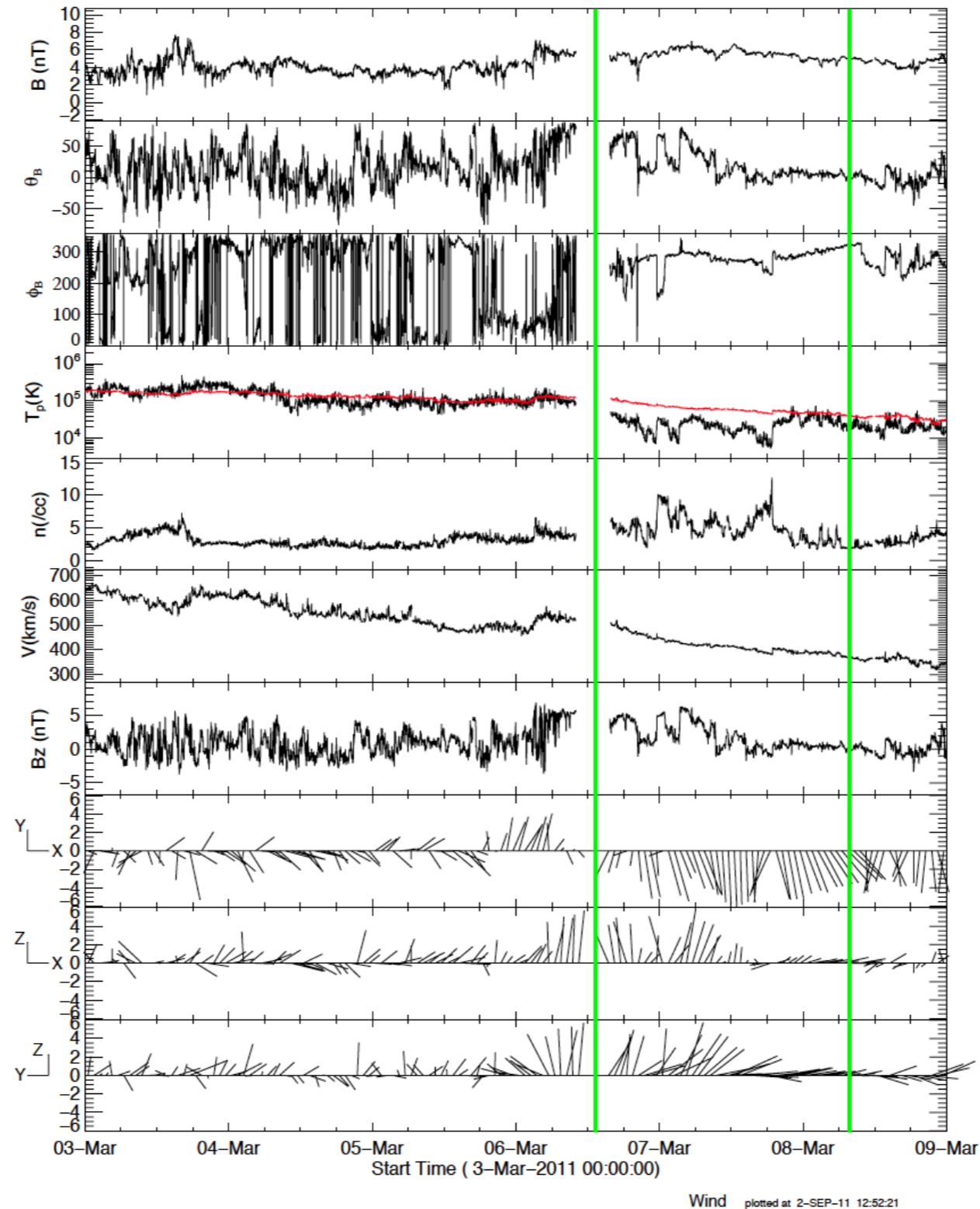
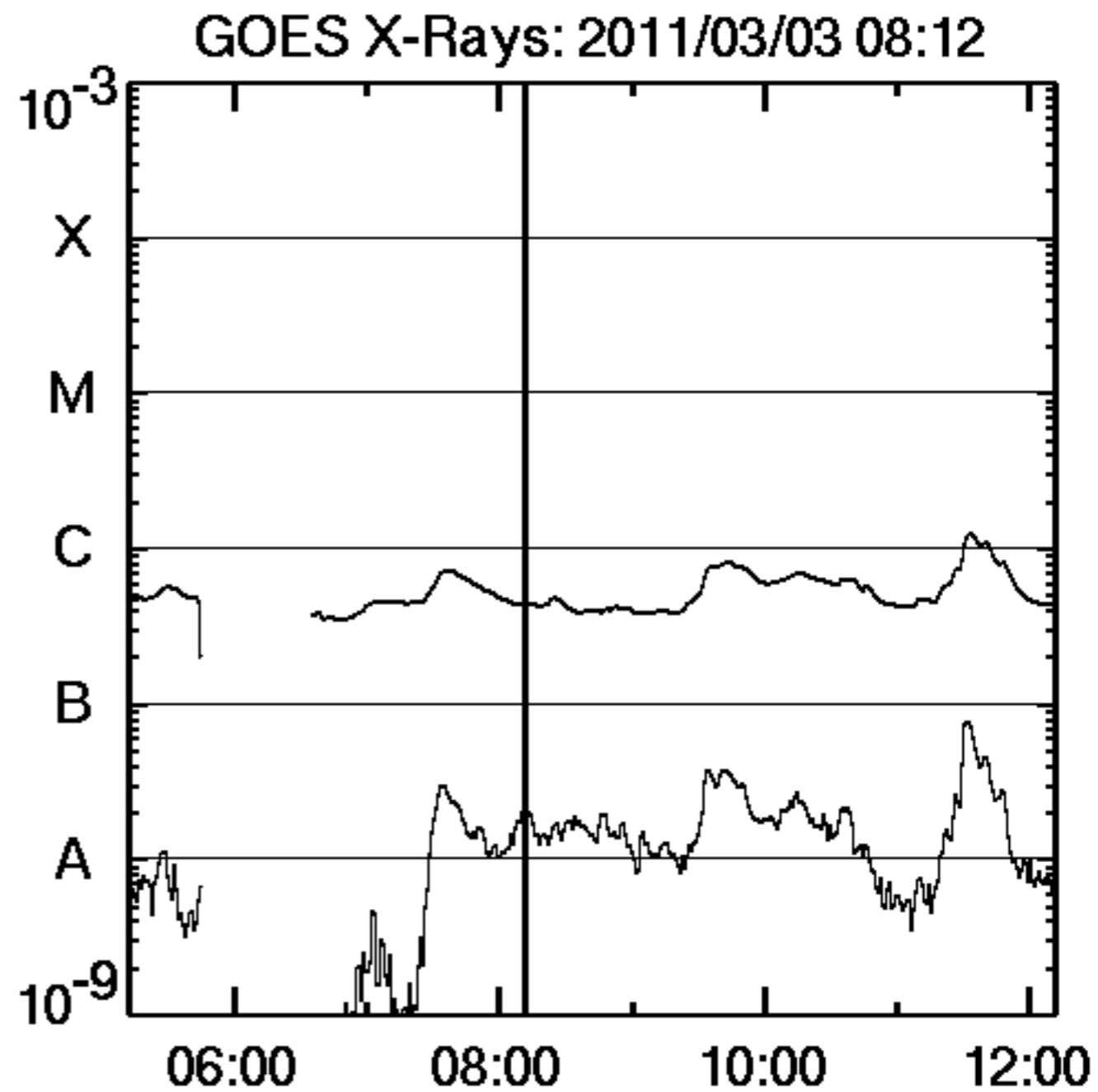


# Can Stealth CMEs be Heliosphere-effective and Still Elusive?

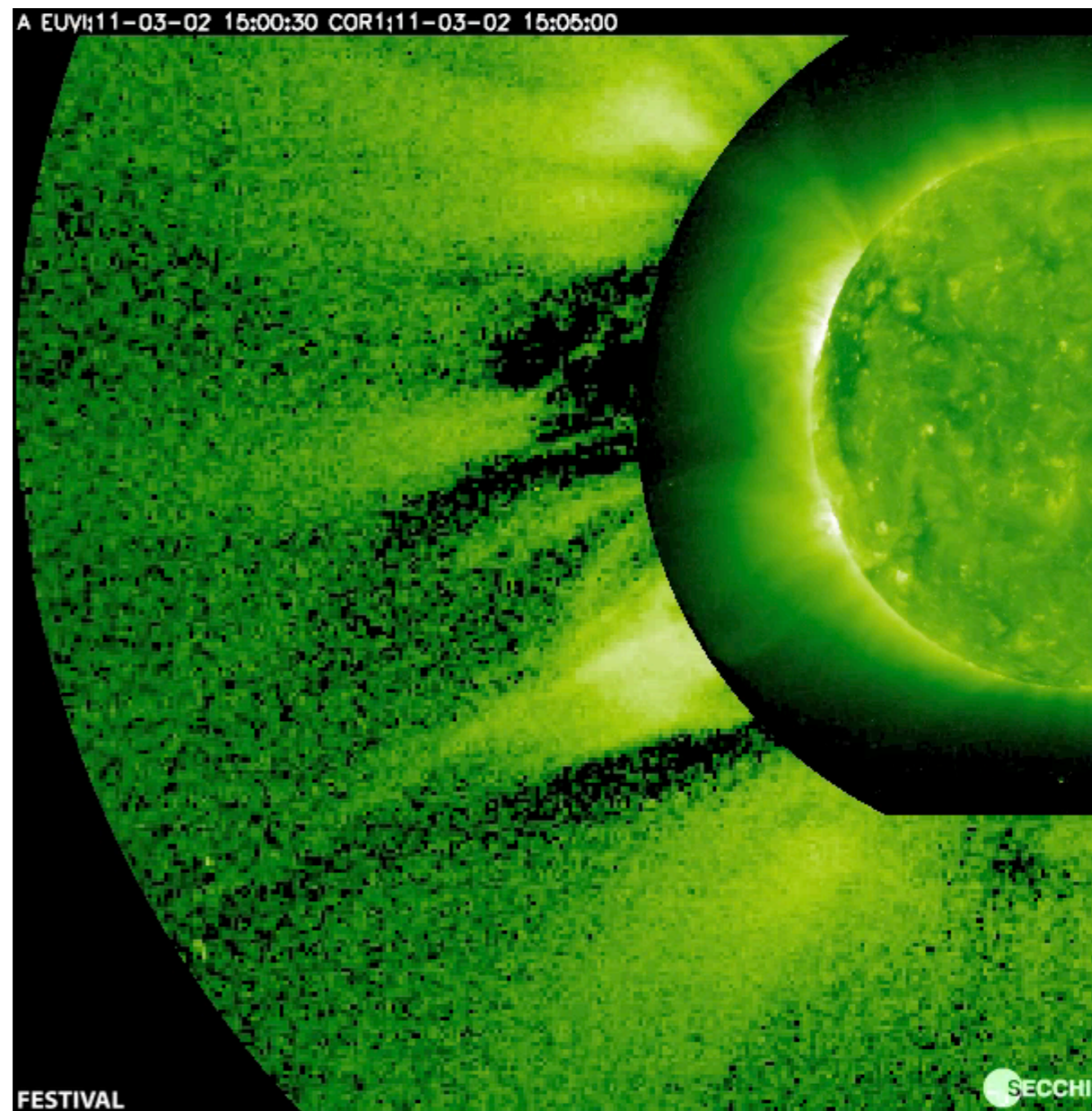
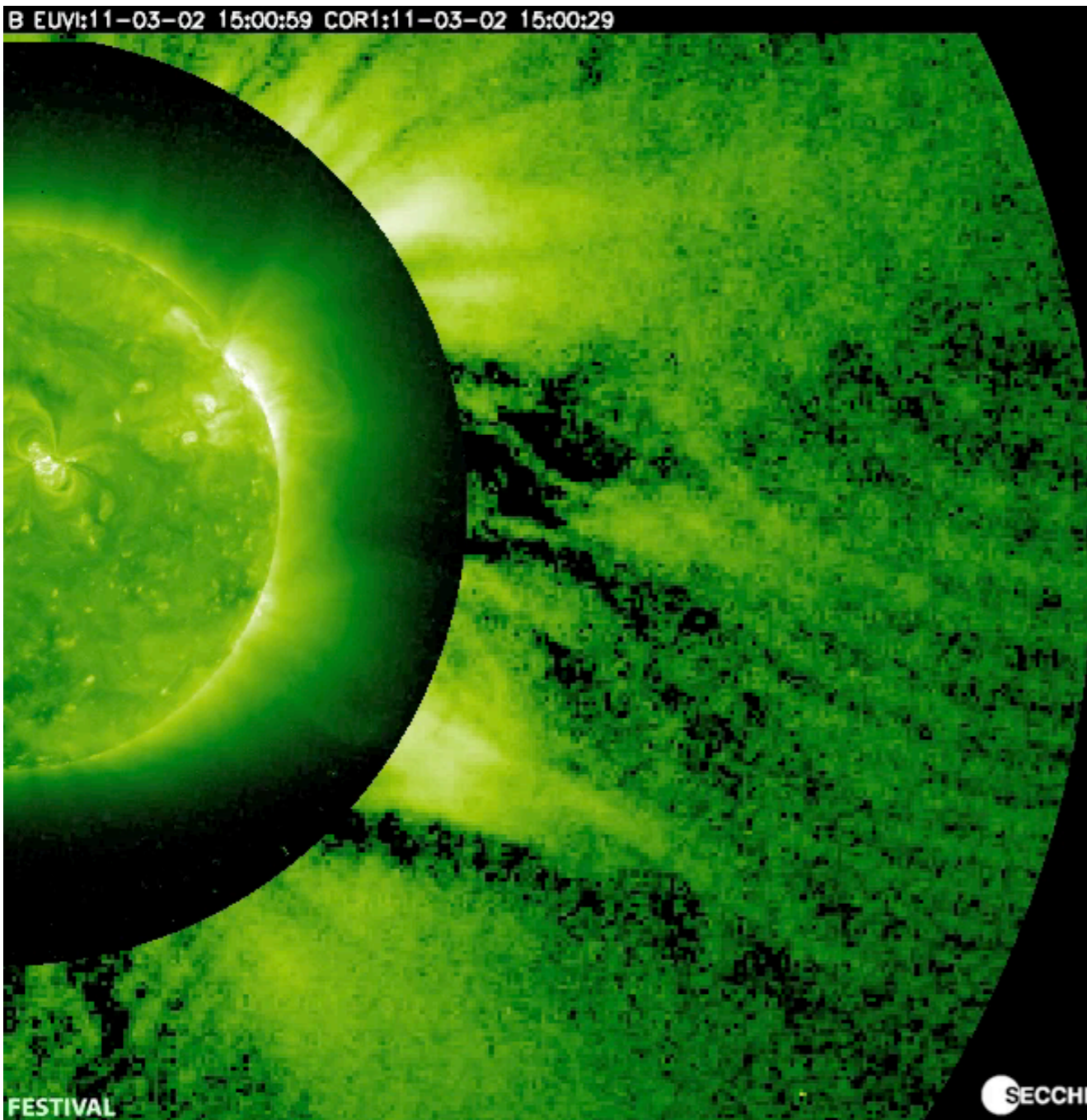


Nariaki Nitta (LMSAL)

# LASCO



# STEREO EUVI/COR1

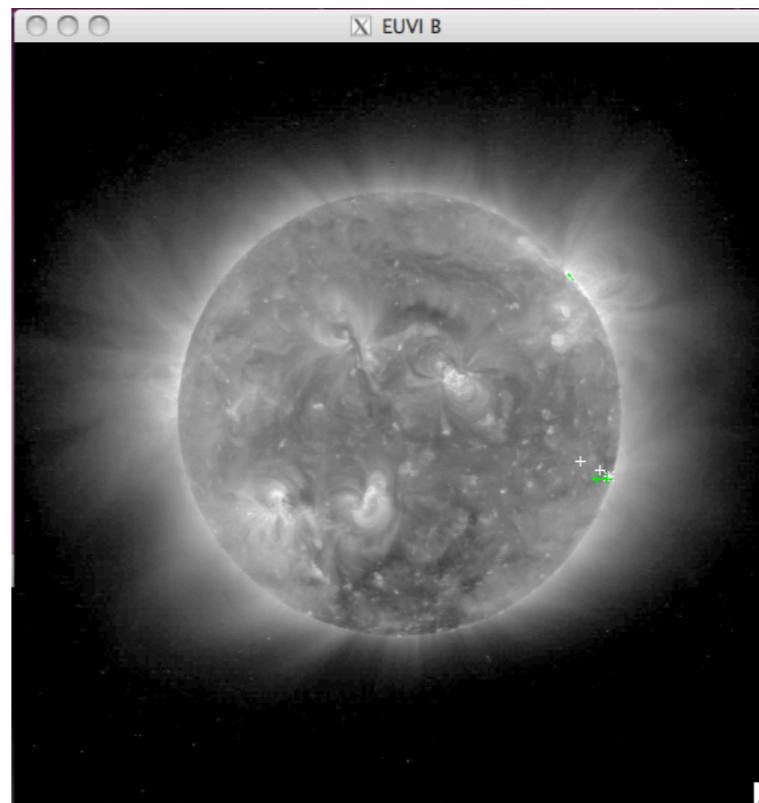
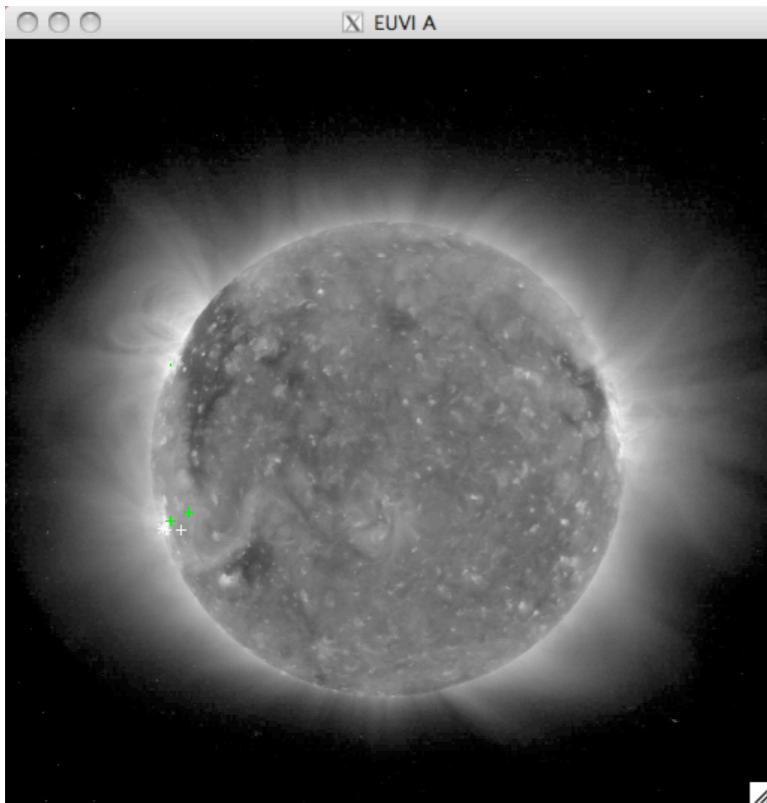
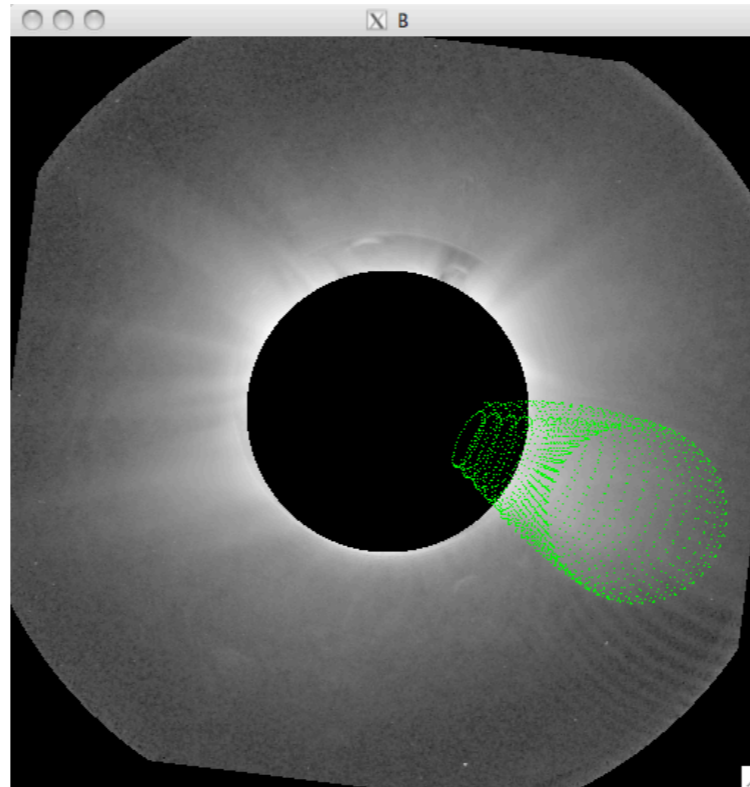
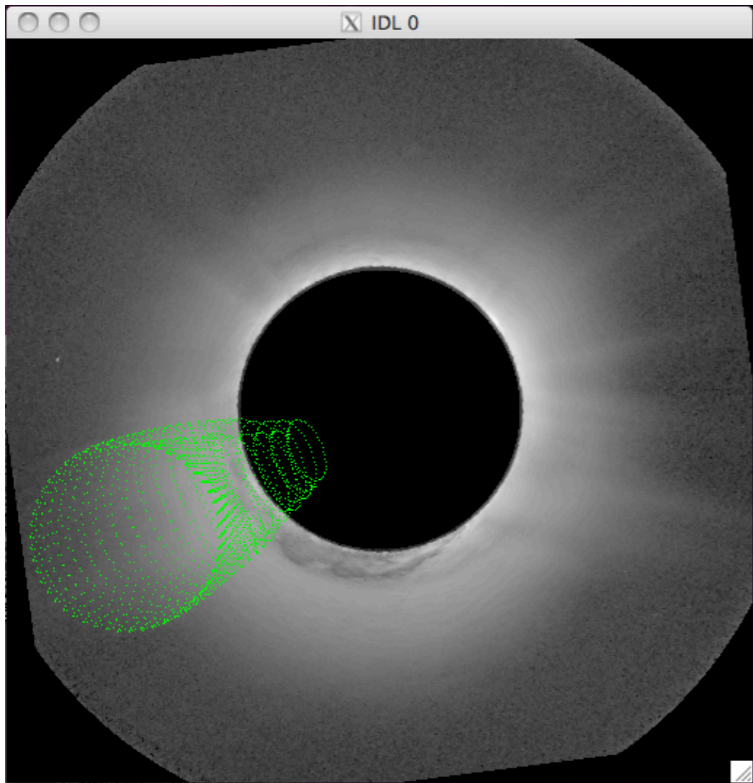


[http://www.lmsal.com/nitta/movies/4CDAW\\_Fluxrope/FESTIVAL\\_EUVI\\_COR1\\_B\\_20110302\\_20110303.mov](http://www.lmsal.com/nitta/movies/4CDAW_Fluxrope/FESTIVAL_EUVI_COR1_B_20110302_20110303.mov)

[http://www.lmsal.com/nitta/movies/4CDAW\\_Fluxrope/FESTIVAL\\_EUVI\\_COR1\\_A\\_20110302\\_20110303.mov](http://www.lmsal.com/nitta/movies/4CDAW_Fluxrope/FESTIVAL_EUVI_COR1_A_20110302_20110303.mov)

Flux rope structure seen from two directions

# Thernisien model



STEREO Cloud

Position | Cloud | Simu | Contour | Auto Fit | Sensit.

171.058

Longitude

-24.5970

Latitude

5.03100

Tilt Angle

3.92859

Height

0.329740

Ratio

25.4349

Half Angle

Eruption Date

2011-03-03T05:10:00.006

◆ Carrington ◆ Stonhurst

Wire Off

Eval. Fit

Fit : ?

SC-A LON: 256.7 , LAT: -0.7  
Date Obs: 2011-03-03T05:10:00.006

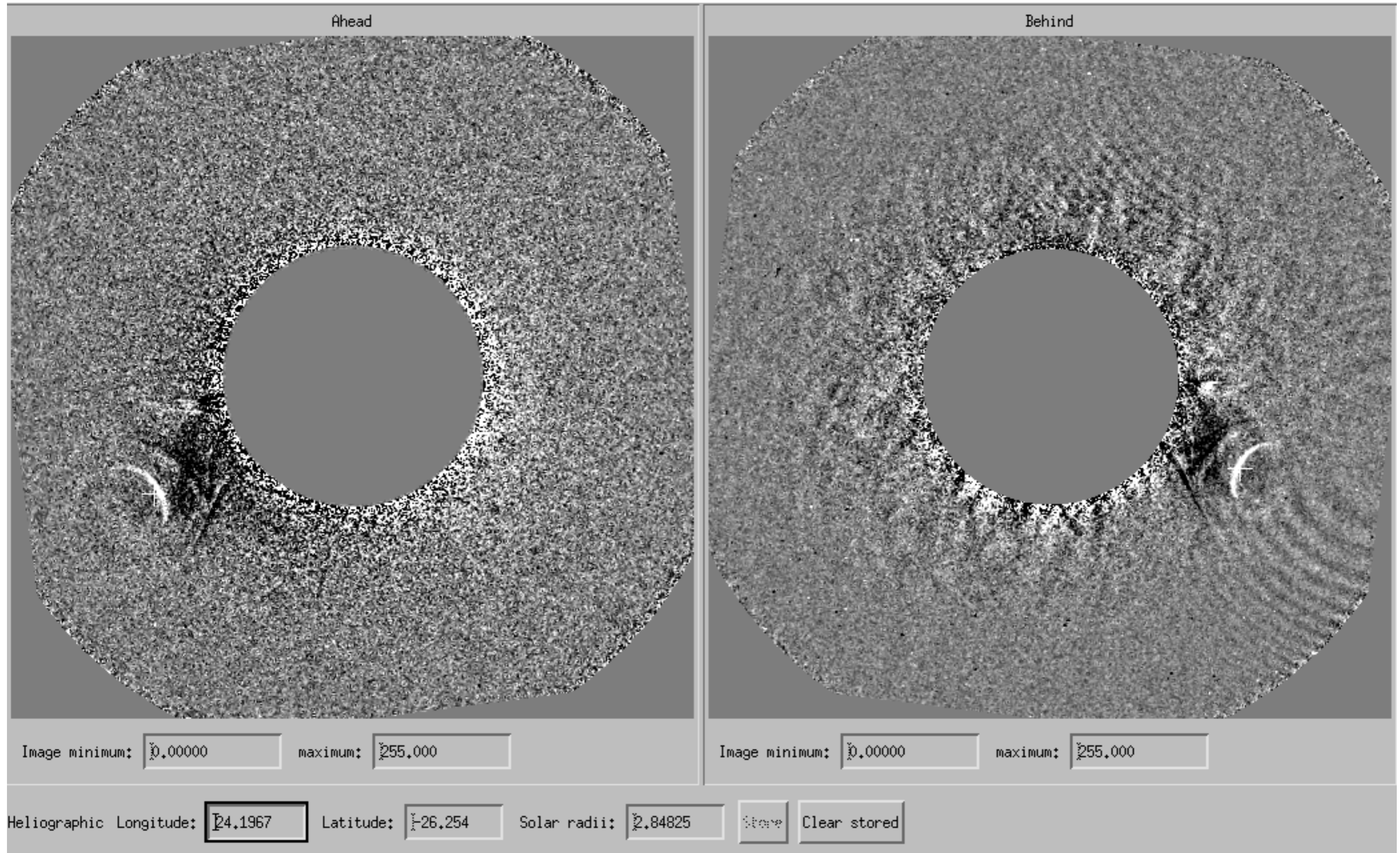
SC-B LON: 74.5 , LAT: 1.4  
Date Obs: 2011-03-03T05:10:29.326

Generate View

Done Quit

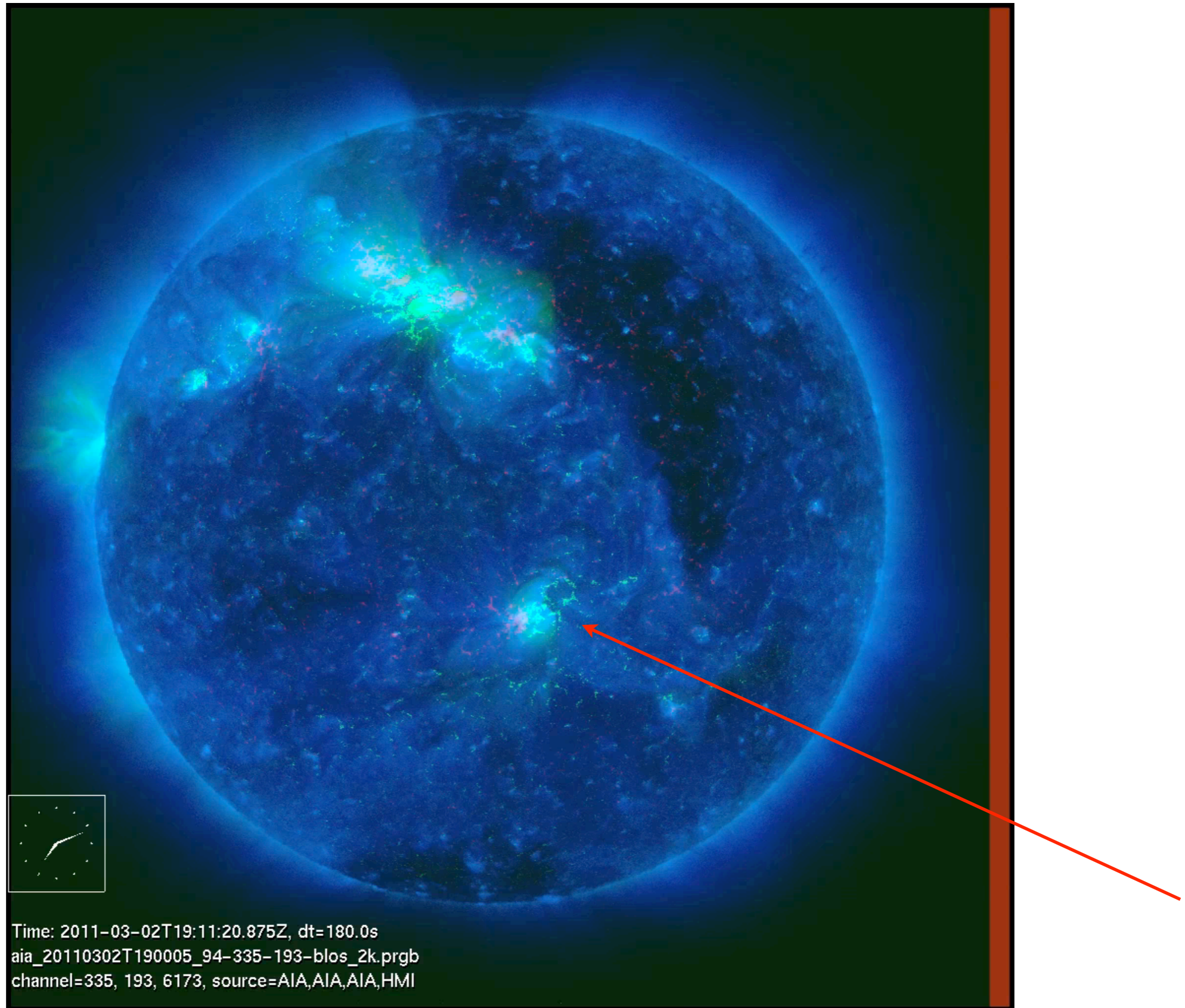
W01, S25

# Measuring the concave part of the flux rope



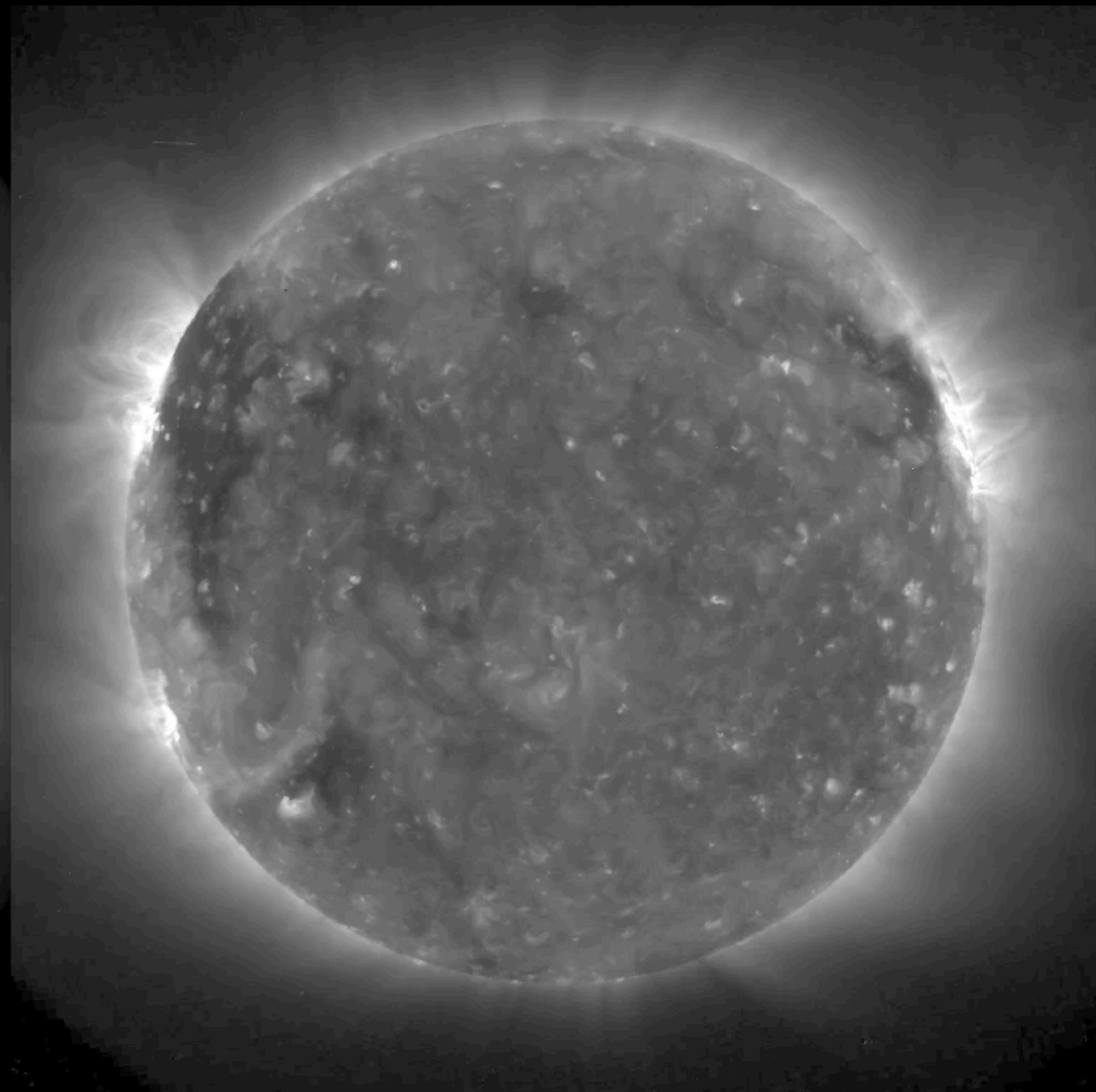
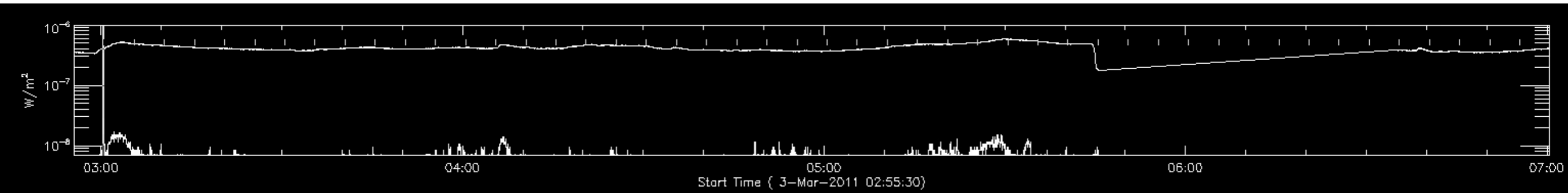
W15-25, S25-20, ~130 km/s

# Post-eruption arcade?



[http://www.lmsal.com/nitta/movies/4CDAW\\_Fluxrope/  
panorama\\_halocme\\_AIA-335\\_AIA-193\\_HMI-6173\\_20110302T191120\\_180s\\_at\\_20110304T043544.mov](http://www.lmsal.com/nitta/movies/4CDAW_Fluxrope/panorama_halocme_AIA-335_AIA-193_HMI-6173_20110302T191120_180s_at_20110304T043544.mov)

# Intensity images -- changes not easy to find on disk



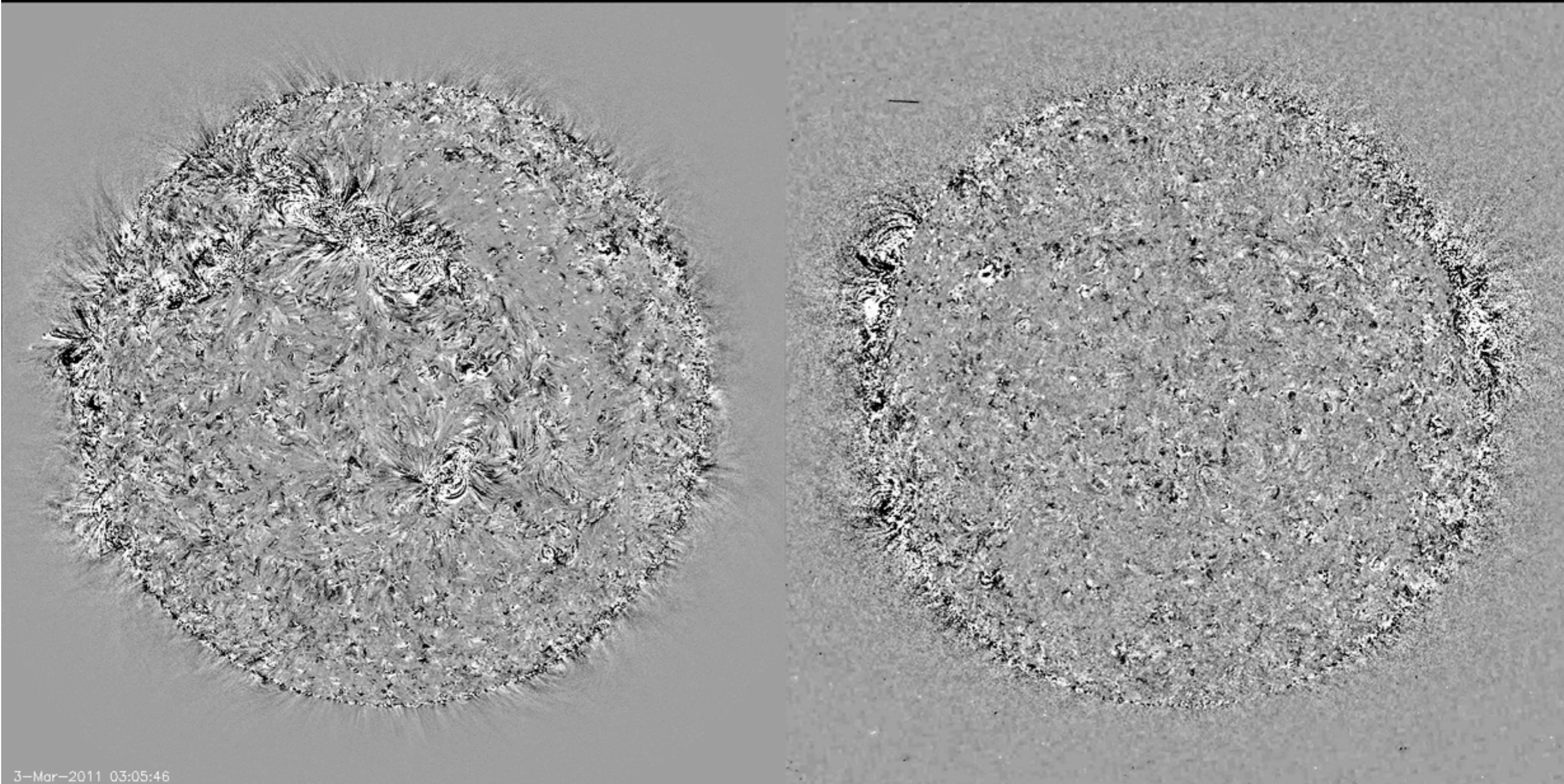
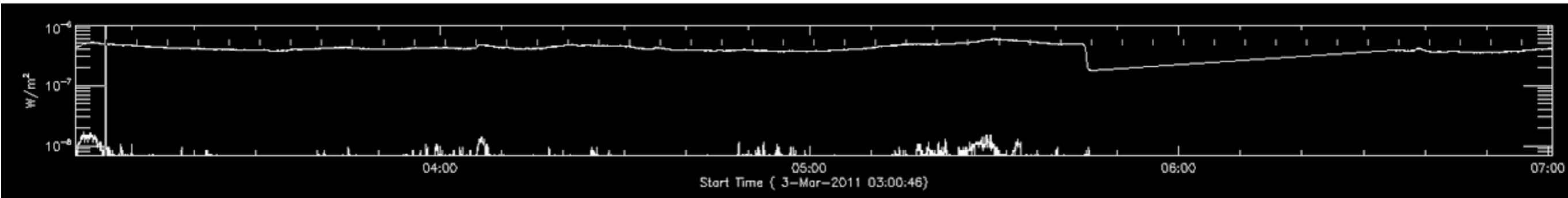
3-Mar-2011 03:00:30

AIA

STA

[http://www.lmsal.com/nitta/movies/4CDAW\\_Fluxrope/aia\\_euvia\\_int\\_20110303.mov](http://www.lmsal.com/nitta/movies/4CDAW_Fluxrope/aia_euvia_int_20110303.mov)

# Running difference images -- changes not easy to find



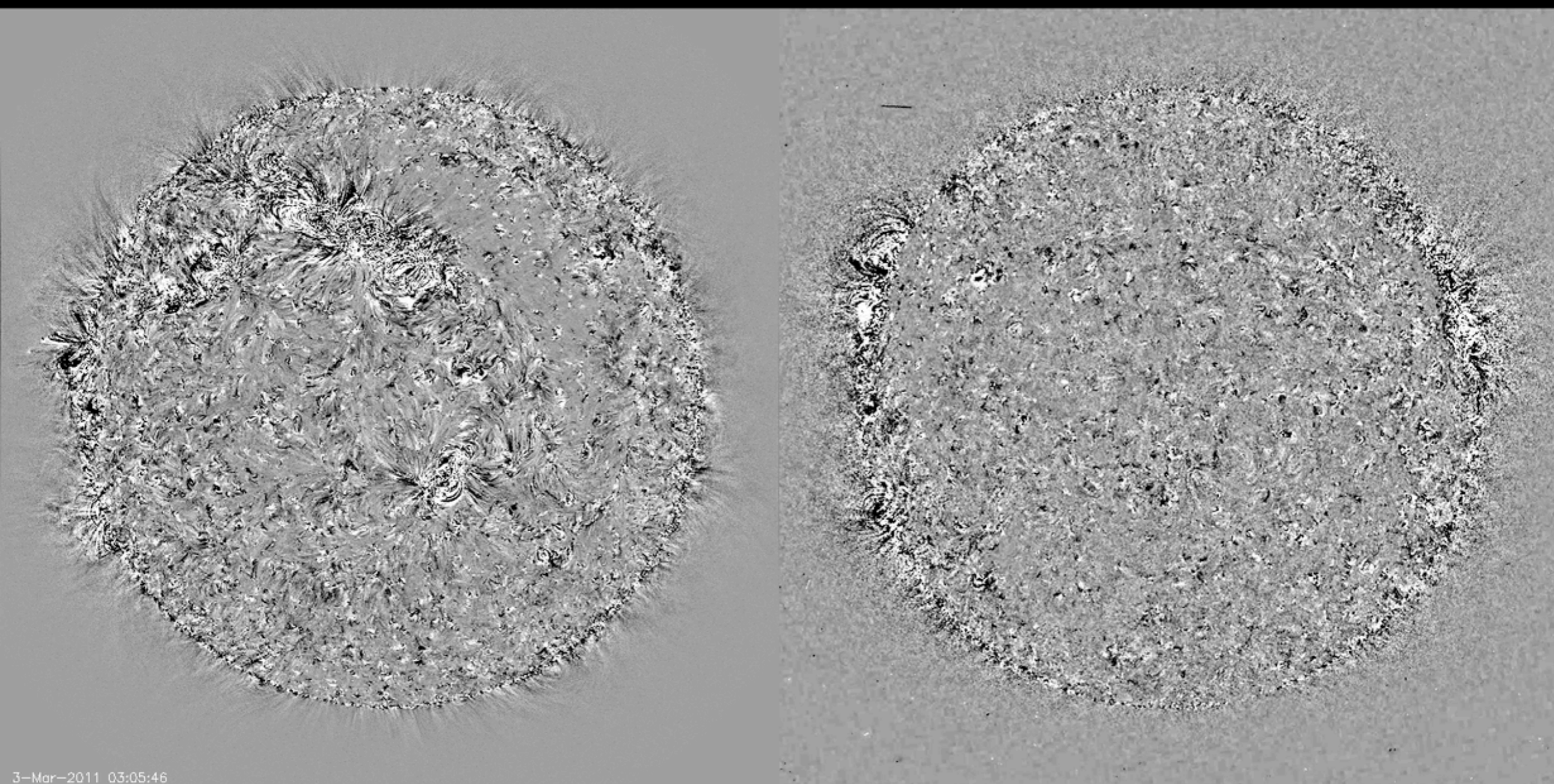
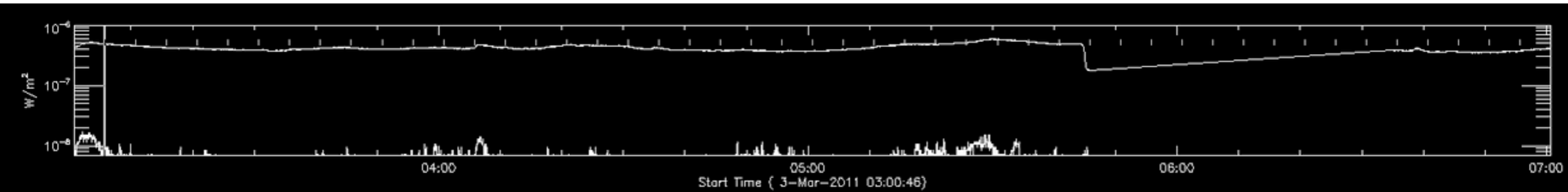
AIA

STA

[http://www.lmsal.com/nitta/movies/4CDAW\\_Fluxrope/aia\\_euvia\\_rdiff\\_20110303.mov](http://www.lmsal.com/nitta/movies/4CDAW_Fluxrope/aia_euvia_rdiff_20110303.mov)



# Base difference images -- dimming (esp. in STA)



AIA

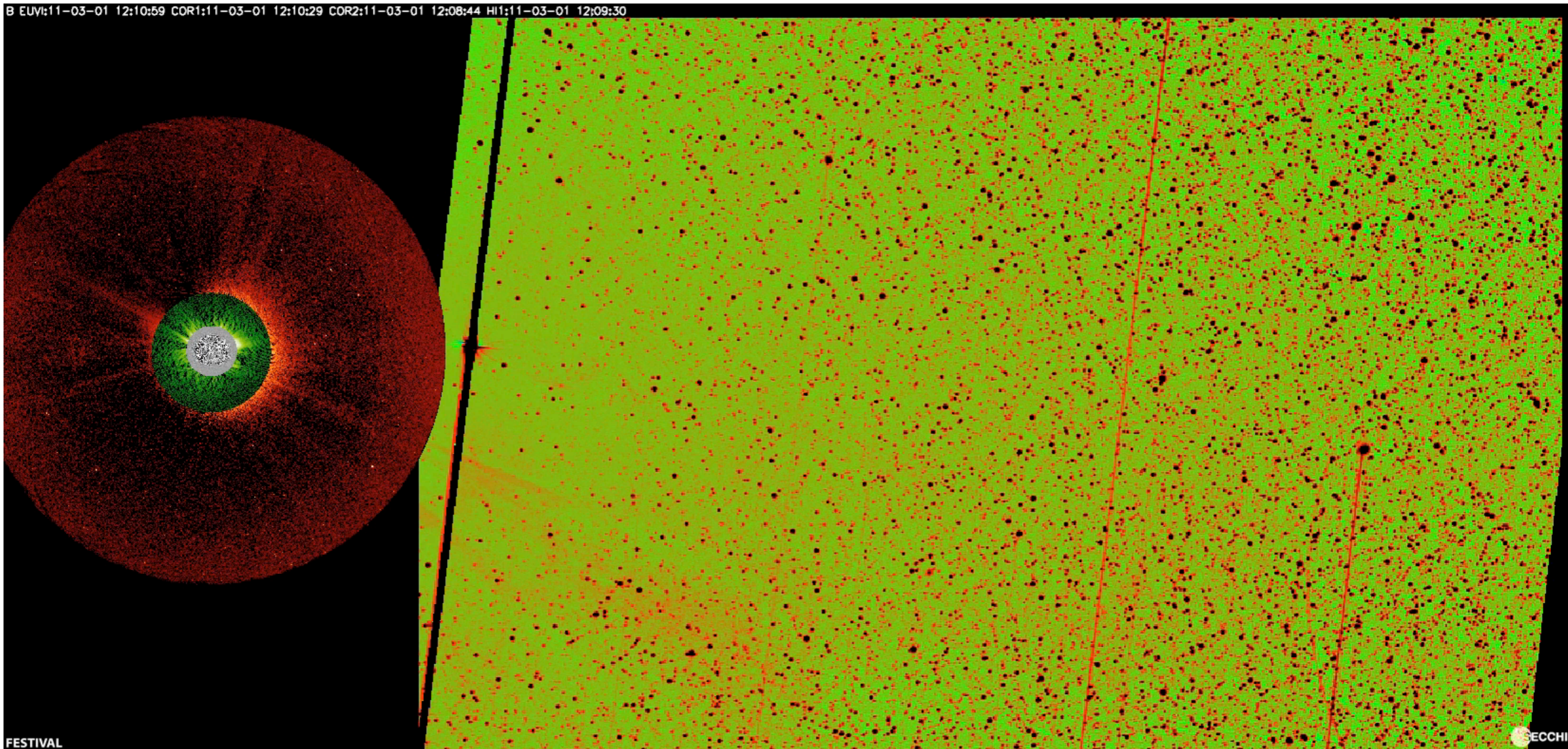
STA

[http://www.lmsal.com/nitta/movies/4CDAW\\_Fluxrope/aia\\_euvia\\_bdiff\\_20110303.mov](http://www.lmsal.com/nitta/movies/4CDAW_Fluxrope/aia_euvia_bdiff_20110303.mov)

# Up to HI-1 FOV

Perhaps the ICME is due to a later E-hemisphere event, rather than to the flux rope eruption?

STB

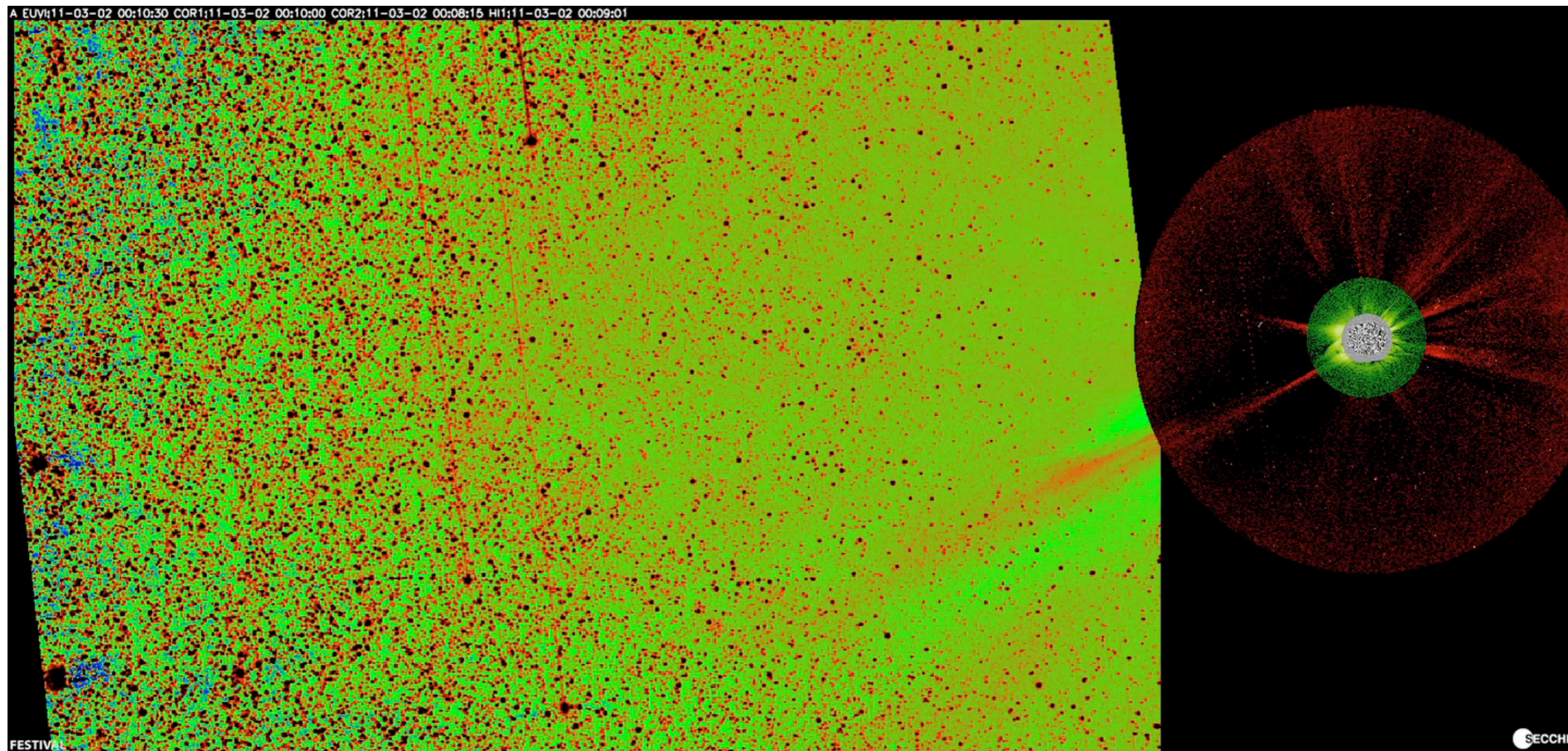


[http://www.lmsal.com/nitta/movies/4CDAW\\_Fluxrope/  
FESTIVAL\\_EUVI\\_COR1\\_COR2\\_HI1\\_B\\_20110302\\_20110306.mov](http://www.lmsal.com/nitta/movies/4CDAW_Fluxrope/FESTIVAL_EUVI_COR1_COR2_HI1_B_20110302_20110306.mov)

# Up to HI-1 FOV

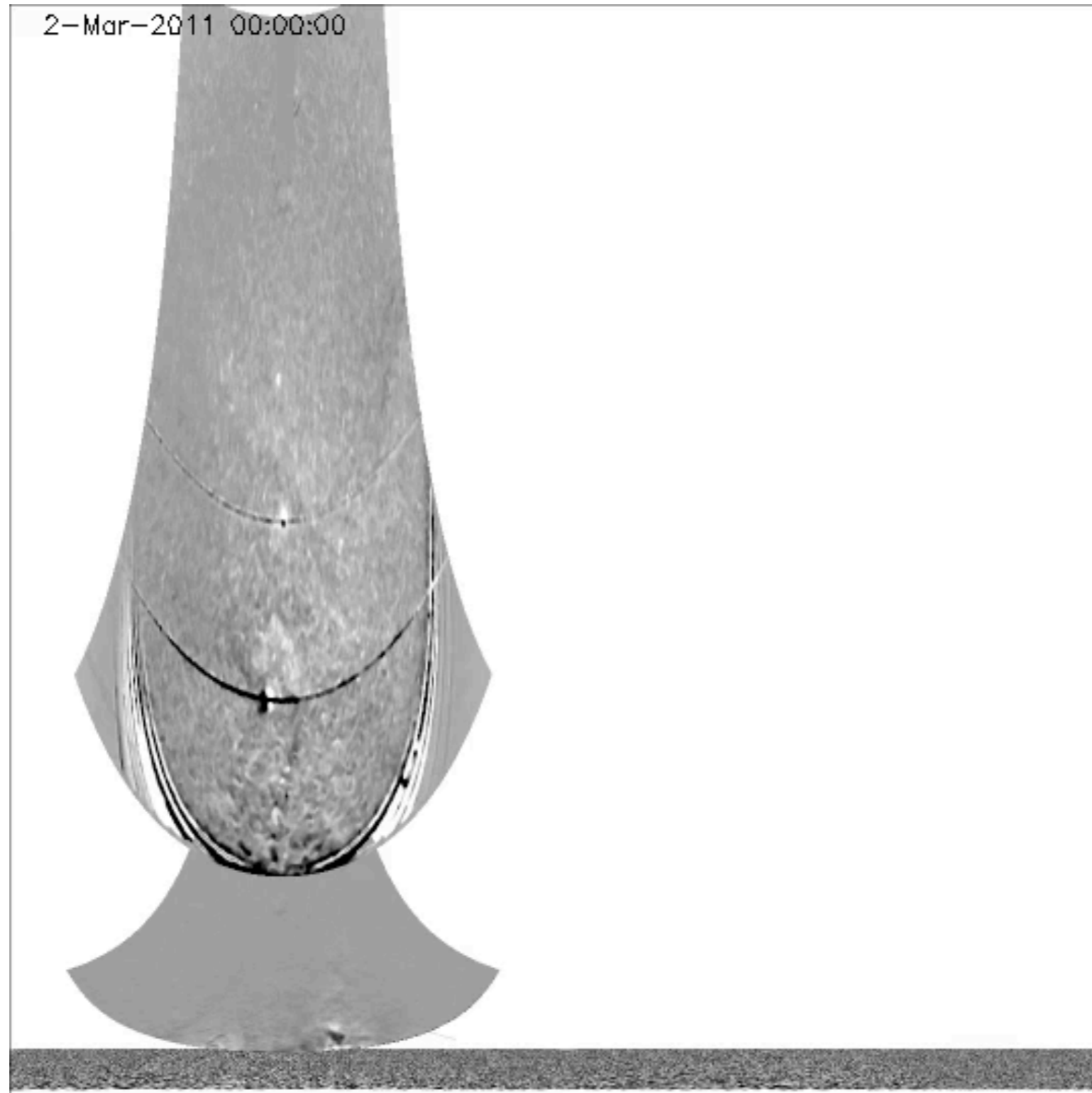
Perhaps the ICME is due to a later E-hemisphere event, rather than to the flux rope eruption?

STA



[http://www.lmsal.com/nitta/movies/4CDAW\\_Fluxrope/FESTIVAL\\_EUVI\\_COR1\\_COR2\\_HI1\\_A\\_20110302\\_20110306.mov](http://www.lmsal.com/nitta/movies/4CDAW_Fluxrope/FESTIVAL_EUVI_COR1_COR2_HI1_A_20110302_20110306.mov)

# J-map (A) from JPL



[http://www.lmsal.com/nitta/movies/4CDAW\\_Fluxrope/jmapa.mov](http://www.lmsal.com/nitta/movies/4CDAW_Fluxrope/jmapa.mov)

# Summary

- There was only one (partial) halo CME in the 2-5 day window preceding the ICME on 6 March 2011.
- This CME was associated with an ejection that looked like a flux rope.
- The low coronal signatures of this eruption are marginal, with changes that are found over several hours (post eruption loops and dimming).
- STEREO HI observations indicate that the ICME are attributable to a later non-halo CME. But let's discuss different possibilities.