

Forward Modeling of the March 25, 2011 CME

Robin Colaninno

LWS CDAW

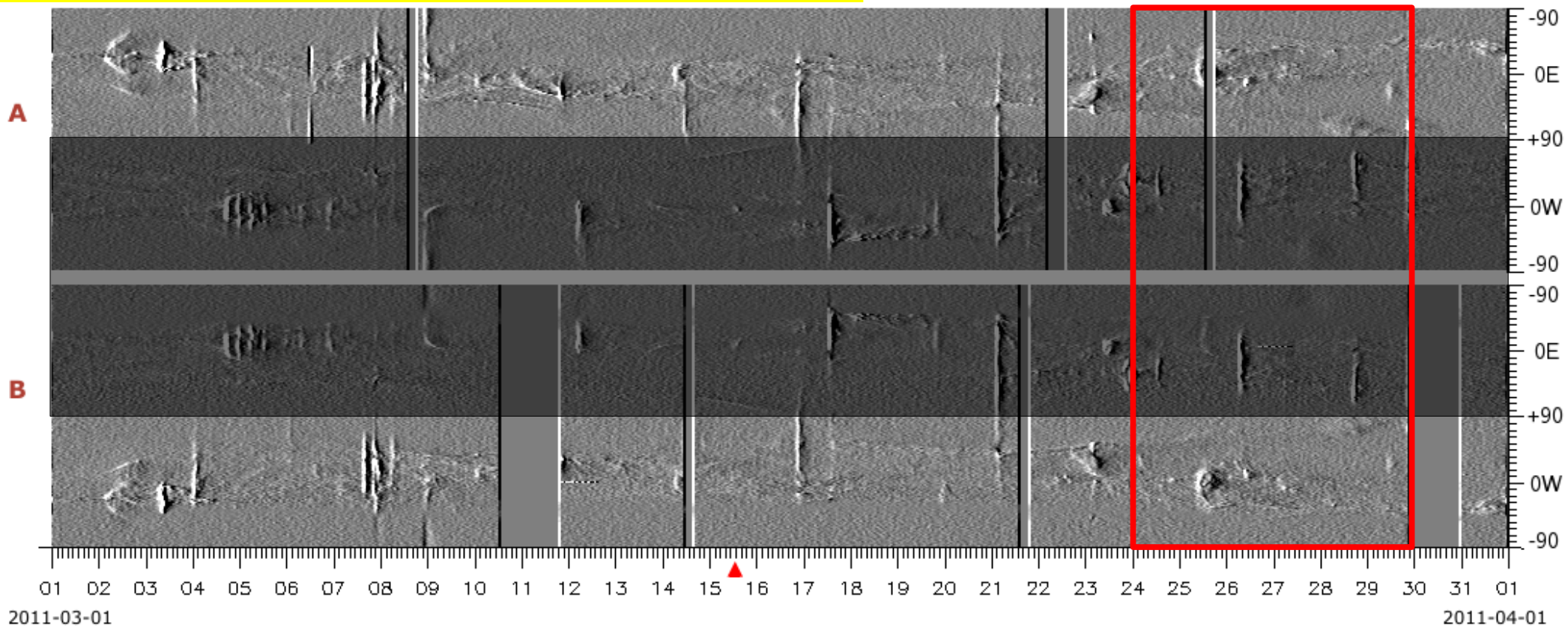
Alcala de Henares, Spain

September 4-9, 2011

Tortoise CME : March 25, 2011

- Interesting Event Features
 - Slow rising 'streamer blowout' CME
 - Unaffected by multiple prominence eruption
 - 2.5 days of low plasma β in situ
 - Dark cavity most visible feature
 - Secondary front develops in HI1-A
 - Well defined front the HI2-A
- Fit CME with Forward Model
 - Compare results with in situ data

Synoptic Map at 7.0 R_⊙



Graduated Cylindrical Shell Model

STEREO Cloud

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

0.00000

Longitude

0.00000

Latitude

0.00000

Tilt Angle

2.00000

Height

0.400000

Ratio

30.0000

Half Angle

Eruption Date

2007-05-15T23:52:30.006

◆ Carrington ◆ Stonyhurst

Wire Off

Eval. Fit

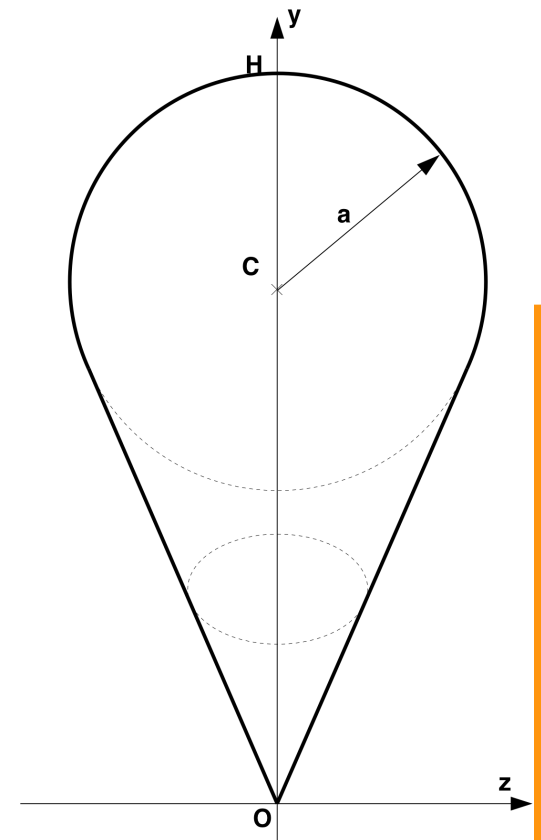
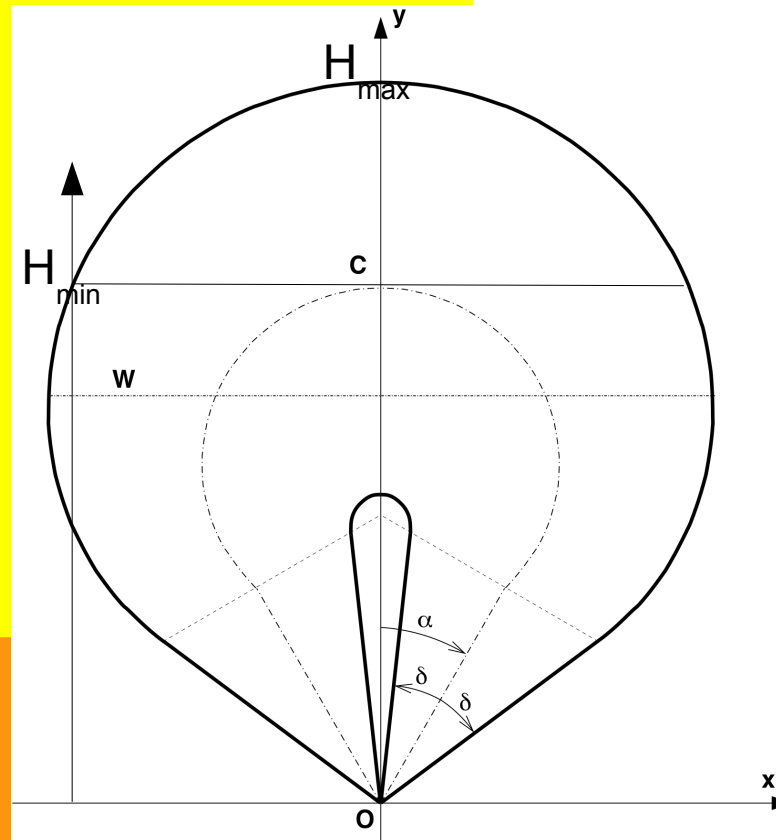
Fit : ?

SC-A LON: 124.2 , LAT: -1.9
Date Obs: 2007-05-15T23:52:30.006

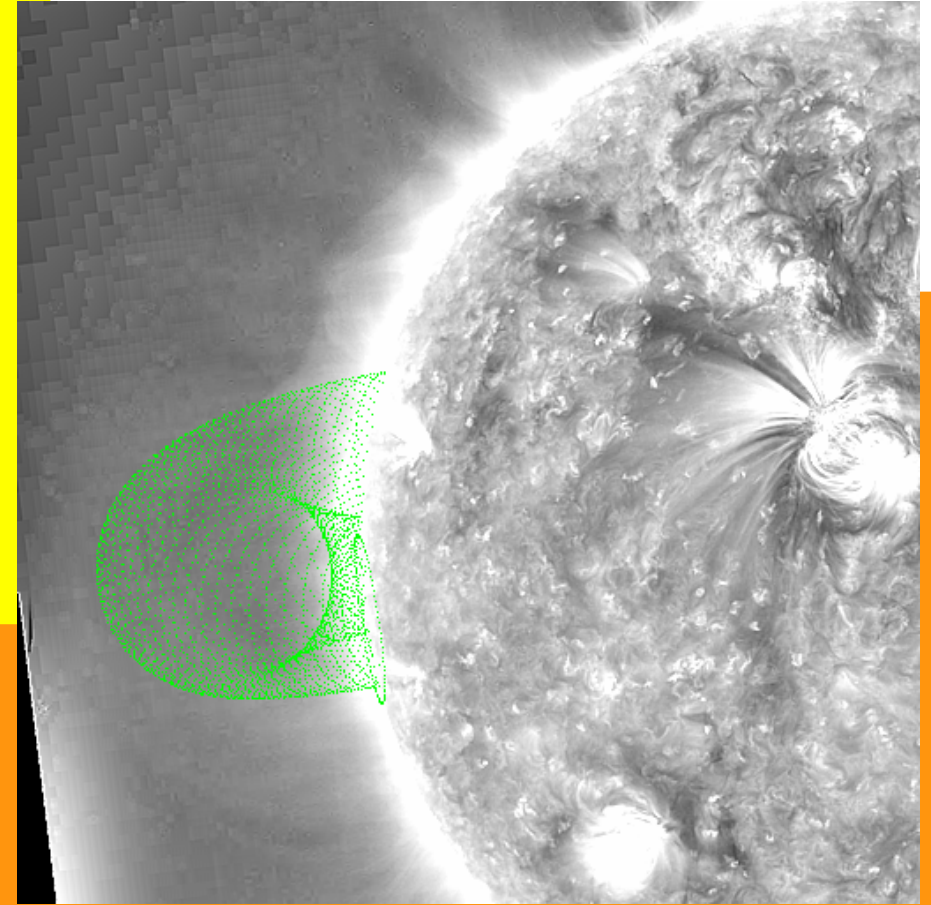
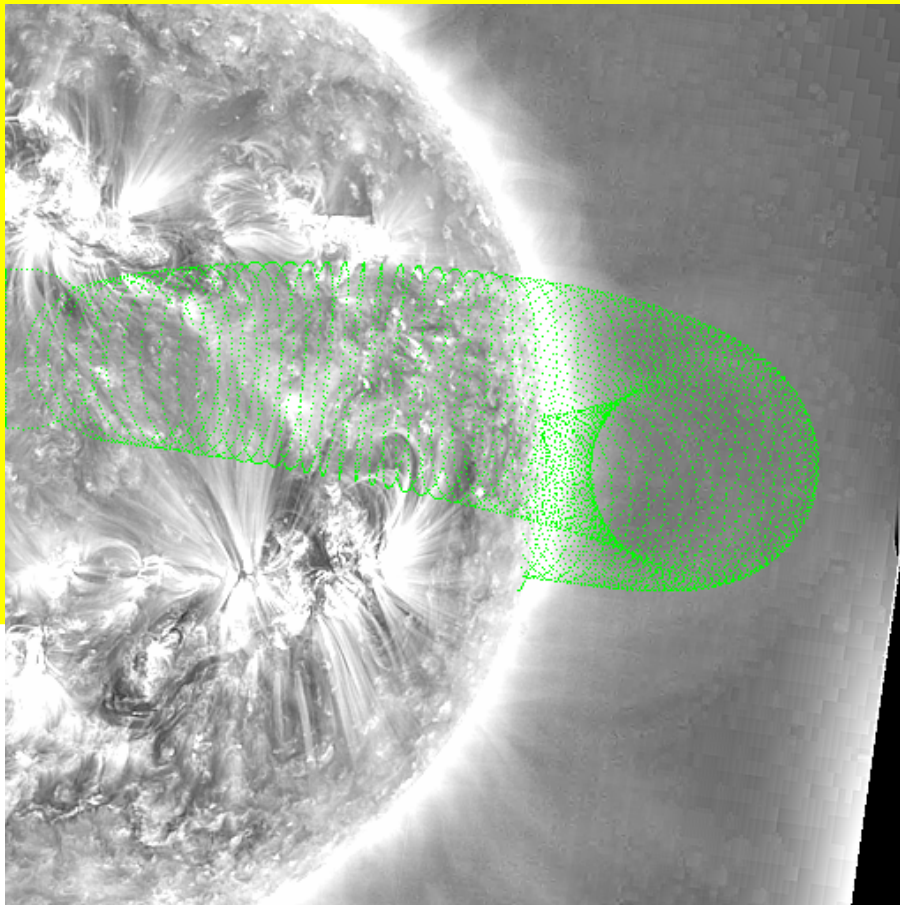
SC-B LON: 116.2 , LAT: -3.2
Date Obs: 2007-05-15T23:53:17.351

Generate View

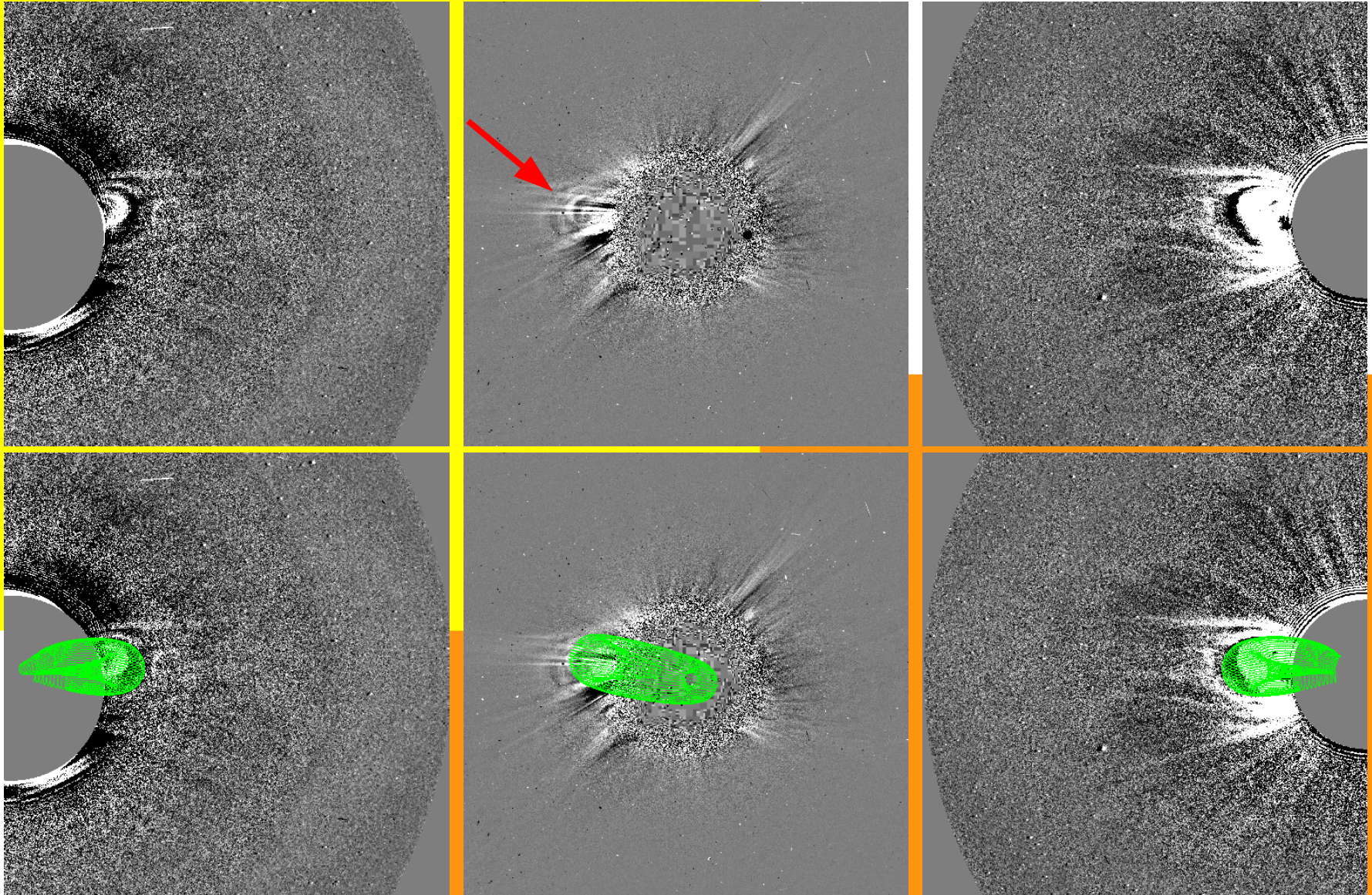
Done Quit



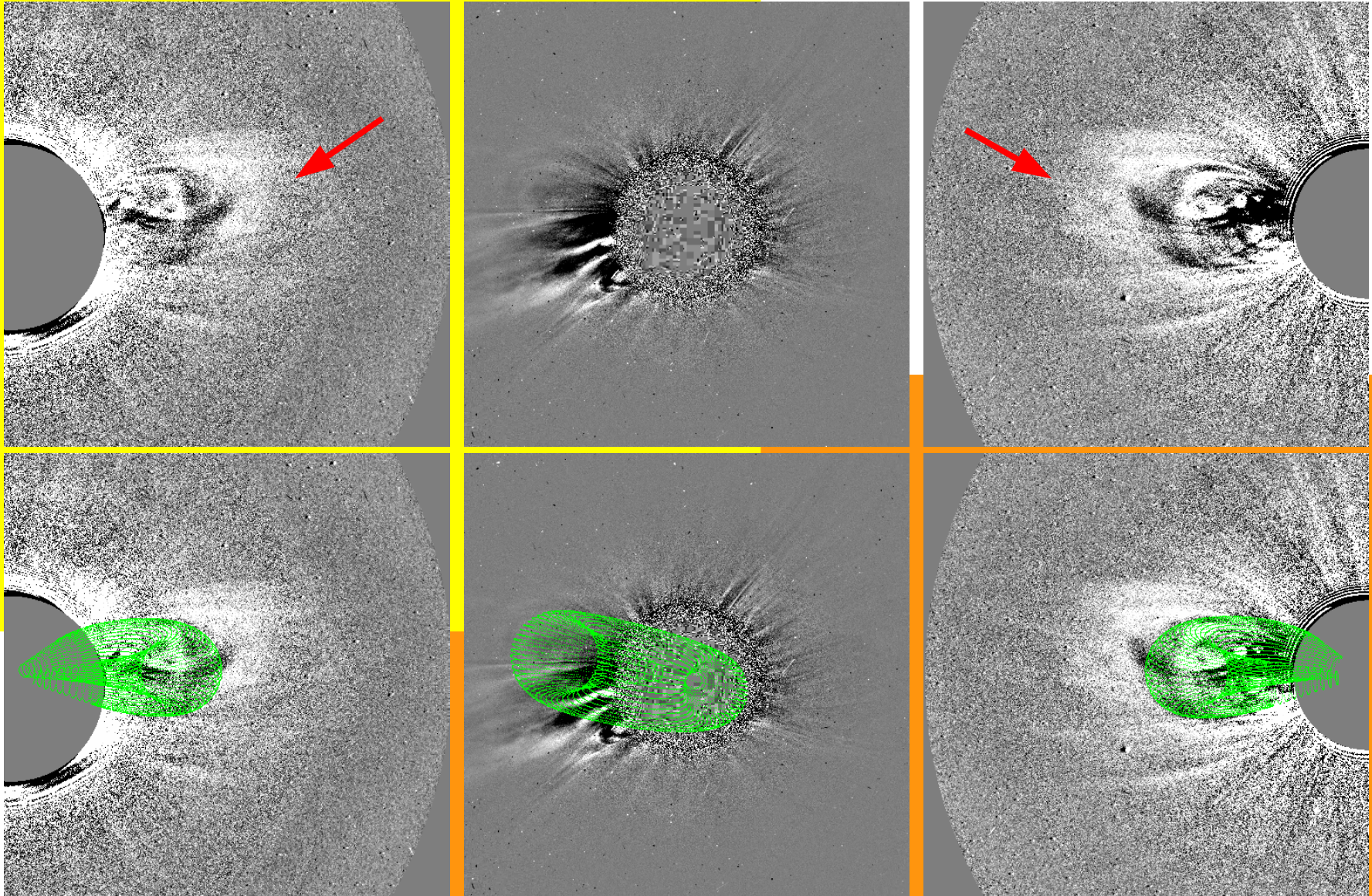
24-MAR-2011 06:14



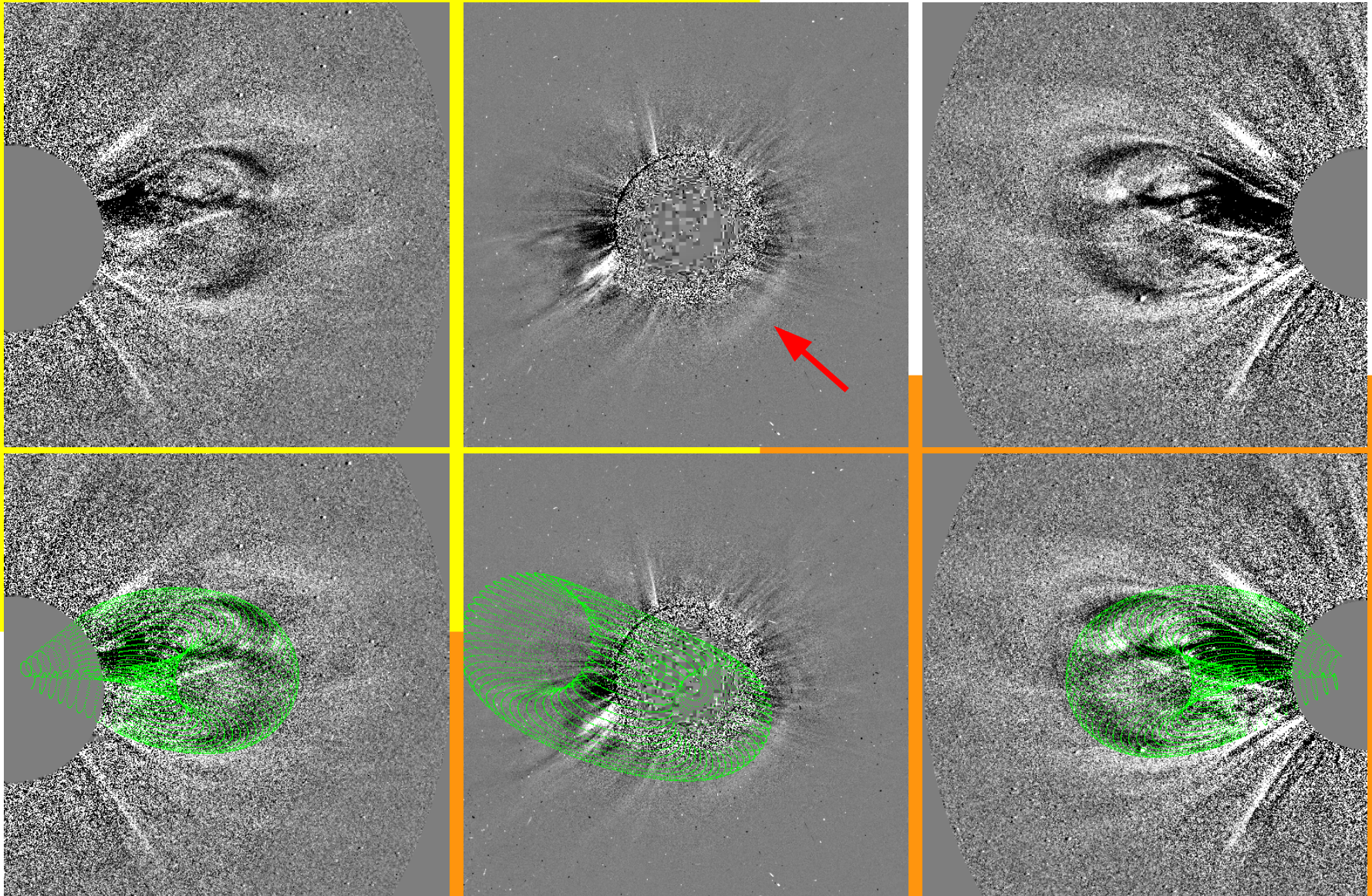
25-MAR-2011 08:08



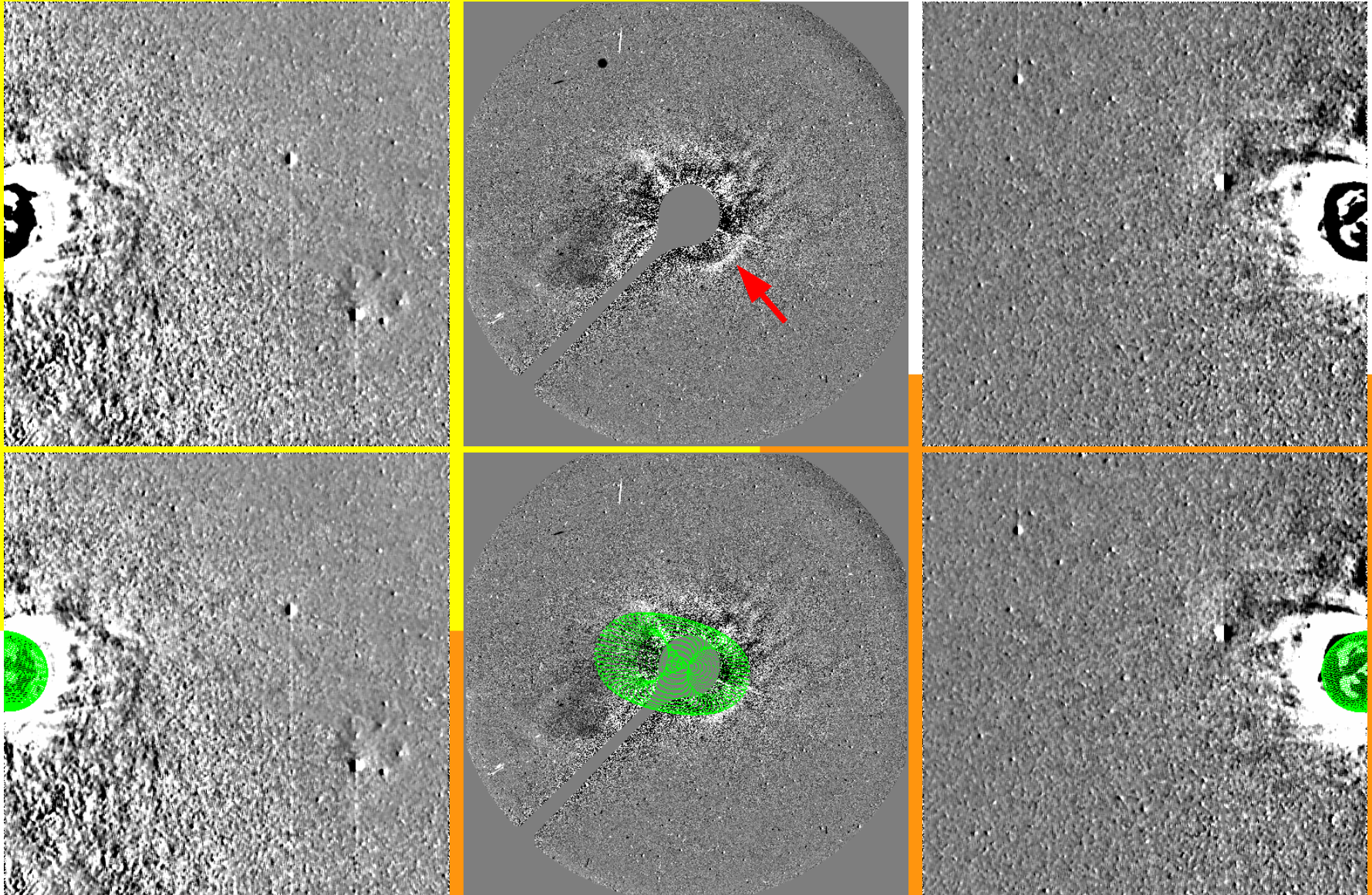
25-MAR-2011 12:54



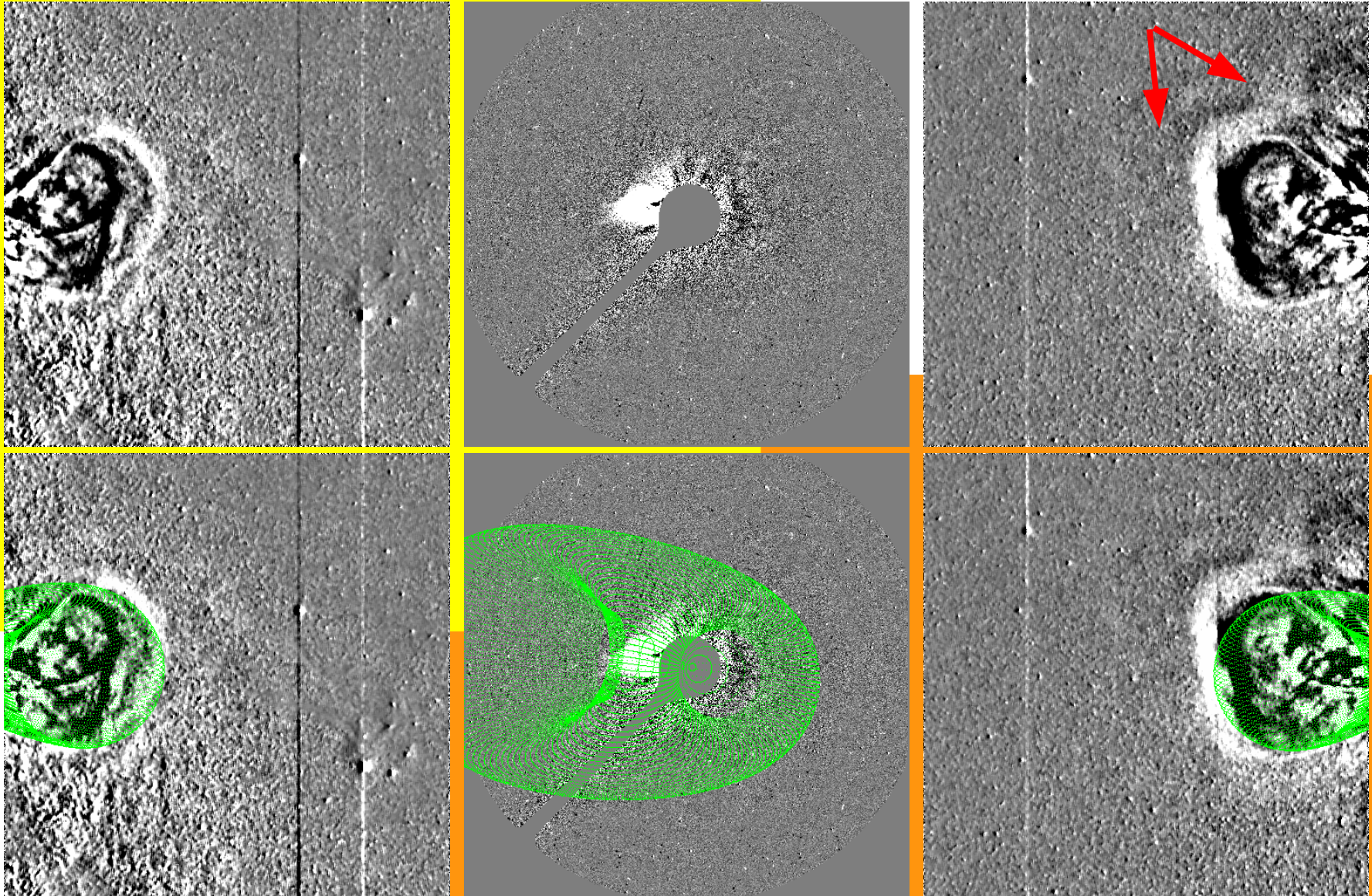
25-MAR-2011 16:24



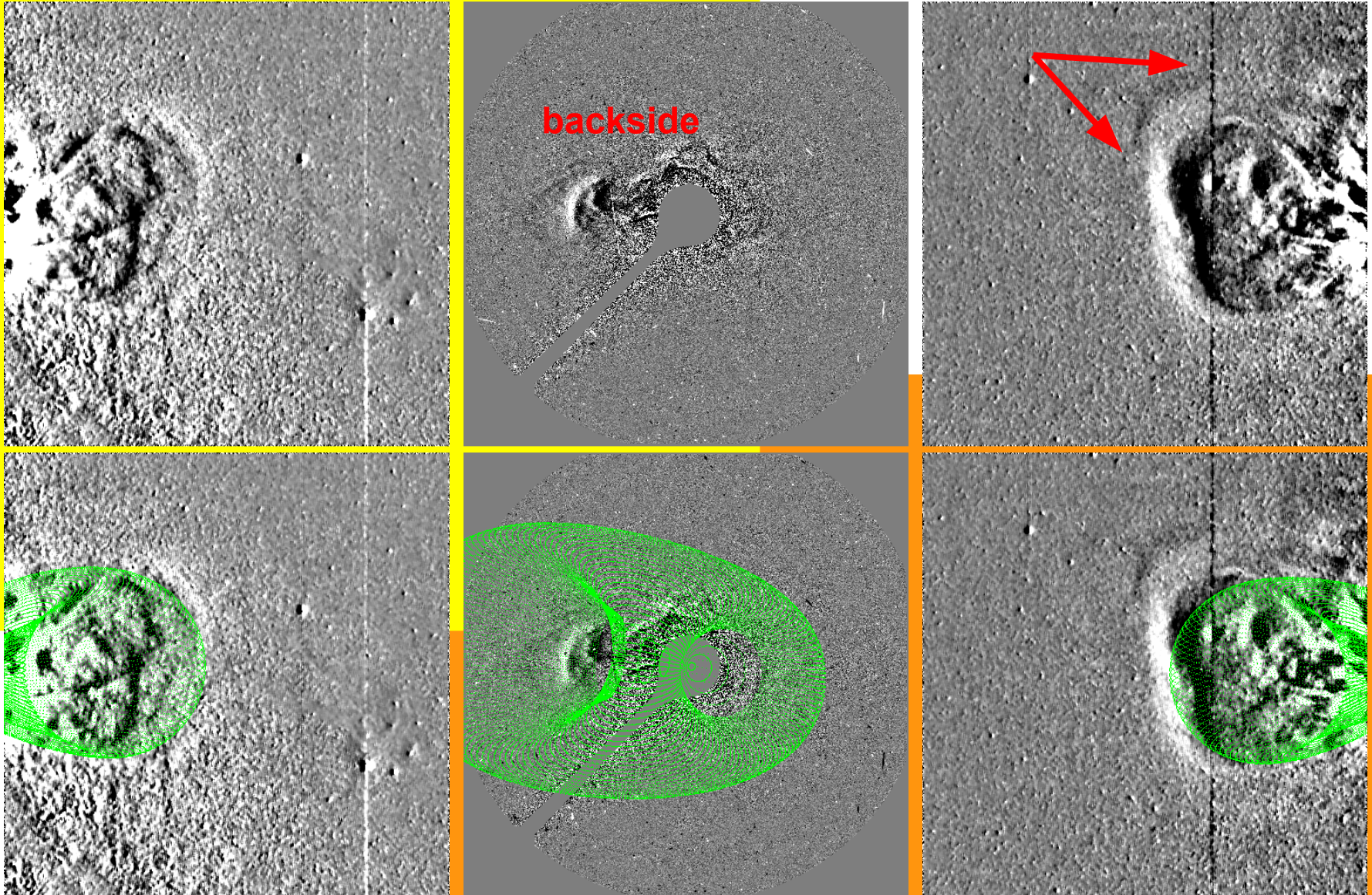
25-MAR-2011 23:29



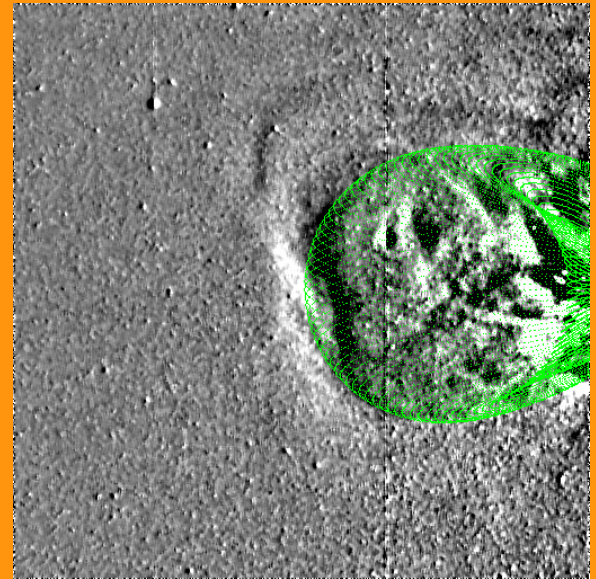
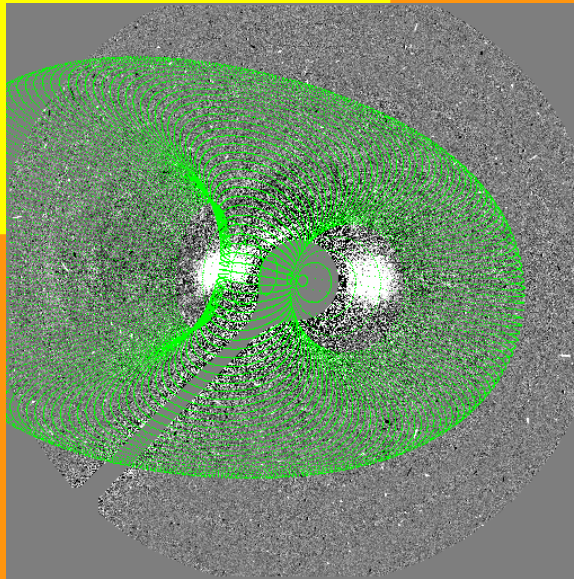
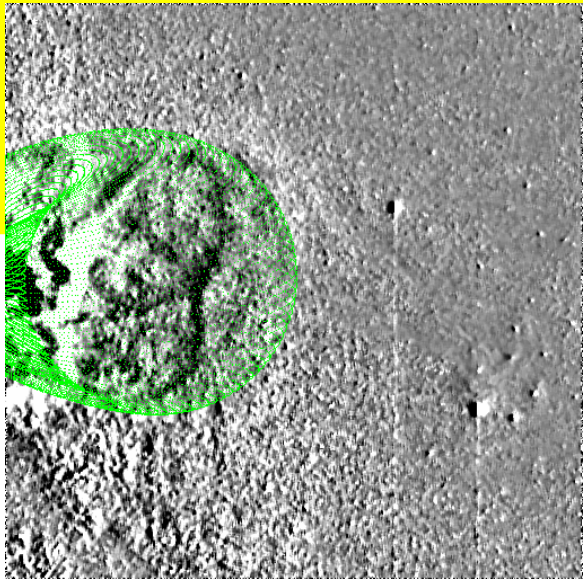
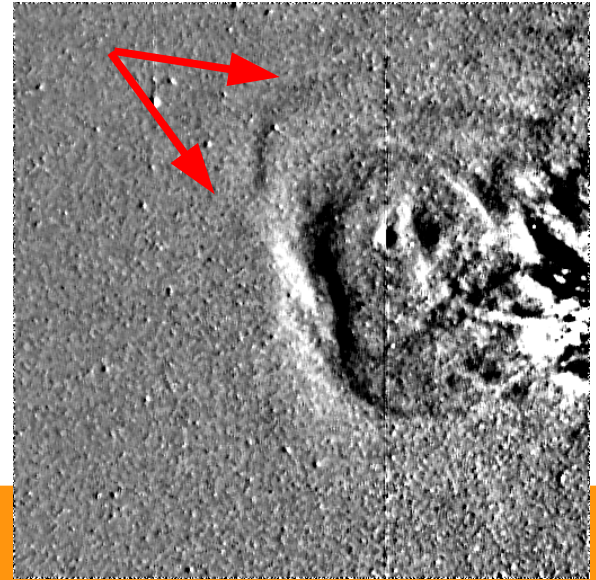
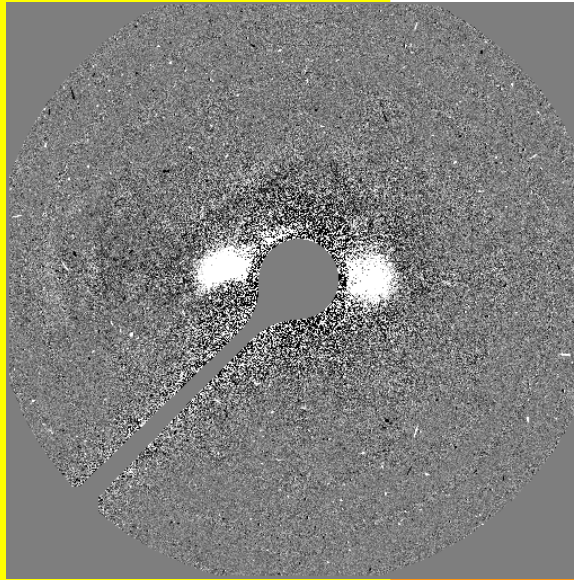
26-MAR-2011 07:29



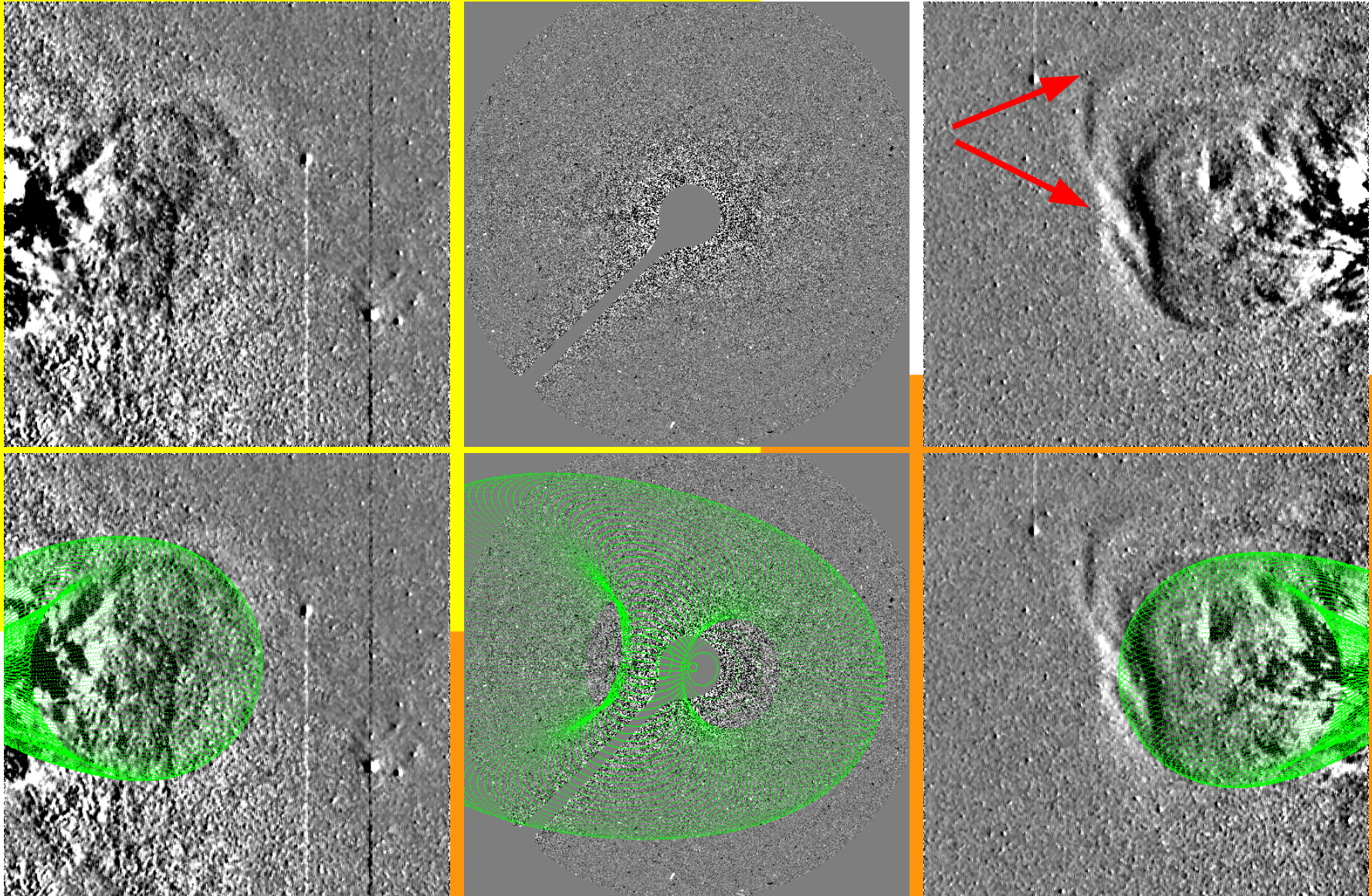
26-MAR-2011 10:49



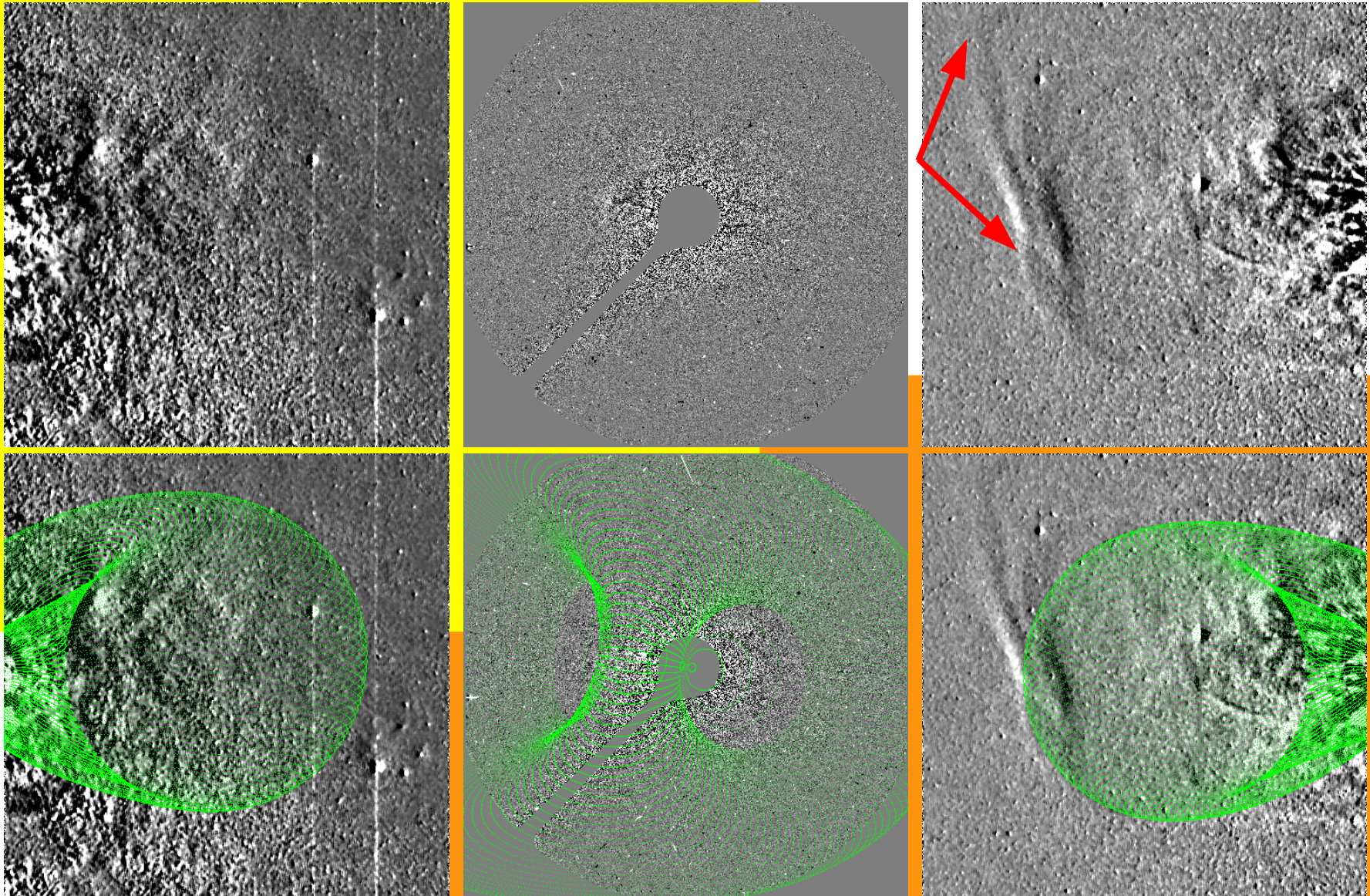
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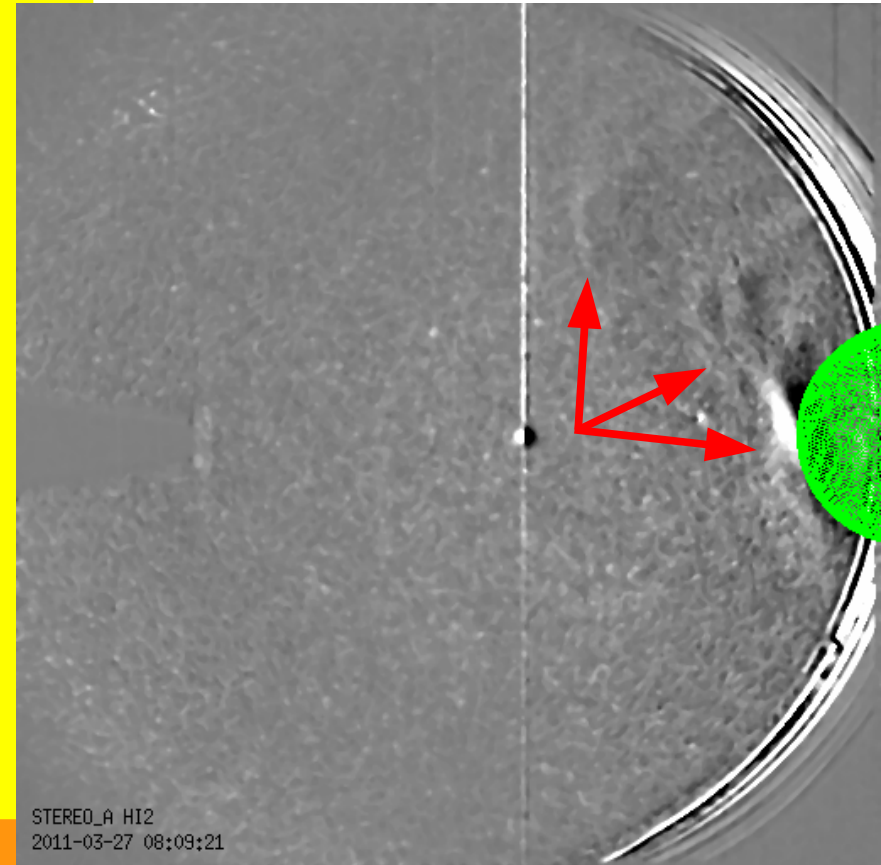
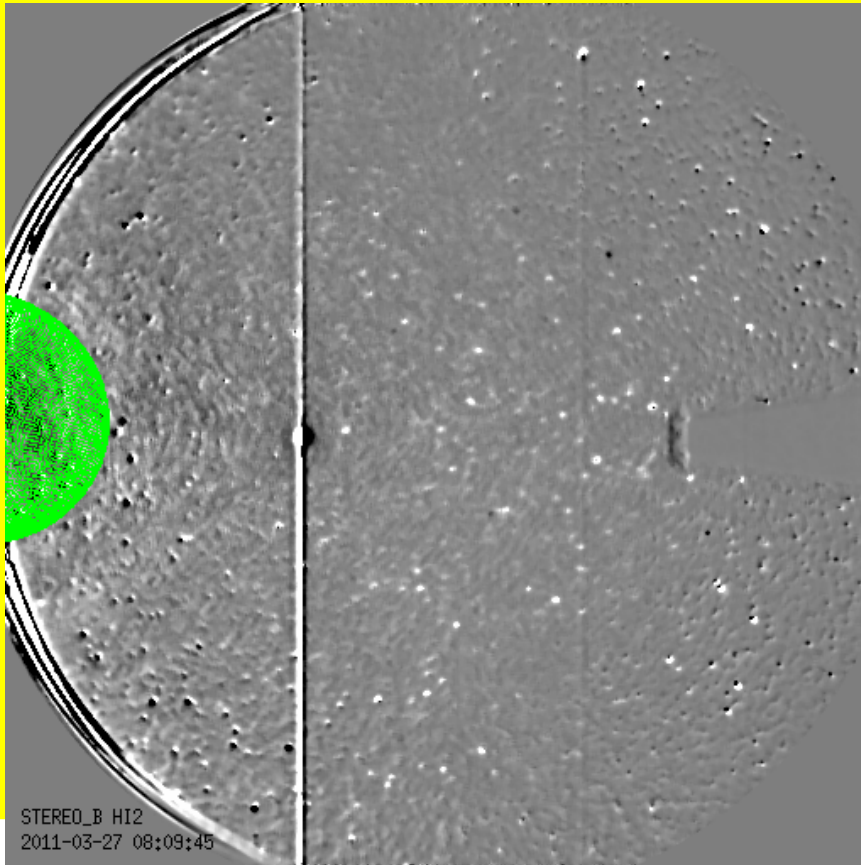
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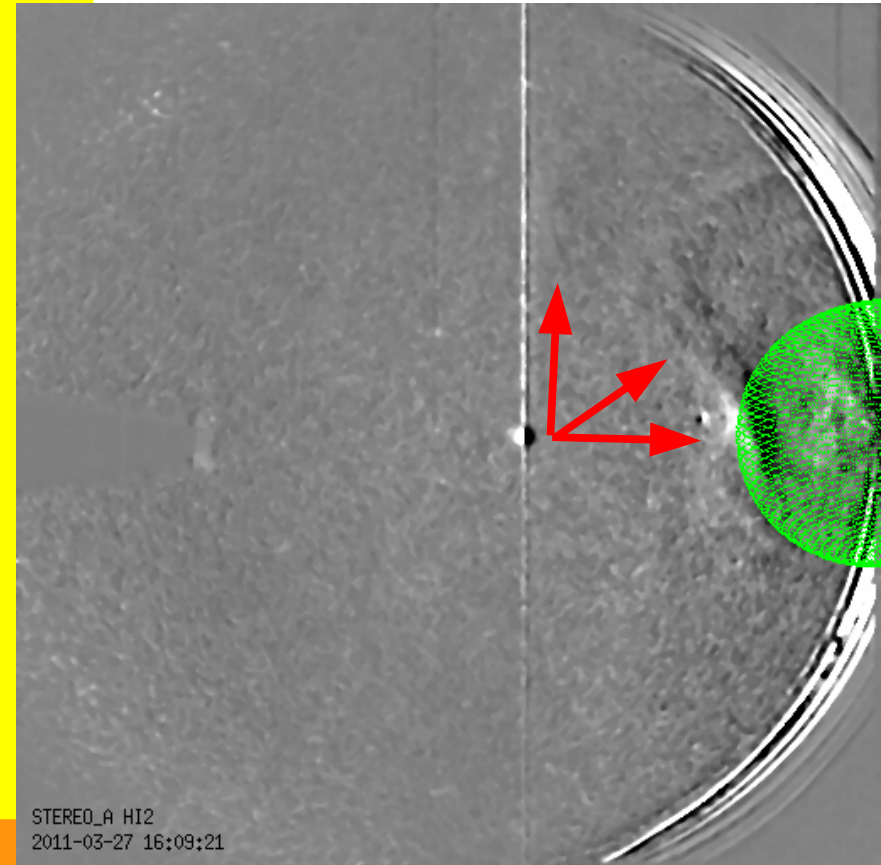
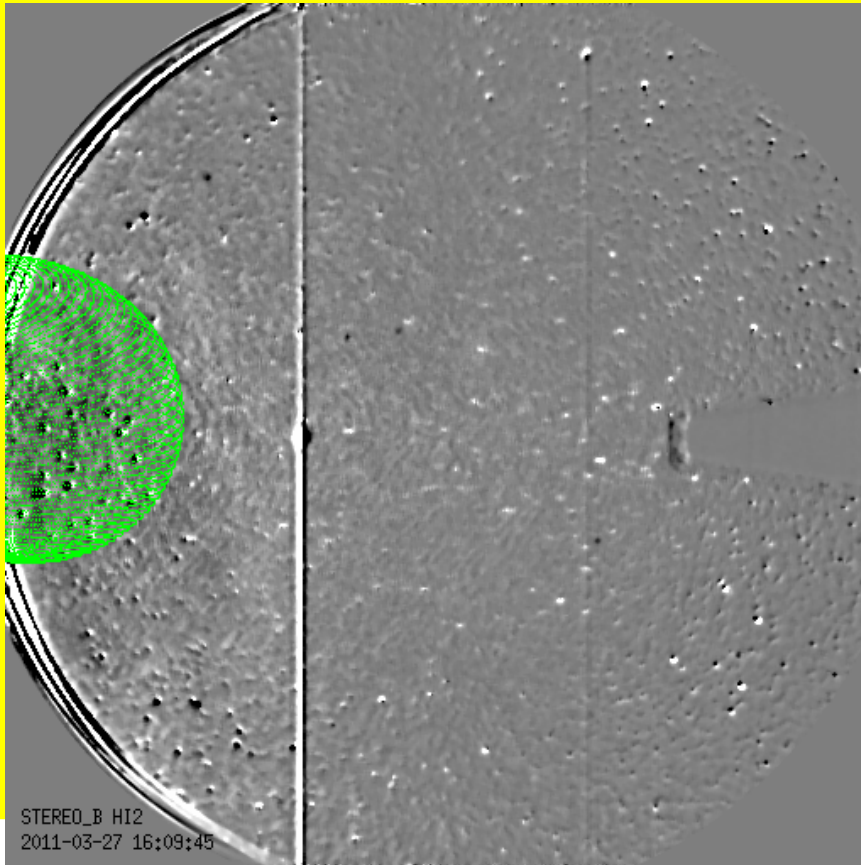
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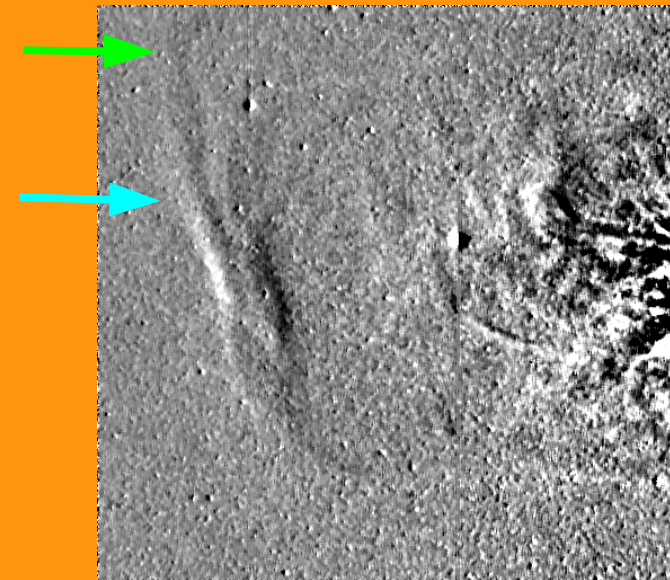
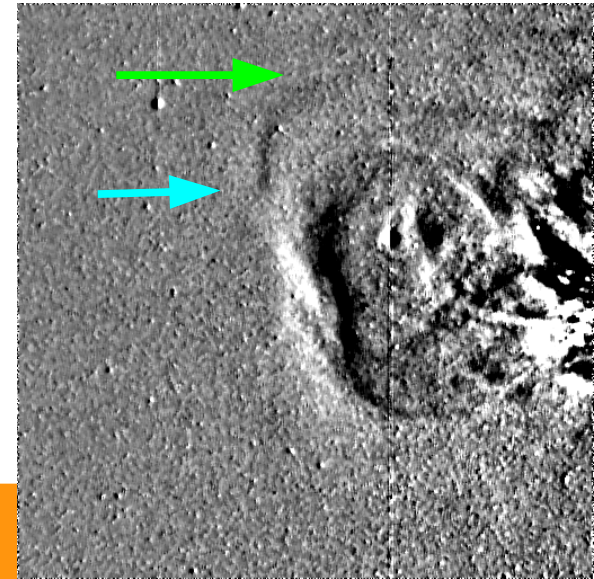
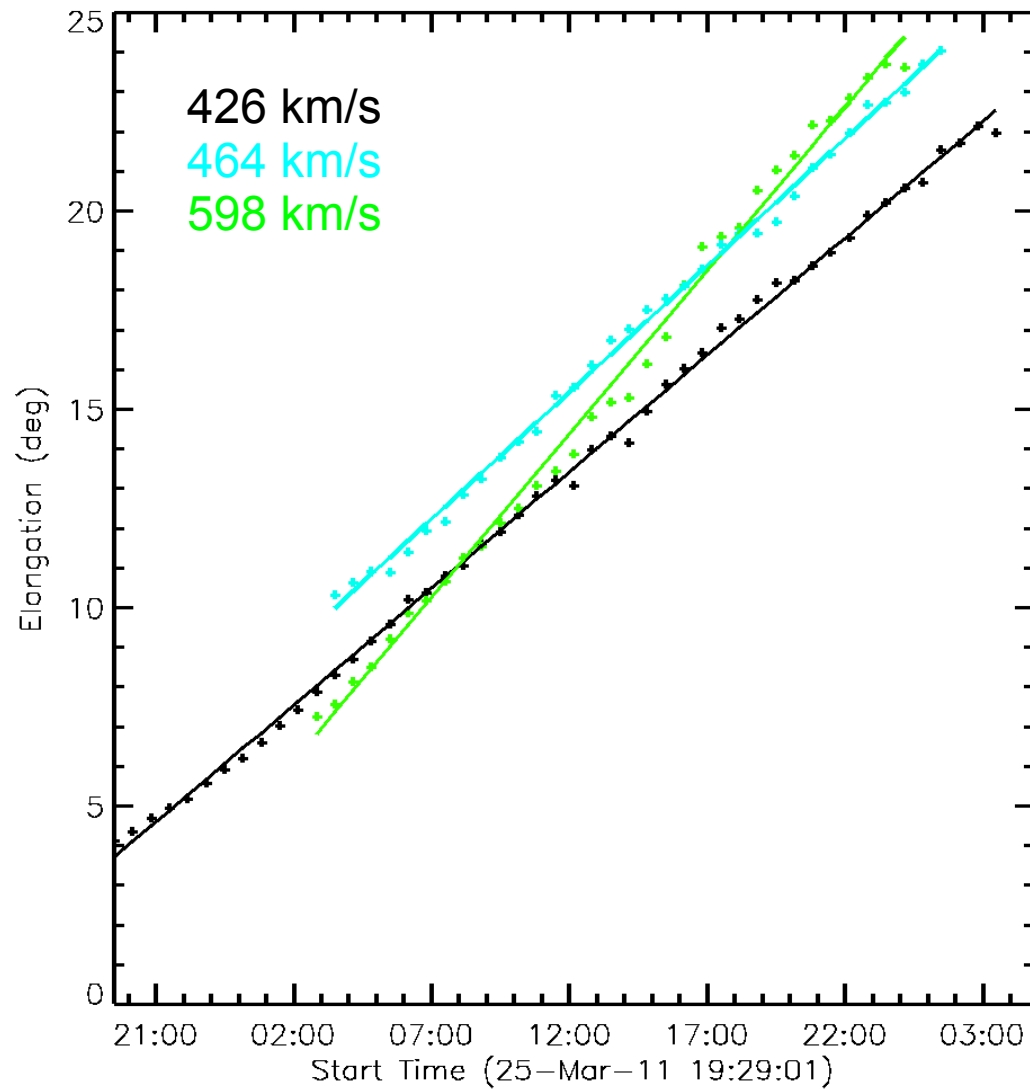
27-MAR-2011 08:09



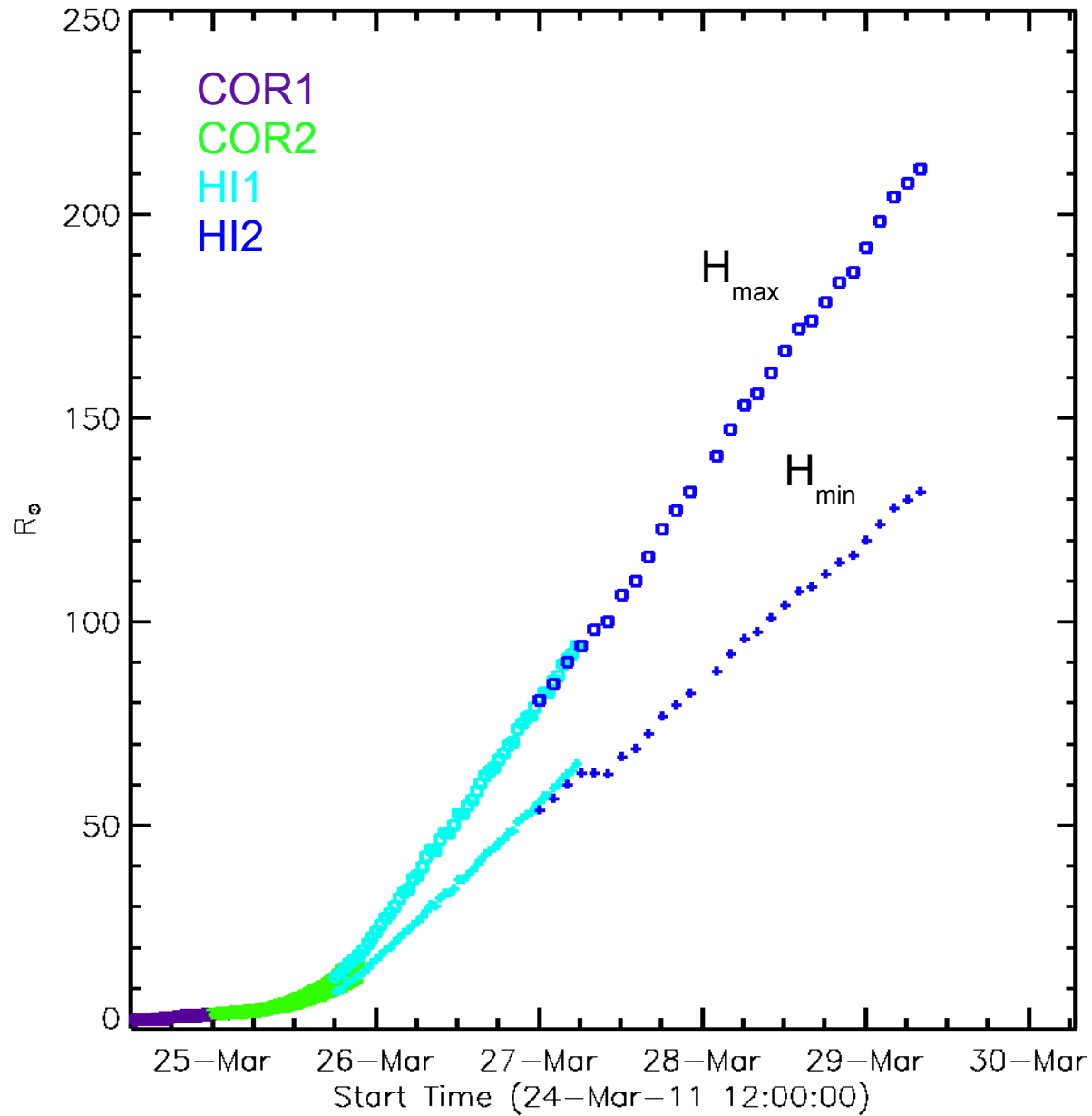
27-MAR-2011 16:09



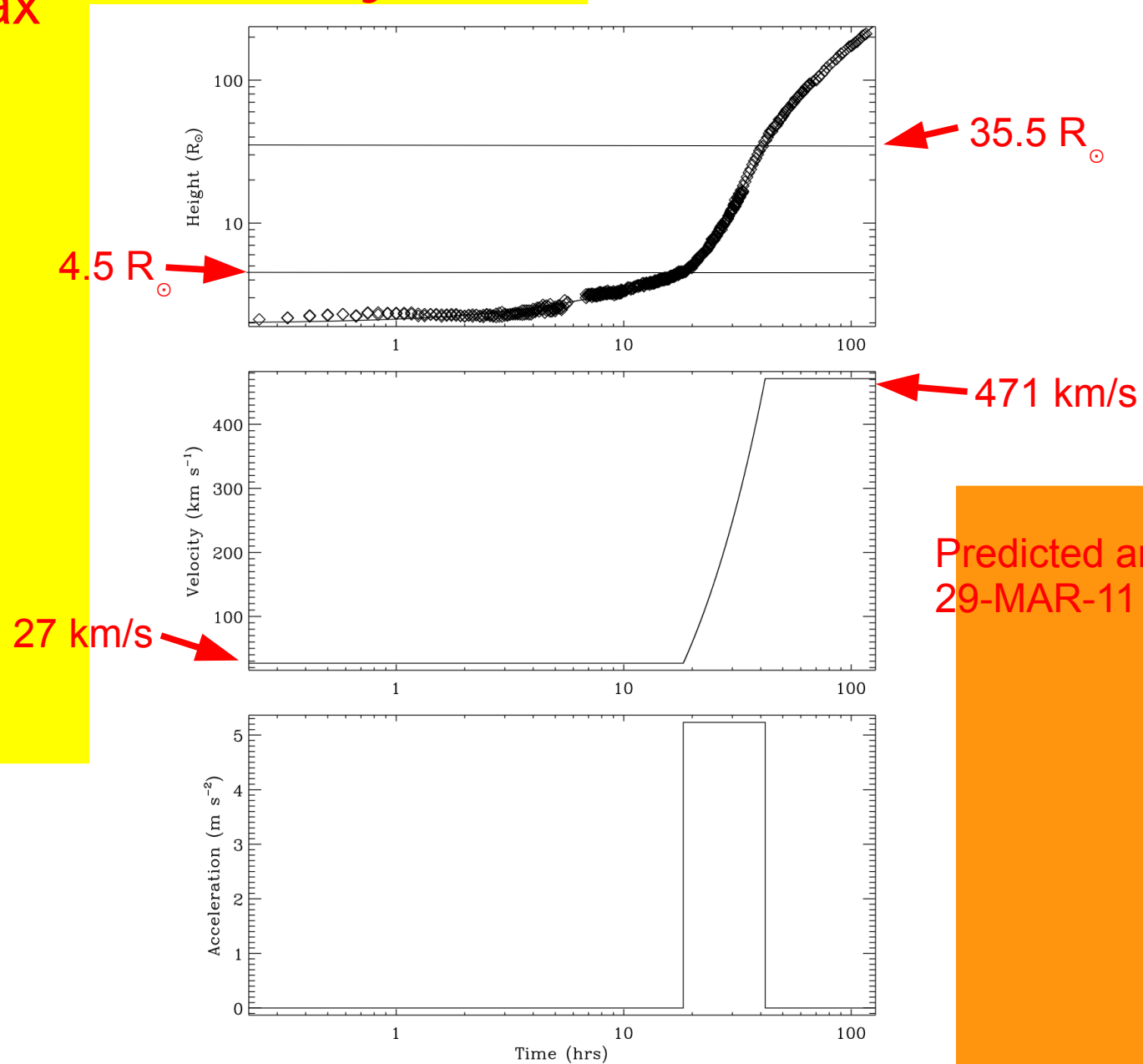
Secondary Front



Height-Time

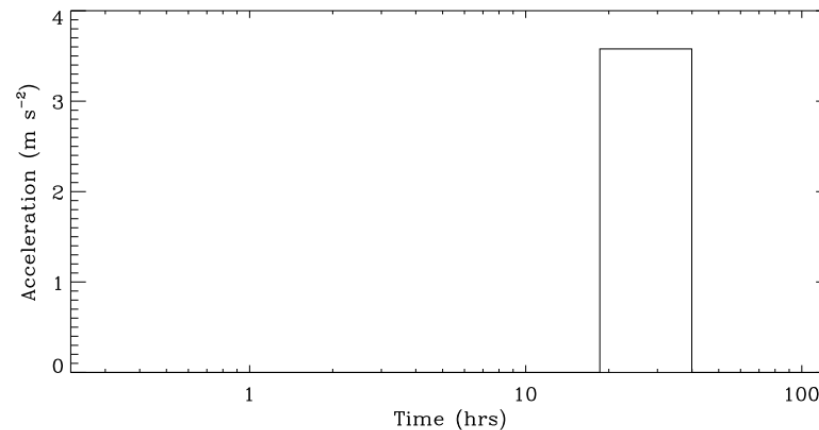
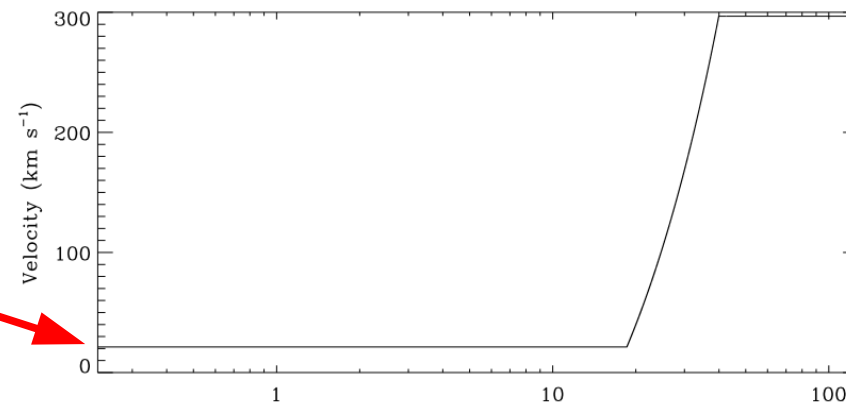
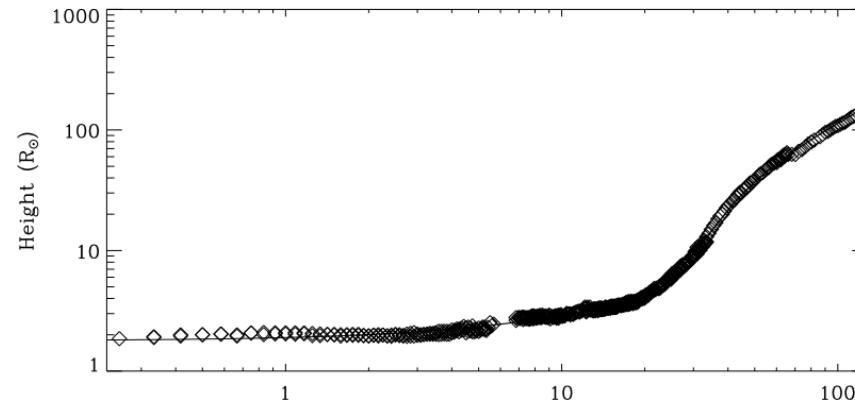


H_{\max} Velocity and Acceleration



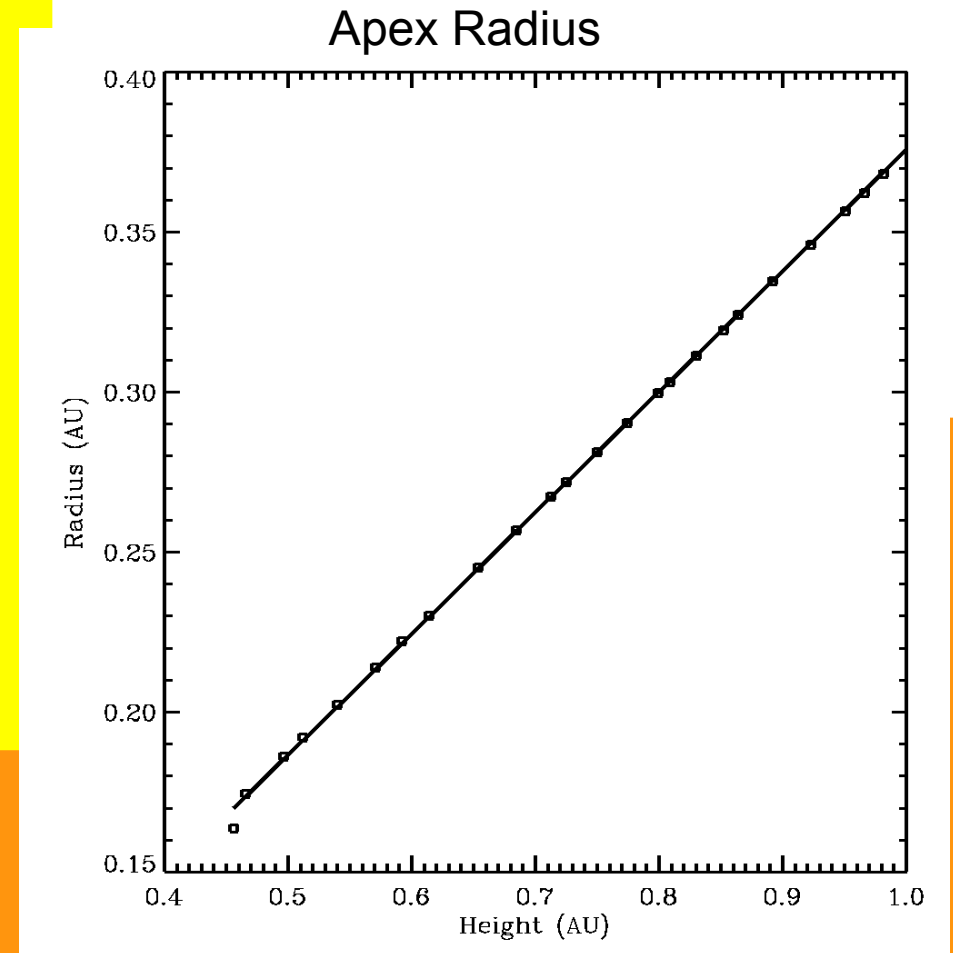
Predicted arrival time :
29-MAR-11 07:40:59

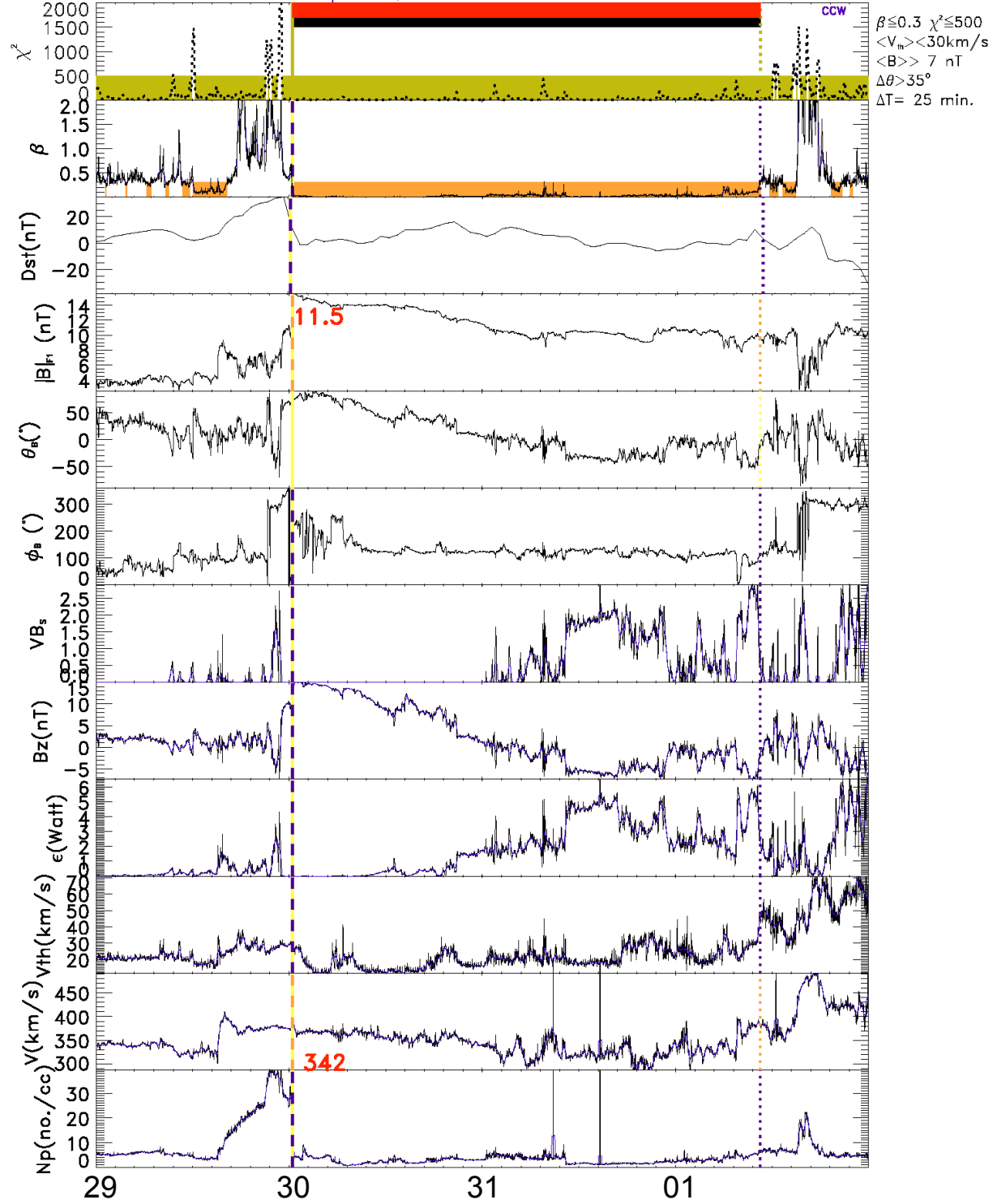
H_{\min} Velocity and Acceleration



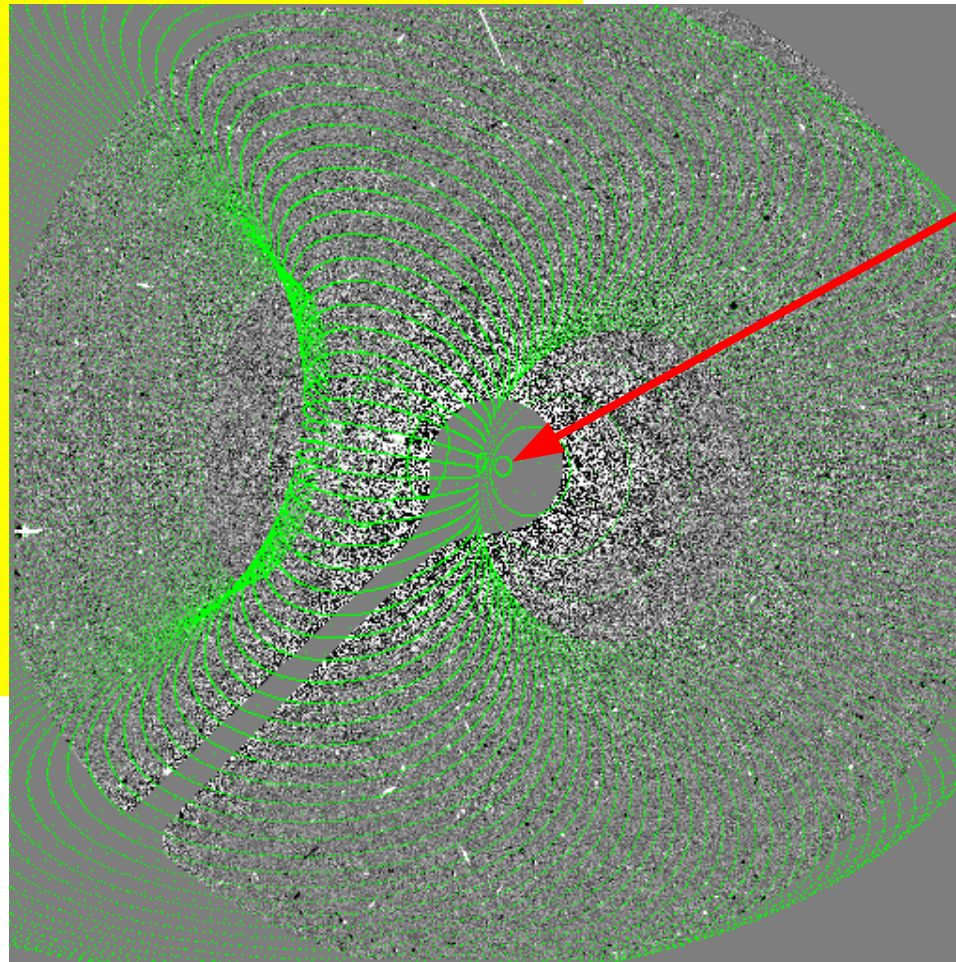
Predicted Values at 1 AU

- Arrival time :
29-Mar 07:40 - 31-Mar 10:01
- Velocity :
471 – 297 km/s
- Apex Radius :
81 R_{\odot} (0.376 AU)
- Minimum Transit Time :
1.9 days





Why so long?



Down the leg!