

GOES-16 ABI Level 2 Cloud Top Parameters, Beta Data Quality
May 16, 2017
Read-Me for Data Users

The GOES-R Peer/Stakeholder Product Validation Review (PS-PVR) for ABI L2 Cloud Top Parameters (height, pressure, temperature) Beta Maturity was held on May 16, 2017. As a result of this review, the PS-PVR panel recommended that the ABI Cloud Top Parameters (CTP) data be included in GRB.

The ABI CTP Level2 products provide cloud top height (CTH), cloud top pressure (CTp), and cloud top temperature (CTT) over the Full Disk (FD) of the Earth, CTH and CTp over the Continental United States (CONUS) region, and CTH and CTT over both Mesoscale (MESO) regions. They also include cloud emissivity, the 11/12 um cloud beta, the processing information flags, parameter quality indicators and error estimates in the intermediate product (IP) files.

Full description and format of the CTP products 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 CTP from GOES-16 ABI observations is described in the "GOES-R Advanced Baseline Imager (ABI) Algorithm Theoretical Basis Document for Cloud Height" (http://www.goes-r.gov/products/ATBDs/baseline/Cloud_CldHeight_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 (via GRB);
- 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 CTP 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. All issues discussed in the clear sky mask README may have impacts on the CTP.
2. M4 Level 1b data drop outs from the PDA not evident in the GRB.
3. False clouds result in low level stationary clouds.
4. Missed clouds with cloud optical depth (COD) < 1 tends to be high level clouds.
5. Missed clouds with COD > 1 tends to be low level clouds.
6. Phase errors cause cloud height underestimation and is usually in high clouds.
7. Parameter quality indicator in the IP file is output incorrectly.
8. The error estimates are currently output as integers and not real numbers in the IP files.