

GOES-18 EXIS Level 1b (L1b) Data Release  
Beta Data Quality  
July 22, 2022  
Read-Me for Data Users

On July 18, 2022, the GOES-R Program Scientist declared that the GOES-18 EXIS L1b products met the criteria for Beta Maturity. The L1b data products derived from EXIS include:

- X-Ray fluxes derived from X-Ray Sensor (XRS) observations
- Extreme ultraviolet (EUV) line irradiances, Magnesium II indices, and EUV proxy spectra derived from Extreme Ultraviolet Sensor (EUVS) observations

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;
- Product has been minimally validated and may still contain significant errors; and
- Product is not optimized for operational use.

The GOES-18 EXIS Level 1b (L1b) Beta level data products are preliminary, non-operational data. These data are currently undergoing testing and initial calibration and validation. The user should be aware that these products are only at a Beta level of maturity. This means that the products are made available to users for them 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 still contain significant errors. They are not optimized for operations 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-18 EXIS Beta-maturity L1b products for any reason, including but not limited to scientific and technical investigations, should involve the responsible NOAA scientists before proceeding. Science-quality versions of this data with retrospective corrections will be available at a later date.

Some of the more major known L1b issues under work for resolution are:

1. XRS dark corrections are not yet included.
2. EUVS data needs degradation corrections.
3. EUVS model is incorrect.
4. When the electron fluxes are high and the X-ray fluxes are low, the X-ray fluxes exhibit significant electron contamination. (A correction for this is applied in the Level 2 1-minute averaged data.)

5. XRS data lacks corrections for SEP impacts.
6. Solar array currents are not correct.
7. Dispersion and cross-dispersion angles in the XRS product are fill values during lunar transits and eclipses.
8. Mg II index values may be incorrect during eclipse and lunar transit.
9. A flag state of "penumbra\_with\_no\_full\_eclipse" will be added to the SC\_eclipse\_flag in the future.
10. A flag state of "euvs\_calibration\_in\_progress\_qf" will be added to the euvs{a,b,c}qualityFlags in the future.
11. The range for ECEF\_Z is too small.

Contact for further information: OSPO User Services at [SPSD.UserServices@noaa.gov](mailto:SPSD.UserServices@noaa.gov)

NCEI contacts for specific information on the EXIS L1b data:

Janet Machol [janet.machol@noaa.gov](mailto:janet.machol@noaa.gov)

Courtney Peck [courtney.peck@noaa.gov](mailto:courtney.peck@noaa.gov)

Jamie Mothersbaugh [james.mothersbaugh@noaa.gov](mailto:james.mothersbaugh@noaa.gov)