

# CME assignment one **ANSWERS**

For the CMEs listed below, follow the CME analysis procedure described in the lesson and also submit answers to the following questions for each CME:

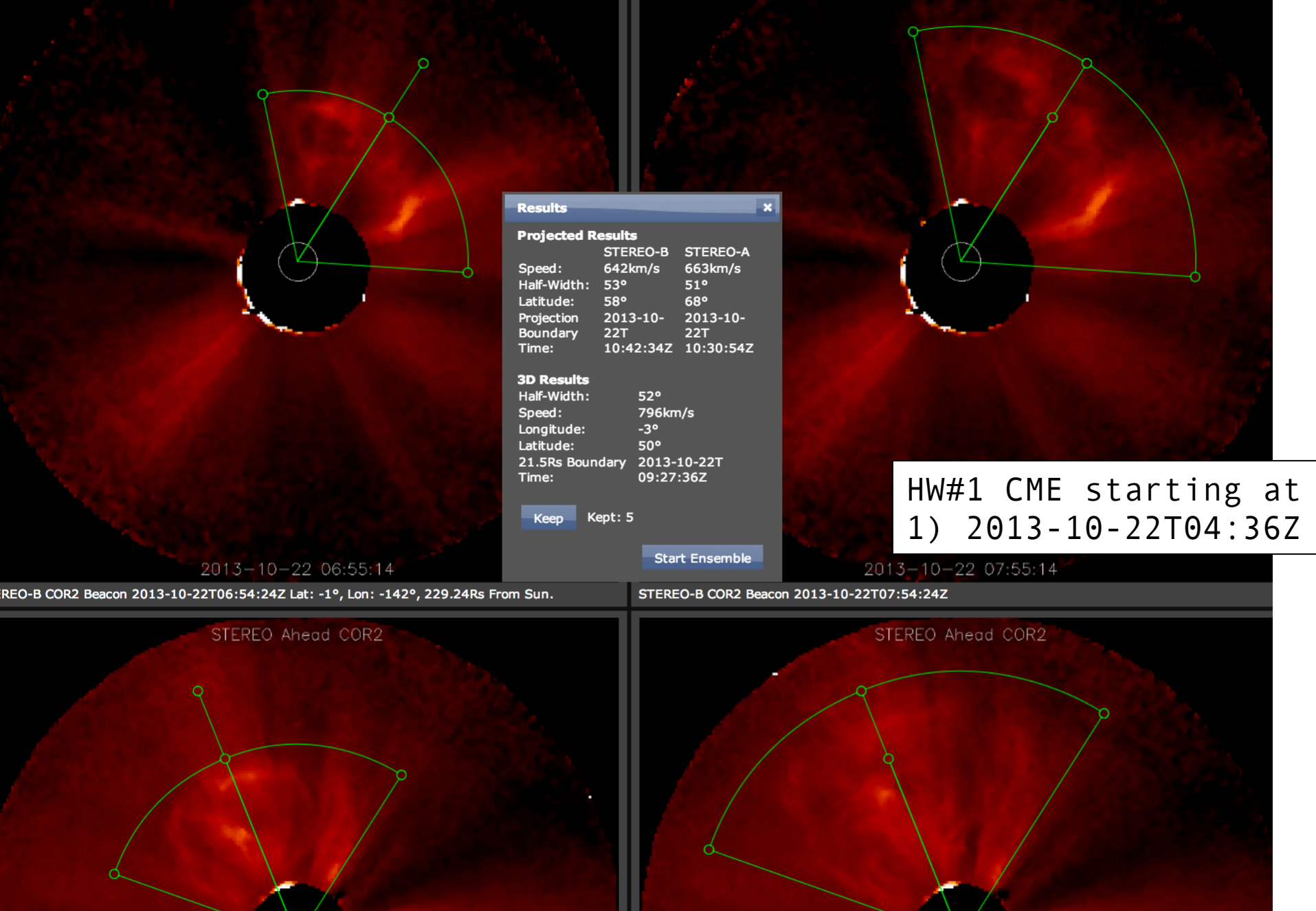
HW#1 CMEs starting at

- 1) 2013-10-22T04:36Z
- 2) 2013-11-07T00:00Z
- 3) 2013-11-07T10:39Z
- 4) 2012-07-17T14:25Z
- 5) 2013-01-13T07:24Z

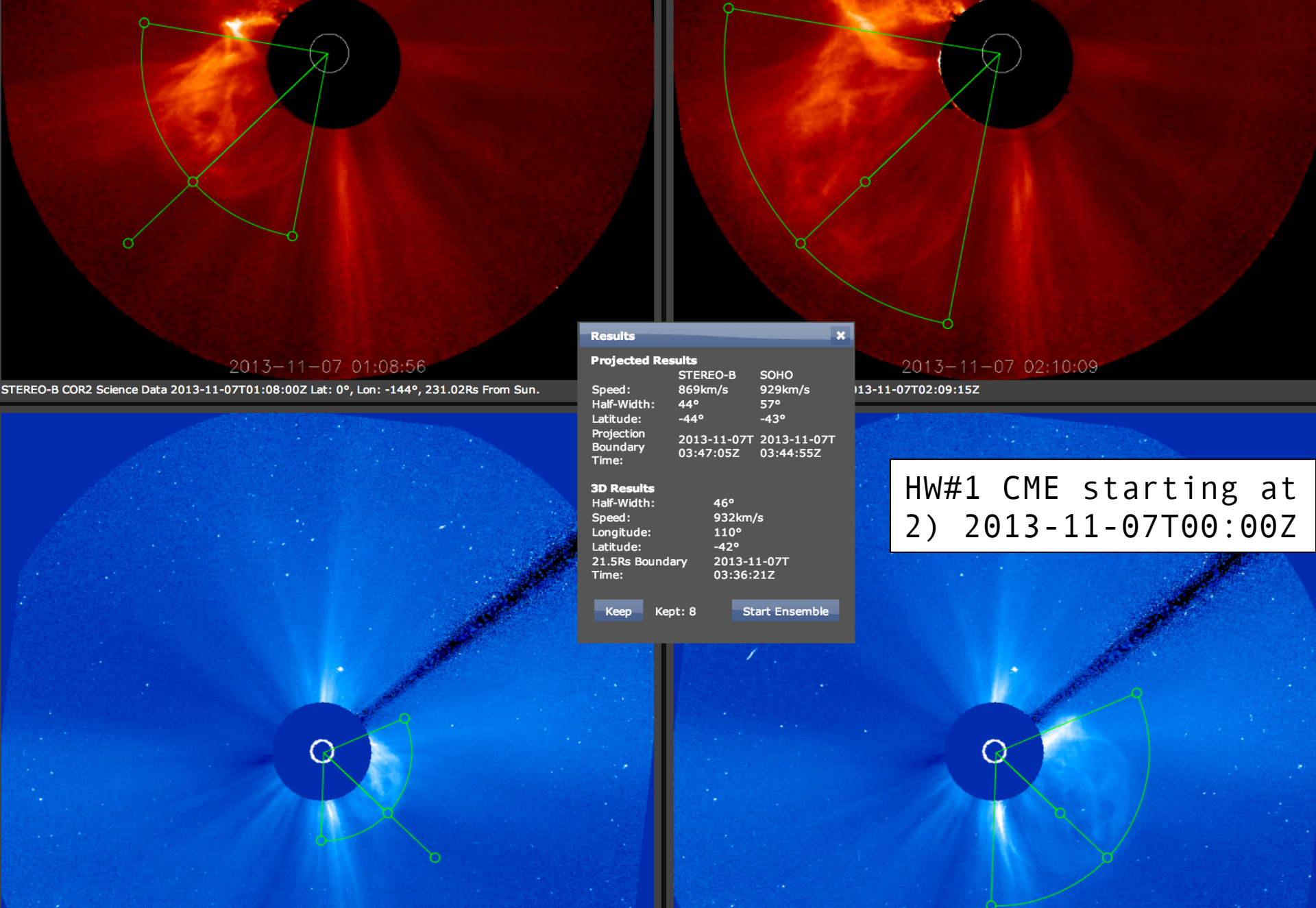
*Resources & iSWA layouts*

- \* StereoCAT: <http://ccmc.gsfc.nasa.gov/analysis/stereo/>
- \* 40 Frame coronagraph and EUV movies <http://go.nasa.gov/16bTvzK>
- \* Where is STEREO? [http://stereo-ssc.nascom.nasa.gov/cgi-bin/make\\_where\\_gif](http://stereo-ssc.nascom.nasa.gov/cgi-bin/make_where_gif)
- \* <http://cdaw.gsfc.nasa.gov/movie/>
- \* Solar Images with grid overlays <http://www.solarmonitor.org/>

- a) What is the source location for this CME? (list the location e.g. N15E20, instrument/wavelength, and time of the observation).
- b) Describe the EUV lower coronal signature for this CME (e.g. flare, post eruption arcade/loops, rising loops, dimming, filament eruption).
- c) Is the CME a halo in any of the coronagraphs? If so, is it moving away from or towards the observer?
- d) Which coronagraph instrument first observed the CME at the start time?
- e) What are your final **CME parameters** (radial speed, half width, longitude, latitude, and time at 21.5 Rs (solar radii)).
- f) Submit your “Save URL” of your measurements.

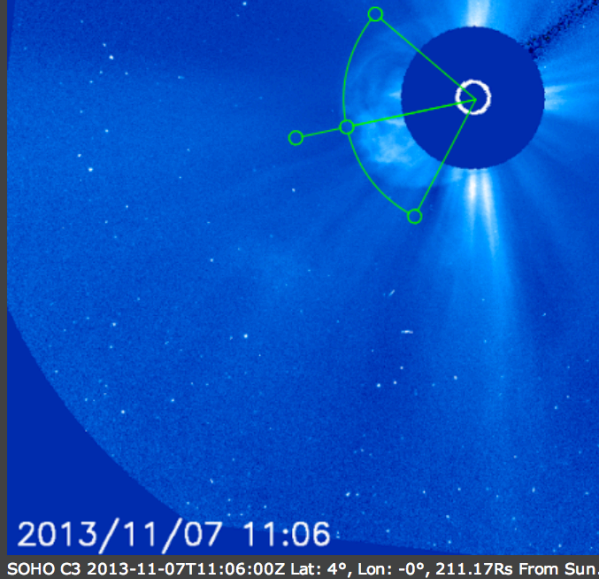


EUV Signatures: AIA: Slow rising filament eruption just north of disk center. EUVI: opening of corona off of NE limb in A, NW limb in B.



EUV Signatures: AIA: Filament eruption from west limb. EUVI: flare, eruption, post-eruption loops, dimming near AR east of disk center in A.





Results

Projected Results

	SOHO	STEREO-A
Speed:	1538km/s	2057km/s
Half-Width:	51°	62°
Latitude:	-12°	-16°
Projection	2013-11-07T	2013-11-07T
Boundary	12:47:22Z	12:11:11Z
Time:		

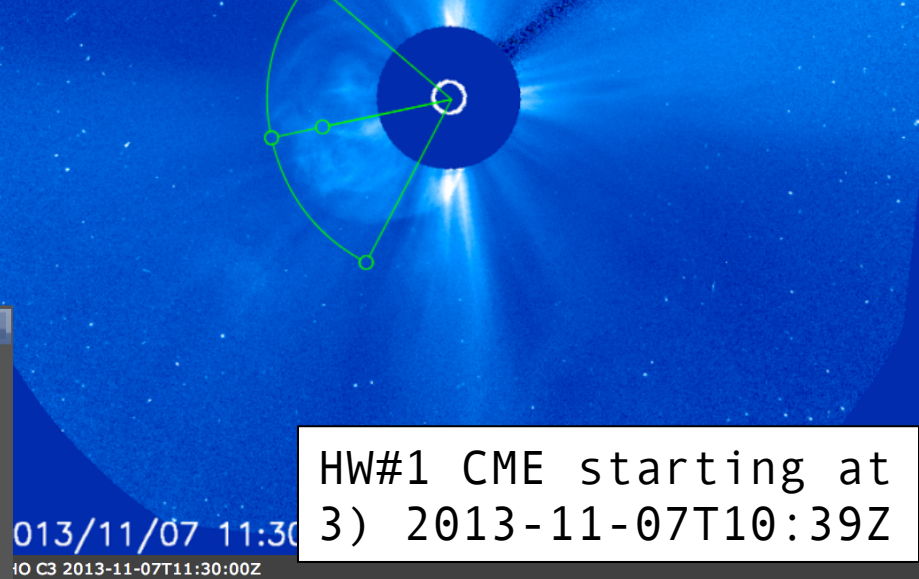
3D Results

Half-Width:	60°
Speed:	2066km/s
Longitude:	-126°
Latitude:	-14°
21.5Rs Boundary	2013-11-07T
Time:	12:11:29Z

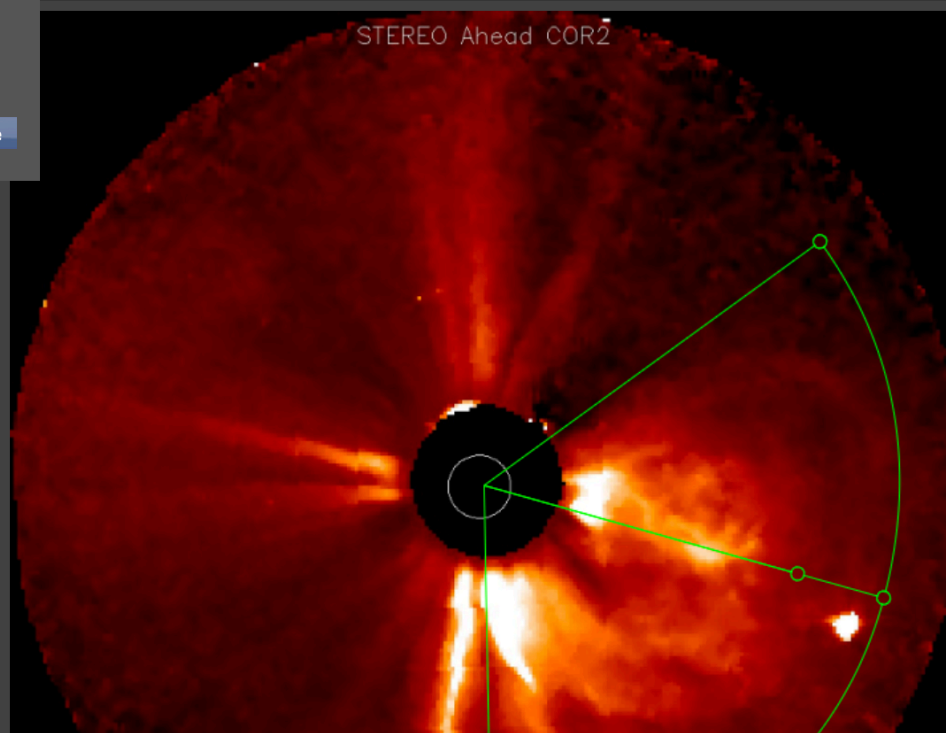
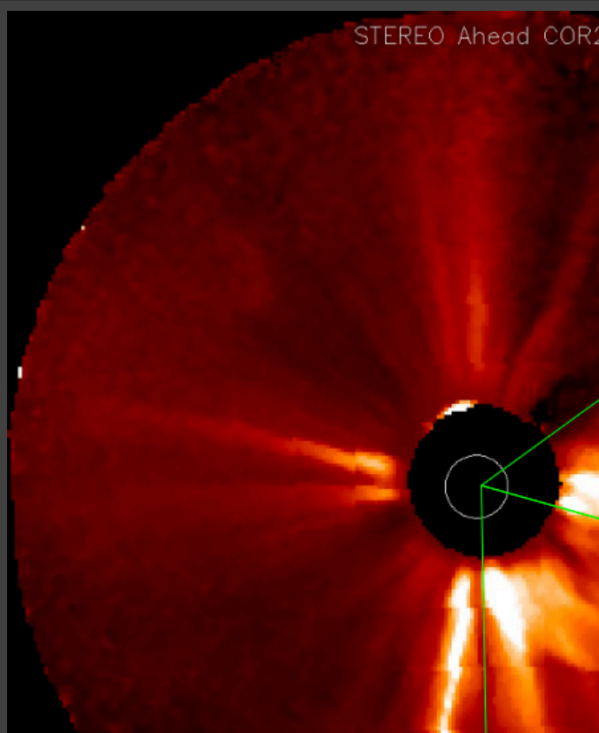
Keep

Kept: 16

Start Ensemble

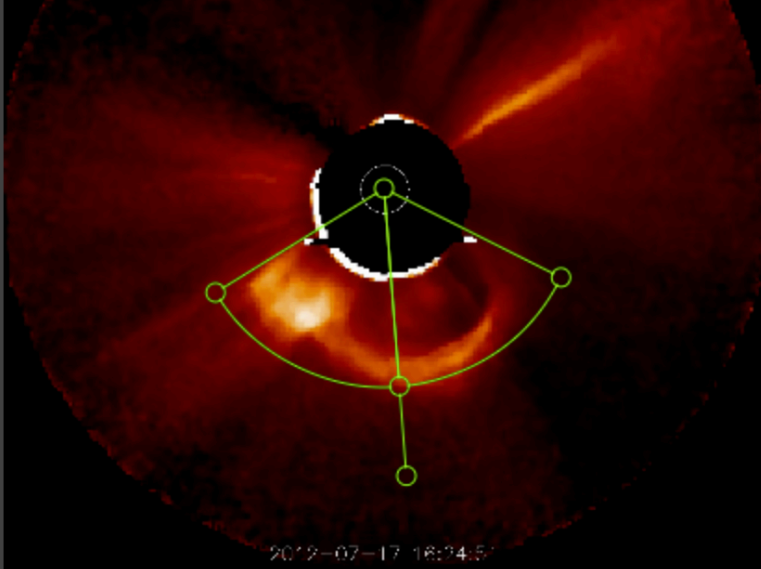


HW#1 CME starting at  
3) 2013-11-07T10:39Z

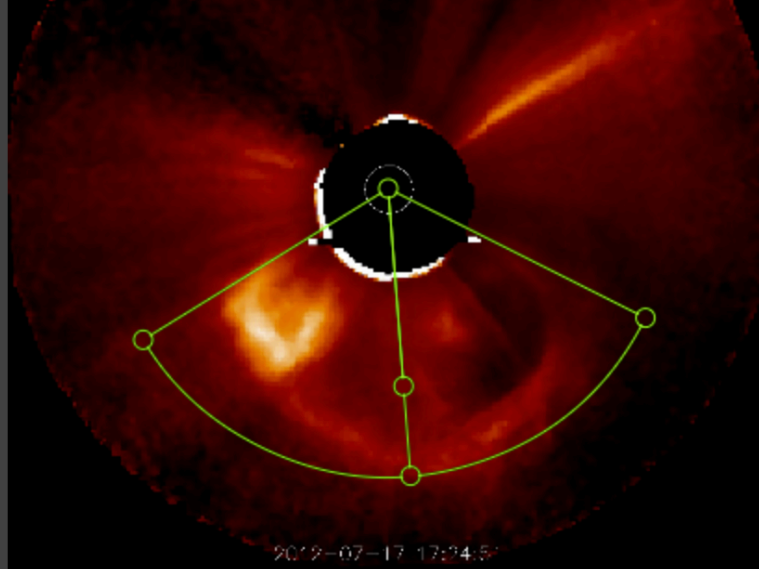


EUV Signatures: EUVI: flare brightening, eruption, dimming north of disk center in B, NW of disk in A.



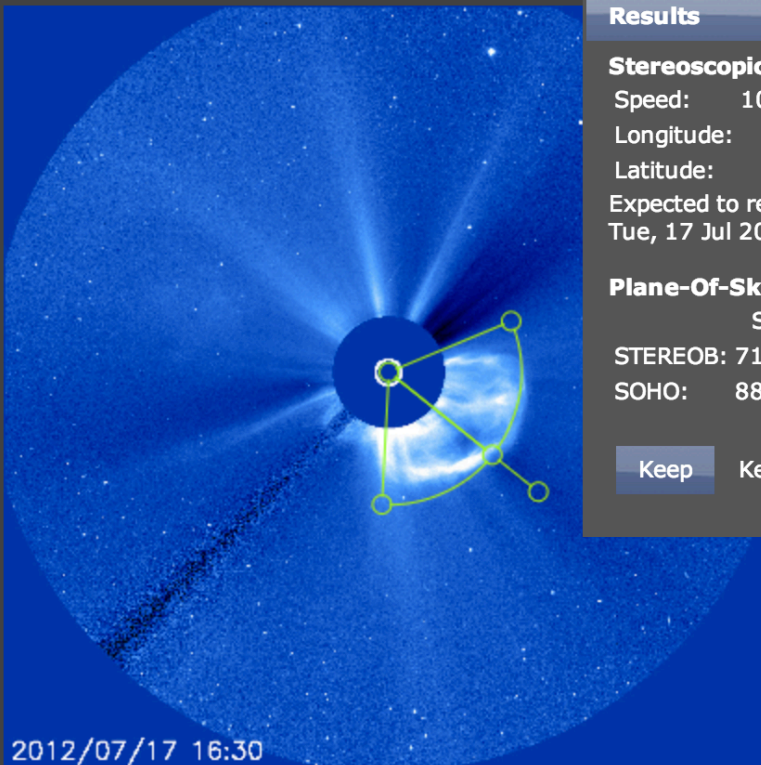


STEREOB COR 2 Tue, 17 Jul 2012 16:24:24 GMT



STEREOB COR 2 Tue, 17 Jul 2012 17:24:24 GMT

EUV Signatures:  
AIA: Eruption,  
rising loops in  
front of SW limb.  
EUVI: eruption,  
rising loops off SE  
limb in A.



2012/07/17 16:30  
SOHO LASCO C3 Tue, 17 Jul 2012 16:30:00 GMT

Results

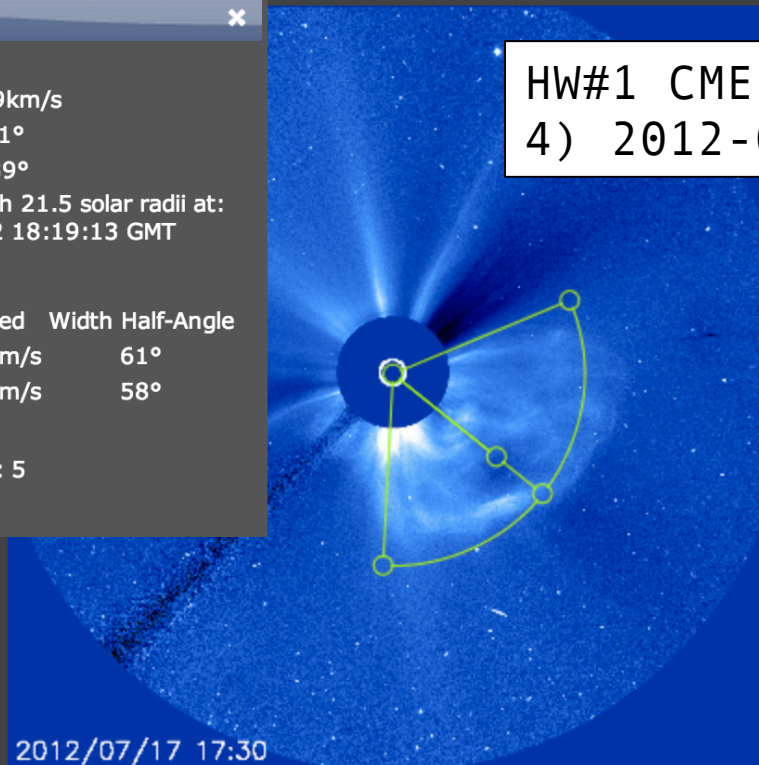
Stereoscopic

Speed: 1019km/s  
Longitude: 61°  
Latitude: -39°  
Expected to reach 21.5 solar radii at:  
Tue, 17 Jul 2012 18:19:13 GMT

Plane-Of-Sky

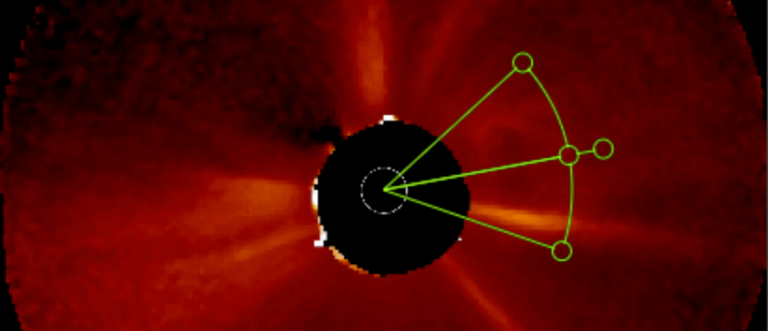
	Speed	Width	Half-Angle
STEREOB:	719km/s	61°	
SOHO:	888km/s	58°	

Kept: 5

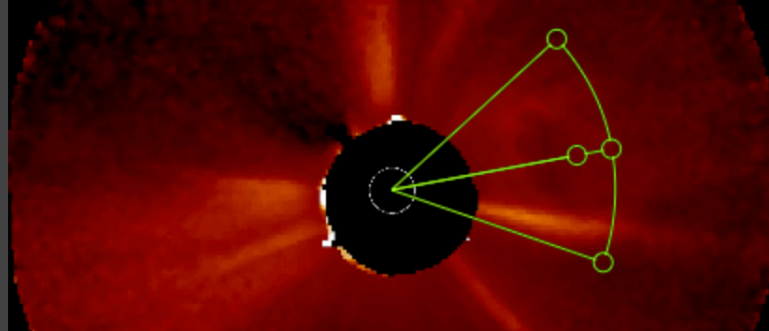


2012/07/17 17:30  
SOHO LASCO C3 Tue, 17 Jul 2012 17:30:00 GMT

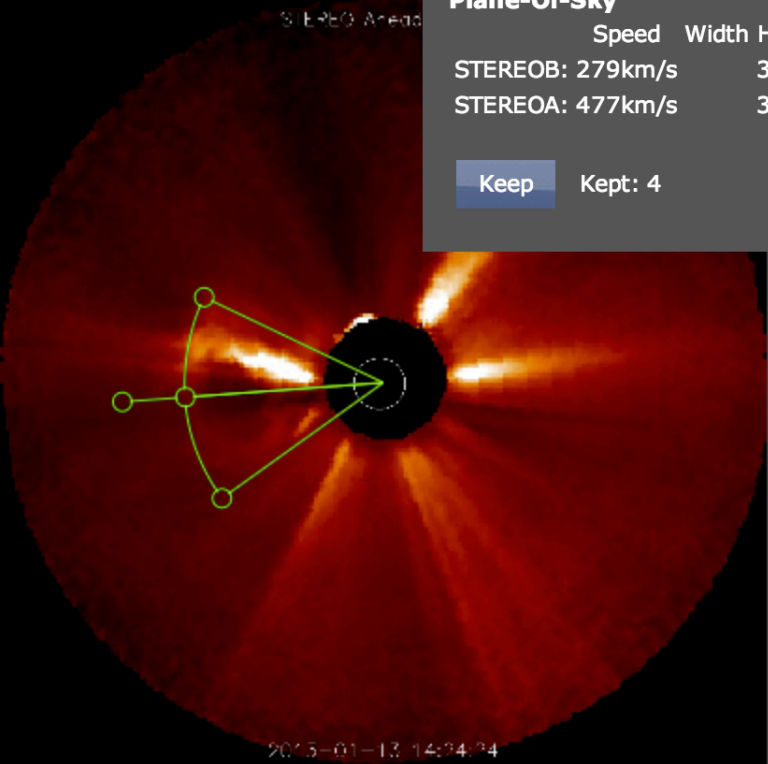
HW#1 CME starting at  
4) 2012-07-17T14:25Z



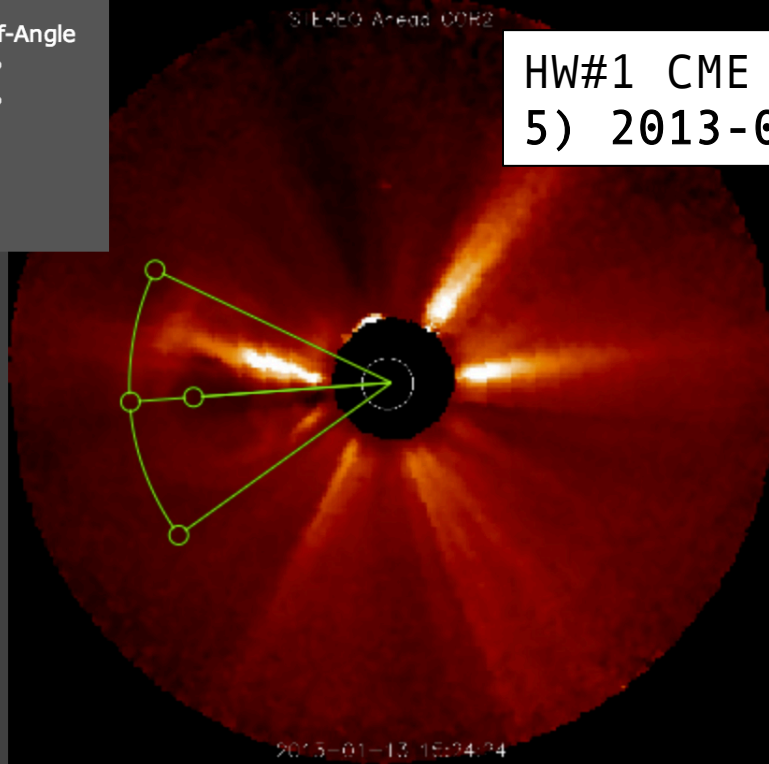
STEREOB COR 2 Sun, 13 Jan 2013 14:24:24 GMT



STEREOB COR 2 Sun, 13 Jan 2013 15:24:24 GMT



STEREOA COR 2 Sun, 13 Jan 2013 14:24:24 GMT



STEREOA COR 2 Sun, 13 Jan 2013 15:24:24 GMT

**Results** ✕

**Stereoscopic**  
Speed: 522km/s  
Longitude: 15°  
Latitude: 1°  
Expected to reach 21.5 solar radii at:  
Sun, 13 Jan 2013 18:36:29 GMT

**Plane-Of-Sky**

	Speed	Width Half-Angle
STEREOB:	279km/s	31°
STEREOA:	477km/s	31°

Keep

Kept: 4

EUV Signatures:  
AIA: flare from AR just north of disk center. EUVI: quick rising loops from behind NE limb in A.

HW#1 CME starting at  
5) 2013-01-13T07:24Z