

GOES-19 GMAG Level 1b (L1b) Release
Beta Data Quality
October 9, 2024
Read-me for Data Users

The GOES-R Program Scientist declared that the GOES-19 Goddard Magnetometer (GMAG) L1b product met the criteria for Beta Maturity on October 9, 2024. The GOES-19 GMAG is an upgraded magnetometer instrument, like that on GOES-18, which offers improved measurements of Earth's magnetic field over the magnetometers on GOES-16 and GOES-17.

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;
- Product is not optimized for operational use

The L1b data product derived from GMAG provides vector measurements of the geomagnetic field sampled at 10 Hz from the inboard (IB) and outboard (OB) magnetometers. Magnetic field data provided in coordinate systems other than the sensor frame are based on the outboard magnetometer.

The GOES-19 GMAG 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 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 operations or research and should not be used for these purposes. 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 GMAG 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 initial offset calibration parameters have not been applied, resulting in bias errors on the order of 1-5 nT

2. The arcjet correction has not been applied yet, resulting in artificial magnetic signatures up to 20nT

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

NCEI contacts for specific information on the GMAG L1b data:

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