Van Allen Probe Mission Science Working Group Meeting 2/26/ 2013

EFW Update

John Wygant and EFW Team

John Hopkins University Applied Physics Laboratory

2/26/ 2013

EFW SWG Update 2/26/ 2013

Instrument status:

Performing Well.

There some charging issues but we have adjusted bias values to minimize pre-amplifier saturation.

We are getting good data from storms

We are still fine Tuning Bias, Guard and Ushers values--Photo-emission form sensors changes over mission

Level 2 File Production

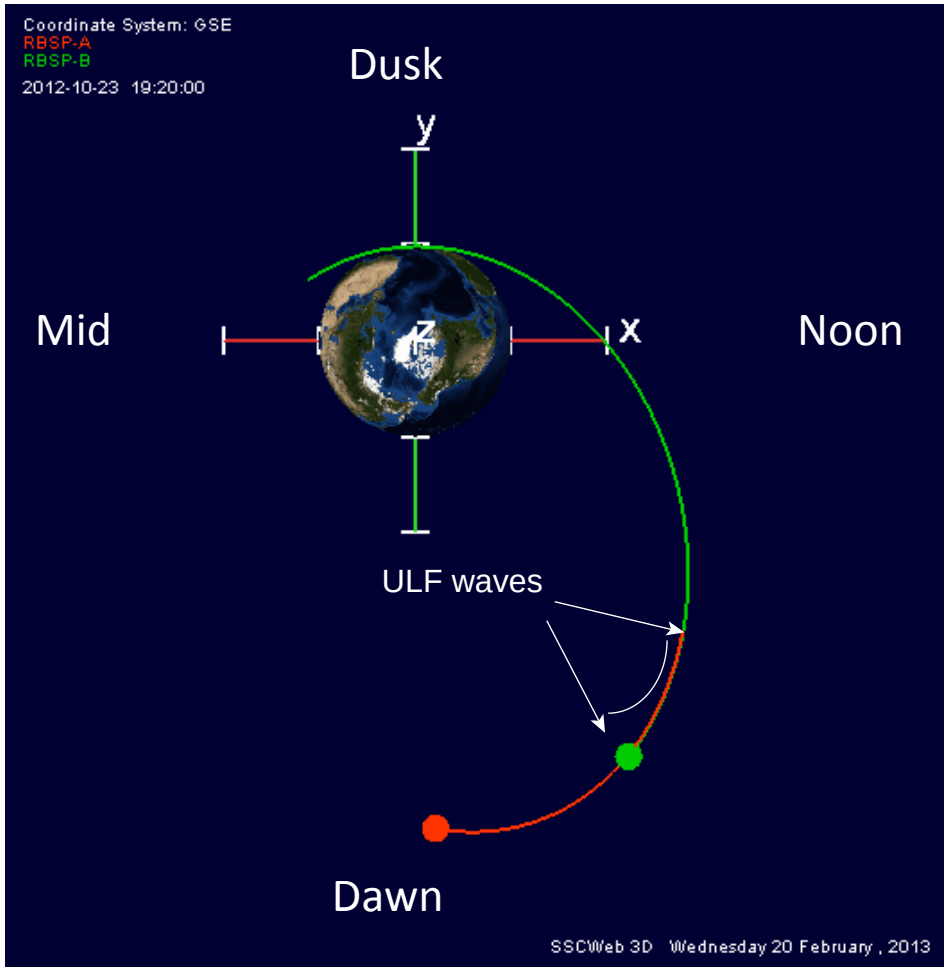
- Level 2 Data Files: In progress
- Expect files available in two weeks.
- They will posted on SSL SOC Website at SSL Berkeley.
- Files will include spinfit electric field data (high quality measurement of electric field spin plane at 11.5 second cadence). Spin fits mitigate probe saturation that sometimes occurs during storms are more accurate than ordinary despun data..

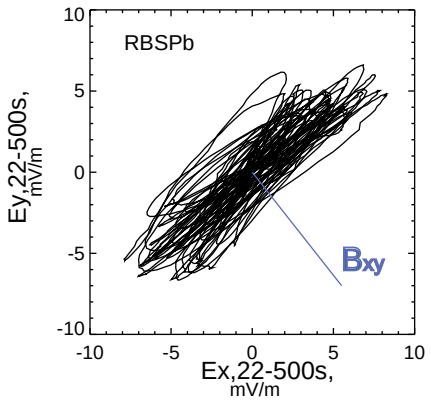
BARREL Campaign:

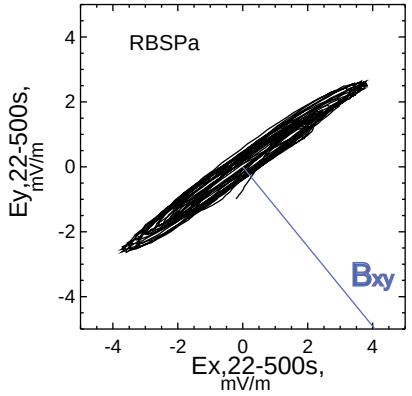
- Over.
- This campaign was a central focus of the EFW efforts over the last two months.
- Daily telecon to download Burst data during conjunctions. Telecon Leaders: Alexa Halford, Aron Brenneman, and, in last, week Kris Kersten
- Numerous BARRREL-RBSP conjunctions: Rough estimate 20 hours of 16 ksamples E-field and B field data during best conjunctions. Significant help from EMFISIS, ECT, and RBSPICE.
- Suggest continuing BARREL Telecon 1-2 days a week or on an as needed basis for event comparison and data analysis. All interested parties invited. Same call in number?

EFW Telecon Support

- Biweekly Science Telecon
- Weekly EFW SOC Telecon to organize burst modes/triggering/downloads and bias sweeps for adjusting sensor performance.
- Bias sweeps scheduled for Wednesdays and are cancelled if there is a forcast of strong geomagnetic activity.







Dai Lei Presentation:

Poloidal oscillations with sometime large ampitude azimuthal E-fields First(?!)

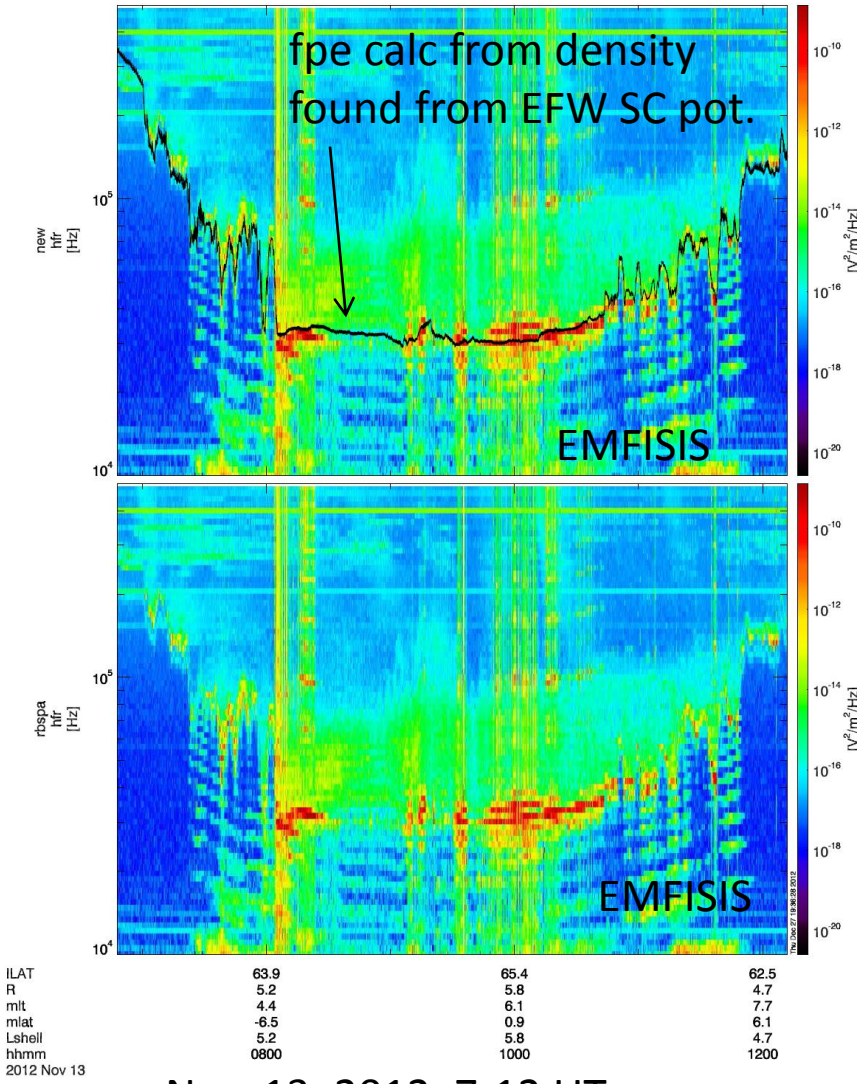
B-field oscillations in meridonal Plane and orthogonal to back ground B-field (EMFISIS)

Waves last 2.5 hours

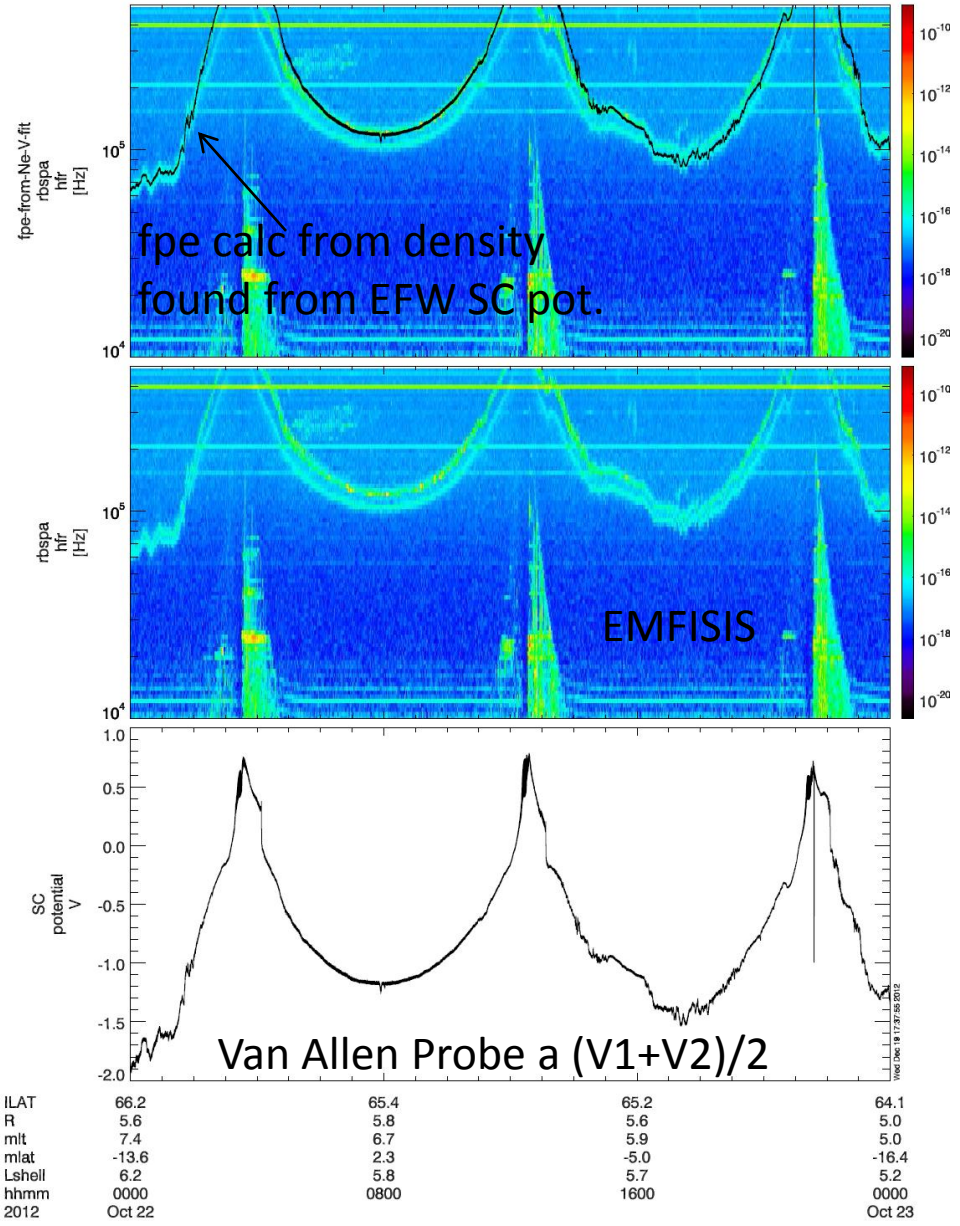
Correlated Fluctuations with Electrons and Ion (MagEIS)

Recent Paper: Dave Sibeck Paper and Work by Kazue Takahashi

Density fit to spacecraft potential (Scott Thaller)



Nov. 13, 2012, 7-12 UT



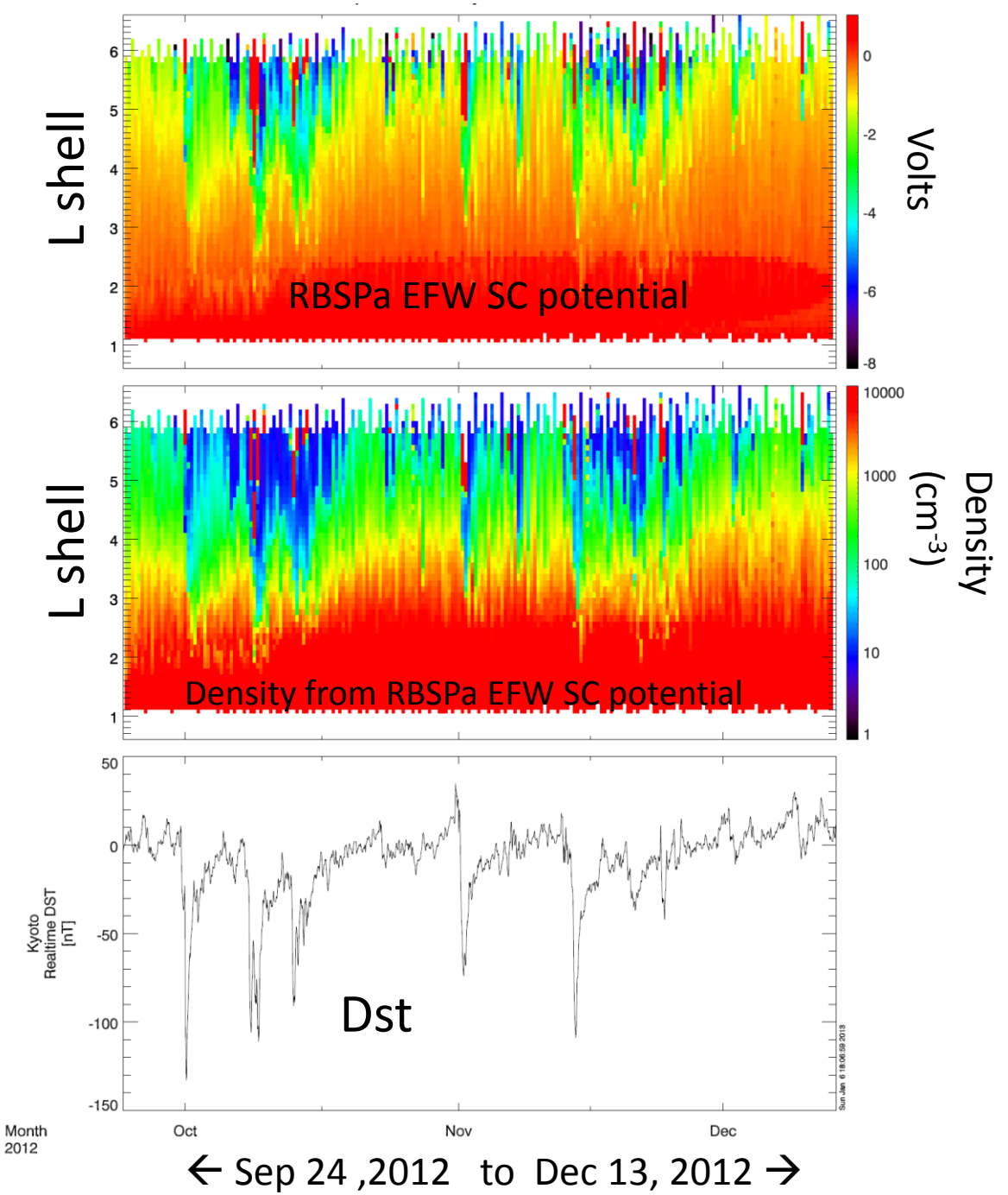
Oct 22, 2012, whole day

Negative of spacecraft potential V=(V1+V2)/2

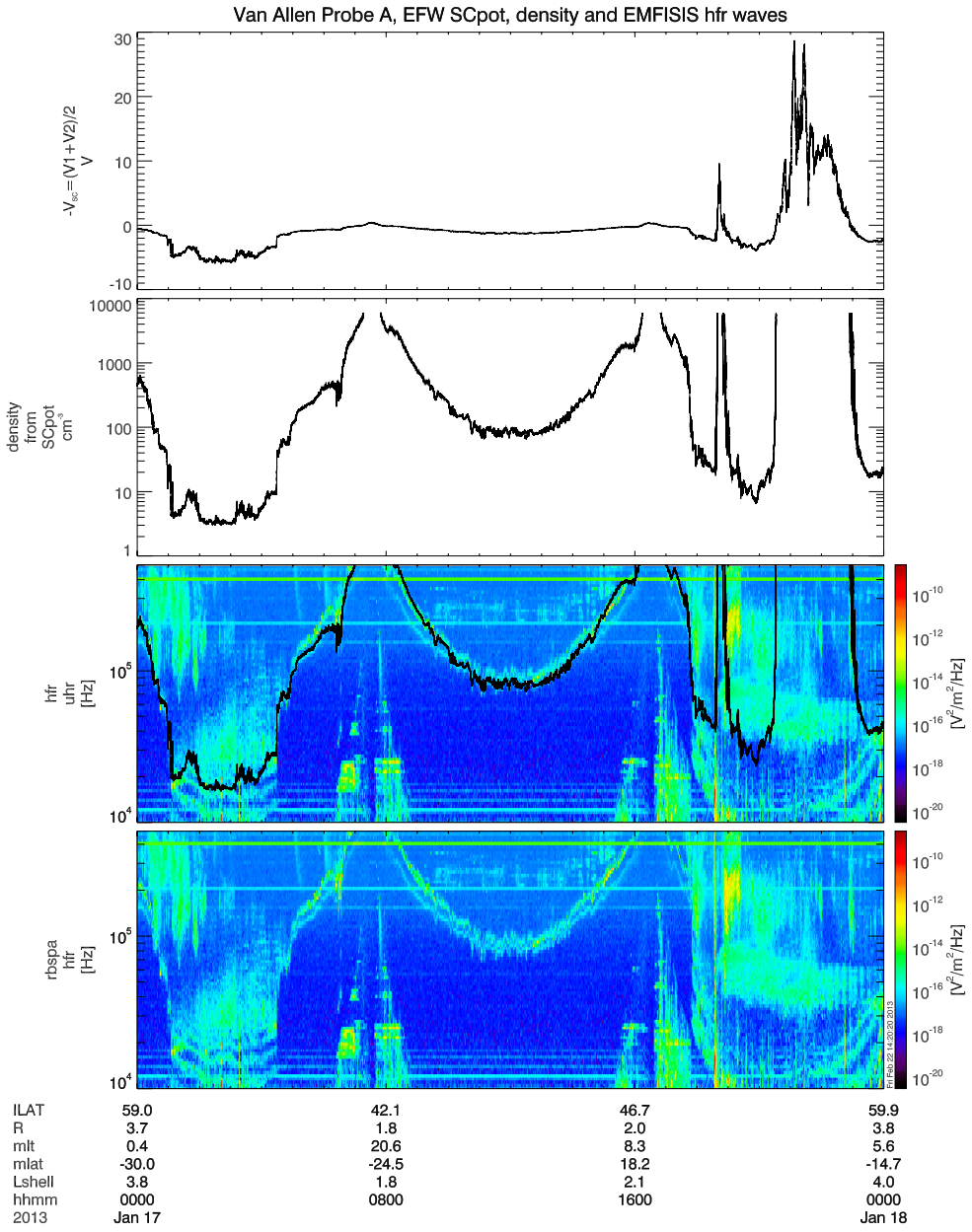
Plasma density calculated from SC potential (cm^{-3})

The negative of spacecraft potential (-Vsc) and plasma density determined from Vsc as a function of L shell and time.

Courtesy Scott Thaller



← Sep 24 ,2012 to Dec 13, 2012 →



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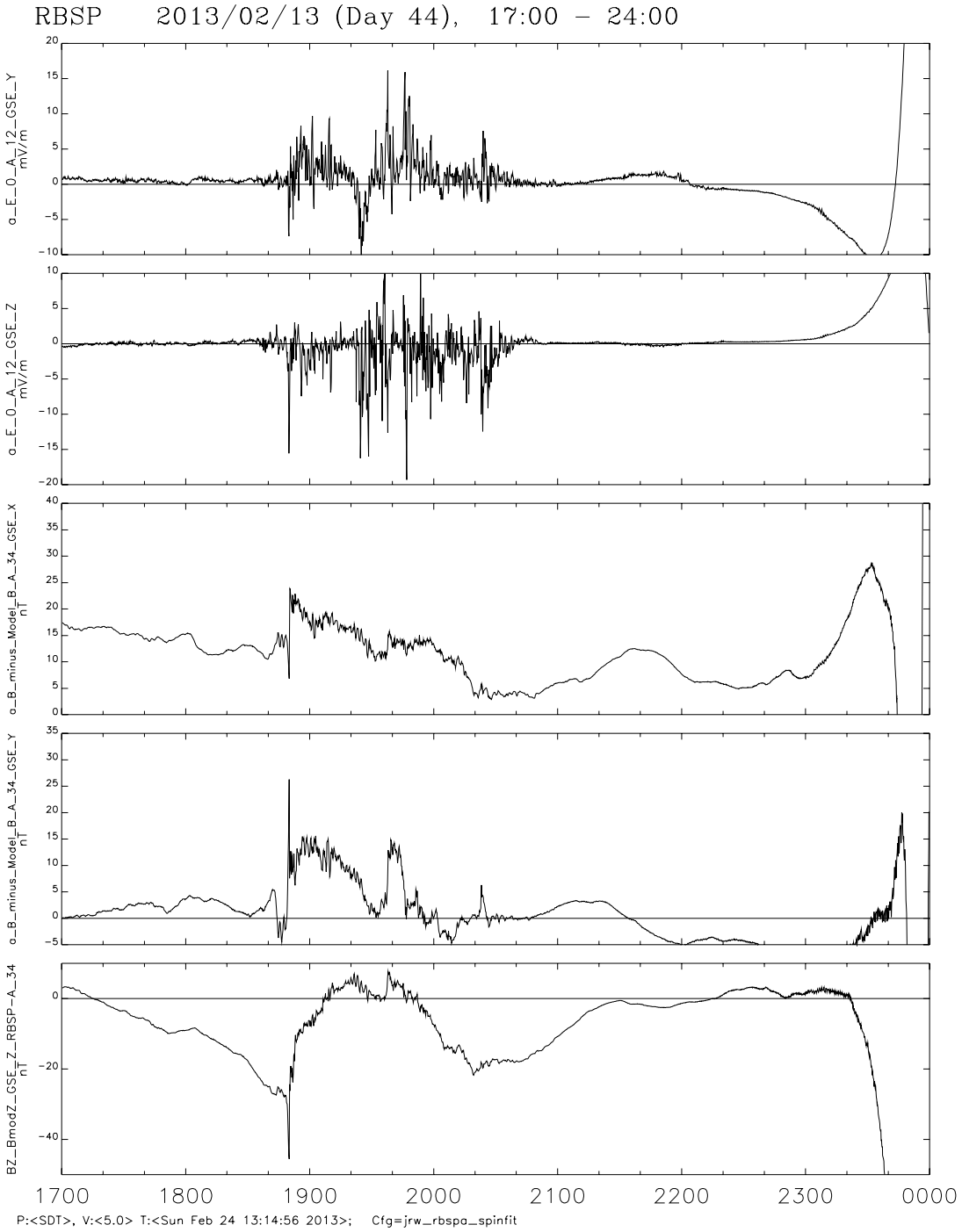
Night-side
Injection event
on 2/13/2003

Strong Dawn-Dusk
For ~ 1 Hour
5-10 mV/m

Abrupt B-field
Dipolarization
(EMFISIS)

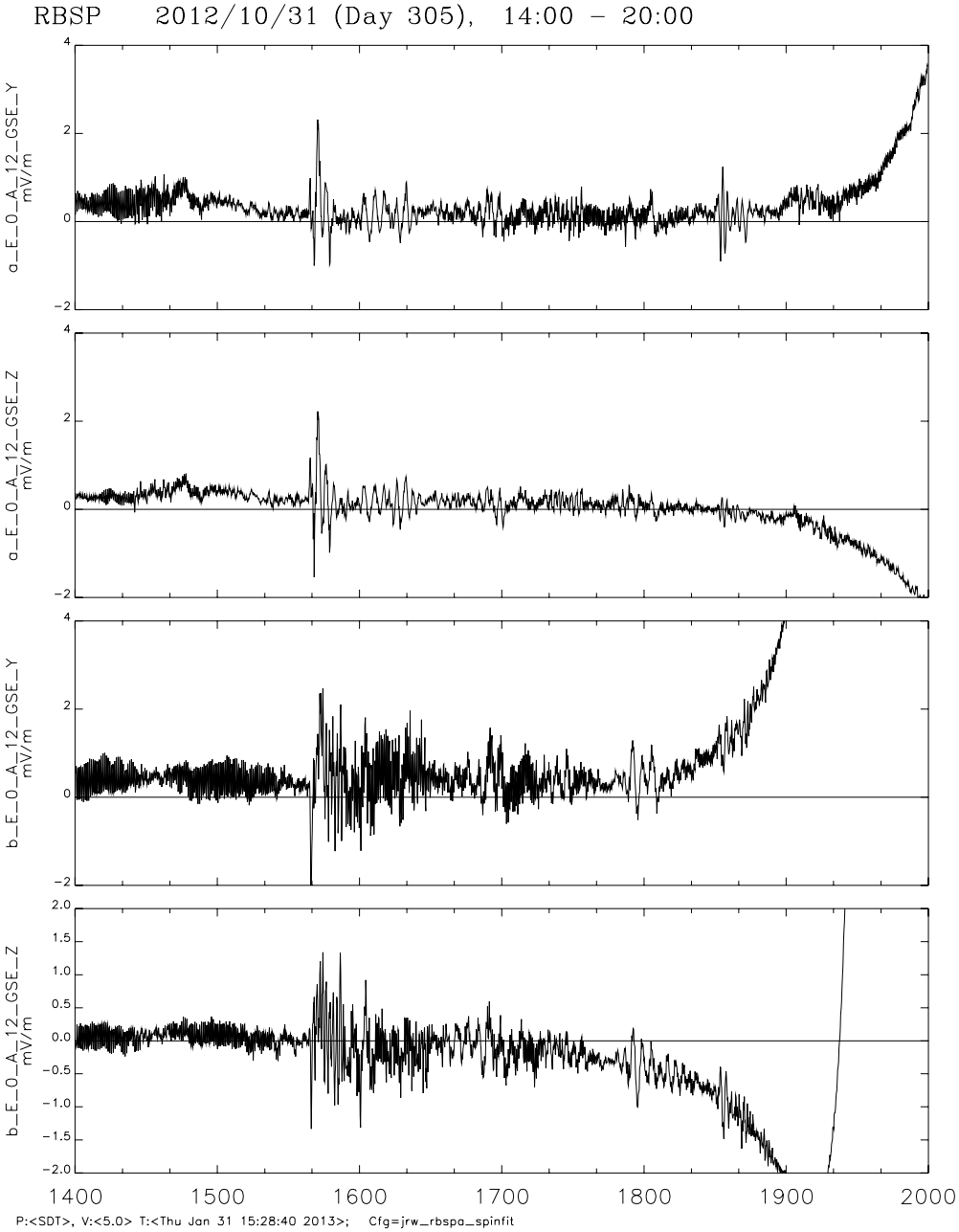


Shock Event
10/31/2012
and associated
Pulsations

E field
Seen
by both spacecraft

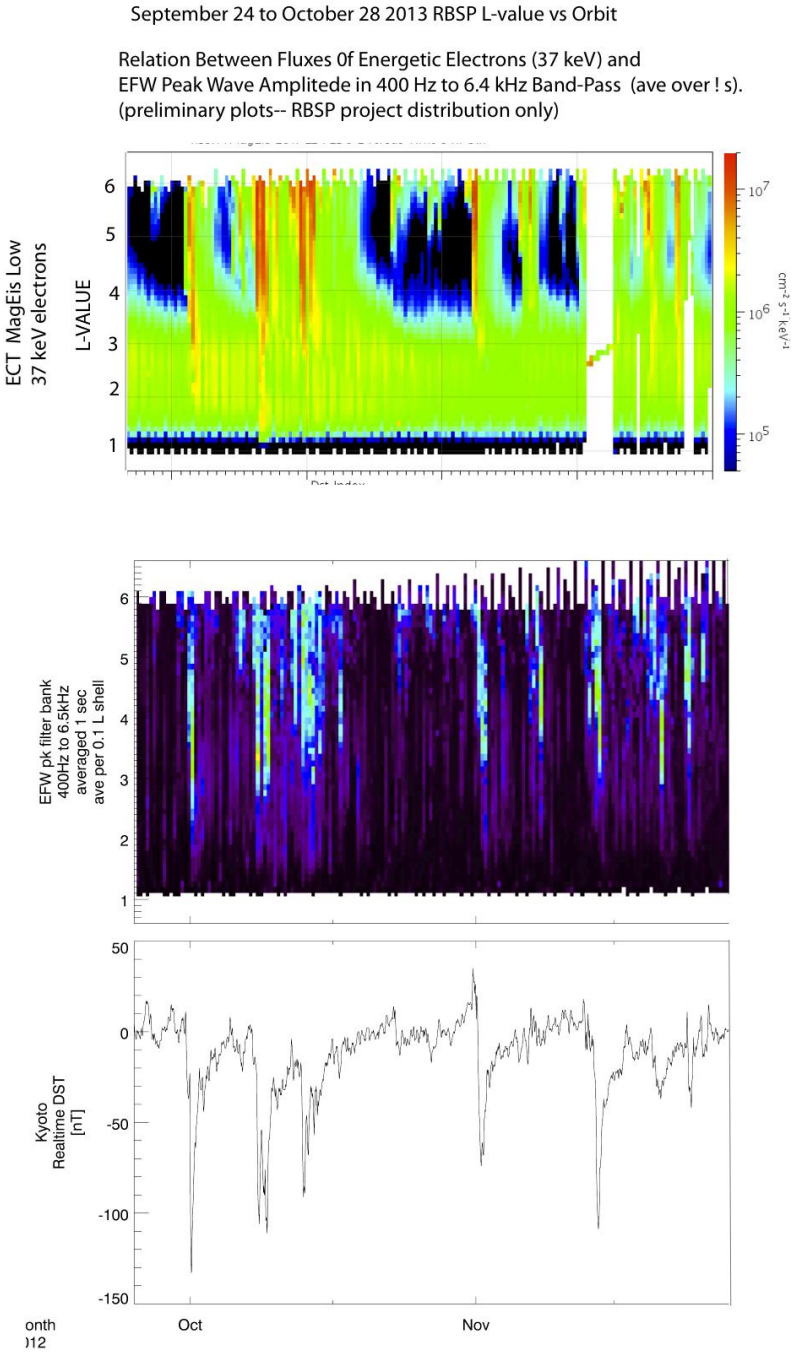
Seth Claudepierre
Association with
Drift Echoes

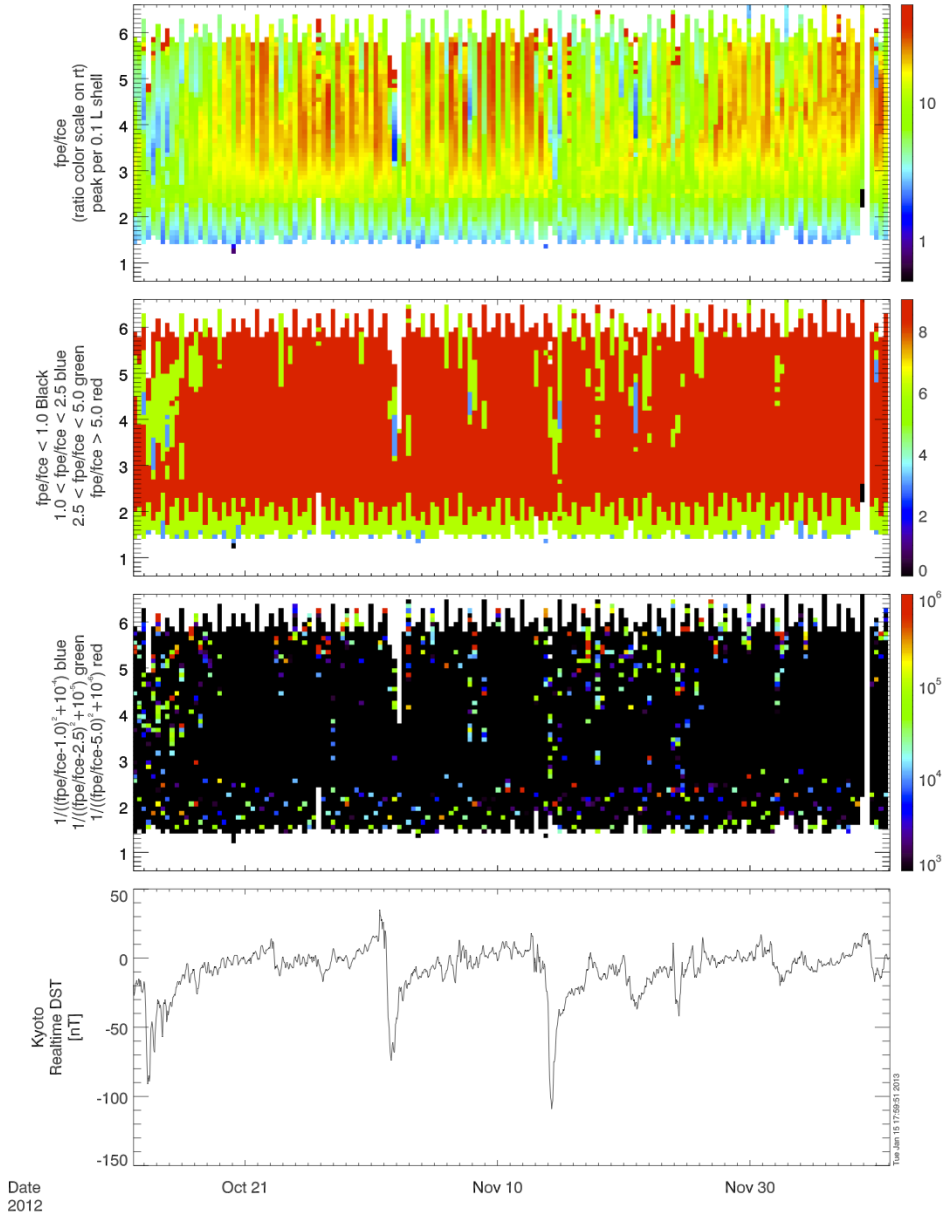
Kris Kersten



MagEIS 37 keV Electrons (Seth)

Whistler Wave Peak Amplitudes (Thaller)





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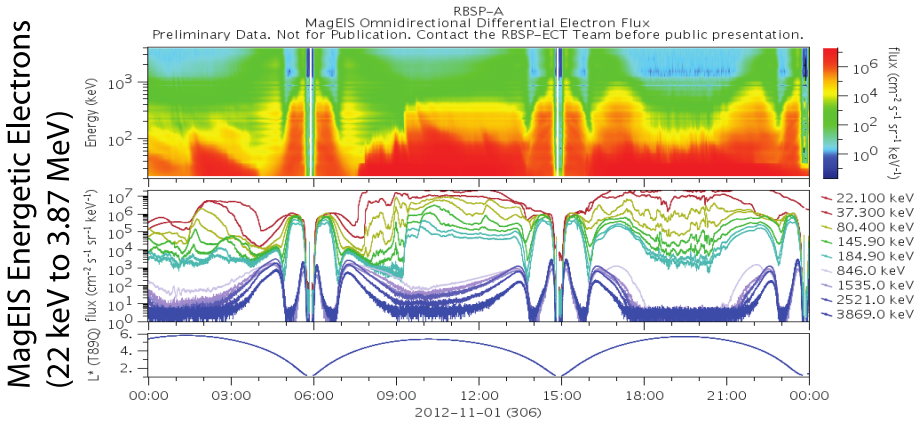
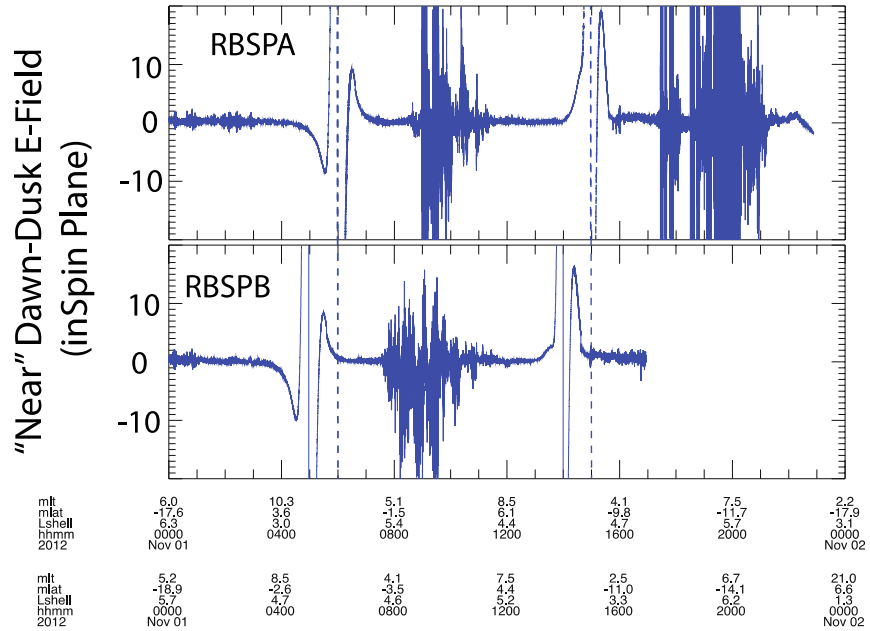

MagEIS Energetic Electrons
(22 keV to 3.87 MeV)
RBSP-A
MagEIS Omnidirectional Differential Electron Flux
Preliminary Data. Not for Publication. Contact the RBSP-ECT Team before public presentation.
Energy (keV)
flux (cm-2 s-1 sr-1 keV-1)
L* (T89Q) flux (cm-2 s-1 sr-1 keV-1)
22.100 keV
37.300 keV
80.400 keV
145.90 keV
184.90 keV
846.0 keV
1535.0 keV
2521.0 keV
3869.0 keV
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
2012-11-01 (306)


"Near" Dawn-Dusk E-Field
(inSpin Plane)
RBSPA
RBSPB
10
0
-10
mlt 6.0 10.3 5.1 8.5 4.1 7.5 2.2
mlat -17.6 3.6 -1.5 6.1 -9.8 -11.7 -17.9
Lshell 6.3 3.0 5.4 4.4 4.7 5.7 3.1
hhmm 0000 0400 0800 1200 1600 2000 0000
2012 Nov 01 Nov 02
mlt 5.2 8.5 4.1 7.5 2.5 6.7 21.0
mlat -18.9 -2.6 -3.5 4.4 -11.0 -14.1 6.6
Lshell 5.7 4.7 4.6 5.2 3.3 6.2 1.3
hhmm 0000 0400 0800 1200 1600 2000 0000
2012 Nov 01 Nov 02