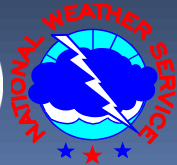
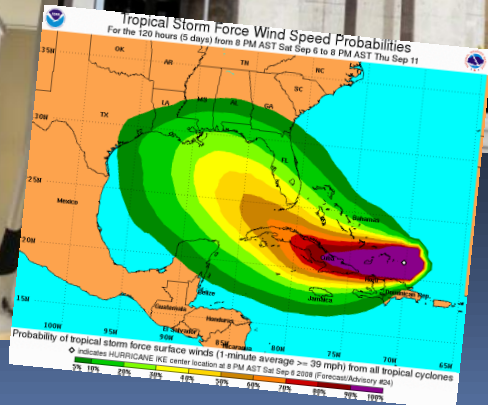
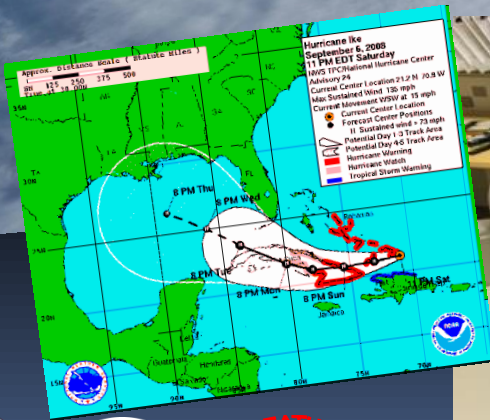
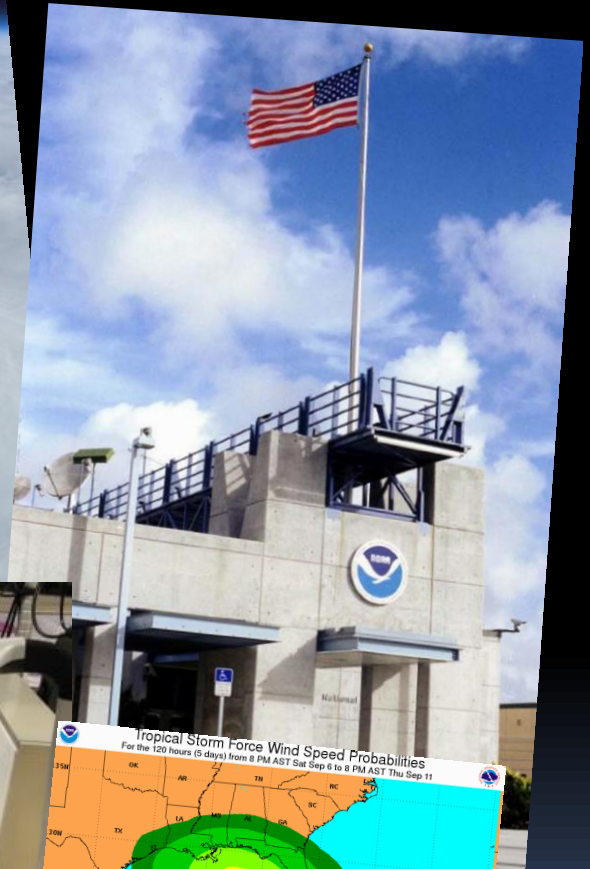


2019 WMO RA-IV Workshop Advisory Preparation Exercise (Student Version)



Outline

Setting the Stage (00:00-00:45)

- Plotting Fixes
- Determining Initial Location, Intensity, and Size
- Send and receive model guidance

Creating the Forecast (00:45-02:00)

- Track
- Intensity
- Wind Radii

Outline

Forecast Coordination (02:00-02:15)

- Coordinate U.S. and International Watches/Warnings
- Coordinate rainfall and other TC hazards

Product Preparation (02:15-03:00)

- Public Advisory
- Discussion

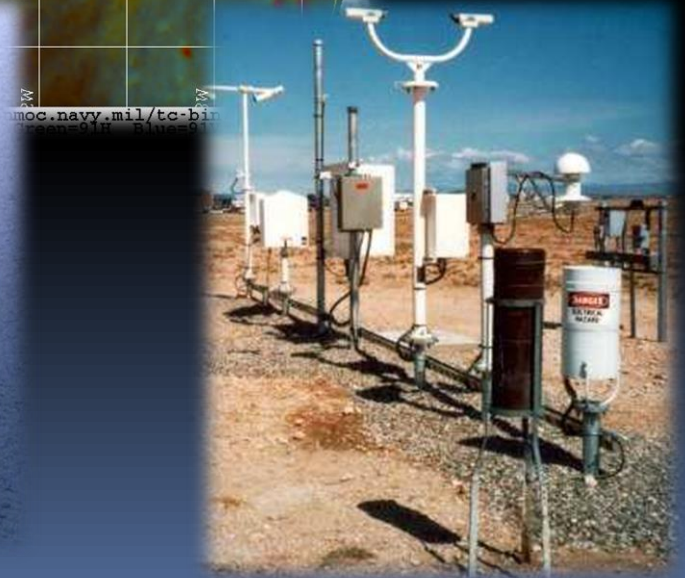
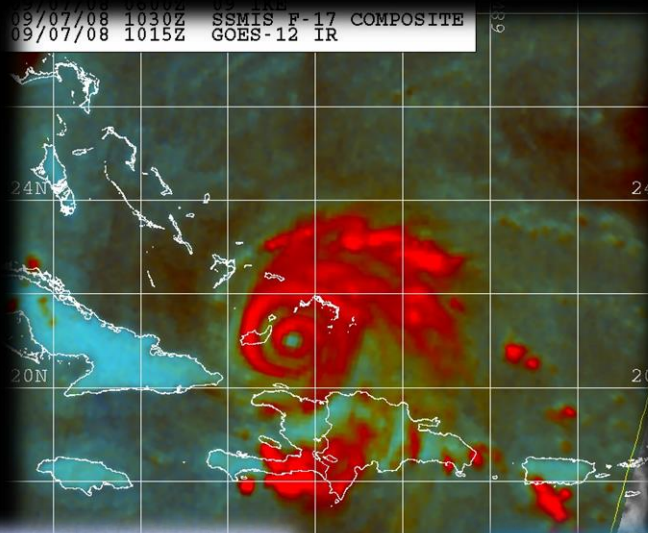
NHC Forecast Cycle

Time (HR : MIN)	Event
00:00	Issue Tropical Weather Outlook Issue Intermediate Public Advisory (if necessary) Synoptic time / cycle begins
00:45	Receive satellite fix data
01:00	Initialize models
01:10	Receive model guidance and <i>prepare forecast</i>
02:00	NWS / DOD hotline coordination
03:00	Advisory deadline
03:15	FEMA conference call
06:00	New cycle begins

18:00 UTC

Synoptic time / cycle begins

Hurricane specialist analyzes available observations



SAB Satellite- Black Square

Air Force Aircraft- Red Triangle

NOAA Aircraft – Blue Triangle

NHC Advisory Composition Worksheet

Forecasters use worksheet to supplement the ATCF computer system.

National Hurricane Center Advisory Composition Worksheet

Cyclone Name	ATCF ID	Adv #	Special	Last	Date	Time (UTC)	Forecaster(s)
WMODEMO	ALXX20XX	10	<input type="checkbox"/>	<input type="checkbox"/>	Aug 29, 20XX	2100	??????
Watches and Warnings							
Hazards Statements	<input type="checkbox"/> Storm Surge						
	<input type="checkbox"/> Rainfall						
	<input type="checkbox"/> Tornadoes						
Notes	<input type="checkbox"/> Special Soundings						

Fcst Hr	Date/Time (UTC)	Lat (°N)	Lon (°W)	Dir/Spd (deg/kt)	Pres (mb)	Wind (kt)	Gusts (kt)	Status	Wind Radii (nm)				
									kt	NE	SE	SW	NW
0	29 / 00 06 12 18								34				
									50				
									64				
3	29 / 03 09 15 21								12				
		miles / km of											
12	___ / 12 18 00 06								34				
									50				
									64				
24	___ / 00 06 12 18								34				
									50				
									64				
36	___ / 12 18 00 06								34				
									50				
									64				
48	___ / 00 06 12 18								34				
									50				
72	___ / 00 06 12 18								34				
									50				
96	___ / 00 06 12 18												
120	___ / 00 06 12 18												

☐ TCM
☐ TCP
☐ PWS
☐ ICAO

☐ TCD
☐ TCV
☐ W/W Graphic

NHC Advisory Composition Worksheet

Forecasters use worksheet to supplement the ATCF computer system.

National Hurricane Center Advisory Composition Worksheet

Cyclone Name	ATCF ID	Adv #	Special	Last	Date	Time (UTC)	Forecaster(s)
AMS	ALXX20XX	10	<input type="checkbox"/>	<input type="checkbox"/>	Aug 29, 20XX	2100	??????
Watches and Warnings							
Hazards Statements	<input type="checkbox"/> Storm Surge						
	<input type="checkbox"/> Rainfall						
	<input type="checkbox"/> Tornadoes						
Notes	<input type="checkbox"/> Special Soundings						

Fcst Hr	Date/Time (UTC)	Lat (°N)	Lon (°W)	Dir/Spd (deg/kt)	Pres (mb)	Wind (kt)	Gusts (kt)	Status	Wind Radii (nm)				
									kt	NE	SE	SW	NW
0	29 / 00 06 12 (18)								34				
									50				
3	29 / 03 09 15 (21)								64				
		miles / km of							12				
12	30 / 12 18 00 (06)								34				
									50				
									64				
24	30 / 00 06 12 (18)								34				
									50				
									64				
36	31 / 12 18 00 (06)								34				
									50				
									64				
48	31 / 00 06 12 (18)								34				
									50				
72	1 / 00 06 12 (18)								34				
									50				
96	2 / 00 06 12 (18)												
120	3 / 00 06 12 (18)												

☐ TCM

☐ TCP

☐ PWS

☐ ICAO

☐ TCD

☐ TCV

☐ W/W Graphic

Working Best Track in ATCF through 1200 UTC



Reconnaissance Aircraft (Air Force) Scheduled between 1800-0000 UTC

000 NOUS42 KNHC 281430

WEATHER RECONNAISSANCE FLIGHTS

CARCAH, NATIONAL HURRICANE CENTER, MIAMI, FL

1030 AM EDT THU 28 AUG XXXX

SUBJECT: TROPICAL CYCLONE PLAN OF THE DAY (TCPOD)

VALID 29/1100Z TO 30/1100Z AUGUST XXXX

TCPOD NUMBER.....XX-089

I. ATLANTIC REQUIREMENTS

1. TROPICAL STORM AMS FLIGHT ONE -- TEAL 72

A. 29/1800, 30/0000Z

B. AFXXX 1007A AMS

C. 29/1515Z

D. 18.7N 79.9W

E. 29/1700Z TO 30/0000Z

F. SFC TO 10,000 FT

FLIGHT TWO -- NOAA 49

A. 30/0000Z

B. NOAA9 1107A AMS


C. 29/1730Z

D. NA

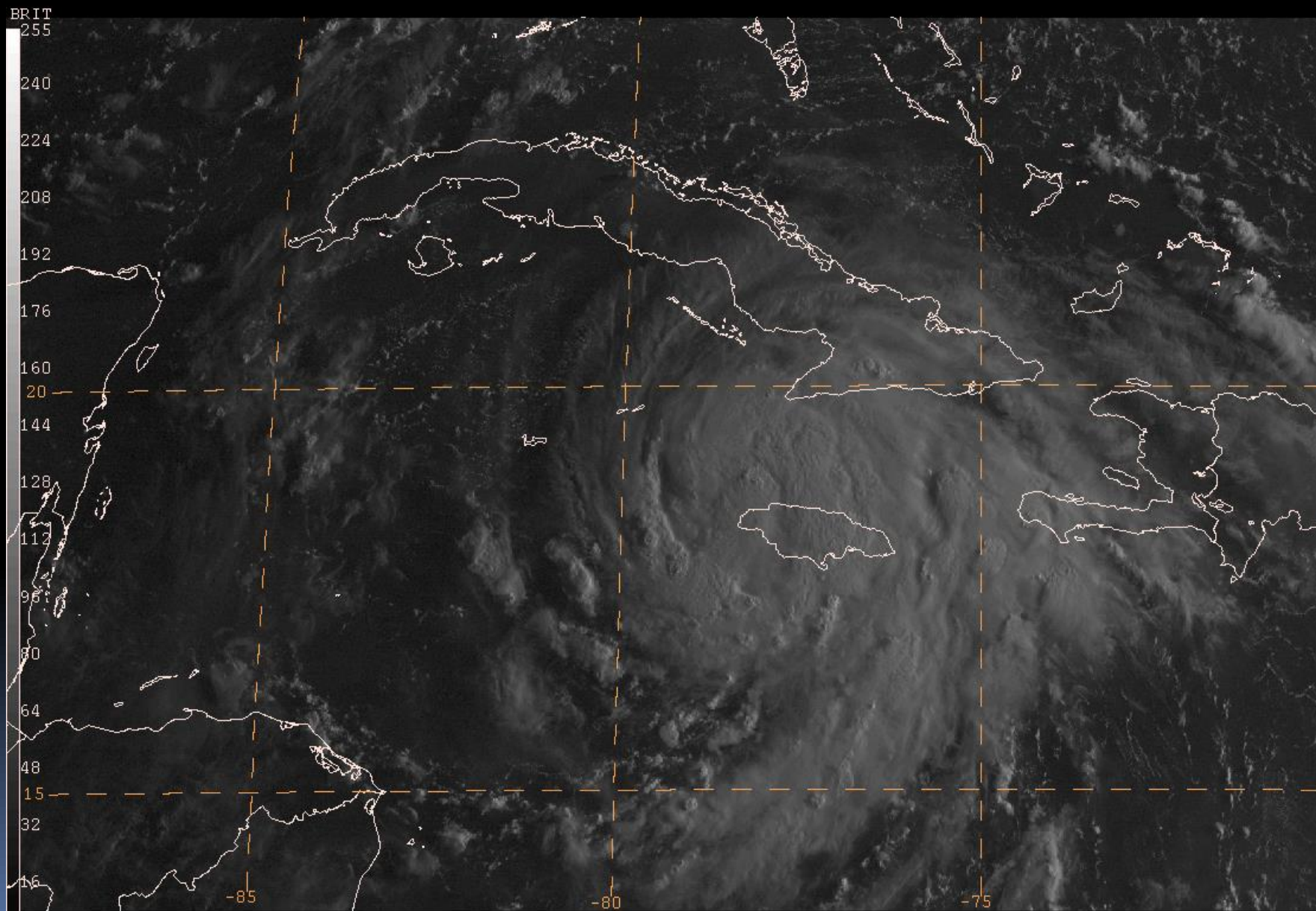
E. NA

F. 41,000 TO 45,000 FT

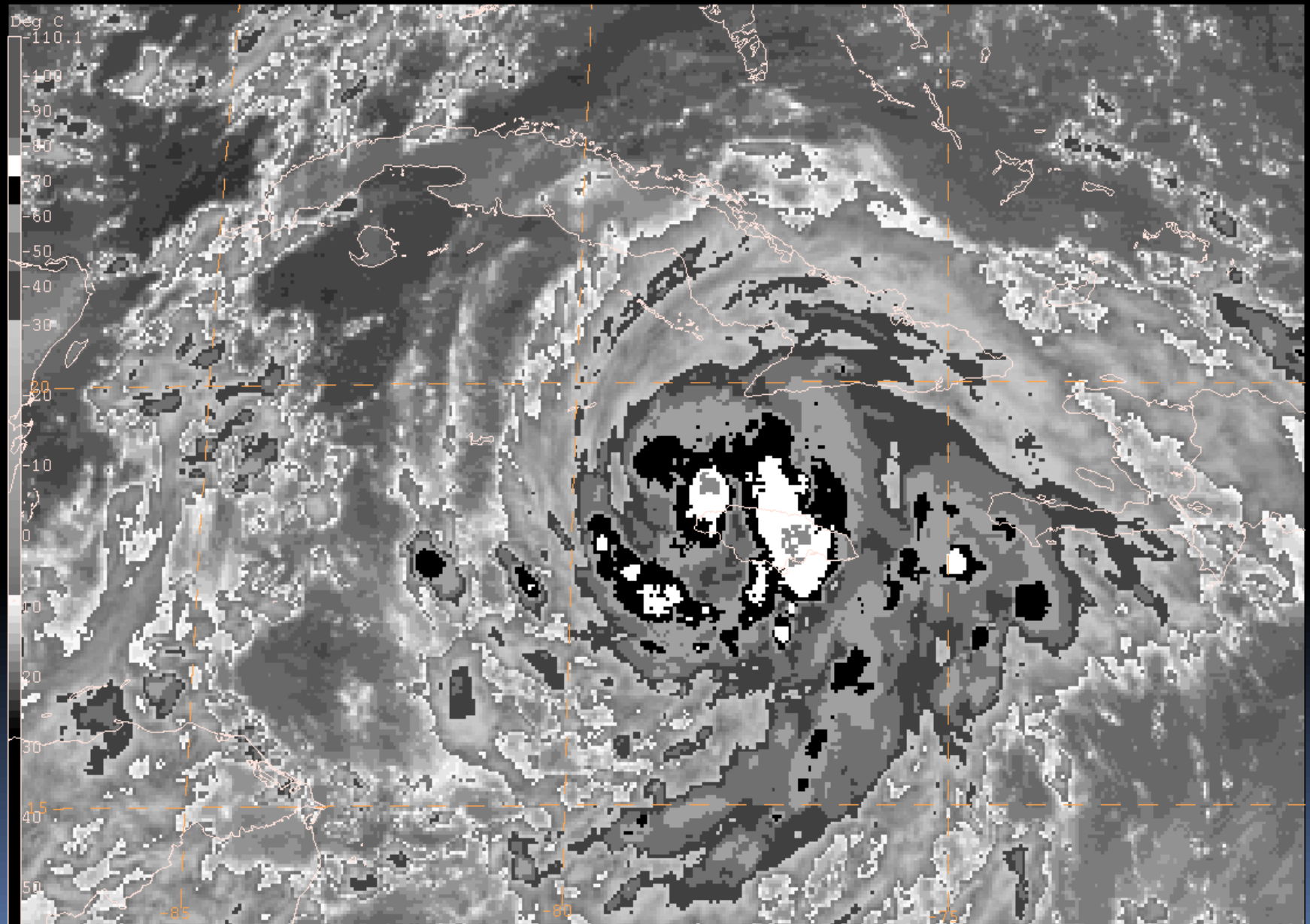
G-IV flight planned
for 0000 UTC
departing at 1730 UTC



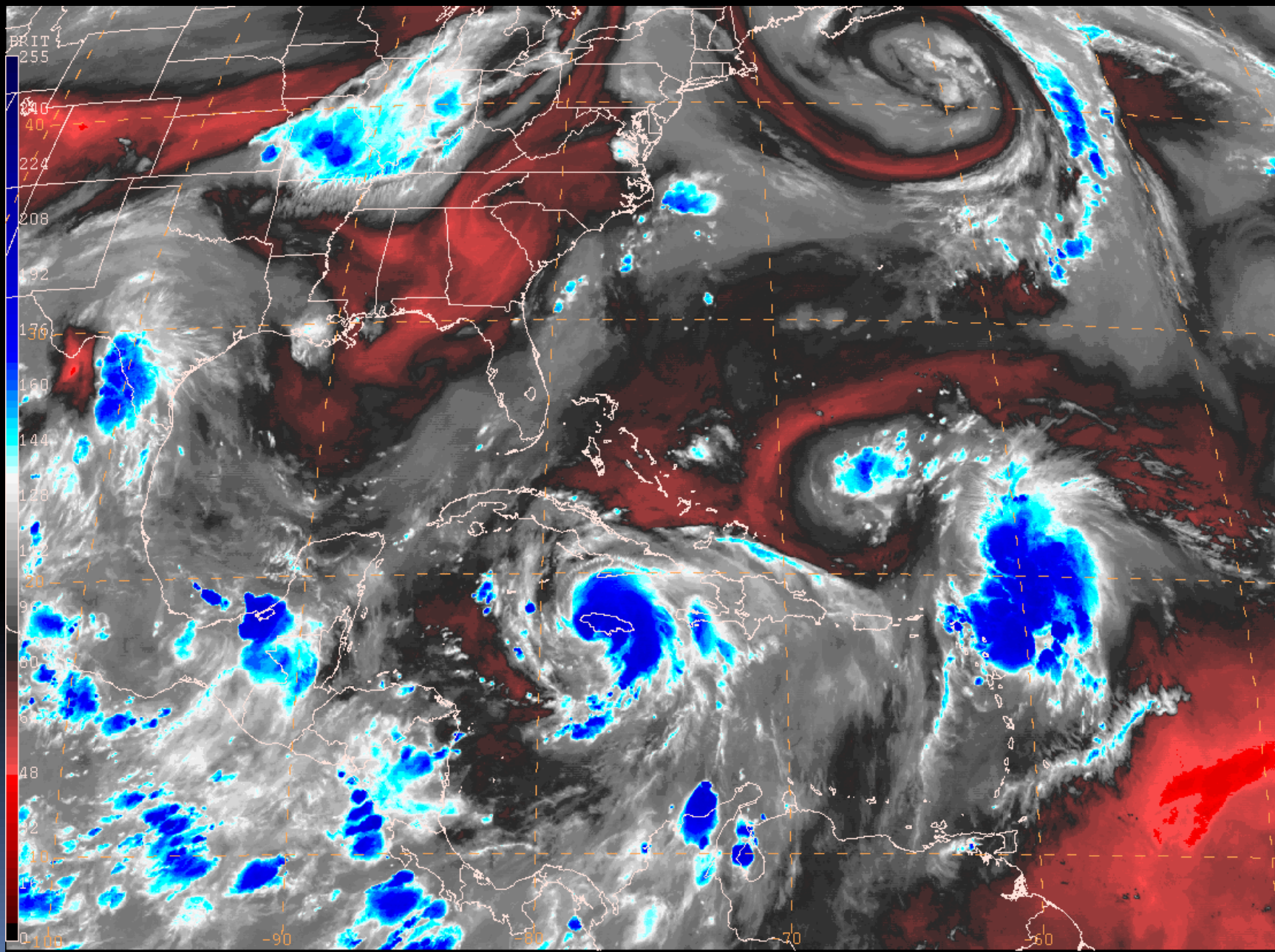
Visible Satellite Loop 1145-1745 UTC



IR Satellite Loop 1145-1745 UTC

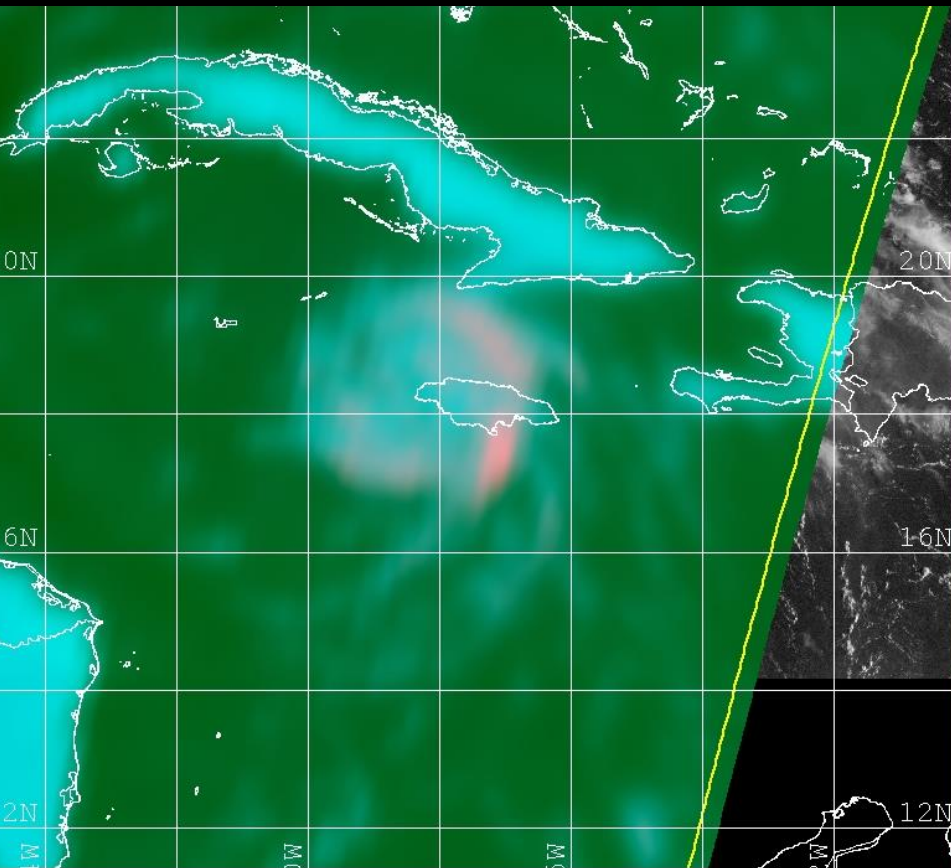


Water Vapor Loop 0645-1745 UTC



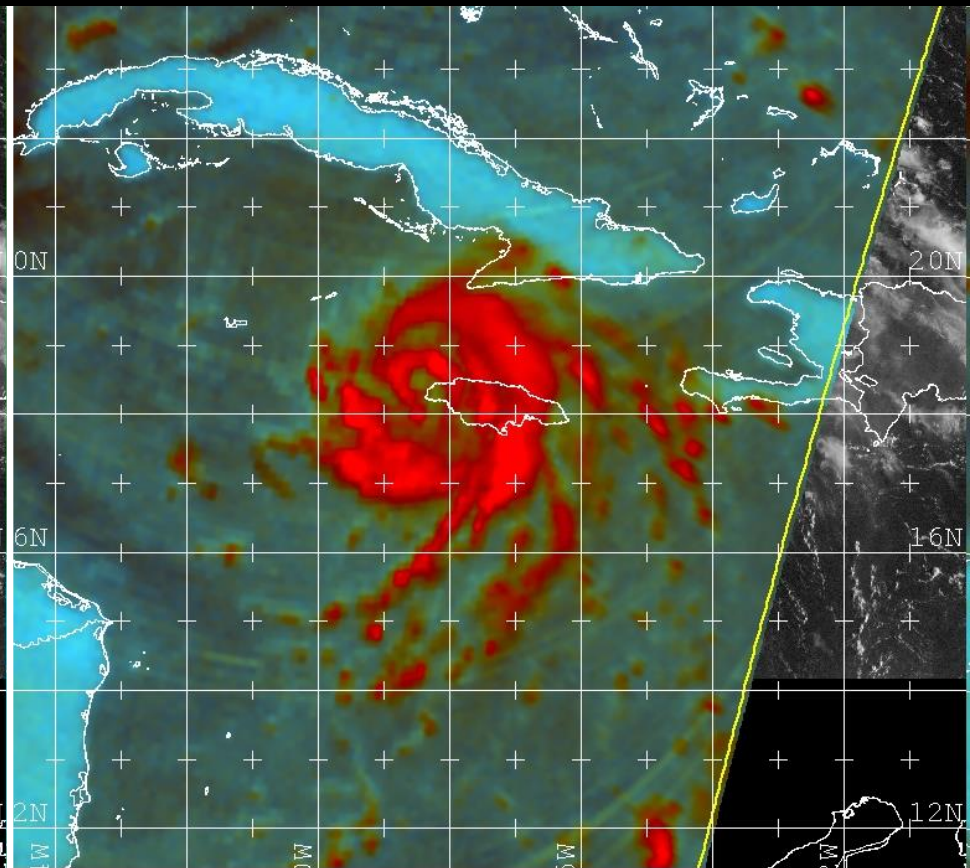
SSMIS Microwave Image 29/1318 UTC

analyze center and plot fix



Naval Research Lab www.nrlmry.navy.mil/sat_products.html
Red=37PCT Green=37V Blue=37H

37 GHz Color Composite



Naval Research Lab www.nrlmry.navy.mil/sat_products.html
Red=91PCT Green=91H Blue=91V

91 GHz Color Composite

Let's enter the Microwave Fix

Enter Fixes - AMS a1792010

Satellite - Subj. Dvorak...

Satellite - Obj. Dvorak...

Microwave - SSM/I, TRMM ...

Radar...

Aircraft...

Dropsonde...

Analysis/Synoptic...

OK



Interactive display

- <http://www.hfip.org/nhc-display/>
- Database source
 - Working
- Year
 - 2014
- Select storm number from worksheet provided

Let's enter the Microwave Fix

Microwave Fix Data - AMS al792010

* C/I ☐ Center Fix ☐ Max Wind Speed Fix ☐ Wind Radii Fix ☐ Min Sfc Pressure Fix

* DTG (YYYYMMDDHHMM)

Lat N ☐ N ☐ S Lon E ☐ E ☐ W

Posit. Conf.
☐ Good
☐ Fair
☐ Poor

* Satellite Type

Max. Wind Speed kts Confidence ☐ Good ☐ Fair ☐ Poor

34 knot winds ☐ Circle ☐ Quadrants

<input type="text"/> nm NE	<input type="checkbox"/> Edge of Pass	<input type="checkbox"/> Cut off by land
<input type="text"/> nm SE	<input type="checkbox"/> Edge of Pass	<input type="checkbox"/> Cut off by land
<input type="text"/> nm SW	<input type="checkbox"/> Edge of Pass	<input type="checkbox"/> Cut off by land
<input type="text"/> nm NW	<input type="checkbox"/> Edge of Pass	<input type="checkbox"/> Cut off by land

Wind Radii Conf.
☐ Good
☐ Fair
☐ Poor

☐ Rain Rain rate mm/h

Rain Algorithm ☐ FNMOC ☐ NESDIS ☐ RSS

SLP mb Confidence ☐ Good ☐ Fair ☐ Poor

Temperature celsius Wave Height feet

Eye Diameter nm Max Seas feet

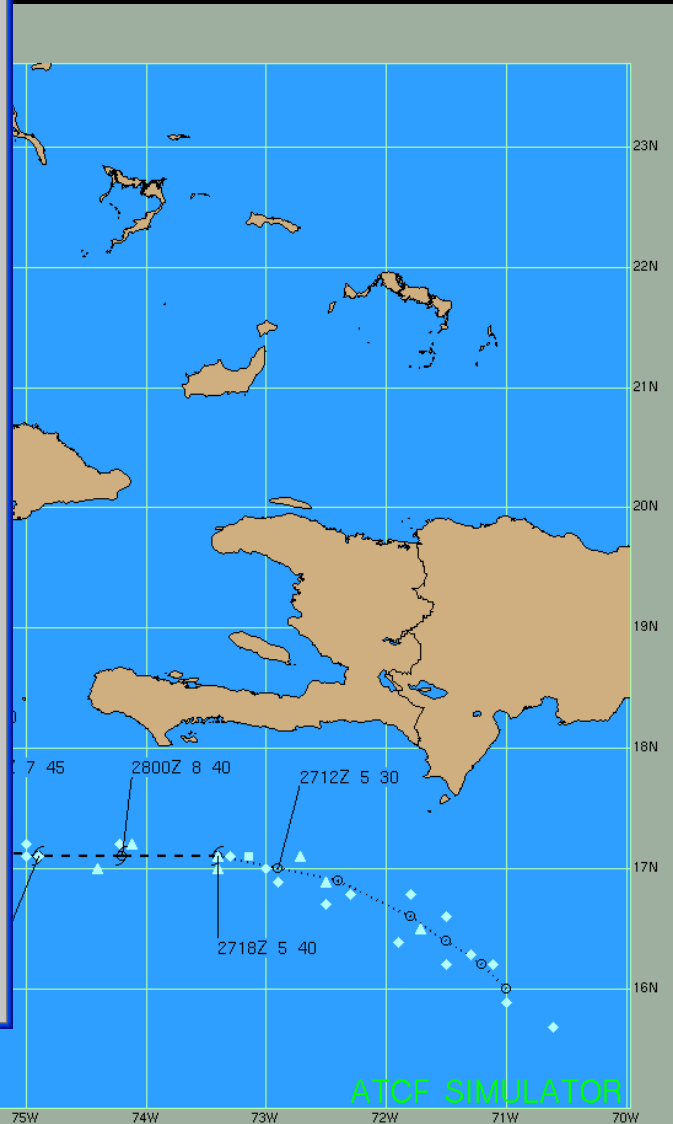
Comments

* Fix Site

Initials

* Fields marked with an asterisk (*) are required.

OK Cancel

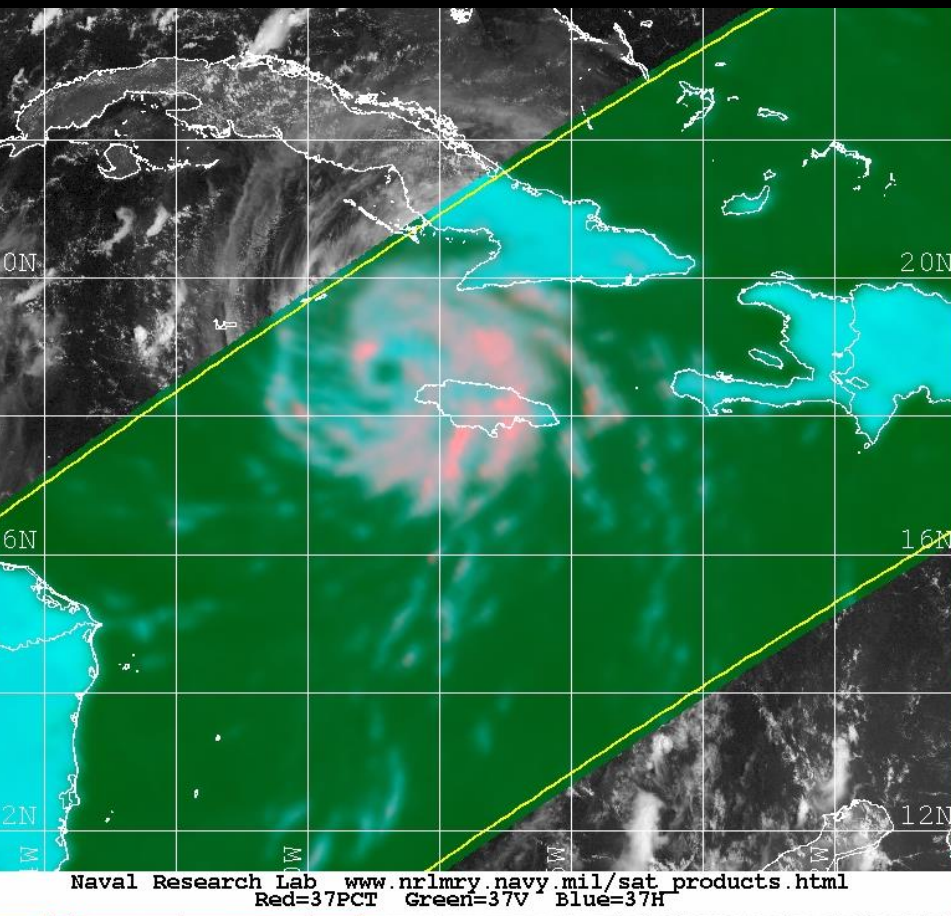


Working Best Track with 1318 UTC SSMIS Fix

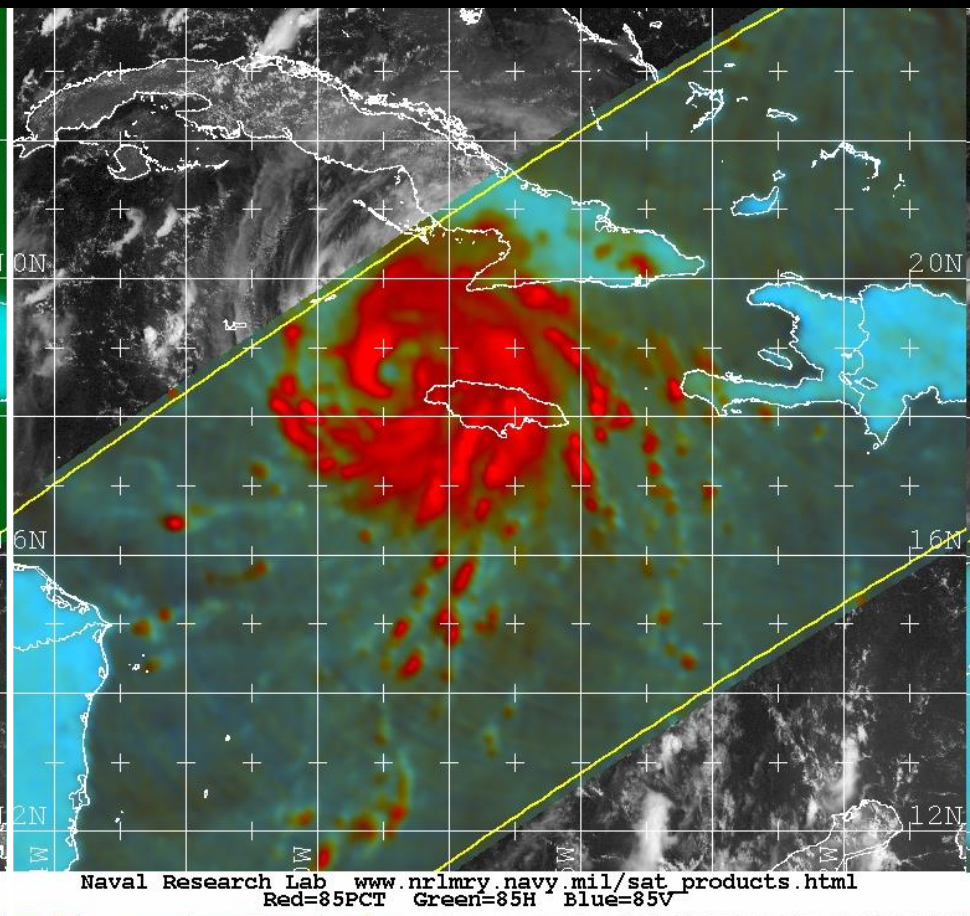


TRMM Microwave Image 29/1525 UTC

analyze center and plot fix



37 GHz Color Composite



85 GHz Color Composite

Let's enter the Microwave Fix

Enter Fixes - AMS a1792010

Satellite - Subj. Dvorak...

Satellite - Obj. Dvorak...

Microwave - SSMI, TRMM ...

Radar...

Aircraft...

Dropsonde...

Analysis/Synoptic...

OK



Let's enter the Microwave Fix

Microwave Fix Data - AMS al792010

* C/I ☐ Center Fix ☐ Max Wind Speed Fix ☐ Wind Radii Fix ☐ Min Sfc Pressure Fix

* DTG (YYYYMMDDHHMM)

Lat N S Lon E W

Posit. Conf.
☐ Good
☐ Fair
☐ Poor

* Satellite Type

Max. Wind Speed kts Confidence ☐ Good ☐ Fair ☐ Poor

34 knot winds ☐ Circle ☐ Quadrants

<input type="text"/> nm NE	<input type="checkbox"/> Edge of Pass	<input type="checkbox"/> Cut off by land
<input type="text"/> nm SE	<input type="checkbox"/> Edge of Pass	<input type="checkbox"/> Cut off by land
<input type="text"/> nm SW	<input type="checkbox"/> Edge of Pass	<input type="checkbox"/> Cut off by land
<input type="text"/> nm NW	<input type="checkbox"/> Edge of Pass	<input type="checkbox"/> Cut off by land

Wind Radii Conf.
☐ Good
☐ Fair
☐ Poor

☐ Rain Rain rate mm/h

Rain Algorithm ☐ FNMOC ☐ NESDIS ☐ RSS

SLP mb Confidence ☐ Good ☐ Fair ☐ Poor

Temperature celsius Wave Height feet

Eye Diameter nm Max Seas feet

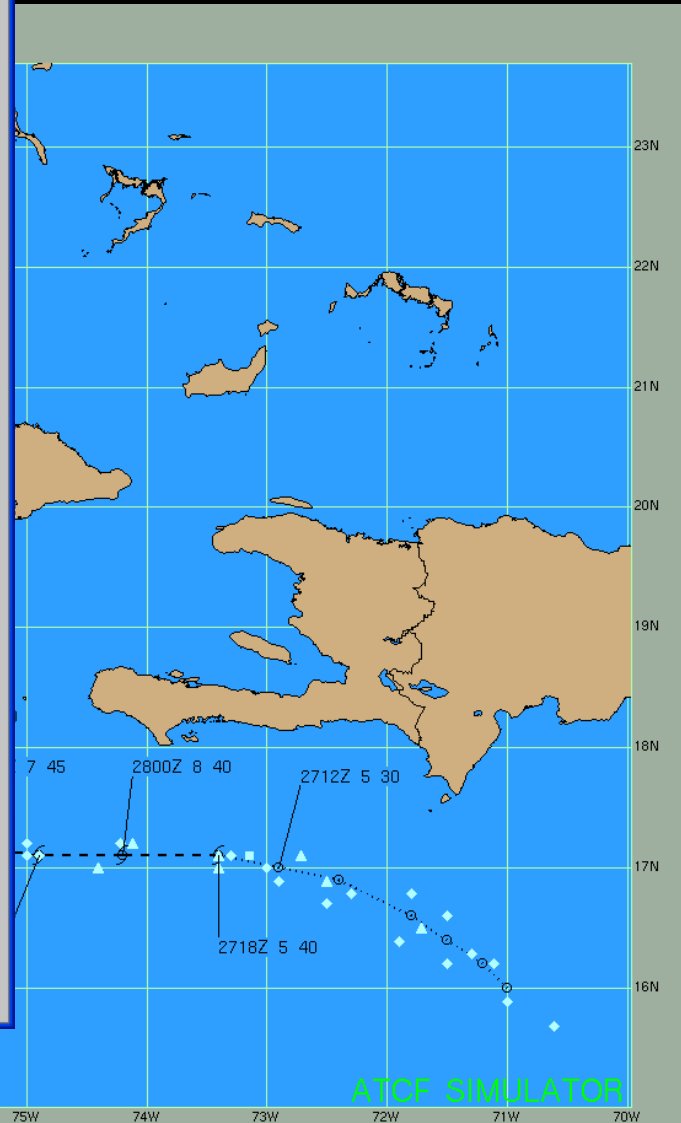
Comments

* Fix Site

Initials

* Fields marked with an asterisk (*) are required.

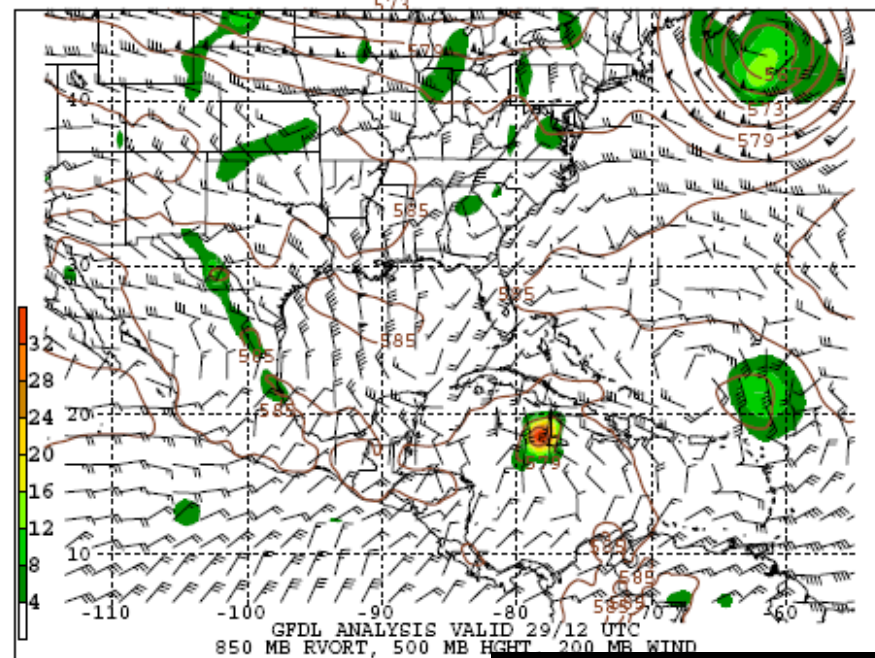
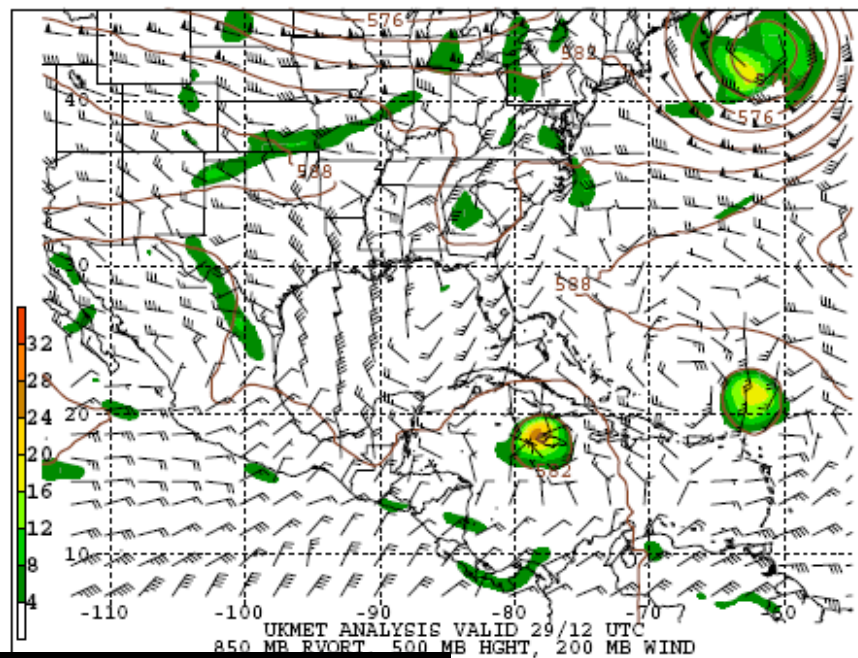
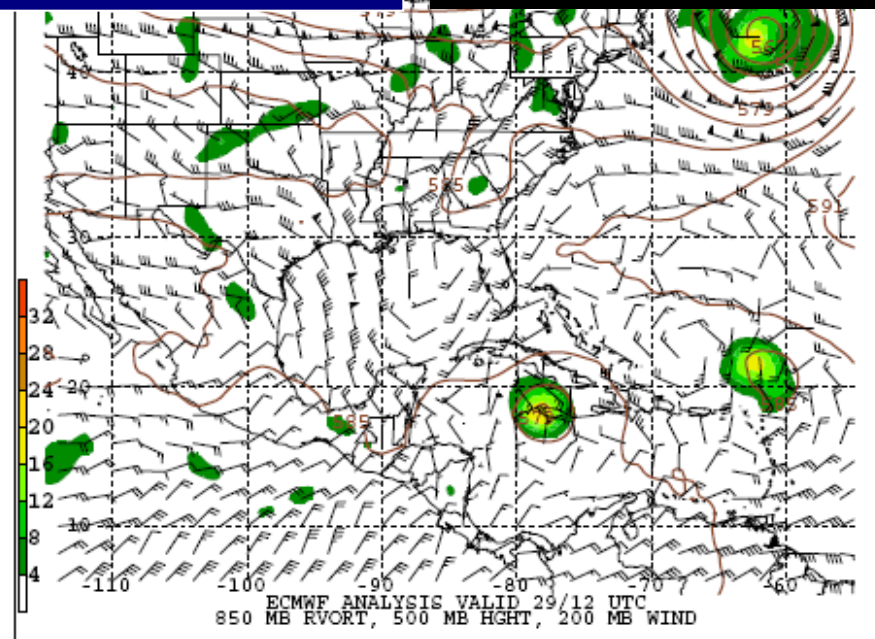
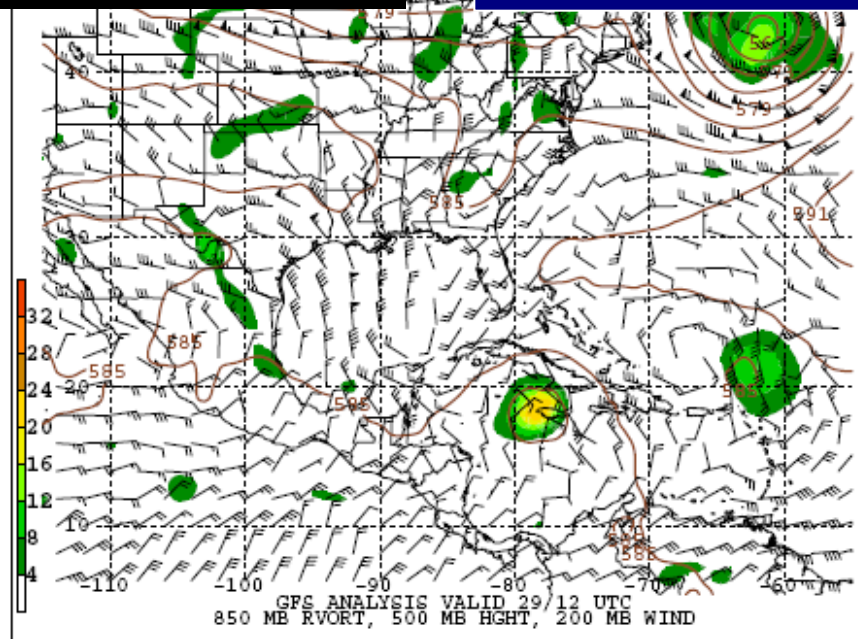
OK Cancel



Working Best Track with 1525 UTC TRMM Fix



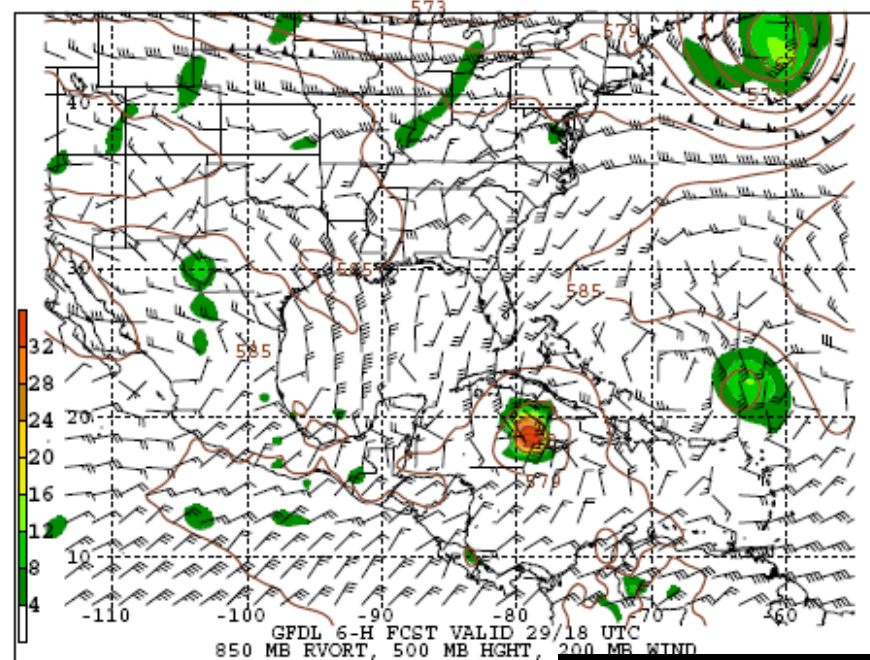
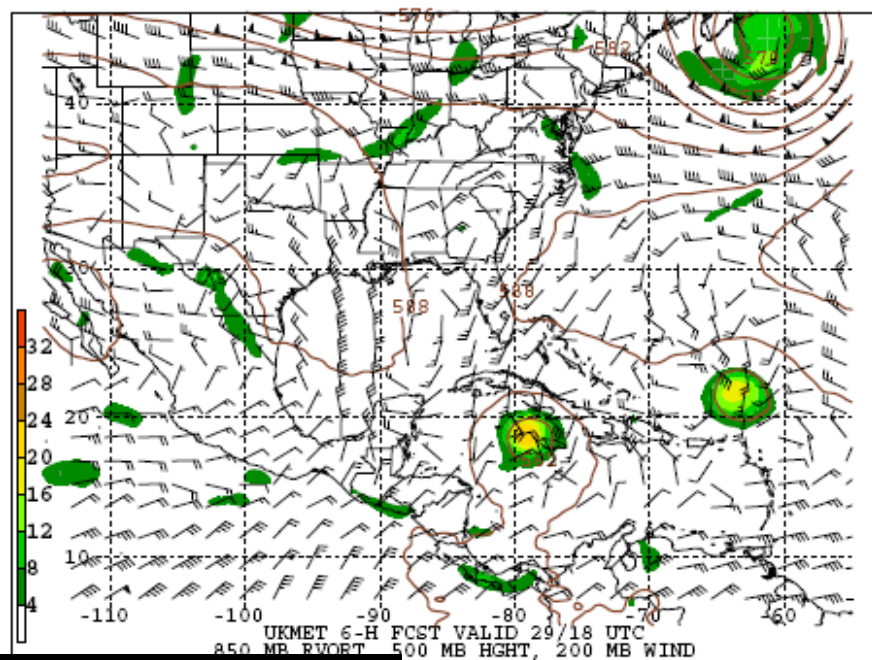
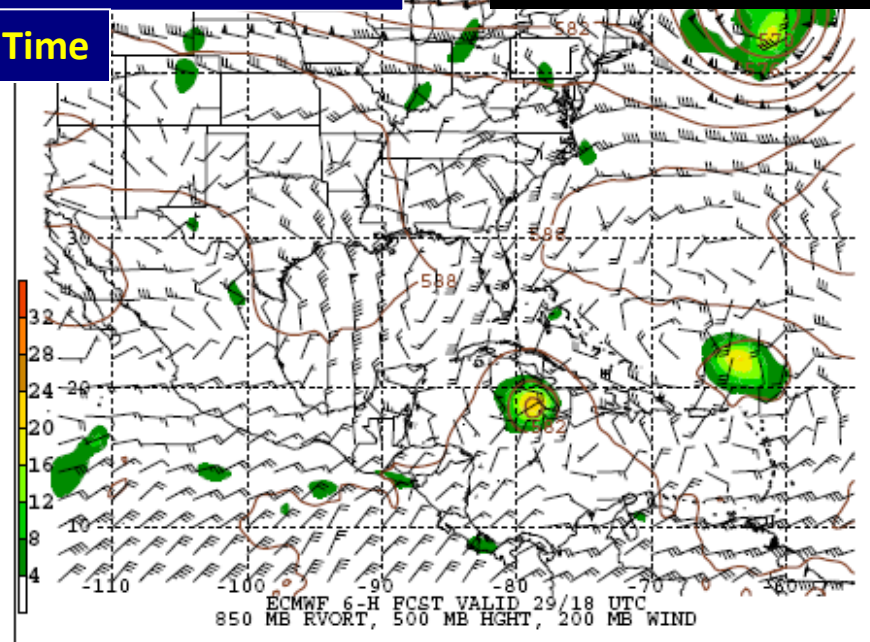
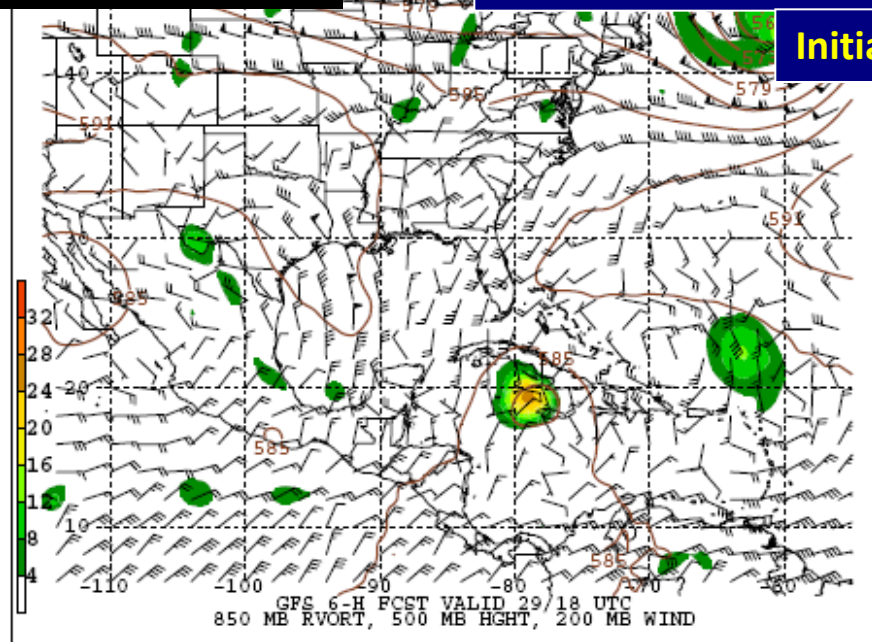
**While we wait for the Aircraft
and Satellite Fixes...
let's examine the 1200 UTC
model guidance**

GFS Analysis-1200 UTC**850 MB RVort, 500 MB Height, 200 MB Wind****ECMWF Analysis-1200 UTC****UKMET Analysis-1200 UTC****GFDL Analysis-1200 UTC**

GFS 6h fcst - 29/18z

850 MB RVort, 500 MB Height, 200 MB Wind

ECMWF 6h fcst - 29/18z



UKMET 6h fcst - 29/18z

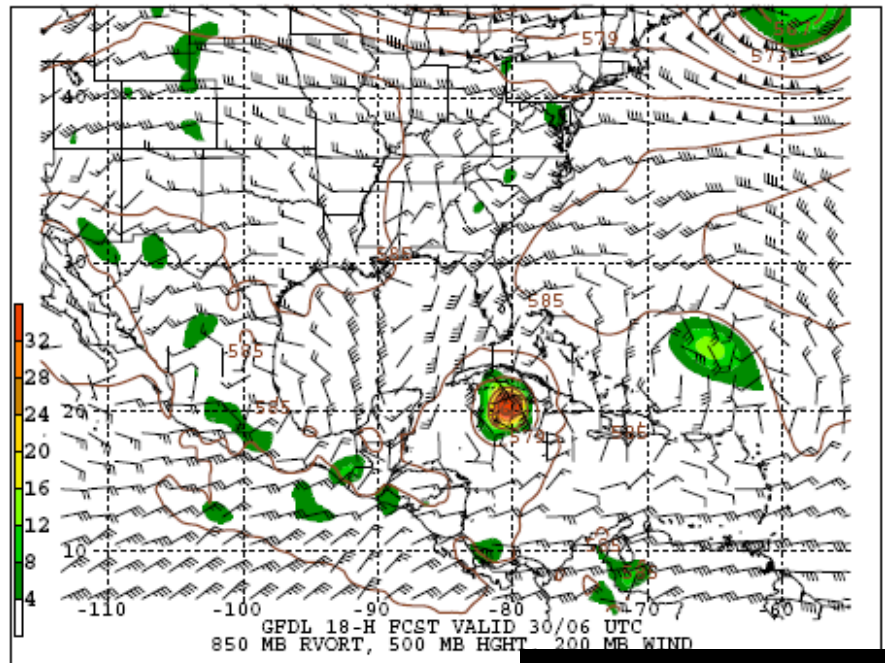
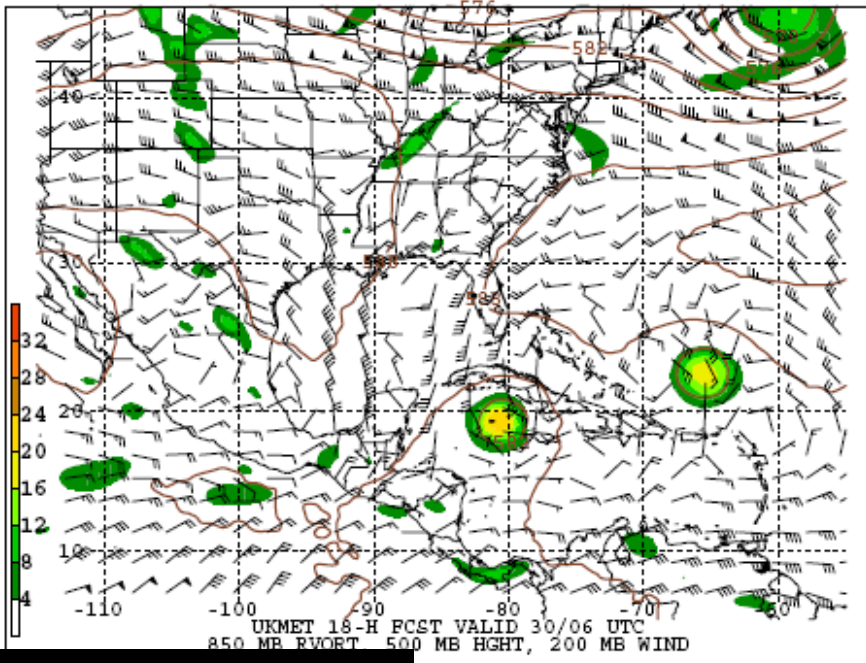
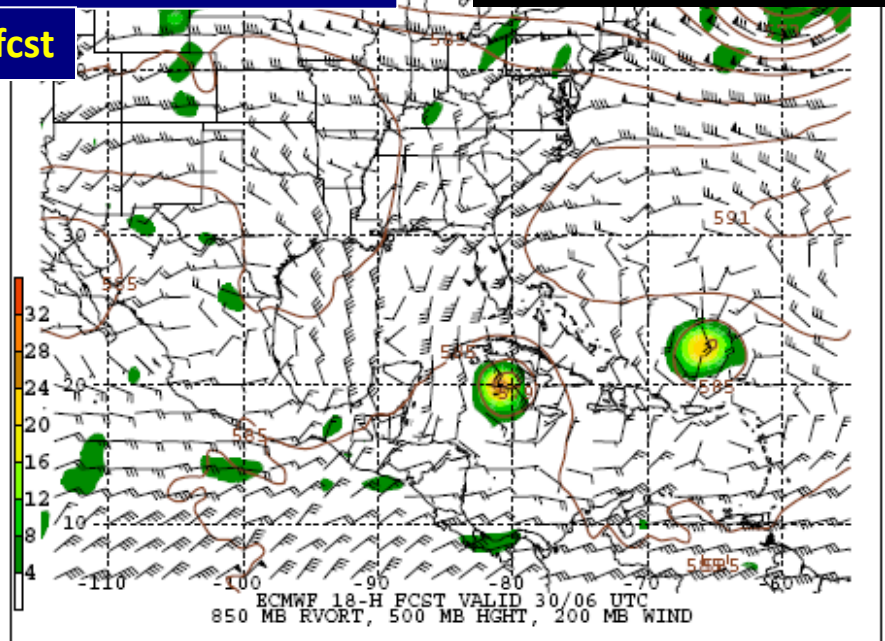
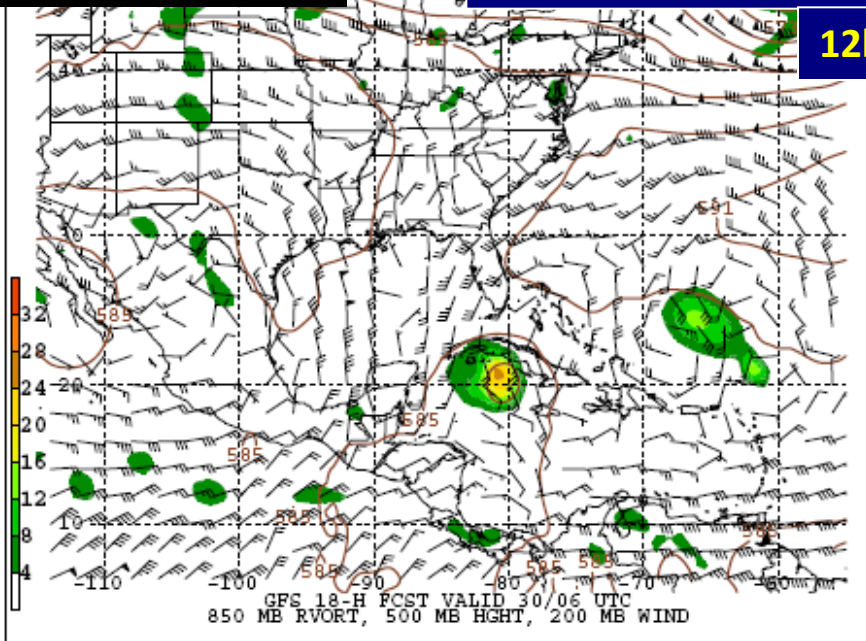
GFDL 6h fcst - 29/18z

GFS 18h fcst - 30/06z

850 MB RVort, 500 MB Height, 200 MB Wind

ECMWF 18h fcst - 30/06z

12h fcst



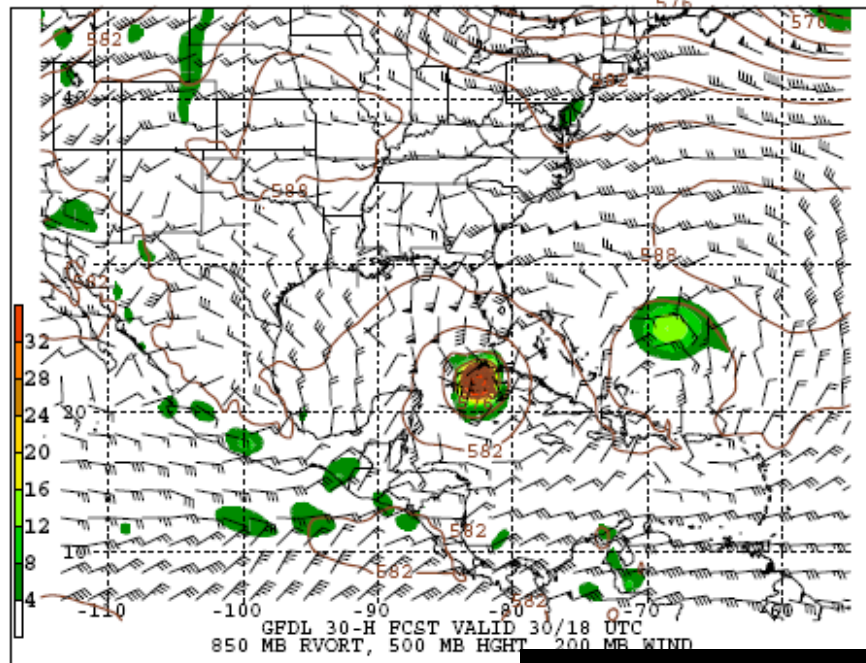
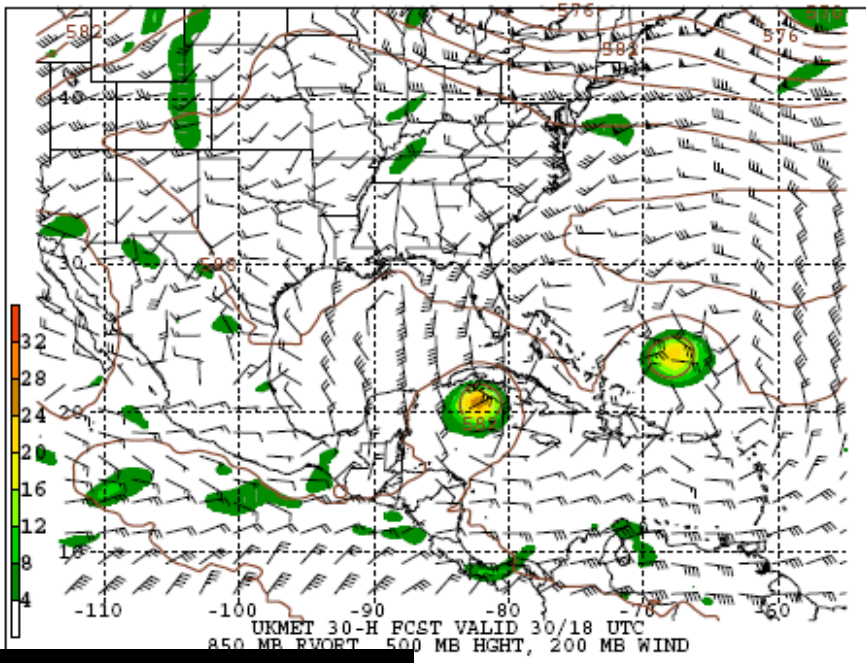
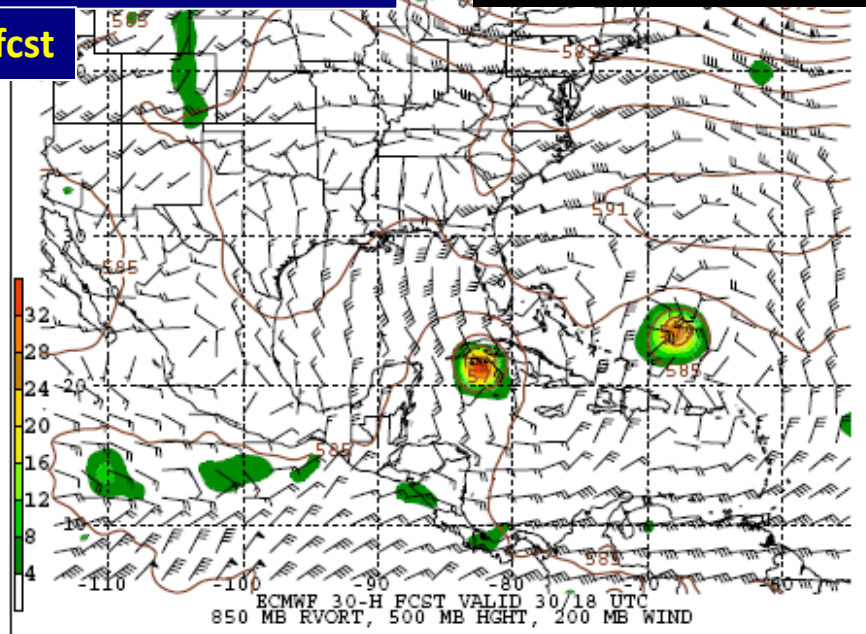
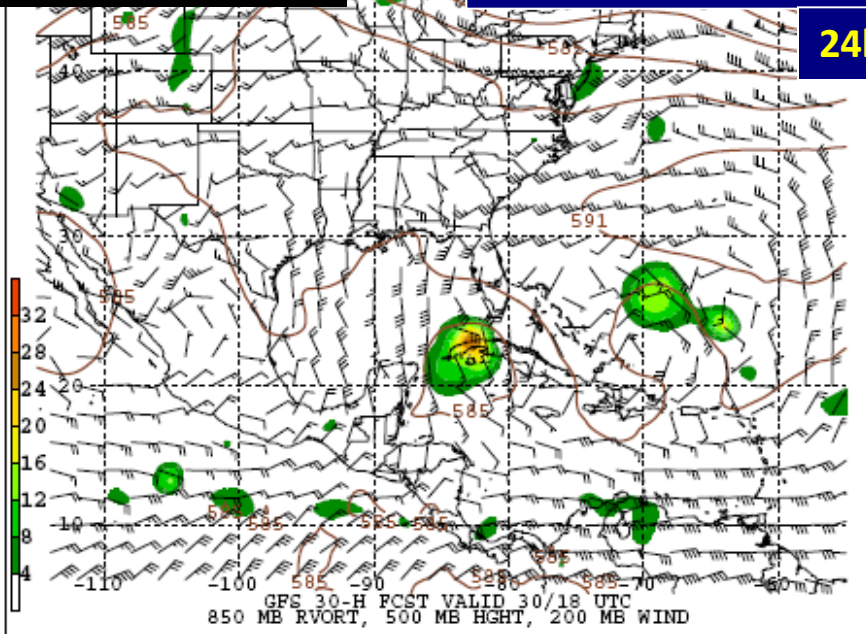
UKMET 18h fcst - 30/06z

GFDL 18h fcst - 30/06z

GFS 30h fcst - 30/18z

850 MB RVort, 500 MB Height, 200 MB Wind

ECMWF 30h fcst - 30/18z



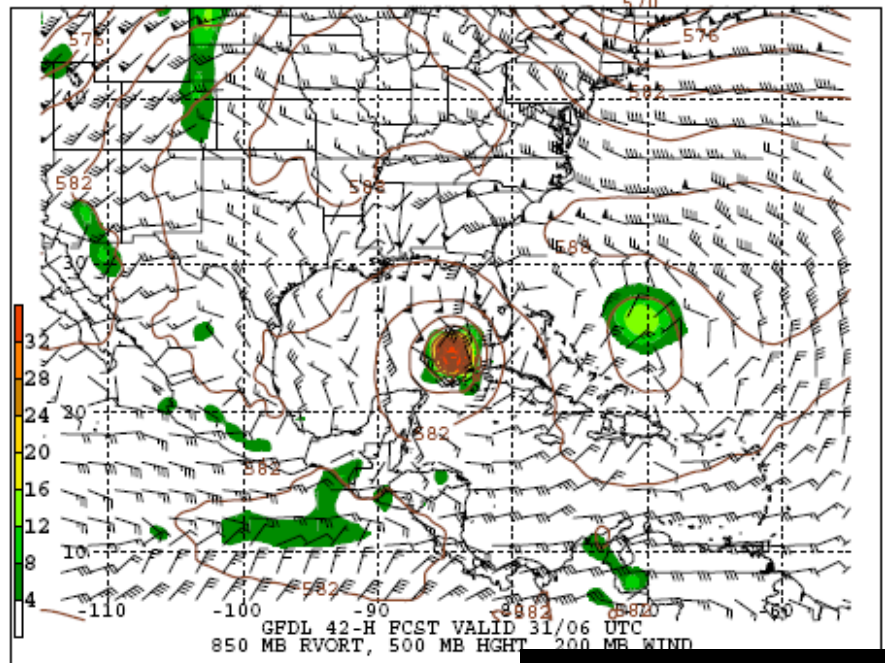
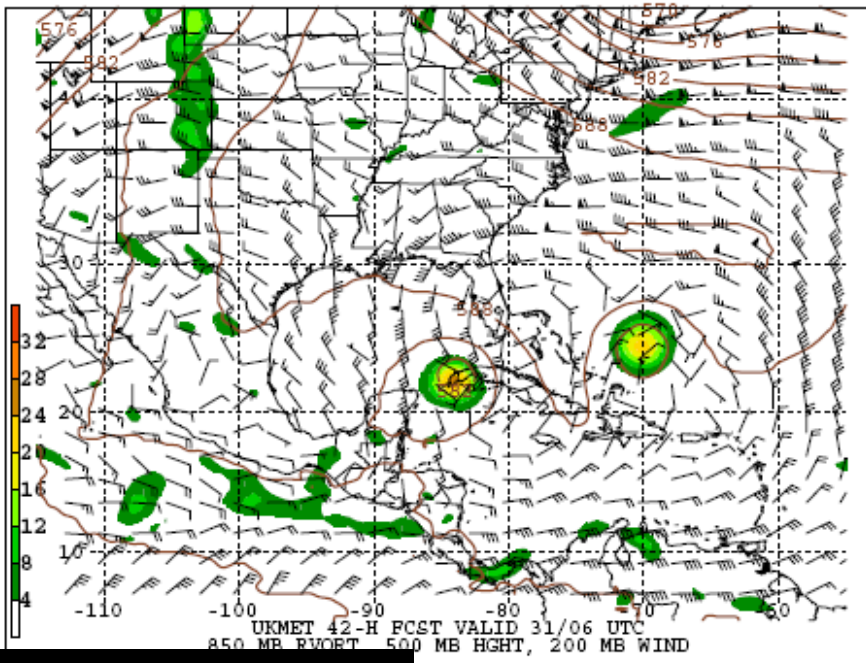
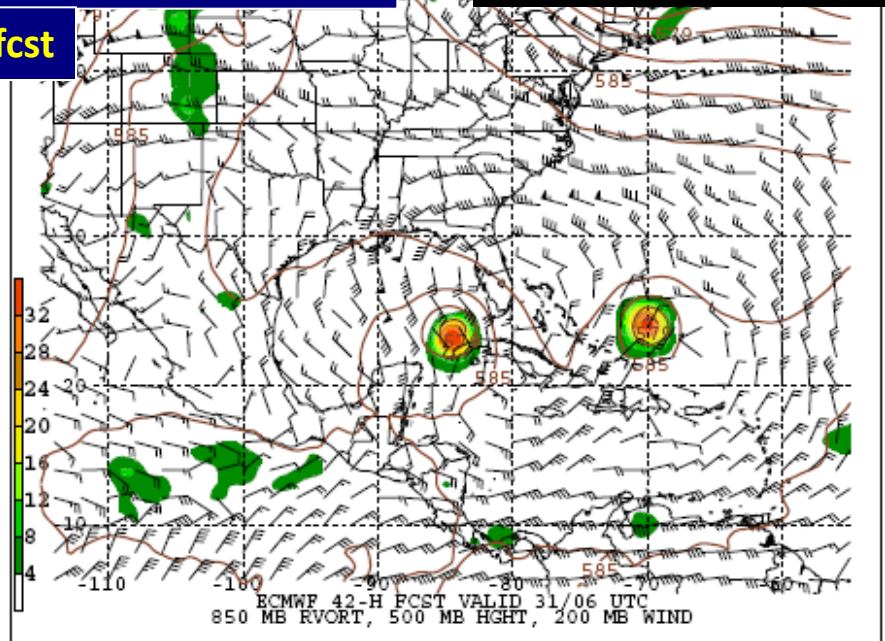
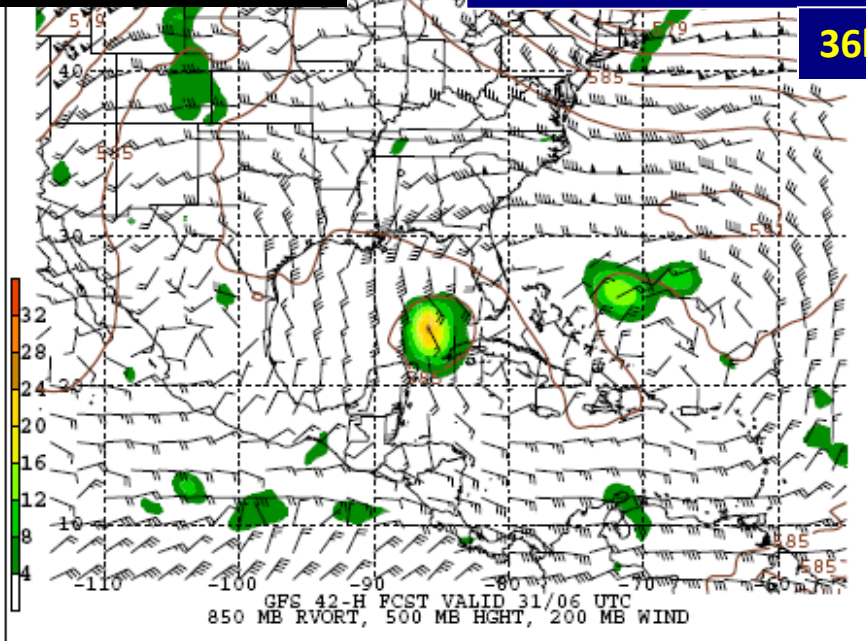
UKMET 30h fcst - 30/18z

GFDL 30h fcst - 30/18z

GFS 42h fcst - 31/06z

850 MB RVort, 500 MB Height, 200 MB Wind

ECMWF 42h fcst - 31/06z



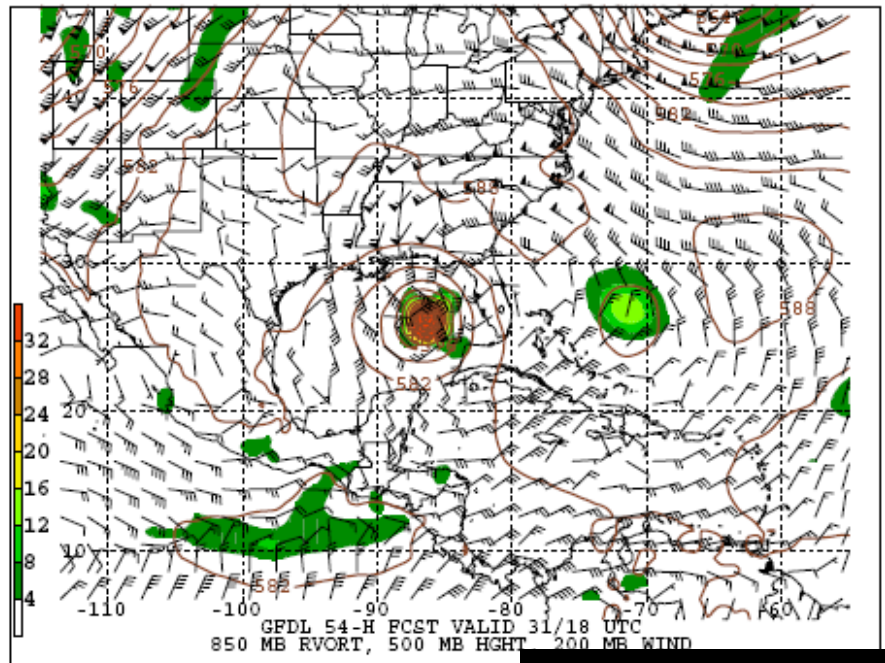
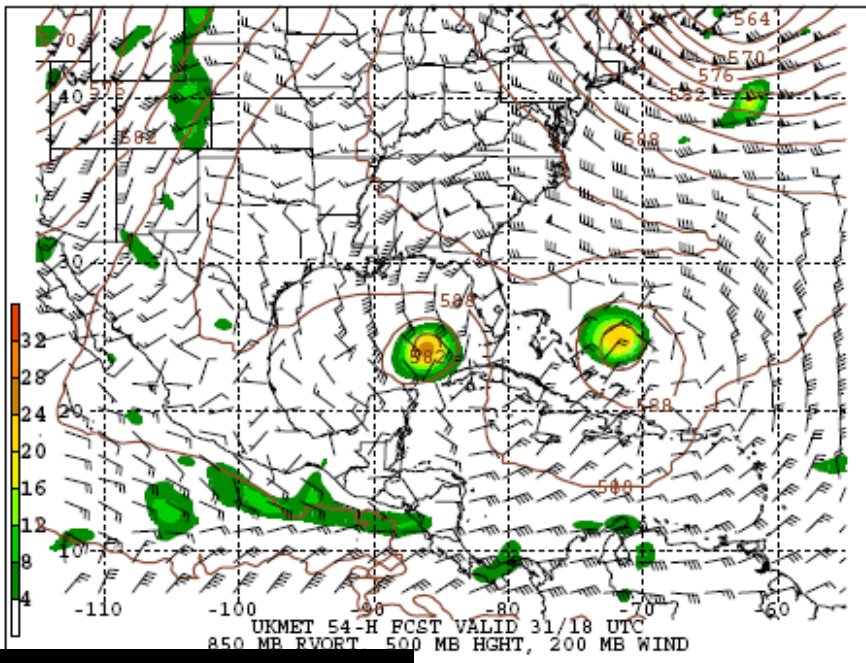
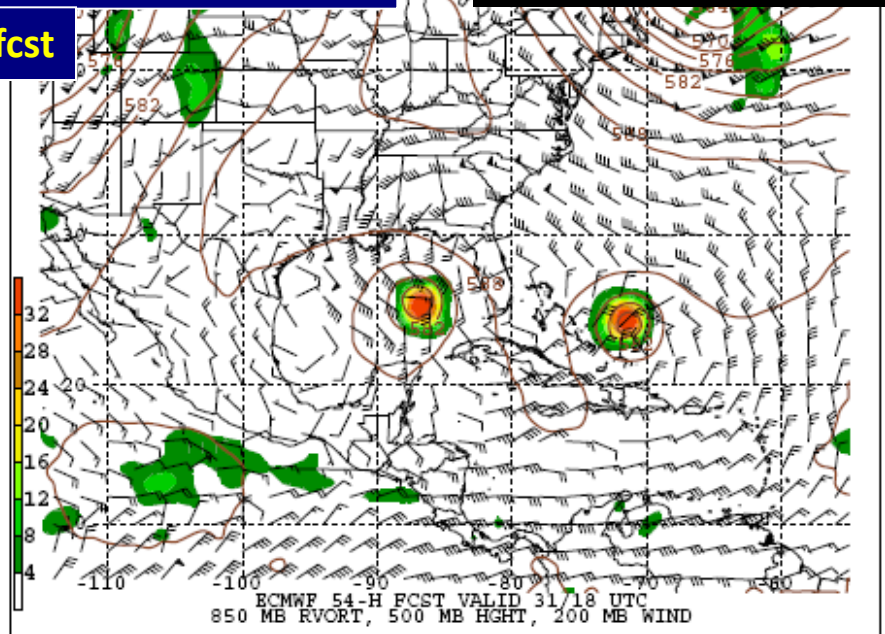
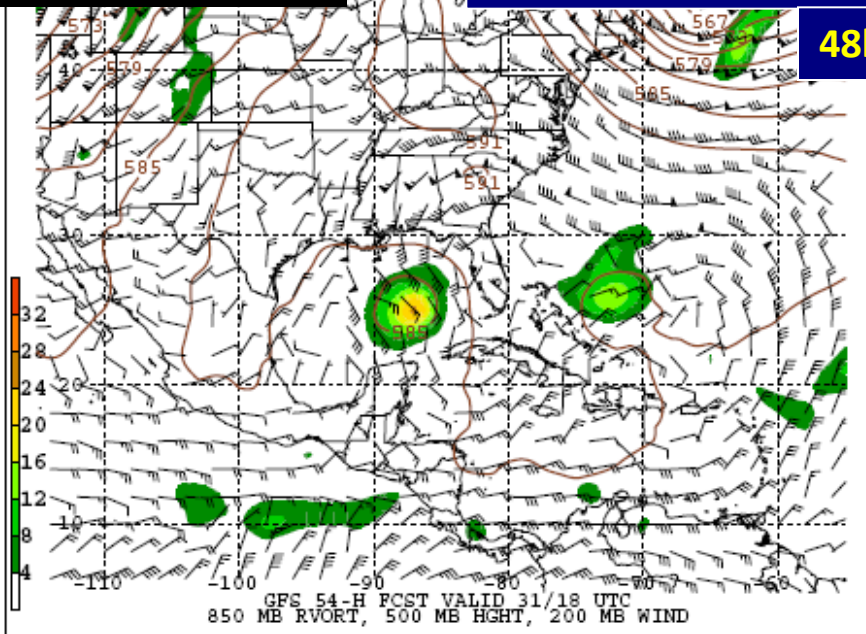
UKMET 42h fcst - 31/06z

GFDL 42h fcst - 31/06z

GFS 54h fcst - 31/18z

850 MB RVort, 500 MB Height, 200 MB Wind

ECMWF 54h fcst - 31/18z



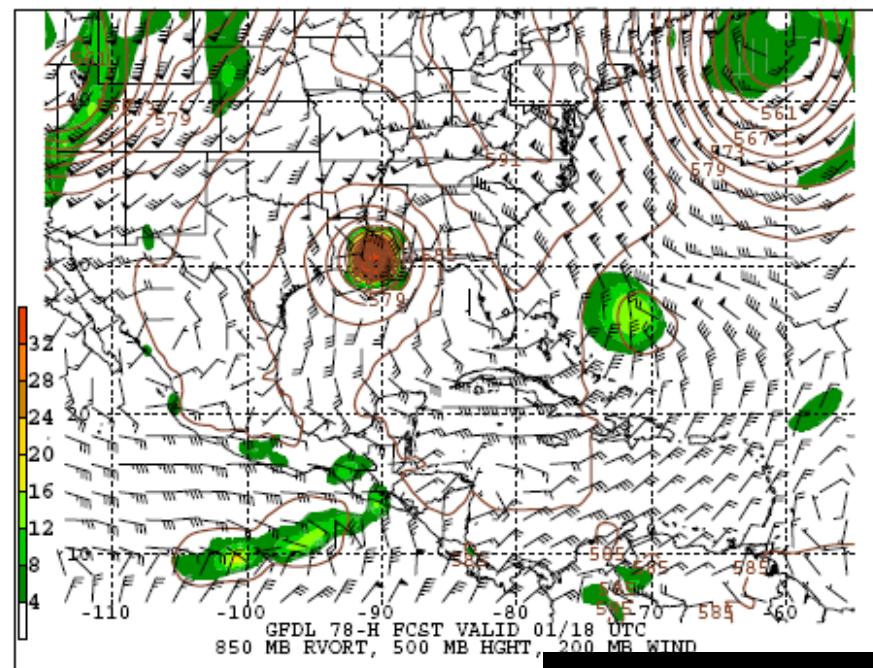
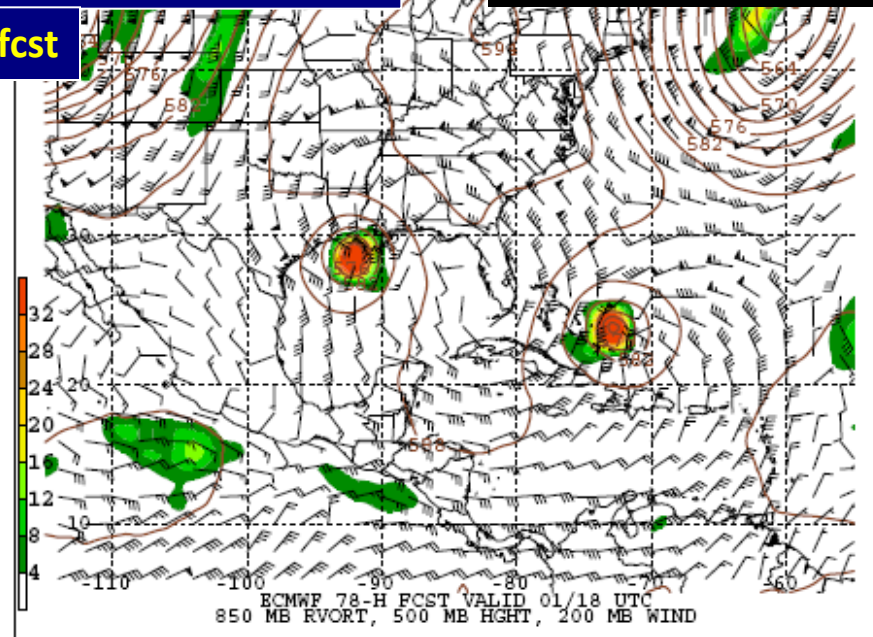
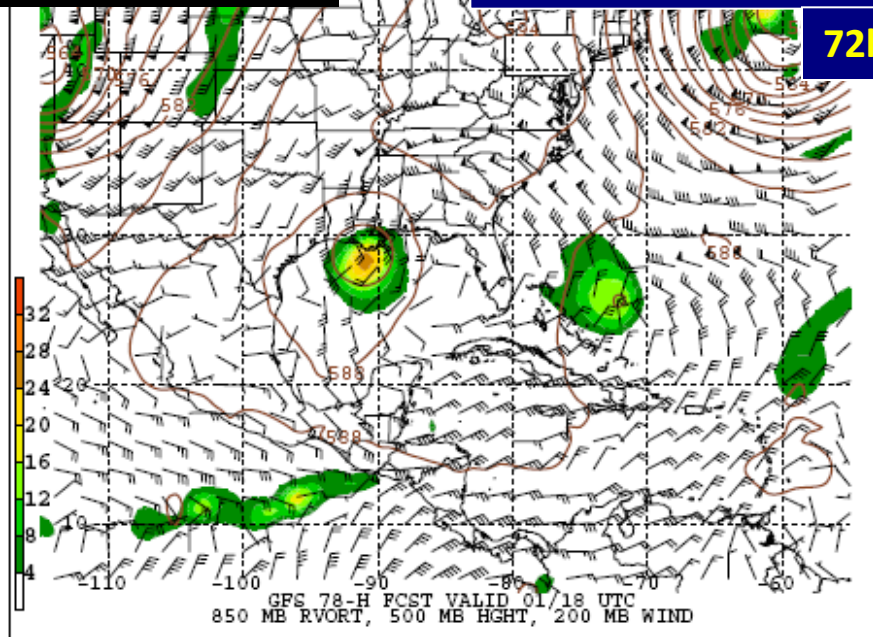
UKMET 54h fcst - 31/18z

GFDL 54h fcst - 31/18z

GFS 78h fcst - 1/18z

850 MB RVort, 500 MB Height, 200 MB Wind

ECMWF 78h fcst - 1/18z

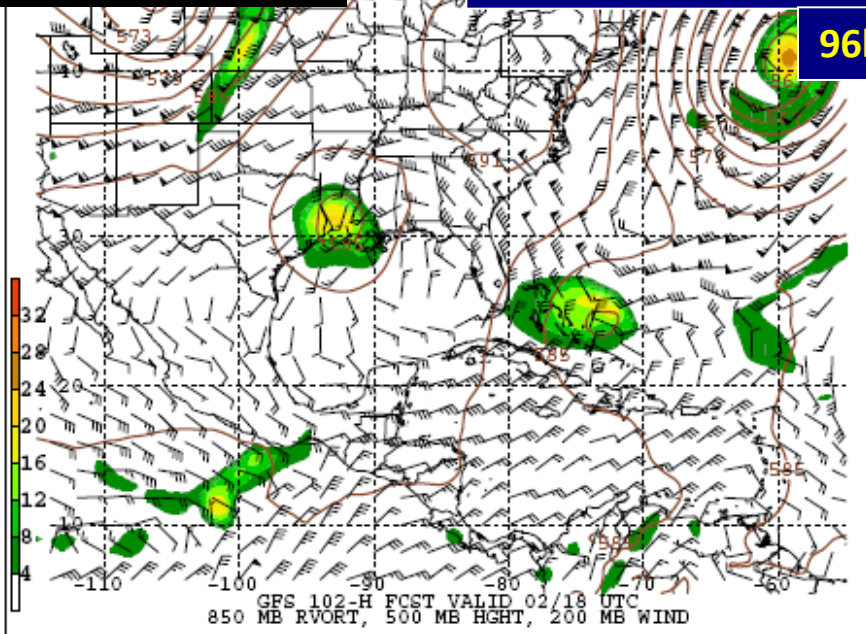


GFDL 78h fcst - 1/18z

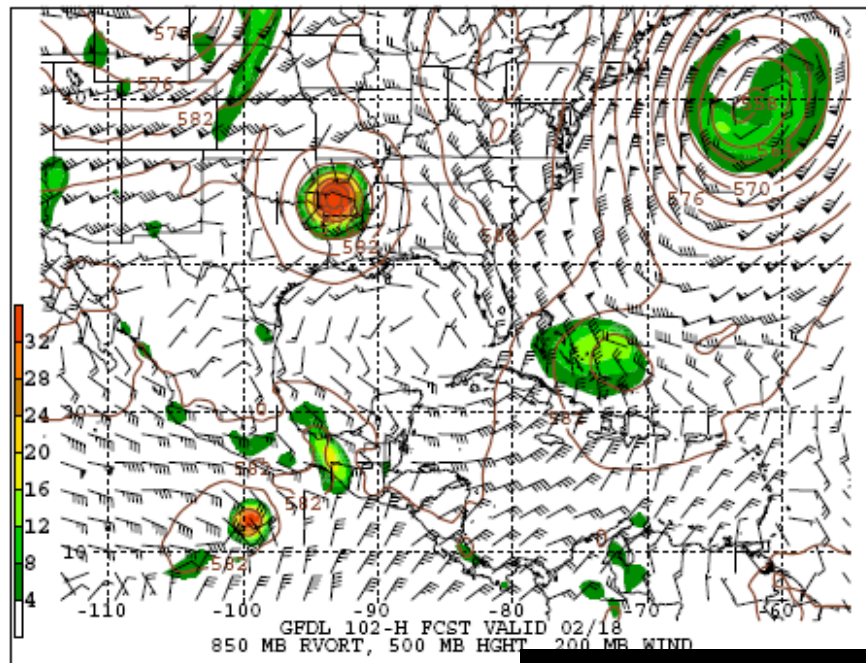
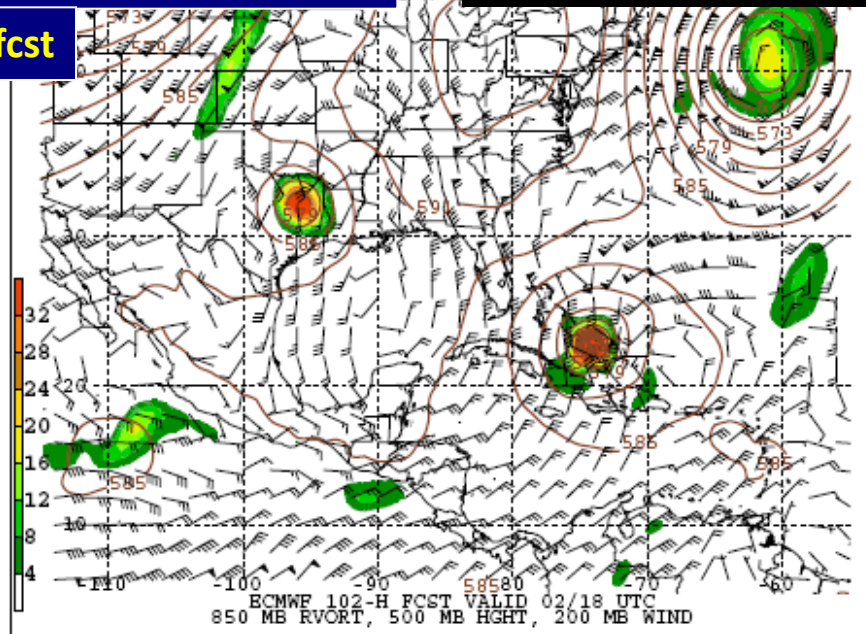
GFS 102h fcst - 2/18z

850 MB RVort, 500 MB Height, 200 MB Wind

ECMWF 102h fcst - 2/18z



96h fcst

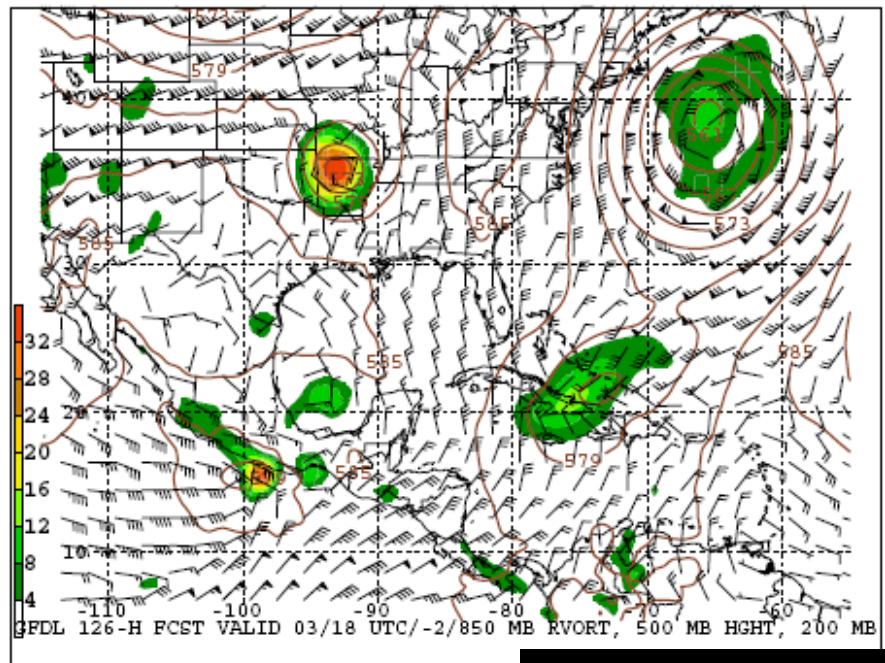
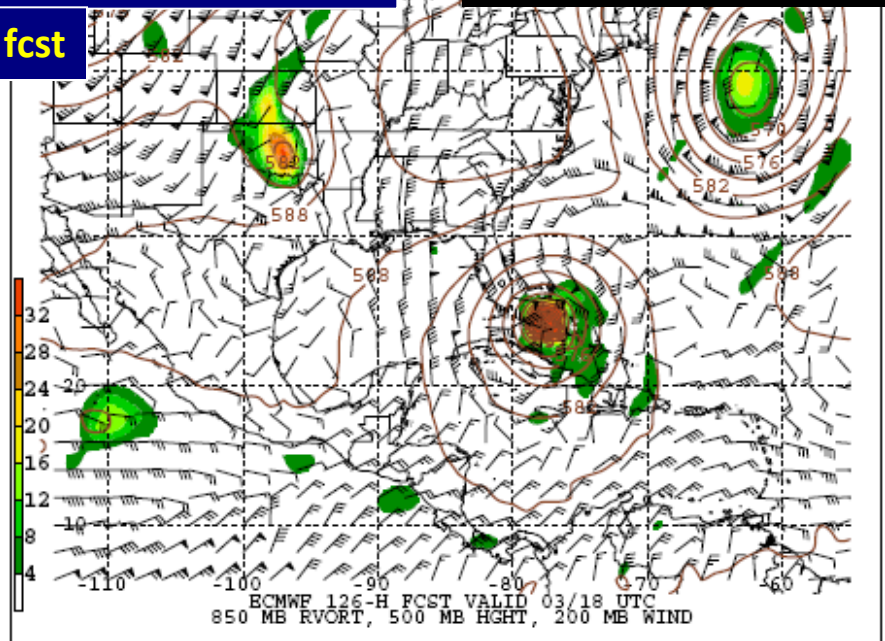
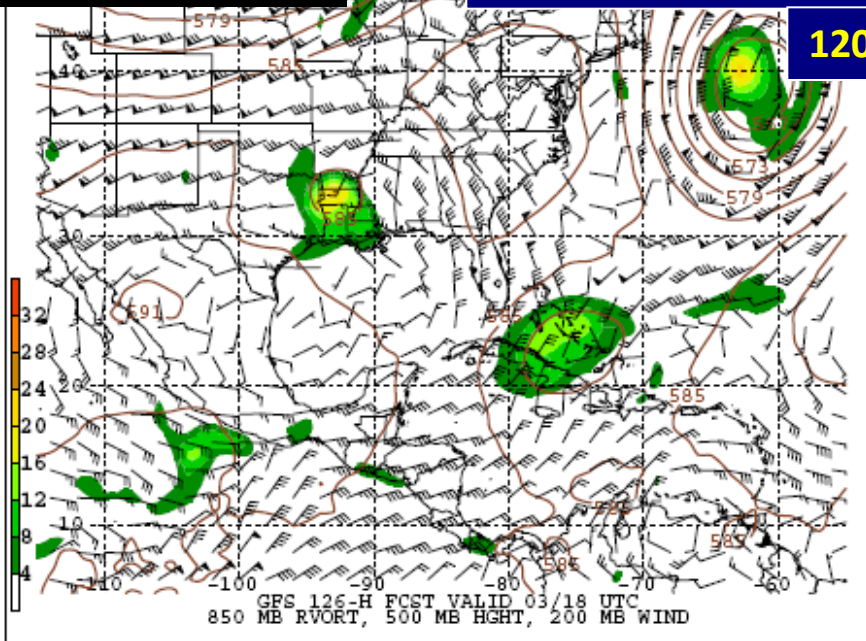


GFDL 102h fcst - 2/18z

GFS 126h fcst - 3/18z

850 MB RVort, 500 MB Height, 200 MB Wind

ECMWF 126h fcst - 3/18z



GFDL 126h fcst - 3/18z

GFDL and HWRF Track and Intensity Forecasts

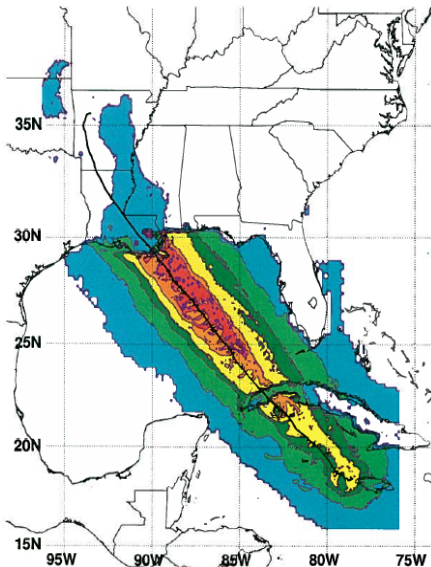
GFDL

NCEP COUPLED GFDL HURRICANE MODEL FORECAST MADE FOR

TROPICAL STORM

INITIAL TIME 12Z AUG 29

HRUR	LAT	LON	PRES	WIND	DIR/SPD
0	18.3	-78.5	988	55	290/7
6	18.6	-79.2	980	84	291/8
12	19.2	-79.8	980	70	315/7
18	20.2	-80.7	979	72	316/13
24	21.0	-81.8	972	79	307/13
30	22.0	-82.9	963	93	313/14
36	22.9	-83.8	965	88	313/12
42	23.8	-84.8	959	93	315/12
48	24.9	-85.6	952	101	322/14
54	25.9	-86.7	945	108	315/14
60	27.0	-87.6	942	108	318/14
66	28.0	-88.7	943	108	312/14
72	29.1	-89.8	946	106	318/15
78	30.2	-90.9	954	85	314/14
84	31.2	-91.8	962	60	318/12
90	32.0	-92.6	970	42	317/11
96	32.9	-93.2	976	31	326/10
102	33.8	-93.5	980	26	335/9
108	34.3	-93.8	981	22	341/6
114	34.9	-93.9	983	24	344/6
120	35.3	-93.8	985	24	13/5
126	35.5	-93.5	987	26	60/4



0829/1200 UTC GHM Maximum Surface Wind Speed (knots)

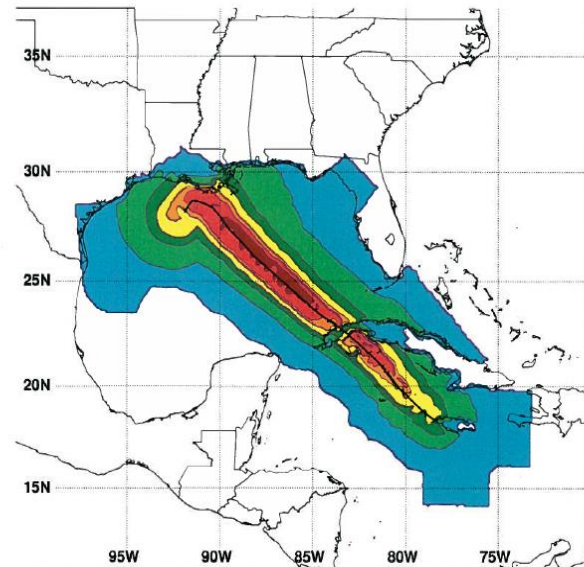
HWRF

NCEP COUPLED HWRF HURRICANE MODEL FORECAST MADE FOR

TROPICAL STORM

INITIAL TIME 12Z AUG 29

HRUR	LAT	LON	PRES	WIND	DIR/SPD
0	18.3	-78.4	988	55	290/7
6	18.7	-79.0	969	69	304/7
12	19.3	-79.7	958	83	311/9
18	20.0	-80.5	944	99	311/10
24	21.1	-81.4	937	114	321/14
30	22.1	-82.6	925	114	310/15
36	22.9	-83.7	939	94	306/13
42	23.5	-84.7	929	101	301/11
48	24.2	-85.6	918	124	308/11
54	24.9	-86.5	908	121	308/11
60	25.6	-87.4	913	115	308/11
66	26.2	-88.2	911	118	307/9
72	26.8	-88.8	914	117	315/8
78	27.4	-89.5	914	112	311/9
84	27.9	-89.9	921	110	321/6
90	28.4	-90.4	923	109	315/7
96	28.6	-90.9	929	100	292/5
102	28.7	-91.3	932	100	284/4
108	28.7	-91.5	941	89	270/2
114	28.5	-91.7	945	82	225/3
120	28.2	-91.9	948	90	214/4
126	27.9	-92.2	948	83	225/4



0829/1200 UTC HWRF Maximum Surface Wind Speed (knots)

18:00-18:45 UTC

Receive fix data

Hurricane specialist receives estimates of location and intensity via satellite imagery from 2 different agencies

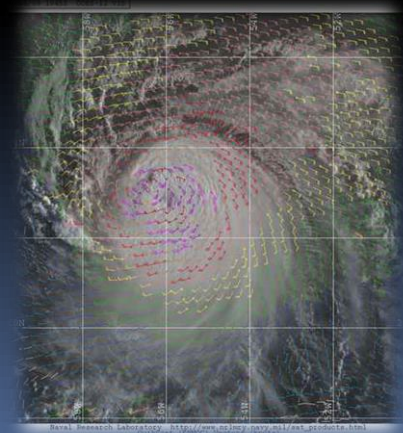
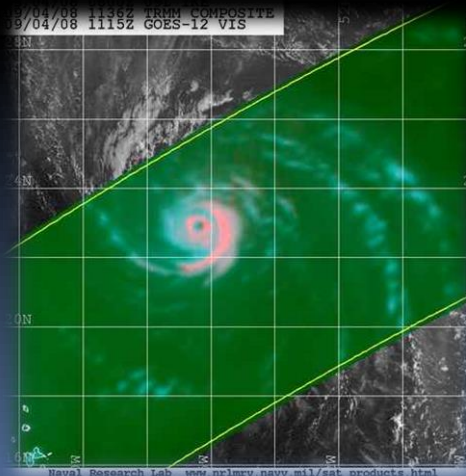
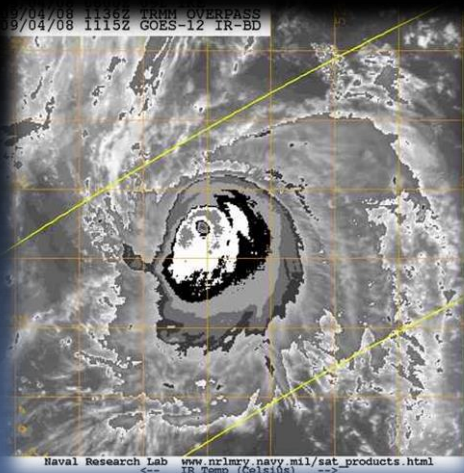
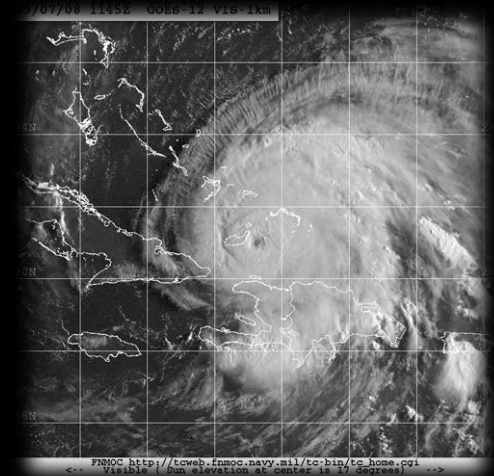
Determine the center location

Determine past motion (6-12 h)

Determine the intensity/wind speed

Determine various wind radii

34-, 50-, and 64-kt (when applicable)



18:00-18:45 UTC

Receive fix data

Thankfully, in this case we have reconnaissance aircraft, that provided a fix at 1721 UTC. Final fix with an outbound maximum flight-level wind of 62 kt, that equates to 56 kt (90%) at the surface.

12 KNHC 291748
VORTEX DATA MESSAGE
A. 29/172050Z
B. 18 deg 44 min N
 079 deg 08 min W
C. 700 mb 2961 m
D. 57 kt
E. 300 deg 25 nm
F. 027 deg 048 kt
G. 300 deg 036 nm
H. 984 mb
I. 10 C/ 3048 m
J. 13 C/ 3044 m
K. 9 C/ NA
L. OPEN NE
M. C15
N. 12345/7
O. 0.02 / 1 nm
P. AF307 1007A
MAX FL WIND 48 KT NW QUAD 171040 Z
MAX OUTBOUND FL WIND 62 KT SE QUAD 173440Z
SURFACE WIND OBSERVED VISUALLY

position
max surface wind
max flight-level wind
minimum pressure
max outbound flight-level wind

Let's enter the aircraft fix, while we wait for the Dvorak satellite intensity estimates

Entering the Aircraft Fix

Enter Fixes - AMS al792010

Satellite - Subj. Dvorak...

Satellite - Obj. Dvorak...

Microwave - SSMI, TRMM ...

Radar...

Aircraft...

Dropsonde...

Analysis/Synoptic...

OK



Entering the Aircraft Fix

Enter Fixes - AMS al792010

Satellite - Subj. Dvorak...

Satellite - Obj. Dvorak...

Microwave - SSM/I, TRMM ...

Radar...

Aircraft...

Dropsonde...

Analysis/Synoptic...

OK

Aircraft Fix Data - AMS al792010

Center/Intensity

☐ Center Fix

☐ Max Wind Speed Fix

* DTG (YYYYMMDDHHMN) 201008291721

Latitude 18.7 N Longitude 79.1 E W

C. Flight Level 700

☐ 100s of feet

☐ millibars

C. Flight Level Min Height 2961 meters

Max Sfc Wind: D. Intensity 57 kts

E. Bearing 300 deg

E. Range 25 nm

Max Flt Lev Wind: F. Dir 027 deg

F. Intensity 48 kts

G. Bearing 300 deg

G. Range 36 nm

H. Min Sea Level Pressure 984 millibars

I. Outside Eye Temp 10 deg C

J. Inside Eye Temp 13 deg C

K. Dew Point 9 deg C

K. Sea Surface Temp deg C

L. Wall Cloud Thickness nm

M. Eye: Eye Shape CI - Circular

Orientation deg

Diameter 15 nm (Long axis if Elliptical)

Short axis nm (Blank if not Elliptical)

O. Accuracy: Navigational .02 nm

Meteorological 1 nm

Mission Number 10

Comments MAX OUTBOUND FL WIND 62 KT SE QUAD 1735Z

Initials XXX

* Fields marked with an asterisk (*) are required.

OK

Cancel

17N

16N

83W

82W

81W

80W

79W

78W

77W

76W

75W

74W

73W

72W

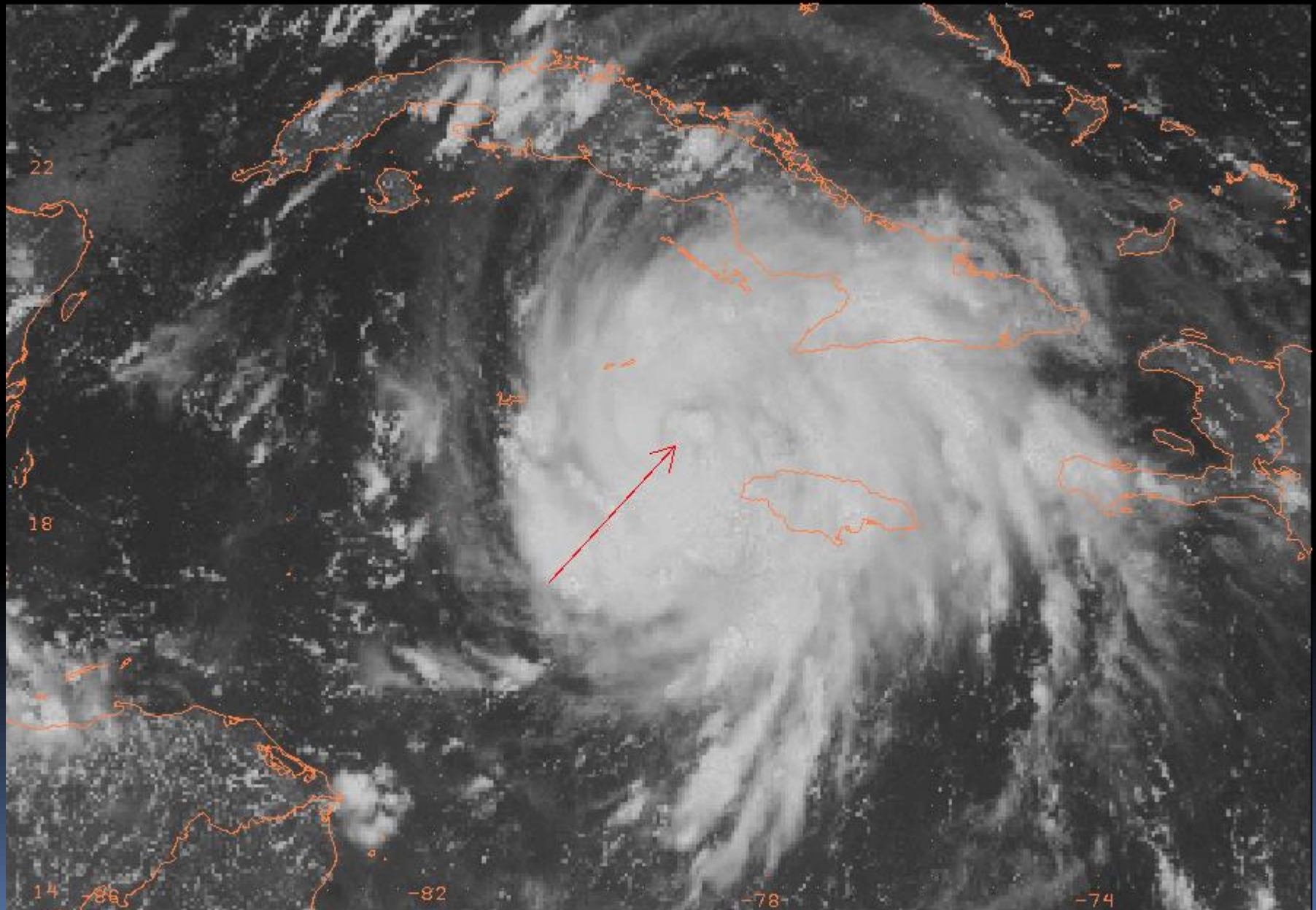
71W

70W

Working Best Track with 1721 UTC Aircraft Fix

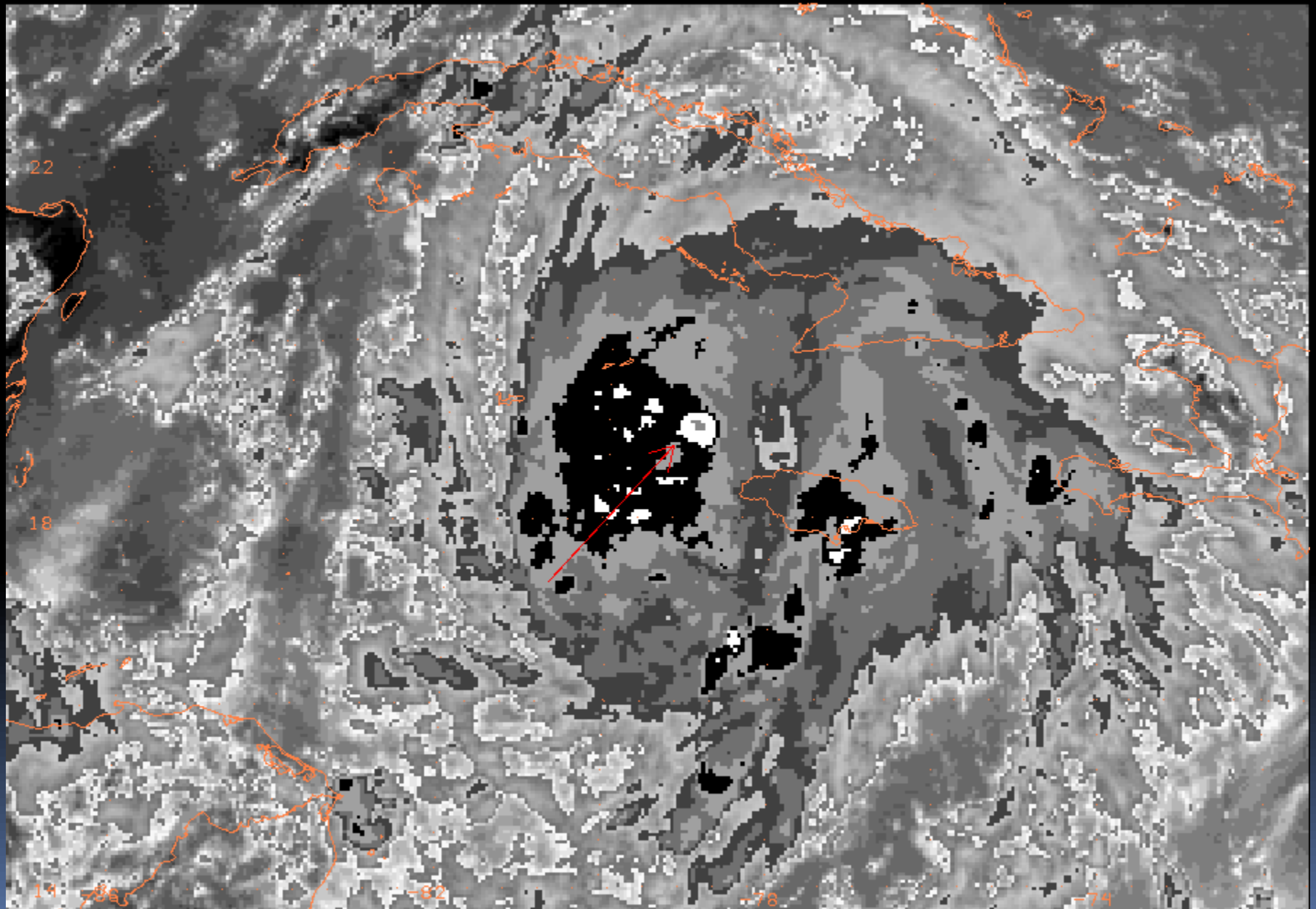


Vis Satellite Image- 1745 UTC



IR Satellite Image- 1745 UTC

BD Enhancement



18:30 UTC

TAFB and SAB Dvorak Satellite Fixes

TAFB SATELLITE CLASSIFICATION

BASIN: **ATLC** NAME: _____
DATE: **29** TIME (UTC): **1745**
Latitude: **18.8 N** Longitude: **79.2 W**
LOCATION CONF: **3** SAT: **GOES12** RESOLUTION (KM): **1**
T/CI NUMBER: **T 4.0 / 4.0** MAX WIND (KT): **65** MIN PRESSURE (MB): **987**
3 HR AVERAGE ODT (FT/CI): **3.9 / 4.1** 24 HR DEV TREND: **D-** INT CONF: **2**
EYE DIAMETER (NM): **----** SENSOR TYPE: **IR VIS** METEOROLOGIST: **MN**
WAVE ESTIMATES:
Right Front: Max Seas **----** FT. 12 FT or higher radius: **----** NM
Left Rear: Max Seas **----** FT. 12 FT or higher radius: **----** NM
REMARKS:
DT = 4.5 BASED ON CENTER EMBEDDED IN LG.
MET= 4.5 PAT= 4.0A

TAFB Position
TAFB Intensity

Now it's time to enter
the Dvorak Fixes

SAB SATELLITE CLASSIFICATION

Latitude: **18.7 N** Longitude: **79.2 W** TIME (UTC): **1745**
T/CI NUMBER: **T 4.0 / 4.0** SAT: **GOES12**
LOCATION CONFIDENCE: **3** PIC: **IR VIS** ANALYST: **SCHWARTZ**

SAB Position
SAB Intensity (CI#=65kt)

PREVIOUS TAFB INTERMEDIATE FIX

DATE: **29 0** TIME (UTC): **1445**
Latitude: **18.6 N** Longitude: **78.7 W** SAT: **GOES12**
LOCATION CONFIDENCE: **3** PIC: **IR VIS** ANALYST: **MN**

Entering Dvorak Fixes

Enter Fixes - AMS al792010

Satellite - Subj. Dvorak...

Satellite - Obj. Dvorak...

Microwave - SSMI, TRMM ...

Radar...

Aircraft...

Dropsonde...

Analysis/Synoptic...

OK

Satellite (Subj. Dvorak) Fix Data - AMS al792010

* Center/Intensity ☐ Center Fix ☐ Max Wind Speed Fix

* DTG (YYYYMMDDHHMMN) 201008291745

Latitude 18.8 N S Longitude 79.2 E W

PCN CONF

PCN or CONF 3 Well def'd circ center/Geography

* Satellite Type GOES12

Dvorak Code - Long Term Trend

Final T-Number 4.0

CI Number 4.0

Anticipated Intensity Change + - Blank

Past Change Developed Steady Weakened Blank

Amount of T-Num change none Hours since previous eval

Dvorak Code - Short Term Trend

Past Change Developed Steady Weakened Blank

Amount of T-Num change none Hours since previous eval

Forecast Intensity none * Fix Type CSC - cloud system center

* Sensor Type ☐ Visual ☐ Infrared ☐ Microwave

Tropical SubTropical ExtraTropical

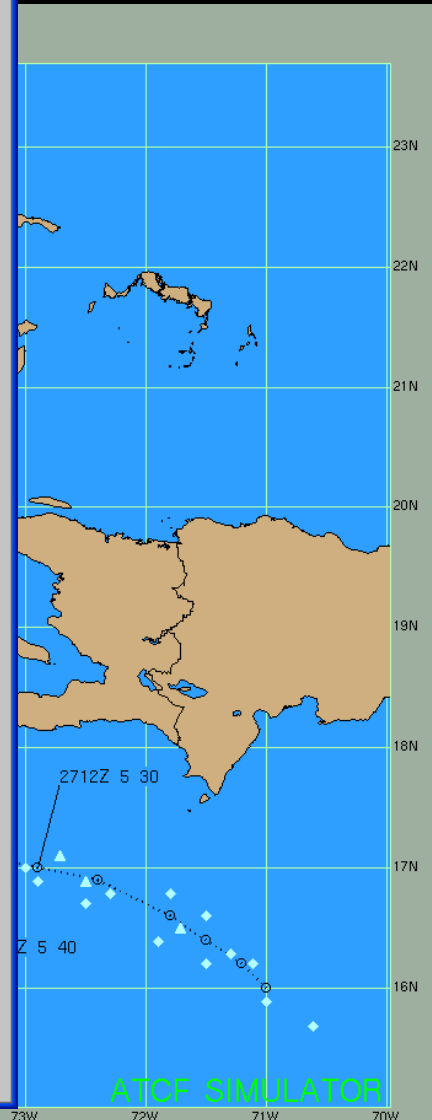
Comments DT=4.5 Based on embedded center in LG

* Fix Site TAFB Initials MN

* Fields marked with an asterisk (*) are required.

OK Cancel

TAFB fix



Entering Dvorak Fixes

Enter Fixes - AMS al792010

Satellite - Subj. Dvorak...
Satellite - Obj. Dvorak...
Microwave - SSMI, TRMM ...
Radar...
Aircraft...
Dropsonde...
Analysis/Synoptic...
OK

Satellite (Subj. Dvorak) Fix Data - AMS al792010

* Center/Intensity ☐ Center Fix ☐ Max Wind Speed Fix

* DTG (YYYYMMDDHHMMN) 201008291745

Latitude 18.7 N S Longitude 79.2 E W

PCN CONF
PCN or CONF 3 Well def'd circ center/Geography

* Satellite Type GOES12

Dvorak Code - Long Term Trend

Final T-Number 4.0
CI Number 4.0
Anticipated Intensity Change + - Blank
Past Change Developed Steady Weakened Blank
Amount of T-Num change none Hours since previous eval

Dvorak Code - Short Term Trend

Past Change Developed Steady Weakened Blank
Amount of T-Num change none Hours since previous eval

Forecast Intensity none * Fix Type CSC - cloud system center

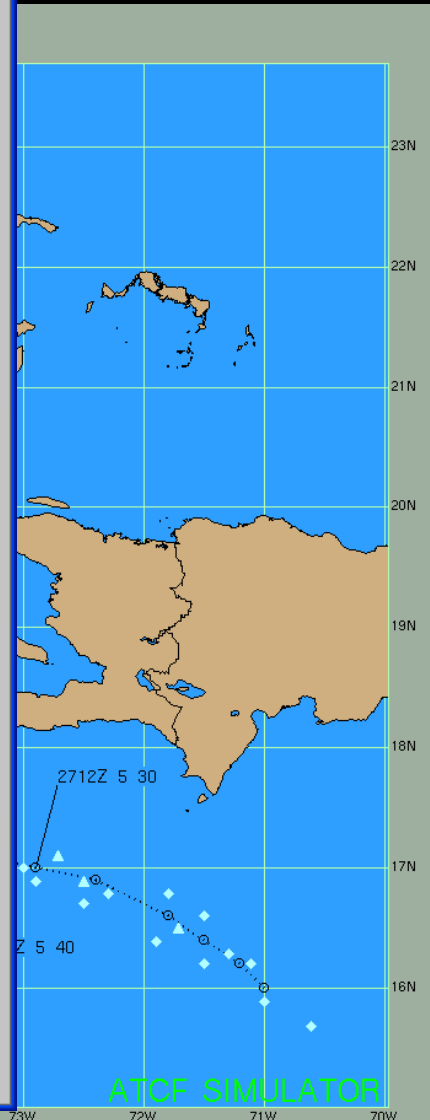
* Sensor Type ☐ Visual ☐ Infrared ☐ Microwave
☐ Tropical ☐ SubTropical ☐ ExtraTropical

Comments

* Fix Site SAB Initials AS

* Fields marked with an asterisk (*) are required.

OK Cancel



SAB fix

Now that we have all the 18z fixes, let's determine the 18z best-track position and intensity



Entering the 1800 UTC best-track information

ATCF - North Atlantic - AMS al792010

File Tools Fixes Track Aids Fields Forecast Advisory Graphic Stats Help

al792010 - AMS

intensity and pressure

wind radii

1800 UTC best-track location 18.8N 79.2W

2912Z 8 50/ 2906Z 7 50/ 2900Z 7 55/ 2818Z 7 50/ 2812Z 7 50/ 2806Z 7 45/

Re-Best Track Dialog - AMS al792010

DTG of position

2010082806
2010082812
2010082818
2010082900
2010082906
2010082912
2010082918 workin

Re-Best
Delete Pos.

Best Track Options

☐ Wind Radii

Fix Options

☐ AutoLabel
☐ Confidence
☐ Wind Radii

Wind Speed 60
Development TS - tropical storm
Pressure 984

NE SE SW NW

34 kt: circle quad 130 90 40 100
50 kt: circle quad 60 40 0 40
64 kt: circle quad 0 0 0 0

Graph/Select 34 kt radii: NE... SE... SW... NW...

Graph/Select radii (radial graph) 34 kt ... 50 kt ... 64 kt ...

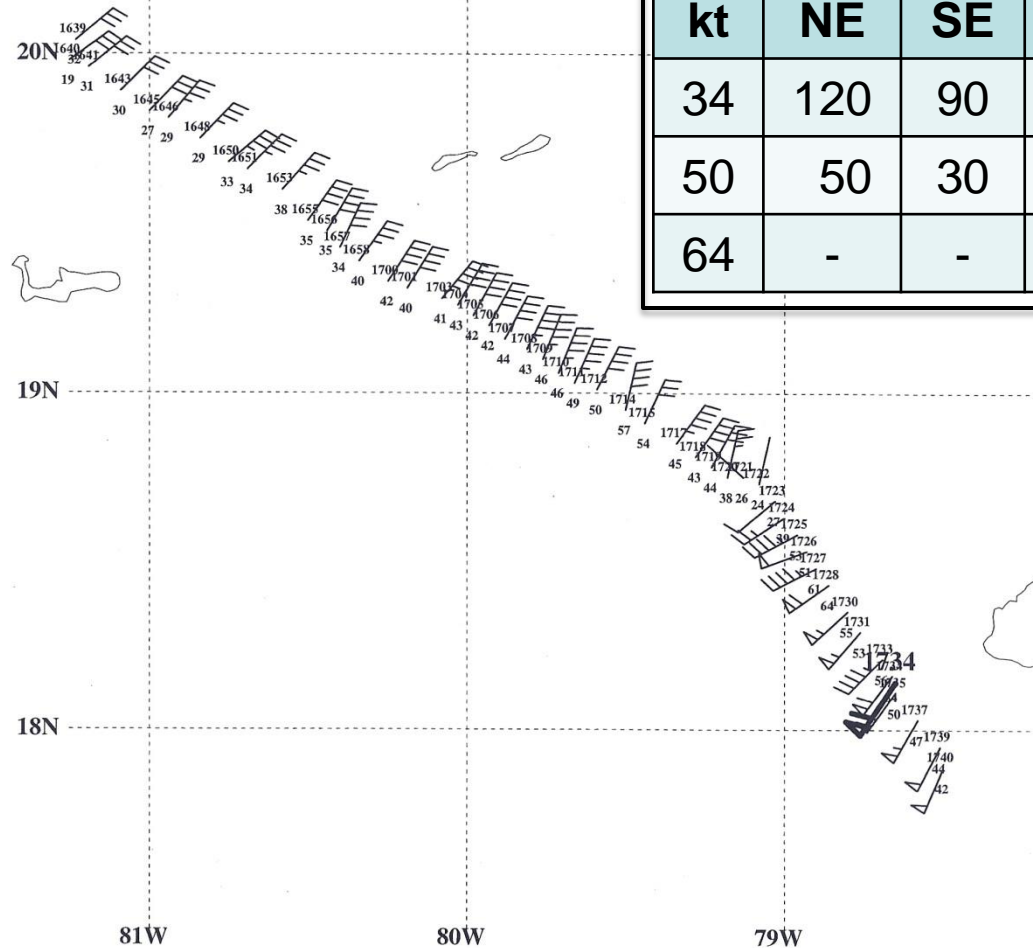
Best Track Speeds and Intensities

Date - Time	Old Speed	New Speed	Best Track Intensity	Obj Track Intensity	Central Pressure
2010082906Z	7		50 kts		991
2010082912Z	8		50 kts		990
2010082918Z	9		60 kts	N/A	984
2010083000Z	N/A		N/A		N/A
2010083006Z	N/A		N/A		N/A

Help Apply OK Cancel

22.8N-76.6W

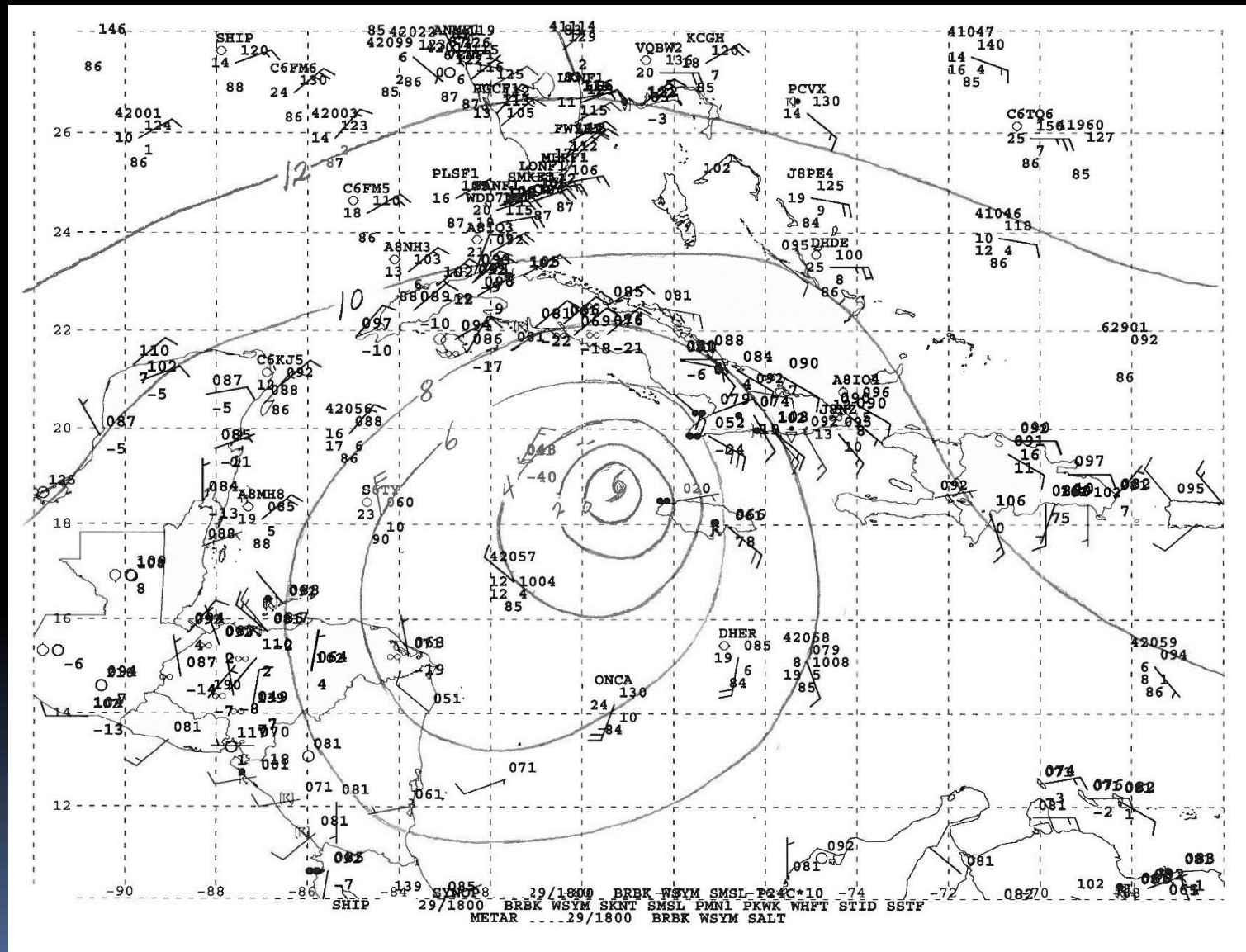
Determining Wind Radii from Aircraft Data



MISSION: AF307 1007A
29/1639 - 29/1822
max wind (knots): 62

SHIP 29/1800
METAR 29/1800
BRBK WSYM SKNT SMSL PKWK STID
29/1800 BRBK WSYM SALT

What value and radius did you come up with?



Remember to insert
the initial position,
intensity and motion
on the Worksheet?

National Hurricane Center Advisory Composition Worksheet

Cyclone Name	ATCF ID	Adv #	Special	Last	Date	Time (UTC)	Forecaster(s)
AMS	ALXX20XX	10	<input type="checkbox"/>	<input type="checkbox"/>	Aug 29, 20XX	2100	??????
Watches and Warnings							
Hazards Statements	<input type="checkbox"/> Storm Surge						
	<input type="checkbox"/> Rainfall						
	<input type="checkbox"/> Tornadoes						
Notes	<input type="checkbox"/> Special Soundings						

Fcst Hr	Date/Time (UTC)	Lat (°N)	Lon (°W)	Dir/Spd (deg/kt)	Pres (mb)	Wind (kt)	Gusts (kt)	Status	Wind Radii (nm)				
									kt	NE	SE	SW	NW
0	29 / 00 06 12 (18)	18.8	79.2	300/9	984	60	75	TS	34	130	90	40	100
									50	60	40	0	60
3	29 / 03 09 15 (21)								64				
			miles /	km	of				12	90	90	60	90
12	30 / 12 18 00 (06)								34				
									50				
									64				
24	30 / 00 06 12 (18)								34				
									50				
									64				
36	31 / 12 18 00 (06)								34				
									50				
									64				
48	31 / 00 06 12 (18)								34				
									50				
72	1 / 00 06 12 (18)								34				
									50				
96	2 / 00 06 12 (18)												
120	3 / 00 06 12 (18)												

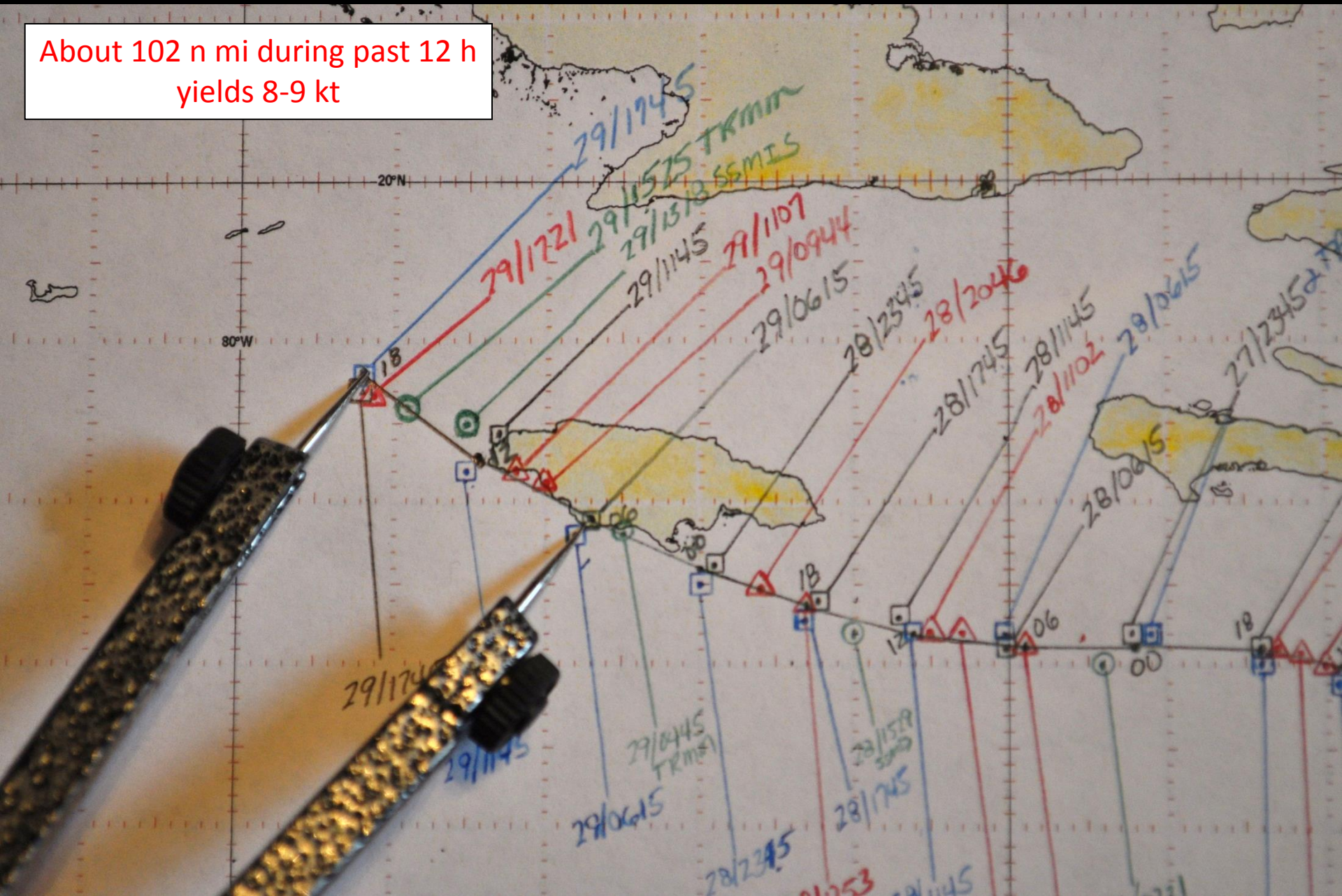
☐ TCM ☐ TCD
☐ TCP ☐ TCV
☐ PWS ☐ W/W Graphic
☐ ICAO

Best-Track through 1800 UTC... Finally ready to initialize the guidance.

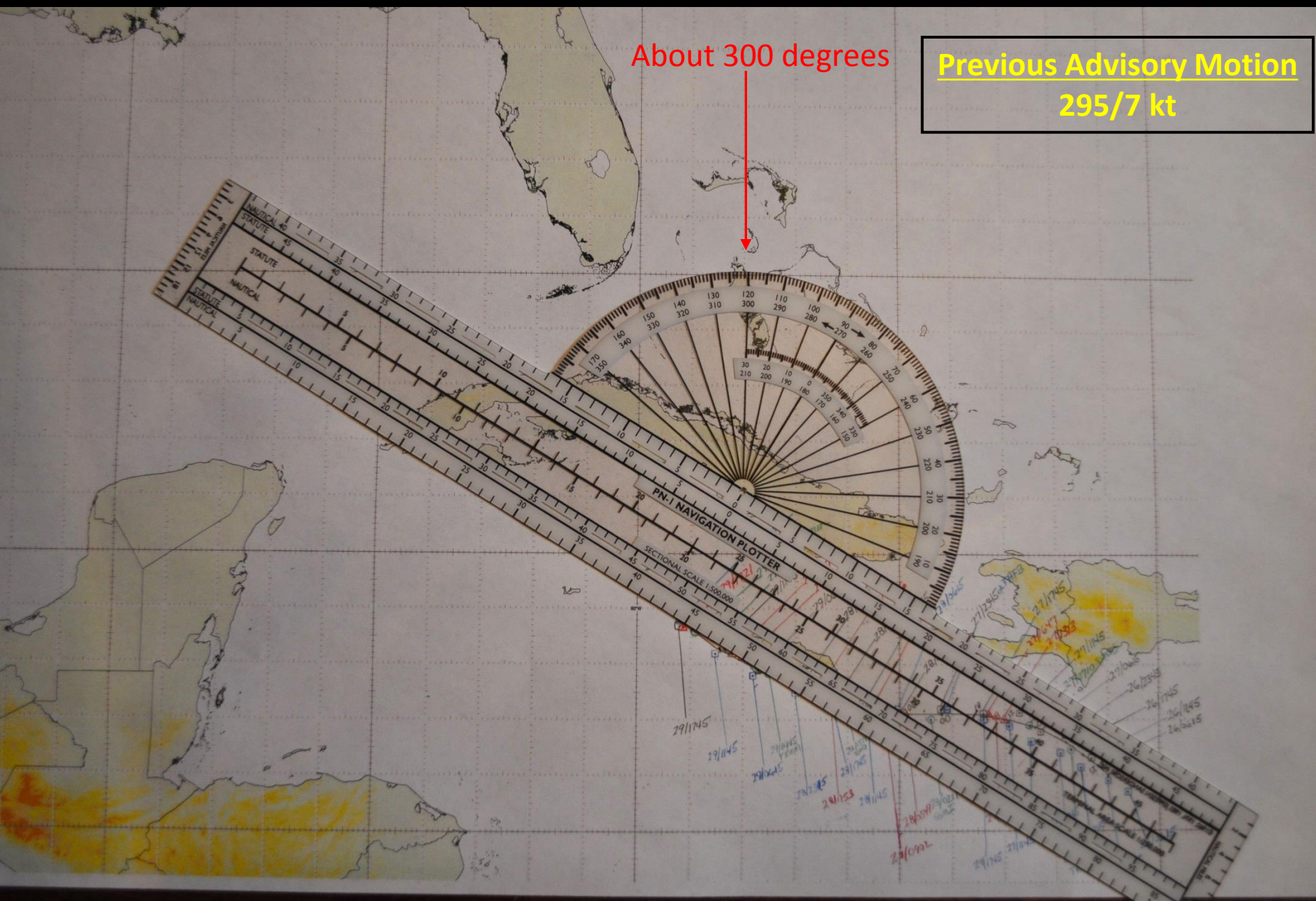


Computing Tropical Cyclone Motion (Speed)

About 102 n mi during past 12 h
yields 8-9 kt



Computing Tropical Cyclone Motion (Direction)



18:45-19:00 UTC

Initialize models

After determining the center, strength, motion, and size of the tropical cyclone, the hurricane specialist gives that information to a supercomputer to run the models

ATCF - North Atlantic - AMS al792010

File Tools Fixes Track Aids Fields Forecast Advisory Graphic Stats Help

Display Objective Aids...
Create Obj Aid Forecasts
Enter Objective Aid...
Enter Objective Aid (no wind radii)...
List Objective Aid Data...
Objective Aid Speed Analysis...
Import New Objective Aid Data
Browse Aid Messages Directory...
Graph Aid Intensity vs Time...
Graph Aid Wind Radii vs Time...
Log Comments...
Check Objective Aid Data...

Prepare Compute Data - AMS al792010

79 2010 North Atlantic - AMS

Date-Time-Group: 2010062916

	Lat (deg)	Lon (deg)	Max Wind (kt)	Dir (deg)	Spd (kt)
Past 24 hr:	17.4 N	76.3 W	50		
Past 12 hr:	17.9 N	77.7 W	50	298	8
Current:	18.8 N S	79.2 E W	60	300	9

Eye Diameter: 0 nm
Max Wind Radius: 25 nm
Vertical Extent of Circulation: Deep >400 mb
Central Pressure: 984 mb
Outermost Closed Isobar: 1008 mb
Radius Outermost Closed Isobar: 225 nm

Speed/Quadrant	NE (nm)	SE (nm)	SW (nm)	NW (nm)
34 kt:	130	90	40	100
50 kt:	60	40	0	40
64 kt:	0	0	0	0

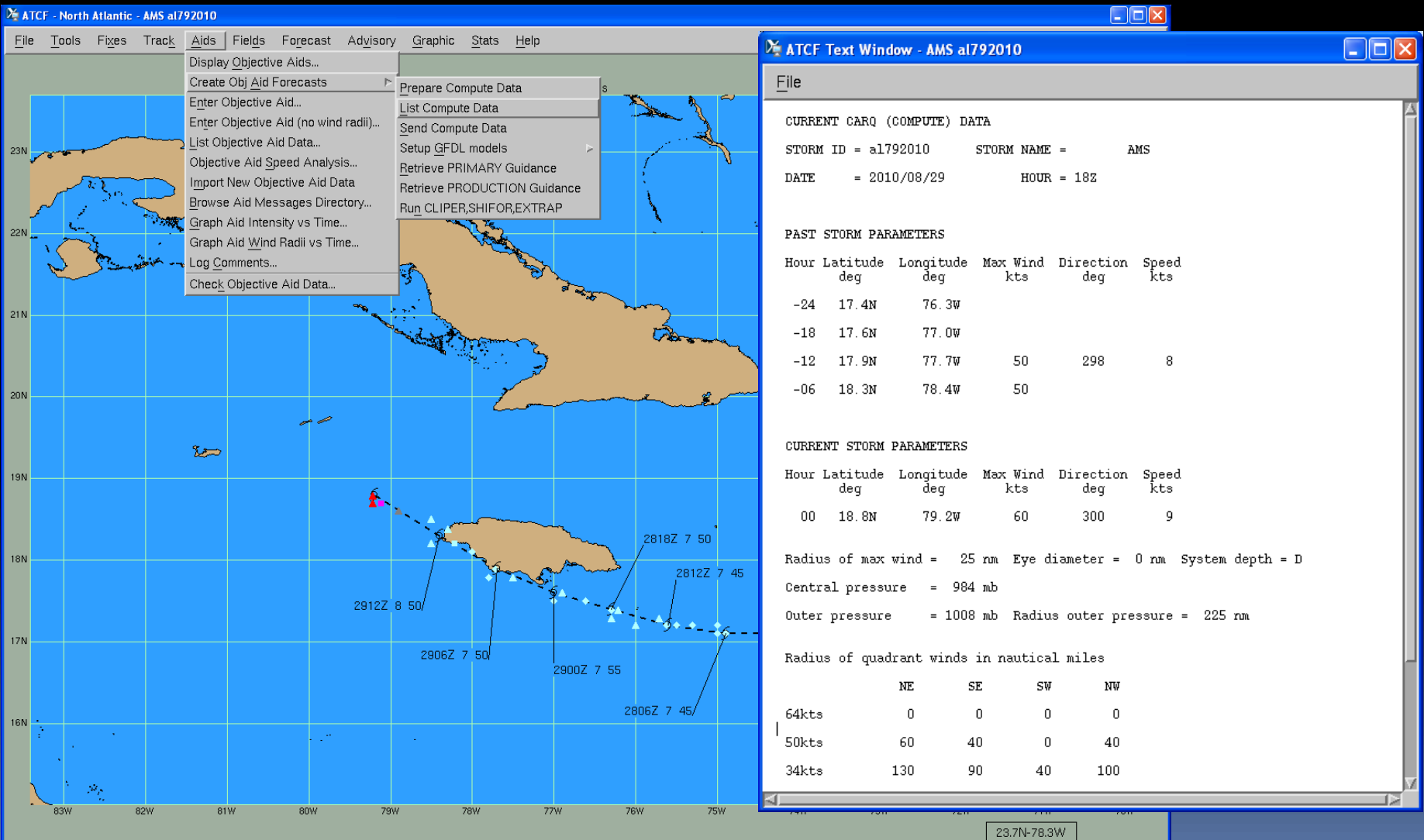
Help OK Cancel

23.5N-78.4W

18:45-19:00 UTC

Initialize models

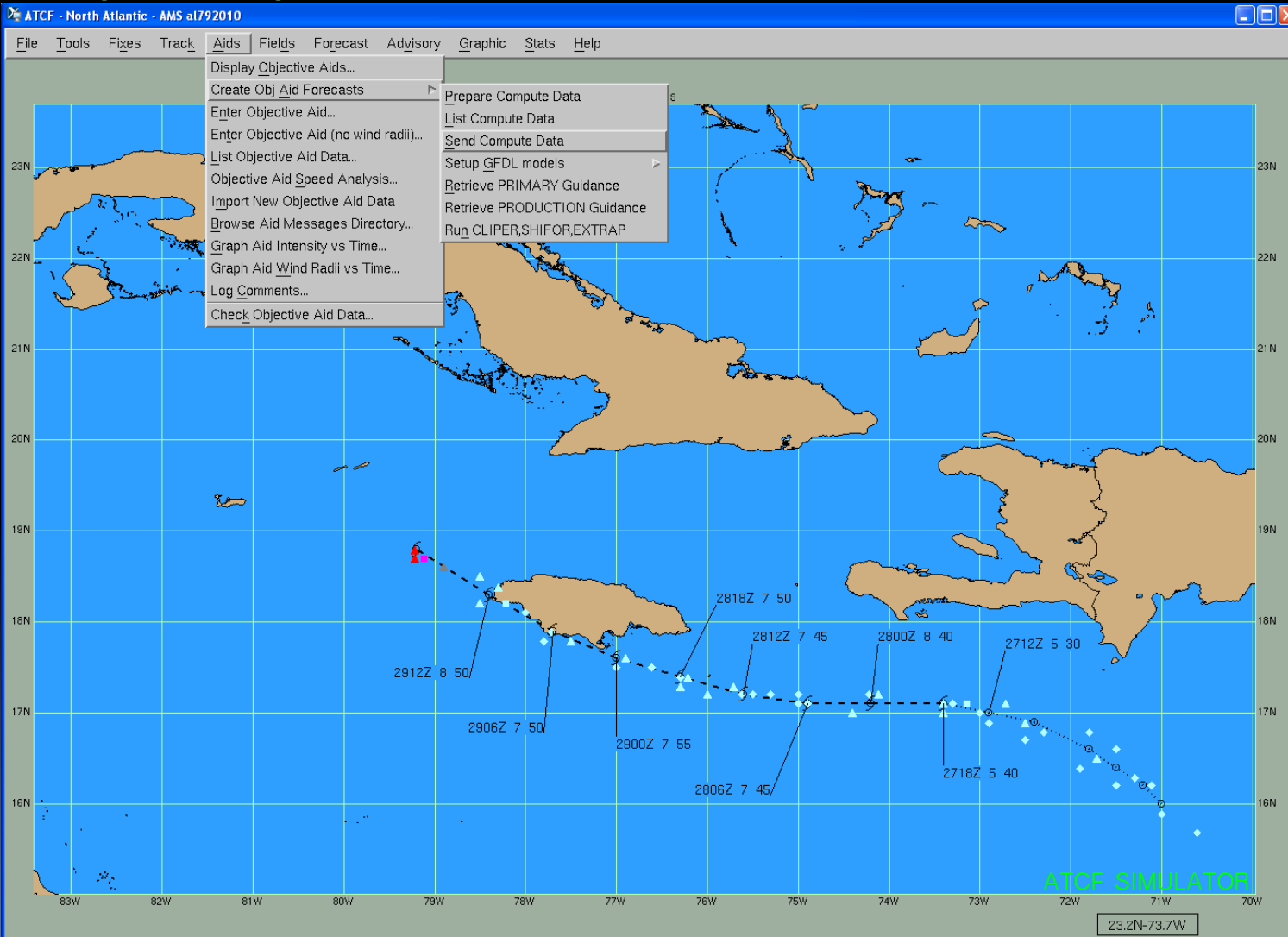
Let's check to make sure the information was entered correctly.



18:45-19:00 UTC

Initialize models

After determining the center, strength, motion, and size of the tropical cyclone, the hurricane specialist gives that information to a supercomputer to run the models

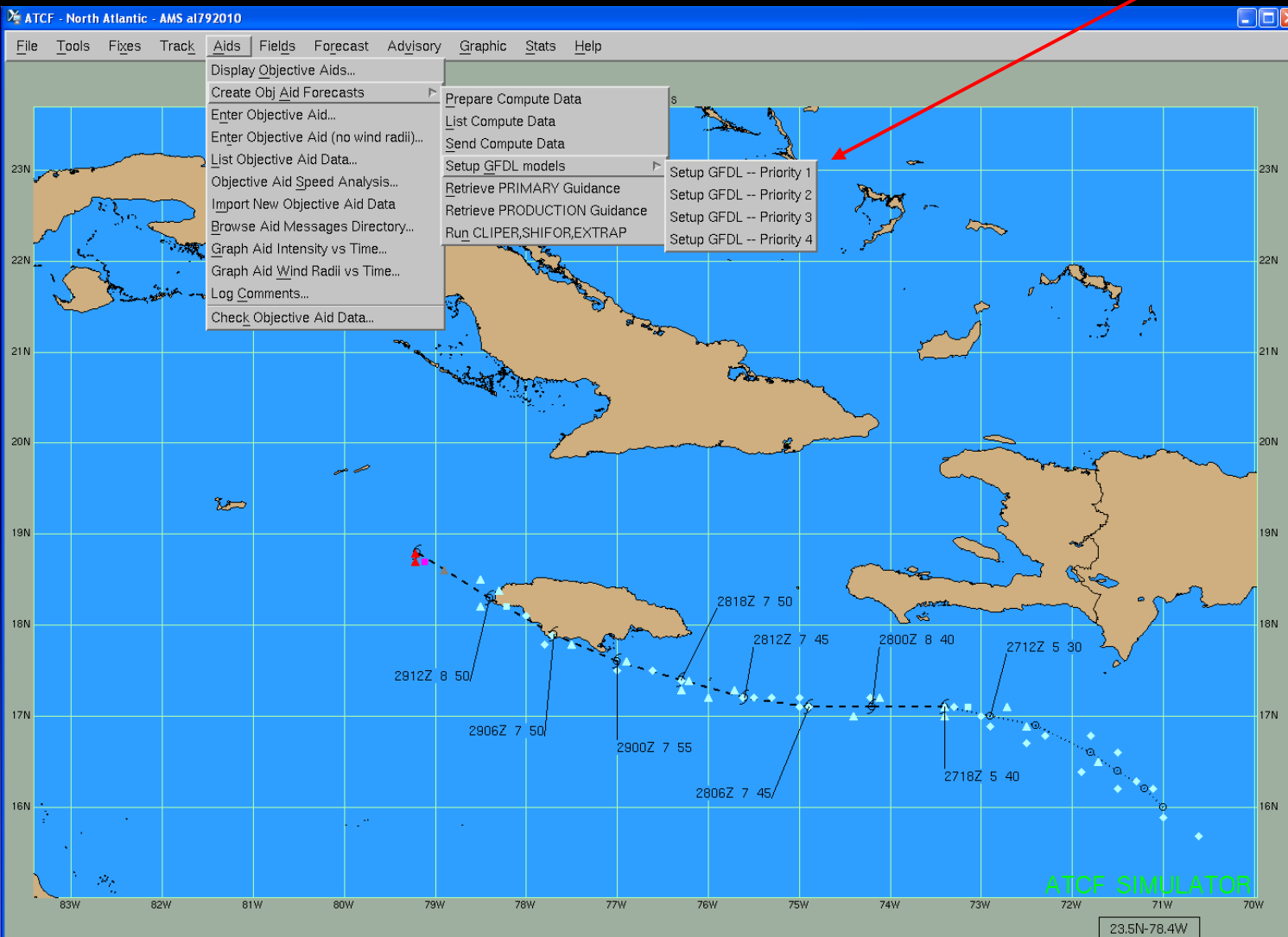


18:45-19:00 UTC

Initialize models

Send Compute Data... and don't forget to set-up the GFDL/HWRF models or your relief will not be happy!

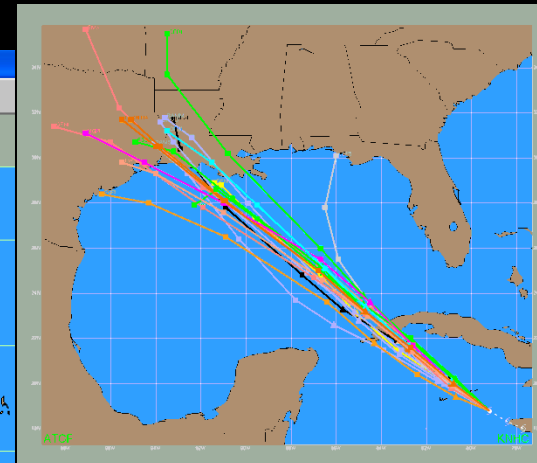
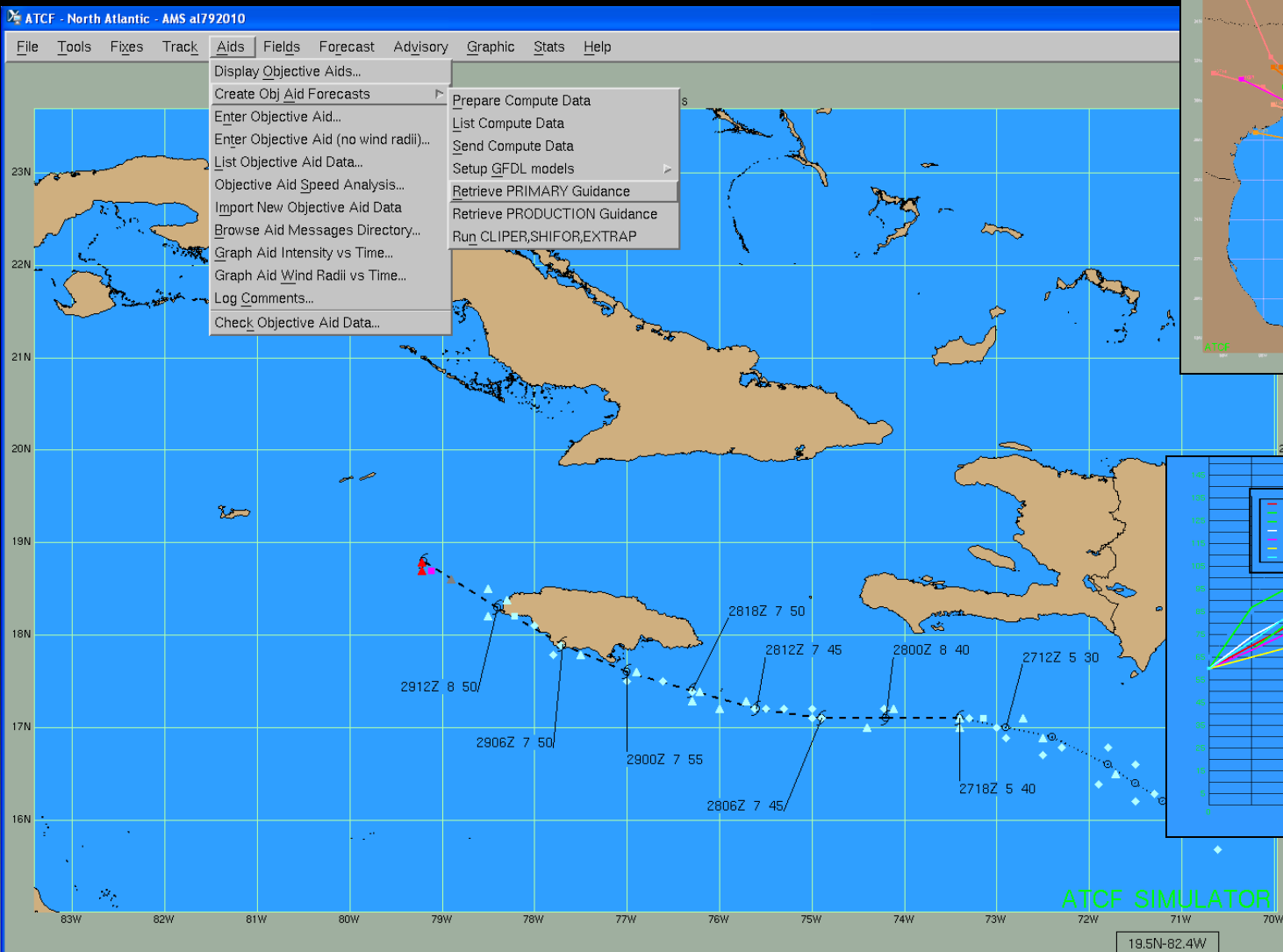
Now we must wait a few minutes for the models to run.



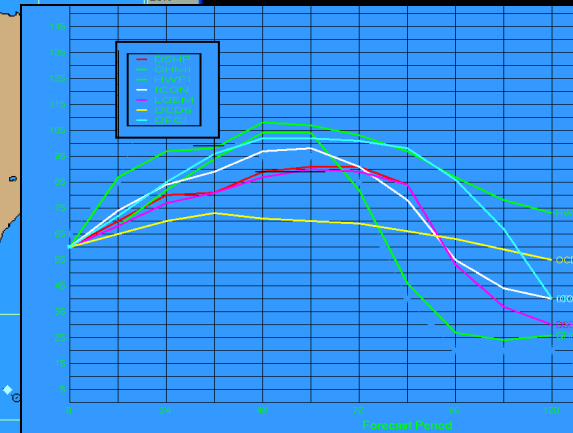
19:00-19:10 UTC

Receive model guidance

Then analyze numerical model output and prepare track, intensity, and wind radii forecasts

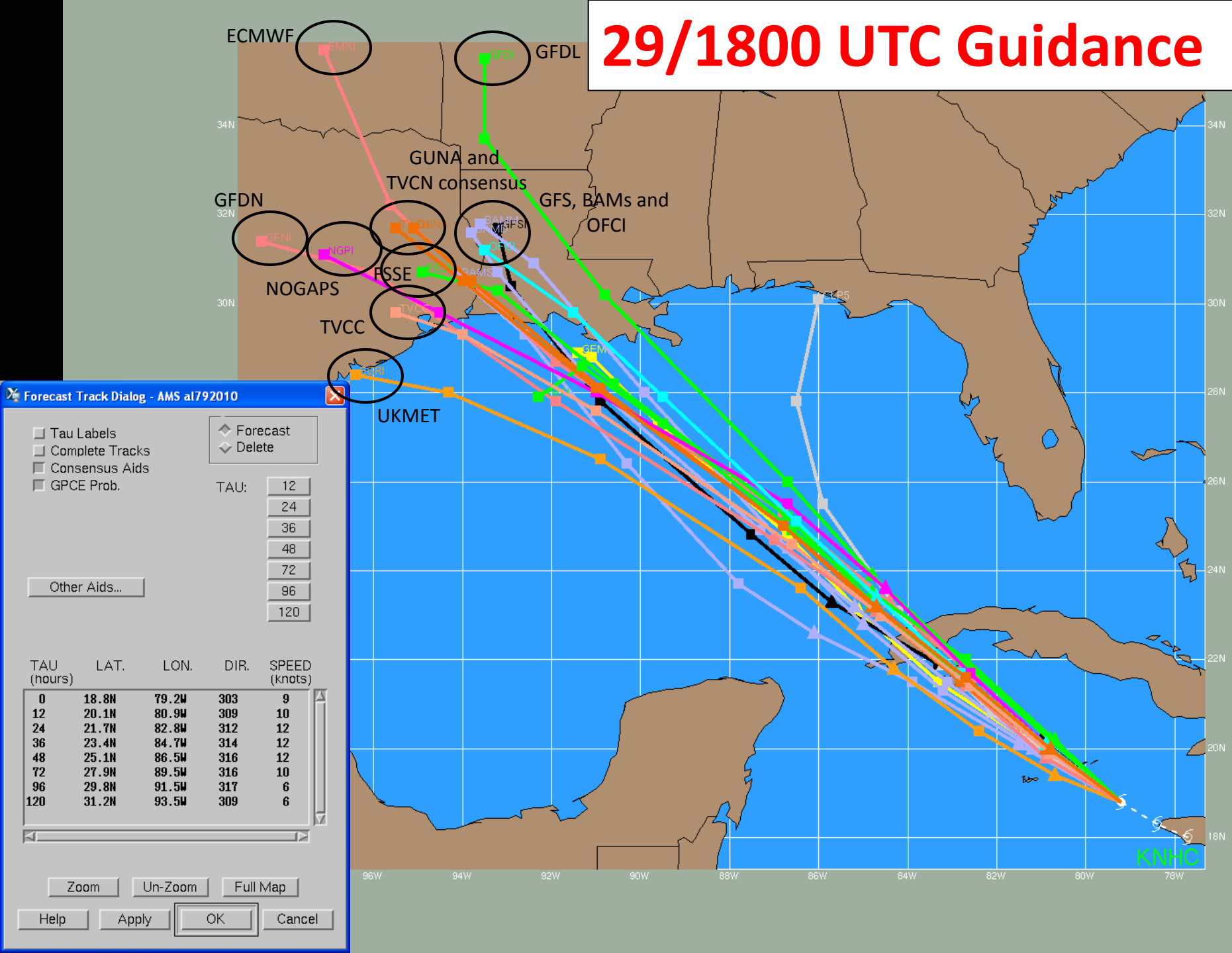


Track Guidance



Preparing the Track Forecast

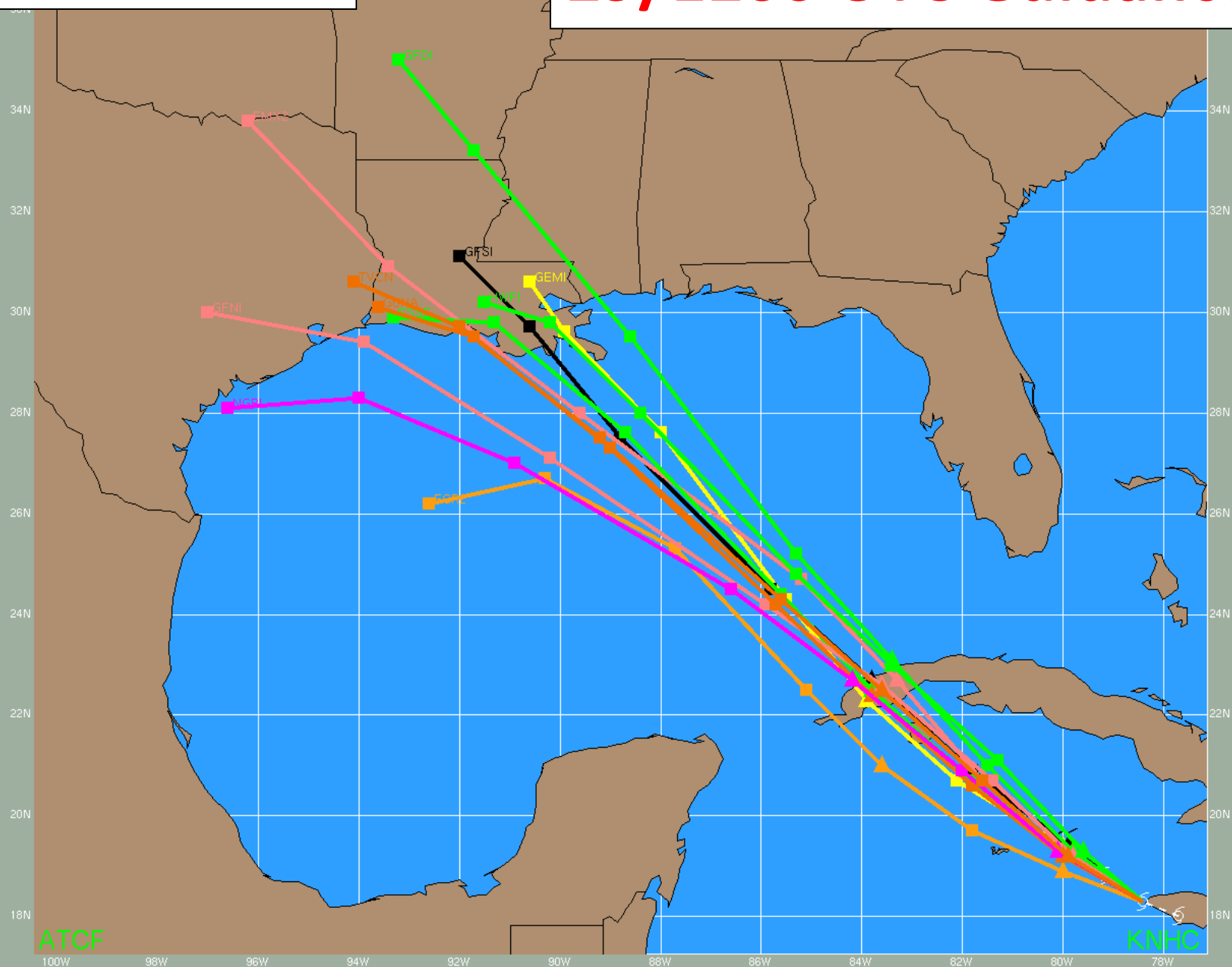
29/1800 UTC Guidance



**Before we begin, let's examine
recent model trends...**

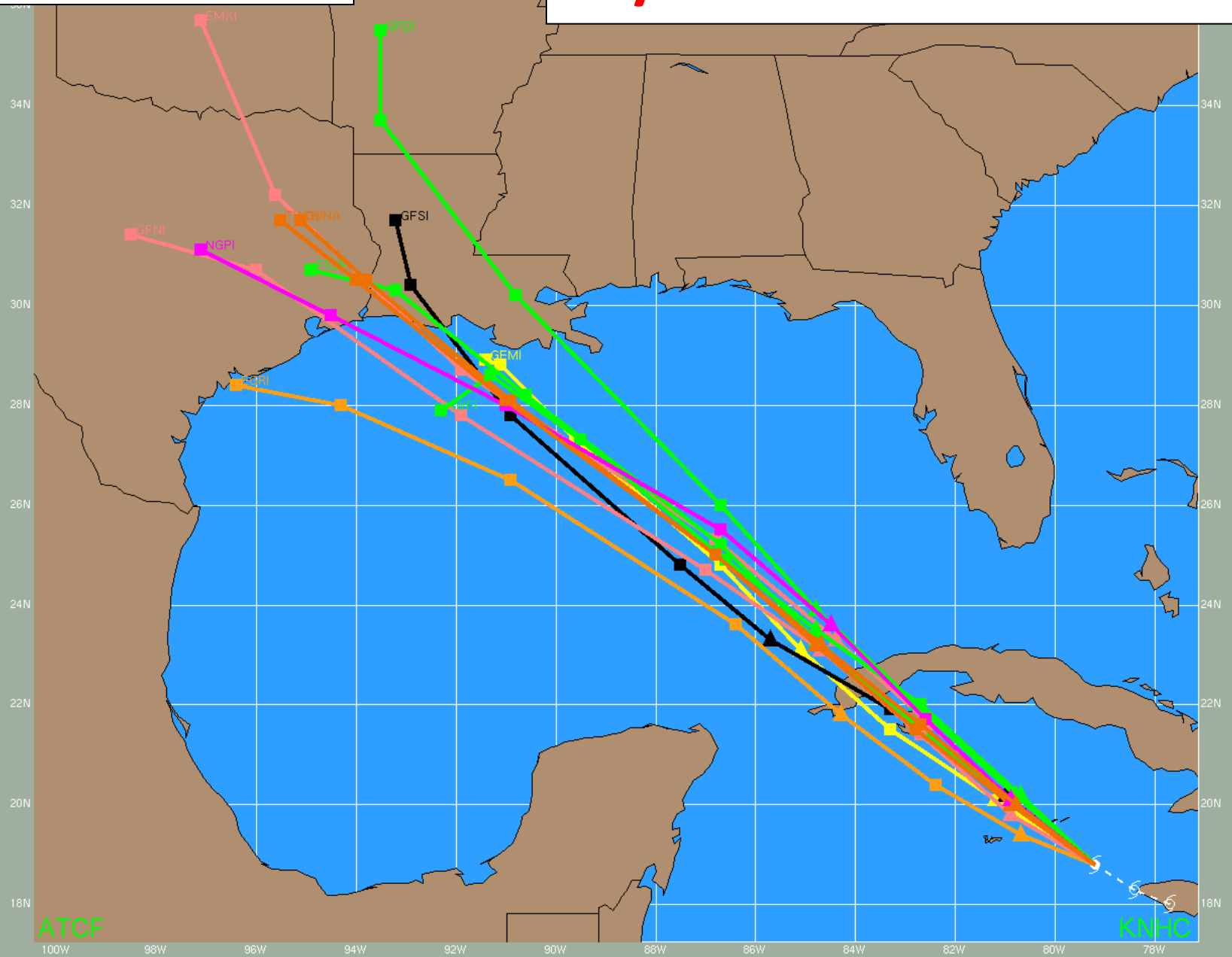
Recent model trends

29/1200 UTC Guidance



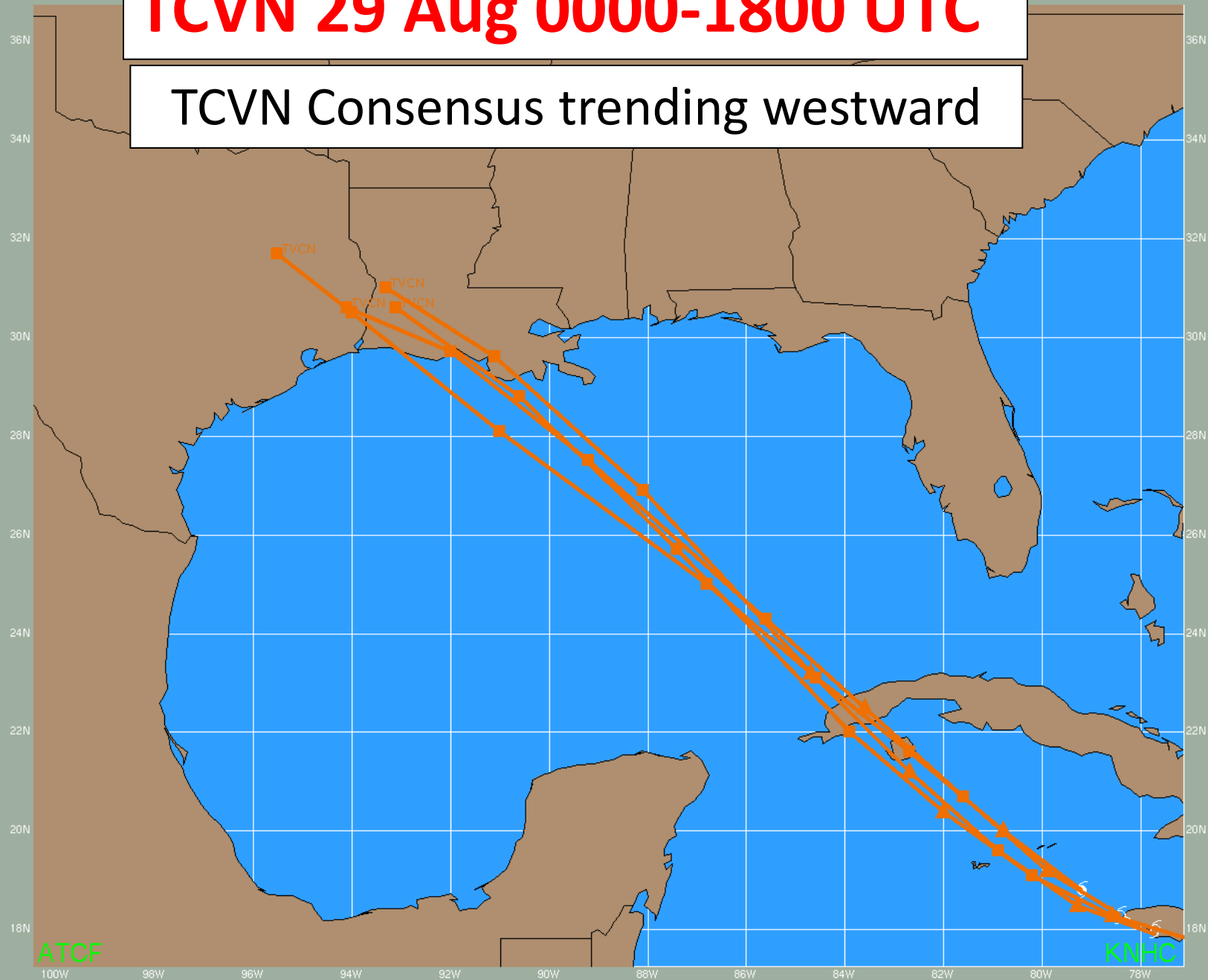
29/1800 UTC Guidance

29/1800 UTC Guidance



TCVN 29 Aug 0000-1800 UTC

TCVN Consensus trending westward

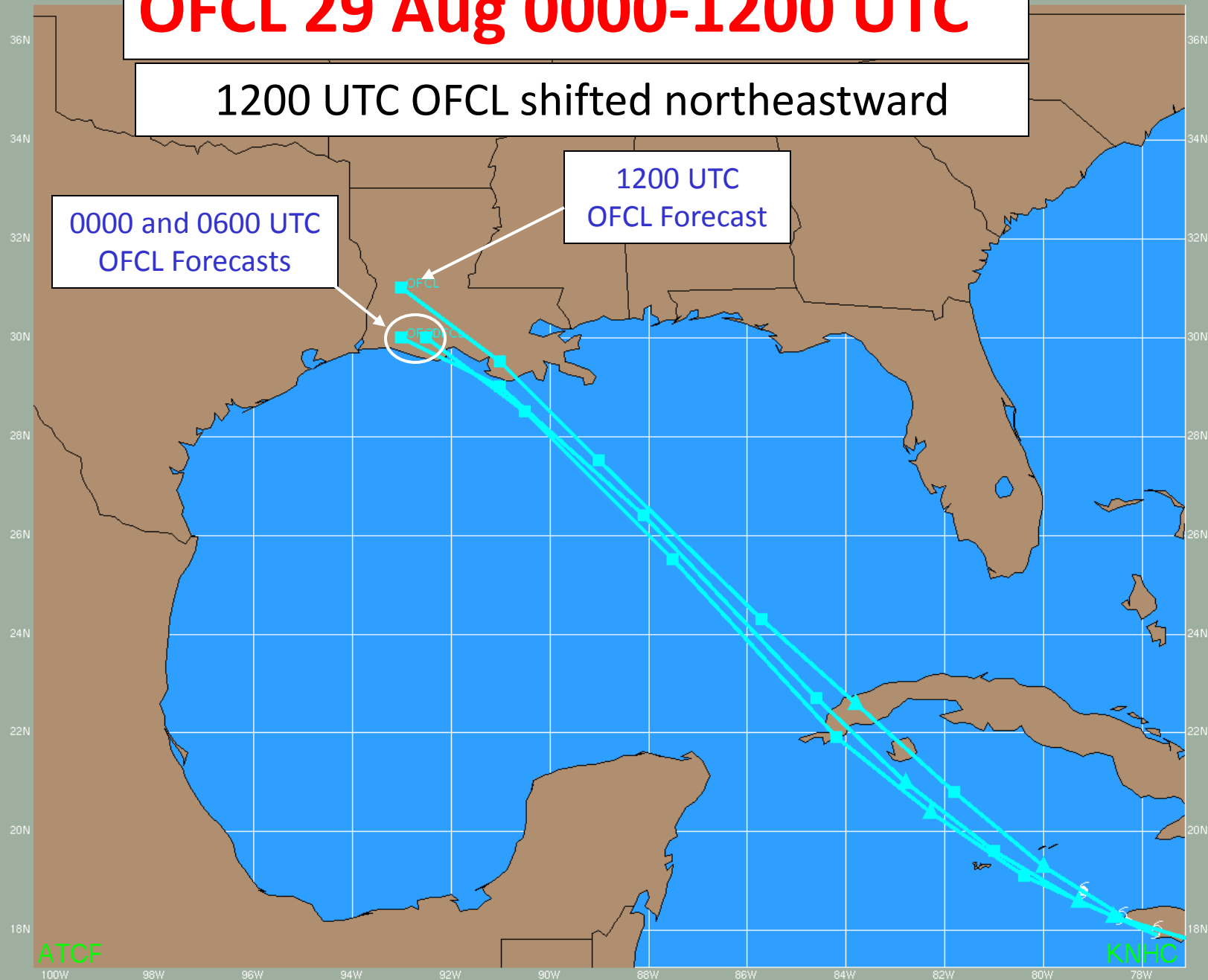


OFCL 29 Aug 0000-1200 UTC

1200 UTC OFCL shifted northeastward

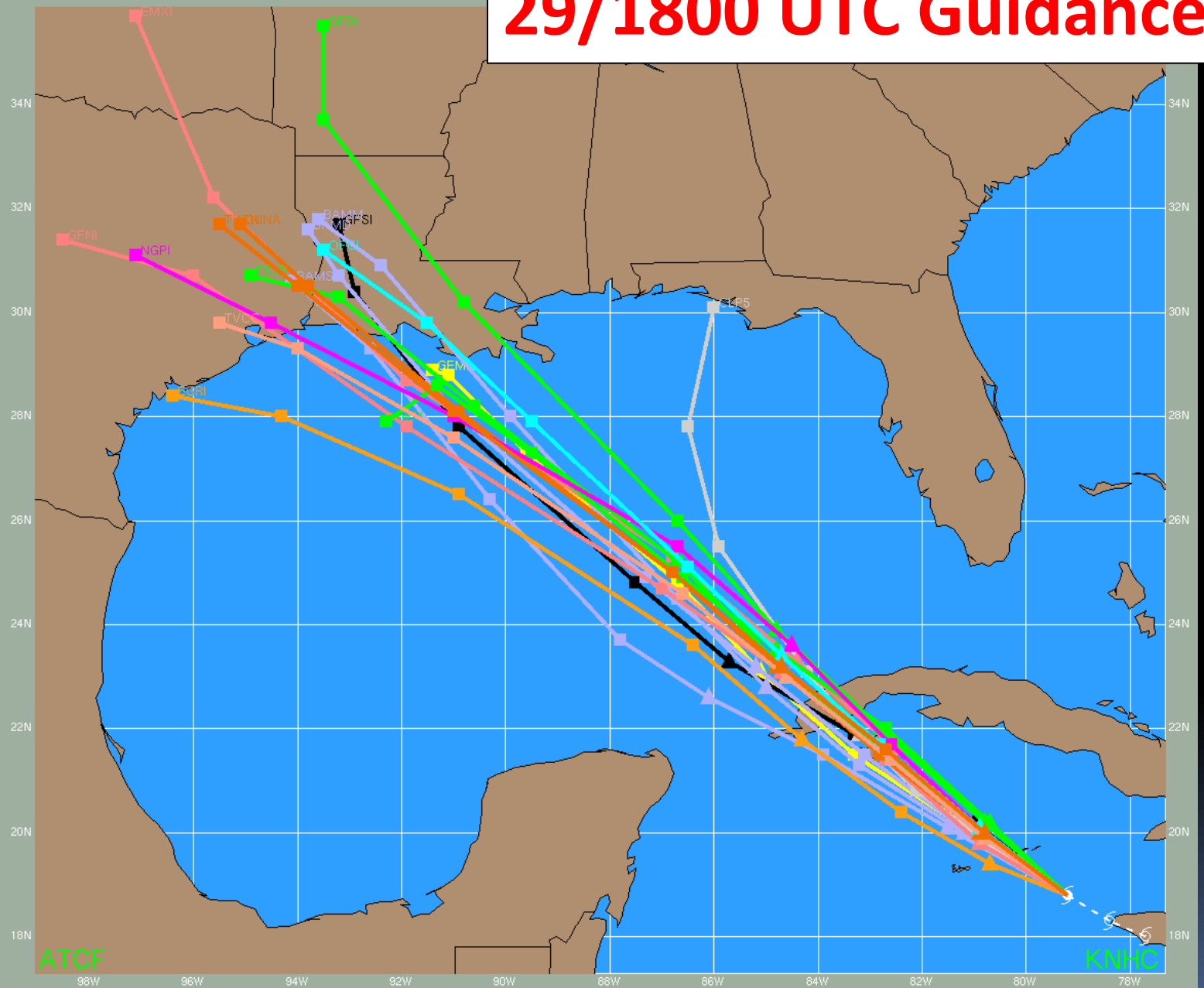
0000 and 0600 UTC
OFCL Forecasts

1200 UTC
OFCL Forecast



Let's Begin

29/1800 UTC Guidance



Forecast Track Dialog - AMS a1792010

- ☐ Tau Labels
- ☐ Complete Tracks
- ☐ Consensus Aids
- ☐ GPCE Prob.

- ☒ Forecast
- ☐ Delete

TAU:

Other Aids...

TAU (hours)	LAT.	LON.	DIR.	SPEED (knots)
0	18.8N	79.2W	303	9
12	20.1N	80.9W	309	10
24	21.7N	82.8W	312	12
36	23.4N	84.7W	314	12
48	25.1N	86.5W	316	12
72	27.9N	89.5W	316	10
96	29.8N	91.5W	317	6
120	31.2N	93.5W	309	6

Zoom

Un-Zoom

Full Map

Help

Apply

OK

Cancel

22N

20N

18N

ATCF

98W

96W

94W

92W

90W

88W

86W

84W

82W

80W

78W

34N

32N

30N

28N

26N

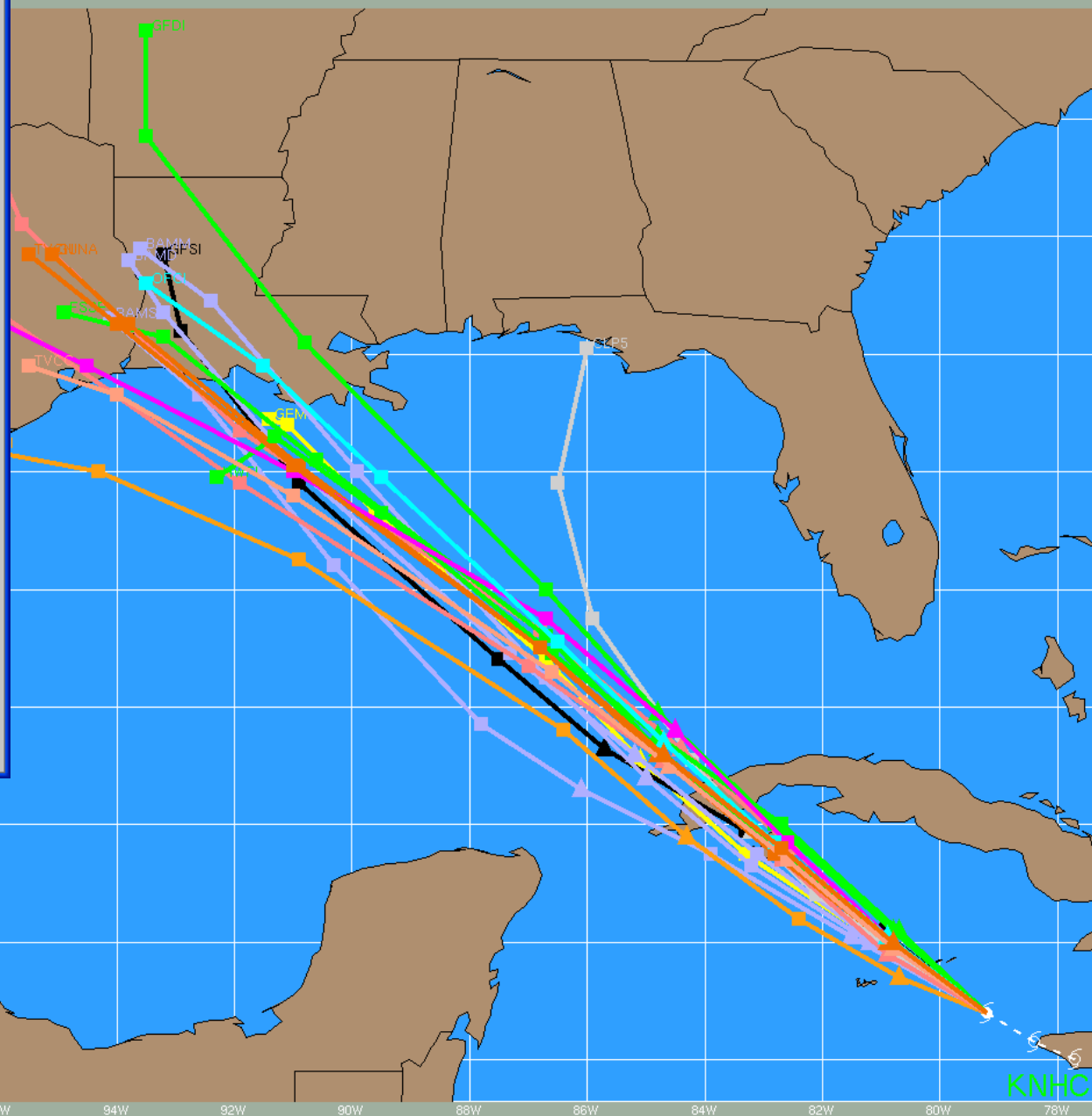
24N

22N

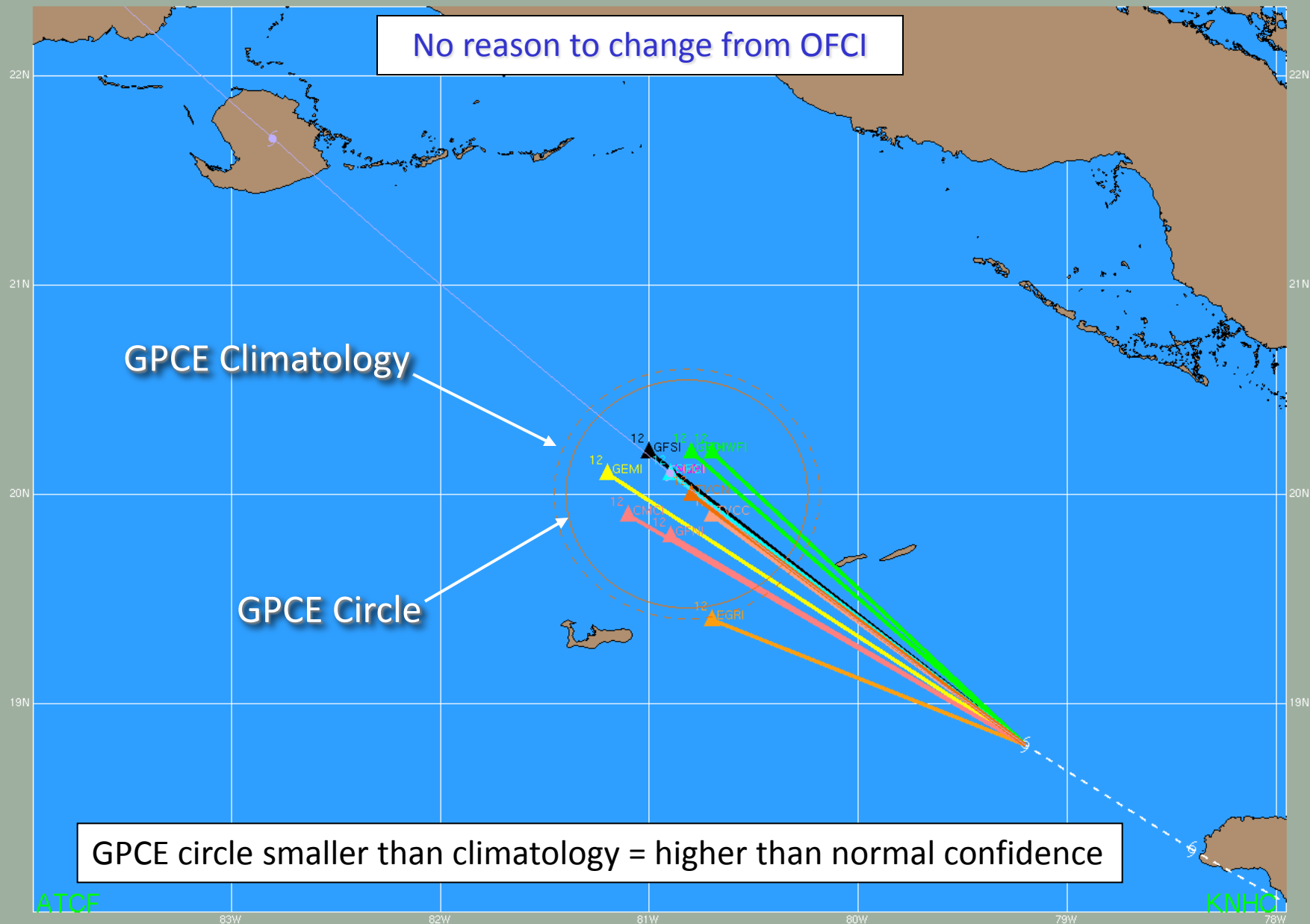
20N

18N

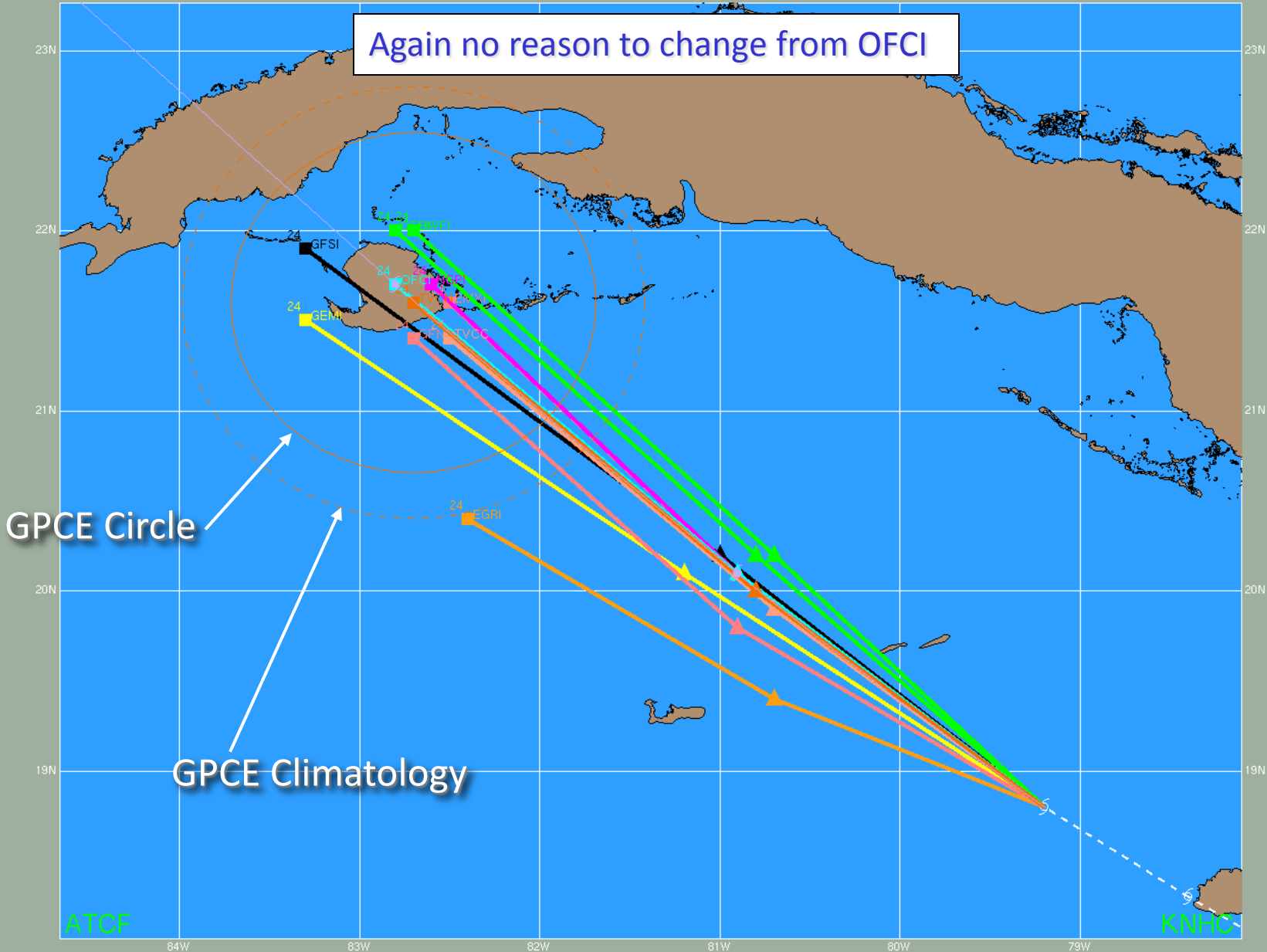
KNHC



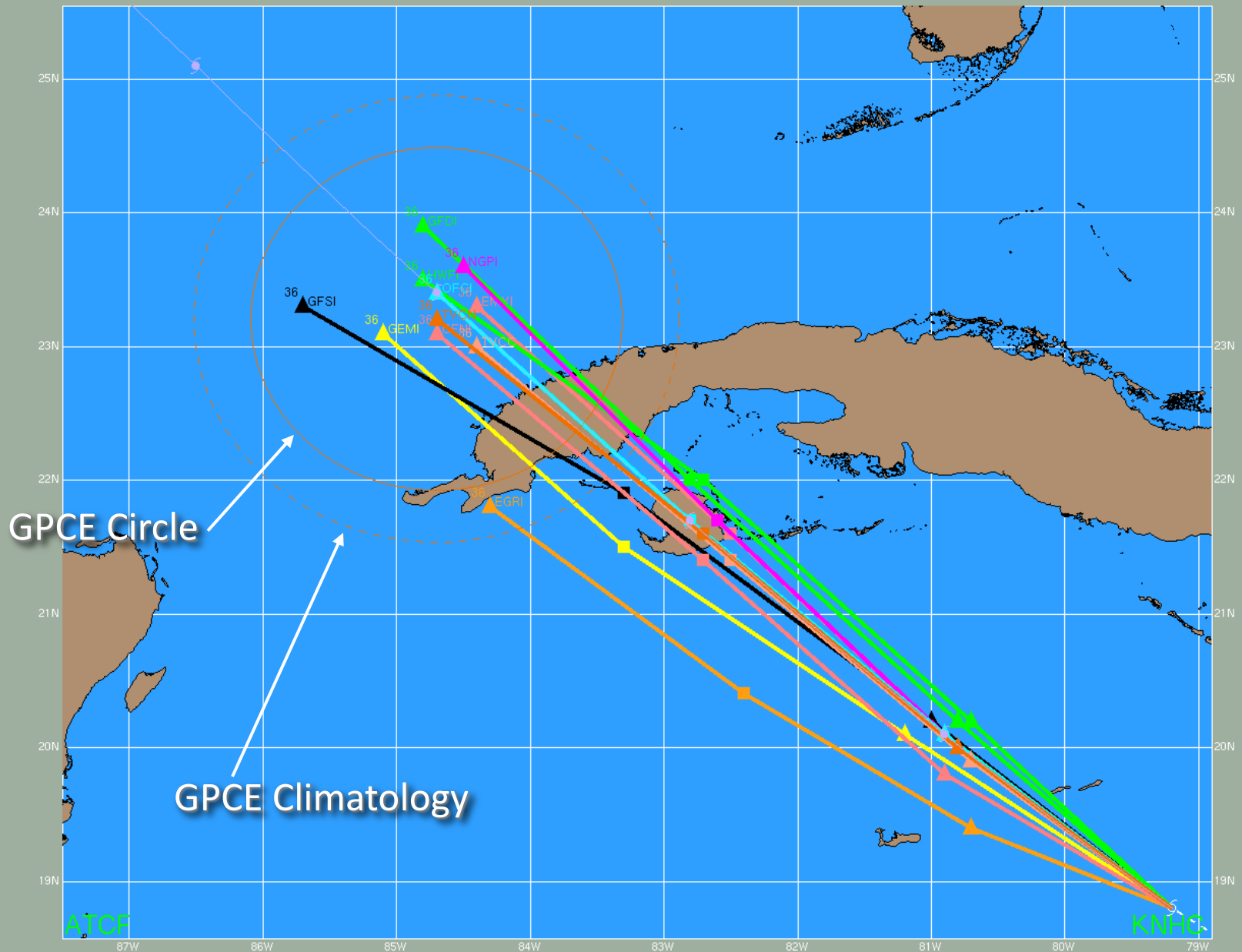
Making the 12 h forecast



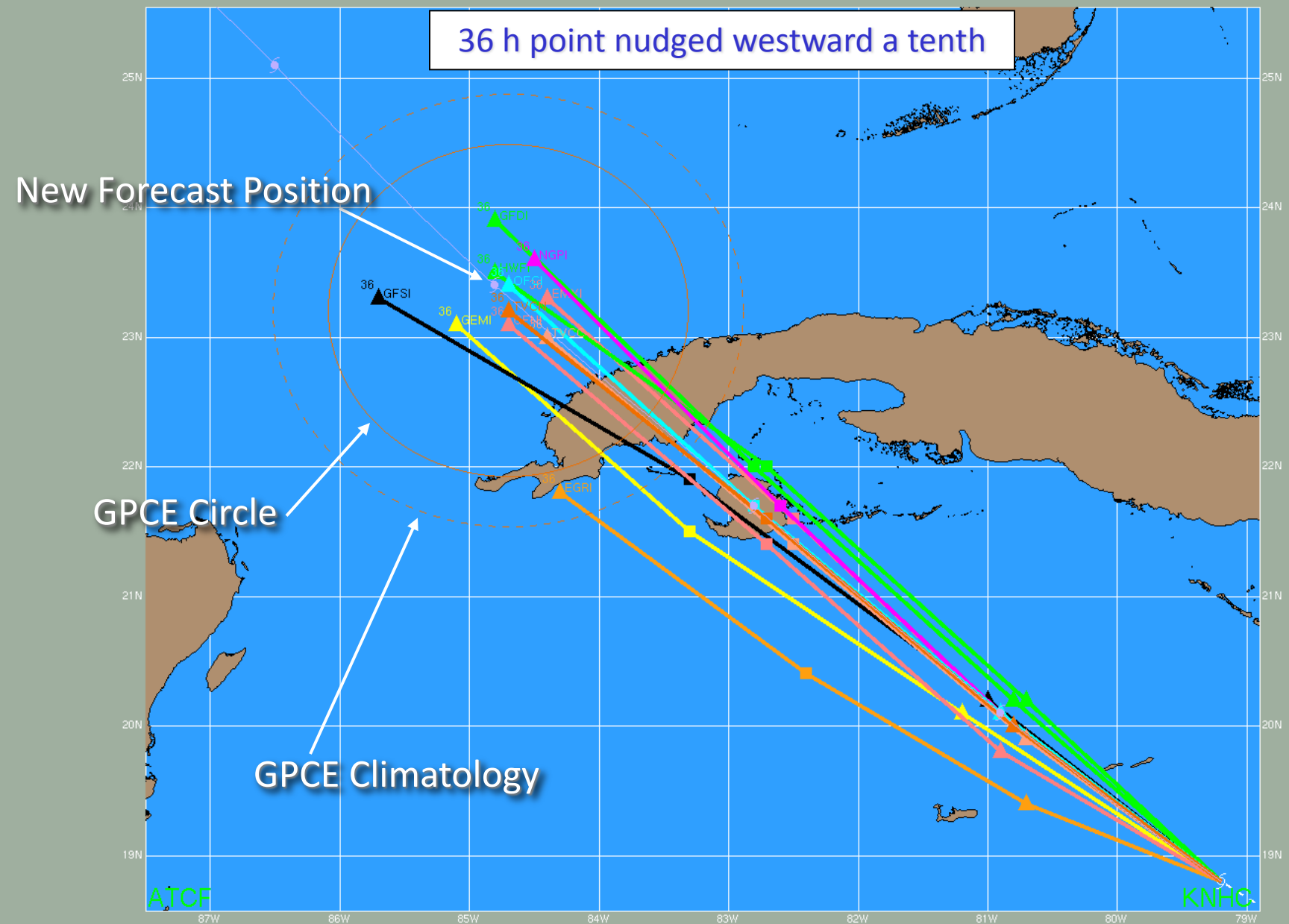
24 h forecast



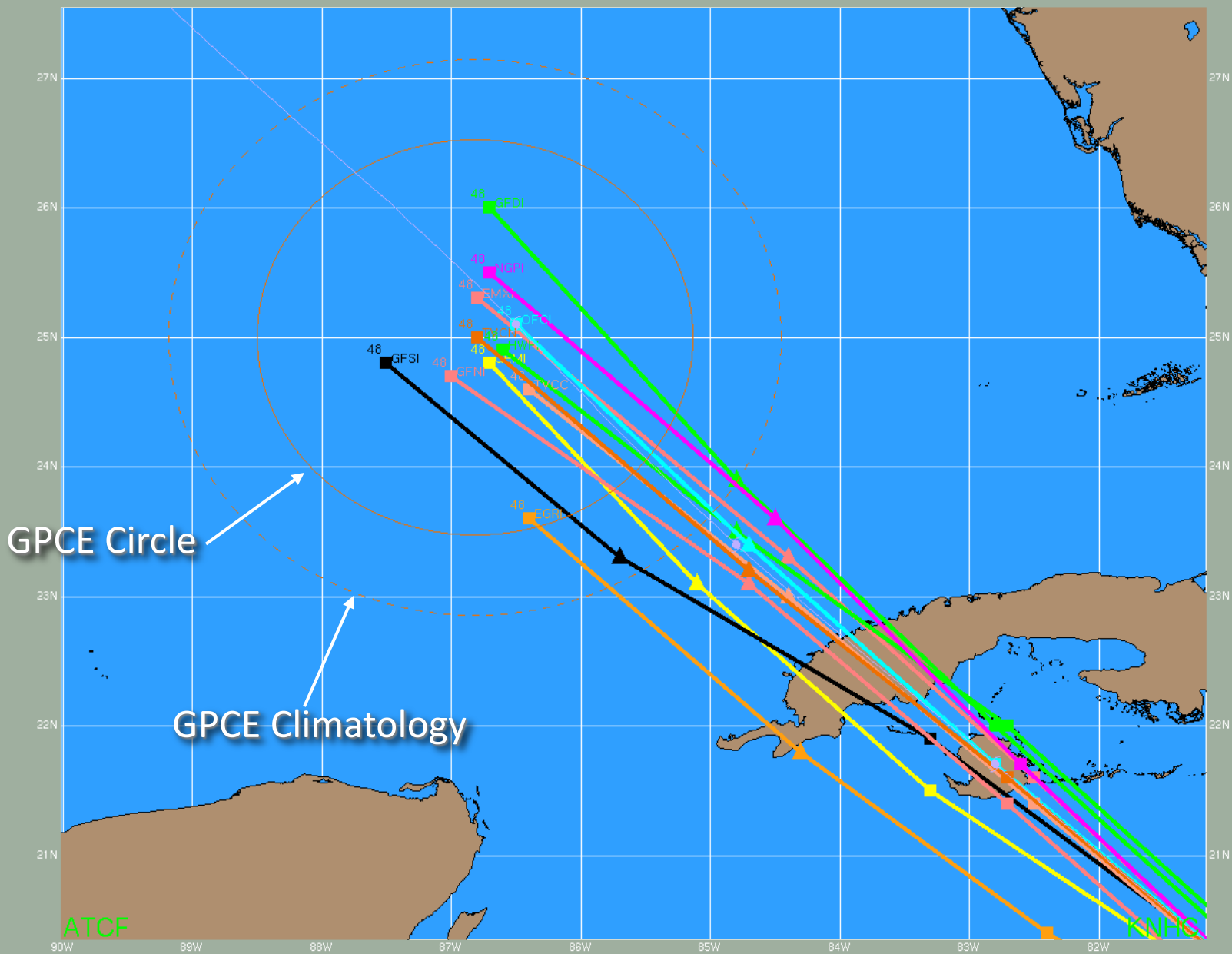
36 h forecast



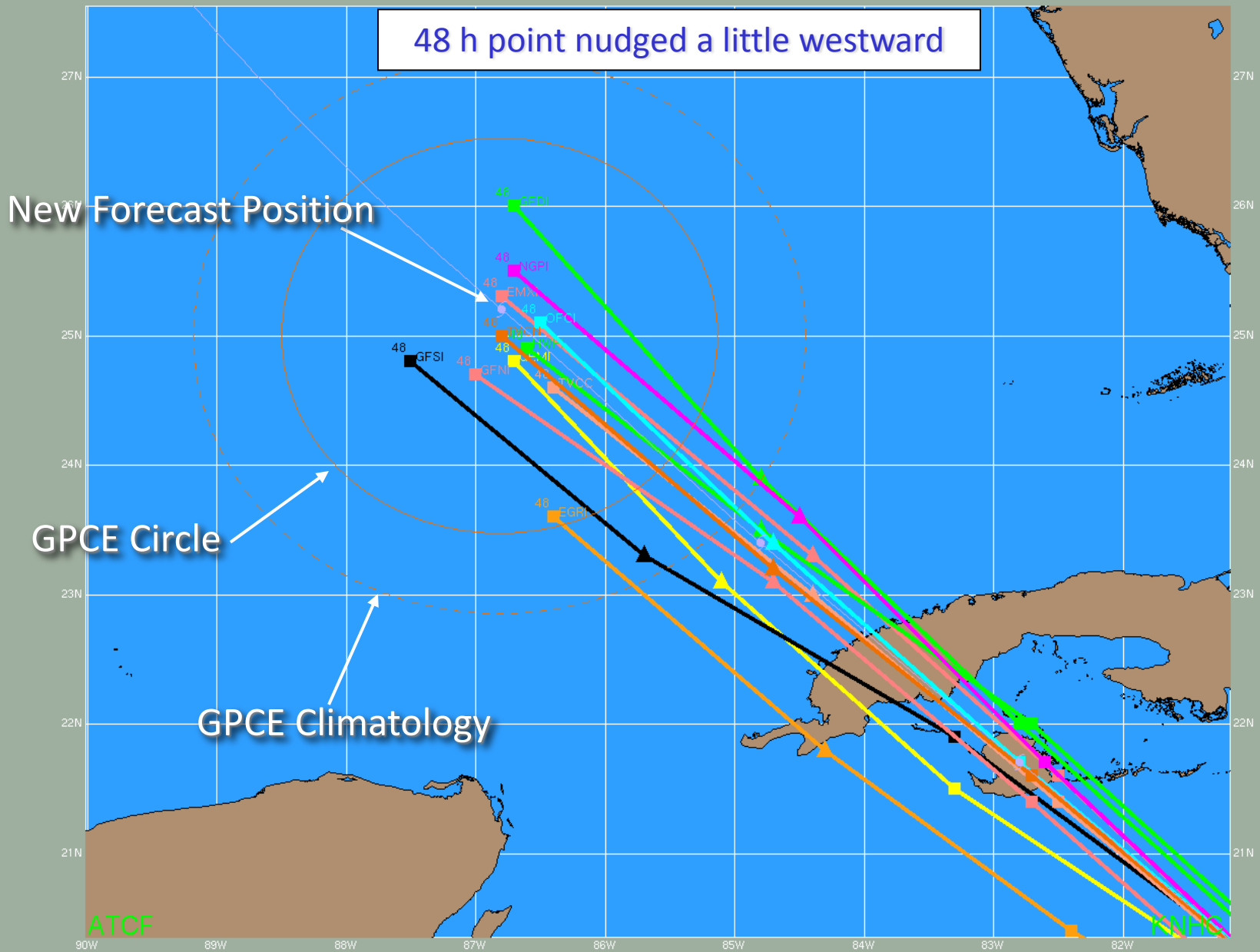
36 h forecast



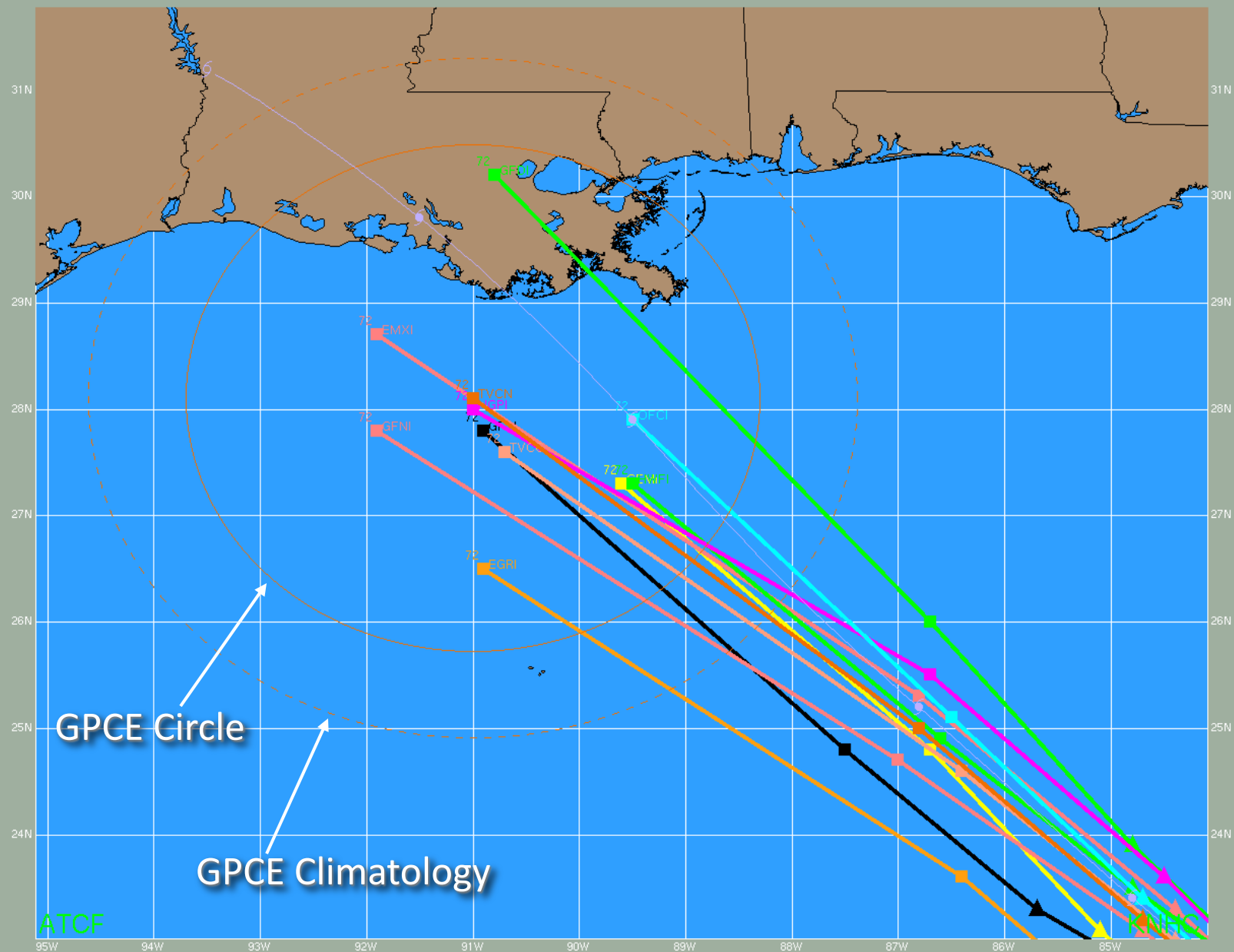
48 h forecast



48 h forecast

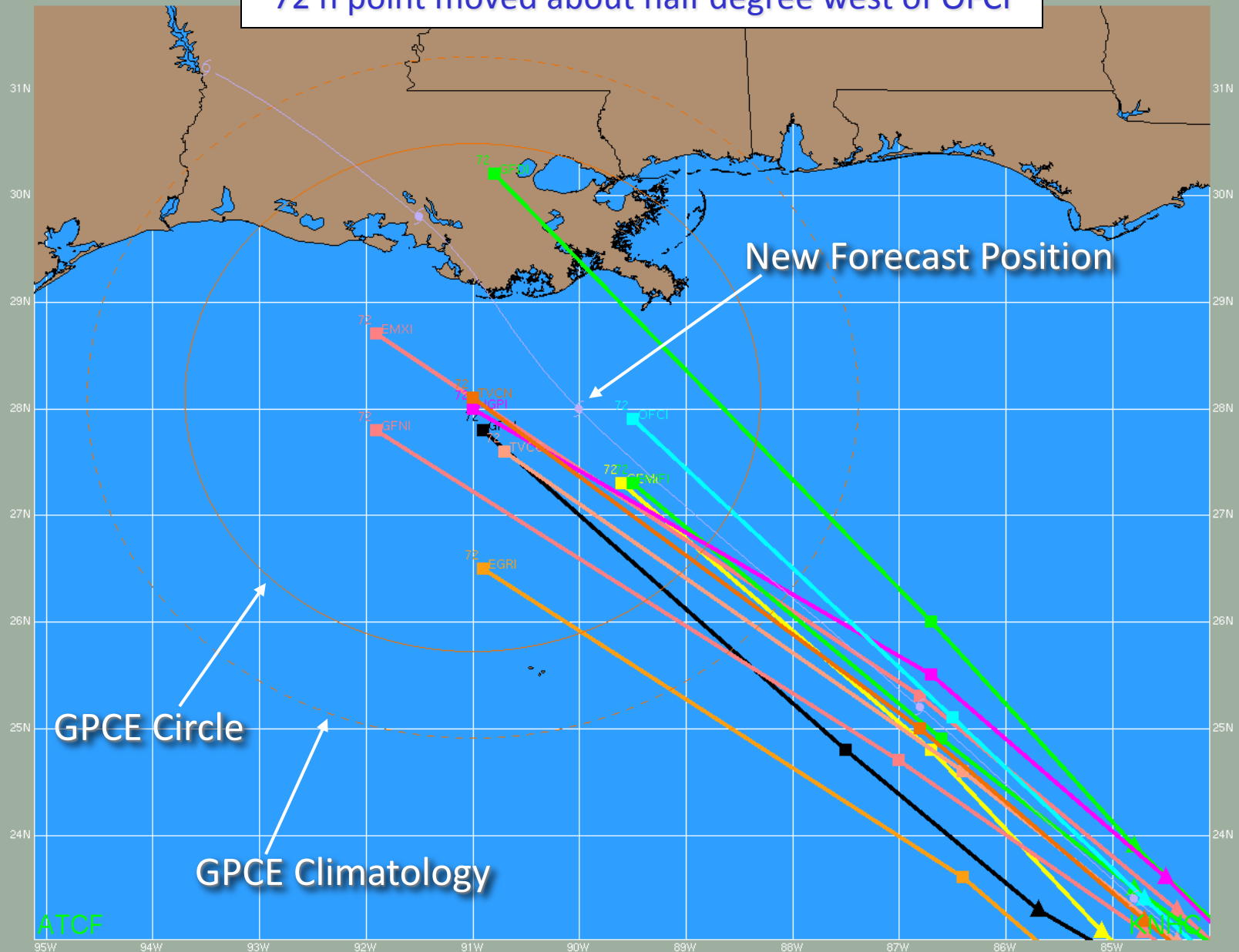


72 h forecast

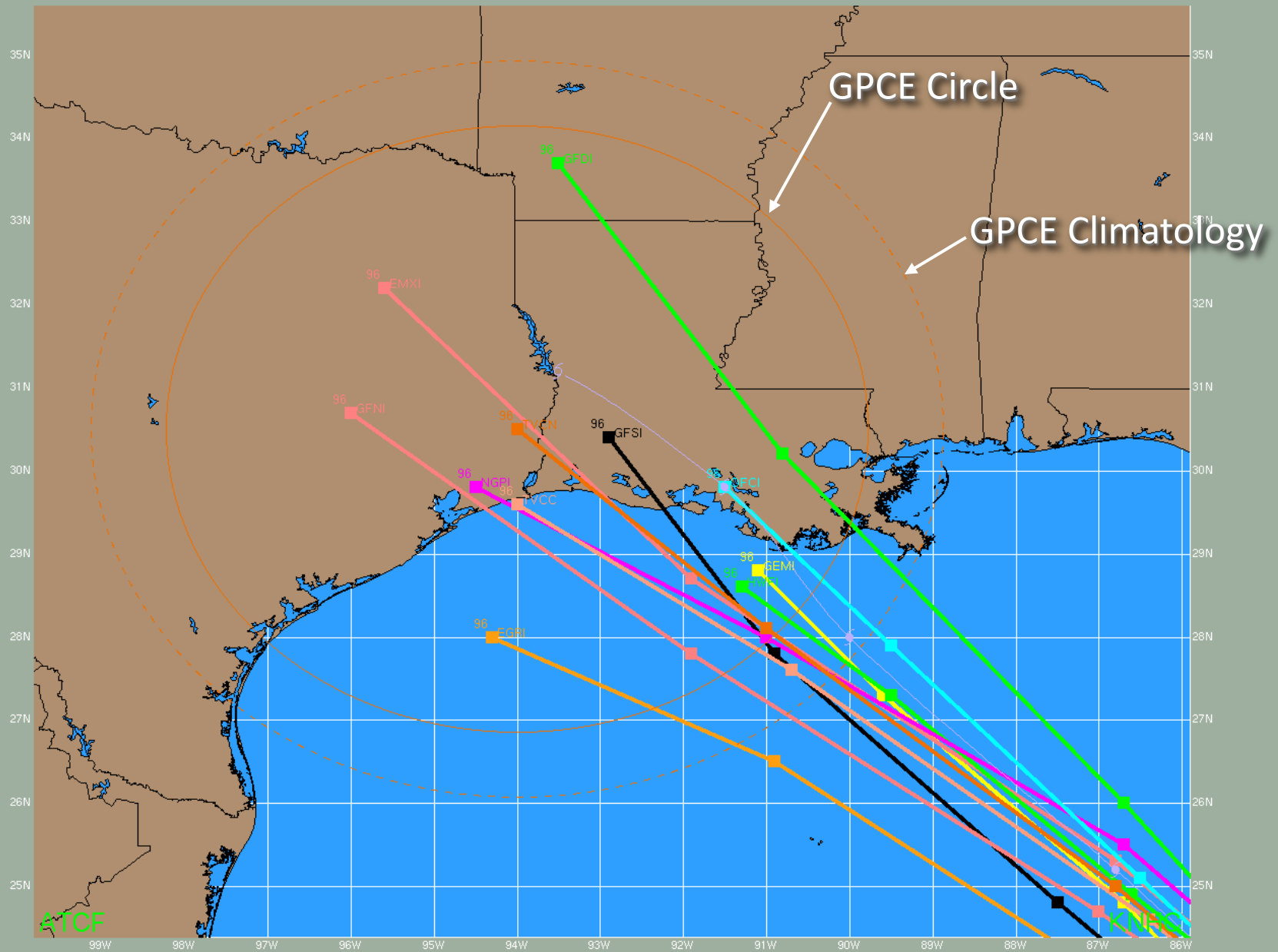


72 h forecast

72 h point moved about half degree west of OFCI

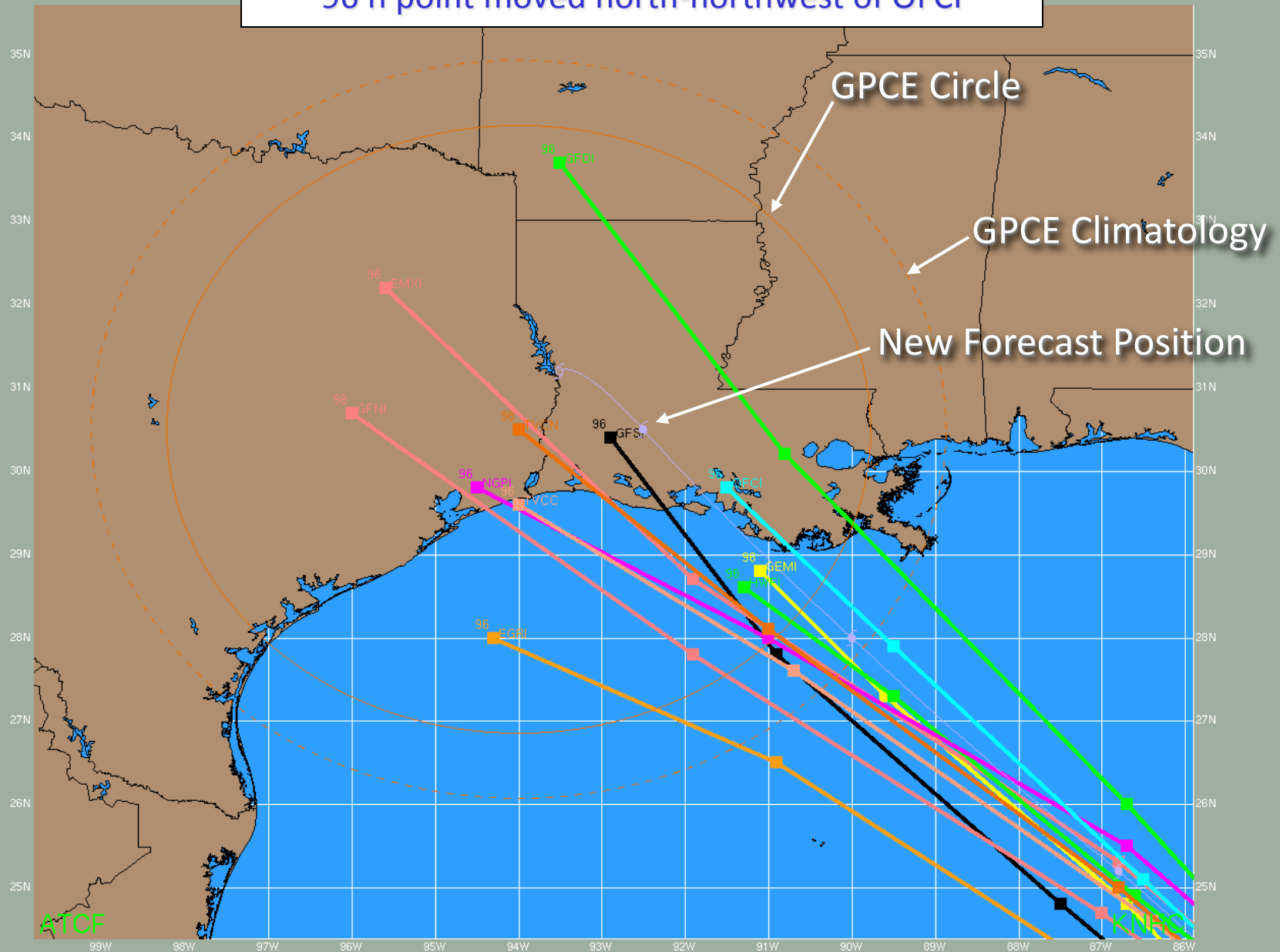


96 h forecast

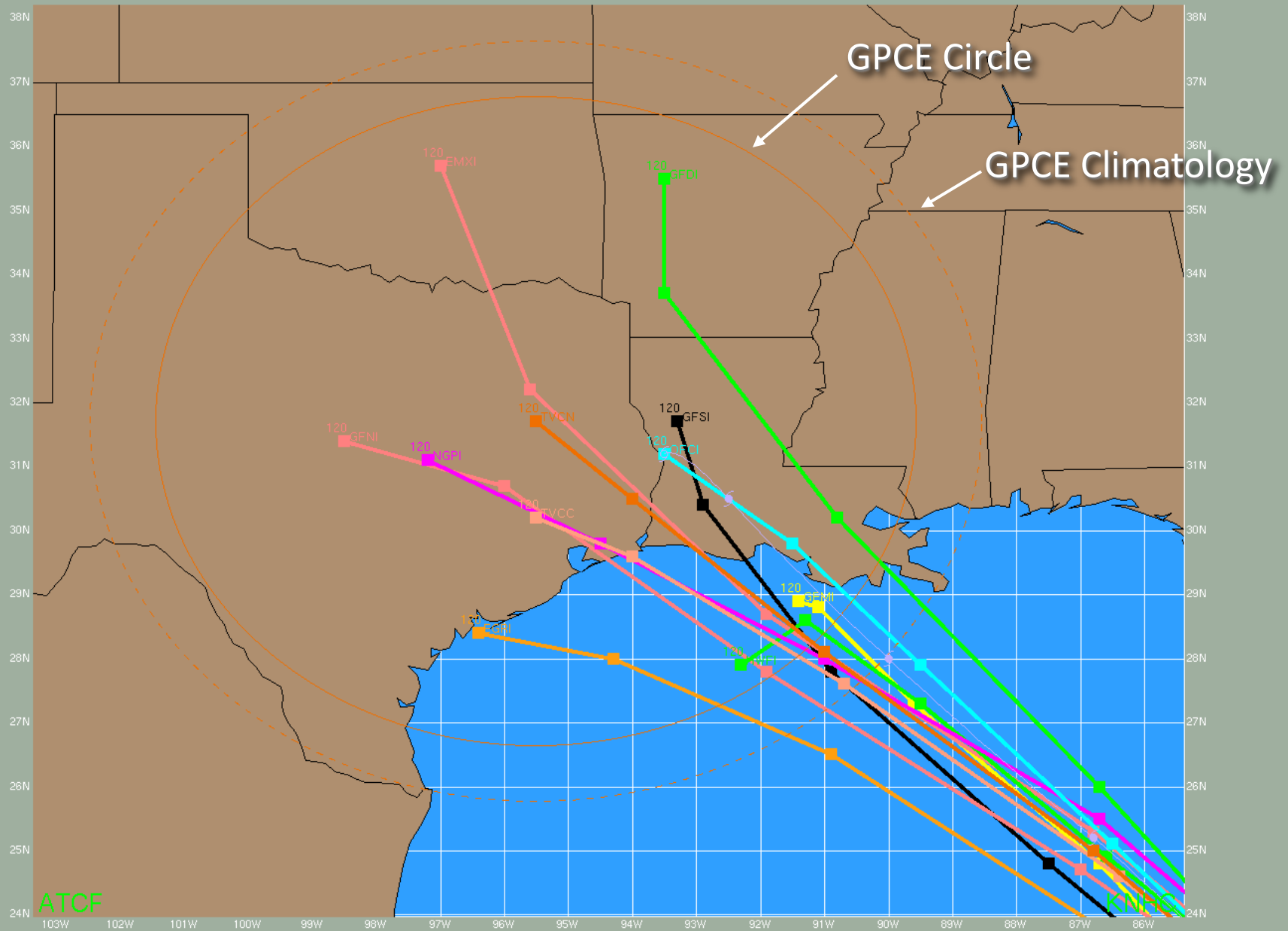


96 h forecast

96 h point moved north-northwest of OFCI

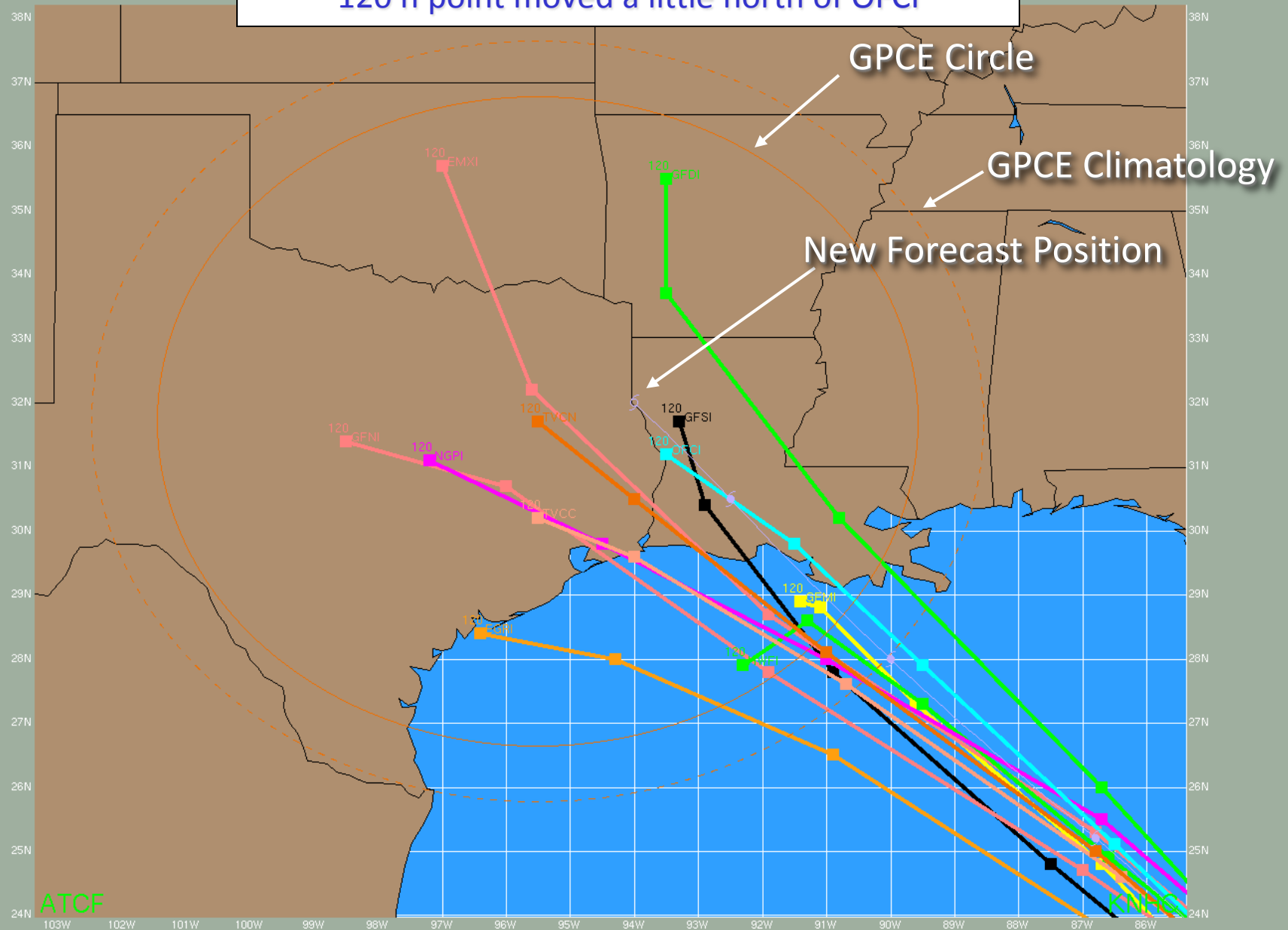


120 h forecast

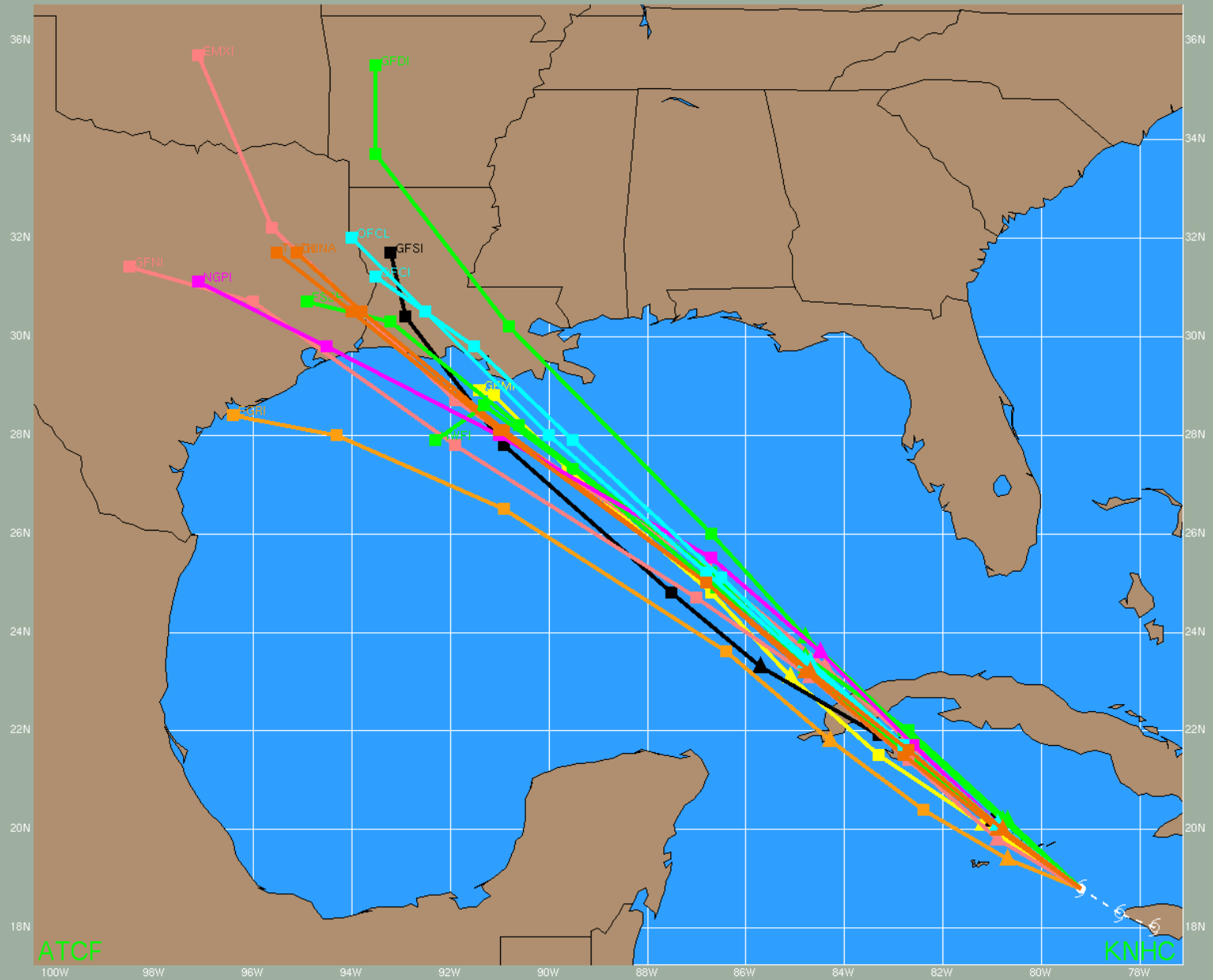


120 h forecast

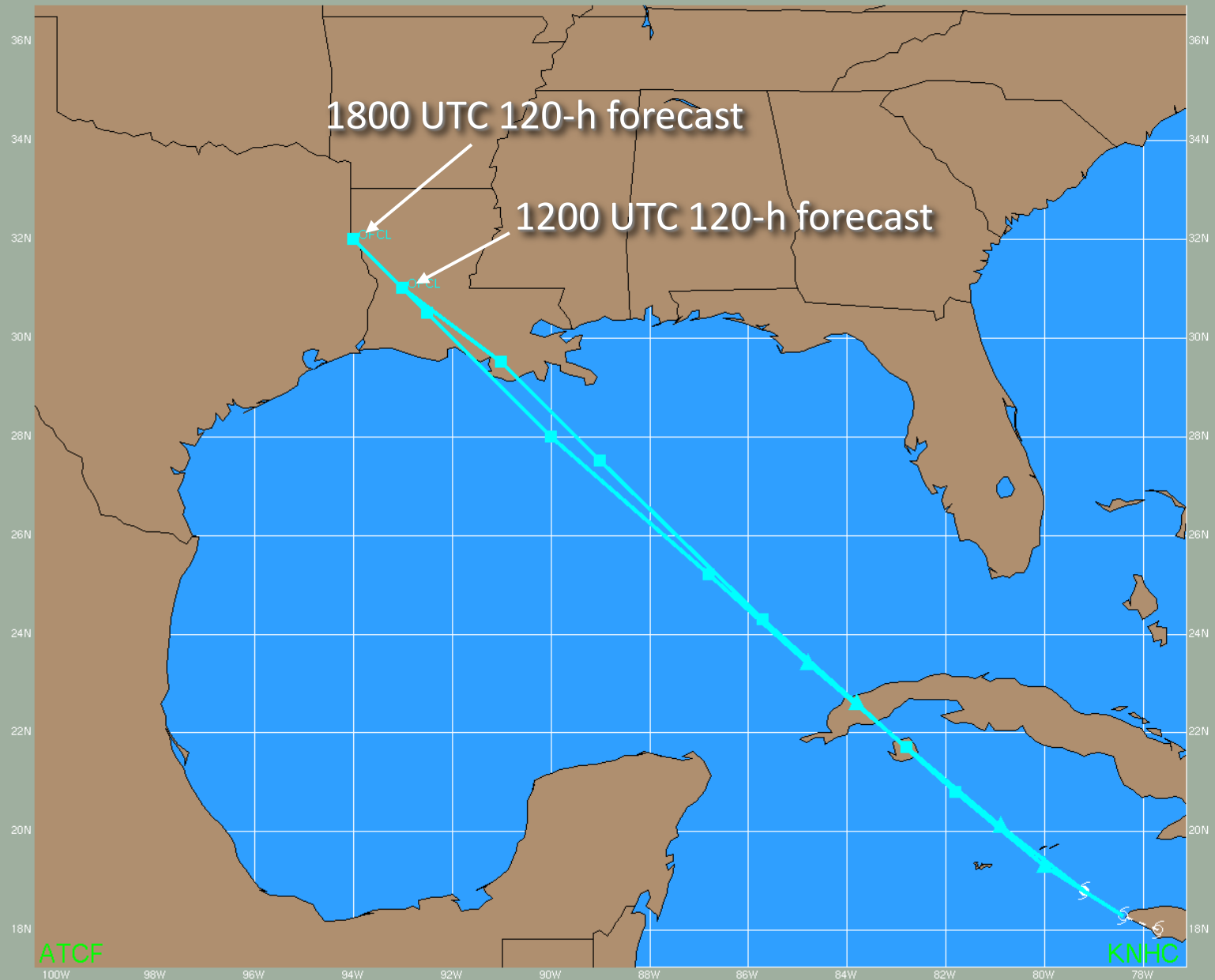
120 h point moved a little north of OFCI



Our new OFCL forecast track



Comparing the new OFCL vs. the previous OFCL



Did you remember to
fill out the Advisory
Composition
Worksheet?

National Hurricane Center Advisory Composition Worksheet

Cyclone Name	ATCF ID	Adv #	Special	Last	Date	Time (UTC)	Forecaster(s)
AMS	ALXX20XX	10	<input type="checkbox"/>	<input type="checkbox"/>	Aug 29, 20XX	2100	??????
Watches and Warnings							
Hazards Statements	<input type="checkbox"/> Storm Surge						
	<input type="checkbox"/> Rainfall						
	<input type="checkbox"/> Tornadoes						
Notes	<input type="checkbox"/> Special Soundings						

Fcst Hr	Date/Time (UTC)	Lat (°N)	Lon (°W)	Dir/Spd (deg/kt)	Pres (mb)	Wind (kt)	Gusts (kt)	Status	Wind Radii (nm)				
									kt	NE	SE	SW	NW
0	29 / 00 06 12 (18)	18.8	79.2	300/9	984	60	75	TS	34	130	90	40	100
									50	60	40	0	60
3	29 / 03 09 15 (21)								64				
				miles / km of					12	90	90	60	90
12	30 / 12 18 00 (06)	20.1	80.9	309/10					34				
									50				
									64				
24	30 / 00 06 12 (18)	21.7	82.8	312/12					34				
									50				
									64				
36	31 / 12 18 00 (06)	23.4	84.8	313/13					34				
									50				
									64				
48	31 / 00 06 12 (18)	25.2	86.8	315/13					34				
									50				
72	1 / 00 06 12 (18)	28.0	90.0	315/10					34				
									50				
96	2 / 00 06 12 (18)	30.5	92.5	319/8									
120	3 / 00 06 12 (18)	32.0	94.0	319/5									

☐ TCM ☐ TCD
☐ TCP ☐ TCV
☐ PWS ☐ W/W Graphic
☐ ICAO

19:14 UTC

New Fix Data

New aircraft data has just arrived. The aircraft measured SFMR winds of 78 kt and a maximum flight-level wind of 71 kt. Is it a hurricane?

URNT12 5307 291920
VORTEX DATA MESSAGE
A. 29/191110Z
B. 18 deg 59 min N
079 deg 24 min W
C. 700 mb 2924 m
D. 78 kt
E. 082 deg 021 nm
F. 157 deg 071 kt
G. 073 deg 027 nm
H. 980 mb
I. 8 C/ 3049 m
J. 14 C/ 3045 m
K. 9 C/ NA
L. CLOSED
M. C25
N. 12345/ 7
O. 0.02 / 1 nm
P. AF307 1007A
MAX FL WIND 71 KT NE QUAD 190240 Z
SURFACE WIND OBSERVED VISUALLY

position
max surface wind
max flight-level wind
minimum pressure
max flight-level wind

EXTRA? 78 KT

Stop the process...time to issue a Tropical Cyclone Update letting the world know we have a hurricane

ZCZC MIATCUAT2 ALL
TTAA00 KNHC DDHHMM
HURRICANE AMS TROPICAL CYCLONE UPDATE
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL AL072008
320 PM EDT FRI AUG 29 2010

DATA FROM AN AIR FORCE RECONNAISSANCE AIRCRAFT INDICATE THAT
WMODEMO HAS BECOME A HURRICANE WITH MAXIMUM WINDS NEAR 75
MPH...120 KM/HR.

\$\$
FORECASTER PASCH

NNNN

Preparing the Intensity Forecast

GFDL and HWRF Track and Intensity Forecasts

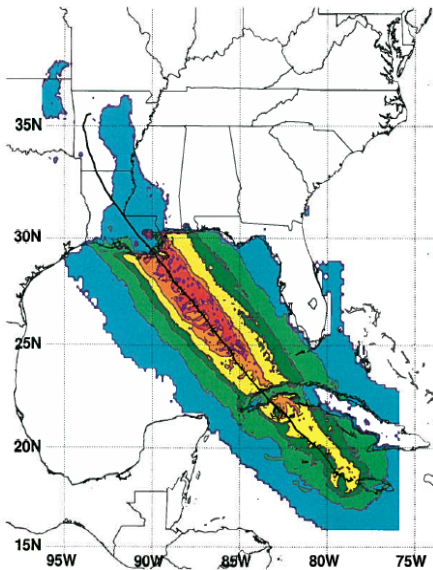
GFDL

NCEP COUPLED GFDL HURRICANE MODEL FORECAST MADE FOR

TROPICAL STORM

INITIAL TIME 12Z AUG 29

HR	LAT	LO	PR	WIND	DIR/SPD
0	18.3	-78.5	988	55	290/7
6	18.6	-79.2	980	84	291/8
12	19.2	-79.8	980	70	315/7
18	20.2	-80.7	979	72	316/13
24	21.0	-81.8	972	79	307/13
30	22.0	-82.9	963	93	313/14
36	22.9	-83.8	965	88	313/12
42	23.8	-84.8	959	93	315/12
48	24.9	-85.6	952	101	322/14
54	25.9	-86.7	945	108	315/14
60	27.0	-87.6	942	108	318/14
66	28.0	-88.7	943	108	312/14
72	29.1	-89.8	946	106	318/15
78	30.2	-90.9	954	85	314/14
84	31.2	-91.8	962	60	318/12
90	32.0	-92.6	970	42	317/11
96	32.9	-93.2	976	31	326/10
102	33.8	-93.5	980	26	335/9
108	34.3	-93.8	981	22	341/6
114	34.9	-93.9	983	24	344/6
120	35.3	-93.8	985	24	13/5
126	35.5	-93.5	987	26	60/4



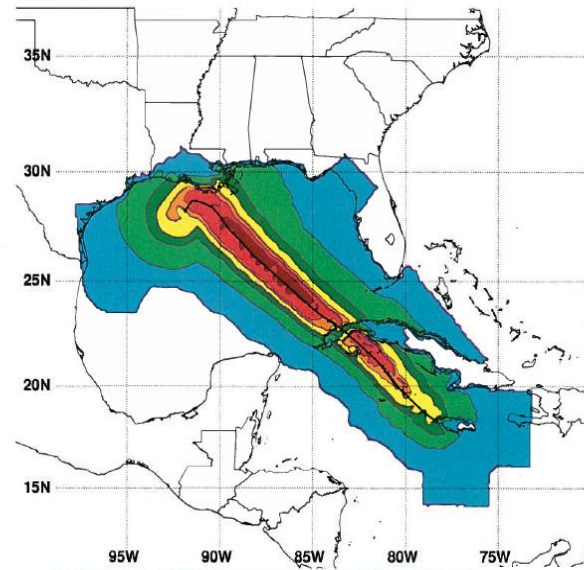
HWRF

NCEP COUPLED HWRF HURRICANE MODEL FORECAST MADE FOR

TROPICAL STORM

INITIAL TIME 12Z AUG 29

HR	LAT	LO	PR	WIND	DIR/SPD
0	18.3	-78.4	988	55	290/7
6	18.7	-79.0	969	69	304/7
12	19.3	-79.7	958	83	311/9
18	20.0	-80.5	944	99	311/10
24	21.1	-81.4	937	114	321/14
30	22.1	-82.6	925	114	310/15
36	22.9	-83.7	939	94	306/13
42	23.5	-84.7	929	101	301/11
48	24.2	-85.6	918	124	308/11
54	24.9	-86.5	908	121	308/11
60	25.6	-87.4	913	115	308/11
66	26.2	-88.2	911	118	307/9
72	26.8	-88.8	914	117	315/8
78	27.4	-89.5	914	112	311/9
84	27.9	-89.9	921	110	321/6
90	28.4	-90.4	923	109	315/7
96	28.6	-90.9	929	100	292/5
102	28.7	-91.3	932	100	284/4
108	28.7	-91.5	941	89	270/2
114	28.5	-91.7	945	82	225/3
120	28.2	-91.9	948	90	214/4
126	27.9	-92.2	948	83	225/4



Super Ensemble Intensity Forecast

Super Ensemble FSSE

STORM ID:

DATE TIME: 08/29 18:00 UTC

FHOUR	LAT	LON	INTENSITY
FHR = 000	18.8	-79.2	60
FHR = 012	20.1	-80.9	74
FHR = 024	21.6	-82.8	79
FHR = 036	23.3	-84.8	78
FHR = 048	25.2	-86.7	102
FHR = 060	26.7	-88.7	104
FHR = 072	28.2	-90.6	105
FHR = 084	29.4	-92.2	105
FHR = 096	30.3	-93.2	80
FHR = 108	30.9	-93.8	53
FHR = 120	30.7	-94.9	27

SHIPS and LGEM Guidance

Intensity (kt)

Values of the predictors

Predictors contributions to intensity change

* ATLANTIC SHIPS INTENSITY FORECAST * * GOES/OHC INPUT INCLUDED * * 08/29/ 18 UTC *													
TIME (HR)	0	6	12	18	24	36	48	60	72	84	96	108	120
V (KT) NO LAND	60	65	70	75	80	86	94	96	95	89	84	76	72
V (KT) LAND	60	65	70	75	80	81	89	91	91	84	53	37	30
V (KT) LGE mod	60	64	68	73	77	81	87	90	89	84	53	37	30

SHEAR (KTS)	2	9	10	7	11	11	10	16	15	19	16	21	14
SHEAR DIR	254	236	260	255	202	206	171	221	214	256	253	273	264
SST (C)	29.6	29.6	29.7	29.8	29.9	29.8	29.6	29.3	29.0	28.9	28.8	28.5	27.6
POT. INT. (KT)	162	162	164	167	169	167	163	157	151	148	146	142	130
ADJ. POT. INT.	152	152	156	160	160	154	148	140	130	125	122	120	110
200 MB T (C)	-52.0	-51.6	-51.8	-51.7	-51.3	-51.0	-50.6	-50.5	-49.9	-50.2	-50.0	-50.2	-50.4
TH_E DEV (C)	13	13	12	11	12	11	10	9	8	6	7	5	6
700-500 MB RH	66	69	65	68	65	59	60	56	61	55	59	57	63
GFS VTEX (KT)	18	18	18	17	19	18	21	21	22	19	19	15	17
850 MB ENV VOR	68	60	45	47	49	52	66	40	35	-4	5	-14	0
200 MB DIV	54	50	30	18	25	24	83	32	53	21	21	15	8
LAND (KM)	115	219	220	142	82	113	374	287	104	0	-28	-86	-191
LAT (DEG N)	18.8	19.4	19.9	20.8	21.7	23.4	25.1	26.7	28.2	29.2	29.8	30.5	31.5
LONG(DEG W)	79.2	80.0	80.8	81.8	82.8	84.7	86.5	88.2	89.6	90.6	91.3	92.3	93.6
STM SPEED (KT)	9	9	11	13	13	12	11	10	8	6	5	7	7
HEAT CONTENT	125	111	101	128	105	112	111	38	35	2	9999	9999	9999

FORECAST TRACK FROM OFCI INITIAL HEADING/SPEED (DEG/KT):300/ 9 CX,CY: -7/ 5
T-12 MAX WIND: 55 PRESSURE OF STEERING LEVEL (MB): 560 (MEAN=625)
GOES IR BRIGHTNESS TEMP. STD DEV. 100-300 KM RAD: 13.8 (MEAN=20.0)
% GOES IR PIXELS WITH T < -20 C 50-200 KM RAD: 99.0 (MEAN=68.6)

INDIVIDUAL CONTRIBUTIONS TO INTENSITY CHANGE													
	6	12	18	24	36	48	60	72	84	96	108	120	
SAMPLE MEAN CHANGE	1.	2.	3.	4.	6.	8.	9.	10.	11.	12.	12.	13.	
SST POTENTIAL	2.	3.	6.	7.	11.	13.	13.	12.	11.	10.	9.	6.	
VERTICAL SHEAR	1.	1.	2.	3.	4.	6.	7.	8.	8.	8.	7.	7.	
PERSISTENCE	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	
200/250 MB TEMP.	0.	-1.	-1.	-2.	-3.	-4.	-6.	-7.	-8.	-9.	-10.	-11.	
THETA_E EXCESS	0.	0.	0.	1.	1.	1.	0.	0.	-1.	-2.	-3.	-4.	
700-500 MB RH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-1.	-2.	
GFS VORTEX TENDENCY	0.	0.	-1.	0.	-1.	1.	1.	2.	-1.	-1.	-4.	-3.	
850 MB ENV VORTICITY	0.	0.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	
200 MB DIVERGENCE	0.	0.	0.	1.	1.	2.	3.	3.	3.	3.	3.	3.	
ZONAL STORM MOTION	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	
STEERING LEVEL PRES	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	
DAYS FROM CLIM. PEAK	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	
SUB-TOTAL CHANGE	4.	9.	13.	17.	23.	31.	33.	35.	31.	26.	17.	13.	
SATELLITE ADJUSTMENTS													
MEAN ADJUSTMENT	0.	0.	0.	0.	-1.	-1.	-1.	-1.	-1.	-1.	-1.	-2.	
GOES IR STD DEV	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	
GOES IR PIXEL COUNT	0.	1.	1.	1.	1.	1.	0.	0.	-1.	-1.	-1.	0.	
OCEAN HEAT CONTENT	0.	0.	0.	0.	1.	2.	2.	2.	1.	1.	1.	1.	
TOTAL ADJUSTMENT	1.	2.	2.	2.	2.	3.	2.	0.	-2.	-2.	-2.	-1.	
TOTAL CHANGE (KT)	5.	10.	15.	20.	26.	34.	36.	35.	29.	24.	16.	12.	

** ATLANTIC RI INDEX 08/29/ 18 UTC **
(25 KT OR MORE MAX WIND INCREASE IN NEXT 24 HR)

12 HR PERSISTENCE (KT): 5.0 Range:-45.0 to 30.0 Scaled/Wgtd Val: 0.7/ 1.2
850-200 MB SHEAR (KT) : 7.7 Range:35.1 to 3.2 Scaled/Wgtd Val: 0.9/ 1.4
D200 (10**7s-1) : 35.4 Range:-20.0 to 149.0 Scaled/Wgtd Val: 0.3/ 0.5
POT = MPI-VMAX (KT) : 95.8 Range:25.1 to 130.7 Scaled/Wgtd Val: 0.7/ 0.8
850-700 MB REL HUM (%) : 76.6 Range:56.0 to 88.0 Scaled/Wgtd Val: 0.6/ 0.3
% area w/pixels <-30 C: 98.0 Range:17.0 to 100.0 Scaled/Wgtd Val: 1.0/ 0.2
STD DEV OF IR BR TEMP : 6.2 Range:35.1 to 3.2 Scaled/Wgtd Val: 0.9/ 1.2
Heat content (KJ/cm2) : 114.0 Range: 0.0 to 132.0 Scaled/Wgtd Val: 0.9/ 0.1

Prob of RI for 25 kt RI threshold= 46% is 3.7 times the sample mean(12.3%)
Prob of RI for 30 kt RI threshold= 35% is 4.0 times the sample mean(7.8%)
Prob of RI for 35 kt RI threshold= 32% is 7.8 times the sample mean(4.5%)

Rapid Intensification Index

probability of RI during next 24 hour

Probability of
rapid
intensification →

```

**          ATLANTIC RI INDEX                      08/29/   18 UTC **
( 25 KT OR MORE MAX WIND INCREASE IN NEXT 24 HR)

12 HR PERSISTENCE (KT):   5.0 Range:-45.0 to   30.0 Scaled/Wgted Val:  0.7/  1.2
850-200 MB SHEAR (KT) :   7.7 Range: 35.1 to    3.2 Scaled/Wgted Val:  0.9/  1.4
D200 (10**7s-1)       :  35.4 Range:-20.0 to  149.0 Scaled/Wgted Val:  0.3/  0.5
POT = MPI-VMAX (KT)    :  95.8 Range: 25.1 to  130.7 Scaled/Wgted Val:  0.7/  0.8
850-700 MB REL HUM (%) :  76.6 Range: 56.0 to   88.0 Scaled/Wgted Val:  0.6/  0.3
% area w/pixels <-30 C:  98.0 Range: 17.0 to  100.0 Scaled/Wgted Val:  1.0/  0.2
STD DEV OF IR BR TEMP :   6.2 Range: 35.1 to    3.2 Scaled/Wgted Val:  0.9/  1.2
Heat content (KJ/cm2) : 114.0 Range:  0.0 to  132.0 Scaled/Wgted Val:  0.9/  0.1

Prob of RI for 25 kt RI threshold=   46% is   3.7 times the sample mean(12.3%)
Prob of RI for 30 kt RI threshold=   35% is   4.0 times the sample mean( 7.8%)
Prob of RI for 35 kt RI threshold=   32% is   7.8 times the sample mean( 4.5%)

##          ANNULAR HURRICANE INDEX (AHI) .                      08/29,   18 UTC      ##
## STORM NOT ANNULAR, SCREENING STEP FAILED, NPASS=3 NFAIL=4      ##
## AHI=  0  (AHI OF 100 IS BEST FIT TO ANN. STRUC., 1 IS MARGINAL, 0 IS NOT ANNULAR) ##
##          ANNULAR INDEX RAN NORMALLY
```

Intensity Forecast Dialogue Box

Intensity Forecast - AMS al792010

Intensity Forecast

00h 12h 24h 36h 48h 72h 96h 120h

60 70 85 95 100 100 85 40

Gusts

00h 12h 24h 36h 48h 72h 96h 120h

75 85 105 115 120 120 105 50

View Intensity Graph / Make Forecast ...

Intensity Guidance

AID	12h	24h	36h	48h	72h	96h	120h	144h	168h
AVNI	61	62	59	57	57	45	39	0	0
DSHP	70	80	81	89	91	53	30	0	0
GFDI	68	79	87	97	74	20	18	0	0
GFNI	79	89	87	95	106	45	21	0	0
GHNI	68	82	94	104	82	27	26	0	0
ICON	74	84	89	97	91	55	40	0	0
NGPI	60	62	63	66	65	44	26	0	0
OFCI	72	85	96	102	101	86	40	0	0
OFCL	70	85	95	100	100	85	40	0	0
SHF5	65	70	73	75	73	67	59	0	0
SHIP	70	80	86	94	95	84	72	0	0
UKHI	59	60	62	63	65	65	58	0	0

Help OK Cancel

Click to View Graph of Intensity Guidance

Graph of Intensity Guidance (kt)

Intensity Forecast - AMS al

00h 12h
60 70 8

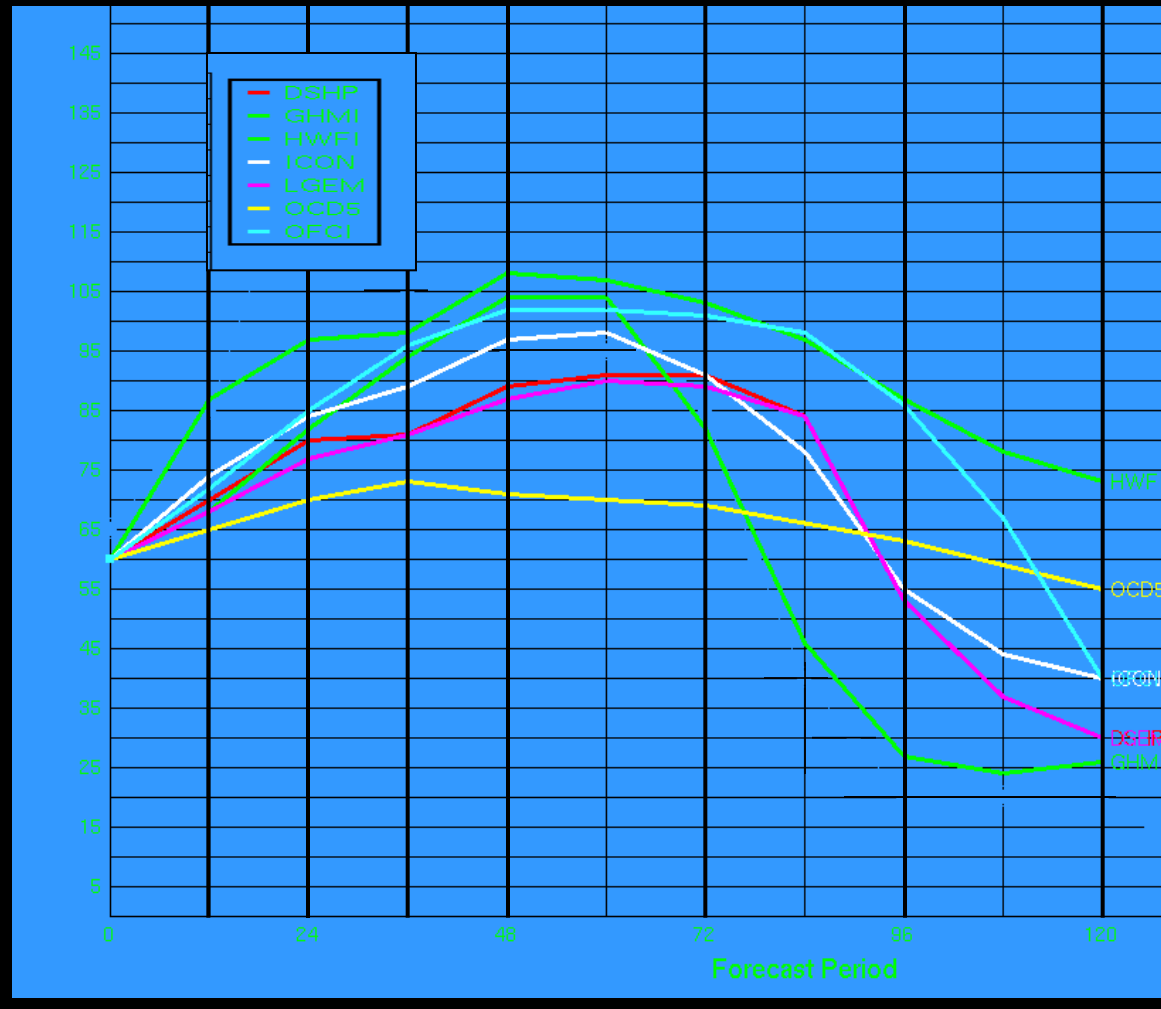
00h 12h
75 85 1

AID 12h

AVNI	61
DSHP	70
GFDI	68
GFNI	79
GHMI	68
ICON	74
NGPI	60
OFCI	72
OFCL	70
SHF5	65
SHIP	70
UKHI	59

He

Intensity Guidance 29/1800 UTC



Making the Intensity Forecast

Enter your
official forecast at
each forecast
interval
(defaults to OFCI)

Table listing the
various intensity
guidance

Intensity Forecast - AMS al792010

Intensity Forecast

00h 12h 24h 36h 48h 72h 96h 120h

60 70 85 95 100 100 85 40

Gusts

00h 12h 24h 36h 48h 72h 96h 120h

75 85 105 115 120 120 105 50

View Intensity Graph / Make Forecast ...

Intensity Guidance

AID	12h	24h	36h	48h	72h	96h	120h	144h	168h
AVNI	61	62	59	57	57	45	39	0	0
DSHP	70	80	81	89	91	53	30	0	0
GFDI	68	79	87	97	74	20	18	0	0
GFNI	79	89	87	95	106	45	21	0	0
GHNI	68	82	94	104	82	27	26	0	0
ICON	74	84	89	97	91	55	40	0	0
NGPI	60	62	63	66	65	44	26	0	0
OFCI	72	85	96	102	101	86	40	0	0
OFCL	70	85	95	100	100	85	40	0	0
SHF5	65	70	73	75	73	67	59	0	0
SHIP	70	80	86	94	95	84	72	0	0
UKHI	59	60	62	63	65	65	58	0	0

Help OK Cancel

Making the Intensity Forecast

Enter your
official forecast at
each forecast
interval
(defaults to OFCI)

Table listing the
various intensity
guidance

Intensity Forecast - AMS al792010

Intensity Forecast

00h 12h 24h 36h 48h 72h 96h 120h

60 75 85 95 100 100 85 40

00h 12h 24h 36h 48h 72h 96h 120h

75 105 115 120 120 105 50

Gusts

View Intensity Graph / Make Forecast ...

Intensity Guidance

AID	12h	24h	36h	48h	72h	96h	120h	144h	168h
AVNI	61	62	59	57	57	45	39	0	0
DSHP	70	80	81	89	91	53	30	0	0
GFDI	68	79	87	97	74	20	18	0	0
GFNI	79	89	87	95	106	45	21	0	0
GHMI	68	82	94	104	82	27	26	0	0
ICON	74	84	89	97	91	55	40	0	0
NGPI	60	62	63	66	65	44	26	0	0
OFCI	72	85	96	102	101	86	40	0	0
OFCL	70	85	95	100	100	85	40	0	0
SHF5	65	70	73	75	73	67	59	0	0
SHIP	70	80	86	94	95	84	72	0	0
UKMI	59	60	62	63	65	65	58	0	0

Help OK Cancel

Making the Intensity Forecast

Our new Official
Forecast

Intensity Forecast - AMS al792010

Intensity Forecast

00h	12h	24h	36h	48h	72h	96h	120h
60	75	90	100	110	105	85	55

Gusts

00h	12h	24h	36h	48h	72h	96h	120h
75	90	110	120	135	130	105	65

View Intensity Graph / Make Forecast ...

Intensity Guidance

AID	12h	24h	36h	48h	72h	96h	120h	144h	168h
AVNI	61	62	59	57	57	45	39	0	0
DSHP	70	80	81	89	91	53	30	0	0
GFDI	68	79	87	97	74	20	18	0	0
GFNI	79	89	87	95	106	45	21	0	0
GHMI	68	82	94	104	82	27	26	0	0
ICON	74	84	89	97	91	55	40	0	0
NGPI	60	62	63	66	65	44	26	0	0
OFCI	72	85	96	102	101	86	40	0	0
OFCL	70	85	95	100	100	85	40	0	0
SHF5	65	70	73	75	73	67	59	0	0
SHIP	70	80	86	94	95	84	72	0	0
UKMI	59	60	62	63	65	65	58	0	0

Help OK Cancel

Did you record your
intensity forecast on
the worksheet?

National Hurricane Center Advisory Composition Worksheet

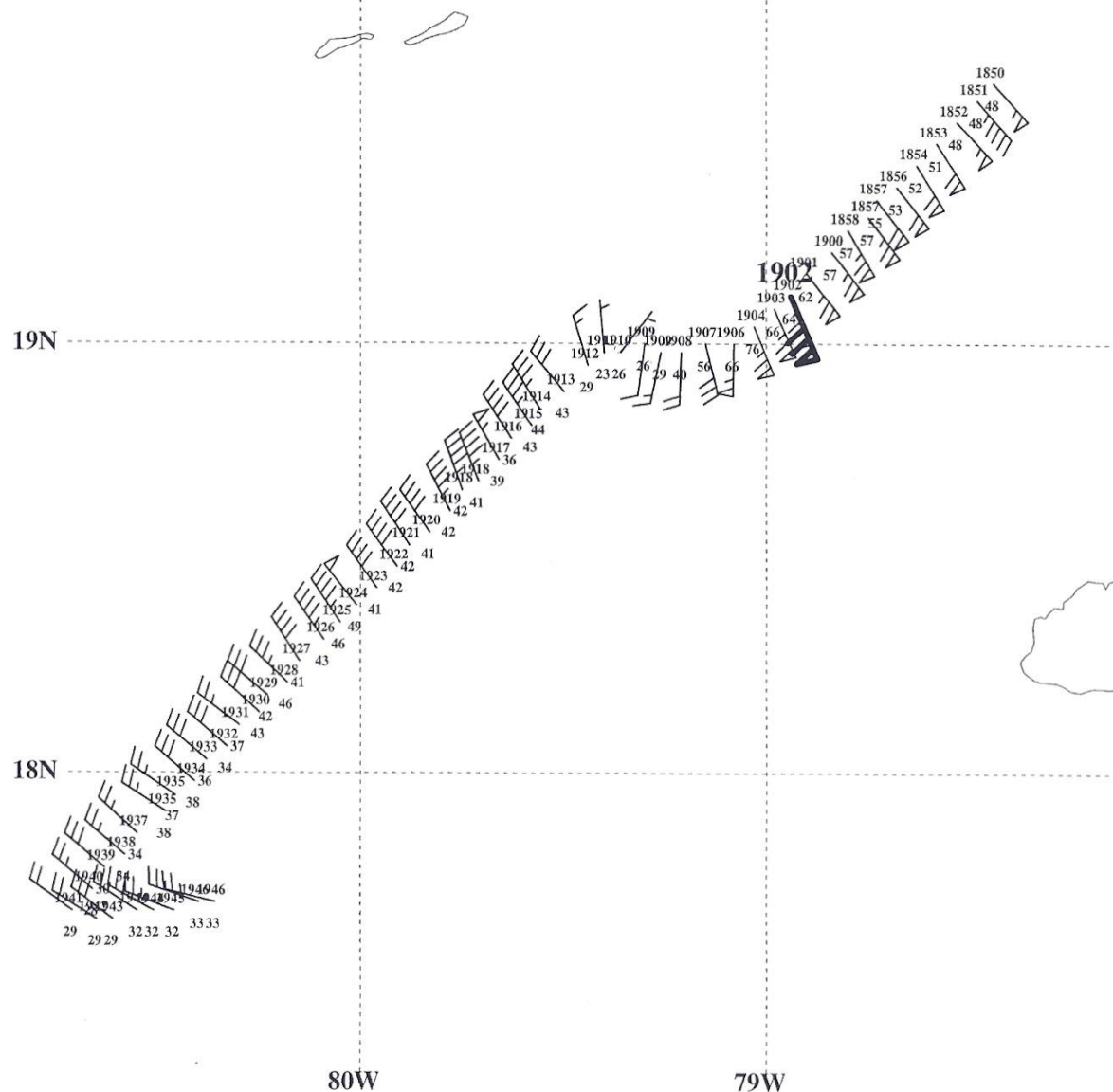
Cyclone Name	ATCF ID	Adv #	Special	Last	Date	Time (UTC)	Forecaster(s)
AMS	ALXX20XX	10	<input type="checkbox"/>	<input type="checkbox"/>	Aug 29, 20XX	2100	??????
Watches and Warnings							
Hazards Statements	<input type="checkbox"/> Storm Surge						
	<input type="checkbox"/> Rainfall						
	<input type="checkbox"/> Tornadoes						
Notes	<input type="checkbox"/> Special Soundings						

Fcst Hr	Date/Time (UTC)	Lat (°N)	Lon (°W)	Dir/Spd (deg/kt)	Pres (mb)	Wind (kt)	Gusts (kt)	Status	Wind Radii (nm)				
									kt	NE	SE	SW	NW
0	29 / 00 06 12 (18)	18.8	79.2	300/9	984	60	75	TS	34	130	90	40	100
									50	60	40	0	60
3	29 / 03 09 15 (21)								64				
		miles / km of							12	90	90	60	90
12	30 / 12 18 00 (06)	20.1	80.9	309/10		75	90	HU	34				
									50				
									64				
24	30 / 00 06 12 (18)	21.7	82.8	312/12		90	110	HU	34				
									50				
									64				
36	31 / 12 18 00 (06)	23.4	84.8	313/13		100	120	MH	34				
									50				
									64				
48	31 / 00 06 12 (18)	25.2	86.8	315/13		110	135	MH	34				
									50				
72	1 / 00 06 12 (18)	28.0	90.0	315/10		105	130	MH	34				
									50				
96	2 / 00 06 12 (18)	30.5	92.5	319/8		85	105	HU					
120	3 / 00 06 12 (18)	32.0	94.0	319/5		55	65	TS					

☐ TCM ☐ TCD
☐ TCP ☐ TCV
☐ PWS ☐ W/W Graphic
☐ ICAO

Preparing the Wind Radii Forecast

Latest Aircraft Observations



MISSION: AF307 1007A
 29/1850 – 29/2004
 Max wind (knots): 72

Wind Radii Forecast Dialogue Box

Enter your radii prediction (n mi) for each forecast period

Select forecast period. Radii forecasts only out to 72 h

Forecast Wind Radii Dialog - AMS al792010

TAU: 12

		NE (nm)	SE (nm)	SW (nm)	NW (nm)
34 kt	circle quad	130	90	40	100
50 kt	circle quad	60	40	0	40
64 kt	circle quad	0	0	0	0

TAU: 0 12 24 36 48 72 96 120

Max Wind: 75 kts
Dir: 309
Spd: 10 kts

Buttons: Use previous TAU, Use TAU 0 - all TAUs, Use DRCL - current TAU, Use DRCL - all TAUs, Delete Radii, Display Options...

Graph/Make-Forecast 34 kt radii: NE... SE... SW... NW...
Graph/Select radii (radial graph): 34 kt ... 50 kt ... 64 kt ...

Wind Radii Guidance for TAU 12

Tech	TAU	V-Max (kts)	34 knot radii (nm)				50 knot radii (nm)				64 knot radii (nm)			
EMXI	12	63	0	0	0	3								
GFDT	12	94	215	209	127	167	134	125	45	128	74	71	0	52
GFTI	12	69	48	56	19	34	28	53	17	17	17	27	4	10
HRCL	12	75	135	95	70	120	70	45	20	50	40	20	15	25
NGPI	12	60	0	14	0	0								
NGPS	12	53	177	121	68	93	70	0	0	75				
NGXI	12	60	0	61	0	0								

Current Forecast

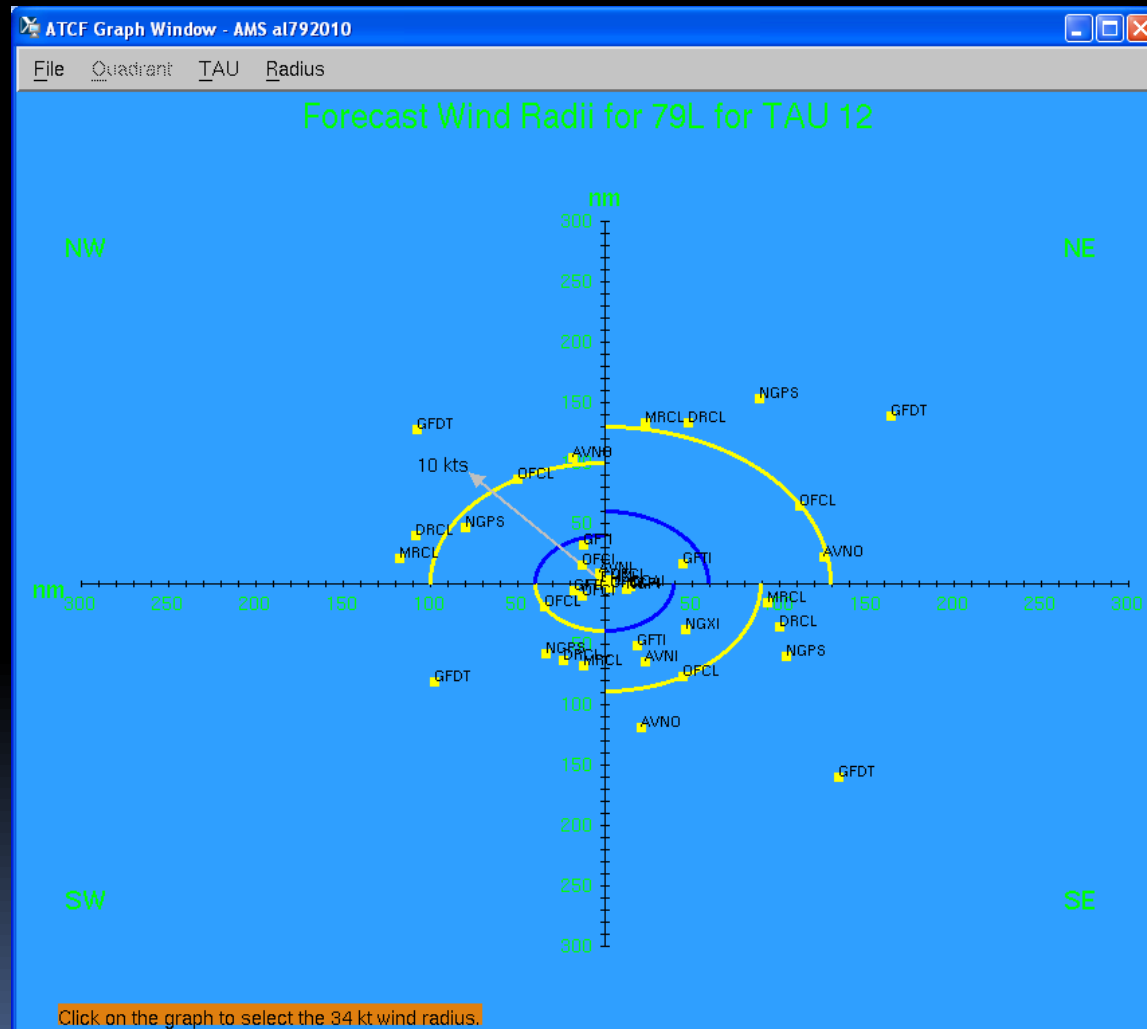
TAU	V-Max (kts)	34 knot radii (nm)				50 knot radii (nm)				64 knot radii (nm)			
0	60	130	90	40	100	60	40	0	40				
12	75	130	90	40	100	60	40	0	40				
24	90	130	90	40	100	60	40	0	40				
36	100	130	90	40	100	60	40	0	40				
48	110	130	90	40	100	60	40	0	40				
72	105	130	90	40	100	60	40	0	40				
96	85												
120	55												

Buttons: Help, Apply, OK, Cancel

Guidance

Summary of your radii forecasts

Forecasters can use a graphical plot to complete radii forecasts



Wind Radii Forecast Dialogue Box

Forecast Wind Radii Dialog - AMS al792010

TAU 72

NE (nm) SE (nm) SW (nm) NW (nm) TAU: 0

34 kt: circle quad 160 140 120 140 12

50 kt: circle quad 90 75 60 75 24

64 kt: circle quad 0 0 0 0 36

Use previous TAU Delete Radii

Use TAU 0 - all TAUs Display Options...

Use DRCL - current TAU

Use DRCL - all TAUs

Max Wind 105 kts

Dir: 315

Spd: 10 kts

Graph/Make-Forecast 34 kt radii: NE... SE... SW... NW...

Graph/Select radii (radial graph) 34 kt ... 50 kt ... 64 kt ...

Wind Radii Guidance for TAU 72

Tech	TAU	V-Max (kts)	34 knot radii (nm)				50 knot radii (nm)				64 knot radii (nm)			
AVNI	72	57	0	0	0	24								
AVNO	72	42	217	0	0	107								
DRCL	72	105	161	140	122	143	92	83	73	84	59	55	52	56
EMXI	72	75	95	37	25	69								
GFDI	72	96	231	225	167	154	144	144	114	101	119	109	89	50
GFTI	72	65	0	55	36	0	0	46	22	0	0	39	13	0
HRCL	72	105	170	150	120	150	120	100	65	90	70	55	30	40

Current Forecast

TAU	V-Max (kts)	34 knot radii (nm)				50 knot radii (nm)				64 knot radii (nm)			
0	60	130	90	40	100	60	40	0	40				
12	75	140	100	90	120	70	50	40	60	30	25	0	25
24	90	150	120	100	120	75	60	50	60	40	30	25	30
36	100	150	120	100	120	75	60	50	60	40	30	25	30
48	110	160	130	120	130	90	75	60	75				
72	105	160	140	120	140	90	75	60	75				
96	85												
120	55												

Help Apply OK Cancel

Summary of your radii forecasts

Record your wind radii
forecast on the
worksheet

National Hurricane Center Advisory Composition Worksheet

Cyclone Name	ATCF ID	Adv #	Special	Last	Date	Time (UTC)	Forecaster(s)
AMS	ALXX20XX	10	<input type="checkbox"/>	<input type="checkbox"/>	Aug 29, 20XX	2100	??????
Watches and Warnings							
Hazards Statements	<input type="checkbox"/> Storm Surge						
	<input type="checkbox"/> Rainfall						
	<input type="checkbox"/> Tornadoes						
Notes	<input type="checkbox"/> Special Soundings						

Fcst Hr	Date/Time (UTC)	Lat (°N)	Lon (°W)	Dir/Spd (deg/kt)	Pres (mb)	Wind (kt)	Gusts (kt)	Status	Wind Radii (nm)				
									kt	NE	SE	SW	NW
0	29 / 00 06 12 (18)	18.8	79.2	300/9	984	60	75	TS	34	130	90	40	100
									50	60	40	0	60
3	29 / 03 09 15 (21)								64				
				miles / km of					12	90	90	60	90
12	30 / 12 18 00 (06)	20.1	80.9	309/10		75	90	HU	34	140	100	90	120
									50	70	50	40	60
									64	30	25	0	25
24	30 / 00 06 12 (18)	21.7	82.8	312/12		90	110	HU	34	150	120	100	120
									50	75	60	50	60
									64	40	30	25	30
36	31 / 12 18 00 (06)	23.4	84.8	313/13		100	120	MH	34	150	120	100	120
									50	75	60	50	60
									64	40	30	25	30
48	31 / 00 06 12 (18)	25.2	86.8	315/13		110	135	MH	34	160	130	120	130
									50	90	75	60	75
72	1 / 00 06 12 (18)	28.0	90.0	315/10		105	130	MH	34	160	140	120	140
									50	90	75	60	75
96	2 / 00 06 12 (18)	30.5	92.5	319/8		85	105	HU	<input type="checkbox"/> TCM <input type="checkbox"/> TCD <input type="checkbox"/> TCP <input type="checkbox"/> TCV <input type="checkbox"/> PWS <input type="checkbox"/> W/W Graphic <input type="checkbox"/> ICAO				
120	3 / 00 06 12 (18)	32.0	94.0	319/5		55	65	TS					

Now let's decide if watches or warnings are required



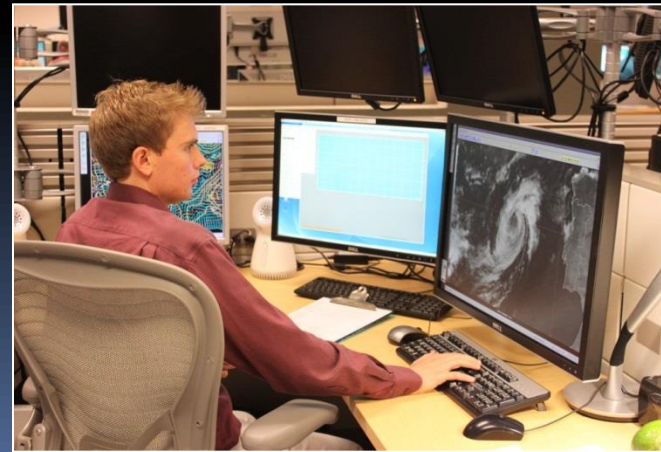
Definitions of Hurricane Watch/Warning

- Hurricane Watch: hurricane conditions are possible somewhere within the watch area. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane watch is issued 48 hours in advance of the anticipated onset of tropical-storm-force winds.
- Hurricane Warning: hurricane conditions are expected somewhere within the warning area. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane warning is issued 36 hours in advance of the anticipated onset of tropical-storm-force winds.

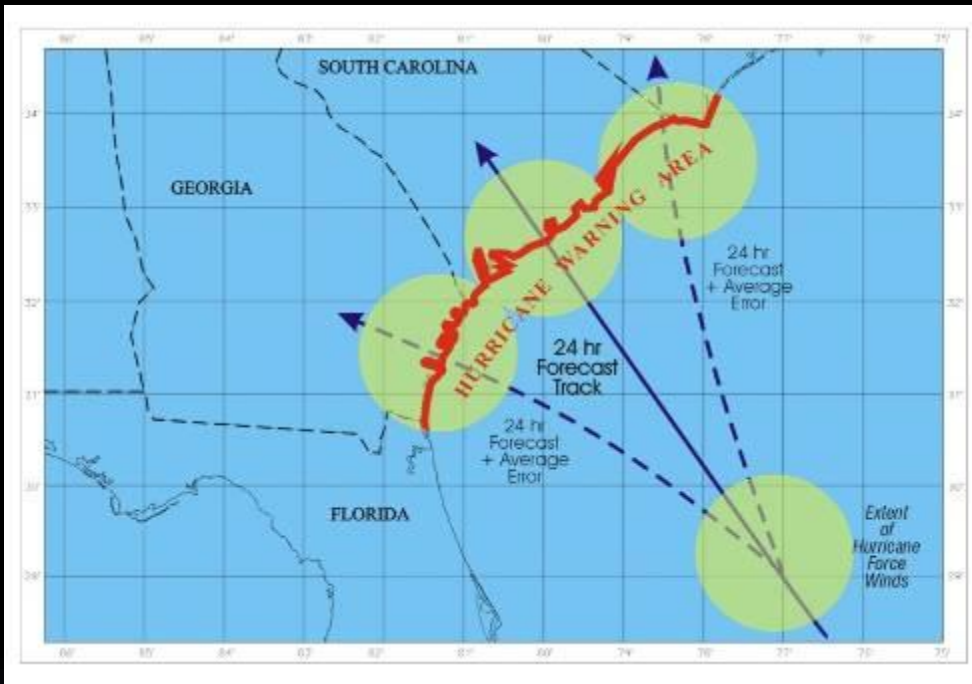


Definitions of Tropical Storm Watch/Warning

- Tropical Storm Watch: tropical storm conditions are possible somewhere within the watch area within the next 48 hours.
- Tropical Storm Warning: tropical storm conditions are expected somewhere within the warning area within the next 36 hours.



Issuing Warnings



(AVERAGE 24-HOUR FORECAST ERROR IS NOW ~50 MILES)

Warning Size is based on:

Forecast Track

Storm Size

Known uncertainties in the forecasts

Orientation of the forecast track with respect to the coast plays a major role in the size of the warning area

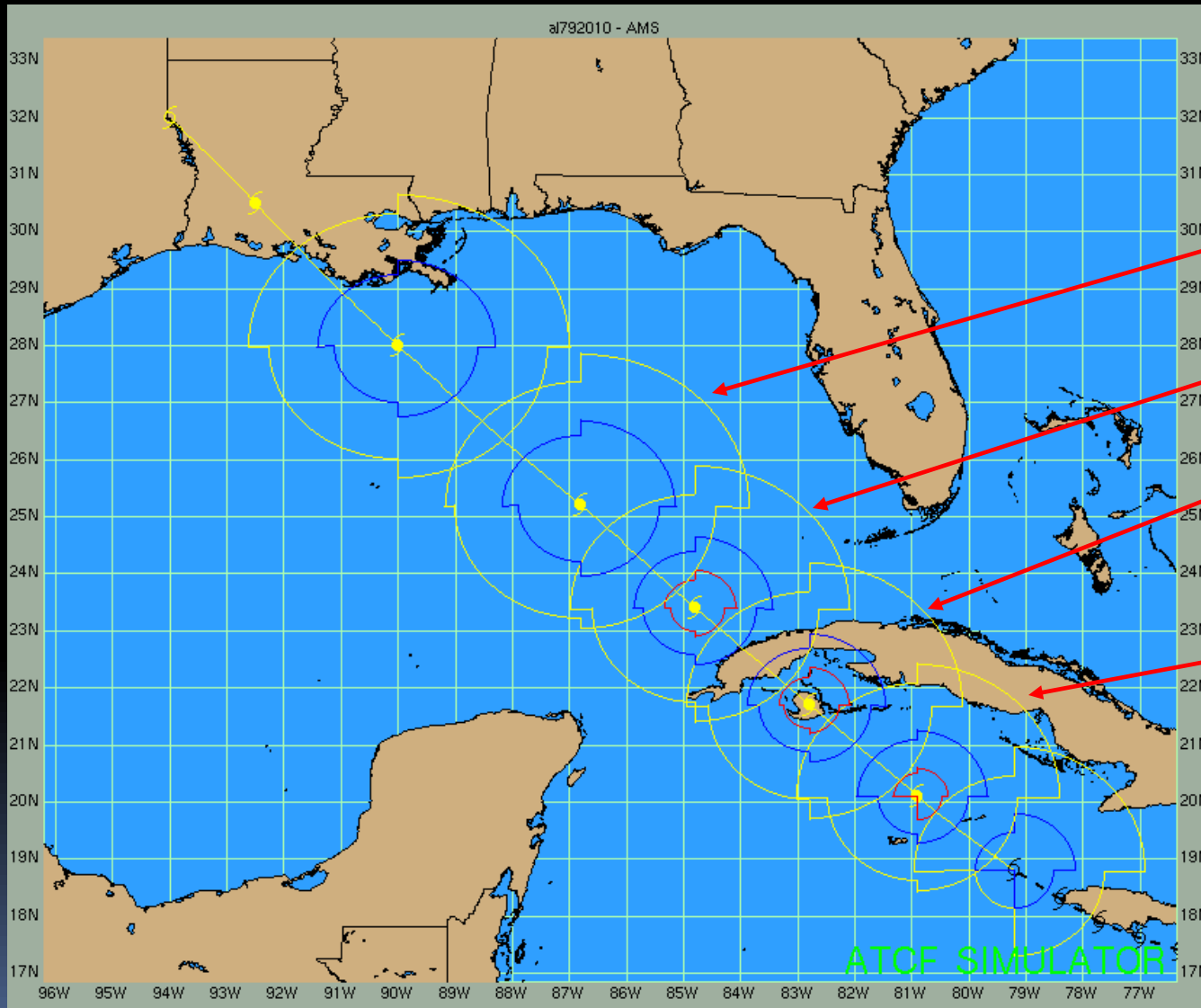
International Coordination

World MET. ORGANIZATION - Regional Association IV Coordination



Do we need watches or warnings?

Remember to consider forecast uncertainty



48 h forecast- Still time for the Gulf Coast?

36 h forecast- Florida Keys and Dry Tortugas?

24 h forecast- Western Cuba and the Isle of Youth?

12 h forecast- Don't forget about the Cayman Islands



**Better start calling Jamaica, the
Cayman Islands, Cuba, and the
National Weather Service Office in
Key West...**

**If you run out of time to call NWS Key West,
you can coordinate on the hotline call**

Now type them up...

Advisory Composition Dialog - AMS al792010

Tropical Cyclone al792010 on 2010082918

☐ Special Advisory Time of advisory: 0000 HHMM

Forecaster Initials: DPB

Advisory number: 10 AWIPS bin number: 4

Time Zone: ☒ Atlantic ☒ Eastern ☒ Central ☐ Daylight Time

☐ Subtropical Surface Pressure: 984 mb

Center Accuracy: 20 nm Eye Diameter: 0 nm

Forecast type...

Geography Reference: 19.3N 81.2W GRAND CAYMAN


Geography Reference: 21.6N 82.8W THE ISLE OF YOUTH

Public advisory frequency: ☒ 6 hourly ☒ 3 hourly ☐ 2 hourly

☐ Last Advisory

Advisory Data... Edit Warning...

Help OK Cancel



Now type them up...

WATCHES AND WARNINGS

CHANGES WITH THIS ADVISORY...

NONE.

SUMMARY OF WATCHES AND WARNINGS IN EFFECT...

A HURRICANE WARNING IS IN EFFECT FOR...

- * THE CAYMAN ISLANDS

- * THE WESTERN CUBAN PROVINCES OF ISLA DE JUVENTUD...PINAR DEL RIO...LA HABANA...AND CIUDAD DE LA HABANA.

A TROPICAL STORM WARNING IS IN EFFECT FOR...

- * JAMAICA

- * THE CENTRAL CUBAN PROVINCES OF MATANZAS...CIENFUEGOS...VILLA CLARA...SANCTI SPIRITUS...CIEGO DE AVILA...CAMAGUEY...AND GRANMA.

- * THE LOWER FLORIDA KEYS FROM WEST OF KEY WEST WESTWARD TO DRY TORTUGAS

A TROPICAL STORM WATCH IS IN EFFECT FOR...

- *THE LOWER FLORIDA KEYS FROM WEST OF THE SEVEN MILE BRIDGE TO KEY WEST

20:00 UTC

NWS / DOD Coordination Call

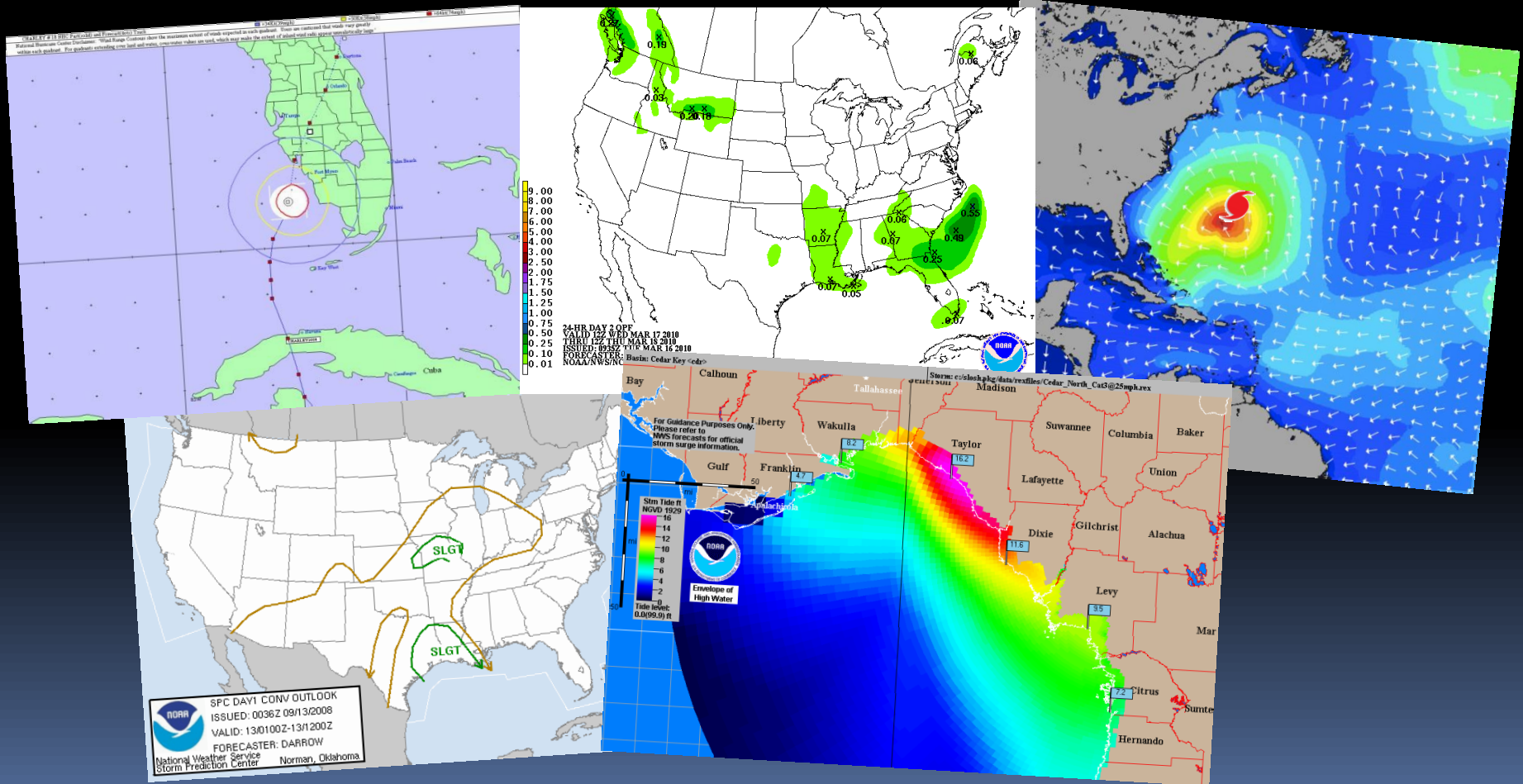
Coordinate and determine watches/ warnings



20:00 UTC

NWS / DOD Coordination Call

Coordinate and determine watches/ warnings
Coordinate storm surge, rainfall, tornado, rip
current hazards



Advisory Composition

**hurry up- you only have about
30-45 minutes to get it out**

Finally, its time to create the advisory products

Enter your initials

Center Accuracy

Forecast Type

Minimum Pressure

Advisory Composition Dialog - AMS al792010

Tropical Cyclone al792010 on 2010082918

☐ Special Advisory Time of advisory 0000 HMM

Forecaster Initials DPB

Advisory number 10 AWIPS bin number 4

Time Zone Atlantic Eastern Central Daylight Time

☐ Subtropical Surface Pressure 980 mb

Center Accuracy 15 nm Eye Diameter 0 nm

Forecast type...

Geography Reference 19.3N 81.2W GRAND CAYMAN

Geography Reference 21.6N 82.8W THE ISLE OF YOUTH

Public advisory frequency 6 hourly 3 hourly 2 hourly

☐ Last Advisory

Advisory Data... Edit Warning...

Help OK Cancel

Finally, its time to create the advisory products

Enter your initials

Center Accuracy

Forecast Type

The image shows two overlapping windows from a software application. The background window is titled 'Advisory Composition Dialog - AMS al792010'. It contains several input fields and checkboxes. The 'Forecaster Initials' field is set to 'DPB'. The 'Advisory number' field is set to '10'. The 'Time Zone' is set to 'Atlantic'. The 'Center Accuracy' is set to '20 nm'. The 'Forecast type...' button is highlighted with a red box. The foreground window is titled 'Advisory - Storm State - AMS al792010'. It contains a 'TAU' list with values 12, 24, 36, 48, 72, 96, and 120. The '96' value is selected. To the right of the TAU list is a 'Storm state:' section with a list of options: Normal, Inland, Dissipating, Dissipated, Extratropical, and Remnant Low. To the right of the Storm state section is a table with columns 'tau', 'tau', and 'Normal'. The table contains the following data:

tau	tau	Normal
12	12	Normal
24	24	Normal
36	36	Normal
48	48	Normal
72	72	Normal
96	96	Inland
120	120	Inland

At the bottom of the 'Advisory - Storm State' window are buttons for 'Help', 'OK', and 'Cancel'. The 'OK' button is highlighted with a red box. The 'Advisory Composition Dialog' also has buttons for 'Advisory Data...', 'Edit Warning...', 'Help', 'OK', and 'Cancel' at the bottom.

Finally, its time to create the advisory products

Advisory Composition Dialog - AMS al792010

Tropical Cyclone al792010 on 2010082918

☐ Special Advisory Time of advisory 0000 HMM

Forecaster Initials DPB

Advisory number 10 AWIPS bin number 4

Time Zone Atlantic Eastern Central Daylight Time

☐ Subtropical Surface Pressure 980 mb

Center Accuracy 15 nm Eye Diameter 0 nm

Forecast type...

Geography Reference 19.3N 81.2W GRAND CAYMAN

Geography Reference 21.6N 82.8W THE ISLE OF YOUTH

Public advisory frequency 6 hourly 3 hourly 2 hourly

☐ Last Advisory

Advisory Data... Edit Warning...

Help OK Cancel

Enter your initials

Minimum Pressure

Center Accuracy

Forecast Type

Pick Geographical
Reference Points

Finally, its time to create the advisory products

Enter your initials

Center Accuracy

Forecast Type

Review the
Advisory Data

Advisory Composition Dialog - AMS al792010

Tropical Cyclone al792010 on 2010082918

☐ Special Advisory Time of advisory 0000 HMM

Forecaster Initials DPB

Advisory number 10 AWIPS bin number 4

Time Zone Atlantic Eastern Central Daylight Time

☐ Subtropical Surface Pressure 980 mb

Center Accuracy 15 nm Eye Diameter 0 nm

Forecast type...

Geography Reference 19.3N 81.2W GRAND CAYMAN

Geography Reference 21.6N 82.8W THE ISLE OF YOUTH

Public advisory frequency 6 hourly 3 hourly 2 hourly

☐ Last Advisory

Advisory Data... Edit Warning...

Help OK Cancel

Minimum Pressure

Pick Geographical
Reference Points

Finally, its time to create the advisory products

Review each forecast time

Enter your initials

Center Accuracy

Forecast Type

Review the Advisory Data

Advisory Composition Dialog - AMS al79

Tropical Cyclone

☐ Special Advisory

Forecaster Initials

Advisory number

Time Zone

☐ Subtropical

Center Accuracy nm

Geography Reference

Geography Reference

Public advisory frequency

☐ Last Advisory

NHC Advisory Data - AMS al792010

TAU 3

TAU:

Latitude Longitude

Max Wind knots Gusts knots

Direction degrees Speed knots

	NE (nm)	SE (nm)	SW (nm)	NW (nm)
12 ft seas	<input type="text" value="90"/>	<input type="text" value="90"/>	<input type="text" value="60"/>	<input type="text" value="90"/>
34 kt winds	<input type="text" value="130"/>	<input type="text" value="90"/>	<input type="text" value="40"/>	<input type="text" value="100"/>
50 kt winds	<input type="text" value="60"/>	<input type="text" value="40"/>	<input type="text" value="0"/>	<input type="text" value="40"/>
64 kt winds	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

TAU hrs	Verify dy/hr	Lat deg	Lon deg	Dir	Spd	Wind kts	Gusts kts	Value	Radli (nm)
									NE SE SW NW
0	29/18	18.8N	79.2W	305	9	60	75	34kt	130 90 40 100
0								50kt	60 40 0 40
3								12ft	90 90 60 90
3	29/21	19.1N	79.6W	310	10	60	75	34kt	130 90 40 100
3								50kt	60 40 0 40
12	30/06	20.1N	80.9W	310	10	75	90	34kt	140 100 90 120
12								50kt	70 50 40 60
12								64kt	30 25 0 25
24	30/18	21.7N	82.8W	310	12	90	110	34kt	150 120 100 120
24								50kt	75 60 50 60
24								64kt	40 30 25 30
36	31/06	23.4N	84.8W	315	13	100	120	34kt	150 120 100 120
36								50kt	75 60 50 60
36								64kt	40 30 25 30

Don't forget to make the cyclone a hurricane at synoptic & advisory time

Enter your initials

Center Accuracy

Forecast Type

Review the
Advisory Data

Make it a hurricane- 65 kt

Advisory Composition Dialog - AMS al792010

Tropical Cyclone

☐ Special Advisory

Forecaster Initials

Advisory number

Time Zone

☐ Subtropical

Center Accuracy nm

Geography Reference

Geography Reference

Public advisory frequency ☒

☐ Last Advisory

NHC Advisory Data - AMS al792010

TAU 3

TAU:

Latitude Longitude

Max Wind knots

Gusts knots

Direction degrees

Speed knots

NE (nm) SE (nm) SW (nm) NW (nm)

12 ft seas

34 kt winds

50 kt winds

64 kt winds

TAU hrs	Verify dy/hr	Lat deg	Lon deg	Dir	Spd	Wind kts	Gusts kts	Value	Radli (nm)
									NE SE SW NW
0	29/18	18.8N	79.2W	305	9	65	75	34kt	140 90 40 100
0								50kt	60 40 25 40
0								64kt	25 0 0 0
3								12ft	90 90 60 90
3	29/21	19.1N	79.6W	305	10	65	80	34kt	140 90 40 100
3								50kt	60 40 25 40
3								64kt	25 0 0 0
12	30/06	20.1N	80.9W	310	11	75	90	34kt	140 100 90 120
12								50kt	70 50 40 60
12								64kt	30 25 0 25
24	30/18	21.7N	82.8W	310	12	90	110	34kt	150 120 100 120
24								50kt	75 60 50 60
24								64kt	40 30 25 30
36	31/06	23.4N	84.8W	315	13	100	120	34kt	150 120 100 120

Record the Advisory Information

Update the initial & synoptic intensity (65 kt), wind radii, pressure

National Hurricane Center Advisory Composition Worksheet

Cyclone Name	ATCF ID	Adv #	Special	Last	Date	Time (UTC)	Forecaster(s)
AMS	ALXX20XX	10	<input type="checkbox"/>	<input type="checkbox"/>	Aug 29, 20XX	2100	??????
Watches and Warnings							
Hazards Statements	<input type="checkbox"/> Storm Surge						
	<input type="checkbox"/> Rainfall						
	<input type="checkbox"/> Tornadoes						
Notes	<input type="checkbox"/> Special Soundings						

Fcst Hr	Date/Time (UTC)	Lat (°N)	Lon (°W)	Dir/Spd (deg/kt)	Pres (mb)	Wind (kt)	Gusts (kt)	Status	Wind Radii (nm)				
									kt	NE	SE	SW	NW
0	29 / 00 06 12 ¹⁸	18.8	79.2	300/9	984	65	80	TS	34	140	90	40	100
									50	60	40	25	60
3	29 / 03 09 15 ²¹	19.2	79.7	305/10	980	65	80	HU	64	25	0	0	0
				miles / km of					12	90	90	60	90
12	30 / 12 18 00 ⁰⁶	20.1	80.9			75	90	HU	34	140	100	90	120
									50	70	50	40	60
									64	30	25	0	25
24	30 / 00 06 12 ¹⁸	21.7	82.8			90	110	HU	34	150	120	100	120
									50	75	60	50	60
									64	40	30	25	30
36	31 / 12 18 00 ⁰⁶	23.4	84.8			100	120	MH	34	150	120	100	120
									50	75	60	50	60
									64	40	30	25	30
48	31 / 00 06 12 ¹⁸	25.2	86.8			110	135	MH	34	160	130	120	130
									50	90	75	60	75
72	1 / 00 06 12 ¹⁸	28.0	90.0			105	130	MH	34	160	140	120	140
									50	90	75	60	75
96	2 / 00 06 12 ¹⁸	30.5	92.5			85	105	HU	<input type="checkbox"/> TCM <input type="checkbox"/> TCD <input type="checkbox"/> TCP <input type="checkbox"/> TCV <input type="checkbox"/> PWS <input type="checkbox"/> W/W Graphic <input type="checkbox"/> ICAO				
120	3 / 00 06 12 ¹⁸	32.0	94.0			55	65	TS					

Now say OK to create the products

Enter your initials

Center Accuracy

Forecast Type

Review the
Advisory Data

Minimum Pressure

Pick Geographical
Reference Points

Advisory Composition Dialog - AMS al792010

Tropical Cyclone al792010 on 2010082918

☐ Special Advisory Time of advisory 0000 HMM

Forecaster Initials DPB

Advisory number 10 AWIPS bin number 4

Time Zone Atlantic Eastern Central ☐ Daylight Time

☐ Subtropical Surface Pressure 980 mb

Center Accuracy 15 nm Eye Diameter 0 nm

Forecast type...

Geography Reference 19.3N 81.2W GRAND CAYMAN

Geography Reference 21.6N 82.8W THE ISLE OF YOUTH

Public advisory frequency 6 hourly 3 hourly 2 hourly

☐ Last Advisory

Advisory Data... Edit Warning...

Help OK Cancel

Forecast/Advisory

Remember, this is the
product that drives
everyone's tracking
and plotting
software!

```
al792010.fstadv-10 - Notepad
File Edit Format View Help
HURRICANE AMS FORECAST/ADVISORY NUMBER 10|
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL AL792010
2100 UTC SUN AUG 29 2010

CHANGES TO WATCHES AND WARNINGS WITH THIS ADVISORY...
NONE.

SUMMARY OF WATCHES AND WARNINGS IN EFFECT...
A HURRICANE WARNING IS IN EFFECT FOR...
* THE CAYMAN ISLANDS
* THE WESTERN CUBAN PROVINCES OF ISLA DE JUVENTUD..PINAR DEL RIO...
HABANA..AND CIUDAD DE LA HABANA.

A TROPICAL STORM WARNING IS IN EFFECT FOR...
* JAMAICA
* THE CENTRAL CUBAN PROVINCES OF MATANZAS...CIENFUEGOS...VILLA
CLARA...SANCTI SPIRITUS...CIEGO DE AVILA...CAMAGUEY...AND GRANMA.
* THE LOWER FLORIDA KEYS FROM WEST OF KEY WEST WESTWARD TO DRY
TORTUGAS

A TROPICAL STORM WATCH IS IN EFFECT FOR...
* THE LOWER FLORIDA KEYS FROM WEST OF THE SEVEN MILE BRIDGE WESTWARD
TO KEY WEST

HURRICANE CENTER LOCATED NEAR 19.1N 79.6W AT 29/2100Z
POSITION ACCURATE WITHIN 15 NM

PRESENT MOVEMENT TOWARD THE NORTHWEST OR 305 DEGREES AT 10 KT

ESTIMATED MINIMUM CENTRAL PRESSURE 980 MB
MAX SUSTAINED WINDS 65 KT WITH GUSTS TO 80 KT.
64 KT..... 25NE 05E 05W 0NW.
50 KT..... 60NE 40SE 25SW 40NW.
34 KT.....140NE 90SE 40SW 100NW.
12 FT SEAS.. 90NE 90SE 60SW 90NW.
WINDS AND SEAS VARY GREATLY IN EACH QUADRANT. RADII IN NAUTICAL
MILES ARE THE LARGEST RADII EXPECTED ANYWHERE IN THAT QUADRANT.

REPEAT...CENTER LOCATED NEAR 19.1N 79.6W AT 29/2100Z
AT 29/1800Z CENTER WAS LOCATED NEAR 18.8N 79.2W

FORECAST VALID 30/0600Z 20.1N 80.9W
MAX WIND 75 KT...GUSTS 90 KT.
64 KT... 30NE 25SE 05W 25NW.
50 KT... 70NE 50SE 40SW 60NW.
34 KT...140NE 100SE 90SW 120NW.

FORECAST VALID 30/1800Z 21.7N 82.8W
MAX WIND 90 KT...GUSTS 110 KT.
64 KT... 40NE 30SE 25SW 30NW.
50 KT... 75NE 60SE 50SW 60NW.
34 KT...150NE 120SE 100SW 120NW.

FORECAST VALID 31/0600Z 23.4N 84.8W
MAX WIND 100 KT...GUSTS 120 KT.
64 KT... 40NE 30SE 25SW 30NW.
50 KT... 75NE 60SE 50SW 60NW.
34 KT...150NE 120SE 100SW 120NW.

FORECAST VALID 31/1800Z 25.2N 86.8W
MAX WIND 110 KT...GUSTS 135 KT.
50 KT... 90NE 75SE 60SW 75NW.
34 KT...160NE 130SE 120SW 130NW.

FORECAST VALID 01/1800Z 28.0N 90.0W
MAX WIND 105 KT...GUSTS 130 KT.
50 KT... 90NE 75SE 60SW 75NW.
34 KT...160NE 140SE 120SW 140NW.

EXTENDED OUTLOOK. NOTE...ERRORS FOR TRACK HAVE AVERAGED NEAR 225 NM
ON DAY 4 AND 300 NM ON DAY 5...AND FOR INTENSITY NEAR 20 KT EACH DAY

OUTLOOK VALID 02/1800Z 30.5N 92.5W...INLAND
```

Wind Speed Probabilities

Provides chances of 34-, 50-, and 64-kt winds at individual locations

Numbers outside parenthesis give the chance that winds of that magnitude or greater will start within the time period listed above

Numbers inside parenthesis give the cumulative chance the winds of that magnitude or greater occurring between the initial advisory time and the time listed above

Cumulative Chance over the next five days- also shown on the NHC probability graphics

/home/atcf-sim/atcf/nhc_messages/al792010.fstadv.new - KEdit

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WIND SPEED PROBABILITIES FOR FORECAST POSITIONS

TIME PERIODS	FROM 18Z SUN TO 06Z MON	FROM 06Z MON TO 18Z MON	FROM 18Z MON TO 06Z TUE	FROM 06Z TUE TO 18Z TUE	FROM 18Z TUE TO 18Z WED	FROM 18Z WED TO 18Z THU	FROM 18Z THU TO 18Z FRI
FORECAST HOUR	(12)	(24)	(36)	(48)	(72)	(96)	(120)
HR POSITIONS KT							
ATLANTA GA	34 X	X (X)	X (X)	X (X)	2 (2)	3 (5)	1 (6)
JACKSONVILLE	34 X	X (X)	X (X)	1 (1)	3 (4)	1 (5)	1 (6)
DAYTONA BEACH	34 X	X (X)	X (X)	3 (3)	2 (5)	1 (6)	X (6)
ORLANDO FL	34 X	X (X)	2 (2)	3 (5)	2 (7)	1 (8)	1 (9)
COCOA BEACH FL	34 X	X (X)	1 (1)	3 (4)	1 (5)	1 (6)	X (6)
FT PIERCE FL	34 X	X (X)	3 (3)	2 (5)	1 (6)	X (6)	1 (7)
W PALM BEACH	34 X	1 (1)	3 (4)	2 (6)	1 (7)	X (7)	1 (8)
MIAMI FL	34 X	5 (5)	6 (11)	3 (14)	X (14)	X (14)	1 (15)
MARATHON FL	34 2	14 (16)	14 (30)	3 (33)	1 (34)	X (34)	X (34)
MARATHON FL	50 X	1 (1)	3 (4)	1 (5)	X (5)	X (5)	X (5)
MARATHON FL	64 X	X (X)	1 (1)	X (1)	X (1)	X (1)	X (1)
KEY WEST FL	34 2	21 (23)	24 (47)	2 (49)	2 (51)	X (51)	X (51)
KEY WEST FL	50 X	2 (2)	7 (9)	2 (11)	X (11)	X (11)	X (11)
KEY WEST FL	64 X	X (X)	3 (3)	1 (4)	X (4)	X (4)	X (4)
MARCO ISLAND	34 X	5 (5)	15 (20)	6 (26)	1 (27)	X (27)	1 (28)
MARCO ISLAND	50 X	X (X)	3 (3)	1 (4)	1 (5)	X (5)	X (5)
MARCO ISLAND	64 X	X (X)	1 (1)	X (1)	X (1)	1 (2)	X (2)
FT MYERS FL	34 X	2 (2)	13 (15)	6 (21)	2 (23)	1 (24)	X (24)
FT MYERS FL	50 X	X (X)	1 (1)	2 (3)	1 (4)	X (4)	X (4)
VENICE FL	34 X	1 (1)	12 (13)	9 (22)	4 (26)	X (26)	1 (27)
VENICE FL	50 X	X (X)	1 (1)	2 (3)	2 (5)	X (5)	X (5)
VENICE FL	64 X	X (X)	X (X)	1 (1)	X (1)	X (1)	X (1)
TAMPA FL	34 X	X (X)	4 (4)	9 (13)	5 (18)	X (18)	1 (19)
TAMPA FL	50 X	X (X)	X (X)	2 (2)	1 (3)	X (3)	X (3)
TAMPA FL	64 X	X (X)	X (X)	1 (1)	X (1)	X (1)	1 (2)

INS Line: 12 Col: 21

Let's create the public advisory

Example of Public Advisory

ZCZC MIATCPAT4 ALL
TTAA00 KNHC DDHMM
BULLETIN
HURRICANE IKE ADVISORY NUMBER 42
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL AL092008
1000 PM CDT THU SEP 11 2008

...IKE CONTINUES TO GROW IN SIZE BUT HAS NOT STRENGTHENED YET...
...HURRICANE WARNING ISSUED FOR NORTHWESTERN GULF COAST...

SUMMARY OF 1000 PM CDT...0300 UTC...INFORMATION

LOCATION...25.5N 88.4W
ABOUT 580 MI...930 KM ESE OF CORPUS CHRISTI TEXAS
ABOUT 470 MI...760 KM ESE OF GALVESTON TEXAS
MAXIMUM SUSTAINED WINDS...100 MPH...160 KM/HR
PRESENT MOVEMENT...WNW OR 290 DEGREES AT 10 MPH...17 KM/HR
MINIMUM CENTRAL PRESSURE...945 MB...27.91 INCHES

WATCHES AND WARNINGS

CHANGES WITH THIS ADVISORY...

A HURRICANE WARNING HAS BEEN ISSUED FROM MORGAN CITY LOUISIANA TO BAFFIN BAY TEXAS.

A TROPICAL STORM WARNING HAS BEEN ISSUED FROM SOUTH OF BAFFIN BAY TO PORT MANSFIELD TEXAS.

SUMMARY OF WATCHES AND WARNINGS IN EFFECT...

A HURRICANE WARNING IS IN EFFECT FOR...
* MORGAN CITY LOUISIANA TO BAFFIN BAY TEXAS

A TROPICAL STORM WARNING IS IN EFFECT FOR...
* EAST OF MORGAN CITY TO THE MISSISSIPPI-ALABAMA BORDER...INCLUDING THE CITY OF NEW ORLEANS AND LAKE PONTCHARTRAIN
* SOUTH OF BAFFIN BAY TO PORT MANSFIELD

A HURRICANE WARNING MEANS THAT HURRICANE CONDITIONS ARE EXPECTED SOMEWHERE WITHIN THE WARNING AREA. A WARNING IS TYPICALLY ISSUED 36 HOURS BEFORE THE ANTICIPATED FIRST OCCURRENCE OF TROPICAL-STORM-FORCE WINDS...
CONDITIONS THAT MAKE OUTSIDE PREPARATIONS DIFFICULT OR DANGEROUS.
PREPARATIONS TO PROTECT LIFE AND PROPERTY SHOULD BE RUSHED TO COMPLETION.

Section headers added

Storm information first

Changes to watches and warnings in the current advisory are highlighted

Bulleted summary of all watches and warnings in effect

Example of New Public Advisory Format

DISCUSSION AND 48-HOUR OUTLOOK

AT 1000 PM CDT...0300Z...THE CENTER OF HURRICANE IKE WAS LOCATED NEAR LATITUDE 25.5 NORTH...LONGITUDE 88.4 WEST. IKE IS MOVING TOWARD THE WEST-NORTHWEST NEAR 10 MPH...17 KM/HR. A GENERAL WEST-NORTHWESTWARD MOTION IS EXPECTED OVER THE NEXT DAY OR SO...AND THE CENTER OF IKE SHOULD BE VERY NEAR THE COAST BY LATE FRIDAY.

MAXIMUM SUSTAINED WINDS ARE NEAR 100 MPH...160 KM/HR...WITH HIGHER GUSTS. IKE IS A CATEGORY TWO HURRICANE ON THE SAFFIR-SIMPSON SCALE. IKE IS FORECAST TO BECOME A MAJOR HURRICANE PRIOR TO REACHING THE COASTLINE.

IKE REMAINS A VERY LARGE TROPICAL CYCLONE. HURRICANE FORCE WINDS EXTEND OUTWARD UP TO 115 MILES...185 KM...FROM THE CENTER...AND TROPICAL STORM FORCE WINDS EXTEND OUTWARD UP TO 275 MILES...445 KM.

THE LATEST MINIMUM CENTRAL PRESSURE REPORTED BY A NOAA HURRICANE HUNTER AIRCRAFT WAS 945 MB...27.91 INCHES.

HAZARDS AFFECTING LAND

STORM SURGE...STORM SURGE WILL RAISE WATER LEVELS AS MUCH AS 10 TO 15 FT ABOVE GROUND LEVEL ALONG THE COAST WITHIN THE HURRICANE WARNING AREA... WITH LARGE AND DANGEROUS BATTERING WAVES...NEAR AND TO THE EAST OF WHERE THE CENTER OF IKE MAKES LANDFALL. STORM SURGE WILL RAISE WATER LEVELS AS MUCH AS 5 TO 7 FEET ABOVE GROUND LEVEL ALONG THE COAST WITHIN THE TROPICAL STORM WARNING AREA ALONG THE NORTHERN GULF COAST. THE SURGE COULD PENETRATE AS FAR INLAND AS ABOUT 10 MILES FROM THE SHORE WITH DEPTH GRADUALLY DECREASING AS THE WATER MOVES INLAND.

WIND...BECAUSE IKE IS A VERY LARGE TROPICAL CYCLONE...WEATHER WILL DETERIORATE ALONG THE COASTLINE LONG BEFORE THE CENTER REACHES THE COAST. HURRICANE CONDITIONS ARE EXPECTED TO REACH NORTHWESTERN GULF COAST WITHIN THE WARNING AREA FRIDAY AFTERNOON. WINDS ARE EXPECTED TO FIRST REACH TROPICAL STORM STRENGTH FRIDAY MORNING...MAKING OUTSIDE PREPARATIONS DIFFICULT OR DANGEROUS. PREPARATIONS TO PROTECT LIFE AND PROPERTY SHOULD BE RUSHED TO COMPLETION.

RAINFALL...IKE IS EXPECTED TO PRODUCE RAINFALL AMOUNTS OF 5 TO 10 INCHES ALONG THE CENTRAL AND UPPER TEXAS COAST AND OVER PORTIONS OF SOUTHWESTERN LOUISIANA...WITH ISOLATED MAXIMUM AMOUNTS OF 15 INCHES POSSIBLE. RAINFALL AMOUNTS OF 1 TO 2 INCHES ARE POSSIBLE OVER PORTIONS OF THE YUCATAN PENINSULA.

Section headers

Discussion of forecast motion and intensity and other pertinent information

Storm hazards and impacts, shown by type

Let's Make a Public Advisory

Think of a good headline

Summary information pre-formatted for complete advisories

Remember this was typed in earlier.

Check to make sure it is correct. May have to insert watch/warning definitions

```
al792010.public_10_template - Notepad
File Edit Format View Help
ZCZC MIATCPAT4 ALL
TTAA00 KNHC DDHMM
BULLETIN
HURRICANE AMS ADVISORY NUMBER 10
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL AL792010
500 PM EDT SUN AUG 29 2010

...INSERT HEADLINE XXXXXXXXXXXXXXXXXXXX

SUMMARY OF 500 PM EDT...2100 UTC...INFORMATION
-----
LOCATION...19.1N 79.6W
ABOUT 105 MI...170 KM E OF GRAND CAYMAN
ABOUT 270 MI...435 KM SE OF THE ISLE OF YOUTH
MAXIMUM SUSTAINED WINDS...70 MPH...65 KM/HR
PRESENT MOVEMENT...ENE OR 60 DEGREES AT 5 MPH...7 KM/HR
MINIMUM CENTRAL PRESSURE...1003 MB...29.62 INCHES

WATCHES AND WARNINGS
-----
CHANGES WITH THIS ADVISORY...
NONE.

SUMMARY OF WATCHES AND WARNINGS IN EFFECT...
A HURRICANE WARNING IS IN EFFECT FOR...
* THE CAYMAN ISLANDS
* THE WESTERN CUBAN PROVINCES OF ISLA DE JUVENTUD...PINAR DEL RIO...
LA HABANA...AND CIUDAD DE LA HABANA.

A TROPICAL STORM WARNING IS IN EFFECT FOR...
* JAMAICA
* THE CENTRAL CUBAN PROVINCES OF MATANZAS...CIENFUEGOS...VILLA
CLARA...SANCTI SPIRITUS...CIEGO DE AVILA...CAMAGUEY...AND GRANMA.
* THE LOWER FLORIDA KEYS FROM WEST OF KEY WEST WESTWARD TO DRY
TORTUGAS

A TROPICAL STORM WATCH IS IN EFFECT FOR...
* THE LOWER FLORIDA KEYS FROM WEST OF THE SEVEN MILE BRIDGE WESTWARD
TO KEY WEST

A HURRICANE WARNING MEANS THAT HURRICANE CONDITIONS ARE EXPECTED
SOMEWHERE WITHIN THE WARNING AREA. A WARNING IS TYPICALLY ISSUED 36
HOURS BEFORE THE ANTICIPATED FIRST OCCURRENCE OF TROPICAL-STORM-
FORCE WINDS...CONDITIONS THAT MAKE OUTSIDE PREPARATIONS DIFFICULT
OR DANGEROUS. PREPARATIONS TO PROTECT LIFE AND PROPERTY SHOULD BE
RUSHED TO COMPLETION IN THE CAYMAN ISLANDS AND CUBA.

A TROPICAL STORM WARNING MEANS THAT TROPICAL STORM CONDITIONS ARE
EXPECTED SOMEWHERE WITHIN THE WARNING AREA WITHIN THE NEXT 36 HOURS.

A TROPICAL STORM WATCH MEANS THAT TROPICAL STORM CONDITIONS ARE
POSSIBLE SOMEWHERE WITHIN THE WARNING AREA WITHIN THE NEXT 48 HOURS.

FOR STORM INFORMATION SPECIFIC TO YOUR AREA OUTSIDE THE UNITED
STATES...PLEASE MONITOR PRODUCTS ISSUED BY YOUR NATIONAL
METEOROLOGICAL SERVICE. FOR STORM INFORMATION SPECIFIC TO YOUR
AREA IN THE UNITED STATES...PLEASE MONITOR PRODUCTS ISSUED BY YOUR
LOCAL NATIONAL WEATHER SERVICE FORECAST OFFICE.

DISCUSSION AND 48-HOUR OUTLOOK
-----
AT 500 PM EDT...2100 UTC...THE CENTER OF HURRICANE AMS WAS LOCATED
NEAR LATITUDE 19.1 NORTH. AMS IS MOVING TOWARD THE NORTHWEST NEAR
12 MPH...19 KM/HR...AND THIS MOTION IS EXPECTED TO XXXXXXXXXXXX

MAXIMUM SUSTAINED WINDS ARE NEAR 75 MPH...120 KM/HR...WITH HIGHER
GUSTS. AMS IS A CATEGORY ONE HURRICANE ON THE SAFFIR-SIMPSON
HURRICANE WIND SCALE. SOME STRENGTHENING IS FORECAST DURING THE
NEXT 24 HOURS. XXXXXXXXXXXXXXXXXXXX
```

Let's Make a Public Advisory

Discussion and Outlook Section

Add information about the forecast motion

Add information about the forecast intensity change

Discuss hazards or impacts, for this case we should discuss storm surge, wind, and rainfall

Previous hazard information is available for cut and paste!

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FOR STORM INFORMATION SPECIFIC TO YOUR AREA OUTSIDE THE UNITED STATES...PLEASE MONITOR PRODUCTS ISSUED BY YOUR NATIONAL METEOROLOGICAL SERVICE. FOR STORM INFORMATION SPECIFIC TO YOUR AREA IN THE UNITED STATES...PLEASE MONITOR PRODUCTS ISSUED BY YOUR LOCAL NATIONAL WEATHER SERVICE FORECAST OFFICE.

DISCUSSION AND 48-HOUR OUTLOOK

AT 500 PM EDT...2100 UTC...THE CENTER OF HURRICANE AMS WAS LOCATED NEAR LATITUDE 19.1 NORTH. AMS IS MOVING TOWARD THE NORTHWEST NEAR 12 MPH...19 KM/HR...AND THIS MOTION IS EXPECTED TO XXXXXXXXXXXX

MAXIMUM SUSTAINED WINDS ARE NEAR 75 MPH...120 KM/HR...WITH HIGHER GUSTS. AMS IS A CATEGORY ONE HURRICANE ON THE SAFFIR-SIMPSON HURRICANE WIND SCALE. SOME STRENGTHENING IS FORECAST DURING THE NEXT 24 HOURS. XXXXXXXXXXXXXXXXXXXX

HURRICANE FORCE WINDS EXTEND OUTWARD UP TO 30 MILES...45 KM...FROM THE CENTER...AND TROPICAL STORM FORCE WINDS EXTEND OUTWARD UP TO 160 MILES...260 KM.

ESTIMATED MINIMUM CENTRAL PRESSURE IS 984 MB...29.06 INCHES.

HAZARDS AFFECTING LAND

*****PUBLIC SECTION*****

ARE ANY BLOCKS OF TEXT REQUIRED FROM THE PREVIOUS PUBLIC ADVISORY ATTACHED BELOW???? IF SO, CUT AND PASTE THE BLOCKS OF TEXT AND DELETE ALL LINES PAST THE NNNN LINE.

NEXT ADVISORY

NEXT INTERMEDIATE ADVISORY...800 PM EDT
NEXT COMPLETE ADVISORY...1100 PM EDT

HAZARDS AFFECTING LAND

STORM SURGE...COASTAL STORM SURGE FLOODING OF 2 TO 5 FEET ABOVE NORMAL TIDE LEVELS IS POSSIBLE IN THE CAYMAN ISLANDS...WITH 8 TO 13 FEET POSSIBLE NEAR WHERE THE CENTER OF AMS CROSSES WESTERN CUBA...INCLUDING ISLA DE JUVENTUD.

WIND...HURRICANE CONDITIONS ARE EXPECTED TO REACH THE CAYMAN ISLAND TONIGHT...AND THE ISLE OF YOUTH AND WESTERN CUBA TOMORROW AFTERNOON. WINDS ARE EXPECTED TO FIRST REACH TROPICAL STORM STRENGTH IN THE CAYMAN ISLANDS WITHIN THE NEXT FEW HOURS AND EARLY TOMORROW MORNING IN WESTERN CUBA...MAKING OUTSIDE PREPARATIONS DIFFICULT OR DANGEROUS.

RAINFALL...AMS IS EXPECTED TO PRODUCE TOTAL RAINFALL ACCUMULATIONS OF 6 TO 12 INCHES ACROSS JAMAICA...THE CAYMAN ISLANDS...AND WESTERN CUBA...WITH ISOLATED MAXIMUM AMOUNTS OF UP TO 25 INCHES POSSIBLE. THESE RAINS WILL LIKELY PRODUCE LIFE-THREATENING FLASH FLOODS AND MUD SLIDES. RAINFALL ACCUMULATIONS OF 2 TO 4 INCHES ARE POSSIBLE OVER SOUTHERN CUBA.

Public advisory ready to be issued

ZCZC MIATCPAT4 ALL
TTAA00 KNHC DDHHMM
BULLETIN
HURRICANE AMS ADVISORY NUMBER 10
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL AL792010
500 PM EDT SUN AUG 29 2010

...AMS BECOMES A HURRICANE OVER THE NORTHWESTERN CARIBBEAN...

SUMMARY OF 500 PM EDT...2100 UTC...INFORMATION

LOCATION...19.1N 79.6W
ABOUT 105 MI...170 KM E OF GRAND CAYMAN
ABOUT 270 MI...435 KM SE OF THE ISLE OF YOUTH
MAXIMUM SUSTAINED WINDS...70 MPH...65 KM/HR
PRESENT MOVEMENT...ENE OR 60 DEGREES AT 5 MPH...7 KM/HR
MINIMUM CENTRAL PRESSURE...1003 MB...29.62 INCHES

WATCHES AND WARNINGS

CHANGES WITH THIS ADVISORY...
NONE.

SUMMARY OF WATCHES AND WARNINGS IN EFFECT...
A HURRICANE WARNING IS IN EFFECT FOR...
* THE CAYMAN ISLANDS
* THE WESTERN CUBAN PROVINCES OF ISLA DE JUVENTUD...PINAR DEL RIO...
LA HABANA...AND CIUDAD DE LA HABANA.

A TROPICAL STORM WARNING IS IN EFFECT FOR...
* JAMAICA
* THE CENTRAL CUBAN PROVINCES OF MATANZAS...CIENFUEGOS...VILLA
CLARA...SANCTI SPIRITUS...CIEGO DE AVILA...CAMAGUEY...AND GRANMA.
* THE LOWER FLORIDA KEYS FROM WEST OF KEY WEST WESTWARD TO DRY
TORTUGAS

A TROPICAL STORM WATCH IS IN EFFECT FOR...
* THE LOWER FLORIDA KEYS FROM WEST OF THE SEVEN MILE BRIDGE WESTWARD
TO KEY WEST

A HURRICANE WARNING MEANS THAT HURRICANE CONDITIONS ARE EXPECTED
SOMEWHERE WITHIN THE WARNING AREA. A WARNING IS TYPICALLY ISSUED 36
HOURS BEFORE THE ANTICIPATED FIRST OCCURRENCE OF TROPICAL-STORM-
FORCE WINDS...CONDITIONS THAT MAKE OUTSIDE PREPARATIONS DIFFICULT
OR DANGEROUS. PREPARATIONS TO PROTECT LIFE AND PROPERTY SHOULD BE
RUSHED TO COMPLETION IN THE CAYMAN ISLANDS AND CUBA.

A TROPICAL STORM WARNING MEANS THAT TROPICAL STORM CONDITIONS ARE
EXPECTED SOMEWHERE WITHIN THE WARNING AREA WITHIN THE NEXT 36 HOURS.

A TROPICAL STORM WATCH MEANS THAT TROPICAL STORM CONDITIONS ARE
POSSIBLE SOMEWHERE WITHIN THE WARNING AREA WITHIN THE NEXT 48 HOURS.

FOR STORM INFORMATION SPECIFIC TO YOUR AREA OUTSIDE THE UNITED
STATES...PLEASE MONITOR PRODUCTS ISSUED BY YOUR NATIONAL
METEOROLOGICAL SERVICE. FOR STORM INFORMATION SPECIFIC TO YOUR
AREA IN THE UNITED STATES...PLEASE MONITOR PRODUCTS ISSUED BY YOUR
LOCAL NATIONAL WEATHER SERVICE FORECAST OFFICE.

DISCUSSION AND 48-HOUR OUTLOOK

AT 500 PM EDT...2100 UTC...THE CENTER OF HURRICANE AMS WAS LOCATED
NEAR LATITUDE 19.1 NORTH. AMS IS MOVING TOWARD THE NORTHWEST NEAR
12 MPH...19 KM/HR...AND THIS MOTION IS EXPECTED TO CONTINUE DURING
THE NEXT COUPLE OF DAYS. ON THIS TRACK...THE CENTER OF AMS WILL
PASS NEAR OR OVER THE CAYMAN ISLANDS TONIGHT...OVER THE WESTERN
PORTIONS OF CUBA ON MONDAY...AND INTO THE SOUTHERN GULF OF MEXICO
ON MONDAY NIGHT OR TUESDAY.

MAXIMUM SUSTAINED WINDS ARE NEAR 75 MPH...120 KM/HR...WITH HIGHER
GUSTS. AMS IS A CATEGORY ONE HURRICANE ON THE SAFFIR-SIMPSON
HURRICANE WIND SCALE. STRENGTHENING IS FORECAST DURING THE NEXT
COUPLE OF DAYS...AND AMS COULD BECOME A MAJOR HURRICANE NEAR
THE TIME IT CROSSES WESTERN CUBA.

HURRICANE FORCE WINDS EXTEND OUTWARD UP TO 30 MILES...45 KM...FROM
THE CENTER...AND TROPICAL STORM FORCE WINDS EXTEND OUTWARD UP TO 160
MILES...260 KM.]

ESTIMATED MINIMUM CENTRAL PRESSURE IS 984 MB...29.06 INCHES.

HAZARDS AFFECTING LAND

STORM SURGE...COASTAL STORM SURGE FLOODING OF 2 TO 5 FEET ABOVE
NORMAL TIDE LEVELS IS POSSIBLE IN THE CAYMAN ISLANDS...WITH 8 TO
13 FEET POSSIBLE NEAR WHERE THE CENTER OF AMS CROSSES WESTERN
CUBA...INCLUDING ISLA DE JUVENTUD.

WIND...HURRICANE CONDITIONS ARE EXPECTED TO REACH THE CAYMAN ISLAND
TONIGHT...AND THE ISLE OF YOUTH AND WESTERN CUBA TOMORROW
AFTERNOON. WINDS ARE EXPECTED TO FIRST REACH TROPICAL STORM
STRENGTH IN THE CAYMAN ISLANDS WITHIN THE NEXT FEW HOURS AND EARLY
TOMORROW MORNING IN WESTERN CUBA...MAKING OUTSIDE PREPARATIONS
DIFFICULT OR DANGEROUS.

RAINFALL...AMS IS EXPECTED TO PRODUCE TOTAL RAINFALL ACCUMULATIONS
OF 6 TO 12 INCHES ACROSS JAMAICA...THE CAYMAN ISLANDS...AND WESTERN
CUBA...WITH ISOLATED MAXIMUM AMOUNTS OF UP TO 25 INCHES POSSIBLE.
THESE RAINS WILL LIKELY PRODUCE LIFE-THREATENING FLASH FLOODS AND
MUD SLIDES. RAINFALL ACCUMULATIONS OF 2 TO 4 INCHES ARE POSSIBLE
OVER SOUTHERN CUBA.

NEXT ADVISORY

NEXT INTERMEDIATE ADVISORY...800 PM EDT
NEXT COMPLETE ADVISORY...1100 PM EDT

\$\$
FORECASTER YOUR NAME HERE
NNNN

Don't forget the discussion

Create Your Discussion

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ZCZC MIATCDAT4 ALL
TTAA00 KNHC DDHHMM
HURRICANE AMS DISCUSSION NUMBER 10
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL AL792010
500 PM EDT SUN AUG 29 2010


FORECAST POSITIONS AND MAX WINDS


INITIAL      29/2100Z 19.1N  79.6W   65 KT
12HR VT      30/0600Z 20.1N  80.9W   75 KT
24HR VT      30/1800Z 21.7N  82.8W   90 KT
36HR VT      31/0600Z 23.4N  84.8W  100 KT
48HR VT      31/1800Z 25.2N  86.8W  110 KT
72HR VT      01/1800Z 28.0N  90.0W  105 KT
96HR VT      02/1800Z 30.5N  92.5W   85 KT...INLAND
120HR VT     03/1800Z 32.0N  94.0W   55 KT...INLAND


$$
FORECASTER YOUR NAME HERE

NNNN
|
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INS Line: 32 Col: 1

Objective of the Discussion

Explain the reasoning behind the analysis and the forecast

- include the prognostic reasoning
- indicate objective techniques used
- describe other meteorological decisions
- plans for watches and warnings

Best opportunities to convey the degree of confidence in the forecast;
particularly important if the level of confidence is low

Product has a wide spectrum of users with varying levels of
sophistication

- professional meteorologists
- meteorology students and professors
- the media
- emergency managers
- general public

Final NHC Discussion

How does
yours
compare?

al792010.discus-10_final - Notepad

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HURRICANE AMS DISCUSSION NUMBER 10
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL AL792010
500 PM EDT SUN AUG 29 2010

VISIBLE IMAGERY HAS OCCASIONALLY REVEALED AN EYE TRYING TO FORM...BUT THAT FEATURE HAS NOT BEEN PERSISTENT. NEVERTHELESS...THE CYCLONE CONTINUES TO INCREASE IN ORGANIZATION...WITH SOLID CONVECTIVE BANDS AND UPPER-LEVEL OUTFLOW THAT IS WELL-DEVELOPED IN ALL QUADRANTS. THE UNDERLYING WATERS OF THE NORTHWESTERN CARIBBEAN SEA ARE QUITE WARM...AND TO SOME DEPTH BENEATH THE SURFACE...SO THERE ARE NO APPARENT IMPEDIMENTS TO ADDITIONAL STRENGTHENING BEFORE AMS REACHES WESTERN CUBA. EVEN RAPID INTENSIFICATION IS POSSIBLE...AS SUPPORTED BY THE LATEST SHIPS-BASED RAPID INTENSIFICATION INDEX THAT SHOWS A 35 PERCENT CHANCE OF AN INTENSITY INCREASE OF 30 KT OR MORE DURING THE NEXT 24 HOURS...SO IT IS POSSIBLE THAT AMS COULD REACH MAJOR HURRICANE STATUS PRIOR TO CROSSING WESTERN CUBA. PASSAGE OVER CUBA WILL NOT LIKELY HAVE MUCH IMPACT ON THE STORM'S STRENGTH...AND ALL GUIDANCE FORECASTS A STRENGTHENING TREND OVER THE SOUTHERN GULF...WITH SLIGHT WEAKENING POSSIBLE IN THE NORTHERN GULF. THE OFFICIAL FORECAST AGAIN CALLS FOR A MAJOR HURRICANE OVER THE GULF...AND DESPITE THE WEAKENING IMPLIED BY THE LESSER INTENSITY OVER LAND AT 96 HOURS...AMS COULD MAKE FINAL LANDFALL ALONG SOME PORTION OF THE NORTHERN GULF COAST AS A MAJOR HURRICANE.

AMS HAS TURNED MORE TO THE RIGHT AND SPED UP A LITTLE...NOW MOVING AT ABOUT 305/10...AS IT HEADS FOR A BREAK IN THE SUBTROPICAL RIDGE OVER THE EASTERN GULF OF MEXICO. THE PORTION OF THAT RIDGE THAT IS INTACT OVER THE SOUTHERN PLAINS OF THE UNITED STATES IS FORECAST BY ALL MODELS TO EVOLVE INTO A DEEP-LAYER HIGH THAT WILL REACH THE NORTHEASTERN U.S. IN A FEW DAYS. THERE ARE IMPORTANT DIFFERENCES AMONG THE MODELS...HOWEVER...IN HOW MUCH RIDGING WILL EXTEND SOUTHWESTWARD FROM THAT HIGH TOWARD TEXAS...AND IN HOW STRONG THE UPPER-LEVEL TROUGH CURRENTLY OVER THE CENTRAL GULF WILL BE OVER THE WESTERN GULF IN A FEW DAYS. THESE VARYING SOLUTIONS LEAD TO DIFFERENT TRACKS FOR AMS OVER THE NORTHERN GULF. MODELS WITH THE RIDGE EXTENSION AND A STRONGER UPPER-LEVEL TROUGH WEST OF AMS...SUCH AS THE NOGAPS AND UKMET...FORECAST AMS TO TURN WESTWARD TOWARD TEXAS. OTHERS INCLUDING THE GFS...GFDL...AND HWRF...DO NOT SHOW THE RIDGE EXTENSION NOR A STRONG UPPER-LEVEL TROUGH...AND FORECAST AMS TO BE PULLED INTO THE NORTHERN GULF COAST FARTHER EAST. THE NEW OFFICIAL FORECAST LEANS TOWARD THE LATTER SOLUTIONS AND IS EAST OF THE CONSENSUS...AND REPRESENTS NO SIGNIFICANT CHANGE TO THE PREVIOUS ADVISORY. DUE TO THE NOTABLE MODEL SPREAD LATE IN THE FORECAST PERIOD...IT IS ONCE AGAIN IMPORTANT TO RESTATE THAT IT IS SIMPLY NOT YET POSSIBLE TO DETERMINE EXACTLY WHERE AND WHEN AMS WILL MAKE FINAL LANDFALL.

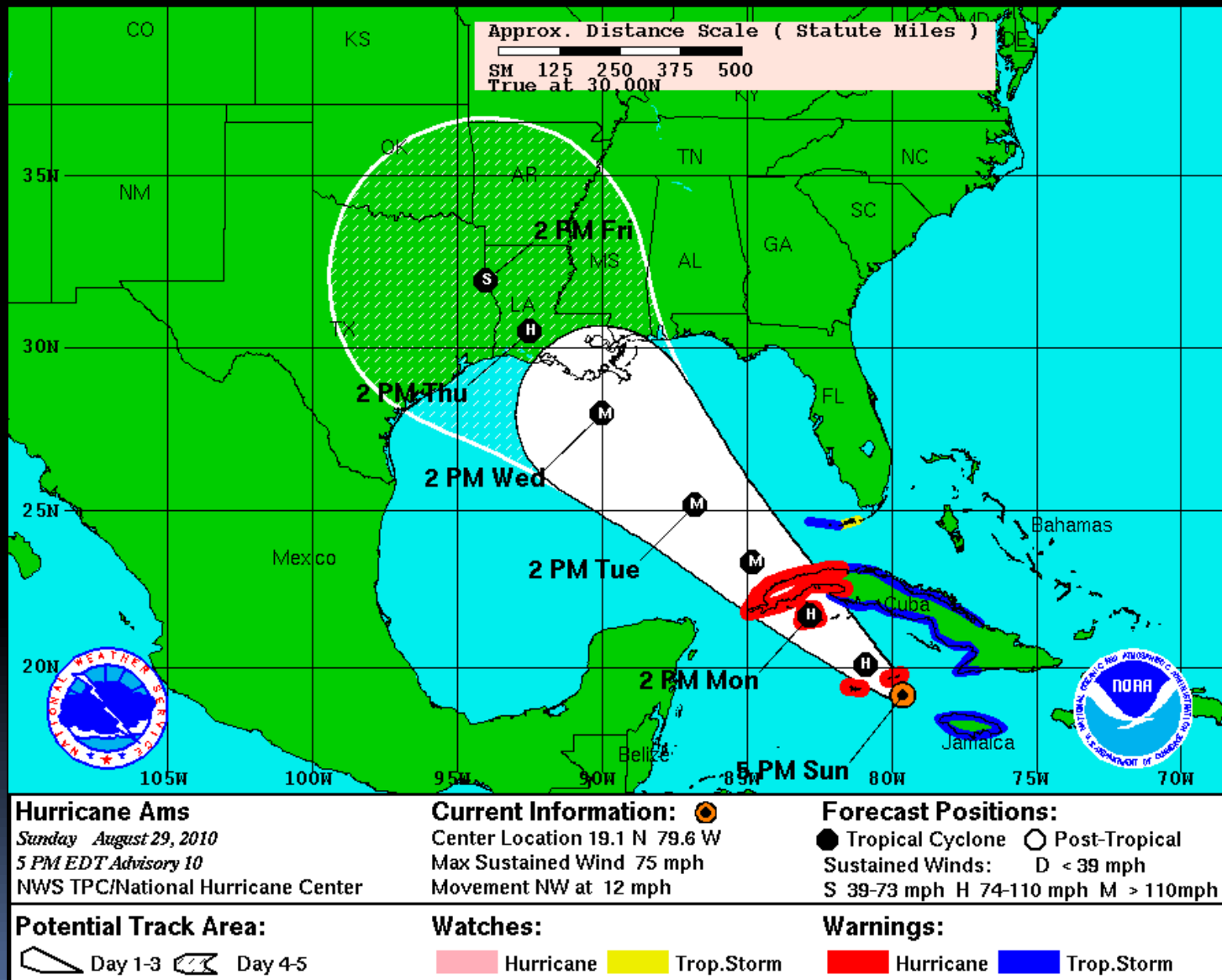
FORECAST POSITIONS AND MAX WINDS

INITIAL 20/2100Z 10 14 20 64 65 KT

21:00 UTC

Advisory deadline

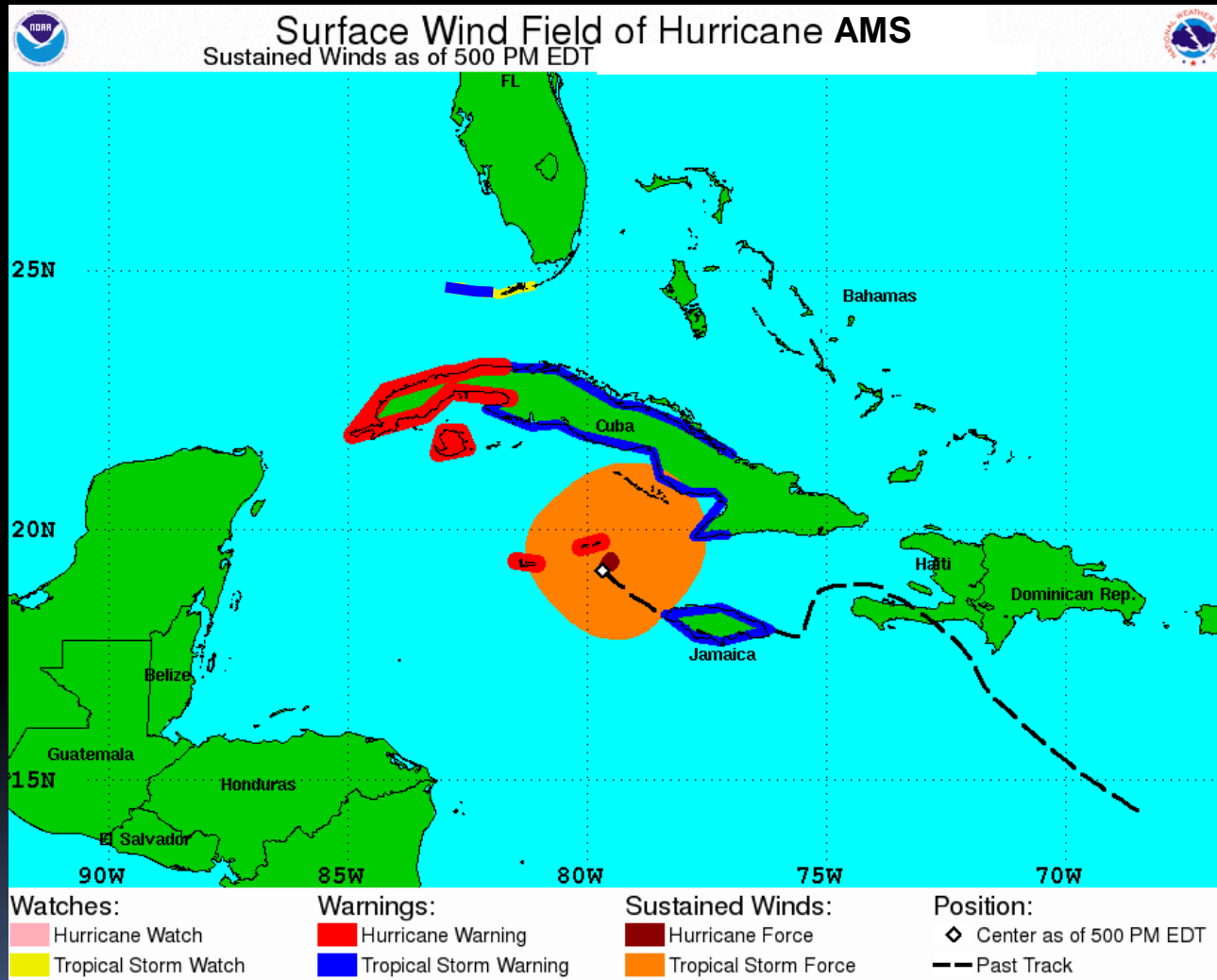
Quick Issue the Graphics- the media is calling



21:00 UTC

Advisory deadline

Quick Issue the Graphics- the media is calling

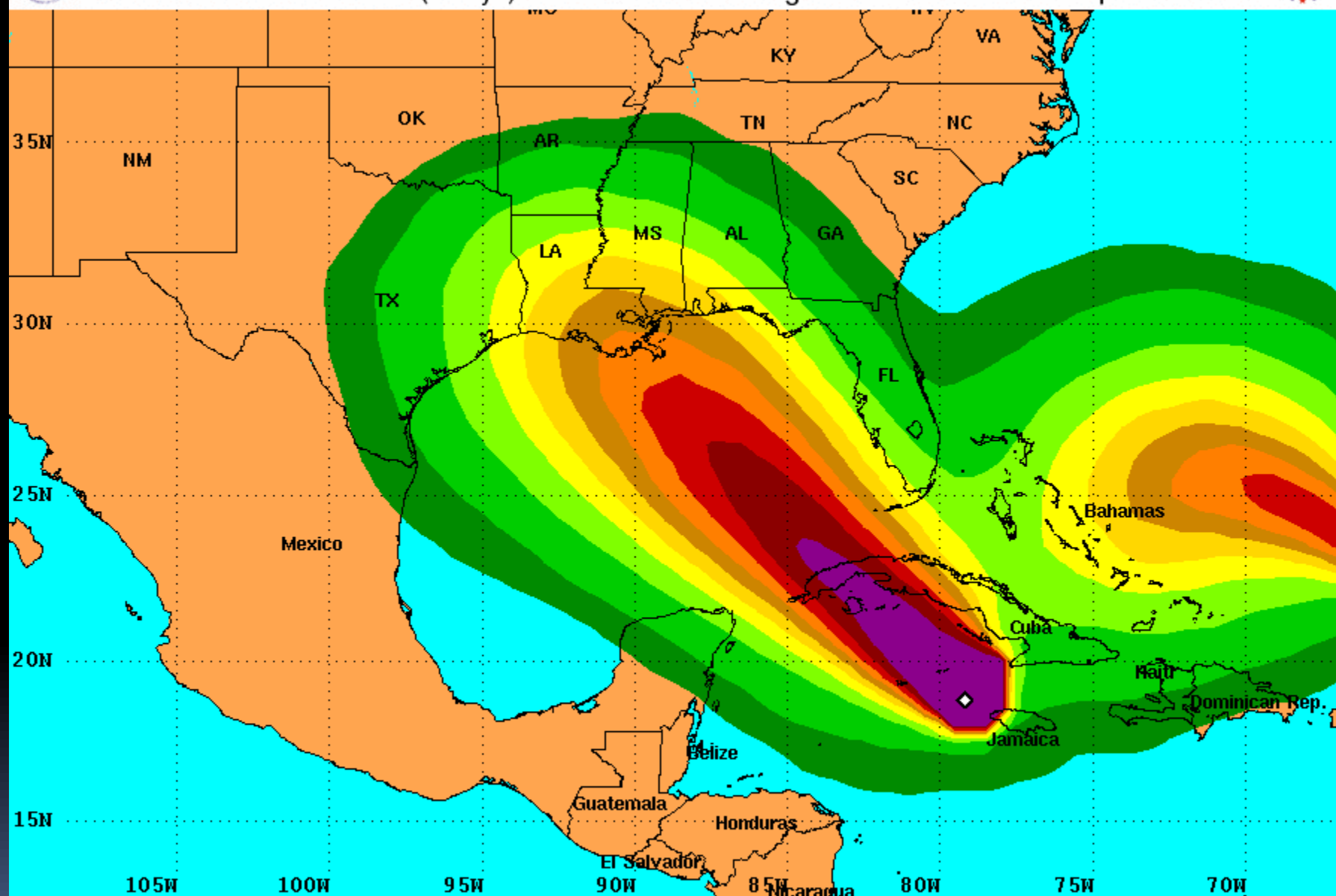


Surface Wind Field



Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 PM EDT Fri Aug 29 to 2 PM EDT Wed Sep 3



Probability of tropical storm force surface winds (1-minute average ≥ 39 mph) from all tropical cyclones

◇ indicates HURRICANE

center location at 2 PM EDT Fri Aug 29

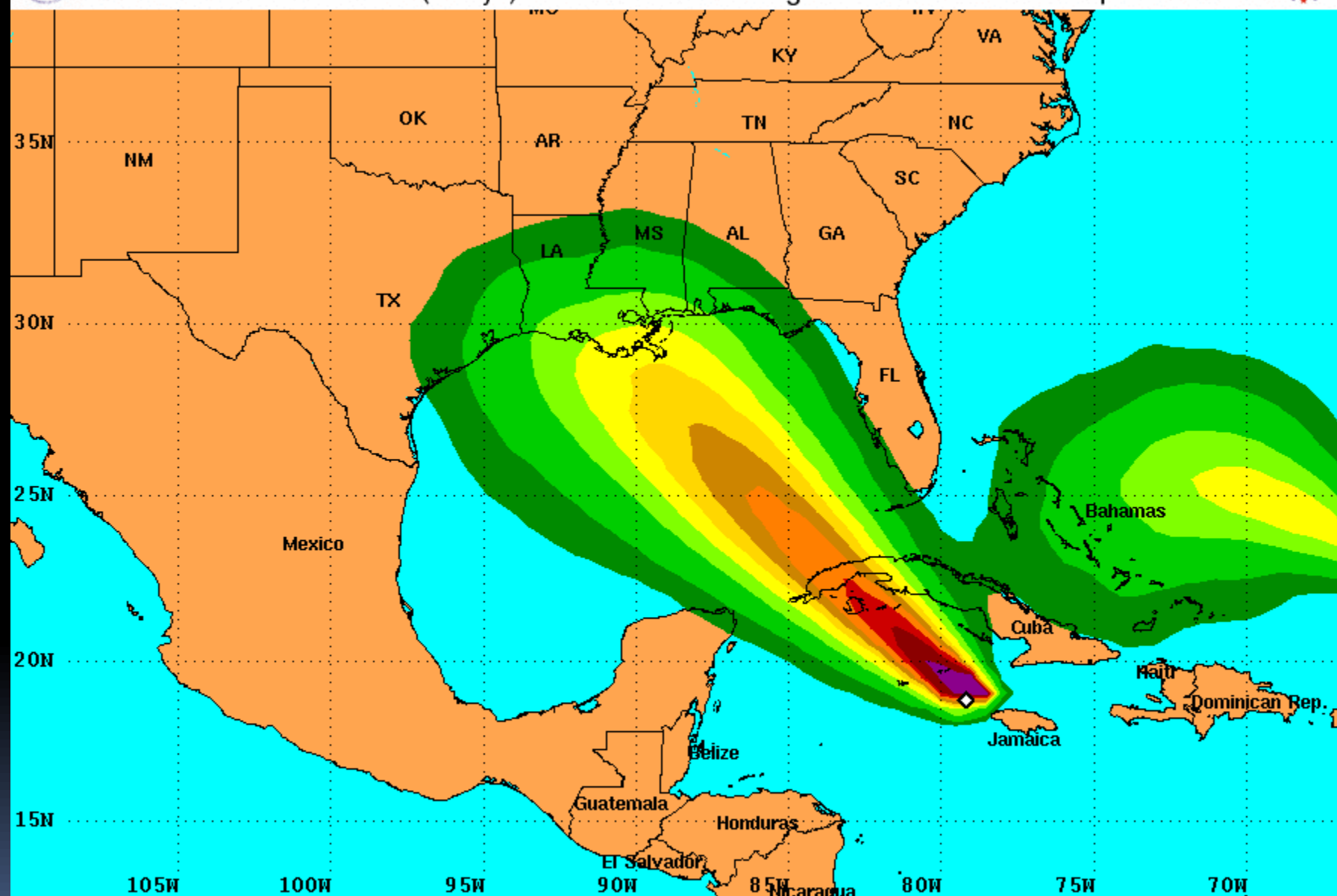




50-knot Wind Speed Probabilities



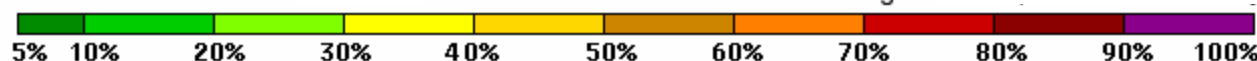
For the 120 hours (5 days) from 2 PM EDT Fri Aug 29 to 2 PM EDT Wed Sep 3



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

◆ indicates HURRICANE

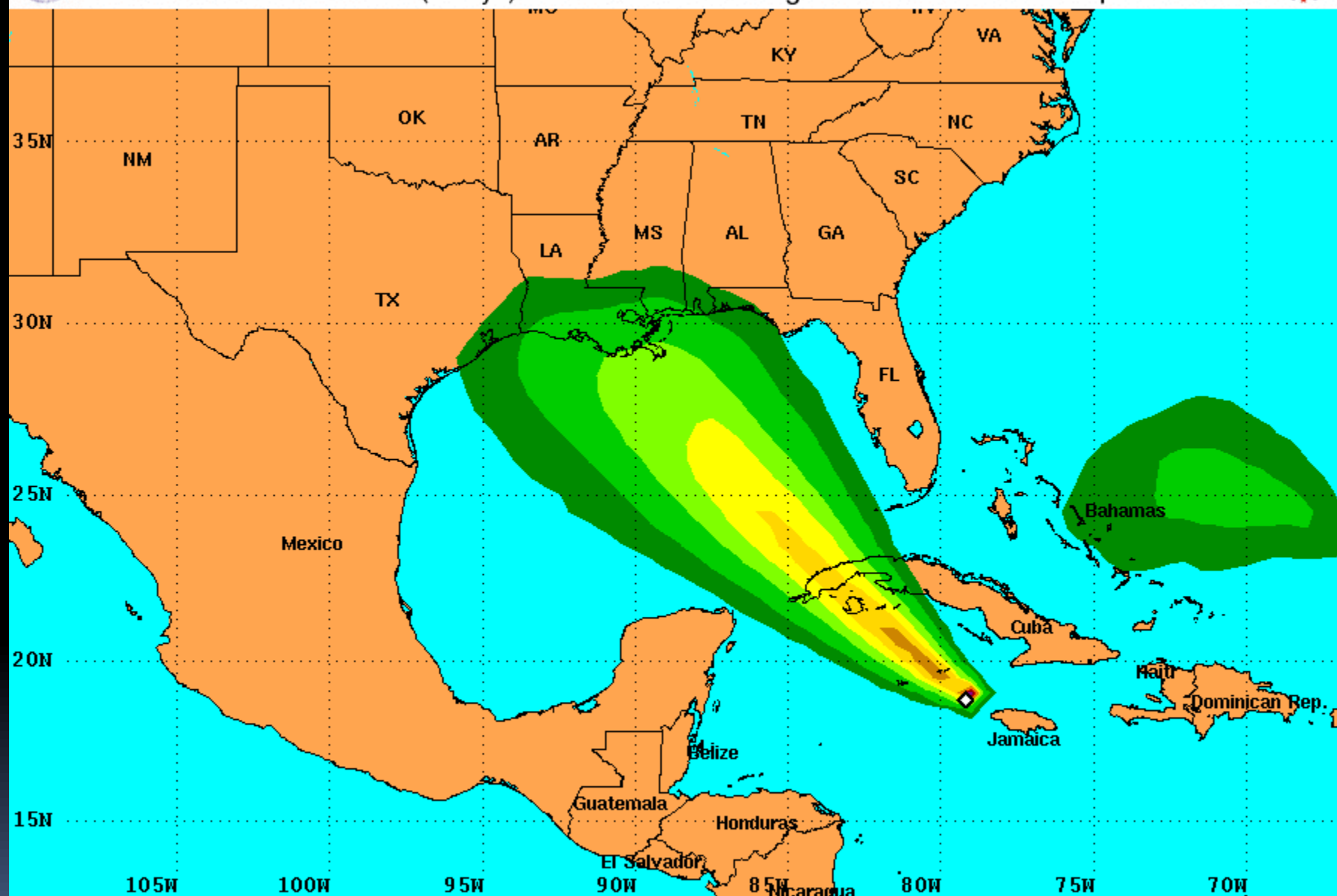
center location at 2 PM EDT Fri Aug 29





Hurricane Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 PM EDT Fri Aug 29 to 2 PM EDT Wed Sep 3



21:15 UTC

FEMA and State Conference Calls and Media Interviews

Hurricane Liaison Team



FEMA



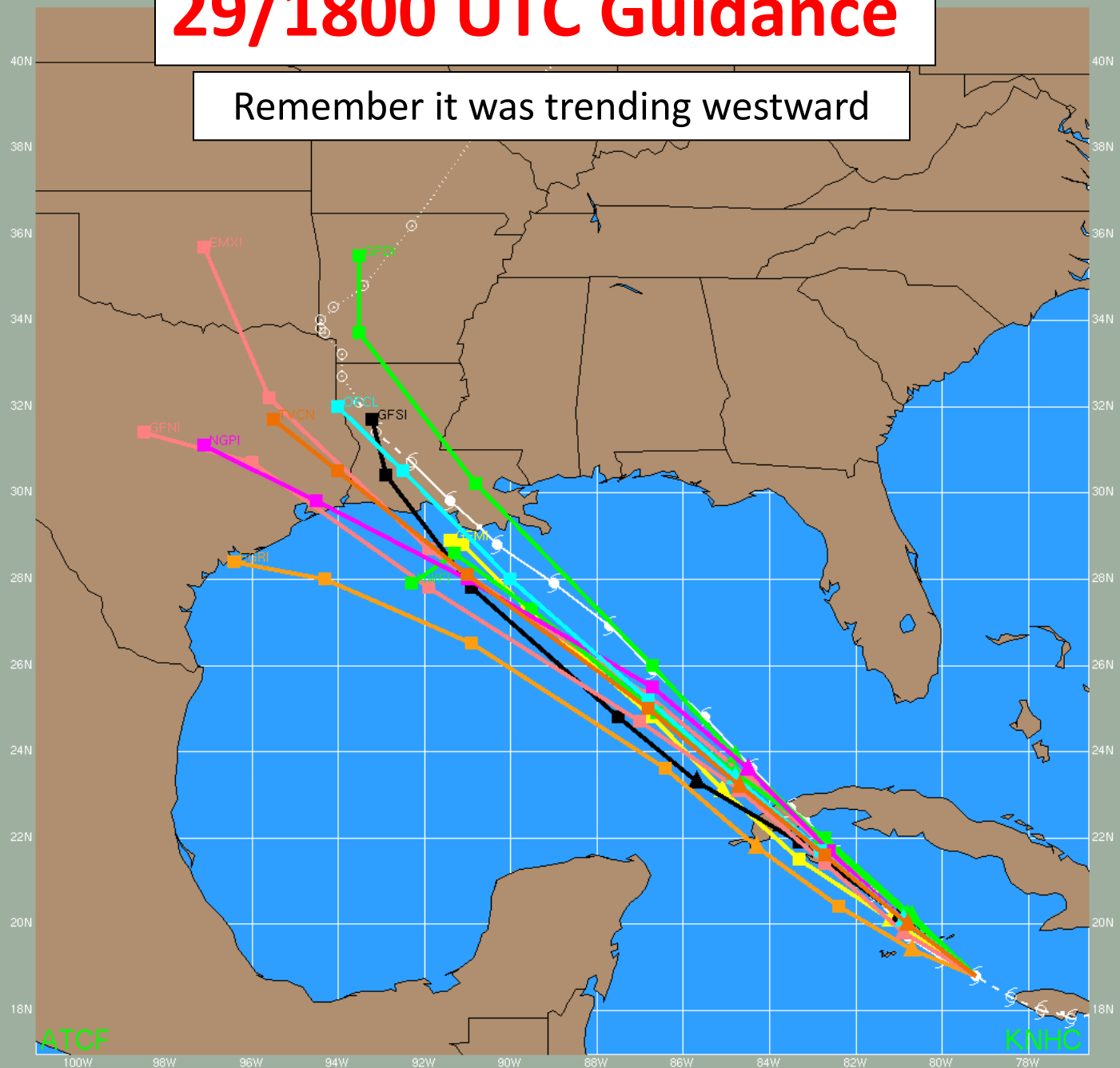
Media Interviews



**How did the track guidance
change in subsequent runs?**

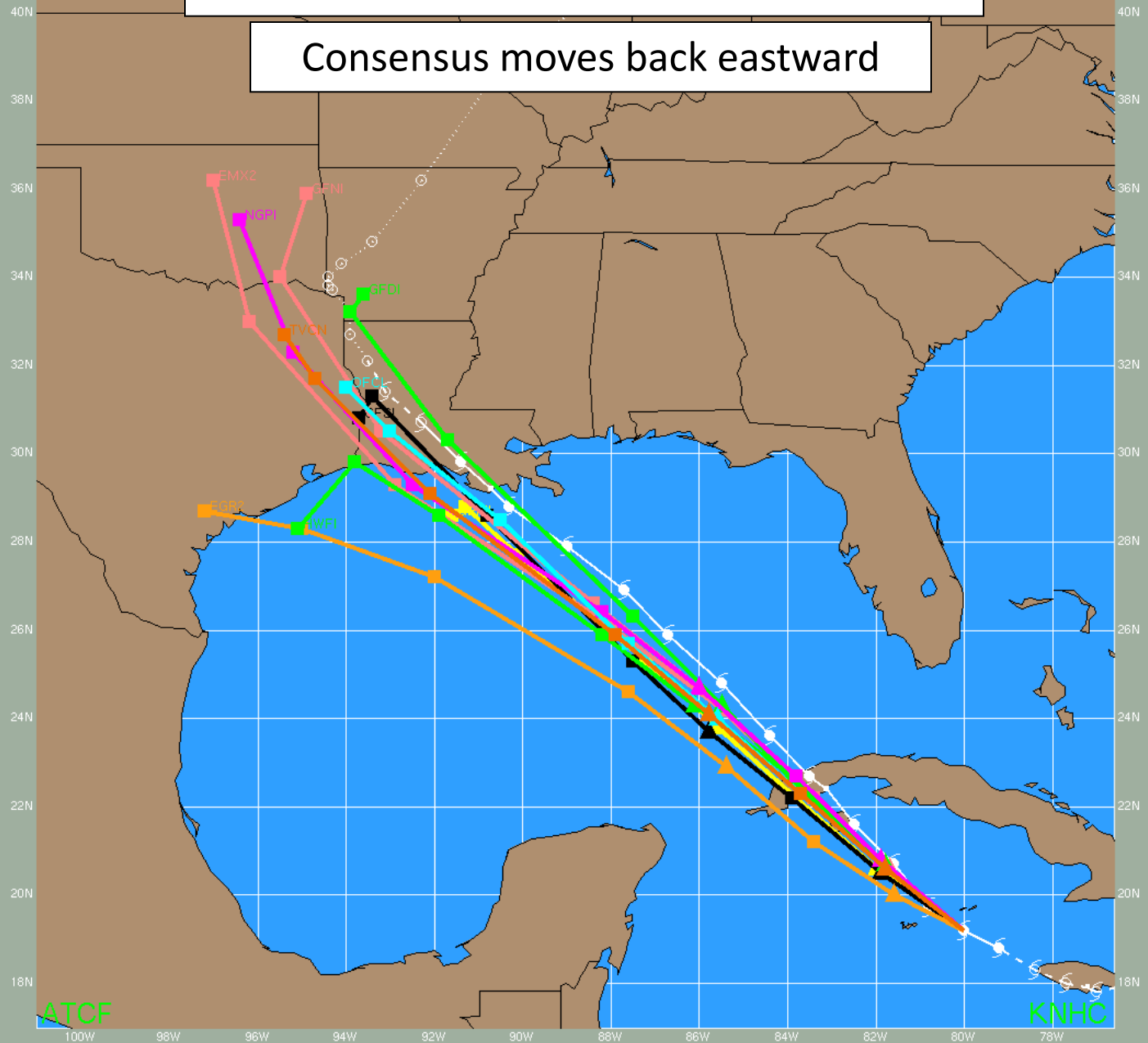
29/1800 UTC Guidance

Remember it was trending westward



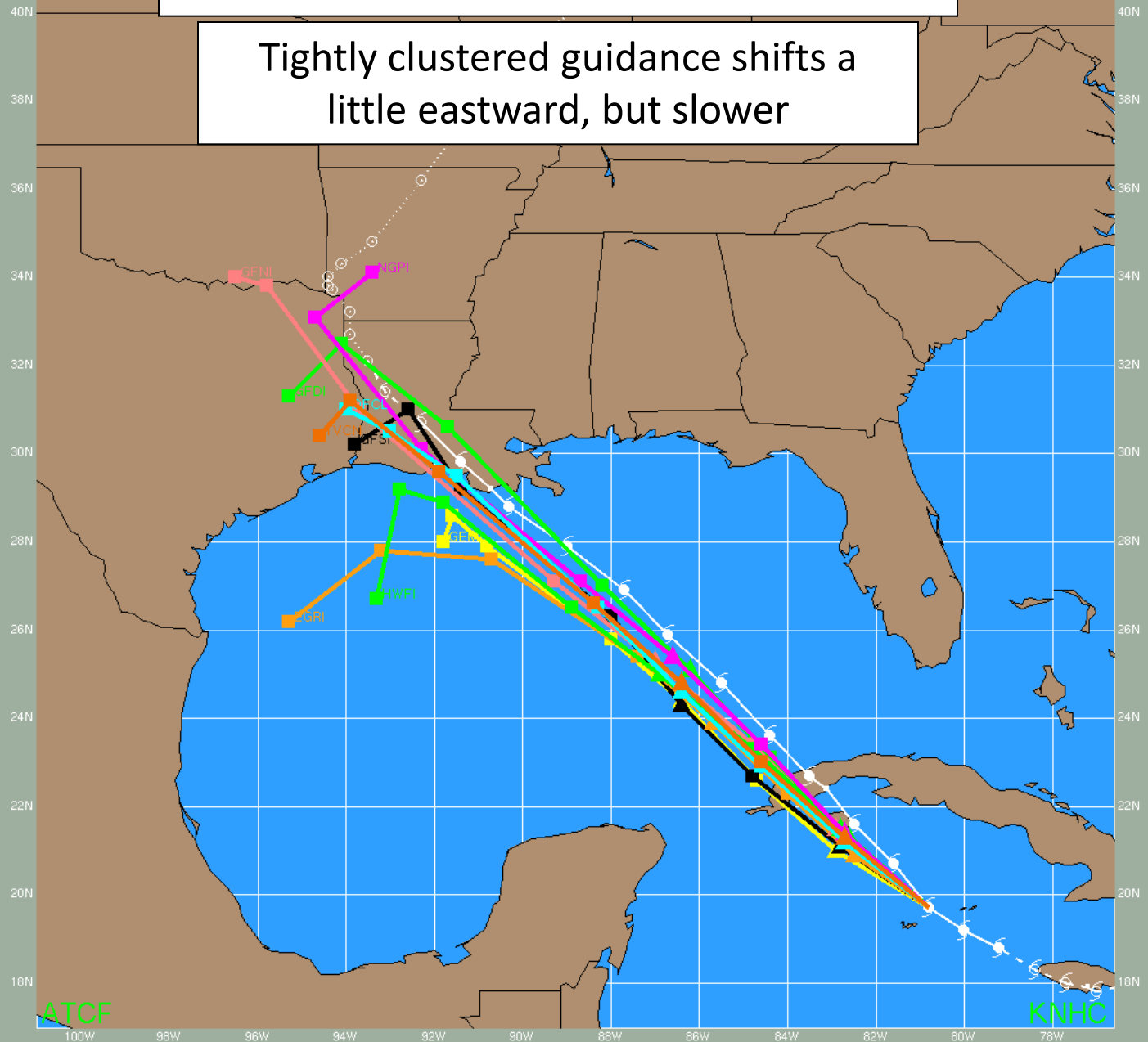
30/0000 UTC Guidance

Consensus moves back eastward



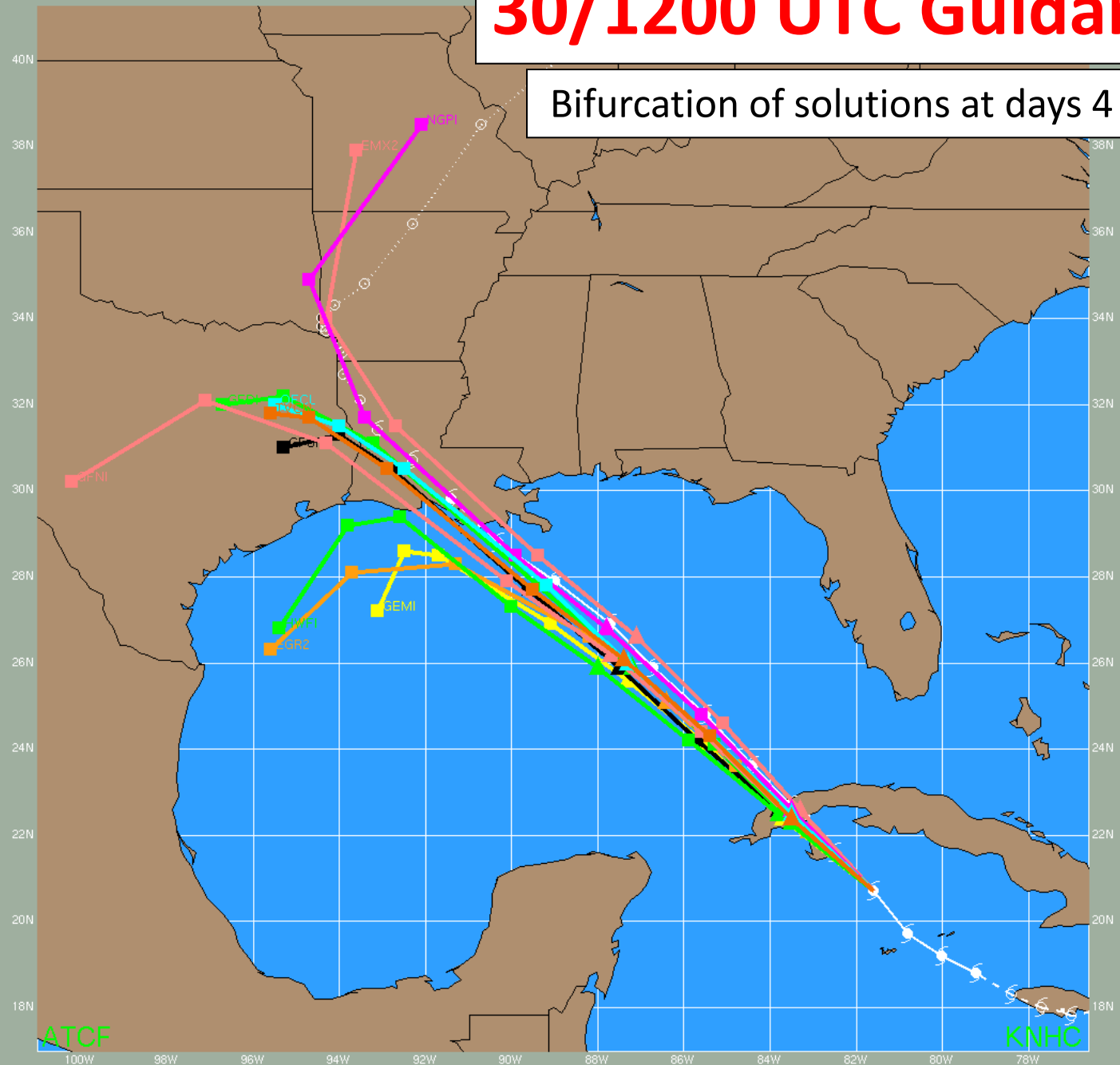
30/0600 UTC Guidance

Tightly clustered guidance shifts a little eastward, but slower

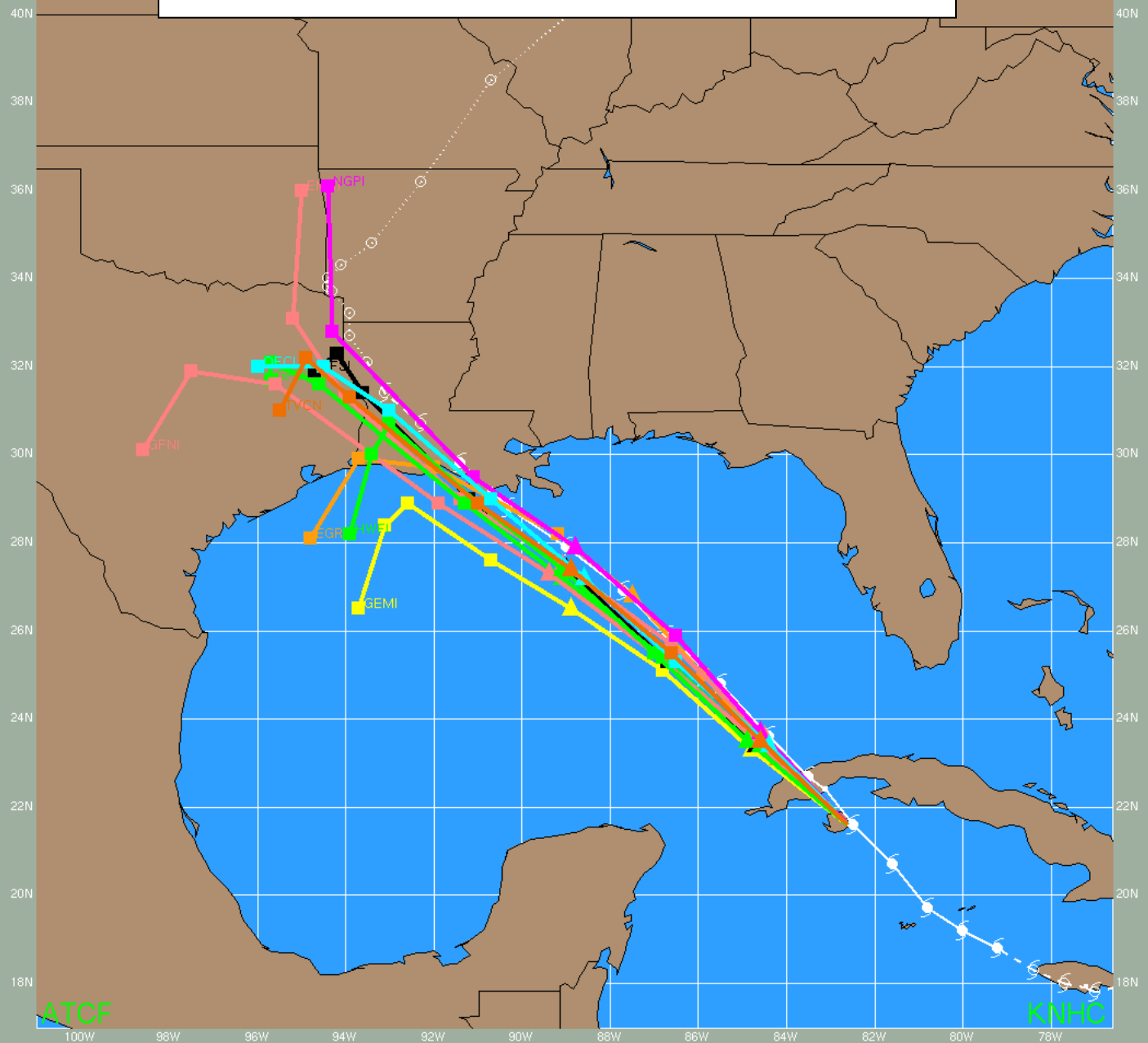


30/1200 UTC Guidance

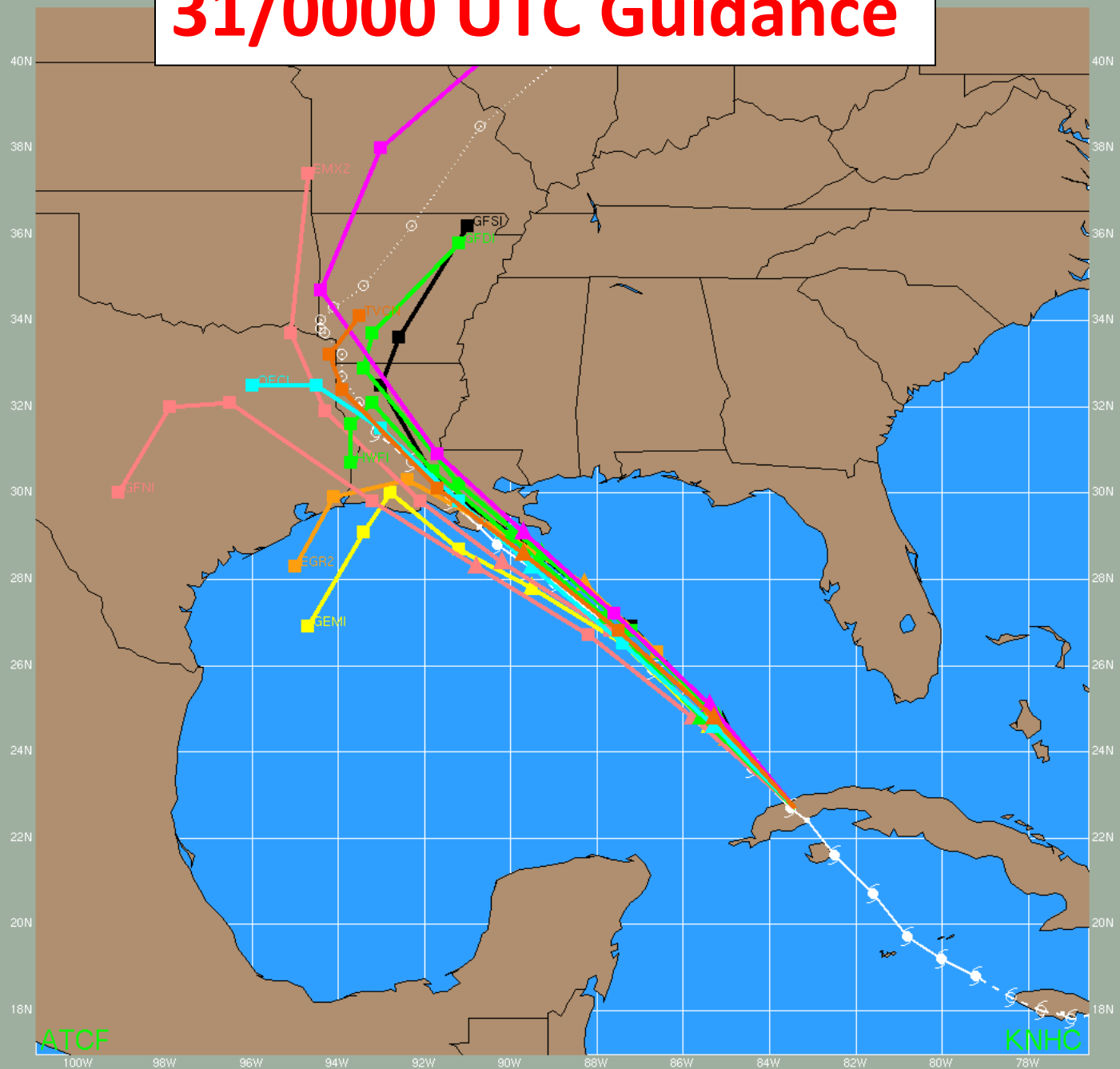
Bifurcation of solutions at days 4 and 5



30/1800 UTC Guidance

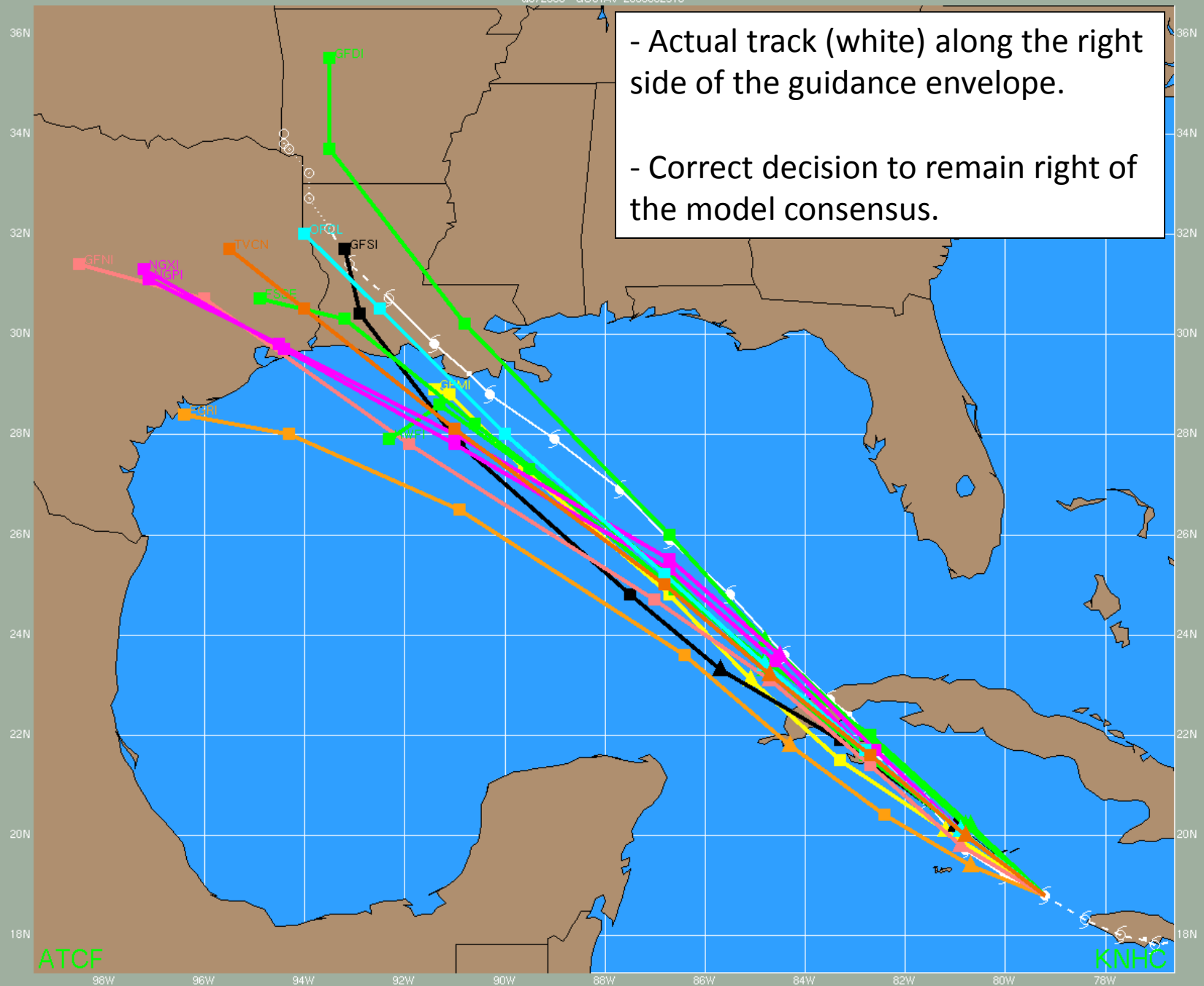


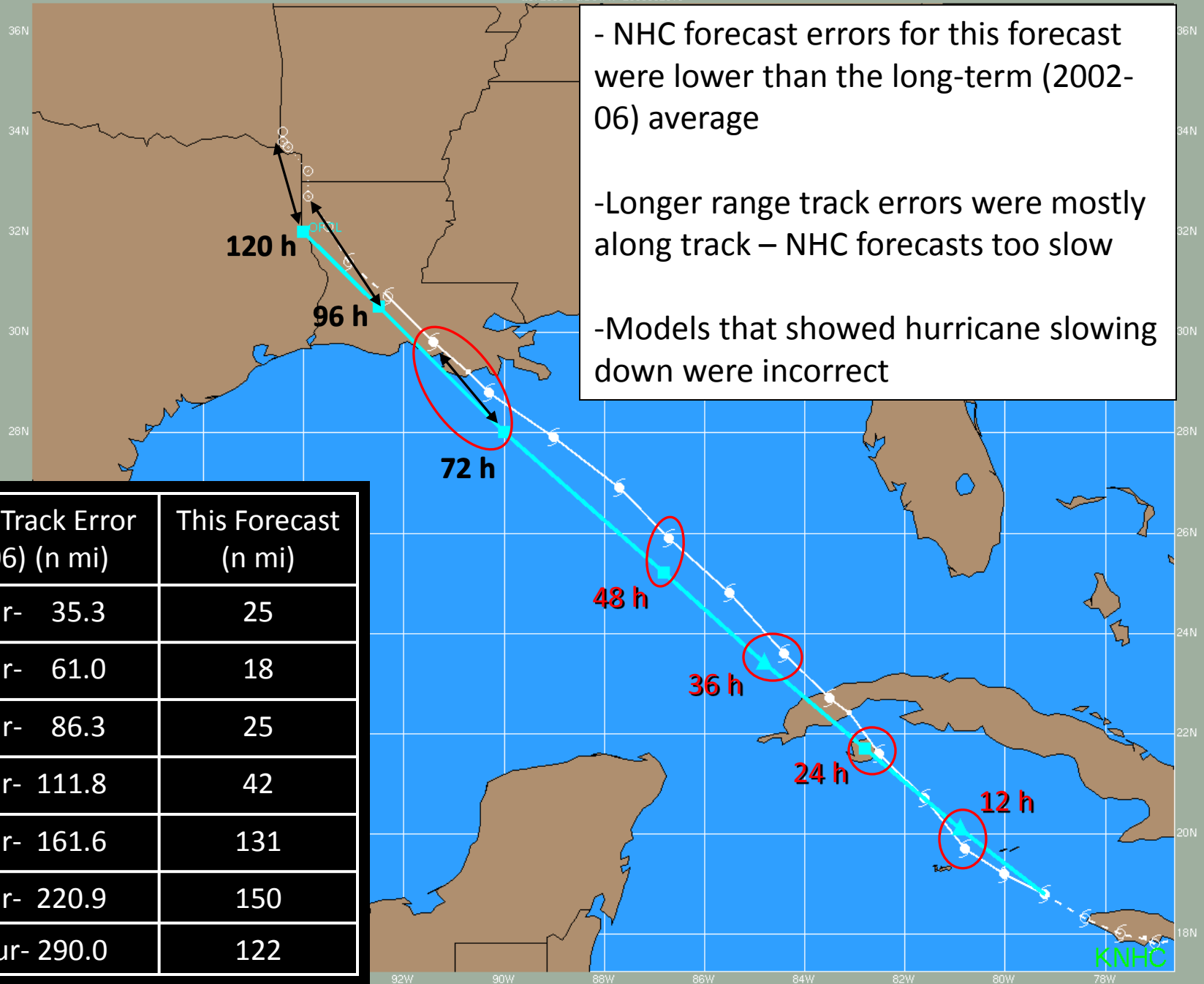
31/0000 UTC Guidance



**How did the NHC forecast for
this case verify?**

- Actual track (white) along the right side of the guidance envelope.
- Correct decision to remain right of the model consensus.



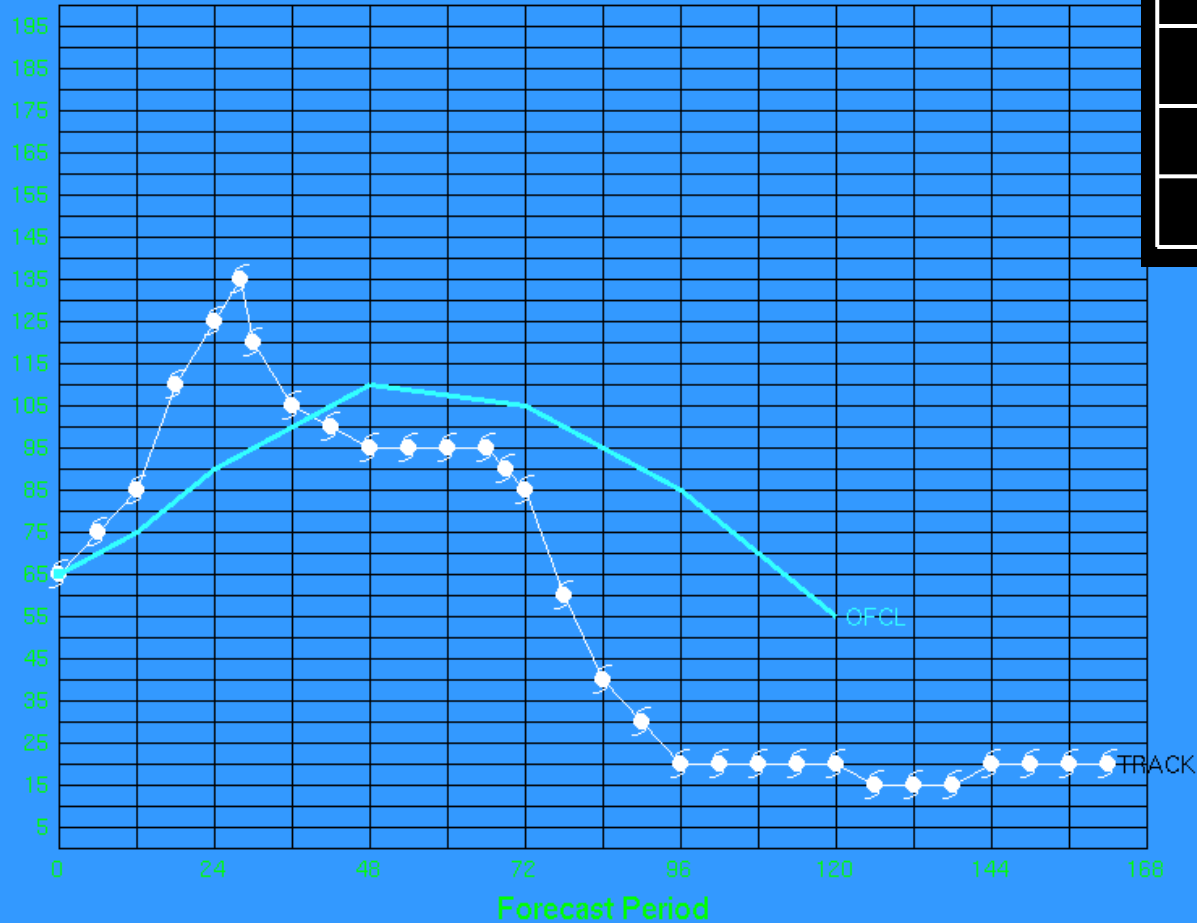


-Gustav rapidly intensified

-Made landfall as Category 4 hurricane (135 kt) in western Cuba a little over 24 hour after this forecast was issued

Obj. Aid Time Intensity for 07L for 082918

Intensity (kts)



Avg. NHC Intensity
Error (2002-06) (kt)

This
Forecast (kt)

12 hour- 6.4

-10

24 hour- 9.8

-35

36 hour- 12.0

-5

48 hour- 14.1

15

72 hour- 18.3

20

96 hour- 19.8

65

120 hour- 21.8

35