



Himawari-8 RGB Products

- True Color RGB
- Natural Color RGB
- Dust RGB
- Airmass RGB

May 2017

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Satellite Information System for KMA staffs



National Meteorological
Satellite Center



로그인 회원가입 마이페이지 메인페이지 사이트맵 Web Admin

검색

위성(운영)정보 위성별영상 현상별영상 연직단면표출 자료서비스 품질·감시 인트라넷

위성별영상

COMS(MI)

COMS(GOCI)

HIMAWARI-8(AHI)

- > 기본영상(cloud)
- > 컬러영상(cloud)
- > 기본영상(cast)
- > 컬러영상(cast)

FY-2E(VISSR)

NOAA(AVHRR)

Aqua/Terra(MODIS)

Aqua(AMSRE)

METOP(ASCAT)

METOP(AVHRR)

METOP(IASI)

NPP(MIRS)

DMSP(SSMIS)

COROLIS(WindSat)

M/W sensors

전체영상 모니터

MTSAT(Imager)

HIMAWARI-8(AHI) 컬러영상(cloud)

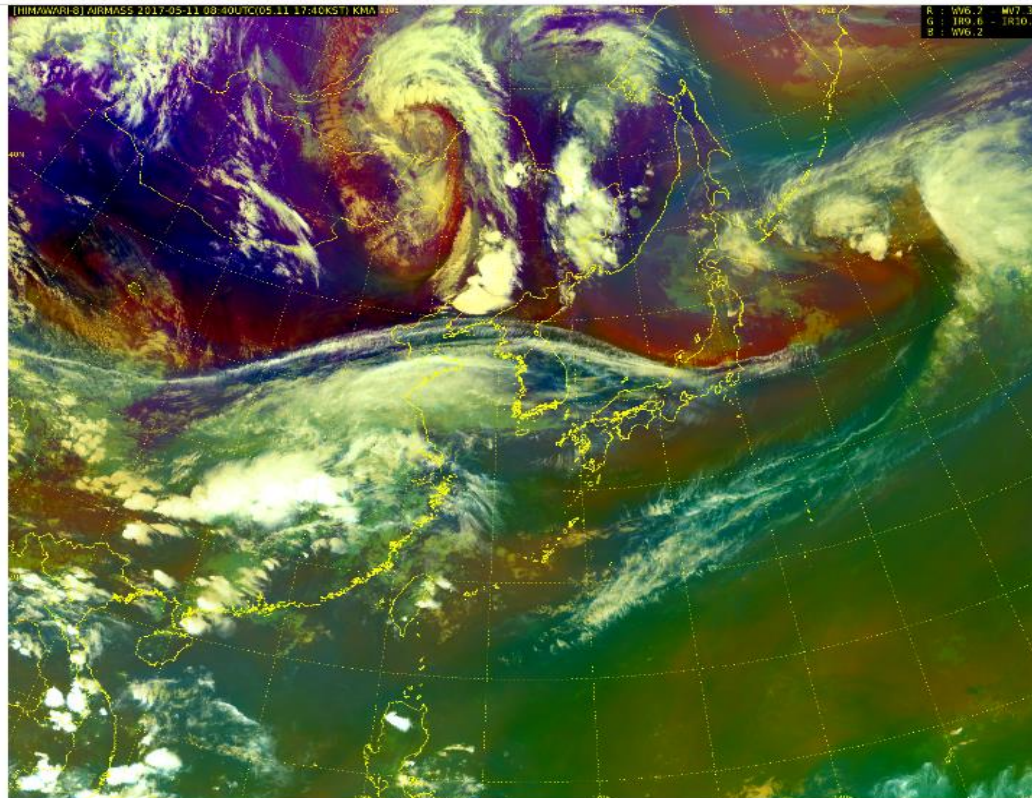
Home > 위성별영상 > HIMAWARI-8(AHI) > 컬러영상(cloud)

기대(Airmass) 농아시아 2017-05-11 17:40KST KST

도움말 이전 다음 동영상 검색 NOW

검색간격설정: 10분

자동새로고침: 1분



◆ HimawariCloud (2015.7)

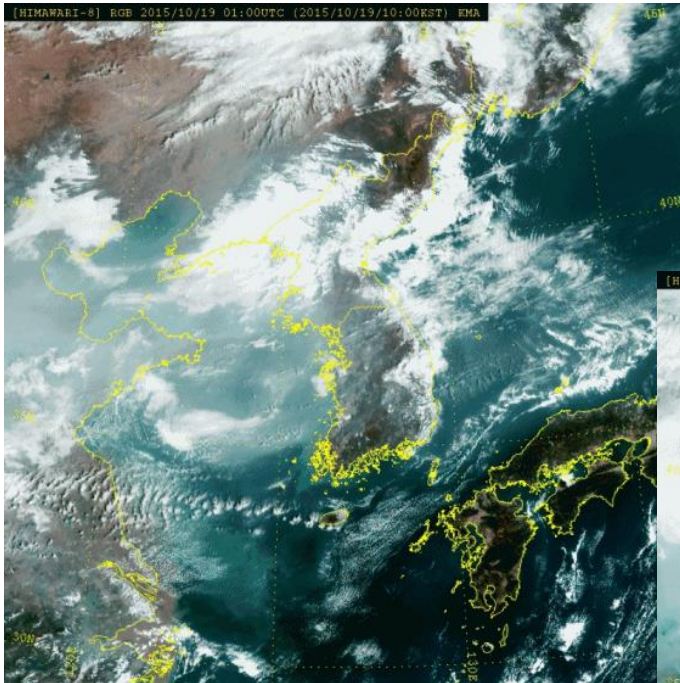
- 16chs images
- 4 RGB Products
- Original Resolution
- about 12min latency

◆ HimawariCast (2017.4)

- 14chs images
- 3 RGB Products
- Reduced Resolution (VIS 1km, IR 4km)
- 10 min latency

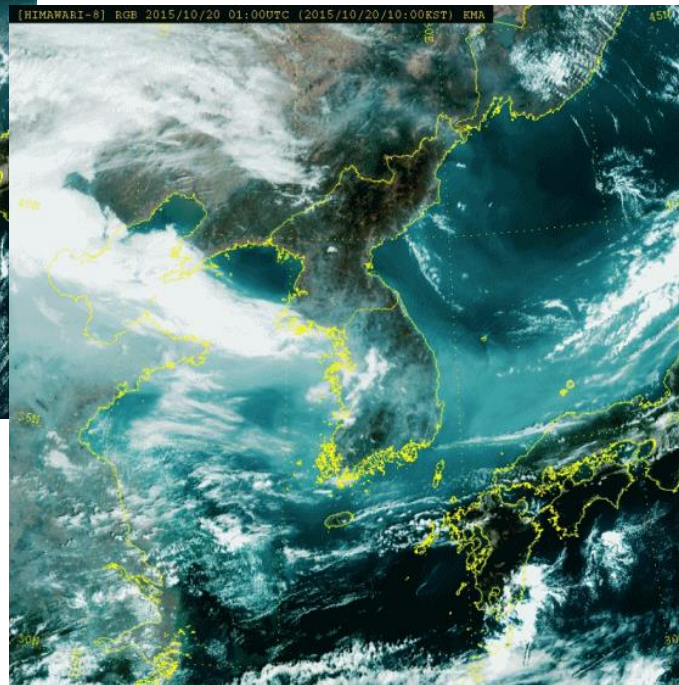
@ Usage of True color RGB images

- Monitoring of Smog/suspended dusts

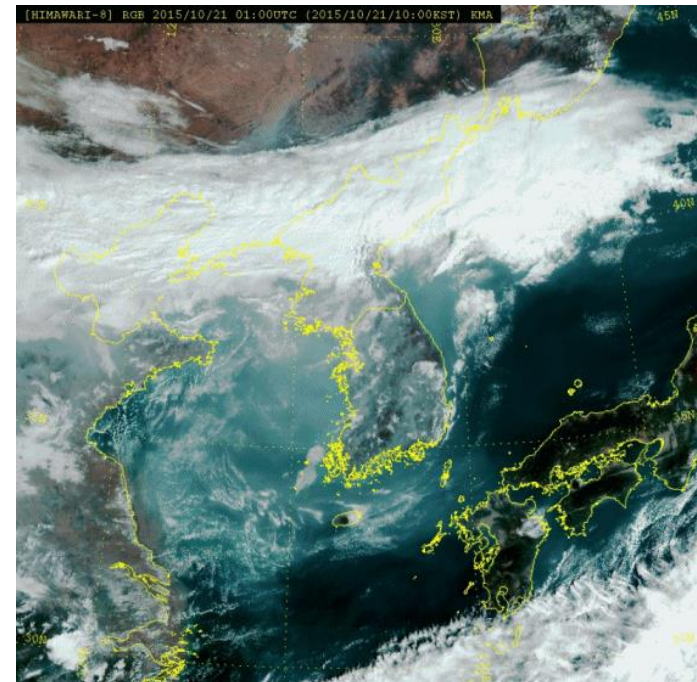


19 Oct., 2015

20 Oct., 2015



21 Oct., 2015





@ Usage of True color RGB images

19 Oct 2015

Seoul

Volume Concentration($\mu\text{m}^3/\text{cm}^3$) / Seoul(108) / 5min Observation

Fine dust particles(PM2.5)

2015.10.18.

2015.10.19.

2015.10.20.

2015.10.21.

2015.10.22.

20 Oct 2015

Gunsan

($\mu\text{m}^3/\text{cm}^3$) / Gunsan(140) / 5min Observation

2015.10.19.

2015.10.20.

2015.10.21.

2015.10.22.

21 Oct 2015

Kwangju

($\mu\text{m}^3/\text{cm}^3$) / Kwaju(156) / 5min Observation

2015.10.19.

2015.10.20.

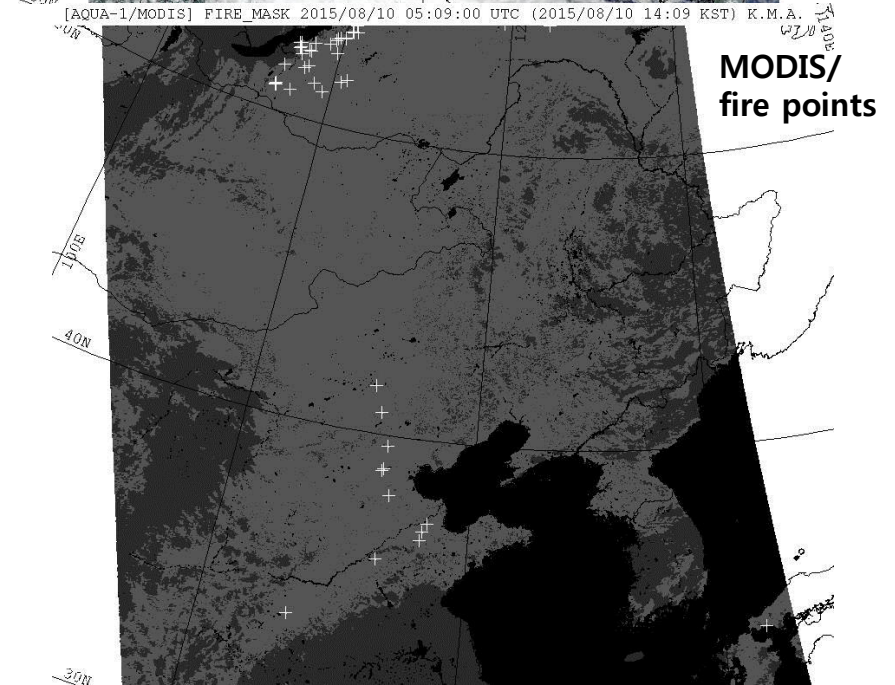
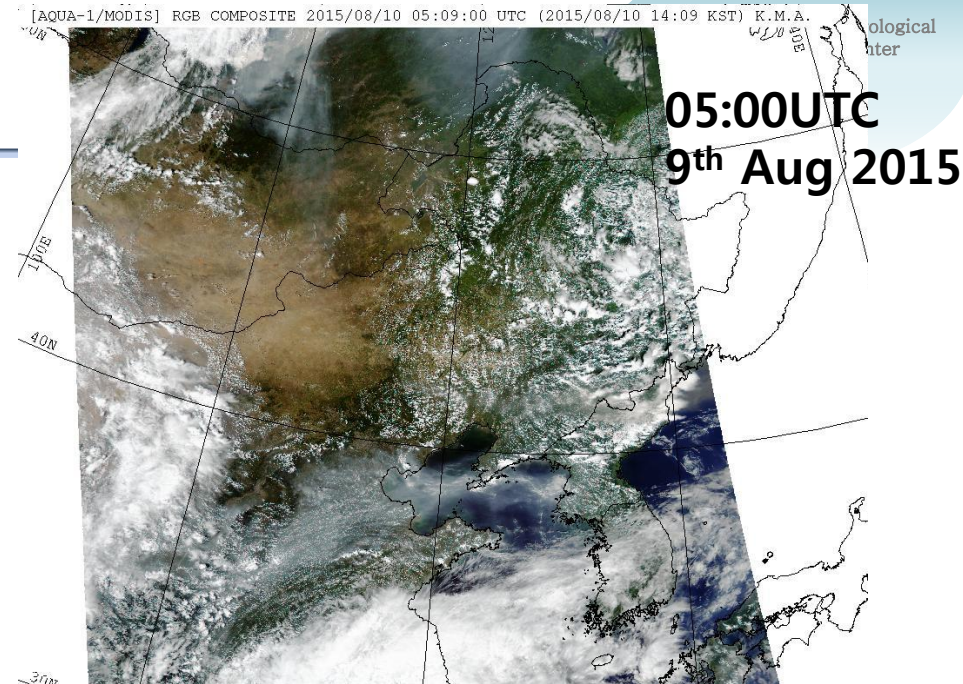
2015.10.21.

2015.10.22.

@ Usage of True color RGB images

Monitoring of smoke/haze, pollutants

22:00UTC 9 Aug ~07:00UTC 10 Aug 2015

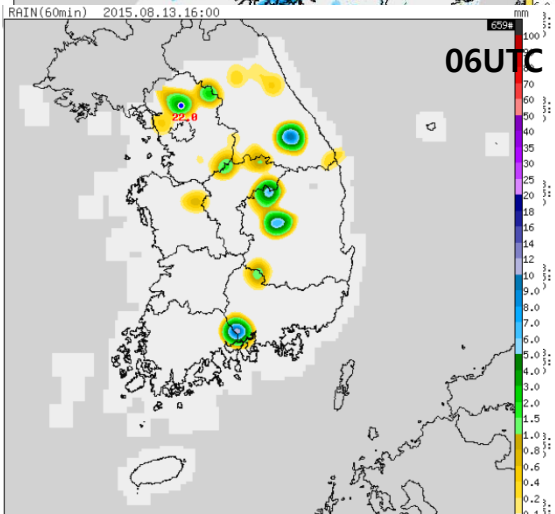
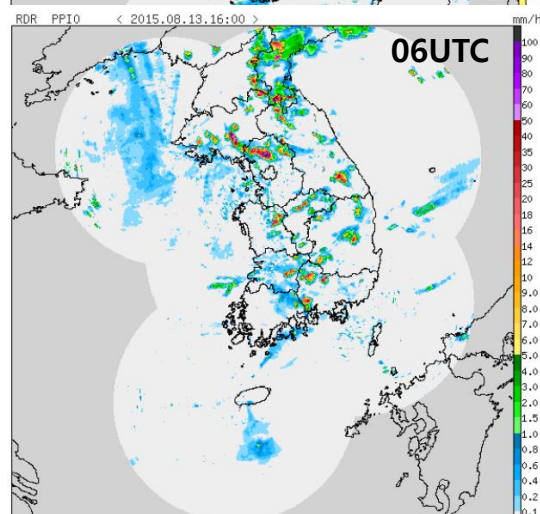
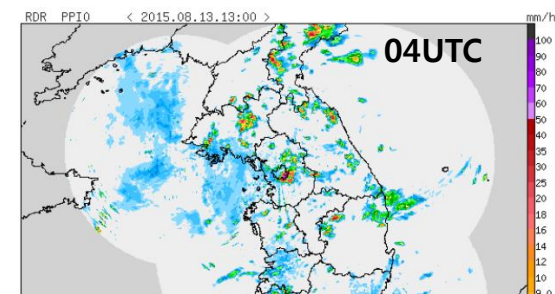
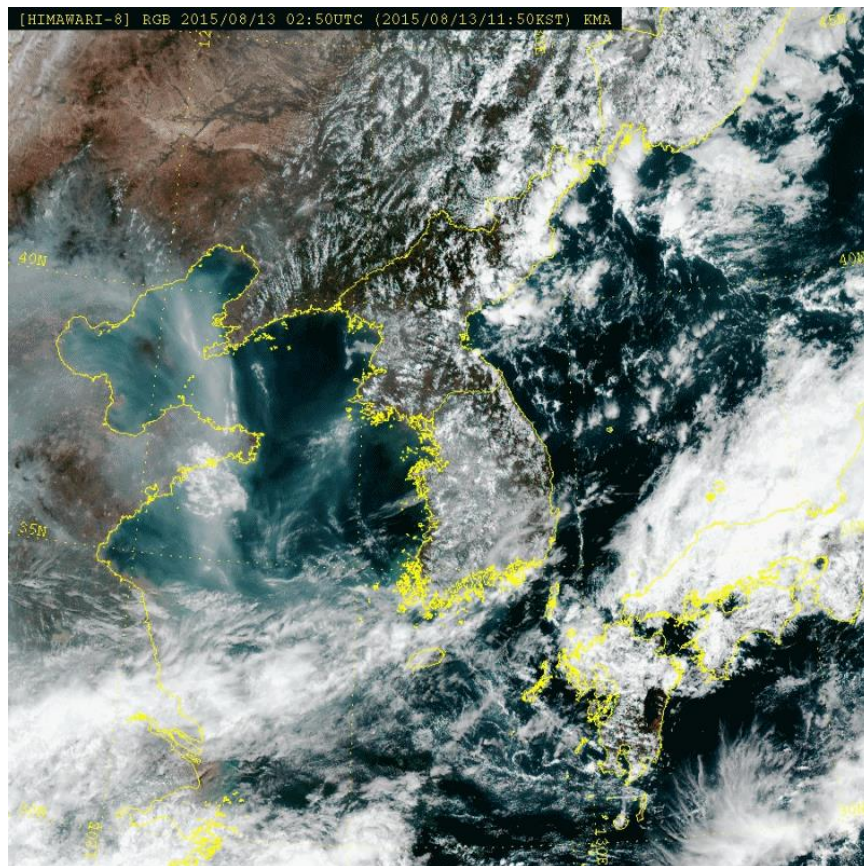




@ Usage of True color RGB images

☀ Monitoring of mesoscale convective clouds

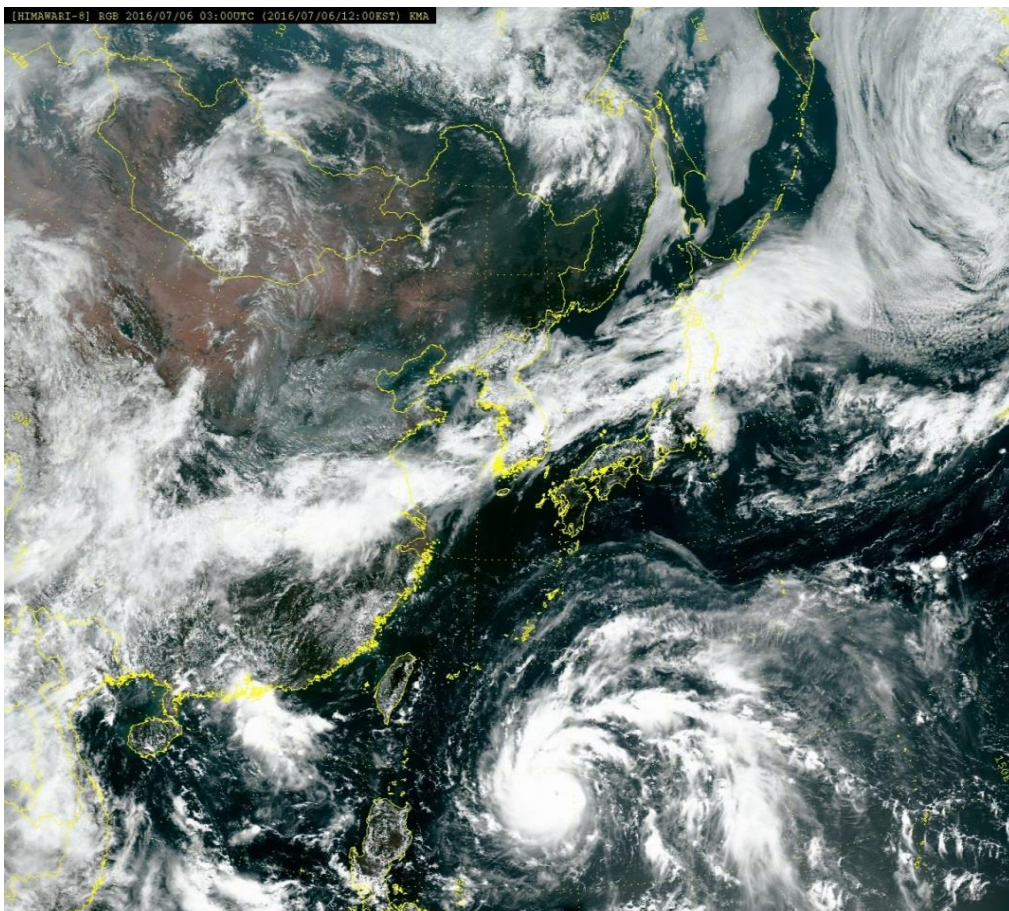
2015. 8. 13. 02:50~07:00UTC



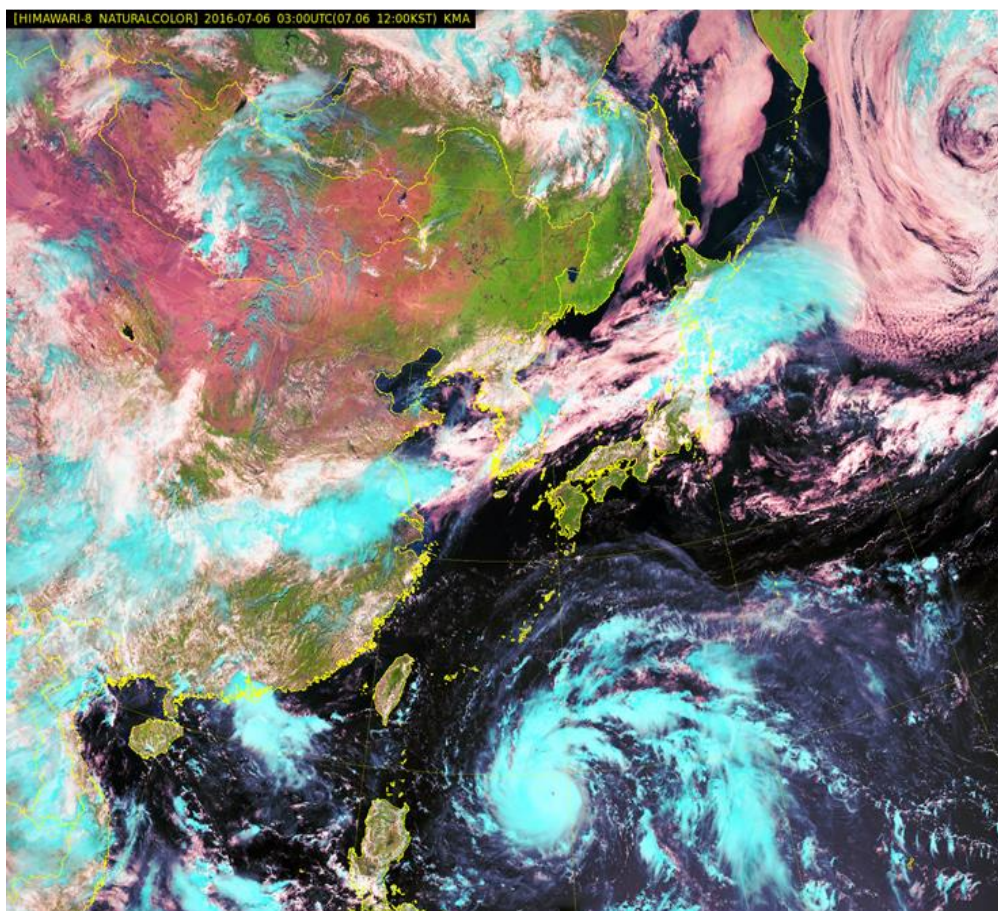


@ True Color & Natural color RGB images

True Color RGB



Natural Color RGB



6 July 2016, 13:00 UTC

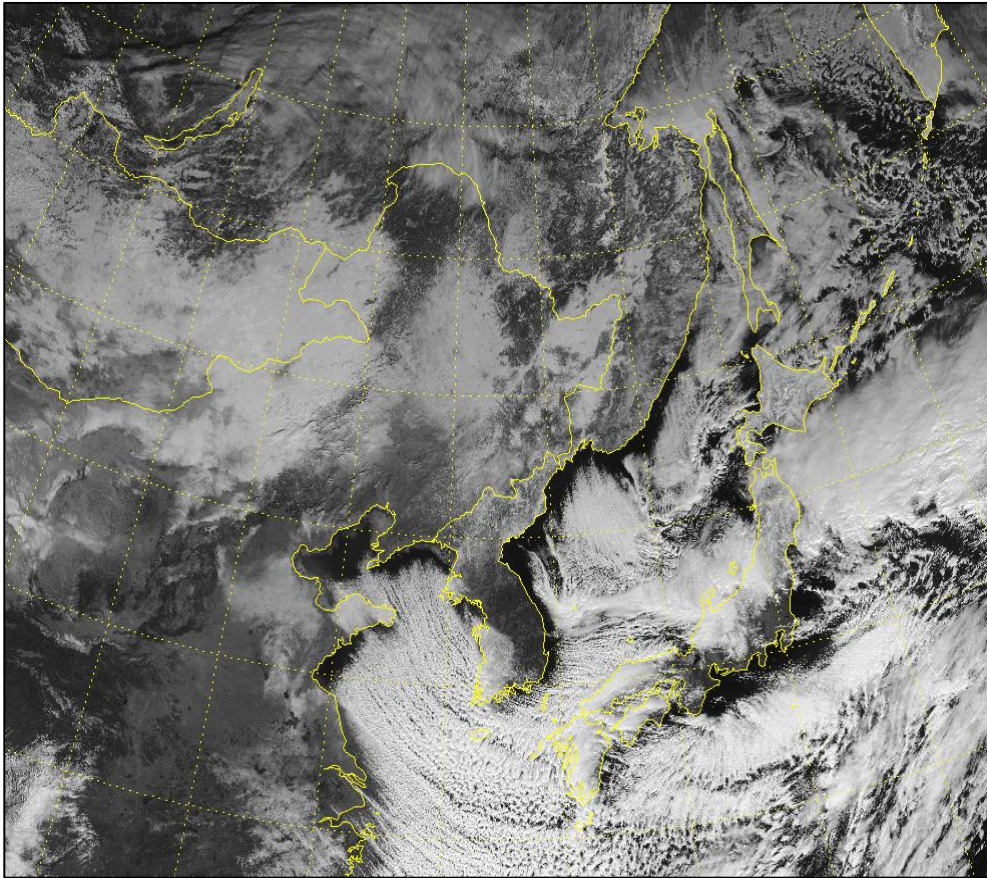


Application : Vegetation, Snow, ice cloud

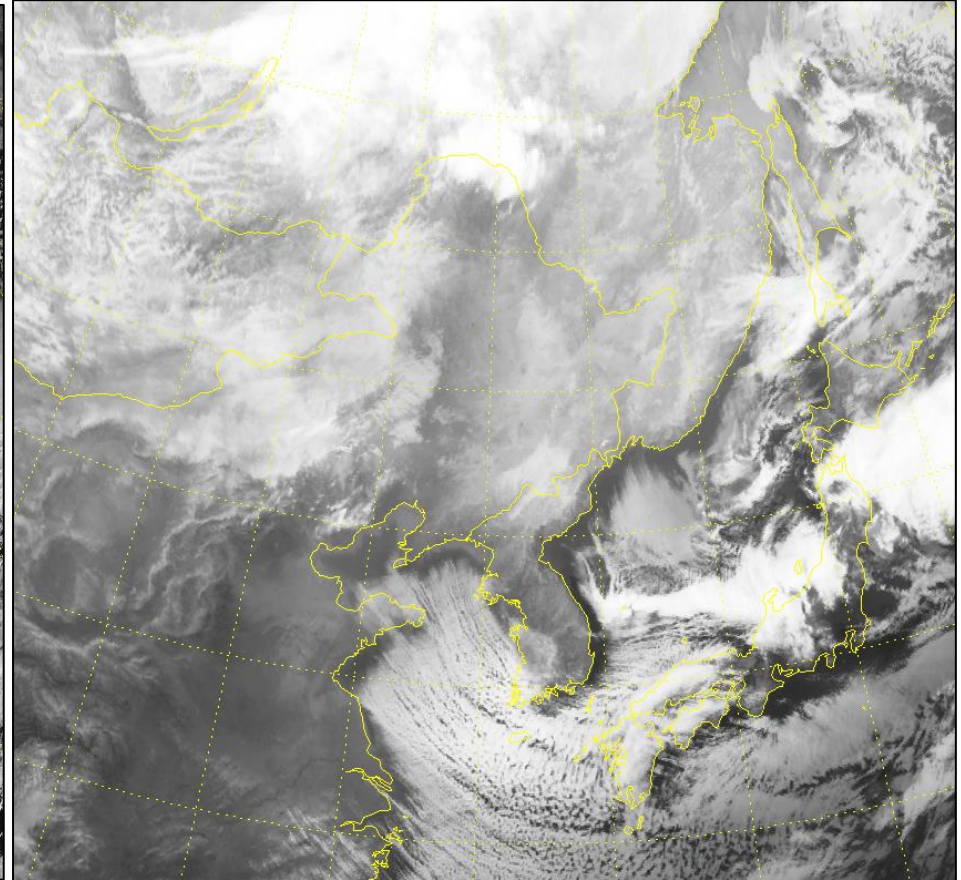


@ Usage of Natural color RGB images

COMS (VIS)



COMS (IR)

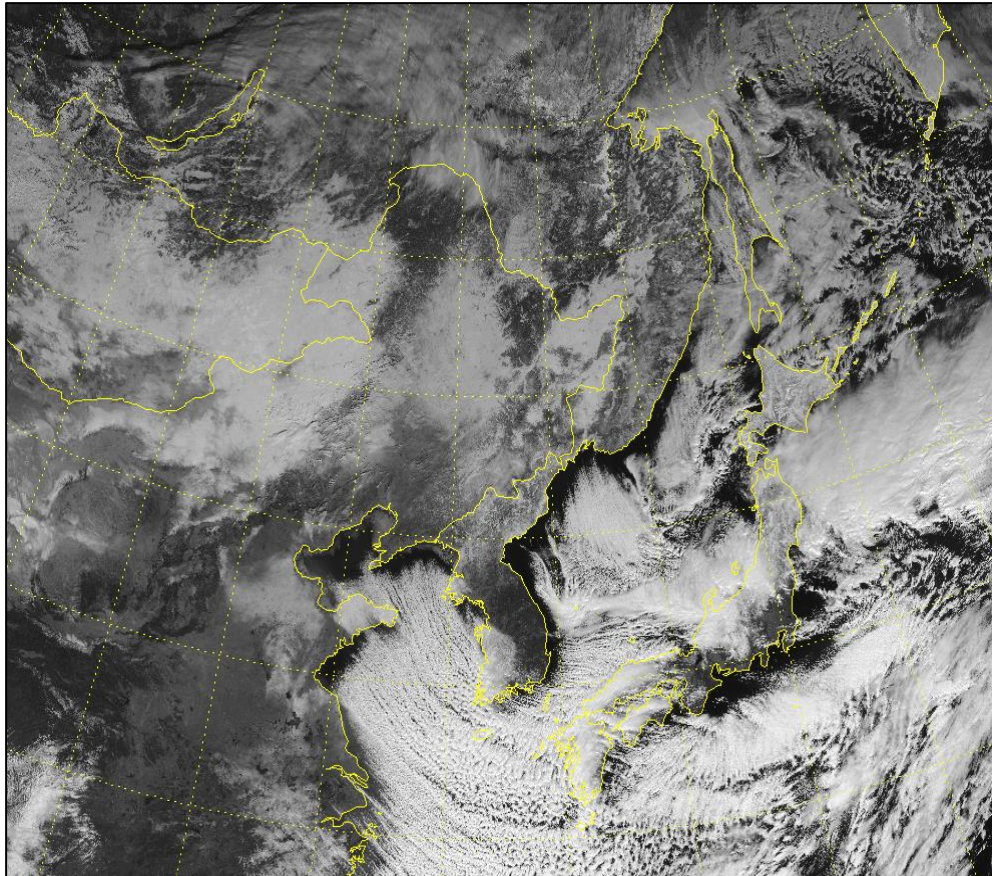


<2016-01-24 03:00 UTC>

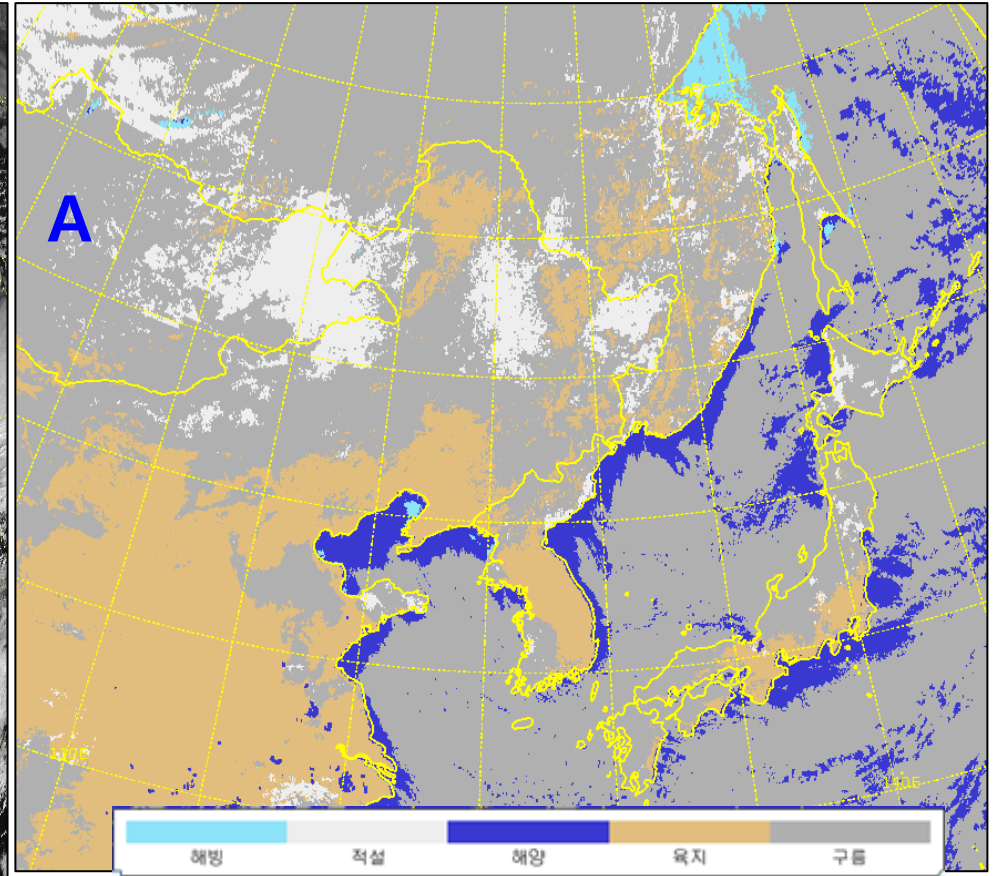
Where is the snow area?

Where is the snow area? - using derived product

COMS (VIS)



COMS SNOW/SEA ICE

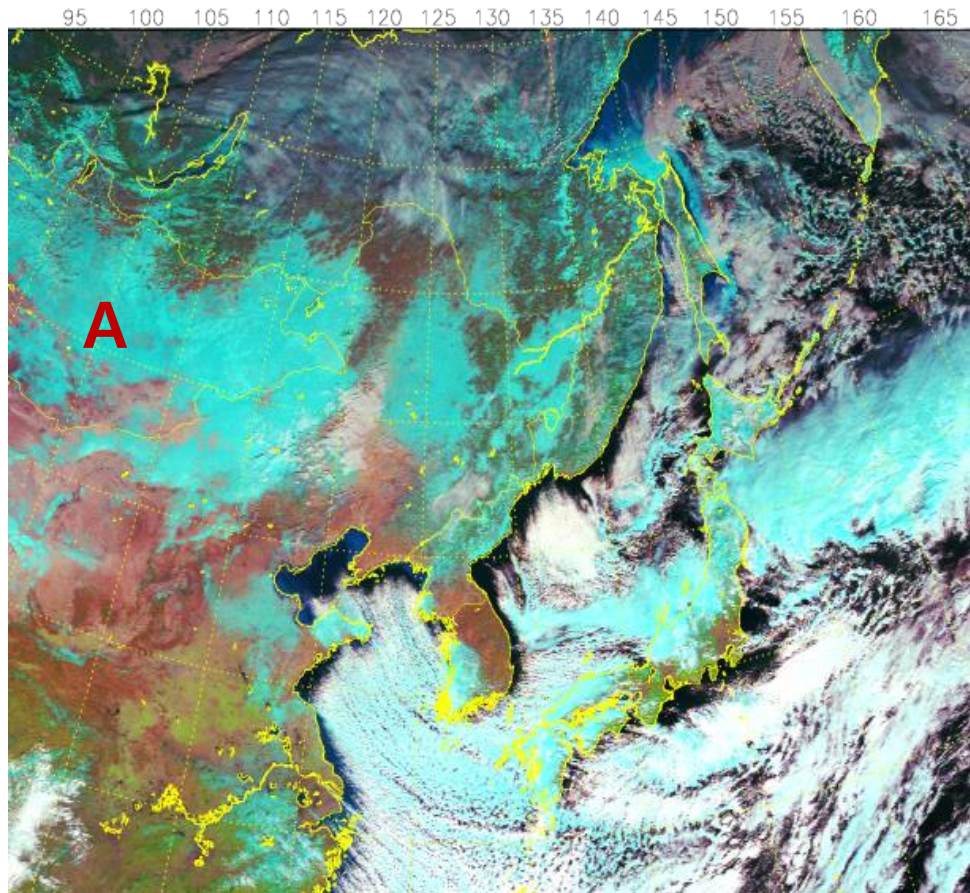


<2016-01-24 03:00 UTC>

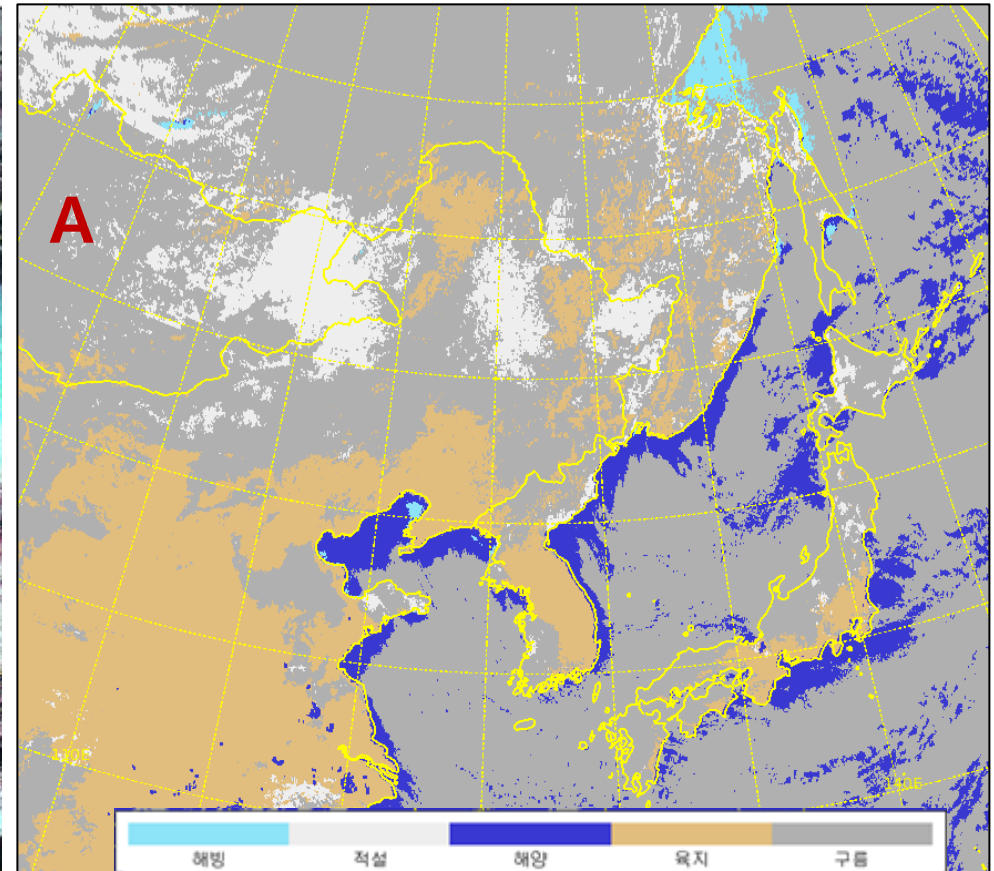
A areas are really clouds ?

Where is the snow area? - using derived product

Himawari-8 Natural Color RGB



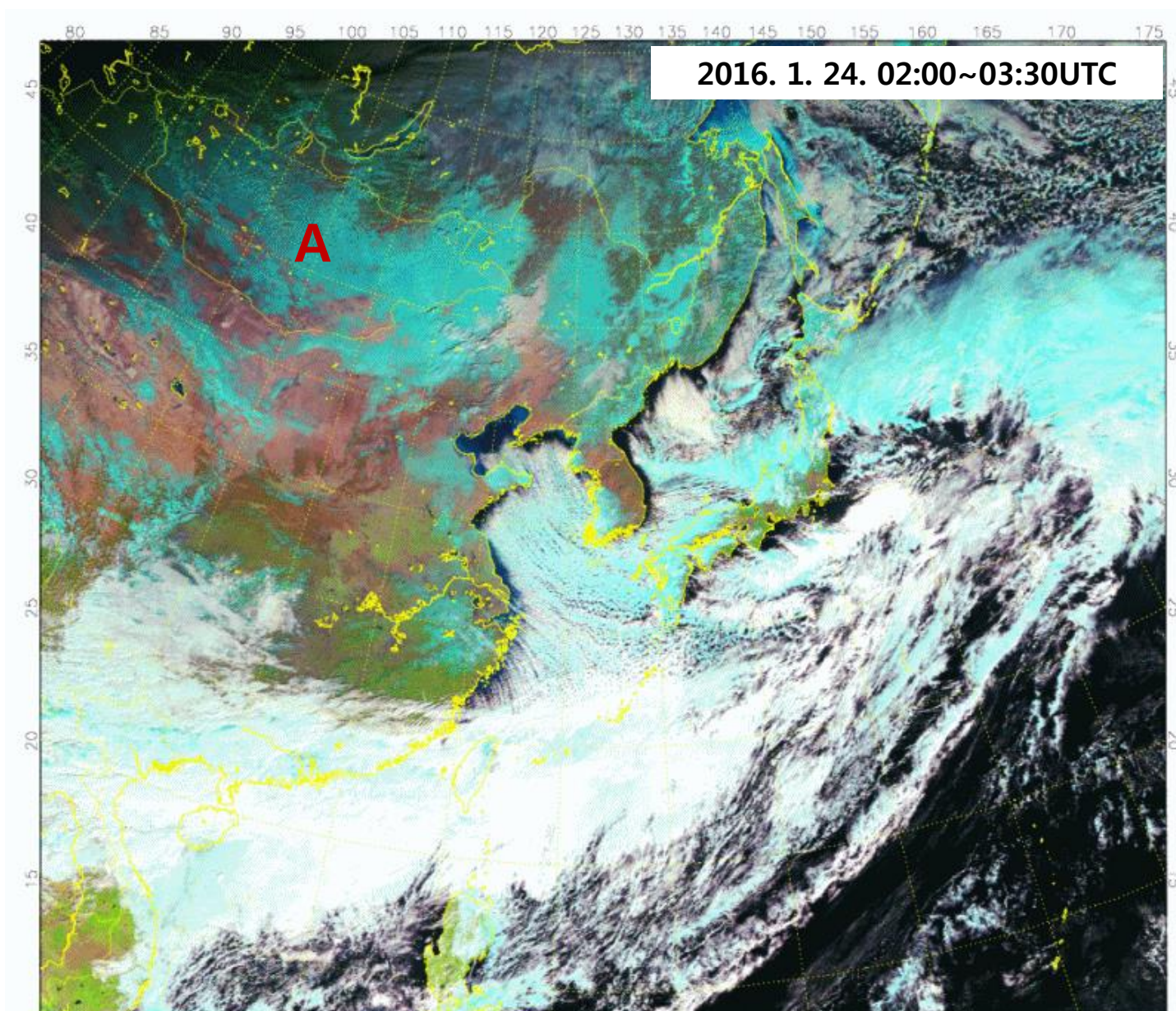
COMS SNOW/SEA ICE



<2016-01-24 03:00 UTC>

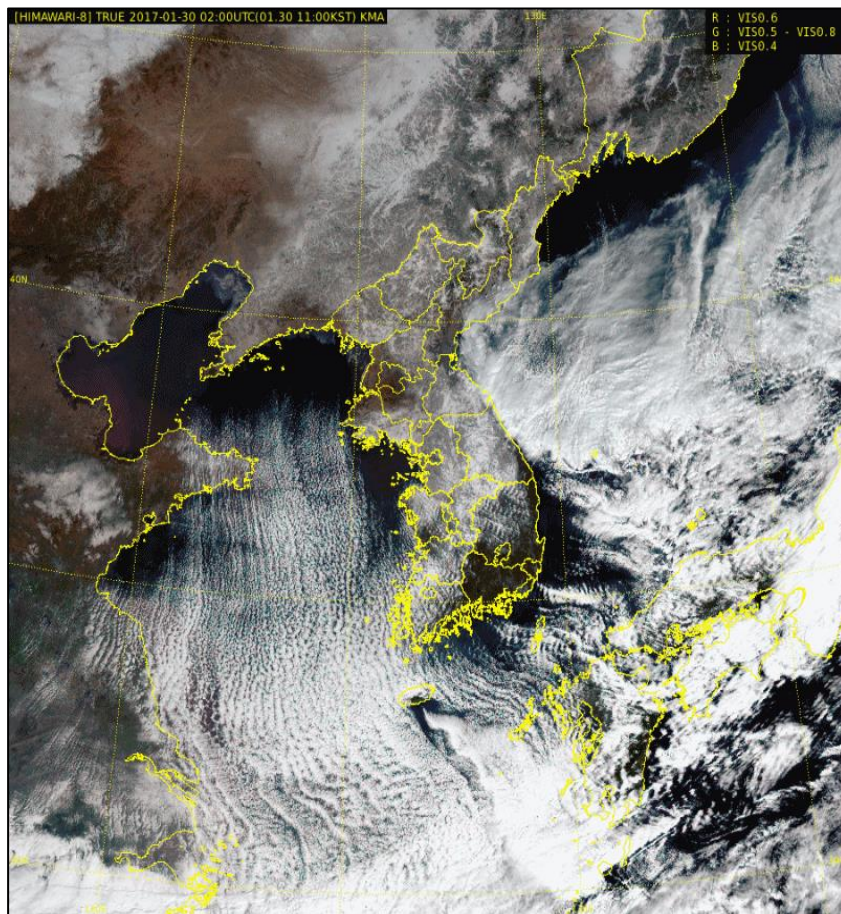
A areas are really clouds ?

A areas are really clouds ?



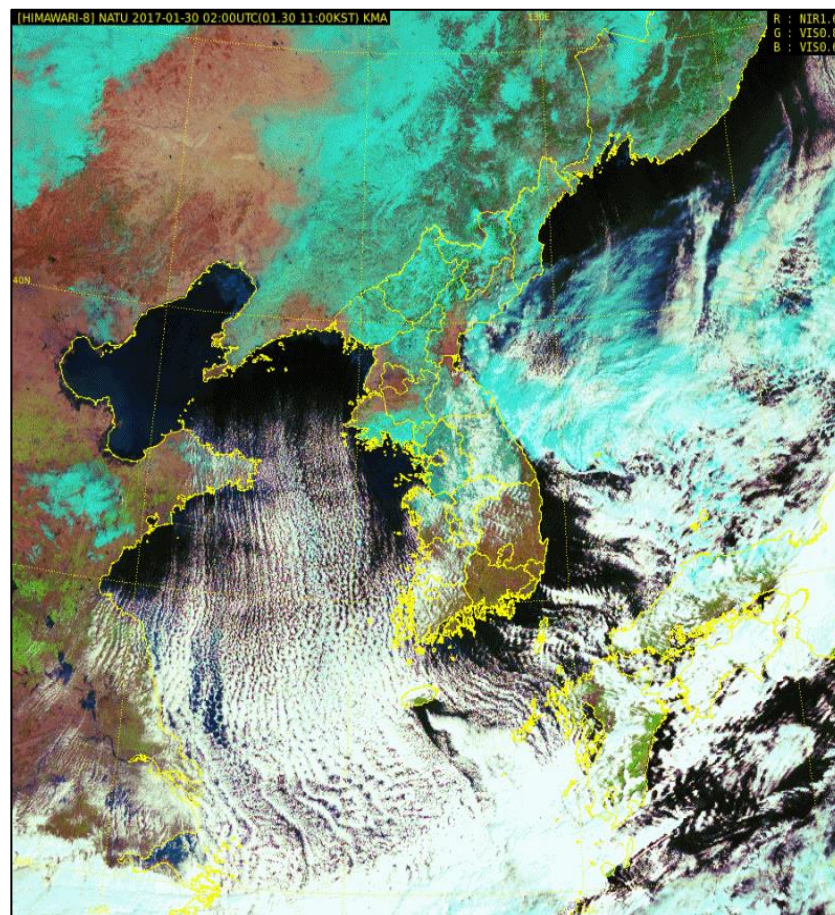
@ Natural color RGB images – snow area detection

True Color RGB



<VIS0.47+ VIS0.51+ VIS0.64>

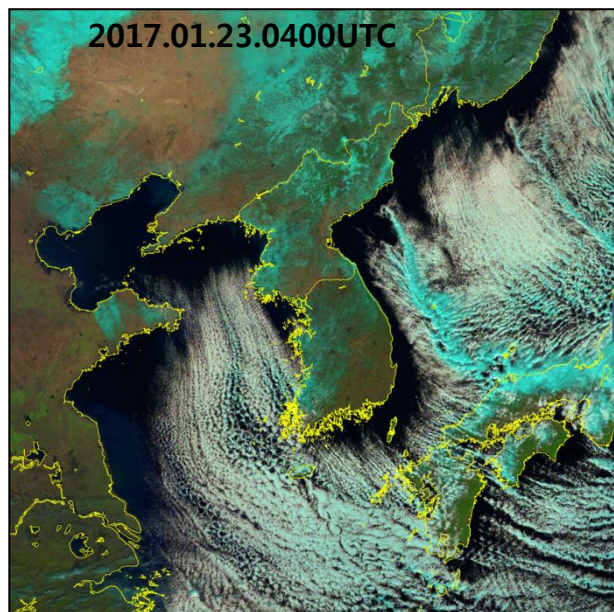
Natural Color RGB



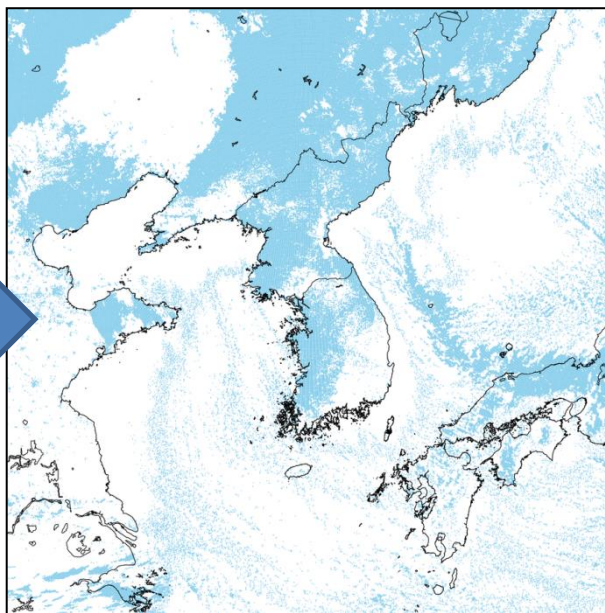
<NIR 1.6+ VIS0.8+ VIS0.6>



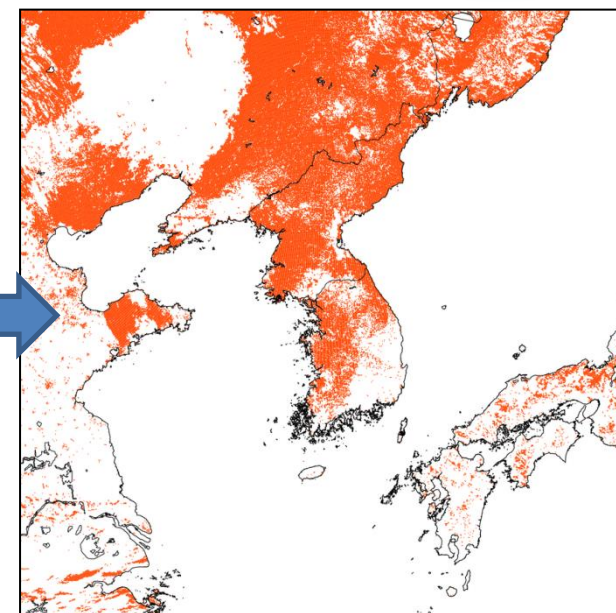
@ Discrimination of Snow and Clouds using Natural Color RGBs



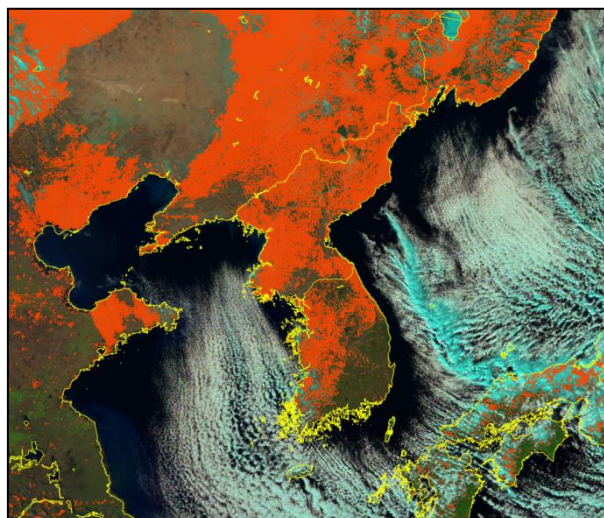
1. Natural Color RGB



2. Filtering1: snow/ice clouds

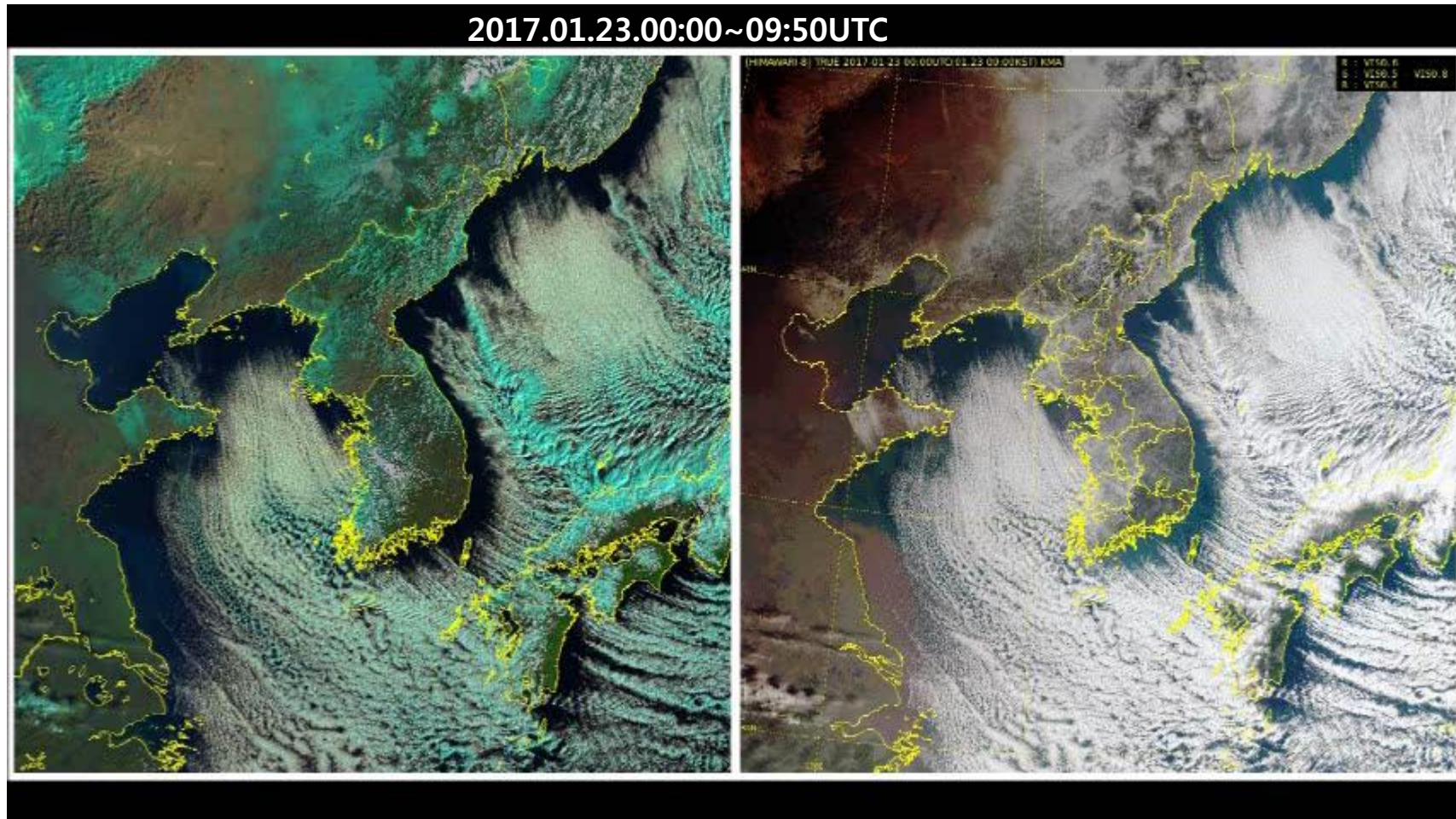


3. Filtering2: Snow area



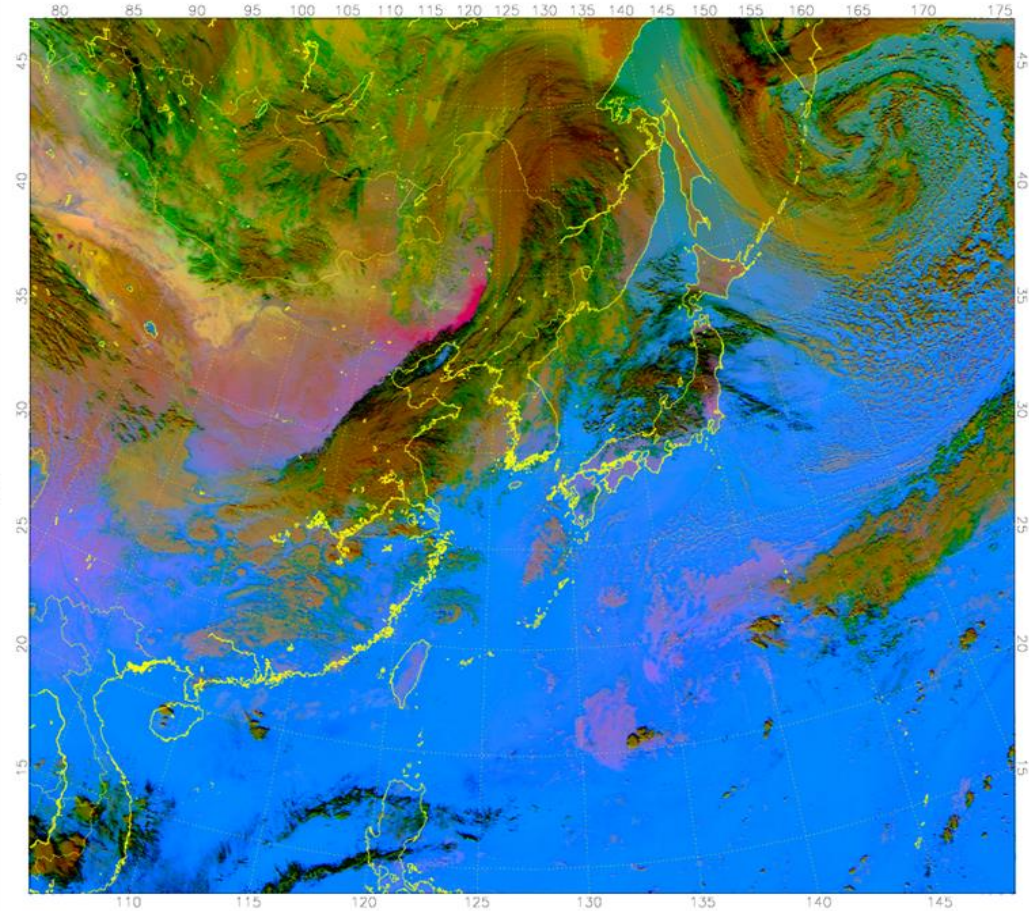
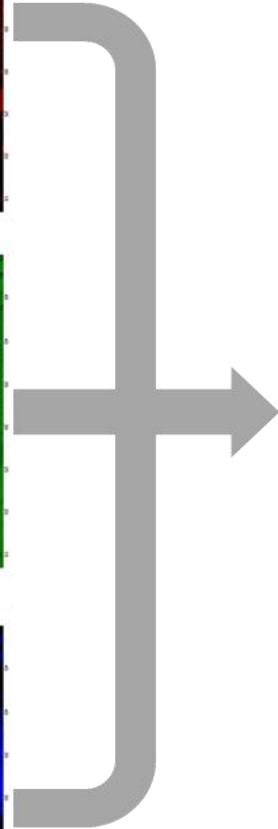
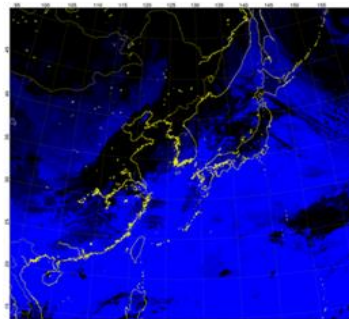
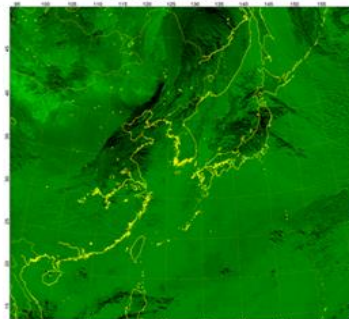
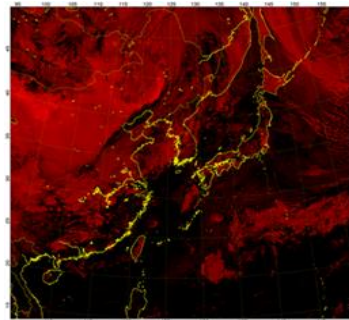
4. Allocate new color
over the snow areas

@ Discrimination of Snow and Clouds using Natural Color RGBs



- White : water clouds
- Cyan : ice clouds
- Weak Violet : snow area

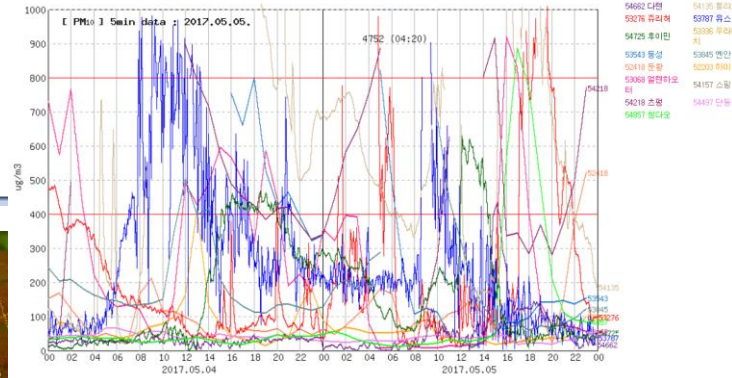
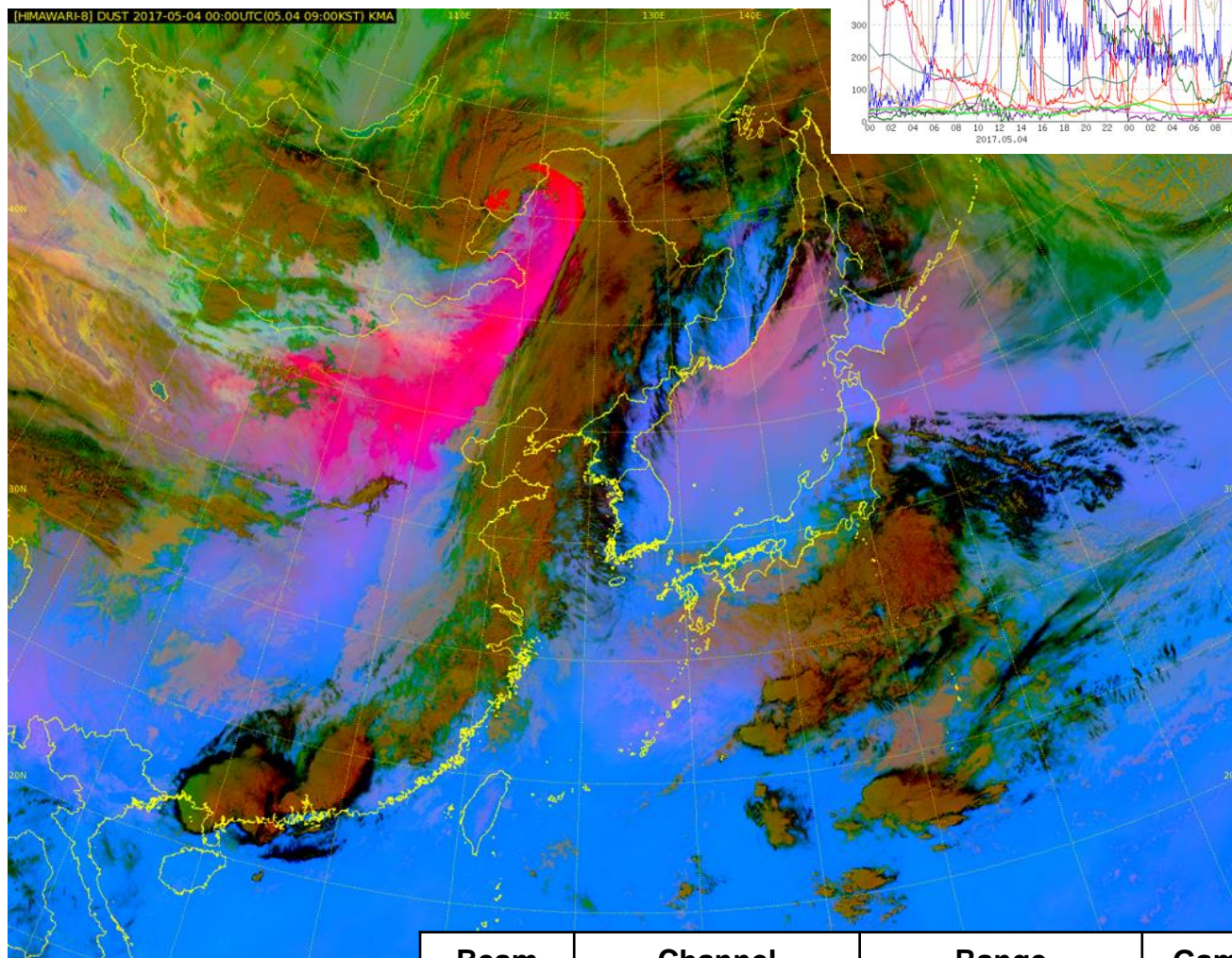
@ Dust RGB images



Beam	Channel	Range	Gamma	Gamma 2
Red	IR12.0 - IR10.8	-4 ... +2K	1.0	1.0
Green	IR10.8 - IR8.7	0 ... +15 K	2.5	1.0
Blue	IR10.8	+261 ... +289 K	1.0	1.0

@ Asian Dust Monitoring

4th – 6th May 2017



Thin cirrus

Cold, thick, high-level clouds	Thick, mid-level cloud	Thin, mid-level cloud	Dust Storm
Ocean	Warm Desert	Cold Desert	Warm Land

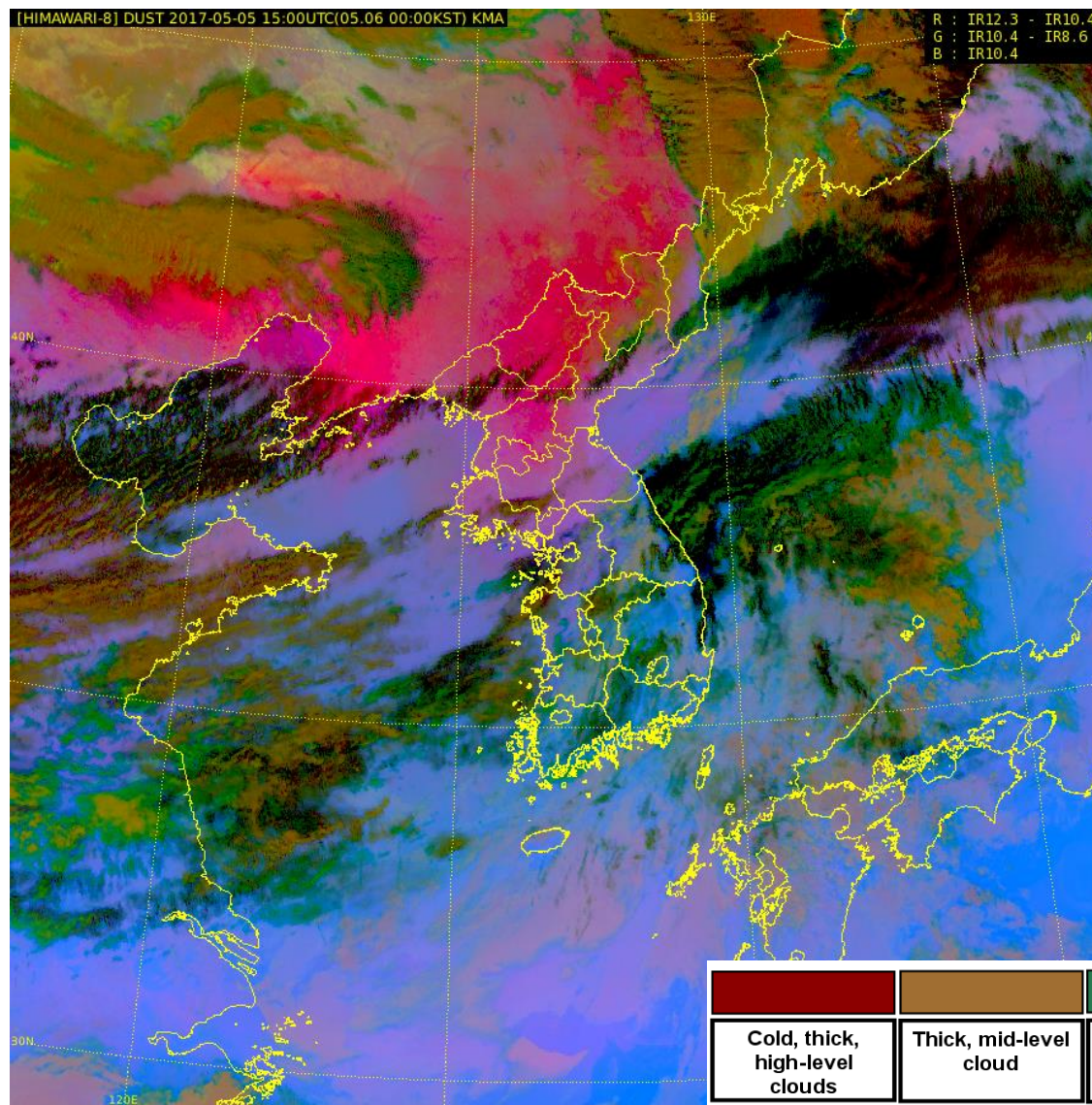
Beam	Channel	Range	Gamma	Gamma 2
Red	IR12.0 – IR10.8	-4 ... +2K	1.0	1.0
Green	IR10.8 – IR8.7	0 ... +15 K	2.5	1.0
Blue	IR10.8	+261 ... +289 K	1.0	1.0



@ Asian Dust Monitoring

15:00UTC 5th May

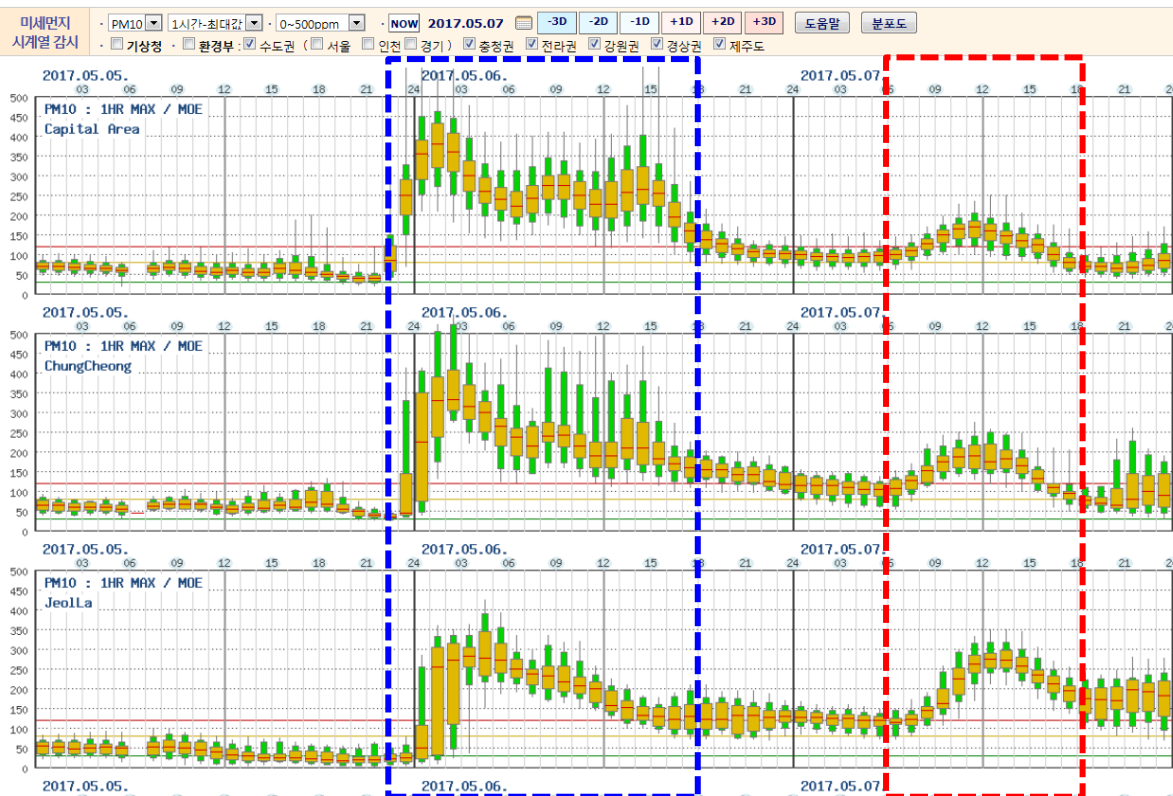
– 00:00UTC 6th May 2017



@ Asian Dust Monitoring – Surface Observation

16:00UTC 5th May

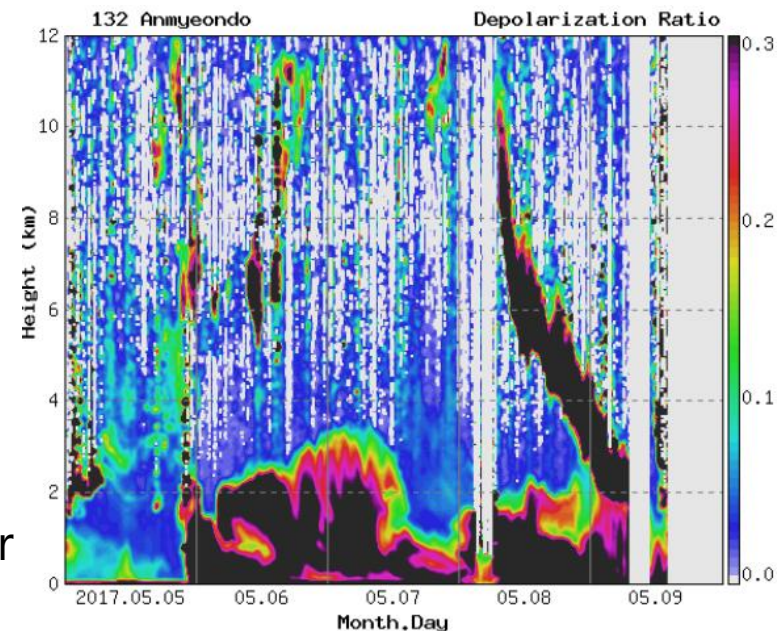
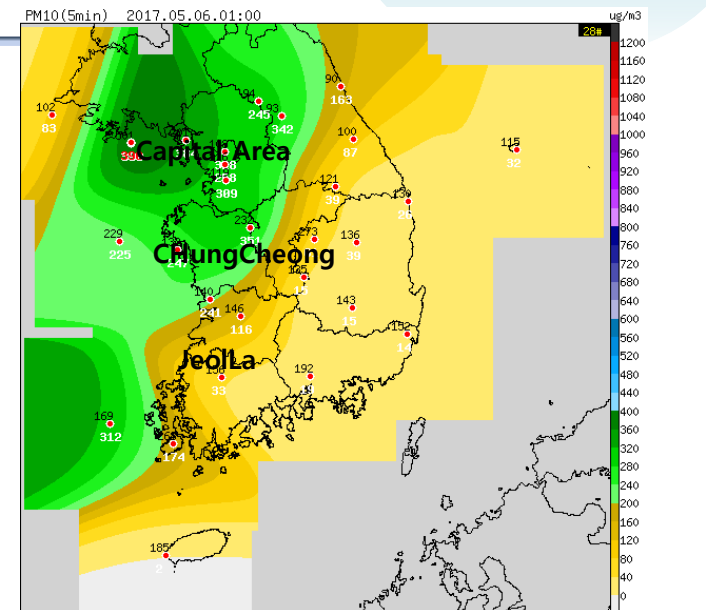
Time series of PM10 concentration



Strong dusts
600 times than normal day

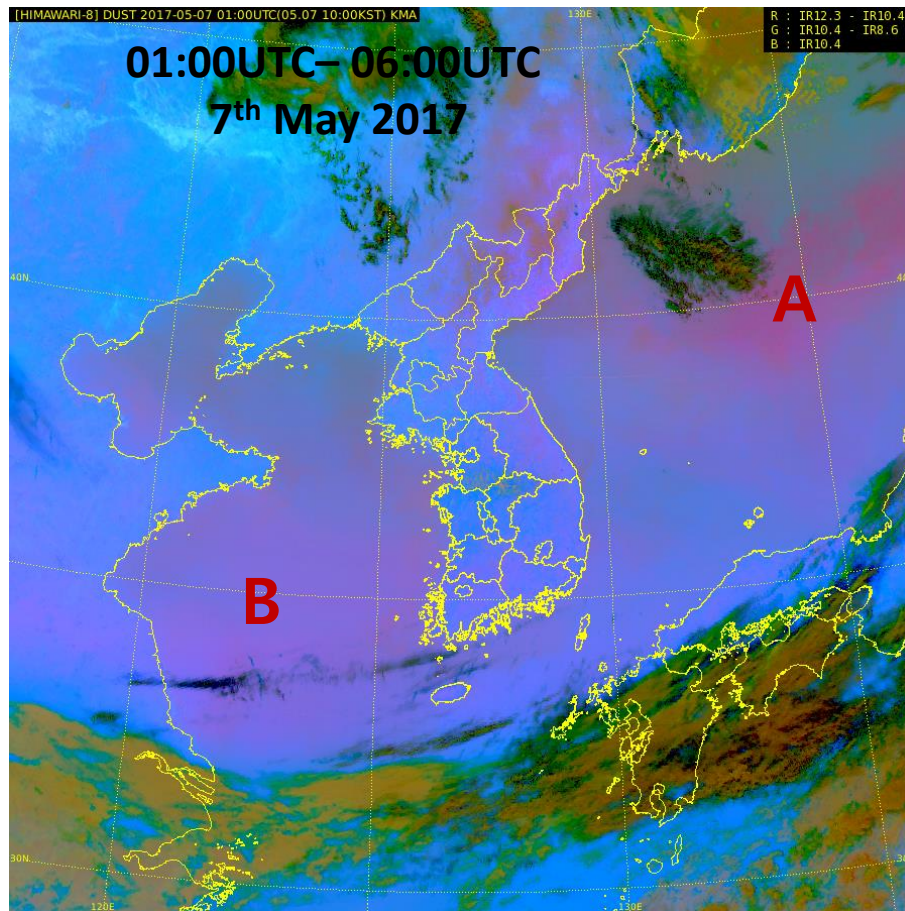
Weak dusts

Lidar

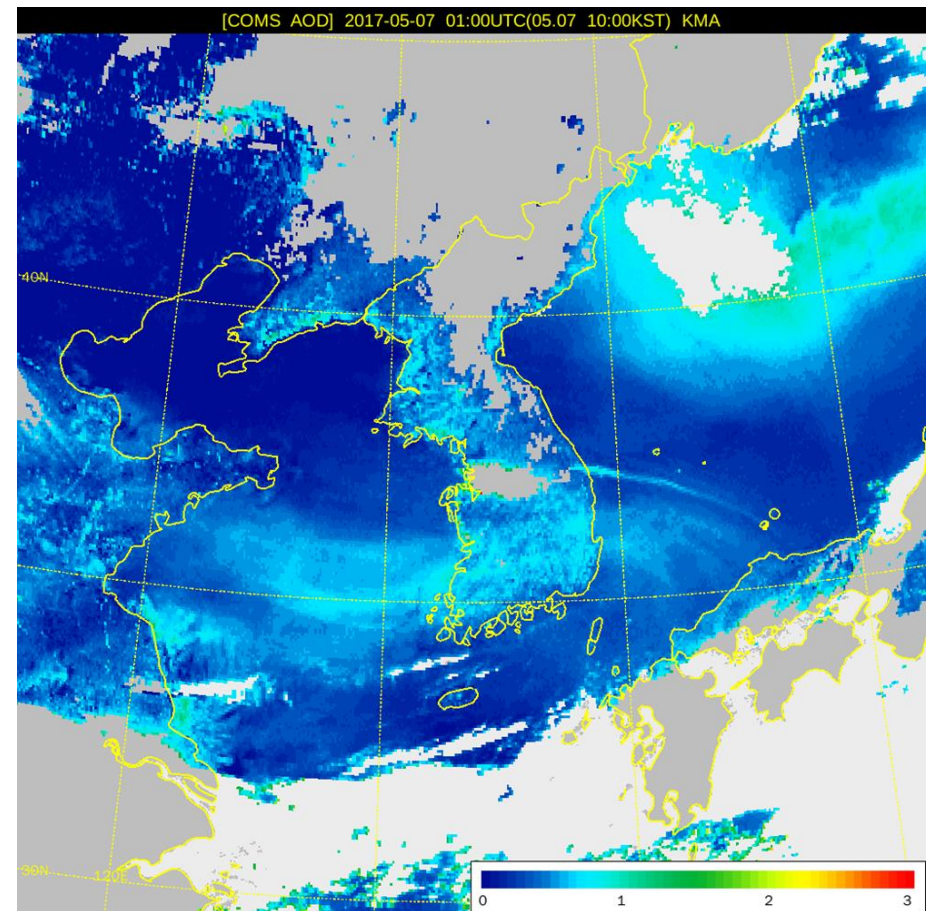


@ Asian Dust Monitoring – weak dusts (7th May 2017)

Dust RGBs



COMS AOD

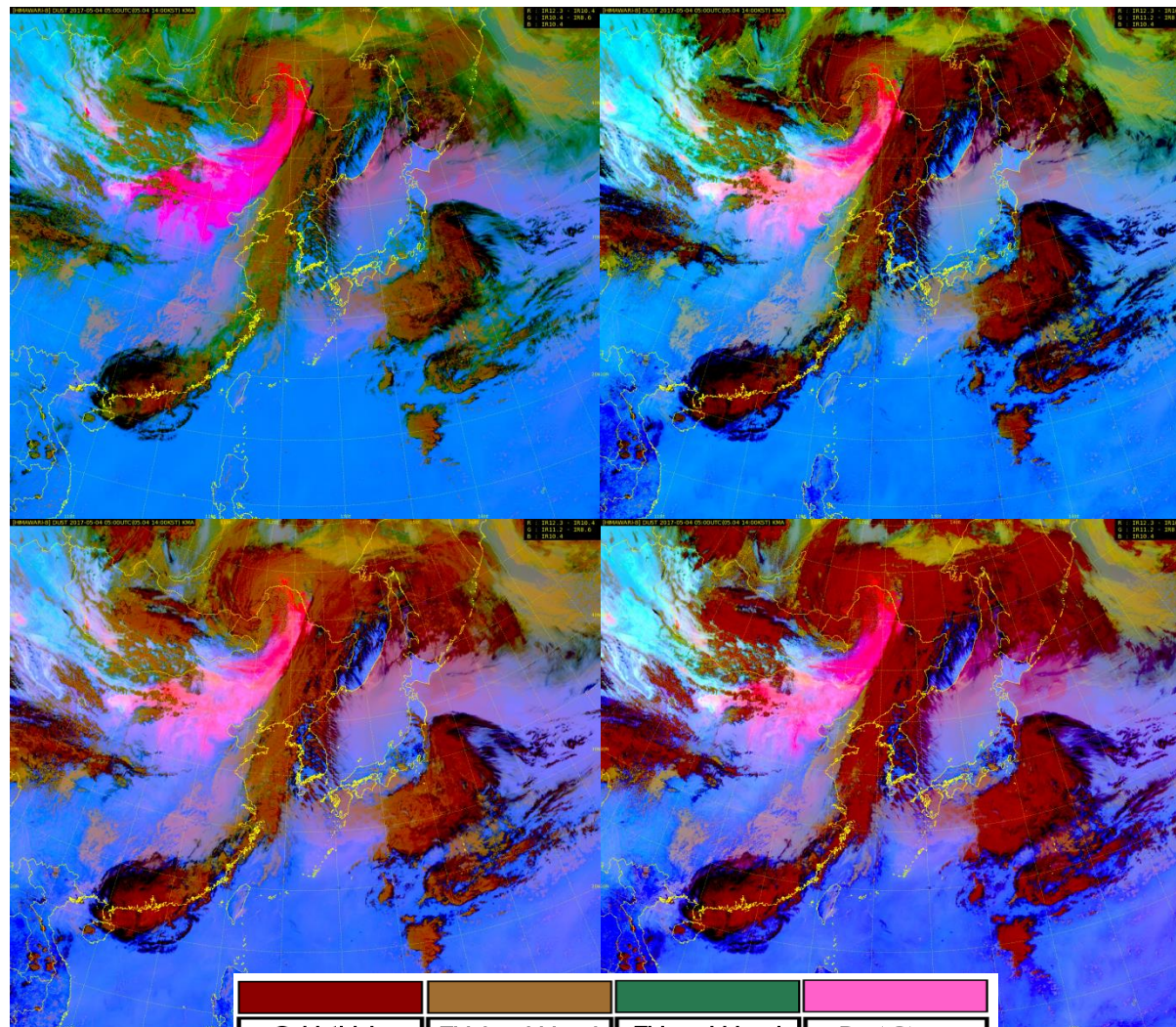


Do you think A and B areas are dusts ?



Which one is best representing of dust and clouds ?

05:00 UTC 4th May 2017 (Strong dust case)



KMA
(EUMETSAT origin)

12.3 – 10.4 (-4~2)
10.4 – 8.6 (0~15)
10.4 (261~289)

EUMETSAT
Adjusted

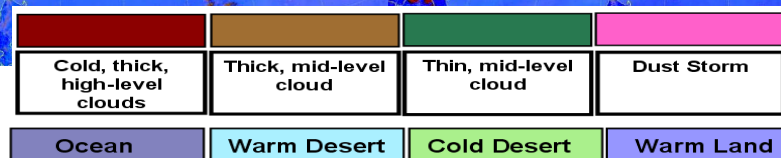
12.3 – 10.4 (-4~2)
11.2 – 8.6 (0~10)
10.4 (261~289)

JMA

12.3 – 10.4 (-6.7~2.6)
11.2 – 8.6 (-0.5~20)
10.4 (261.2~288.7)

BOM

12.3 – 10.4 (-6.7~2.6)
11.2 – 8.6 (1~10.9)
10.4 (261.2~288.7)



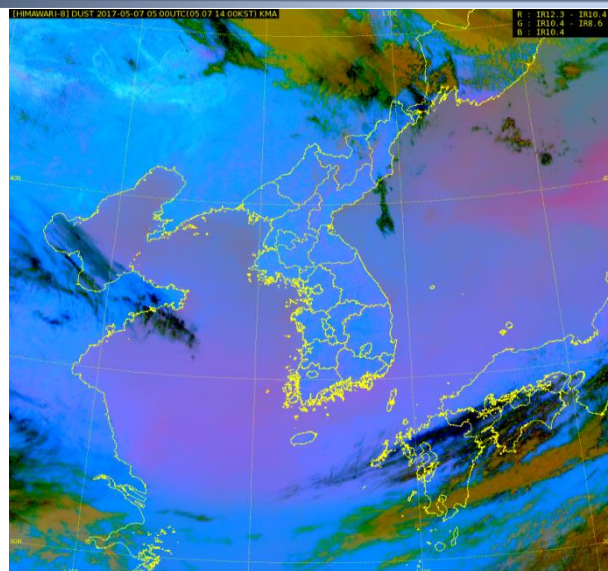


Which one is best for dust monitoring ?

05:00 UTC 7th May 2017
(Weak dust case)

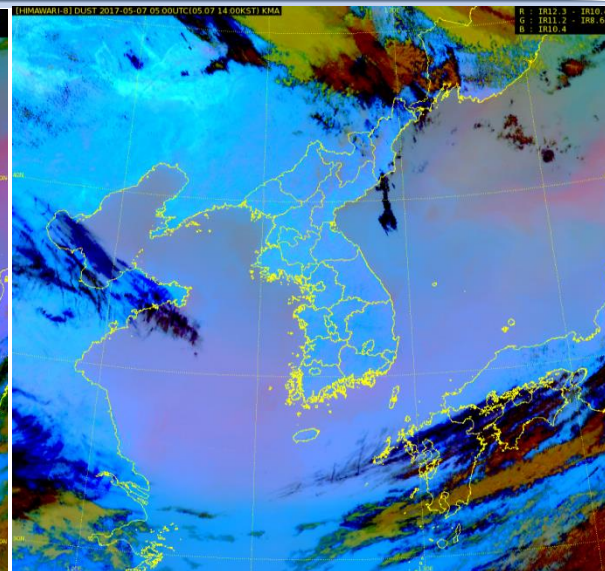
KMA
(EUMETSAT origin)

12.3 – 10.4 (-4~2)
10.4 – 8.6 (0~15)
10.4 (261~289)



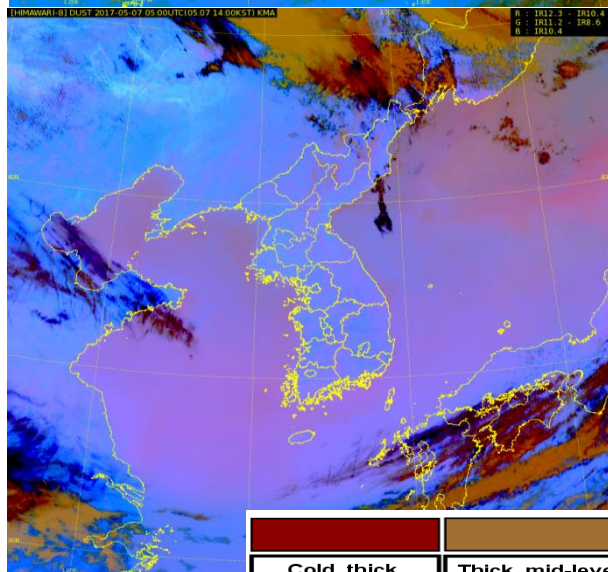
EUMETSAT
Adjusted

12.3 – 10.4 (-4~2)
11.2 – 8.6 (0~10)
10.4 (261~289)



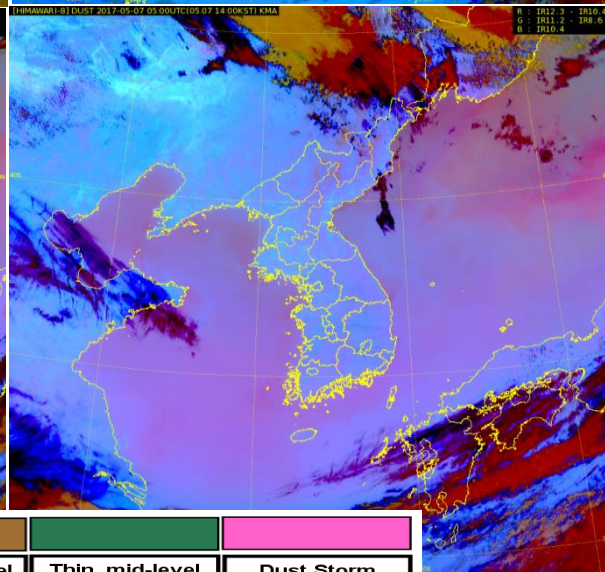
JMA

12.3 – 10.4 (-6.7~2.6)
11.2 – 8.6 (-0.5~20)
10.4 (261.2~288.7)



BOM

12.3 – 10.4 (-6.7~2.6)
11.2 – 8.6 (1~10.9)
10.4 (261.2~288.7)



@ Usage of Airmass RGB

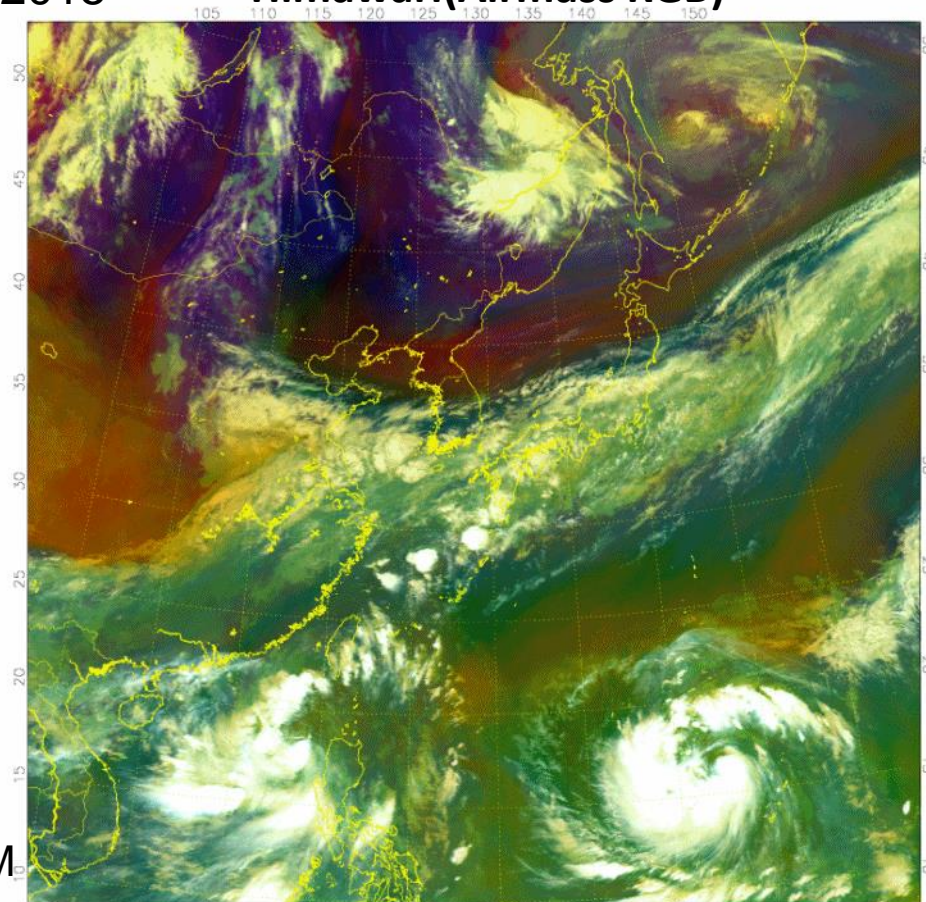
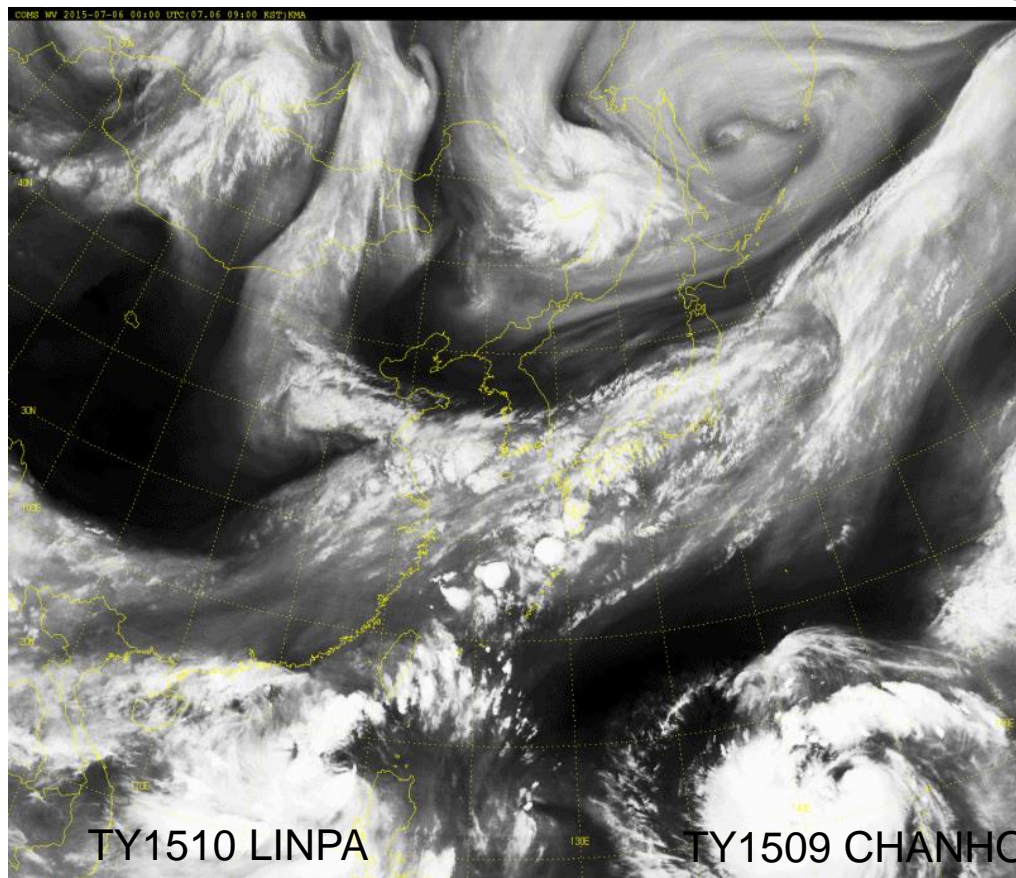


National Meteorological
Satellite Center

COMS(WV)

6th July 2015

Himawari(Airmass RGB)



00:00~01:30 UTC(15min)

00:00~01:30 UTC(10min)

2015.07.06.0000UTC

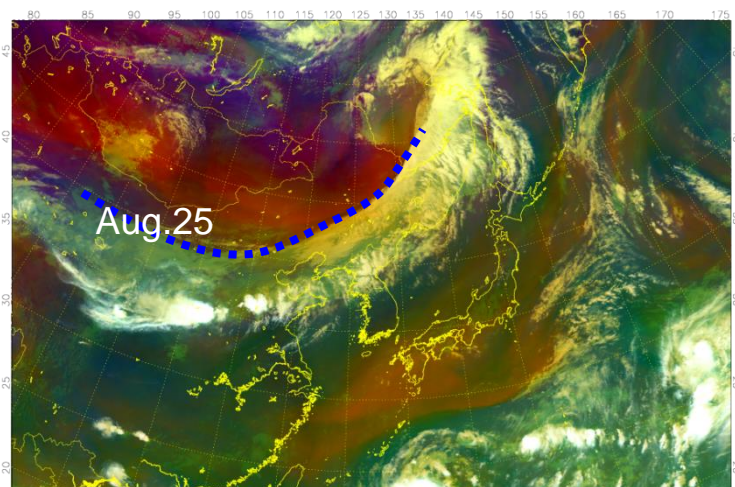
Which one is better for detection of dry area, jet stream upper-level circulation?

Which one is better for know airmass property and cloud information?

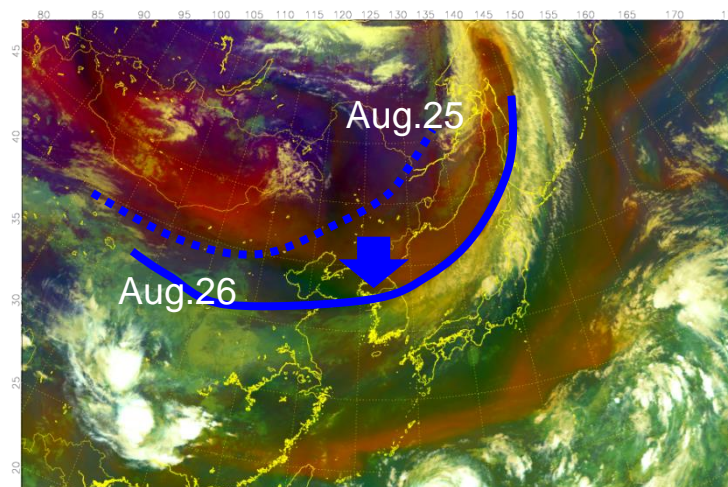


@ Usage of Airmass RGB – Downdraft of cold airmass

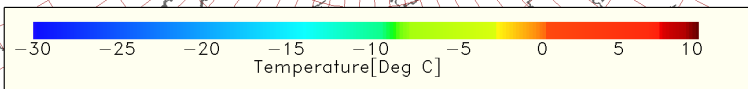
02UTC
25th Aug
2016



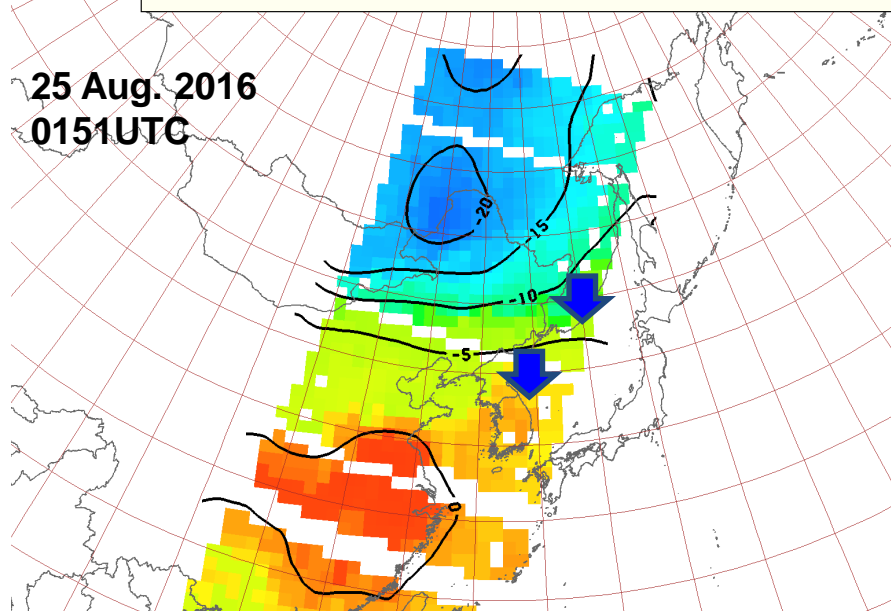
02UTC
26th Aug
2016



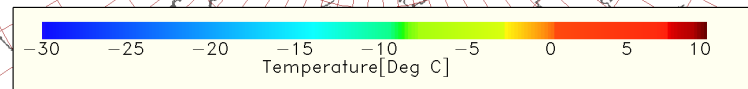
MetopB 500hPa Temperature 2016.08.25.0151UTC



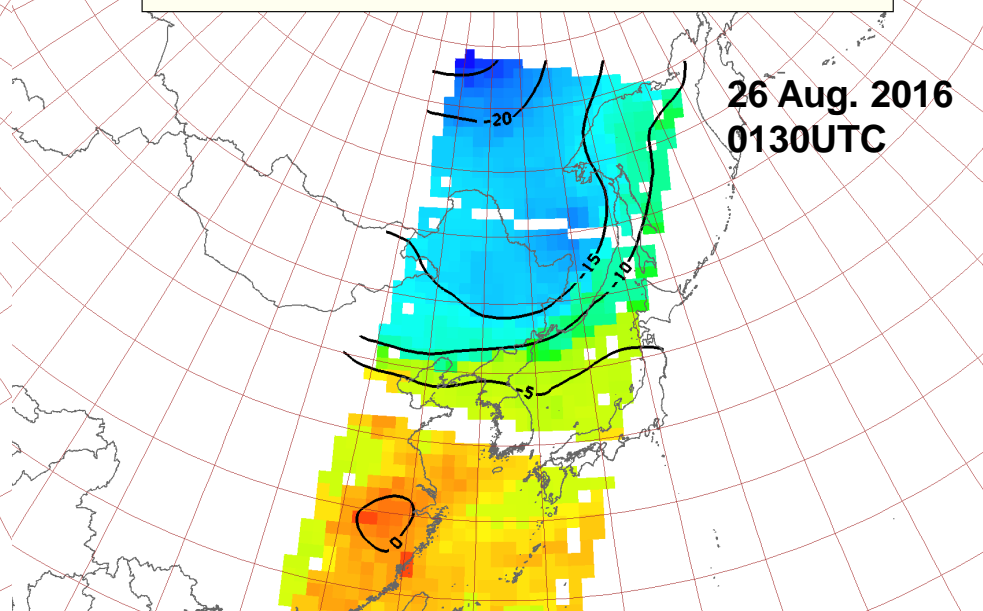
25 Aug. 2016
0151UTC



MetopB 500hPa Temperature 2016.08.26.0130UTC

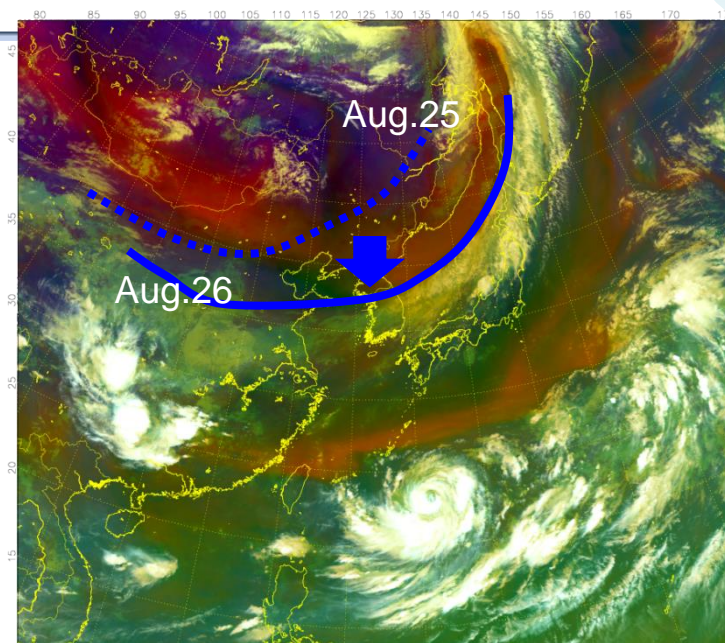
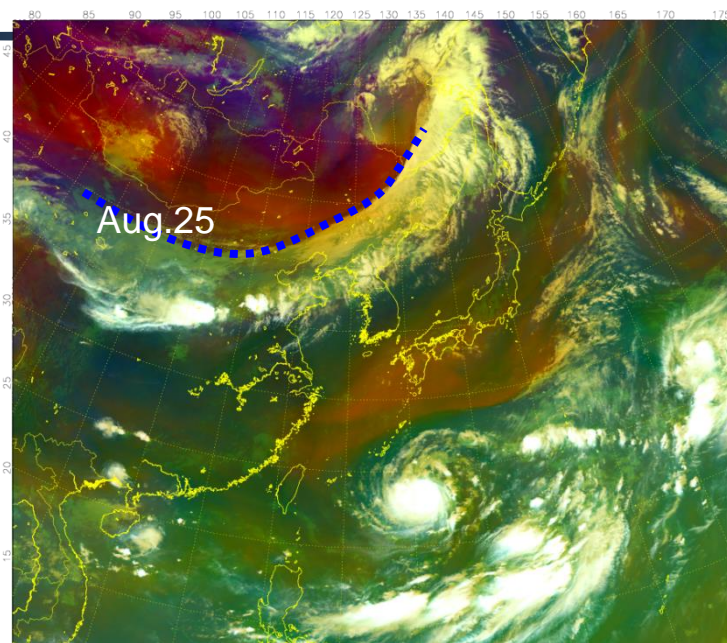


26 Aug. 2016
0130UTC

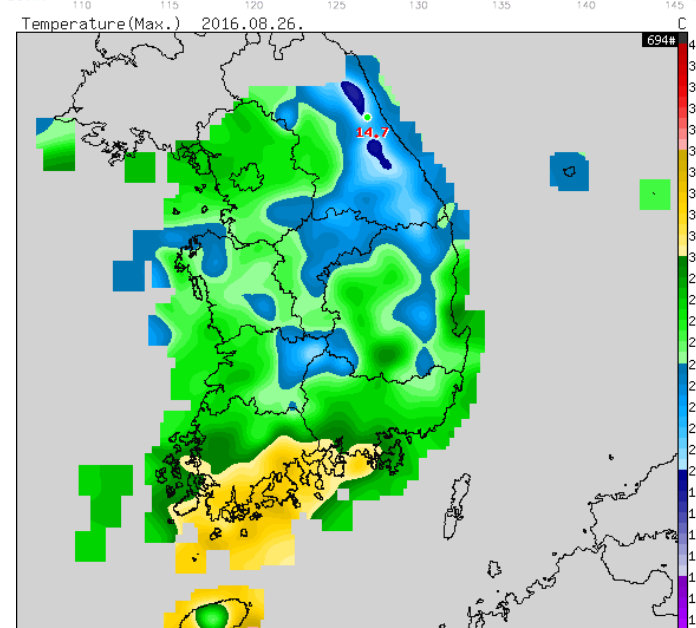
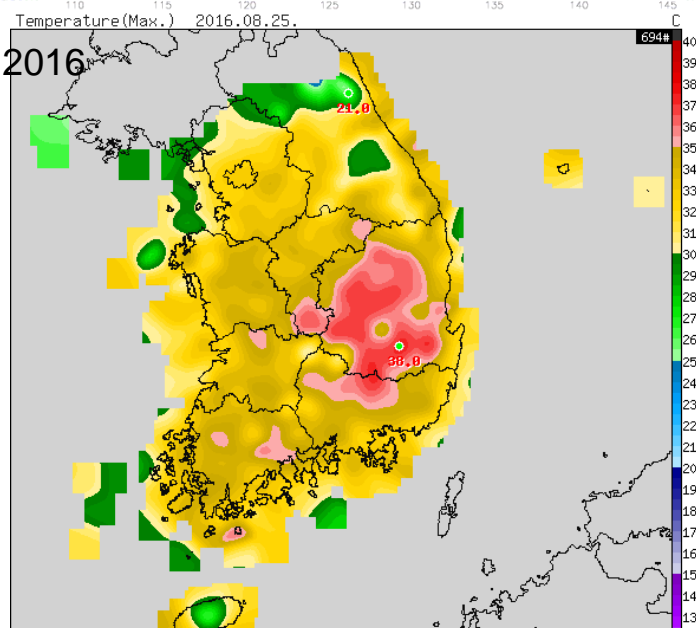




@ Usage of Airmass RGB – Downdraft of cold airmass



25 Aug. 2016



26 Aug. 2016

Big drop
of Temp