

## DISCOVER-AQ Outlook for Sunday, July 3, 2011

Despite a forecast high-temperature day tomorrow in the Baltimore-Washington area, considerable cloud cover will prevent ozone from reaching the high values seen today. Code Yellow ozone is forecast for tomorrow in the Baltimore area and borderline Code Yellow/Orange in the DC area. The GEOS-5 aerosol forecast brings considerable smoke aerosol into the region on Sunday with AOT possibly reaching values over 1.0. However, cloud cover may prevent us from seeing much of this aerosol plume. The NAM model produces broken to overcast high clouds in the morning and the possibility of thunderstorms in the afternoon. These clouds and possible storms are associated with a frontal system approaching from the west. Therefore, we have decided not to fly on Sunday. The front will stall just to the southeast of the DC area, and will lead to continued high cloudiness on Monday. Therefore, tomorrow we will need to revisit the forecast for Monday, July 4.

# Recommendations for July 3rd-July 6<sup>th</sup>:

Sun., July 3: **No Fly, Hot but Considerable Cloudiness**

Mon., July 4: **Perhaps No Fly (clouds) – to be updated tomorrow**

Tues., July 5: **Perhaps Fly, Cooler, less clouds**

Wed., July 6: **Perhaps Fly -- clouds increasing**

Clare Flynn

July 2, 2011

# Code Orange Ozone Alert Today

– 1 hr Ozone at 9 AM: 80 ppbv Edgewood

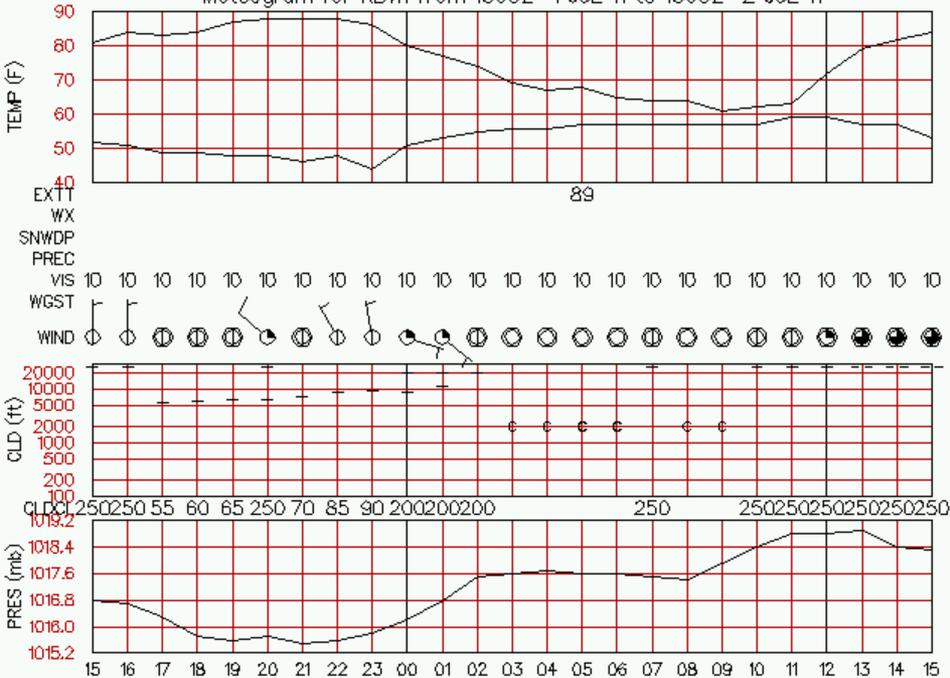
79 Beltsville

75 Padonia

- 8-hr Ozone: Code **Orange** reached at Essex, Edgewood and Beltsville by 2 PM; Code **Red** at Edgewood at 3 PM.

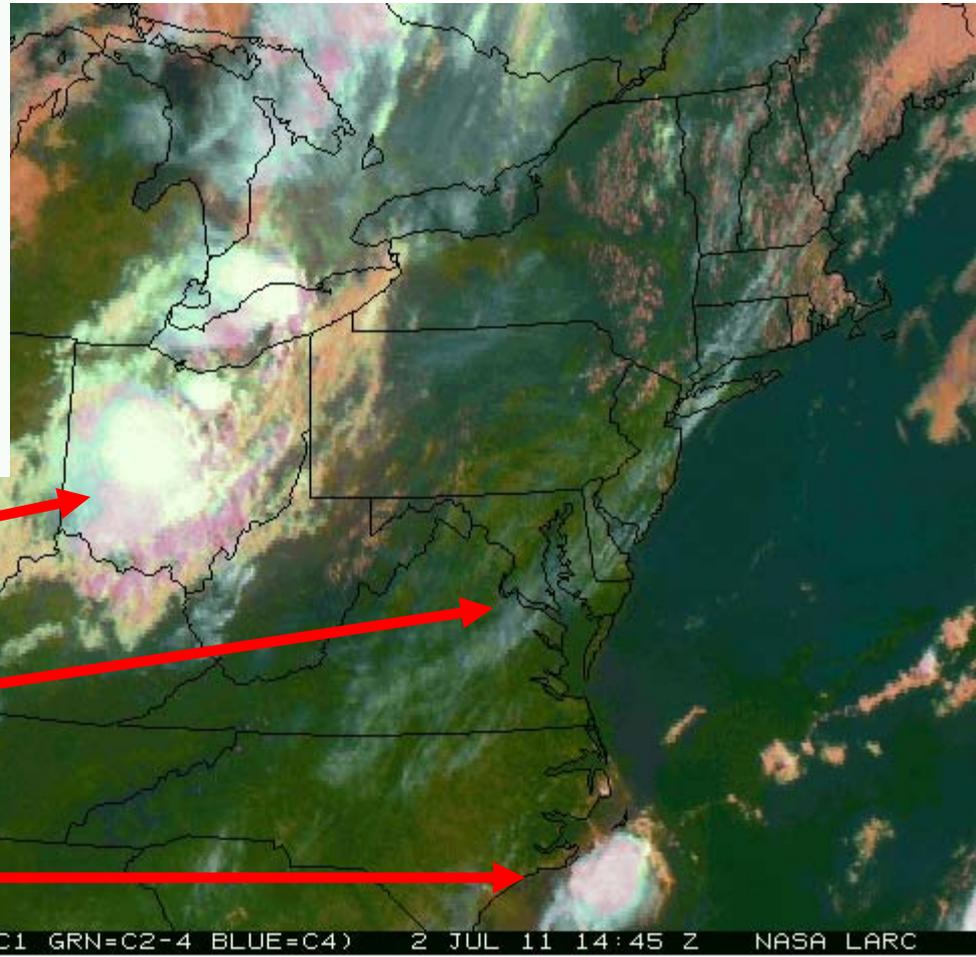
**Plymouth State Weather Center**

Meteorgram for KBWI from 1500Z 1 JUL 11 to 1500Z 2 JUL 11



# Current Conditions

- Broken clouds above 20,000 ft
- Temp – mid 80s, Dew – mid 50s
- SLP – 1018 mb and falling slowly

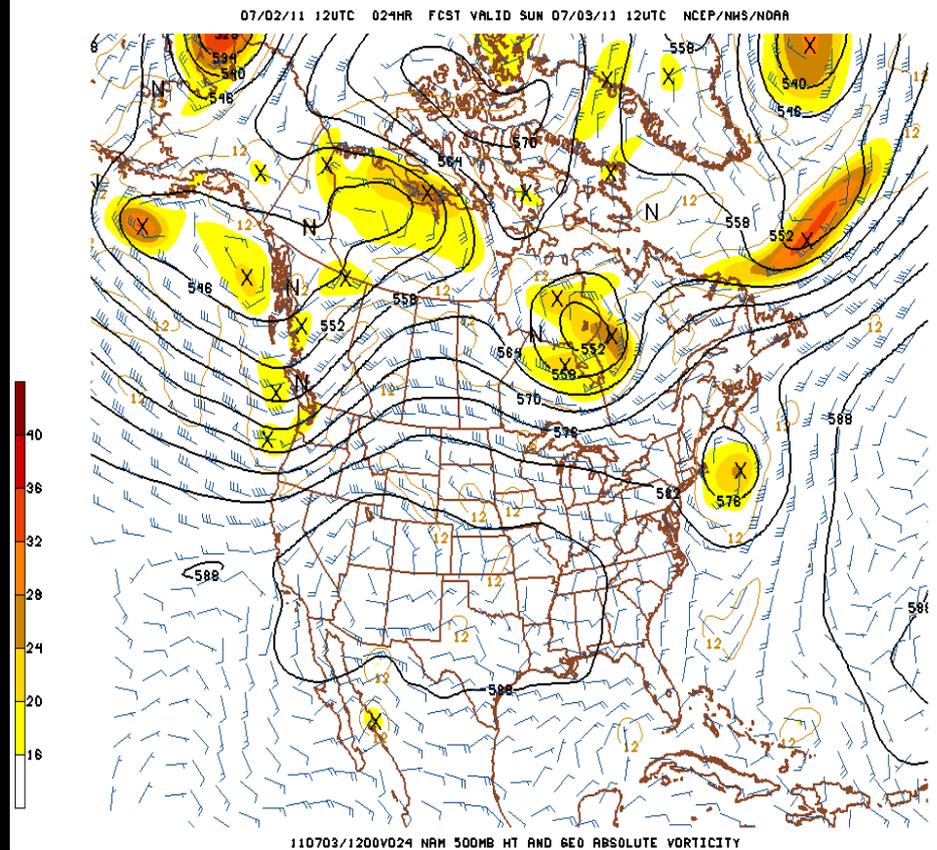
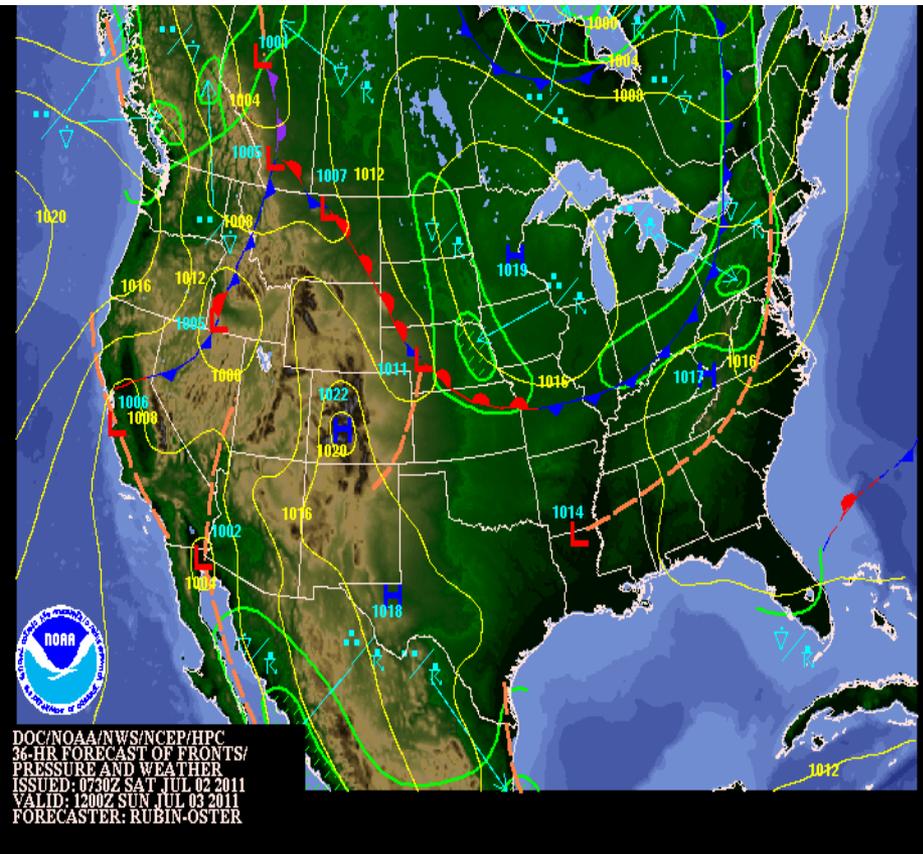


• Convection in OH

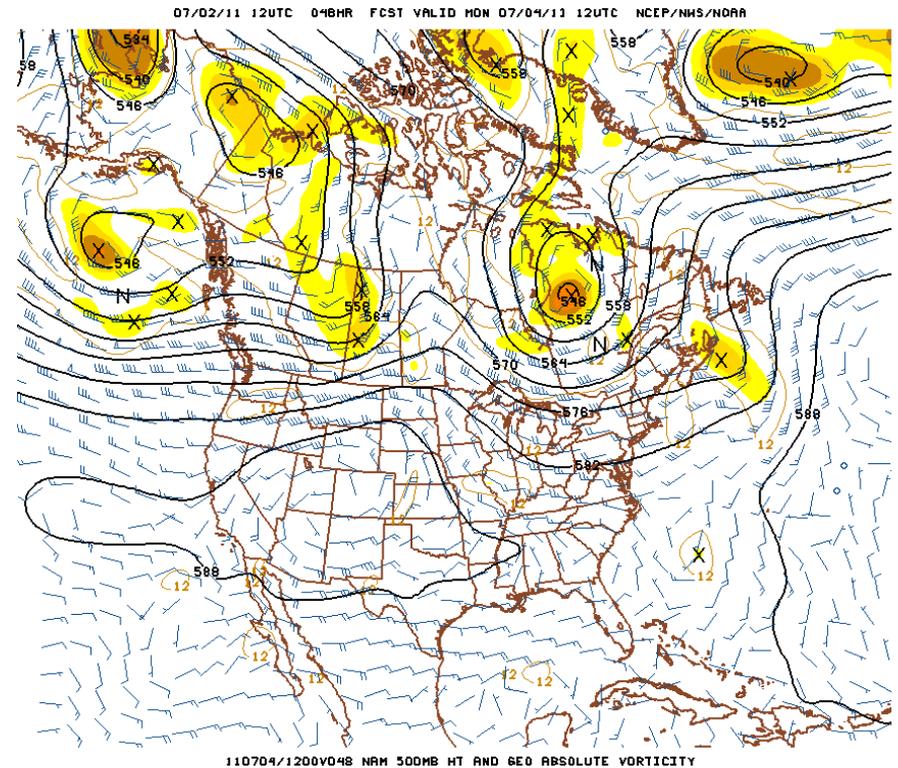
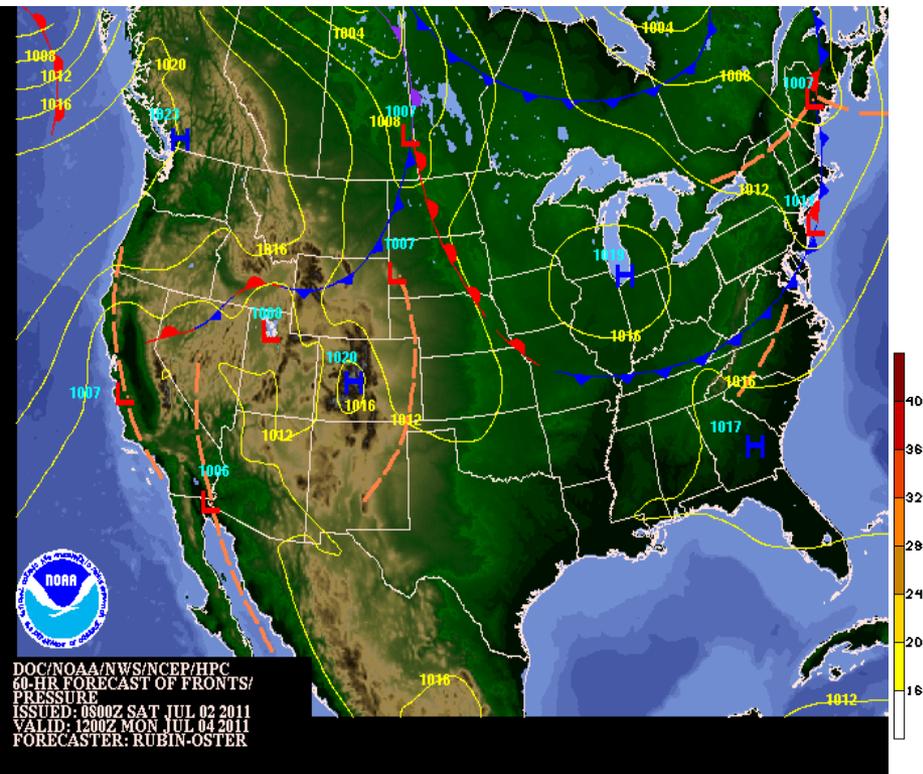
• Thin line of opaque Ci pushing to SE

• Fires in NC

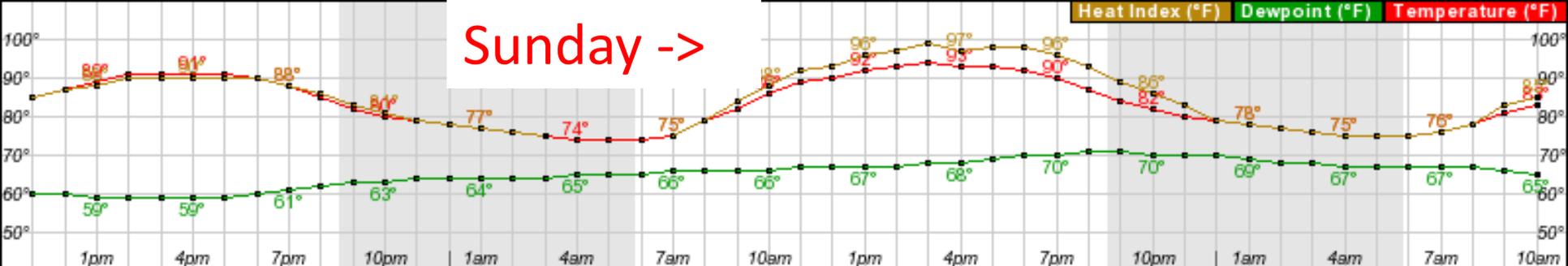
# Sunday: Hot. Chance of showers. Cold front brings clouds and scattered convection.



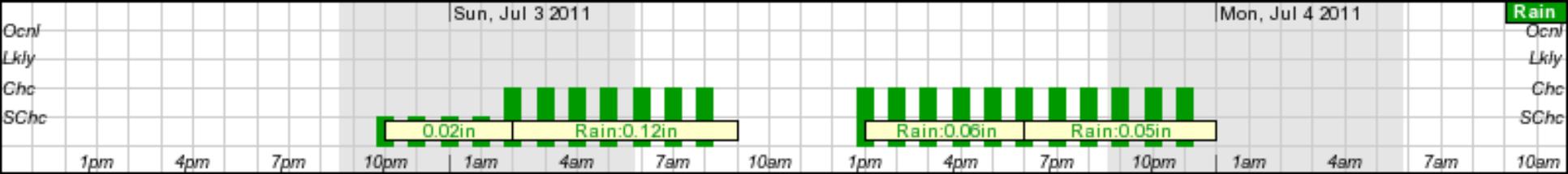
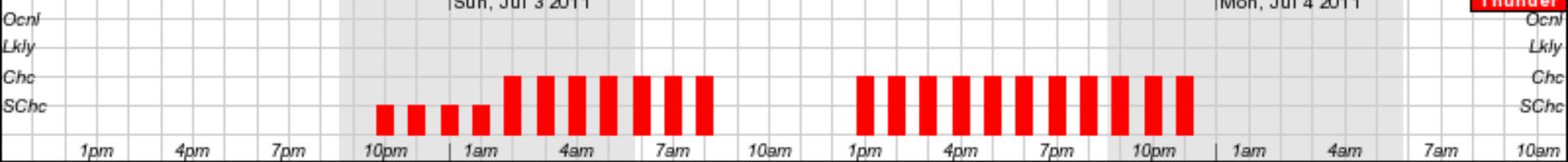
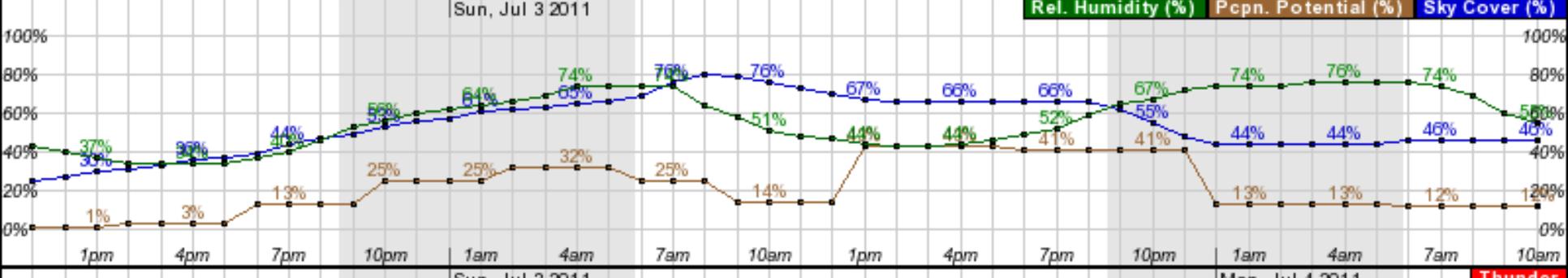
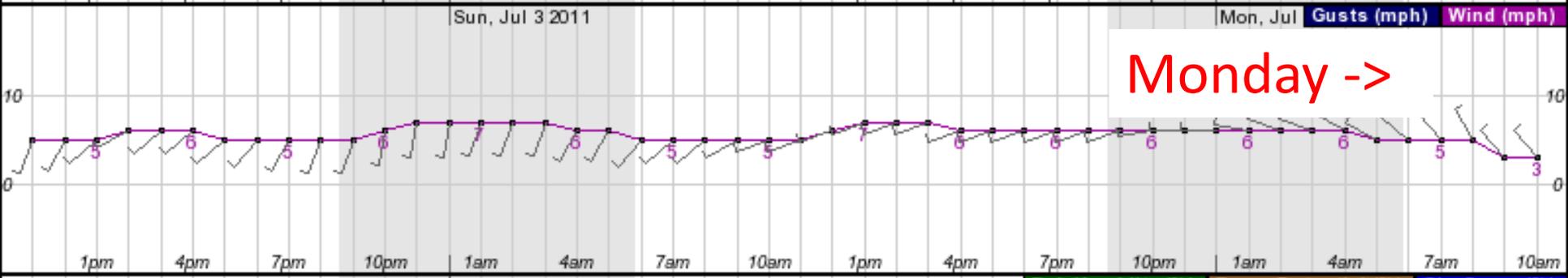
# Monday: Hot but lower humidity. Cold front stalls south of region.



Sunday ->

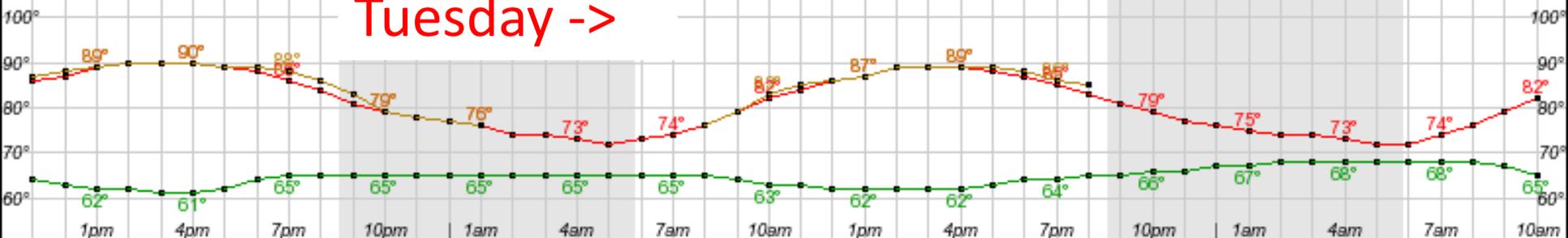


Monday ->



Tuesday ->

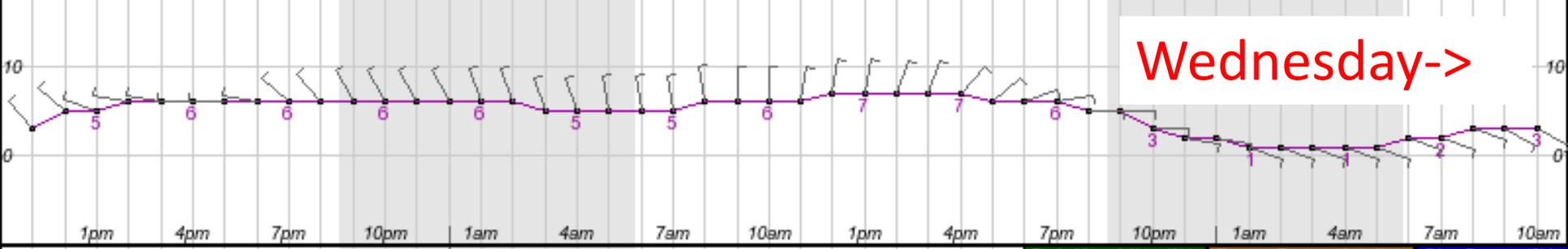
Heat Index (°F) Dewpoint (°F) Temperature (°F)



Tue, Jul 5 2011

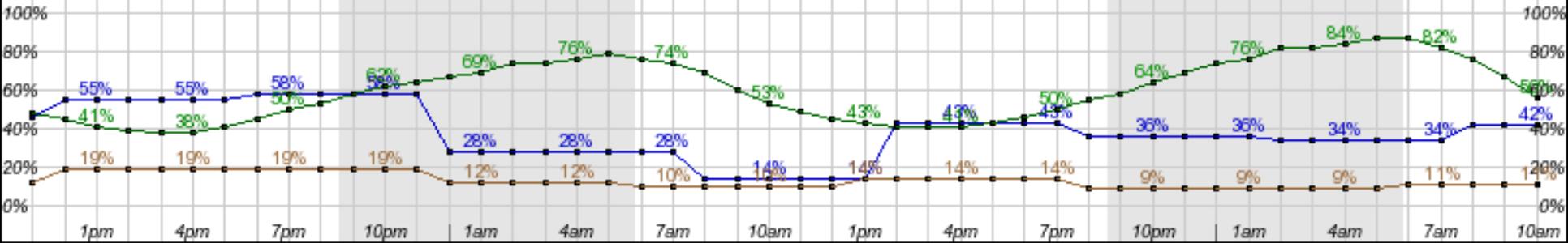
Wed, Jul 6 2011

Wednesday ->



Tue, Jul 5 2011

Rel. Humidity (%) Pcpn. Potential (%) Sky Cover (%)



Tue, Jul 5 2011

Wed, Jul 6 2011

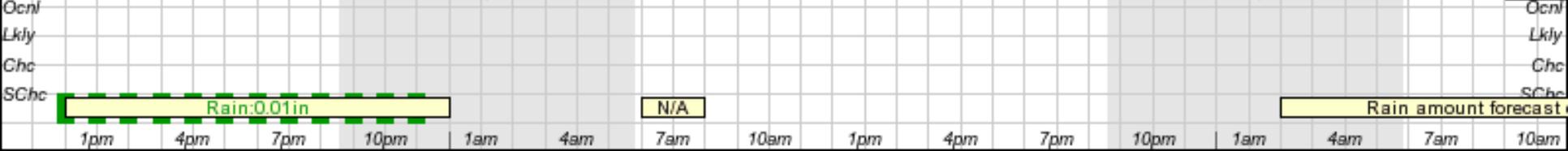
Thunder



Tue, Jul 5 2011

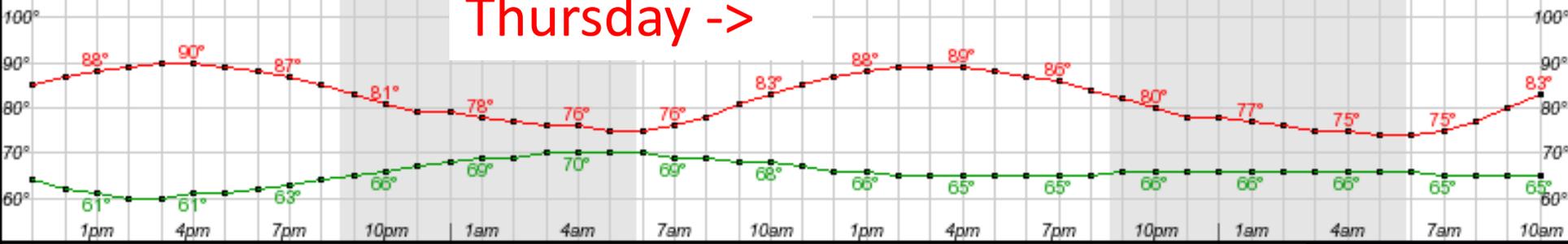
Wed, Jul 6 2011

Rain



# Thursday ->

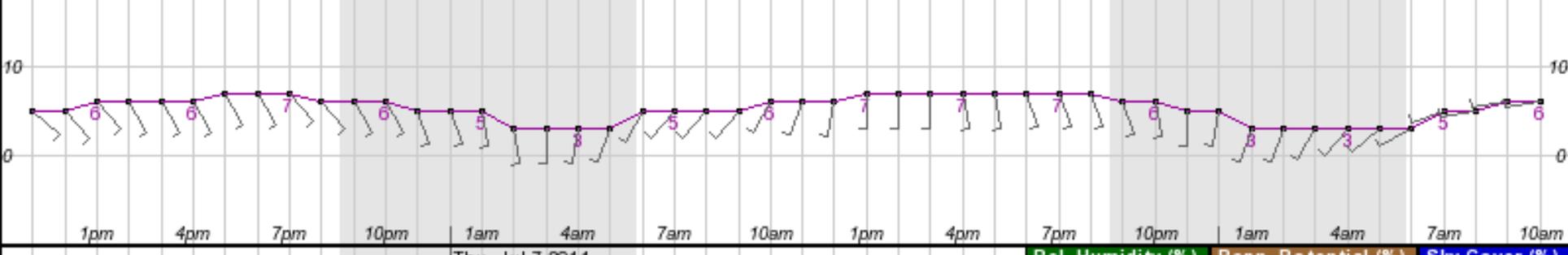
Heat Index (°F) Dewpoint (°F) Temperature (°F)



Thu, Jul 7 2011

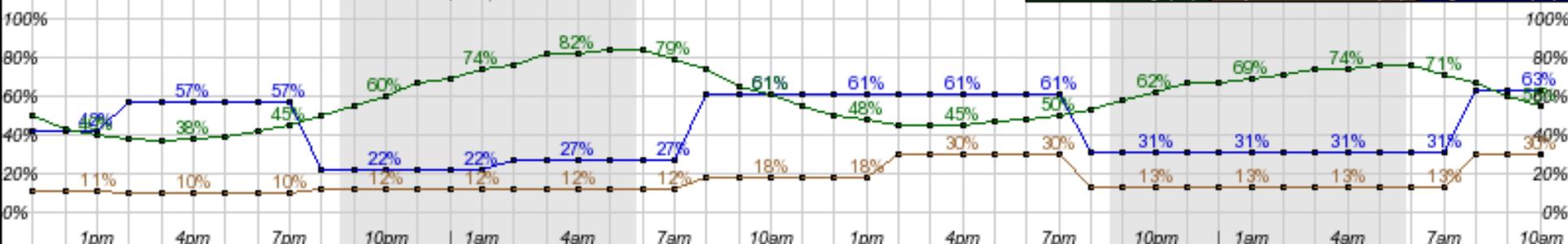
Fri, Jul 8

Gusts (mph) Wind (mph)



Thu, Jul 7 2011

Rel. Humidity (%) Pcpn. Potential (%) Sky Cover (%)



Thu, Jul 7 2011

Fri, Jul 8 2011

Thunder



Thu, Jul 7 2011

Fri, Jul 8 2011

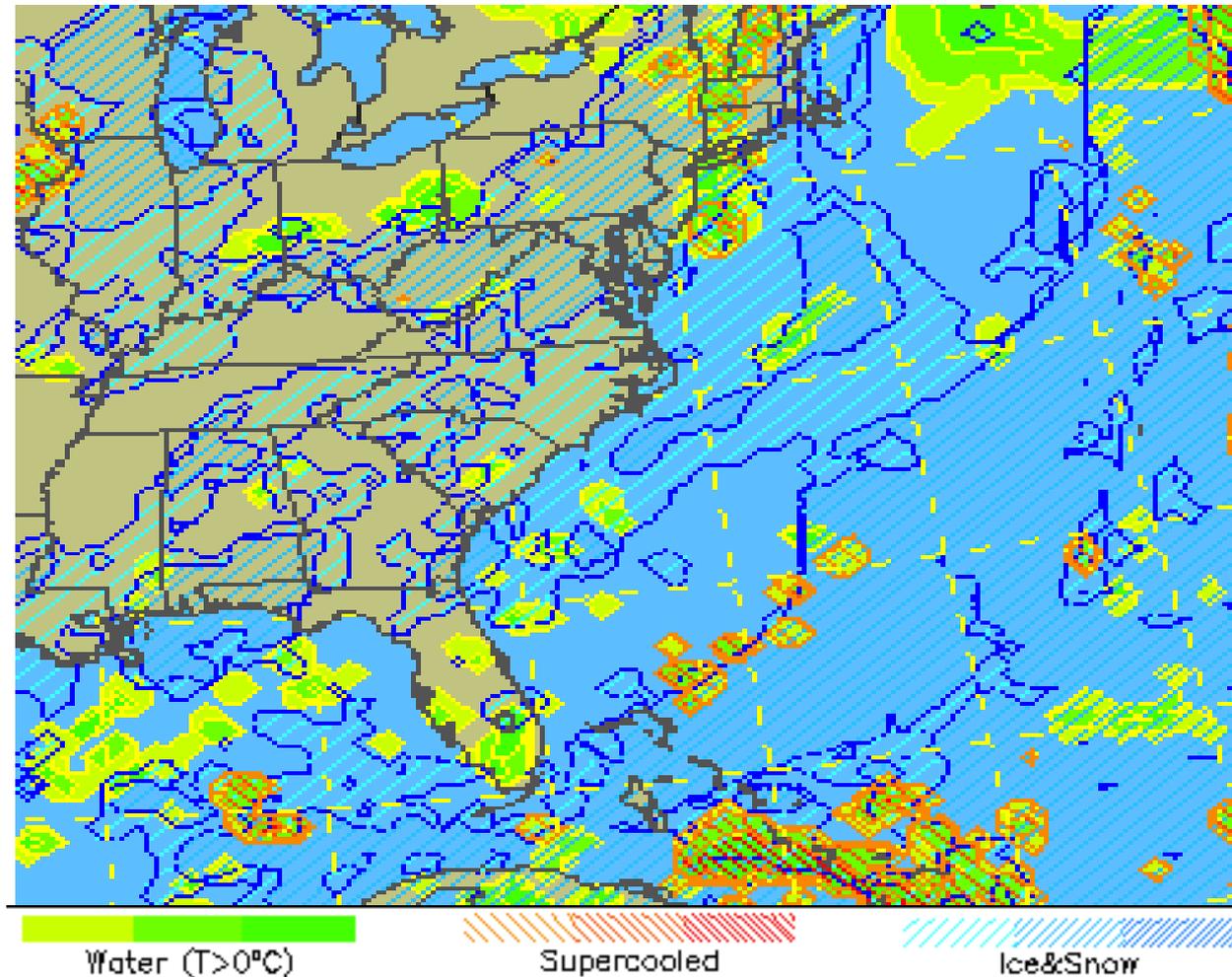
Rain



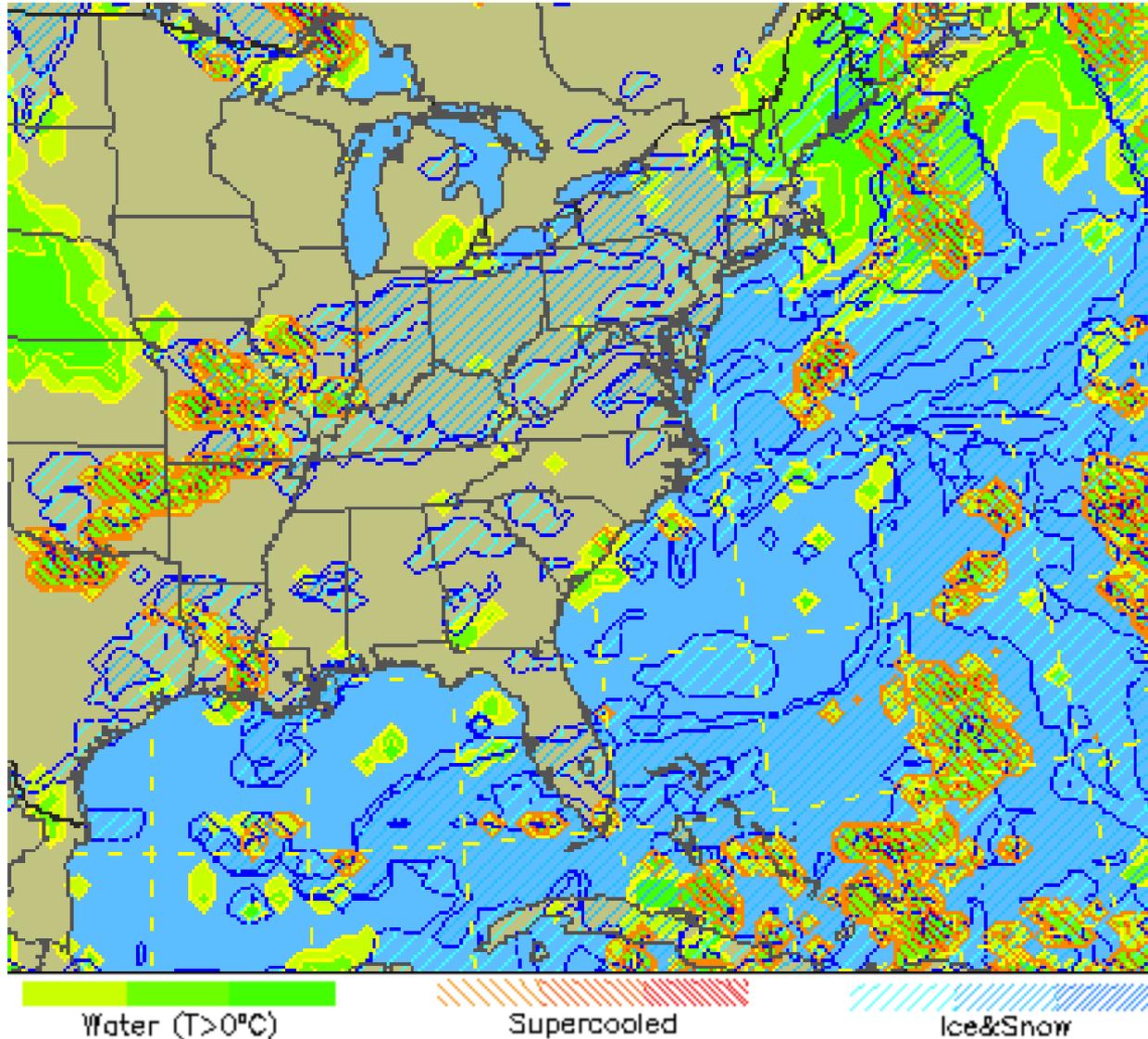
Rain amount forecast data is unavailable for this period



Sunday 2pm: Presence of high clouds (above 18,000ft) throughout day

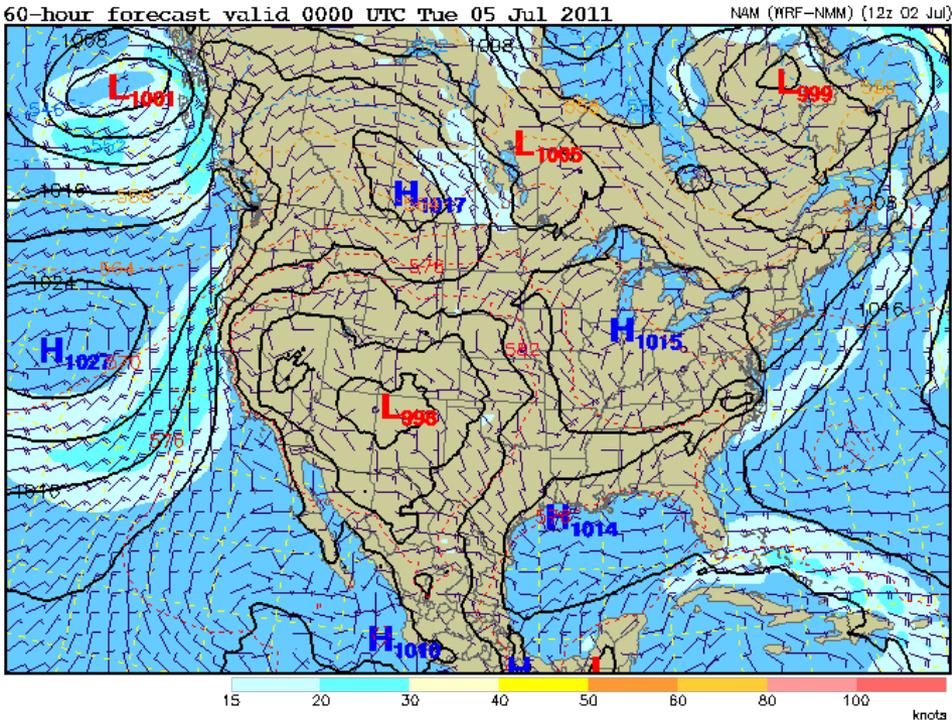


Monday 8am: High clouds present through at least morning (NCAR NAM); NWS predicts clouds by 2pm

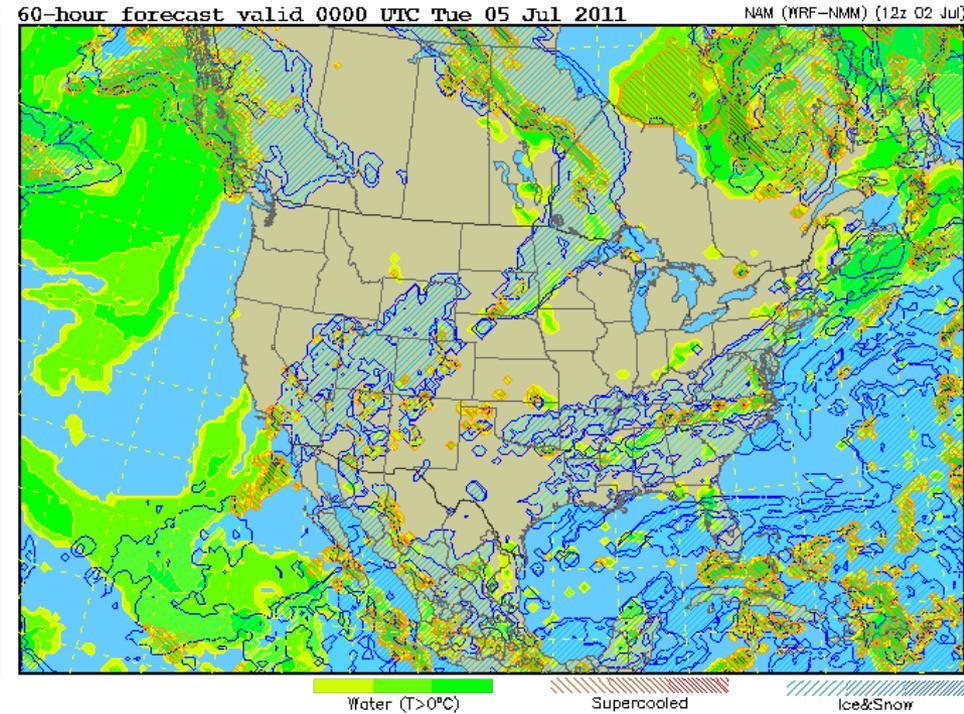


# NAM – MSLP and Clouds Monday Evening

Surface (10m) Wind Speed (knots) / MSLP (mb)

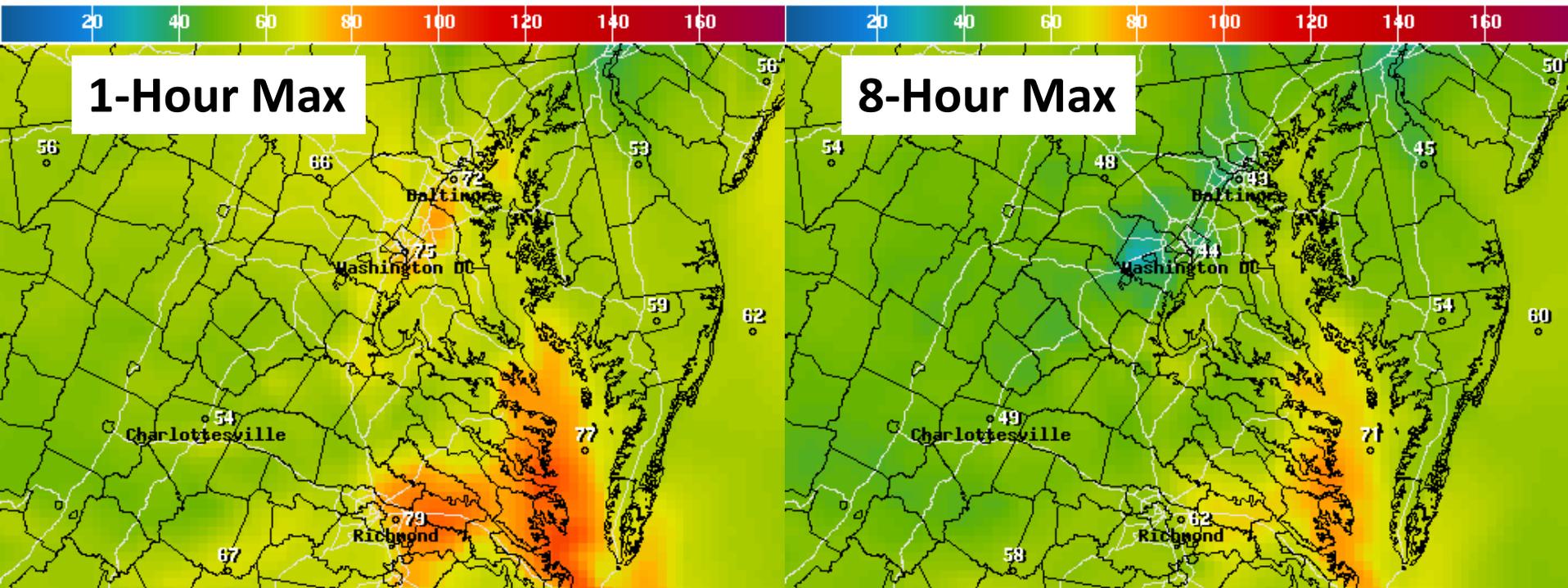


Integrated liquid and frozen hydrometeors (all levels)



- Front associated with Low in Canada moves out to the east
- Lingering high-level clouds throughout the day

# Sunday: Ozone in upper good/lower moderate range due to clouds/frontal passage



Maximum 1Hr Ozone (PPB) Ending Mon Jul 04 2011 12AM EDT  
(Mon Jul 04 2011 04Z)

Maximum 8hr Ozone (PPB) Ending Mon Jul 04 2011 3AM EDT  
(Mon Jul 04 2011 07Z)

National Digital Guidance Database

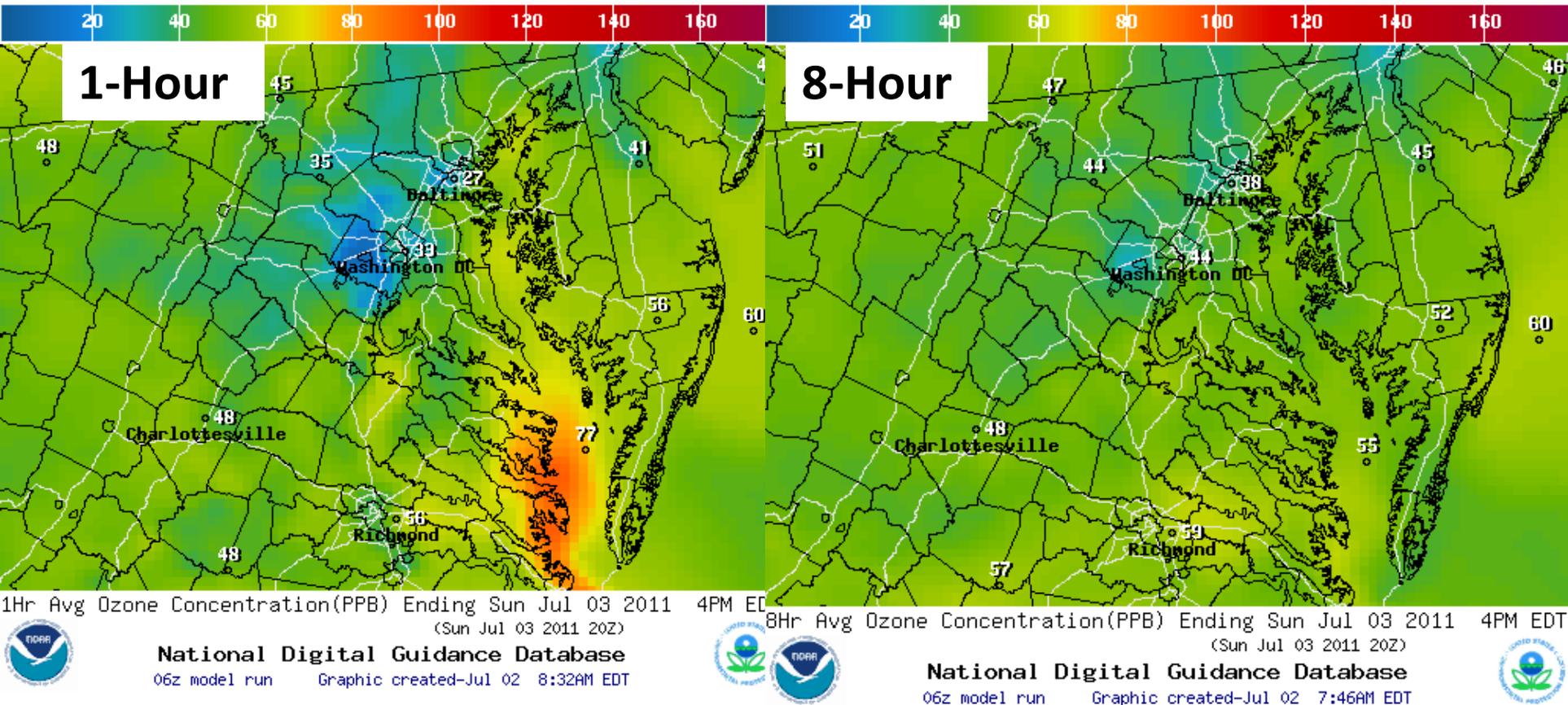
06z model run Graphic created-Jul 02 7:50AM EDT

National Digital Guidance Database

06z model run Graphic created-Jul 02 7:50AM EDT

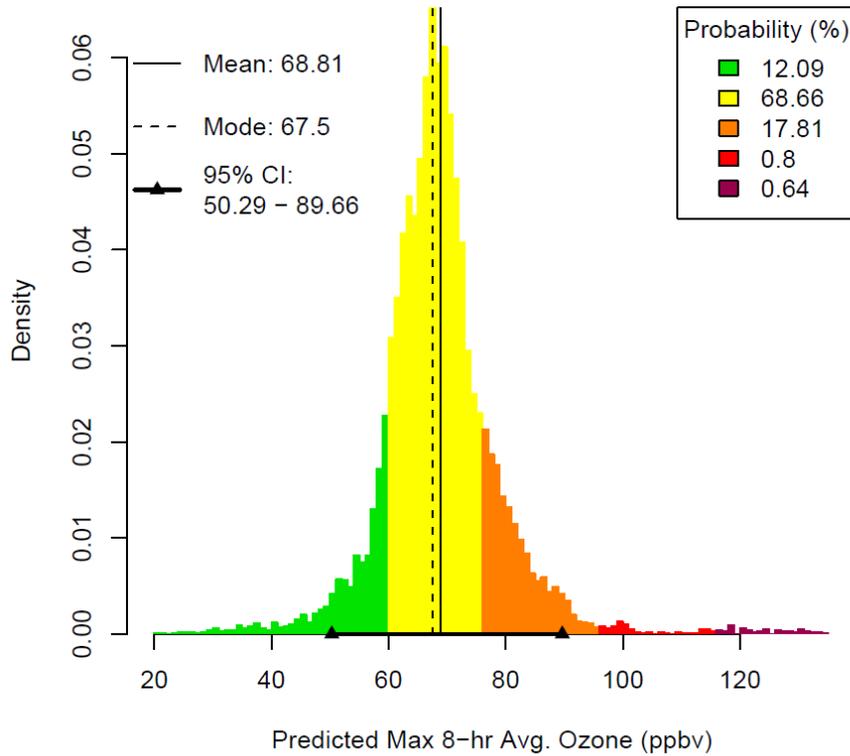


Sunday (4pm): Ozone air quality much better than Saturday, concentrations ~ 30-50ppbv lower



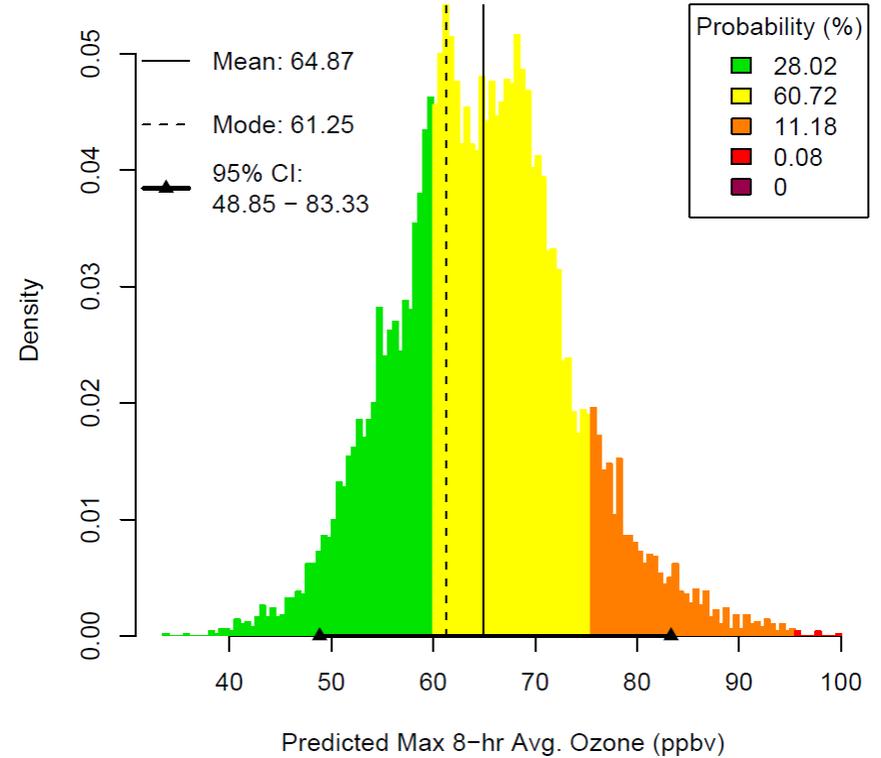
# NAQFC-MOS

ID: 240251001 VALID: 2011-07-03



Edgewood

ID: 240330030 VALID: 2011-07-03

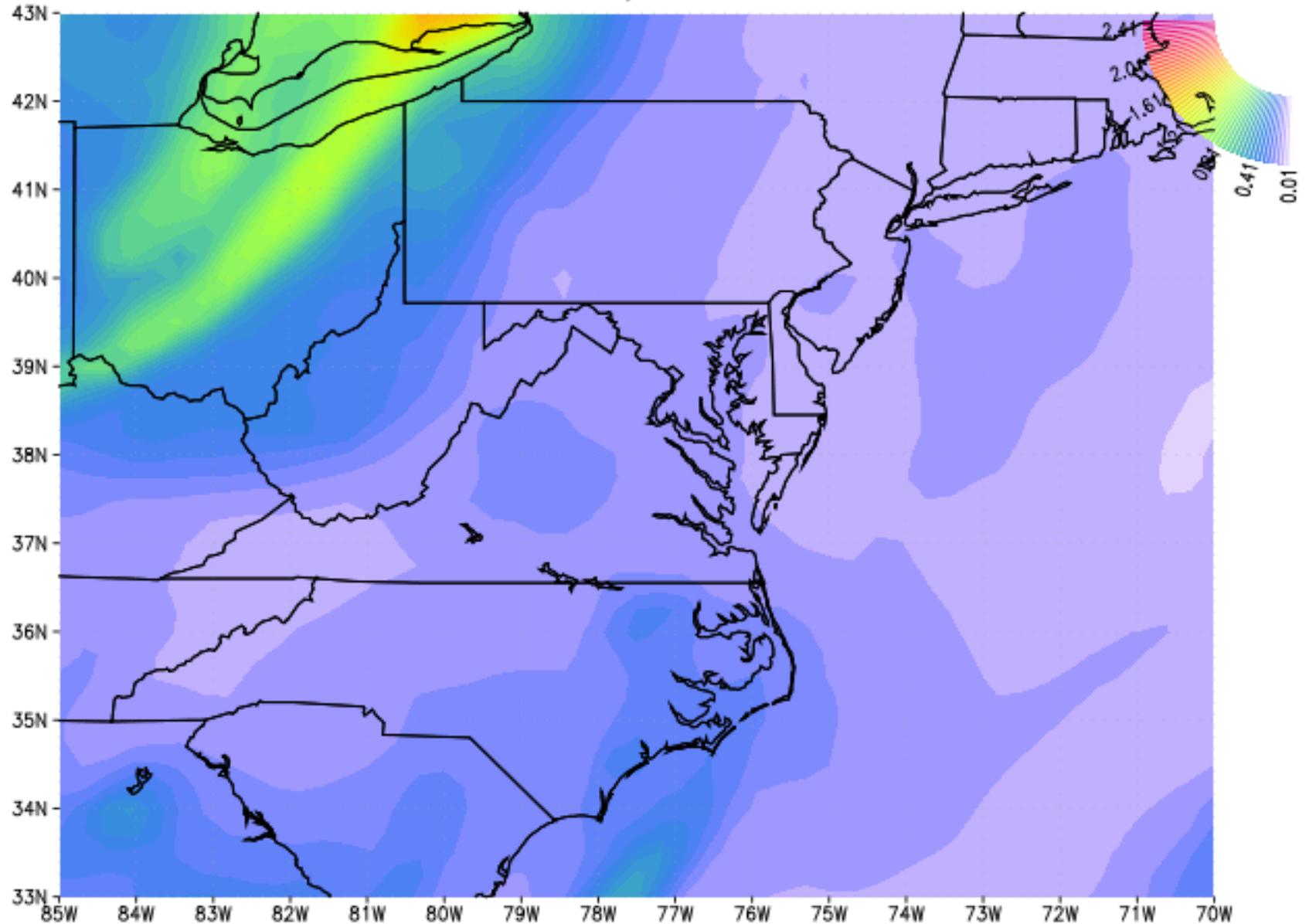


HU - Beltsville

# Today's AOT forecast, no major impact of wildfires

NASA/GMAO - GEOS-5 Forecast initialized on 00z 2011-07-02

## Total Aerosol Optical Thickness

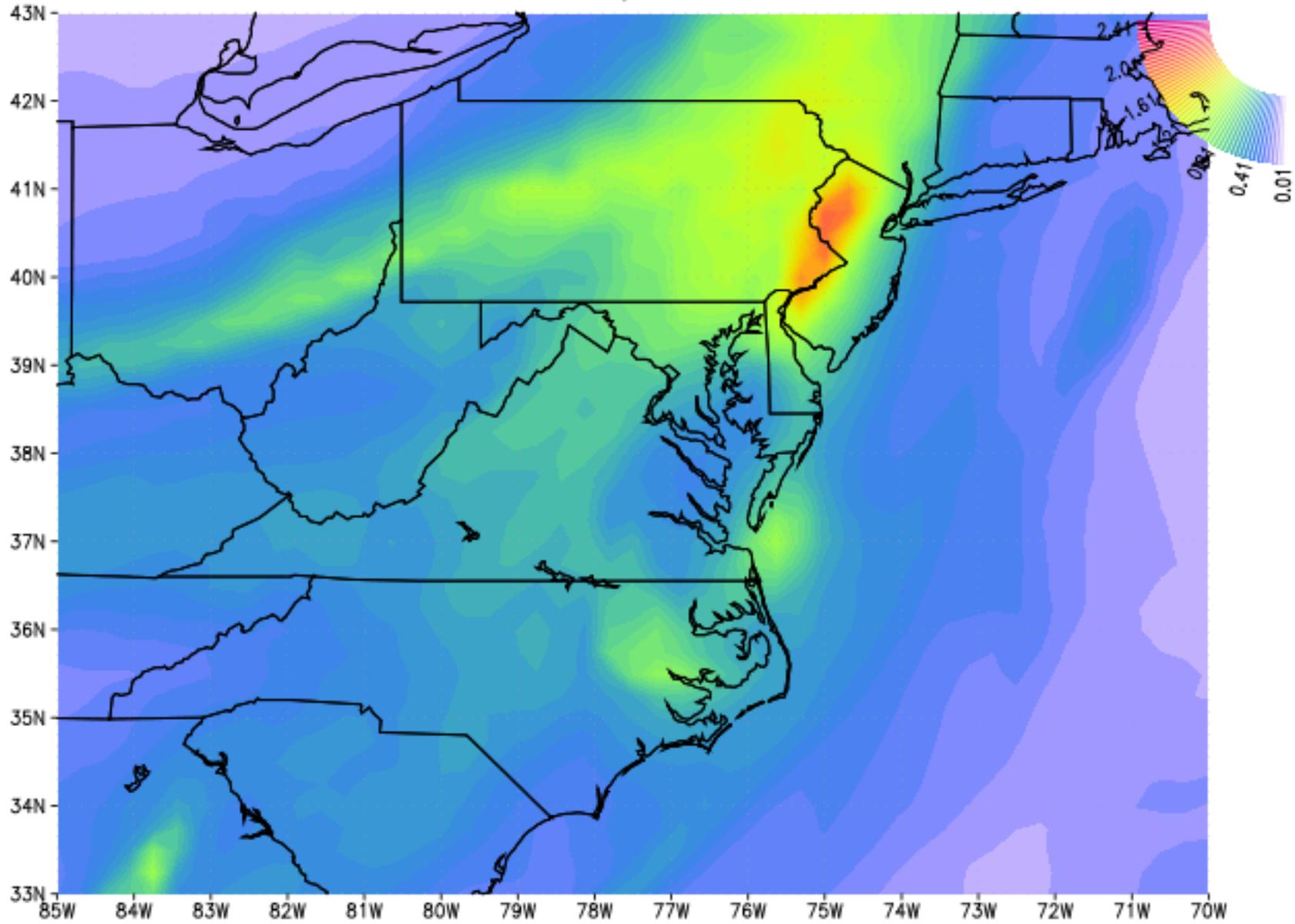


12 hr forecast valid Sat 12z 2011-07-02

# Smoke moves through region through Sun. afternoon/evening

NOAA/NWS/NCEP/Climate Prediction Center/Modeling and Data Interpretation Division

Total Aerosol Optical Thickness

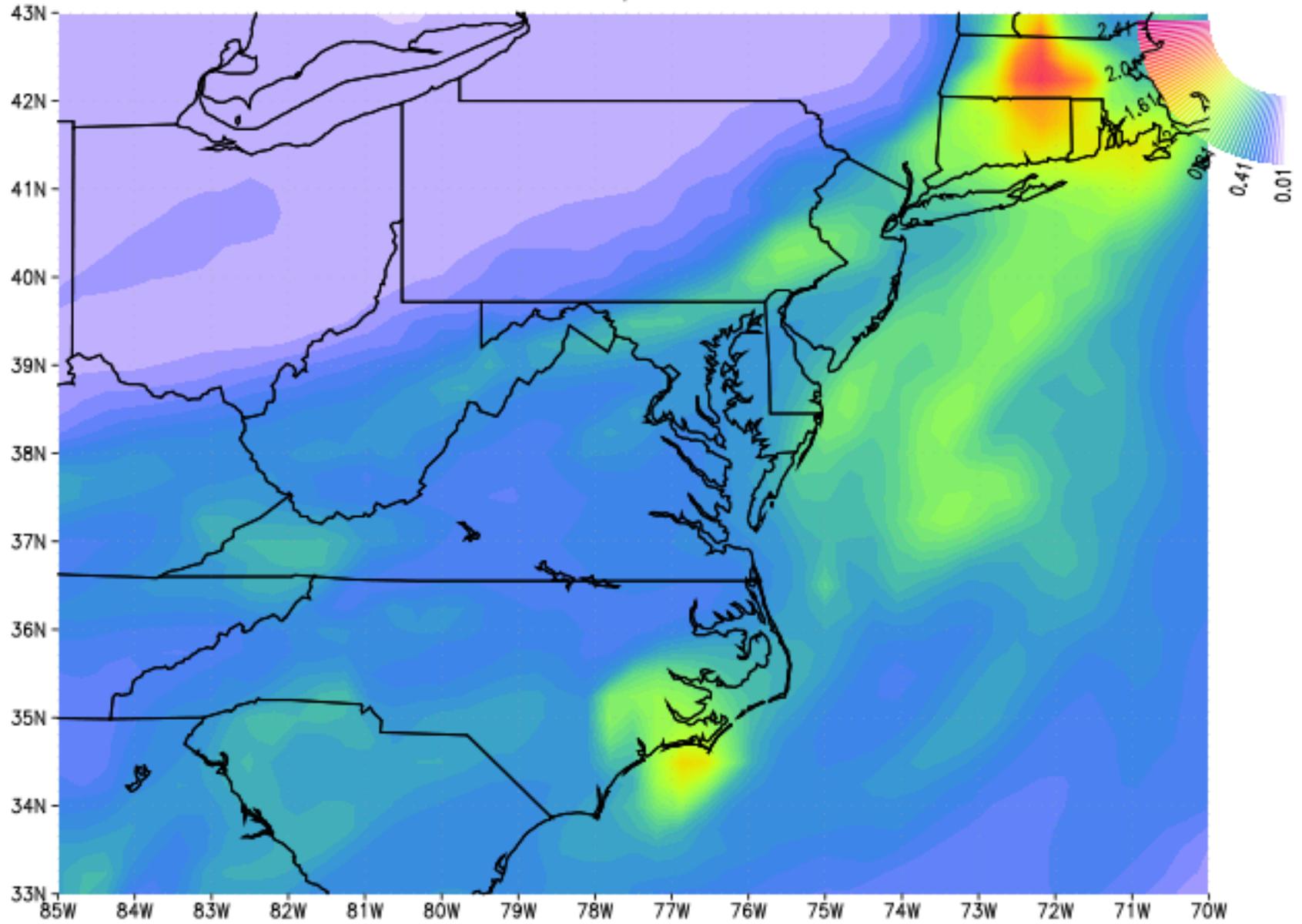


36 hr forecast valid Sun 12z 2011-07-03

# Some impact through Monday morning, then moves off coast

NCEP/NCAR - 5000 ft forecast, 1000 mb, 00z Jul 04

## Total Aerosol Optical Thickness



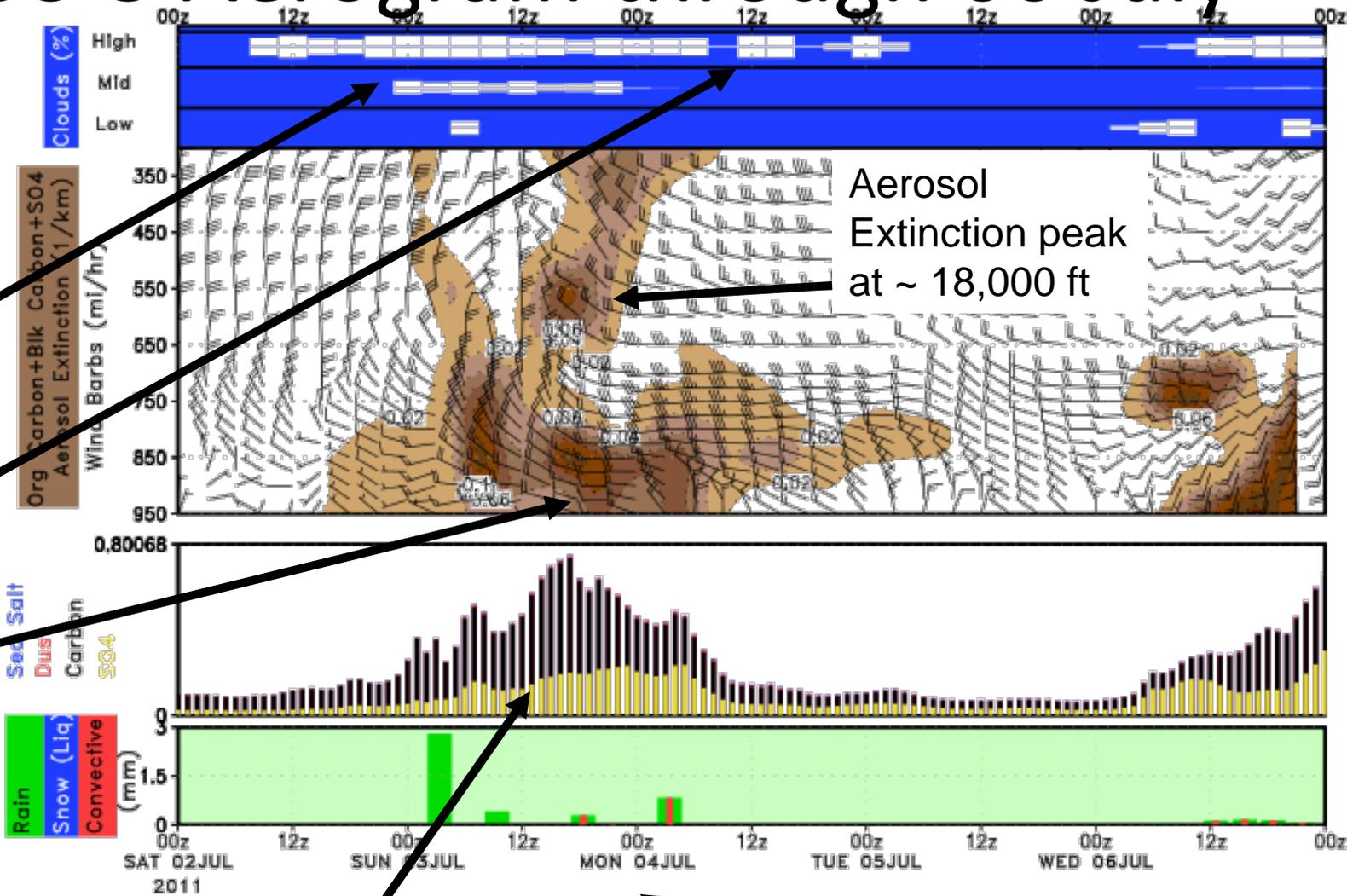
48 hr forecast valid Mon 00z 2011-07-04

# GEOS-5 Aerogram through 06 July

Persistent clouds at mid and upper levels on Sunday

High clouds on Monday

Aerosol Extinction peaking in afternoon at surface.



Smoke influence on Sunday through early Monday

Precip. on Sunday