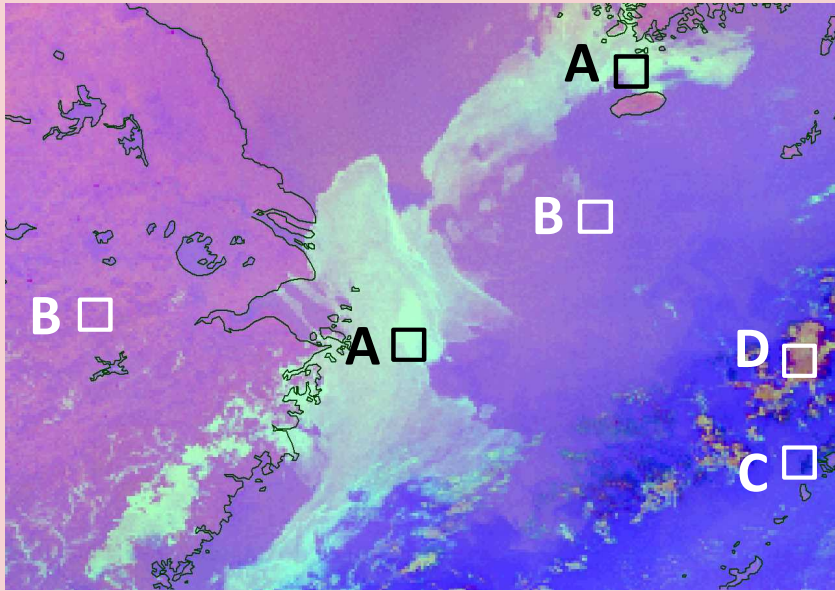
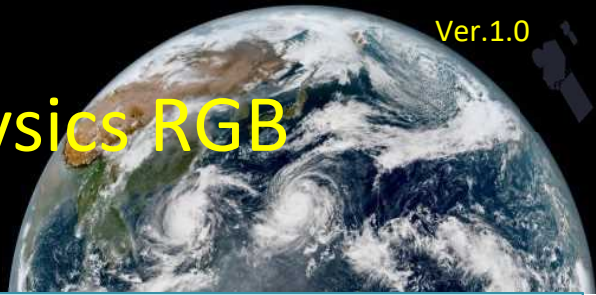


Himawari Night Microphysics RGB Quick Guide



Fog/low-level clouds around the East China Sea and the Yellow Sea (21:00 UTC, 27 March 2018)

- A : fog/low-level clouds
- B : land and ocean (cloud-free);
- C : thin cirrus clouds
- D : thick mid-level clouds

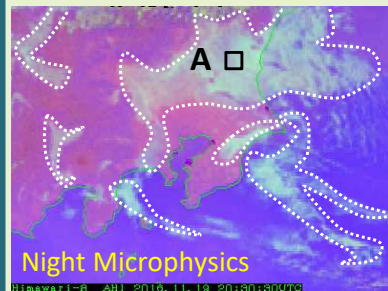
Main applications: Cloud analysis, especially in detection of fog/low clouds at nighttime

Benefits:

- High contrast between water clouds (fog/low clouds) and cloud-free surfaces
- Efficiency for nighttime cloud analysis
- Identification of fire hotspots

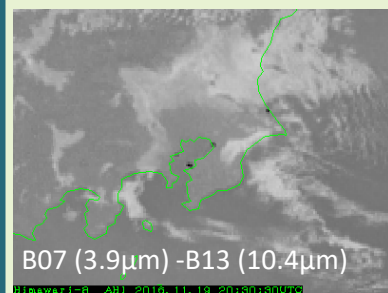
Limitations:

- Available during nighttime only (all clouds appear magenta during the daytime)
- Difficulty of distinguishing between fog and low clouds from Night Microphysics RGB data alone
- Effect on cloud colors (especially fog/low clouds) and surfaces from thermal conditions (i.e., latitudinal, seasonal and diurnal variations)



Fog/low-level cloud around the Kanto Plain, Japan (20:30 UTC, 19 November 2016)

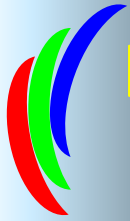
Fog and low-level clouds appear bright in difference imagery (bottom), thereby supporting identification of nighttime fog. In Night Microphysics RGB (top), fog/low-level clouds are clearer with a bright-greenish hue (dashed lines).



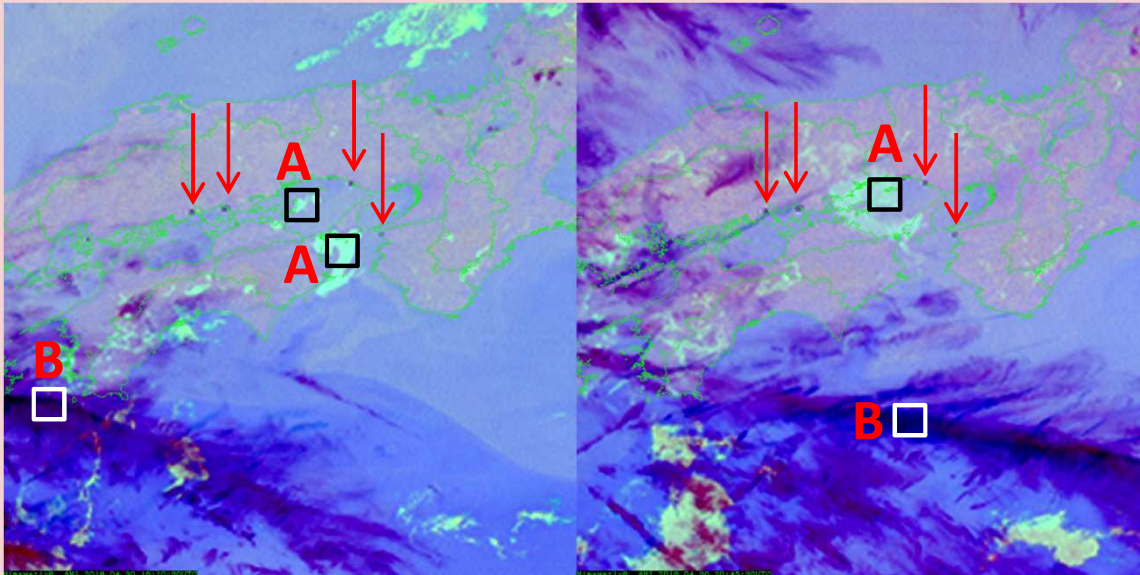
A : (thick) low-level cloud or fog

RGB composition with recommended thresholds and related specifications for Night Microphysics RGB

Color	AHI bands	Central wave length [µm]	Min [K]	Max [K]	Gamma	Physical relation to	Smaller contribution to signal of	Larger contribution to signal of
Red	B13-B15	10.4-12.4	-3.0K	7.5K	1.0	Cloud optical thickness	Thin clouds	Thick clouds
Green	B07-B13	3.9-10.4	-7.0K	2.9K	1.0	Cloud phase	Thin ice clouds	Thick fog/ water clouds
Blue	B13 (inverse)	10.4	243.7K	293.2K	1.0	Cloud top temperature Surface temperature	Cold clouds Cold surface	Warm clouds Warm surface



Himawari Night Microphysics RGB Quick Guide

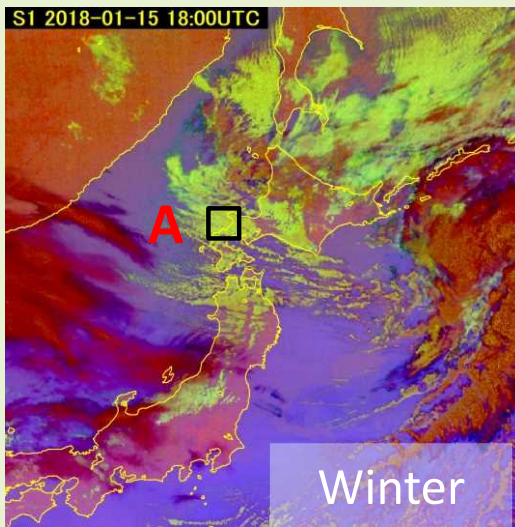
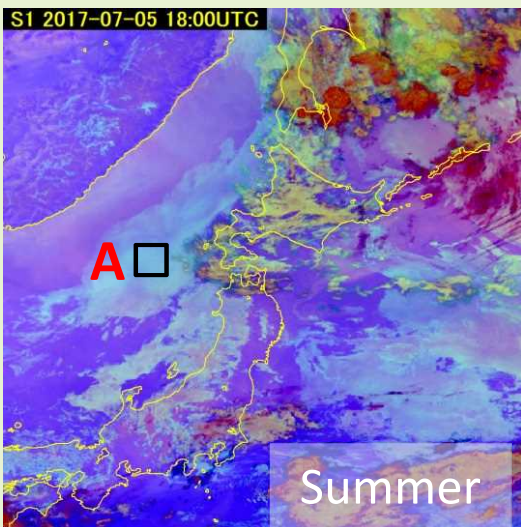


Fog and thin cirrus clouds around Japan's Seto Inland Sea based on Night Microphysics RGB (16:10 UTC (left) and 20:45 UTC (right), 30 April 2018)

A ■ : fog or low-level clouds

B ■ : thin cirrus clouds

Arrows indicate darkish hotspots considered to be artificial sources of heat (e.g., factories and industrial areas).



Colors of clouds (especially fog/low clouds) and surfaces are affected by thermal conditions (i.e., latitudinal, seasonal and diurnal variations).

In mid-/high latitudes, clear seasonal differences are seen between summer and winter.

A ■ ■ : low-level cloud/ fog

Color interpretation for Night Microphysics RGB

Color	Interpretation
■	Cold, thick, high-level cloud
■ (with dots)	Very cold, thick, high-level cloud*
■	Thin cirrus cloud
■	Thick, mid-level cloud
■	Thin, mid-level cloud
■	Low-level cloud (cold atmosphere, high latitude)
■	Low-level cloud (warm atmosphere, low latitude)
■	Ocean
■	Land