

GOES-16 & GOES-17 ABI L2+ Enterprise Cloud Mask (ECM) Release  
 Provisional Data Quality  
 November 29, 2021  
 Read-Me for Data Users

The GOES-R Cloud Mask product transitioned from a baseline algorithm to an enterprise algorithm on November 29, 2021 at 1900 UTC. The binary cloud mask (BCM) output remains in the product, but additional parameters have been added.

- 4-Level Mask - Enterprise Cloud Mask (ECM) combines spectral and spatial tests to produce a four-level classification of cloudiness at each pixel location. The 4 levels are:
  - 0 = Clear
  - 1 = Probably Clear
  - 2 = Probably Cloudy
  - 3 = Cloudy
- Cloud Probability - Likelihood of a cloud at a given pixel location (range: 0.0 - 1.0)

There is also a change to the data quality flags (DQFs):

| DQF Flag value | Baseline Algorithm Meaning (prior to 11/29/2021 1900 UTC)   | Enterprise Algorithm Meaning (from 11/29/2021 1900 UTC onwards)               |
|----------------|---|---|
| 0              | Valid, good quality cloud mask  | Valid, good quality cloud mask  |
| 1              | Invalid pixel due to space view   | Bad quality   |
| 2              | Invalid or reduced quality pixel due to being outside of sensor zenith range 70 degrees                               | Invalid pixel due to space view   |
| 3              | Invalid earth pixel due to bad data (bad or missing 11 $\mu\text{m}$ BT or bad/missing clear sky 11 $\mu\text{m}$ BT) | Not Used  |
| 4              | Reduced quality Cloud mask (bad 3.9 $\mu\text{m}$ pixel)  | Not Used  |
| 5              | Reduced quality 0.64 $\mu\text{m}$ tests  | Not Used  |
| 6              | Reduced quality due to other bad channels (excluding 0.64, 3.9 or 11 $\mu\text{m}$ )                                  | Degraded due to out of range focal plane temperature (FPT) or missing channel |

There is no change to product short names, filenames, cadences, or resolution.

Short Names:

- ABI-L2-ACMF

- ABI-L2-ACMC
- ABI-L2-ACMM

Cadence: 10 min Full Disk, 5 minute CONUS, 1 minute mesoscale  
Resolution: 2 km

A full description and format of the ECM can be found 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 the ECM from GOES-R ABI observations is described in detail in the "GOES-R Advanced Baseline Imager (ABI) Algorithm Theoretical Basis Document for A Naïve Bayesian Cloud Mask Delivered to NOAA Enterprise". ATBDs are available at [https://www.star.nesdis.noaa.gov/goesr/documentation\\_ATBDs.php](https://www.star.nesdis.noaa.gov/goesr/documentation_ATBDs.php).

GOES-16 and GOES-17 ECM products continue at Provisional data maturity as of this algorithm change notice.

Contact for further information: OSPO User Services at [SPSD.UserServices@noaa.gov](mailto:SPSD.UserServices@noaa.gov)

Contacts for specific information on the ABI L2 ECM product:

Mark Kulie [mark.kulie@noaa.gov](mailto:mark.kulie@noaa.gov)