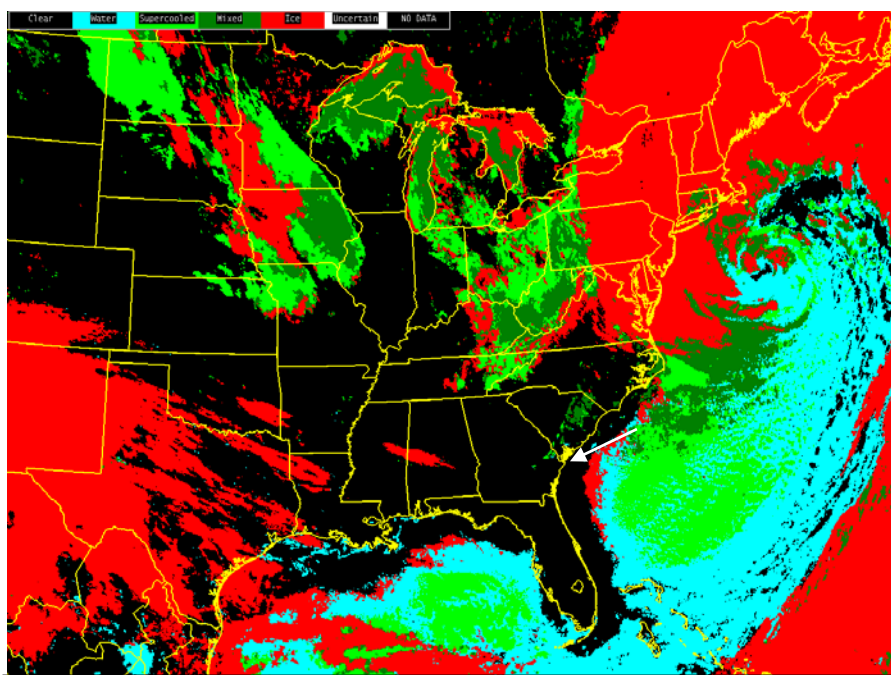


Why is the Cloud Phase Important?

The Baseline Cloud Phase product describes the cloud-top composition. There are four phase categories: liquid water cloud top, with temperatures warmer than 273 K or colder than 273 K (*i.e.*, supercooled), mixed-phase (liquid water and ice) clouds and glaciated (ice) clouds.



GOES-16 Cloud Phase Baseline Product, 1707 UTC on 4 January 2018

Cloud Phase Temporal Cadence and Band Requirements

Domain	Temporal Refresh	Local Zenith Angle Range	ABI Bands Used
Full Disk	15 minutes	0-65	7.3 μ m,8.4 μ m,11.2 μ m,12.2 μ m
CONUS	5 minutes	0-65	7.3 μ m,8.4 μ m,11.2 μ m,12.2 μ m
Mesoscale	5 minutes	0-65	7.3 μ m,8.4 μ m,11.2 μ m,12.2 μ m

Impact on Operations

Primary Application: Cloud Phase, specifically glaciation, can be used to judge convective cloud growth. Cloud phase can also be used to determine the likelihood of drizzle vs. rain (or freezing drizzle v. snow)

Application: Cloud Phase is derived from the baseline Cloud Type product.

Limitations

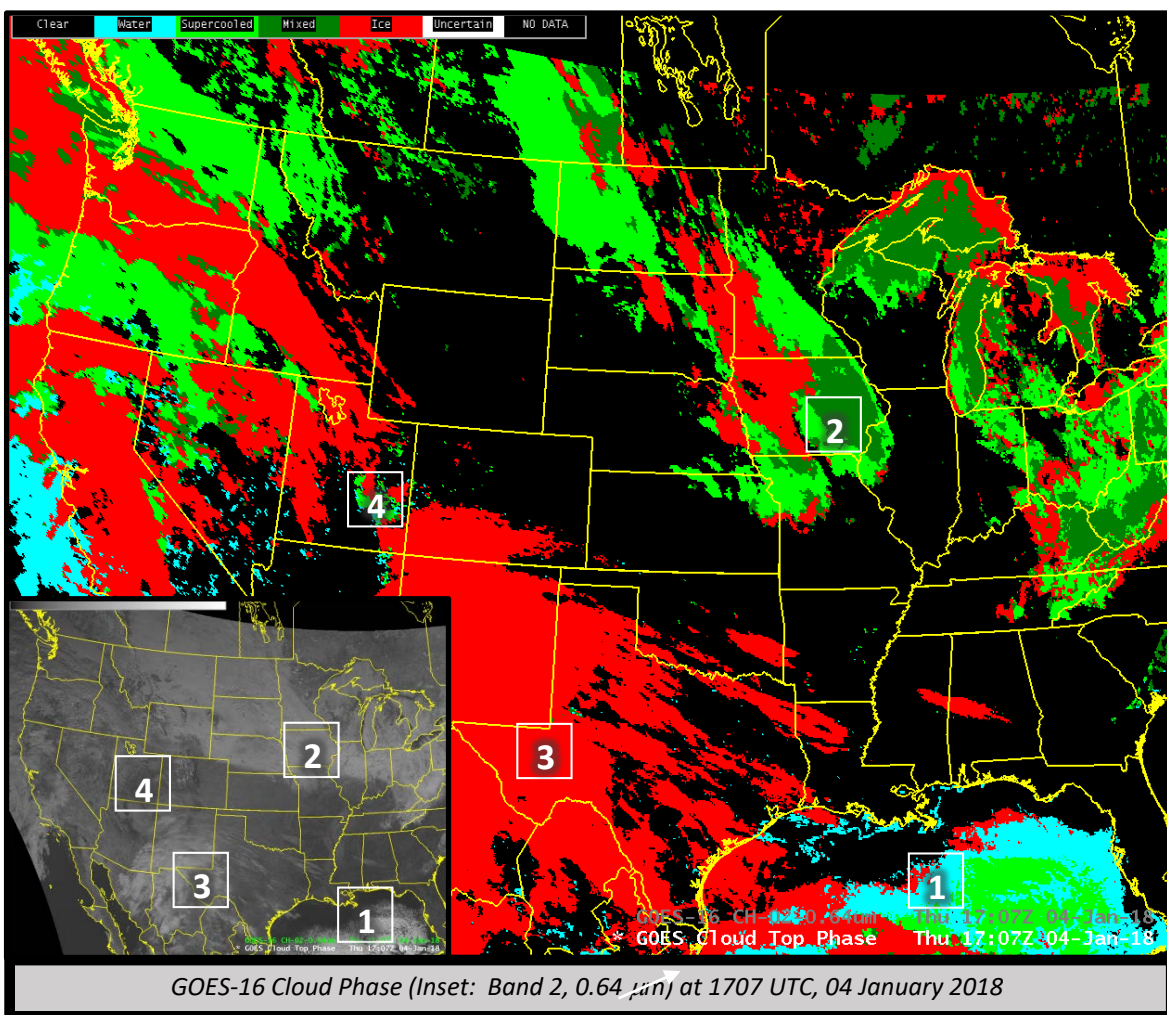
Limitation: Misclassification can occur near coastlines, for warm low clouds, for regions far from nadir, and over snow cover.

Limitation: Accuracy requirement is 80%.

Limitation: Supercooled cloud tops can occur in arctic airmasses from which snow is falling. The satellite sees just the cloud top, not the mixed phase/glaciated middle of the cloud.

Image Interpretation

- 1 Cloud tops made of water droplets are cyan. Note: misclassification can happen at sharp edges.
- 2 Supercooled water droplets are bright green; mixed phase clouds are darker green
- 3 Glaciated clouds are red.
- 4 Snowcover can occasionally show up as stationary clouds.



Resources

[ATBD on Cloud Type/Cloud Phase](#)

[CIMSS Satellite Blog
Blog Post on Cloud Phase](#)

[Journal article on Cloud Phase](#)

**Hyperlinks do not work in
AWIPS but they do in VLab**