

IMPACT SWG Status Report – December 11, 2006



Early IMPACT Timeline Status

Day 3,4	10-28, 10-29	IDPU/MAG/SWEA and STE turned on
Day 7	11-1	Booms deployed
Day 19	11-13	SEP Suite on
Day 28/35	11-22/11-29	MAG rolls at P1, P3
Day 54	12-18	SIT HVPS still pending
Day ??(A), 70(B)	12-??(A), 1-3(B)	SIT and SEPT covers deploy still pending

IMPACT Instrument Status

* Boom Suite

- MAG On but offsets larger than expected (~30 nT)
- SWEA Operating
- STE Suspected light contamination issue, especially for STE-U units. Possible damage to STE-U-B? STE-D seems to be working on both A and B when Earth and moon are out of FOV

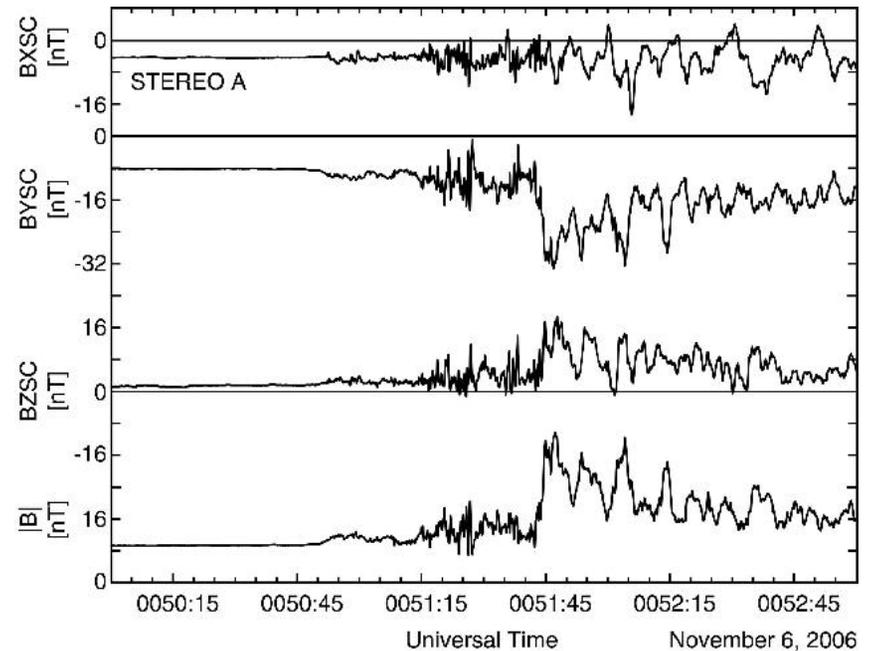
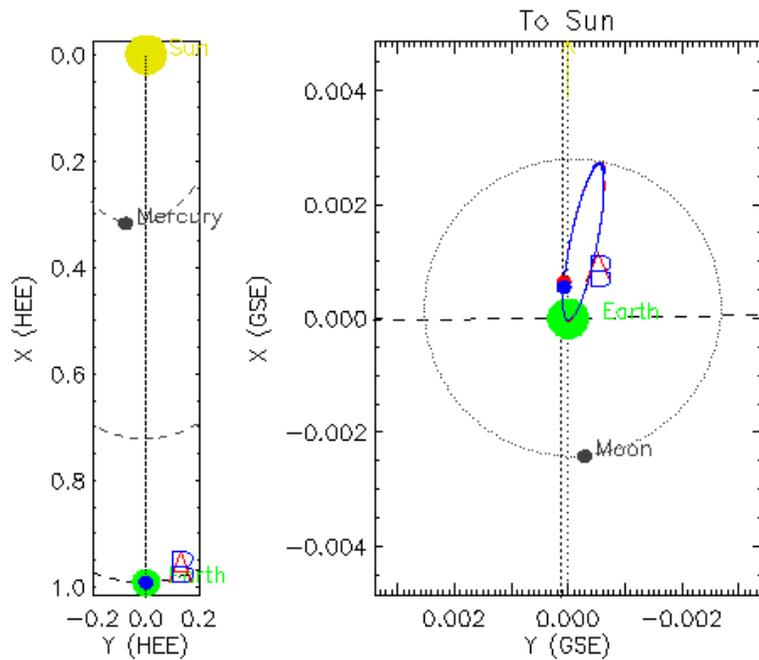
• SEP Suite

- SEPT Power on, doors closed, detects radiation belt background near perigee
- SIT Power on except HV, doors closed
- LET Operating (LET B stopped sending data after the Post P3 eclipse for reasons TBD, but recovered upon auto reboot)
- HET Operating

Status of IMPACT Data Products

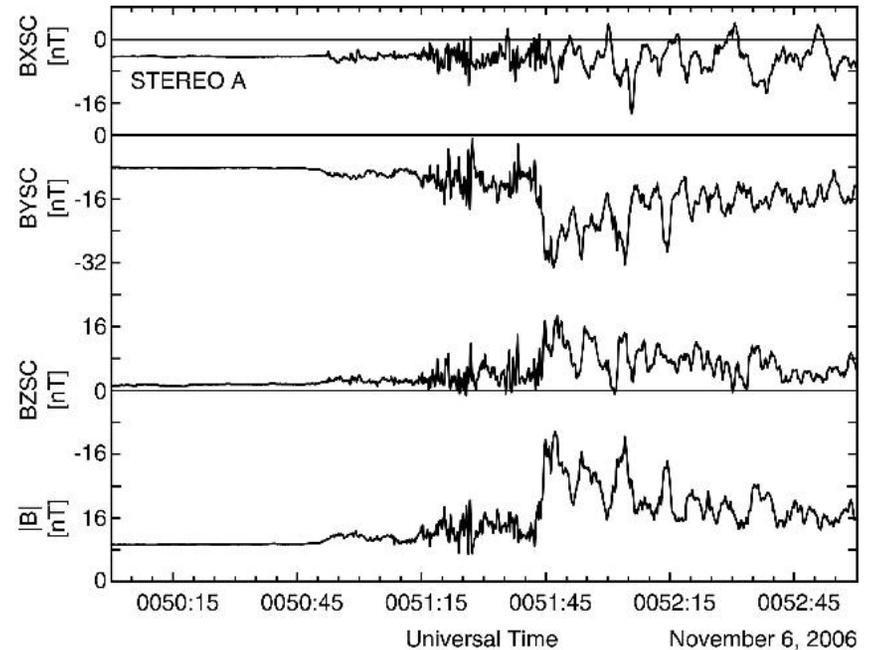
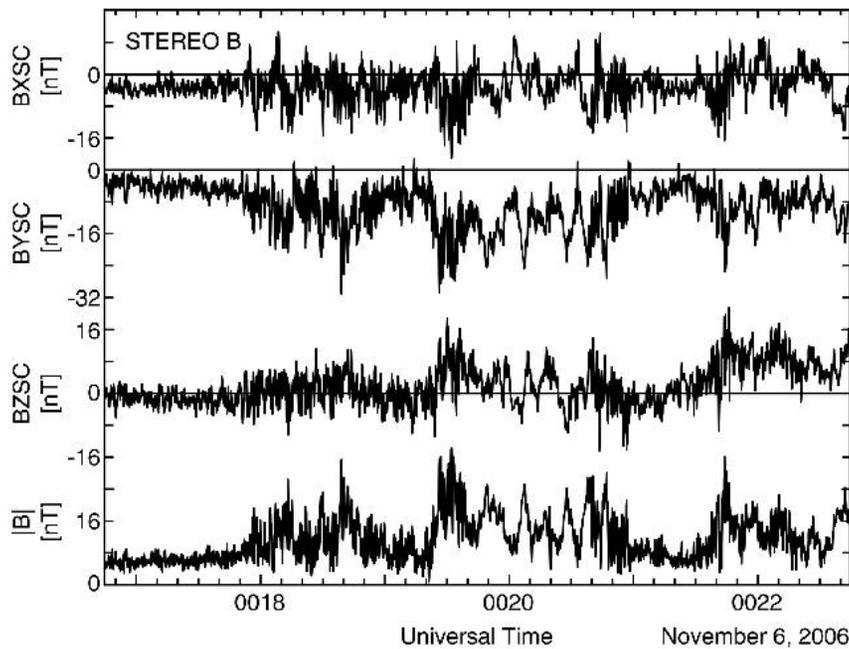
- Beacon
 - Produced at SSC (GSFC)
 - Uses NOAA antenna partners for 24/7 space weather monitoring
(NOT IMPLEMENTED UNTIL HELIOCENTRIC)
- L1
 - Produced at UCB after validation by instrument teams
 - Highest time resolution data in physical units of all measured quantities
 - Available in variety of formats (CDF, ASCII, FITS, ...)
 - Reside natively in ISTP-compliant CDF's
(Data Files on-line for MAG, SWEA, STE, LET, HET. Some reprocessing required.
SEPT on but doors closed, SIT partly on with door closed. LET data also available at Caltech)
- L2
 - Produced at UCLA
 - Key parameter (1-minute cadence) data in physical units
 - Includes PLASTIC and SWAVES
 - Available in ASCII
(NOT YET AVAILABLE)
- L3
 - Produced at UCLA
 - Higher level products such as event lists
 - ASCII
(NOT YET AVAILABLE)

Sample MAG data



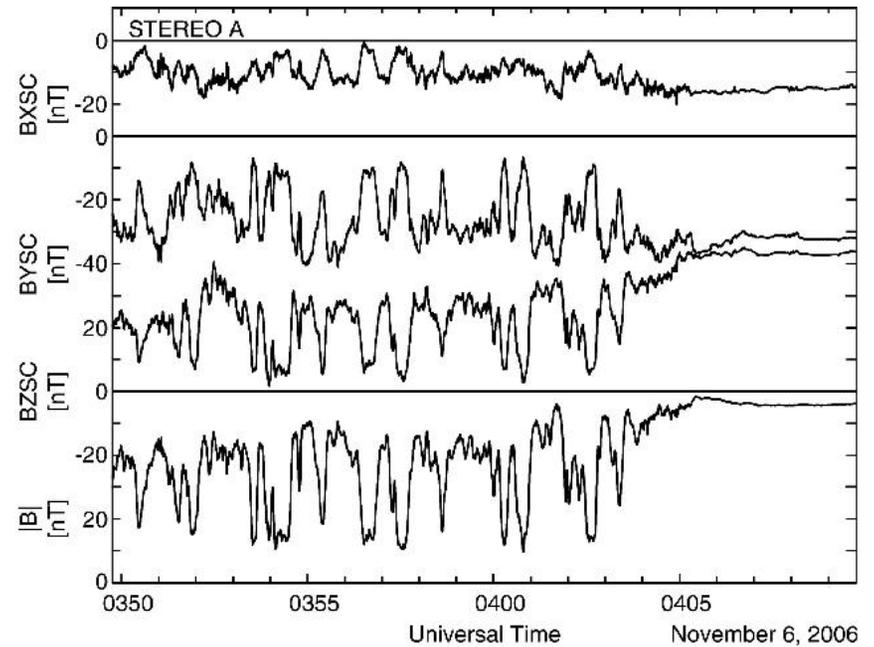
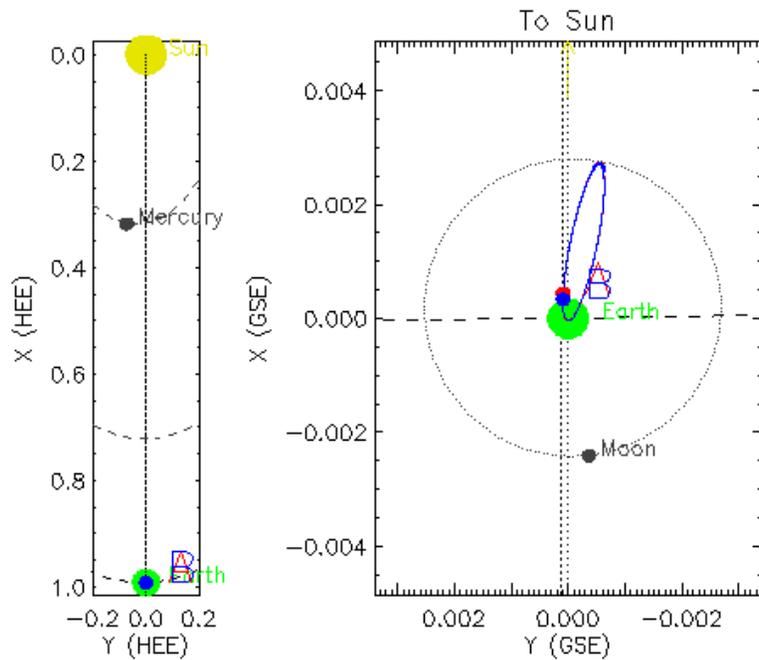
Typical bow shock crossing

Sample MAG data



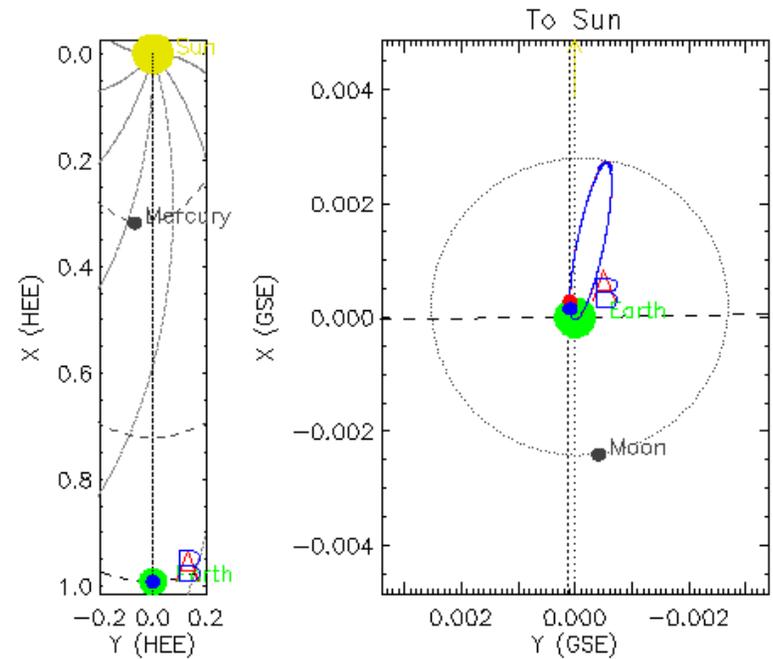
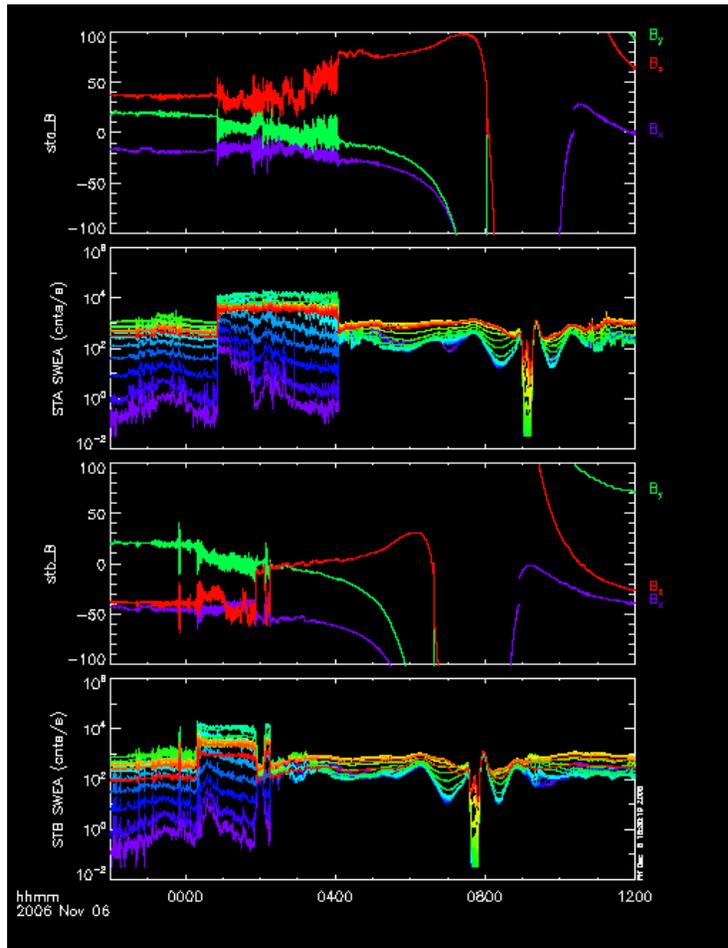
Two bow shock crossings showing contrast

Sample MAG data

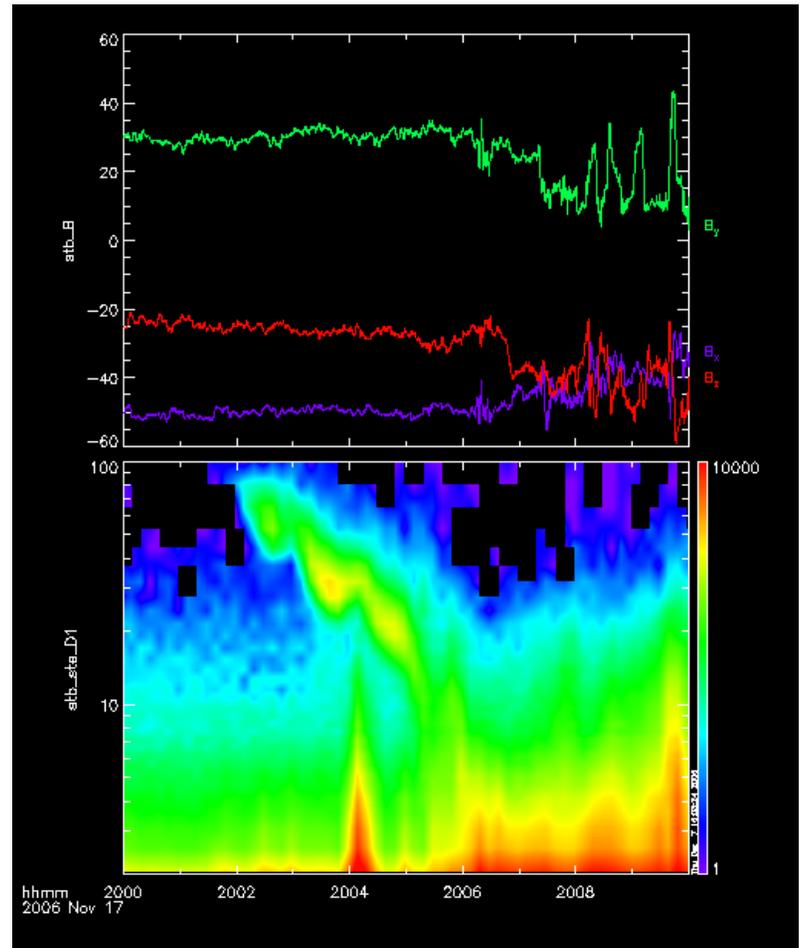
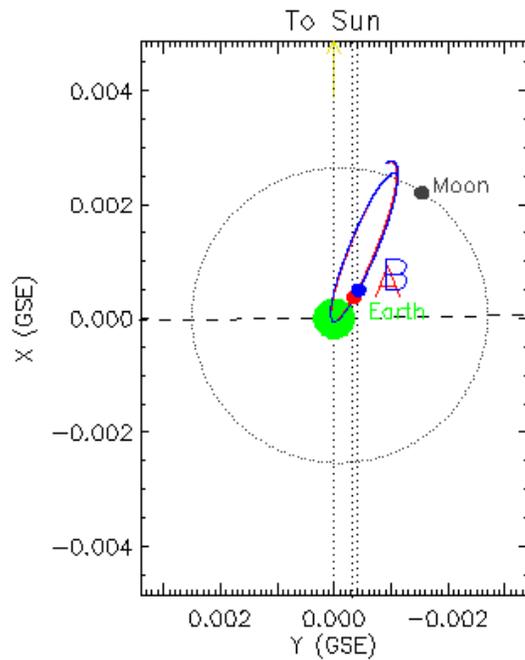
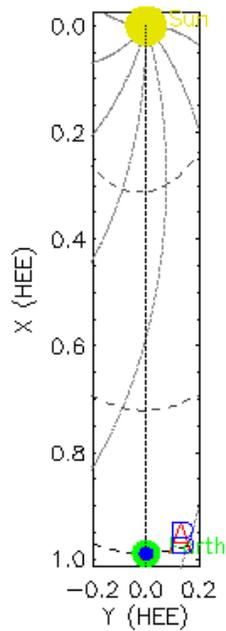


Magnetopause crossing with
Mirror Mode waves

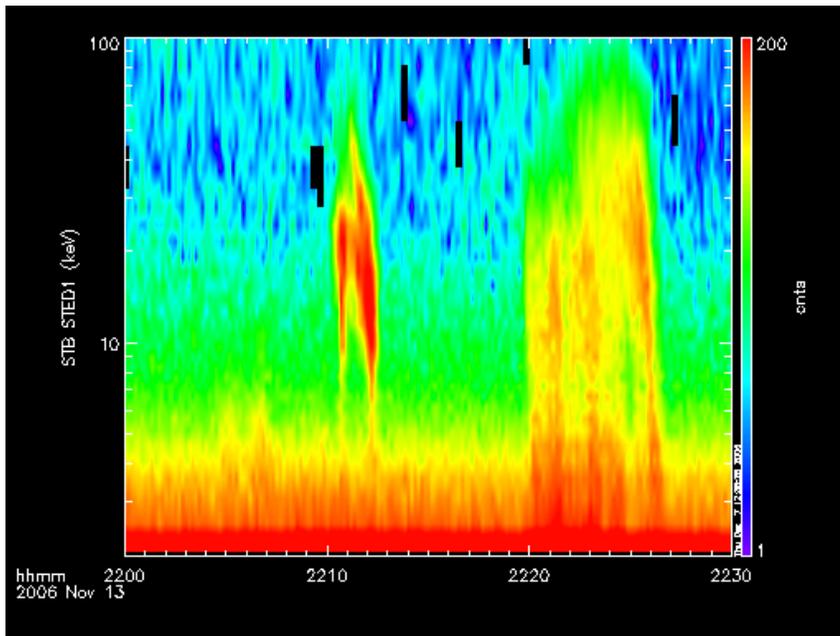
Sample SWEA data, with MAG



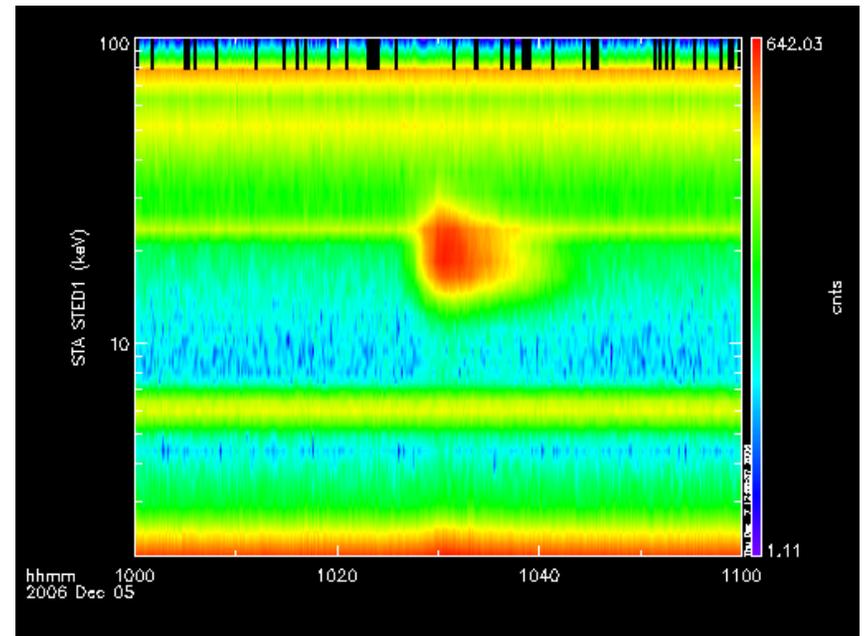
Sample STE data



Other STE-D data



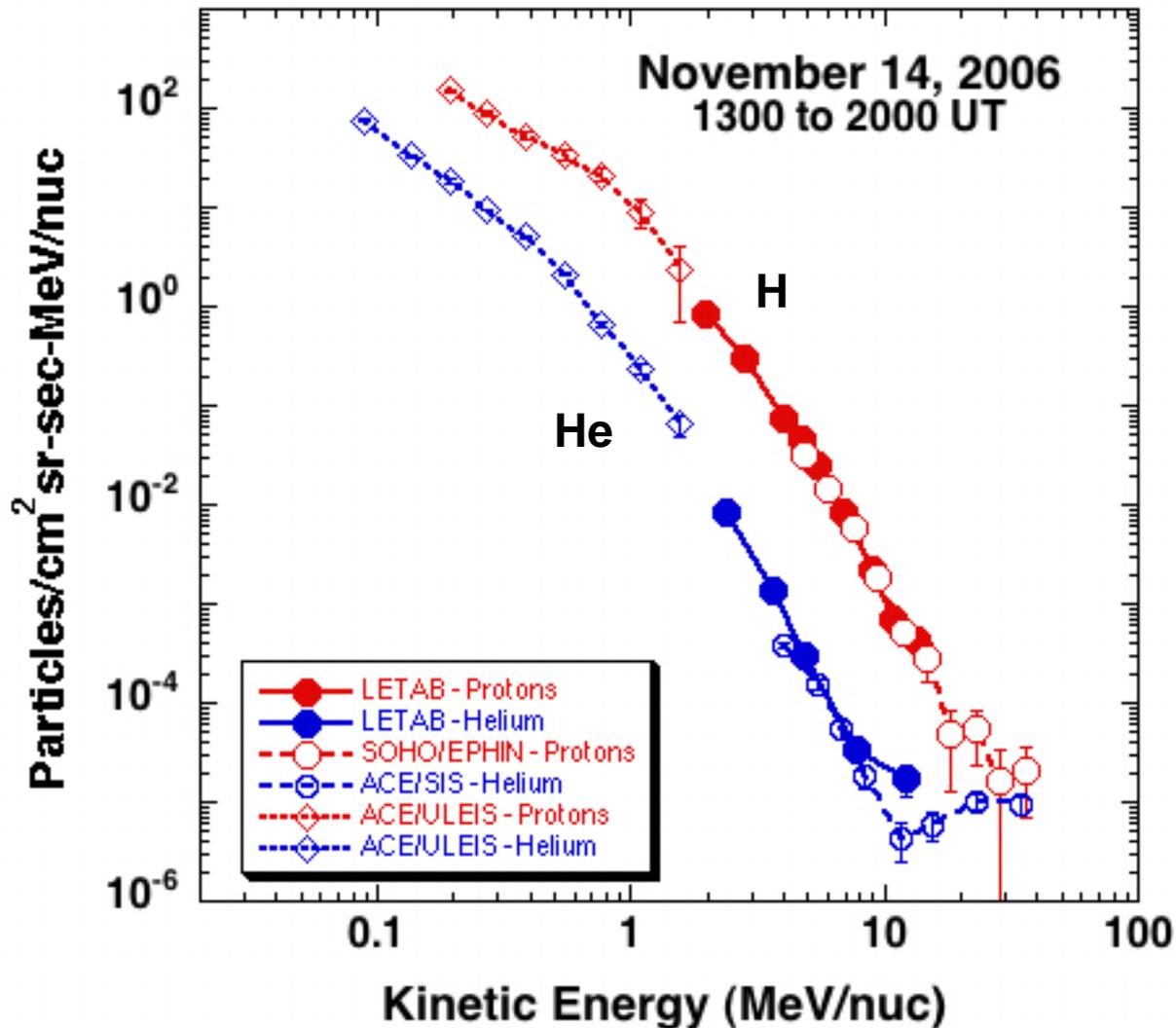
Another foreshock event
Showing electron dispersion



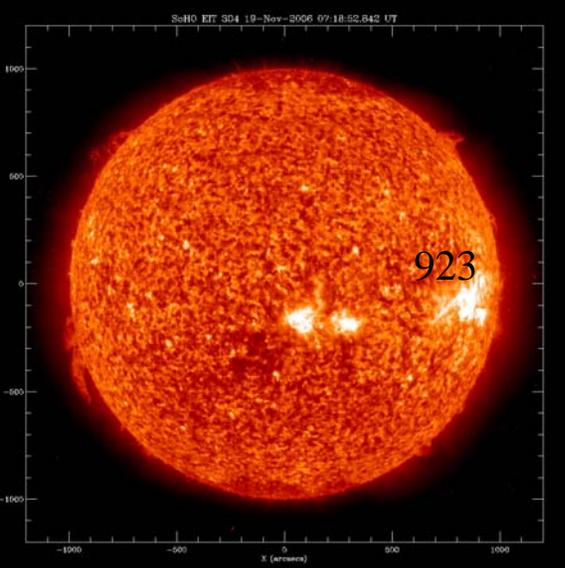
Detection of HXR burst from
Dec 5 flare through STE door

Sample LET Data

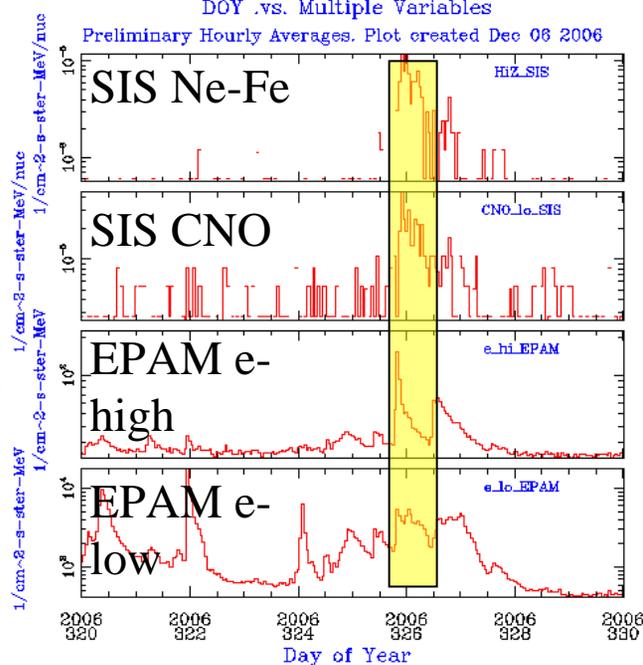
from the 1st (A) and 2nd (B) day of operation



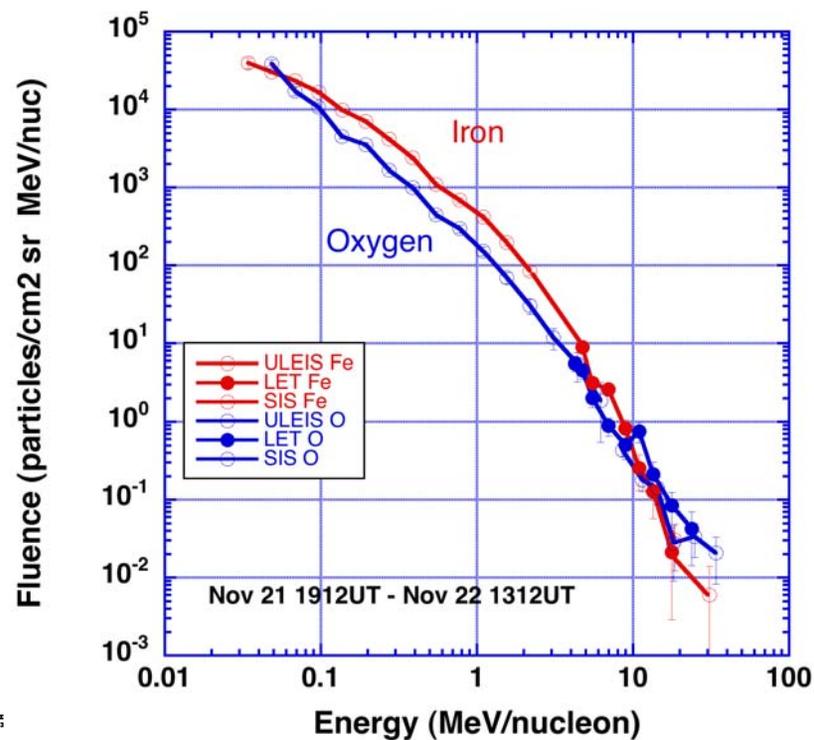
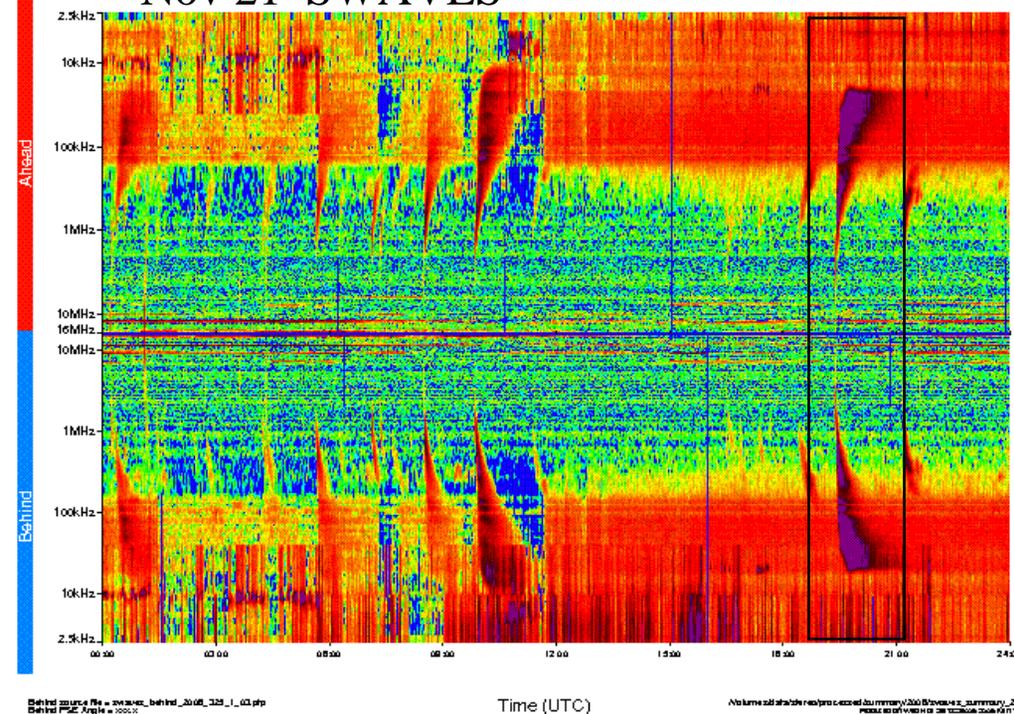
Good agreement between
LETs A/B, SOHO/EPHIN and
ACE (ULEIS & SIS)



As AR923 rotated over the west limb, it flared resulting in a type III radio burst observed by SWAVES and Wind/WAVES. A typical small, impulsive, ^3He -rich SEP event was then observed by LET as well as ULEIS and SIS on ACE. The combined ULEIS-LET-SIS spectra for oxygen and iron are similar to those observed in previous studies, with Fe exceeding O in abundance.



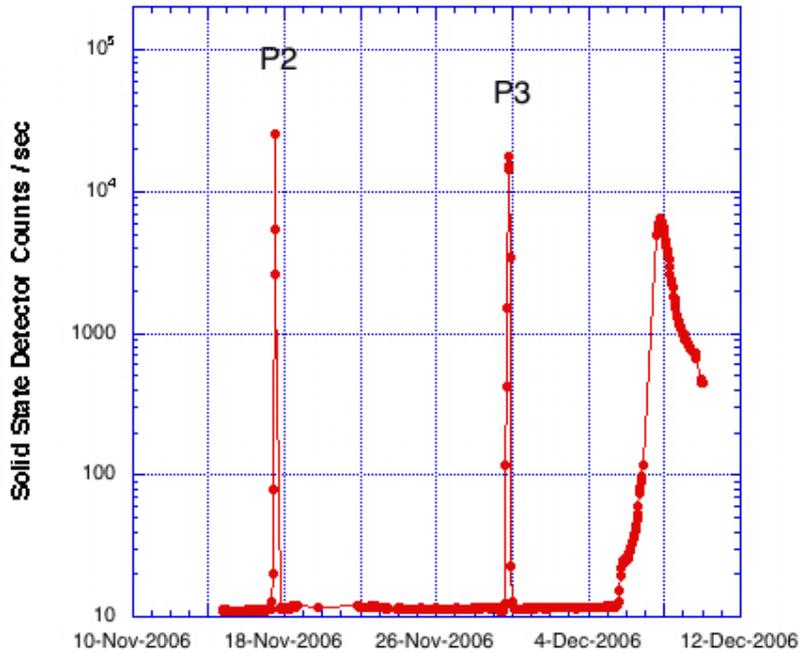
Nov 21 SWAVES



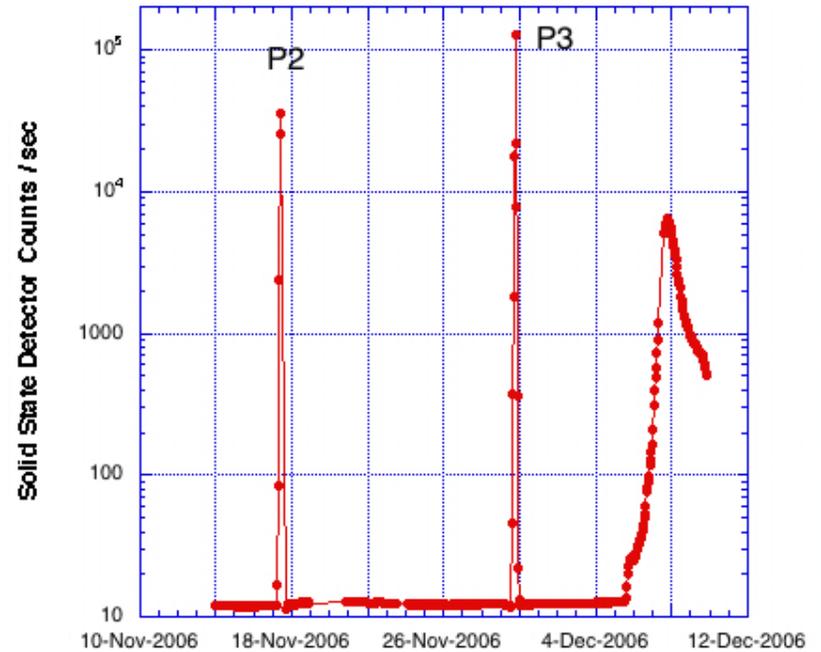
IMPACT / SIT A & B SSD counts/sec and temp summary

12/10/06

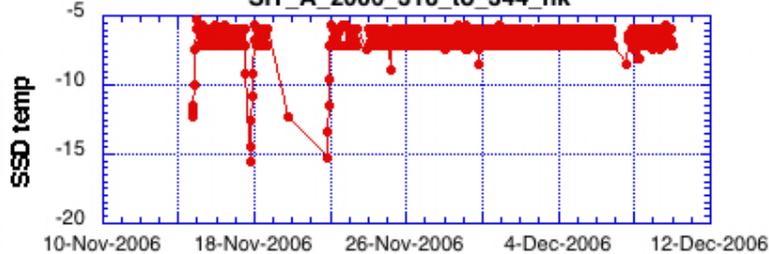
SIT_A_2006_318_to_344_rates



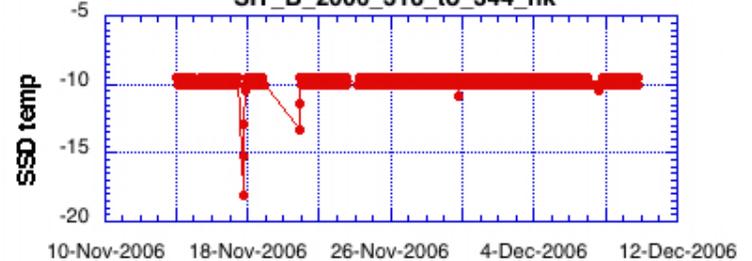
SIT_B_2006_318_to_344_rates



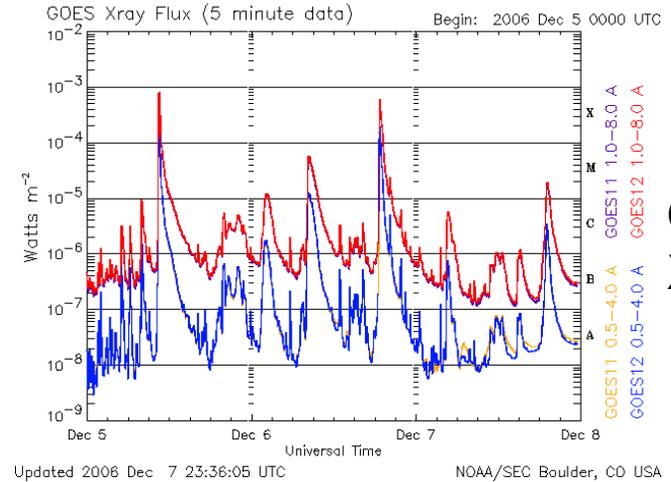
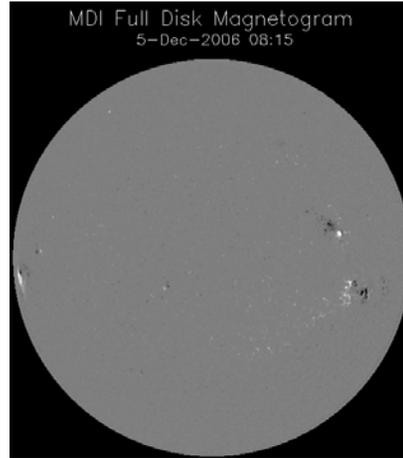
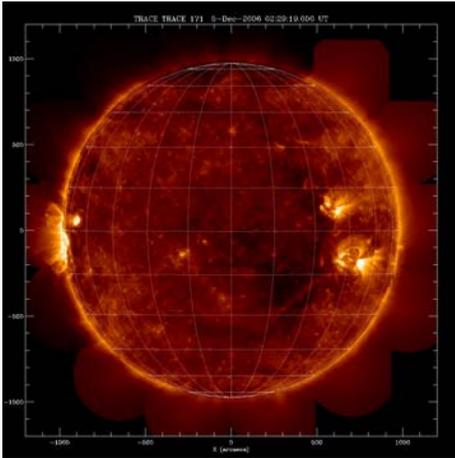
SIT_A_2006_318_to_344_hk



SIT_B_2006_318_to_344_hk

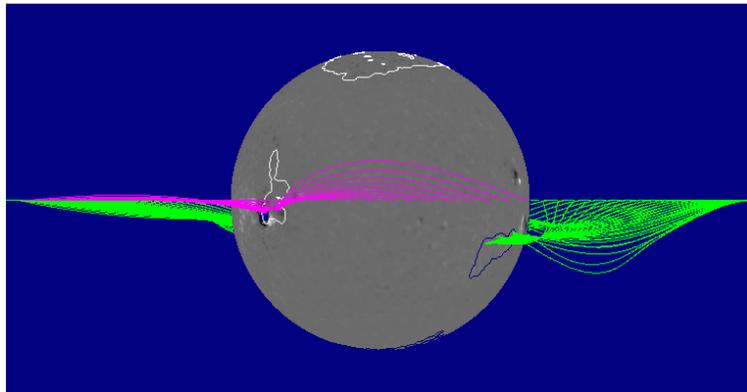


East Limb Solar Event (flare + CME(?)) December 5, 2006

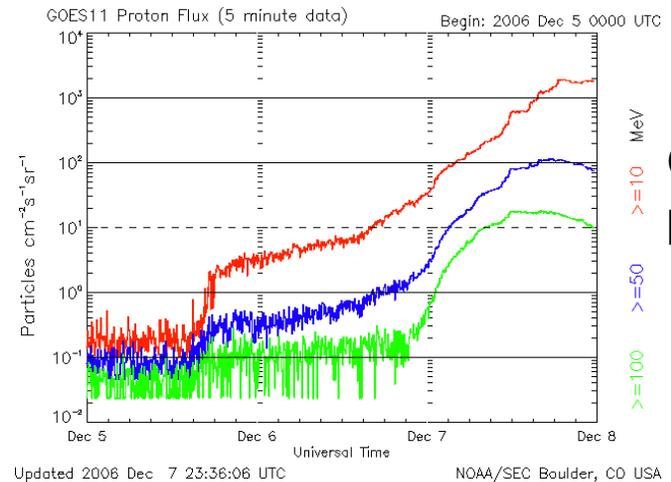


GOES
X-rays

TRACE and SOHO MDI images



Dec 7 MDI with SolarSoft PFSS field lines



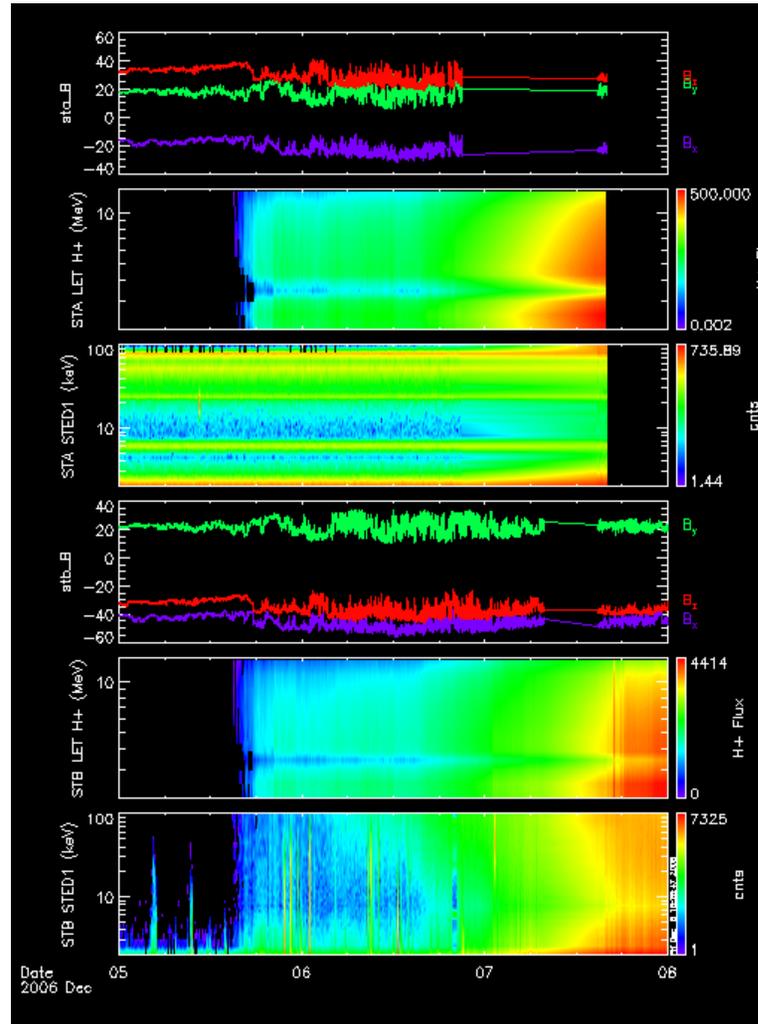
GOES
protons

Browse Plot of some IMPACT early data from the December 5 flare/CME-related events

MAG-not corrected for offsets here

LET-energy channel Boundaries still to be adjusted

STED-A with door closed, showing Calibration source and STED-B with door open



MAG-A

LET-A

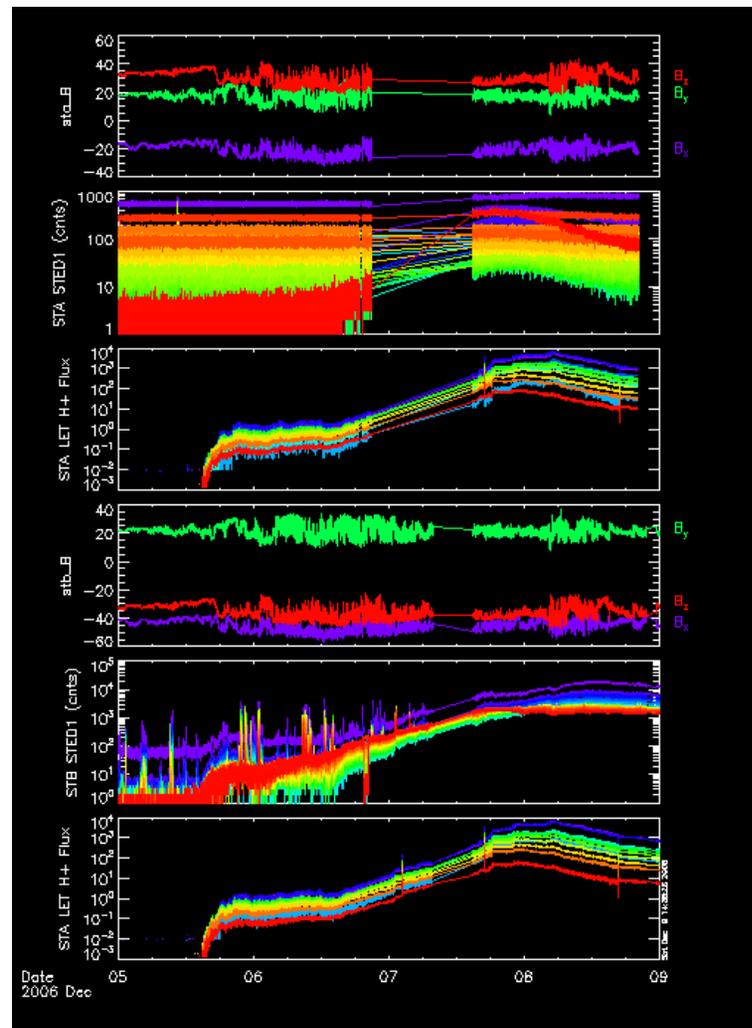
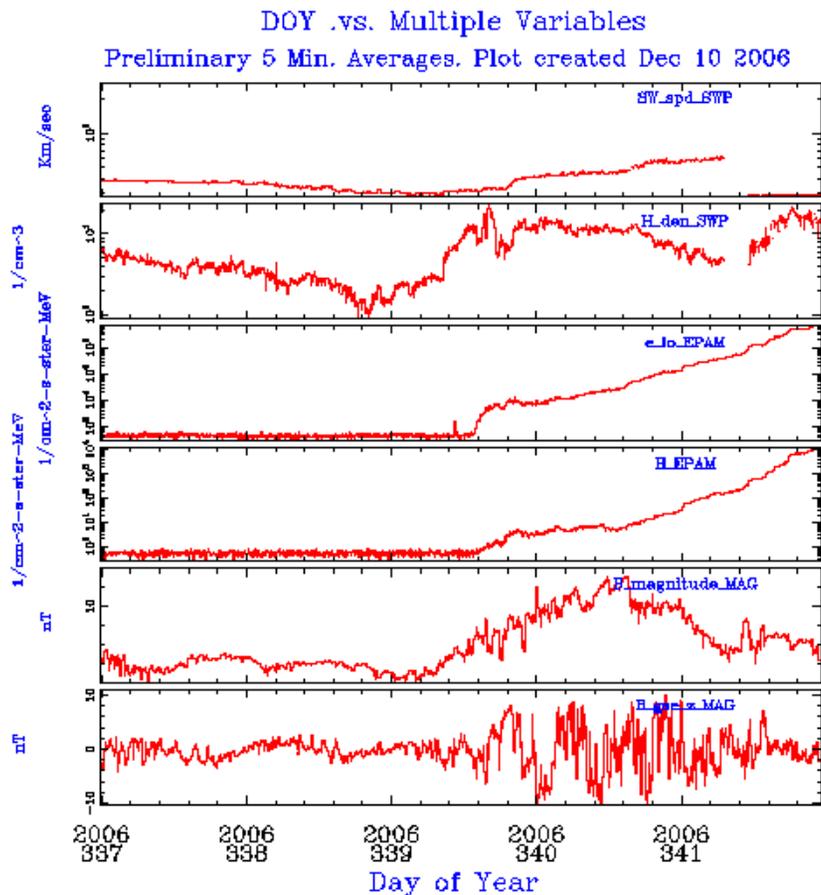
STED-A

MAG-B

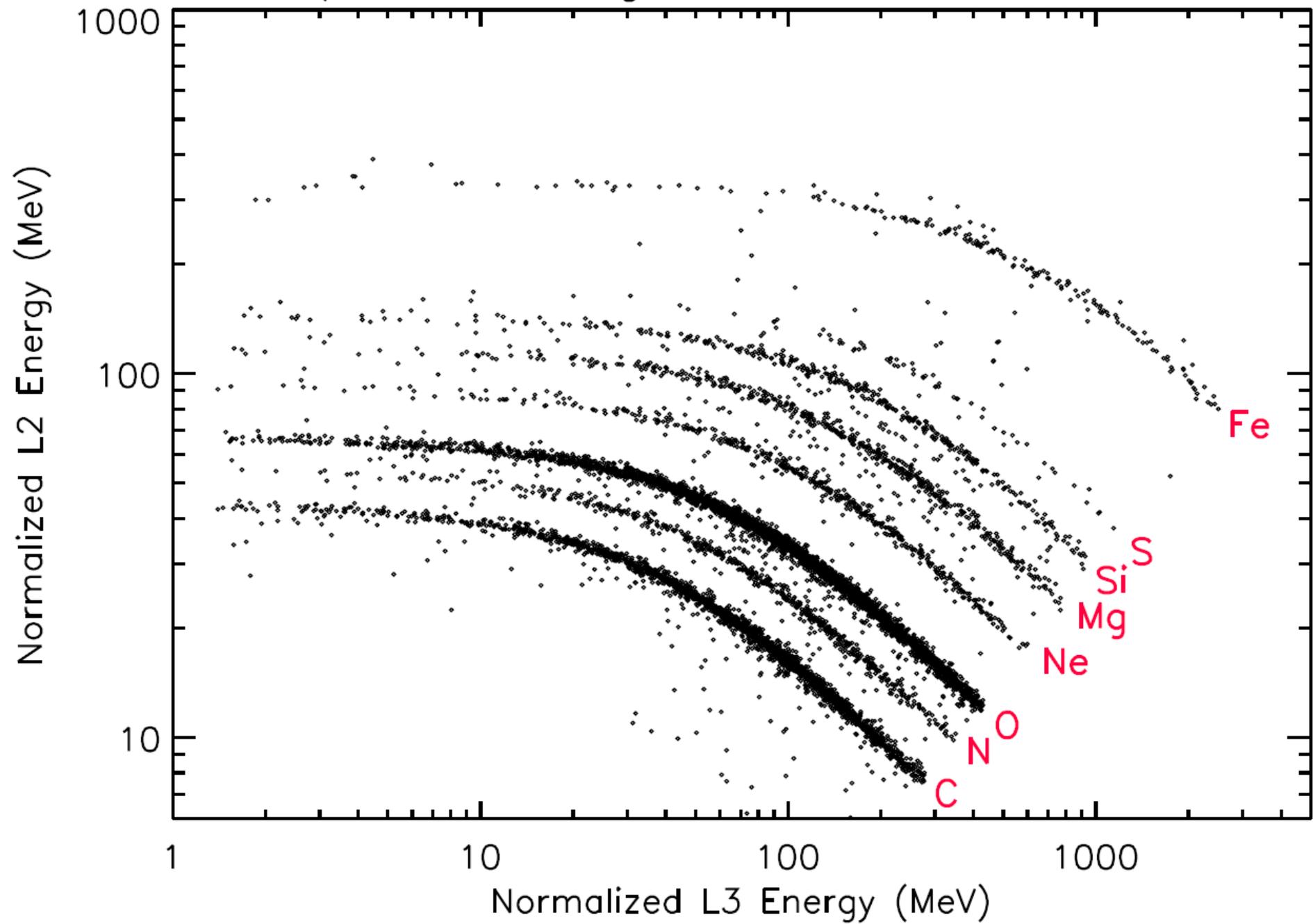
LET-B

STED-B

Comparison with ACE browse data



LET/Behind, Range 3, DOY 337–342.3, Z>4

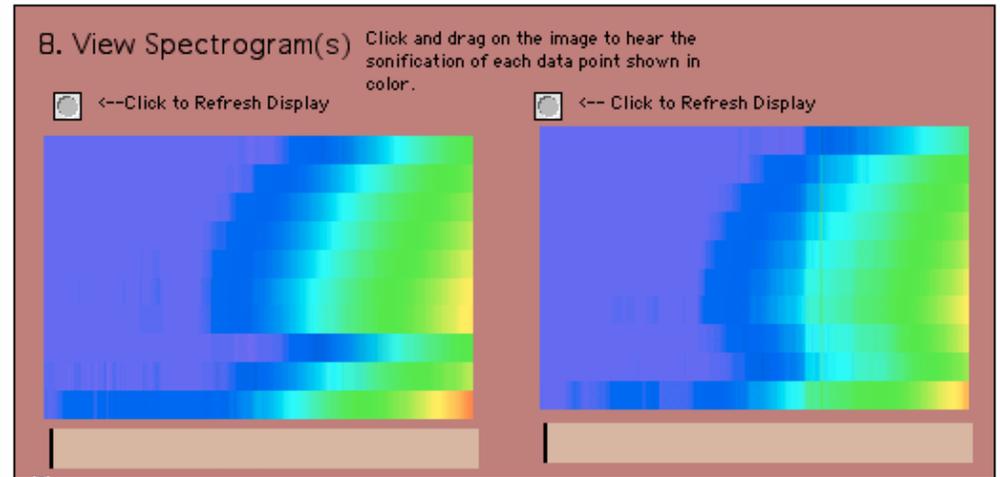


Where to Get IMPACT Data

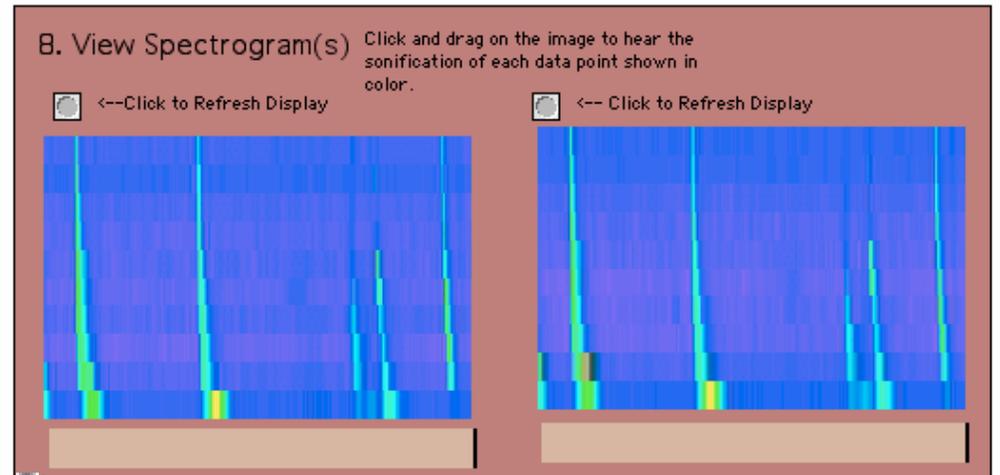
- L0 and L1 data online at:
<http://stereo.ssl.berkeley.edu>
- SEP-specific data at:
<http://www.srl.caltech.edu/STEREO/index.html>
- Level 2 data and MAG-specific info will be available through UCLA (website to broadcast soon)
- Email me with any comments, problems or suggestions at: peters@ssl.berkeley.edu

IMPACT E/PO highlights

- Teacher PD workshops in CA continuously and at the National Science Teacher Conference (NSTA) in 2007.
- Sonification continued:
 - Nov 30th in a science museum in the UK
 - New STEREO (IMPACT & SWAVES) data!



LET SEPs, Dec. 6 + 40 hrs



SWAVES type-3 bursts, Nov. 22 + 5hrs