THEMIS and ARTEMIS Science Data Analysis Software Monthly Accomplishments
October 2011

THEMIS and ARTEMIS Science Data Analysis Software (TDAS) - Post v6.0

1. The ERG Science Center at the Solar-Terrestrial Environment Laboratory (STEL) of Nagoya University has provided TDAS Users with a plug-in for TDAS to enable users to use the ERG Mission data. The plug-in is now available in the TDAS bleeding edge.
2. The load routines for Kyoto DST and AE data have been enhanced. The routine kyoto_load_dst will now check for final, provisional or realtime data.
3. The dimensions of the GUI's plot area can now be modified through the Page Options window. This allows plotting with custom dimension and the settings will carry over to exports. Other options were enhanced with regards to this new feature as follows:
   a. Canvas size input is now checked for validity
   b. GUI start-up and resizing now take variable canvas size into account
   c. Opening and closing windows now displays page layout correctly.
4. Exporting to postscript now supports CMYK colors for improved printing.
5. GUI overview plots now use blank panels as placeholders when variables are missing.
6. Velocity distribution slices now handles instrument mode changes and notifies the user.

THEMIS and ARTEMIS Data Products

1. The L1 STATE cdfs (V00, V01, V02, V03) have been reprocessed for the entire mission.
   Enhancements are as follows:
   a. New variables have been added for probe positions and velocities in lunar (SSE and SEL) coordinates.
   b. Enhanced shadow spin model is now available in standard data products.
   c. Enhanced spin axis attitude and spin phase corrections for inner probes (THA, THD, THE) for times between March 2010 and September 2011 are now implemented.
   d. Coordinate transformations routines (e.g., cotrans) now are able to transform to/from SSE (Selenocentric Solar Ecliptic) and SEL (Selenographic) coordinate systems."
2. All Sky Imager (ASI) products are available as follows:
   a. L1 cdf's and Mosaics are up to date and available through 10/31/2011.
   b. Thumbnail cdf files and overview plots are available through 10/31/2011.
      Thumbnail movies are available through 12/31/2010.
   c. Full resolution raw data is available and complete for 2007-2010. 2011 complete through April 2011.
      Full resolution cdf's and keograms are available and complete for 2007-2010. 2011 complete through April 2011.
   d. Web site - Mosaics and movies reprocessed for 2007-2010 seasons. They are up to date and available through 12/2010.
3. The Data Analysis Center for Geomagnetism and Space Magnetism of the Graduate School of Science, Kyoto University has made the final Kyoto DST data available to TDAS users through Dec 2008.

THEMIS and ARTEMIS Documentation

1. The THEMIS Developers Guide and THEMIS L2 File Definitions documents have been revised (10/25/2011) and can be found at:
   ftp://apollo.ssl.berkeley.edu/pub/THEMIS/3 Ground Systems/3.2 Science Operations/Science Operations Documents/

THEMIS Web Site

1. Summary plot keys have been created for all THEMIS probe subplots.
2. The Ground Magnetometer status pages available at http://themis.ssl.berkeley.edu/status.shtml have been revised to include a more complete list of the Ground Magnetometer sites available.
3. SST overview panels now have generic removal of sun contamination.

THEMIS and ARTEMIS TDAS Trainings

1. The THEMIS/ARTEMIS TDAS software was reviewed at the MMS SWT meeting Sept. 26-27 at the University of New Hampshire, Space Sciences Center. Lead scientists from the MMS mission reviewed several software packages, including TDAS. It was determined that TDAS would be used for the 'Scientist in the Loop' (SITL) software.
2. The THEMIS/ARTEMIS TDAS software was presented to the RBSP Science Working Group meeting, October 21, 2011 at the JHUAPL facilities in Baltimore, MD. Approximately 20-30 RBSP scientists and engineers were present. TDAS is being considered for use with the RBSP mission and the initial response was favorable.