

Contributed by:

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Region:

CONUS West/Northwest

Office:

NWS Medford, OR (MFR)

Date:

29 December 2013

Product(s):

Nighttime Microphysics RGB

Application Area:

Aviation

Feature:

Fog/Low Stratus
Mid-level Clouds

Instrument(s):

MODIS
VIIRS

Works well with:

11-3.9 μ Difference
Vis./Ceiling observations
Probability of IFR/LIFR

Related Links:

[Multispectral Imagery: RGBs Explained](#)
(UCAR/COMET)
[Quick Guide: Nighttime Microphysics RGB](#)
(NASA SPoRT)

Event Description:

Low-level moisture contributed to the formation of low clouds and fog near the Oregon coastline and further inland. Thin, mid-level clouds were also present at the time. Multiple scans of the product showed the decrease of low clouds and fog over time.

Product Impact:

The imagery allowed for the distinction between fog and low cloud features, even while thin, mid-level clouds were present. Multiple passes of the product from MODIS and VIIRS between 0515UTC – 1105UTC showed the decreasing area of fog through the mid-level clouds and the area of that morning's Dense Fog Advisory was narrowed due to the imagery.

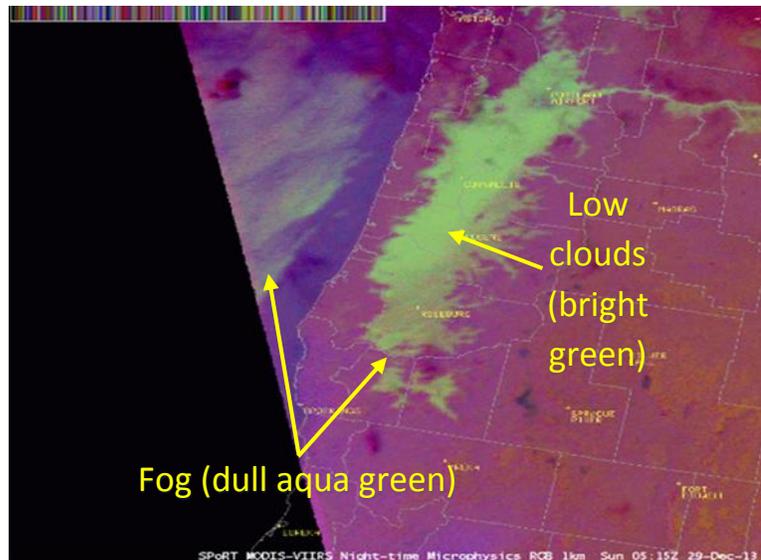


Figure 1. Annotated SPoRT Nighttime Microphysics RGB valid at 0515 UTC, 29 December 2013 over western Oregon.

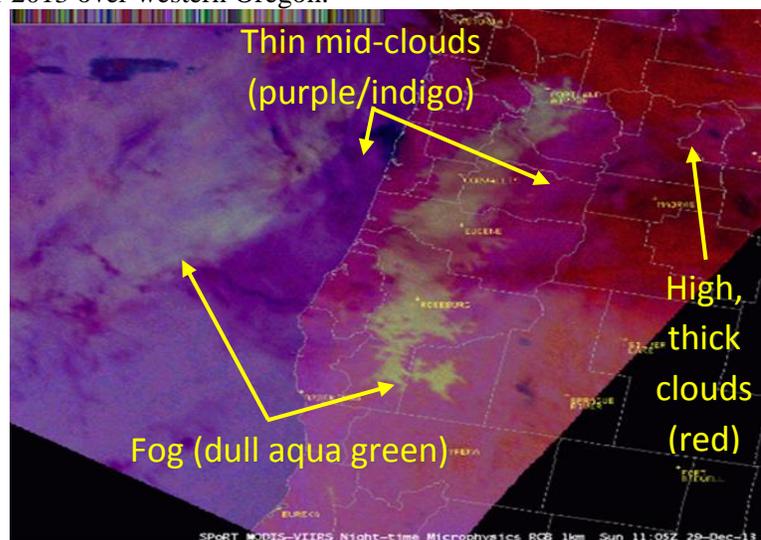


Figure 1. Annotated SPoRT Nighttime Microphysics RGB valid at 1105 UTC, 29 December 2013 over western Oregon.

Interpretation:

The fog is shown in the dull aqua-green coloring, which decreases from the first image (top, 0515 UTC, MODIS) to the next image (below, 1105 UTC, VIIRS). The fog and low clouds will have more blue contributions than the mid-clouds, but thin fog can be influenced by cold surface emissions, which means that thin fog sometimes has less intense blue than warm, low clouds. Fog and low cloud features are still apparent in this case due to the thin nature of the mid-level clouds, shown in purple/indigo. These mid clouds have a lower red contribution, an indication of their relative thickness, and less of a green contribution than the fog and low clouds, indicating their larger particle size, typical of ice. High thick ice clouds approaching from the east appear red, due to low green and blue contributions.