

DISCOVER-AQ Outlook for Tuesday, July 5, 2011

A tough forecast today. The frontal system that pushed south of the study region will be moving back north during the day on Wednesday. The day may begin with minimal cloud, especially over the northern part of the study region. However, clouds will be on the increase from south to north as the day goes by. This is the consensus formed by the NAM, NAM-MOS, and GEM (Canadian model), with the GFS as the outlier, keeping the skies clearer. Therefore, conditions have been judged to be quite uncertain for flights tomorrow. The only way flights could be conducted would be with another early departure. Thursday conditions are also very uncertain cloud-wise as the frontal system remains relatively stationary. These uncertainties, along with logistical concerns, have led to decisions not to fly on Wed. and Thurs. Looking farther into the future, the GFS model tends to build a strong ridge over the central and eastern US starting on Saturday and continuing into much of next week. This is the more classical summertime pattern. The frontal systems that have been making forecasts difficult will be largely confined to Canada, and the chances for stagnation conditions over the study region increase.

Recommendations for July 6th-July 9th:

(from a meteorological perspective)

Wed., July 6: Fly?? (majority of models indicate clouds could be a problem; especially in southern portion, but early AM could be OK)

Thurs., July 7: Perhaps more clouds in morning than on Wed.; update tomorrow)

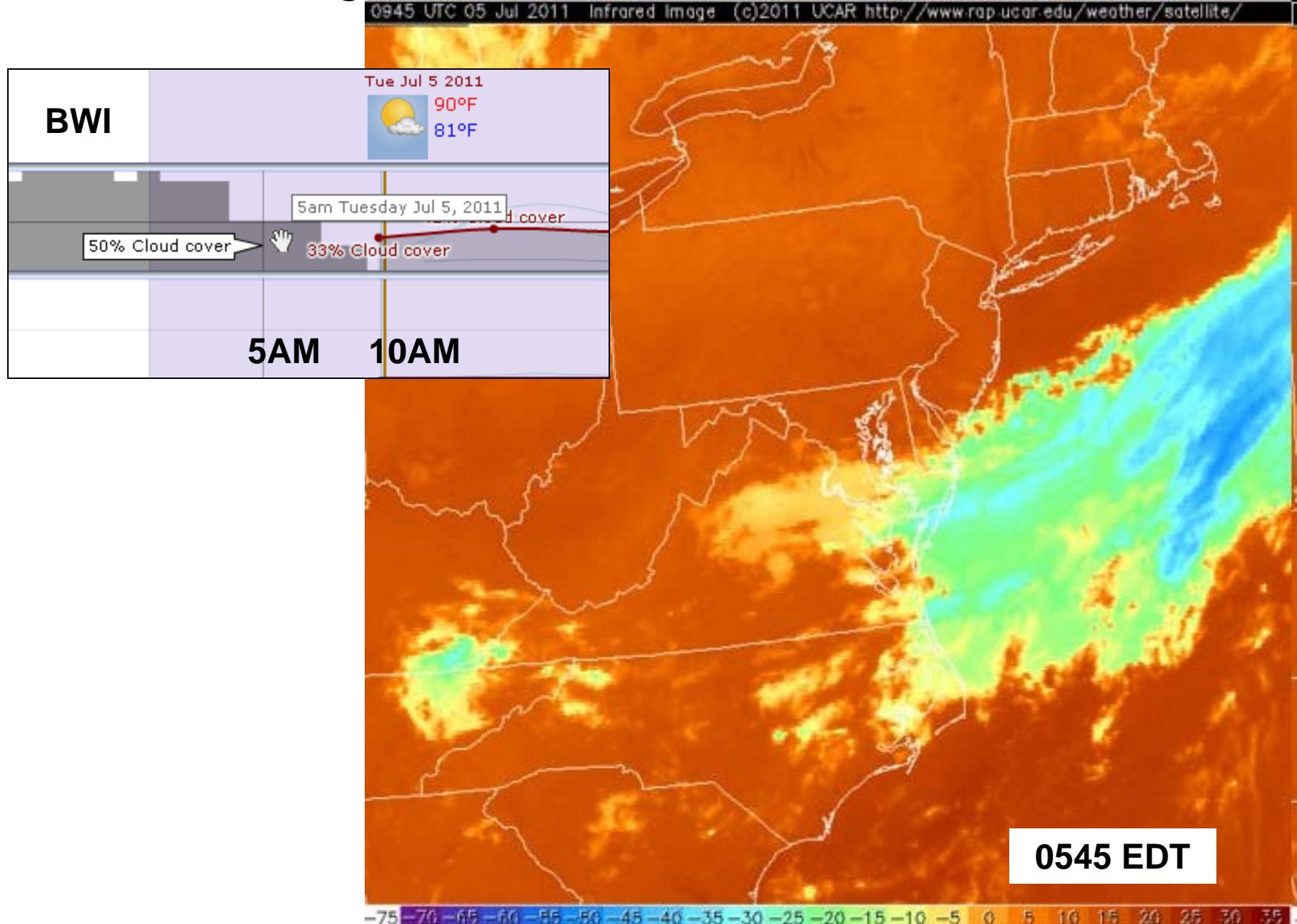
Fri., July 8: No Fly (Science Team Meeting; but clouds likely anyway!)

K. Pickering, C. Flynn, G. Garner

July 5, 2011

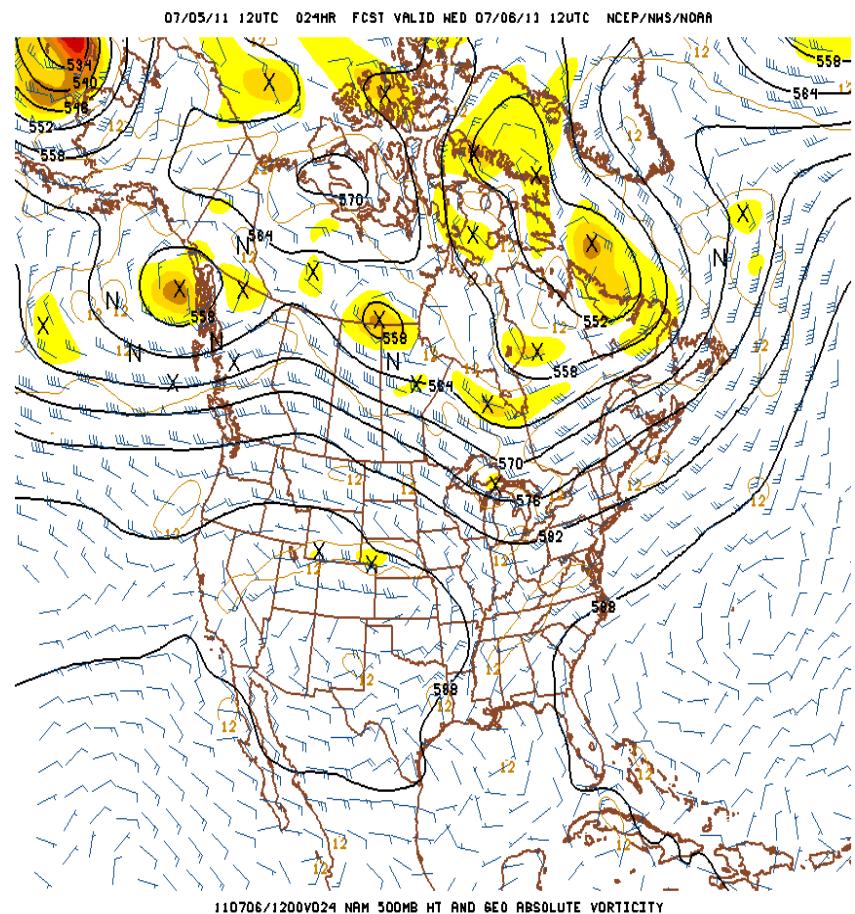
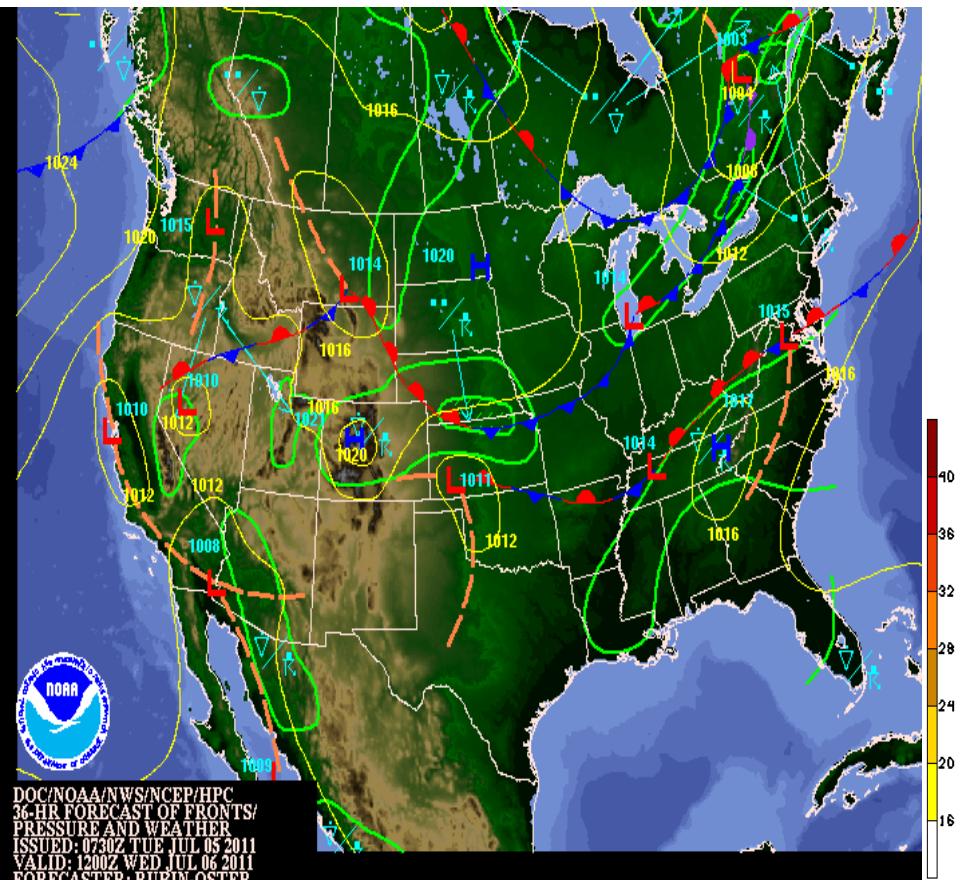
Sat., July 9: Perhaps fly – less clouds

Conditions early this morning

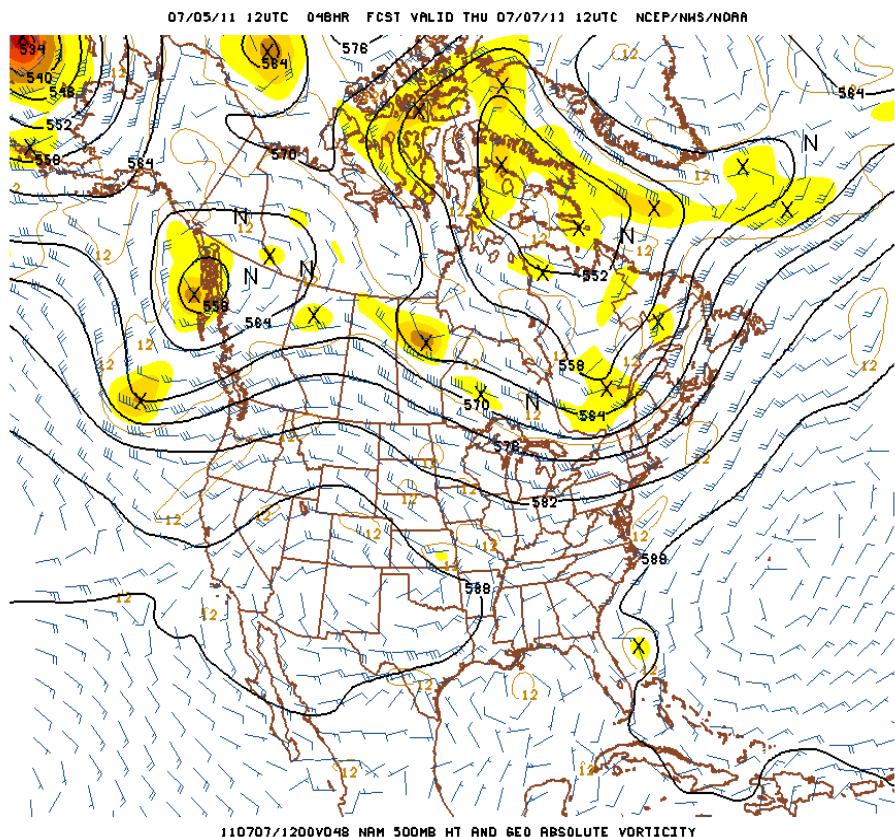
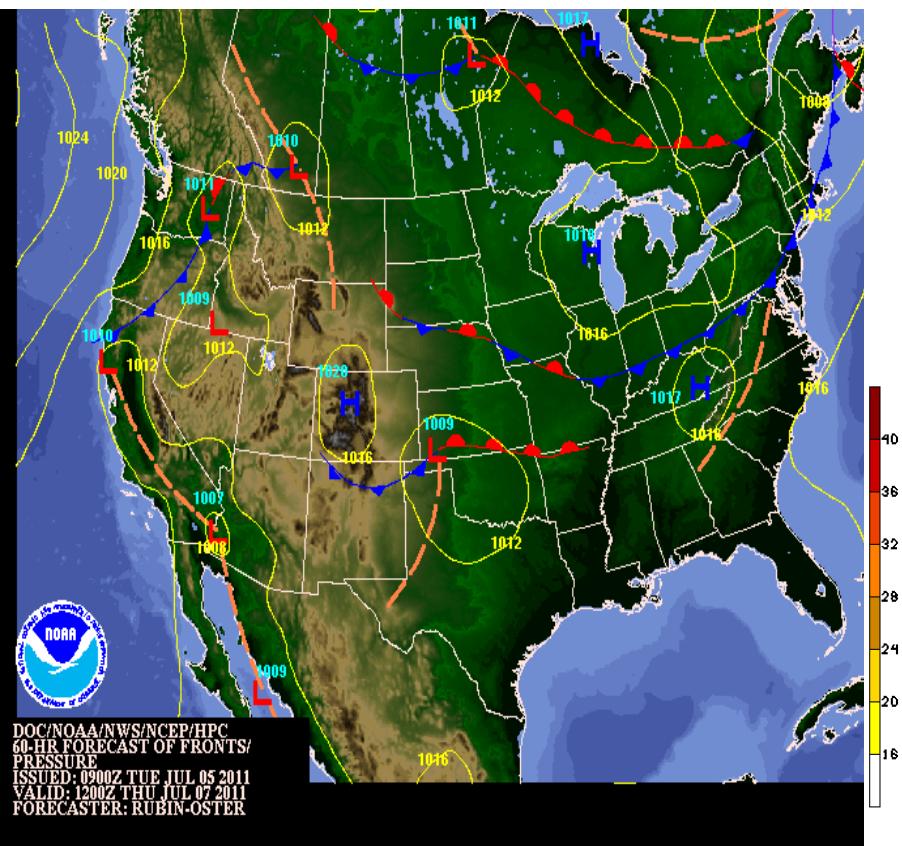


- Current conditions in MD at 3pm
 - Current air quality is Good to Moderate (for O3)
Moderate range for PM2.5 at Fair Hill and Beltsville
 - Code Orange air quality alert for DC/Balt. Metro area,
 - Scat. Clouds, towering Cu, 91 F, humid, light winds

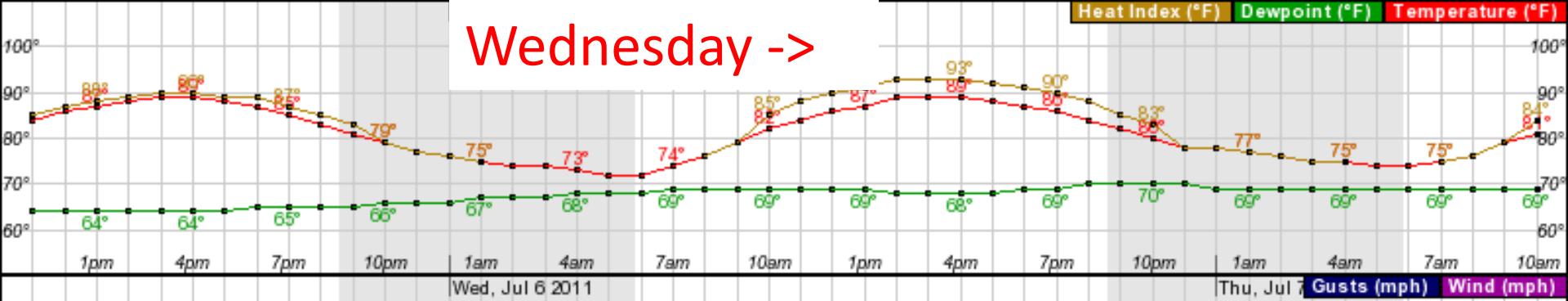
Wednesday: Sfc trough strengthens and warm front moves back into region. Cloud development, possibly showers/tstorms.



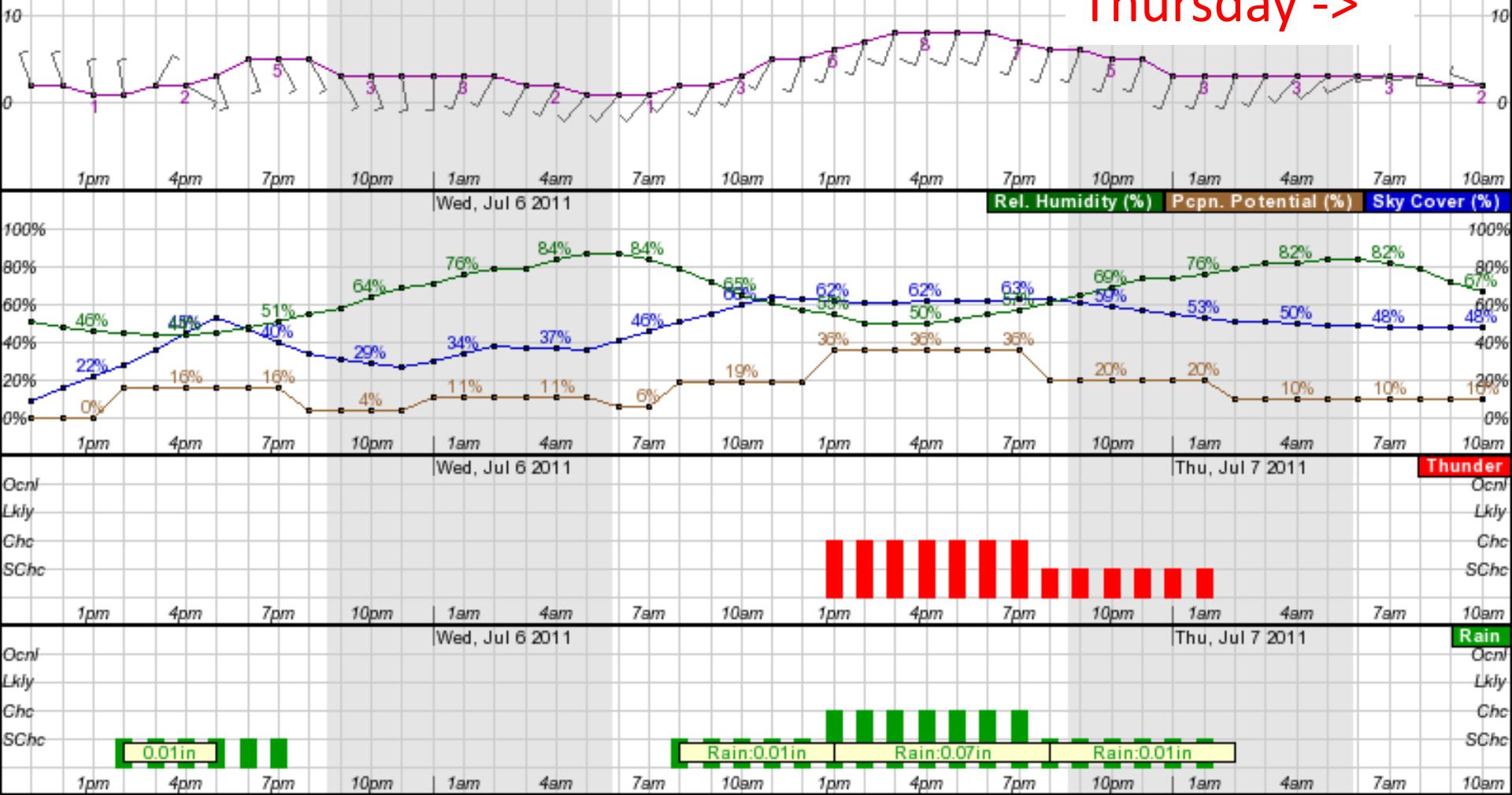
Thursday: Moisture remains in region. Weak surface trough also develops. Chance for convection to occur.



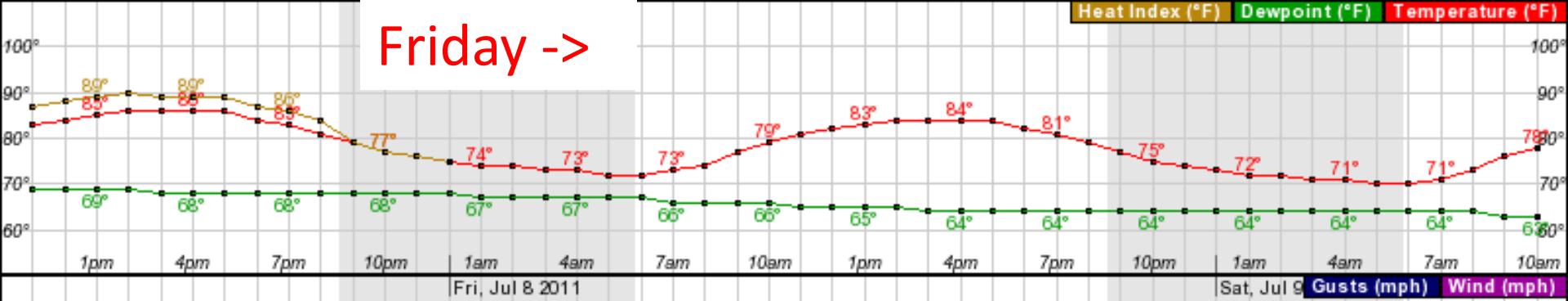
Wednesday ->



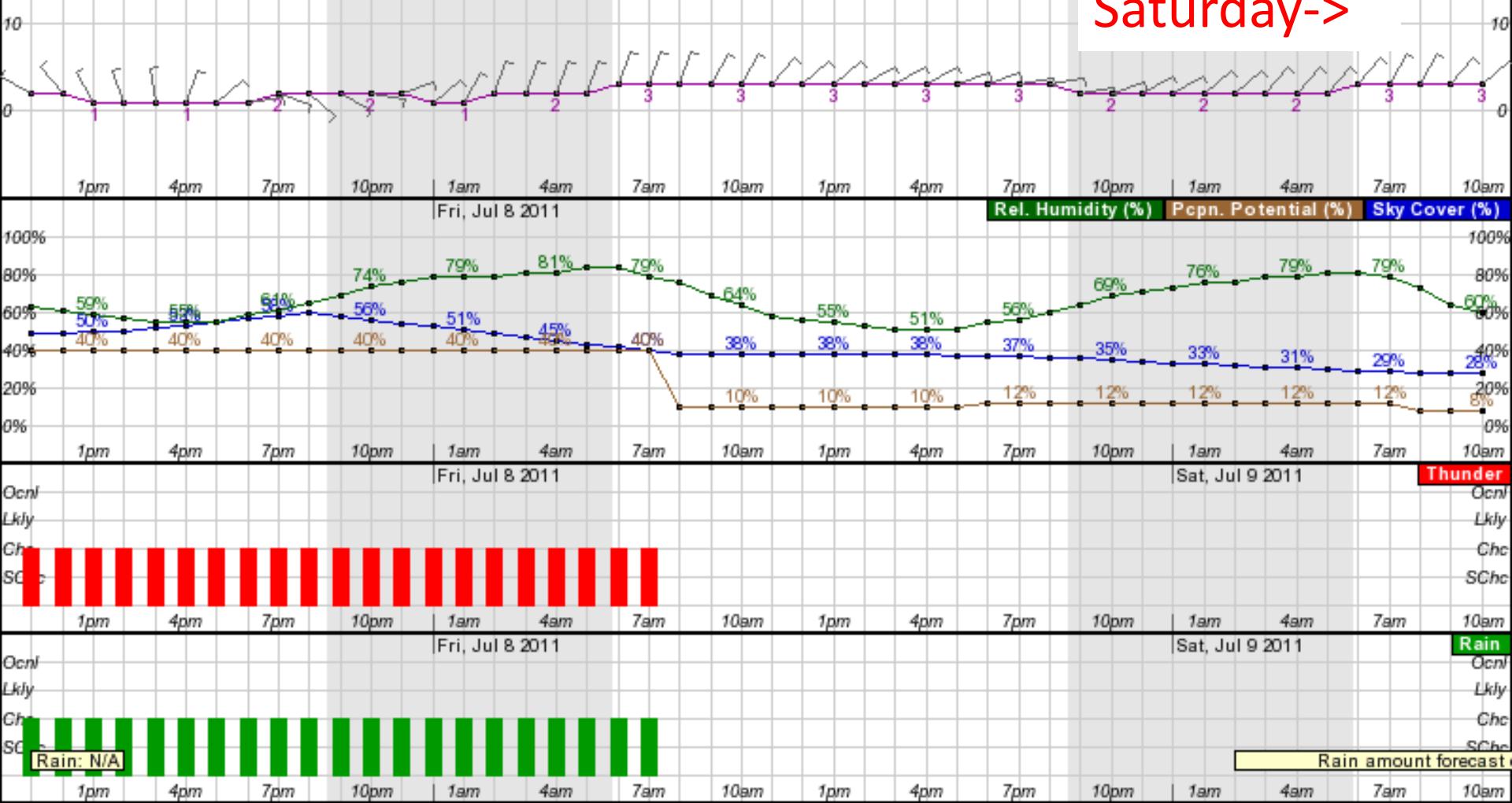
Thursday ->



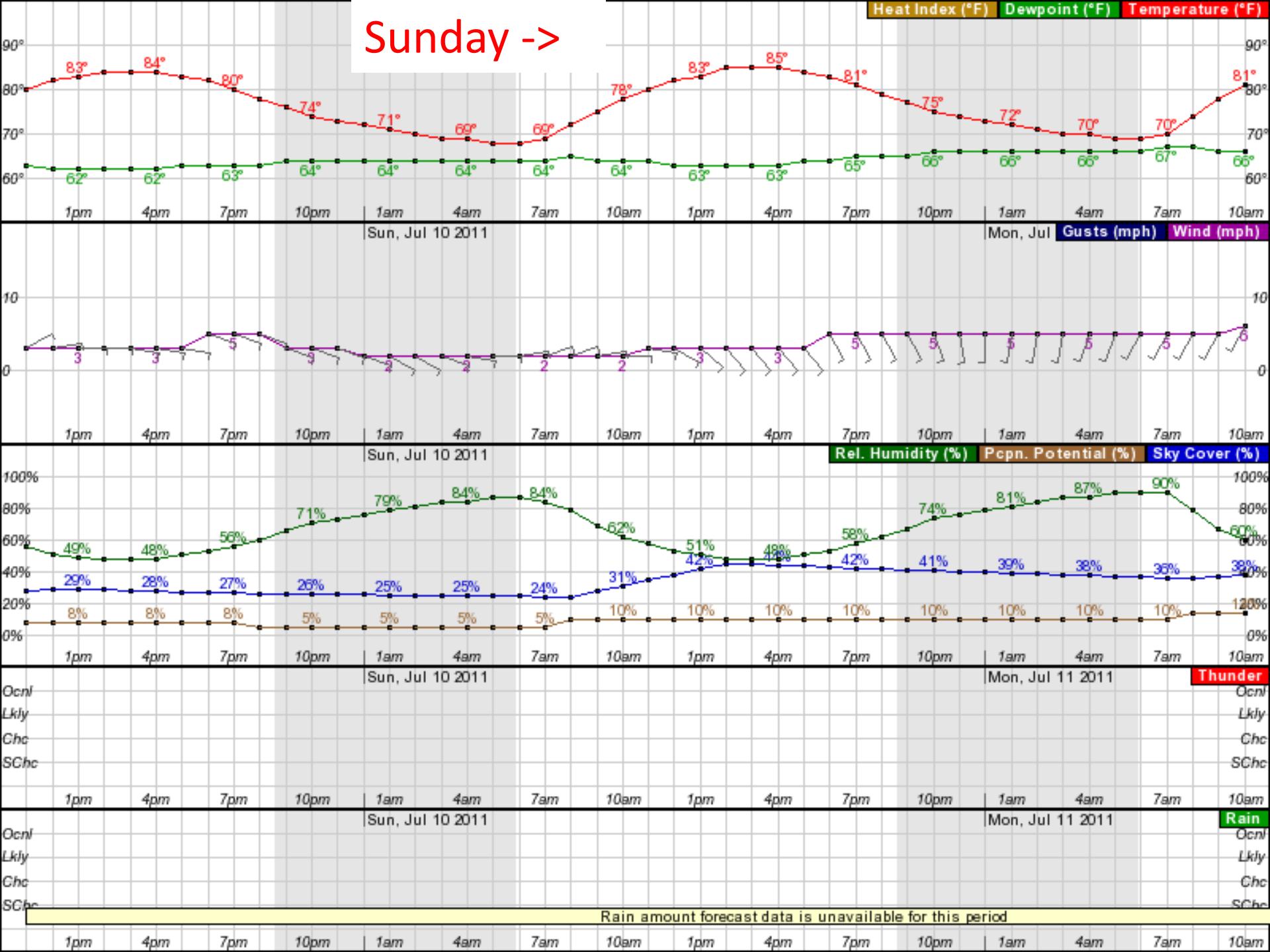
Friday ->

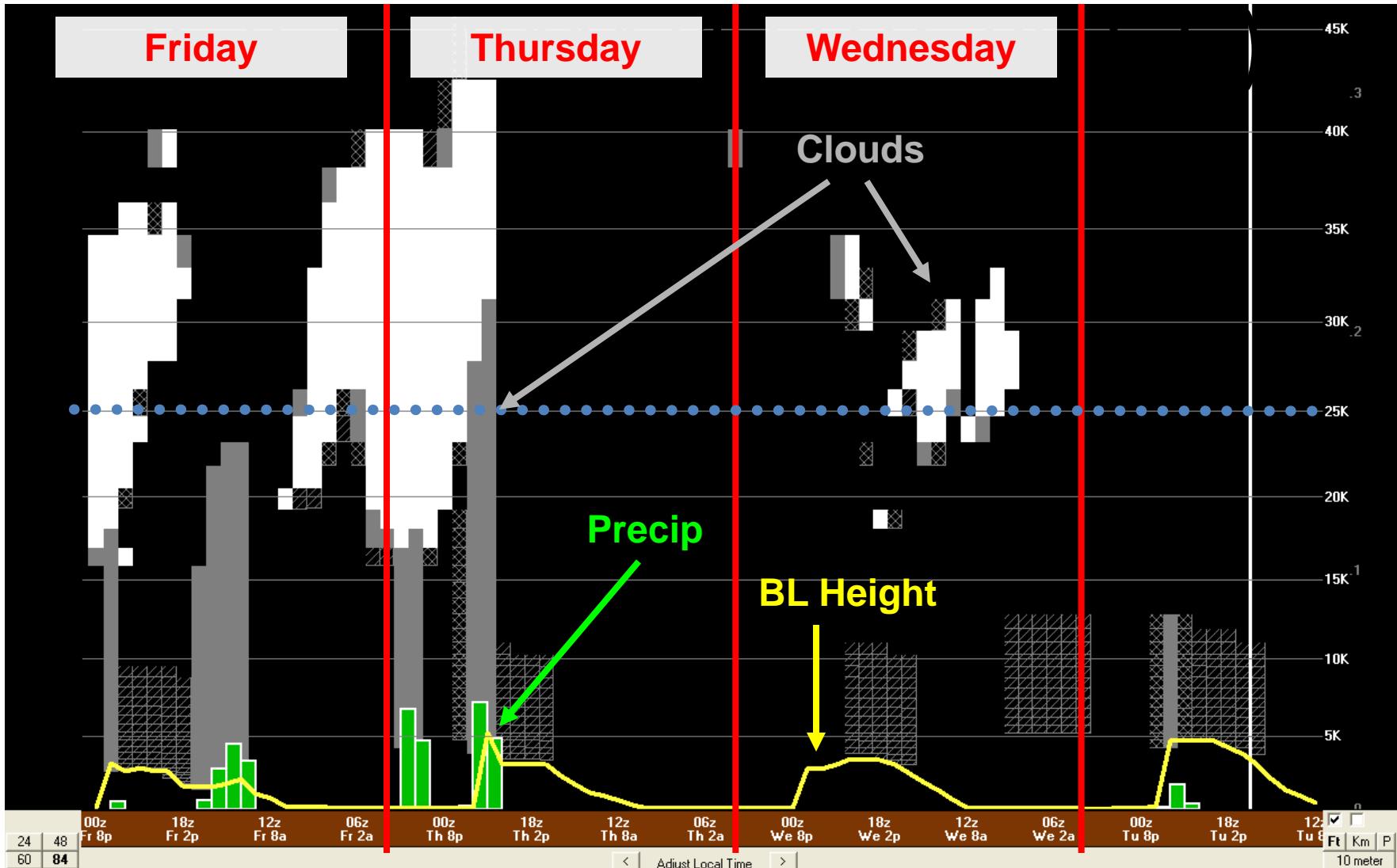


Saturday->



Sunday ->

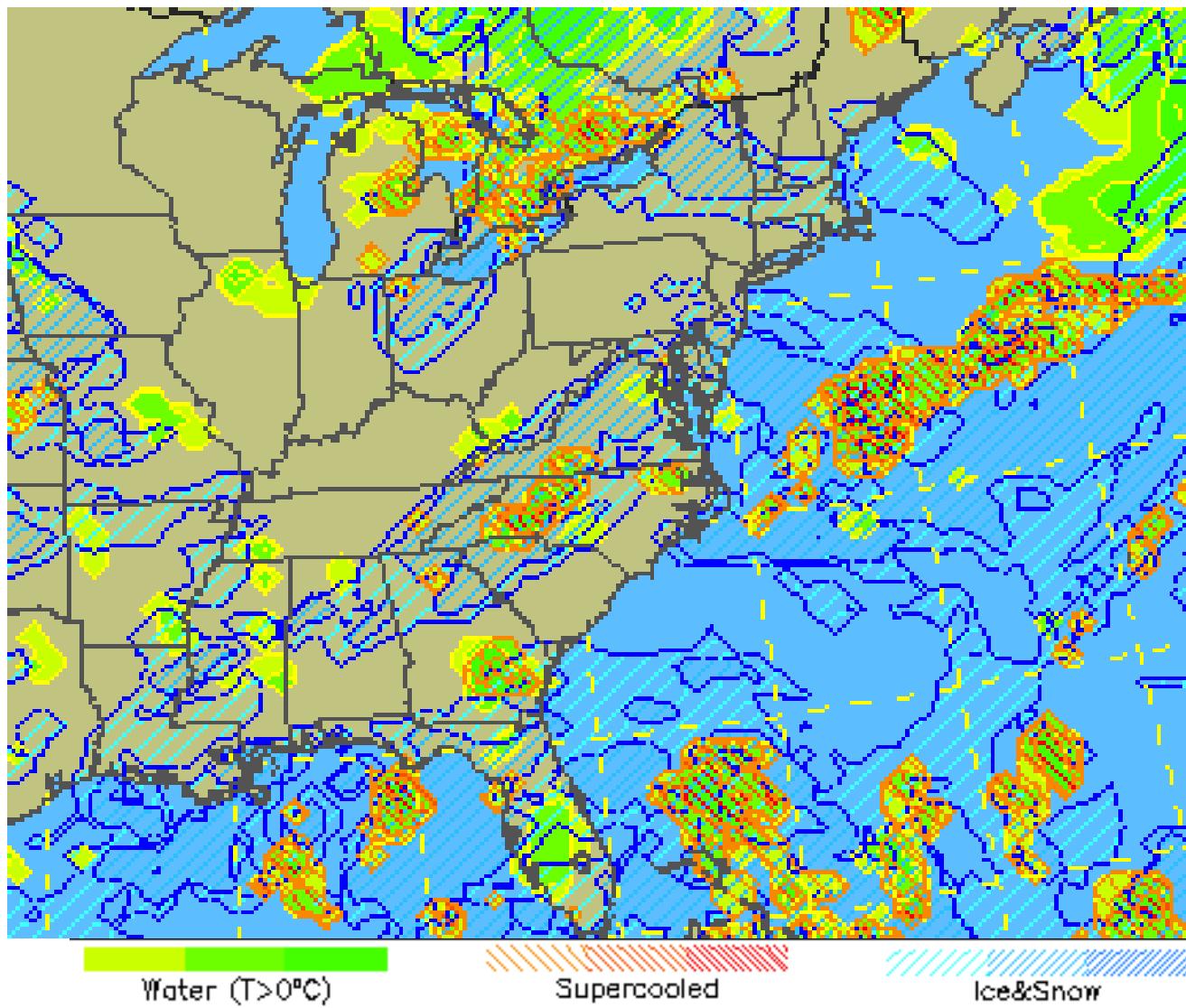




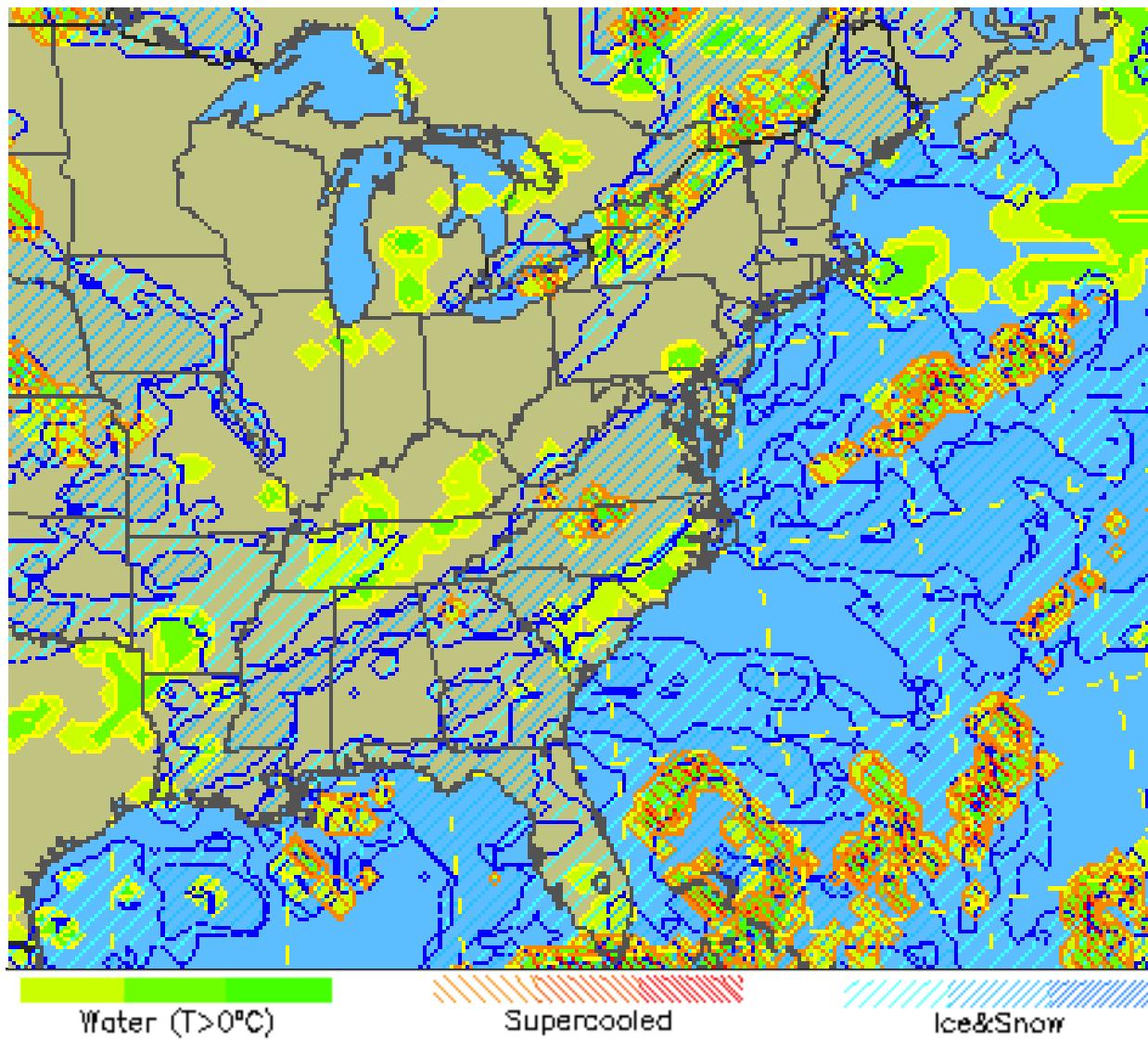
- Thin low-level clouds early Wed. AM
- High-level clouds below 25,000 ft on Wed. 0800 EDT

- Thin low-level clouds Wed. PM
- Thursday is clear through 1400 EDT

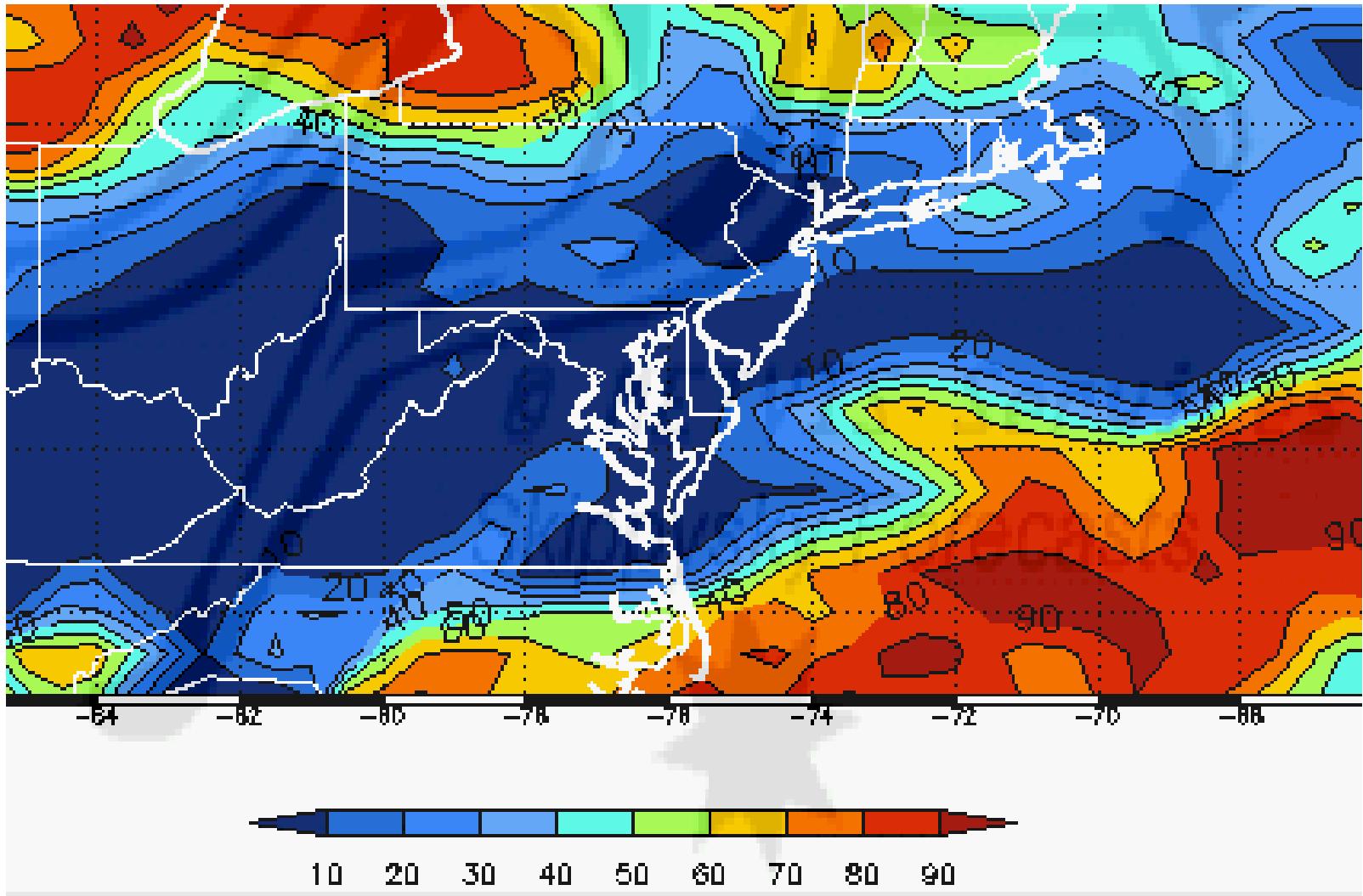
Wednesday 8am: Presence of high clouds (above 18,000ft) and some lower clouds (6-12,000ft). GFS does not agree.



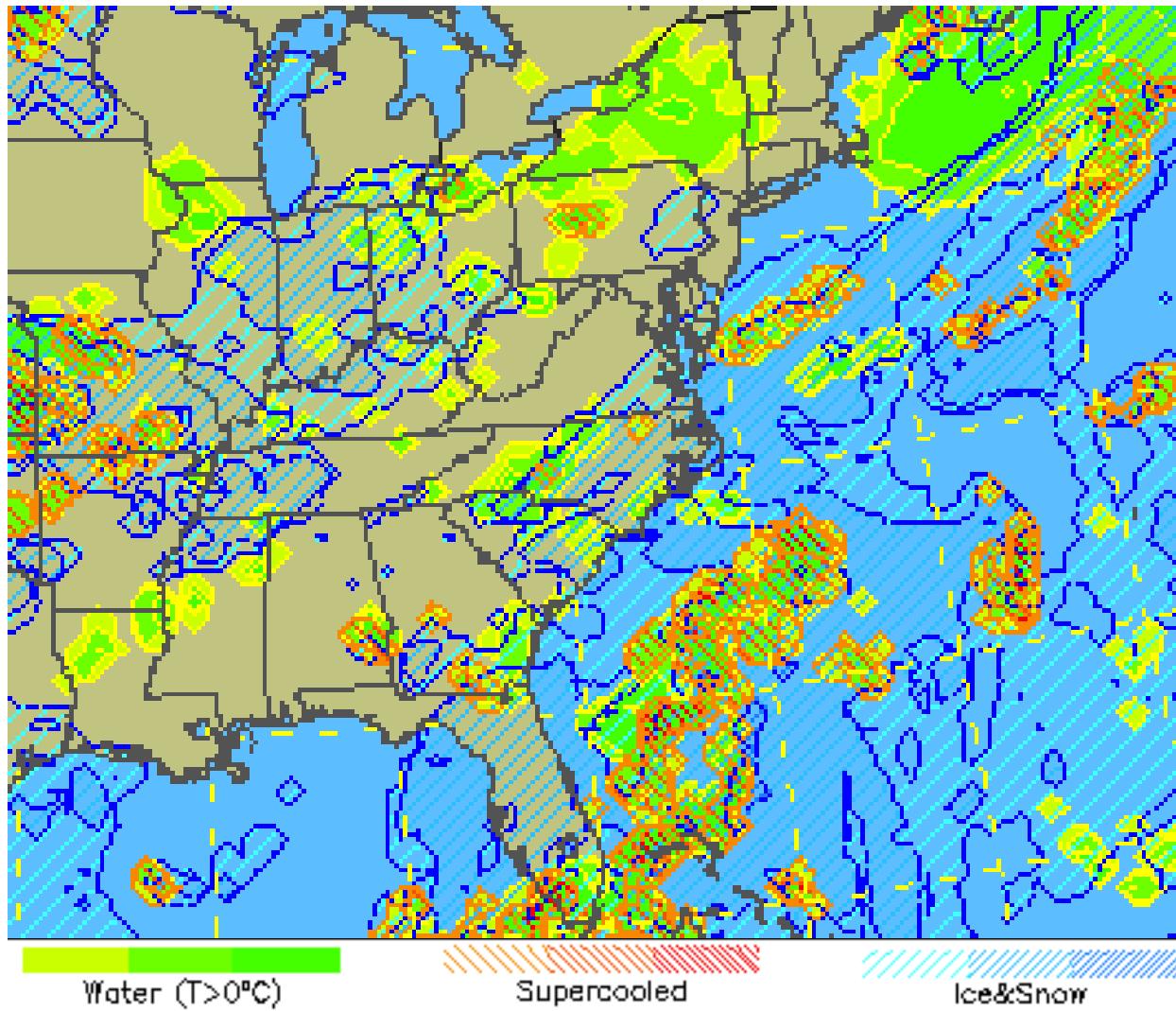
Wednesday 2pm: High clouds remain. GFS does not agree.



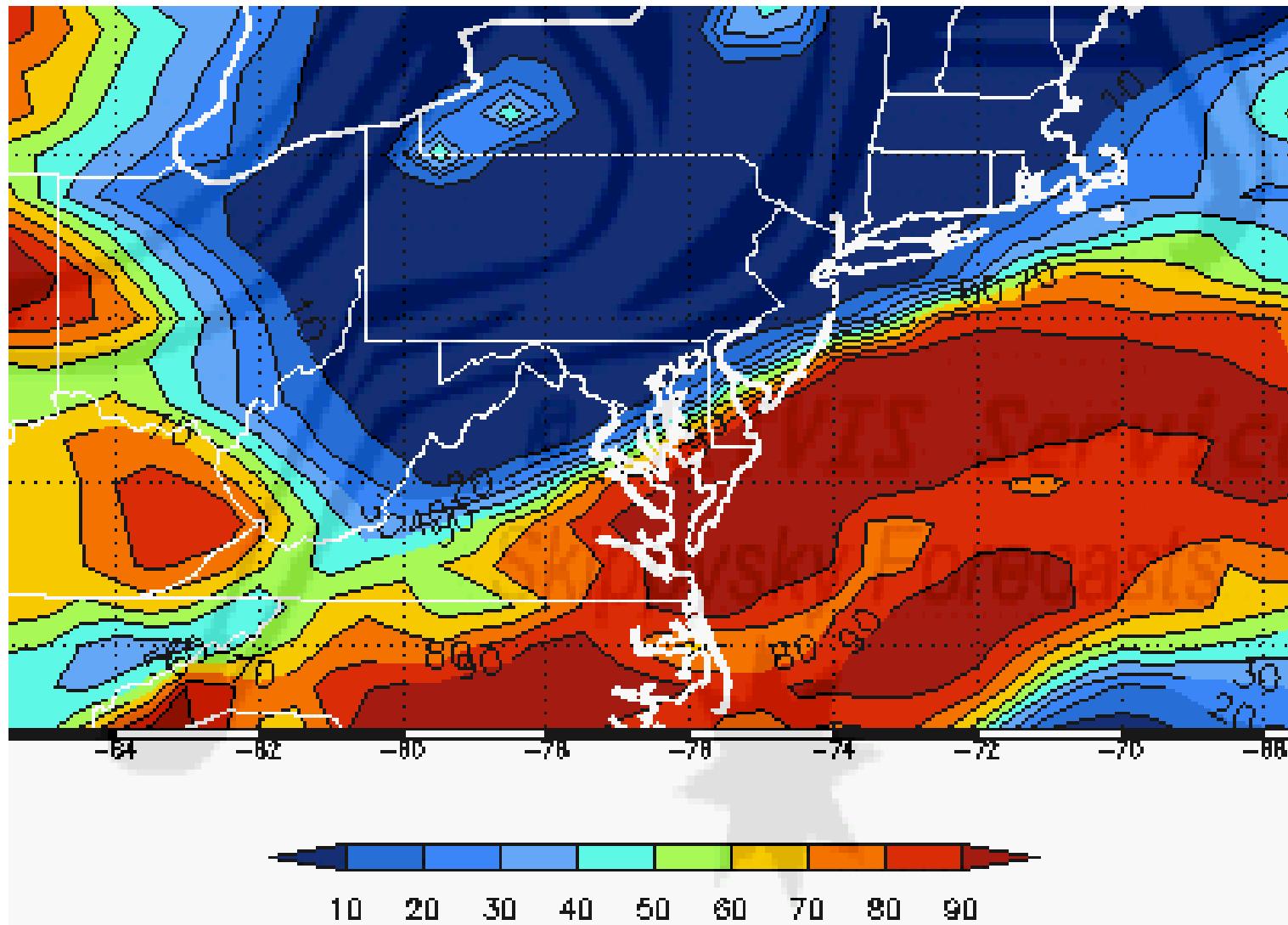
Wednesday 8am: GFS keep region clear through evening. High cloud amounts are south of region.



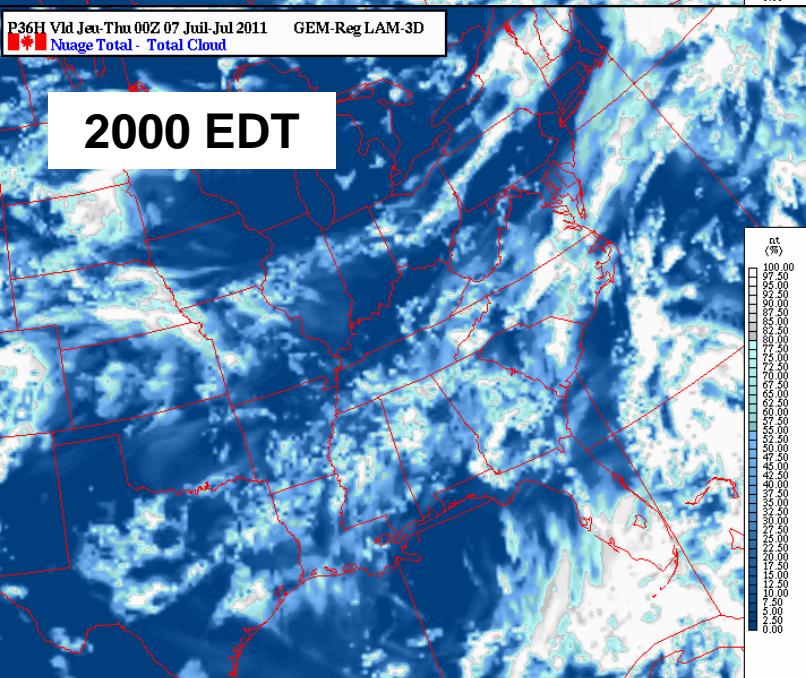
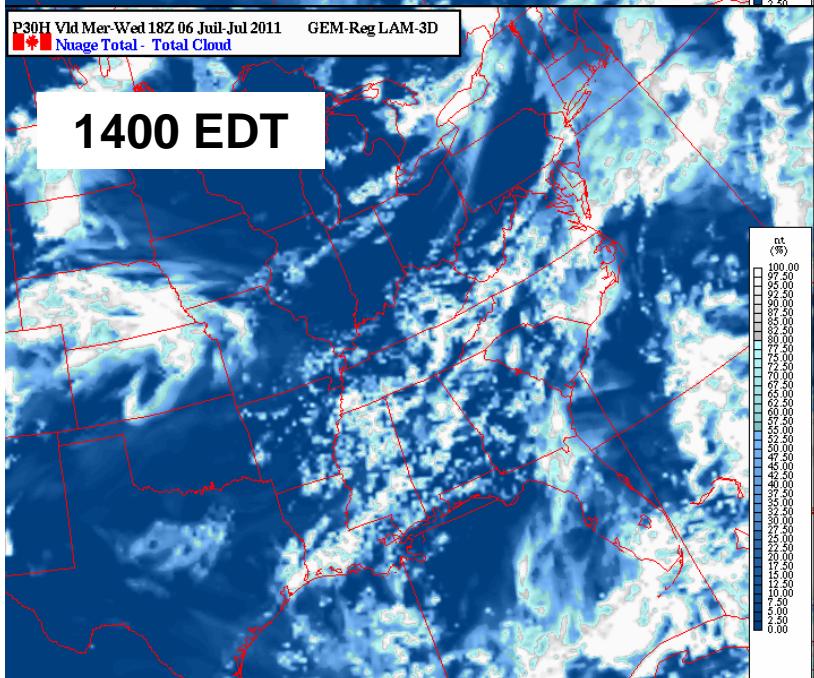
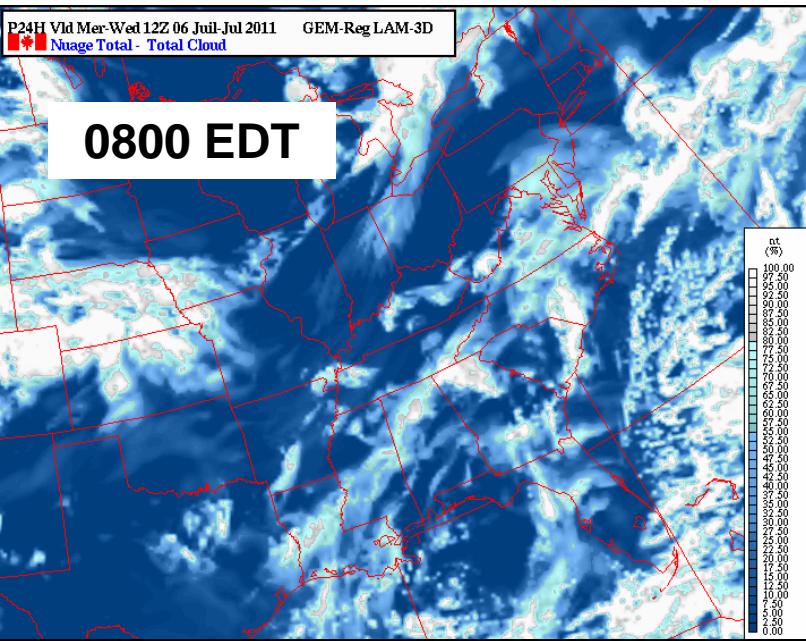
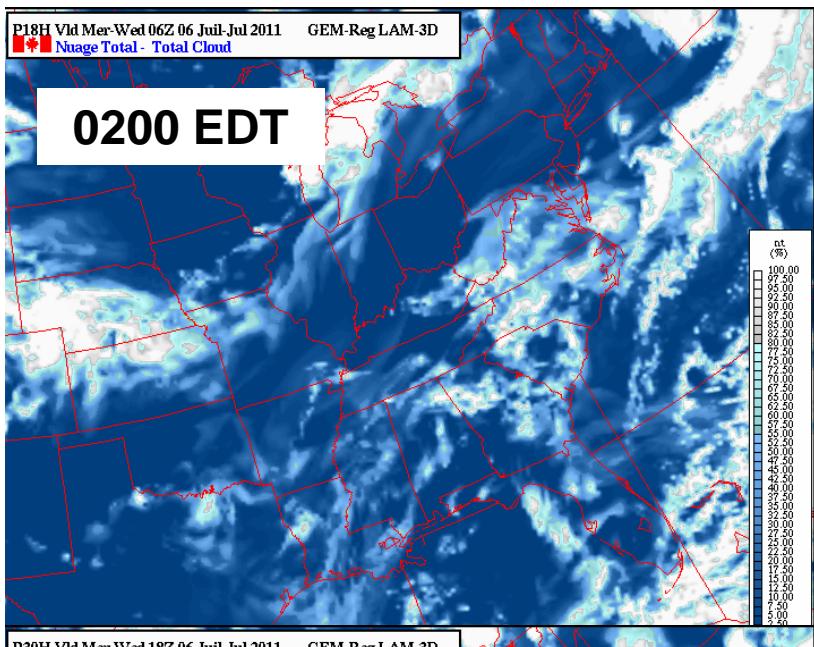
Thursday 8am: Region remains clear of clouds in NAM.



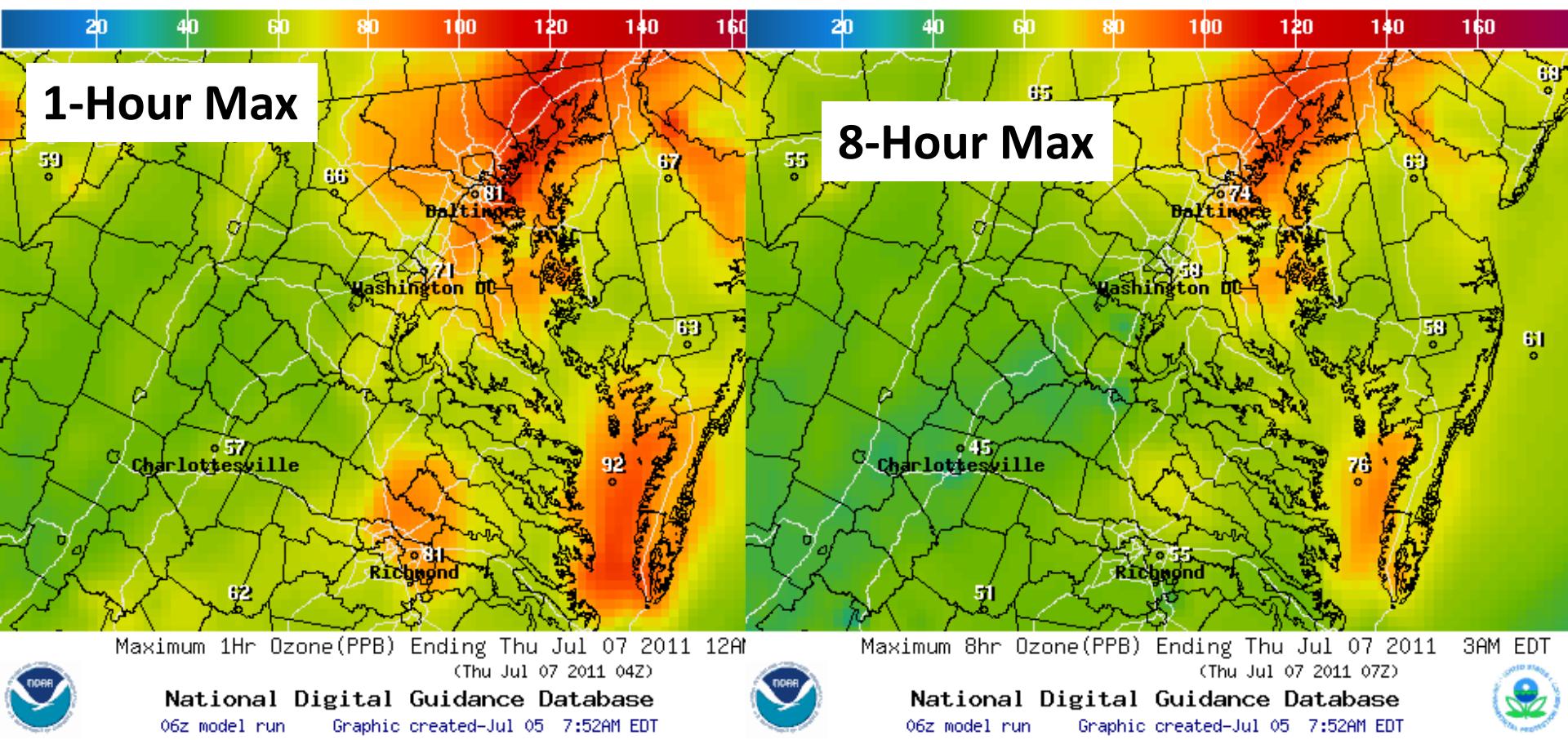
Thursday 8am: GFS keeps high cloud amounts to south of region through morning and afternoon.



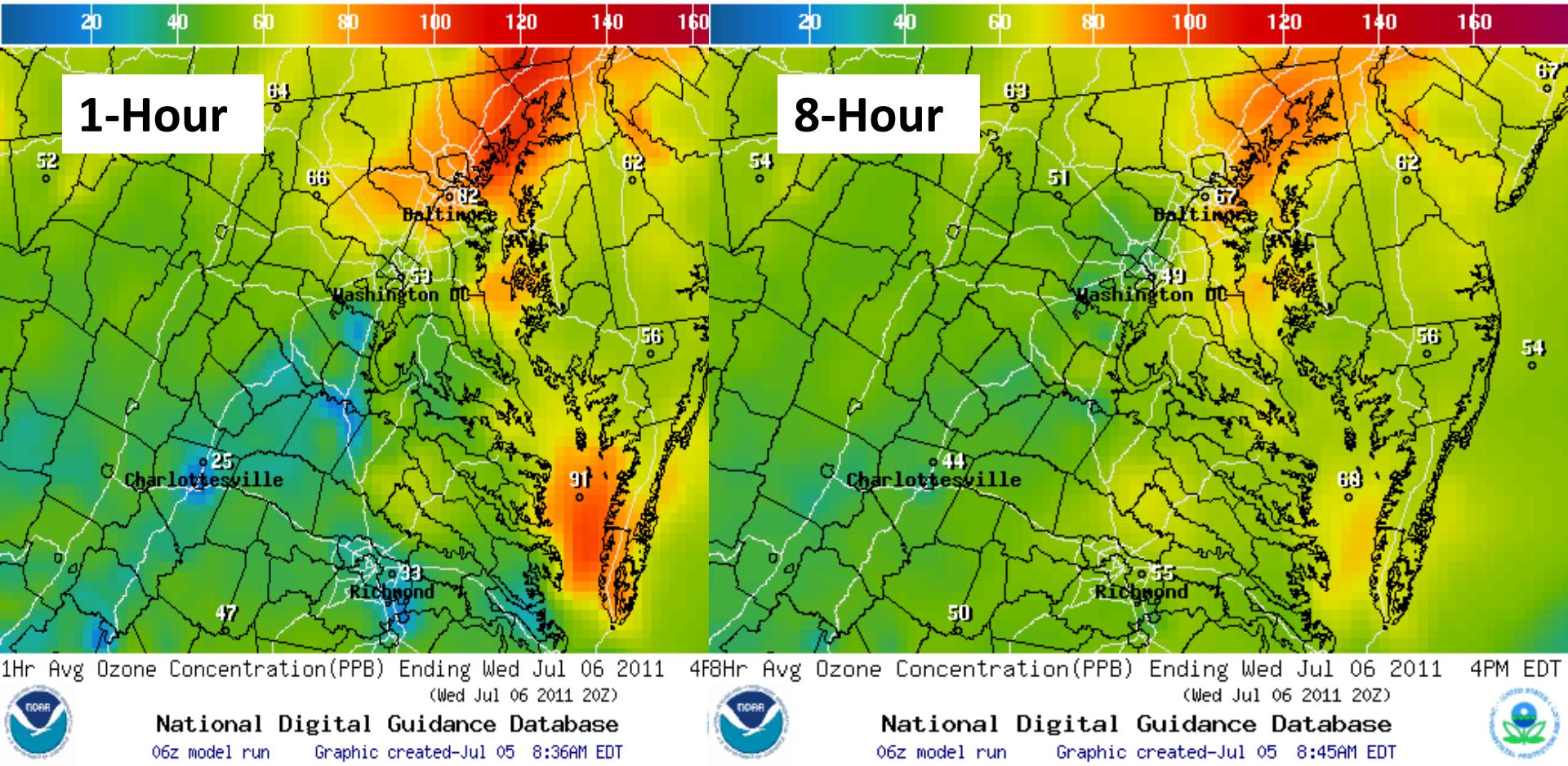
GEM – Regional Cloud Model valid 06 July



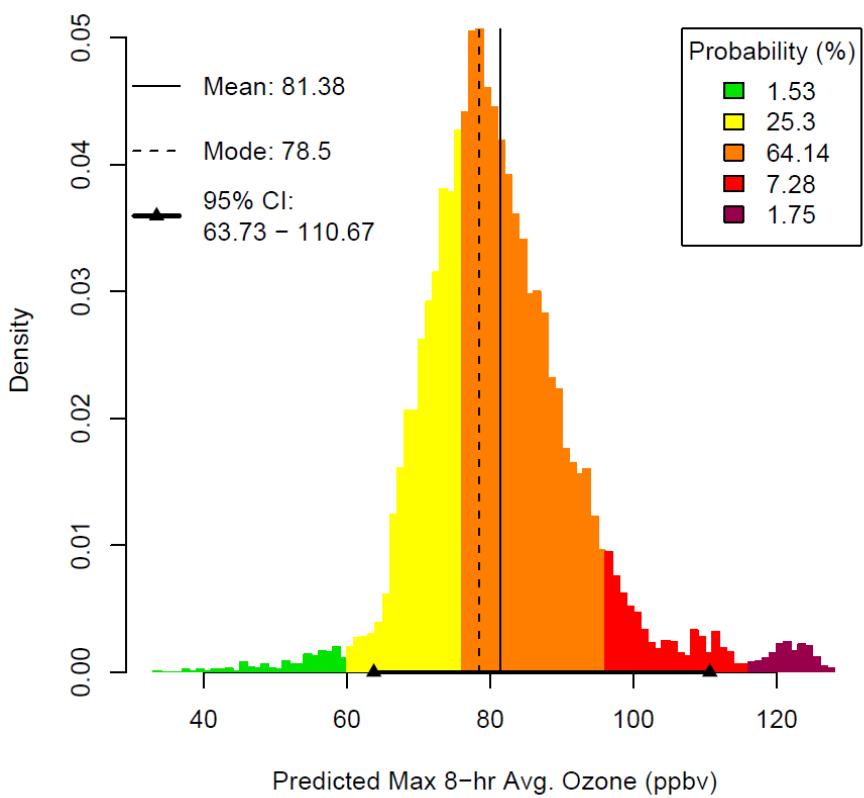
Wednesday: Potential for another high ozone day for Balt. Metro area. Higher ozone also present in DC, but better than Baltimore.



Wednesday (4pm): Ozone much higher in Baltimore than DC (80's ppbv for 1-hr and ~70 ppbv for 8-hr). A dirtier day for Baltimore.

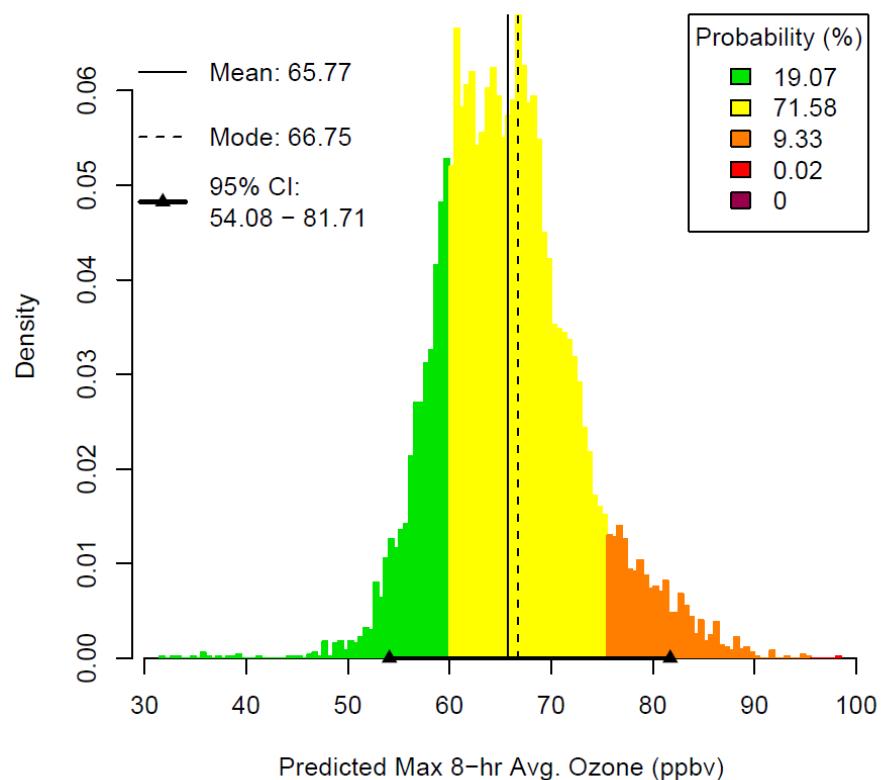


ID: 240251001 VALID: 2011-07-06



Edgewood

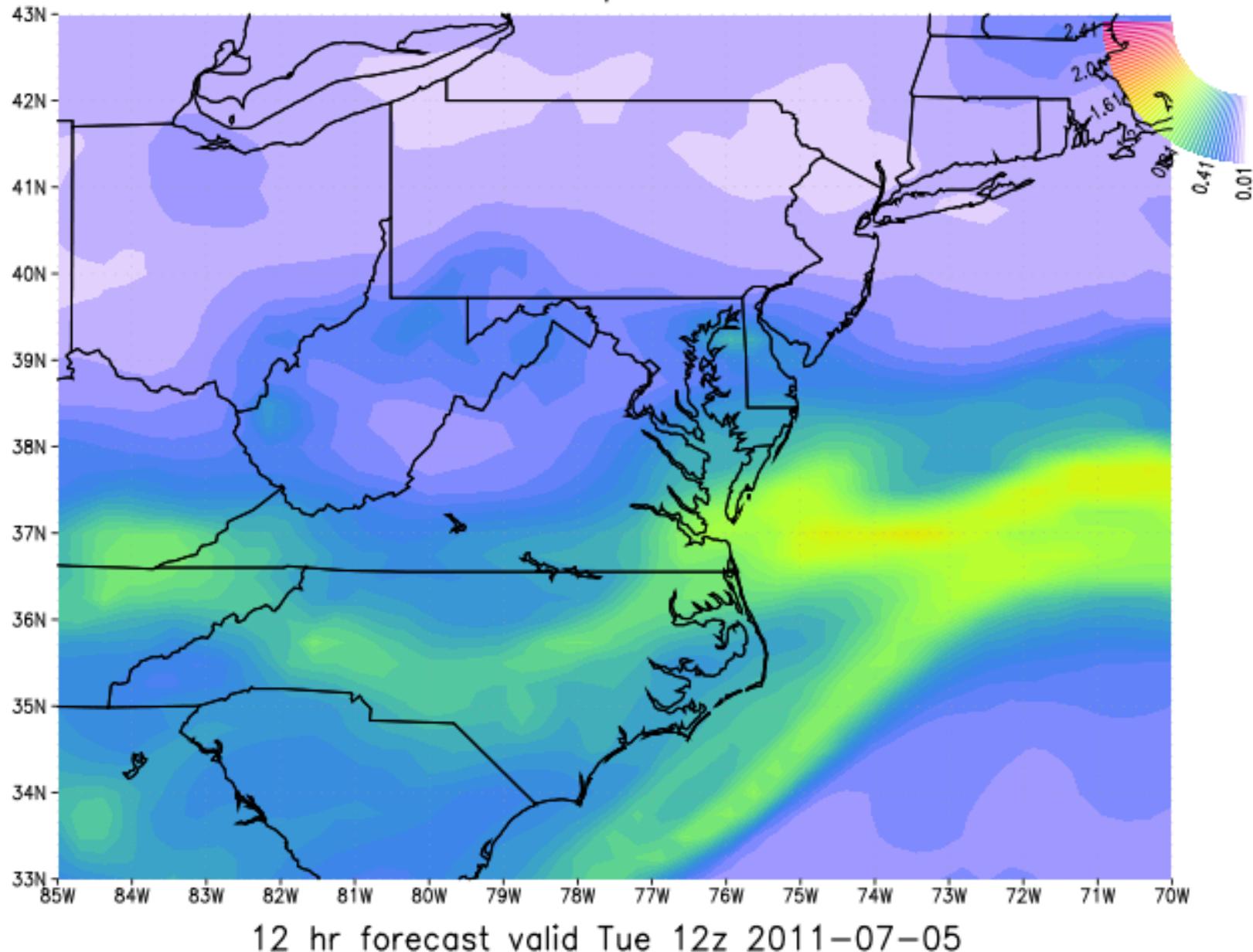
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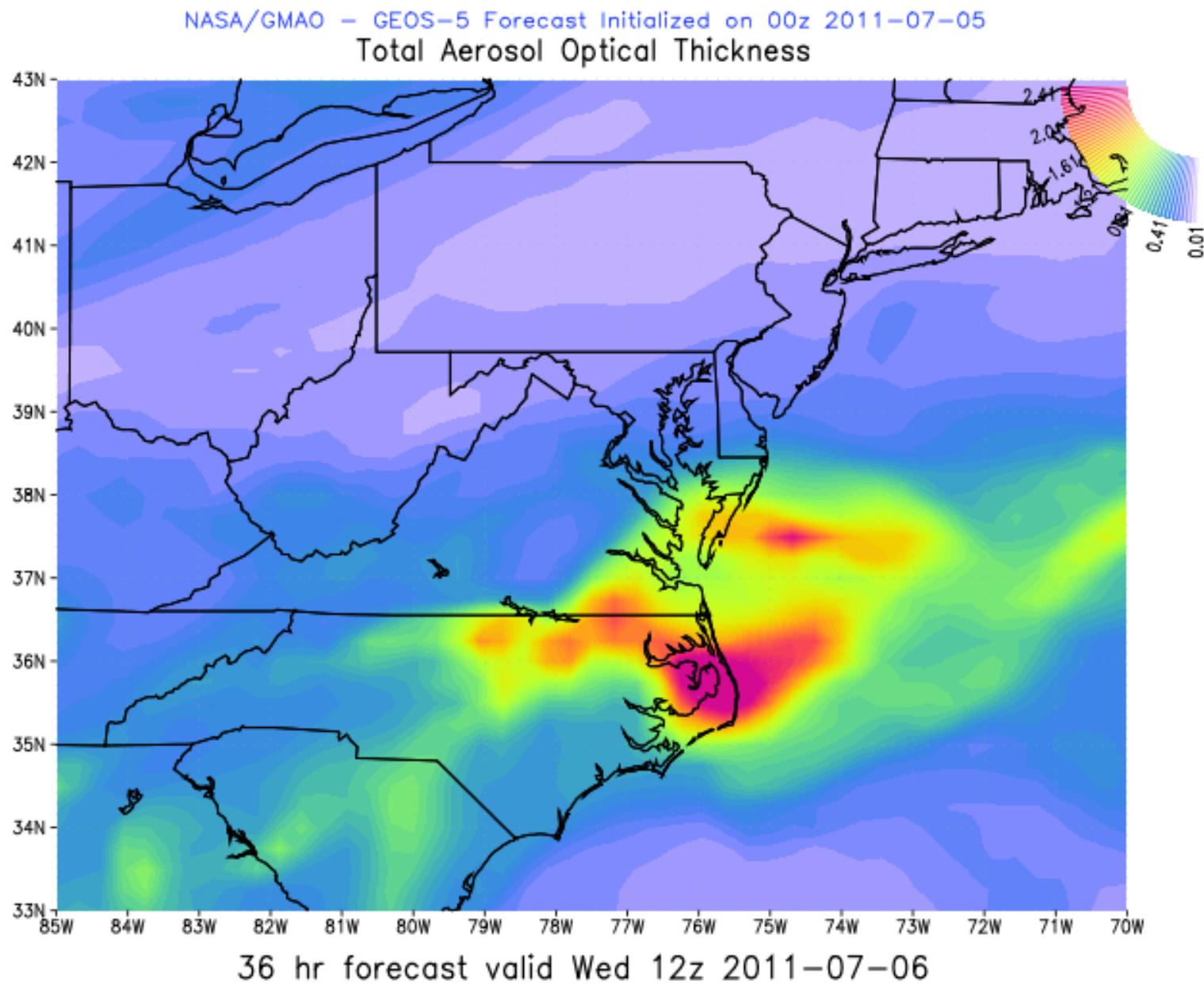
HU - Beltsville

Today's AOT forecast: small impact from NC fires/power plants

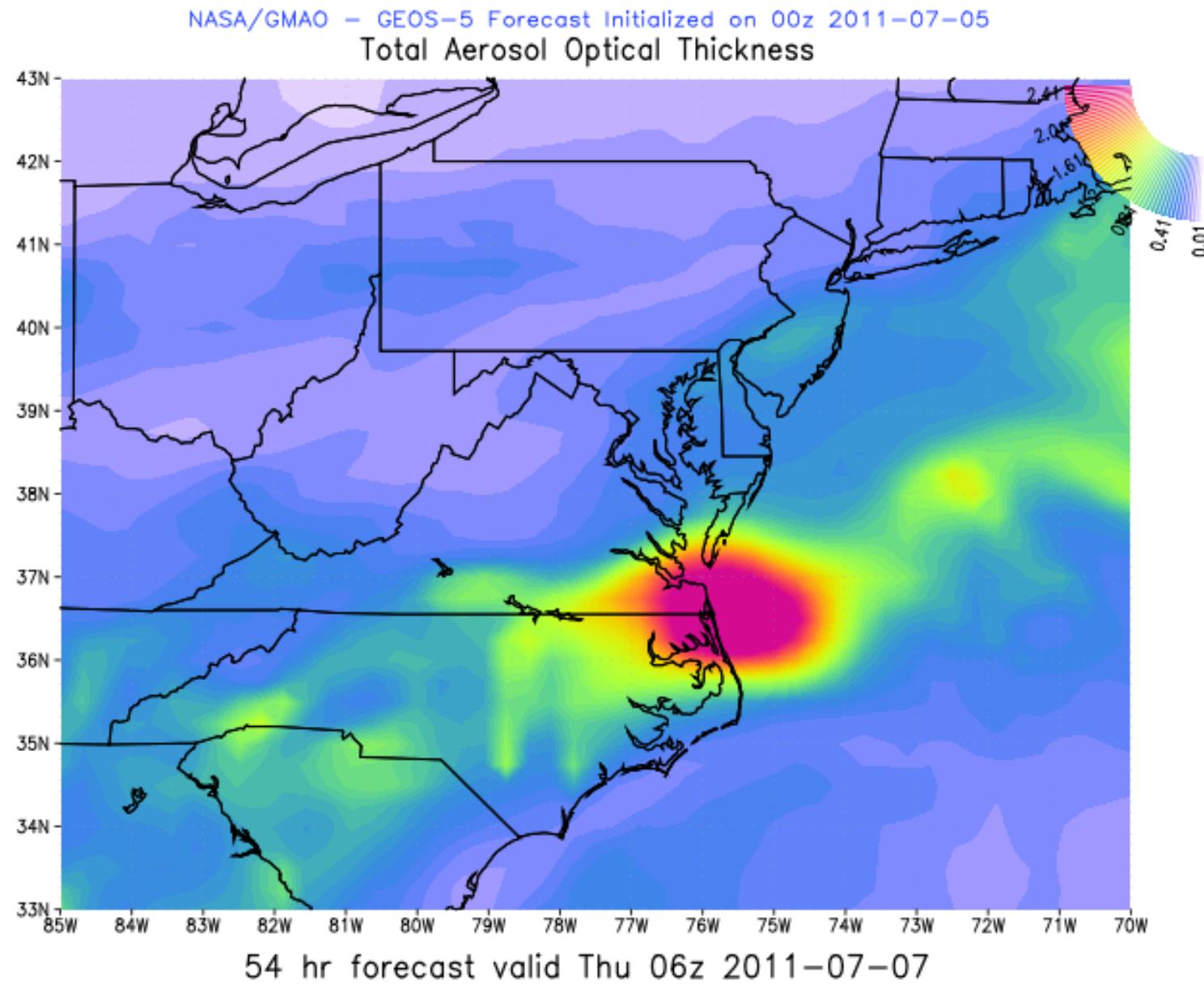
NASA/GMAO – GEOS-5 Forecast Initialized on 00z 2011-07-05
Total Aerosol Optical Thickness



Wednesday: Some impact from NC wildfires



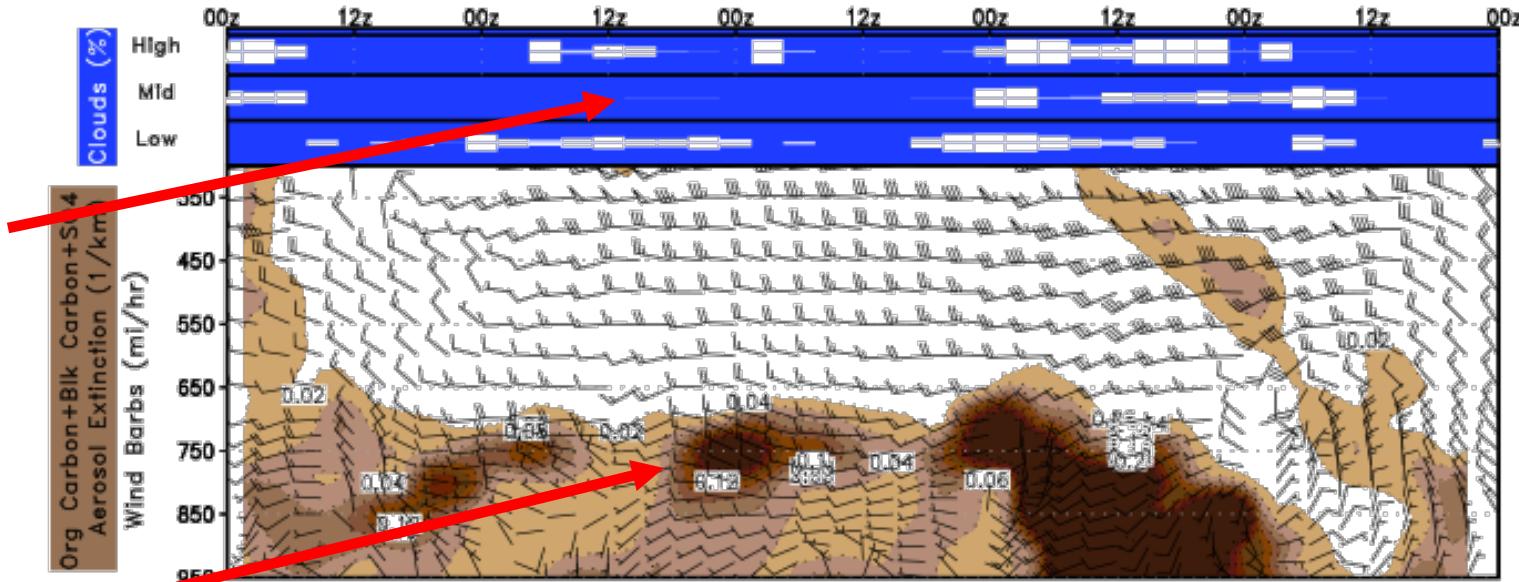
Thursday: Small impact from fires as flow moves offshore. Some sulfate from midwestern power plants.



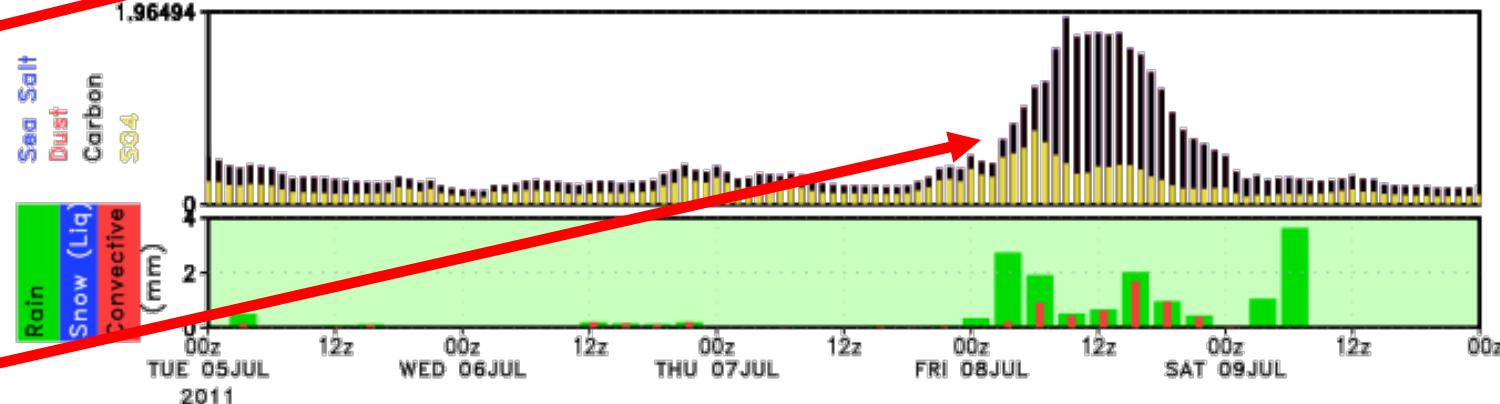
GEOS-5 Envirogram through 09 July 2011

Beltsville

- Clouds at multiple layers Wednesday AM, mostly low clouds by PM



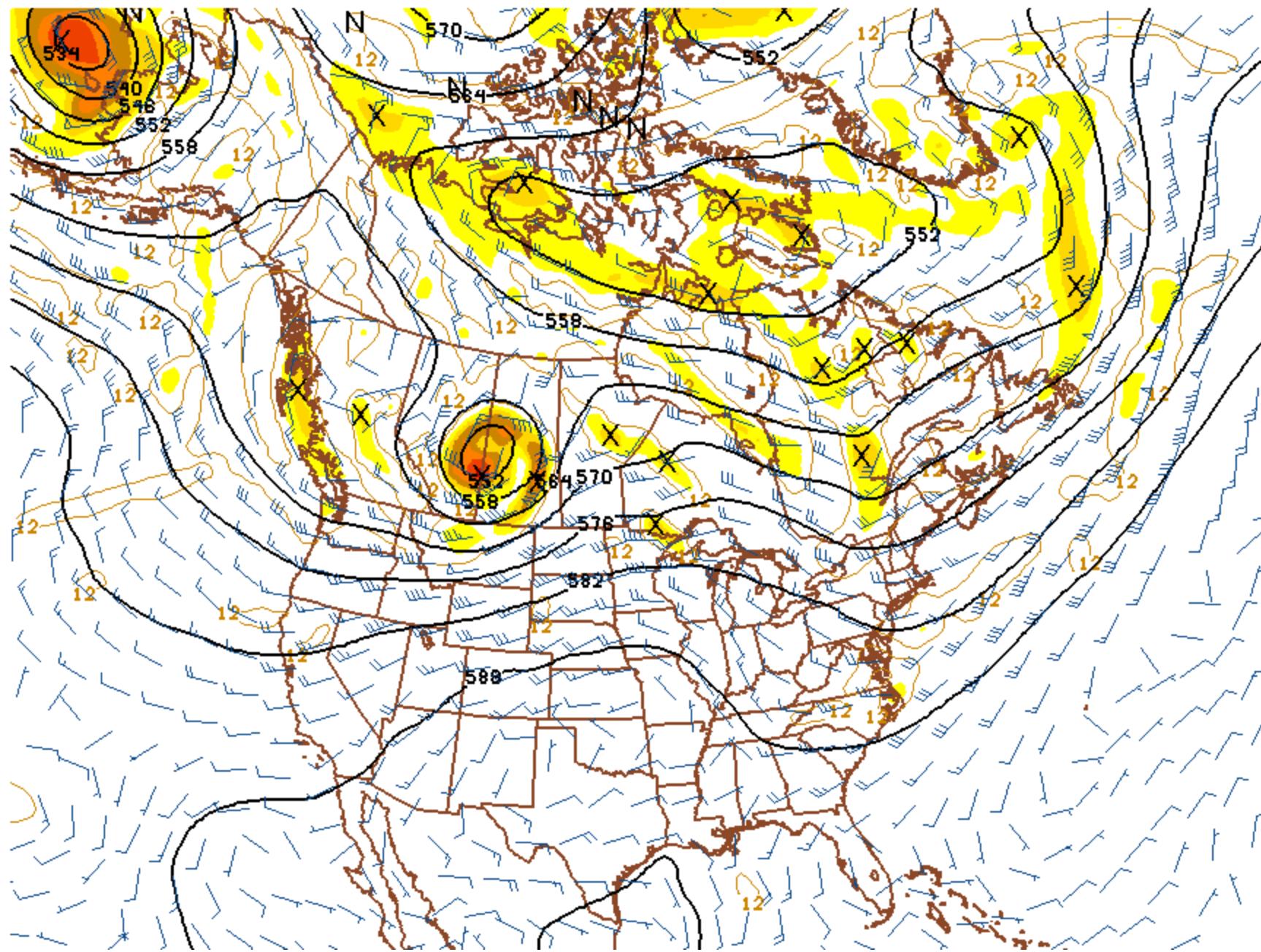
- Elevated aerosol peak late Wednesday evening



- Smoke influence on Friday!

- Clouds and precip late Thursday and all day Friday.

07/05/11 12UTC 102HR FCST VALID SAT 07/09/11 18UTC NCEP/NWS/NOAA



07/05/11 12UTC 126HR FCST VALID SUN 07/10/11 18UTC NCEP/NHS/NOAA

