

NAAMES

WX Briefing

Friday, March 16, 2018

Amy Jo Scarino

Forecast Highlights

- Sunny and warm in San Juan now through weekend, afternoon/evening rain for Sunday and Monday, no rain in forecast for Tuesday morning now
- Wallops will be partly cloudy to start on Saturday, clouds (high and mid) will increase through day, passing showers overnight, Sunday will be mostly sunny all day
- St. John's more snow this weekend, nor'easter next Thursday, wintry mix on the 24th
- Refresher on North Atlantic Oscillation – currently in a negative NAO phase

Planned Ship Route & Forecast

Thursday, 3/22
Waves: NE 4-5 ft
Winds: SE 15-18 kts
Clouds: partly cloudy
Precip: isolated rain showers

Tuesday, 3/20 San Juan
Waves: NNE 3-5 ft
Winds: ESE 10-12 kts
Clouds: mostly clear
Precip: none
Temp: 78°

Wednesday, 3/21
Waves: NNE 4-5 ft
Winds: SE 10-12 kts
Clouds: partly cloudy
Precip: none

Geographer
Navy, NGA, GEBCO

© 2018 Google
Image Landsat / Copernicus

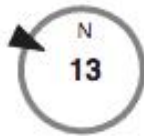
Google Earth

Current Conditions at Wallops

© 10:15 AM EDT on March 16, 2018 (GMT -0400) | Updated 2 minutes ago



Fair

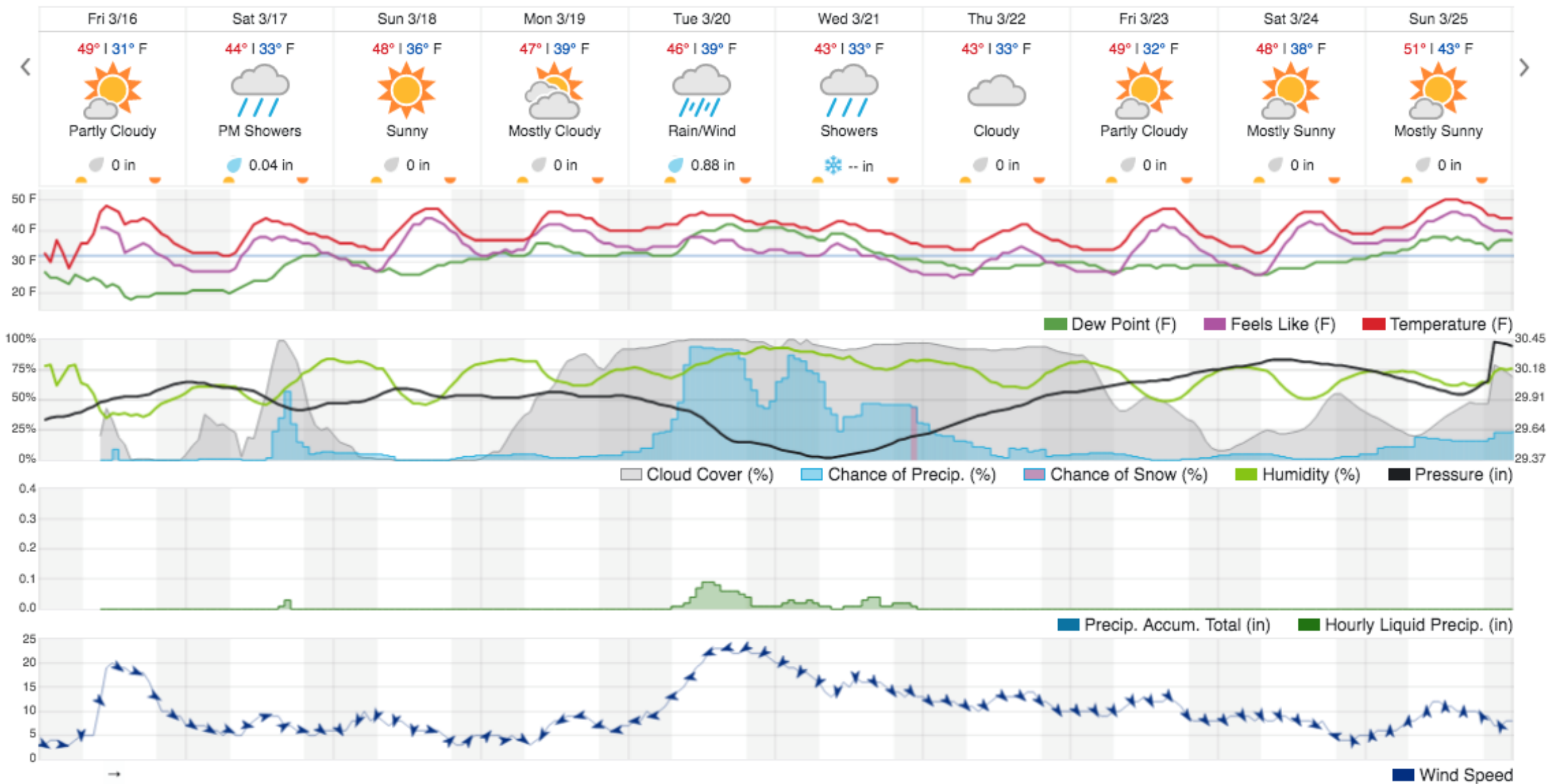


Wind **WNW**
Gusts **21 mph**

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



Wallops Forecast



Current Conditions at San Juan

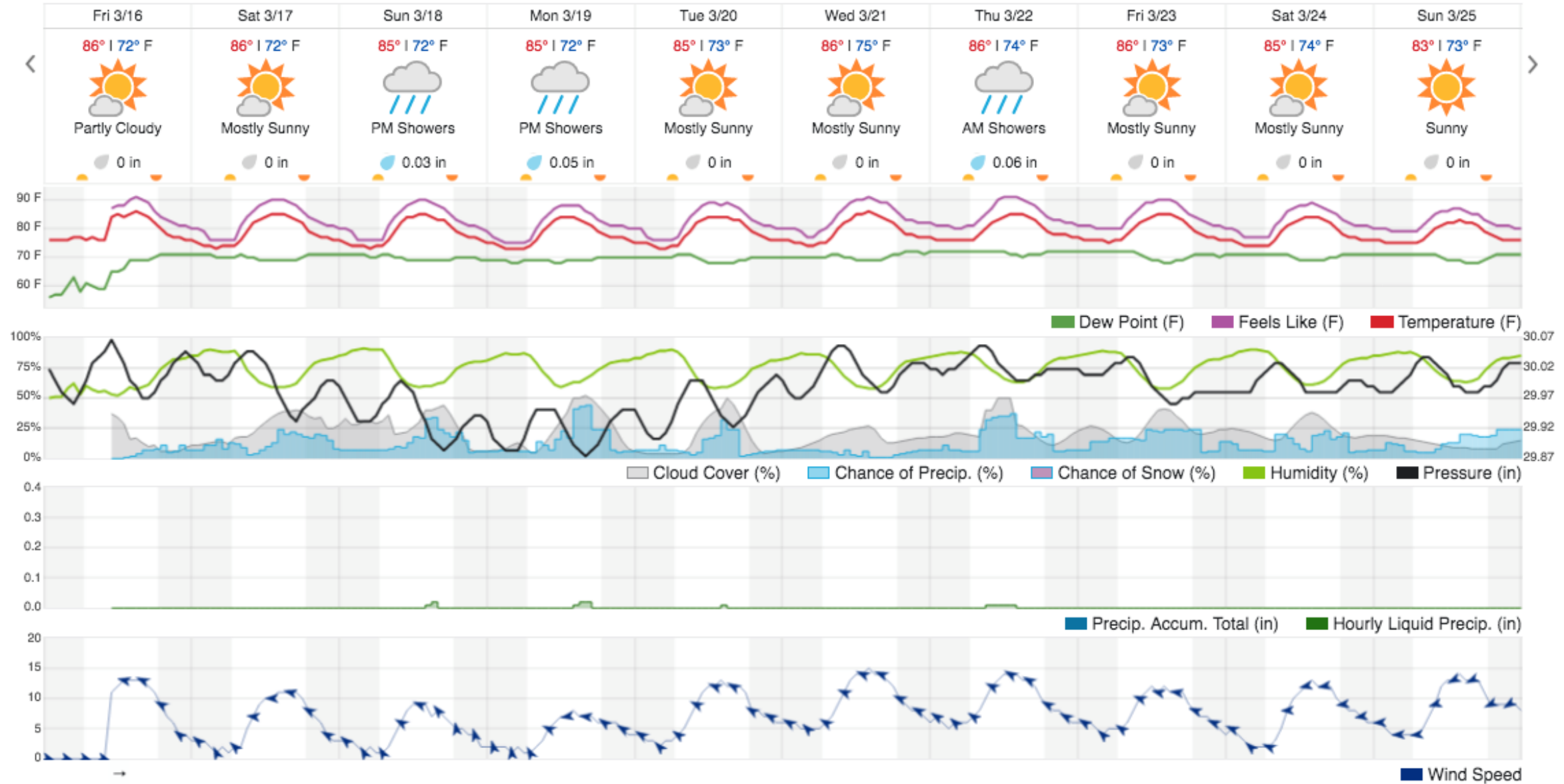
© 10:18 AM AST on March 16, 2018 (GMT -0400) | Updated a few seconds ago



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

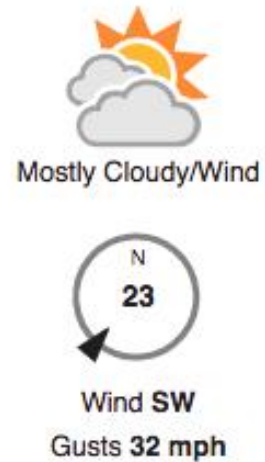


San Juan Forecast



Current Conditions at St. John's

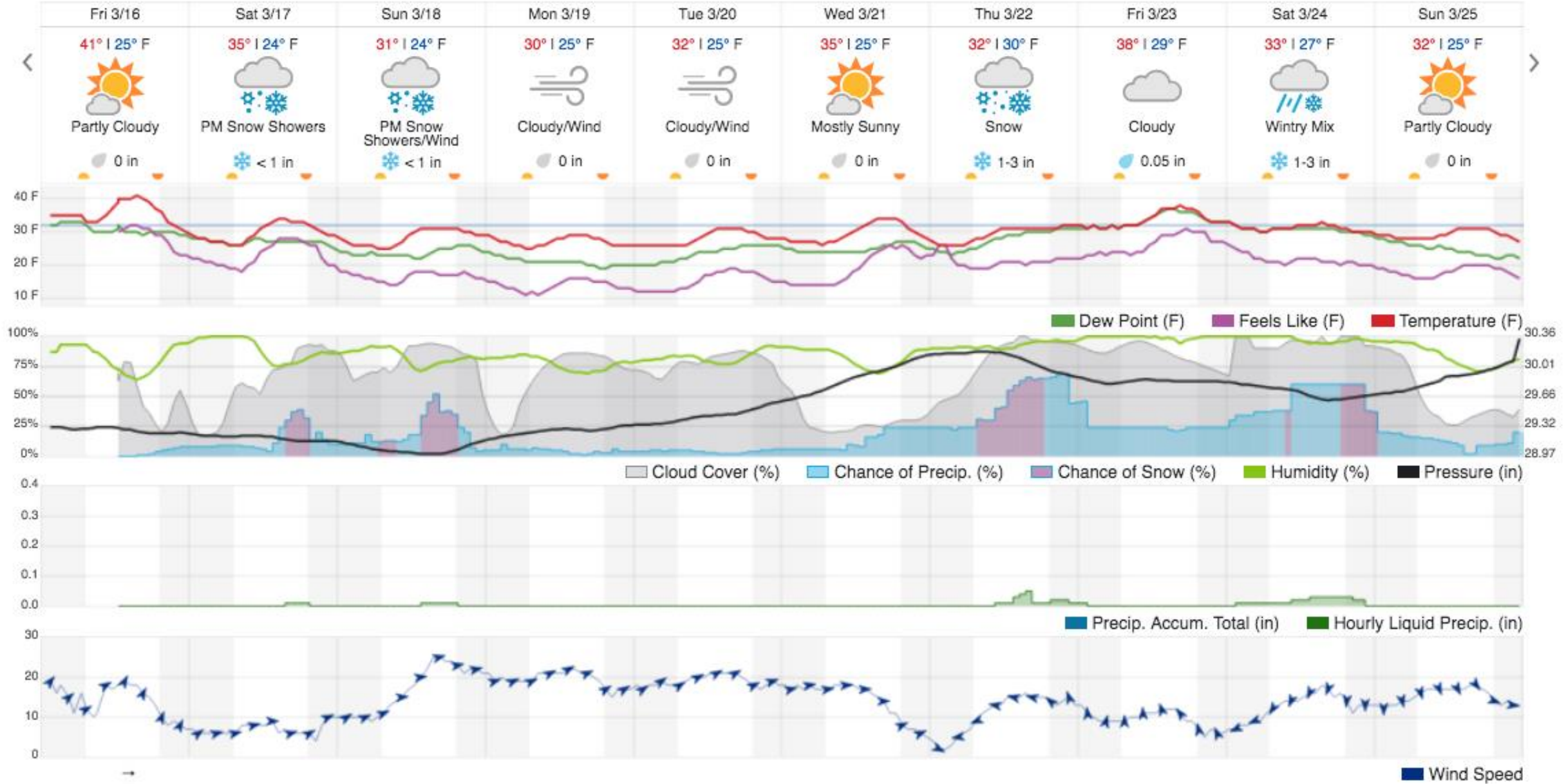
© 12:44 PM NDT on March 16, 2018 (GMT -0230) | Updated 14 minutes ago



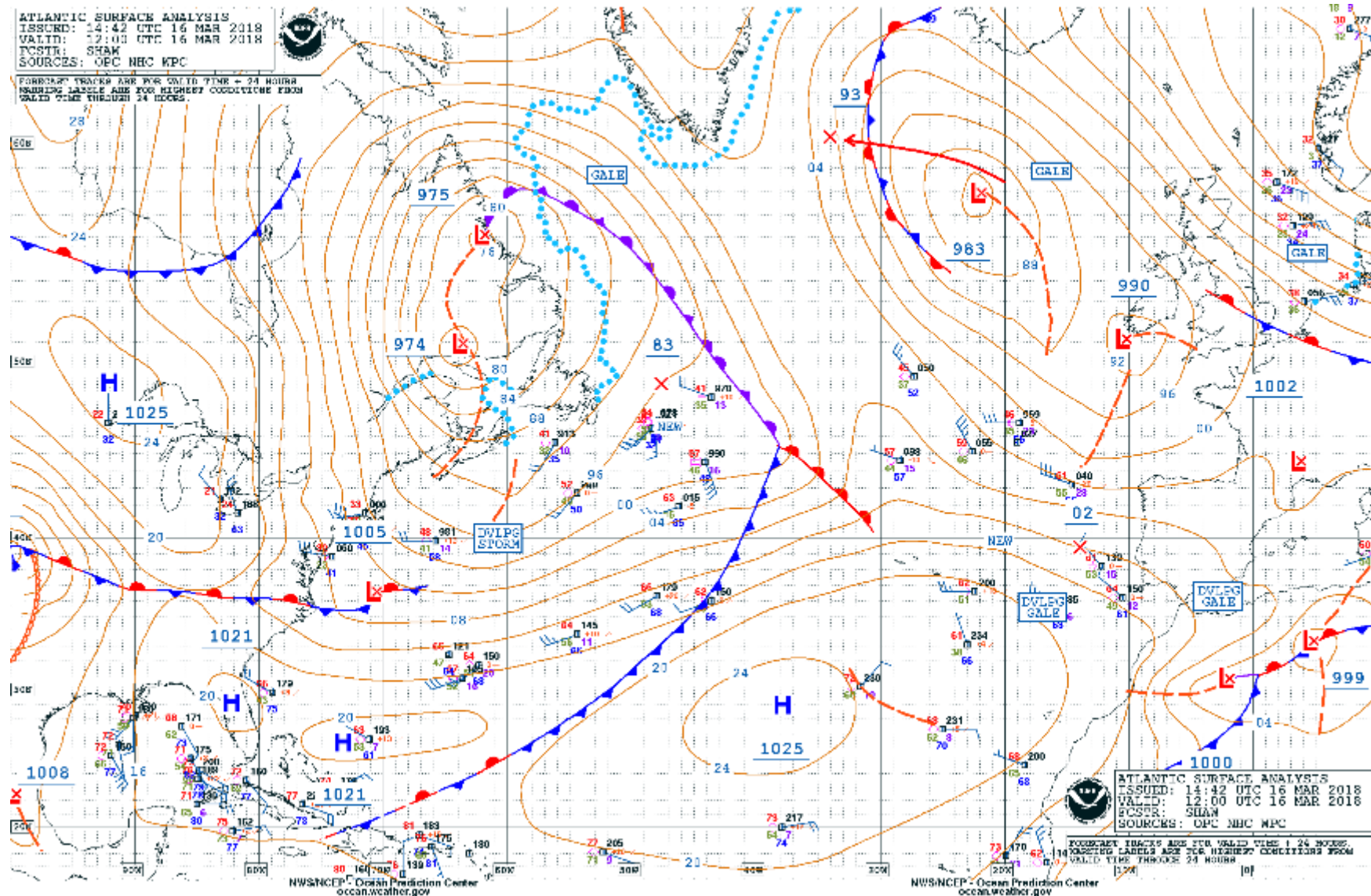
Today is forecast to be **NEARLY THE SAME** temperature as yesterday.



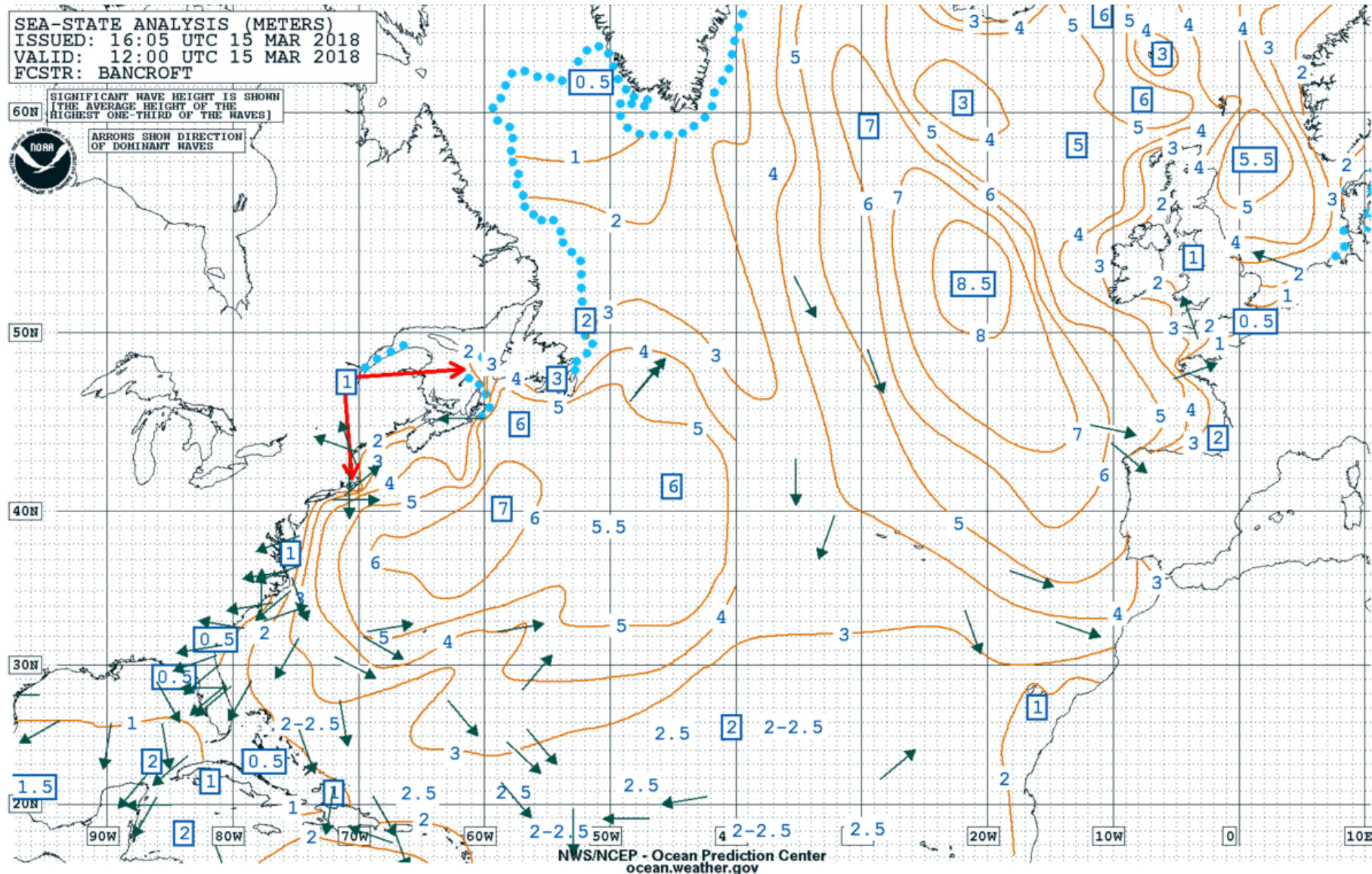
St. John's Forecast



Surface Analysis



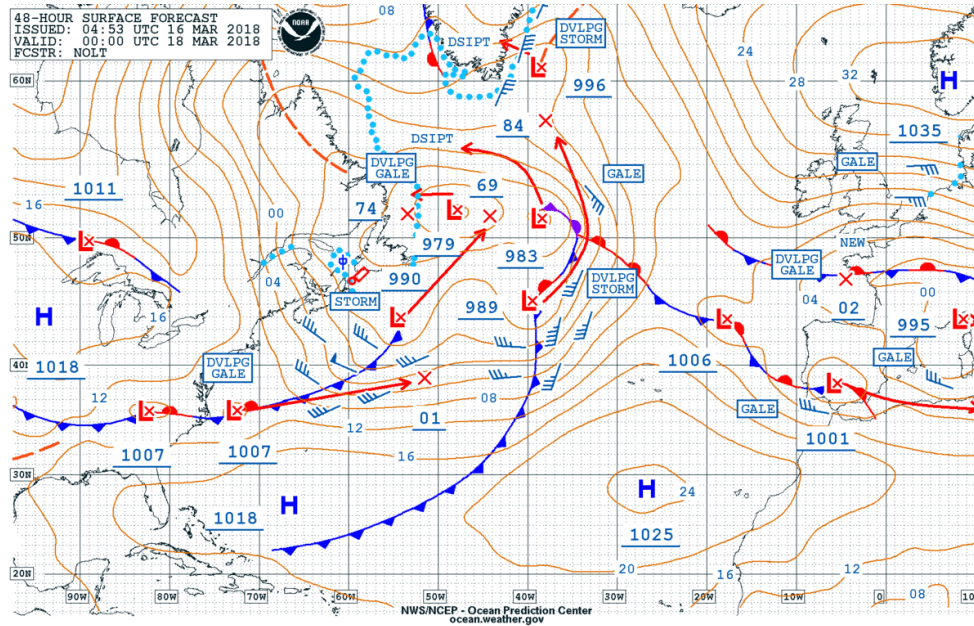
Sea State Analysis



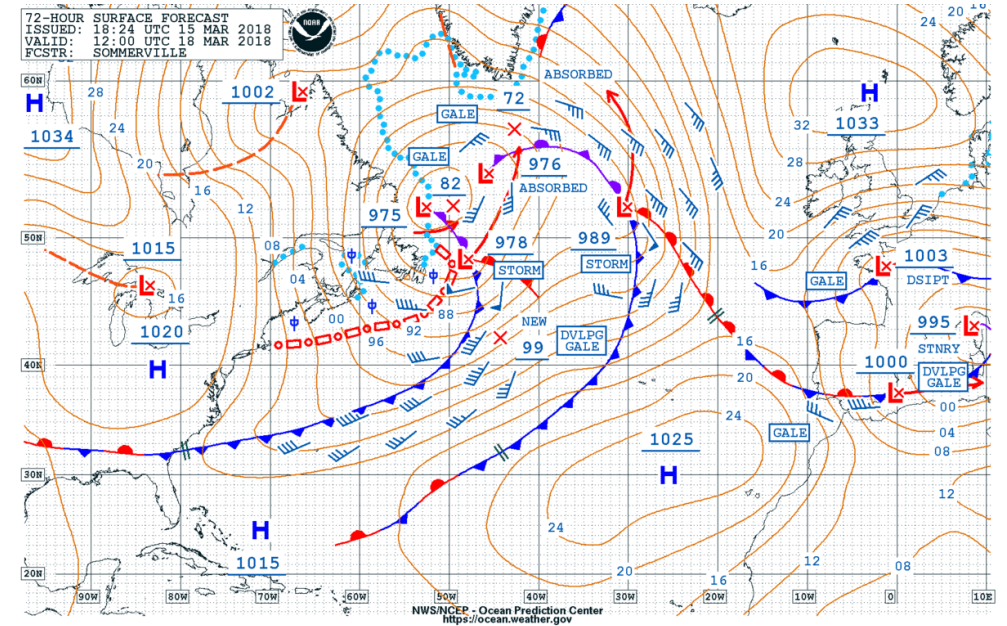
- Significant Wave Height is shown (in meters). This is the average height of the highest one-third of the waves
- Arrows show direction of dominant waves

Synoptic Forecast

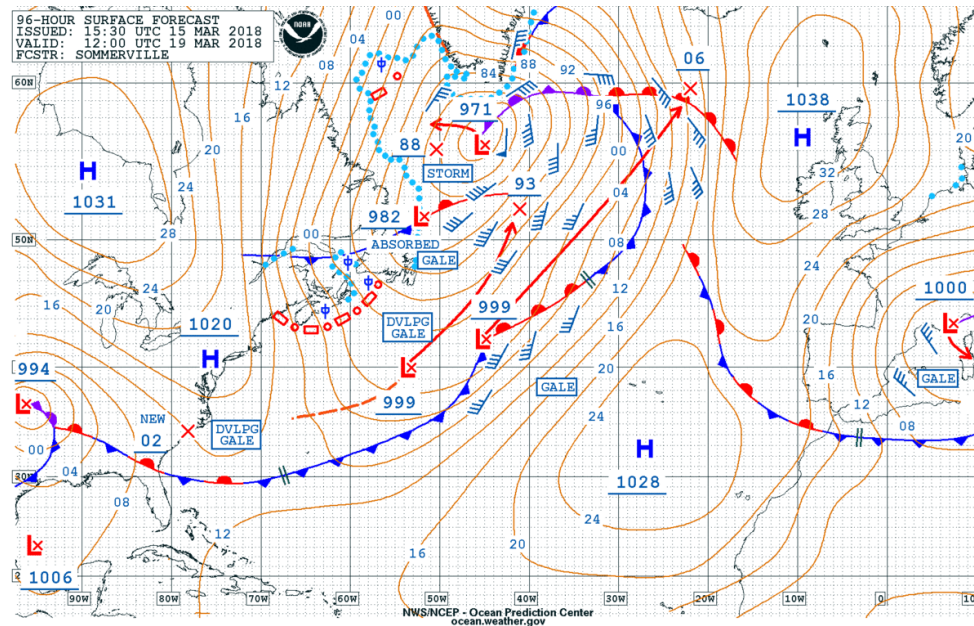
48 Hour Forecast - Saturday 8pm



72 Hour Forecast - Sunday 8am

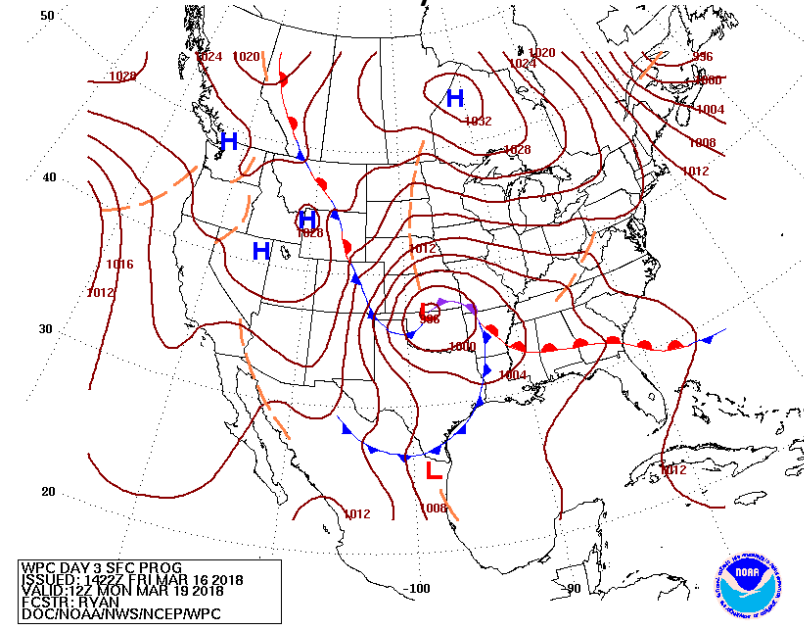


96 Hour Forecast - Monday 8am

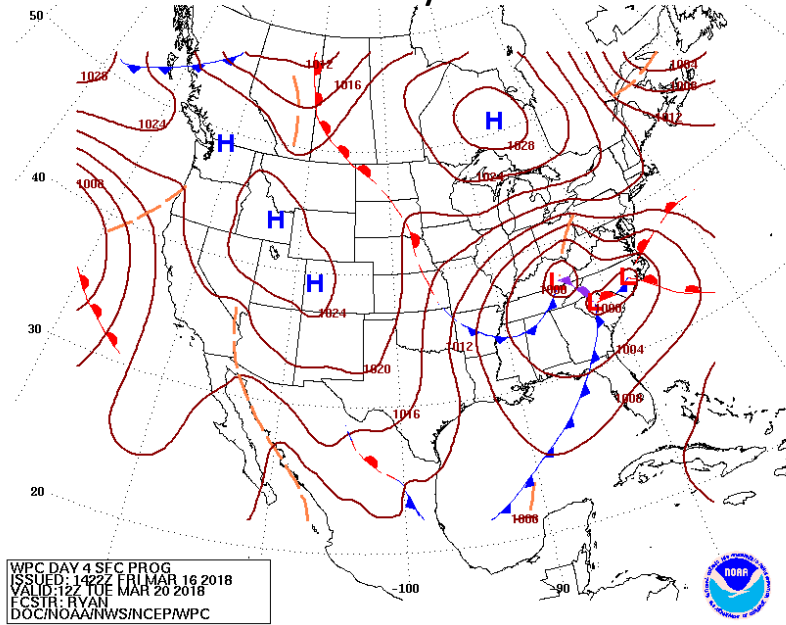


Nor'easter Tracking

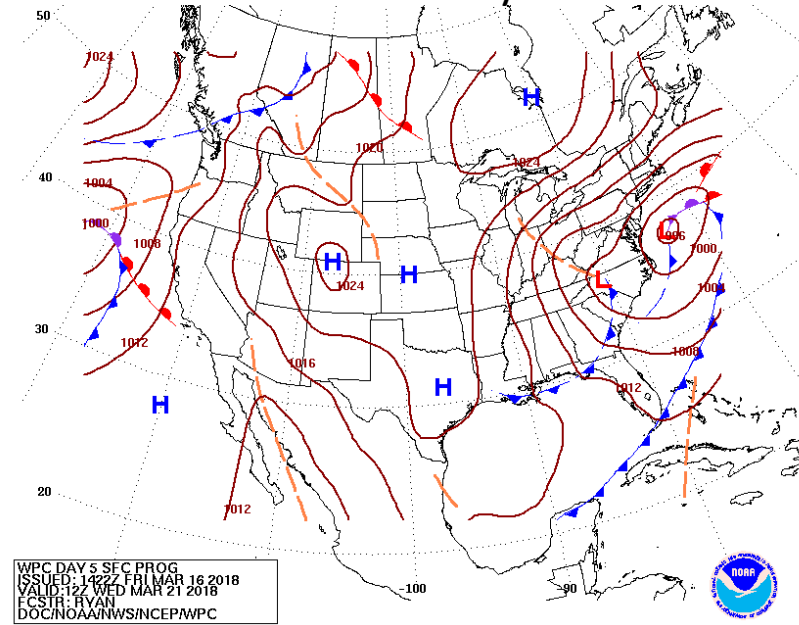
Monday AM



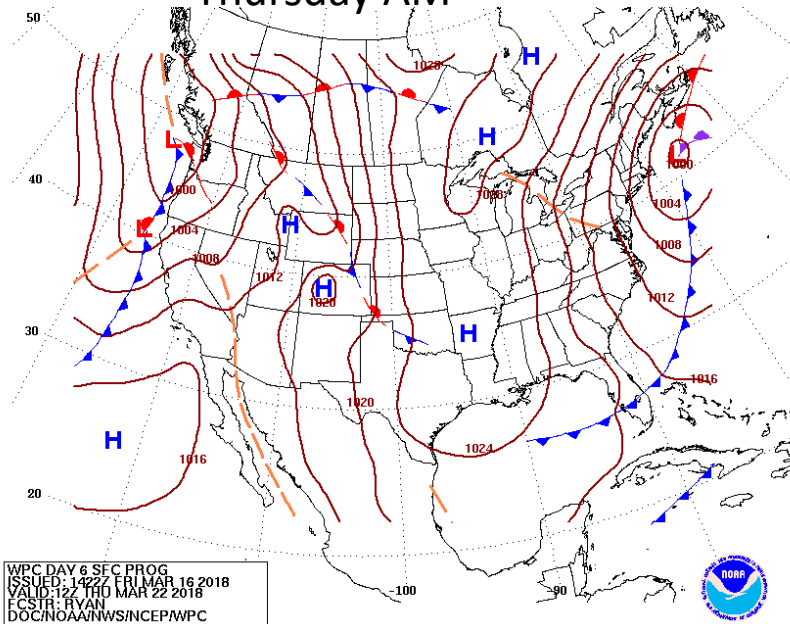
Tuesday AM



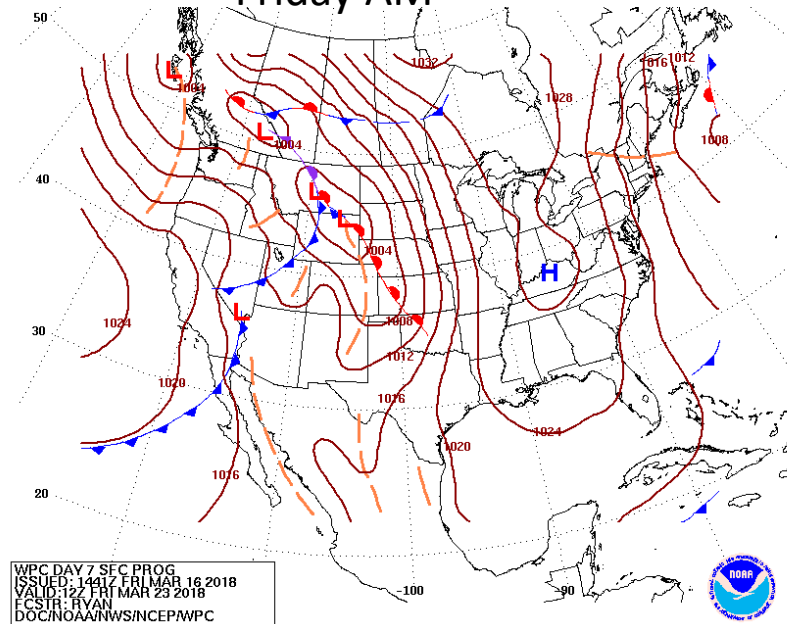
Wednesday AM



Thursday AM



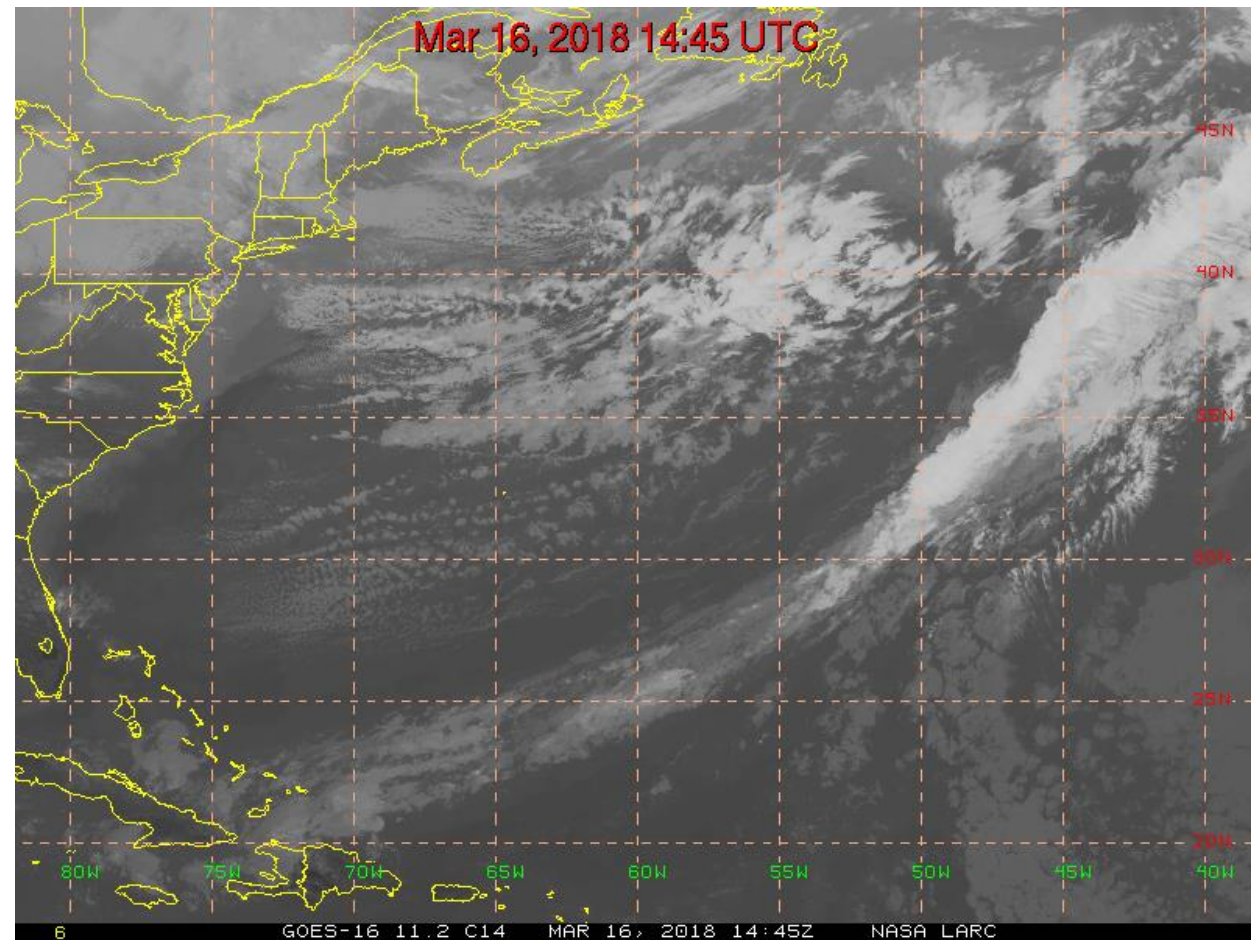
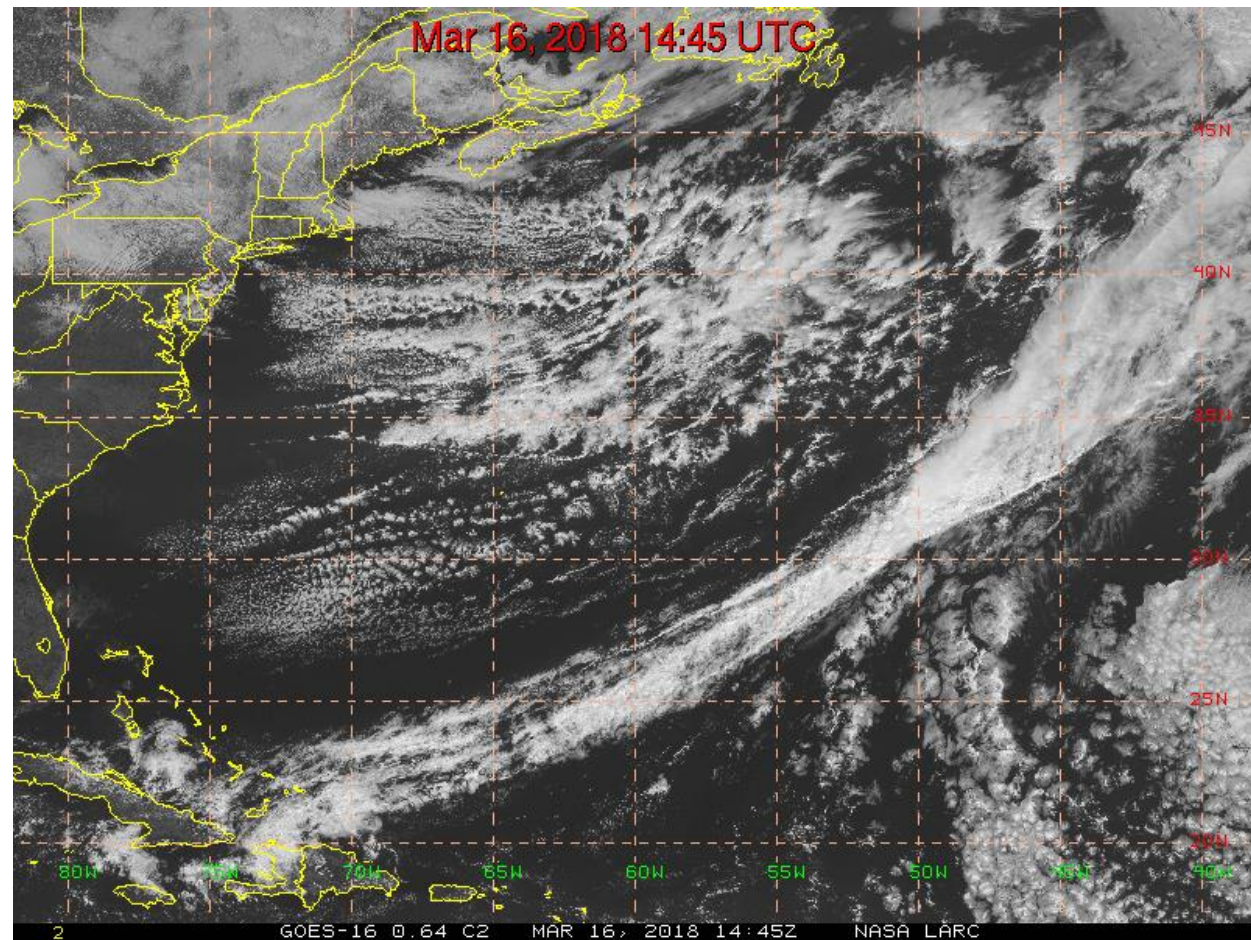
Friday AM



GOES-16 Imagery (3/16 14:45 UTC)

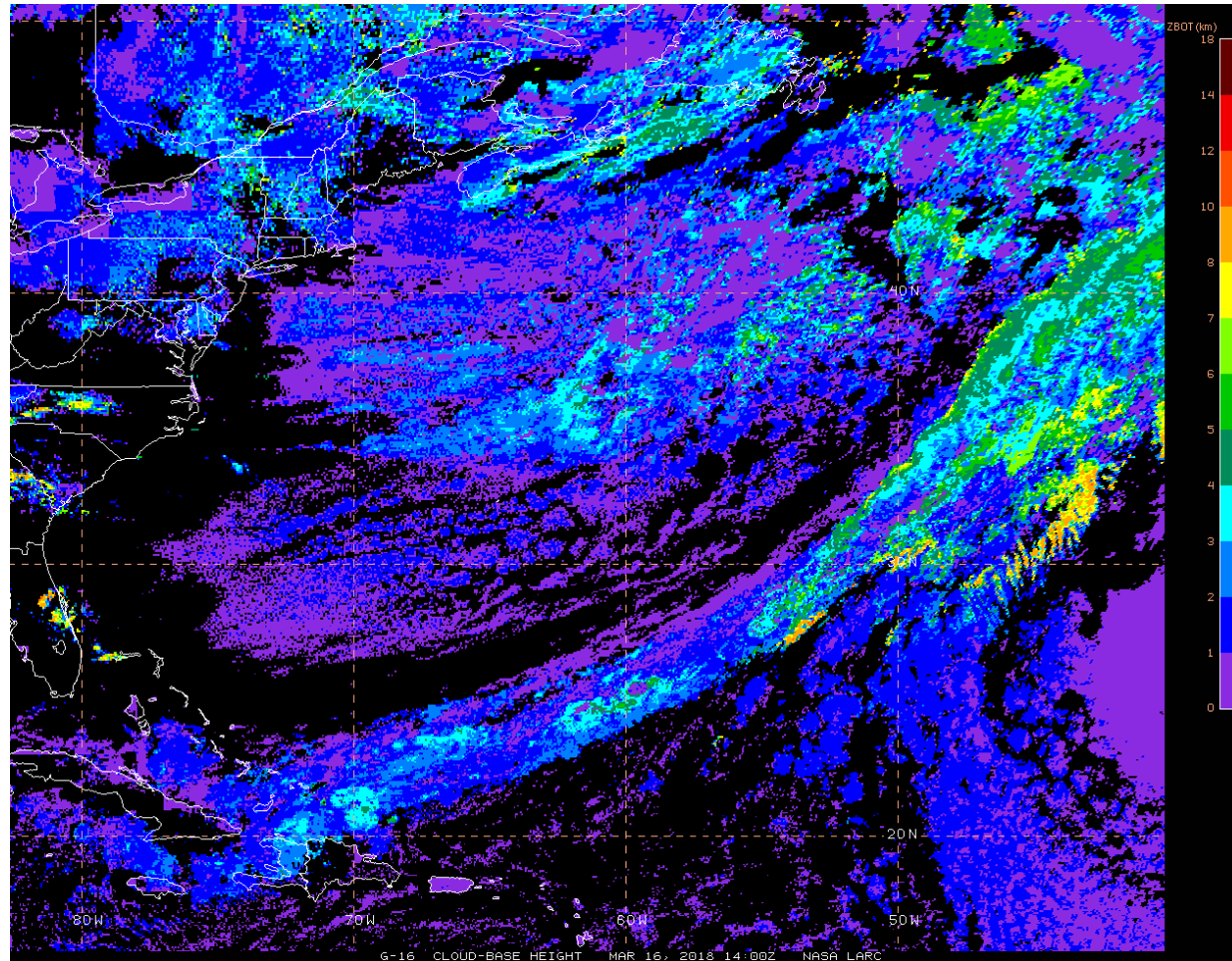
Visible

IR

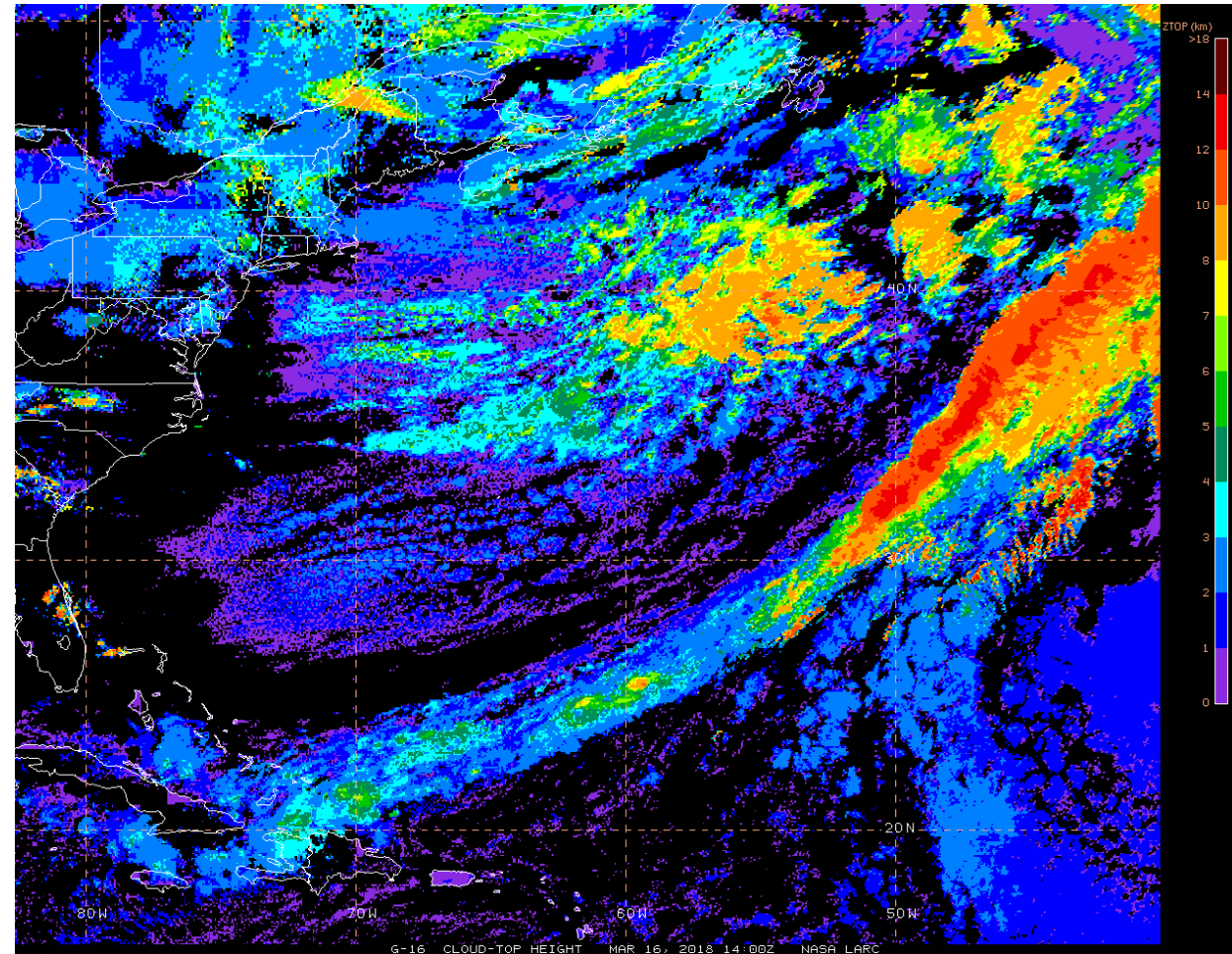


GOES-16 Cloud Products (3/16 14:00 UTC)

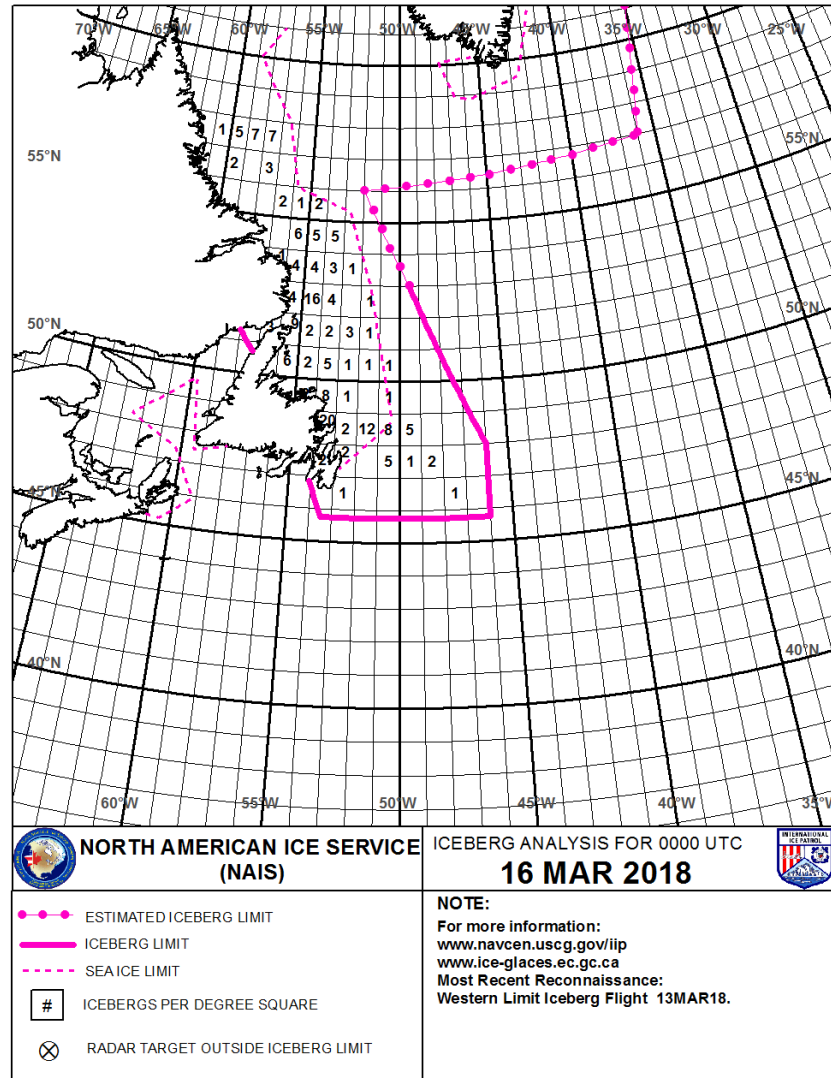
Cloud Base Heights



Cloud Top Heights



Sea Ice and Icebergs



IIP 14MAR18 0000Z
 SEVEN-DAY ICEBERG OUTLOOK FOR EAST NEWFOUNDLAND WATERS AND THE LABRADOR COAST ISSUED BY INTERNATIONAL ICE PATROL (IIP) ON 14 MARCH 2018. THE NEXT ICEBERG OUTLOOK WILL BE ISSUED ON 21 MARCH 2018.

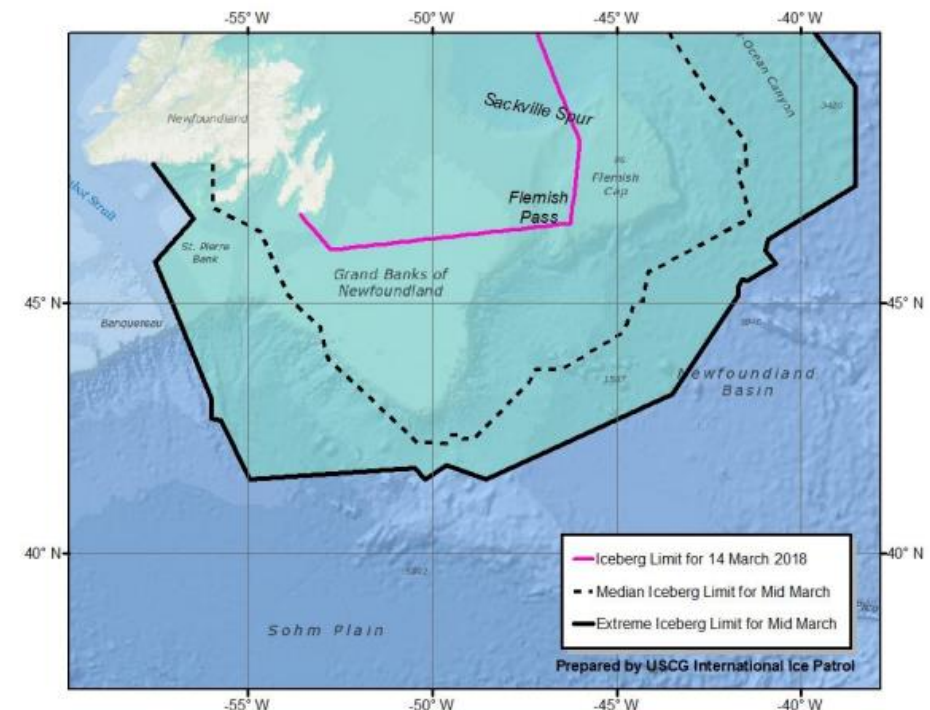
Labrador Coast and Strait of Belle Isle (NORTH OF 52°N):

Sea ice will remain within 120 NM of the Labrador Coast. **Forecasted negative NAO index** and corresponding onshore winds will hold sea ice growth in check over the next seven days. Many icebergs are drifting outside of the sea ice edge along the 1000 meter depth contour. IIP estimates that a total of 180 icebergs are present along the Labrador and Newfoundland Coasts.

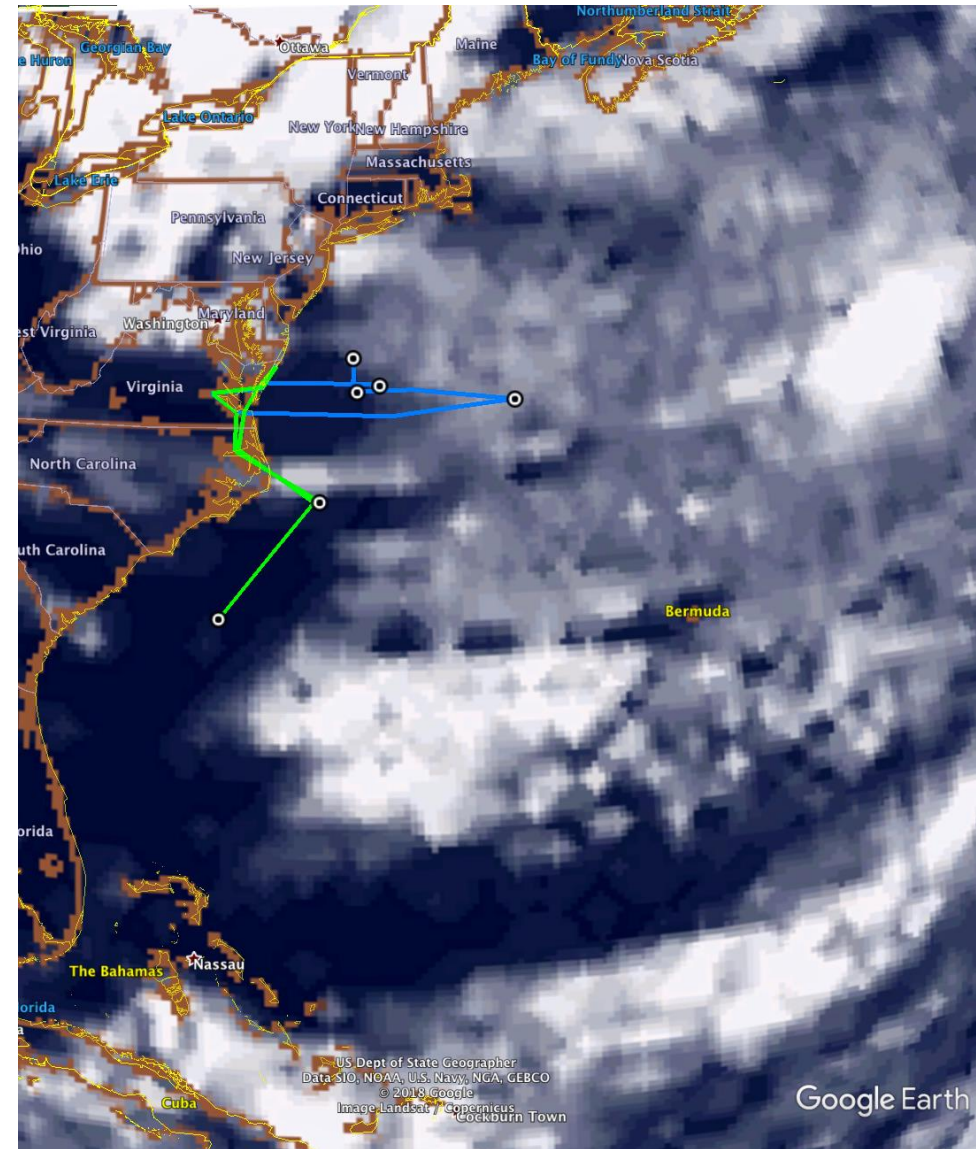
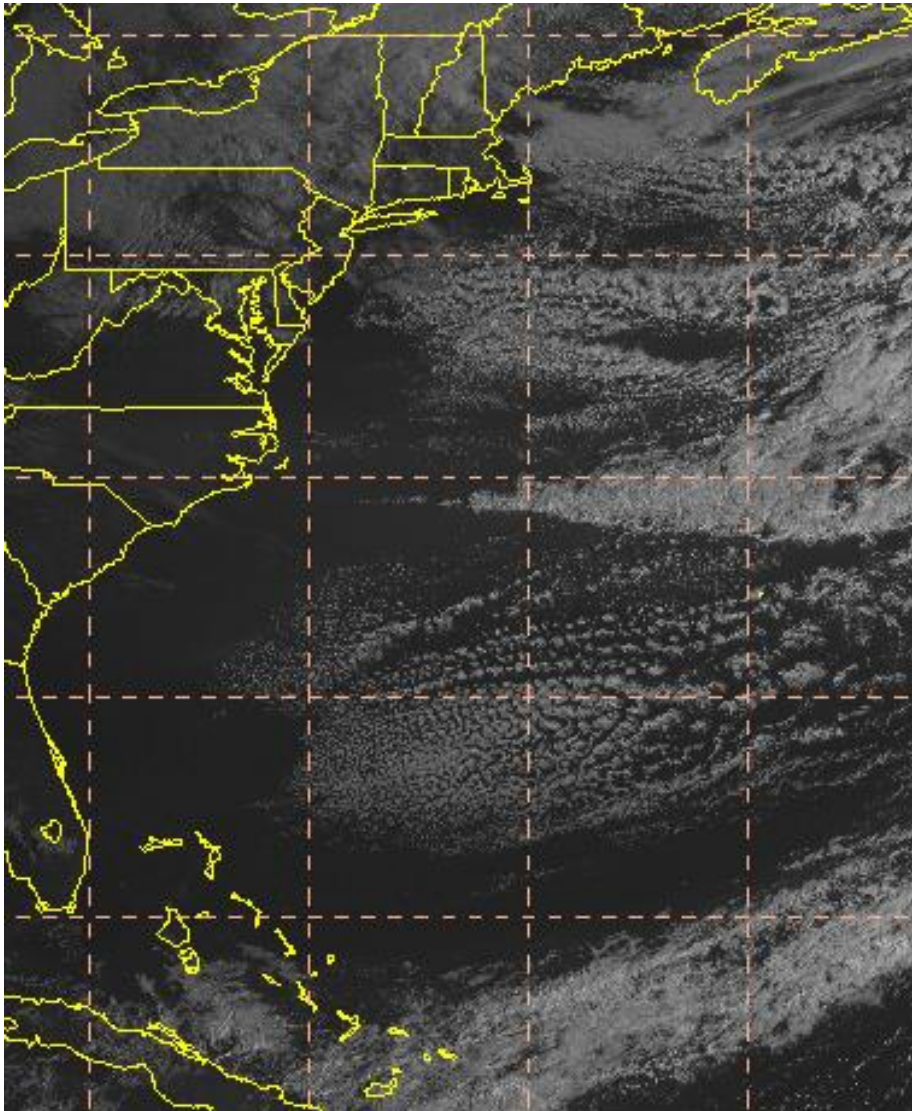
Newfoundland (SOUTH OF 52°N):

Sea ice edge continued to move toward the Newfoundland coast and north of 48°N exposing many icebergs to deterioration in open water. IIP aerial observations and forecasted drift show few icebergs drifting southward near the Flemish Pass holding the Iceberg Limit well within the mid-March median as shown with the dashed line below.

The Iceberg Limit is expected to remain north of 45°N and well within the mid-March median Iceberg Limit (dashed line) over the next seven days. As of 13 March 2018, 20 icebergs have drifted or been sighted south of 48°N in the transatlantic shipping lanes. On average, 85 icebergs drift south of this latitude by the end of March based on data collected between 1900 and 2017.



Cloud Verification – 12:15z observed/12z 4cast



3/18/18 ATF/Science Test Flight

LOW

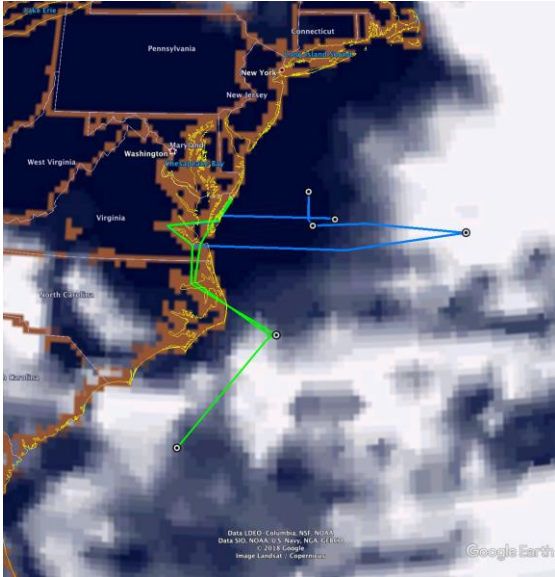
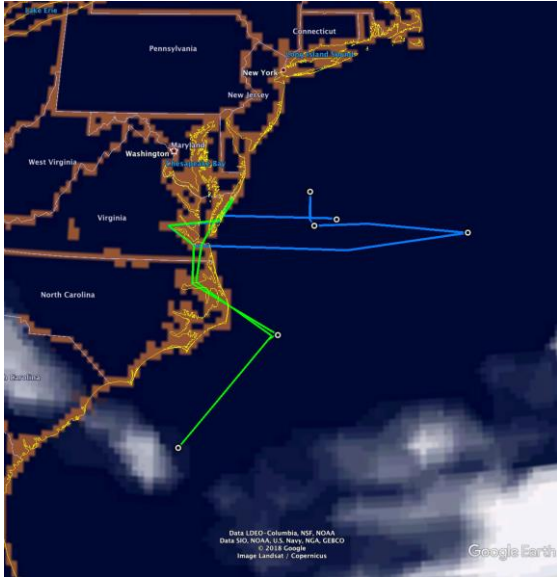
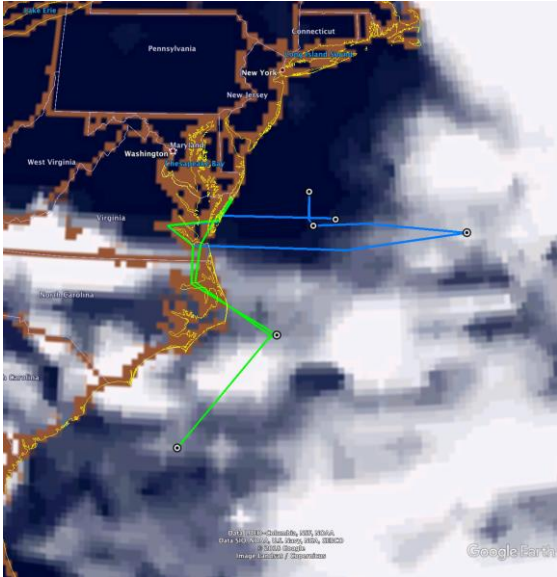
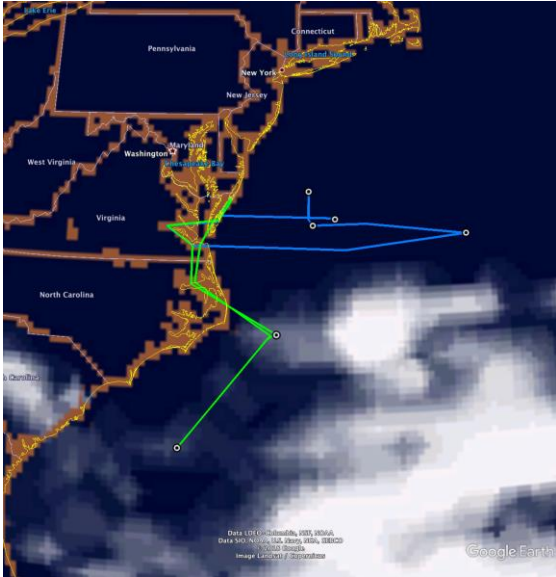
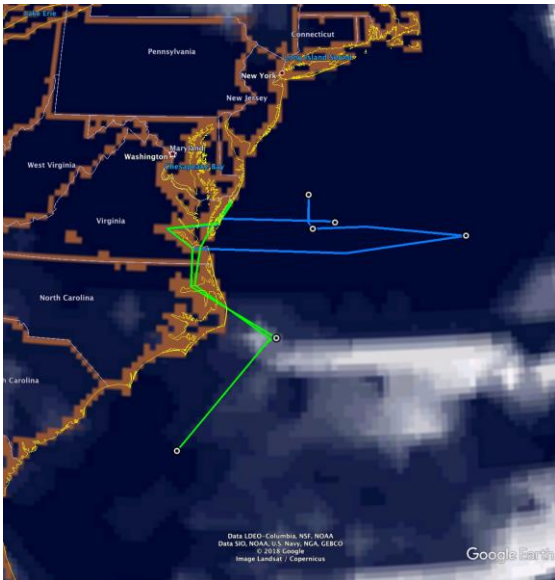
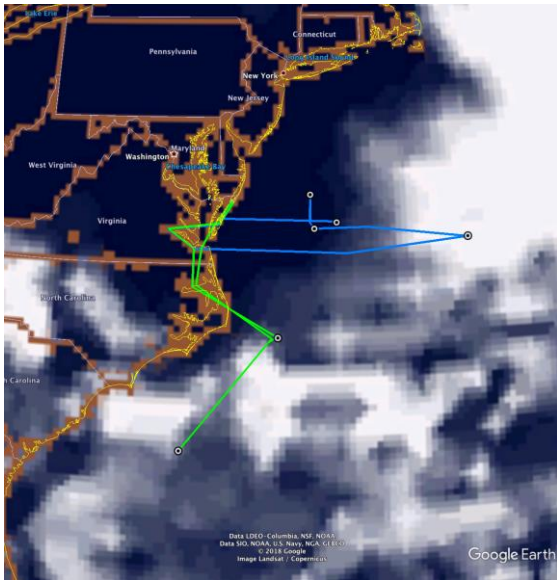
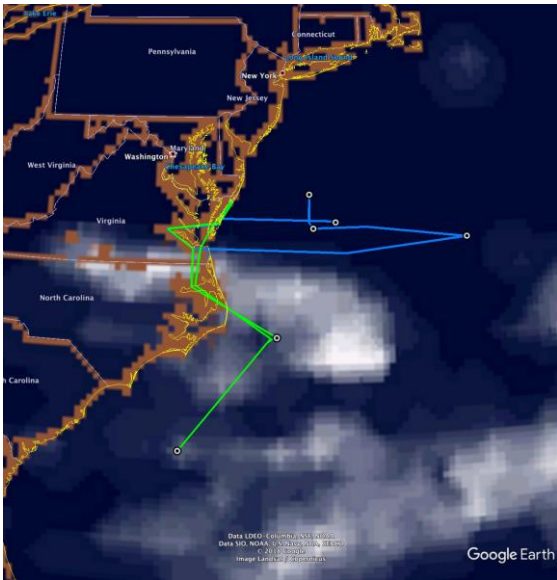
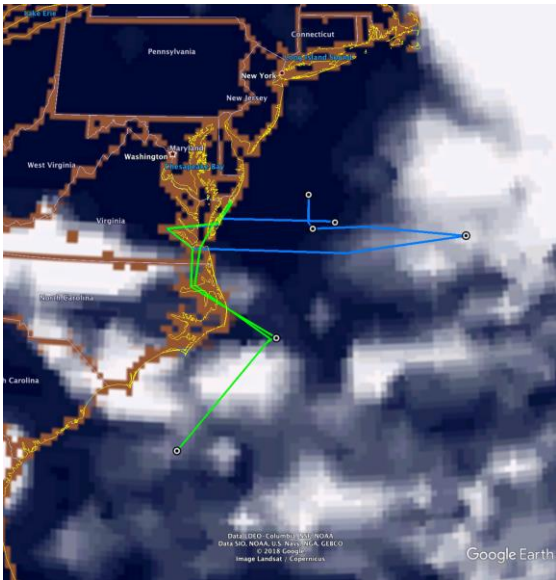
12Z

MID

LOW

18Z

MID



HIGH

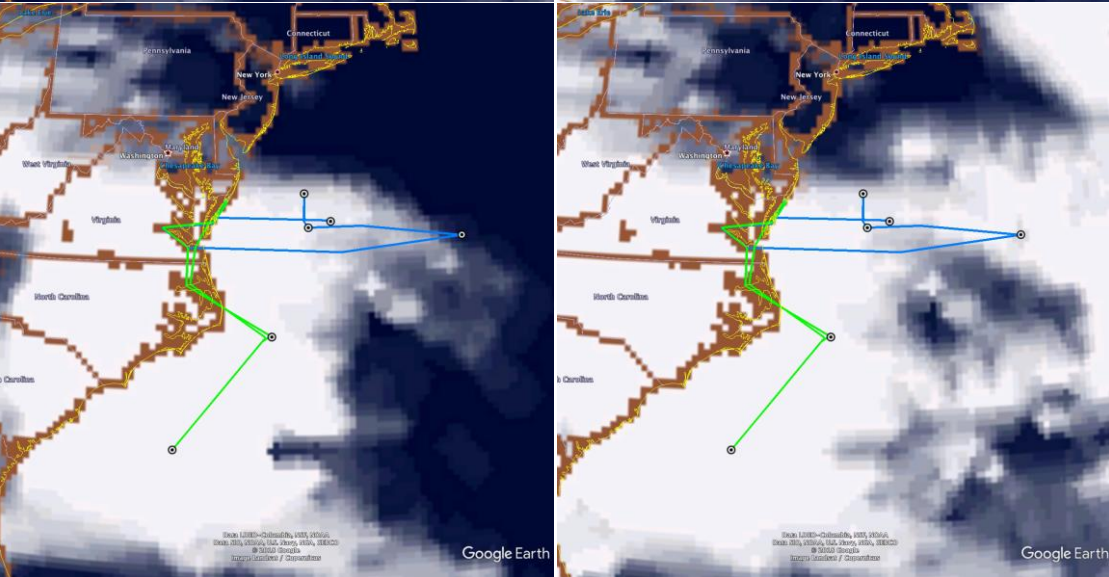
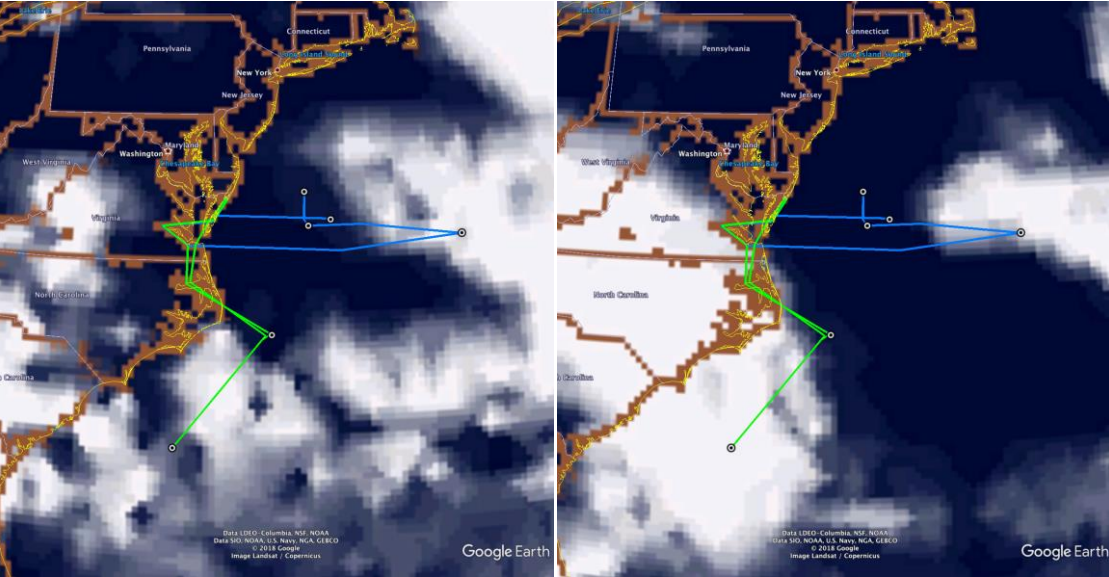
TOTAL

HIGH

TOTAL

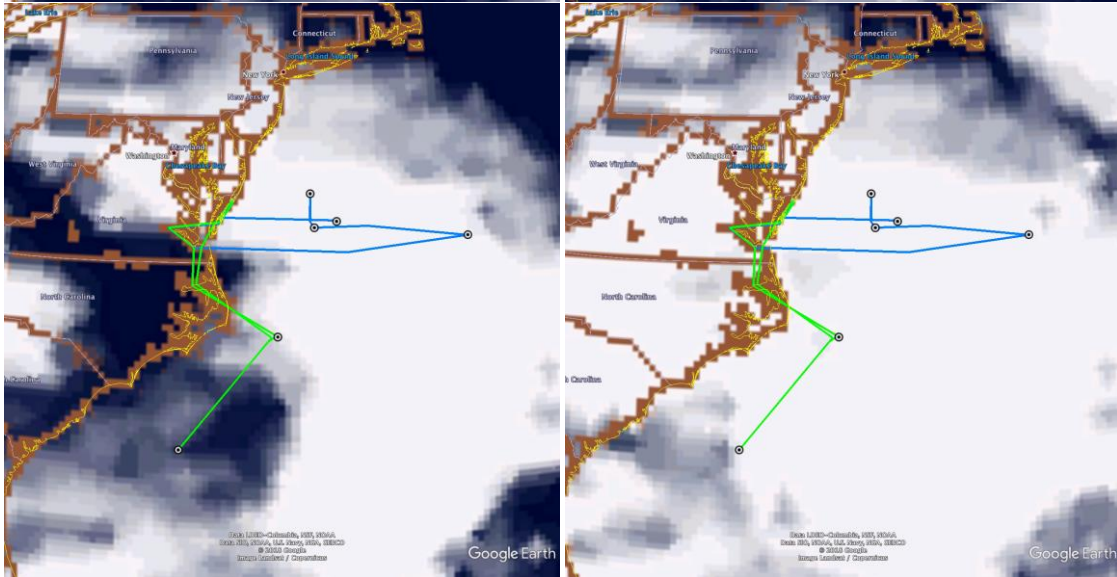
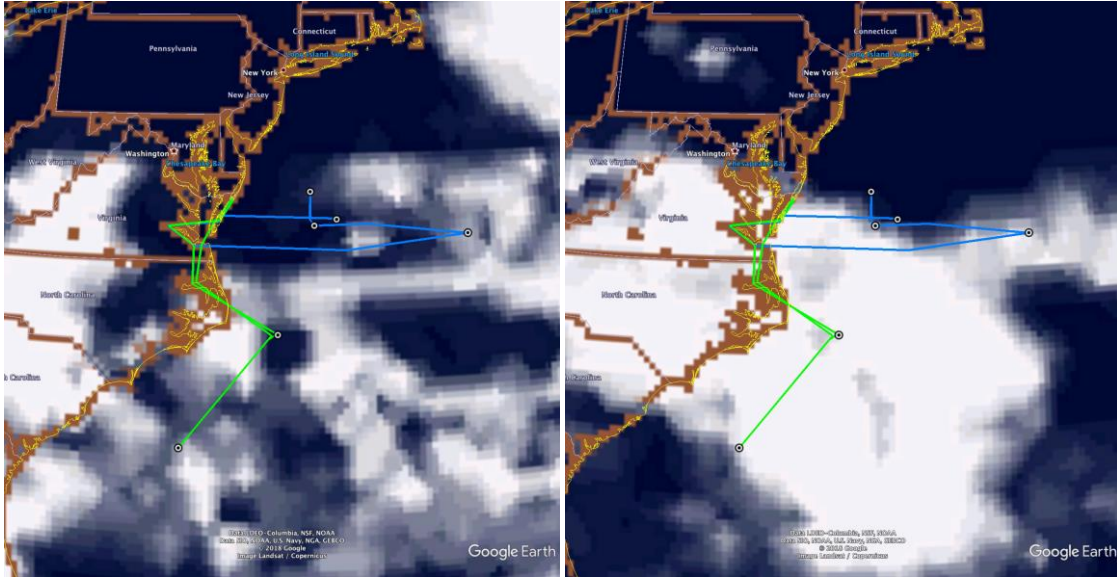
3/19/18 Test Flight

LOW 12Z MID



HIGH TOTAL

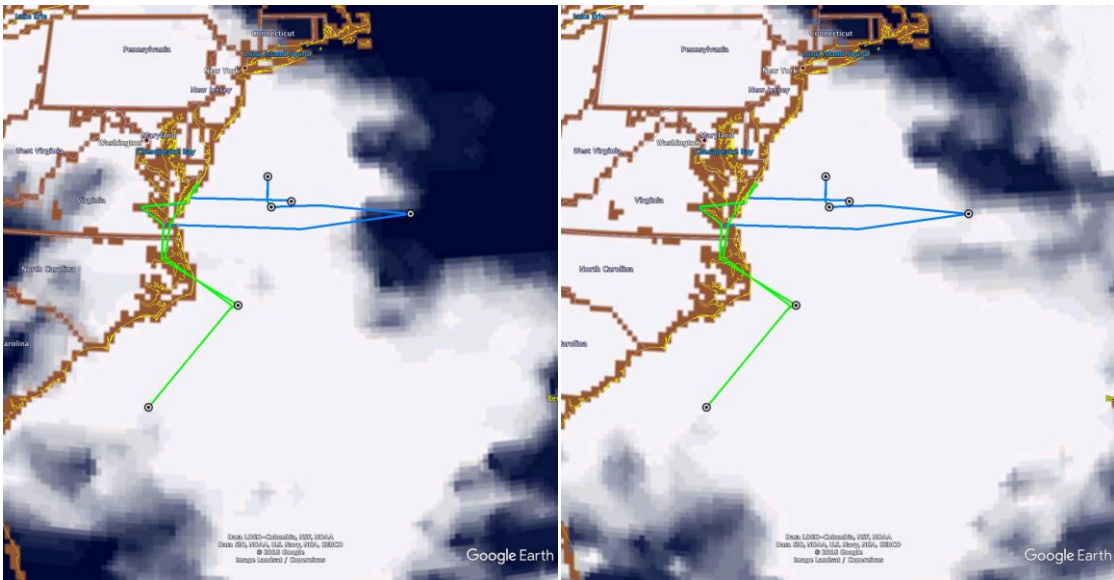
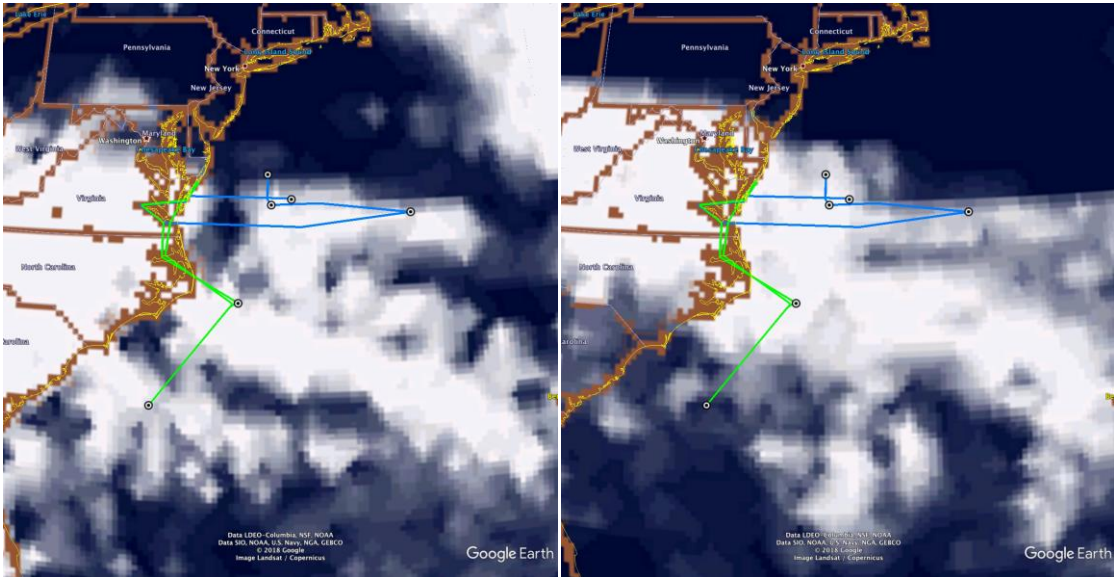
LOW 18Z MID



HIGH TOTAL

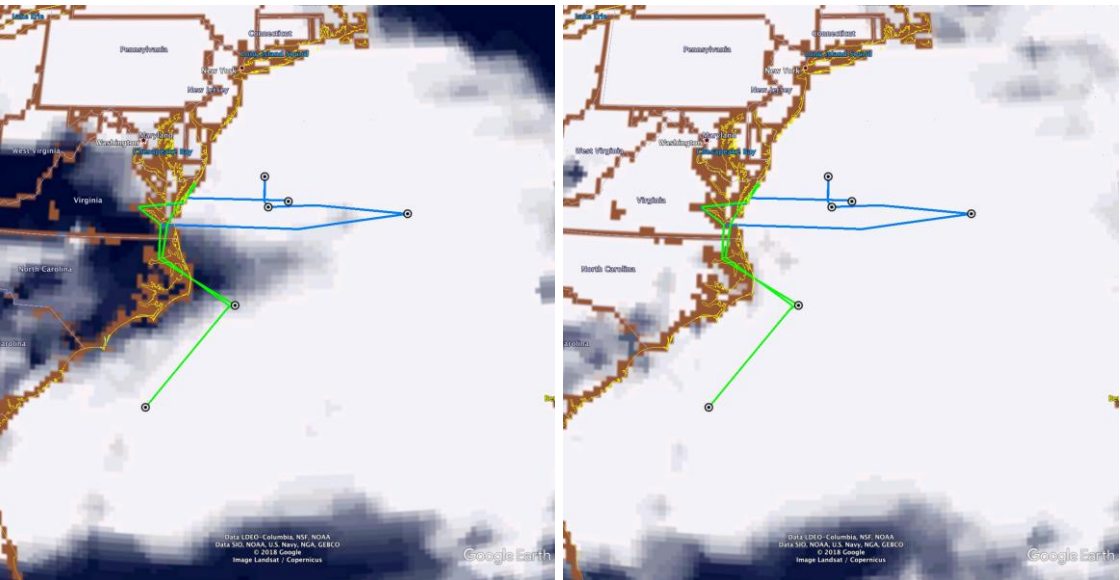
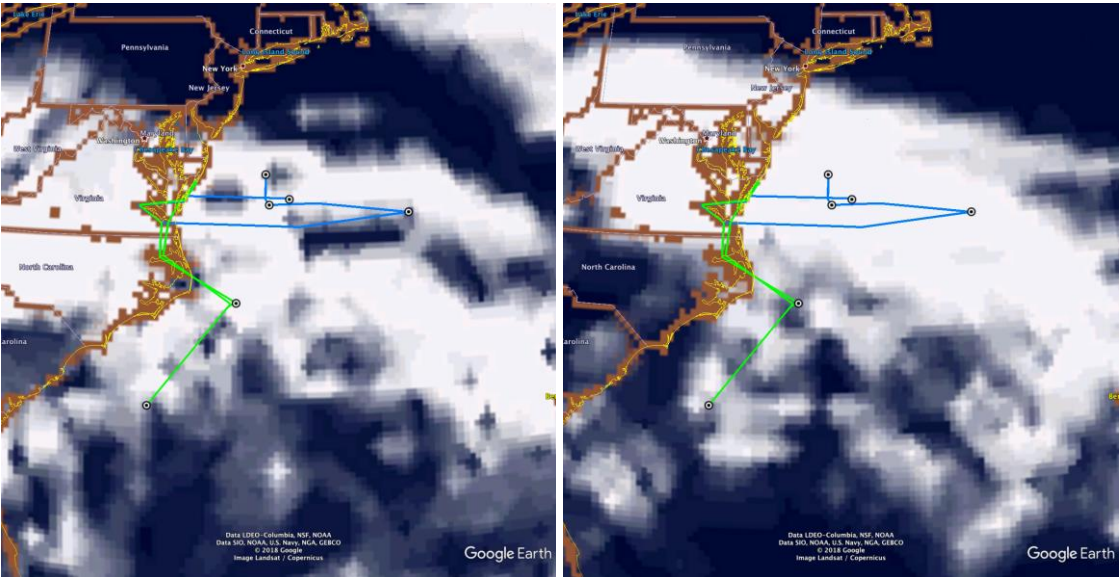
3/20/18 Test Flight

LOW 12Z MID



HIGH TOTAL

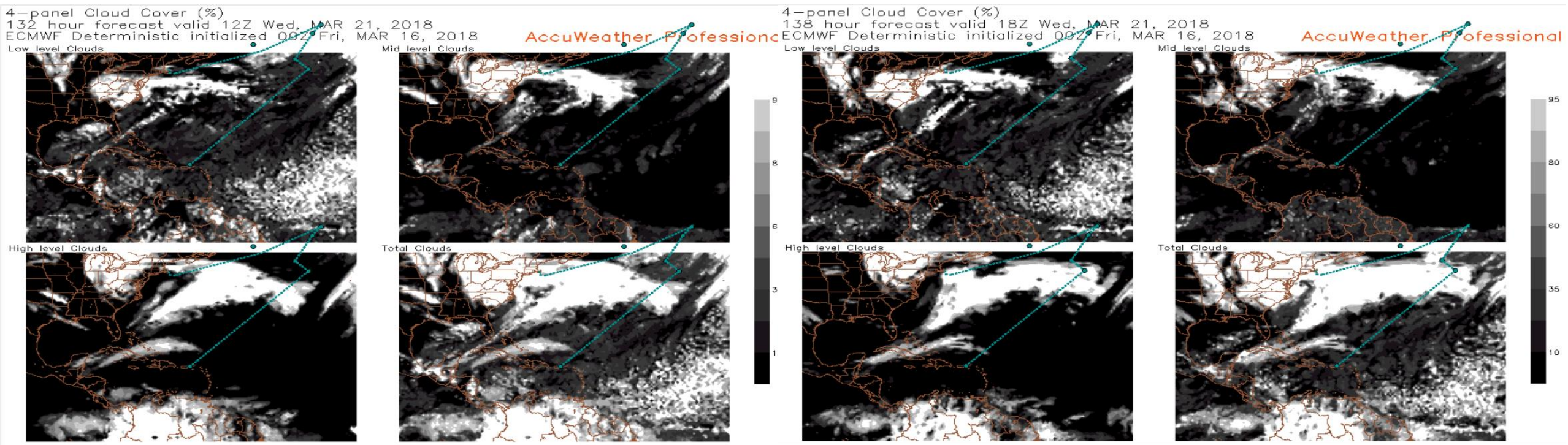
LOW 18Z MID



HIGH TOTAL

3/21/18 Test Flight

LOW 12Z MID LOW 18Z MID



HIGH TOTAL HIGH TOTAL

3/22/18 Test Flight

LOW

12Z

MID

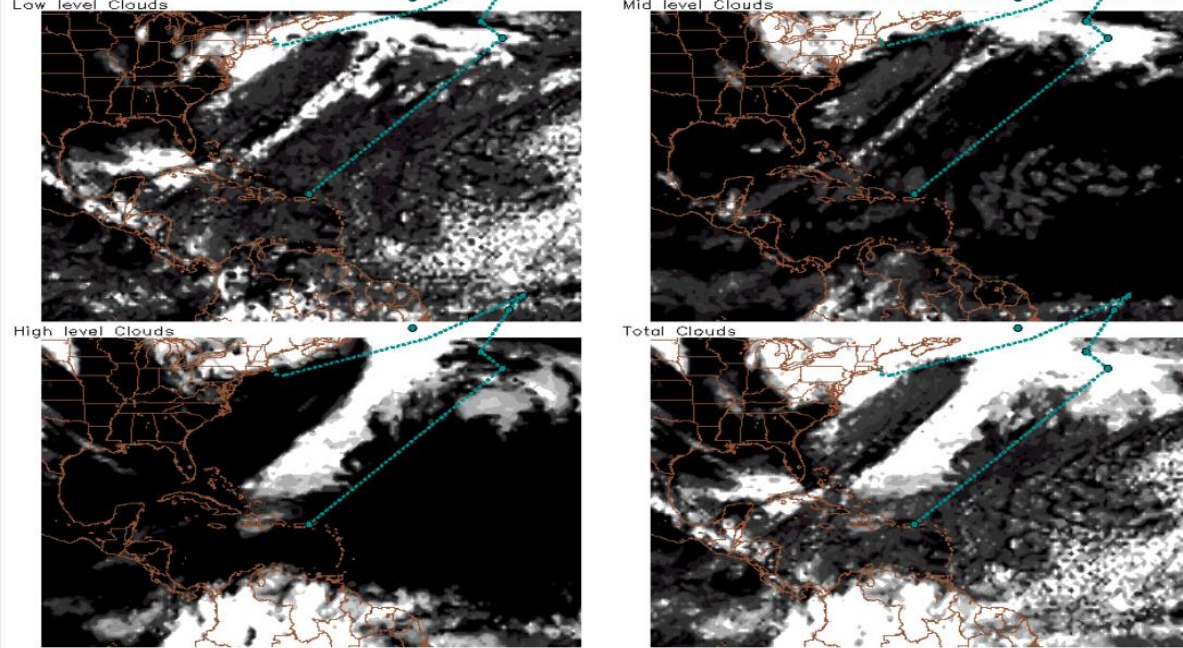
LOW

18Z

MID

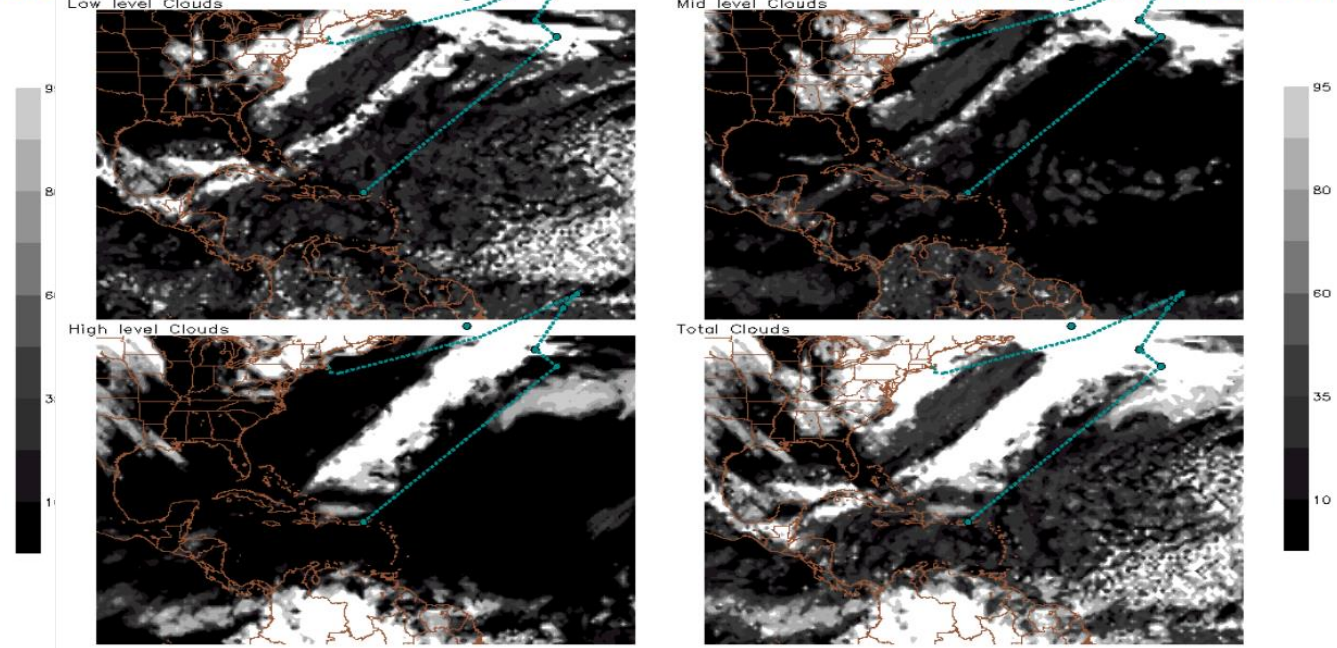
4-panel Cloud Cover (%)
156 hour forecast valid 12Z Thu, MAR 22, 2018
ECMWF Deterministic initialized 00Z Fri, MAR 16, 2018

AccuWeather Professional



4-panel Cloud Cover (%)
162 hour forecast valid 18Z Thu, MAR 22, 2018
ECMWF Deterministic initialized 00Z Fri, MAR 16, 2018

AccuWeather Professional



HIGH

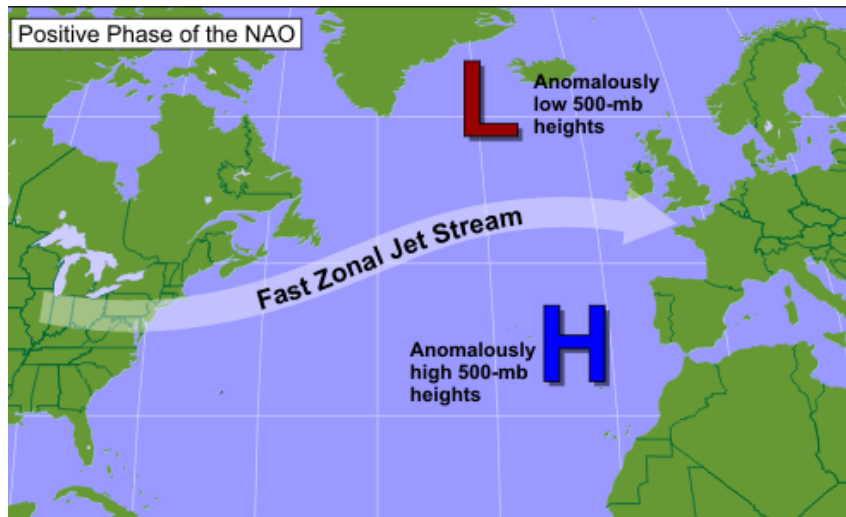
TOTAL

HIGH

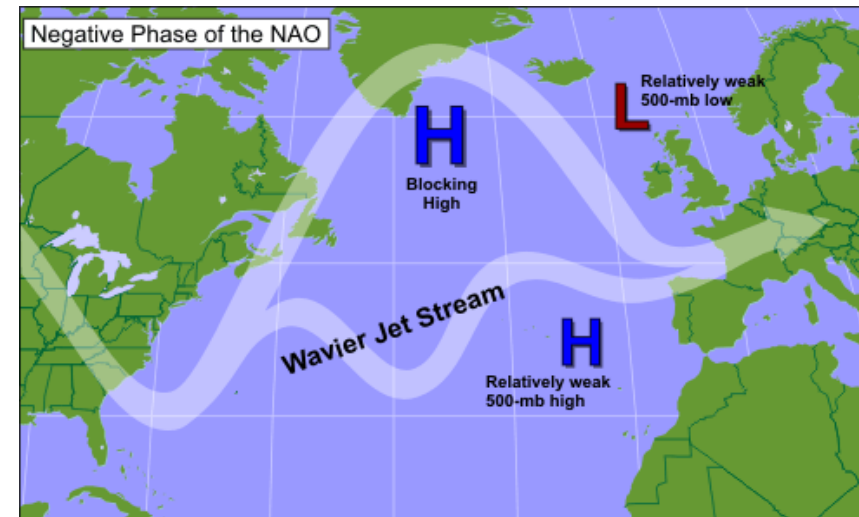
TOTAL

North Atlantic Oscillation

The North Atlantic Oscillation (NAO) is a weather phenomenon in the North Atlantic Ocean of fluctuations in the difference of atmospheric pressure at sea level between the Icelandic low and the Azores high. The fluctuations in the strength of the Icelandic low and the Azores high controls the strength and direction of westerly winds and storm tracks across the North Atlantic, which is important for our mission domain



The positive phase of the NAO is marked by low 500-mb heights near Iceland and high 500-mb heights near the Azores Islands.



The negative phase of the NAO is marked by unusually high 500-mb heights near Iceland, a pattern that typically develops with a blocking ridge or blocking high.

Forecasters track the NAO by comparing the 500-mb heights over the far North Atlantic (near Iceland) with those several thousand miles to the south near the Azores Islands.

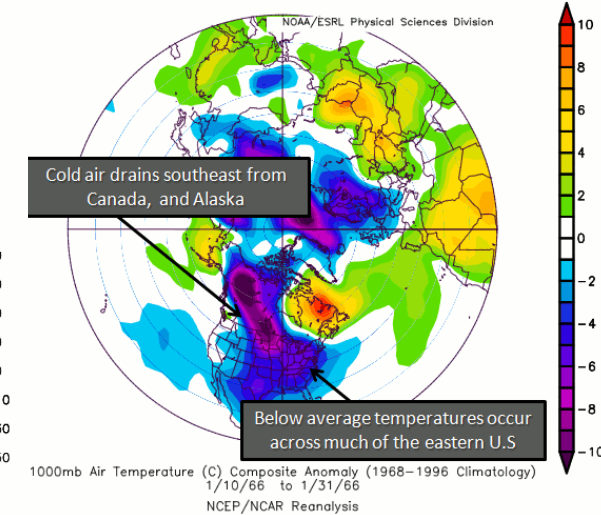
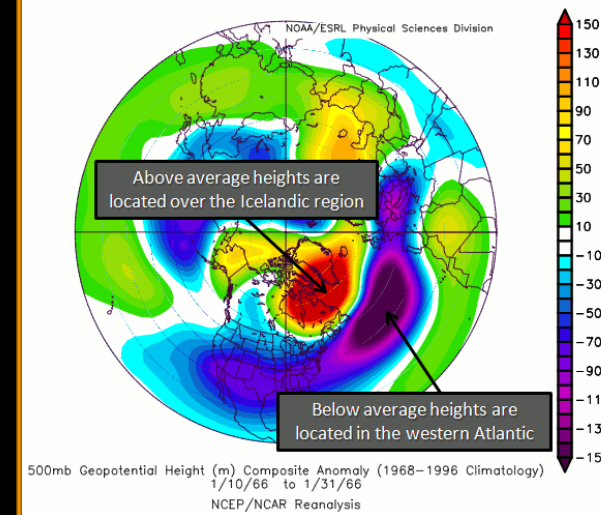
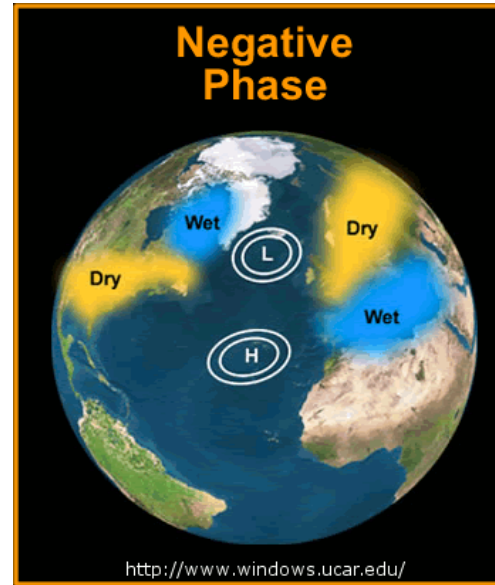
Credit: <https://www.e-education.psu.edu/worldofweather/s15.html>

Negative vs. Positive NAO

Negative NAO

A negative NAO indicates weakening of both the Icelandic low and Azores high, which decreases the pressure gradient across the North Atlantic. This decreased pressure gradient results in a slackening of the westerlies. The decrease in the westerlies allows cold air to build up over Canada, and this combined with below average heights (troughing) over the eastern U.S. gives the cold air a greater chance to move south and affect the eastern United States.

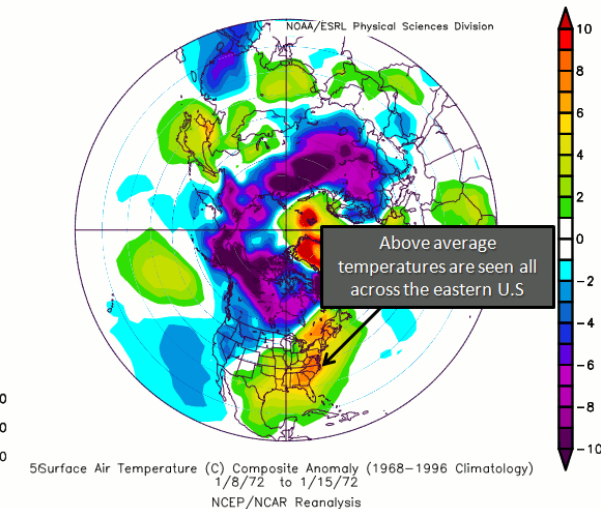
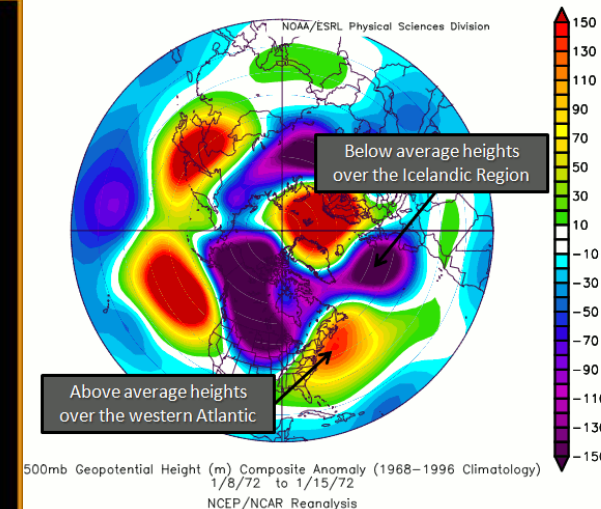
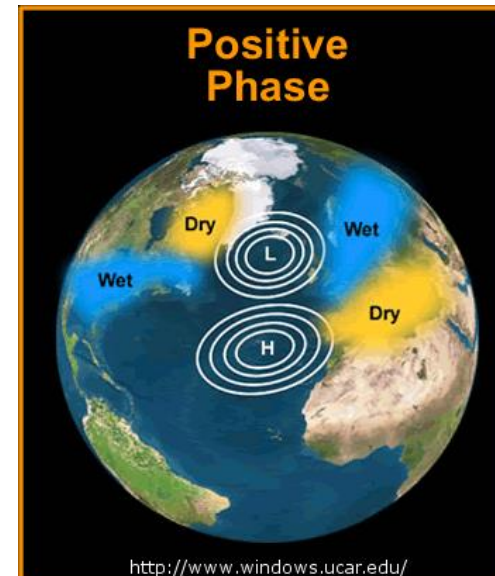
- Below average geopotential heights are often observed over the eastern U.S. during the negative phase of the NAO, which correlates to below average temperatures
- The eastern U.S. typically receives colder, drier air masses during the winter season in this phase



Positive NAO

During a positive NAO there is a strengthening of the Icelandic low and Azores high. This strengthening results in an increased pressure gradient over the North Atlantic, which cause the westerlies to increase in strength. The increased westerlies allow cold air to drain off the North American continent rather than letting it build up and move south.

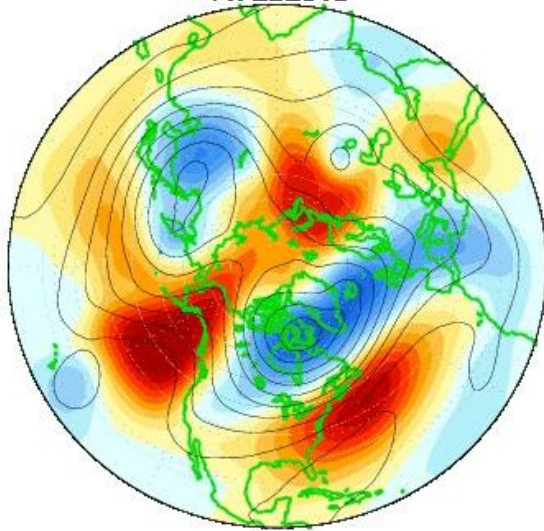
- Above average geopotential heights are observed over the eastern U.S., which correlates to above average temperatures
- The eastern U.S. often sees a wetter pattern with stronger storms during the winter season in this phase due to increased upper level winds



Current NAO

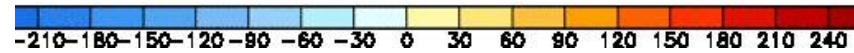
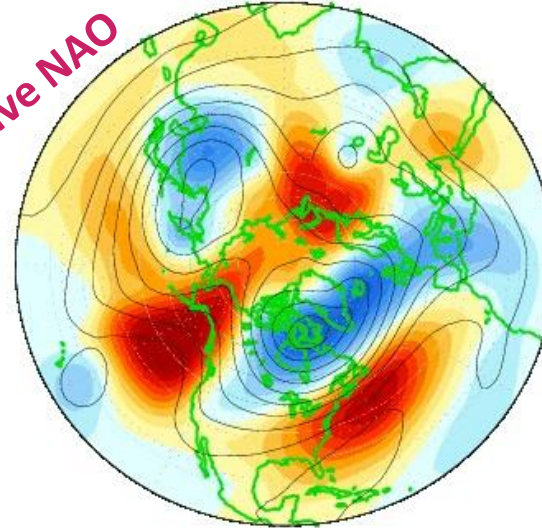
Will animate in slideshow

CDAS 500-hPa HT Anoms (5d rm)
11FEB2018



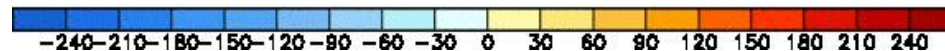
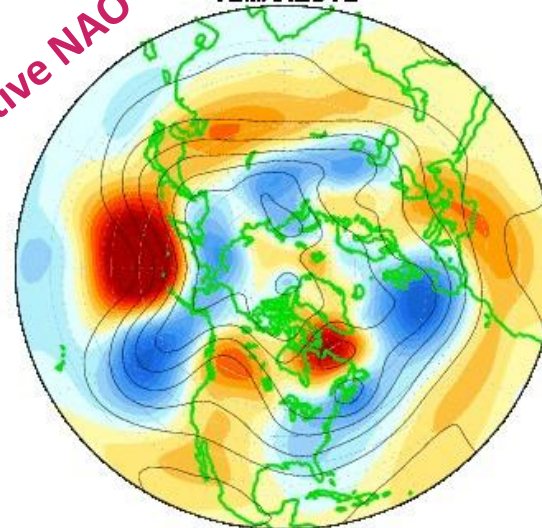
CDAS 500-hPa HT Anoms (5d rm)
11FEB2018

Positive NAO



CDAS 500-hPa HT Anoms (5d rm)
12MAR2018

Negative NAO



NAO: Observed & ENSM forecasts

