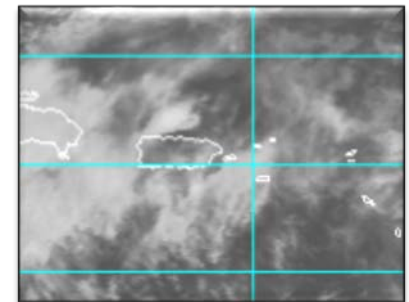
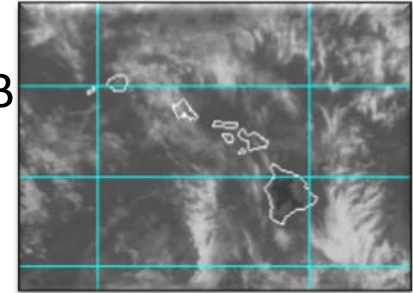


McIDAS at ESPC

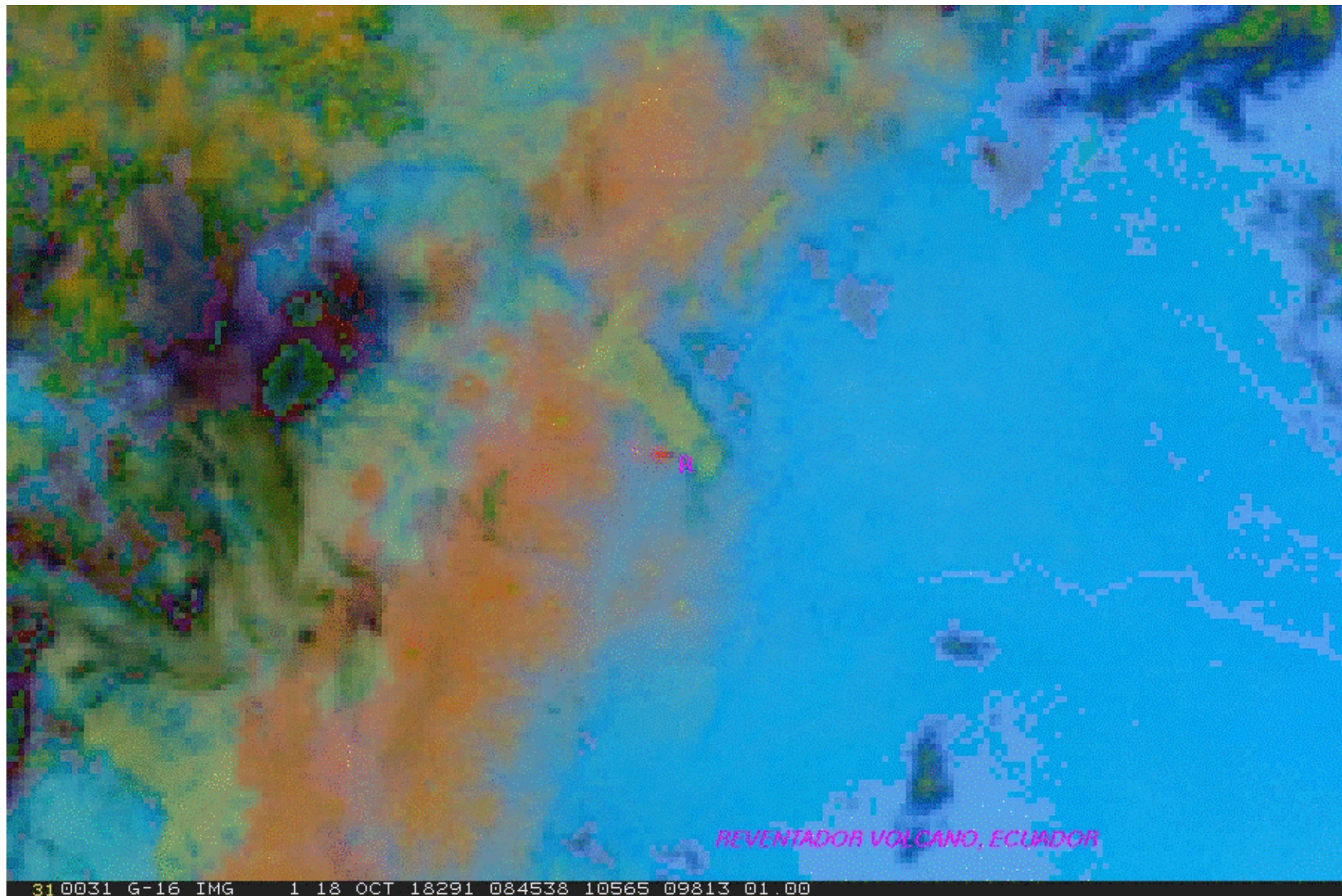
SAB Use of McIDAS

- SAB is 24x7 operation of 5 disaster mitigation desks (Heavy Precipitation, Volcanic Ash, Fire/Smoke/Dust, Marine Pollution, Tropical Cyclones) All desk use Mc-X in some capacity, except Marine which is ArcGIS
- McIDAS-X Usage: ~10 operational Linux systems with 24 GB RAM each and multiple monitor visualization setup
- A persistent daemon (image loop refresh) “SPIDER” uses ADDE protocol to display ~100 imagery loops per system
- Use Fnc keys to switch loops and pan entire globe through SPIDER loaded frames (e.g. NW Pacific IR, Shift+F1 - NW Pacific Vis, F2 - Central US IR) and still use command line (grudgingly)
- Lots of batch commands and everything is scripted by business work flow
- Uses McIDAS AREA files for web site as do NWS offices across country, namely NHC, AWC, NWS Western Region
- RGBs delivered by bash script !looprgb.sh as well as function keys



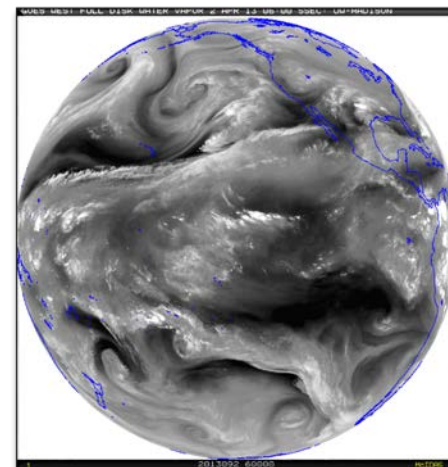
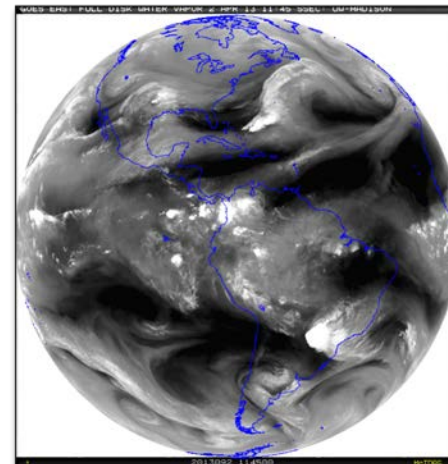
RGBs in SAB

- Background script continuously builds/saves RGB components for fast loading
- 13 RGBs being made full-time in FDSK
 - Volcano: PAVA, PAVB, ASH, SO2
 - Weather: DTMP, NTMP, AIRMAS, SEVST
 - Imagery: TRUE, NATCOL, SNOW
 - Air quality: SMOKE, DUST
- 6 in CONUS
 - PAVA, ASH, SMOKE, TRUE, DTMP, NTMP



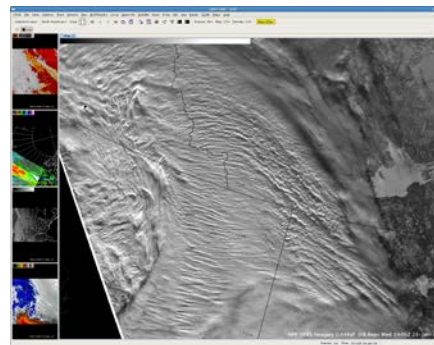
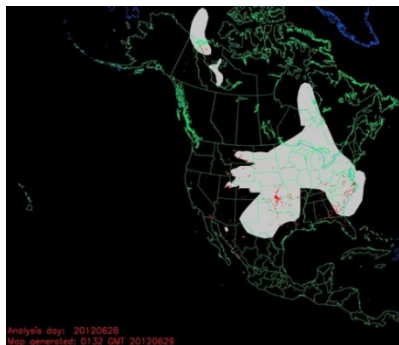
McIDAS Advantages in SAB

- Institutional knowledge - SAB Analysts have great familiarity with McIDAS
- Ability to have near-global coverage at multiple domain scales and resolution (>2000 frames) of quickly and routinely loaded (SPIDER) imagery at the tap of a button (TU Hotkeys) to perform interrogation, manipulation and value-added analysis when every second counts for time sensitive and rapidly evolving natural and man-made hazards, such as volcanic eruptions, flash flooding, fires, etc.
 - This cannot be done presently with NAWIPS or HMS. In fact, depending on the area of concern up to 20 minutes is lost waiting for imagery to show up on these other systems vs McIDAS
 - HOWEVER, since the NWS is the primary user of many SAB products (e.g. volcanic ash and heavy precipitation), there are benefits for SAB to conduct PG on NAWIPS like, quick overlays and seamless in-tool distribution. Fire uses HMS for analysis.



SAB Use of McIDAS for GOES-16/17

- Dedicated servers to ingest GOES-R series data – hold seven days
- Redundant data feeds from GRB antenna (NCEP, College Park, via LDM) and by PDA (local curl scripts)
- Soft links between old *AREAnnnn* names and netcdf files allow Spider to continue its distribution role
- Numeric limit extended to 10K per directory, from 10K total
- Setting up to have most RGB components pre-generated

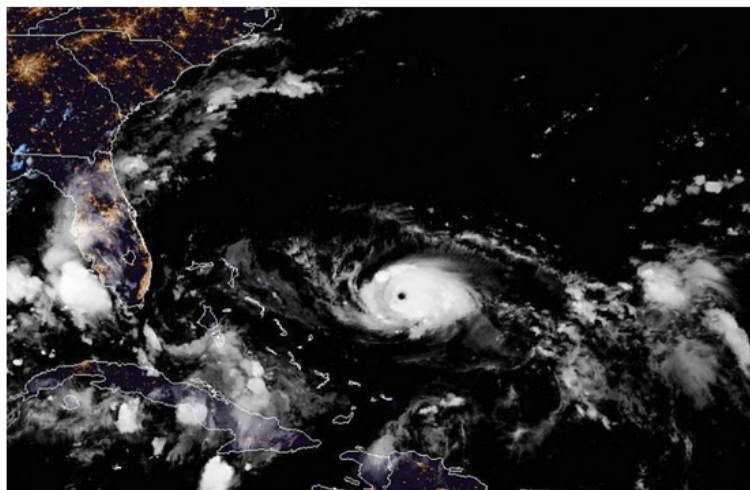


RGB Image in the Washington Post...



are that Dorian will remain an extremely powerful hurricane for the next several days." The northwest Bahamas are expected to take a direct hit from the storm in its most fearsome state on Saturday night and Sunday, with the potential for "A prolonged period of life-threatening storm surge and devastating hurricane-force winds," the NHC stated.

[Lightning barrage in Hurricane Dorian may signal rapid intensification]



A satellite view of Hurricane Dorian taken at 10:00 p.m. EDT, Friday, Aug. 30, 2019. (NOAA via AP)

By the time Dorian nears Florida on Labor Day into Tuesday, it is still forecast to be a Category 4 storm, given warm waters and few obstacles in its path, such as wind shear, that might weaken it some.

However, Dorian's exact path — which for days has proved difficult to pin

5 Trump pushed staff to deal with NOAA tweet that contradicted his inaccurate Alabama hurricane claim, officials say



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From the NWS...

 **NATIONAL WEATHER SERVICE**
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOME FORECAST PAST WEATHER SAFETY INFORMATION EDUCATION NEWS SEARCH ABOUT

Local forecast by "City, ST" or ZIP code
Enter location ... [Location Help](#)

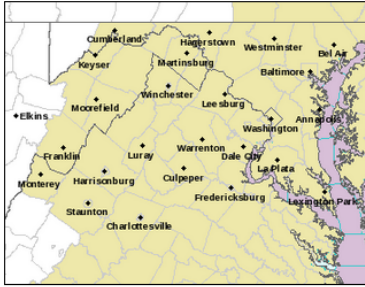
News Headlines
• [Fall 2019 SKYWARN Spotter Class Schedule](#)




NWS Forecast Office Baltimore/Washington
[Weather.gov](#) > Baltimore/Washington

Baltimore/Washington
Weather Forecast Office

Current Hazards Current Conditions Radar Forecasts Rivers and Lakes Climate and Past Weather
Local Programs

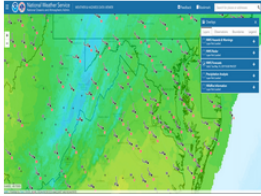
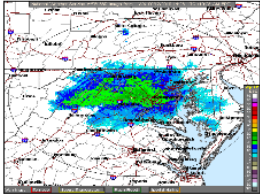

Click a location below for detailed forecast.



[Watches, Warnings & Advisories](#) 
[Small Craft Advisory](#) 
[Hazardous Weather Outlook](#) 

Last Map Update: Thu, Sep. 12, 2019 at 11:06:40 am EDT

Weather Obs Map Viewer **Local Radar** **Satellite**

Text Product Selector (Selected product opens in new window)


From NOAA/STAR...

[←](#)
[→](#)
[↺](#)
[↻](#)

[https://www.star.nesdis.noaa.gov/GOES/conus.php?sat=G16](#)

[...](#)
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GOES Image Viewer


[Home](#)
[Storms](#)
[CONUS](#)
[Full Disk](#)
[North America](#)
[Caribbean](#)
[Pacific](#)
[South America](#)
[Mesoscale](#)
[More](#)

GOES-East - Latest CONUS Images

Images updated every 5 minutes.

12 Sep 2019 - 11:16 EDT

12 Sep 2019 - 15:16 UTC




GeoColor

True Color daytime,
multispectral IR at night
12 Sep 2019 - 15:06 UTC

09-12-19 15:06Z NESDIS-STAR GOES-East GeoColor

- Animation Loop
- 416 x 250 px, (JPG, 29 KB)
- 625 x 375 px, (JPG, 61 KB)
- 1250 x 750 px, (JPG, 220 KB)
- 2500 x 1500 px, (JPG, 781 KB)
- 5000 x 3000 px, (JPG, 14.26 MB)
- Animated GIF, (GIF, 8.67 MB)




AirMass

RGB composite based on the
data from IR and WV
12 Sep 2019 - 15:06 UTC

09-12-19 15:06Z NESDIS-STAR GOES-East AirMass

- Animation Loop
- 416 x 250 px, (JPG, 37 KB)
- 625 x 375 px, (JPG, 68 KB)
- 1250 x 750 px, (JPG, 190 KB)
- 2500 x 1500 px, (JPG, 516 KB)
- 5000 x 3000 px, (JPG, 1.41 MB)
- Animated GIF, (GIF, 7.86 MB)




Band 1

0.47 μ m
Blue - Visible
12 Sep 2019 - 15:11 UTC

09-12-19 15:11Z NESDIS-STAR GOES-East Band 01

- Animation Loop
- 416 x 250 px, (JPG, 36 KB)
- 625 x 375 px, (JPG, 71 KB)
- 1250 x 750 px, (JPG, 212 KB)
- 2500 x 1500 px, (JPG, 635 KB)
- 5000 x 3000 px, (JPG, 1.89 MB)
- 10000 x 6000 px, (ZIP, 4.86 MB)




Band 2

0.64 μ m
Red - Visible
12 Sep 2019 - 15:06 UTC

09-12-19 15:11Z NESDIS-STAR GOES-East Band 02

- Animation Loop
- 416 x 250 px, (JPG, 41 KB)

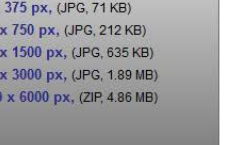


Band 3

0.86 μ m
Veggie - Near IR
12 Sep 2019 - 15:06 UTC

09-12-19 15:11Z NESDIS-STAR GOES-East Band 03

- Animation Loop
- 416 x 250 px, (JPG, 40 KB)



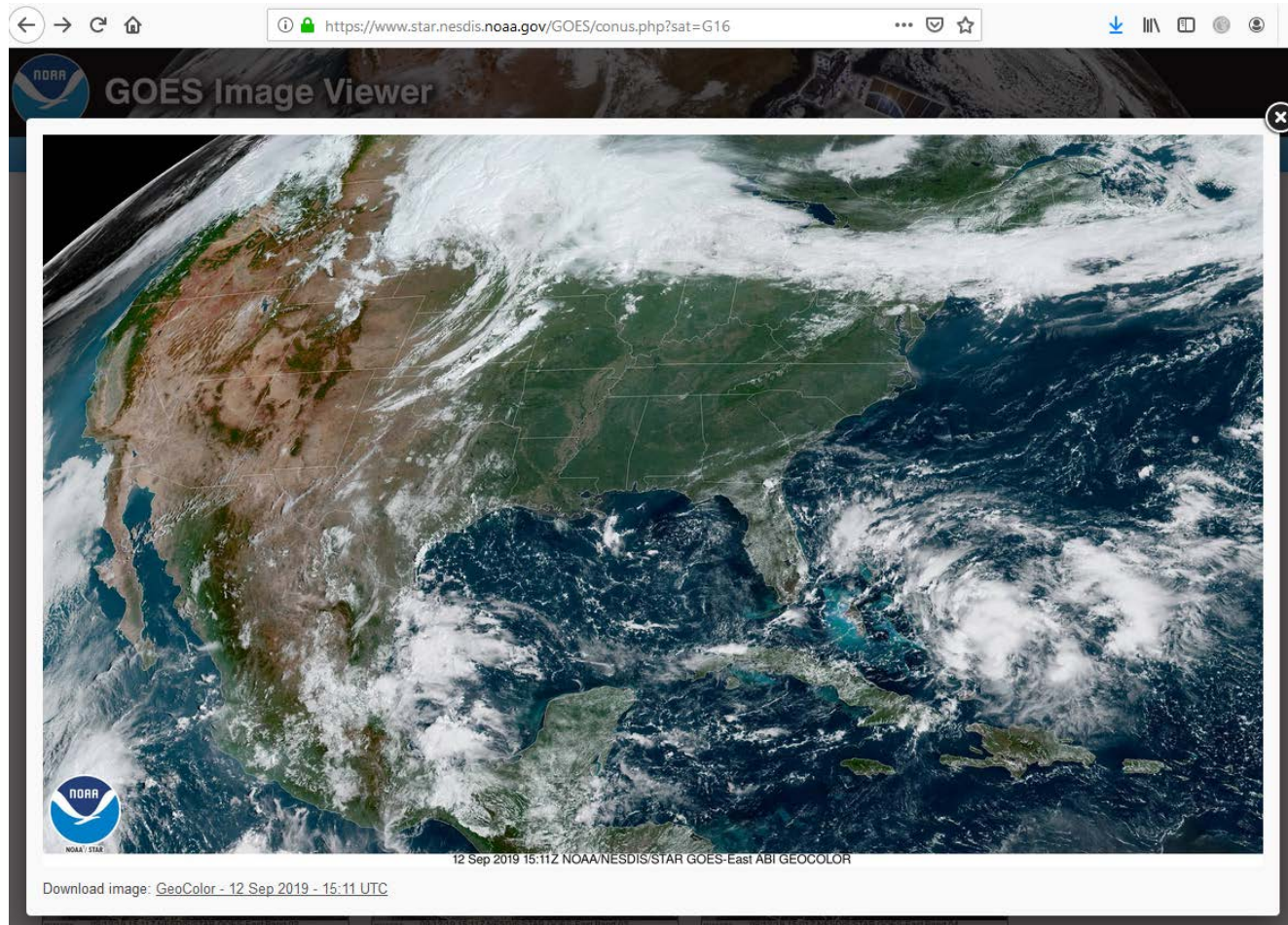
Band 4

1.37 μ m
Cirrus - Near IR
12 Sep 2019 - 15:01 UTC

09-12-19 15:01Z NESDIS-STAR GOES-East Band 04

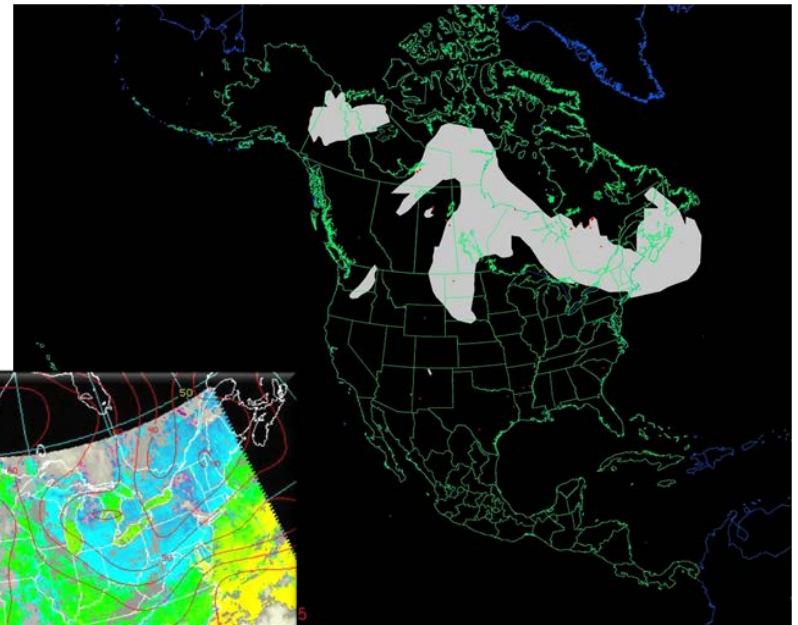
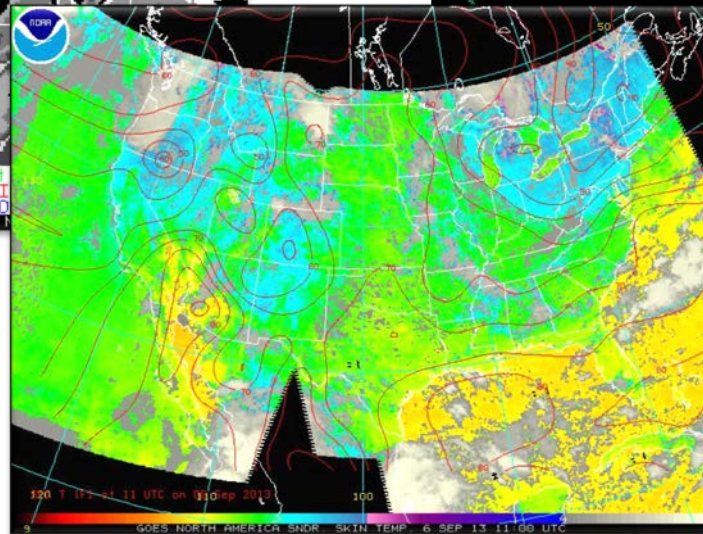
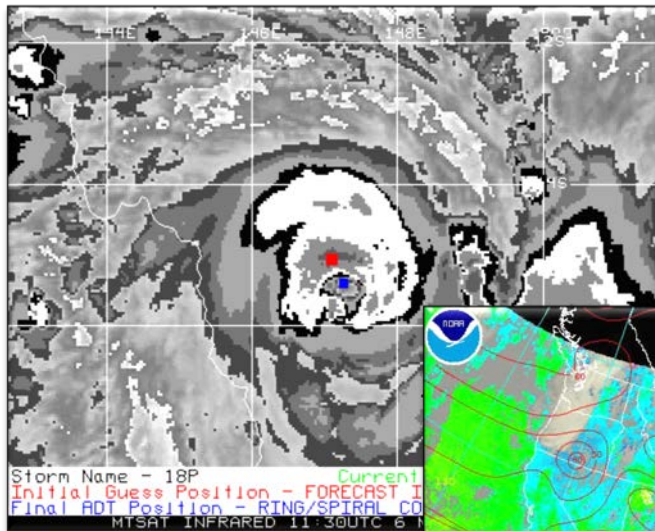
- Animation Loop
- 416 x 250 px, (JPG, 33 KB)

Which made it with McIDAS

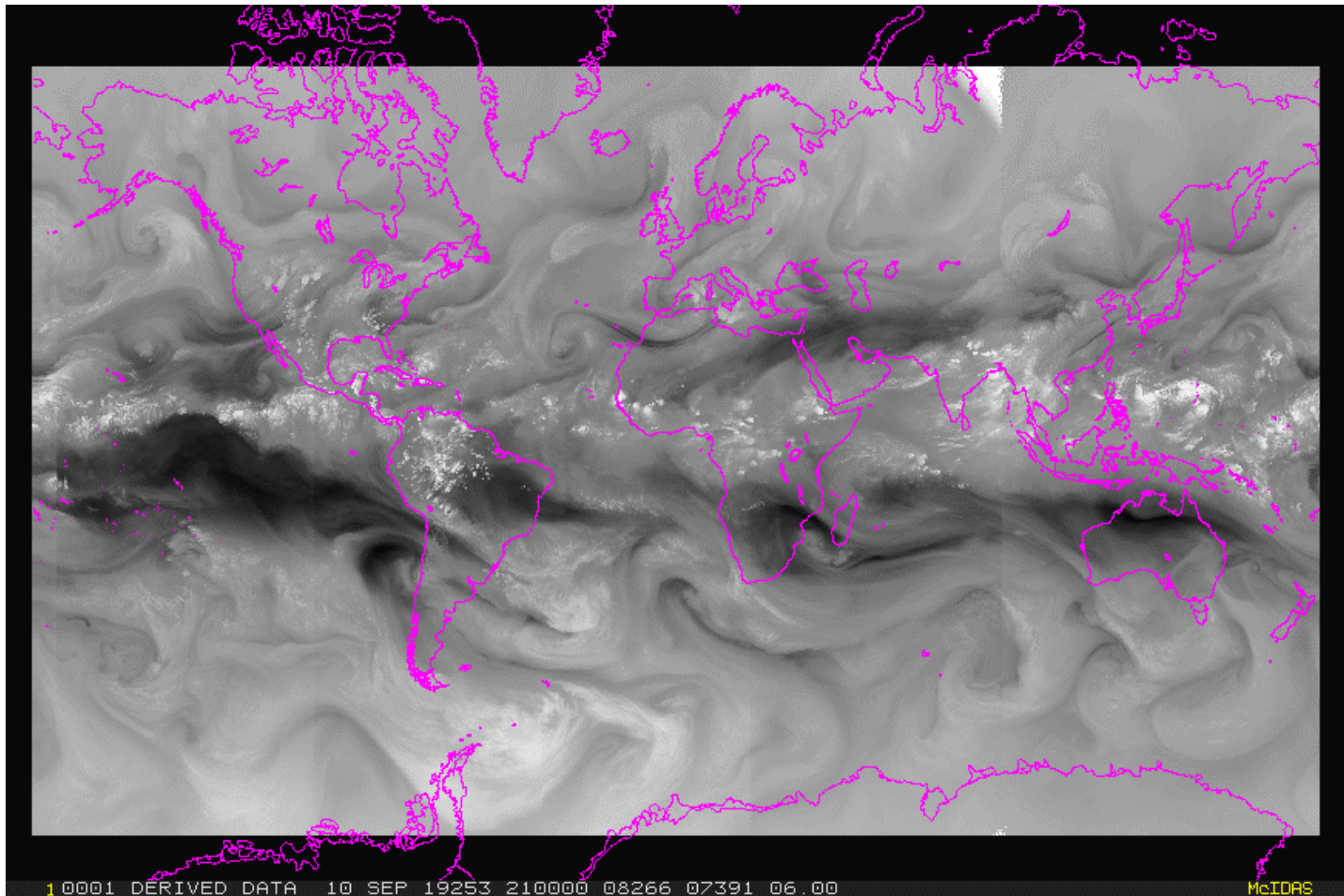


McIDAS & ESPC Applications

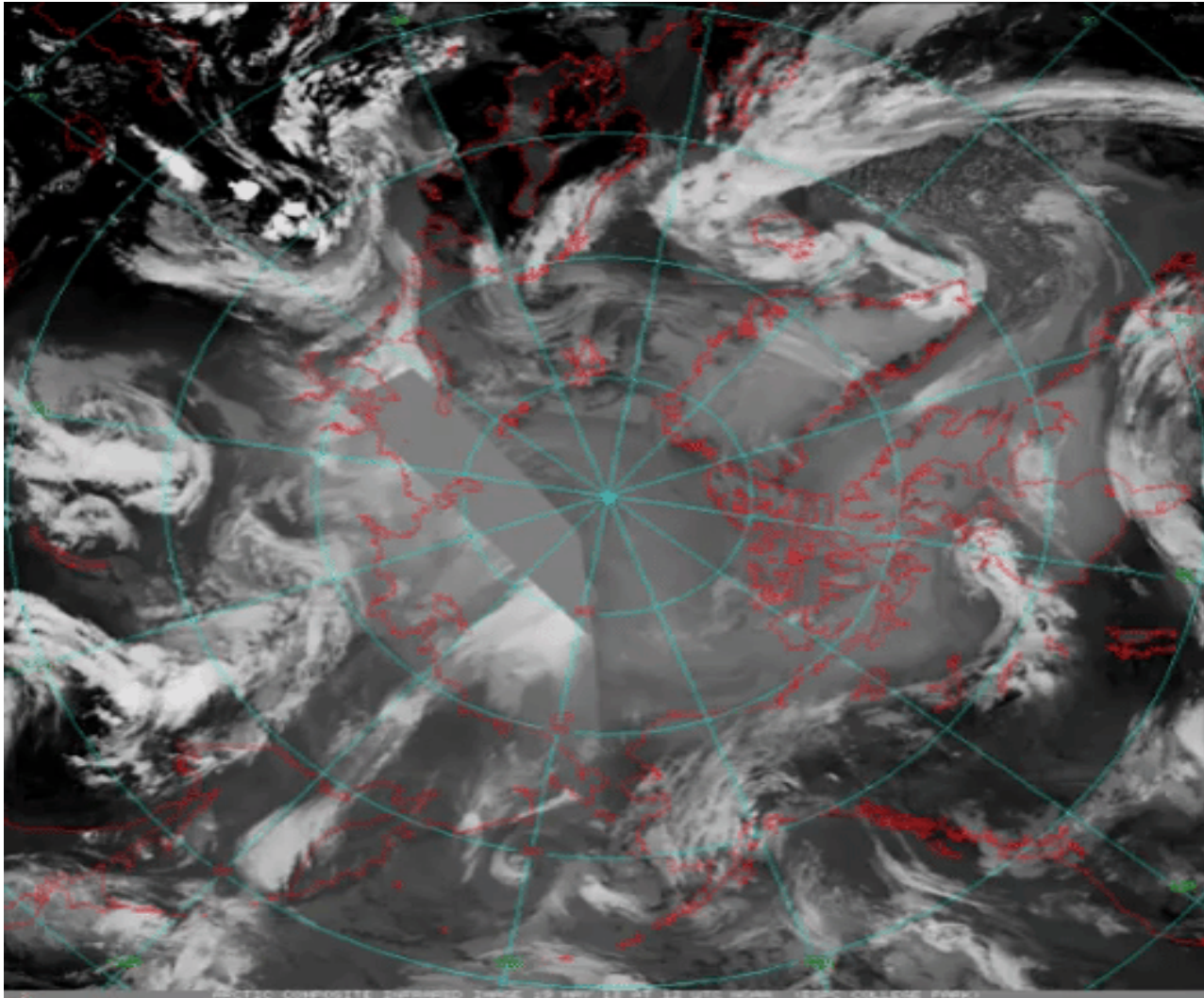
- Over 50 applications in ESPC use McIDAS, McIDAS libraries, input & serve McIDAS AREA Files, MD point files, GRID (McIDAS GRID Format), and Text via ADDE
- ADT, ABBA, CSBT, HMS, others...



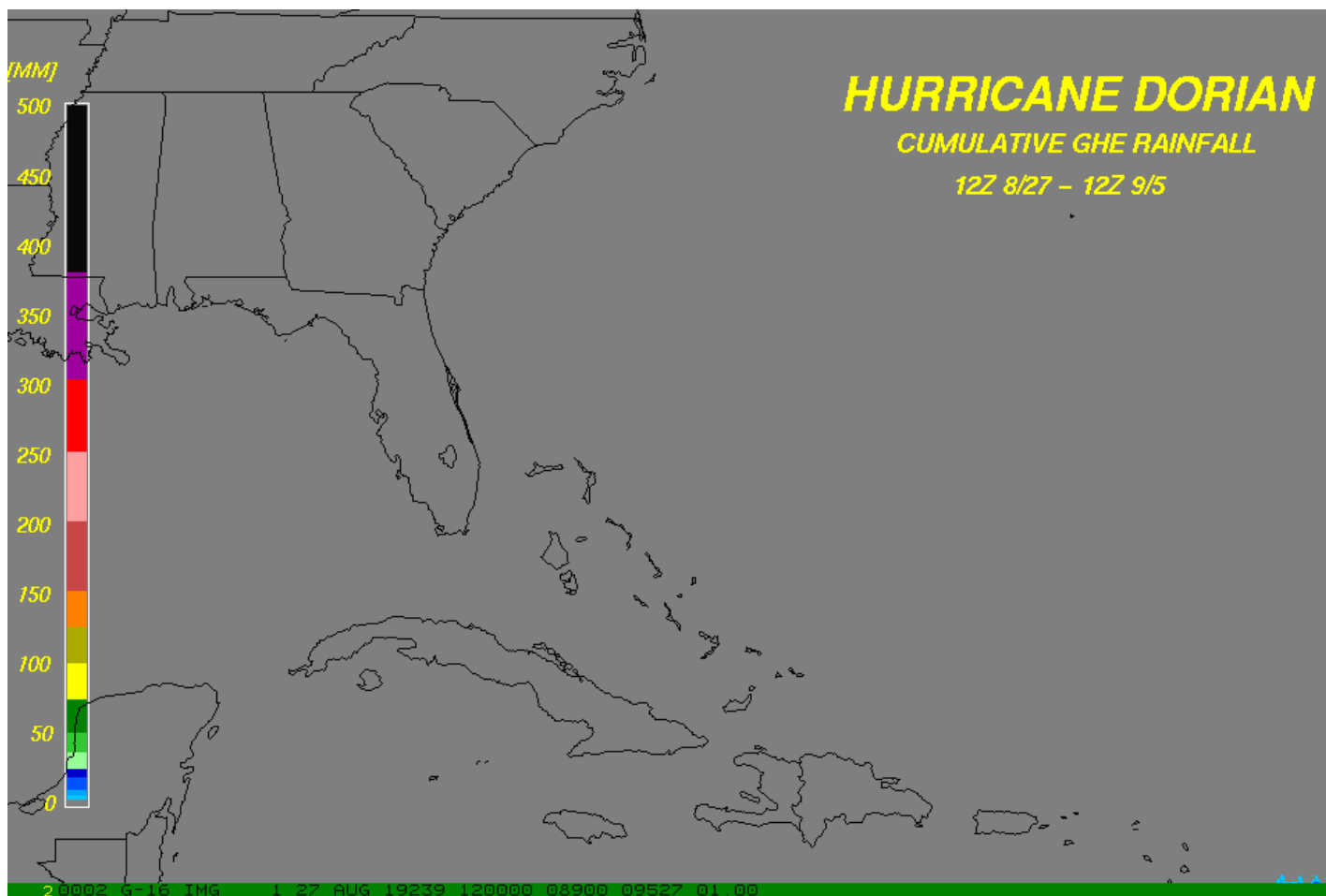
Global Mosaics



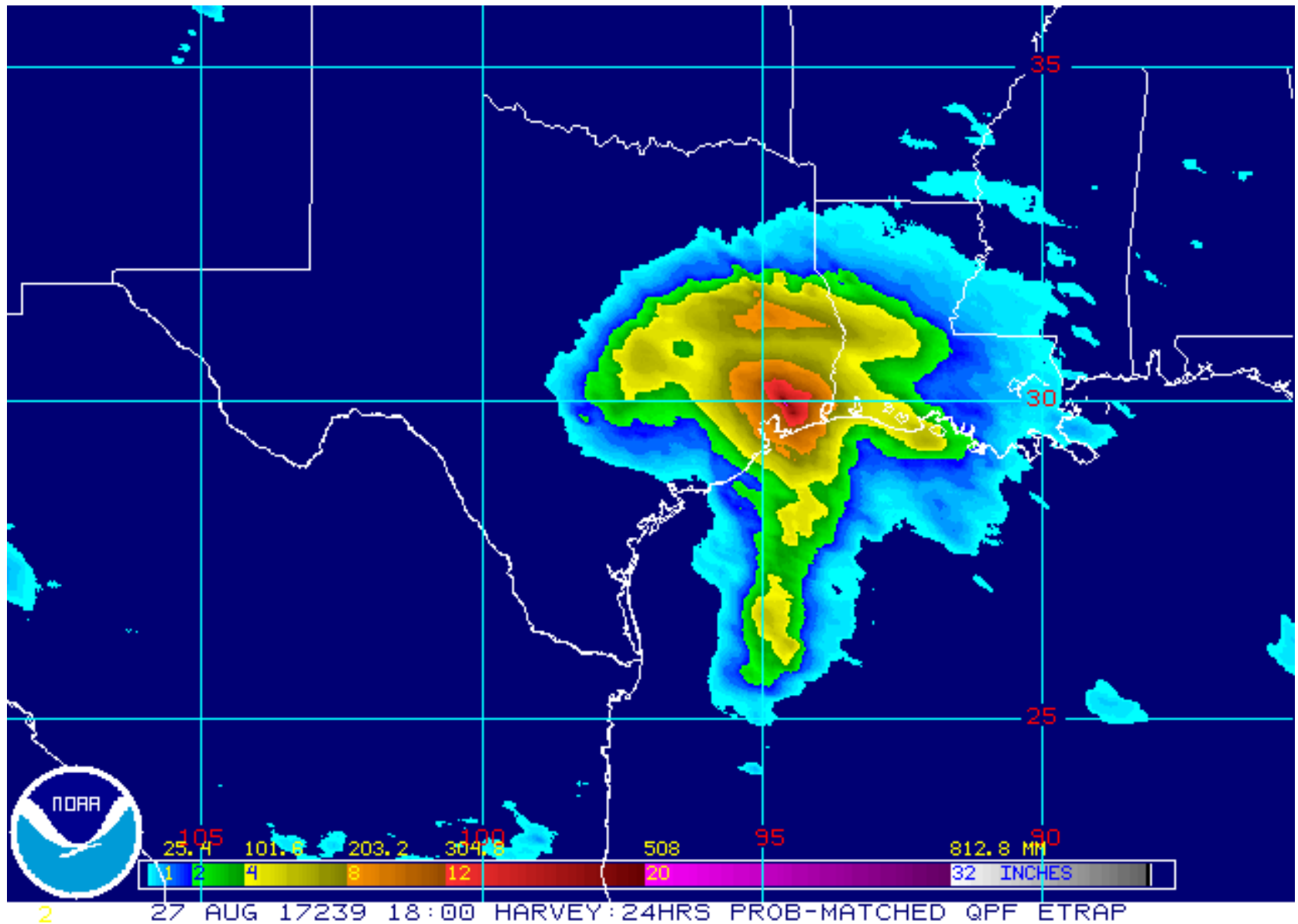
Arctic Composite Imagery



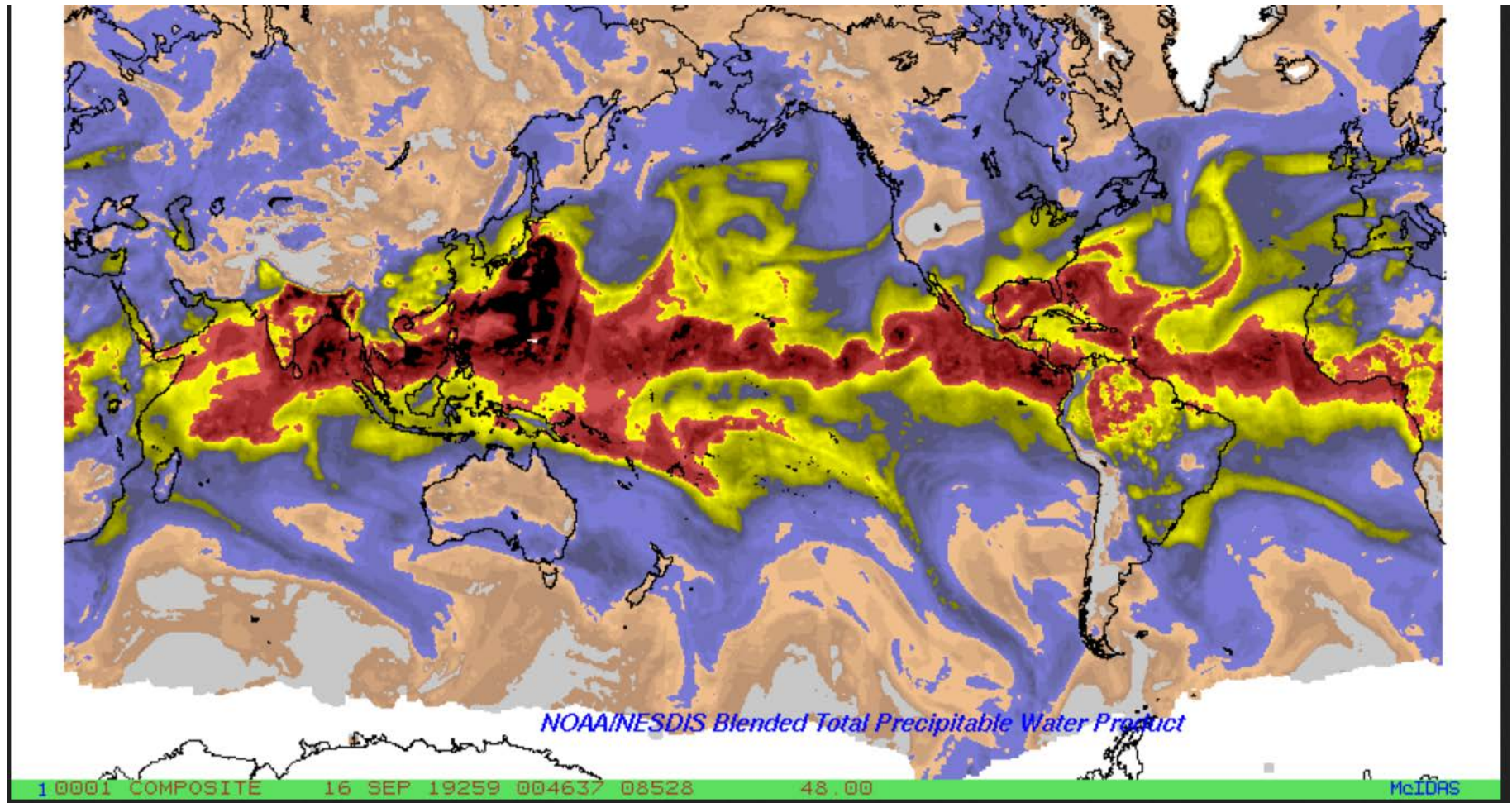
Dorian Rainfall (GHE)



E-TRaP



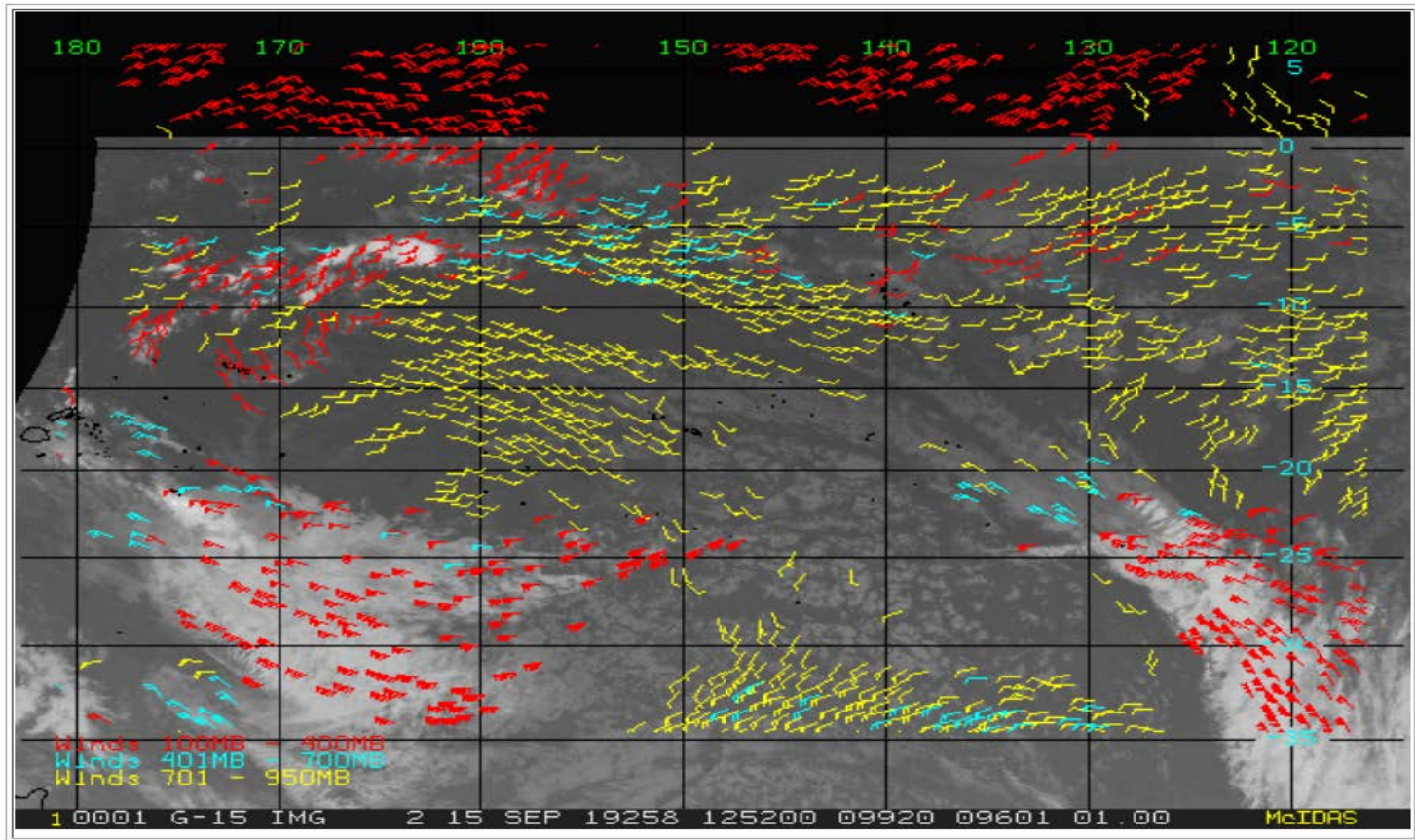
Blended TPW



Satellite Winds

GOES East: Northern Hemisphere Infrared

<< Hour: 13 >> Animation: Start Stop



MTCSWA

[Product Description](#)
[Archive Data & Imagery](#)
[MTC-SWA Monitor](#)

▼ Atlantic

AL092019 HUMBERTO

AL972019 INVEST

Central Pacific

▼ East Pacific

EP132019 KIKO

EP912019 INVEST

EP922019 INVEST

North Indian

Southern Hemisphere

▼ West Pacific

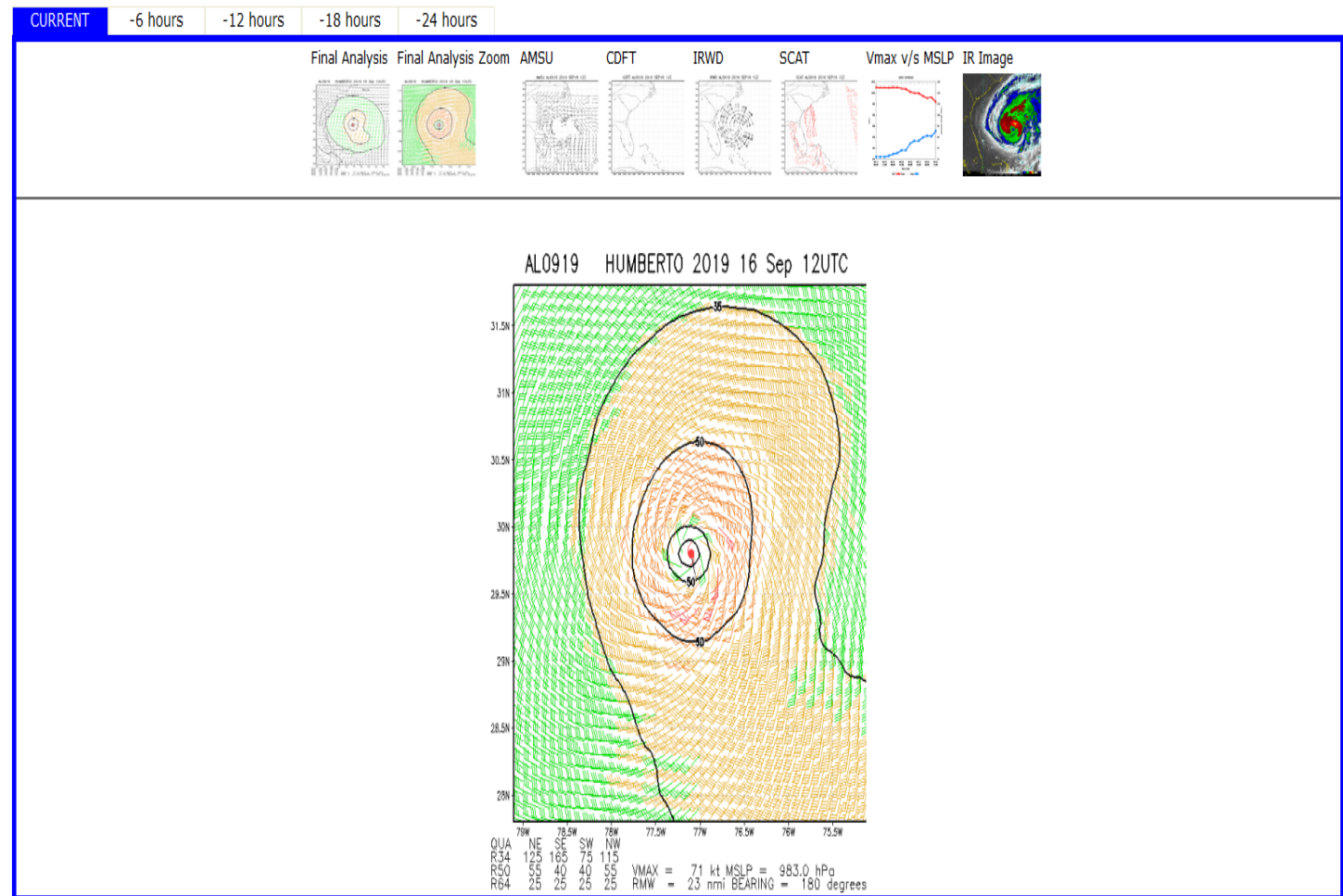
WP172019 PEIPAH

WP952019 INVEST

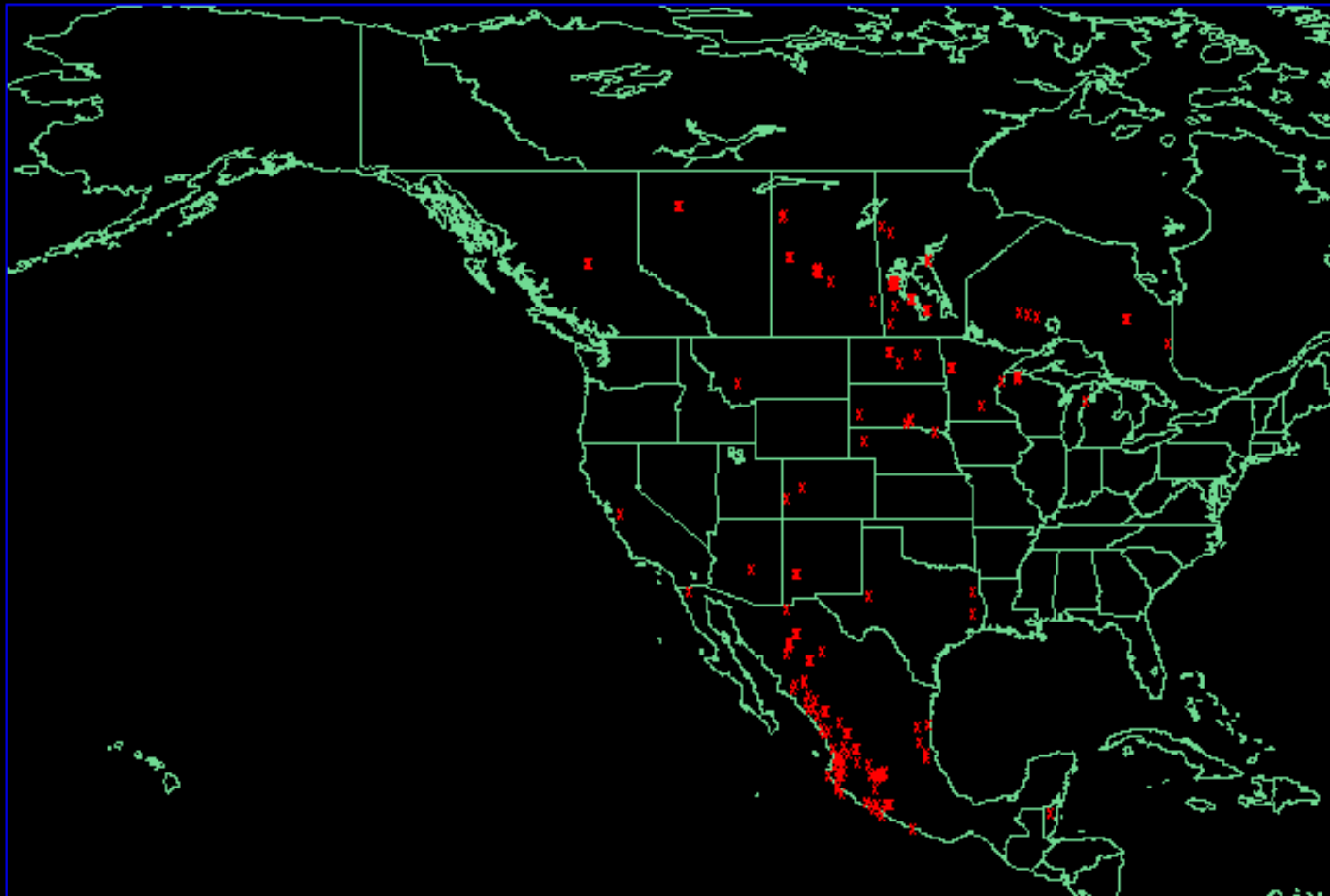
WP982019 INVEST

[MTCSWA Development Site at Colorado State University RAMMB CIRA](#)

AL092019 HUMBERTO for Run: 2019-09-16 12Z



Fire Products

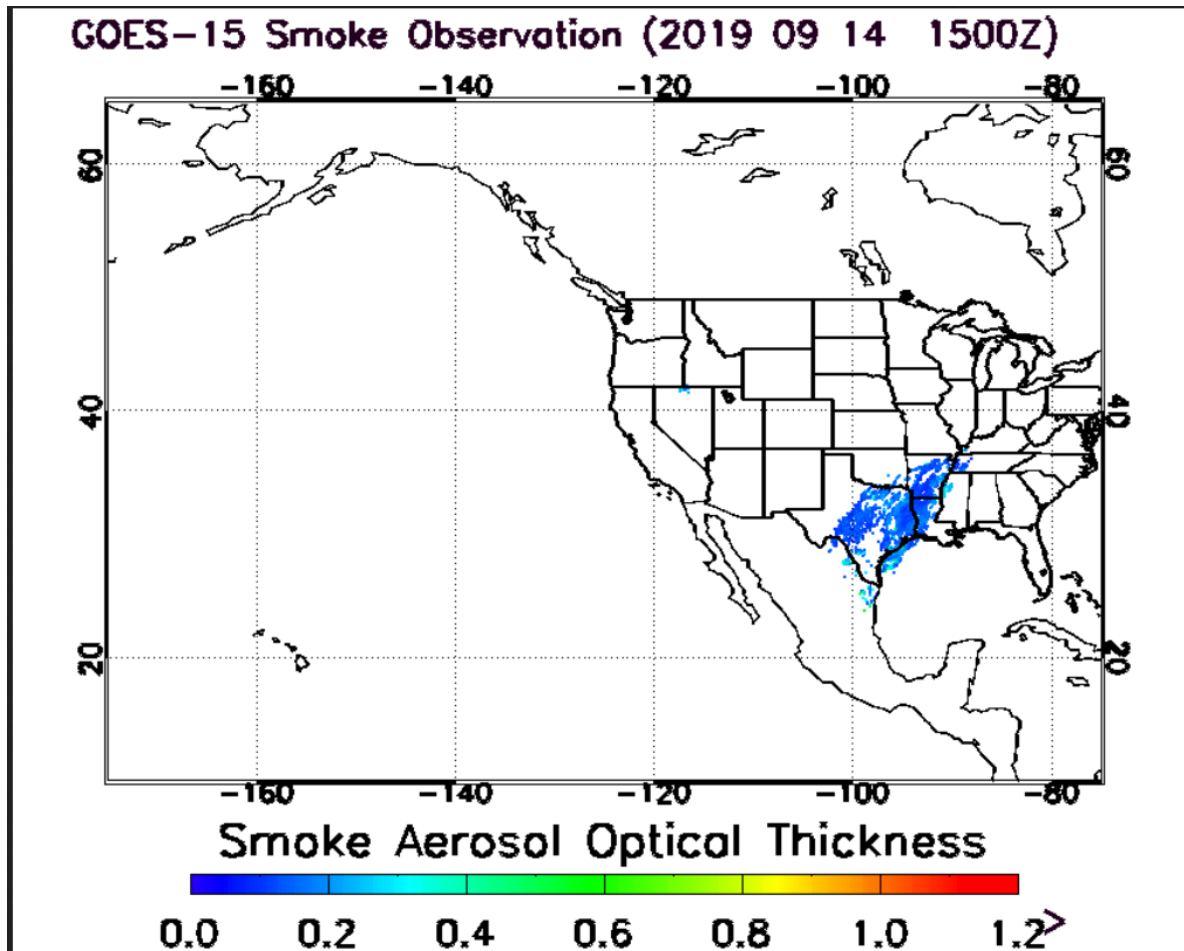


WF-ABBA All Fires Day 140, 2018

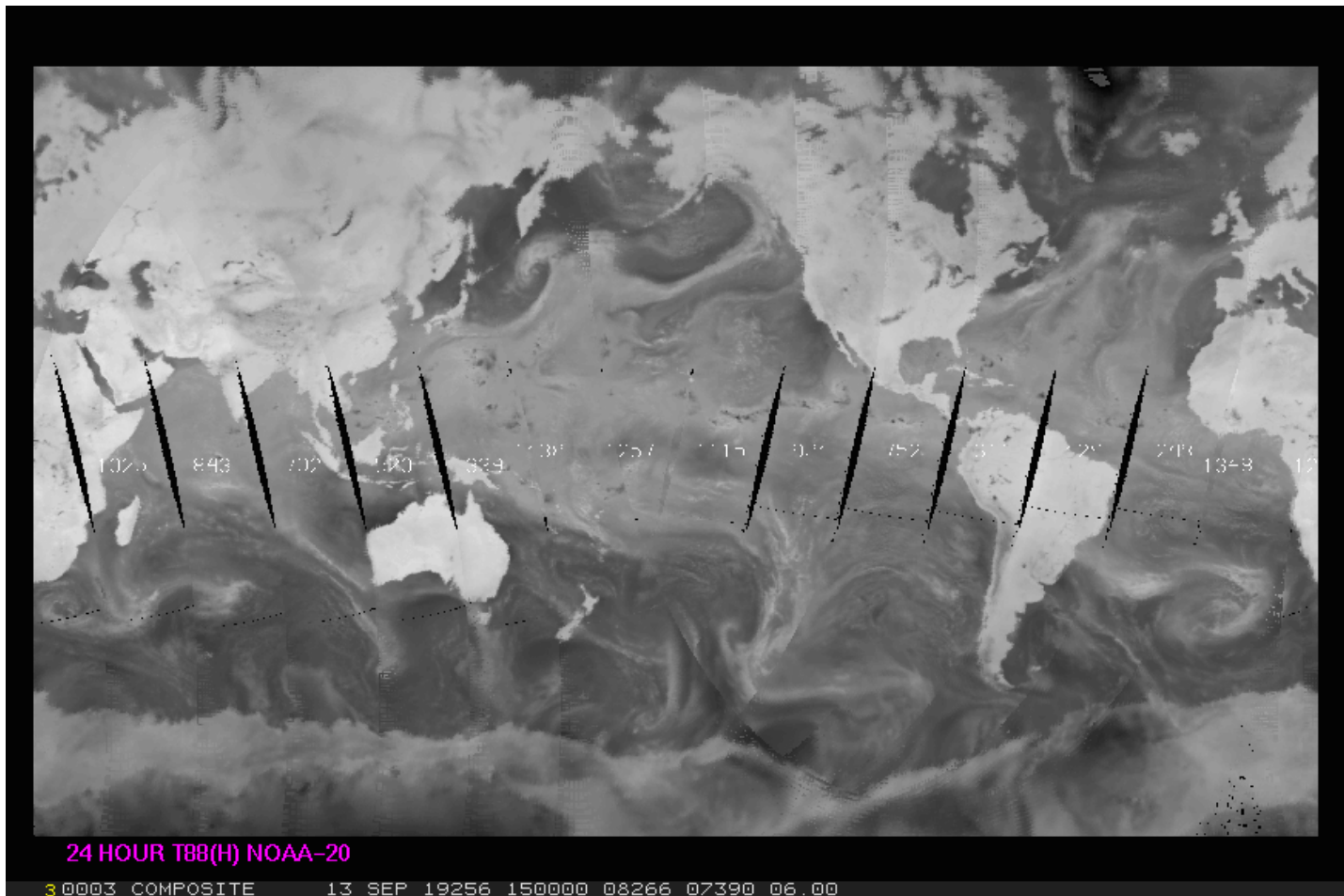
1

McIDAS

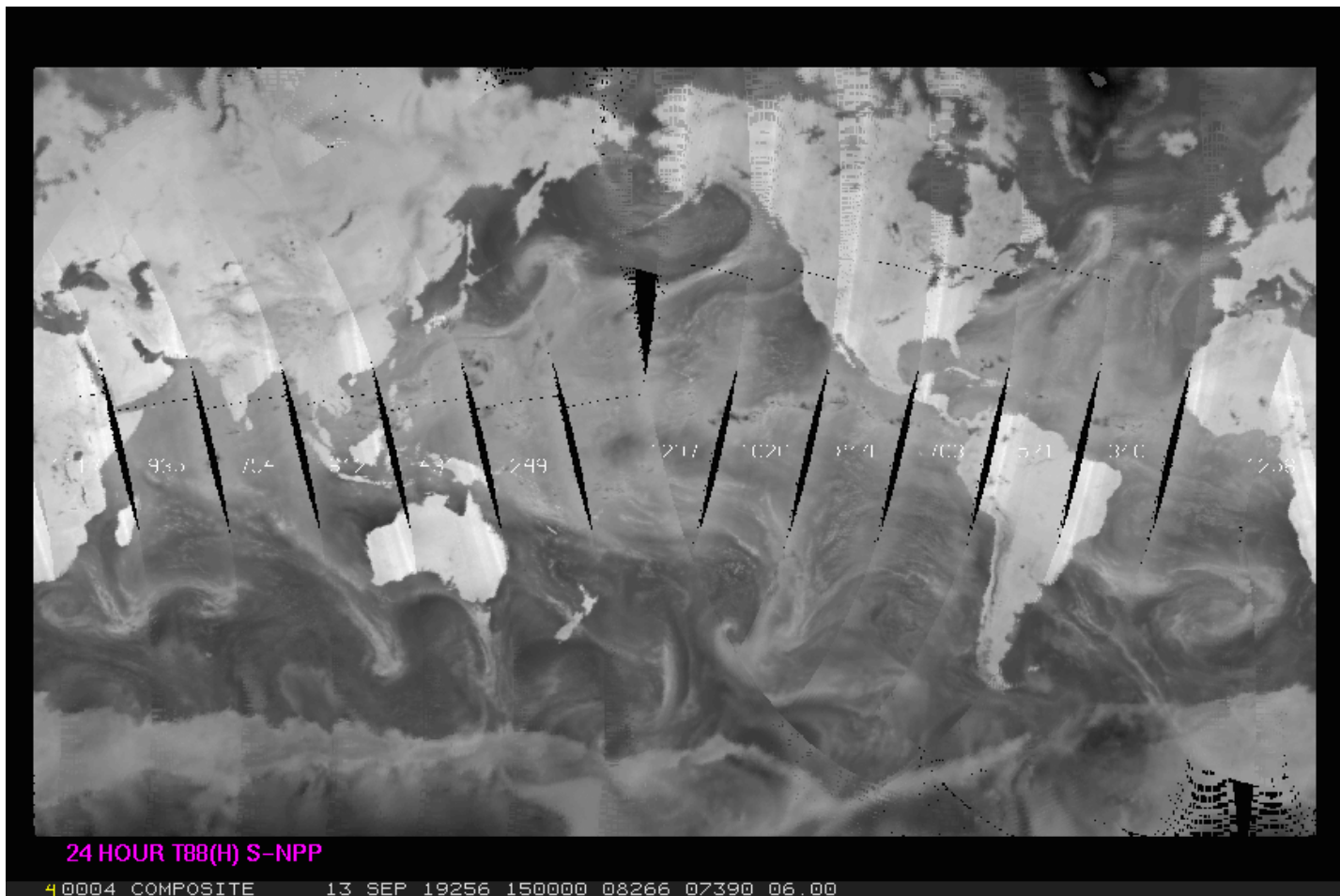
Smoke Products



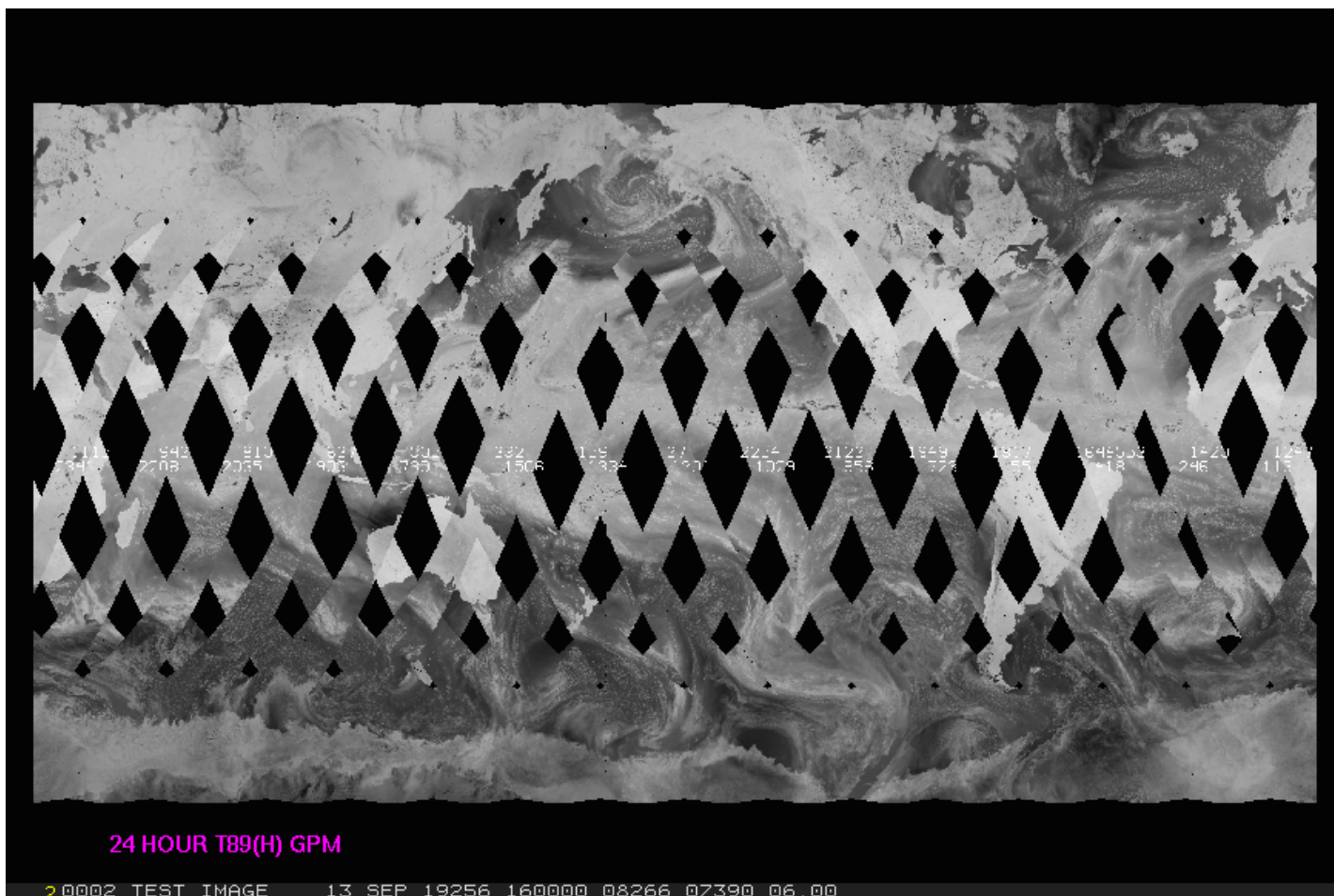
NOAA-20 88 GHz



S-NPP 88 GHz



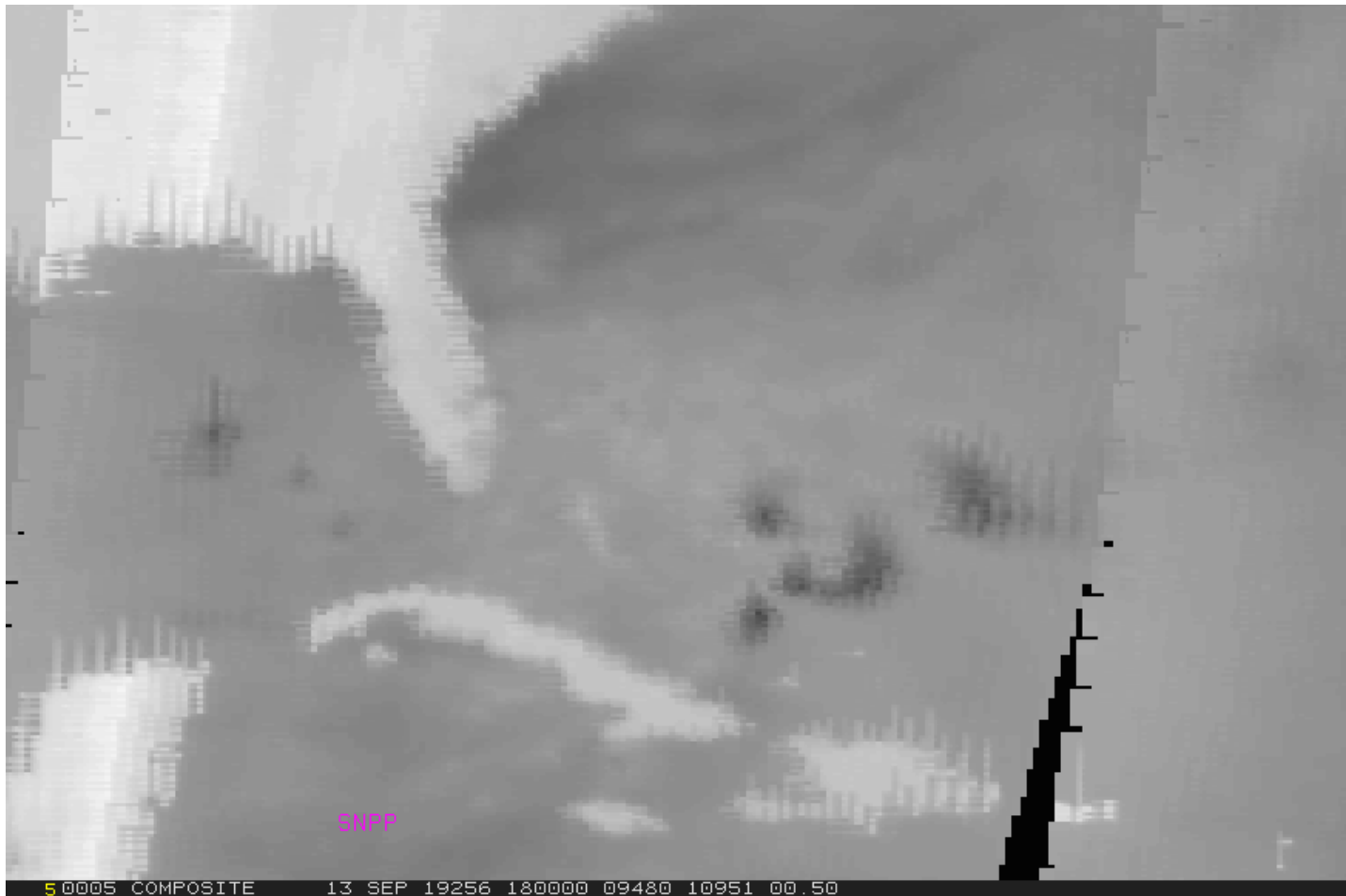
GPM 89 Ghz



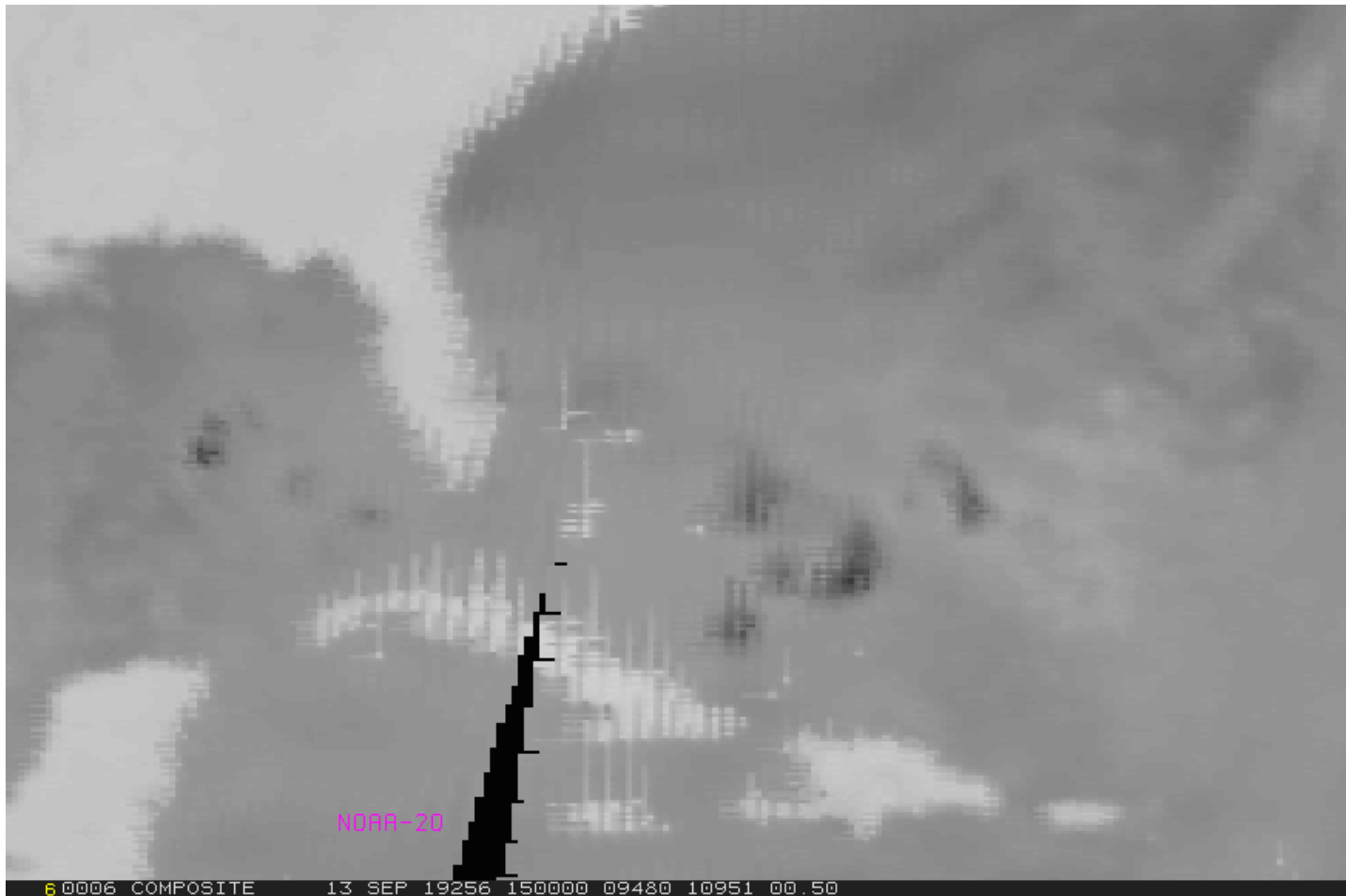
AMSR-2 89 GHz



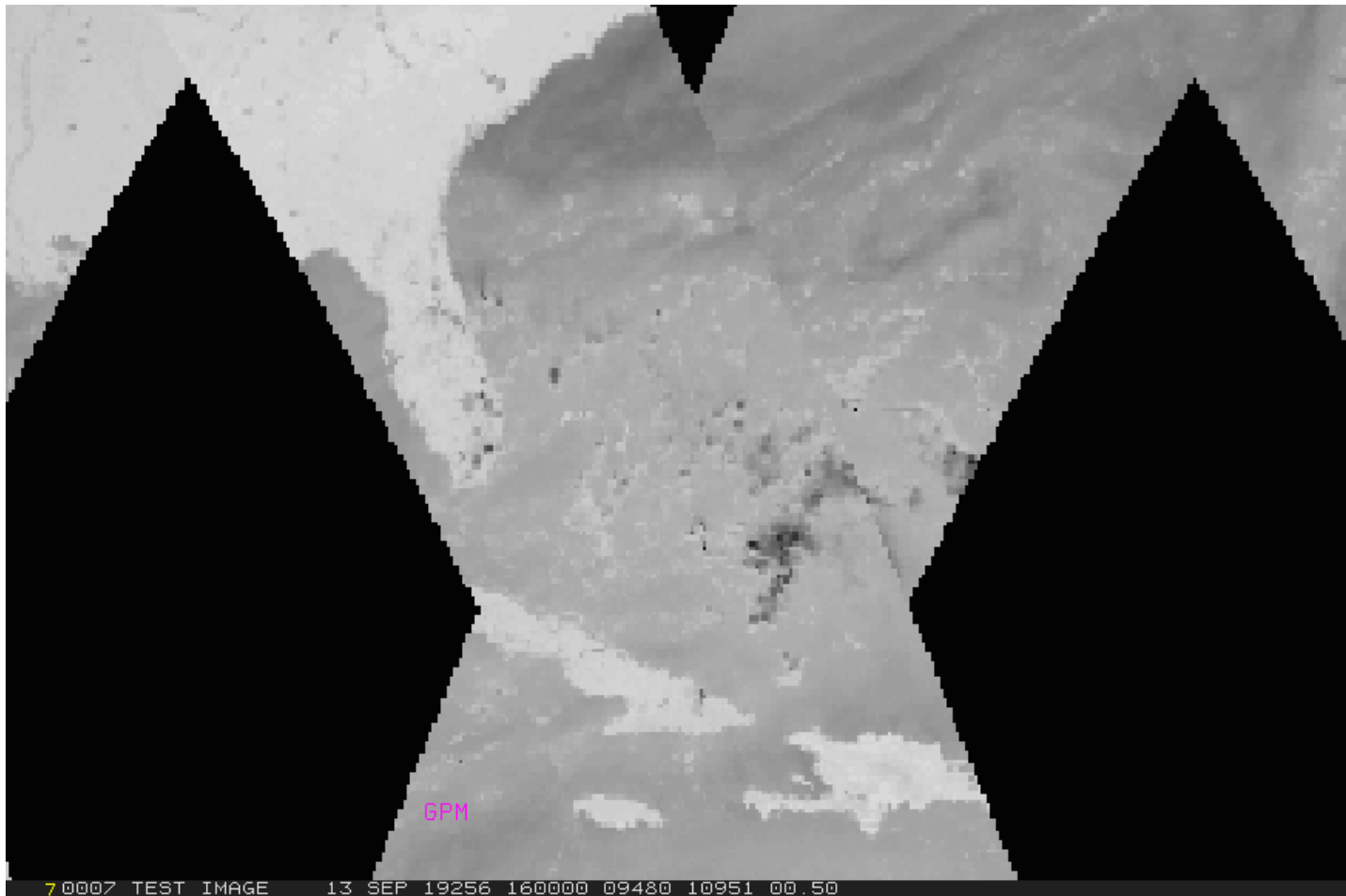
S-NPP 88 GHz (pre-Humberto)



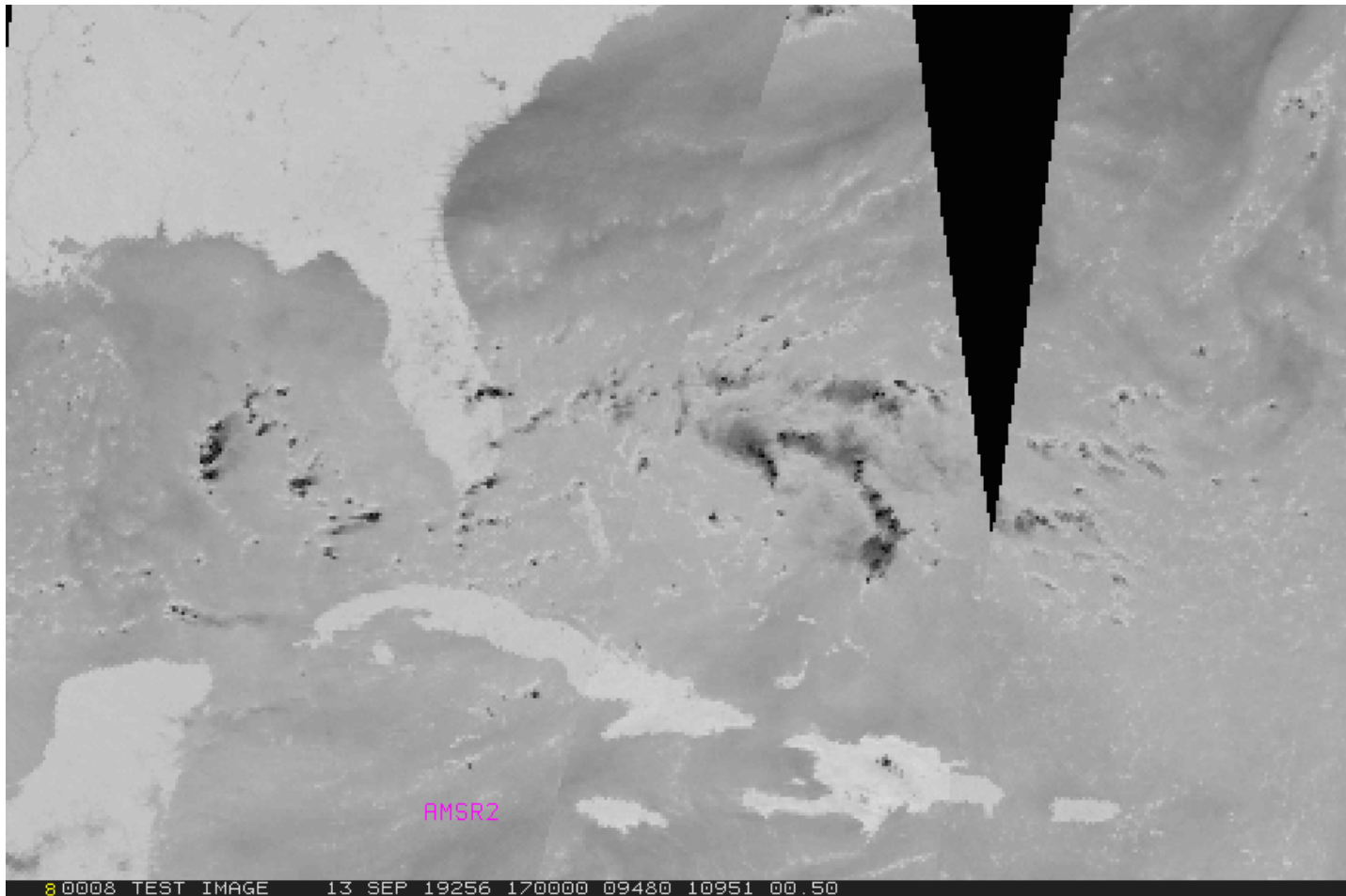
N-20 88 GHz (pre-Humberto)



GPM 89 GHz (pre-Humberto)



AMSR-2 89 GHz (pre-Humberto)



Other Ad hoc McIDAS Usage at ESPC

- Heavy usage of the local GINI server in McIDAS format for validation checks (image previews) for conversion of GOES-15 data to NWS AWIPS
- Great reliance on GINIs during GOES anomalies to confirm the output images quickly and efficiently (Generated mock AWIPS files to confirm changes to use GOES-14).
- Deliver GOES-16/-17 data to select legacy applications
 - Spoofs GOES-13 and 15 AREA file appearance with IMGREMAP
 - No or minimal changes required in legacy code to process
 - Usable by older (pre-GOES-R) McIDAS versions
- Imagery on OSPO web page generated by McIDAS-X client-side software.
- GHE and Arctic Composite – because they use so many different datasets - act as “coalmine canaries” for ingest issues

McIDAS Data Delivery Summary

GEODIST –

Geostationary satellite data is ingested, converted to McIDAS AREA format and placed on a server.

In addition, some foreign geostationary data, polar data, model data and derived products are converted into McIDAS.

This data is served via McIDAS ADDE:

<u>Data</u>	<u>NSOF Server</u>	<u>ADDE Name</u>
– Derived Products	GEODIST1e	DPD
– GOES-E	GEODIST2e	GER <i>PDA/NCDF Only</i>
– GOES-15	GEODIST3e	GWR
– Polar	GEODIST4e	PLR , MIRS
– Model data	GEODIST5	MOD
– Global Mosaic 5 Sat. Comp.	GEODIST6	MOS
– MSG/MIO	GEODIST6e	MSG, MIO
– Himawari	GEODIST7e	HIM
– Select requested data	SATEPSANONE	PUB <i>(not operational)</i>
– Surface/Ship Buoy/RAOBs	FOS2	FOS (Family of Services)

Data Access Services



- Current Access Services (in addition to Direct Broadcast)
 - Product Distribution and Access (PDA) – Operational *
 - NWS Telecommunications Gateway
 - GINI (GOES Ingest and NOAAPORT Interface) / NOAAPORT for Advanced Weather Interactive Processing System (AWIPS) display
 - GEODIST – GOES, POES, and Derived Products; McIDAS *
 - Shared Processing DAPE Gateway – for military partners *
 - MODIS server – subset of products made by NASA *
 - Websites - <http://www.ospo.noaa.gov/>
- * Require Data Access Request (Government)*
- Archival
 - NCEI archive data products using CLASS

ESPC Notifications, Status, and Contacts

24/7 Help Desk	ESPCOperations@noaa.gov
ESPC Messages	http://www.ssd.noaa.gov/PS/SATS/messages.html
WMO GTS Bulletins	Urgent: http://www.weather.gov/view/validProds.php?prod=ADM&node=KNES Routine: http://www.weather.gov/view/validProds.php?prod=ADA&node=KNES
User Services	SPSD.UserServices@noaa.gov
Data Access	NESDIS.Data.Access@noaa.gov
Webmaster	SSDWebmaster@noaa.gov
Facebook	www.facebook.com/NOAANESDIS
Twitter	www.twitter.com/noaasatellites
Satellite Ops Status	http://noaasis.noaa.gov/NOAASIS/ml/status.html
Press releases	http://www.nesdis.noaa.gov/news_archives/
Web	www.ospo.noaa.gov

Thank you!

Questions?