

GOES-17 SUVI Level 1b Release
Beta Data Quality
September 13, 2018
Read-Me for Data Users

The GOES-R Peer Stakeholder Product Validation Review (PS-PVR) for SUVI L1b Beta Maturity was held on August 21, 2018. As a result of this review, the PS-PVR panel recommended that the SUVI L1b data be included in GRB. The data flow in GRB commenced at 1500 UT on August 22, 2018.

Beta maturity, by definition, means that:

- Initial calibration applied (L1b);
- Rapid changes in product input tables / algorithms can be expected;
- Product quick looks and initial comparisons with ground truth data not adequate to determine product quality;
- Anomalies may be found in the product and the resolution strategy may not exist;
- Product is made available to users to gain familiarity with data formats and parameters (via GRB);
- Product has been minimally validated and may still contain significant errors; and
- Product is not optimized for operational use.

The L1b data products are Extreme Ultraviolet (EUV) Solar Imagery in the following bands:

- 94 Å – Fe XVII
- 131 Å – Fe XXI
- 171 Å – Fe IX/X
- 195 Å – Fe XI/XII
- 284 Å – Fe XV
- 304 Å – He II

There are also two different exposure times represented in the SUVI L1b data products: 1 second and 5 milliseconds. We recommend to the user to reference the 'CMD_EXP' keyword in order to reference the exposure time value (the 'EXP_TIME' keyword provides exact exposure time, while 'CMD_EXP' provides delineation between the two target times).

The user should be aware that these GOES-17 SUVI Level 1b (L1b) products are only at a Beta level of maturity, meaning that these data are preliminary and non-operational. These data are currently undergoing testing and initial calibration and validation. The 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 may still contain significant errors. They are not optimized for operational or research. Users bear all responsibility for inspecting the data prior to use and for the manner in which the data are utilized.

Persons desiring to use the GOES-17 SUVI Beta maturity L1b products for any reason, including but not limited to scientific and technical investigations, should involve the responsible NOAA scientists before proceeding.

Known issues under work for resolution:

1. The flatfield correction has not been finalized – expect artifacts to exist.
2. Currently 'BUNIT' is not present in FITS headers therefore image values are in radiometric units not DN.
3. Numerous metadata/keyword values related to image navigation are known to be incorrect.

These keywords include:

- CRPIX1/CRPIX2
- CRVAL1/CRVAL2 (correctly specified, but issues with the coordinate system specification still needed)
- PC1_1, PC1_2, PC2_1, PC2_2
- CROTA occasionally includes a superfluous 360° rotation, but the offset angle is otherwise calculated correctly and can be used for image registration.

Contact for further information: Kathryn Mozer at kathryn.mozer@noaa.gov

NCEI contacts for specific information on the SUVI L1b data:

Jonathan Darnel jonathan.darnel@noaa.gov

Dan Seaton daniel.seaton@noaa.gov

Margaret Tilton margaret.tilton@noaa.gov