

GOES-16 ABI L2+ Cloud Mask Release, Beta Data Quality  
April 19, 2017  
Read-Me for Data Users

The GOES-R Peer/Stakeholder Product Validation Review (PS-PVR) for ABI Cloud Mask Beta Maturity was held on April 19, 2017. As a result of this review, the PS-PVR panel recommended that the ABI Cloud Mask data be declared Beta. This was accomplished at 1500 UT on April 19, 2017.

The ABI Cloud Mask products provide a binary cloud presence decision over the Full Disk (FD) of the Earth, the Continental United States (CONUS) region, the Mesoscale (MESO) regions. The also include a 4 –level mask and cloud mask test decisions included in the intermediate product files.

Full description and format of the CSM product are in the Product Definition and User's Guide (PUG) document (<http://www.goes-r.gov/products/docs/PUG-L2+-vol5.pdf>). The algorithm used to derive CSM from GOES-16 ABI observations is described in the "GOES-R Advanced Baseline Imager (ABI) Algorithm Theoretical Basis Document for ABI Cloud Mask" ([http://www.goes-r.gov/products/ATBDs/baseline/Cloud\\_CldMask\\_v2.0\\_no\\_color.pdf](http://www.goes-r.gov/products/ATBDs/baseline/Cloud_CldMask_v2.0_no_color.pdf)).

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 were 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-16 ABI Beta-maturity Cloud Mask 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 being resolved include:

1. The mapping error in the white-sky albedo ancillary data was fixed April 17, 2017. Data before this time during the day are potentially in error.
2. No post-launch tuning has occurred. Clouds that are optically thin and/or present a low thermal contrast may be missed. Post launch tuning will occur before Provisional Maturity.
3. The Community Radiative Transfer Model lookup tables will be updated on May 5, 2017. This change will impact performance of the cloud mask. Tuning should be able to ameliorate this issue.
4. Performance in the terminator has not been assessed. A terminator test designed to increase stability in terminator is currently not running. A resolution to this issue is currently schedule for integration on May 5, 2017.
5. Performance over specific surface types (mountains, deserts, snow, sea-ice and coasts) has not been addressed.

6. Channel 2 may have positive bias of up to 10% and this will impact the cloud mask and may result in false detection of cloud.
7. Navigation errors may contribute to coastal artifacts.
8. The surface emissivity ancillary data is not being interpolated temporally and are fixed for a specific time period. This may cause artifacts over land surfaces with annual cycle in surface emissivity such as grasslands and arid regions. This issue is currently scheduled to be fixed in June 2017.