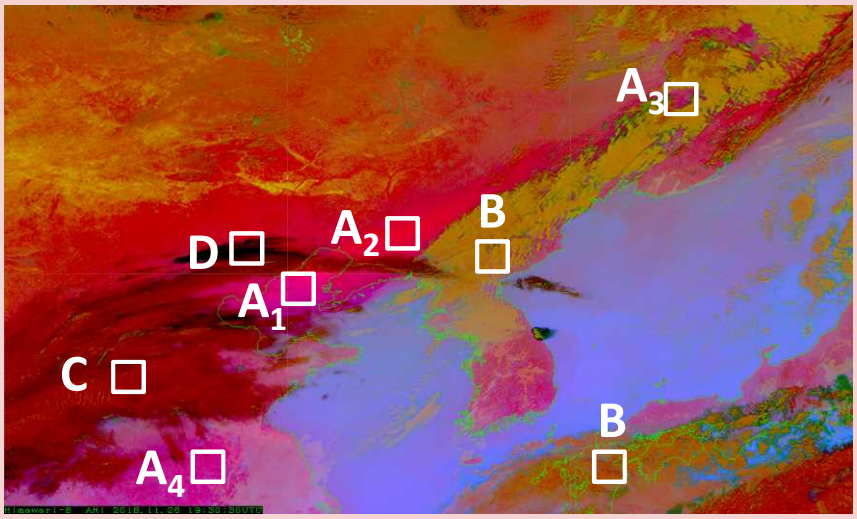
Meteorological Satellite Center (MSC) of JMA

Ver.1.0

Himawari Dust RGB Quick Guide



Extensive dust cloud (yellow sand) around the Bohai Sea, northeastern China and the Korean Peninsula with green beam – $BTD_{B11-B13}$ version (19:30 UTC, 26 November 2018)

The zonal magenta area (A_1-A_2-A_3) indicates distinct dust clouds.

A_i : yellow sand (dust)
B : thick mid-level cloud
C : thick high-level cloud
D : thin high-level (cirrus) cloud

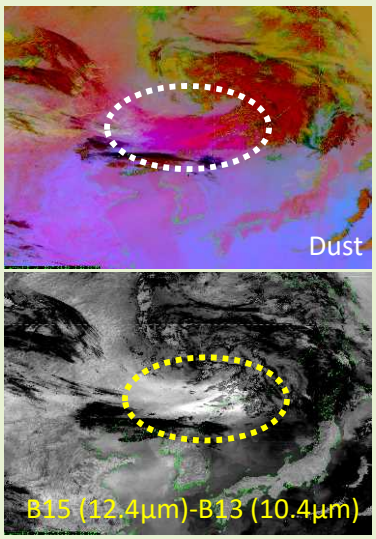
Main applications: Detection of Aeolian dust during day and night, cloud analysis

Benefits:

- Daytime/nighttime applicability thanks to infrared image composition
- Support for all-day monitoring of dust plume generation and dissipation on an ongoing basis
- Support for identification of cirrus clouds
- Support for identification of moisture boundaries in dry cloud-free areas

Limitations:

- Inability to estimate dust cloud height and thickness from Dust RGB data alone
- Difficulty of identifying very thin dust clouds
- Difficulty of identifying thin or low-level dust clouds over sea areas
- Disturbance from high-level clouds over dust clouds
- Poor display of low-level clouds (with dust cloud shading similar to that of low-level clouds)



Yellow sand around northeastern China and the Korean Peninsula with green beam – $BTD_{B11-B13}$ version (15:20 UTC, 29 April 2017)

A bright area indicating yellow sand is seen in the difference image (bottom).
The yellow sand area is more clearly visible in magenta in the RGB image (top).

RGB composition with recommended thresholds and related specifications for Dust 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 Dust	Thin ice clouds	Thick clouds Dust
Green	B11-B13 /B11-B14	8.6-10.4 /8.6-11.2	0.9K -0.5K	12.5K 15.0K	2.5 2.2	Cloud phase	Thin ice clouds Dust	Water clouds Deserts
Blue	B13 (inverse)	10.4	261.5K	289.2K	1.0	Cloud top temperature Surface temperature	Cold clouds Cold surface	Warm clouds Warm surface

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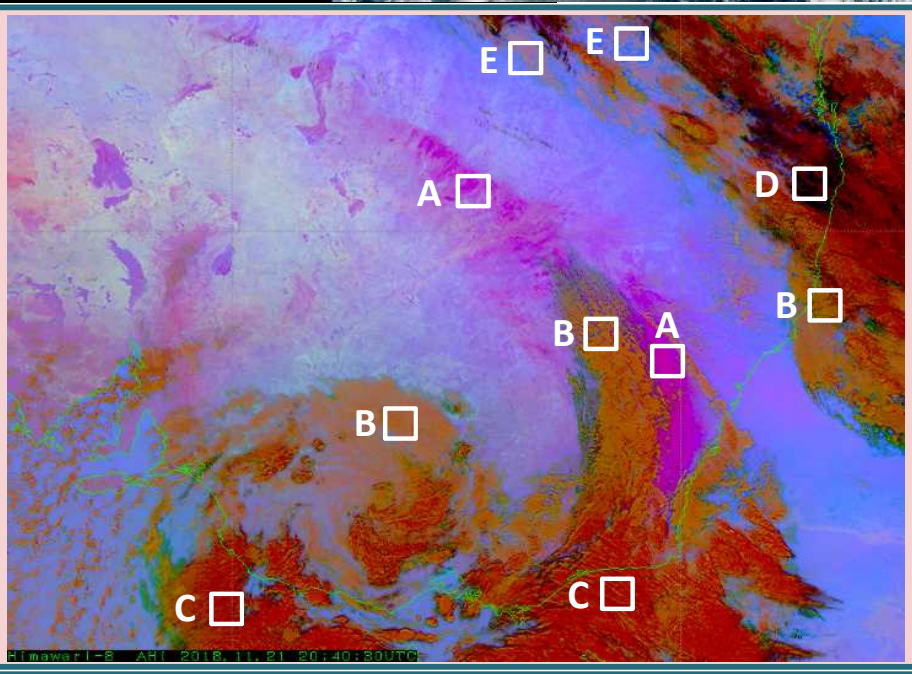
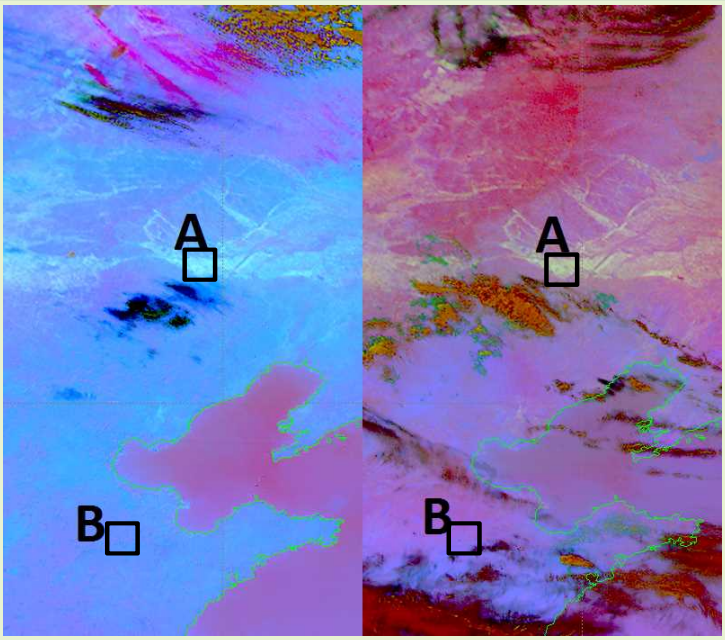
Dust storm around southeastern Australia (20:40 UTC, 21st November 2018) with clouds relating to a low-pressure system

A : dust storm
B : thick mid-level cloud
C : thick high-level cloud
D : thin high-level (cirrus) cloud
E : low-level cloud





Differences in surface color shading between daytime (left: 03:00 UTC) and nighttime (right: 12:00 UTC) (30 April 2017)

A : desert (left: warm; right: cold)
B : land (left : warm/ right :cold)

Color	Interpretation
	Cold, thick, high-level clouds
	Thin cirrus clouds, Contrails
	Thick, mid-level cloud
	Thin, mid-level cloud
	Low-level cloud (cold atmosphere, high latitude)
	Low-level cloud (warm atmosphere, low latitude)
	Dust (yellow sand)/ Volcanic ash
	Ocean
	Warm desert
	Cold desert
	Warm land
	Cold land

Color interpretation for Dust RGB