GOES-16 SEISS Level 1b Release, Beta Data Quality
February 13, 2017
Read-Me for Data Users

The GOES-R Peer Stakeholder Product Validation Review (PS-PVR) for SEISS L1b Beta Maturity was held on February 10, 2017. As a result of this review, the PS-PVR panel recommended that the SEISS L1b data be included in GRB. This was accomplished at 2100 UT on February 13, 2017.

The L1b data products derived from SEISS include:

- Magnetospheric Electrons and Protons: Low Energy (derived from Magnetospheric Particle Sensor – Low Energy (MPS-LO) observations)
- Magnetospheric Electrons and Protons: Medium and High Energy (derived from Magnetospheric Particle Sensor – High Energy (MPS-HI) observations)
- Solar and Galactic Protons (derived from Solar and Galactic Proton Sensor (SGPS) observations)
- Energetic Heavy Ions (derived from Energetic Heavy Ion Sensor (EHIS) observations)

NCEI strongly advises against using SEISS L1b data available in CLASS prior to the Provisional Maturity declaration, December 19, 2017. Due to instrument issues and artifacts of erroneous processing, these L1b data are in general not suitable for scientific analysis prior to this date. Users bear all responsibility for inspecting the data prior to use and for the manner in which the data are utilized. NCEI plans on reprocessing some pre-Provisional data as the instrument configuration permits. If you are interested in these pre-Provisional data, please contact Juan Rodriguez, instrument scientist, at juan.rodriguez@noaa.gov. The NCEI website for GOES-R Space Weather data, which will eventually provide reprocessed data for the Beta time period, is https://www.ngdc.gov/stp/satellite/goes-r.html.

The GOES-16 SEISS Level 1b (L1b) Beta level data products are currently undergoing testing and initial calibration and validation. Products are made available to users to gain familiarity with data formats and parameters in accordance with the GOES-R Product User Guide (PUG). Beta products have been minimally validated, and as noted above may still contain significant errors. Known issues under work for resolution include the following:

1. The high voltages on the MPS-LO detectors have not been optimized. As a result, the background corrections are too high. This affects both electron and ion fluxes.
2. The MPS-HI electron fluxes are exhibiting higher-than-expected backgrounds in some channels, and excessive background corrections in other channels.
3. The P9, P10 and P11 channels in SGPS-X are currently observing non-geophysical diurnal variations in galactic cosmic ray (GCR) fluxes that are related to temperature swings. Also, as of the date of this note, no solar proton events (SPEs) have been observed by GOES; therefore, no comparison of SGPS fluxes has been made with GOES 13-15 SPE observations.
4. The fluxes in the lowest-energy hydrogen (proton) channel from EHIS (H1, 10-31 MeV) are exhibiting contamination signatures characteristics of radiation belt electrons. The EHIS heavy ion histogram observations are undergoing a 3-month on-orbit calibration program and therefore their characteristics have not been finalized. Finally, the EHIS L1b ground processing software has some known implementation issues that affect the accuracy of the heavy ion fluxes.