Ver.1.0

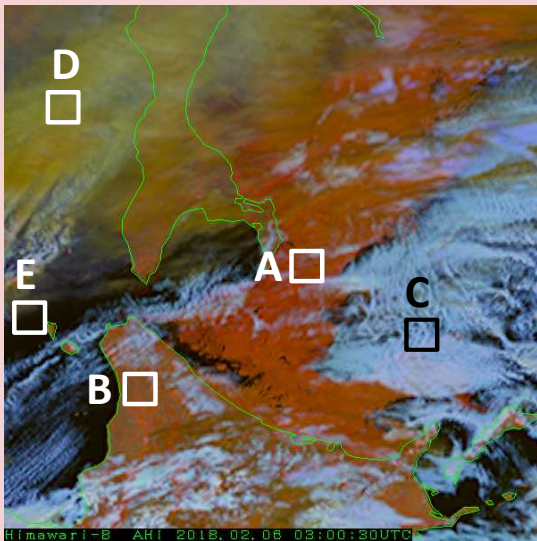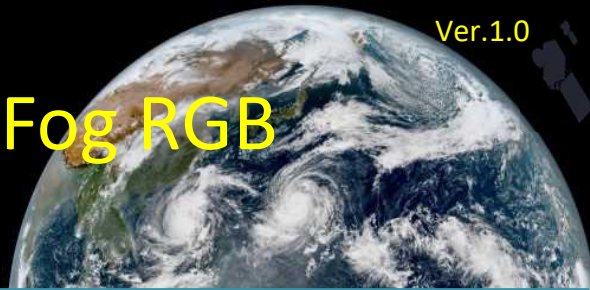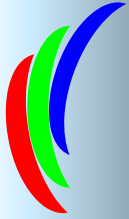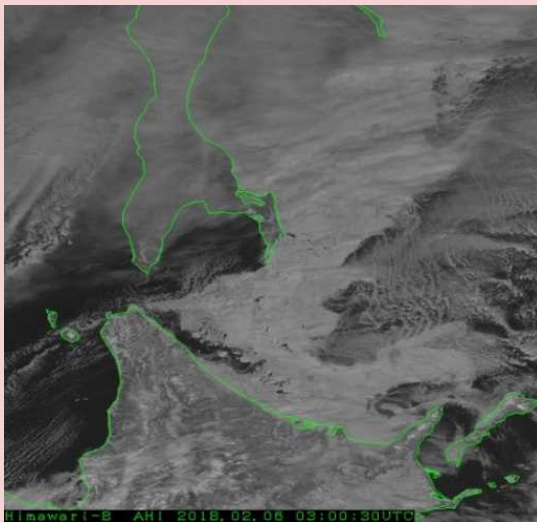# Himawari Day Snow-Fog RGB Quick Guide

A ⬛ : sea ice
B ⬛ : snow-covered land
C ⬜ : low-level water cloud
D ⬜ : high-level cloud with small ice particles
E ⬛ : sea surface

Main applications：Identification of coverage with snow/ice and fog/low clouds during the daytime

Benefits:
- Optimal color contrast between snow/ice covered surface and water clouds/fog
- Support for discrimination between clouds and cloud-free surface areas

Limitations：
- Available for daytime only
- Low contrast for thin cirrus clouds
- Possible obstruction of reflection from snow beneath coniferous forest canopies

Sea ice around the Sea of Okhotsk, northern Japan and Russia (03:00 UTC, 6 February 2018) Top: Day Snow-Fog RGB; bottom: visible (Band 3) image
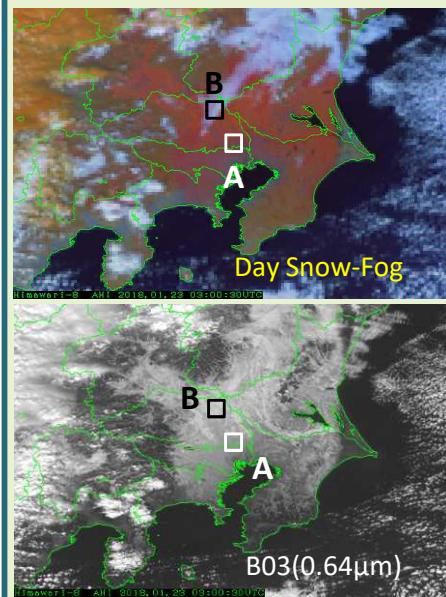
Snow on the Kanto Plain (03:00 UTC, 23 January 2018)

A ⬛ : snow
B ⬜ : low-level water cloud

Day Snow-Fog

B03(0.64μm)

It is difficult to distinguish between clouds and snow areas due to high reflectivity in visible imagery (bottom). The RGB image (top) facilitates discrimination based on hue.

RGB composition with recommended thresholds and related specifications for Day Snow-Fog 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	B04	0.86	0%	102%	1.6	Cloud optical thickness Snow and ice	Thin clouds	Water clouds Snow-covered land/sea ice
Green	B05	1.6	0%	68%	1.7	Cloud phase (and size) Snow and ice	Ice clouds with large crystals Snow-covered land/sea ice	Thick water clouds with small droplets
Blue	B07refl	3.9	2%	45%	1.95	Cloud phase and size Snow and ice	Ice clouds with large crystals Snow-covered land/sea ice	Thick water clouds with small droplets

Himawari Day Snow-Fog RGB Quick Guide
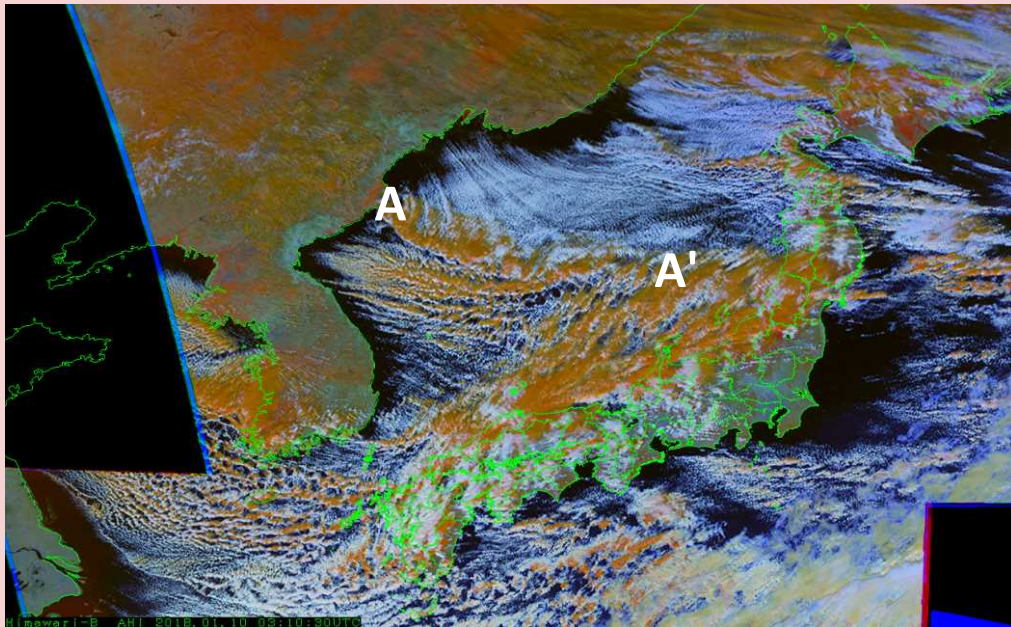
Characteristic winter cloud pattern around the Sea of Japan (03:10 UTC, 10 January 2018)

The orangish cloud line A – A' indicates convergence with thick convective clouds (known as the Sea of Japan Polar Air Mass Convergence Zone, or JPCZ). These clouds often cause heavy snow in winter.

Low-level cloud with fog around Adelaide, Australia (00:00 UTC, 3 September 2019). The dashed line indicates the area around Adelaide.

Low-level clouds and fog with larger particles appear yellowish due to higher contributions from Band 5 (green) and Band 7 (blue).

A ☐ : fog or low-level clouds
B ☐ : thick low-level clouds or fog with large droplets
C ☐ : vegetation
D ☐ : desert
E ☐ : sea surface
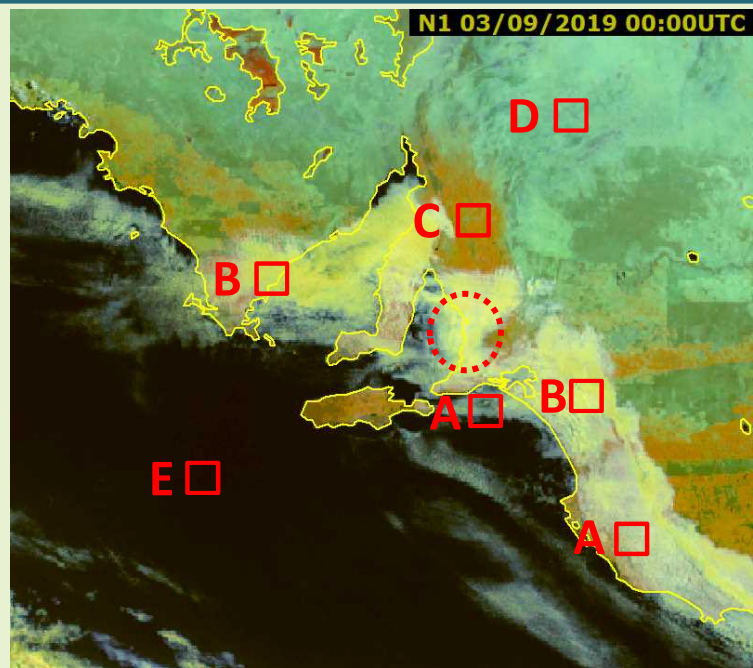
Color interpretation for Day Snow-Fog RGB

Color	Interpretation
	Deep precipitating cloud (precipitation is not necessarily reaching the ground) - bright, thick, large ice particles
	Deep precipitating cloud (or thick, high-level lee cloudiness with small ice particles) - bright, thick, small ice particles
	Thick water cloud with large droplets
	Thick water cloud with small droplets
	Ocean
	Vegetation
	Desert
	Snow/Ice