

NAAMES Afternoon WX Discussion

Monday, August 28, 2017

Amy Jo Scarino

Forecast Highlights

- Sunny in WHOI and Wallops
- No big changes from yesterdays briefing on WHOI and Wallops 8/30 Forecast
 - Wednesday departure from WHOI
 - Mostly cloudy with NNE winds at 20 mph, storm will be south and kicking up seas
 - Wednesday C130 transit
 - Partly cloudy at Wallops, NNW winds at 10-15 mph, Arrival into St. John's looks good
 - Storm will be just East of Wallops
 - Due to clouds ahead of storm, Sable Island will be cloudy and looking likely that the region over south eddy's will end up being partly cloudy, will really depend on slot of clear air between systems
- Potential Tropical Cyclone 10 – Maybe Tropical Storm Irma
 - Currently near Savannah/Charleston
 - Hurricane Hunters currently flying through to evaluate

Forecast Summary

Day 1 (Wednesday) – August 30

Recommendation: Atlantis leave WHOI, C-130 transit

St. John's: Partly cloudy, high 64, winds NNW at 18 mph

Day 2 (Thursday) – August 31

Recommendation: C-130 in St. John's, Atlantis transit to S1

St. John's: Increasing cloud cover, PM rain showers, high 64, variable winds 10-18 mph

Day 3 (Friday) – September 1

Recommendation: C-130 in St. John's, Atlantis transit to S1

St. John's: Rain and cloudy, high 60, winds N 10-20 mph

Day 4 (Saturday) – September 2

Recommendation: C-130 in St. John's, Atlantis transit to S1

St. John's: Scattered rain showers and cloudy, high 59, winds SW to W 15-20 mph

Day 5 (Sunday) – September 3

Recommendation: C-130 in St. John's, Atlantis transit to S1

St. John's: Mostly to partly cloudy, high 62, winds W 10-12 mph

Day 6 (Monday) – September 4 – Ship at S1

Recommendation: First potential science flight

St. John's: Mostly sunny, high 67, winds W 10-12 mph

Planned Ship Route & Forecast

Wednesday, 8/30 Leave WHOI

Waves: E 7-12 ft, increasing to 15-18 ft later in day
Winds: NE 20-30 kts, gusts to 45 kts
Clouds: overcast
Precip: rain showers

Friday, 9/1 Transit to S1

Waves: NE/variable 7-9 ft
Winds: W 20-25 kts
Clouds: partly cloudy
Precip: isolated PM showers

Sunday, 9/3 Transit to S1

Waves: W 5-7 ft
Winds: NW 10-18 kts
Clouds: partly cloudy
Precip: isolated rain showers

Thursday, 8/31 Transit to S1

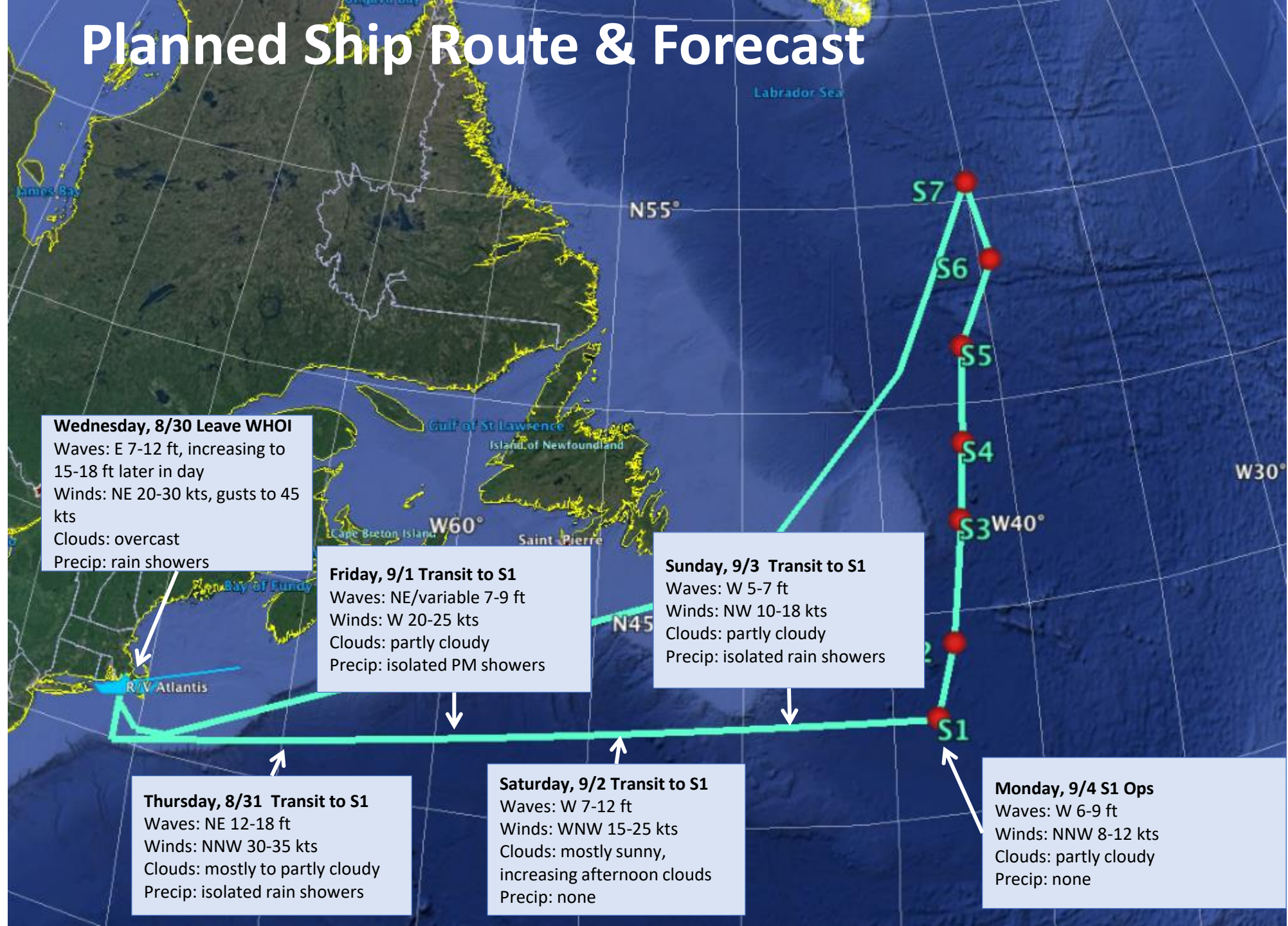
Waves: NE 12-18 ft
Winds: NNW 30-35 kts
Clouds: mostly to partly cloudy
Precip: isolated rain showers

Saturday, 9/2 Transit to S1

Waves: W 7-12 ft
Winds: WNW 15-25 kts
Clouds: mostly sunny, increasing afternoon clouds
Precip: none

Monday, 9/4 S1 Ops

Waves: W 6-9 ft
Winds: NNW 8-12 kts
Clouds: partly cloudy
Precip: none



Current Conditions at St. John's

St. John's, Canada ★ 🏠

✈ St. John's International | [Change Station](#) ✓

🕒 1:55 PM NDT on August 28, 2017 (GMT -0230)

[Forecast](#) [History](#) [Calendar](#) [Rain / Snow](#) [Health](#)

Elev 459 ft 47.62 °N, 52.73 °W | Updated 26 min ago



Clear

61 °F

Feels Like 61 °F



Wind from NE

Today is forecast to be **WARMER** than yesterday.

Today	Yesterday
High 63 Low 50 °F	High 59 Low 50 °F
0% Chance of Precip.	Precip. 0 in

✉ Sign up for your Daily Forecast Email

Pressure	30.24 in
Visibility	15.0 miles
Clouds	Few 2800 ft Few 20000 ft
Dew Point	48 °F
Humidity	63%
Rainfall	0.00 in
Snow Depth	Not available.

Sun & Moon

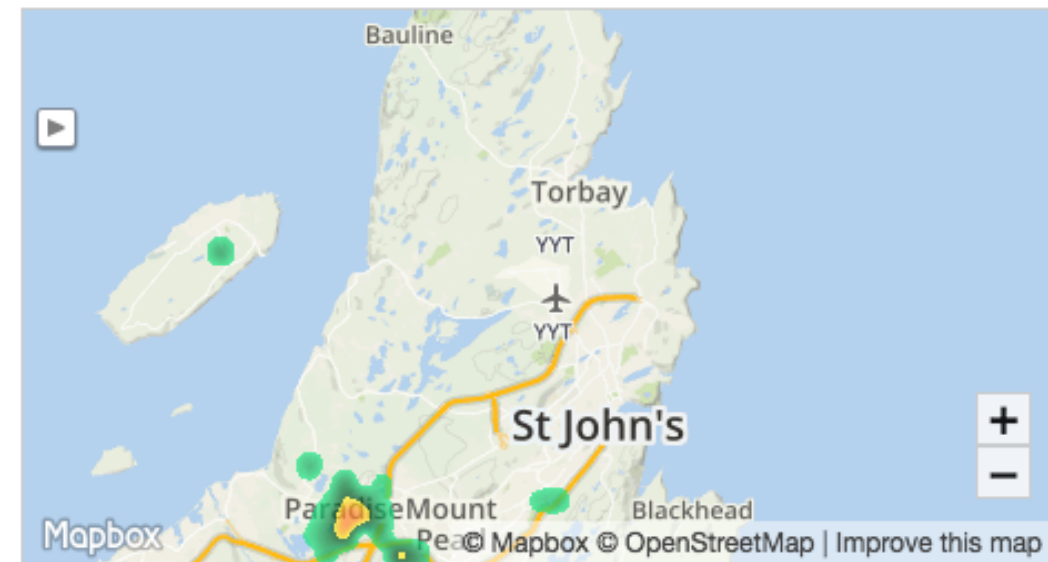
🌅 6:14 am	☾ Waxing Crescent, 44% visible
🌇 7:48 pm	

METAR CYYT 281600Z 04006KT 020V080
15SM FEW028 FEW200 16/09 A3023 RMK
CU1CI1 SLP239

[Radar](#)

[Satellite](#)

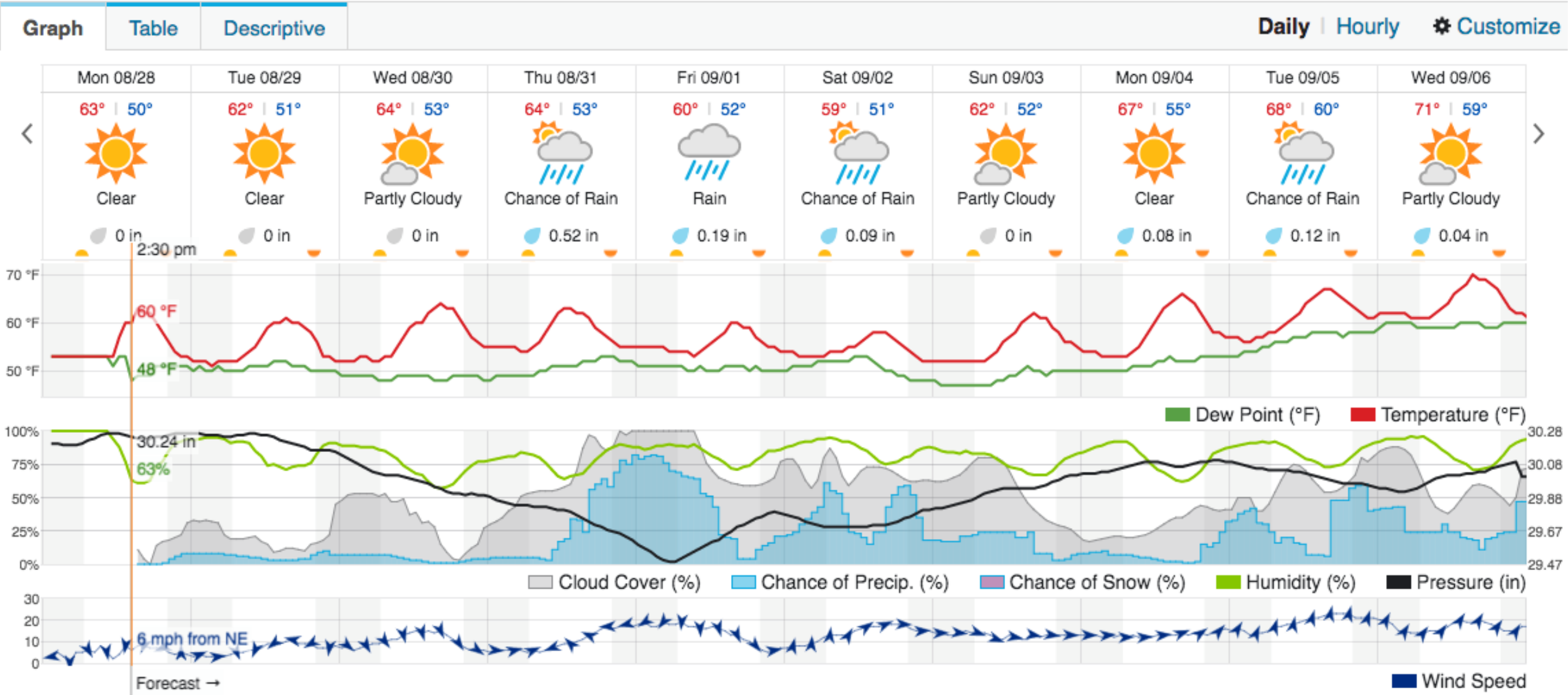
[WunderMap](#) | [Nexrad](#)



☐ Show Webcams

St. John's Forecast

10-Day Weather Forecast



Current Conditions at WHOI

Woods Hole, MA ★ 🏠

📍 [Smith Building, WHOI Dock](#) | [Report](#) | [Change Station](#) ▼

© 12:27 PM EDT on August 28, 2017 (GMT -0400)

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Elev 46 ft 41.54 °N, 70.65 °W | Updated 2 min ago



Clear

70.5 °F

Feels Like 77 °F



Wind from NE
Gusts 13.0 mph

Today is forecast to be **COOLER** than yesterday.

Today

High 72 | Low 56 °F

0% Chance of Precip.

Yesterday

High 75.3 | Low 60.8 °F

Precip. 0 in



[UV Warning](#)

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Pressure 30.32 in
Visibility 10.0 miles
Clouds Clear
Heat Index 77 °F
Dew Point 53 °F
Humidity 54%
Rainfall 0.00 in
Snow Depth Not available.

Sun & Moon

6:04 am
7:21 pm

Waxing Crescent,
44% visible

METAR KMY 281553Z 06016KT 10SM CLR
23/13 A3031 RMK AO2 SLP265
T02280128

Radar

Satellite

[WunderMap](#) | [Nexrad](#) | [Regional](#)



☐ Show Webcams

WHOI Forecast

Monday

08/28

72 | 56 °F



Monday

0 % Precip. / 0 in

Mostly sunny. High 72F. Winds ENE at 10 to 20 mph.



Monday Night

10 % Precip. / 0 in

Partly cloudy skies. Low 56F. Winds ENE at 5 to 10 mph.

Tuesday

08/29

70 | 60 °F



Tuesday

20 % Precip. / 0 in

Mostly cloudy. Slight chance of a rain shower. High around 70F. Winds E at 10 to 20 mph.



Tuesday Night

60 % Precip. / 0.09 in

Becoming windy with showers developing later at night. Low near 60F. Winds ENE at 20 to 30 mph. Chance of rain 60%. Winds could occasionally gust over 40 mph.

Wednesday

08/30

70 | 57 °F



Wednesday

20 % Precip. / 0 in

Decreasing cloudiness and windy. High around 70F. Winds NNE at 20 to 30 mph.



Wednesday Night

10 % Precip. / 0 in

Some clouds early will give way to generally clear conditions overnight. Low 57F. Winds NW at 5 to 10 mph.

Current Conditions at Wallops

Wallops Flight Facility, VA  

 [Wallops Flight Facility](#) | [Change Station](#) 

© 12:28 PM EDT on August 28, 2017 (GMT -0400)

[Forecast](#) | [History](#) | [Calendar](#) | [Rain / Snow](#) | [Health](#)



Active Advisory: [High Wind Watch](#), [Beach Hazard Statement](#)

Elev 39 ft 37.94 °N, 75.47 °W | Updated 34 min ago



74 °F



Overcast

Feels Like 74 °F

Wind from ENE
Gusts 29 mph

Today is forecast to be **NEARLY THE SAME** temperature as yesterday.

Today

High 76 | Low 69 °F

 20% Chance of Precip.


Yesterday


High 77 | Low 61 °F

Precip. 0 in

Pressure	30.18 in
Visibility	10.0 miles
Clouds	Mostly Cloudy 3000 ft Overcast 25000 ft
Dew Point	63 °F
Humidity	68%
Rainfall	0.00 in
Snow Depth	Not available.

Sun & Moon

 6:28 am
 7:36 pm

 Waxing Crescent,
44% visible

METAR KWAL 281554Z 07017G25KT 10SM
BKN030 OVC250 23/17 A3019 RMK AO2
PK WND 06026/1523 SLP219 T02330172

[Radar](#)

[Satellite](#)

[WunderMap](#) | [Nexrad](#) | [Regional](#)



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 Sign up for Severe Weather Alerts in your area

Wallops Forecast

Monday
08/28

76 | 69 °F



Monday

☁ 20 % Precip. / 0 in

Cloudy with gusty winds. Slight chance of a rain shower. High 76F. Winds ENE at 25 to 35 mph.



Monday Night

☔ 100 % Precip. / 0.28 in

Windy early with rain developing after midnight. Low 69F. Winds ENE at 20 to 30 mph. Chance of rain 100%. Rainfall near a quarter of an inch. Winds could occasionally gust over 40 mph.

Tuesday
08/29

74 | 65 °F



Tuesday

☔ 100 % Precip. / 0.98 in

Cloudy and windy with periods of rain. High 74F. Winds ENE at 25 to 35 mph. Chance of rain 100%. Rainfall near an inch. Winds could occasionally gust over 50 mph.



Tuesday Night

☔ 70 % Precip. / 0.13 in

Cloudy and windy. There will be periods of light rain early. Low near 65F. Winds N at 25 to 35 mph. Chance of rain 70%. Winds could occasionally gust over 40 mph.

Wednesday
08/30

77 | 67 °F



Wednesday

☁ 10 % Precip. / 0 in

Partly cloudy skies. High 77F. Winds NNW at 10 to 15 mph.



Wednesday Night

☔ 50 % Precip. / 0.08 in

Partly cloudy skies early followed by increasing clouds with showers developing later at night. Low 67F. Winds SW at 5 to 10 mph. Chance of rain 50%.

St. John's METAR/TAF

METAR CYYT 211500Z 28006KT 250V320 15SM BKN180 16/05 A2979 RMK AC5 SLP092 DENSITY ALT 800FT=		
METAR	LOCATION	DATE - TIME
WIND 280 TRUE @ 6 KNOTS VARIATION 250 <-> 320 DEG		
WEATHER		
ALTIMETER 29.79 IN HG		

TAF CYYT 211138Z 2112/2212 26012KT P6SM BKN200 FM211500 25010KT P6SM SCT200 FM212300 26010KT P6SM -SHRA BKN040 BECMG 2200/2202 35012KT FM220300 36012KT P6SM BKN006 PROB30 2203/2206 4SM BR OVC003 FM220600 02010KT 4SM BR OVC003 FM221000 02010KT P6SM -SHRA

	VALIDITY [UTC] 21 MAY - 1138 to 22 MAY - 1200
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	CLOUDINESS [FEET AGL]
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	20000 BROKEN
--	--------------

	20000 SCATTERED
--	-----------------

R	4000 BROKEN
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	600 BROKEN
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	300 OVERCAST
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22 MAY - 0600 to 22 MAY - 1000	20 @ 10 KNOTS	4	MIST	300 OVERCAST
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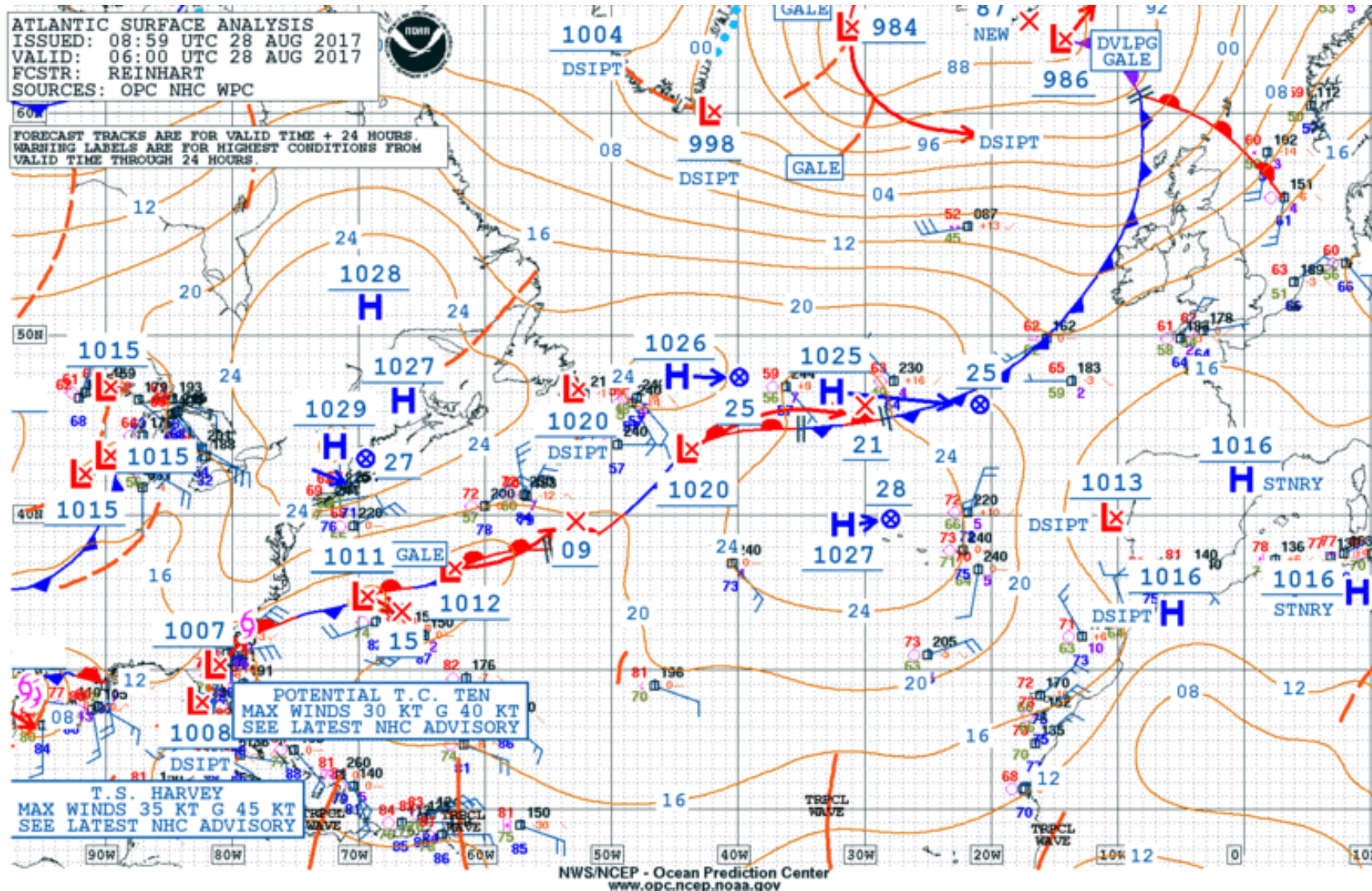
22 MAY - 1000 to 22 MAY - 1200	20 @ 10 KNOTS	6+	LIGHT RAIN SHOWER	300 SCATTERED 3000 OVERCAST
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REMARKS

THE NEXT FORECAST WILL BE ISSUED BY 1800 UTC ON DAY 21

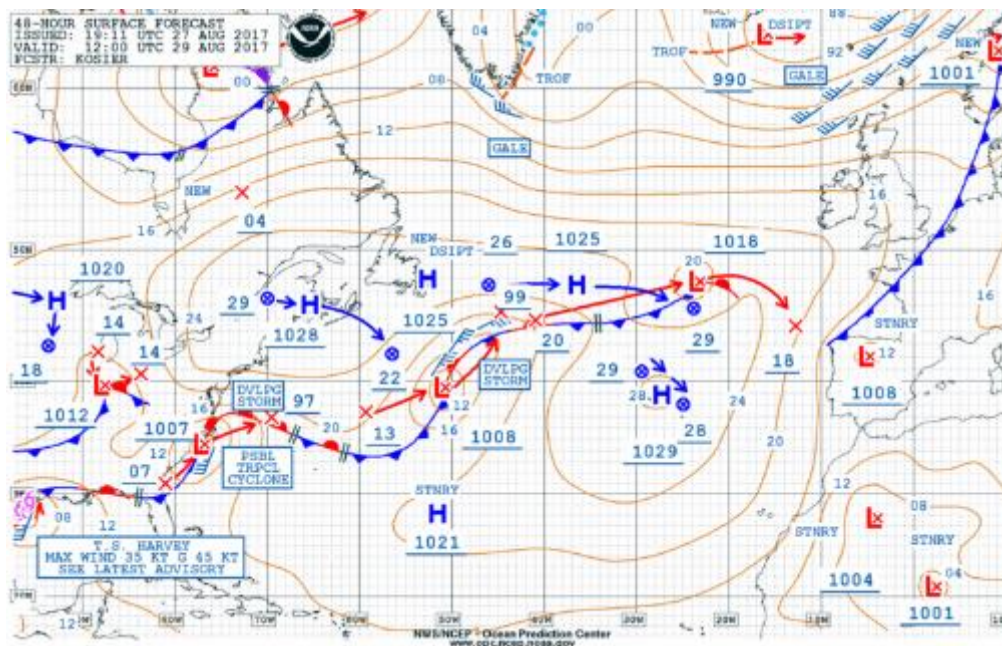
Will start including
these closer to
transit flight

Surface Analysis

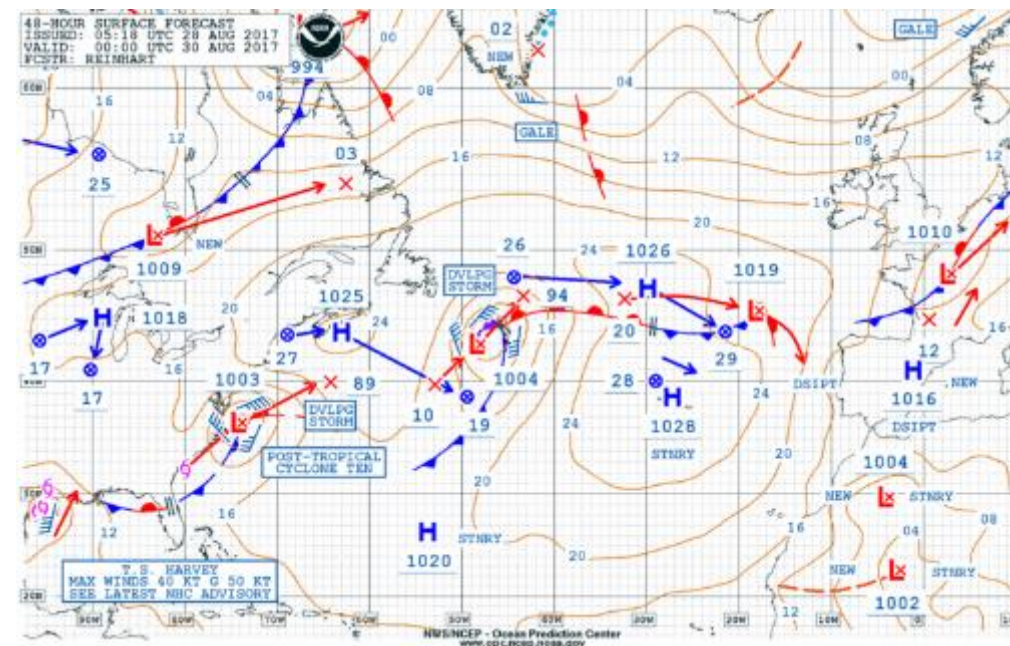


Synoptic Forecast

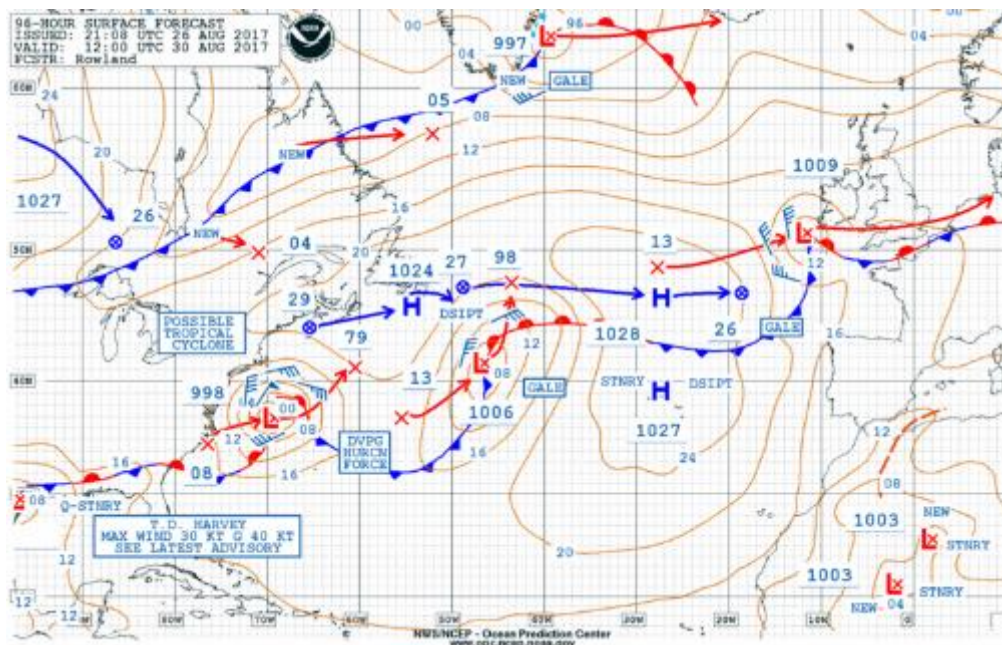
Tuesday 8am



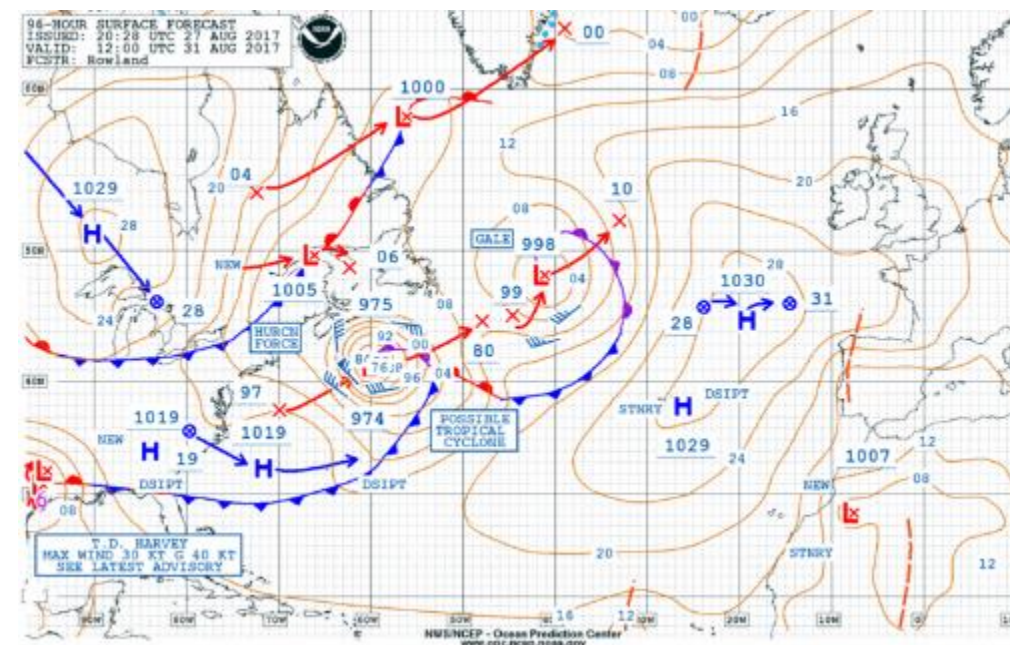
Tuesday 8pm



Wednesday 8am



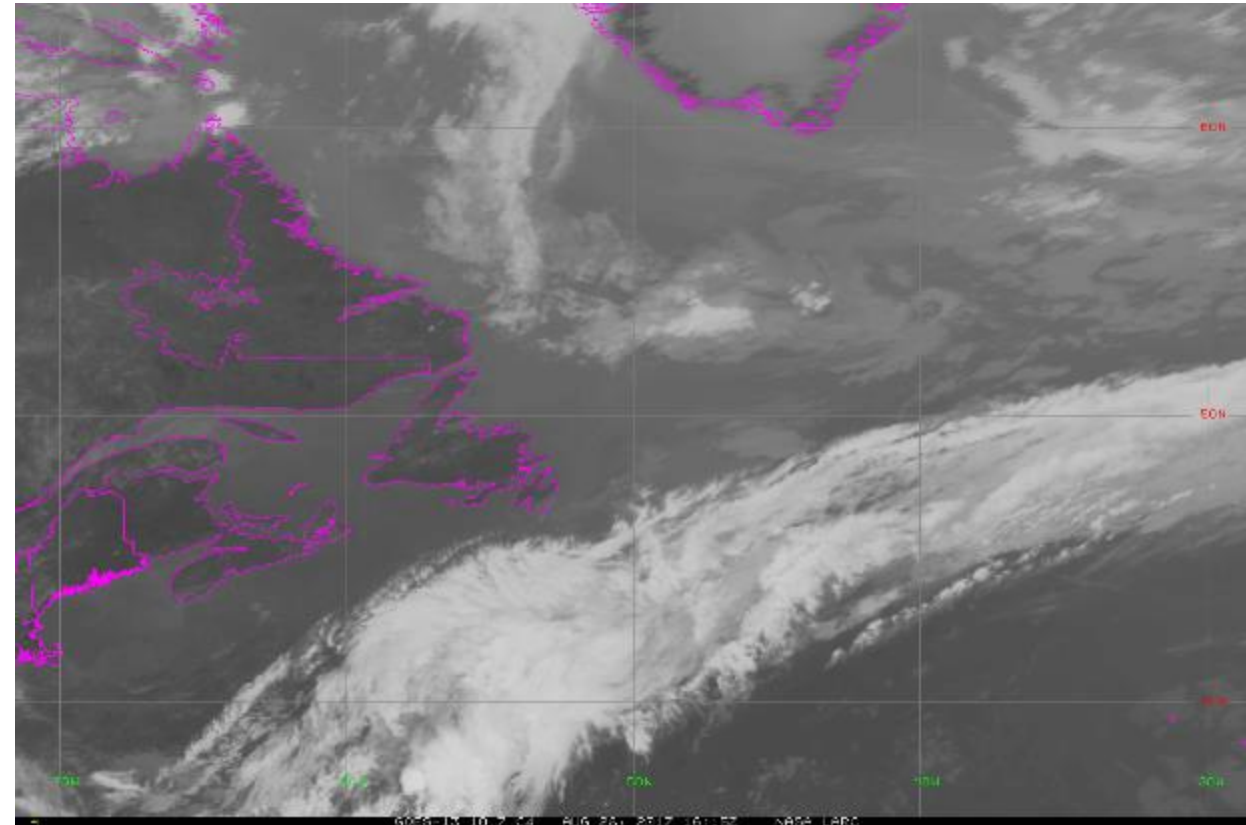
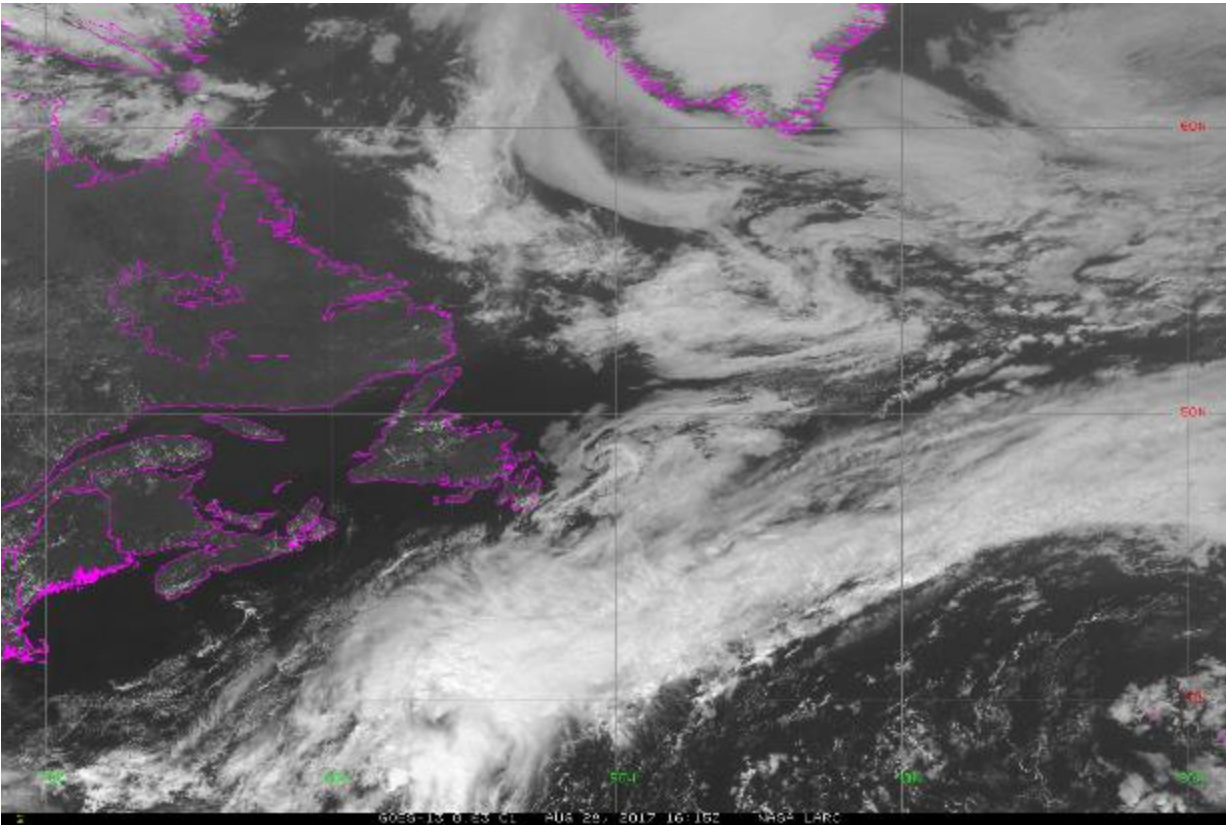
Thursday 8am



GOES-13 Imagery (8/28 16:15 UTC)

Visible

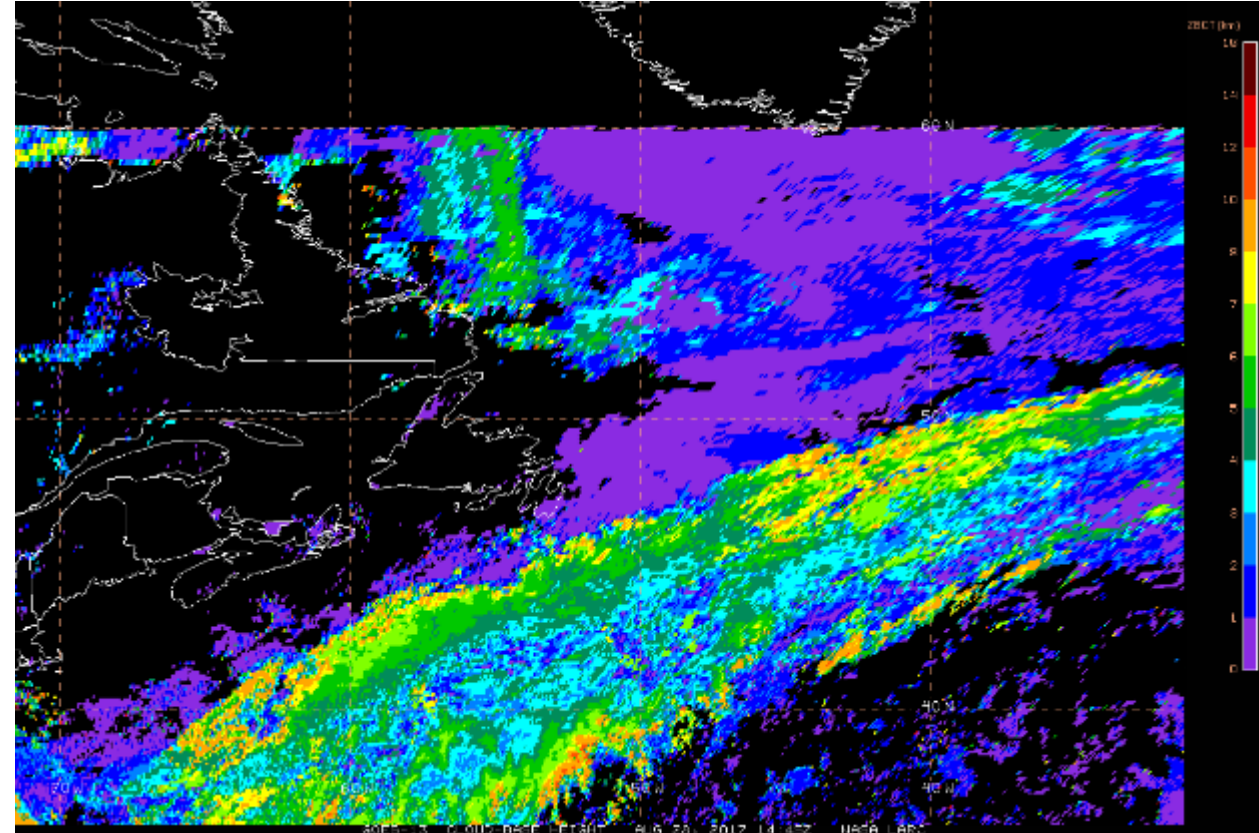
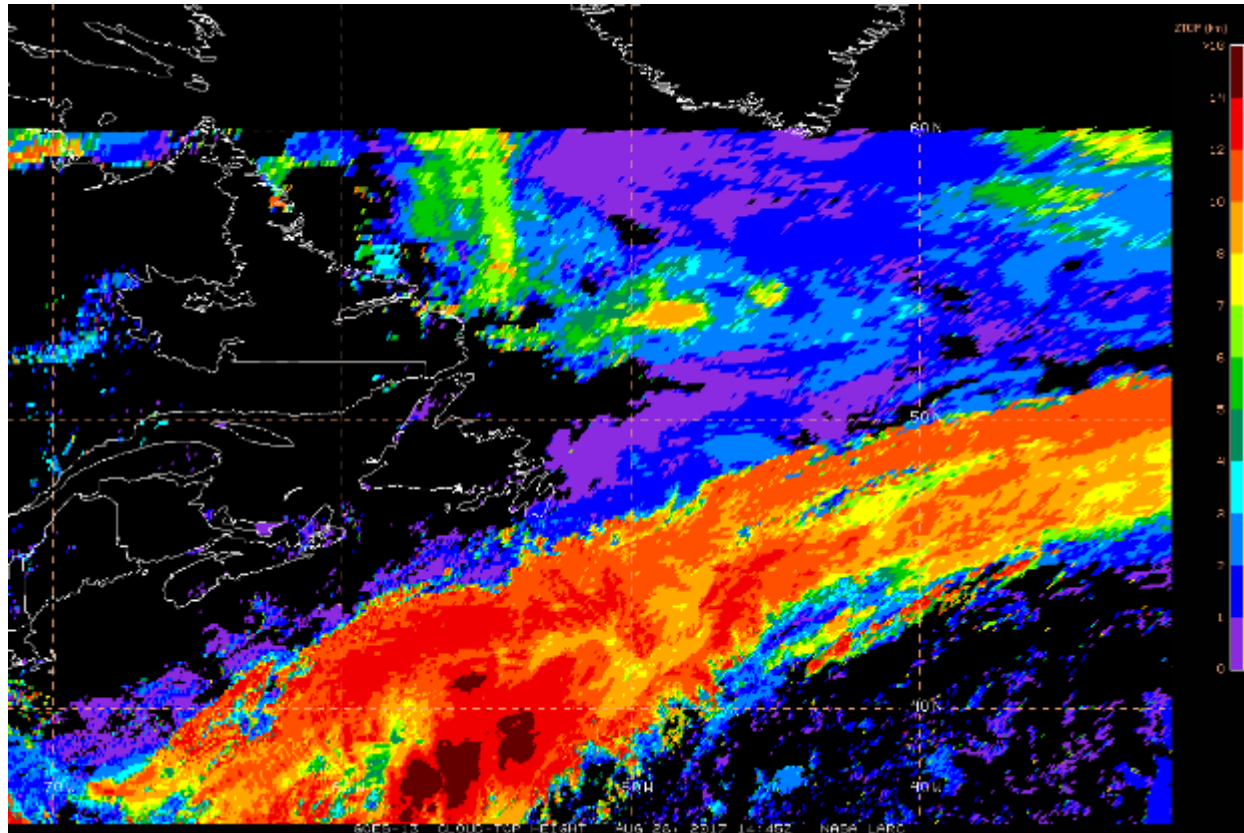
IR



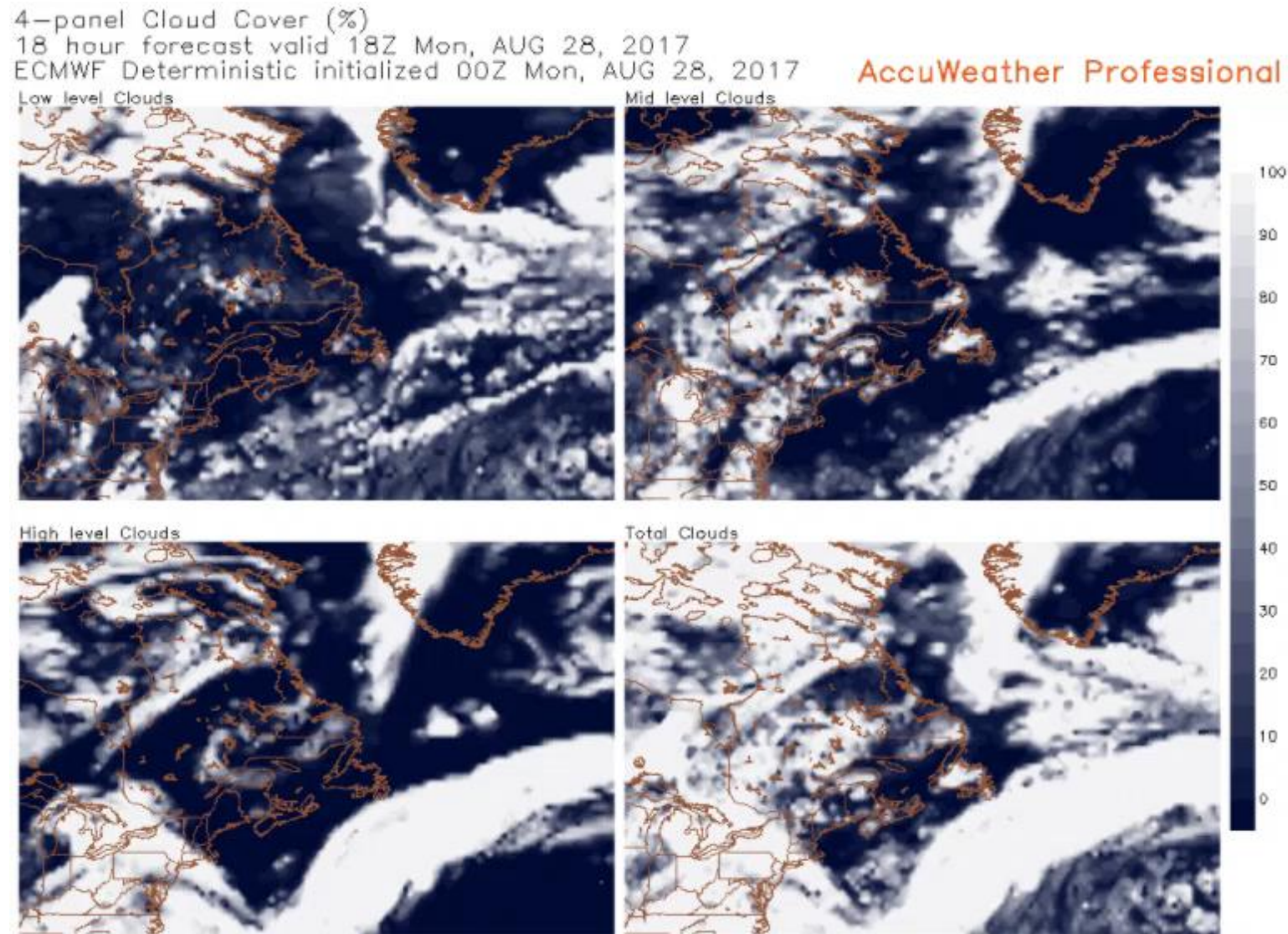
Cloud Products (8/28 14:45Z)

Cloud Top Height

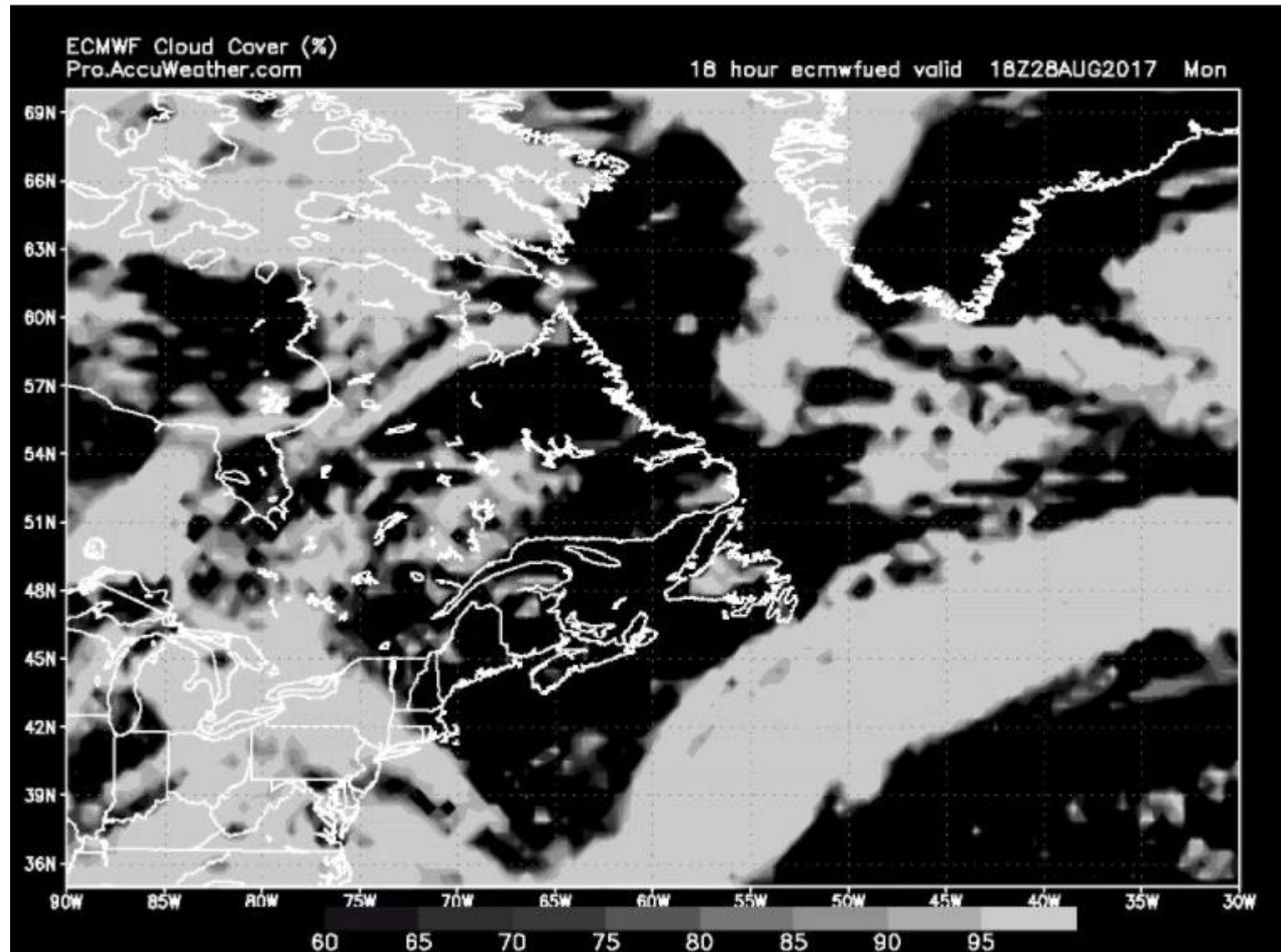
Cloud Base Height



|ECMWF| 4-Panel Cloud Forecast

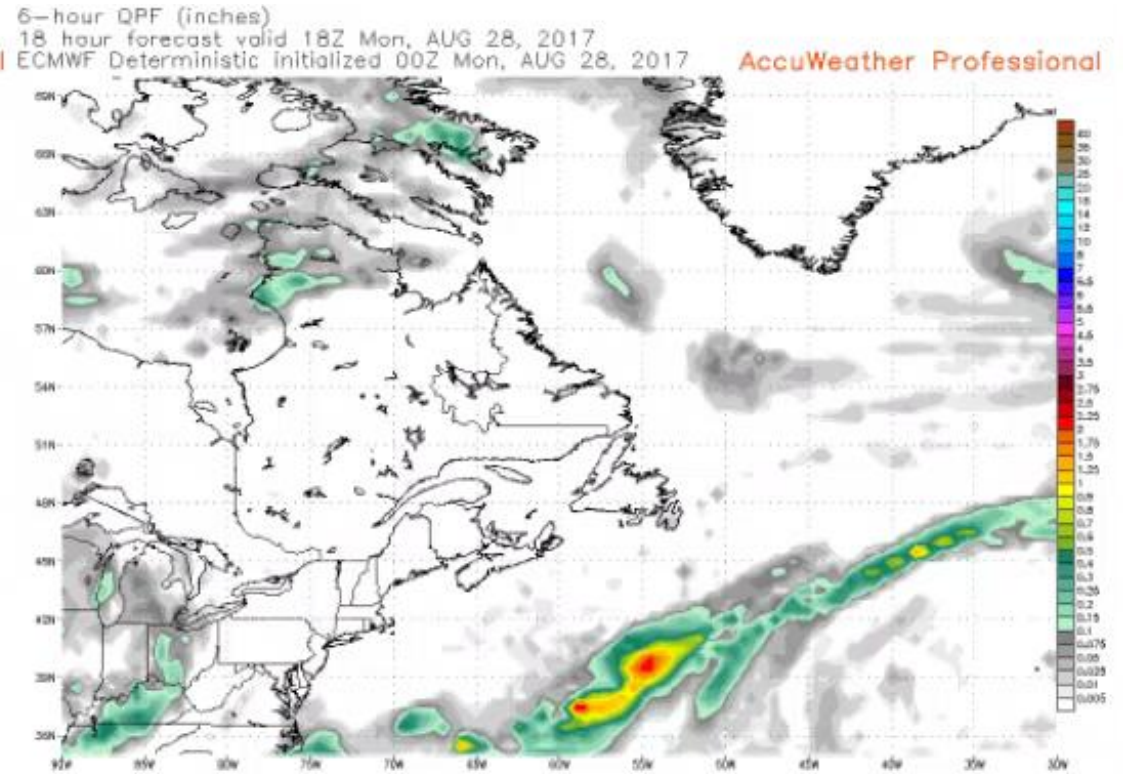
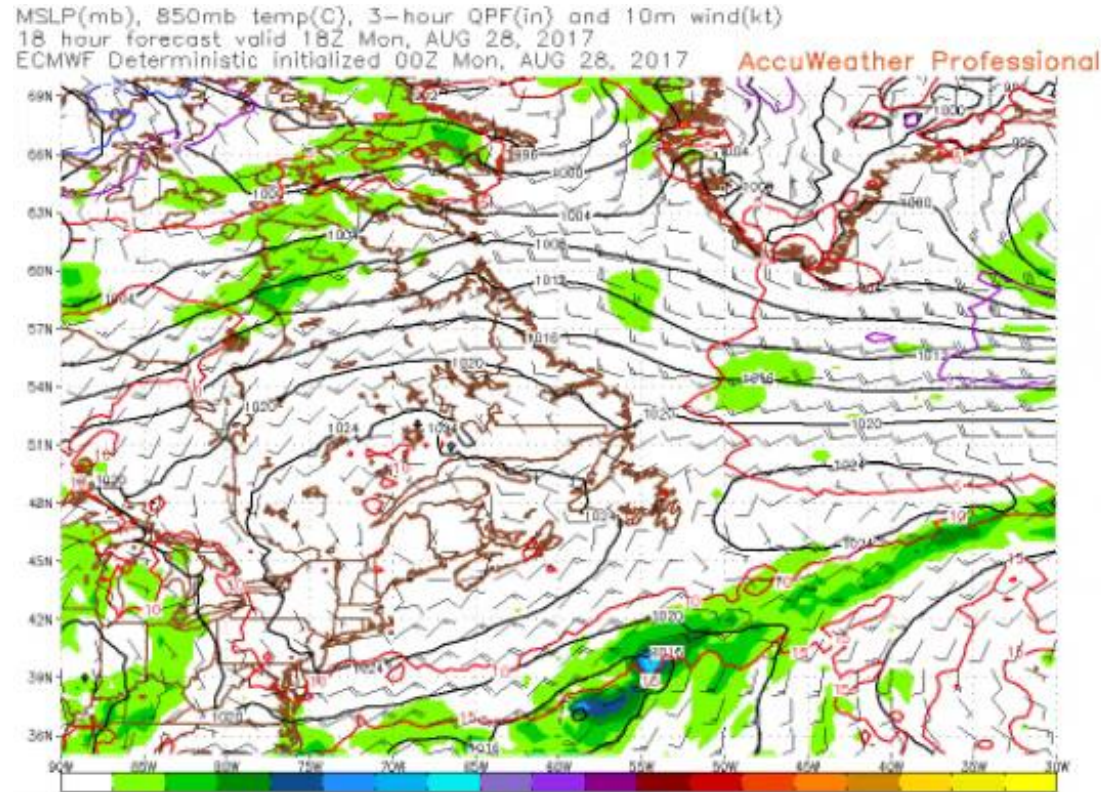


| ECMWF | Total Cloud Forecast



**MSLP, 850 mb temp,
6 hour QPF, 10 m wind**

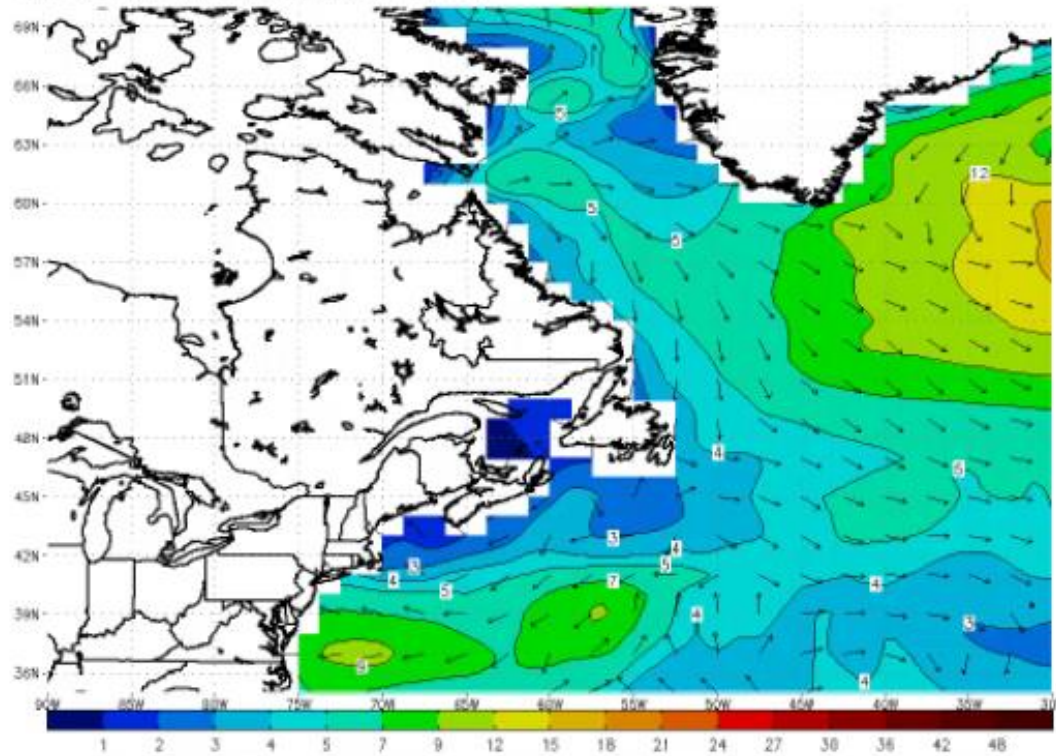
6 hour QPF (inches)



Wave height (ft) Winds (knots)

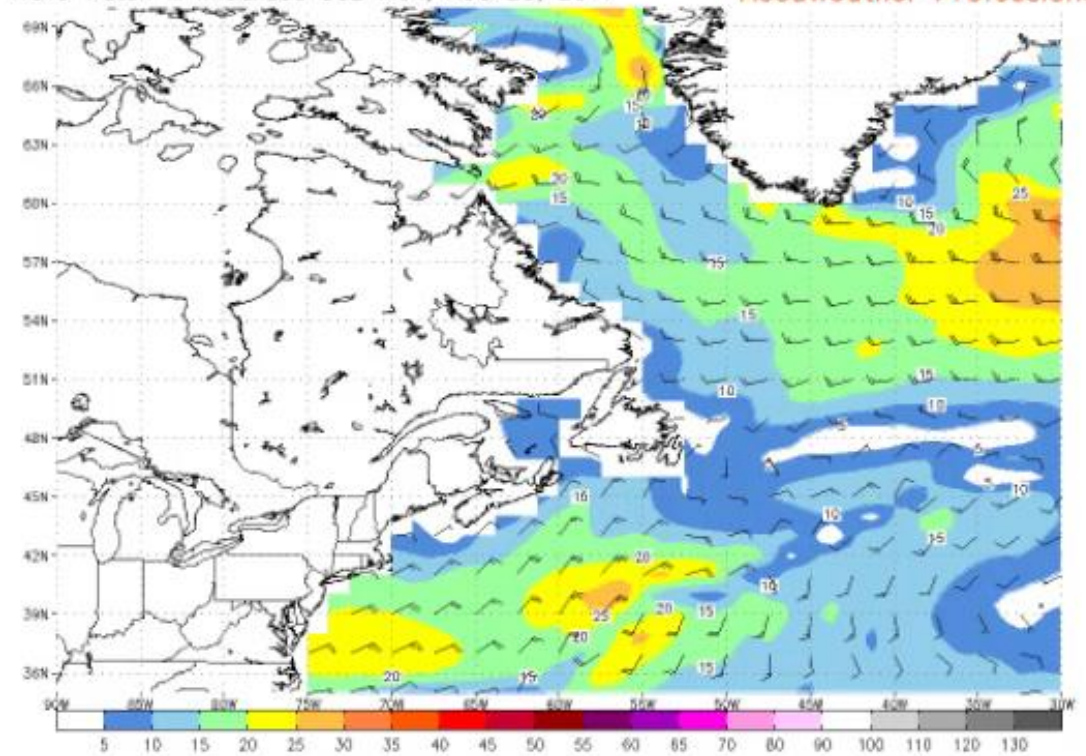
Significant Height of Waves and Swell (ft) and Direction
12 hour forecast valid 18Z Mon 28 AUG 2017
Wave Watch III initialized 06Z Mon 28 AUG 2017

Pro.AccuWeather.com



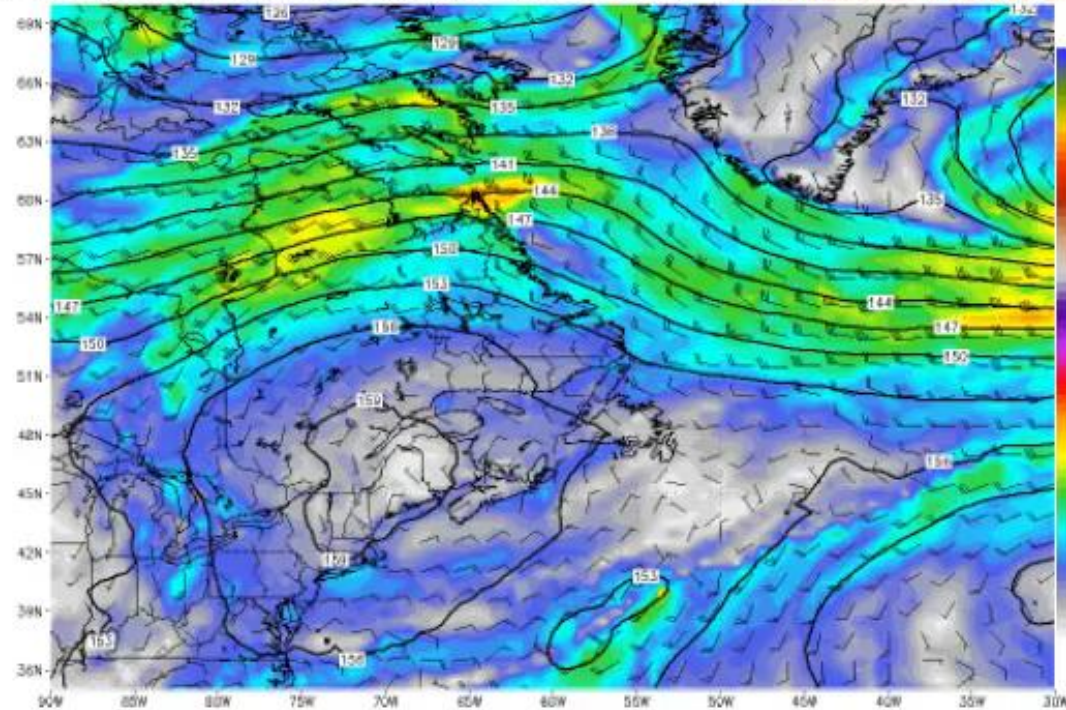
Surface Wind Speed (kts) and Wind Barbs
12 hour forecast valid 18Z Mon, AUG 28, 2017
Wave Watch III initialized 06Z Mon, AUG 28, 2017

AccuWeather Professional



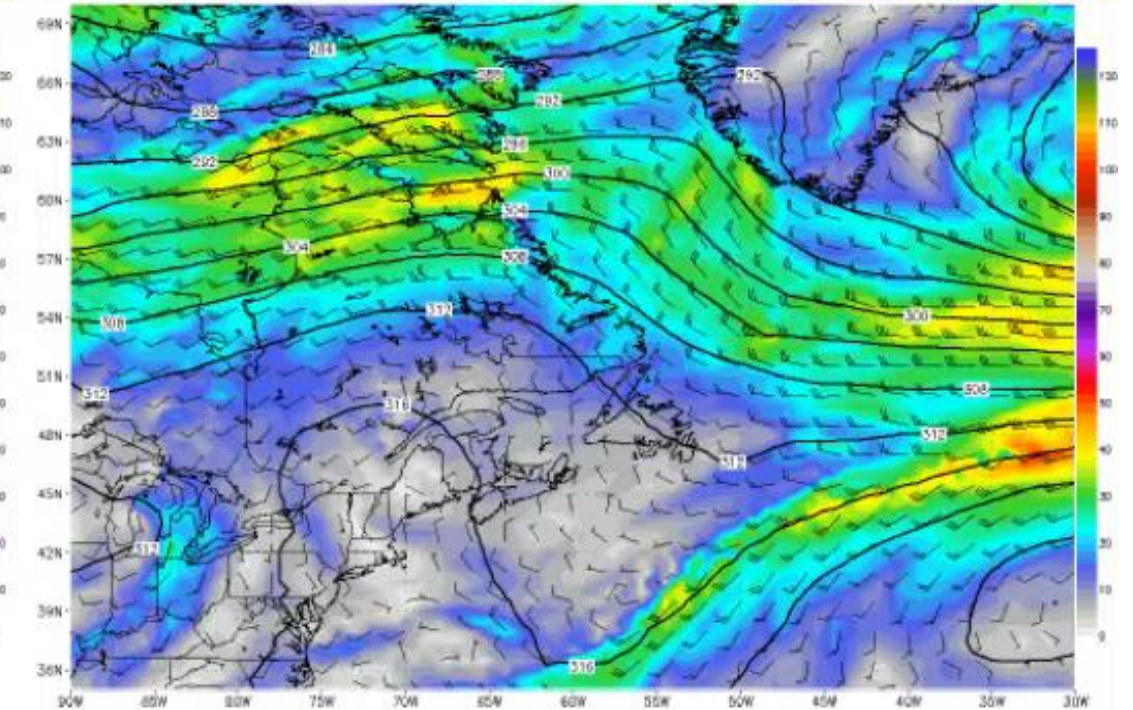
850 mb Height and Winds ~ 1.5 km or 5000 ft AMSL

850 MB Height and Winds (knots)
18 hour forecast valid 18Z Mon, AUG 28, 2017
ECMWF Deterministic initialized 00Z Mon, AUG 28, 2017



700 mb Height and Winds ~ 3 km or 10,000

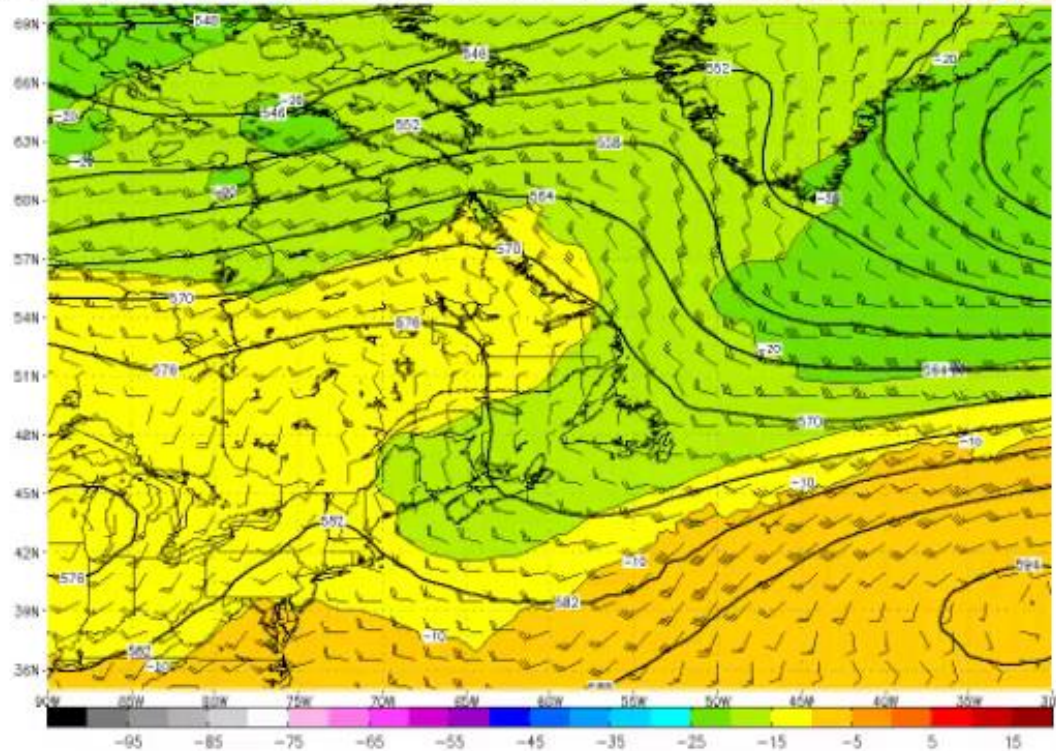
700 MB Height and Winds (knots)
18 hour forecast valid 18Z Mon, AUG 28, 2017
ECMWF Deterministic initialized 00Z Mon, AUG 28, 2017



ECMWF 500mb Height, Temp, Winds ~ 5.5 km or 18,000 ft AMSL

500 MB Height, Temperature, and Winds (knots)
18 hour forecast valid 18Z Mon, AUG 28, 2017
ECMWF Deterministic initialized 00Z Mon, AUG 28, 2017

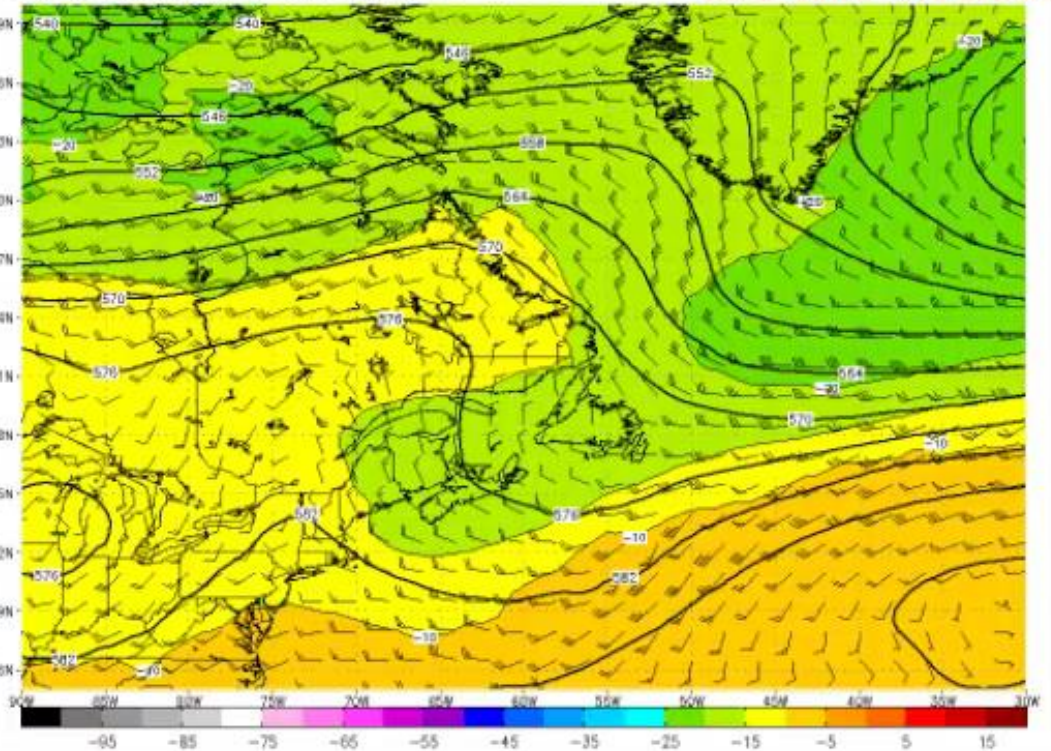
AccuWeather Professional



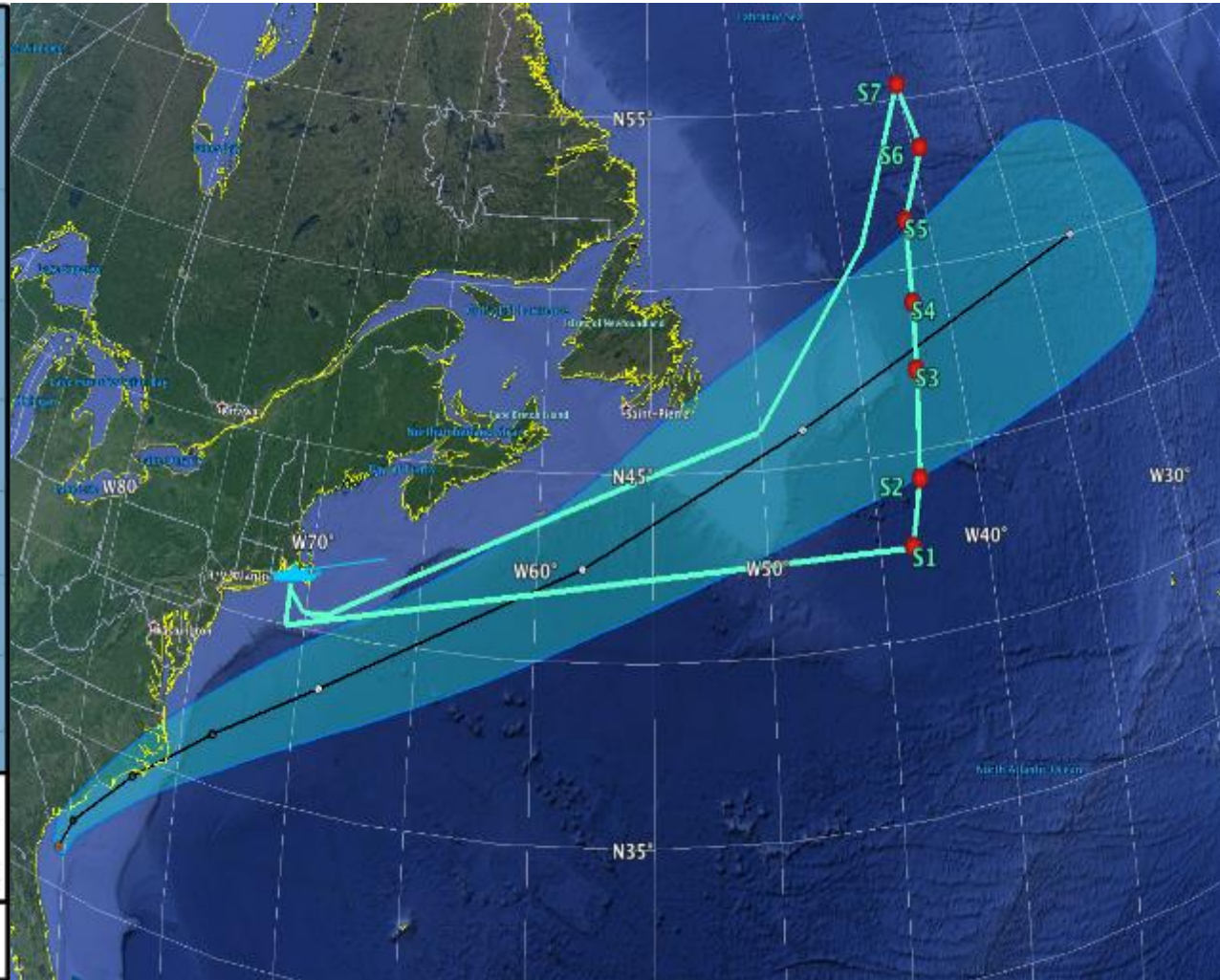
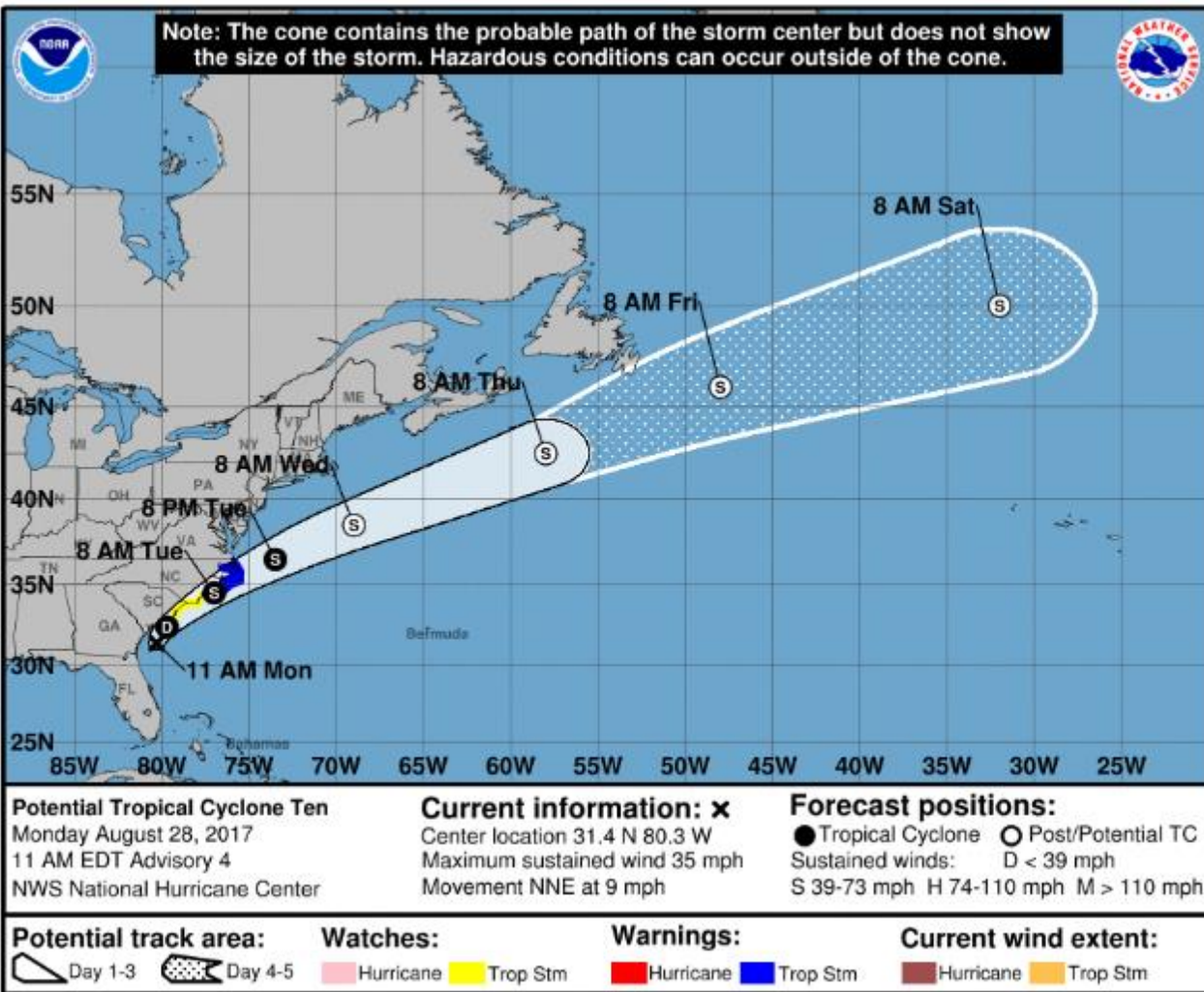
GFS 500mb Height, Temp, Winds ~ 5.5 km or 18,000 ft AMSL

500 MB Height, Temperature, and Winds (knots)
18 hour forecast valid 18Z Mon, AUG 28, 2017
GFS initialized 00Z Mon, AUG 28, 2017

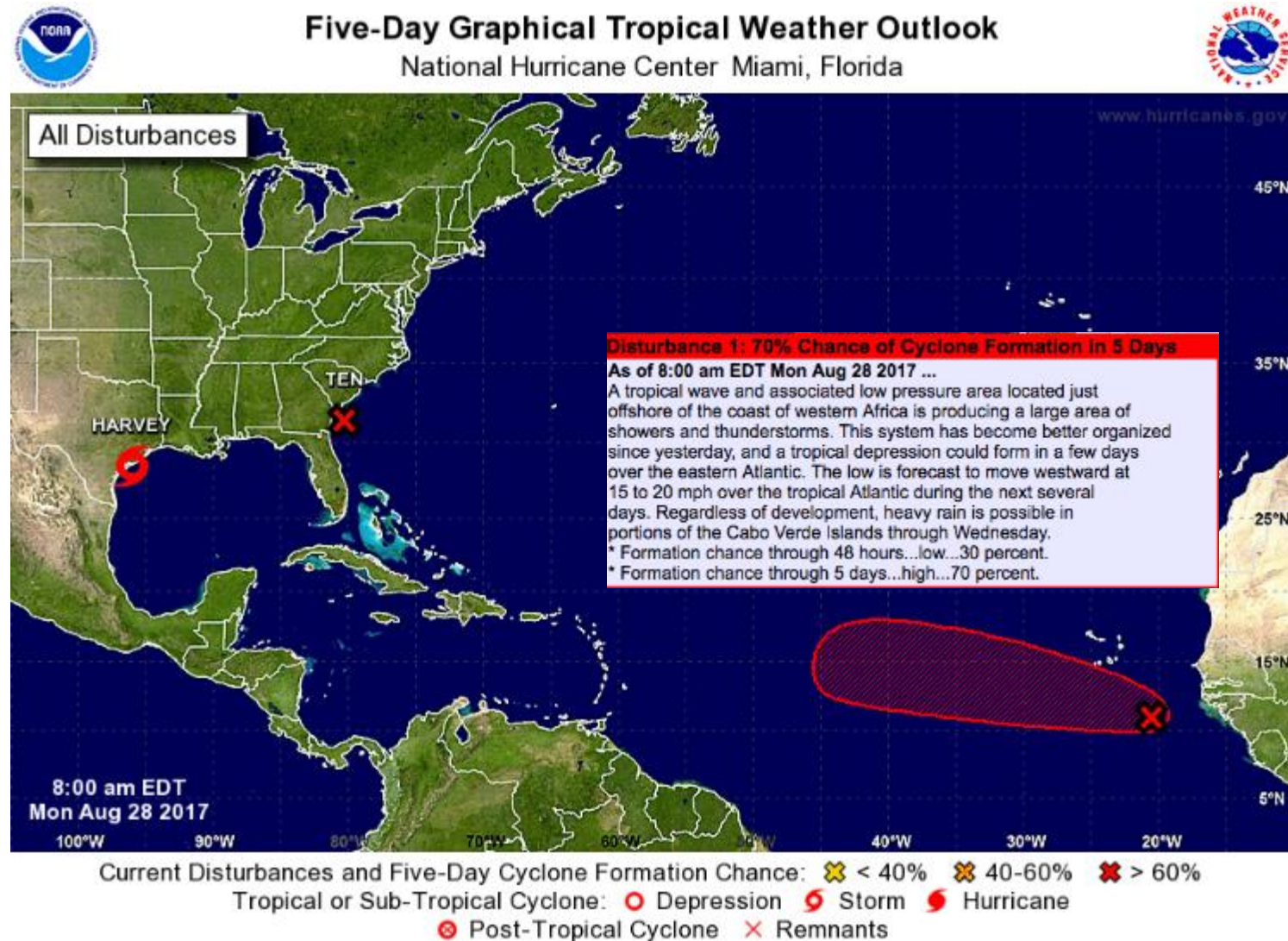
AccuWeather Professional



Eye on the Tropics – Potential TC 10



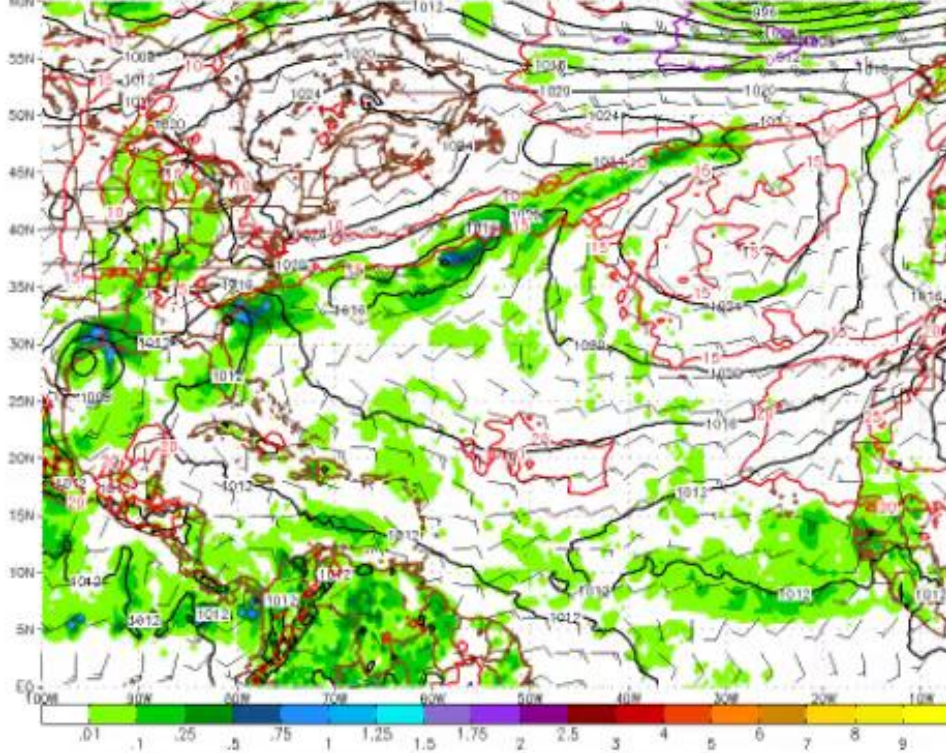
Eye on the Tropics - Outlook



Eye on the Tropics

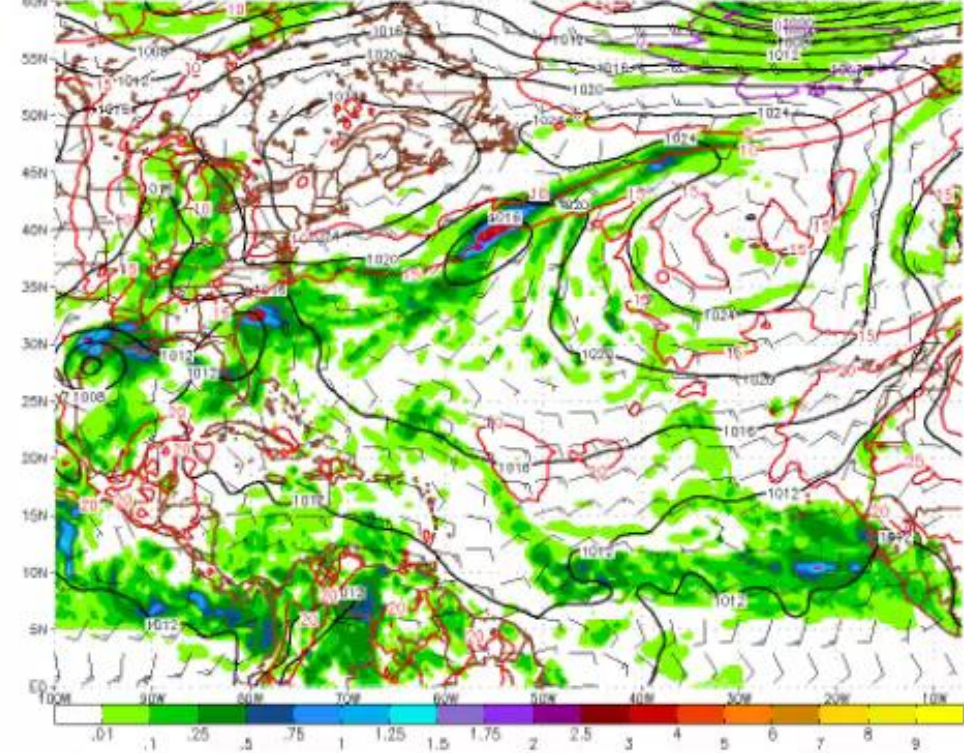
MSLP(mb), 850mb temp(C), 3-hour QPF(in) and 10m wind(kt)
18 hour forecast valid 18Z Mon, AUG 28, 2017
ECMWF Deterministic initialized 00Z Mon, AUG 28, 2017

AccuWeather Professional

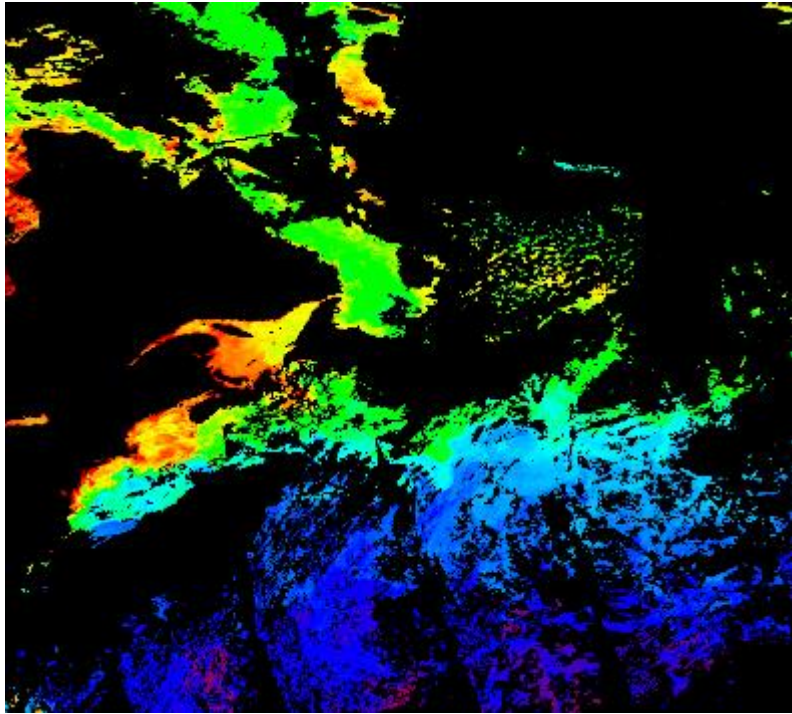


MSLP(mb), 850mb temp(C), 6-hour QPF(in) and 10m wind(kt)
18 hour forecast valid 18Z Mon, AUG 28, 2017
GFS initialized 00Z Mon, AUG 28, 2017

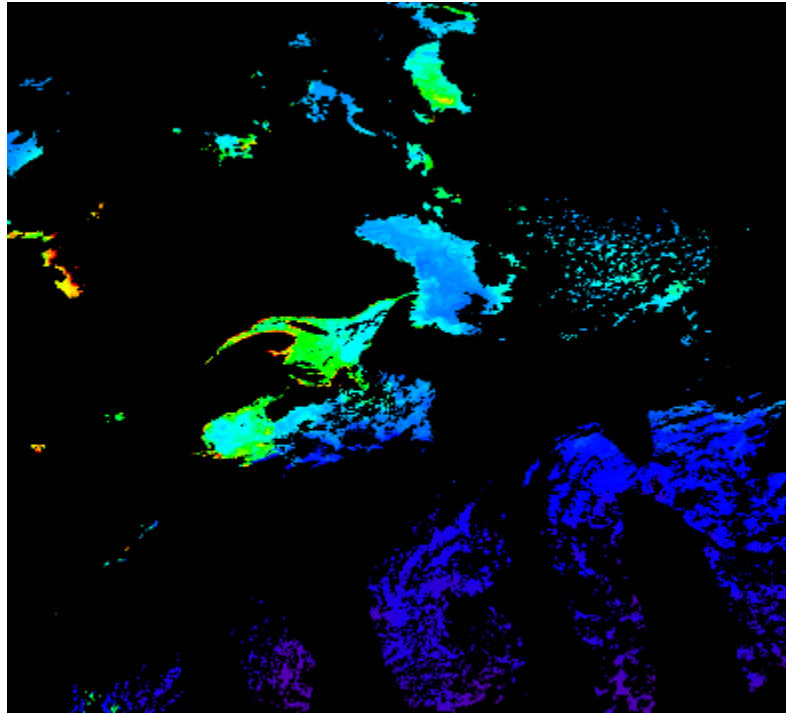
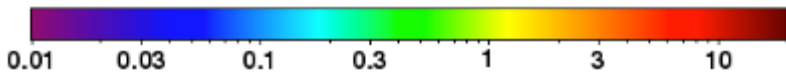
AccuWeather Professional



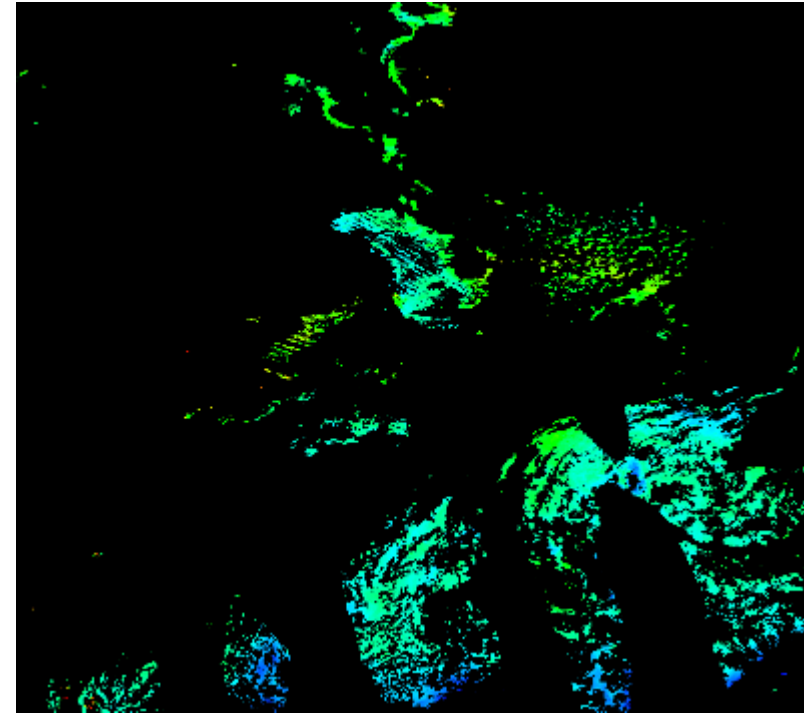
Aqua MODIS Ocean Color – August 27th



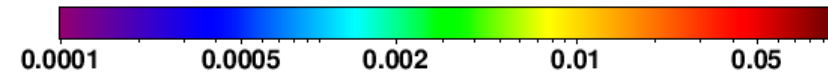
Chlorophyll a concentration (mg / m³)



Diffuse attenuation coefficient at 490 nm (m⁻¹)

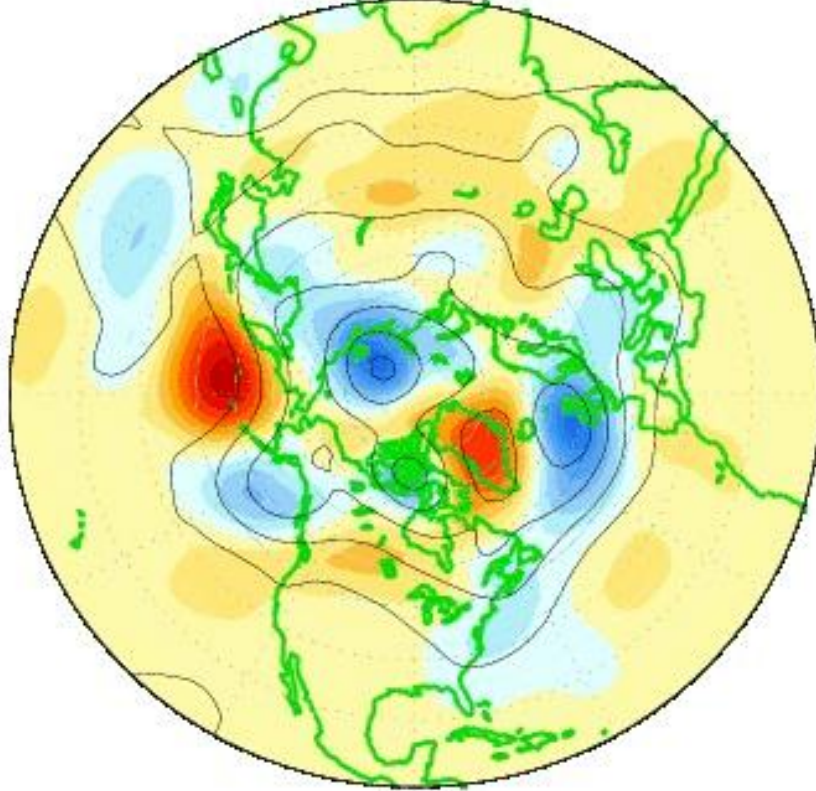


Particle backscatter at 443 nm (m⁻¹)



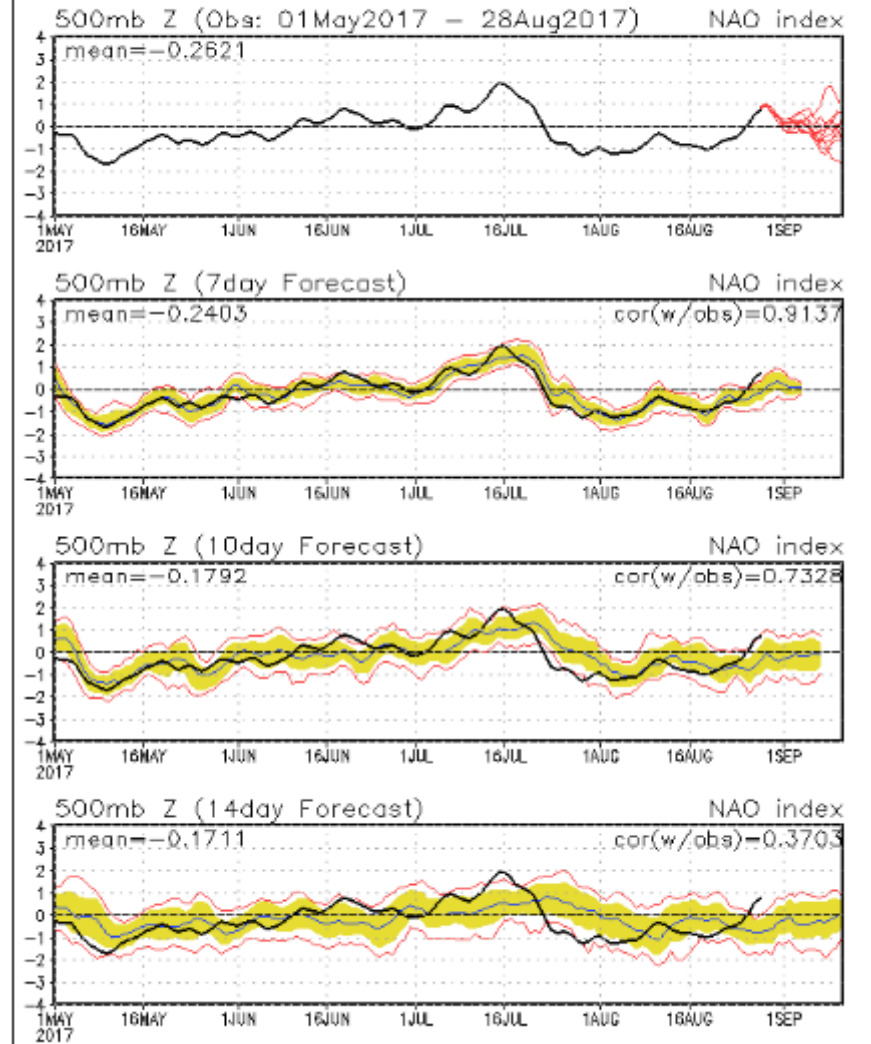
North Atlantic Oscillation

CDAS 500-hPa HT Anoms (5d rm)
28JUL2017

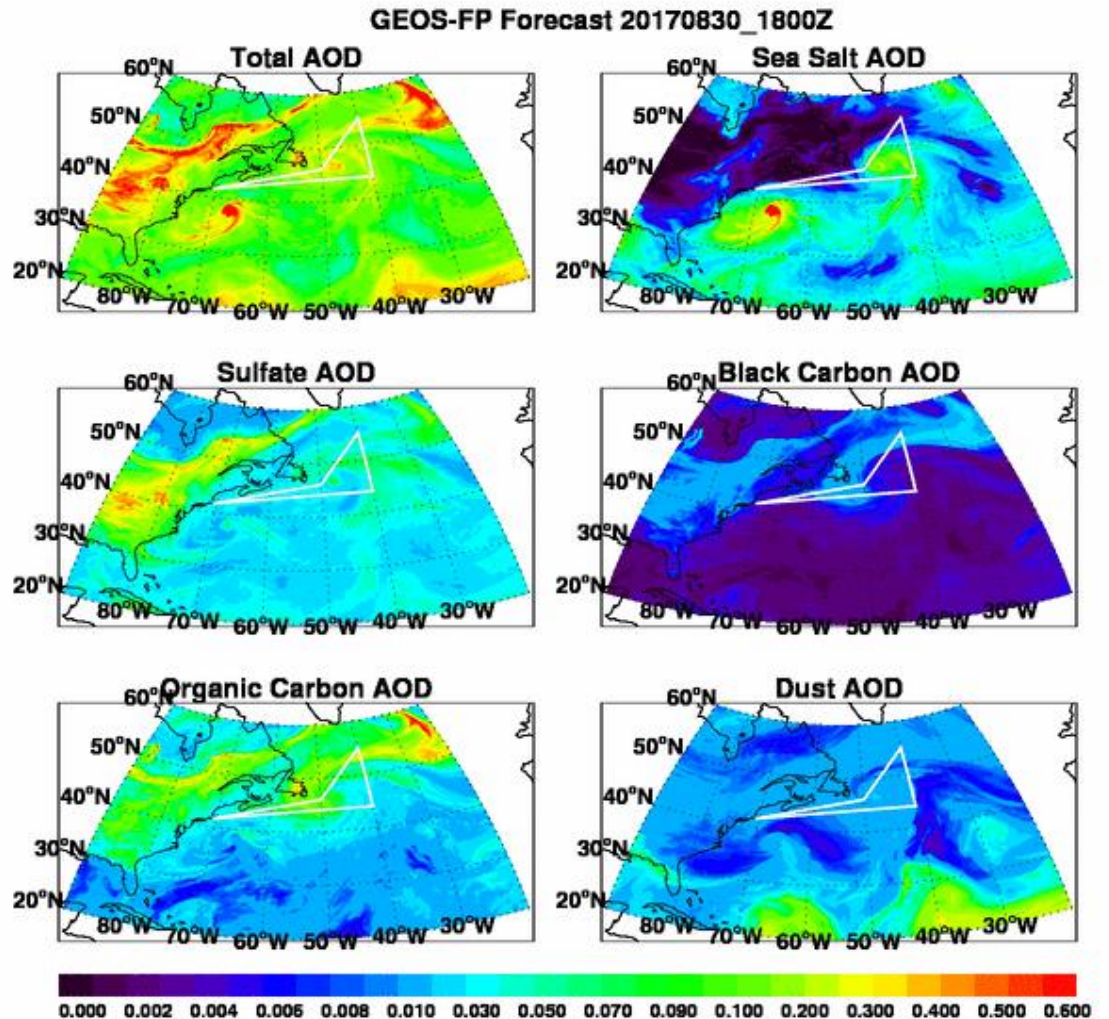
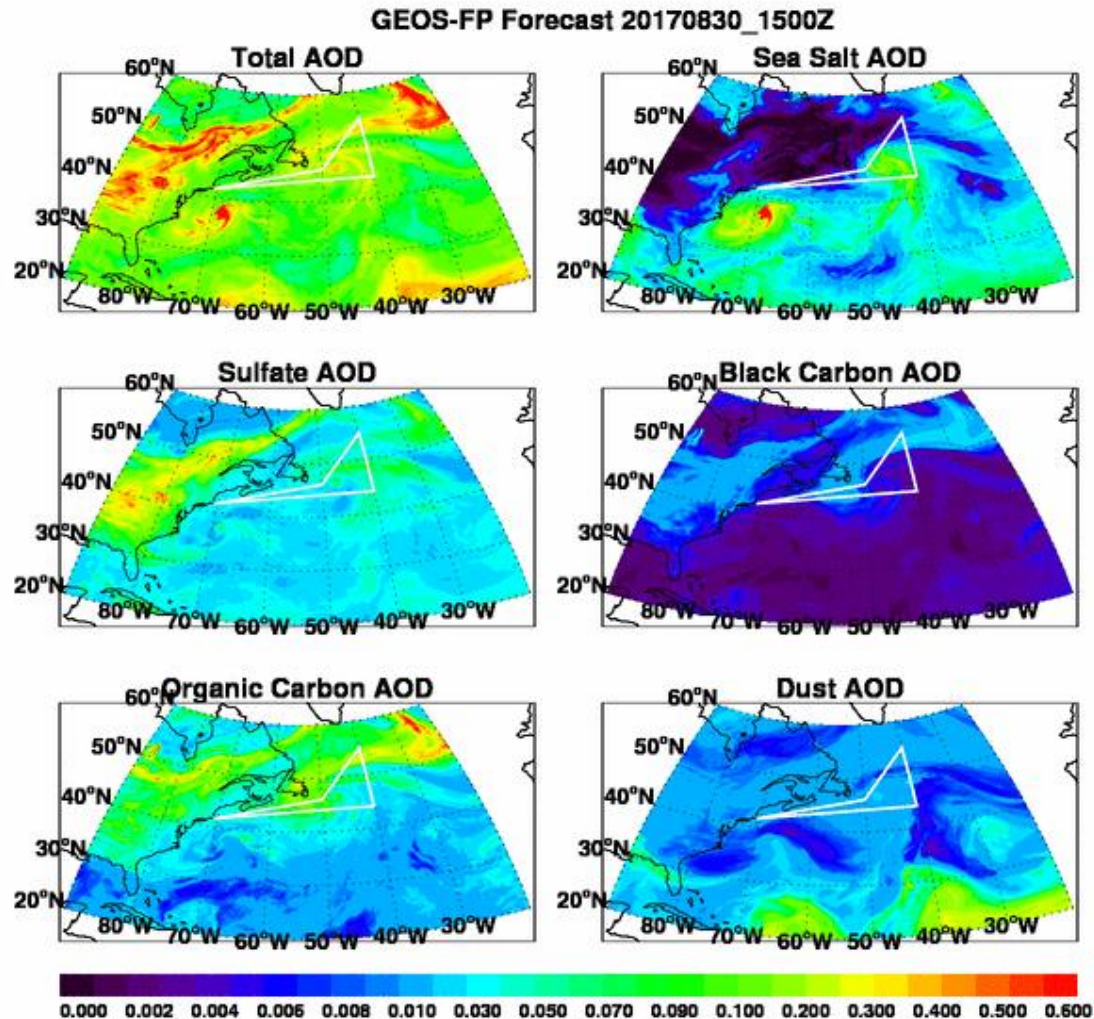


-240 -210 -180 -150 -120 -90 -60 -30 0 30 60 90 120 150 180 210 240

NAO: Observed & ENSM forecasts



GEOS-Chem – 8/30 15 & 18 UTC Forecast



BEAUFORT WIND SCALE WITH CORRESPONDING SEA STATE CODES					
Beaufort Number	Wind Velocity (Knots)	Wind Description	Sea State Description	Sea State	
				Term and Height of Waves (Feet)	Condition Number
0	Less than 1	Calm	Sea surface smooth and mirror-like	Calm, glassy 0	0
1	1-3	Light Air	Scaly ripples, no foam crests		
2	4-6	Light Breeze	Small wavelets, crests glassy, no breaking	Calm, rippled 0 – 0.3	1
3	7-10	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Smooth, wavelets 0.3-1	2
4	11-16	Moderate Breeze	Small waves, becoming longer, numerous whitecaps	Slight 1-4	3
5	17-21	Fresh Breeze	Moderate waves, taking longer form, many whitecaps, some spray	Moderate 4-8	4
6	22-27	Strong Breeze	Larger waves, whitecaps common, more spray	Rough 8-13	5
7	28-33	Near Gale	Sea heaps up, white foam streaks off breakers	Very rough 13-20	6
8	34-40	Gale	Moderately high, waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks		
9	41-47	Strong Gale	High waves, sea begins to roll, dense streaks of foam, spray may reduce visibility		
10	48-55	Storm	Very high waves, with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	High 20-30	7
11	56-63	Violent Storm	Exceptionally high waves, foam patches cover sea, visibility more reduced	Very high 30-45	8
12	64 and over	Hurricane	Air filled with foam, sea completely white with driving spray, visibility greatly reduced	Phenomenal 45 and over	9

Figure 8-1. Beaufort wind scale.

MANDATORY PRESSURE LEVELS

<u>Level</u>	<u>Remarks</u>	Temp. Range	Critical Thickness For Snow	Standard Height Above Sea level	
1000 mb				0 meters	0 feet
925 mb				750 to 800 meters	2460 to 2624 ft
850 mb	Besides the surface, 850mb is used to calculate temperature advection. Also used in weather forecasting to determine high temperature on sunny, warm days and also used to determine maximum wind gust on sunny, well-mixed days.	0 to + 40 in summer -40 to +20 in winter	1000 to 850 = 1300 meters 850 to 700 = 1540 meters	1500 meters	4921 ft
700 mb	The "free atmosphere" begins here. This pressure level skims the tops of the Rockies, so, for practical purposes, there is little ground about this level. The last mandatory level in the lower troposphere	-15 to +15 in summer -40 to +5 in winter	1000 to 700 = 2840 meters	3000 meters	9842 ft
500 mb	This pressure marks the approximate level where half the weight of the local air column is below and half the weight is above. Thus, 500mb is considered to represent the middle troposphere	-25 to 0 in summer -45 to -10 in winter	1000 to 500 meters = 5400 meters	5500 meters	18044 ft
400 mb	The approximate level where winds steer well-developed hurricanes. The first mandatory level in the upper troposphere			7000 meters	22965 ft
300 mb	The pressure level near the cruising altitude of most commercial aircraft. The approximate pressure at the summit of Mount Everest.	-55 to -35 (marginal seasonal changes)		9000 meters	29527 ft
250 mb	The typical pressure level of the jet stream over the middle latitudes.			10500 meters	34448 ft
200 mb	The typical pressure level of the tropopause over the middle latitudes.	-60 to -45 (marginal seasonal changes)		12000 meters	39370 ft
150 mb				13500 meters	44291 ft