



HELcats

University of Goettingen

contribution to WP4

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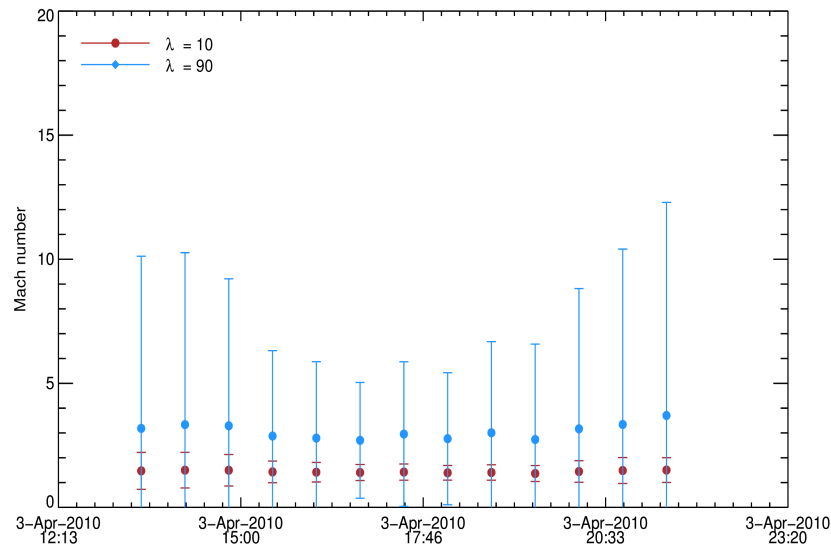
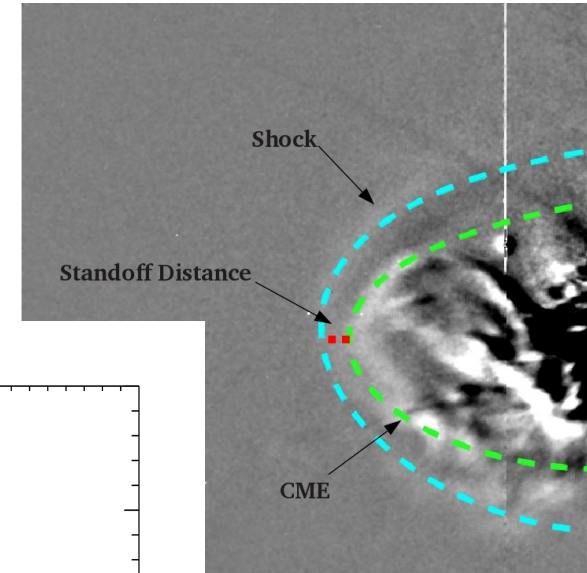
HELcats status report meeting, 05-06 November
2014, ROB, Brussels ,Belgium



STEREO event list

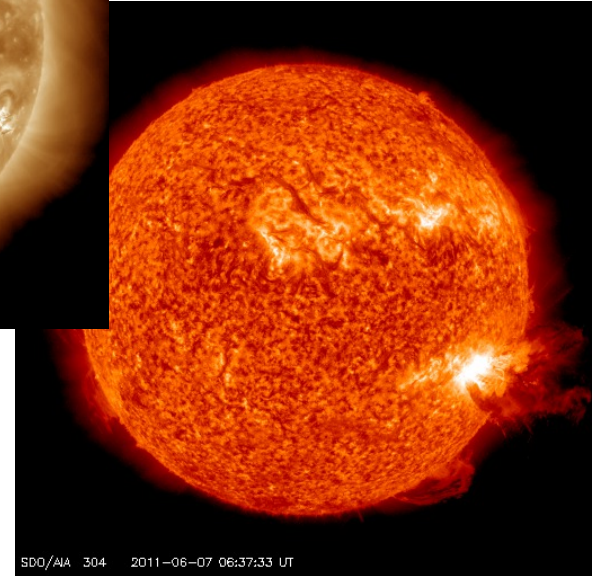
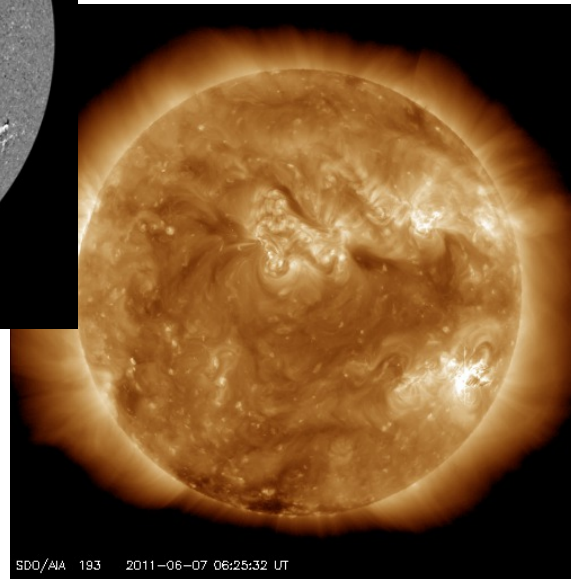
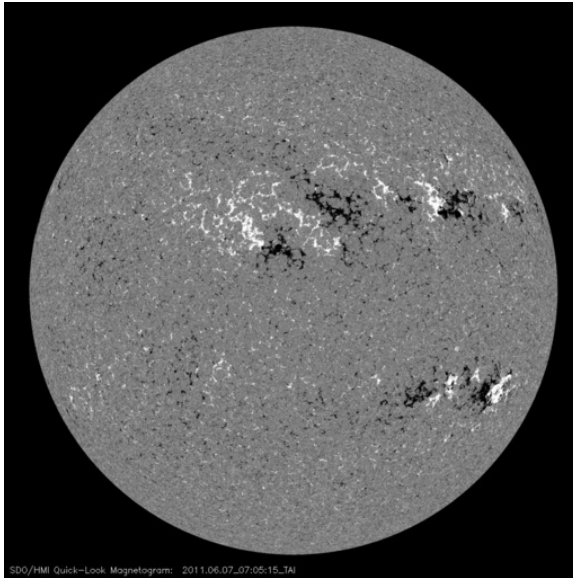
Established for study of evolution of CMEs and CME-driven shock
(SFB 963/A2 – From solar to heliospheric flows and instabilities)

- 2008-12-12
- 2010-04-03
- 2011-06-07*
- 2011-08-03
- 2012-01-19
- 2012-01-23
- 2012-03-07
- 2012-04-23*
- 2012-07-08*
- 2012-07-12
- 2013-03-15



*not observed in-situ

Identification of coronal sources and signatures



Also waves, EUV dimming, post-eruptive arcades



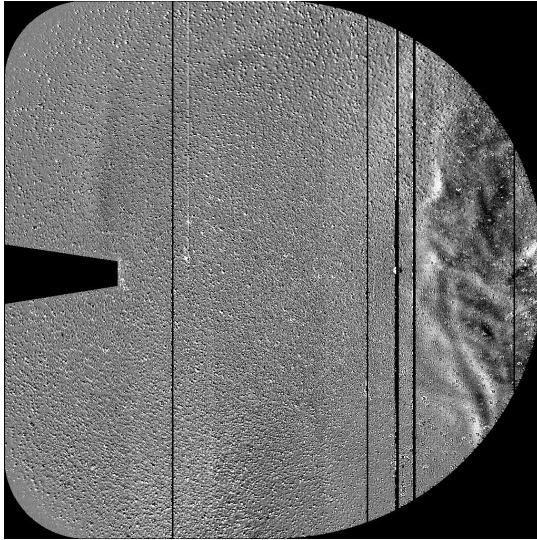


Signatures of CME onset

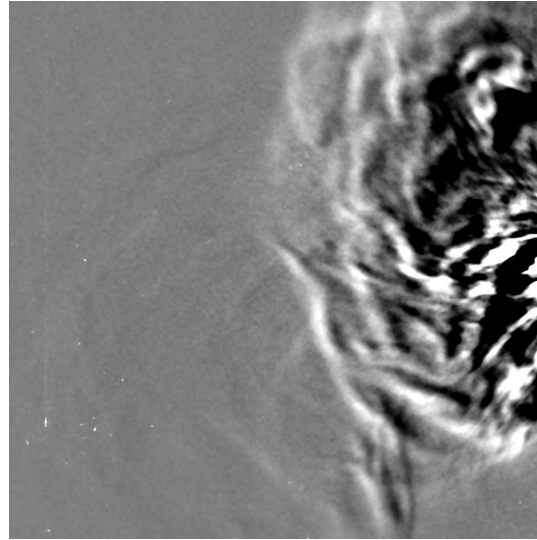
Event	SR ID and location	Flare	EUVI wave	EUVI dimming	Filament eruption	Post eruptive arcade
2008-12-12	-	-	y	y	y	y
2010-04-03	NOAA AR 11059 (S25W03)	B7.4 09:04UT	y	y	y	y
2011-06-07	NOAA AR 11226 (S22W66)	M2.5 06:16UT	y	y	y	y?
2011-08-03	NOAA AR 11261 (N16W28)	M6.0 13:17UT	y	y	-	-?
2012-01-19	NOAA AR 11402 (N32E27)	M2.6 13:43UT	y	y	y	y
2012-01-23	NOAA AR 11402 (N29W21)	M8.7 03:38UT	y	y	y	y
2012-03-07	NOAA AR 11429 (N18E31)	X5.4 00:02UT	y	y	-	y?
2012-04-23	NOAA AR 11461 (N13W17)	C2.0 17:38UT	y	-	-	-
2012-07-08	NOAA AR 11515 (S14W86)	M6.9 16:23UT	y	y	y	-
2012-07-12	NOAA AR 11520 (S13W03)	X1.4 15:37UT	y	y	-	y?
2013-03-15	NOAA AR 11692 (N09E06)	M1.1 05:46UT	y	y	-	y



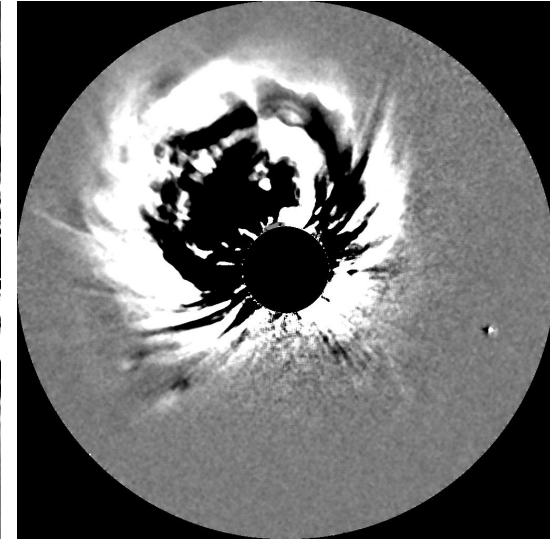
CME evolution



HI2 A 2012 01 21 10:09 UT



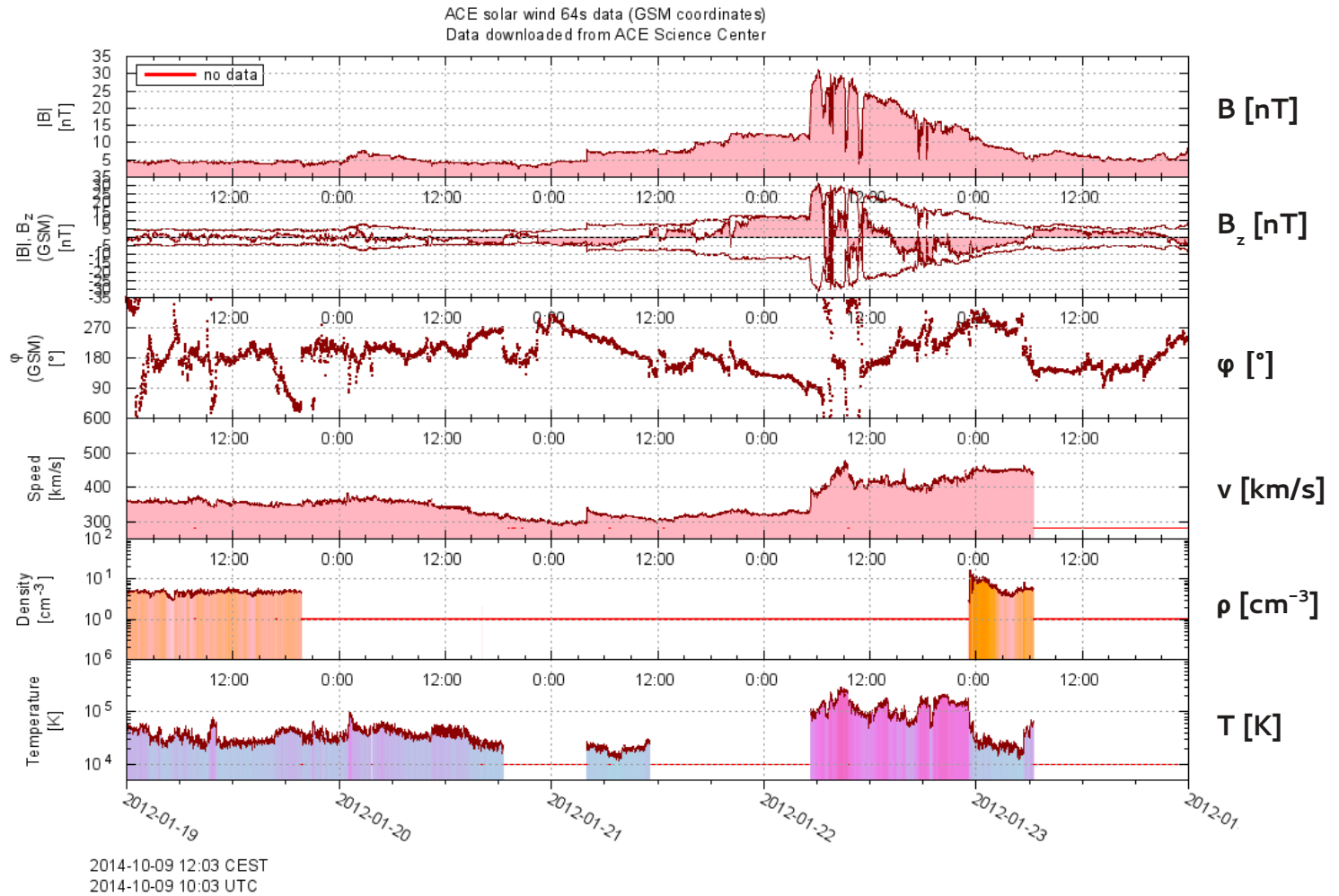
HI1 A 2012 01 20 03:29 UT



COR2 A 2012 01 19 16:54 UT

- Kinematic properties of CMEs (WP3) are compared to SR properties and in-situ measurements

In-situ comparison

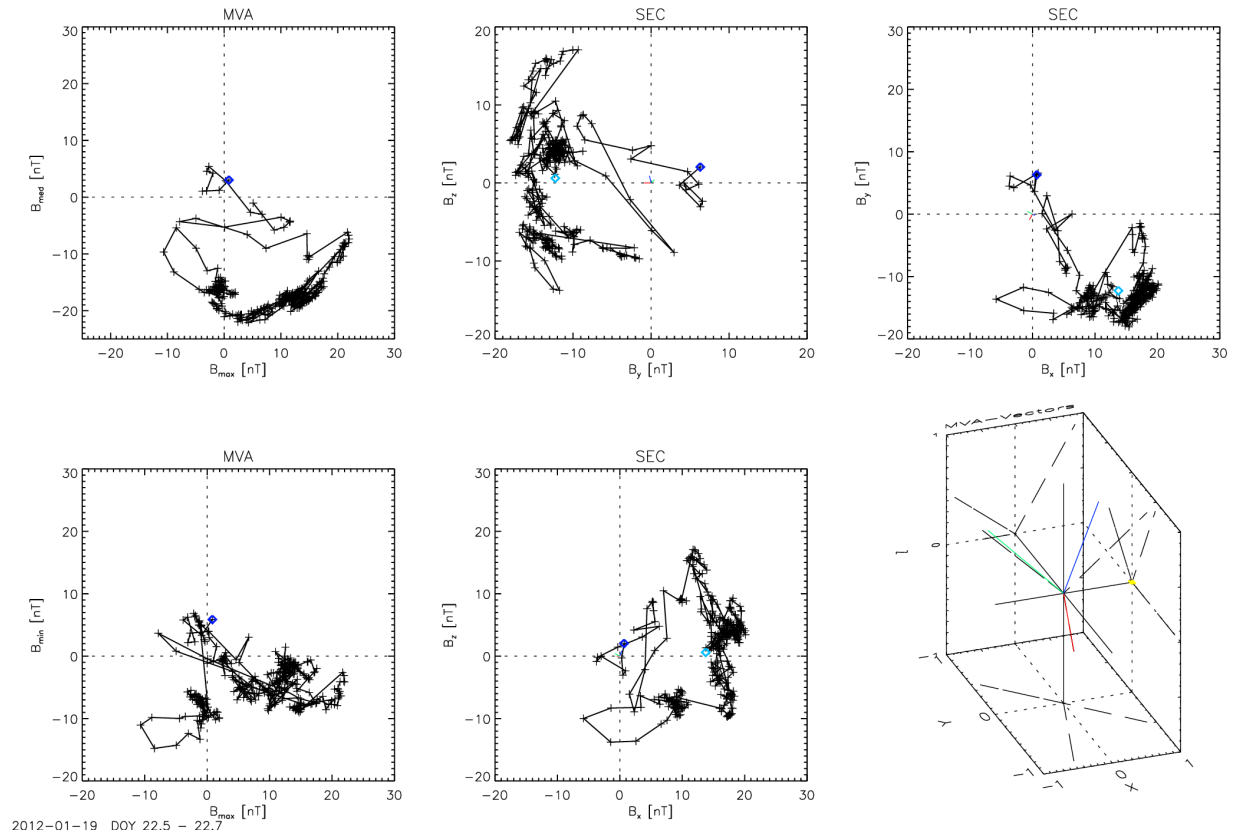


Plots courtesy of M. Venzmer



In situ comparison - MVA

- Development of minimum variance analysis for in-situ data (M. Venzmer, V. Bothmer)



Plots courtesy of M. Venzmer