

GOES-17 ABI L2+ Aerosol Detection (ADP) Release
Beta Data Quality
October 24, 2018
Read-Me for Data Users

The GOES-17 Advanced Baseline Imager (ABI) L2+ Aerosol Detection Product (ADP) was declared Beta maturity on August 27, 2018 (see issue #1 regarding timing for data usage). No formal review was conducted because the algorithms are identical to the ones running with GOES-16, so the Beta declaration of the ABI L1b and CMI flows down to the ABI L2+ products.

The ABI L2+ ADP includes the flags describing the presence of aerosol (including smoke/dust) in the atmosphere over land and over ocean. The ADP is produced during the daytime over clear-sky and snow-free regions; with view and solar zenith angles are less than 87 degrees. Data coverage over the Full Disk (FD) of the Earth is available every 15 minutes and within the Continental United States (CONUS) region every 15 minutes in operational mode 3, and also in mode 4. ADP is produced in the Mesoscale domain every 15 minutes. Data are available in fixed grid at 2 km resolution.

Full description and format of the ADP product is 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 ADP from GOES-16 ABI observations is described in the "GOES-R Advanced Baseline Imager (ABI) Algorithm Theoretical Basis Document for Aerosol Detection Product" (http://www.goes-r.gov/products/ATBDs/baseline/AAA_AIP_v2.0_no_color.pdf).

Beta maturity, by definition, means that:

- 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. Users desiring to use the GOES-16 ABI Beta maturity ADP products for any reason, including but not limited to scientific and technical investigations, are encouraged to consult the NOAA algorithm working group (AWG) scientists for feasibility of the planned applications. These products are sensitive to upstream processing, such as the quality of the calibration, navigation, snow/ice mask and cloud mask.

Known issues being resolved include:

1. Data prior to September 13, 2018 have striping and other image artifacts due to the long-wave IR focal plane having a 6 km offset causing band-to-band registration errors. This had a big impact on dust detection.
2. The Focal Plane Module temperature anomaly effect on ADP is seen as false smoke detection before 10:30 UTC in full disk view.
3. The areas at the edge of full disk where dust from Sahara is usually detected, the ADP product is assigned a low confidence flag. This is because this region falls into either sun glint or view angles are large.

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