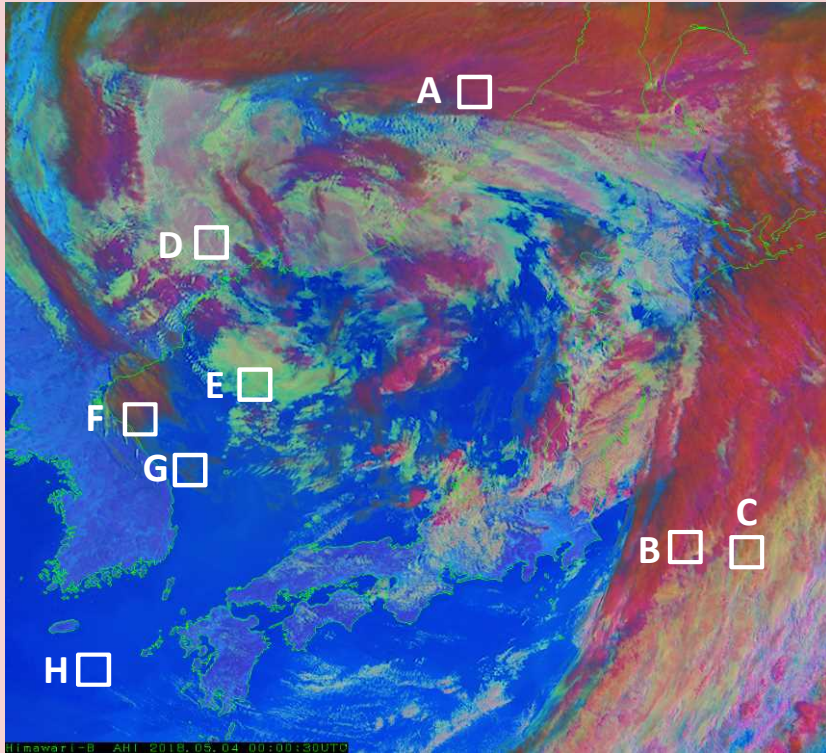


Himawari Day Microphysics RGB Quick Guide



Cloud area associated with a low-pressure (polar-low) system around the Sea of Japan (00:00 UTC, 4 May 2018)

- A ■ : thick cloud with large ice particles
- B ■ : thick cloud with small ice particles (including Cb cloud with strong updrafts)
- C ■ : thick water cloud with (super-cooled) small droplets
- D ■ : thick water cloud with large droplets
- E ■ : thin water cloud with (super-cooled) small droplets
- F ■ : high-level lee cloudiness with small ice particles
- G ■ : thin cirrus cloud
- H ■ : sea surface

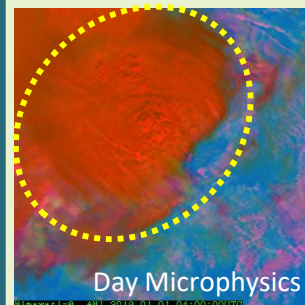
Main applications: Manifold cloud analysis (temperature, cloud optical thickness, cloud particle phase and size)

Benefits:

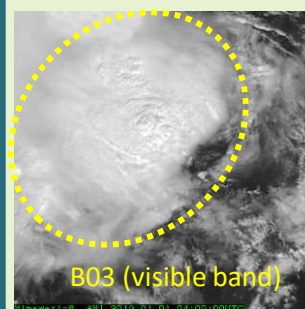
- In relation to the above, usefulness in identifying Cbs with small ice particles, water clouds and super-cooled water clouds
- Detection of wildfires (fire hotspots) and snow/ice cover on land/sea

Limitations:

- Daytime availability only
- Complexity of large number of colors and interpretations for inexperienced users
- Potential obstruction of lower clouds (e.g., super-cooled water types) from upper-level clouds



Typhoon Pabuk (T1901) around the South China Sea (04:00 UTC, 1 January 2019)

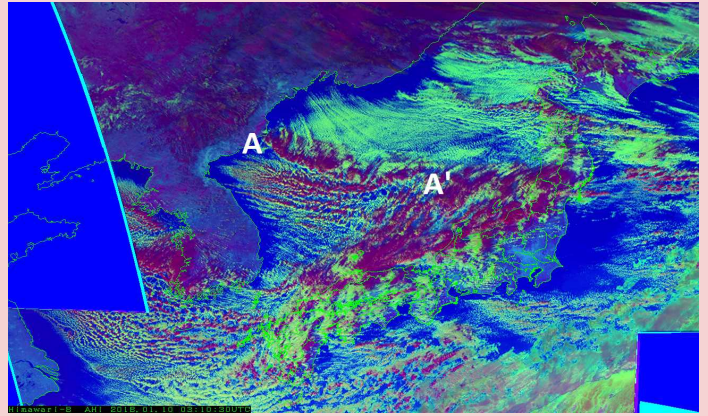
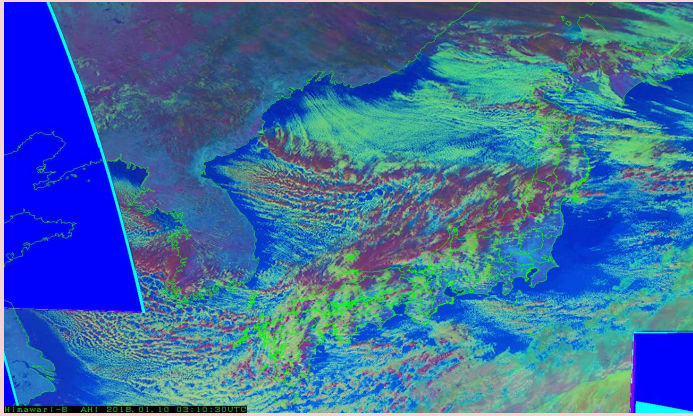


The thick cloud marked by the yellow dashed circle is more distinctive in Day Microphysics RGB.

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

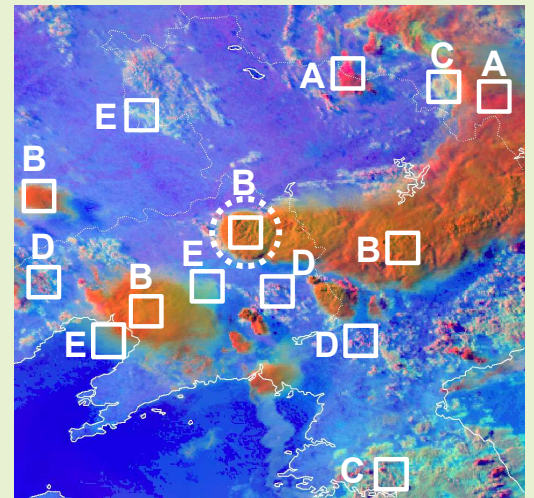
Color	AHI bands	Central wave length [μm]	Min [K/%]	Max [K/%]	Gamma	Physical relation to	Smaller contribution to signal of	Larger contribution to signal of
Red	B04	0.86	0%	102%	0.95	Cloud optical thickness	Thin clouds	Thick clouds
Green	B07refl	3.9	2% (warm/cold season)	82%/38% (warm/cold season)	2.6/1.8 (warm/cold season)	Cloud phase and size Snow and ice	Ice clouds with large ice crystals	Water clouds with small droplets
Blue	B13 (inverse)	10.4	203.5K	303.2K	1.0	Temperature	Cold thick clouds	Warm clouds Warm surface

Himawari Day Microphysics RGB Quick Guide



Characteristic cloud patterns for winter around the Sea of Japan (03:10 UTC, 10 January 2018)
 The image on the left is normal (summer) Day Microphysics RGB, and that on the right shows the same RGB with thresholds for winter in the mid/high latitudes.
 The reddish cloud line A-A' indicates convergence with thick convective clouds (known as the Japan Sea Polar Air Mass Convergence Zone, or JPCZ), which, with convective clouds, often causes heavy snow in winter. The lower winter version offers high contrast between developed ice clouds and water clouds.

Developing Cb clouds around Northeastern China (09:50 UTC, 3 July 2019). Thick ice clouds with small particles (B) appear in orange or light brown in Day Microphysics RGB imagery (left). On the right is a sandwich image. Media reports indicated that Kaiyuan in Liaoning (dashed line) was hit by a tornado.



- A ■ : deep precipitating cloud with large ice particles
- B ■ : deep precipitating cloud with small ice particles (including Cb cloud with strong updrafts)
- C ■ : mid-/low-level (super-cooled) thick water cloud with small droplets
- D ■ : low-level thick water cloud with large droplets
- E ■ : thin cirrus cloud

Color	Interpretation
■	Deep precipitating cloud (precipitation is not necessarily reaching the ground) - bright, thick, large ice particles, cold cloud
■	Deep precipitating cloud (Cb cloud with strong updrafts and severe weather)* - bright, thick, small ice particles, cold cloud *or thick, high-level lee cloudiness with small ice particles
■	Thin Cirrus cloud (large ice particles)
■	Thin Cirrus cloud (small ice particles)
■	Super-cooled, thick water cloud - bright, thick, small droplets
■	Super-cooled, thick water cloud - bright, thick, large droplets
■	Super-cooled thin water cloud with large droplets
■	Super-cooled, thin water cloud with small droplets
■	Thick water cloud (warm rain cloud) - bright, thick, large droplets
■	Thick water cloud (no precipitation) - bright, thick, small droplets
■	Thin water cloud with large droplets
■	Thin water cloud with small droplets
■	Ocean
■	Vegetation
■	Desert/Fire (Hot spot)
■	Snow/Ice

Color interpretation for Day Microphysics RGB