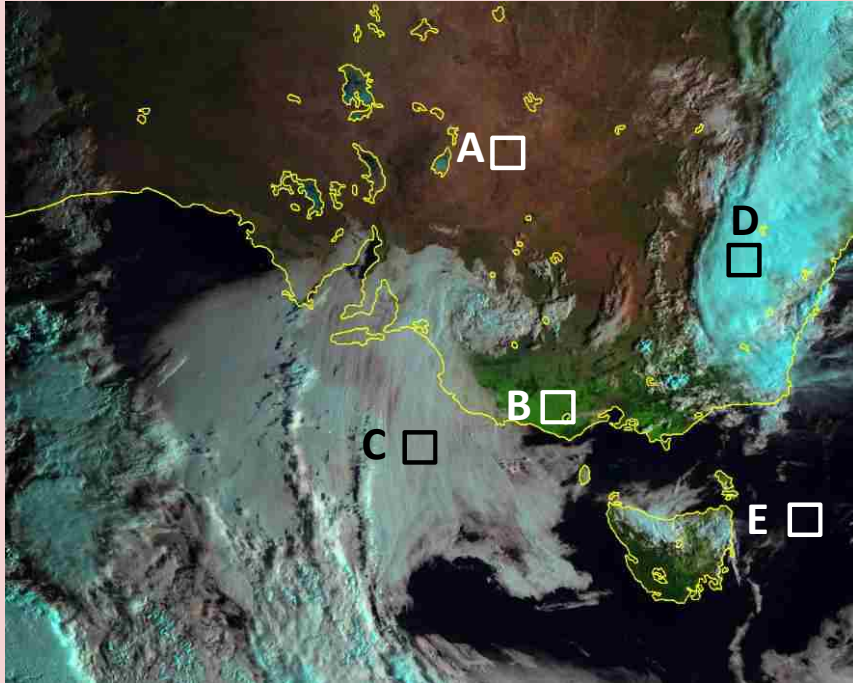# Himawari Natural Color RGB Quick Guide

Low-level clouds, including fog, drifting to southeastern Australia (21:00 UTC, 17 November 2017)

A ■ : bare ground or desert
B ■ : vegetation
C ■ : thick low-level cloud
D ■ : thick high-level cloud
E ■ : ocean

Main applications: Determination of surface characteristics (snow, vegetation, bare soil) and ice/water clouds

Benefits:
- Facilitation of determination between high-level ice clouds and low-level water clouds
- Facilitation of intuitive surface characteristic identification (green vegetation, brown bare soil, blue snow/ice)

Limitations:
- Available for daytime only
- Similarity between the color of high-level ice cloud and snow-/ice-covered surfaces
- Issues with cyan areas sometimes containing both ice and water clouds with large droplets due to low B05(1.6μm) signal contribution
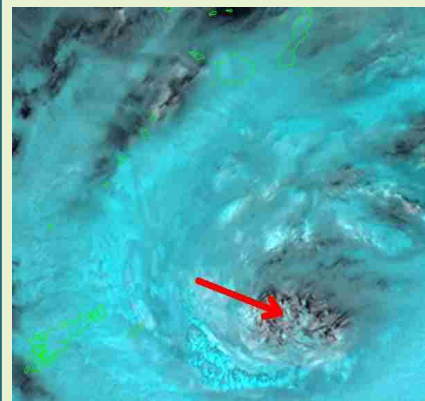
Typhoon Noru with Natural Color RGB display at 02:38 UTC on 4 August 2017

This image shows Typhoon Noru (T1705) approaching southwestern Japan. A detailed structure with whitish low-level clouds (indicated by the red arrow) is seen inside the eyewall.

RGB composition with recommended thresholds and related specifications for Natural Color RGB

| Color	AHI bands	Central wave length [μm]	Min [%]	Max [%]	Gamma	Physical relation to	Smaller contribution to signal of	Larger contribution to signal of
Red	B05	1.6	0%	99%	1.0	Cloud phase Snow and ice	Ice clouds Snow-covered land/sea ice	Water clouds
Green	B04	0.86	0%	102%	0.95	Cloud optical thickness Green vegetation	Thin clouds	Thick clouds Snow-covered land Vegetation
Blue	B03	0.64	0%	100%	1.0	Cloud optical thickness	Thin clouds	Thick clouds Snow-covered land Sea ice

Himawari Natural Color RGB Quick Guide
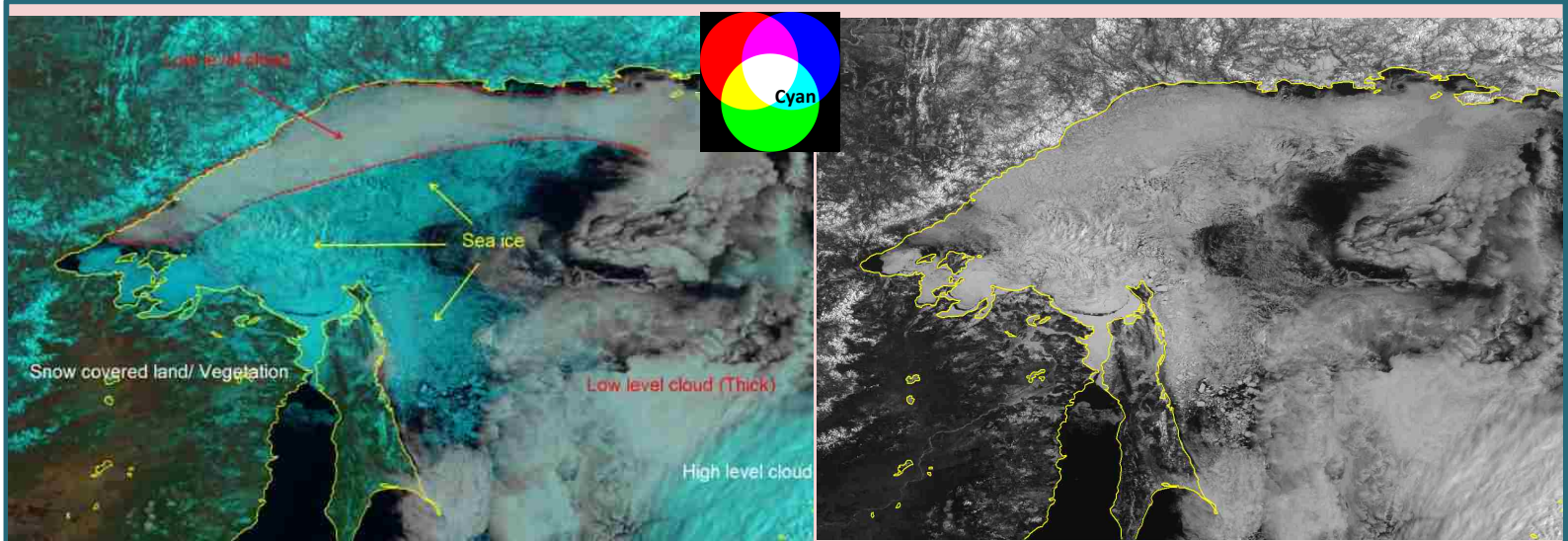

Cyan

Sea ice and low-level cloud with Natural Color RGB at 23:00 UTC on 15 April 2018 (left)

Due to Band 5's lesser contribution to pixels for sea ice, the sea ice area appears in cyan (as a result of contribution from green and blue). Surface snow cover and high-level cloud with ice crystals are also shown in cyan for the same reason (see the color interpretation table). Distinction between sea ice and low-level cloud can be challenging with conventional visible band imagery (right, Band 3) for inexperienced viewers.

Natural Colors

B03(0.64µm)
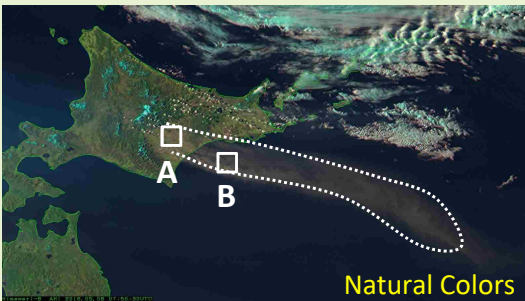
A dust plume caused by strong wind can be seen in both visible (bottom) and RGB (top) images.
RGB facilitates better discrimination of dust due to the clear appearance of dust sources (e.g., bare soil). Both images are enhanced with gamma correction (1.5).
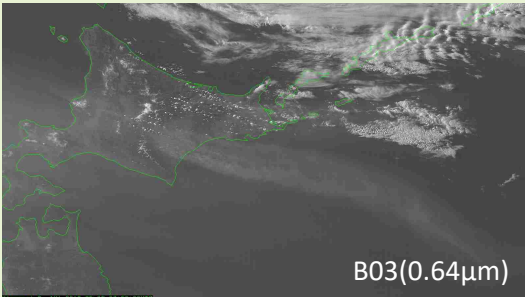
Dust around Hokkaido, northern Japan (07:50 UTC, 8 May 2016)
A ▢ : bare ground or desert
B ▢ : dust

Color interpretation for Natural Color RGB

Color	Interpretation
	High-level ice clouds
	Low-level water clouds
	Ocean
	Vegetation
	Desert
	Snow/Ice