

GOES-19 ABI Level 1b Radiances and Level 2 Cloud and Moisture Imagery
Beta Data Quality
October 1, 2024
Read-Me for Data Users

On October 1, 2024, the GOES-R Program Scientist declared that GOES-19 ABI Level 1b (L1b) Radiances and Cloud and Moisture Imagery (CMI) products met the criteria for Beta maturity.

The GOES-19 ABI L1b and CMI data products are calibrated and geo-located radiances of the 16 ABI bands over the Full Disk (FD) of the Earth, the Contiguous United States (CONUS) region, the Mesoscale (MESO) regions, and certain instrument calibration and engineer data.

By definition, Beta Maturity 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.

Beta 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-19 ABI Beta maturity L1b products for any reason, including but not limited to scientific and technical investigations, are encouraged to consult the NOAA ABI calibration scientists for feasibility of the planned applications.

Known issues that users should be aware of include:

1. Image Navigation and Registration (INR) had initial errors that were larger and lasted longer than GOES-16/17/18. While the INR have maintained acceptable performance since September 25, a permanent correction has yet to be tested and uploaded. Until then, it is possible for INR to degrade temporarily. On the other hand, the frame-to-frame navigation of the same channel appears stable.
2. Banding may be observed at the swath boundaries in Channel 16 (13.3 μm) images.
3. Approximately one hour before and after satellite local midnight for about forty days before and after the vernal (spring) and autumnal (fall) equinox:
 - a. Stray light may occur in Visible Near-Infrared (VNIR) channels. This is allowed, because there is no straylight requirement for VNIR channels at night.
 - b. Stray light may create a Zone of Reduced Data Quality (ZRDQ) for Channel 7 (3.9 μm).

Currently, the intensity and extent of stray light meet the requirement, although it is slightly stronger than those for GOES-16/18.

Note that all the issues associated with the ABI L1b product apply to CMI. The CMI conversion coefficients (to brightness temperature) are updated for GOES-19. There may be inconsistencies between the mean (scene) radiances in an L1b and mean brightness temperature values in a Level 2 (L2) CMI file. In CMI files, maximum brightness temperature metadata does not always reflect the largest CMI value when pixels are saturated due to a fire in the shortwave window band (Channel 7).

Contact for further information: OSPO User Services at SPSD.UserServices@noaa.gov

For specific information about the GOES-19 ABI L1b Radiance and CMI data, contact:

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