Why is the Day Cloud Type RGB important?

As with the Day Cloud Phase Distinction RGB, this RGB allows a user to discern phase changes in a cloud by observing color changes in the RGB. The use of the Band 4 'Cirrus Channel' at 1.38 µm (rather than the 10.3 µm Clean Window Channel) allows for better detection and discrimination of thin and thick cirrus clouds. This RGB has a very similar look to the Day Cloud Phase Distinction RGB in regions of clear skies.
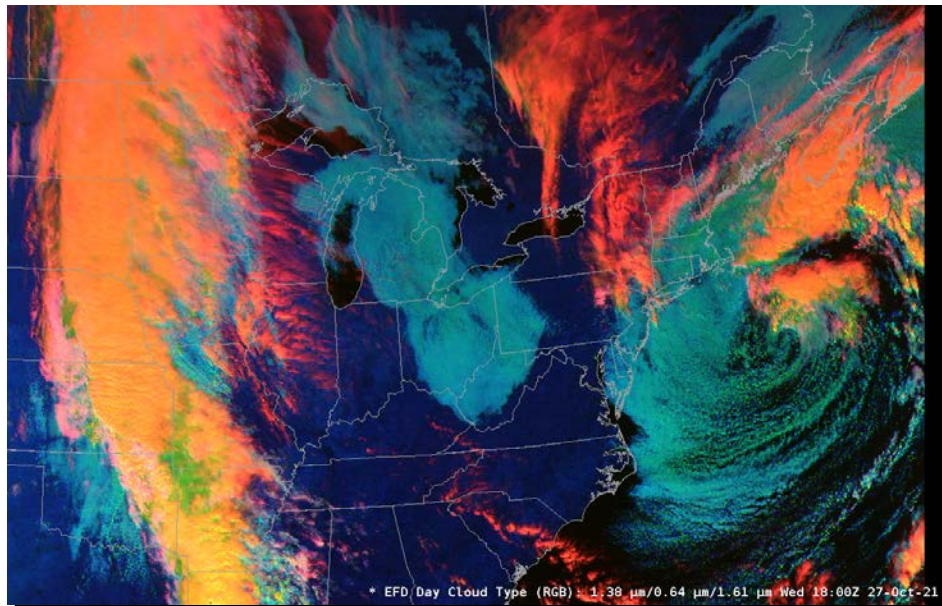
Day Cloud Type RGB from GOES-16 ABI at 1800 UTC, 27 Oct 2021

How is the RGB created?

Color	Band, Wavelength, Gamma	Physically relates to	Large Contribution from…	Small contribution from…
Red	4, 1.38 µm, 0.66	Cloud Height	High clouds	Low clouds
Green	2, 0.64 µm, 1.0	Cloud Optical Thickness	Thick Clouds/Snow/Ice	Thin (or no) clouds
Blue	5, 1.61 µm, 1.0	Cloud Phase	Water Droplets	Ice crystals

Impact on Operations

Phase and Cirrus Detection: Like the Day Cloud Phase Distinction RGB, this one differentiates between cloud types. It has better detection of thin cirrus however, and better identifies thick cirrus; it can thus differentiate between thin and thick cirrus.

Glaciation Detection: As a cloud grows vertically and glaciates, its color changes in the RGB (from blue to green to yellow to orange)
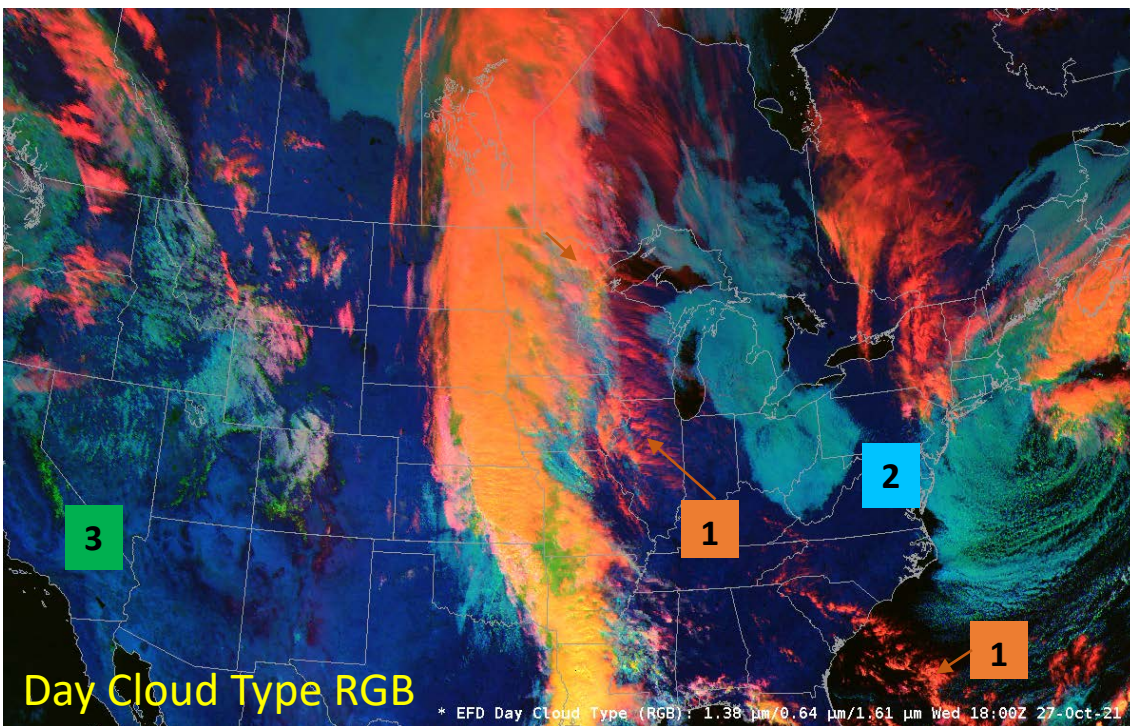
Limitations

Daytime only: This RGB uses only reflective bands and provides a signal in daytime only.

No temperature information: This RGB, unlike the Day Cloud Phase Distinction, has no temperature information. Cloud growth is tracked instead by progressively larger signals in the cirrus channel because growing clouds have less and less absorbing water vapor above their tops.
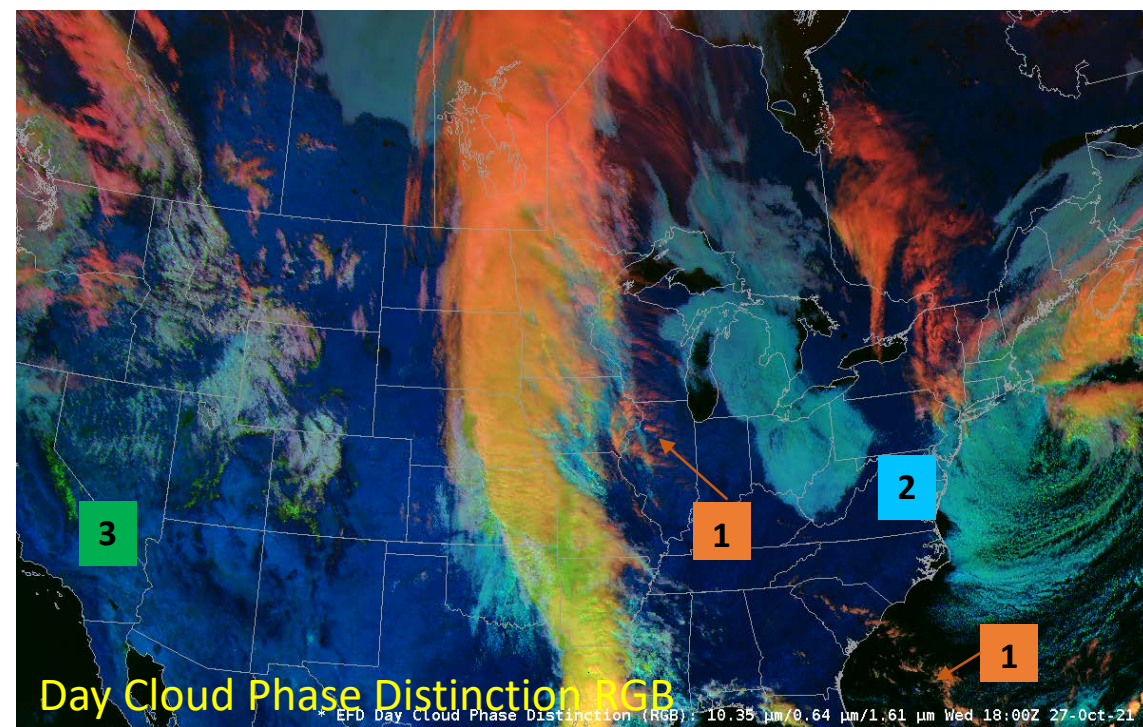
Day Cloud Type RGB

* EFD Day Cloud Type (RGB): 1.38 μm/0.64 μm/1.61 μm Wed 18:00Z 27-Oct-21

Day Cloud Phase Distinction RGB

* EFD Day Cloud Phase Distinction (RGB): 10.35 μm/0.64 μm/1.61 μm Wed 18:00Z 27-Oct-21

1 Thin Cirrus is far more apparent in the Day Cloud Type RGB

2 In regions of low clouds/clear air, the RGBs are identical

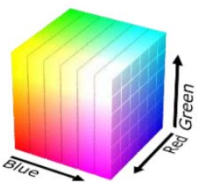**3** Snow cover with clear skies shows as bright green in both RGBs

Resources

Documentation
Satellite Book Club Presentation
CIMSS Satellite Blog
Blog Post 1   Blog Post 2

Hyperlinks will not work in AWIPS, but they will work in VLab

RGB Color Guide

Red: Cirrus Band Information (ABI Band 4)

Green: Visible Band Information (ABI Band 2)

Blue: Snow/Ice Band Information (ABI Band 5)