



Solar Orbiter

from the Sun to the heliosphere and into the future

David Berghmans, Tim Horbury & Miho Janvier

“How does the Sun create and control the Heliosphere – and why does solar activity change with time?”

Go close-by to the Sun
(0.28 au)

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Go out of the ecliptic
($>30^\circ$ latitude)

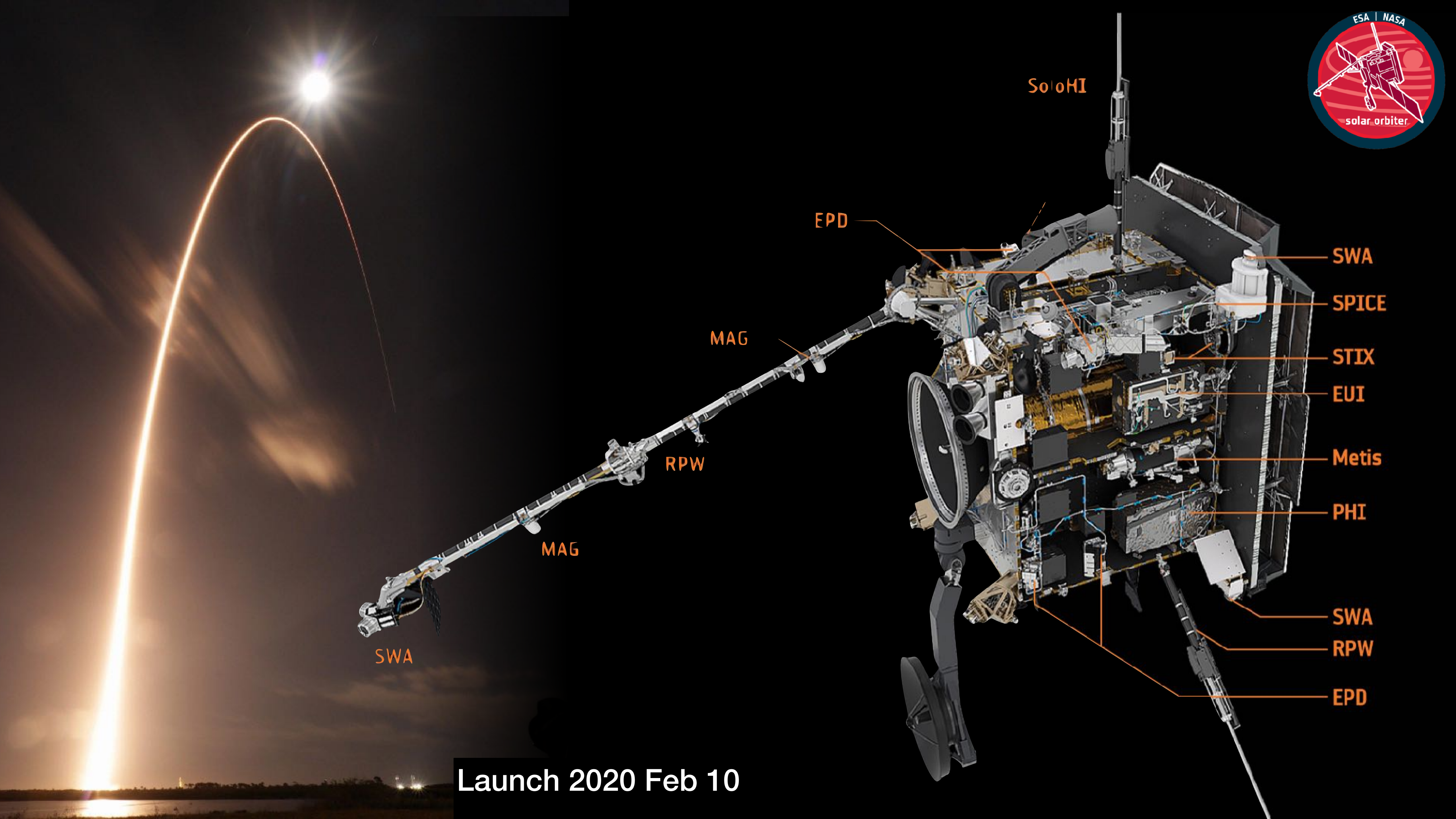
“How does the Sun create and control the Heliosphere – and why does solar activity change with time?”

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“How does the Sun create and control the Heliosphere – and why does solar activity change with time?”

Observe from seconds up
to a full solar cycle



SoloHI

EPD

SWA

SPICE

STIX

EUI

Metis

PHI

SWA

RPW

EPD

MAG

RPW

MAG

SWA

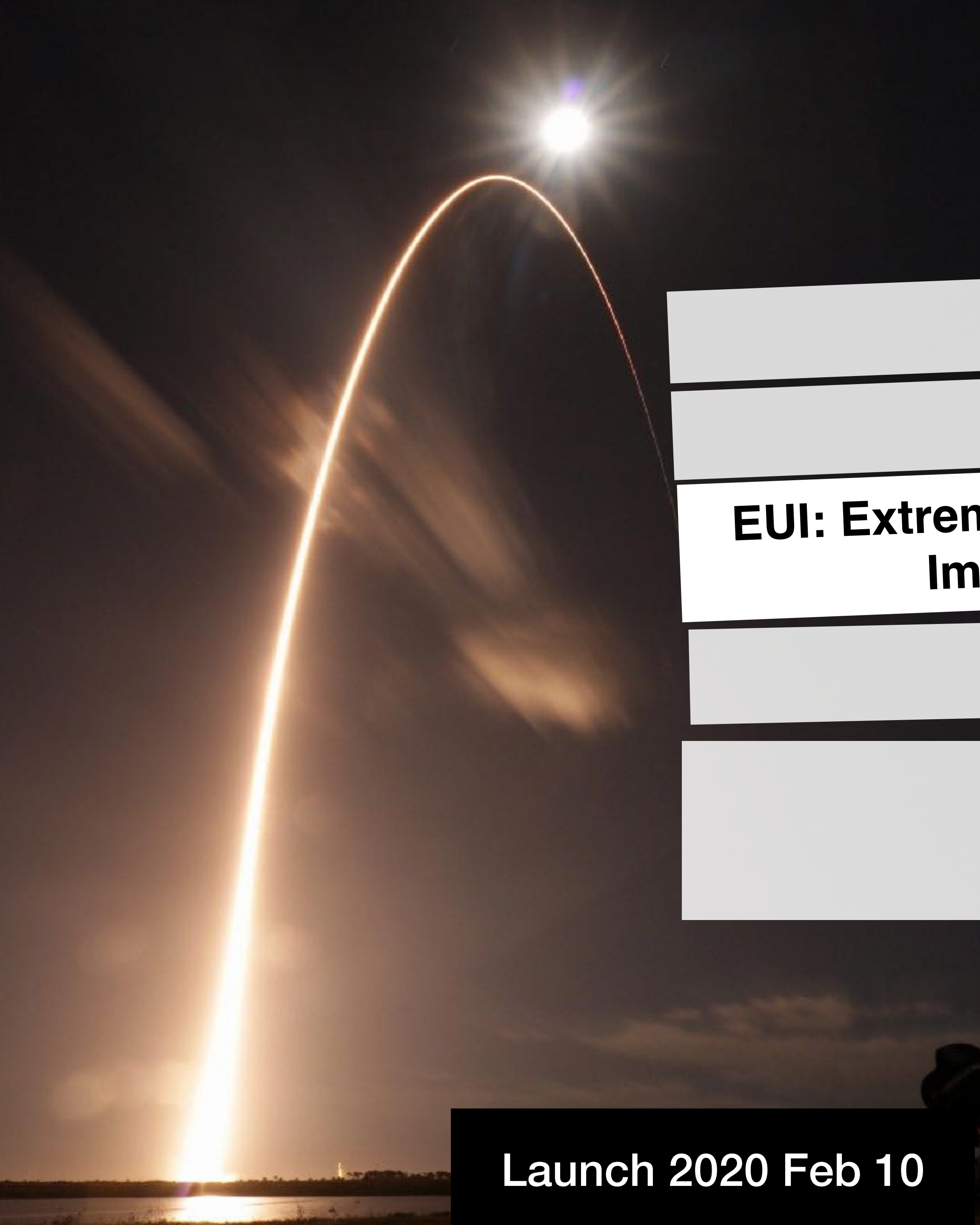
Launch 2020 Feb 10





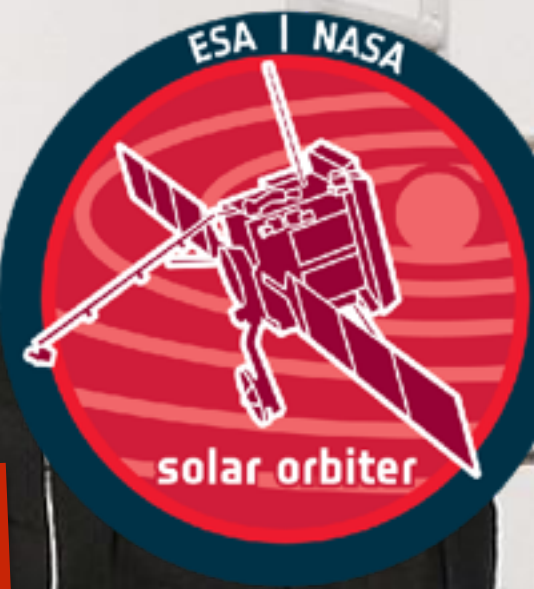
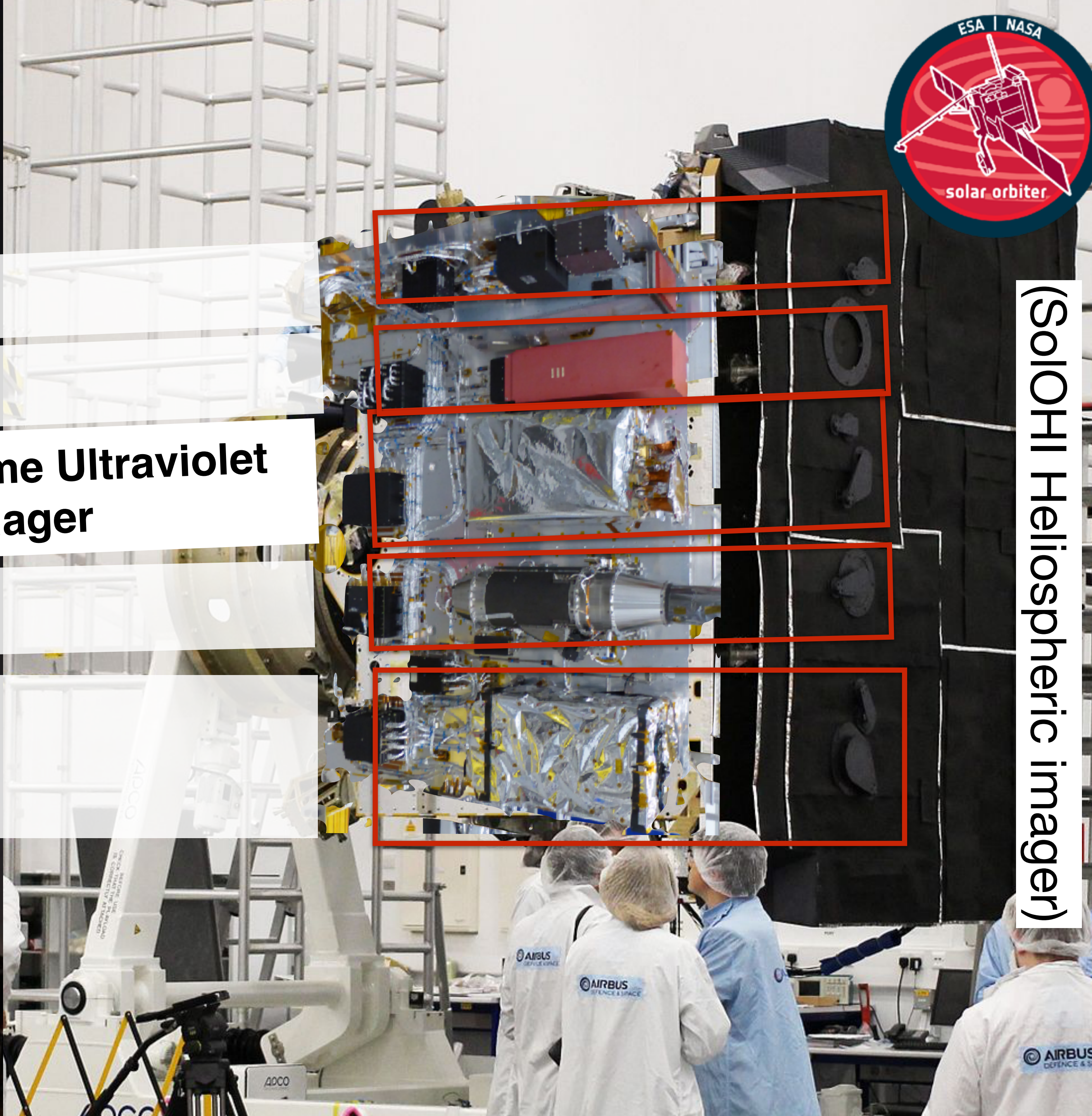
Launch 2020 Feb 10





Launch 2020 Feb 10

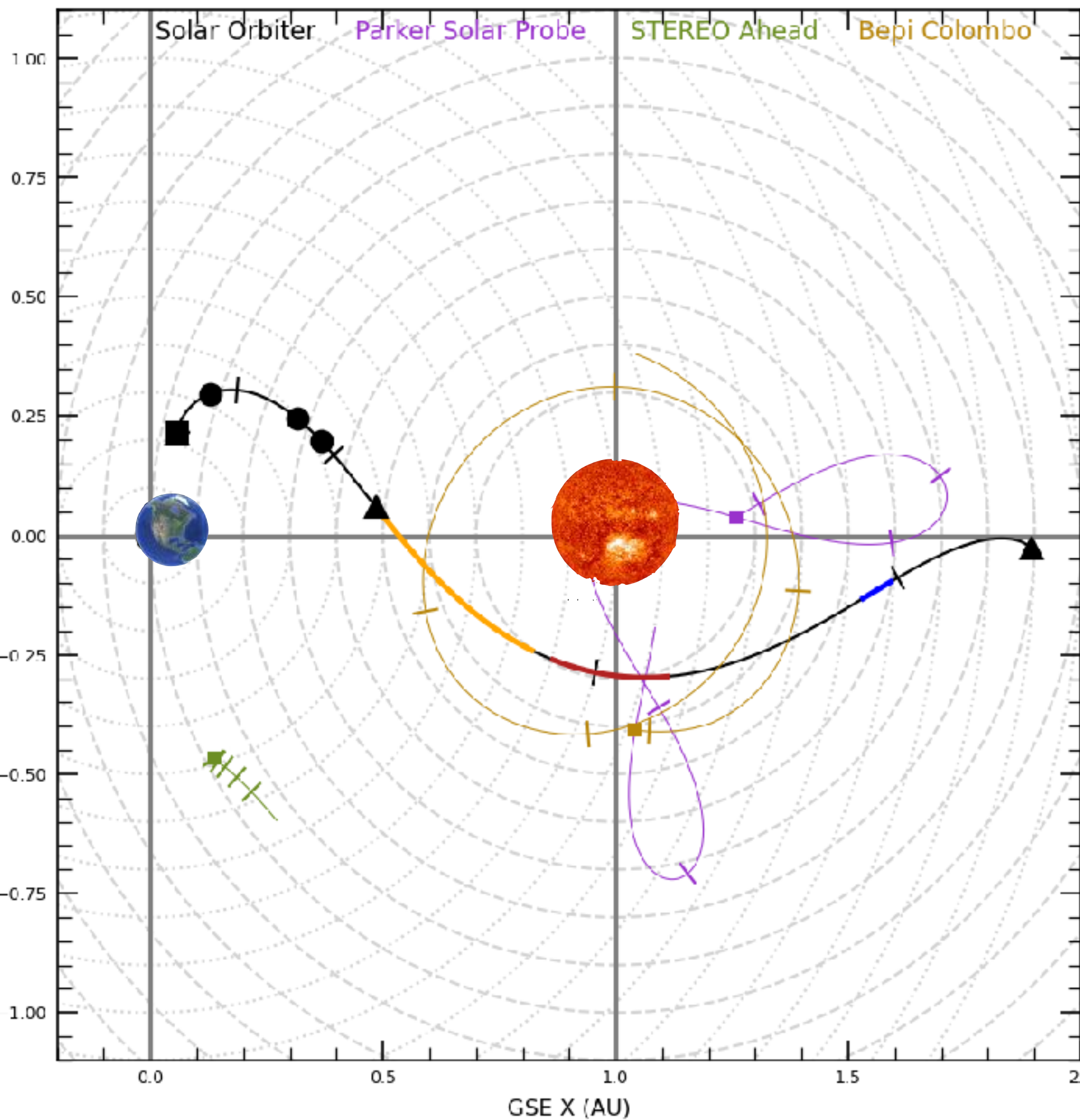
**EUI: Extreme Ultraviolet
Imager**



(SolOHI Heliospheric imager)

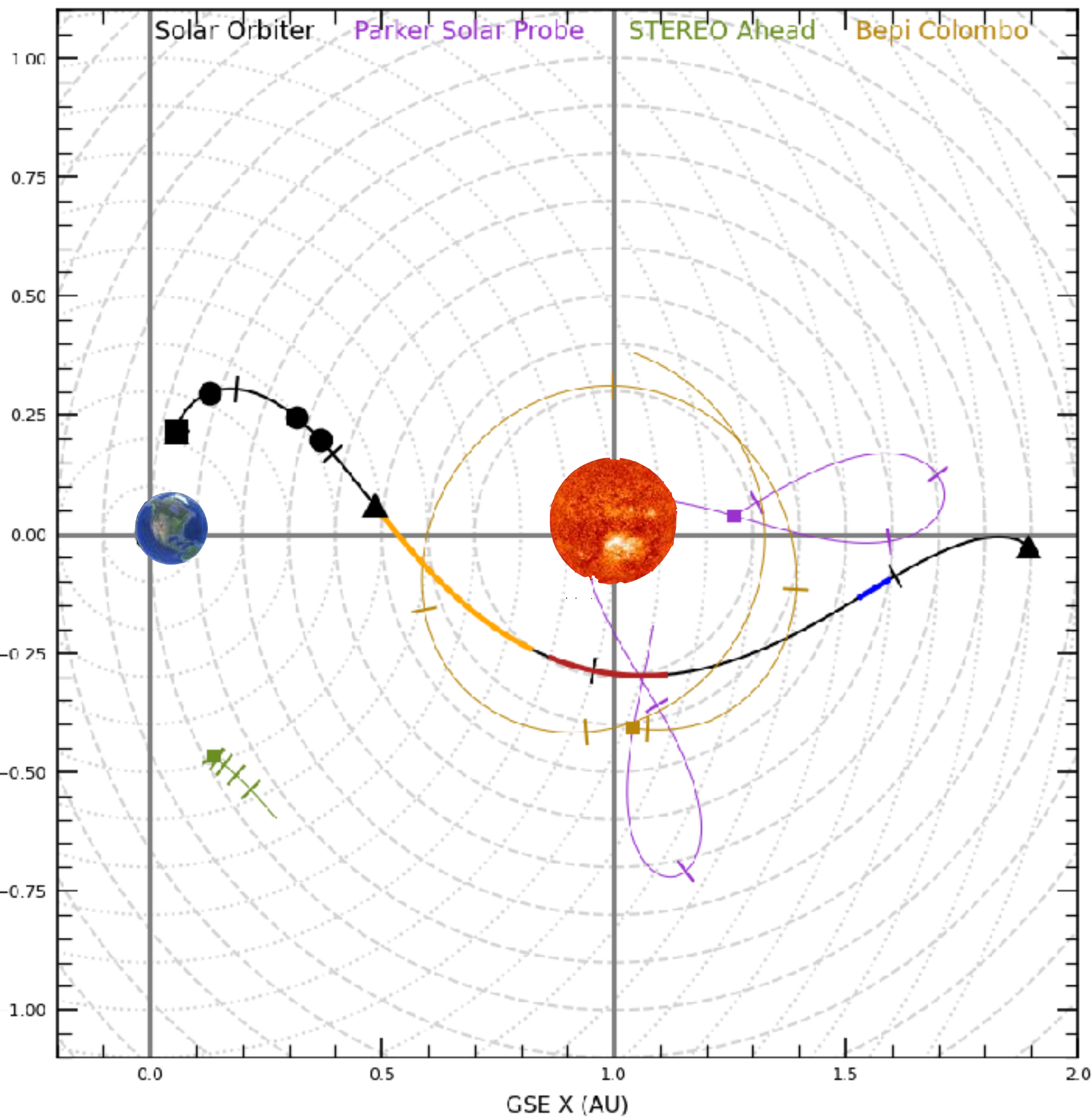
Elliptic orbit around the sun, out of ecliptica

Looking 'down' on solar north

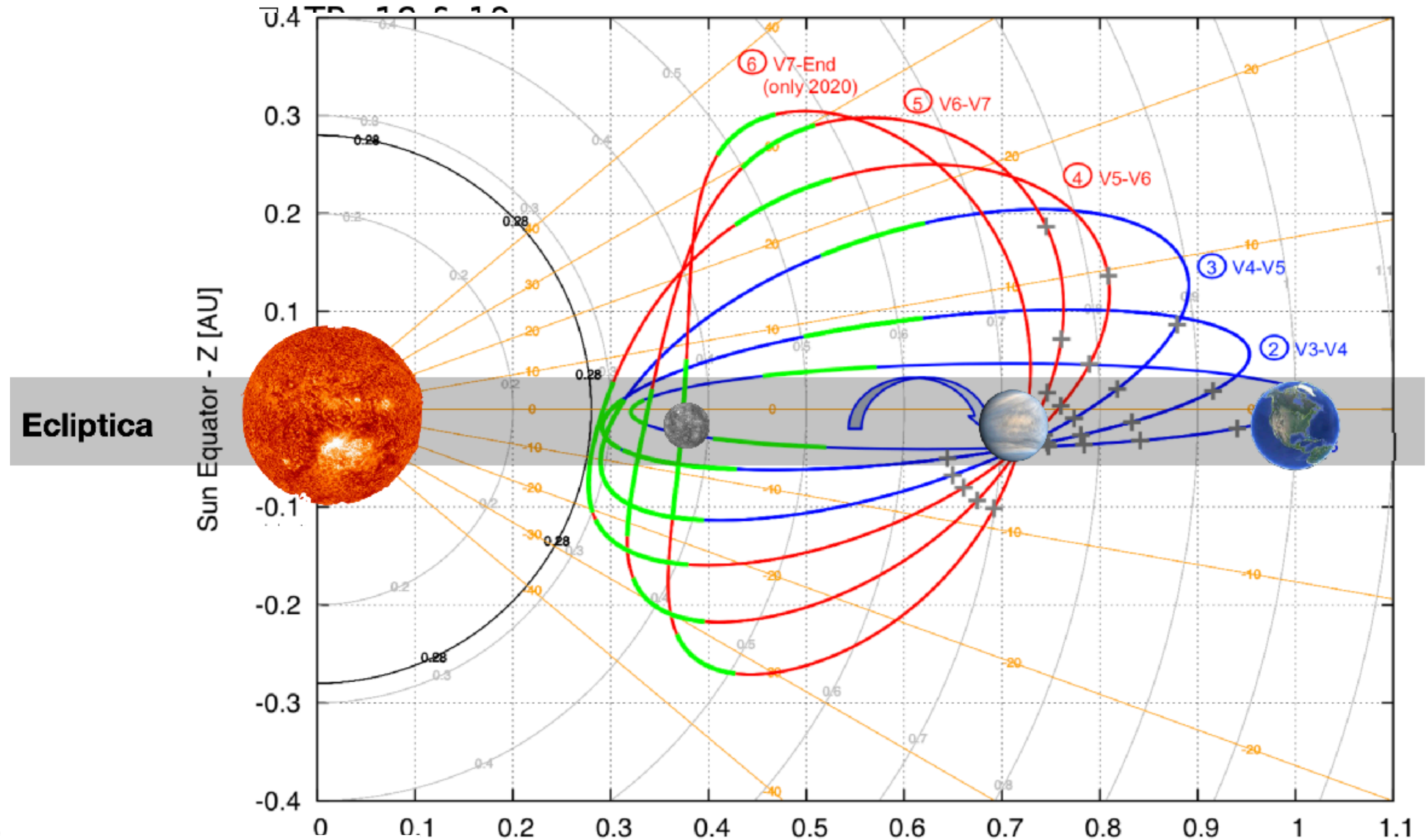


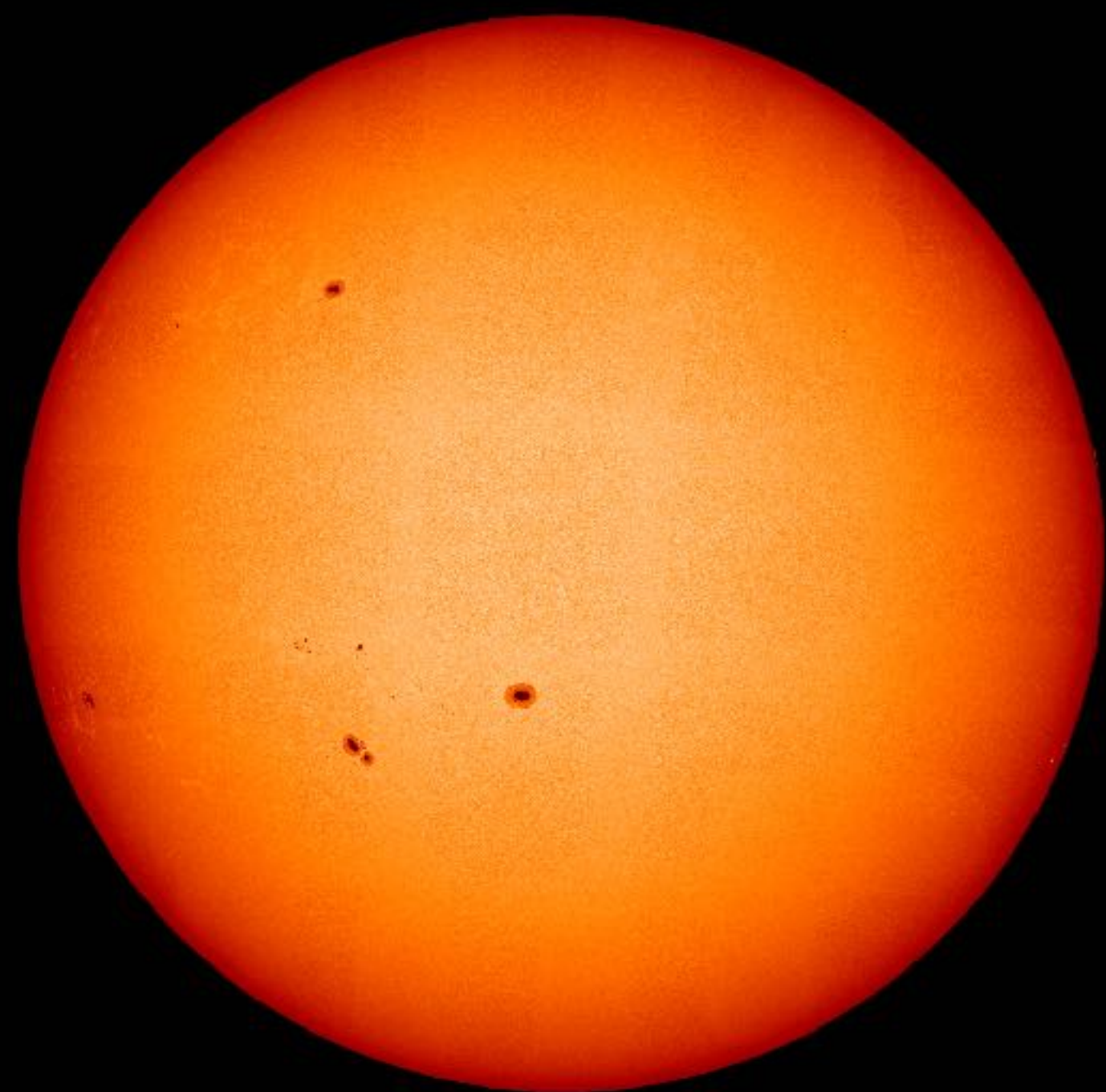
Elliptic orbit around the sun, out of ecliptica

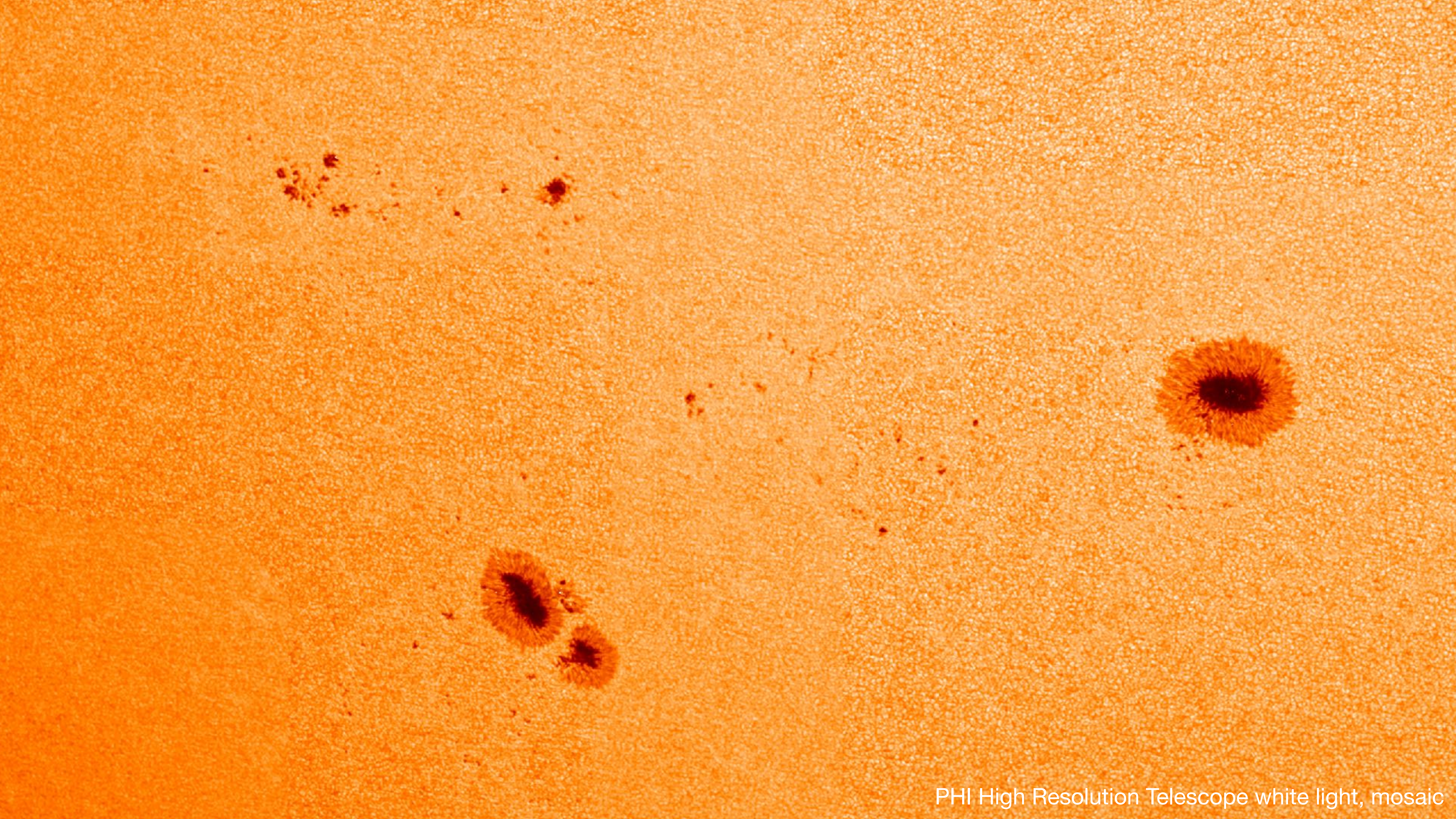
Looking 'down' on solar north

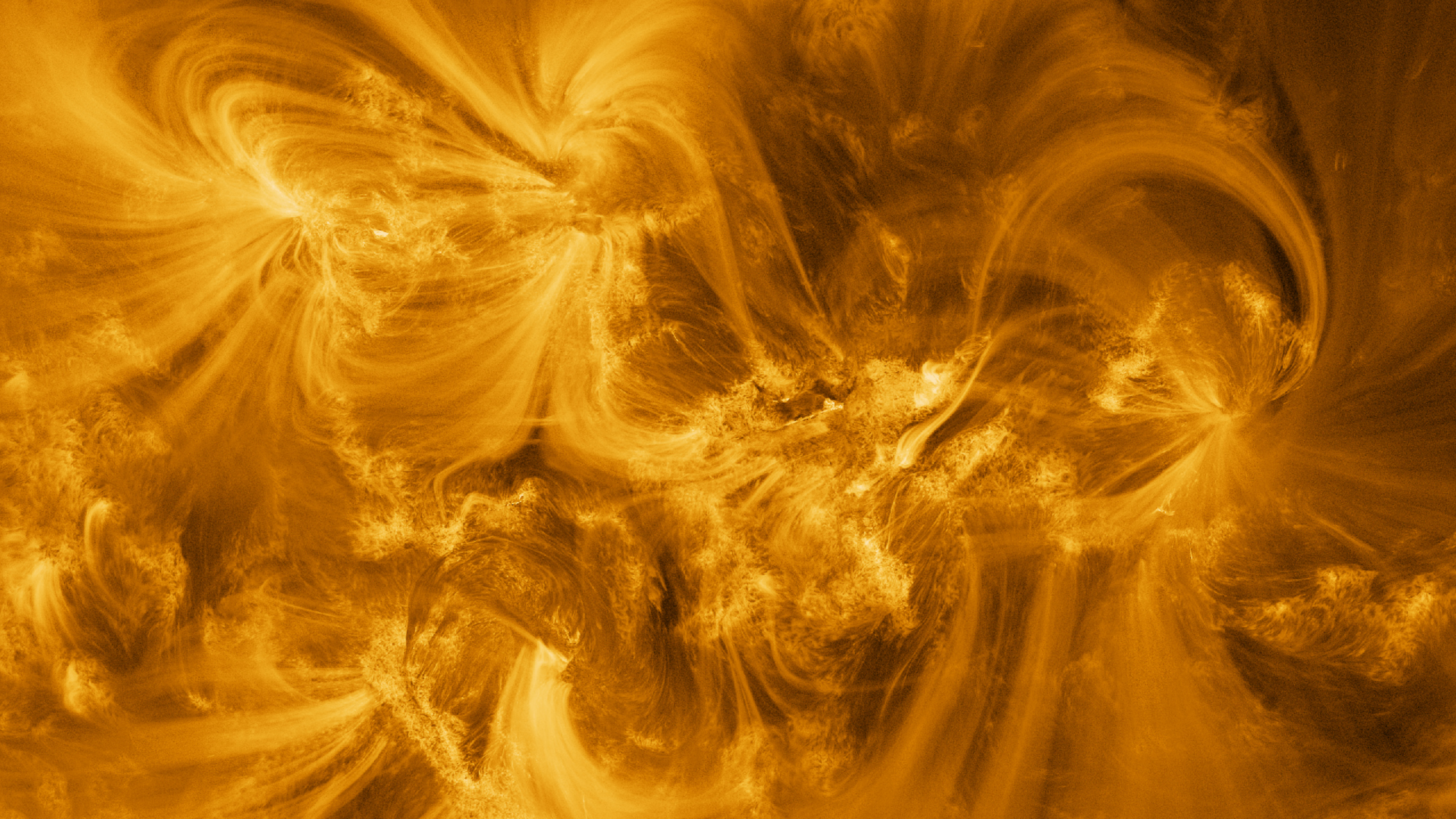


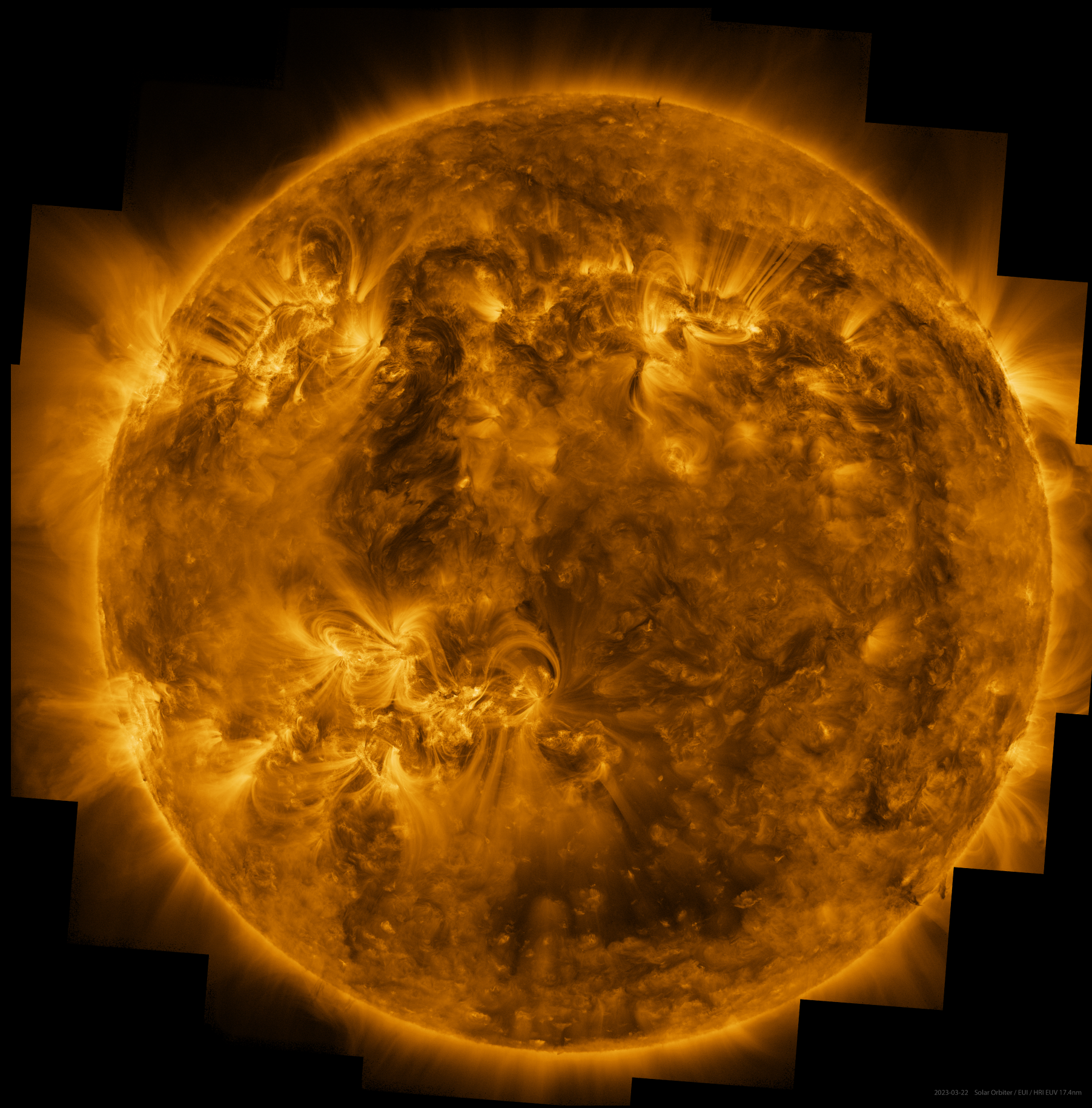
Looking 'sideways' on ecliptica, solar north up



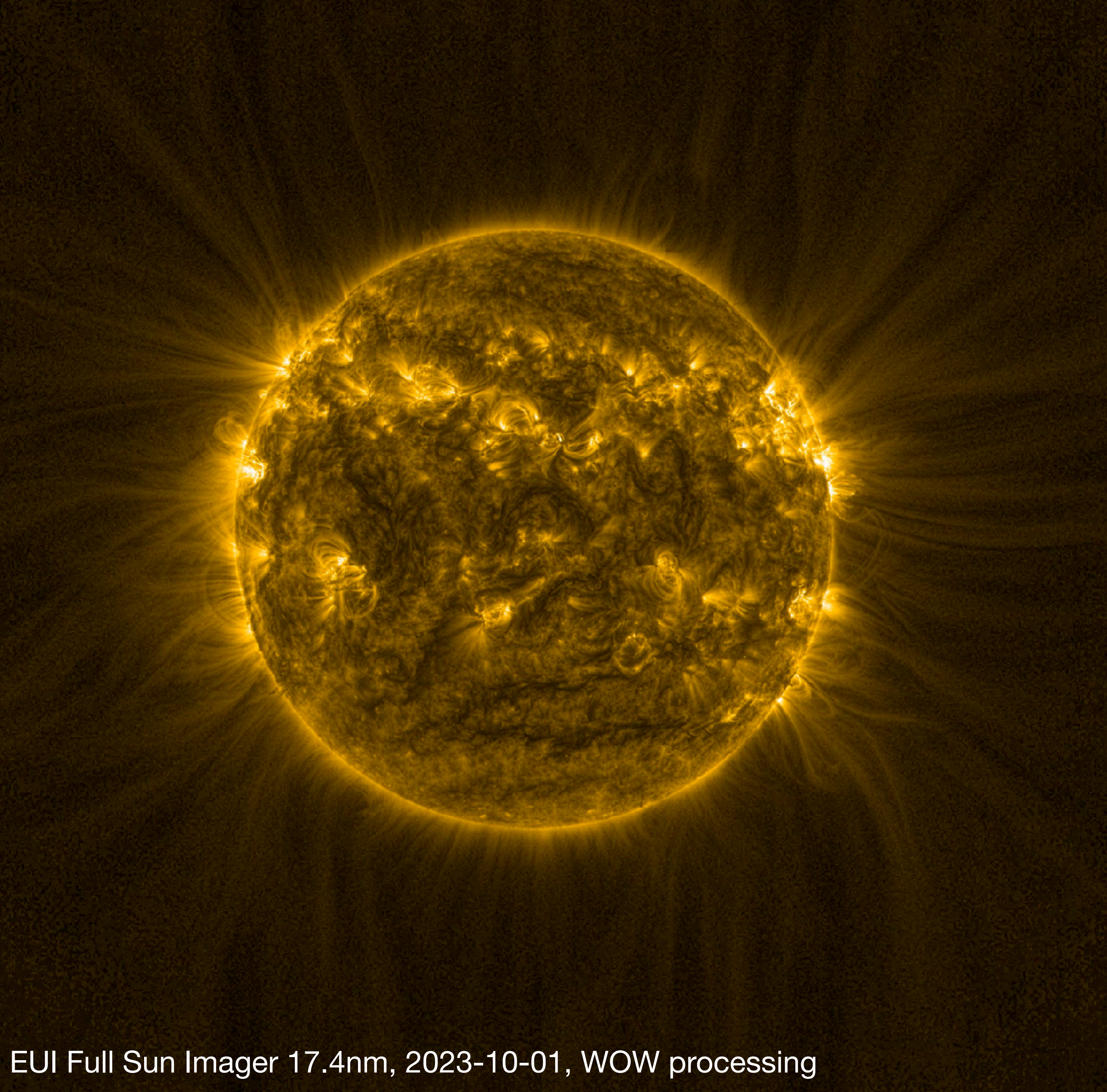




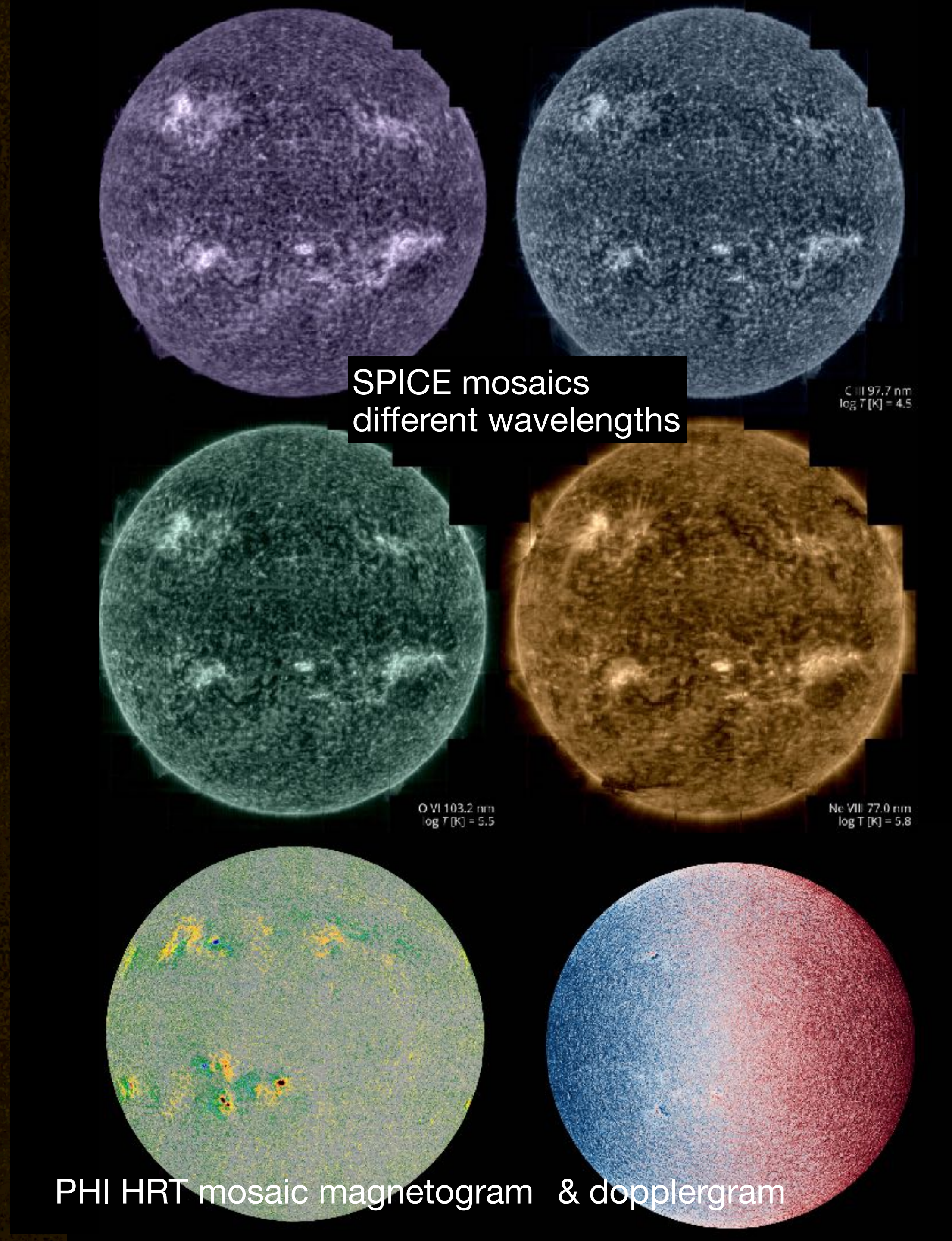




EUI High Resolution Imager 17.4nm, mosaic



EUI Full Sun Imager 17.4nm, 2023-10-01, WOW processing



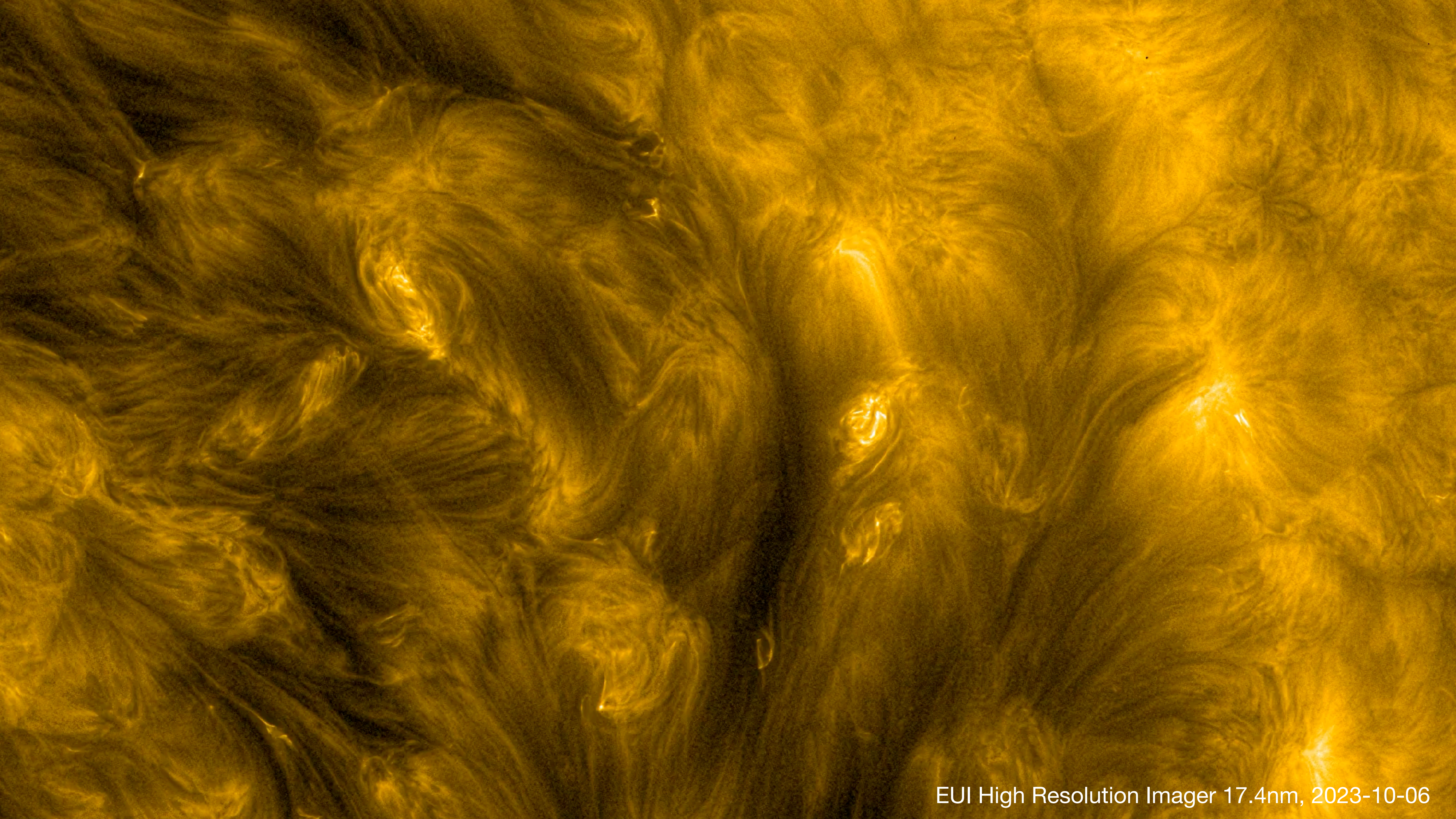
SPICE mosaics
different wavelengths

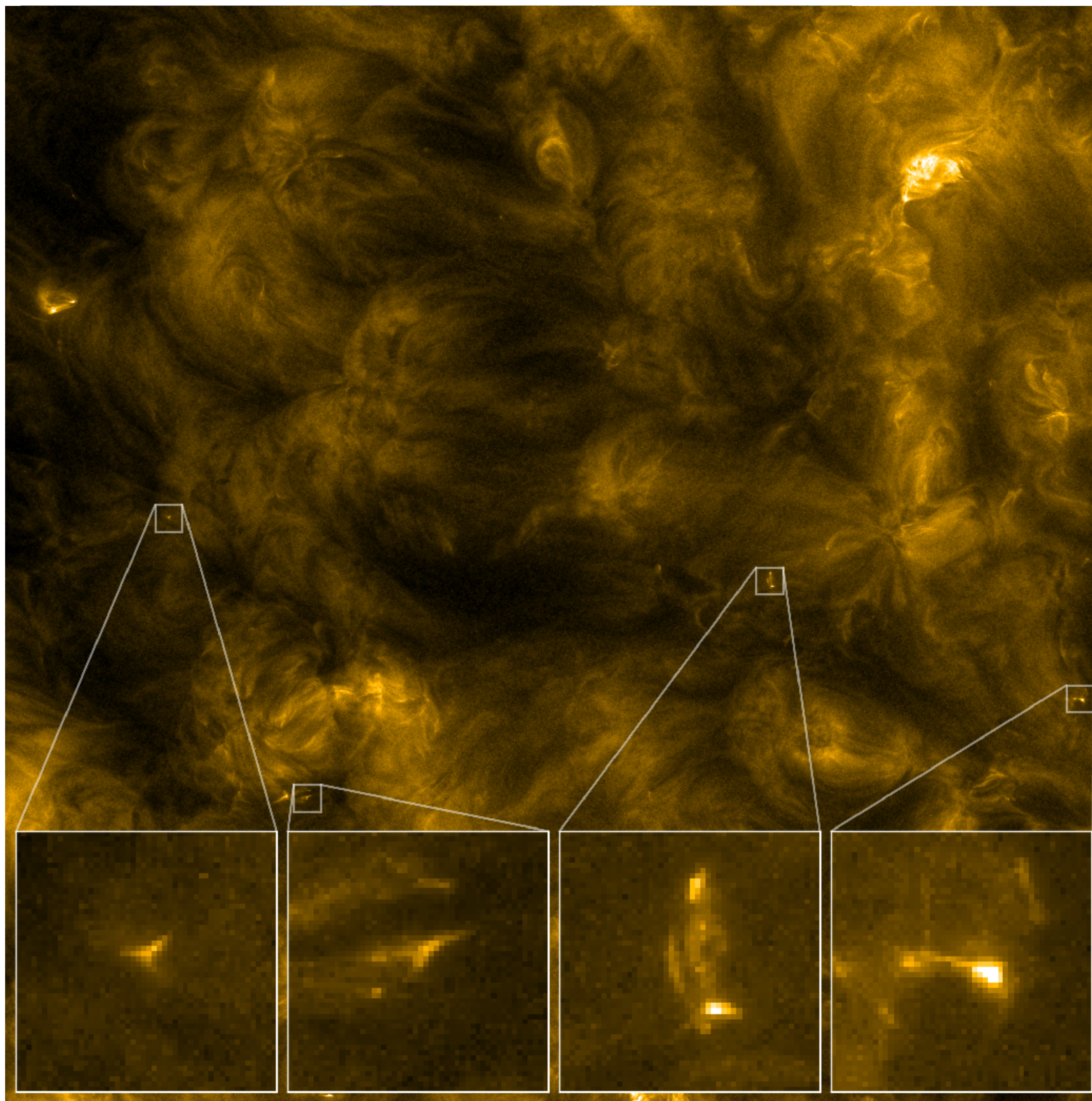
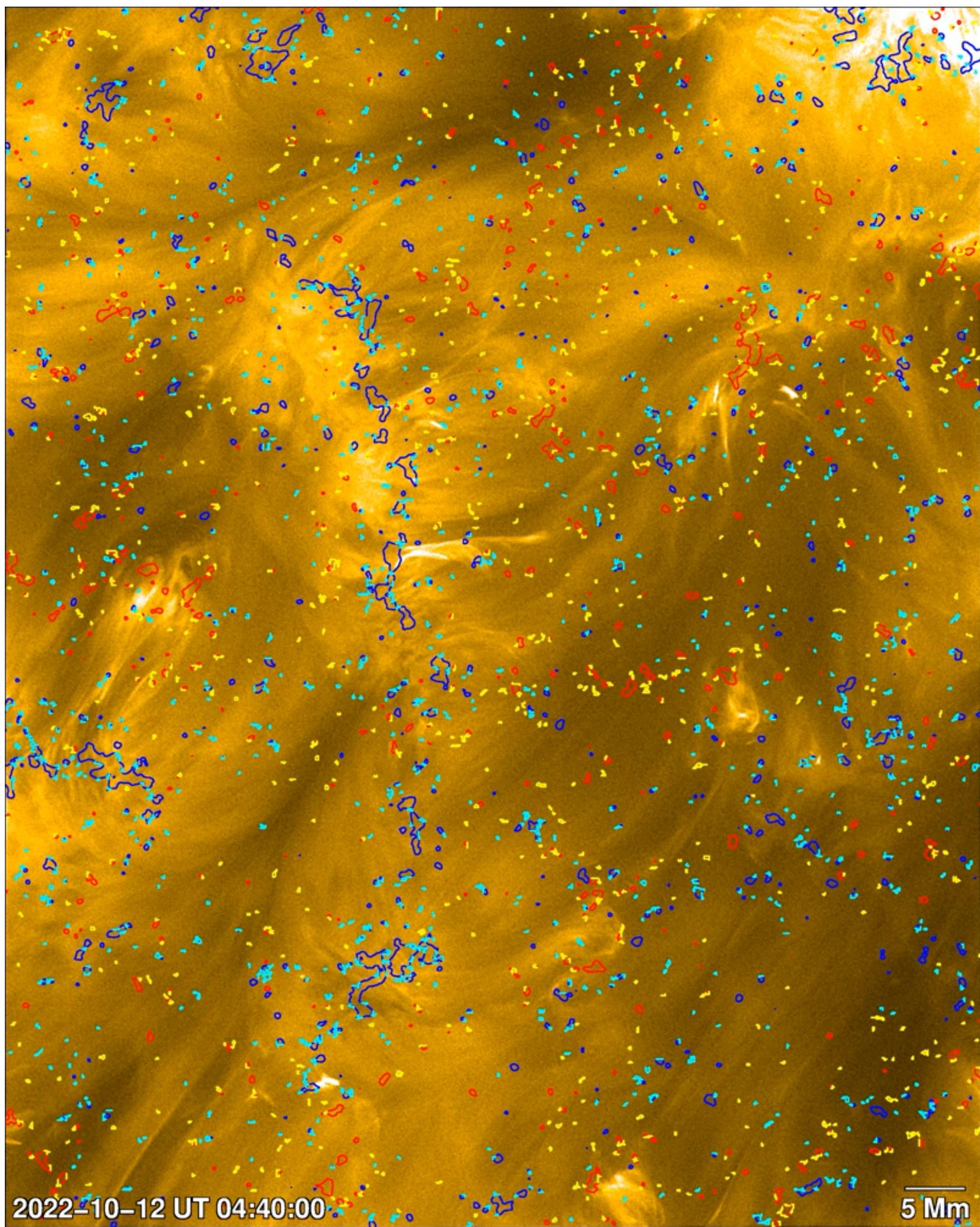
C III 97.7 nm
 $\log T [K] = 4.5$

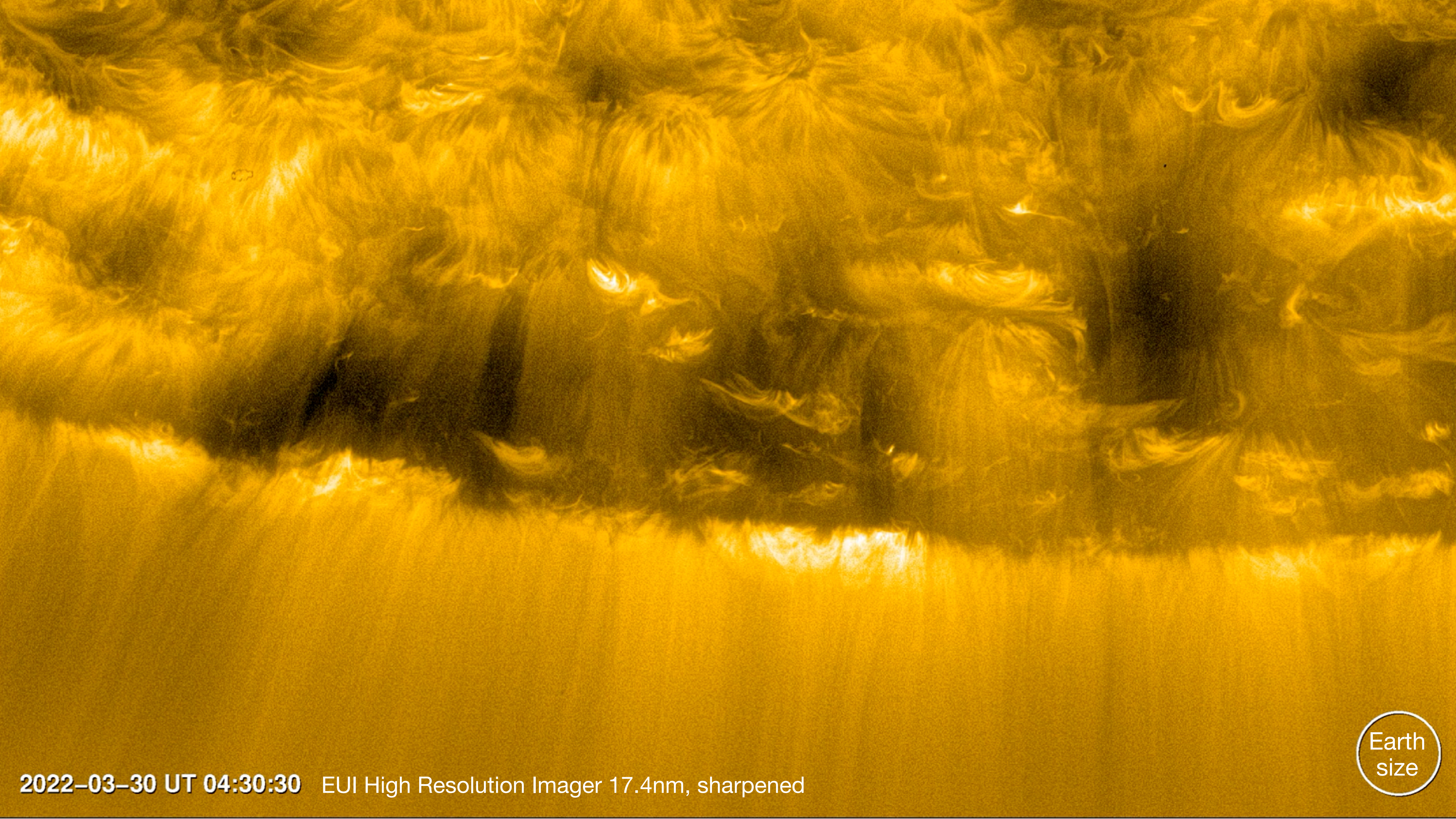
O VI 103.2 nm
 $\log T [K] = 5.5$

Ne VIII 77.0 nm
 $\log T [K] = 5.8$

PHI HRT mosaic magnetogram & dopplergram



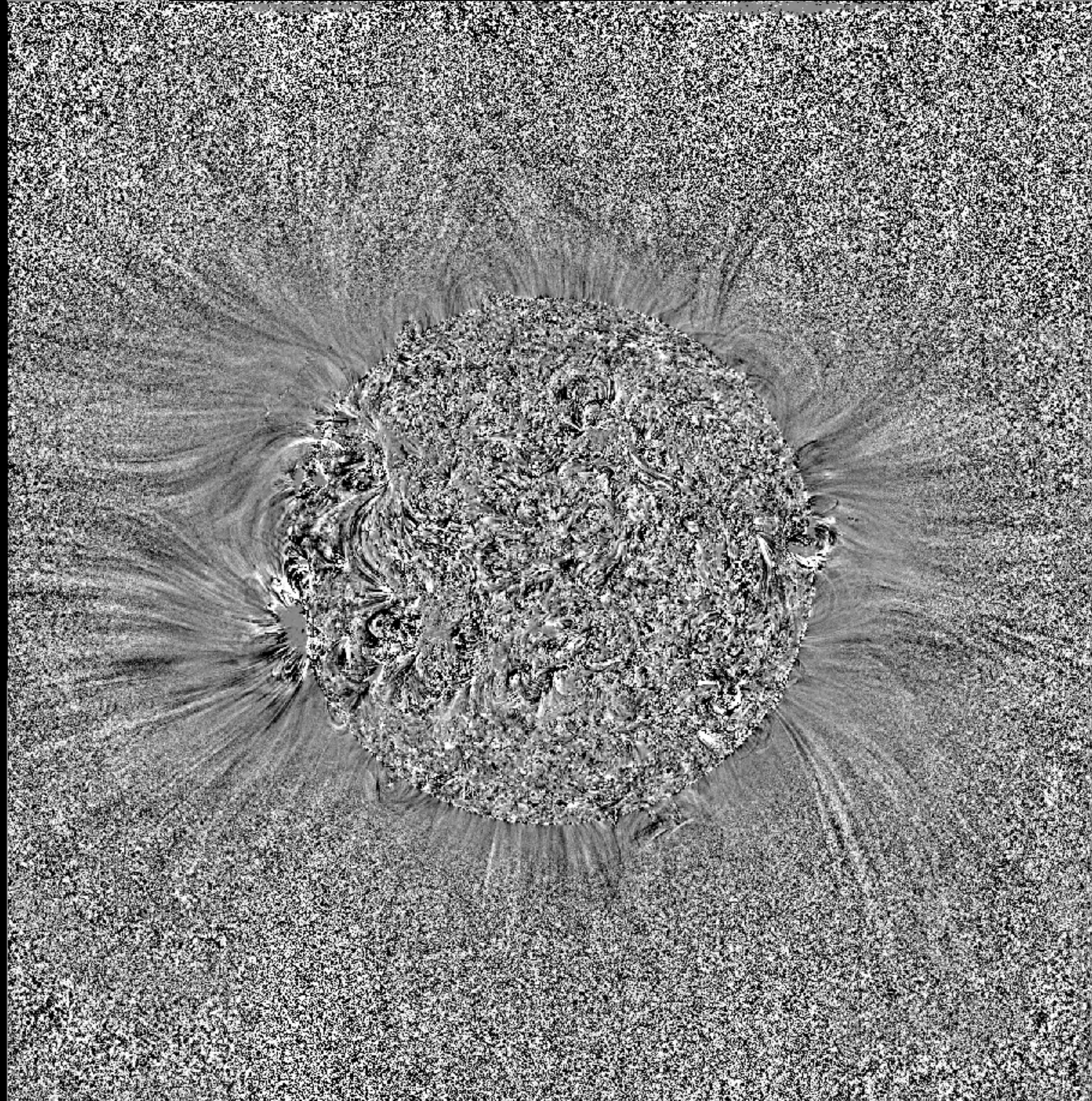




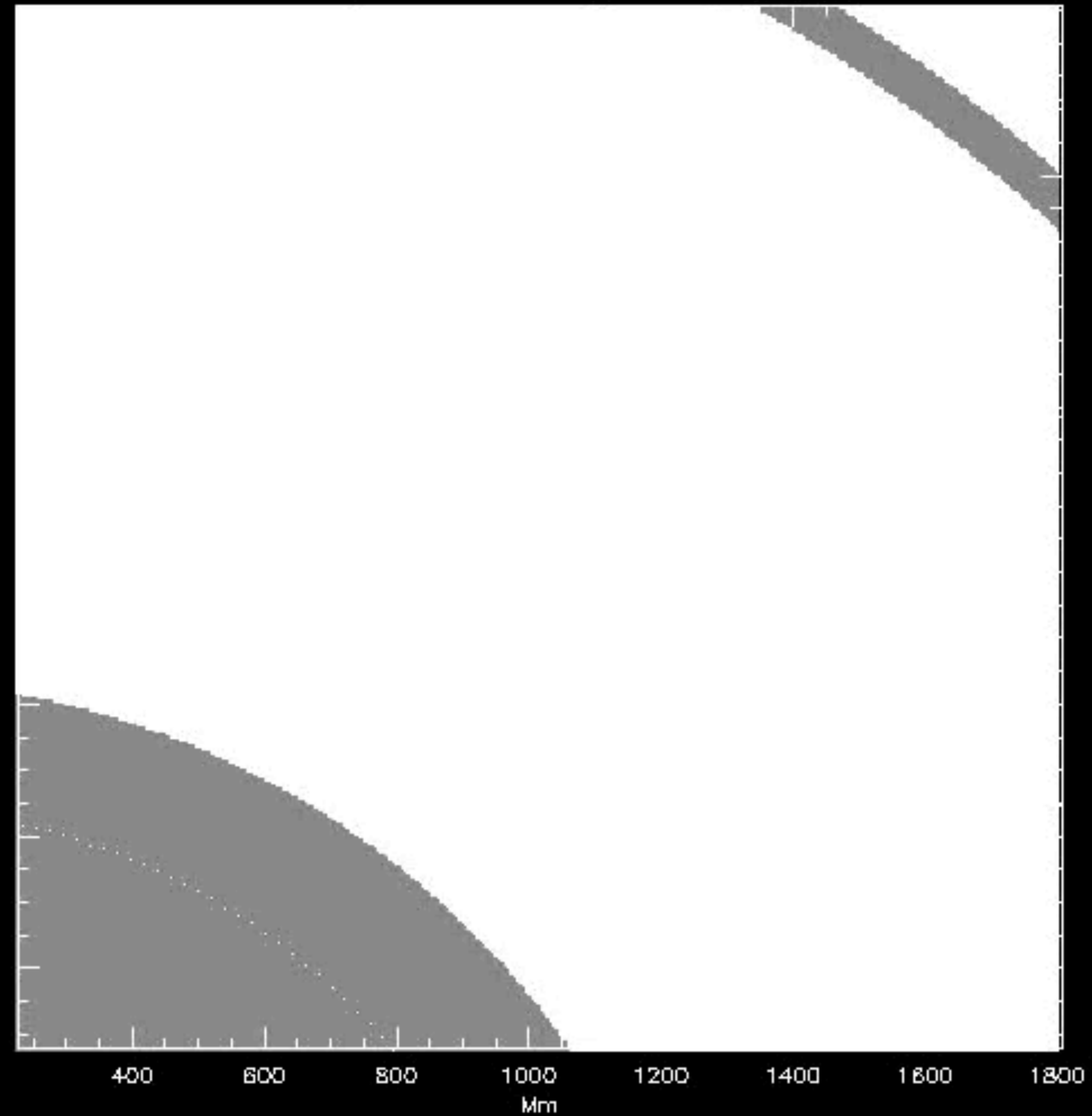
2022-03-30 UT 04:30:30 EUI High Resolution Imager 17.4nm, sharpened

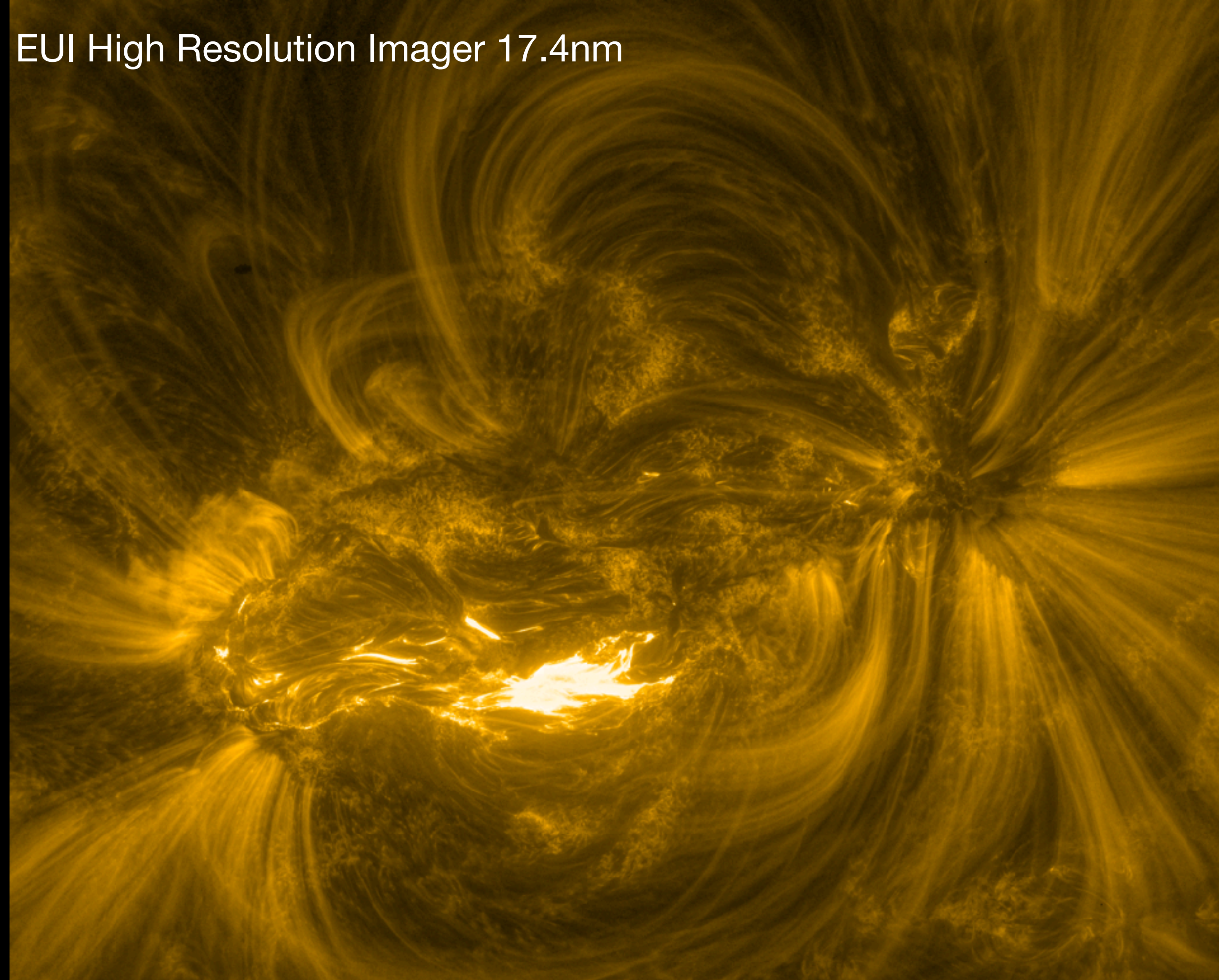


EUI Full Sun Imager 17.4nm, running difference

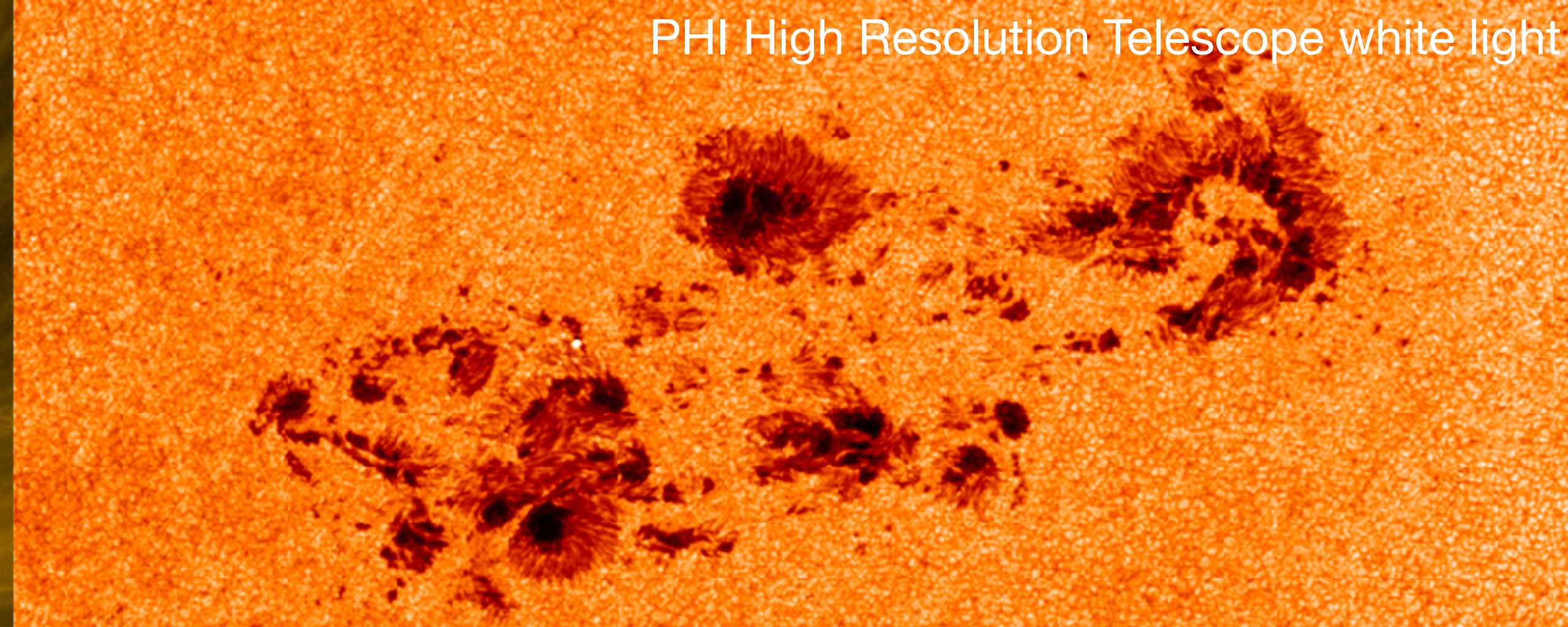


Metis total Brightness, running difference

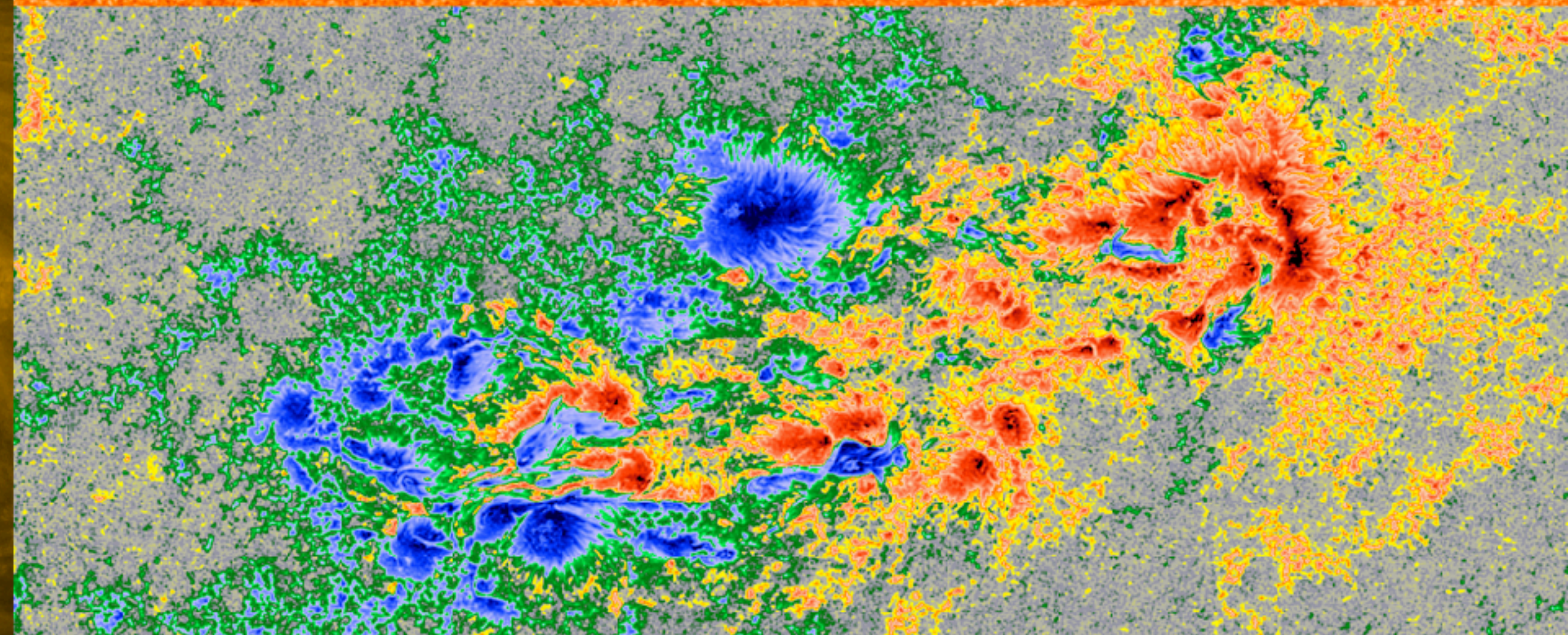




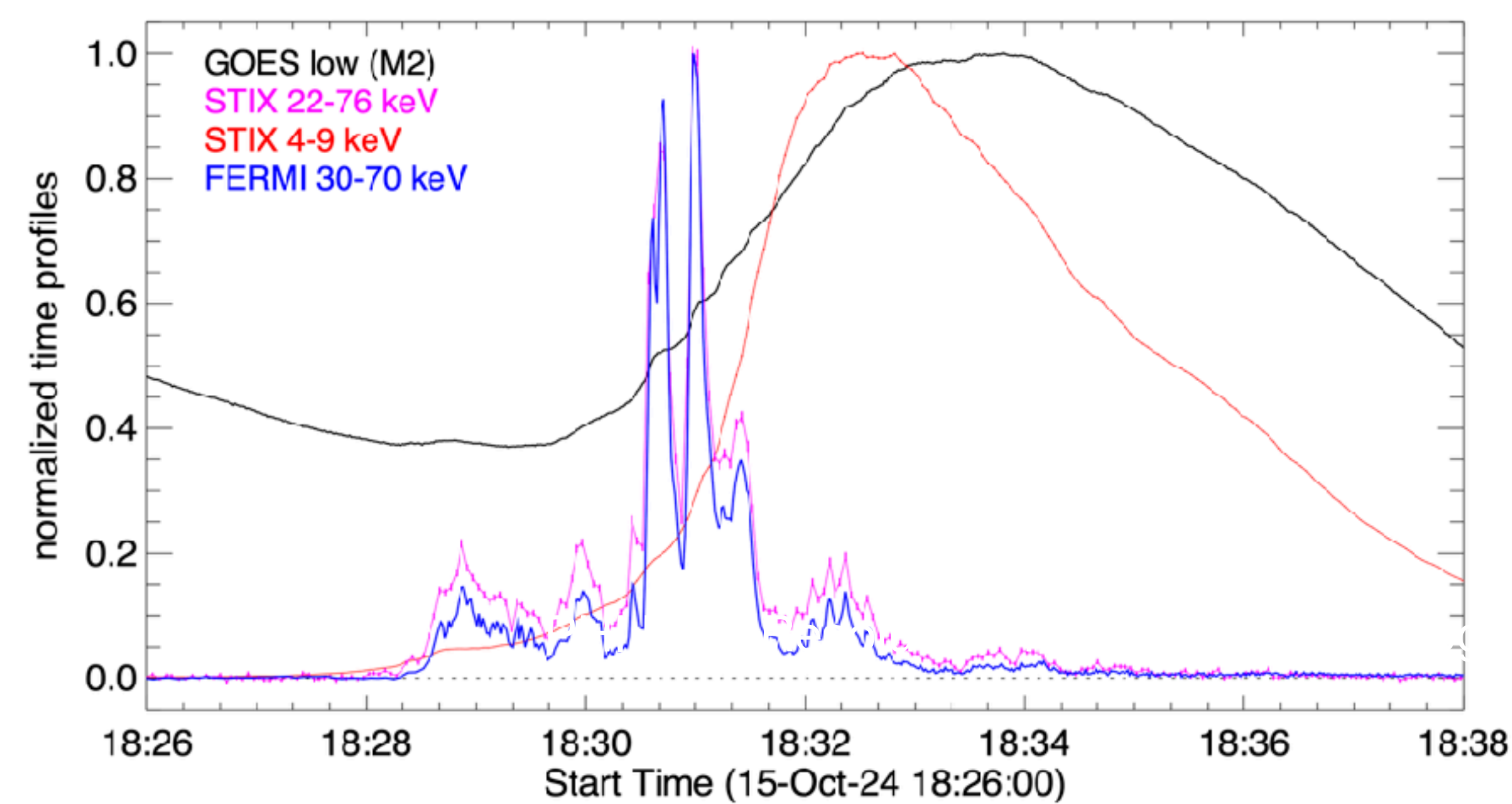
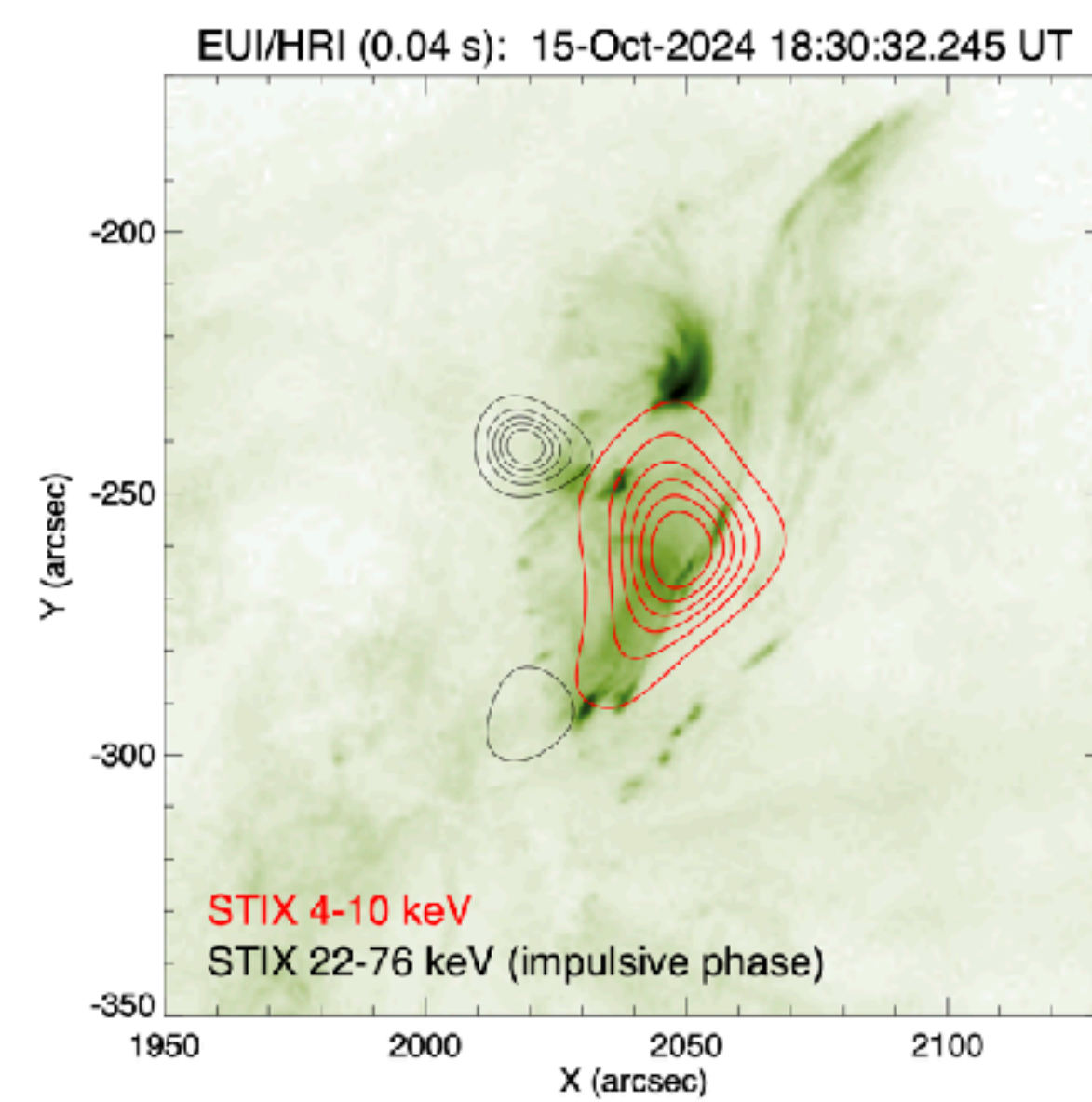
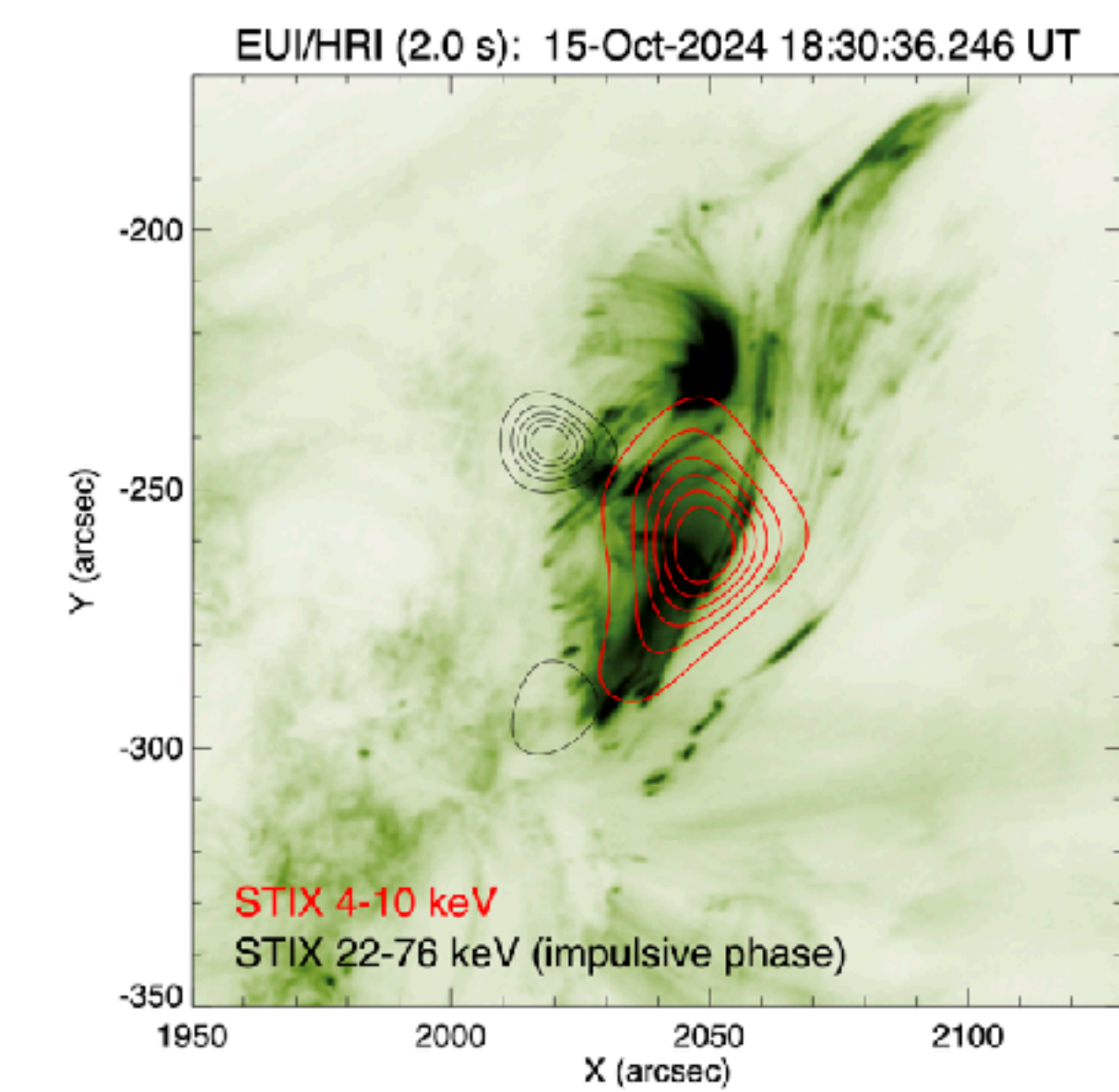
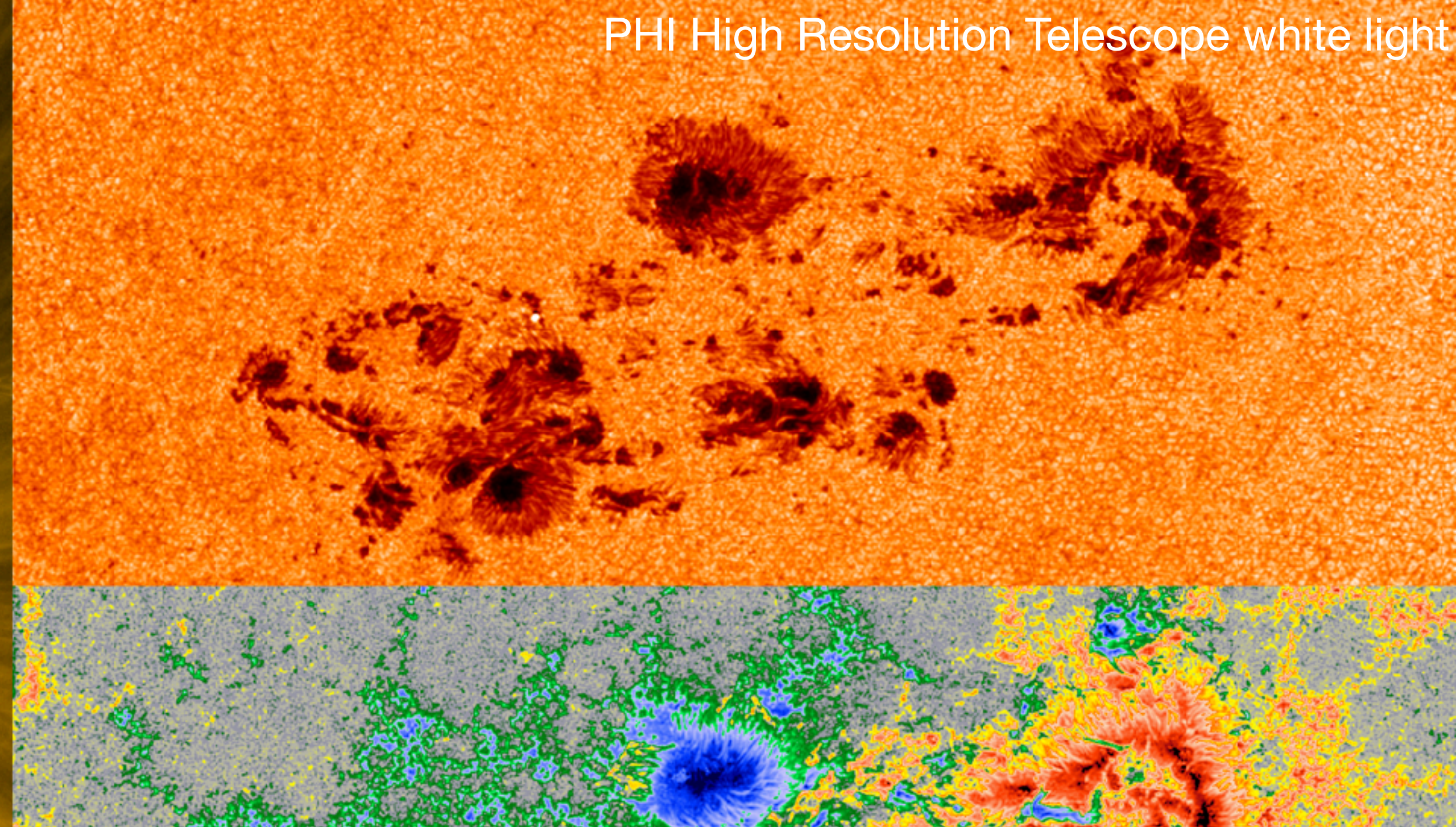
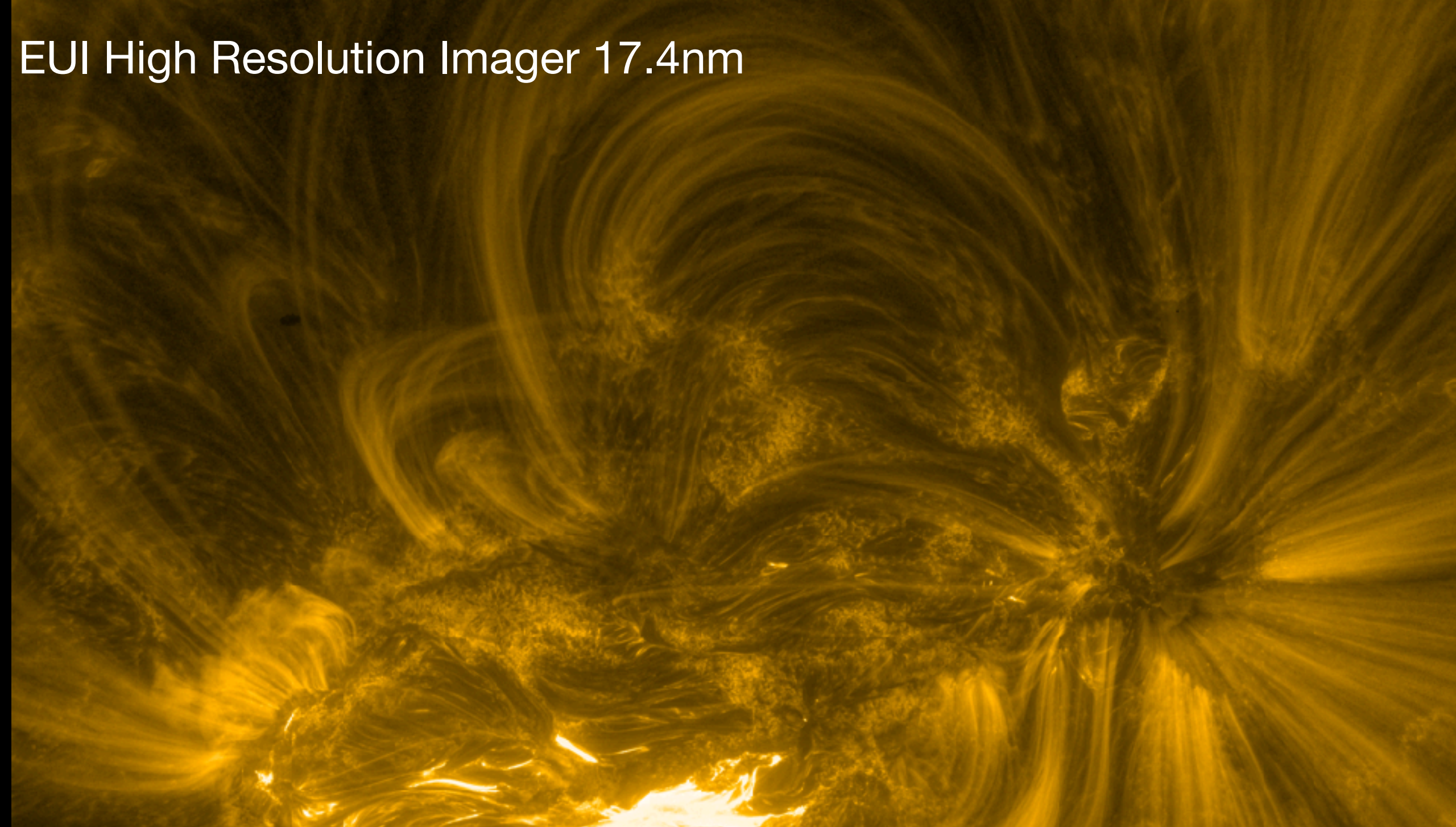
EUI High Resolution Imager 17.4nm



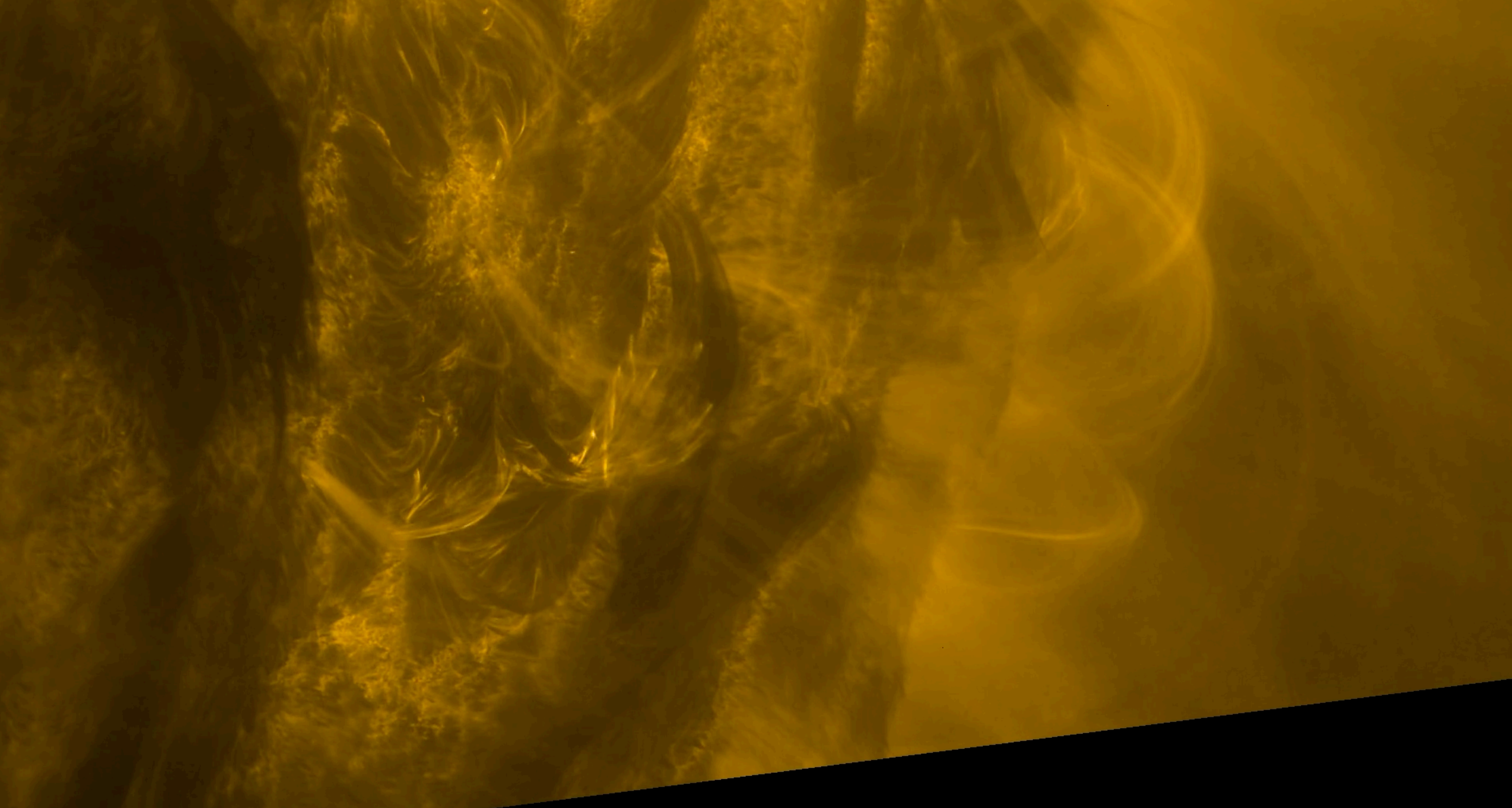
PHI High Resolution Telescope white light



PHI High Resolution Telescope magnetogram

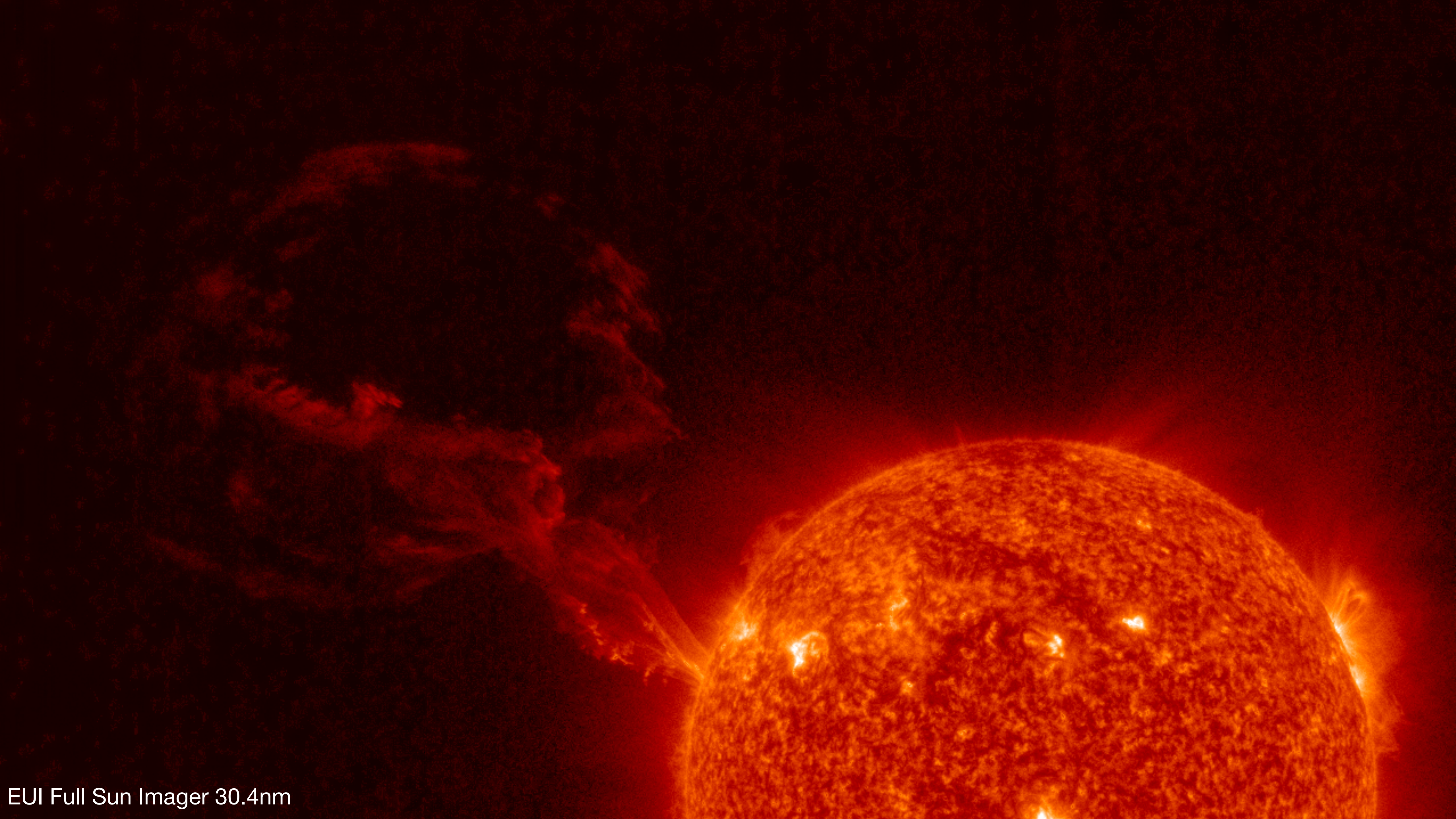


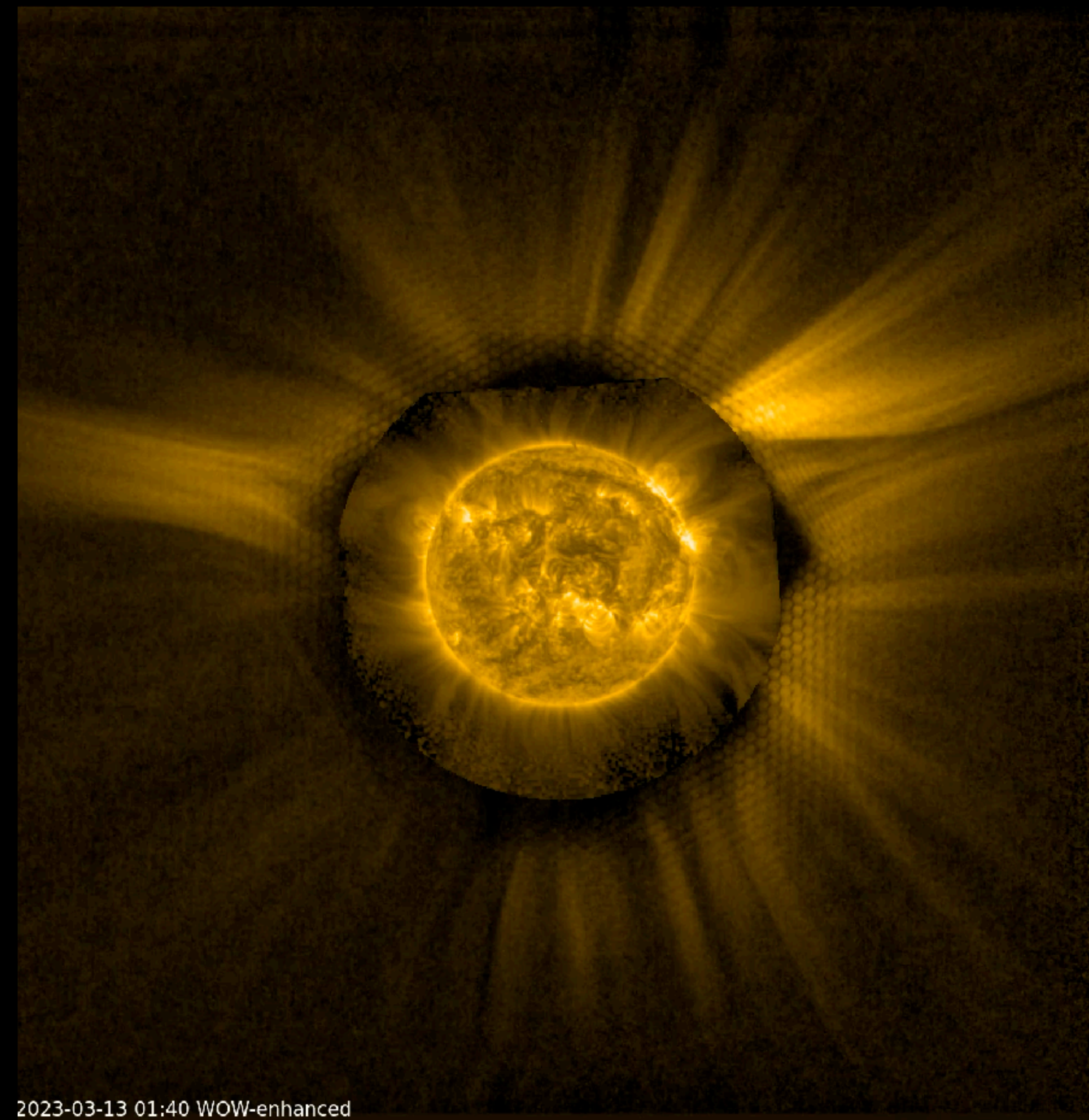
STIX X-ray telescope



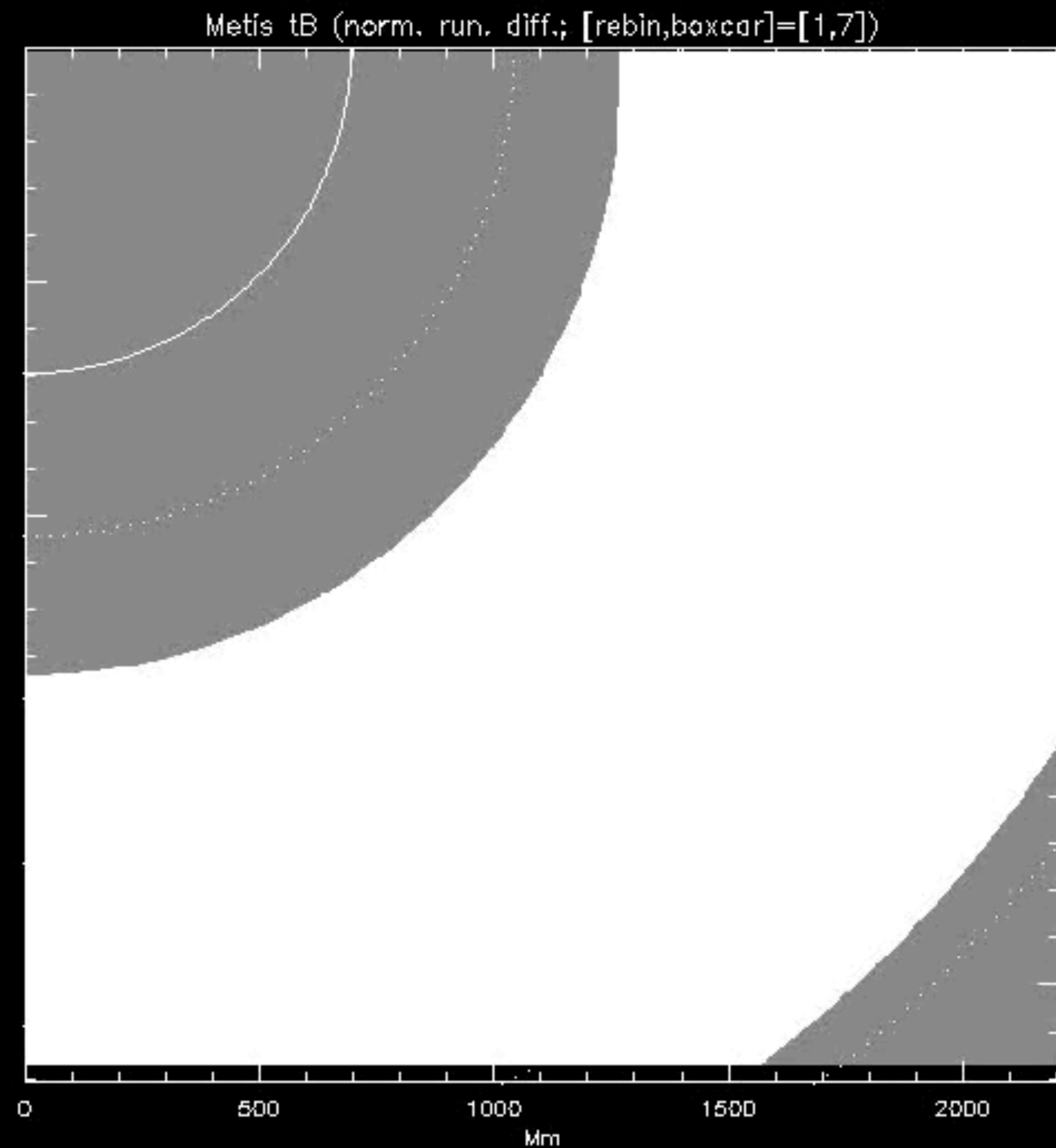
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EUI High Resolution Imager 17.4nm

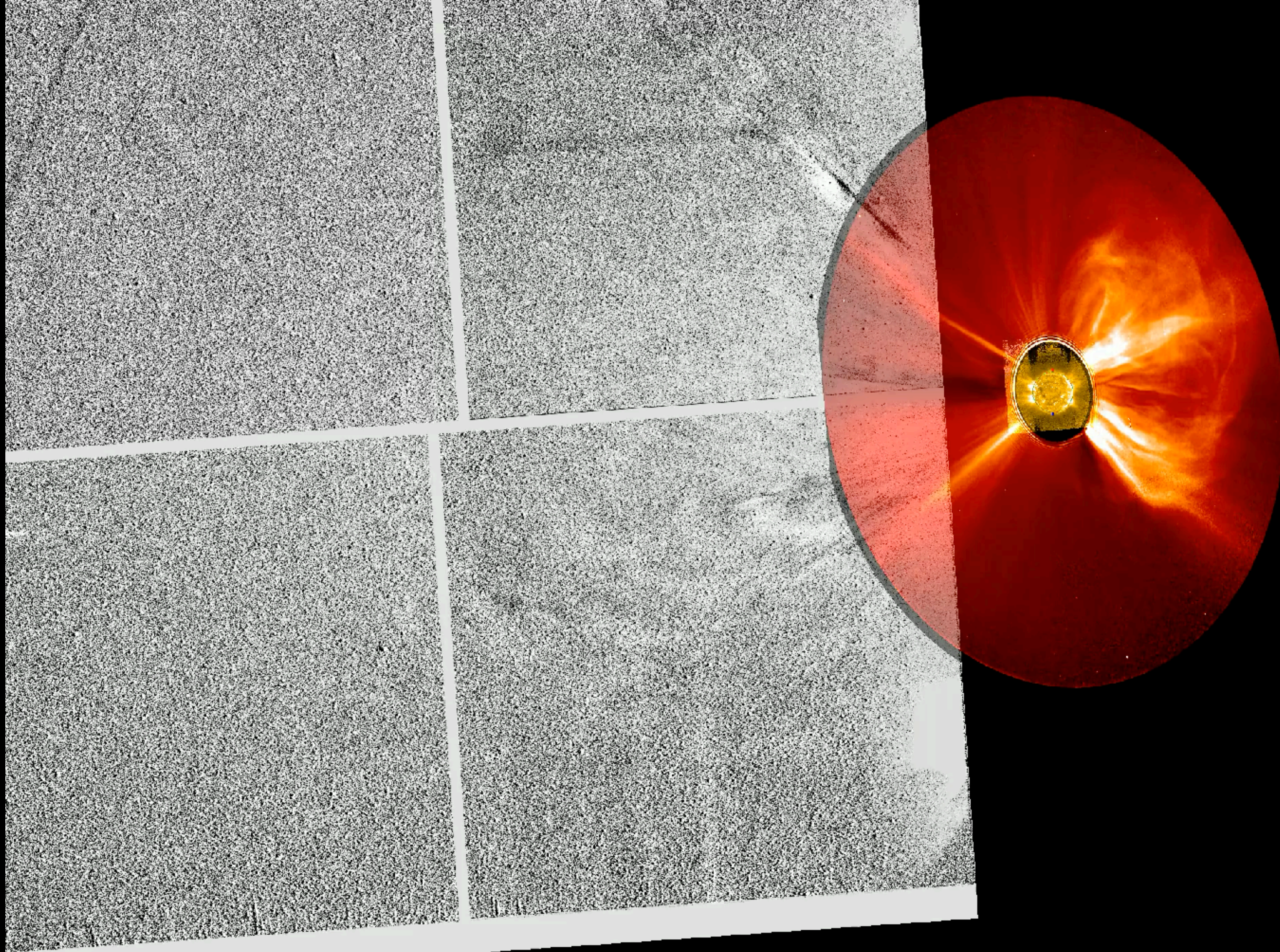




EUI Full Sun Imager 'occulted' 17.4nm + STEREO/EUVI inset



Metis Total Brightness, running difference



2022-03-30T08:58:19.976

SoloHI Heliospheric Imager

Thanks!

- Solar Orbiter team @ ESA
- PHI, SPICE, SoloHI, STIX, Metis and EUV teams
- Frédéric Auchère, Sami Solanki, Marco Romoli, Andretta Vincenzo, Pradeep Chitta, Marilena Mierla, Robin Colannino, Phil Hess,