

RBSP Science Gateway

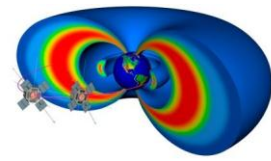
Michele Weiss

Michele.weiss@jhuapl.edu

240-228-4806



Overview



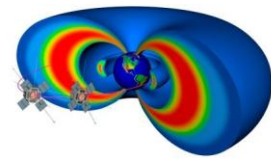
- Space Weather
- Enhancements to Gateway

Space Weather Processing Status

- Now receiving data in near real-time from KASI and CAS ground stations
- Upon receipt, data is ingested into our Space Weather data archive
- Data then gets processed as close to near r/t as possible from receipt at APL
- Processed L1 space weather products are available as soon as possible on Science Gateway at http://athena.jhuapl.edu/space_weather_data_plots
- FTP is backup mechanism and this data gets processed several times a day



Space Weather Data

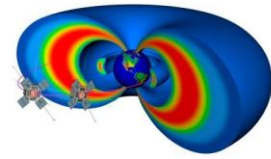


- Data is being provided back to external ground stations
- L0 and L1 are being provided to LANL
- L1 is being provided to CCMC

- There are gaps in the data
 - We don't have full coverage
 - Missing contacts do occur
 - Additional ground stations will help to fill in these gaps



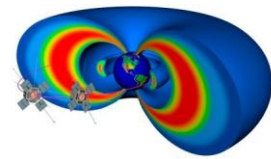
Space Weather Products



- Space Weather ->Data will contain a 15 day archive of processed data
- Default is latest data
- Level 1 Space Weather Plots and data files are available for download



Access to Space Weather Data



**Van Allen Probes
SCIENCE GATEWAY**

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Space Weather Data and Plots

Year: 2013 Day of Year: latest Spacecraft: A B

Notice: You may click on each plot to view a larger version.

Jump to: [Top of page](#), [Spacecraft position](#), [EFW](#), [EMFISIS](#), [RBSPICE](#).

Kp/DST Indices:

Data File: [KpDst_latest.txt](#)
VAP File: [KpDst_latest.vap](#)

To access the Space Weather data

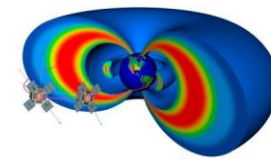


To change to a different day

To change to a different s/c



Access to Digital Data

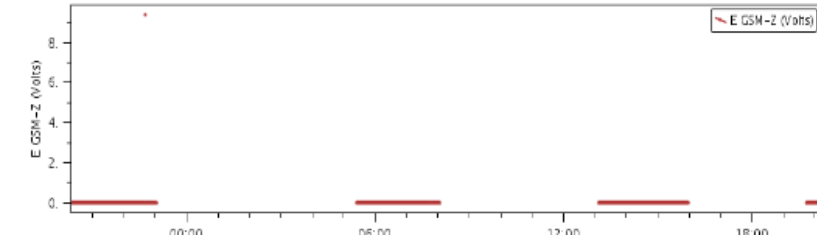
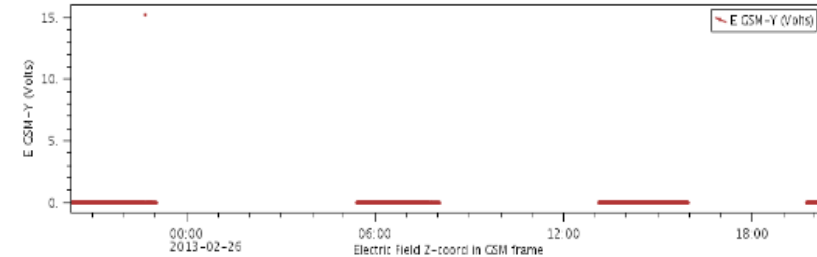
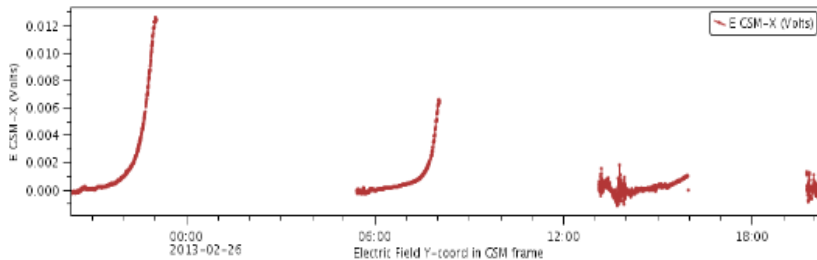
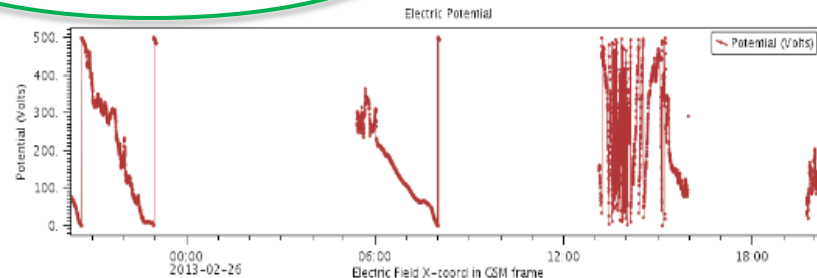


Jump to: [Top of page](#), [KpDst Indices](#), [Spacecraft position](#), [EMFISIS](#), [RBSPICE](#),

EFW:

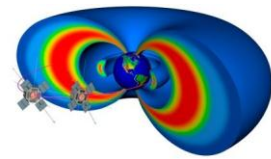
Data File: [SW_EFW_RBSPA_latest.cdf](#)
VAP File: [SW_EFW_RBSPA_latestPoten_EGSM.vap](#)

To access the file or to plot it yourself





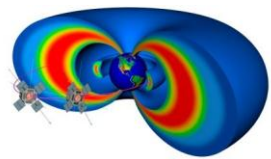
Space Weather Products



- Future implementations:
 - Data availability plots
 - Access to single products
- Plots have been vetted by APL Science Team and are continuing to be improved but need your input



Recent Enhancements - Archive of uploaded files



Van Allen Probes
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Uploaded Files ⚙

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Notice: the list can be sorted by clicking on "File"Name", "Size", "Upload Date" or "Who Uploaded File" at the top of the table below.

File Name	Size	Upload Date	Who Uploaded File
Kurth_Van-AGU-2012a.pdf	6.85 MB	Friday, February 1, 2013 - 15:50	Bill.Kurth File Details
OBRIEN_AGUF12_RPS_SOC_Poster.pdf	1.15 MB	Tuesday, January 29, 2013 - 08:50	Paul.O.Brien File Details
Mauk_AGU_Dec12_SM32A-02_Convection.pdf	3.17 MB	Sunday, January 27, 2013 - 14:44	Barry.Mauk File Details
Mauk_AGU_RBSP_04Dec11.ppt	4.09 MB	Wednesday, January 23, 2013 - 16:51	Tom.Sotirelis File Details

Upload a new file ⚙

NOTICE: In order to upload a file you must:

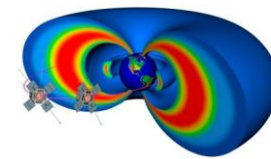
1. Select the file by using the "Browse" or "Choose File" button depending on your browser
2. Upload the file to the web site using the related button
3. Click the "Submit" button

File Description *





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Use the form below to send the bibliographic information, which administrator will use to create an entry in the Van Allen Bibliography. Please, include:

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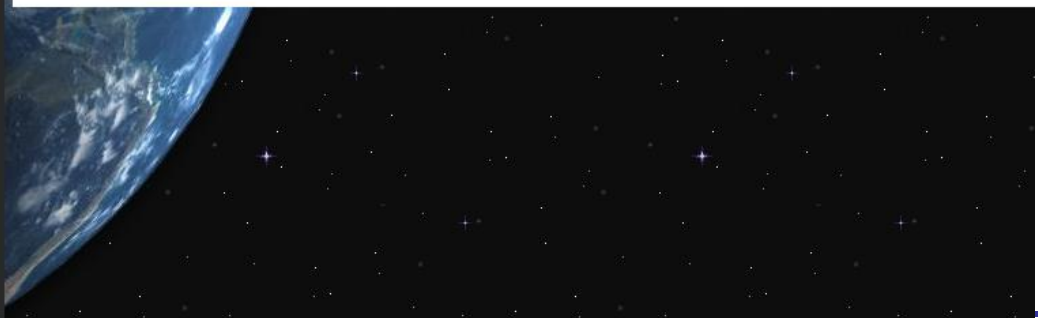
Bibliographic information *

Add bibliographic information

Submit

36 reads

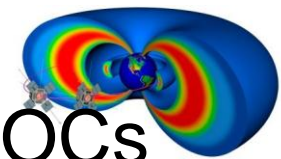
Page Last Modified: February 6, 2013





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Summary plots generated by Instrument SOC's



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Data Summary Plots

Please click on each plot to see a larger version.

Time: Previous 9 February 2013 Next Spacecraft A

clear all select all

ECT ECT Combined Electron Spectra

ECT-HOPE HOPE: Helium, Oxygen, Proton & Electron Spectra

ECT-MagEIS MagEIS Electron Spectra

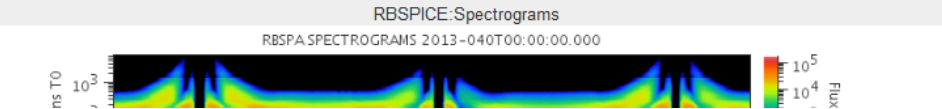
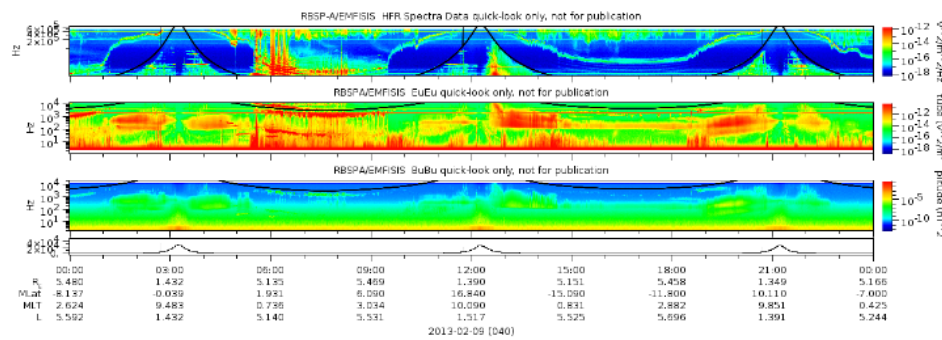
ECT-REPT REPT Electron Spectra REPT Proton Spectra

EFW Survey Spec64 Bw Ew Comparison (ylog) Fb13 Fb1

EMFISIS HFR-WFR HFR-Diagonal

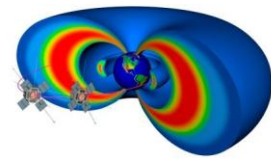
RBSPICE Basic Rates High Voltage Data Present TOF XE H Spectrograms TOF XE ION Spectrograms TOF XE PH Spectrograms Spectrograms ERM

ECT:ECT Combined Electron Spectra
 No Plot Available
 EFW:Survey
 No Plot Available
 EMFISIS:HFR-WFR





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Recent comments

- Reply to: [SPACE WEATHER: Team Area Discussion Forum](#) 4 weeks 1 day ago
[Interesting correlations](#)

How is a chorus wave formed? Electromagnetic radiation is usually made when an electron orbiting an atomic nucleus, falls down a narrower orbit, and decreases its speed/energy by emitting an electromagnetic wave. The parallel is; Solar wind with magnetic field sends the orbiting electrons in the Van Allen belt down to a narrower orbit, while decreasing their speed/energy level by emitting waves.

Atoms have a magnetosphere just like Earth has its magnetosphere, and the outer Van Allen belt is confined to its orbit, just as an orbiting nucleus is confined, until an external force disturbs the orbits.

Electrons in an atom can get excited by an electromagnetic wave so they increase their orbit. Are electrons in the outer Van Allen belt excited by solar radiation in the same way? The components of electromagnetic radiation, an oscillating magnetic field and oscillating electromotive force, can both excite electrons. I think I am starting to surf too, and my wave might be breaking into a tube.

Feedback anyone? Do anybody read this? I won't post any more until someone reply. I hope you also had some fun.

I recommend to follow your highest inspiration, and enjoy surfing the wave, wherever it may take you!

- Reply to: [SPACE WEATHER: Team Area Discussion Forum](#) 1 month 4 days ago
[Timely Data?](#)

Daily current data plots, from spacecraft B has not been updated since 2013-01-06 for: EFW, EMFISIS, RPS, RBSPICE

- Reply to: [SPACE WEATHER: Team Area Discussion Forum](#) 1 month 1 week ago
[The physics of magnetic pump acceleration](#)

I admit that the physics of magnetic pump acceleration was poorly explained, so I have ventured into the realm of electromagnetism to find more accurate explanations to the observed phenomena. Here is a short résumé of what I found:

Relative motion between particles and a magnetic field will in fact induce currents, if the particles moves, if the magnetic field moves/changes or they both move relative to each other.

There also seem to be a general principle that "Any change in an electromagnetic system provokes an effect in order to oppose that change".

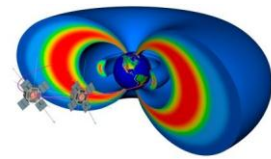
When solar wind compresses the magnetosphere we often get an increased geomagnetic field in the outer dayside magnetosphere. A change in magnetic flux can be opposed by the magnetopause current by moving the current radially inwards while accelerating it westwards, so it can generate a counteractive magnetic field to oppose the change. During the early impact of a solar storm the magnetopause current can decelerate and weaken by this effect.

The orientation and rate of change of the interplanetary magnetic field (IMF) also seem to play a role. During a solar storm with a southward interplanetary magnetic field (IMF) with a sharp decrease in the Bz component, ring currents will be accelerated westward to generate an opposing magnetic field.





Future Implementations



- Data availability plot of all Instrument SOC generated products
- Data finder which provides a link to all available data products
- Event data locator