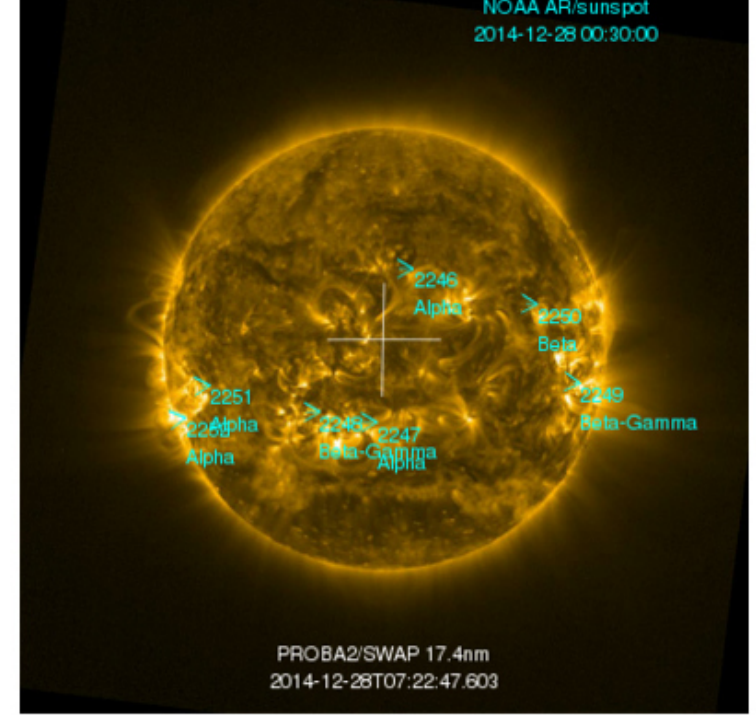
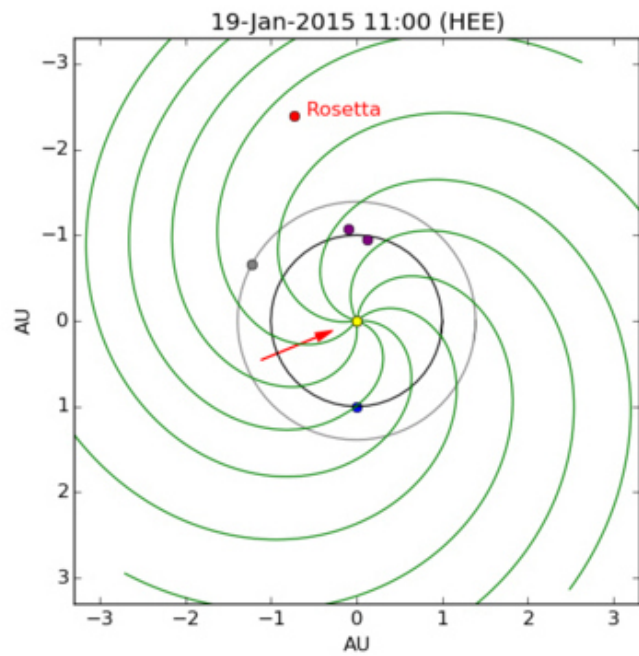
Backside from Earth



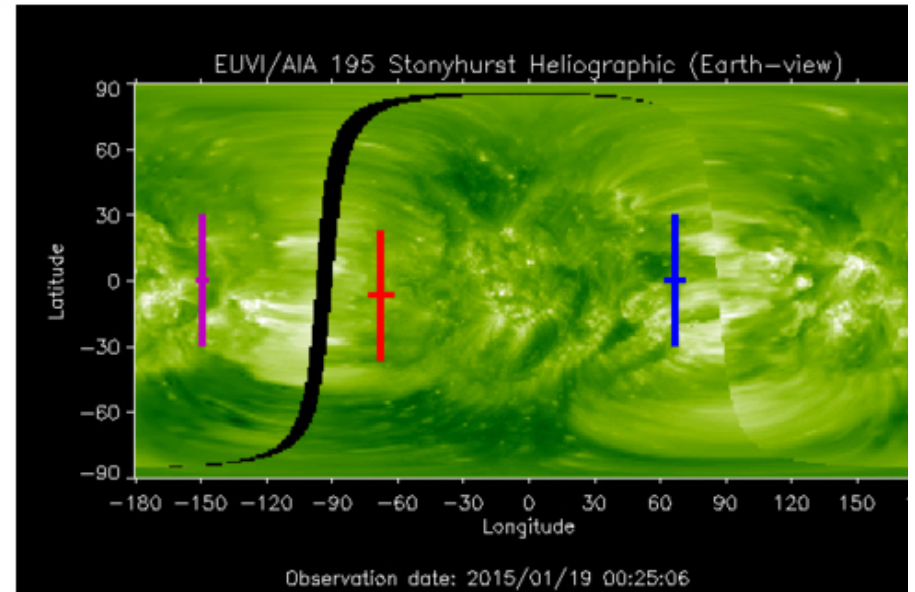
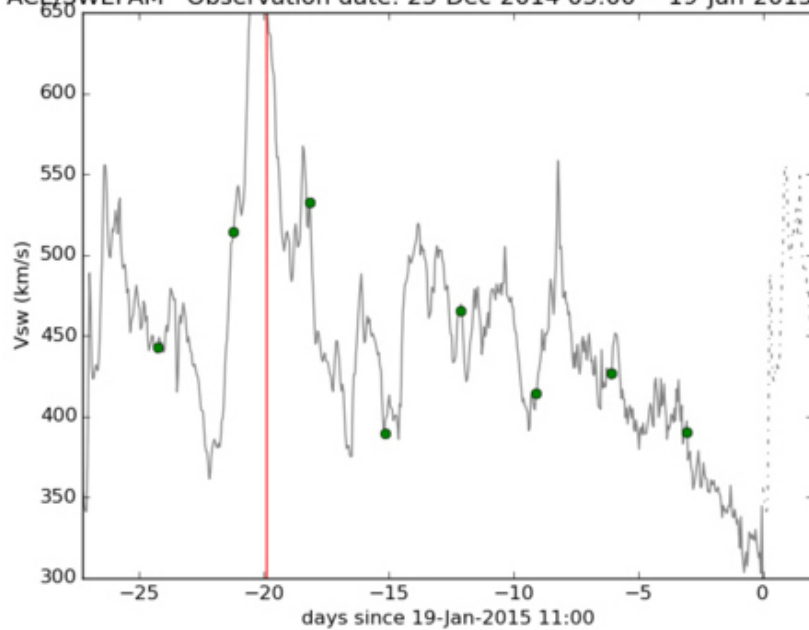
NOAA active regions observed on 2014-05-16 (expected)
observed on 2014-05-10

PROBA2/SWAP 17nm taken on 2014-05-10T20:49:16.734
corresponds to Venus view on 2014-05-16T12:19:27.141
Venus heliographic longitude = 74.4800 deg

ESA/SSA services to Rosetta Landing



ACE/SWEPAM Observation date: 23-Dec-2014 03:00 -- 19-Jan-2015 11:00



Solar-Terrestrial Centre of Excellence

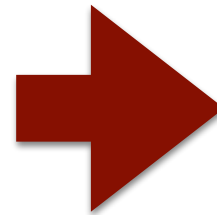
Graphical overview of the solar and interplanetary conditions supporting the risk evaluation of high-energy proton events for the Rosetta mission, part of the tailored space weather bulletin provided by the SSA space weather service network.



Elementary web services!

Example of location server:

[http://swhv.oma.be/position?
utc=2019-04-12T20:23:35&
utc_end=2019-04-13T19:44:11&
deltat=21600&
target=SOLO&
ref=HCI](http://swhv.oma.be/position?utc=2019-04-12T20:23:35&utc_end=2019-04-13T19:44:11&deltat=21600&target=SOLO&ref=HCI)



This will give you radius, longitude, latitude in HCI frame w.r.t. Sun centre. Distances in kilometre, angles in radian, orbit is 2018 Oct (interpolation of CReMA 3.1), format JSON.

```
[
  {
    "utc": "2019-04-12T20:23:35.000",
    "val": [
      112814426.65058863,
      -0.9810106326383871,
      0.06600546614960441
    ]
  },
  {
    "utc": "2019-04-13T02:23:35.000",
    "val": [
      113009729.78536803,
      -0.9737977053854346,
      0.06699857462172885
    ]
  },
  {
    "utc": "2019-04-13T08:23:35.000",
    "val": [
      113206128.99579602,
      -0.9666087809313635,
      0.06798478918977212
    ]
  },
  {
    "utc": "2019-04-13T14:23:35.000",
    "val": [
      113403610.20523115,
      -0.9594438668801281,
      0.06896409352799542
    ]
  }
]
```


3D jHelioviewer

The screenshot displays the ESA JHelioviewer v2 interface. The top toolbar includes icons for Zoom in, Zoom out, Reset Camera, Pan, Zoom Box, Rotate, Track, Corona, 2D, and 3D. The left sidebar contains controls for Contrast (slider at 0), Color (SDO-AIA 171 Å), Channels (Red, Green, Blue checked), Timeline Layers, Space Weather Event Knowledgebase, PFSS Model (Model time: 2014-01-16T06:04:00), Level (0), Fixed colors, Camera Adjustments (Observer, Earth, Expert), Grid (13.2, 15), FOV angle (0.28 degree), Camera time (2019-01-16T09:37:06), Status (Loaded), Solar Orbiter, and Use active layer timestamps (checked).

The main 3D visualization shows a blue and yellow sphere representing the Sun, with a black coronagraph mask. The background is a red and orange solar disk. Below the visualization is a 1-D and 2-D Time Series plot showing $\log(W/m^2)$ on the y-axis (ranging from -9.00 to -6.03) and time on the x-axis (ranging from 2014-01-16 00:00 to 2014-01-17 00:00). The plot shows a green line representing the solar flux, with a vertical red line at 12:05:40 on 2014-01-16. The Time interval is set to Custom.

The bottom status bar shows: Zoom: 46%, Quality: 4/4, (x, y) = (-5678'', -5678...), JPIP: [icon], Meta: [checkmark], OpenGL 2.1.