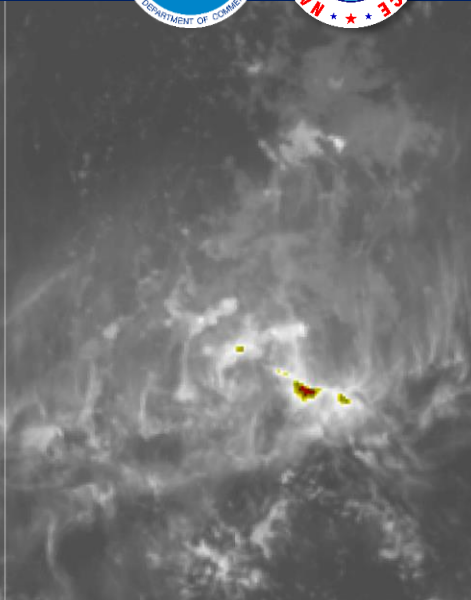
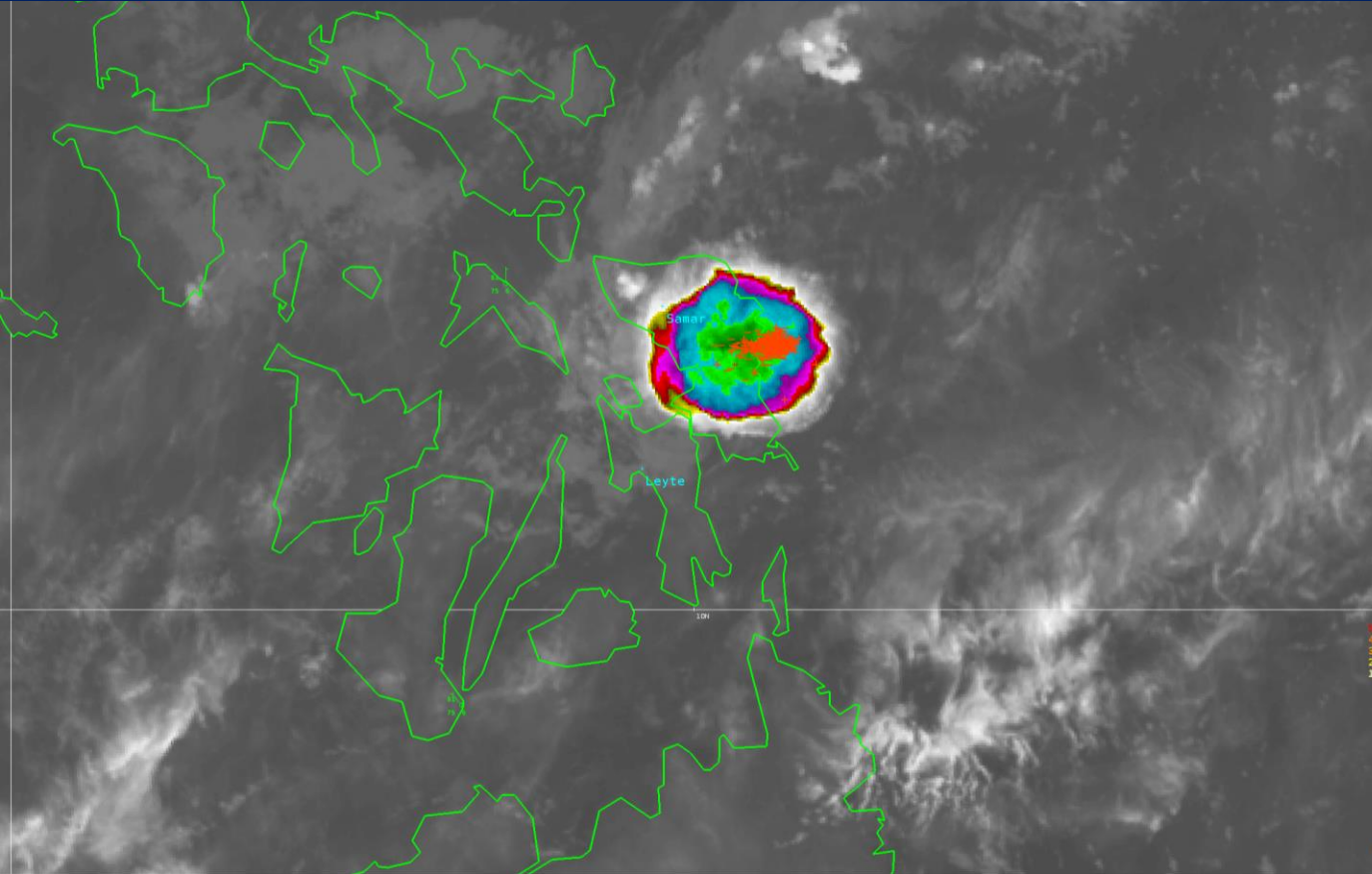


03 Return Strokes  
08 Return Strokes



# Early Morning IR – 3 April (ChST)



	Distance	Bearing	Est. Fatal
1 Minute CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:00Z	02-Apr-25	
2 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:00Z	02-Apr-25	
4 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
5 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
2 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
1 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
1 Minute CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
Fixed Buoy Plot	Wed 18:00Z	02-Apr-25	
Fixed Buoy Plot	Wed 18:00Z	02-Apr-25	
Fixed Buoy Plot	Wed 18:00Z	02-Apr-25	
GFSS5 1000MB 500MB thickness (hPa)	02:18	0HR	Wed 18:00Z 02-Apr-25
GFSS5 1000MB 700MB thickness (hPa)	02:18	0HR	Wed 18:00Z 02-Apr-25
GFSS5 1000MB 500MB Wind Streamlines (kts)	02:18	0HR	Wed 18:00Z 02-Apr-25
GFSS5 1000MB 700MB Wind Streamlines (kts)	02:18	0HR	Wed 18:00Z 02-Apr-25
GFSS5 500MB Wind Streamlines (kts)	02:18	0HR	Wed 18:00Z 02-Apr-25
Hiwari-9 10.41 um Red visible band; channel 3	02:18	0HR	Wed 18:20Z 02-Apr-25
Hiwari-9 10.41 um Red visible band; channel 3	02:18	0HR	Wed 18:20Z 02-Apr-25
Hiwari-9 10.41 um Red visible band; channel 3	02:18	0HR	Wed 18:20Z 02-Apr-25
Hiwari-9 10.41 um Clean window IR band; channel 13	02:18	0HR	Wed 18:20Z 02-Apr-25
Hiwari-9 10.41 um Clean window IR band; channel 13	02:18	0HR	Wed 18:20Z 02-Apr-25







# Check out the Volcano Experts!



## Volcanic Ash Advisory Text

FVFE01 RJTD 022227

VA ADVISORY

DTG: 20250402/2227Z

VAAC: TOKYO

**VOLCANO: KANLAON 272020**

**PSN: N1025 E12308**

AREA: PHILIPPINES

SUMMIT ELEV: 2435M

ADVISORY NR: 2025/102

INFO SOURCE: HIMAWARI-9 PHIVOLCS

AVIATION COLOUR CODE: NIL

ERUPTION DETAILS: ERUPTION AT 20250402/2201Z FL090 EXTD SW REPORTED

OBS VA DTG: 02/2201Z

OBS VA CLD: VA NOT IDENTIFIABLE FM SATELLITE DATA WIND FL090 090/12KT

FCST VA CLD +6 HR: NOT AVBL

FCST VA CLD +12 HR: NOT AVBL

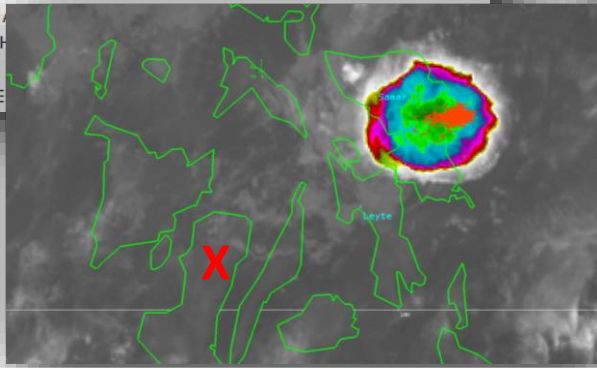
FCST VA CLD +18 HR: NOT AVBL

RMK: WE WILL ISSUE FURTHER

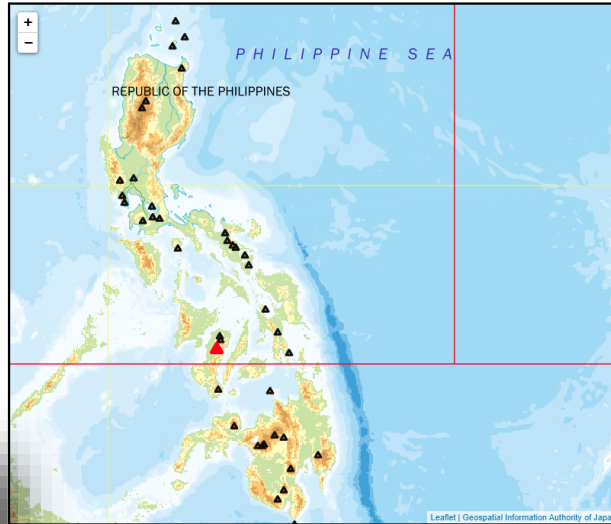
IMAGERY.

NXT ADVISORY: NO FURTHER

**Latest from  
Tokyo VAAC**



Volcano Map



**Legend:**

▲ : volcanoes

▲ : volcanoes for which VAAs (Volcanic Ash Advisories) have been issued.

As of 24 July, 2014, information of volcanoes in VAAs such as names, locations, volcano numbers and others are those in the database for VAA which is maintained by ICAO. The database does not represent any formal position by ICAO.

**Latest Volcanic Ash Advisories**

Volcano	Advisory Number	Eruption Details	Date Time
KANLAON	2025/102	2025-04-02 22:01Z	2025-04-02 22:27Z
KANLAON	2025/101	2025-04-02 18:02Z	2025-04-02 18:36Z

**VAA**

- Issued
  - Recently Advisories
    - 2025
    - 2024
    - 2023
    - 2022
    - 2021
- Darwin VAAC Backup
- VAGNFR (Discontinued on Nov. 28, 2024)
- VAGFNR-AF

**Product Relation**

- VAAC Operation
- Product Explanation

**References**

- Links

**Tokyo notes nothing near the convective plume... Is there ANYTHING there?**





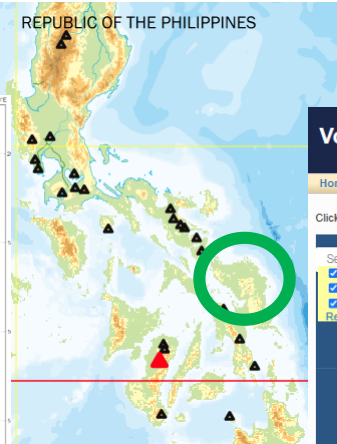
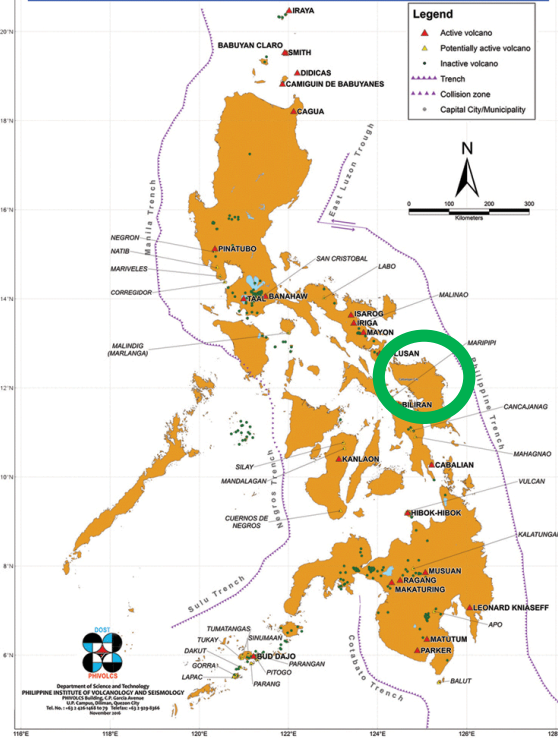


# Volcano Maps



## PHIVOLCS

### Active and Potentially Active Volcanoes of the Philippines



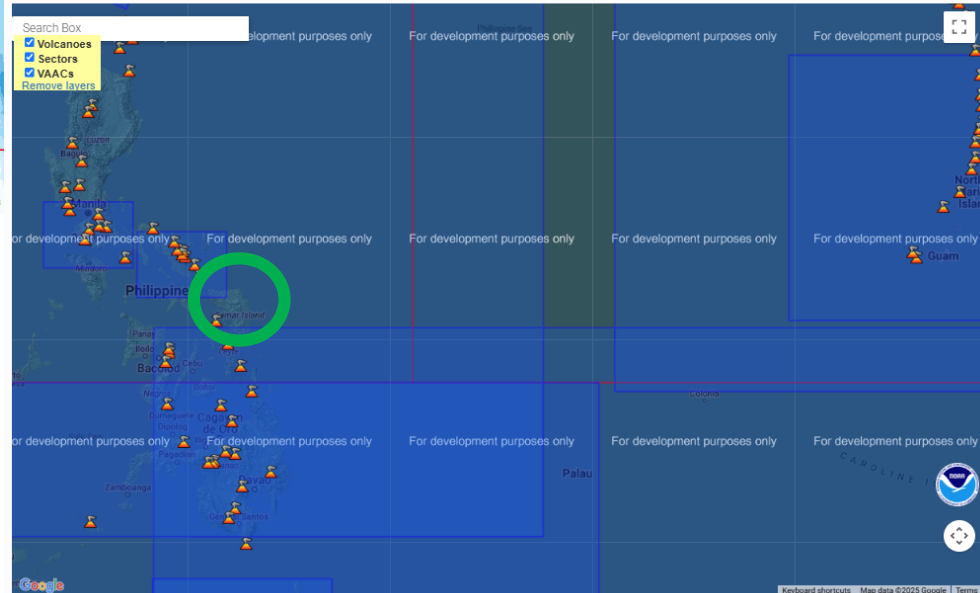
# Tokyo VAAC

## NOAA/CIMSS

### Volcanic Cloud Monitoring — NOAA/CIMSS

Home   Satellite Imagery   Alerts   Coverage Map   Tutorials   Thermal Monitoring   Status   Login

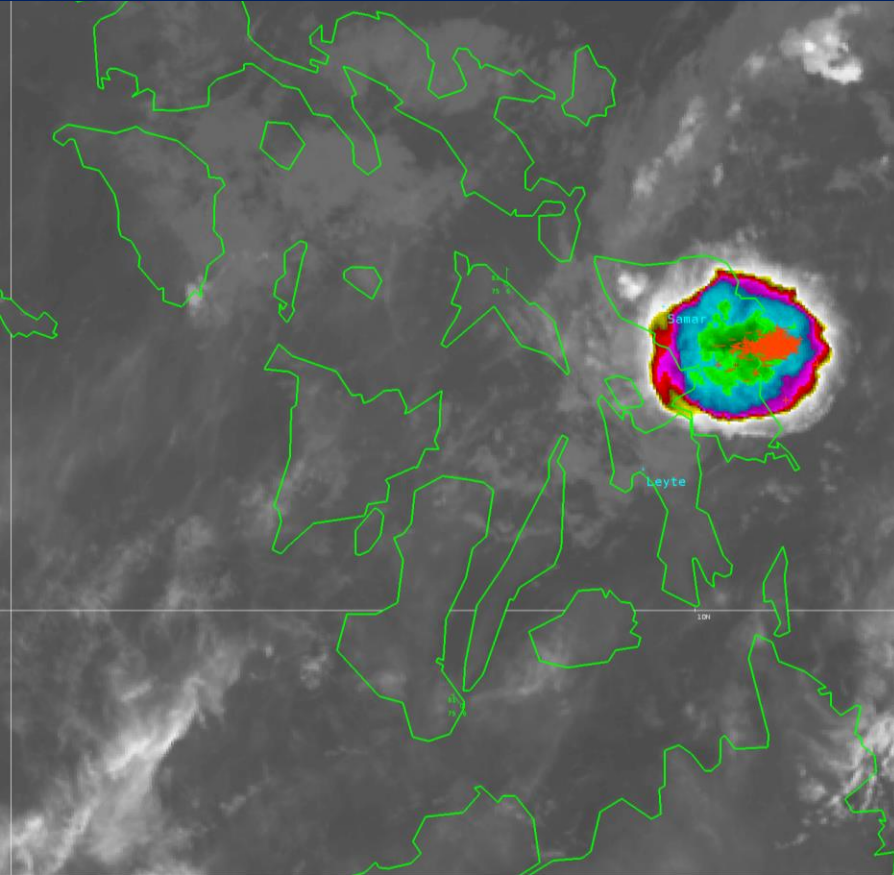
Click the link in a sector pop-up window to see latest satellite imagery for the sector. Click the link in a volcano pop-up window for more information from the [Global Volcanism Program](#).



03 Return Strokes  
08 Return Strokes



# Early Morning IR – 3 April (ChST)



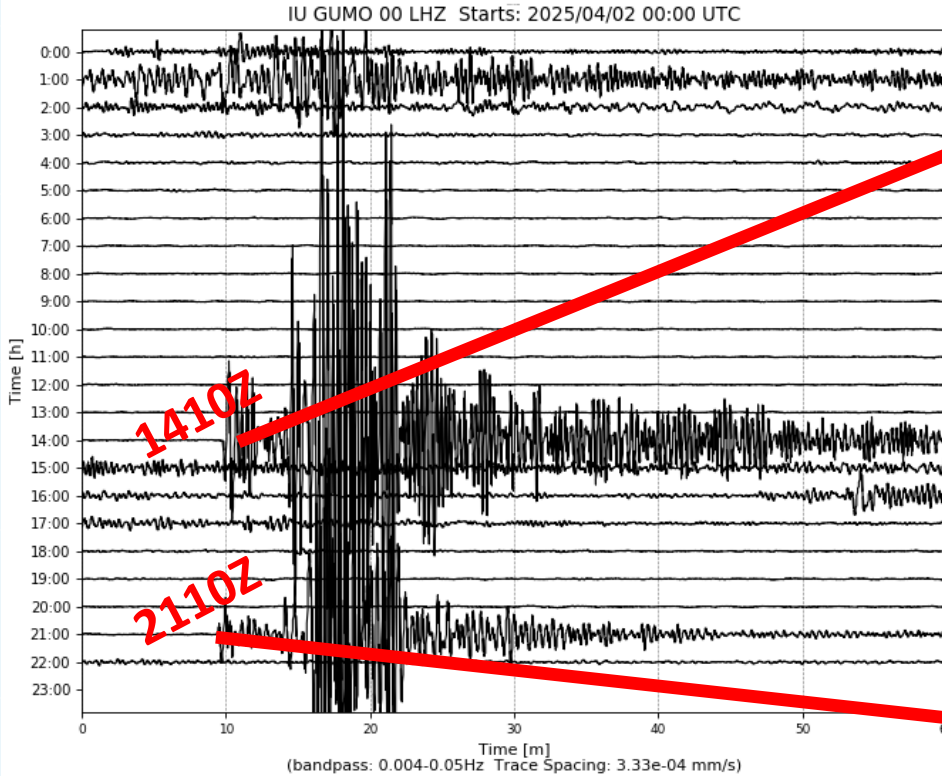
So, no volcano is known to exist there... A **new** volcano?

	Distance	Bearing	Est. Fatal
1 Minute CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:00Z	02-Apr-25	
2 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:00Z	02-Apr-25	
4 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
5 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
2 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
1 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
1 Minute CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
Fixed Buoy Plot	Wed 18:00Z	02-Apr-25	
NETAN Plot	Wed 18:00Z	02-Apr-25	
GFSS5 100MB 500mb thickness (hPa)	02:18	0HR	Wed 18:00Z 02-Apr-25
GFSS5 100MB 700mb thickness (hPa)	02:18	0HR	Wed 18:00Z 02-Apr-25
GFSS5 100MB 500mb Wind Streamlines (kts)	02:18	0HR	Wed 18:00Z 02-Apr-25
GFSS5 100MB 700mb Wind Streamlines (kts)	02:18	0HR	Wed 18:00Z 02-Apr-25
GFSS5 500mb Wind Streamlines (kts)	02:18	0HR	Wed 18:00Z 02-Apr-25
Hiawari-9 10.41 um Clean window IR band; channel 13	Wed 18:20Z	02-Apr-25	
Hiawari-9 10.41 um Clean window IR band; channel 13	Wed 18:20Z	02-Apr-25	
Hiawari-9 10.41 um Clean window IR band; channel 13	Wed 18:20Z	02-Apr-25	
Hiawari-9 10.41 um Clean window IR band; channel 13	Wed 18:20Z	02-Apr-25	



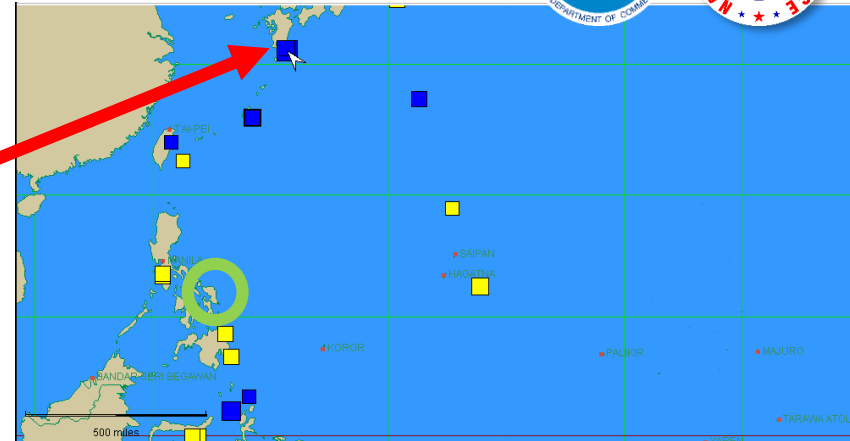


# Any Interesting Seismic Activity?

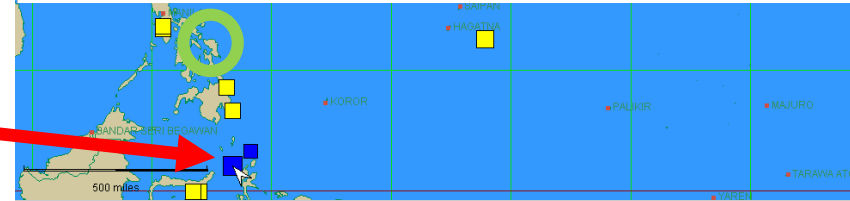


1410Z

2110Z



Event ID: us7000ppfy	Status: <b>Verified</b>	Data Source: United States National Seismic Network	Products
Date: 2025-04-02	Magnitude: 6.2	Latitude: 31.002	ShakeMa
Time: 14:03:57.428 GMT	Depth: 16.1 miles	Longitude: 131.473	
Note: 64 miles S of Miyazaki, Kyushu, Japan			



Event ID: us6000q3iu	Status: <b>Verified</b>	Data Source: United States National Seismic Network	Products
Date: 2025-04-02	Magnitude: 5.9	Latitude: 2.117	ShakeMa
Time: 21:03:39.058 GMT	Depth: 22.8 miles	Longitude: 126.759	
Note: 101 miles NNW of Ternate, Moluccas, Indonesia			





# Any Other Ways to Assess for Volcano? Ash? SO2?



## Volcanic Cloud Imagery

Sector: [Use Map](#)  
 Philippines 2 km

Instrument:   
 AHI  
 VIIRS

Satellite:   
 HIMAWARI-9  
 NOAA-20  
 NOAA-21  
 S-NPP

Image Type:   
 RGB1112or13um 3911t

End Time:   
 2025-04-02 20:20:00

Date Range:   
 1 hour

First Image	<	Stop	>	Last Image	Slower	Faster
Rock	Zoom	Download Original	Download Modified	Annotate	Draw	

False Color Imagery (12.4–10.4µm, 10.4–3.8µm, 10.4µm)  
 HIMAWARI-9 AHI (04/02/2025 - 20:00:00 UTC)

IR Window Imagery and Ash/Dust Cloud Height  
 HIMAWARI-9 AHI (04/02/2025 - 20:00:00 UTC)

IR Window Imagery and Ash/Dust Effective Radius  
 HIMAWARI-9 AHI (04/02/2025 - 20:00:00 UTC)

IR Window Imagery and Ash/Dust Loading  
 HIMAWARI-9 AHI (04/02/2025 - 20:00:00 UTC)

**NOAA/CIMSS  
 Volcano  
 Monitoring  
 Satellite Imagery  
 (lots of options)**

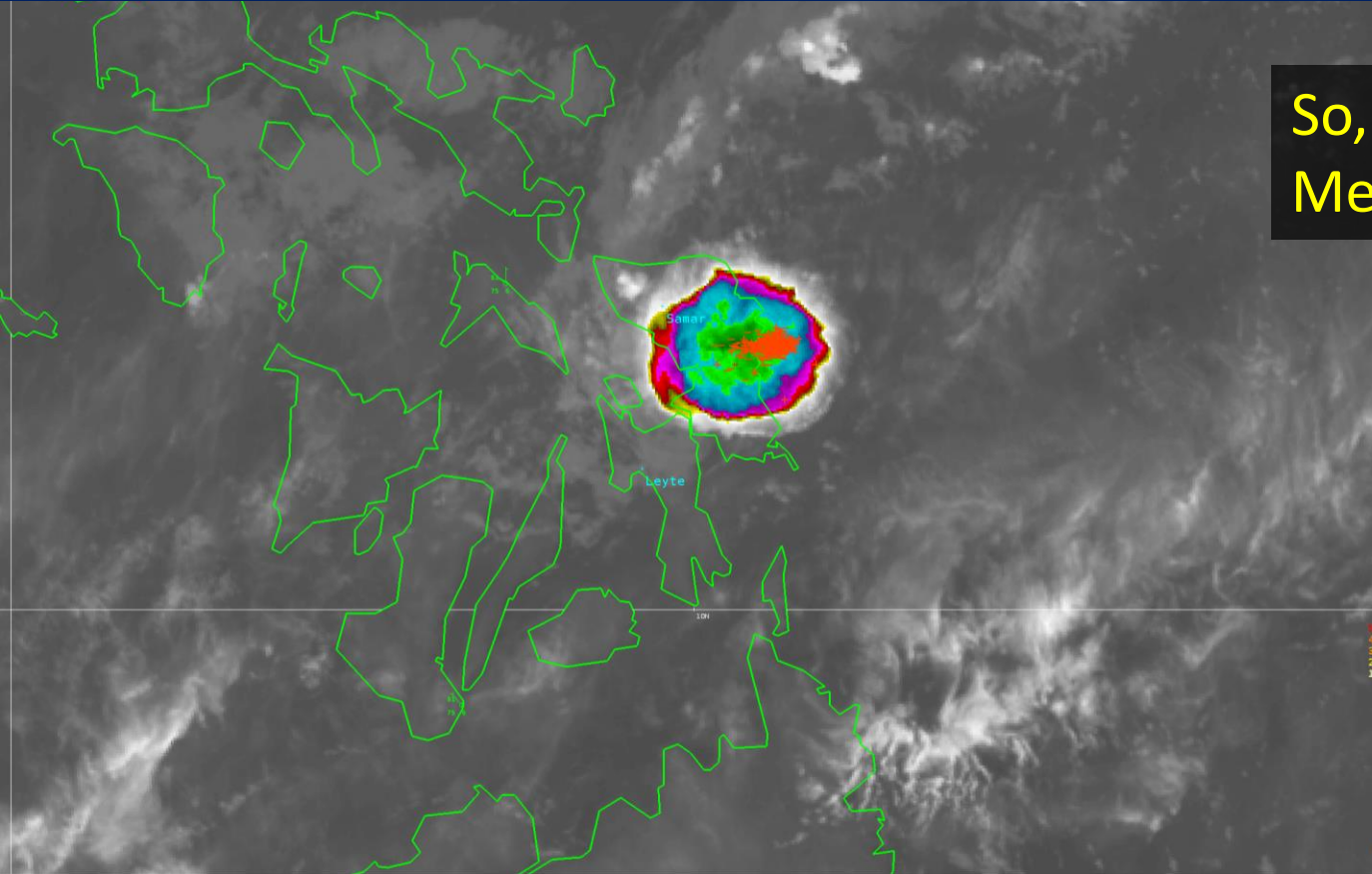




0.3 Return Strokes  
0.8 Return Strokes



# Early Morning IR – 3 April (ChST)



So, not a volcano...  
Meteorological?

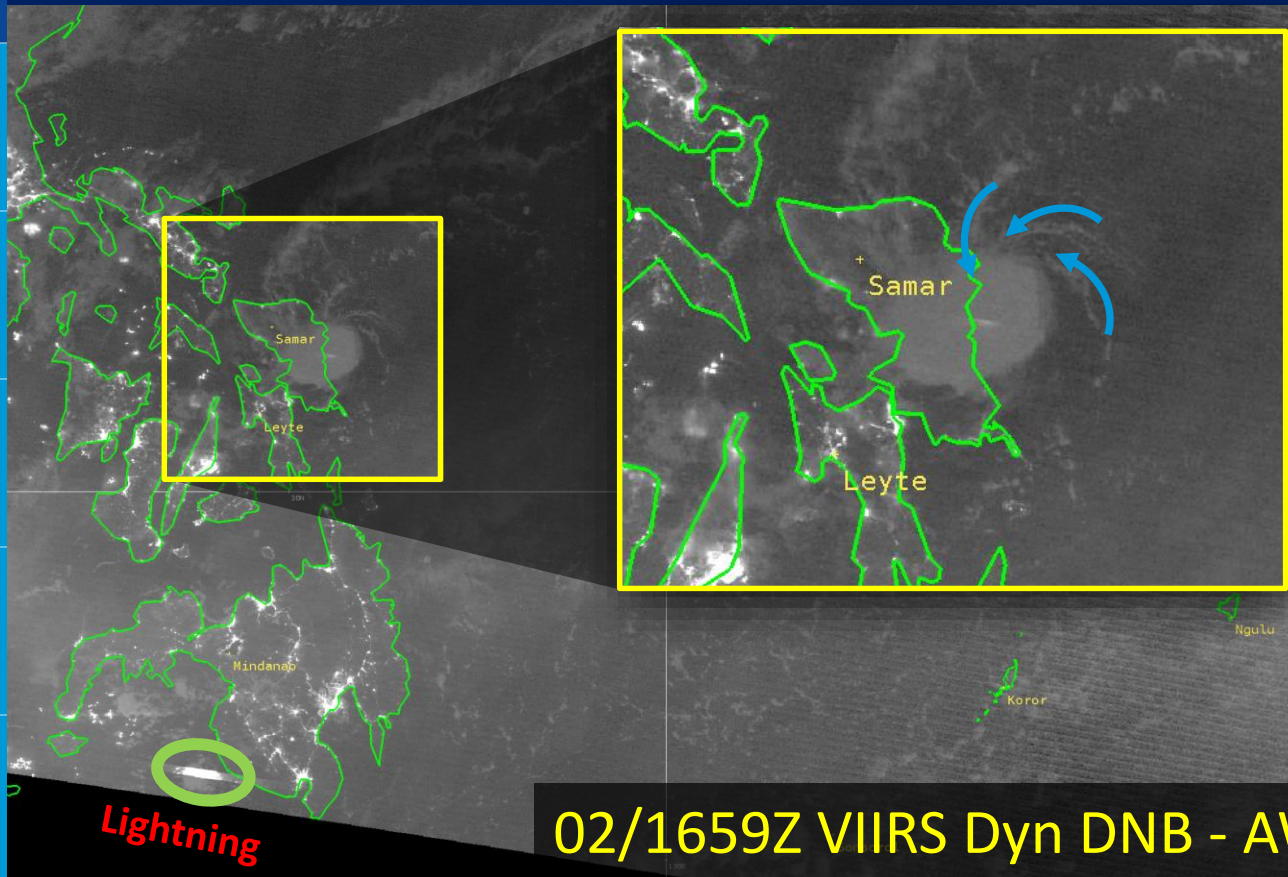
	Distance	Bearing	Est. Fatal
1 Minute CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:00Z	02-Apr-25	
2 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:00Z	02-Apr-25	
4 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
5 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
2 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
1 Minute Old CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
1 Minute CG Return Stroke NLDN & GLD Lightning Plot	Wed 18:20Z	02-Apr-25	
Fixed Buoy Plot	Wed 18:00Z	02-Apr-25	
NETAN Plot	Wed 18:00Z	02-Apr-25	
GFSS5 1000MB 500mb thickness (hPa)	02:18	0HR	Wed 18:00Z 02-Apr-25
GFSS5 1000MB 700mb thickness (hPa)	02:18	0HR	Wed 18:00Z 02-Apr-25
GFSS5 1000MB 500mb Wind Streamlines (kts)	02:18	0HR	Wed 18:00Z 02-Apr-25
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GFSS5 500mb Wind Streamlines (kts)	02:18	0HR	Wed 18:00Z 02-Apr-25
Hiwawari-9 10.41 um Red visible band; channel 3	Wed 18:20Z	02-Apr-25	
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Hiwawari-9 10.41 um Red visible band; channel 3	Wed 18:20Z	02-Apr-25	
Hiwawari-9 10.41 um Clean window IR band; channel 13	Wed 18:20Z	02-Apr-25	
Hiwawari-9 10.41 um Clean window IR band; channel 13	Wed 18:20Z	02-Apr-25	







# Let's go to the SATELLITES! *VIIRS*



Looks like low-level winds curving in...

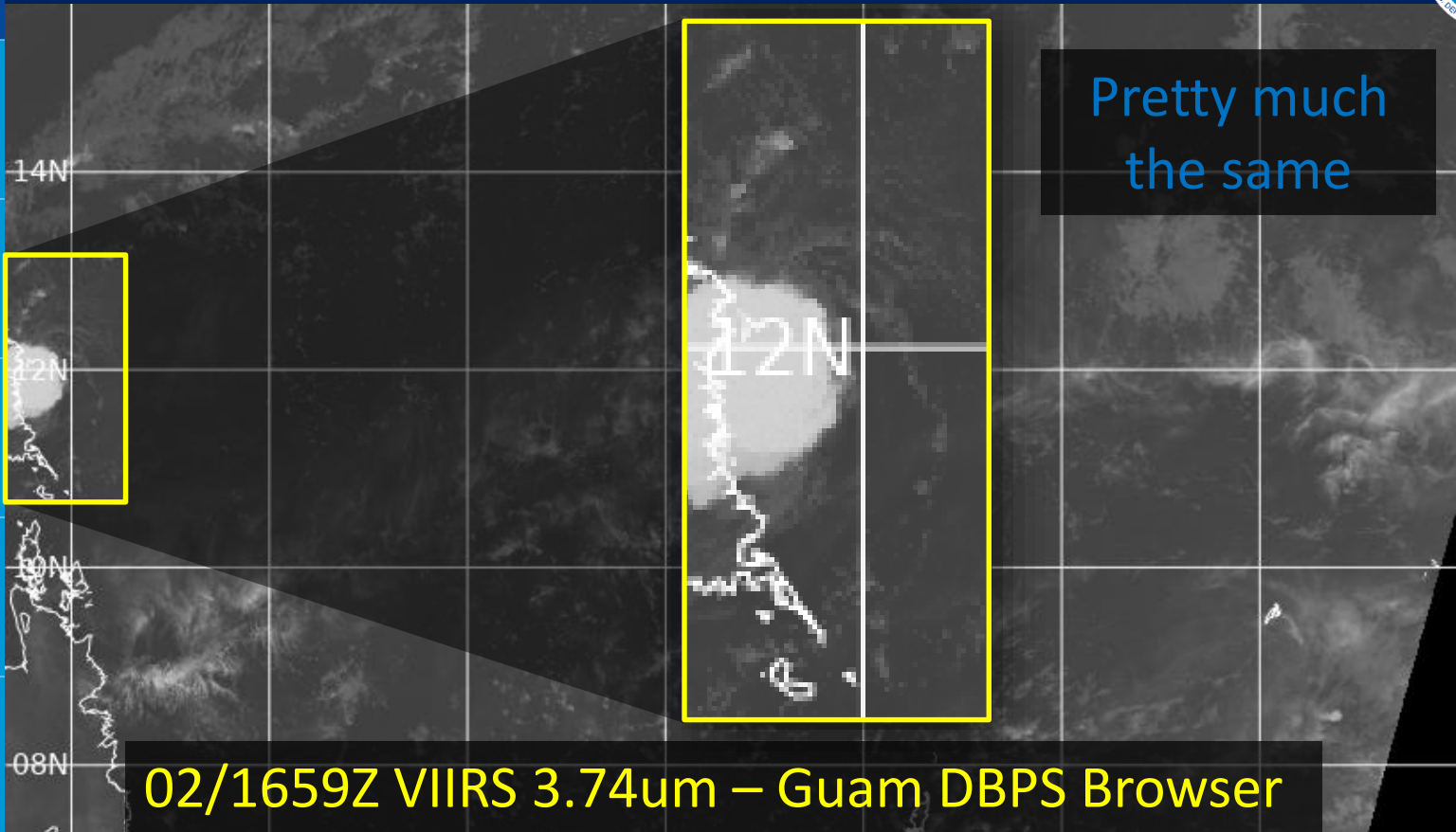
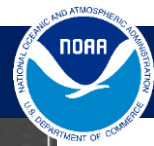
02/1659Z VIIRS Dyn DNB - AWIPS

\* NOAA20-VIIRS Dynamic DNB Wed 16:59Z 02-Apr-25





# Let's go to the SATELLITES! *VIIRS*



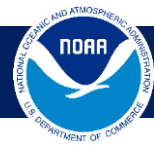
Pretty much the same

02/1659Z VIIRS 3.74μm – Guam DBPS Browser

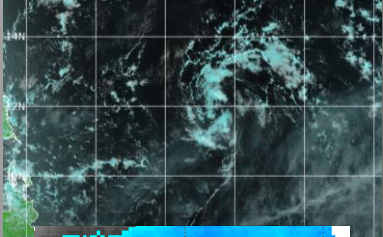




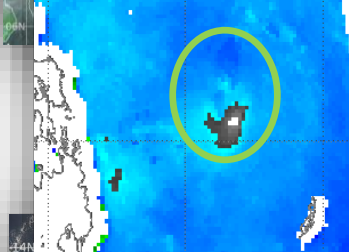
# Let's go to the SATELLITES! *Time Series Lead-Up*



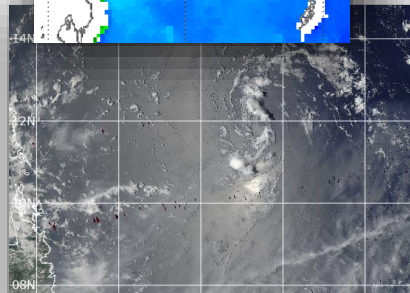
01/0446Z VIIRS False Color – Guam DBPS Browser



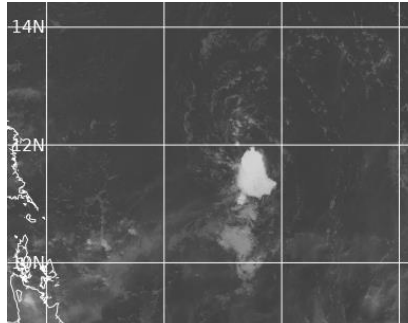
01/0450Z AMSR2 Winds – Web – NESDIS STAR



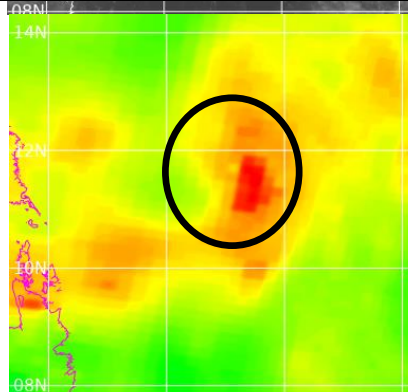
01/0525Z Aqua-MODIS True Color – Guam DBPS Browser



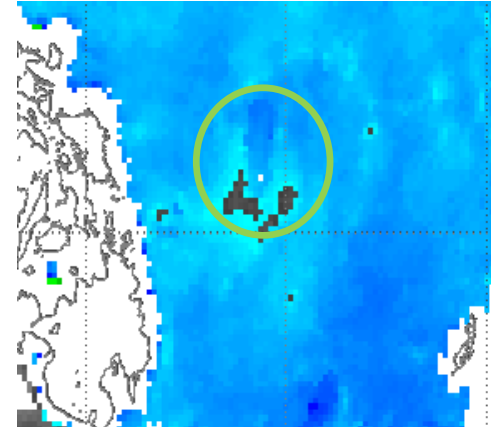
+ ~12hr



01/1628Z N21 VIIRS 3.74um – Guam DBPS Browser



01/1630Z N21 ATMS TPW – Guam DBPS Browser



01/1706Z AMSR2 Winds – Web - NESDIS STAR



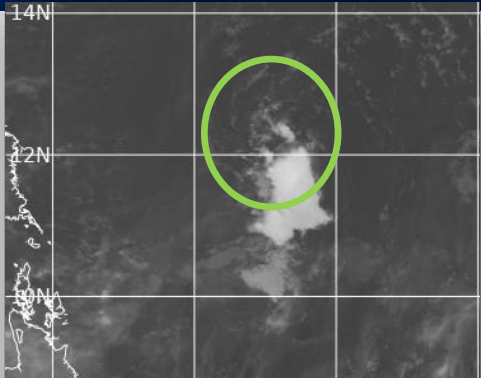




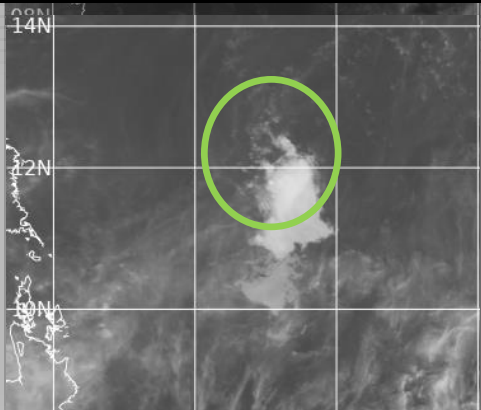
# Let's go to the SATELLITES! *Time Series Lead-Up*



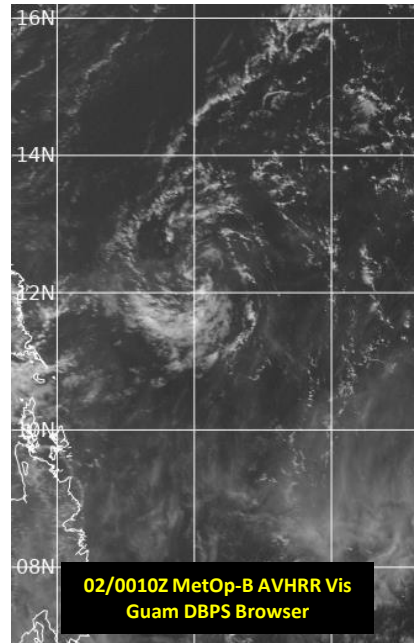
Better low-level cloud definition in 3.96!



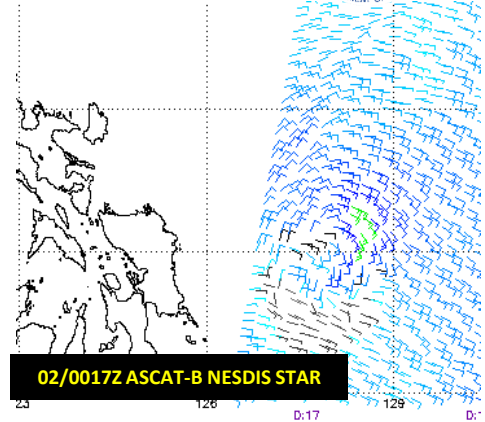
01/1737Z AQUA-MODIS BT22 (3.96um) – DBPS Browser



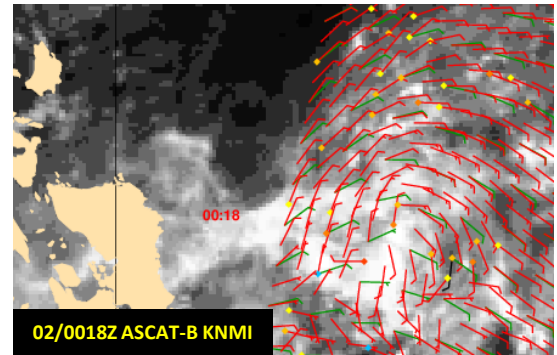
01/1737Z AQUA-MODIS BT31 (11.0um) – DBPS Browser



02/0010Z MetOp-B AVHRR Vis Guam DBPS Browser



02/0017Z ASCAT-B NESDIS STAR

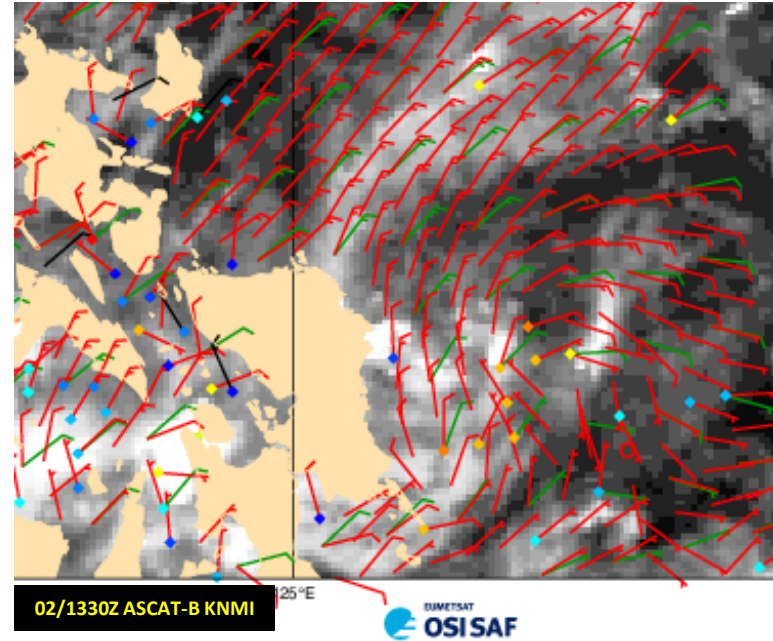
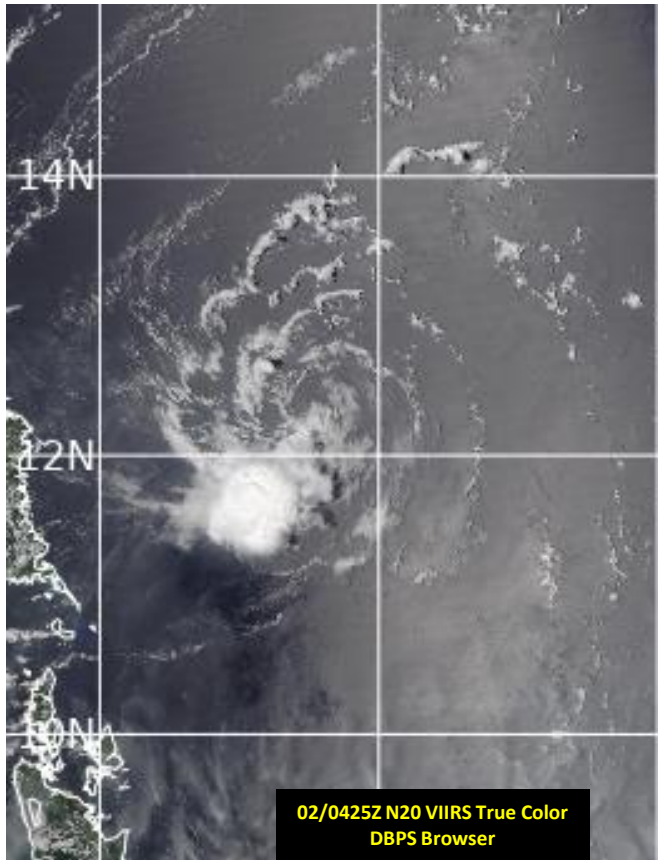
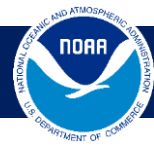


02/0018Z ASCAT-B KNMI



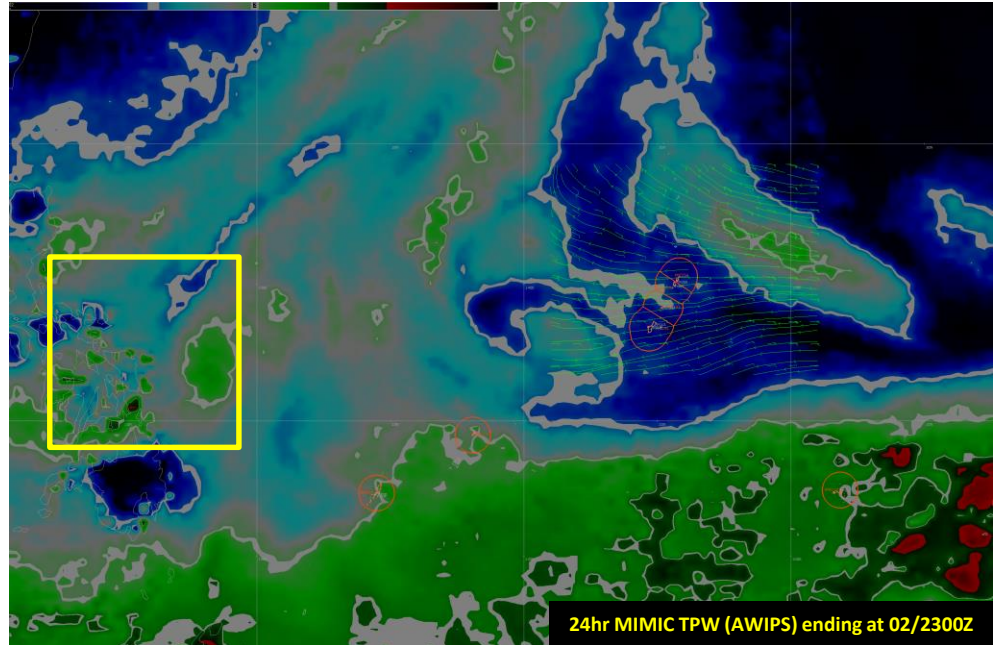
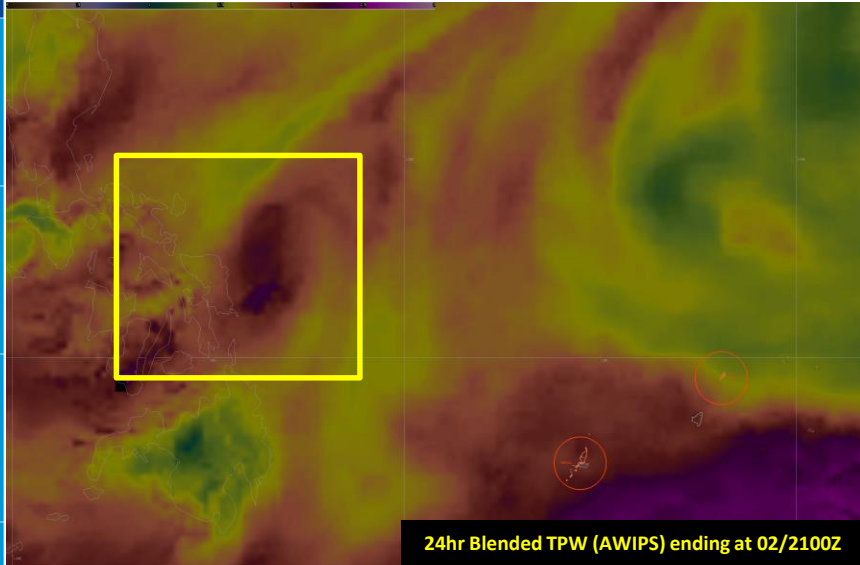
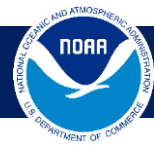


# Let's go to the SATELLITES! *Time Series Lead-Up*





# Let's go to the SATELLITES! *Animated TPW*





## Why LEO?

Higher-resolution imagery

Many additional multispectral datasets

## LEO shortcomings in temporal resolution...

Pronounced in narrow-beam sensors (altimetry, ASCAT, etc.)

Reduced for wide scan swaths (VIS, IR, etc.)

Reduced by presence of similar sensors onboard multiple satellites

## VIIRS Day-Night Band...

Great for nighttime identification of weather features

Great for viewing light sources and spotting active lightning

## Short-Wave IR (3.74um / 3.96um LEO; 3.89um Himawari)...

In areas of thin cirrus, more useful for detecting low-level cloud motion at night.

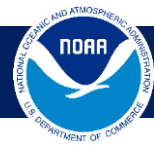
Its sensitivity to heat make it ideal for searching for heat signatures

## Himawari RGBs...

**AWIPS memory-intensive. Use low frame count; have spare time to wait for loading...**



# Takeaway Thoughts - ACCESSIBILITY



## Himawari

Backyard receiver >> AWIPS

Internet via PRH >> AWIPS

Lots of webpages



## LEO

Backyard receiver – **VERY LOW** latency (~<20min)

AWIPS: *“localSat” / “Guam L/X-Band Antenna”*

WFO network PC web browser:



Many webpages

Latency could be a couple of hours +







# WFO LEO (Direct Broadcast) Browser



GUAM / DB Processing System

Please select a Location:

POHNPEI

GUAM

KOROR

97W\_INVEST

96W\_INVEST

3 Standard  
Geographic  
Areas

Dynamic  
Inclusion of &  
Centering-On  
INVs & TCs

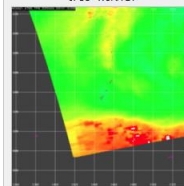
**GREEN** highlights the dataset  
in the gallery. Images are  
chronological. Search by  
sensor/data type. Great for  
event evolution (INVs/TCs) and  
easy to save graphics!

Local to Guam Web Browser for DB data products

GUAM / DB Processing System / GUAM

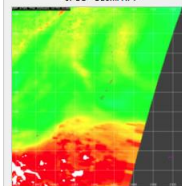
- Level 1
  - True Color
  - False Color
  - Dynamic Day-Night Band
  - Adaptive Day-Night Band
  - Histogram Day-Night Band
  - [00.45 μm] Dark Blue Visible
  - [00.64 μm] Red Visible
  - [00.87 μm] Vegetation NIR
  - [01.38 μm] Cirrus NIR
  - [01.61 μm] Snow/Ice NIR
  - [02.25 μm] Cloud Particle Size NIR
  - [03.74 μm] Shortwave IR Window
  - [06.77 μm] Mid-Level Water Vapor IR
  - [08.55 μm] Cloud-Top Phase IR
  - [10.76 μm] Legacy IR Window
  - [12.01 μm] Dirty IR Window
  - [36.5 GHz] Lower-Level Structure (Horizontal)
  - [36.5 GHz] Lower-Level Structure (Vertical)
  - [89.0 GHz] Upper-Level Structure (A - Horizontal)
  - [89.0 GHz] Upper-Level Structure (A - Vertical)
  - [89.0 GHz] Upper-Level Structure (B - Horizontal)
  - [89.0 GHz] Upper-Level Structure (B - Vertical)
- Level 2
  - MIRS Total Precipitable Water
    - JPSS
    - MetOp
    - Legacy POES
  - MIRS Rain Rate
    - MIRS 31 GHz BT (Vertical)
    - MIRS 89 GHz BT (Vertical)
    - MIRS 157 GHz BT (Vertical)
    - MIRS 165 GHz BT (Horizontal)
    - MIRS 183 GHz BT Wide (Horizontal)
    - MIRS 183 GHz BT Narrow (Horizontal)
    - MIRS 190 GHz BT Narrow (Vertical)

MIRS Total Precipitable Water  
JPSS - NOAA-21



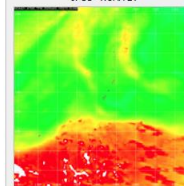
Apr 4, 2025  
03:01:01 UTC

MIRS Total Precipitable Water  
JPSS - Suomi NPP



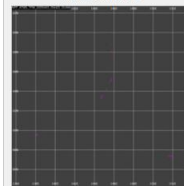
Apr 3, 2025  
16:17:53 UTC

MIRS Total Precipitable Water  
JPSS - NOAA-21



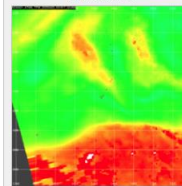
Apr 3, 2025  
15:52:19 UTC

MIRS Total Precipitable Water  
JPSS - Suomi NPP



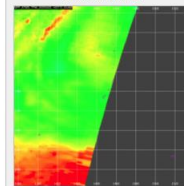
Apr 3, 2025  
03:44:23 UTC

MIRS Total Precipitable Water  
JPSS - NOAA-21



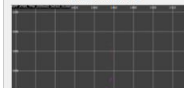
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MIRS Total Precipitable Water  
JPSS - Suomi NPP



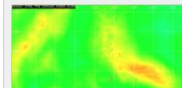
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MIRS Total Precipitable Water  
JPSS - Suomi NPP



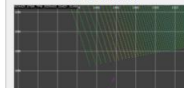
Apr 3, 2025  
03:44:23 UTC

MIRS Total Precipitable Water  
JPSS - NOAA-21



Apr 3, 2025  
03:19:17 UTC

MIRS Total Precipitable Water  
JPSS - NOAA-20



Apr 3, 2025  
03:19:17 UTC

