

GOES-16 ABI L2+ Soundings (LAP) Release, Beta Data Quality  
May 16, 2017  
Read-Me for Data Users

The GOES-R Peer/Stakeholder Product Validation Review (PS-PVR) for ABI L2+ Soundings (Legacy Atmospheric Profile or LAP) Beta Maturity was held on May 16, 2017. As a result of this review, the PS-PVR panel recommended that the ABI Sounding product be declared Beta. This was accomplished at 2030 UTC on May 16, 2017.

The ABI L2+ Soundings products include: legacy vertical temperature (LVT), legacy vertical moisture (LVM), derived stability indices (DSI), total precipitable water (TPW). All four provide a coverage over the Full Disk (FD) of the Earth, the Continental United States (CONUS) region, and the Mesoscale (MESO) regions.

Full description and format of the LAP products are in the Product Definition and User's Guide (PUG) document (<http://www.goes-r.gov/products/docs/PUG-L2+-vol5.pdf>). The algorithms used to derive Soundings products from GOES-16 ABI observations are described in the "GOES-R Advanced Baseline Imager (ABI) Algorithm Theoretical Basis Document for Legacy Atmospheric Moisture Profile, Legacy Atmospheric Temperature Profile, Total Precipitable Water, and Derived Atmospheric Stability Indices" ([http://www.goes-r.gov/products/ATBDs/baseline/Sounding\\_LAP\\_v2.0\\_no\\_color.pdf](http://www.goes-r.gov/products/ATBDs/baseline/Sounding_LAP_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. Persons desiring to use the GOES-16 ABI Beta maturity Soundings 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 and cloud mask.

Known issues being resolved include:

1. Missing values occur frequently and randomly over boxed areas;
2. The migration of the sun affects the LAP products;
3. Bias in relative humidity at upper troposphere (100 - 300 hPa) due to dry bias in RAOB ;
4. Several DSI data are showing accuracy and precision values slightly larger than the requirements. However, the results are much closer to the requirements in unstable atmospheric conditions;
5. Currently transitioning to the new CRTM version which uses updated spectral response functions.