

THEMIS Software Users,

The THEMIS Project announces the release of Version 5.20 of the THEMIS Science Data Analysis Software. Version 5.20 contains the following significant New Features and Enhancements to THEMIS Data Products and Web Site:

Version 5.20 Data Products:

- Completed reprocessing of L1: V3 STATE, L2: FGM, FIT, FFT, ESA, MOM, SCM (new), and EFI (new). Please note for now the L2 SCM and EFI cdf's will only be available on the UCB SSL database. The processing of the STATE V03 includes new spin phase and attitude corrections derived from FGM data. The L2 reprocessing has occurred for the following reasons:
  1. Changes in coordinate transformations related to the new V03 state files.
  2. Changes in FGM calibration parameters.
  3. A revision in the ESA L2 process that includes reduced mode moments for times after the day of the file.
- ASI full resolution data CDF's are now complete until May 2009.
- New variables have been added in the following:

L1 state CDFs for probe positions and velocities in GSE and GSM coordinates  
To support spin axis attitude and spin phase corrections for V03 state CDFs  
Data quality flags to the ESA L2 files for solar wind while not in solar wind mode, density mismatches, counter saturation, maneuver flags and velocity limits. In addition data quality flags have been added to the MOM L2 files,
- Updated L1 process for Pseudo\_AE index generation to allow for data quality checks, reprocessed AE index data from July-2009 to present, removing questionable data.
- V03 STATE CDFs for 2009 (through mid-September) have been generated using latest batch of spin phase and spin attitude corrections derived from FGM data.
- GOES L2 CDFs have been reprocessed with corrected metadata.

THEMIS Web

- ASI overview plots have been updated with full resolution data until May 2009.
- The online summary plot interface was modified so that it will remember the time interval of plots when the spacecraft selection is changed.
- New orbit overview plots added that show zoomed-out orbits, with the moon position indicated.
- Colors and labels for temperature data in overview and moment plots have been made more consistent.
- Toshi Nishimura's Npot density calculation, from spacecraft potential, has been added to the general overview plots and moment plots.
- The overview plot key was enhanced. It now includes new unit abbreviation to clear up plot, EFU = Energy Flux Unit = eV/cm<sup>2</sup>/s/sr/eV, spacecraft potential derived density (blue) and an updated plot background.
- Data Descriptions have been enhanced or added for all L2 data types.
- The Data Variable Description document has been revised with the latest information.
- New web pages have been added for the On-board Spin FIT data:  
[http://themis.ssl.berkeley.edu/instrument\\_fit.shtml](http://themis.ssl.berkeley.edu/instrument_fit.shtml)
- Digital Fields Board (DFB) data web pages for Filter Bank (FBK) and Fourier Power Spectra (FFT) are now available at [http://themis.ssl.berkeley.edu/beta/instrument\\_dfb.shtml](http://themis.ssl.berkeley.edu/beta/instrument_dfb.shtml).

THEMIS Science Team