

Simulation Reflection

This was actually Hurricane Elsa in
2021



Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida

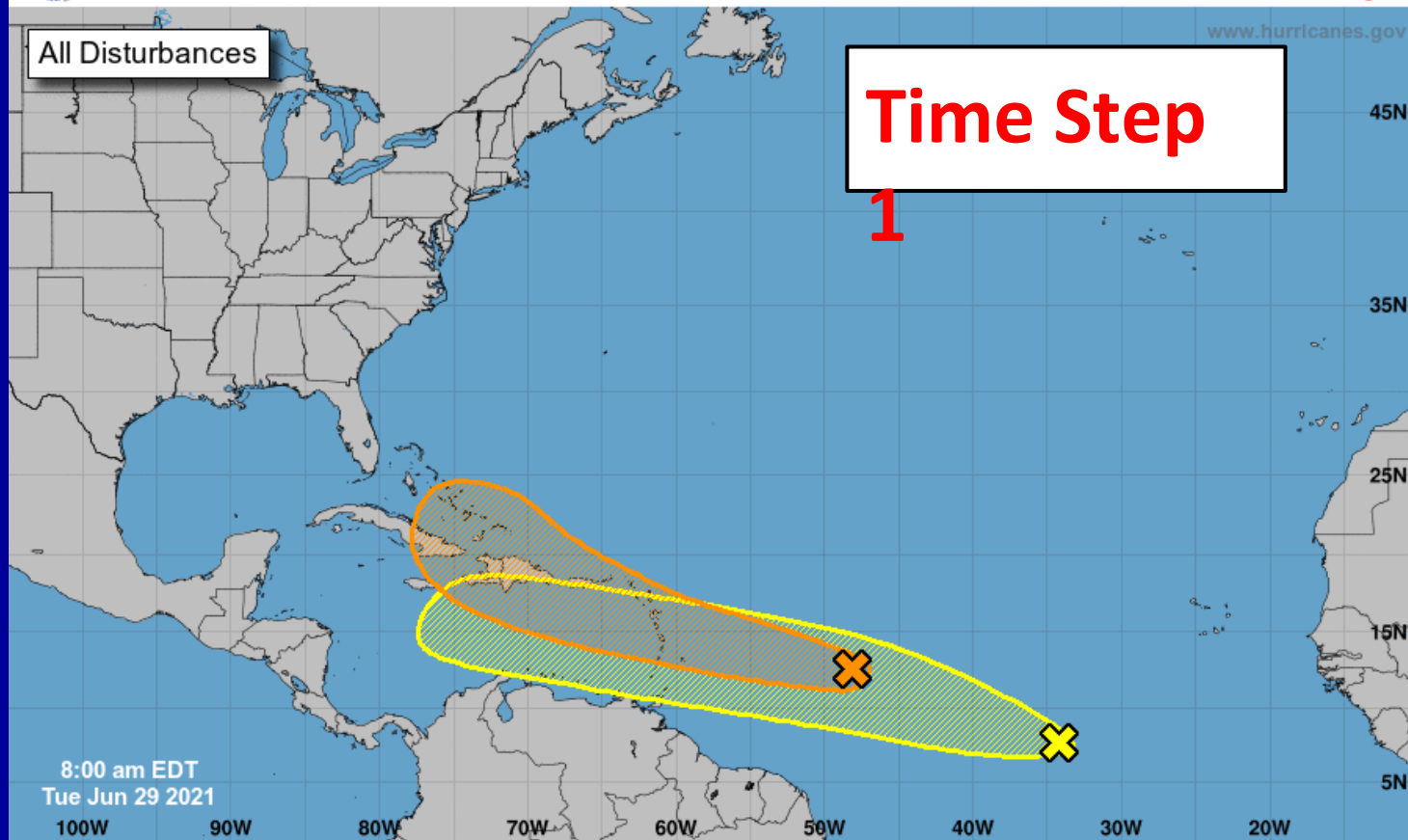


www.hurricanes.gov

All Disturbances

Time Step

1



8:00 am EDT
Tue Jun 29 2021

100W 90W 80W 70W 60W 50W 40W 30W 20W

Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane
 Post-Tropical Cyclone or Remnants



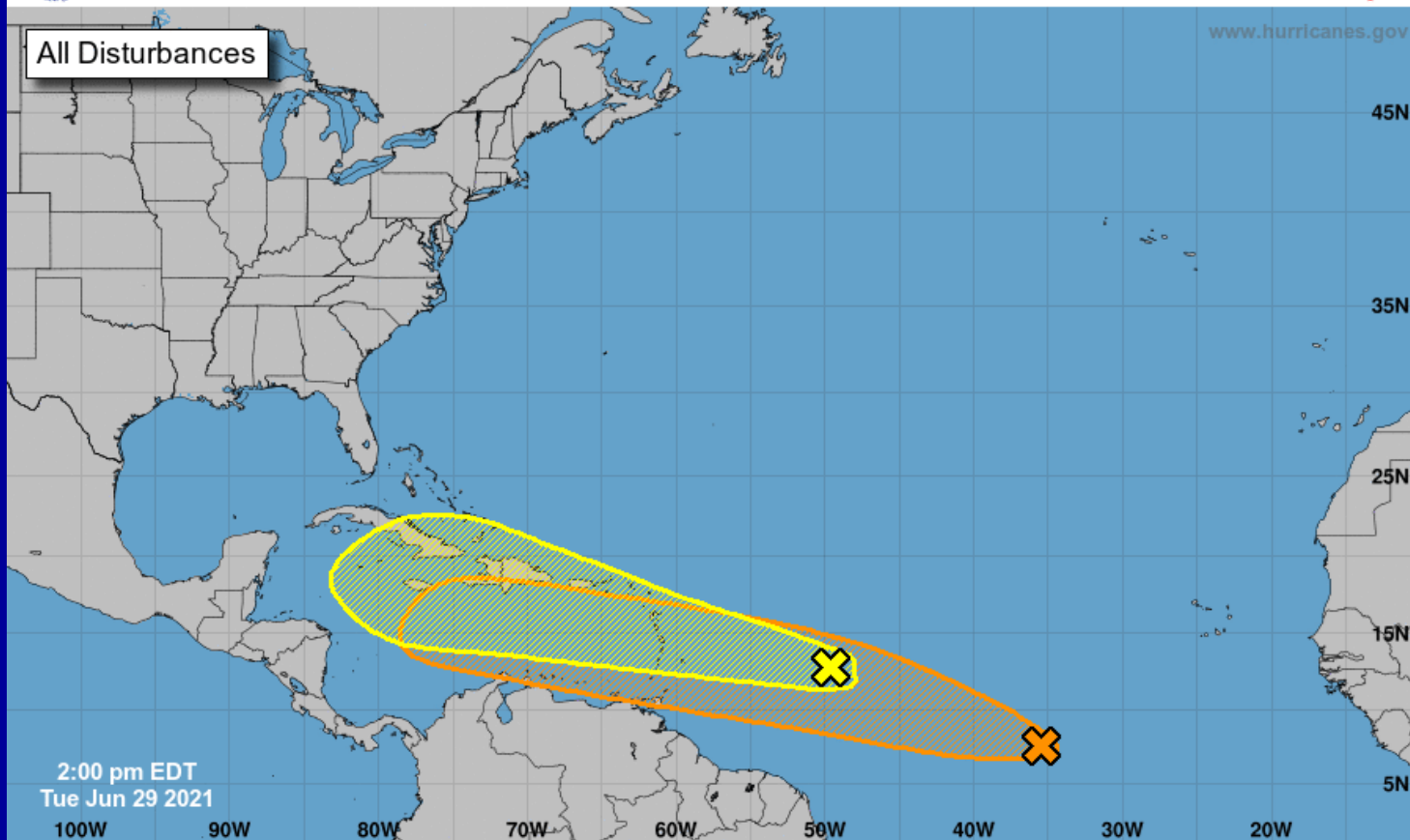
Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



www.hurricanes.gov

All Disturbances



2:00 pm EDT
Tue Jun 29 2021

100W 90W 80W 70W 60W 50W 40W 30W 20W

Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants



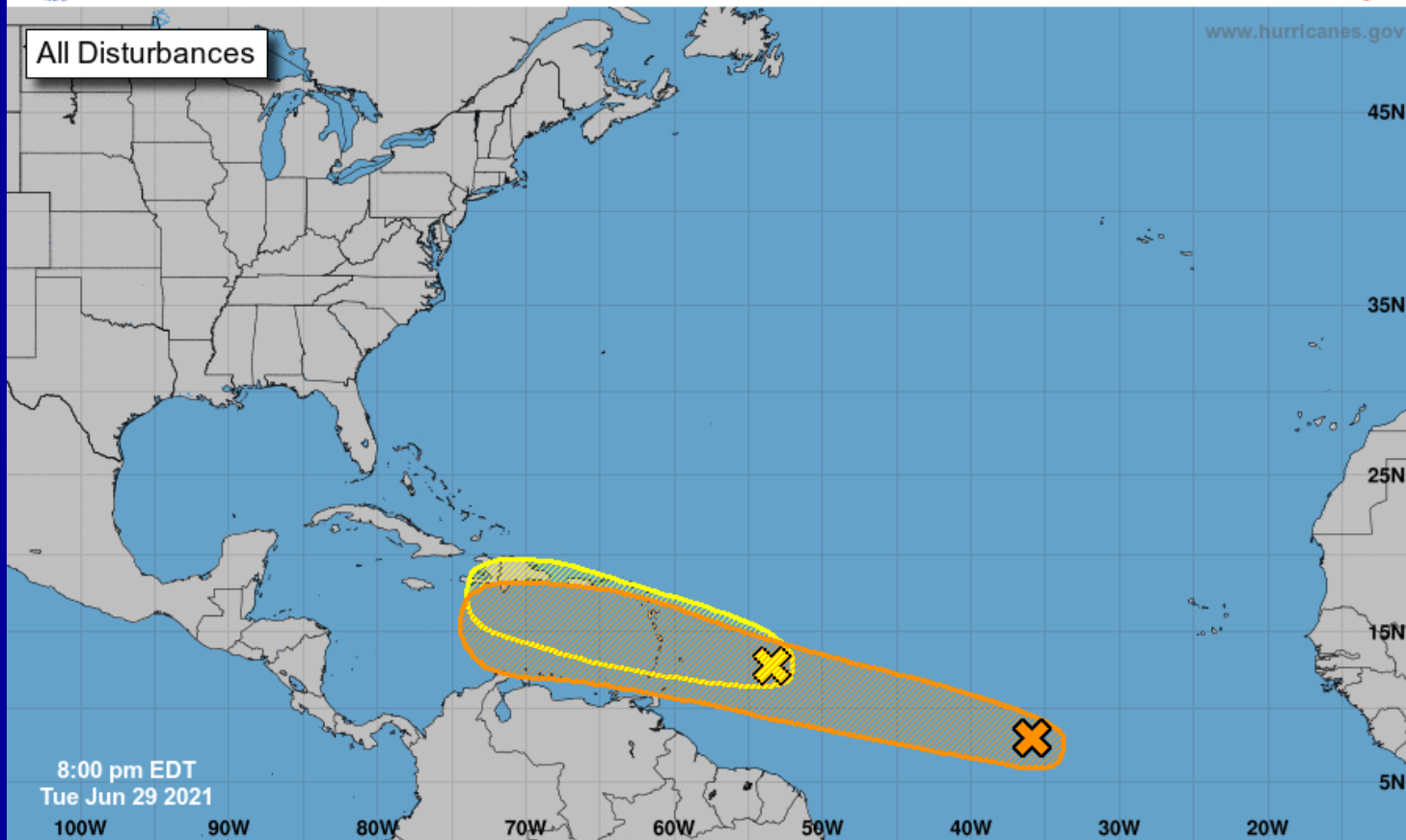
Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



www.hurricanes.gov

All Disturbances



8:00 pm EDT
Tue Jun 29 2021

100W 90W 80W 70W 60W 50W 40W 30W 20W

Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants



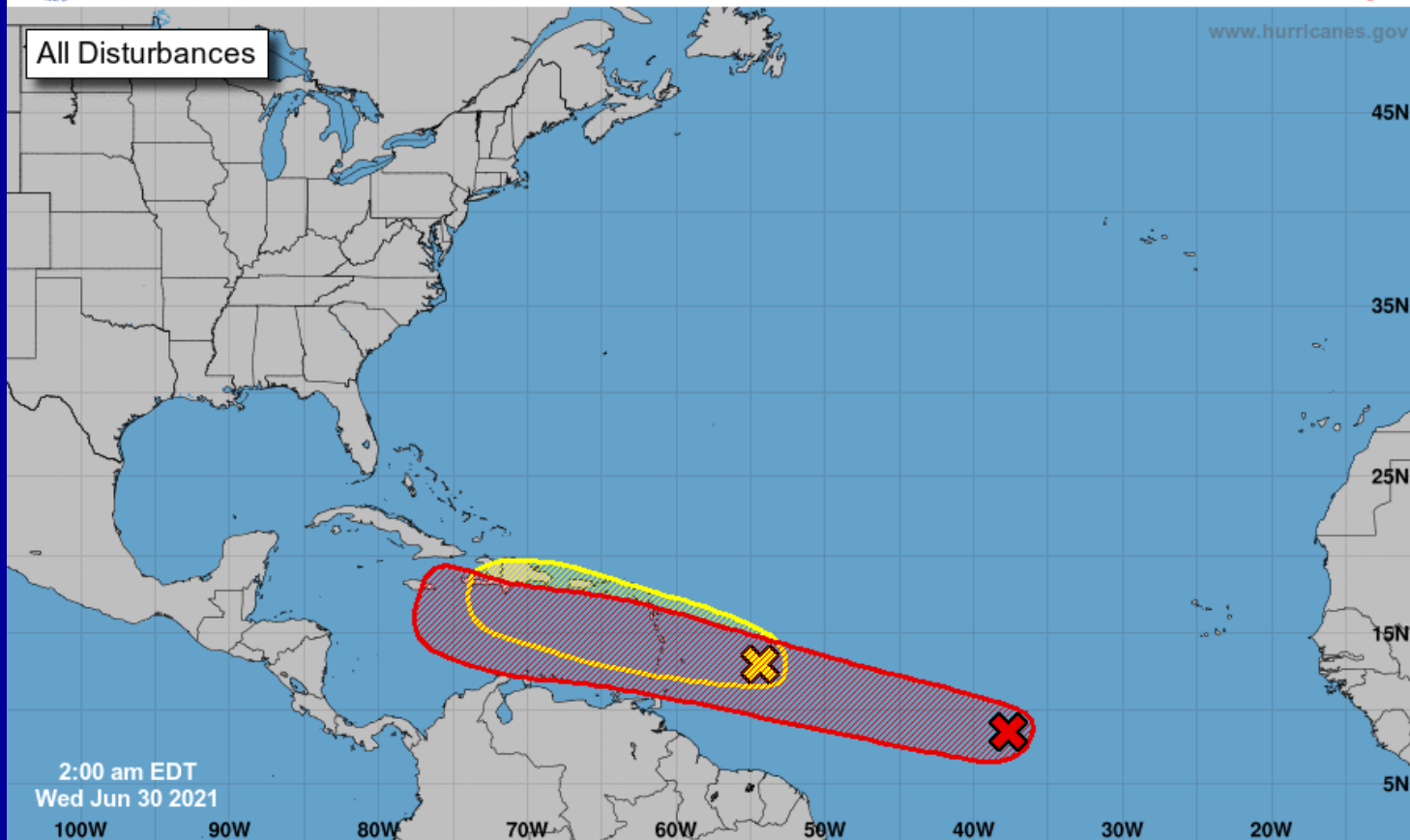
Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



www.hurricanes.gov

All Disturbances



2:00 am EDT
Wed Jun 30 2021

Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants



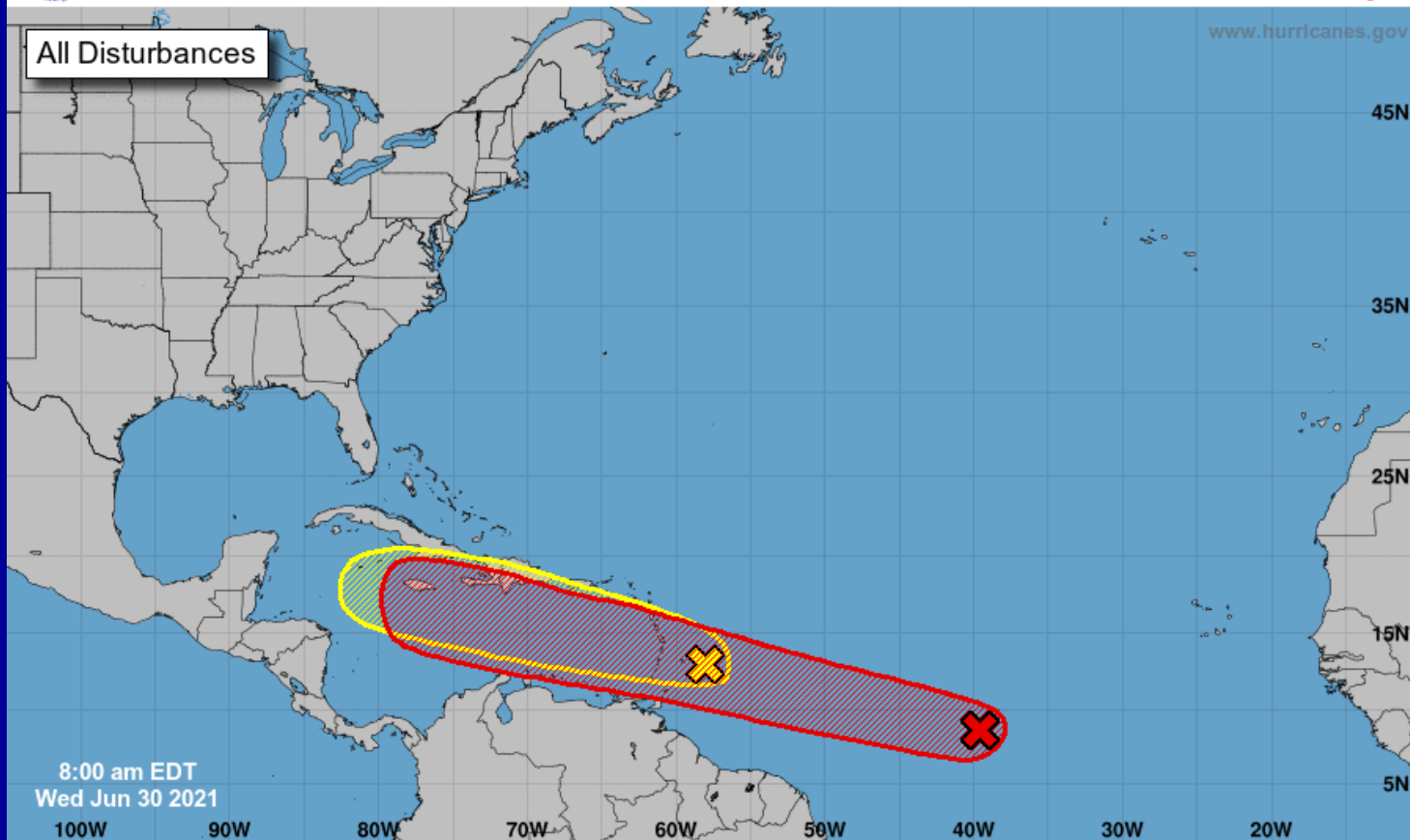
Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



www.hurricanes.gov

All Disturbances



8:00 am EDT
Wed Jun 30 2021

100W 90W 80W 70W 60W 50W 40W 30W 20W

Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants



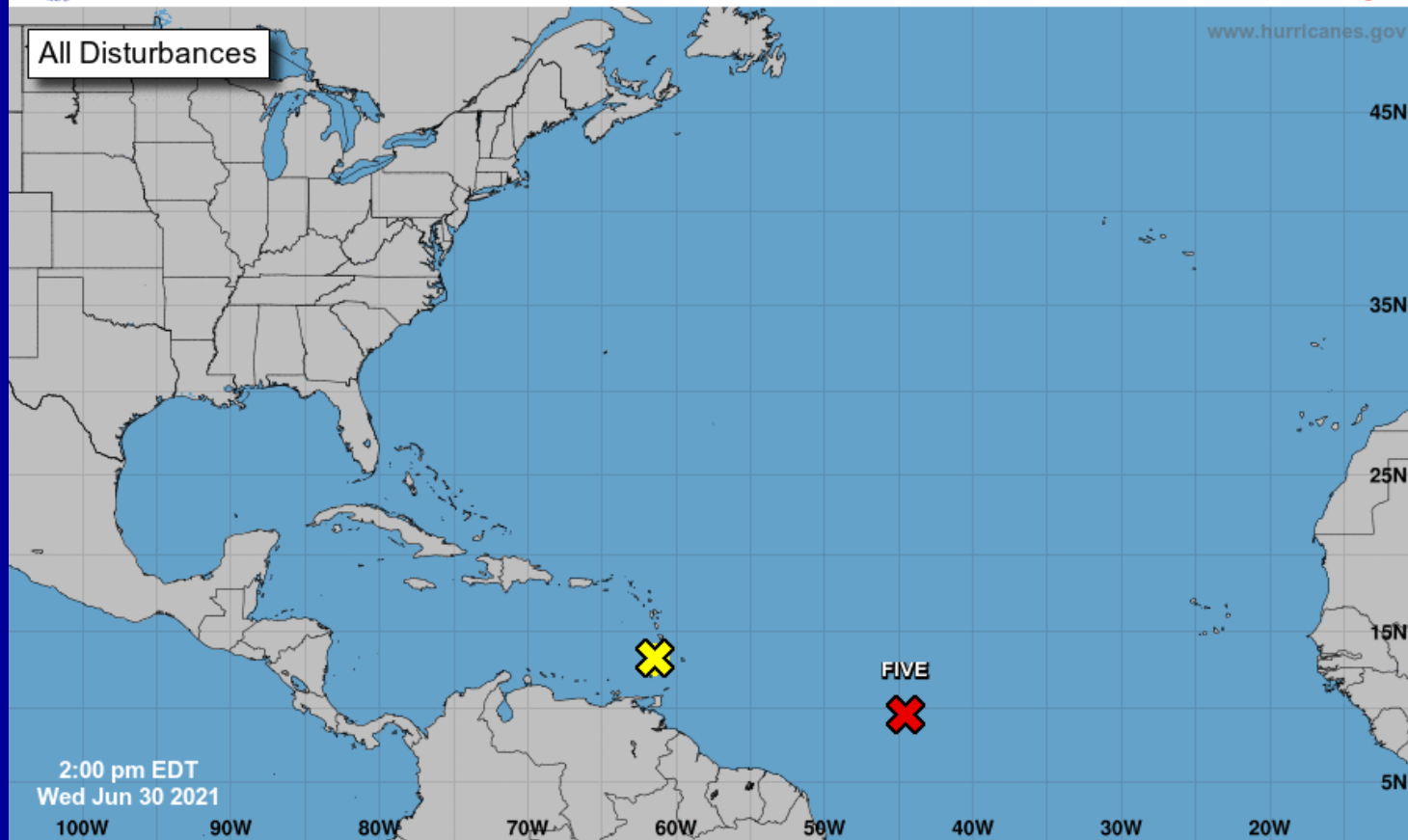
Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



www.hurricanes.gov

All Disturbances



2:00 pm EDT
Wed Jun 30 2021

Current Disturbances and Five-Day Cyclone Formation Chance:

X < 40%
 X 40-60%
 X > 60%

Tropical or Sub-Tropical Cyclone:
 ○ Depression
 ○ Storm
 ○ Hurricane

⊗ Post-Tropical Cyclone or Remnants



Surface Wind Field of Potential Tropical Cyclone Five

Sustained Winds as of 800 PM AST Wed Jun 30, 2021 Advisory Number 1A



Time Step

2



Watches:

- Hurricane Watch
- Tropical Storm Watch

Warnings:

- Hurricane Warning
- Tropical Storm Warning

Sustained Winds:

- Hurricane Force
- Tropical Storm Force

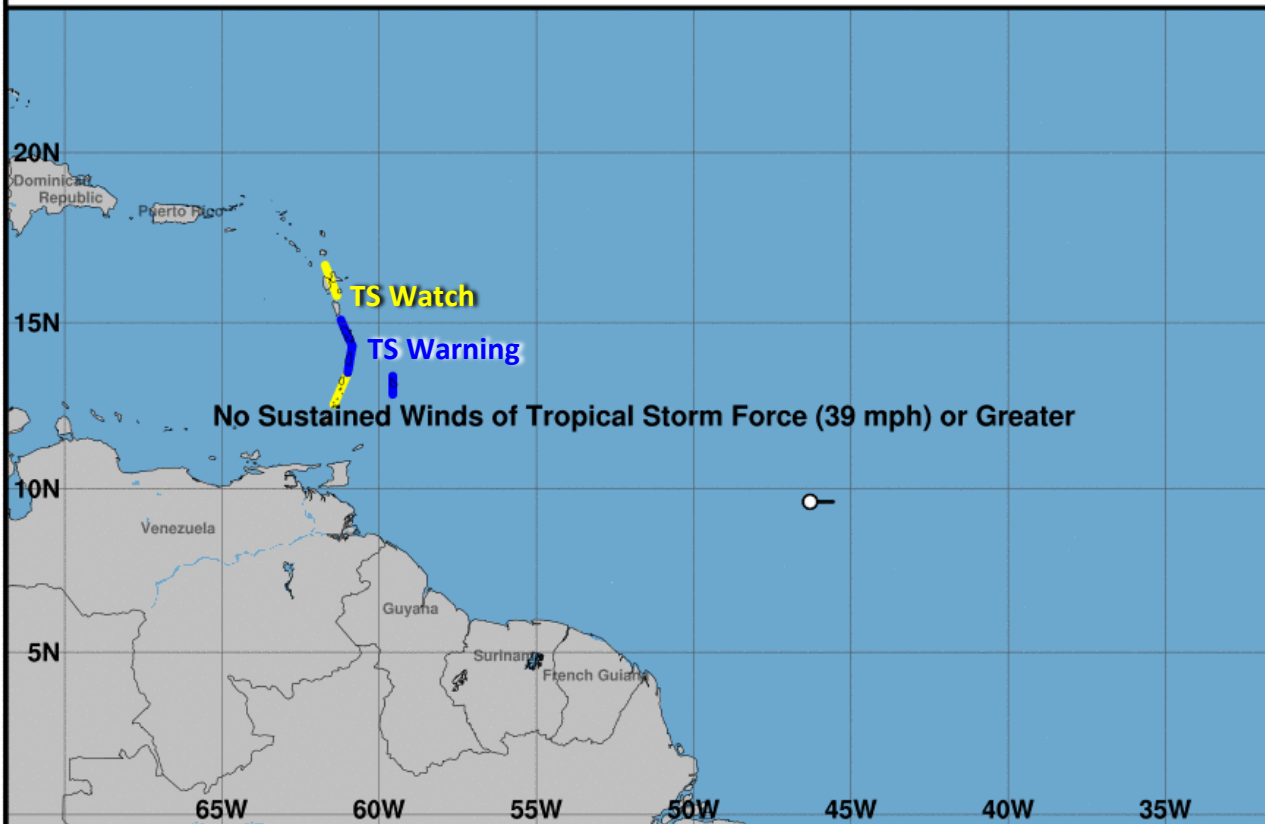
Position:

- Center as of 800 PM AST
- Past Track



Surface Wind Field of Tropical Depression Five

Sustained Winds as of 1100 PM AST Wed Jun 30, 2021 Advisory Number 2



Watches:

- Hurricane Watch
- Tropical Storm Watch

Warnings:

- Hurricane Warning
- Tropical Storm Warning

Sustained Winds:

- Hurricane Force
- Tropical Storm Force

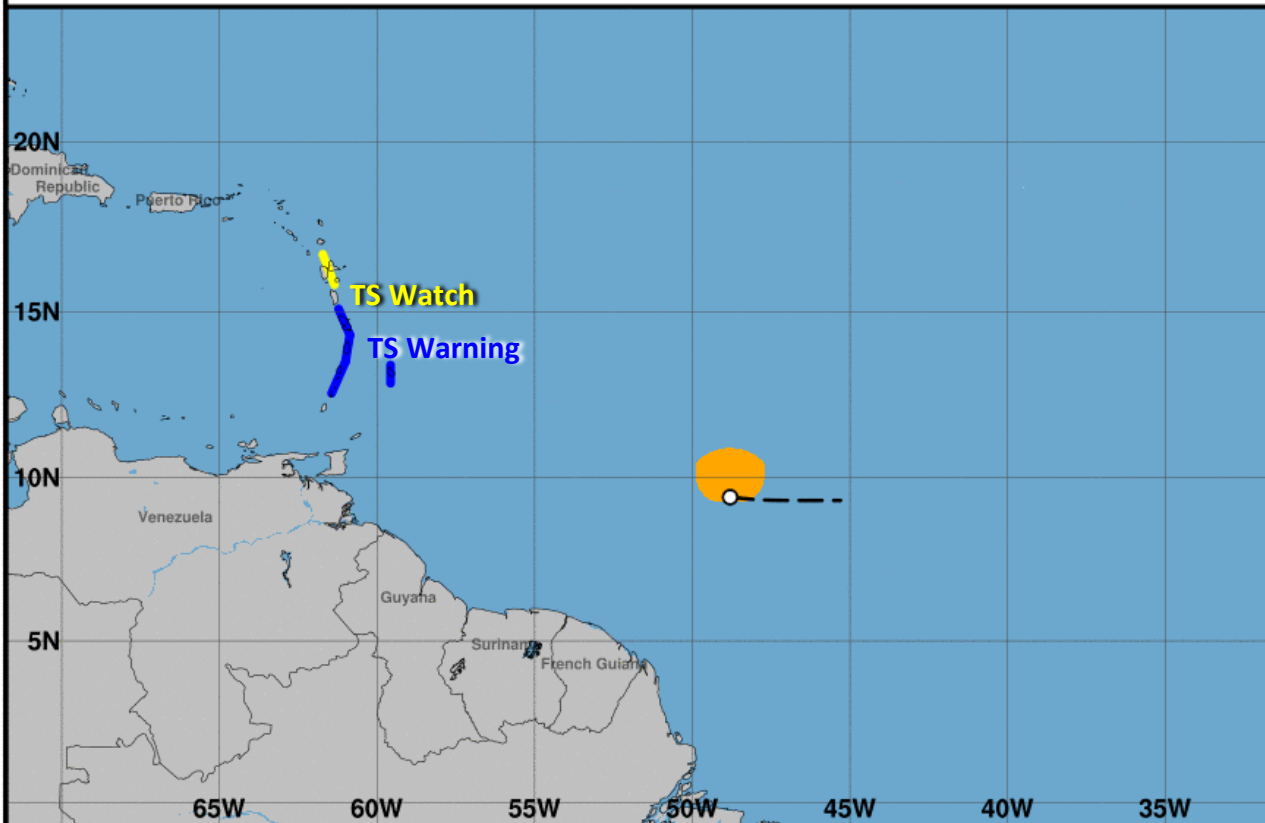
Position:

- Center as of 1100 PM AST
- Past Track



Surface Wind Field of Tropical Storm Elsa

Sustained Winds as of 500 AM AST Thu Jul 01, 2021 Advisory Number 3



Watches:

- Hurricane Watch
- Tropical Storm Watch

Warnings:

- Hurricane Warning
- Tropical Storm Warning

Sustained Winds:

- Hurricane Force
- Tropical Storm Force

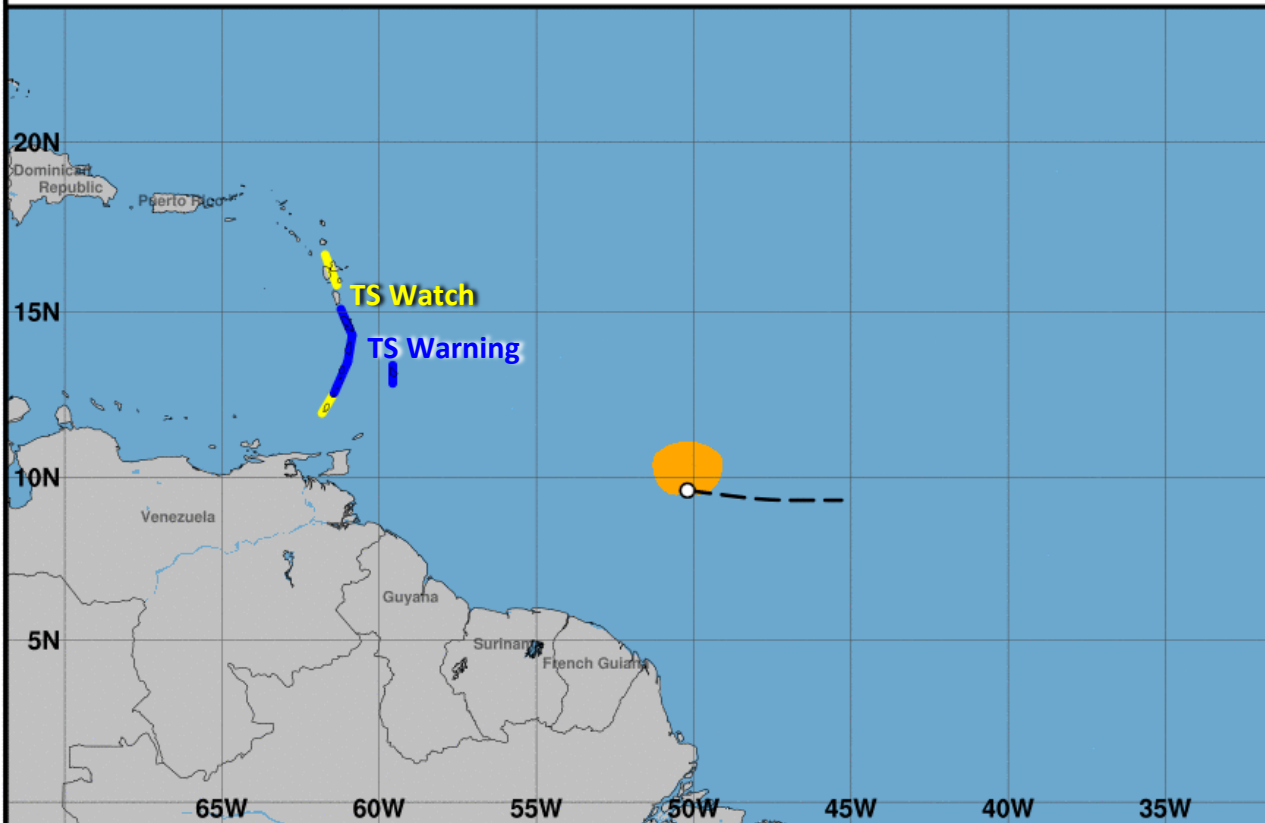
Position:

- Center as of 500 AM AST
- Past Track



Surface Wind Field of Tropical Storm Elsa

Sustained Winds as of 800 AM AST Thu Jul 01, 2021 Advisory Number 3A



Watches:

- Hurricane Watch
- Tropical Storm Watch

Warnings:

- Hurricane Warning
- Tropical Storm Warning

Sustained Winds:

- Hurricane Force
- Tropical Storm Force

Position:

- Center as of 800 AM AST
- Past Track



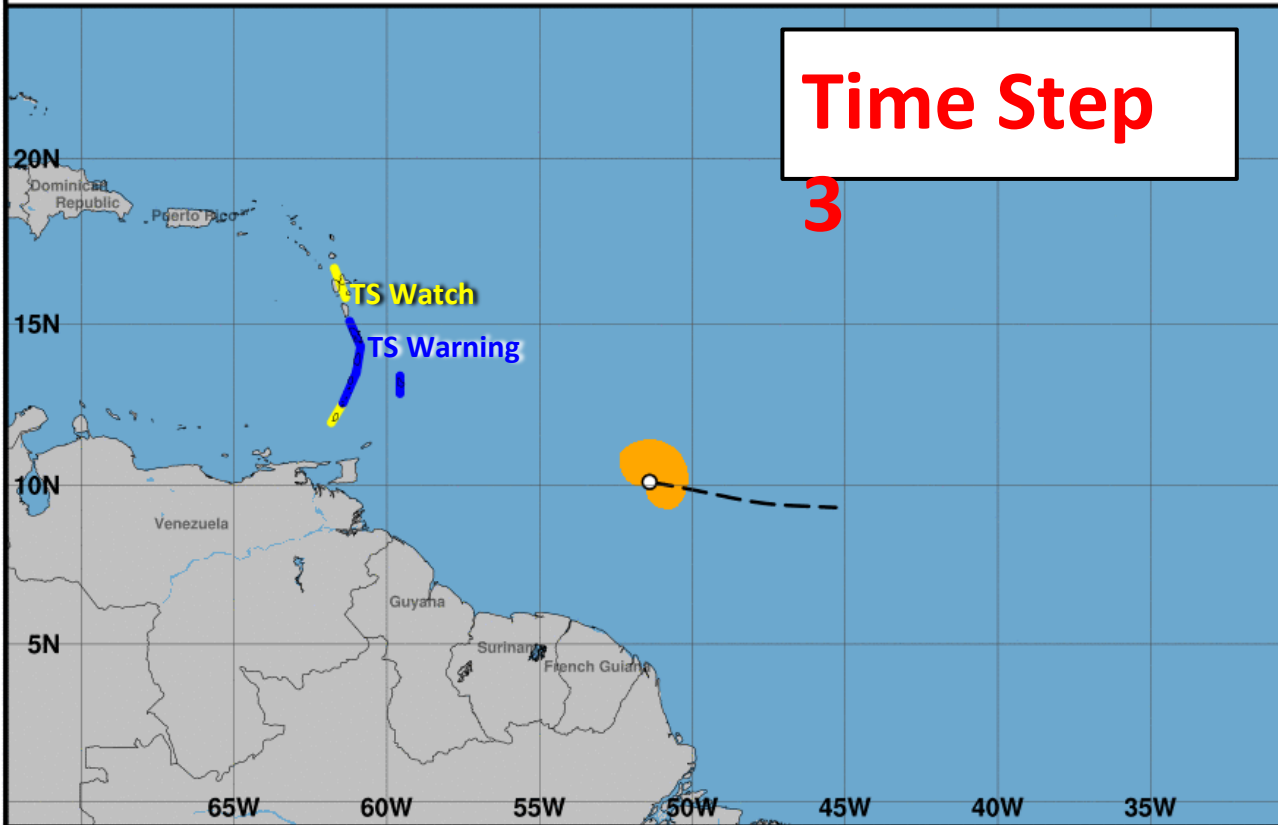
Surface Wind Field of Tropical Storm Elsa

Sustained Winds as of 1100 AM AST Thu Jul 01, 2021 Advisory Number 4



Time Step

3

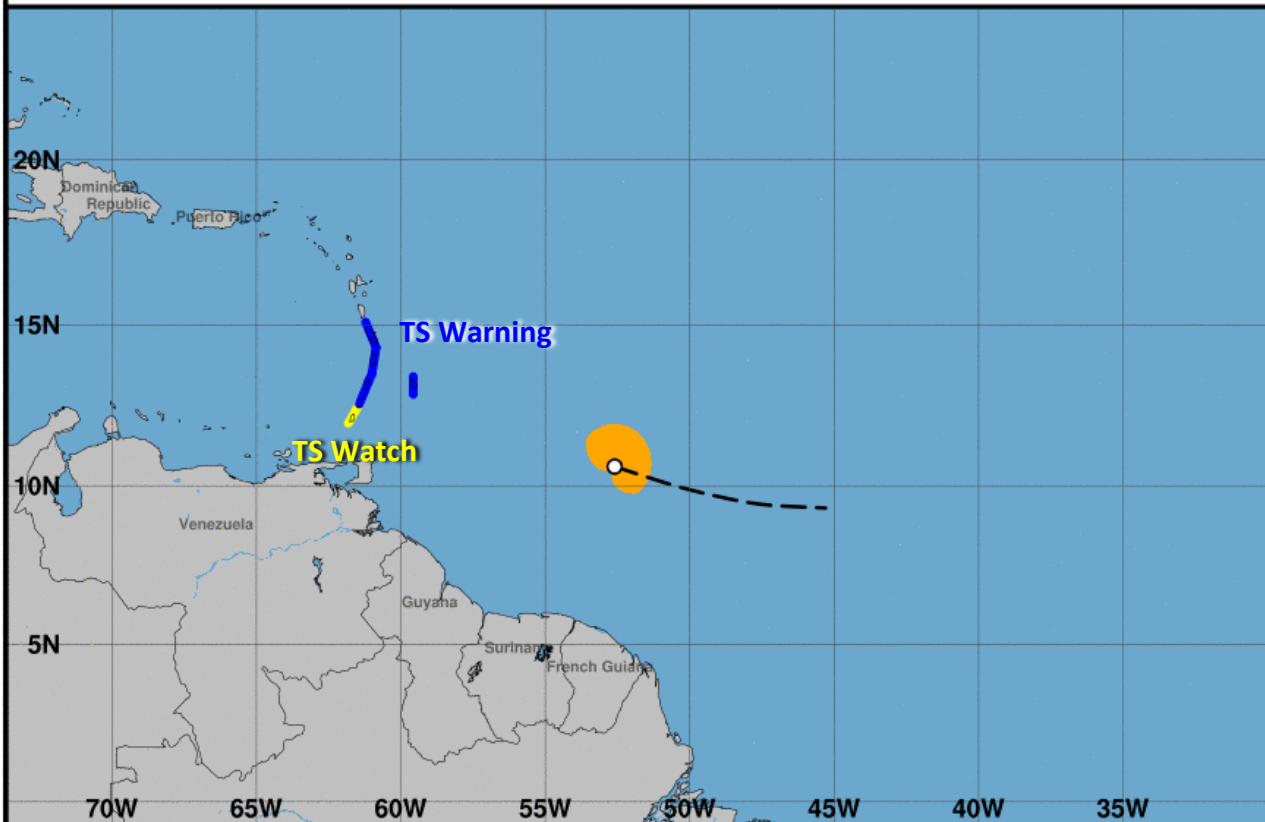


Watches:	Warnings:	Sustained Winds:	Position:
Hurricane Watch	Hurricane Warning	Hurricane Force	Center as of 1100 AM AST
Tropical Storm Watch	Tropical Storm Warning	Tropical Storm Force	Past Track



Surface Wind Field of Tropical Storm Elsa

Sustained Winds as of 200 PM AST Thu Jul 01, 2021 Advisory Number 4A



Watches:

- Hurricane Watch
- Tropical Storm Watch

Warnings:

- Hurricane Warning
- Tropical Storm Warning

Sustained Winds:

- Hurricane Force
- Tropical Storm Force

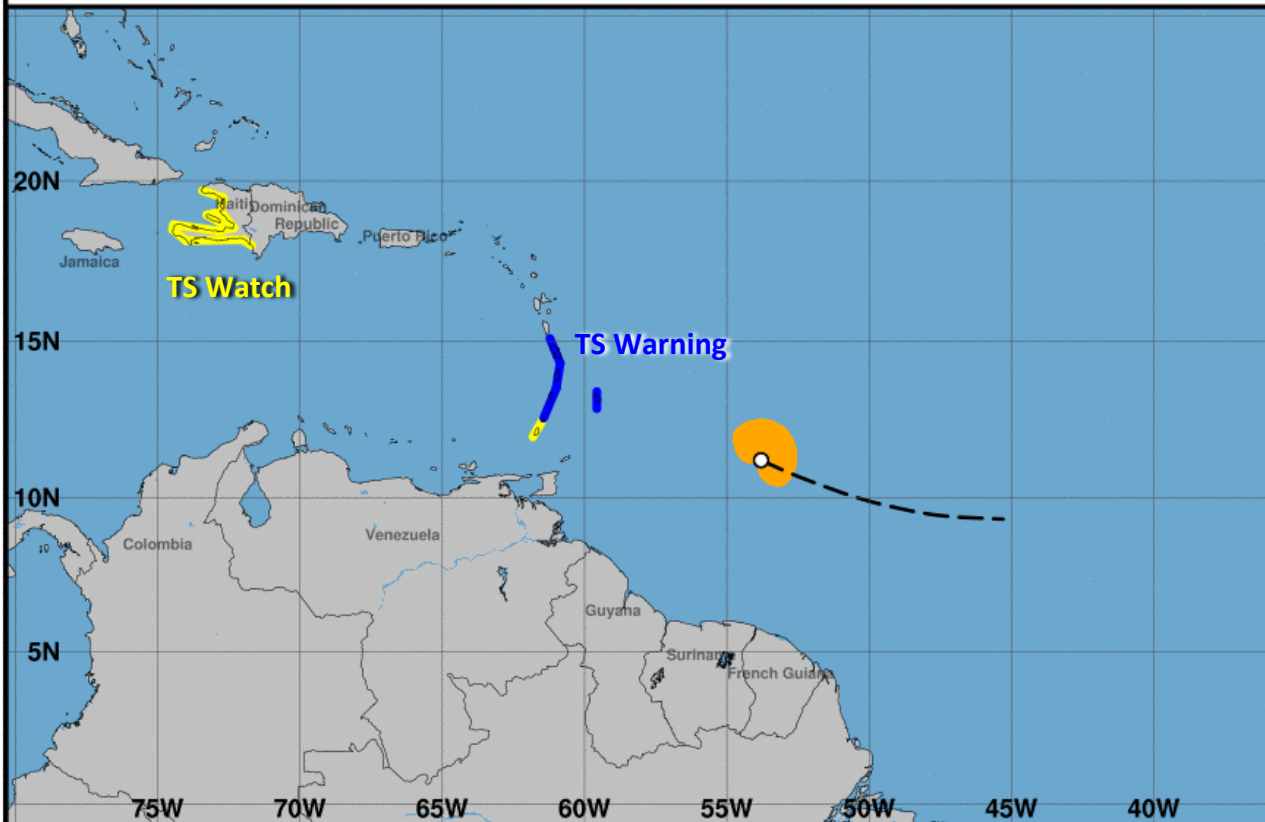
Position:

- Center as of 200 PM AST
- Past Track



Surface Wind Field of Tropical Storm Elsa

Sustained Winds as of 500 PM AST Thu Jul 01, 2021 Advisory Number 5



Watches:

- Hurricane Watch
- Tropical Storm Watch

Warnings:

- Hurricane Warning
- Tropical Storm Warning

Sustained Winds:

- Hurricane Force
- Tropical Storm Force

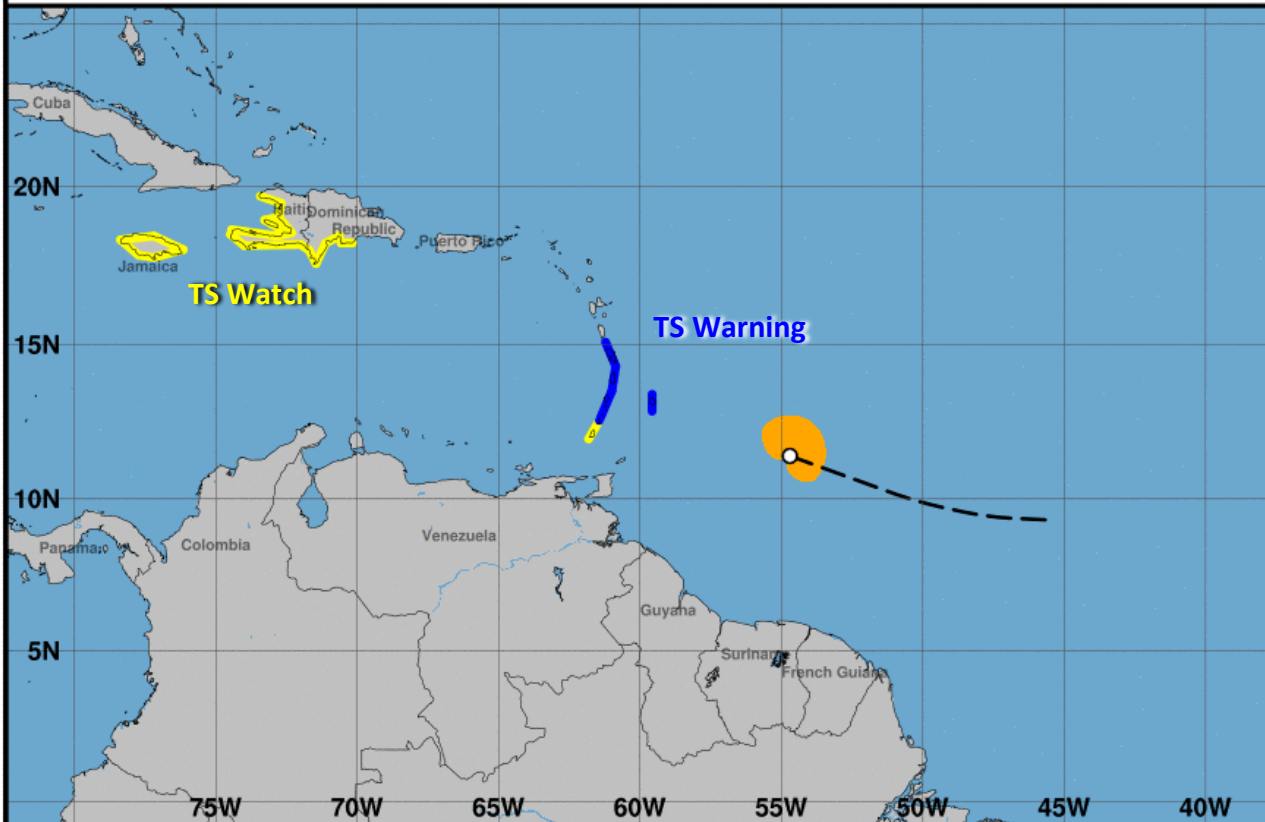
Position:

- Center as of 500 PM AST
- Past Track



Surface Wind Field of Tropical Storm Elsa

Sustained Winds as of 800 PM AST Thu Jul 01, 2021 Advisory Number 5A



Watches:

- Hurricane Watch
- Tropical Storm Watch

Warnings:

- Hurricane Warning
- Tropical Storm Warning

Sustained Winds:

- Hurricane Force
- Tropical Storm Force

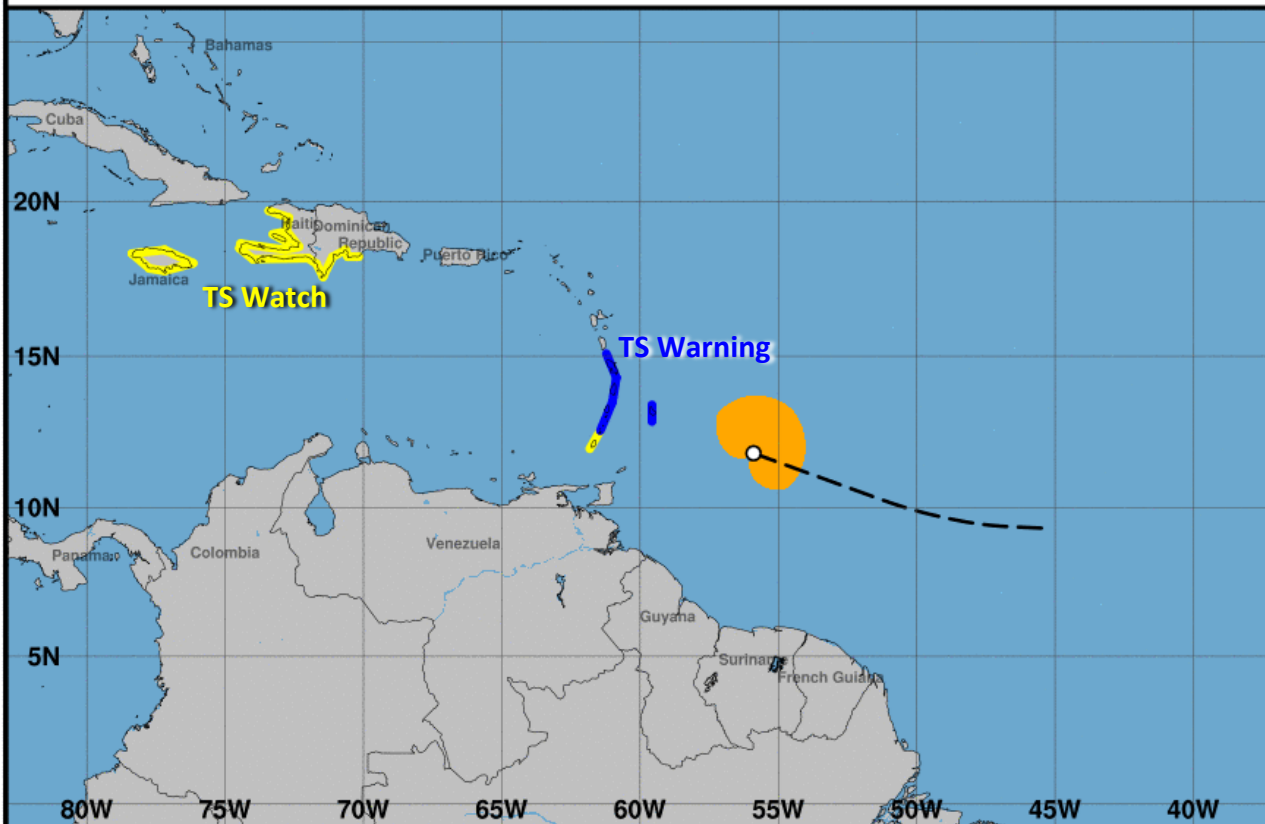
Position:

- Center as of 800 PM AST
- Past Track



Surface Wind Field of Tropical Storm Elsa

Sustained Winds as of 1100 PM AST Thu Jul 01, 2021 Advisory Number 6



Watches:

- Hurricane Watch
- Tropical Storm Watch

Warnings:

- Hurricane Warning
- Tropical Storm Warning

Sustained Winds:

- Hurricane Force
- Tropical Storm Force

Position:

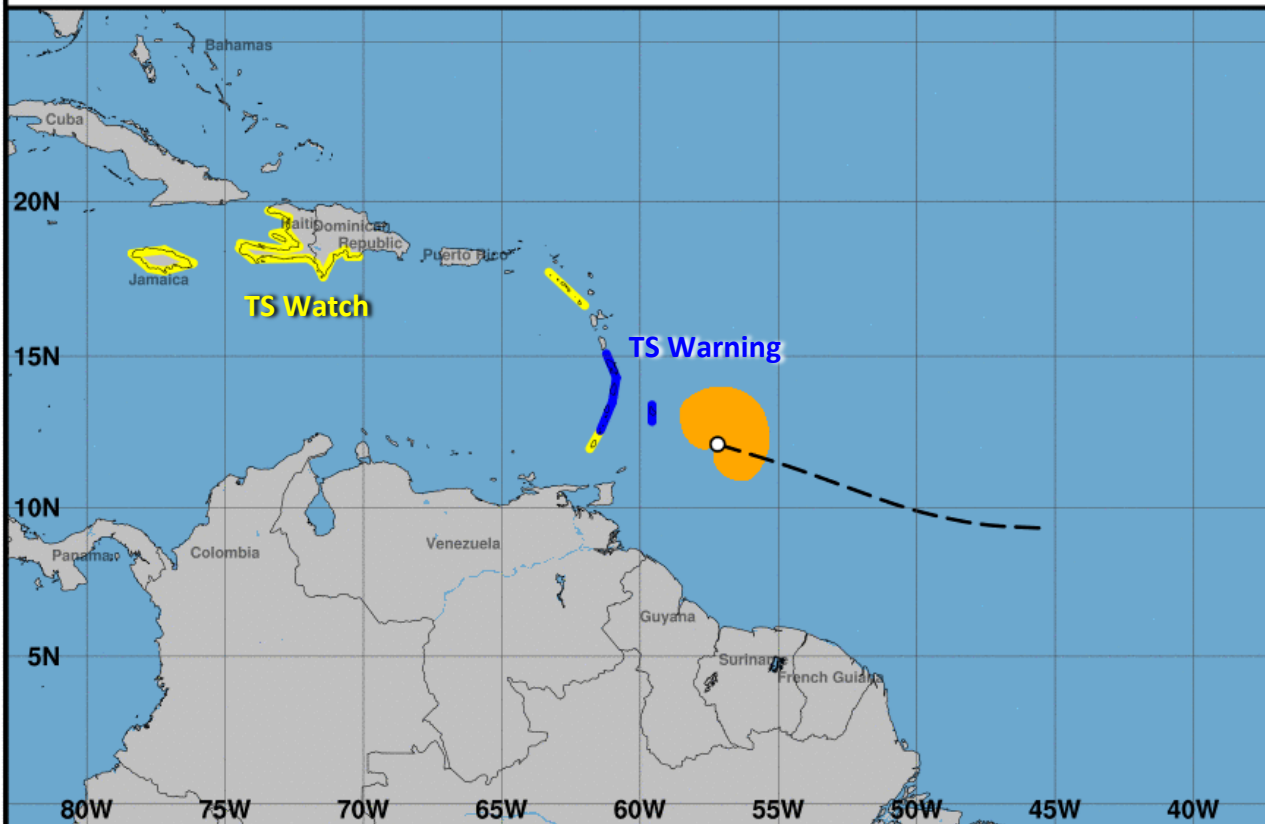
- Center as of 1100 PM AST
- Past Track



Surface Wind Field of Tropical Storm Elsa

Sustained Winds as of 200 AM AST Fri Jul 02, 2021

Advisory Number 6A



Watches:

- Hurricane Watch
- Tropical Storm Watch

Warnings:

- Hurricane Warning
- Tropical Storm Warning

Sustained Winds:

- Hurricane Force
- Tropical Storm Force

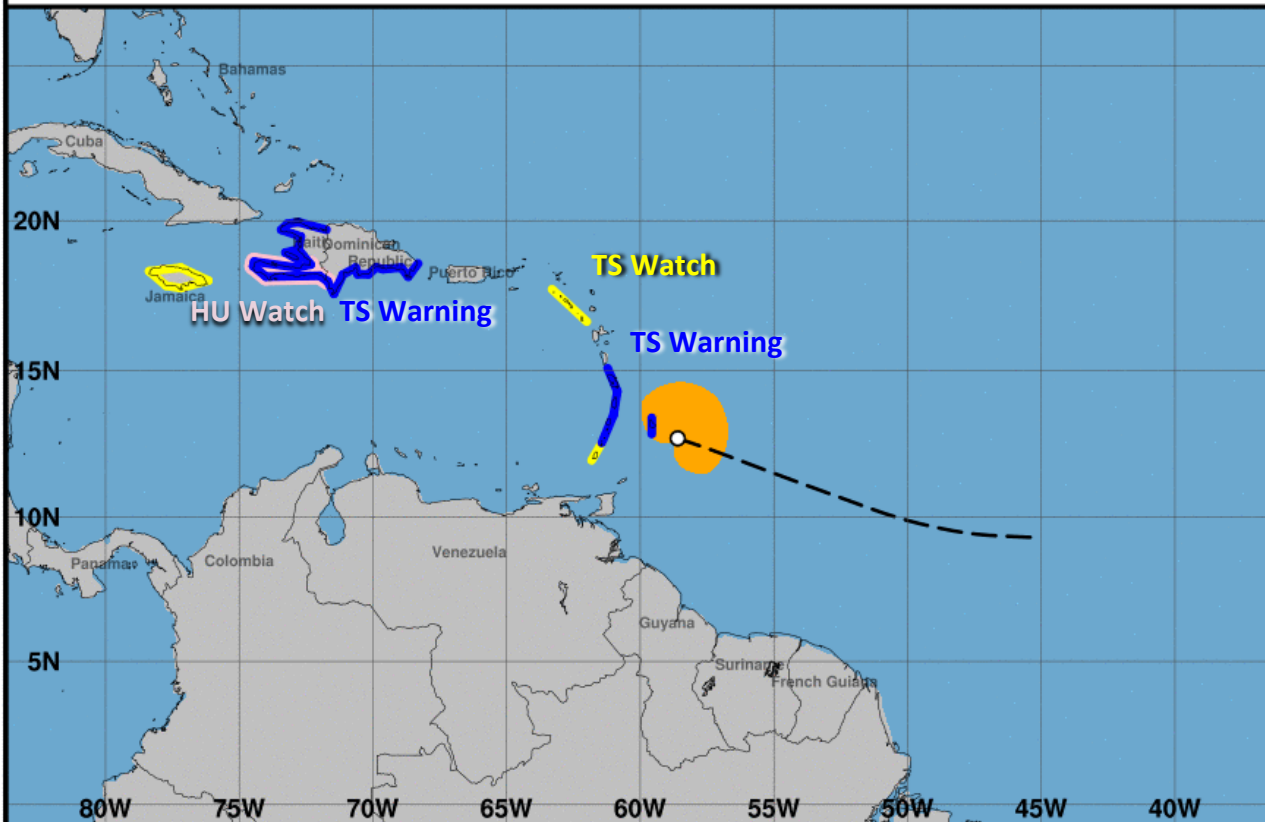
Position:

- Center as of 200 AM AST
- Past Track



Surface Wind Field of Tropical Storm Elsa

Sustained Winds as of 500 AM AST Fri Jul 02, 2021 Advisory Number 7



Watches:

- Hurricane Watch
- Tropical Storm Watch

Warnings:

- Hurricane Warning
- Tropical Storm Warning

Sustained Winds:

- Hurricane Force
- Tropical Storm Force

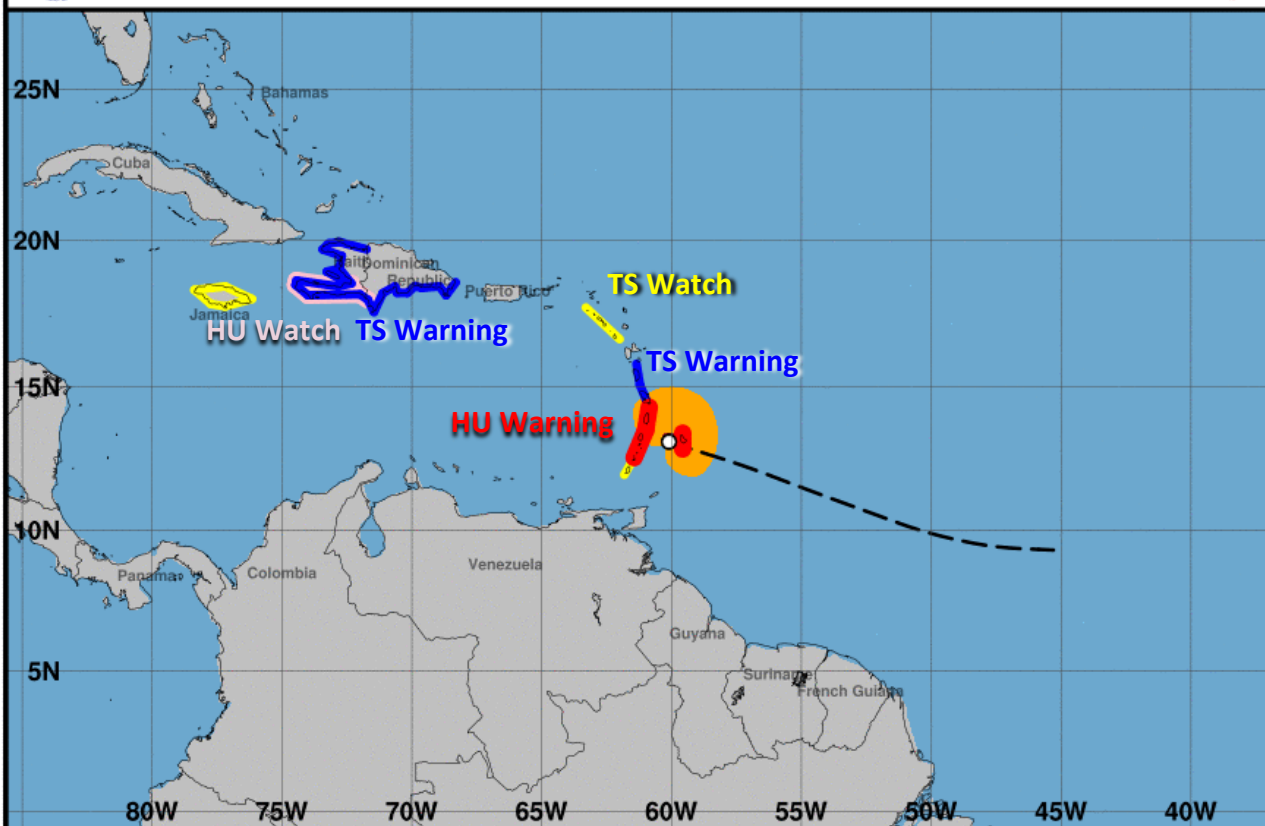
Position:

- Center as of 500 AM AST
- Past Track



Surface Wind Field of Hurricane Elsa

Sustained Winds as of 830 AM AST Fri Jul 02, 2021 Advisory Number 8



Watches:

- Hurricane Watch
- Tropical Storm Watch

Warnings:

- Hurricane Warning
- Tropical Storm Warning

Sustained Winds:

- Hurricane Force
- Tropical Storm Force

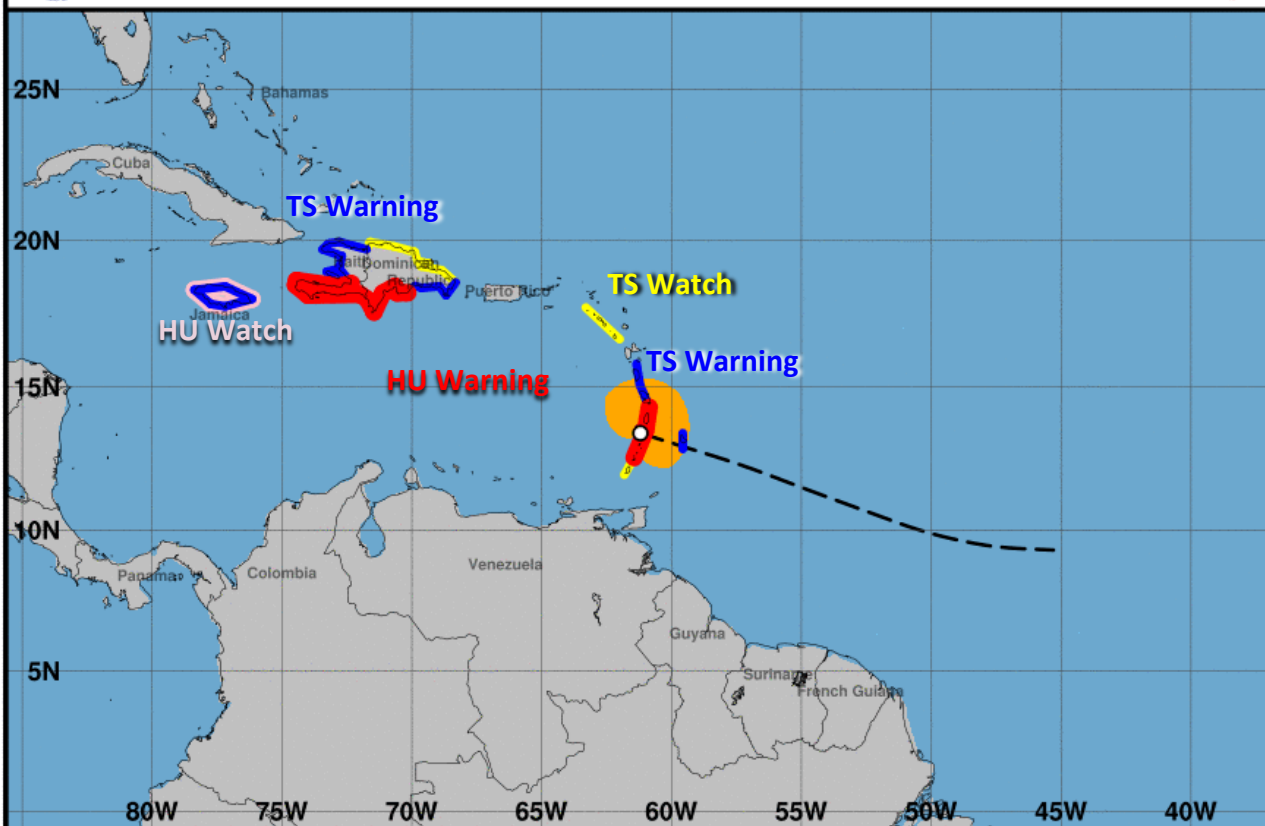
Position:

- Center as of 830 AM AST
- Past Track



Surface Wind Field of Hurricane Elsa

Sustained Winds as of 1100 AM AST Fri Jul 02, 2021 Advisory Number 9



Watches:

- Hurricane Watch
- Tropical Storm Watch

Warnings:

- Hurricane Warning
- Tropical Storm Warning

Sustained Winds:

- Hurricane Force
- Tropical Storm Force

Position:

- Center as of 1100 AM AST
- Past Track

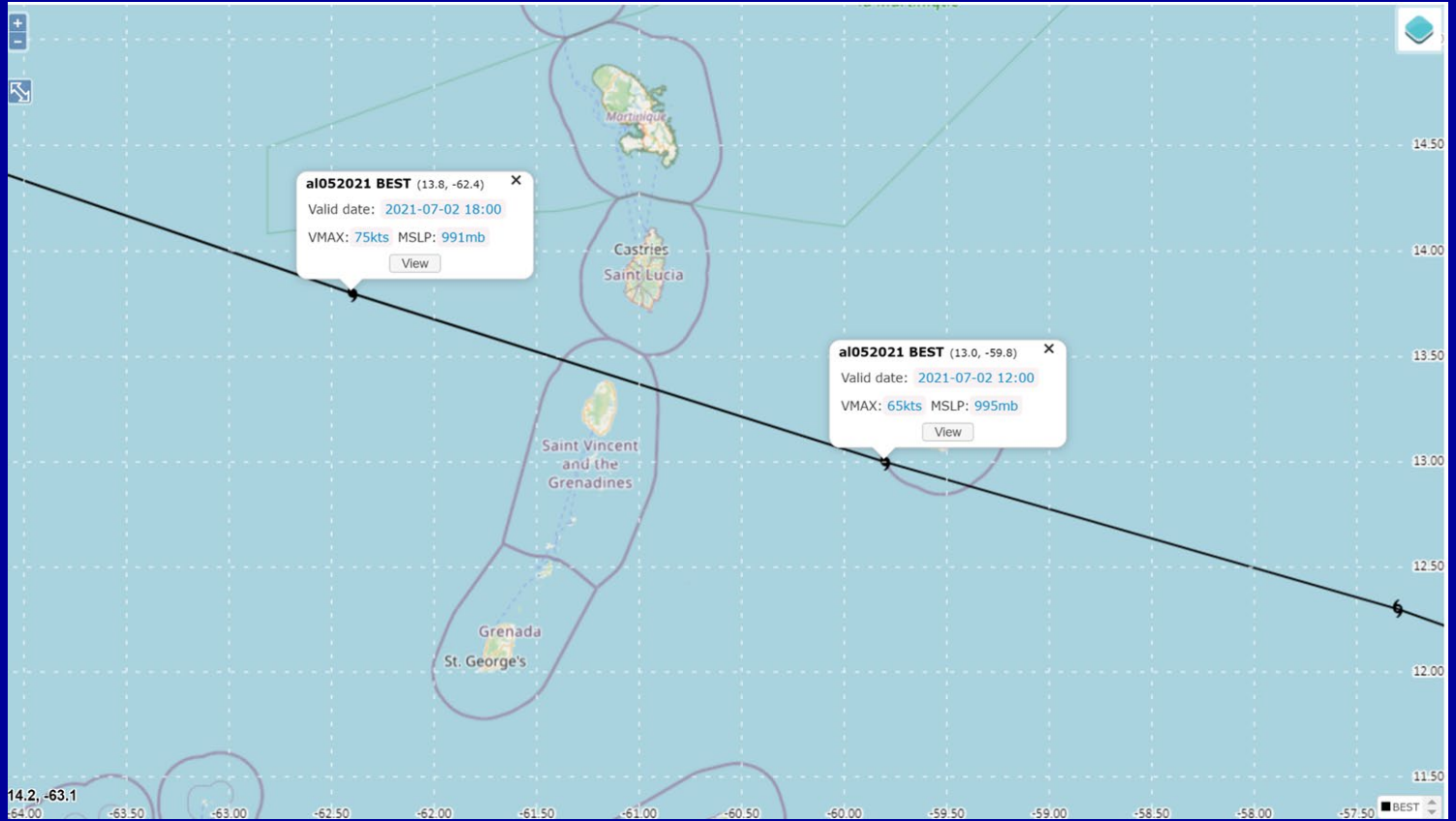
TS/Hurricane Watch/Warning

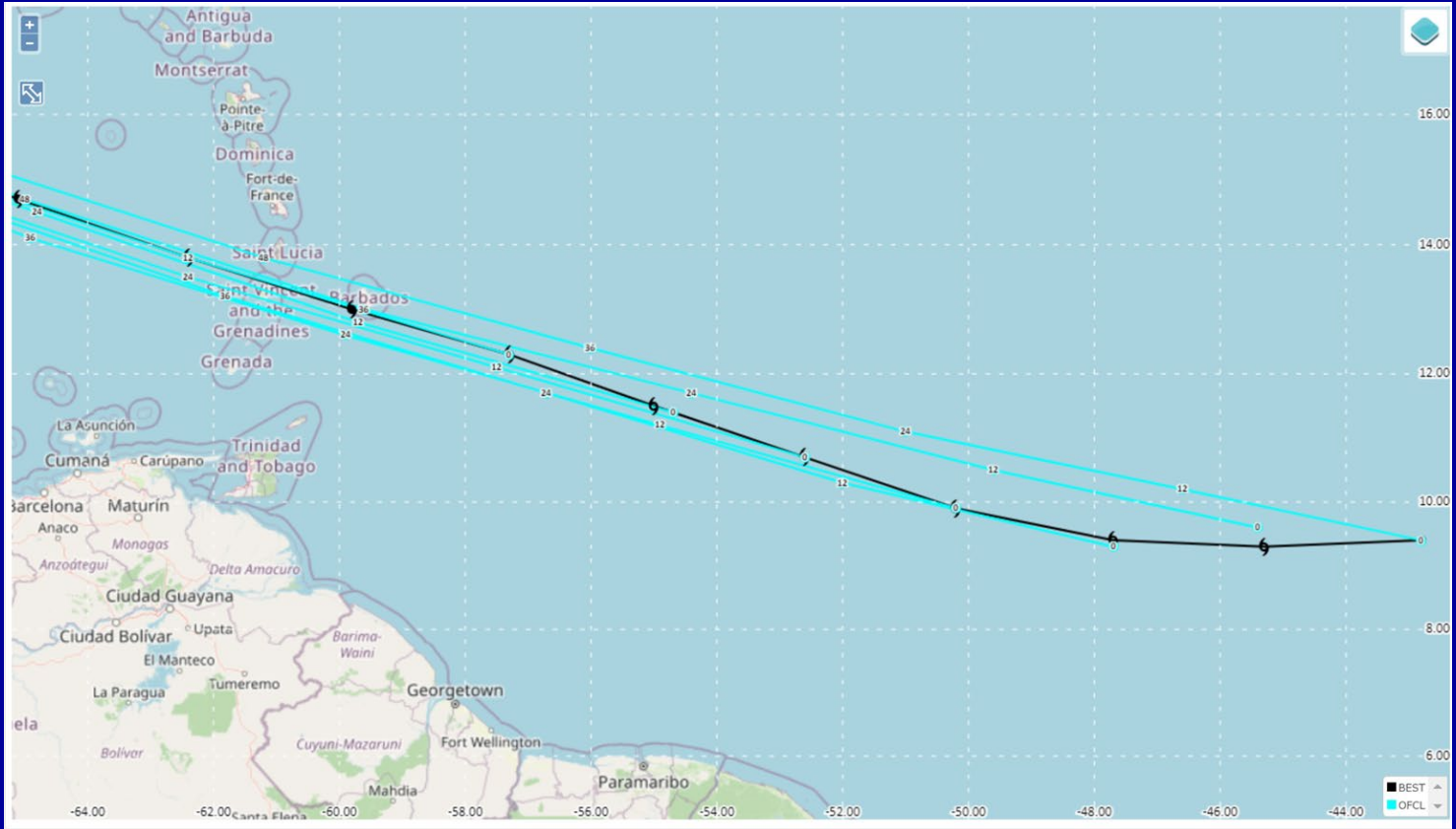
TROPICAL STORM WATCH: Tropical storm conditions are **possible** in the specified area of the watch within 48 hours.

TROPICAL STORM WARNING: Tropical storm conditions are **expected** in the specified area of the warning within 36 hours.

HURRICANE WATCH: Hurricane conditions are **possible** in the specified area of the watch within 48 hours. During a hurricane watch, prepare to take immediate action to protect your family and property in case a hurricane warning is issued.

HURRICANE WARNING: Hurricane conditions are **expected** in the specified area of the warning within 36 hours. Complete all storm preparations and evacuate if directed by local officials.





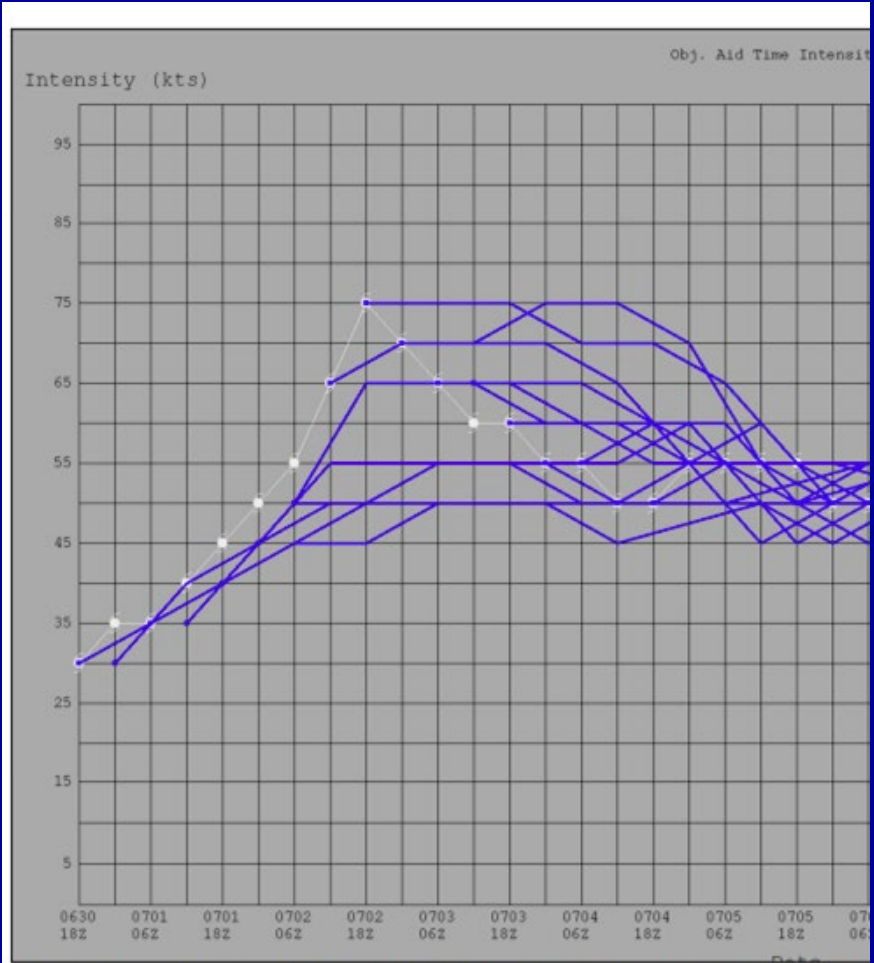
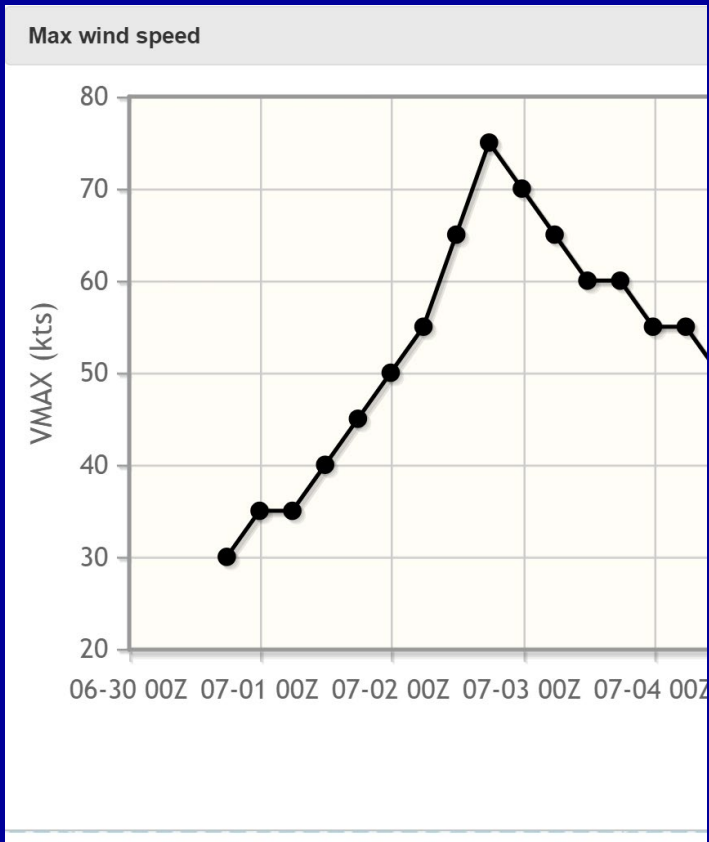
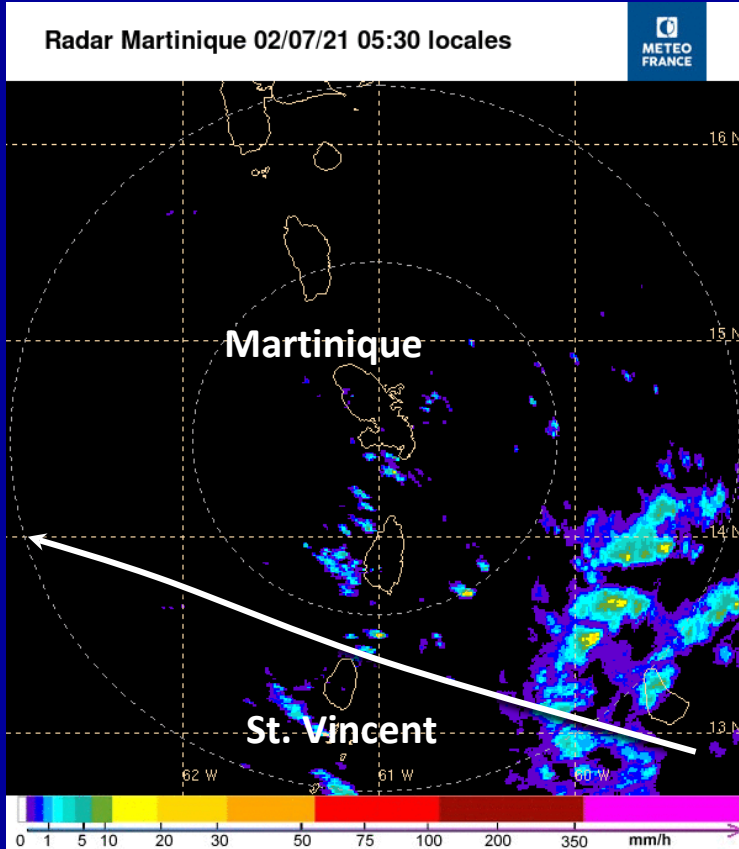
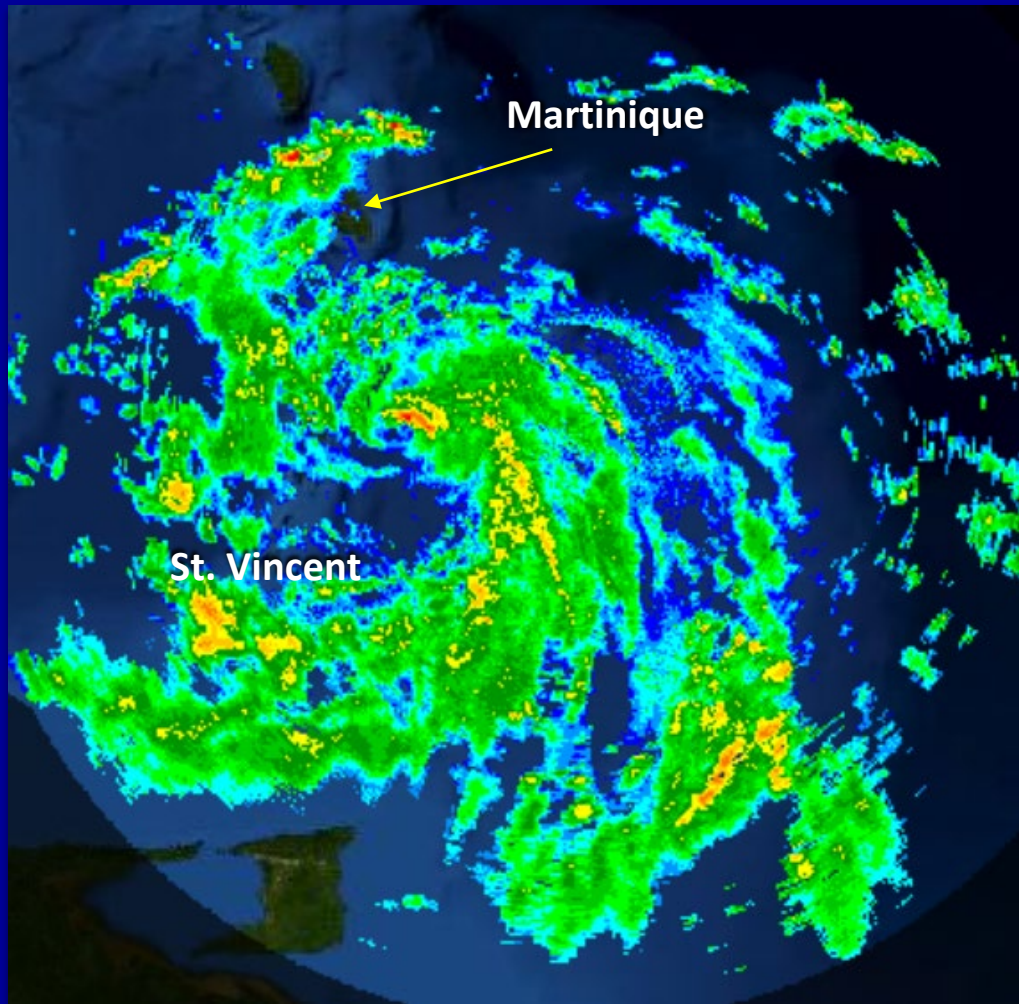


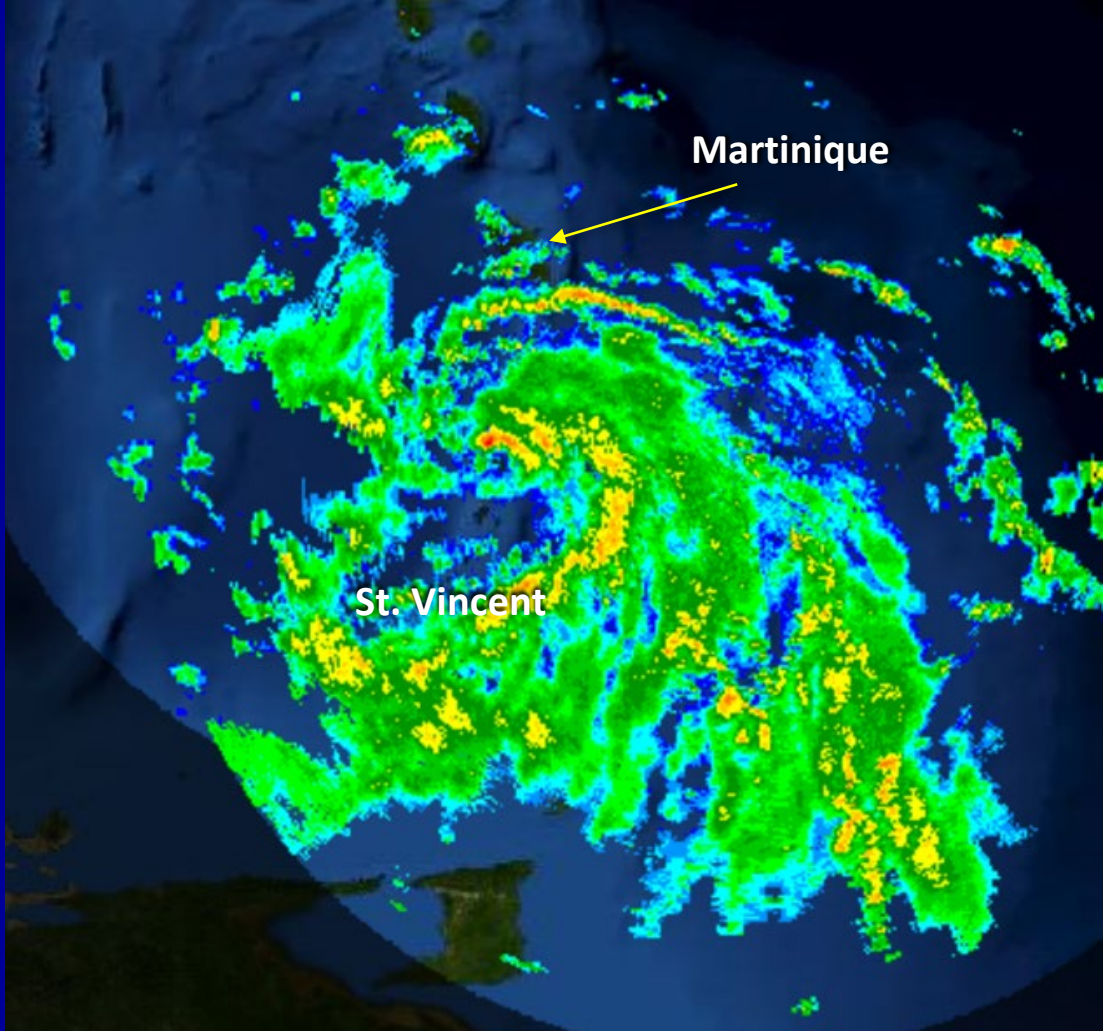
Figure 10. NHC intensity forecasts (kt) for Hurricane Elsa from 1800 UT by the white line.

Radar Imagery



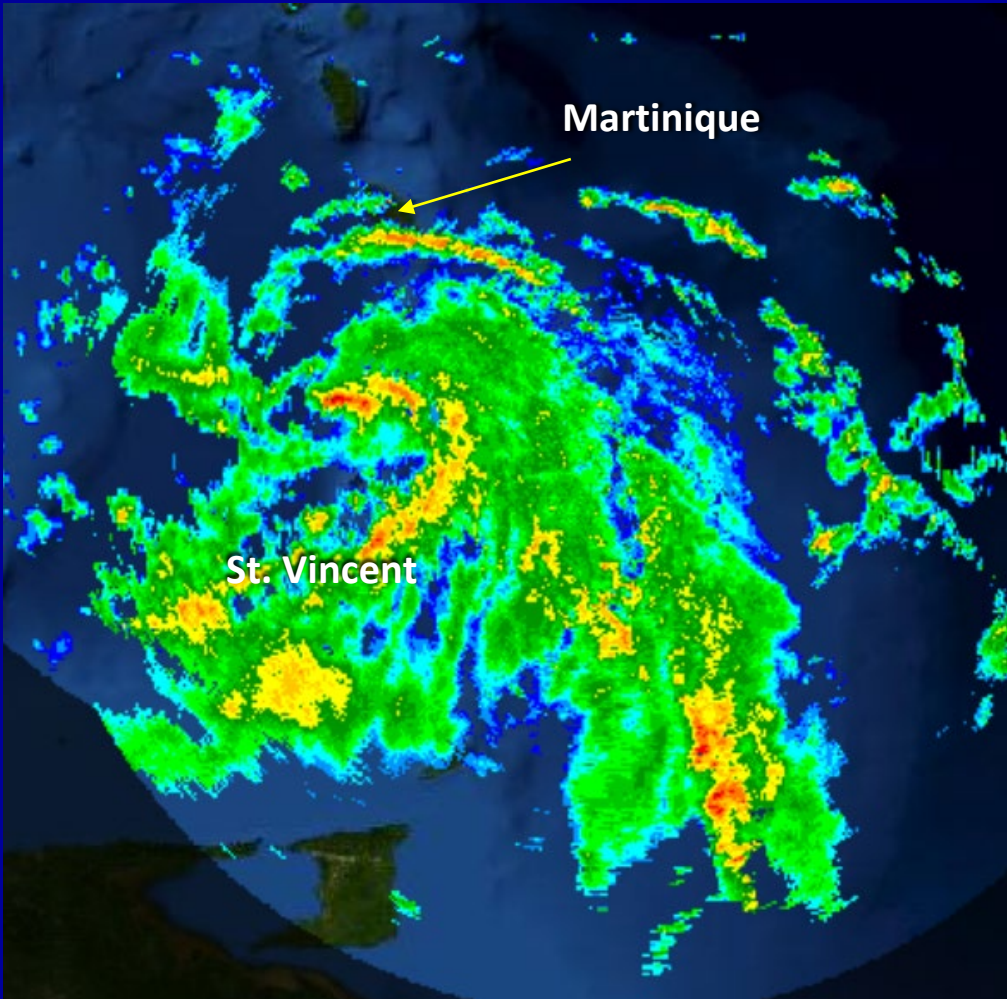
- Small inner core formed early on Friday morning, leading to rapid intensification and Elsa becoming a hurricane
- Center passed in between Martinique to the north and St. Vincent to the south

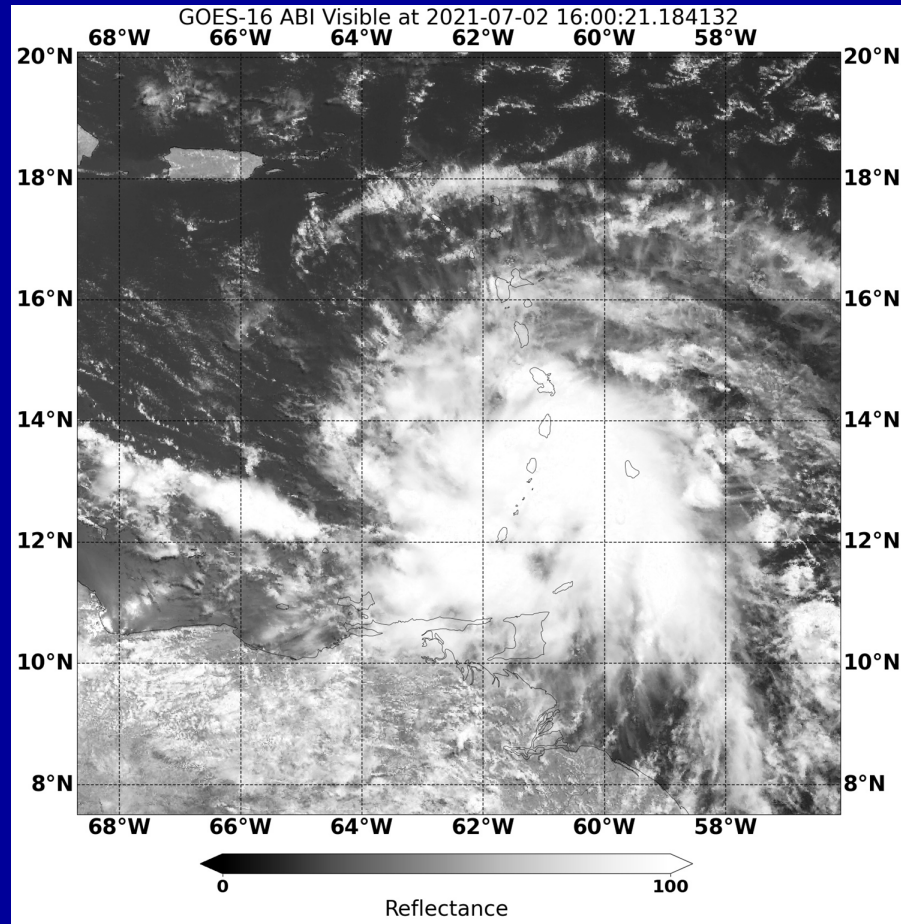
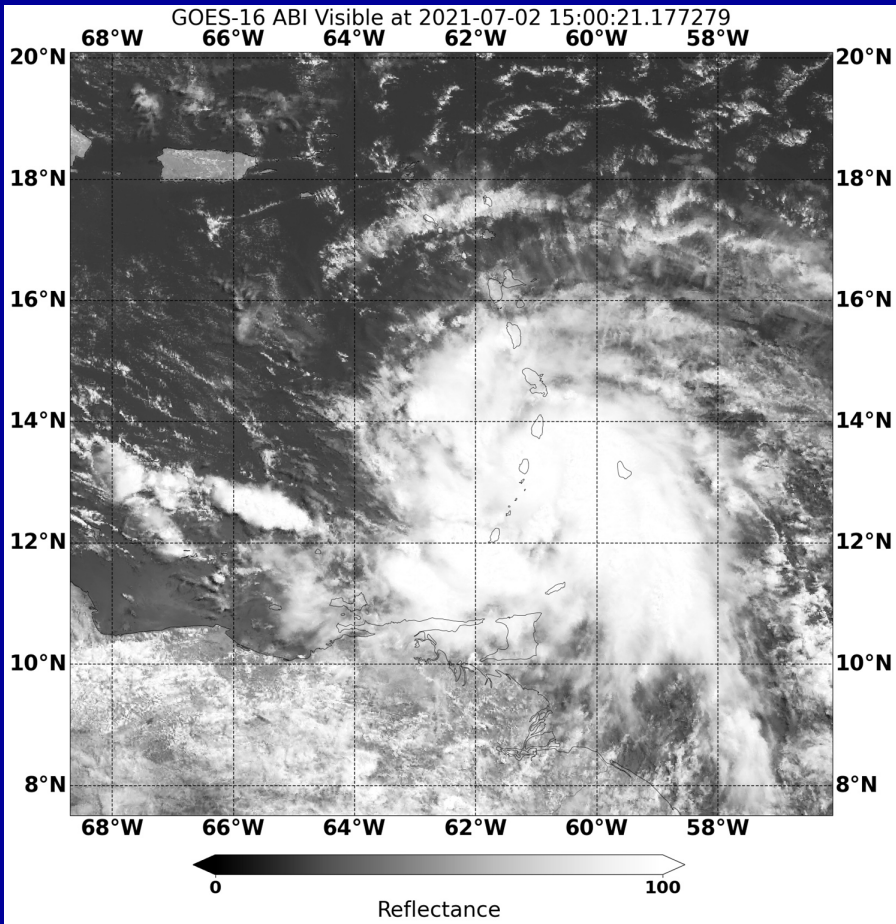




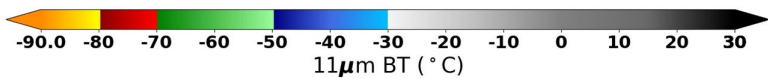
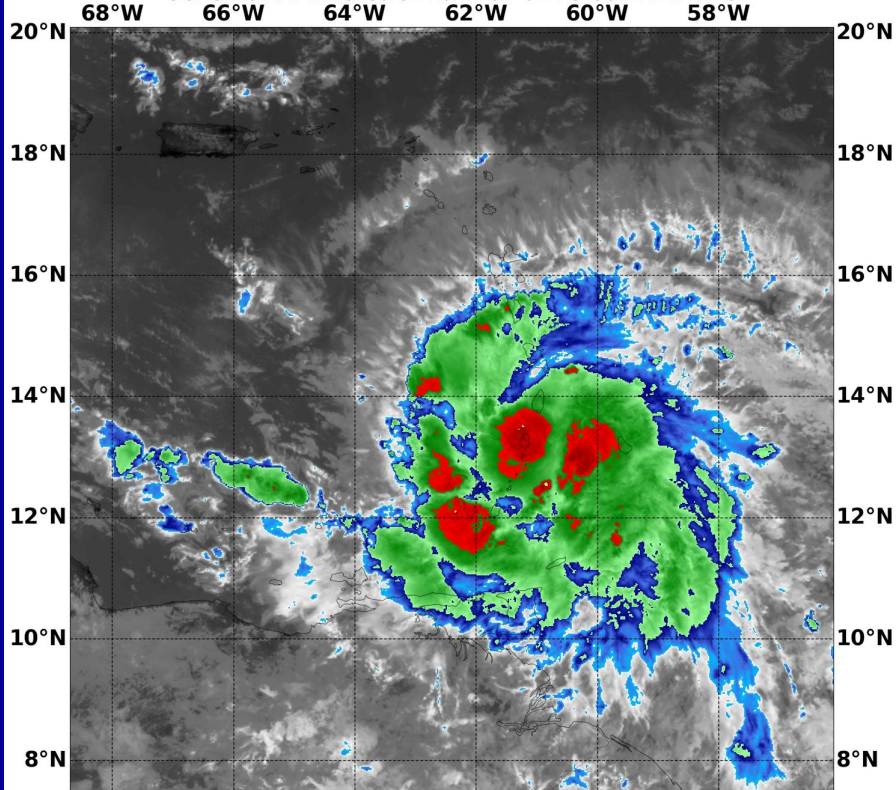
Martinique

St. Vincent

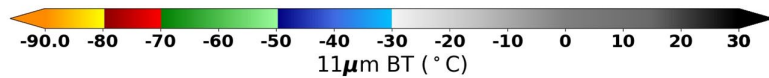
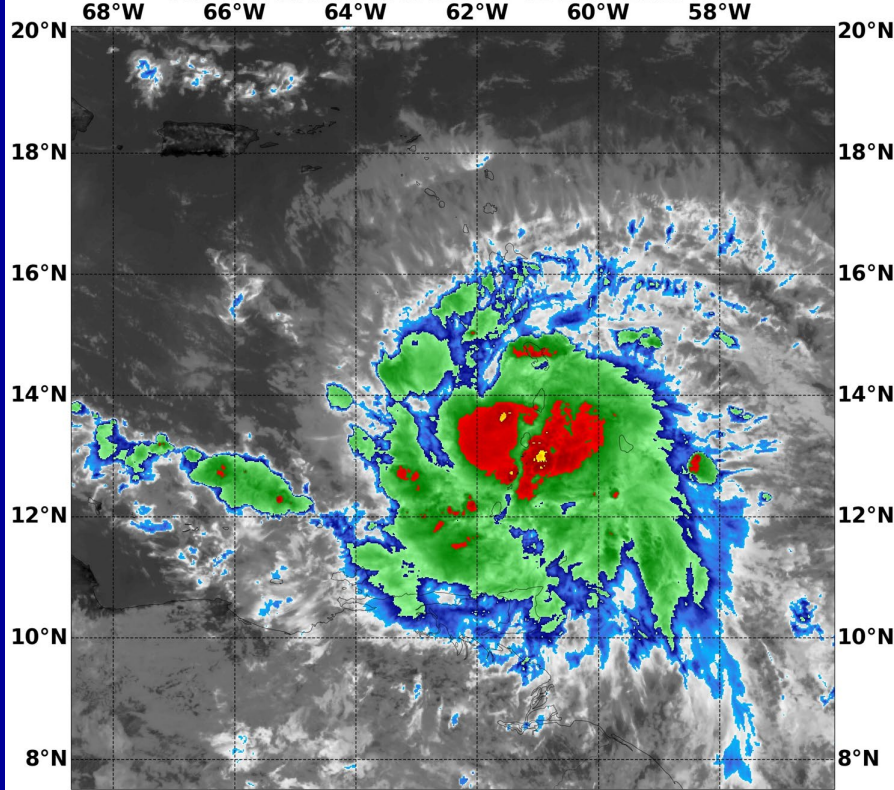




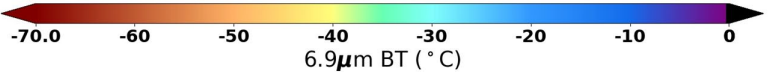
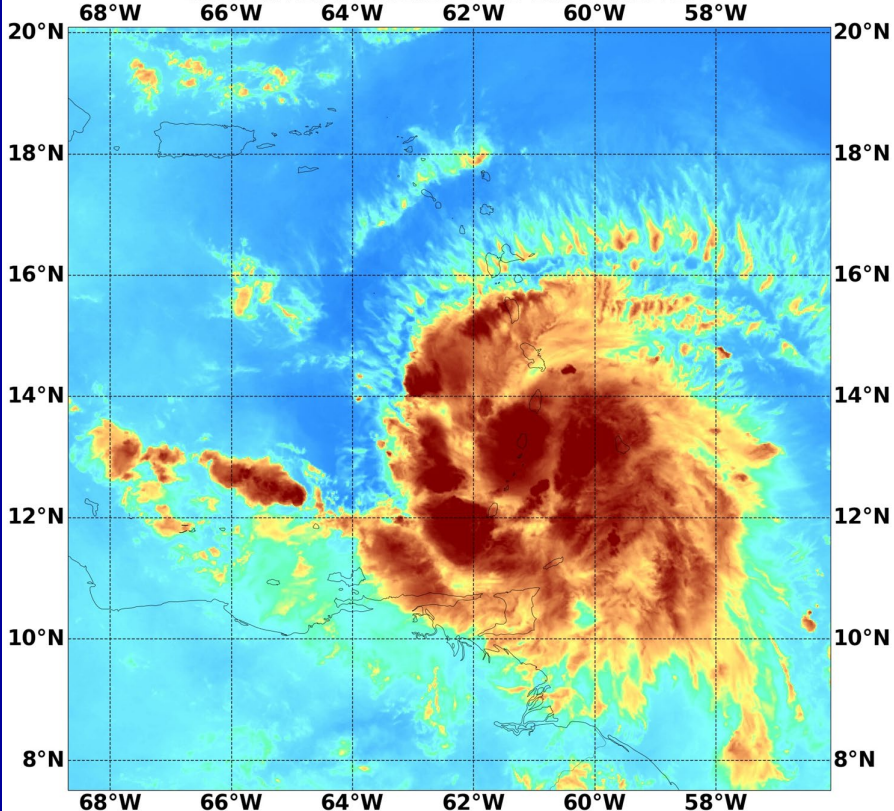
GOES-16 ABI Infrared at 2021-07-02 15:00:21.177279



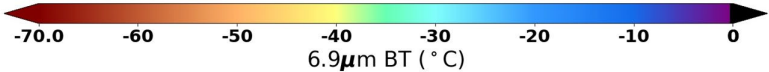
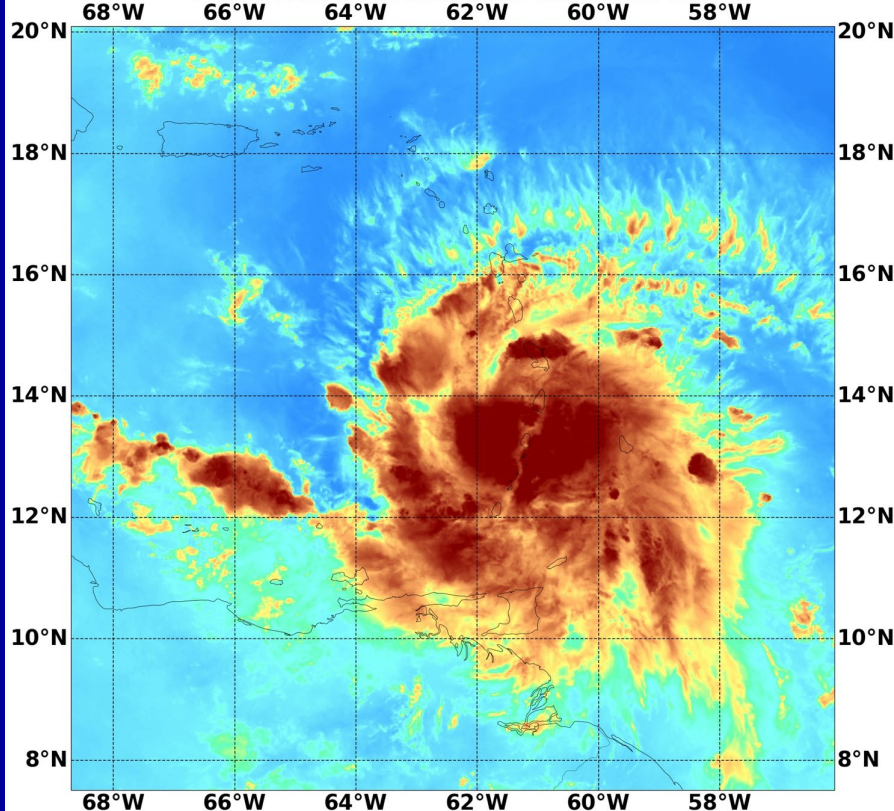
GOES-16 ABI Infrared at 2021-07-02 16:00:21.184132



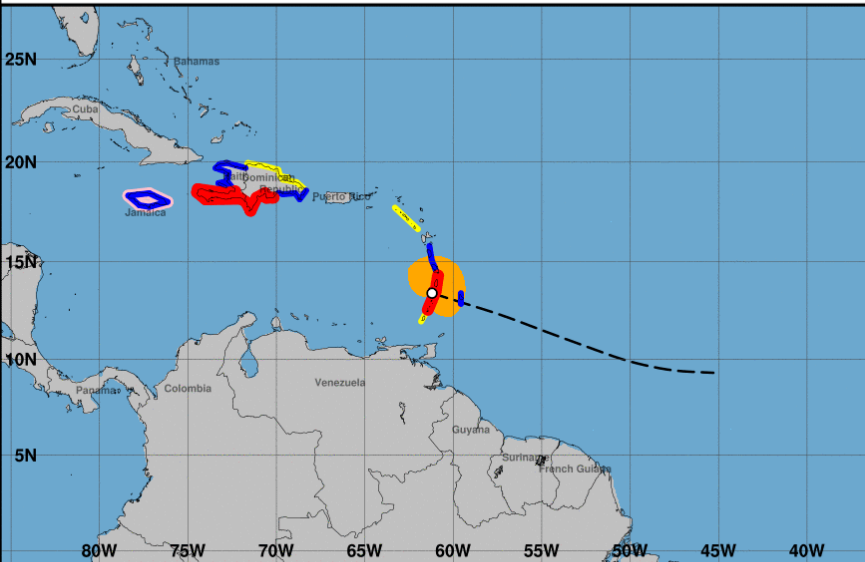
GOES-16 ABI WV at 2021-07-02 15:00:21.177279



GOES-16 ABI WV at 2021-07-02 16:00:21.184132

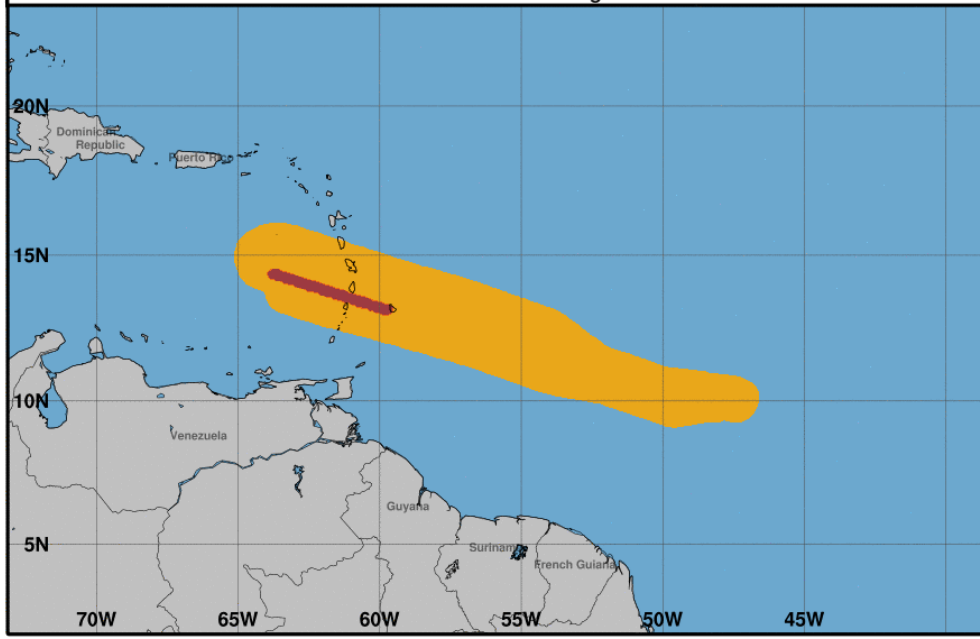


Surface Wind Field of Hurricane Elsa
 Sustained Winds as of 1100 AM AST Fri Jul 02, 2021 Advisory Number 9



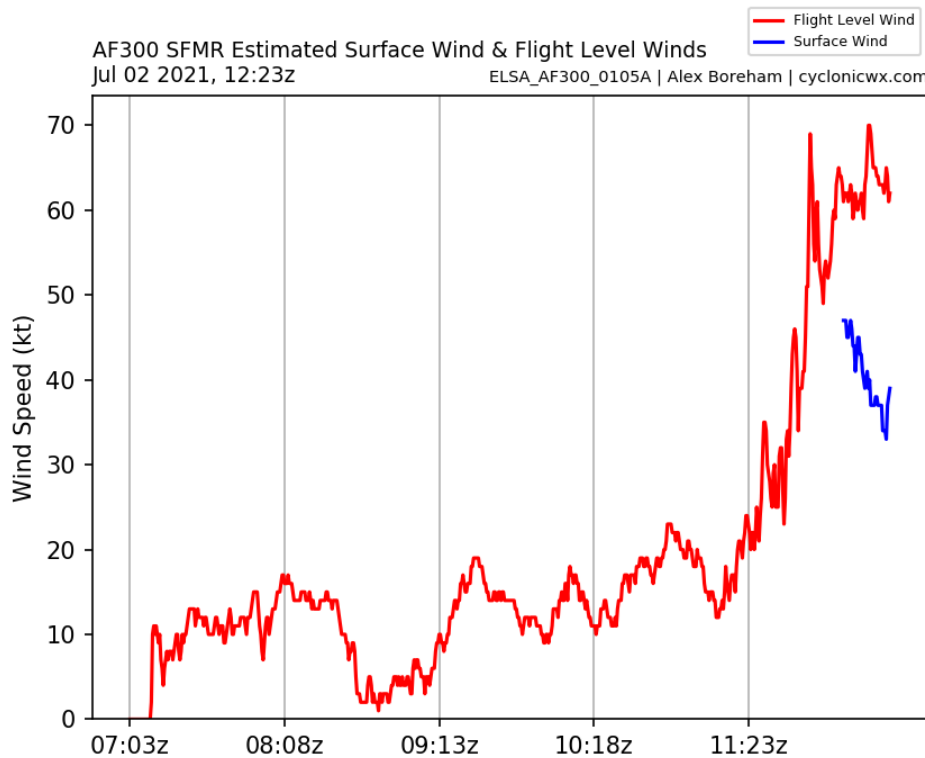
Watches:	Warnings:	Sustained Winds:	Position:
Hurricane Watch	Hurricane Warning	Hurricane Force	Center as of 1100 AM AST
Tropical Storm Watch	Tropical Storm Warning	Tropical Storm Force	Past Track

National Weather Service - National Hurricane Center
 Tropical Storm and Hurricane Force Wind Swaths of Elsa
 From Advisories 1 Through 10



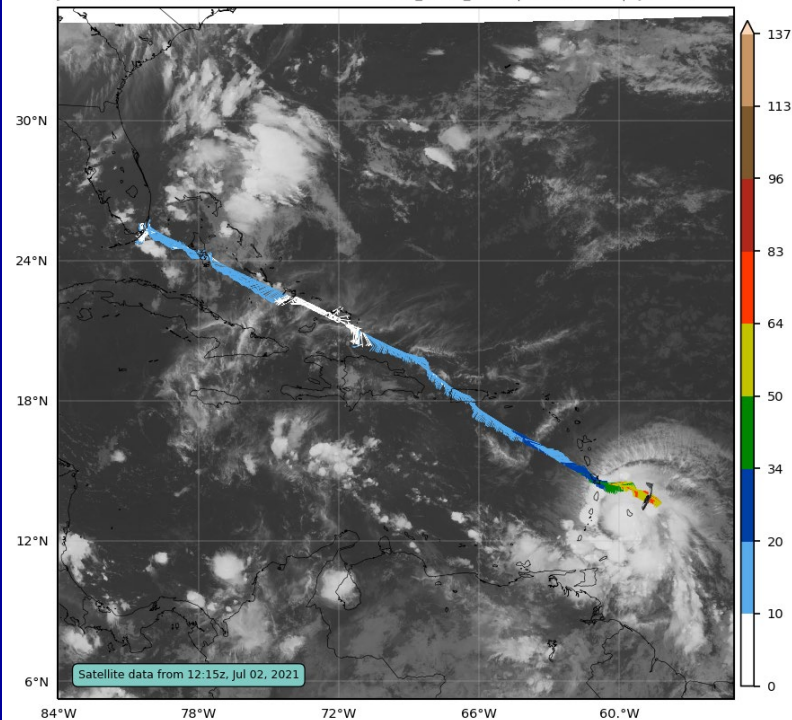
AF300 SFMR Estimated Surface Wind & Flight Level Winds Jul 02 2021, 12:23z

ELSA_AF300_0105A | Alex Boreham | cyclonicwx.com

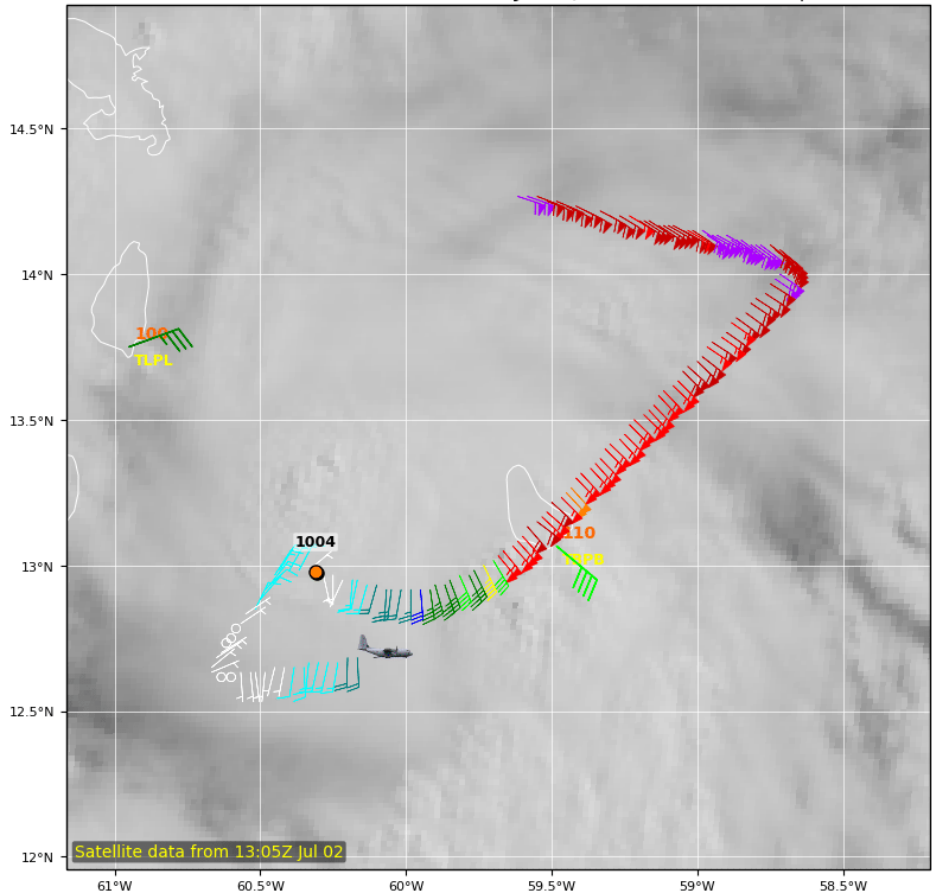


AF300 Recon Flight Level Winds [kt] & VDM Sea Level Pressures Jul 02, 2021, 12:23z

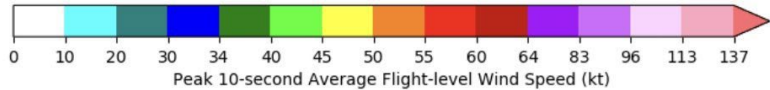
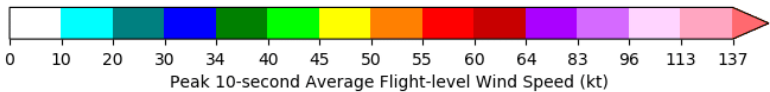
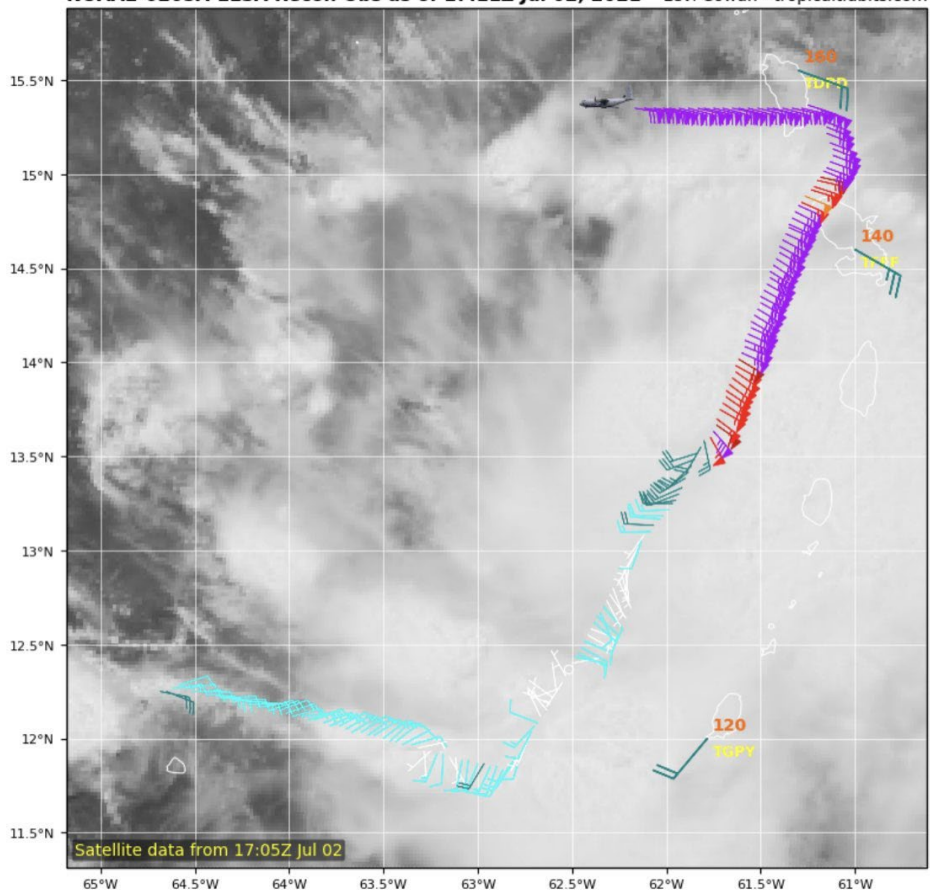
ELSA_AF300_0105A | Alex Boreham | cyclonicwx.com



AF300-0105A-ELSA Recon Obs as of 13:13Z Jul 02, 2021 Levi Cowan - tropicaltidbits.com



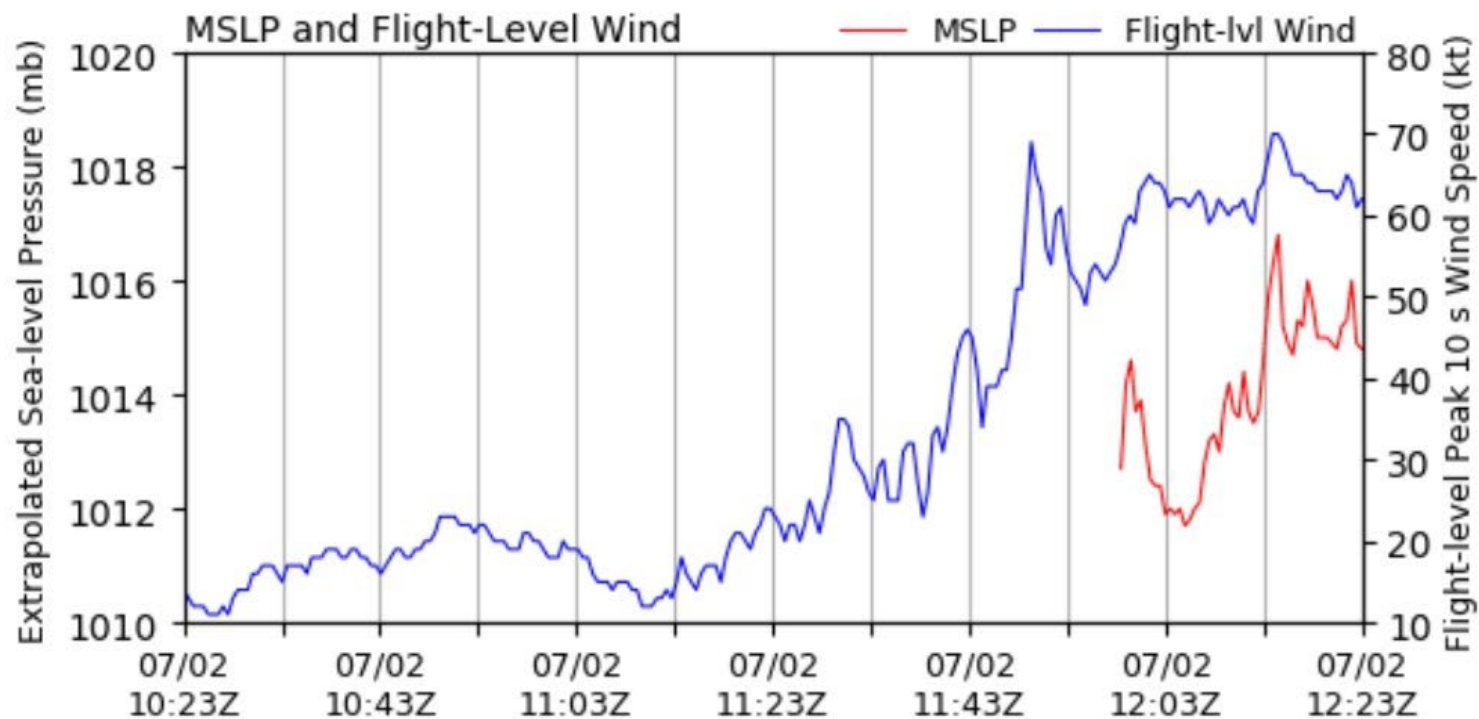
NOAA2-0205A-ELSA Recon Obs as of 17:11Z Jul 02, 2021 Levi Cowan - tropicaltidbits.com



Recon Aircraft Observations

Mission ID: AF300-0105A-ELSA

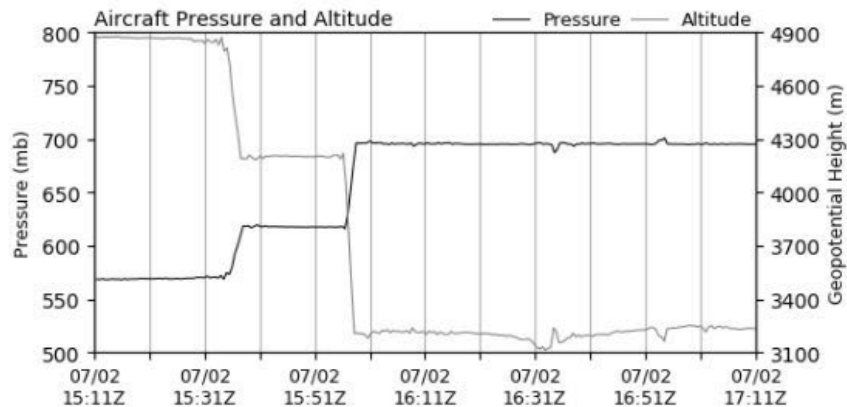
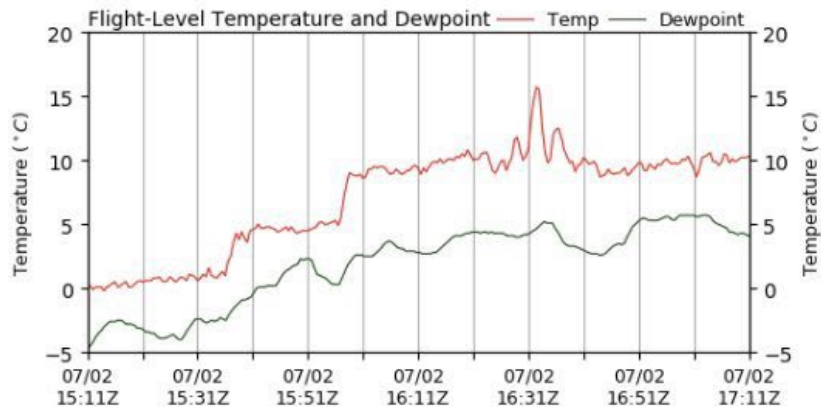
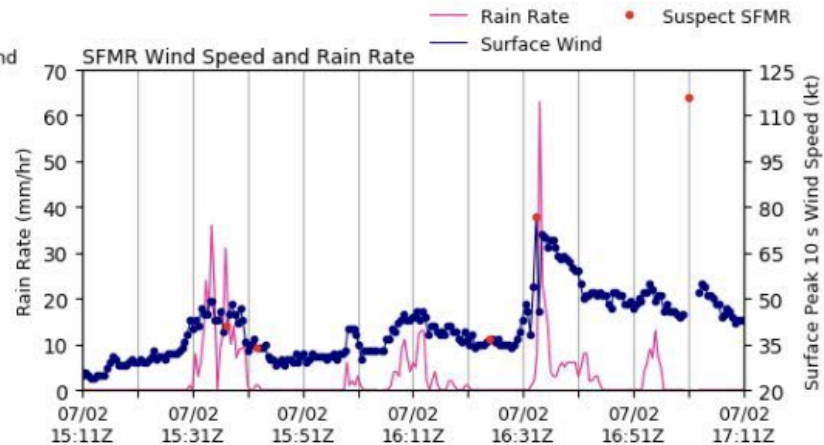
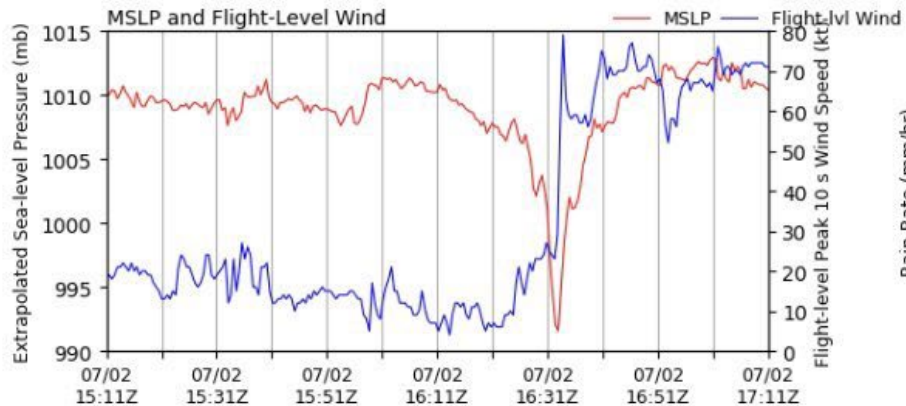
Levi Cowan - tropicaltidbits.com



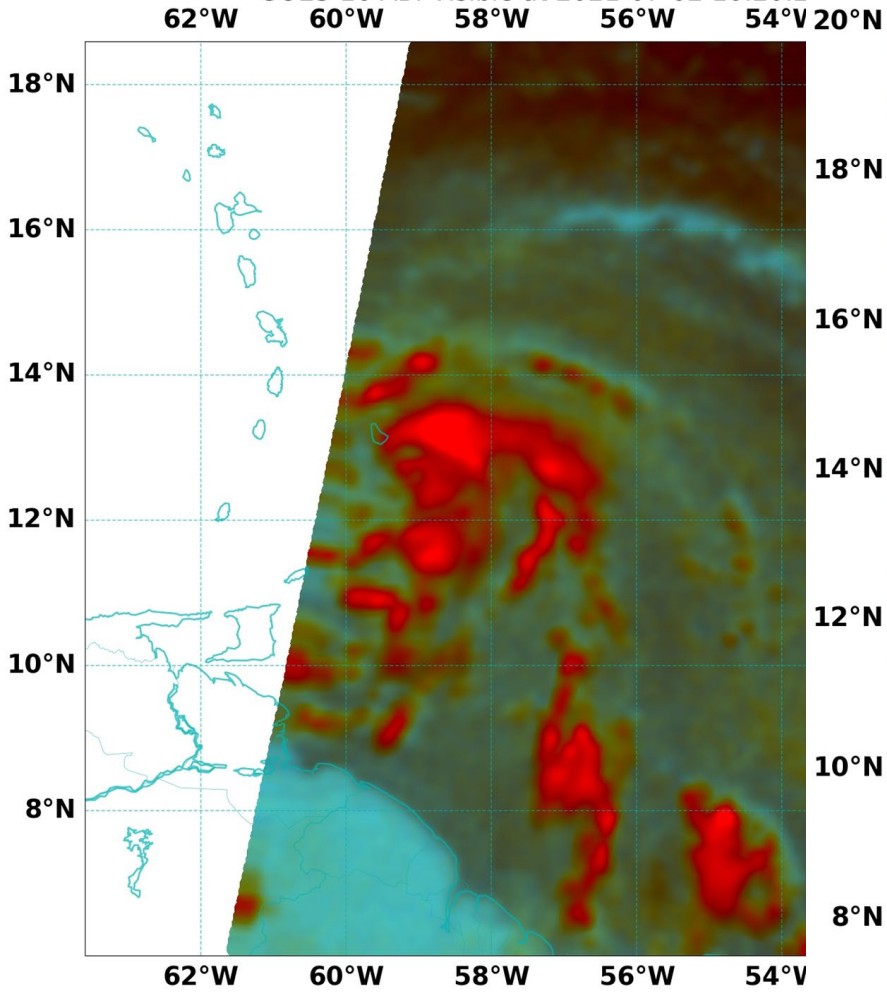
Recon Aircraft Observations

Mission ID: NOAA2-0205A-ELSA

Levi Cowan - tropicaltidbits.com



AL05 ELSA at 2021-07-02 06:00:00, NRL-Mont
F17 SSMIS color89 at 2021-07-02 10:08:00
GOES-16 ABI Visible at 2021-07-02 10:20:2



AL05 ELSA at 2021-07-02 18:00:00, NRL-Monterey
F18 SSMIS color89 at 2021-07-02 20:18:00

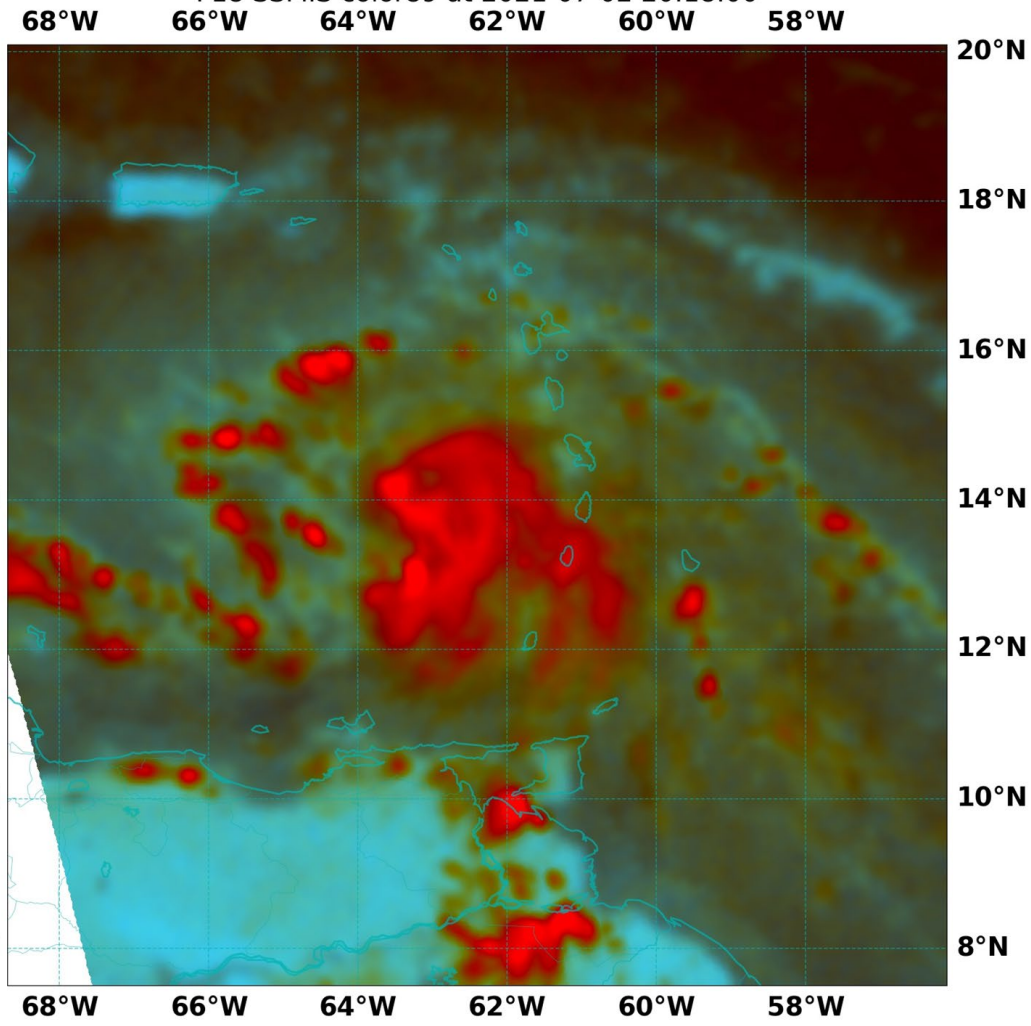


Table 3. Selected surface observations for Hurricane Elsa, 30 June–9 July 2021.

Location	Minimum Sea Level Pressure		Maximum Surface Wind Speed			Storm surge (ft) ^d	Storm tide (ft) ^d	Estimated Inundation (ft) ^e	Total rain (in)
	Date/time (UTC)	Press. (mb)	Date/time (UTC) ^a	Sustained (kt) ^b	Gust (kt)				
Barbados									
Grantley Adams Airport (TBPB)	2/1100	1005.4	2/1122	65	78				3.60
Saint Lucia									
Hewanorra Airport (TLPL)			2/1400	40	69				
George F.L. Charles Airport (TLPC)			2/1600	29	66				
Saint Vincent and the Grenadines									
J.F. Mitchell Airport			2/1700	29	42				
Argyle International Airport			2/2030	24	33				1.36
South Rivers (CWSA)									2.35
Majorca (CWSA)									2.26
Martinique									
Lamentin Airport (TFFF)			2/1500	28 (3 m)	41				
Fond-Denis-Cadet			2/1645	39 (10 m/s)	74				1.99
Vaulin			2/1600	52 (17 m/s)	79				
Trinite			2/1617	27 (8 m/s)	60				
Lamentin	2/1200	1012.0	2/1400	37 (9 m/s)	49				
Fort France Negre			2/1528	21 (6 m/s)	49				
Lorrain			2/1625	16 (5 m/s)	47				1.06
Schoelcher (ISCHLC10) (14.61N 61.09W)	2/1344	1008.8	2/1609	33 (16 m)	42				

St. Lucia, St. Vincent, and Martinique

The center of Elsa passed between St. Lucia and St. Vincent on 2 July and very strong winds moved across those islands resulting in **widespread tree damage, fallen power lines, and significant damage to the banana crop**. In St. Lucia, about 90% of the island's homes were out of power and in **St. Vincent the main impact was tree damage and flooding**. Damage was more minor in Martinique; however, one fatality was reported there. **A 67-year-old man sustained head injuries and later passed away when gusty winds caused a small wind turbine to fall on his vehicle.**