Usage of rapid scan Himawari – 8 data

- **Smog monitoring**
- **Fire Detection**
- **Volcanic eruption monitoring**

May 2017

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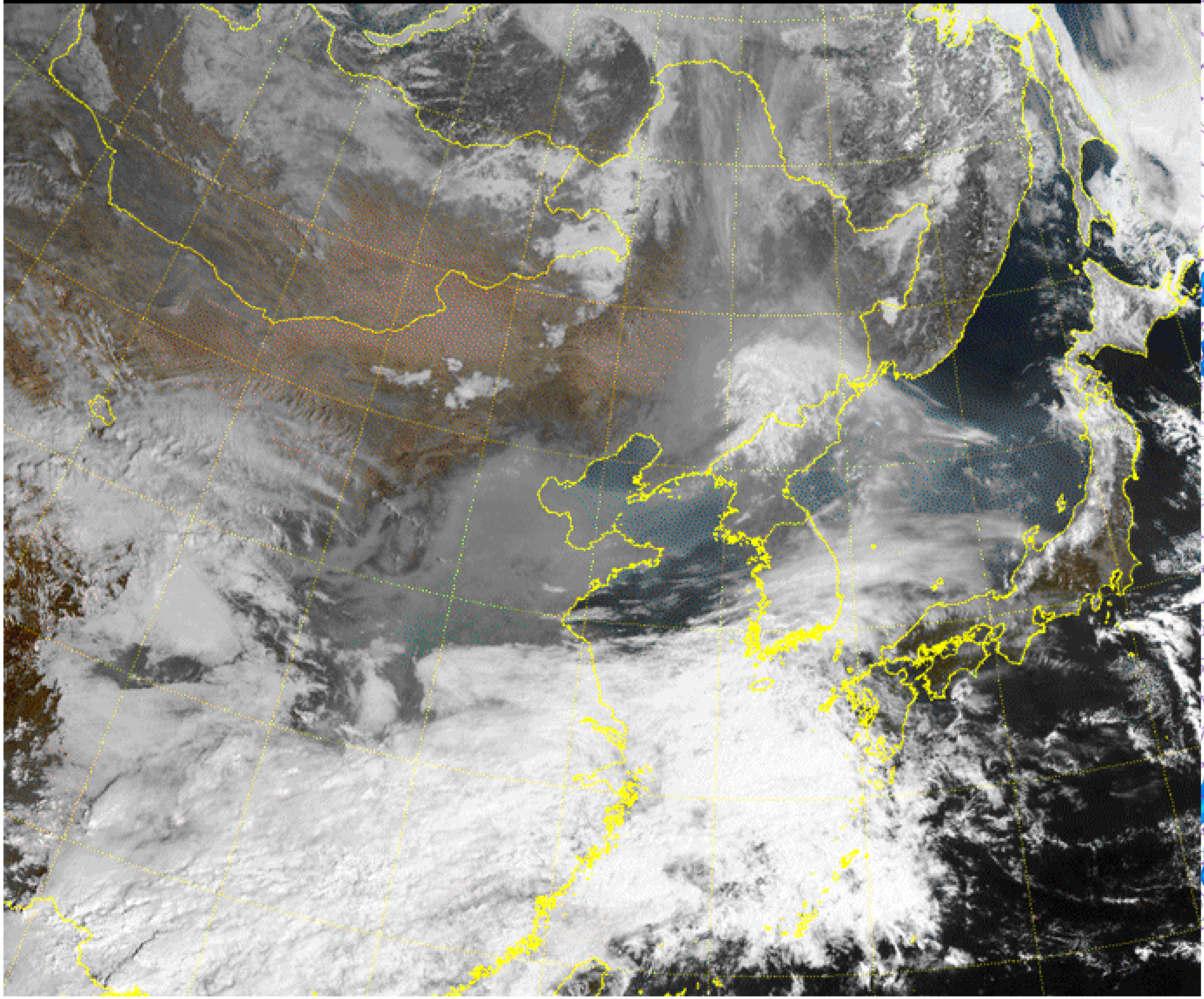
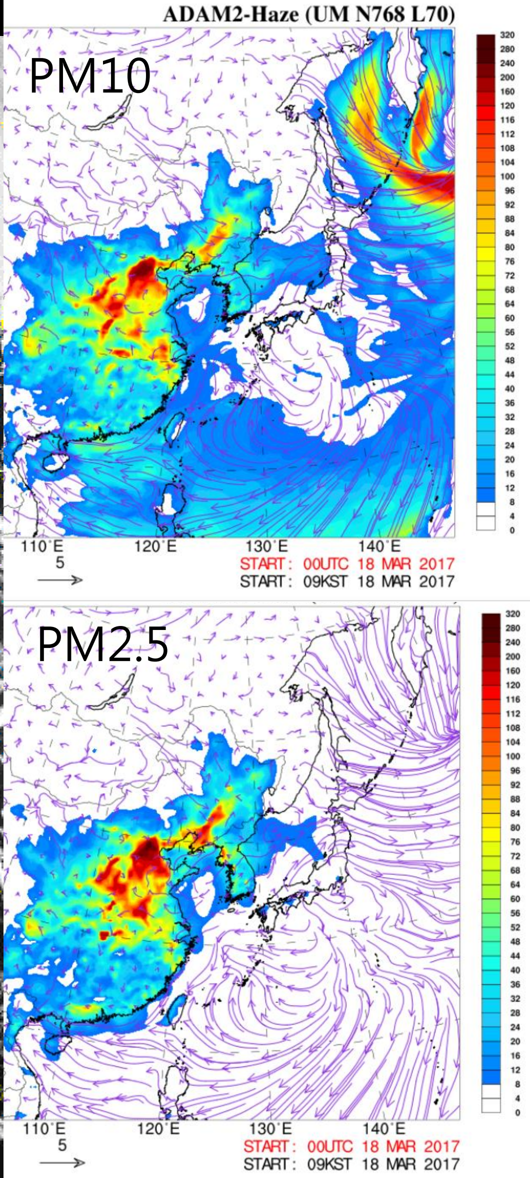
Contact point of CoE-Korea : hyesookpark@korea.kr

Satellite Analysis Division, National Meteorological Satellite Center

Smoke monitoring

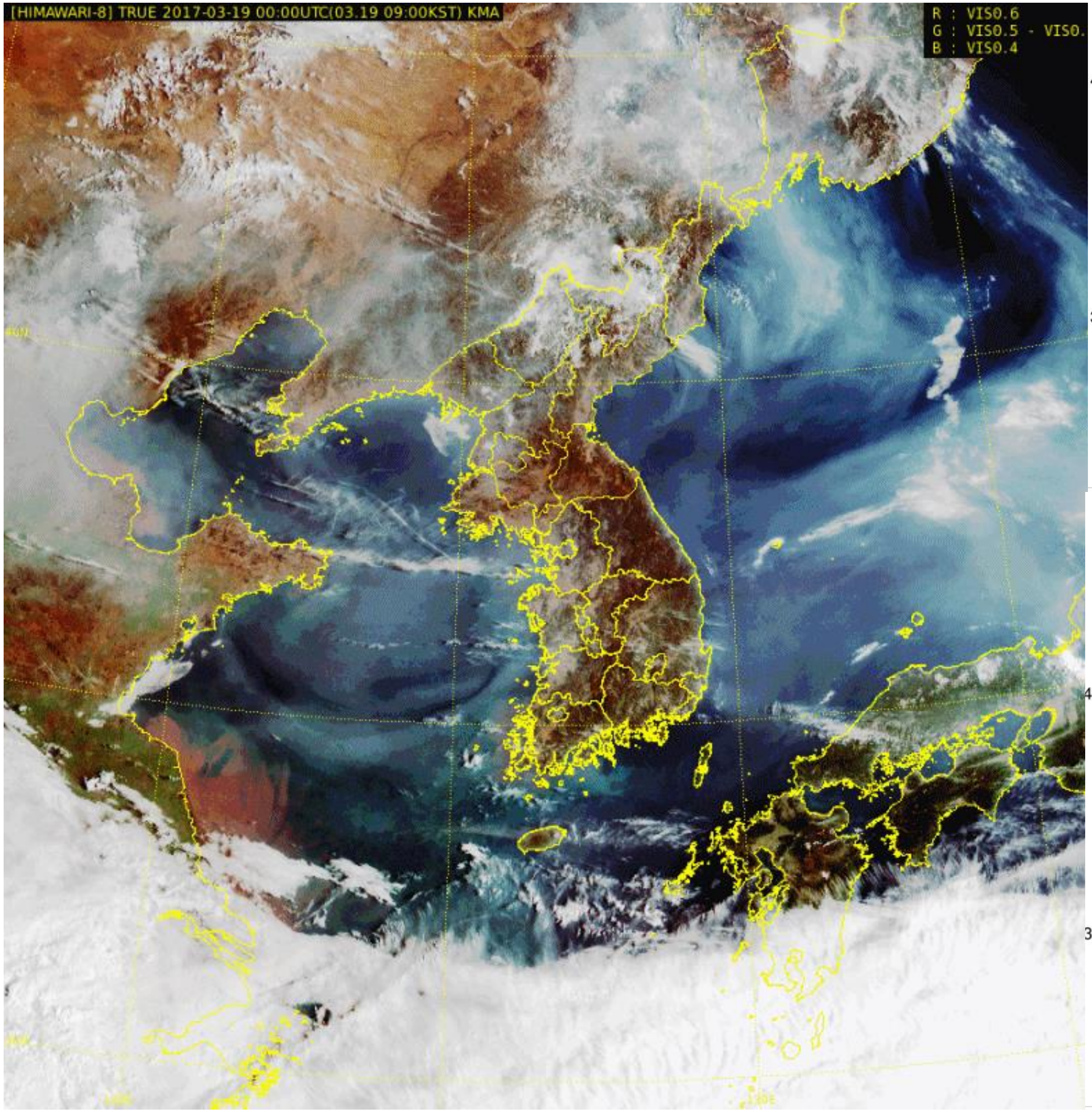
2017.3.18. 01~06UTC(10min)

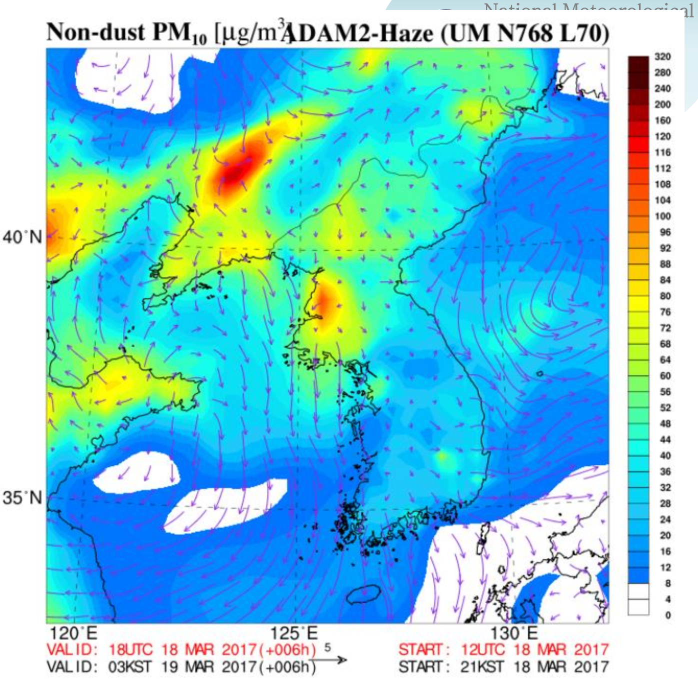


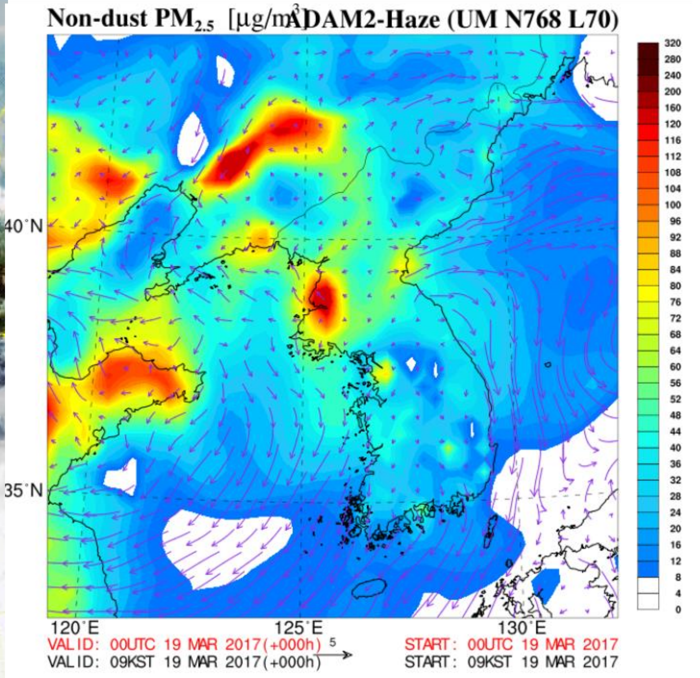

ADAM2-Haze (UM N768 L70)
PM10
110°E
5
120°E
130°E
140°E
START : 00UTC 18 MAR 2017
START : 09KST 18 MAR 2017
PM2.5
110°E
5
120°E
130°E
140°E
START : 00UTC 18 MAR 2017
START : 09KST 18 MAR 2017
320
280
240
200
160
120
116
112
108
104
100
96
92
88
84
80
76
72
68
64
60
56
52
48
44
40
36
32
28
24
20
16
12
8
4
0

Smog monitoring

2017.3.19. 00~04UTC(10min)

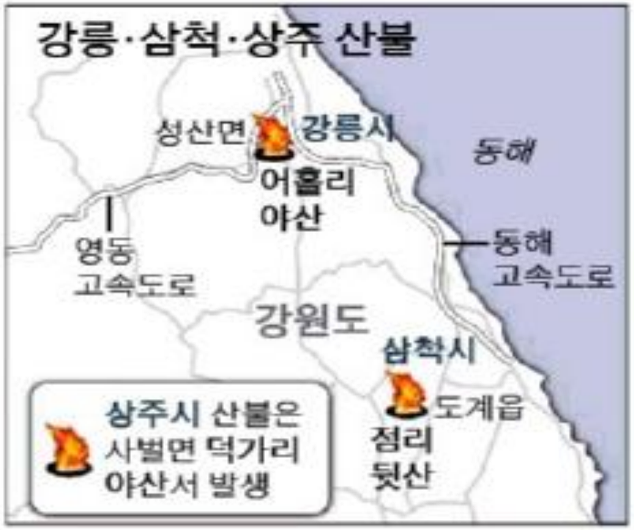

[HIMAWARI-8] TRUE 2017-03-19 00:00UTC(03.19 09:00KST) KMA
R : VIS0.6
G : VIS0.5 - VIS0.
B : VIS0.4


Non-dust PM10 [μg/m³] ADAM2-Haze (UM N768 L70)
40°N
35°N
120°E
125°E
130°E
VALID: 18UTC 18 MAR 2017(+006h)
VALID: 03KST 19 MAR 2017(+006h)
5
START: 12UTC 18 MAR 2017
START: 21KST 18 MAR 2017
320
280
240
200
160
120
116
112
108
104
100
96
92
88
84
80
76
72
68
64
60
56
52
48
44
40
36
32
28
24
20
16
12
8
4
0


Non-dust PM2.5 [μg/m³] ADAM2-Haze (UM N768 L70)
40°N
35°N
120°E
125°E
130°E
VALID: 00UTC 19 MAR 2017(+000h)
VALID: 09KST 19 MAR 2017(+000h)
5
START: 00UTC 19 MAR 2017
START: 09KST 19 MAR 2017
320
280
240
200
160
120
116
112
108
104
100
96
92
88
84
80
76
72
68
64
60
56
52
48
44
40
36
32
28
24
20
16
12
8
4
0

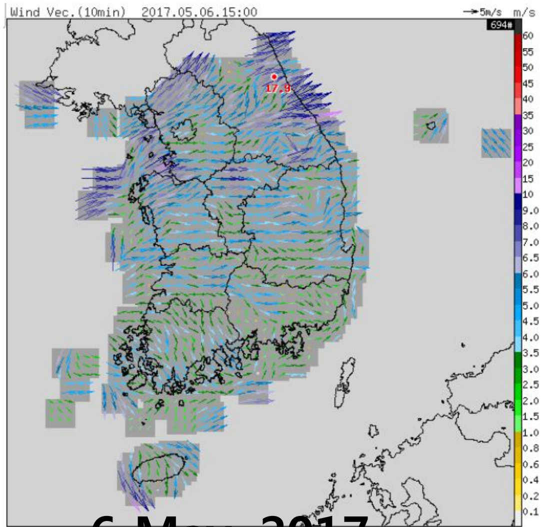
Fire monitoring

Fires at Gangneung, Samchuk, Sangju from 6~8 May, 2017

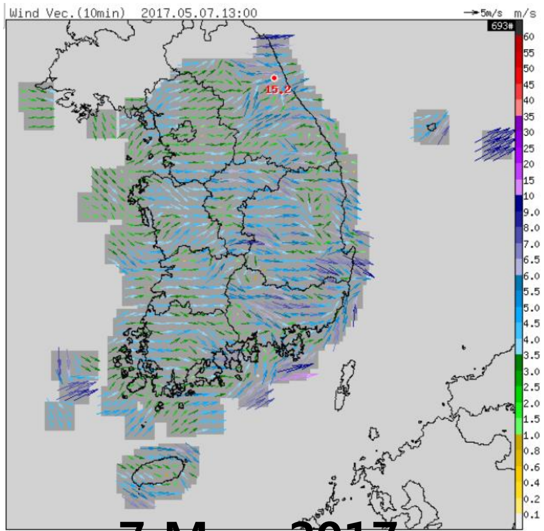

강릉·삼척·상주 산불
성산면
강릉시
동해
어흘리 야산
영동 고속도로
동해 고속도로
강원도
삼척시
도계읍 점리 뒷산
상주시 산불은 사벌면 덕가리 야산서 발생

지난 6일 오후 강원도 강릉시 성산면에서 발생한 산불이 민가로 번지고 있다. 피해를 본 주민 300여 명은 성산초등학교로 대피했다.

7일 전날 발생한 산불로 잿더미가 된 강원 강릉시 성산면 관음리의 한 집터에서 잔불을 정리하는 모습을 주민이 망연자실한 채


Wind Vec.(10min) 2017.05.06.15:00
→5m/s m/s
694#
17.9

6 May, 2017


Wind Vec.(10min) 2017.05.07.13:00
→5m/s m/s
693#
15.2

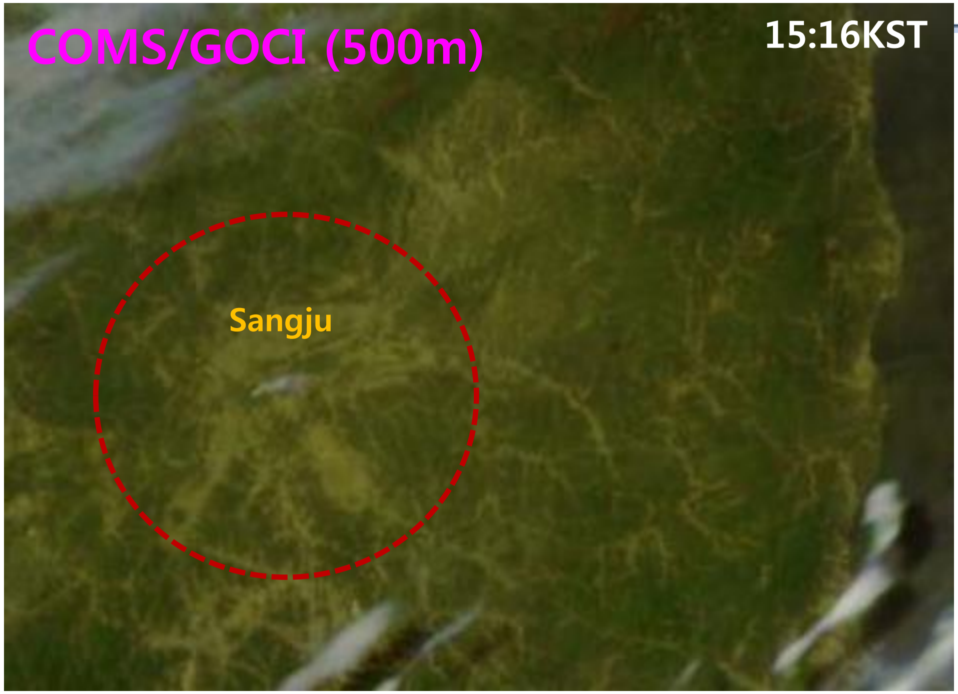
7 May, 2017

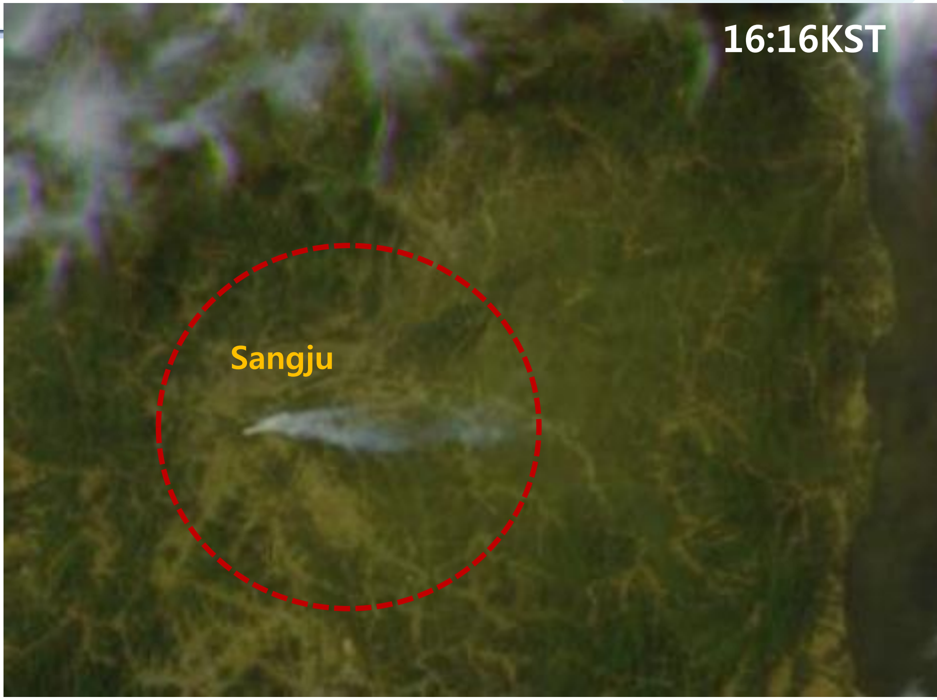
Wind > 15m/s
About 170hP forest was destroyed
30houses were burned
3 casualites

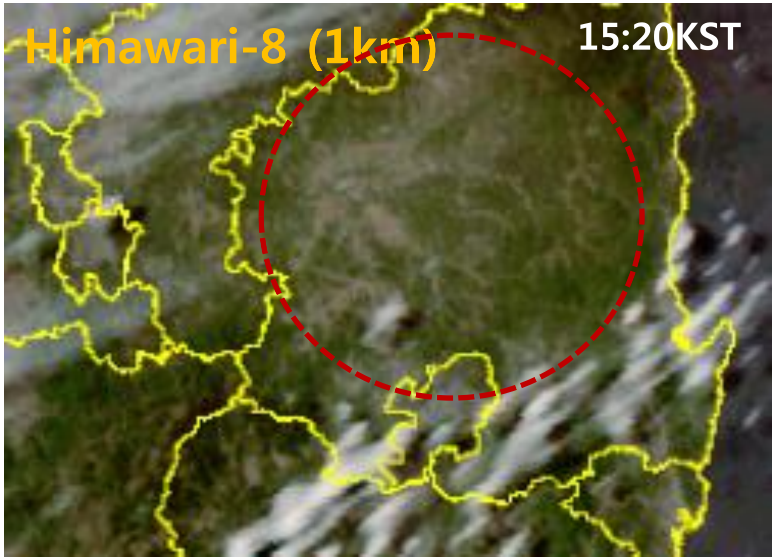
Fires Detection – True Color RGBs

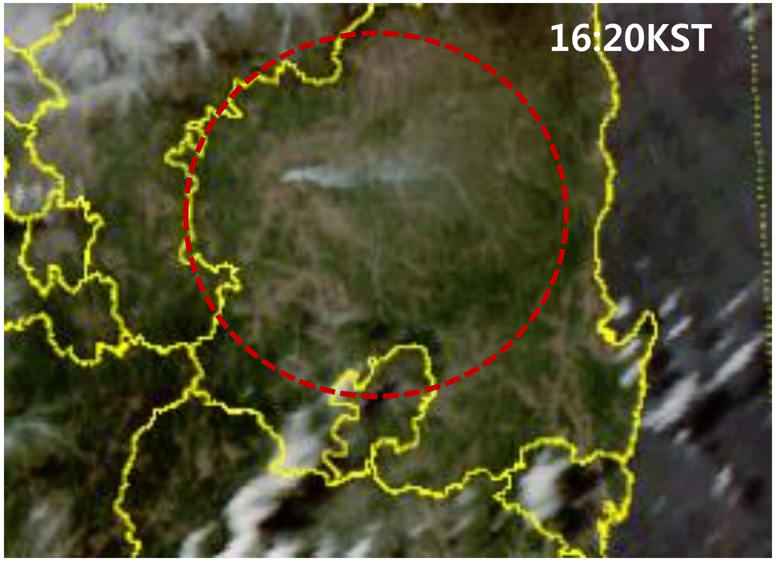
National Meteorological Satellite Center

2017.05.06


COMS/GOCI (500m)
15:16KST
Sangju


16:16KST
Sangju

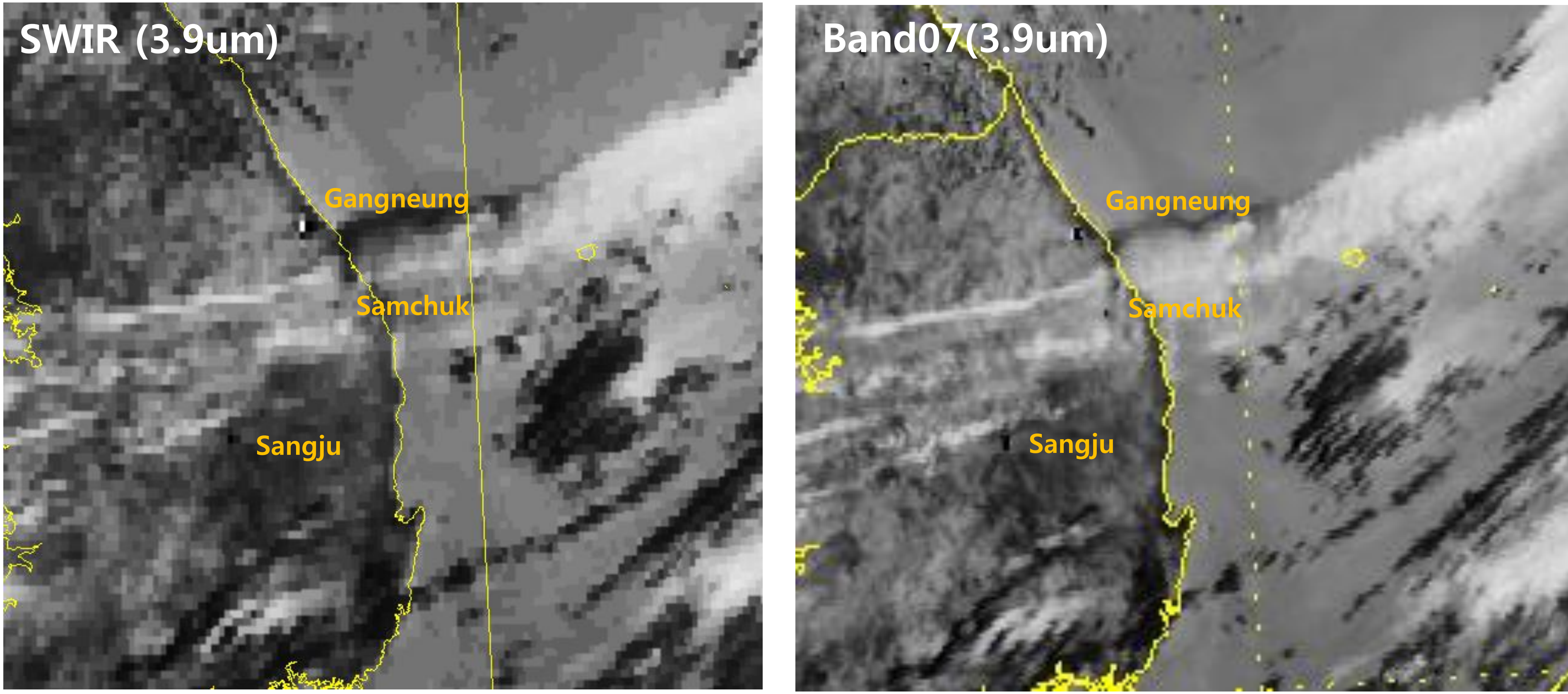

Himawari-8 (1km)
15:20KST



Fires Detection – SWIR channel

COMS SWIR (4km)

Himawari-8 SWIR (2km)

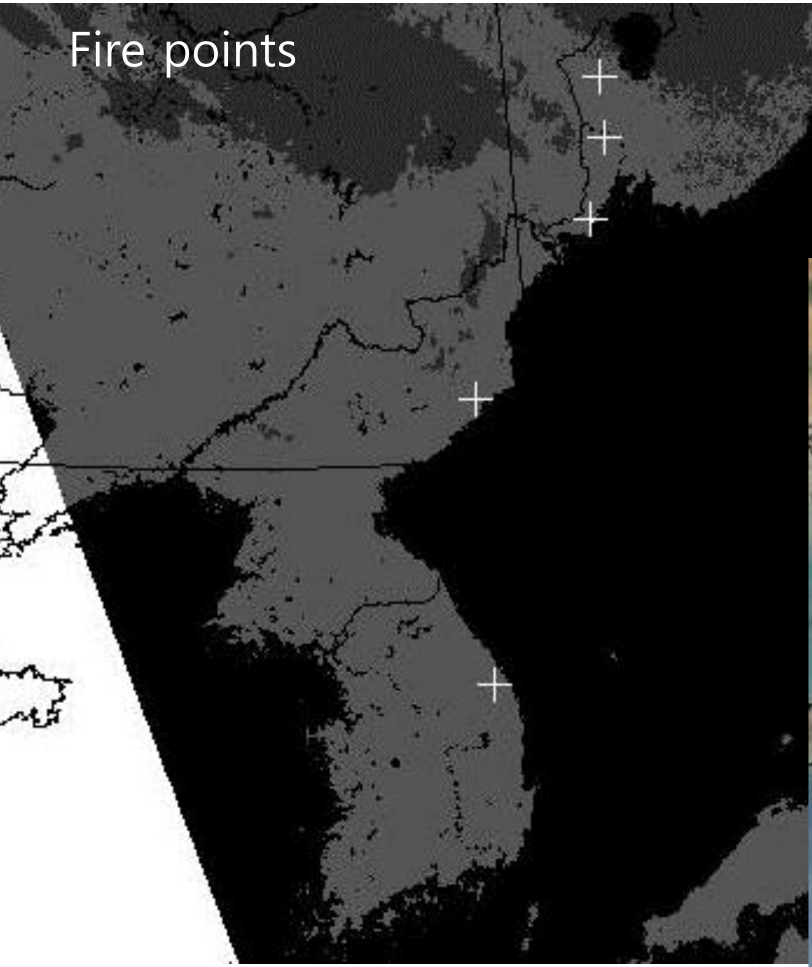

SWIR (3.9um)
Gangneung
Samchuk
Sangju
Band07(3.9um)
Gangneung
Samchuk
Sangju

07:00 UTC 6th May 2017

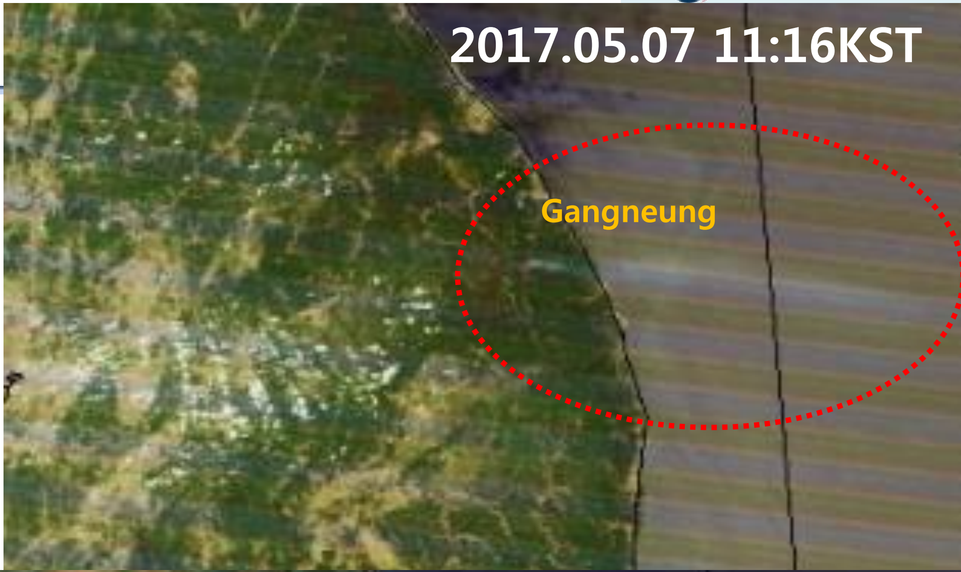
Fires Detection

Aqua/Terra MODIS

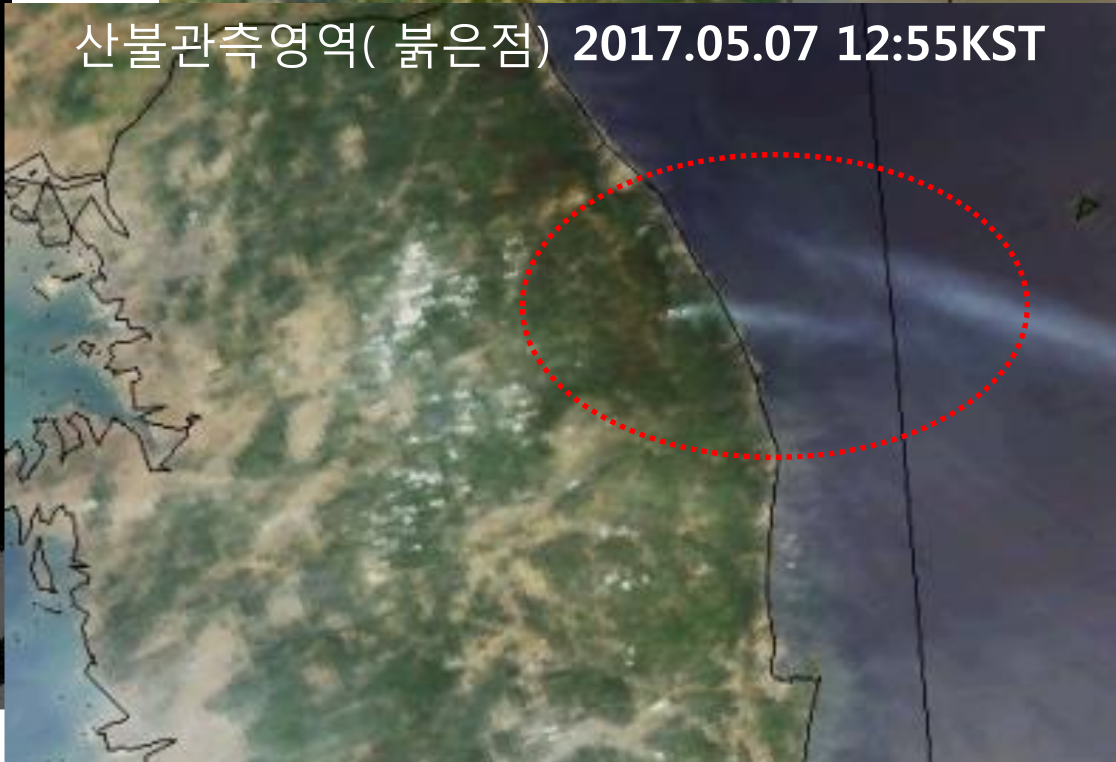
2017.05.07 12:55KST



Fire points



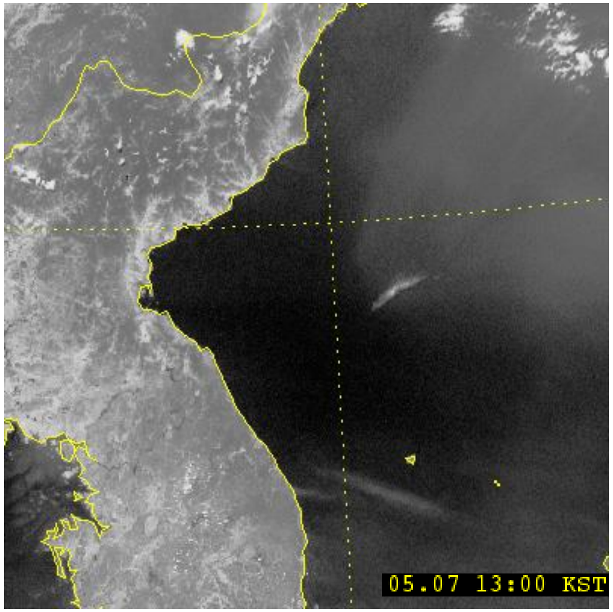
2017.05.07 11:16KST



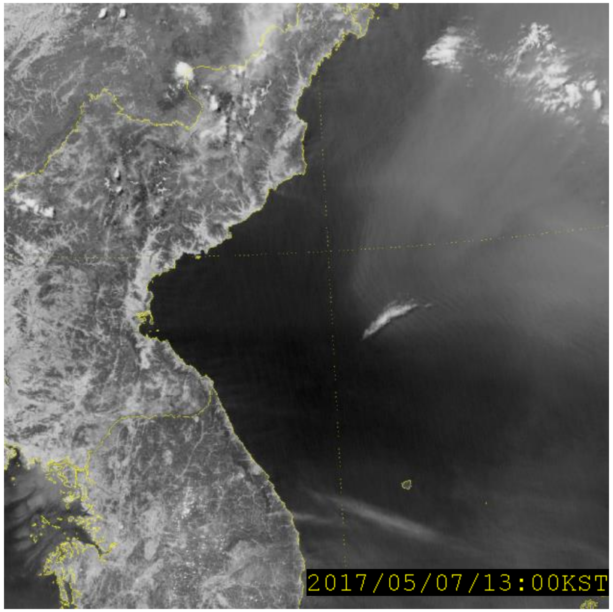
산불관측영역(붉은점) **2017.05.07 12:55KST**

Fires Detection – Visible channel

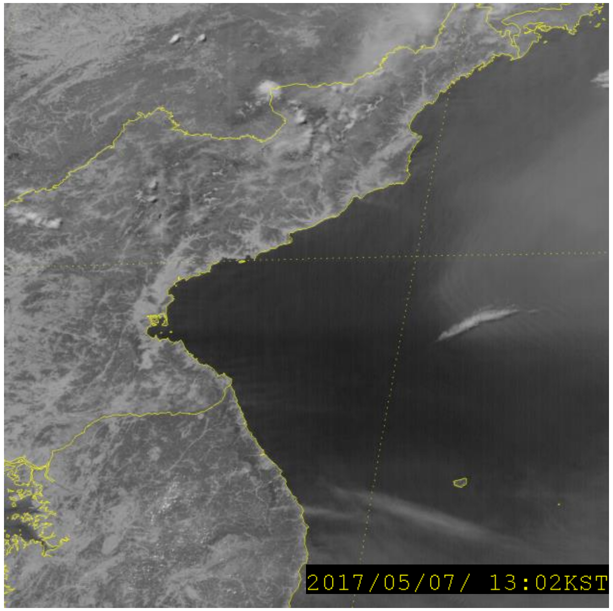
**COMS VIS(1km)
15min interval (fps2)**


05.07 13:00 KST

**HIMAWARI VIS(0.5km)
10min interval (fps3)**


2017/05/07/13:00KST

**HIMAWARI VIS(0.5km)
2min interval (fps12)**

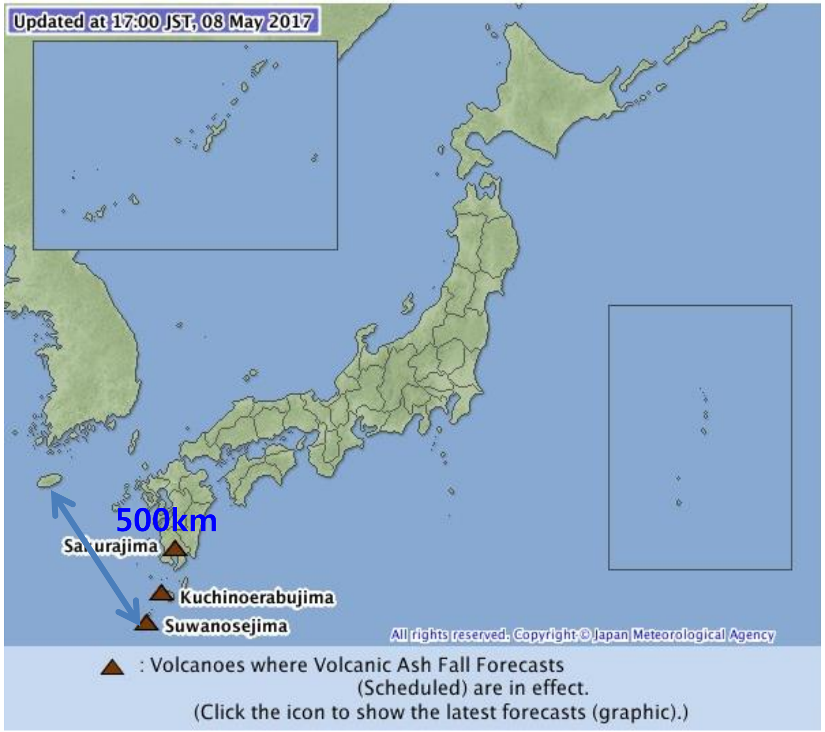

2017/05/07/ 13:02KST

04:00~07:30UTC 7th May 2017

Which one is best for Fire monitoring ?

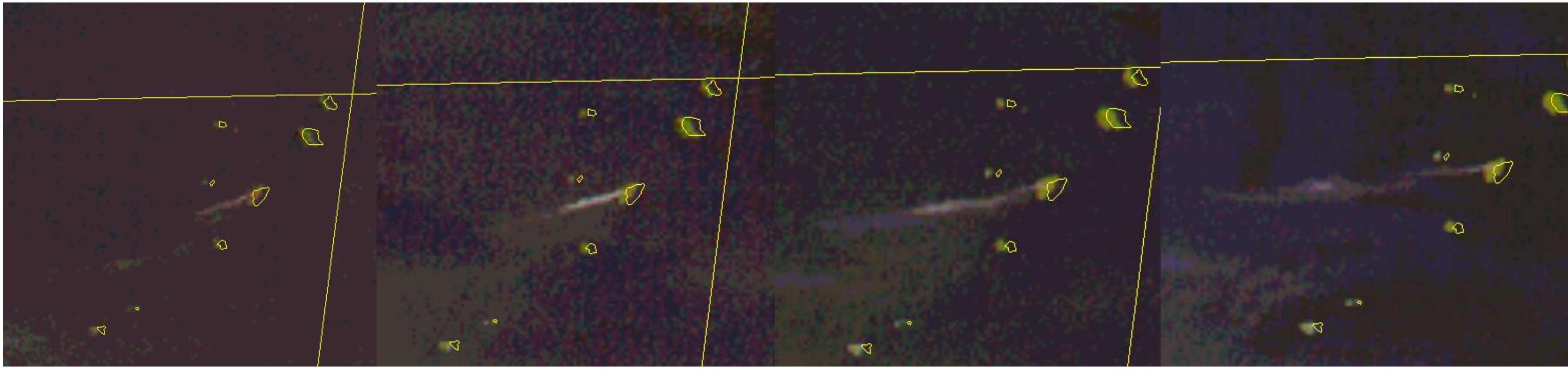
Volcano Eruption

At Suwanosejima Island in Japan


Updated at 17:00 JST, 08 May 2017
500km
Sakurajima
Kuchinoerabujima
Suwanosejima
All rights reserved. Copyright © Japan Meteorological Agency
▲ : Volcanoes where Volcanic Ash Fall Forecasts (Scheduled) are in effect.
(Click the icon to show the latest forecasts (graphic).)

- Eruption started before 21UTC on 7 May
- Eruption maximum around 05UTC on 8 May
- Moving from SW→ W→NW→ W
  along anticyclonic circulation at lower level
- Became weak after 08UTC on 8 May,
- Difficult to monitor after 09 UTC on May
  due to Upper level clouds
- No impact on the Korean peninsular was expected
  due to weak eruption and precipitation clouds

2017.05.08



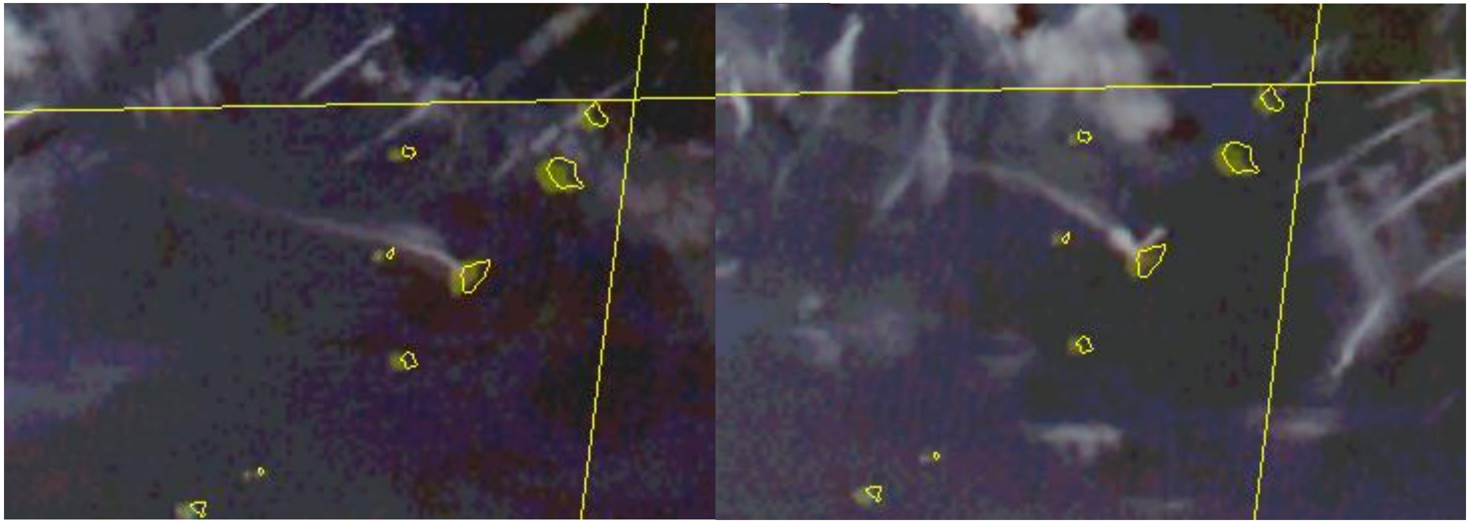
22:08UTC 23:08UTC 00:08UTC 01:08UTC

Himawari-8 True Color RGB image

2017.05.08.

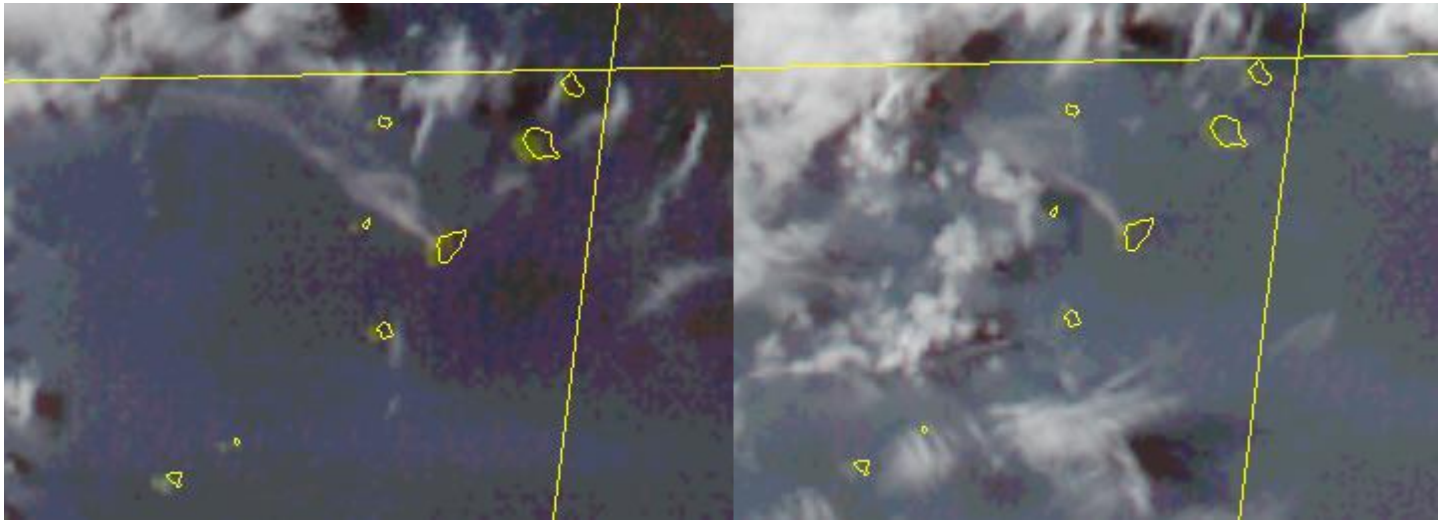
04:38UTC

05:38UTC



06:38UTC

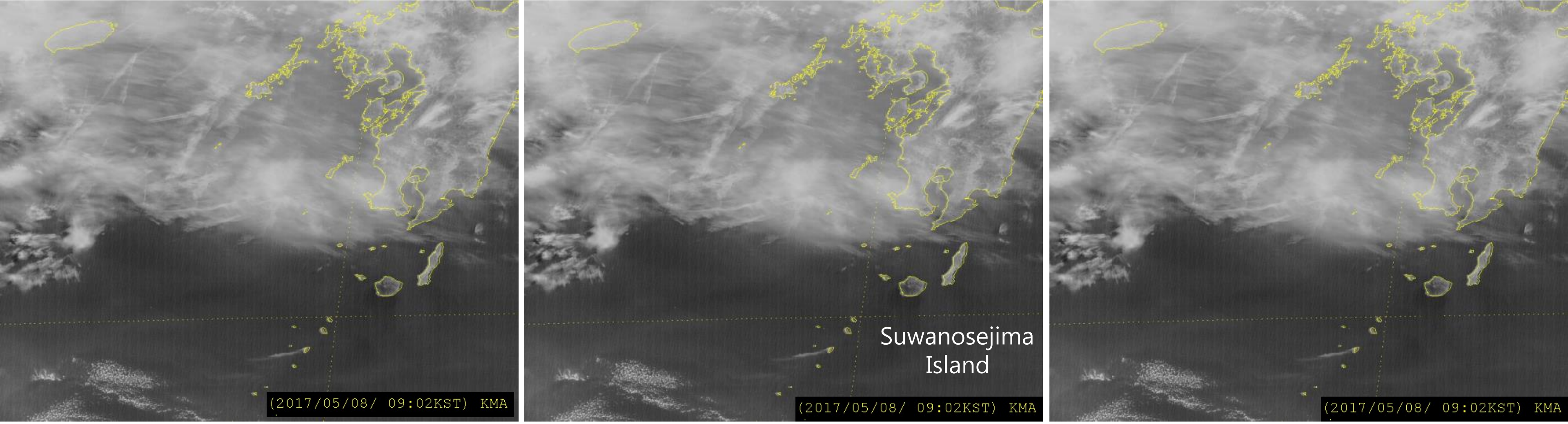
07:38UTC



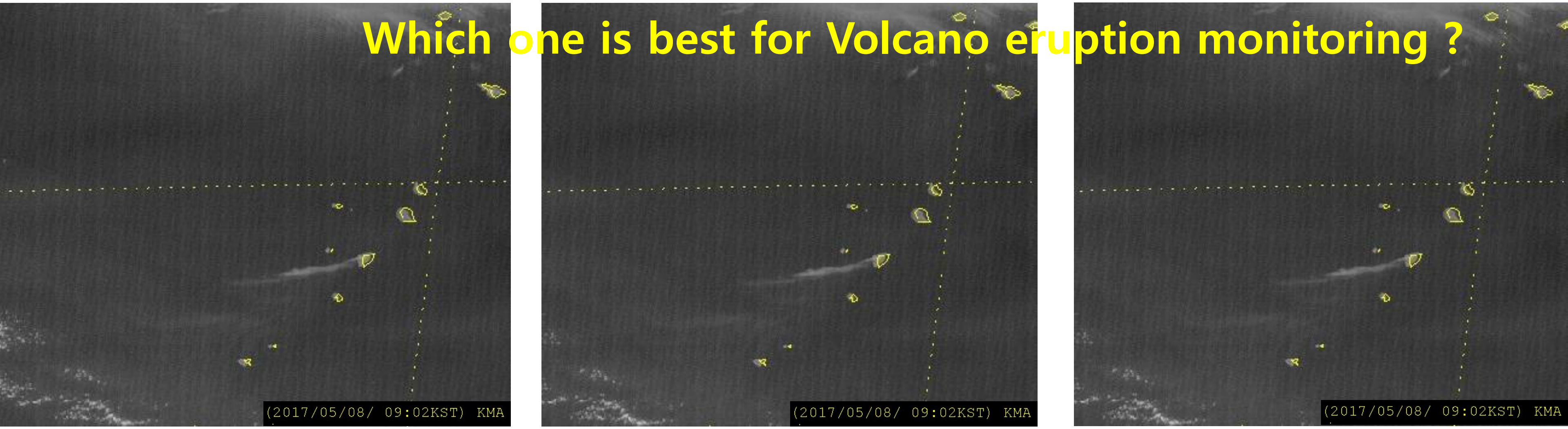
Himawari-8 True Color RGB image

Usefulness of rapid scan data

30min(1frame/1s)　　10min(3frame/1s)　　2min(12frame/1s)


(2017/05/08/ 09:02KST) KMA
(2017/05/08/ 09:02KST) KMA
Suwanosejima Island
(2017/05/08/ 09:02KST) KMA

2018.05.08 00:00~08:00UTC


(2017/05/08/ 09:02KST) KMA
(2017/05/08/ 09:02KST) KMA
(2017/05/08/ 09:02KST) KMA

Which one is best for Volcano eruption monitoring ?