

DISCOVER-AQ Outlook for Sunday, July 17, 2011

Good flying conditions are likely for Sunday, which seems very similar to Saturday weather-wise. One notable exception is that dewpoints increase from the upper 50s to mid-60s. Clouds may be a problem for much of next week and dewpoints will be near 70 – hazy, hot, and humid. Monday may be a fly day with an early takeoff as clouds may build in advance of an upper level trough in the afternoon. Clouds will likely be a problem all day on Tuesday. A heatwave is expected for the end of the work week into next weekend as the massive upper-level ridge plaguing the Plains moves east. Air quality will likely be poor most of the work week.

Recommendations for July 17-20th

July 17th, Sunday: Can Fly

July 18th, Monday: Fly? – check cloud forecast

July 19th, Tuesday: No Fly – clouds

July 20th, Wednesday: Fly? – check cloud forecast

Current Conditions at BWI 11 am

Baltimore-Washington International Airport

Lat: 39.19 Lon: -76.67 Elev: 148

Last Update on Jul 16, 10:54 am EDT

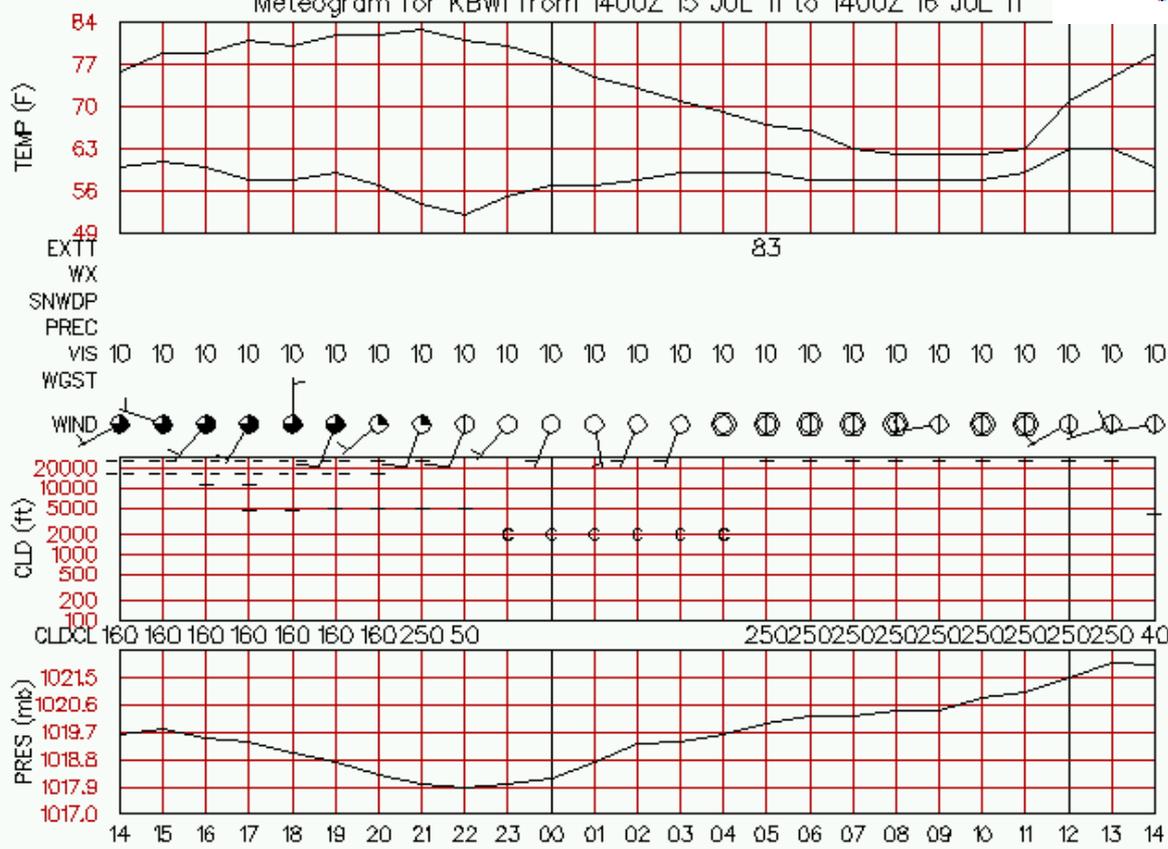
Partly Cloudy

81 °F
(27 °C)

Humidity:	47 %
Wind Speed:	SW 7 MPH
Barometer:	30.18" (1021.9 mb)
Dewpoint:	59 °F (15 °C)
Heat Index:	81 °F (27 °C)
Visibility:	10.00 mi.

Plymouth State Weather Center

Meteorgram for KBWI from 1400Z 15 JUL 11 to 1400Z 16 JUL 11



NWS Overview

Forecast at a Glance

Today	Tonight	Sunday	Sunday Night	Monday	Monday Night	Tuesday	Tuesday Night	Wednesday
								
Sunny	Mostly Clear	Mostly Sunny	Partly Cloudy	Mostly Sunny	Chance Tstms	Partly Sunny	Partly Cloudy	Mostly Sunny
Hi 87 °F	Lo 67 °F	Hi 89 °F	Lo 69 °F	Hi 92 °F	Lo 74 °F	Hi 92 °F	Lo 73 °F	Hi 94 °F

“SYNOPSIS... HIGH PRESSURE DOMINATES MID-ATLANTIC WEATHER THROUGH THE WEEKEND. A WEAK COLD [FRONT](#) DROPS SOUTH THROUGH THE REGION MONDAY NIGHT INTO TUESDAY. THE PRESENCE OF A [BERMUDA HIGH](#) WILL ALLOW THE HEAT TO BUILD ACROSS THE MID-ATLANTIC DURING THE SECOND HALF OF NEXT WEEK.”

Heatwave on the way for next week.



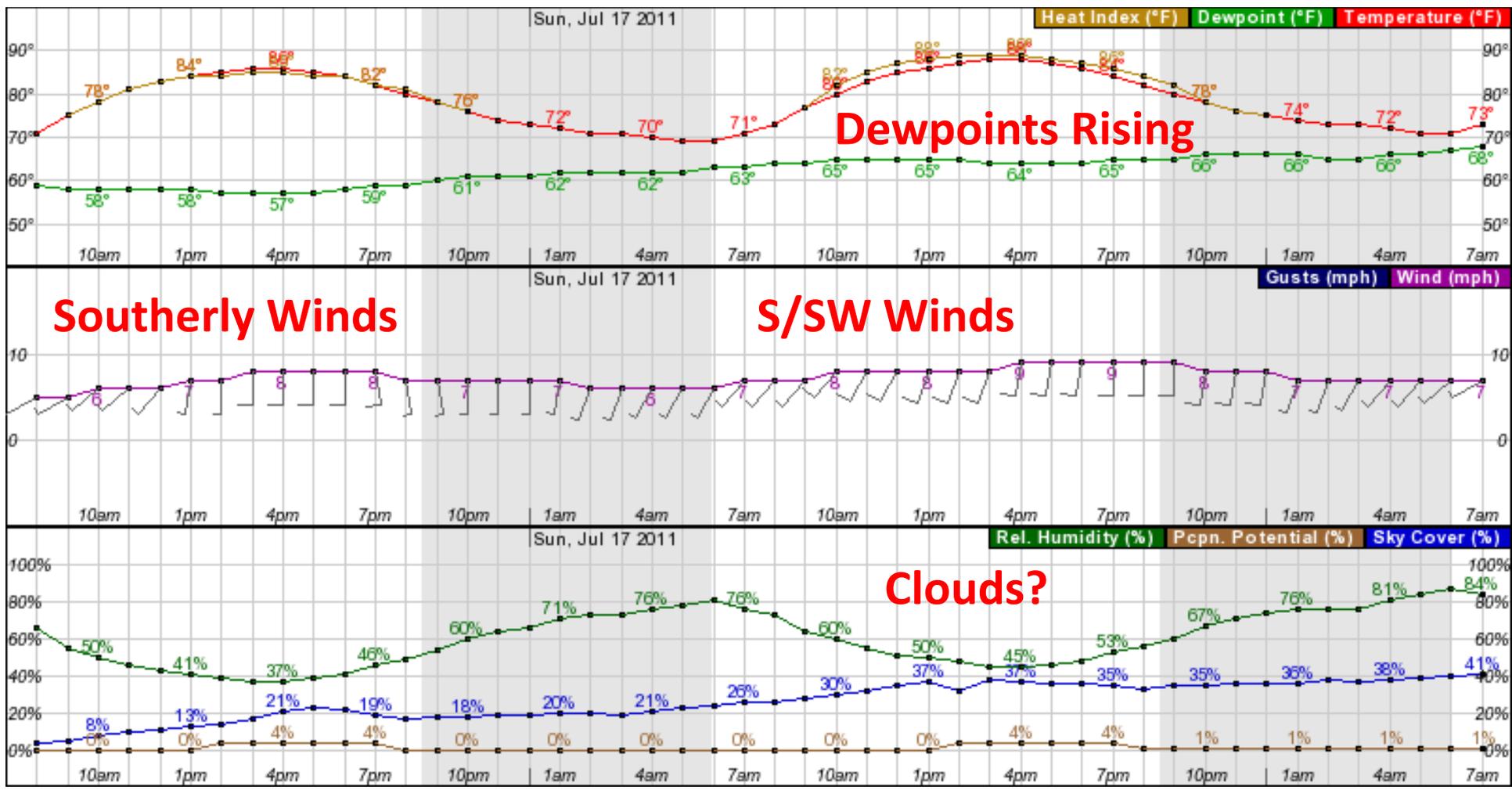
Today	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon
Jul 16	17	18	19	20	21	22	23	24	25

Mostly Sunny	Mostly Sunny	Partly Cloudy	Isolated T-Storms	Mostly Sunny	Partly Cloudy	Partly Cloudy	Scattered T-Storms	Sunny	Partly Cloudy
87°F High	89°	94°	91°	92°	95°	99°	97°	94°	93°
67° Low	70°	74°	71°	74°	75°	78°	76°	73°	73°

Clear today with increasing clouds (~30%) & dewpoints for tomorrow – a little below average temps.

Today →

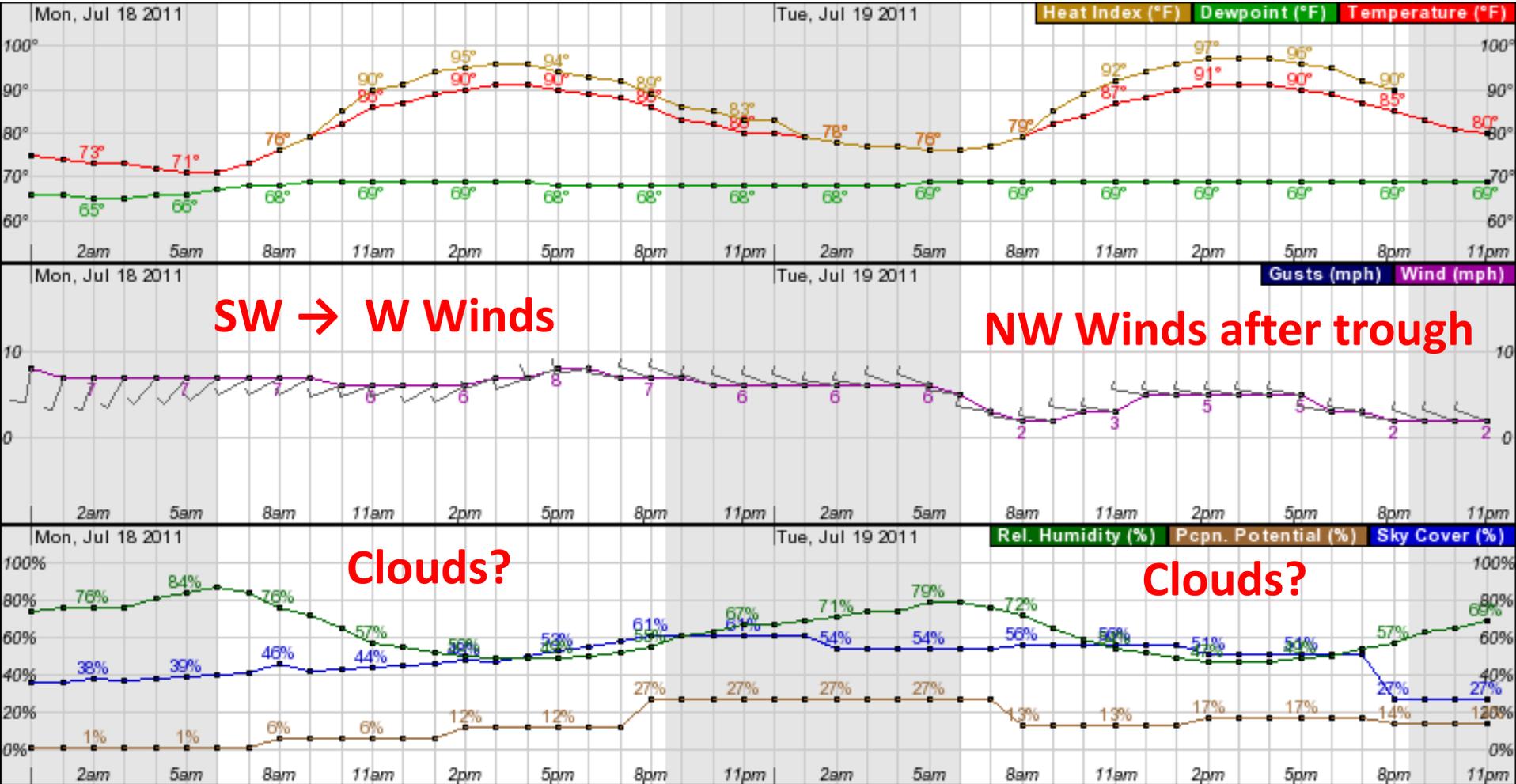
Sunday →



Hazy, Hot & Humid with dewpoints near 70. Need to watch cloud forecasts!

Monday →

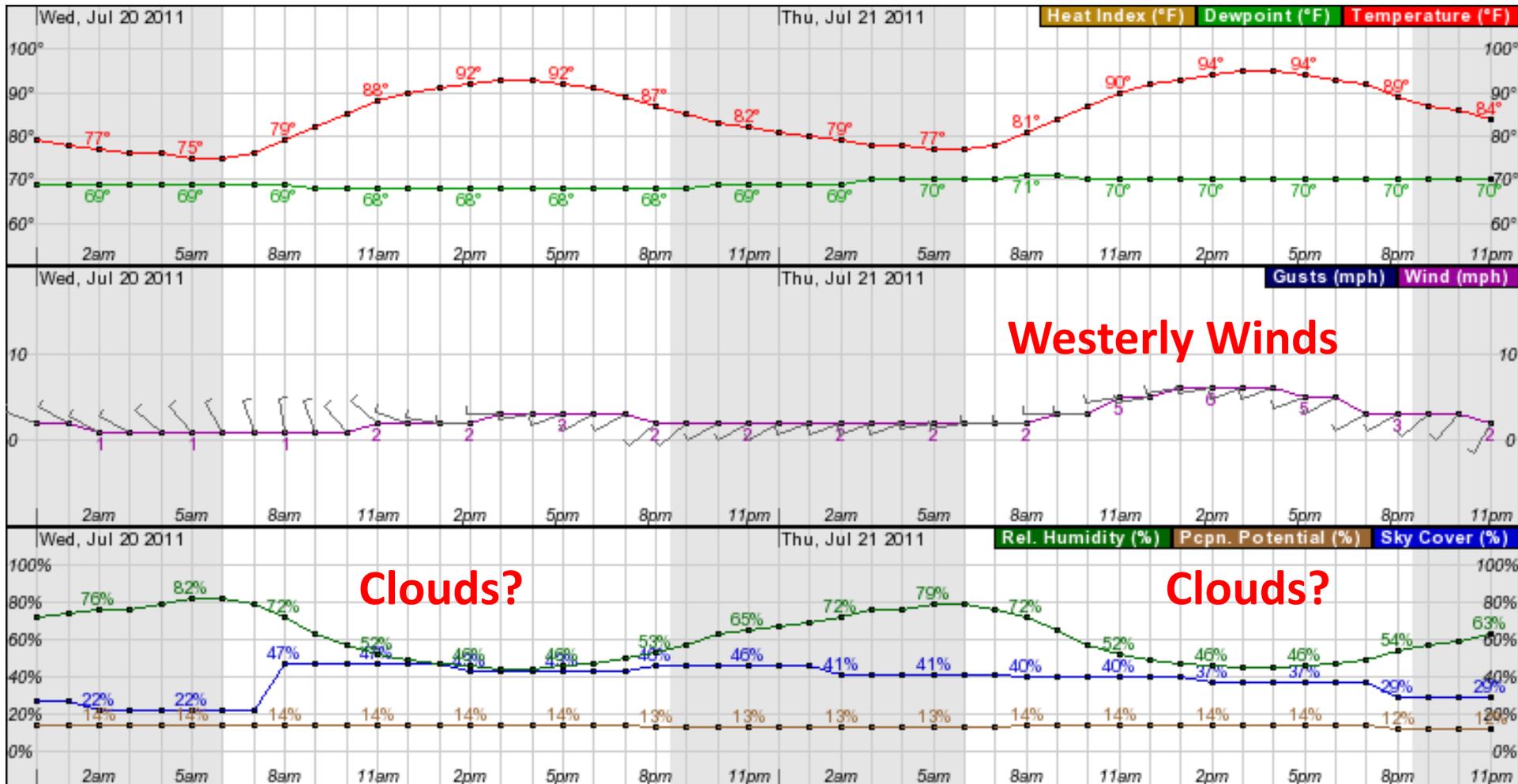
Tuesday →



Hazy, Hot & Humid with dewpoints near 70. Need to watch cloud forecasts!

Wednesday →

Thursday →



NWS Forecast Discussion

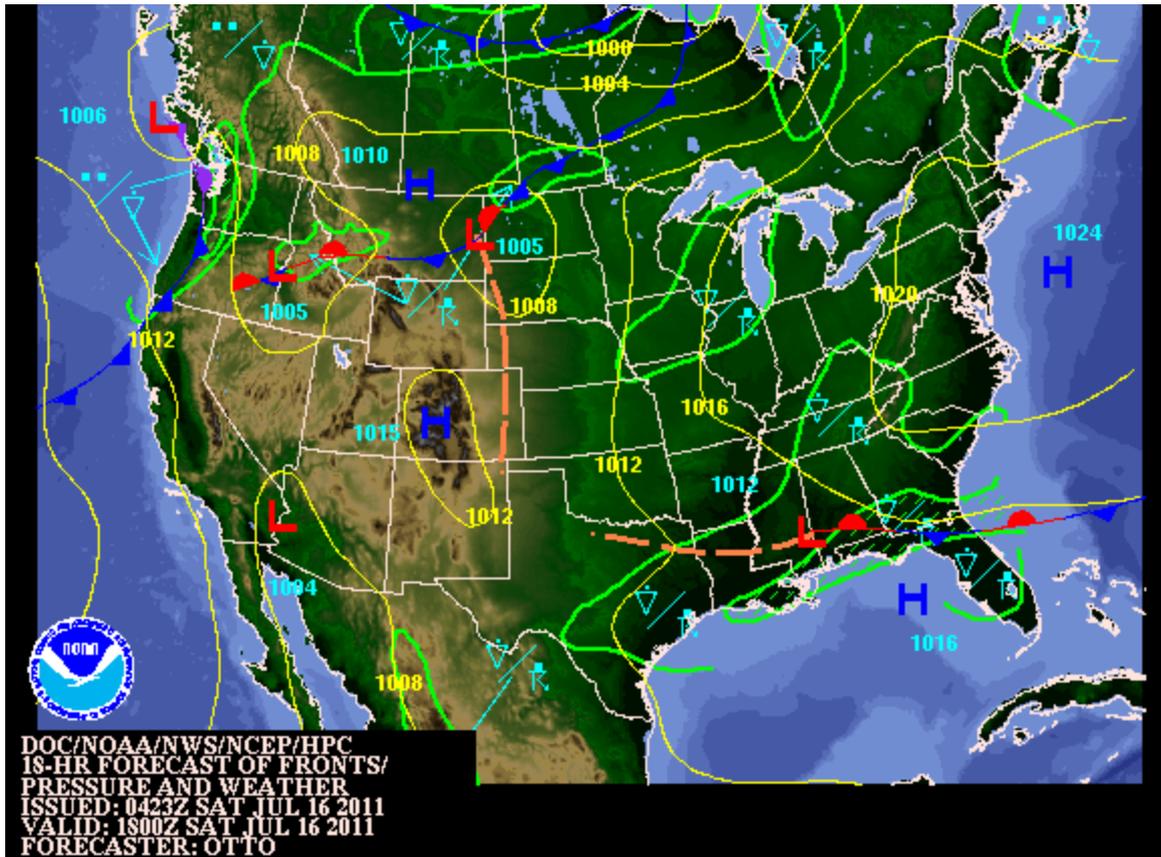
.NEAR TERM /THROUGH TONIGHT/... [SFC](#) HIPRES DRIFTING SEWD AWAY FROM MID-ATLC...AND IS CURRENTLY CENTERED NEAR MOUTH OF CHESAPEAKE BAY. SUNNY [ACRS](#) [CWA](#)...[XCPT](#) FOR SWRNMOST [CWA](#)...WHERE [SCT/BKN](#) STRATOCU ASSOCIATED WITH NRN FRIDGED OF SERN [CONUS CAD](#) HAVE FORMED. TEMPS APROACHING 80F LATE THIS [MRNG](#)...AND SHUD TOP OUT IN M/U80S. [CU](#) FIELD SHUD [DVL](#)[P](#) MAINLY W OF BLUE [RDG](#)...AND STILL CANT RULE OUT [ISOLATED](#) TERRAIN-INDUCED CNVCTN [ACRS](#) HIGHLANDS. OTHERWISE...[UPR RIDGE](#) BUILDING IN FROM SW AND DRY CONDS PREVAIL. PREV DISCUSSION FOLLOWS...ANY [CUMULUS](#) WILL DISSIPATE WITH THE SETTING OF THE SUN. MODEL [RH](#) SUGGESTS SOME HIGH [CIRRUS](#) STREAMING ACROSS THE SOUTHWEST [CWA](#) OVERNIGHT FOR [PARTLY CLOUDY](#) SKIES...WITH MAINLY CLEAR SKIES TO THE NORTHEAST. && .

SHORT TERM /SUNDAY THROUGH TUESDAY/... A DEEP [UPR RIDGE](#) WILL PERSIST ACROSS THE CENTRAL GREAT PLAINS THROUGH THE MIDDLE PART OF NEXT WEEK...WHILE [SFC](#) HIGH PRESSURE WILL PERSIST ACROSS THE MID ATLANTIC INTO MONDAY. SUNDAY AND MONDAY...LIGHT SLY [SFC FLOW](#) BRINGS [MOISTURE](#) AND HEAT...MAX TEMPS CONTINUE UPWARD TREND...NEAR 90F ON SUNDAY AND LOW TO MID 90S ON MONDAY. ANY [THUNDERSTORM](#) DEVELOPMENT TO BE IN THE POTOMAC HIGHLANDS IN THE AFTERNOON WHERE TERRAIN [CIRCULATION](#) IS GREATEST.

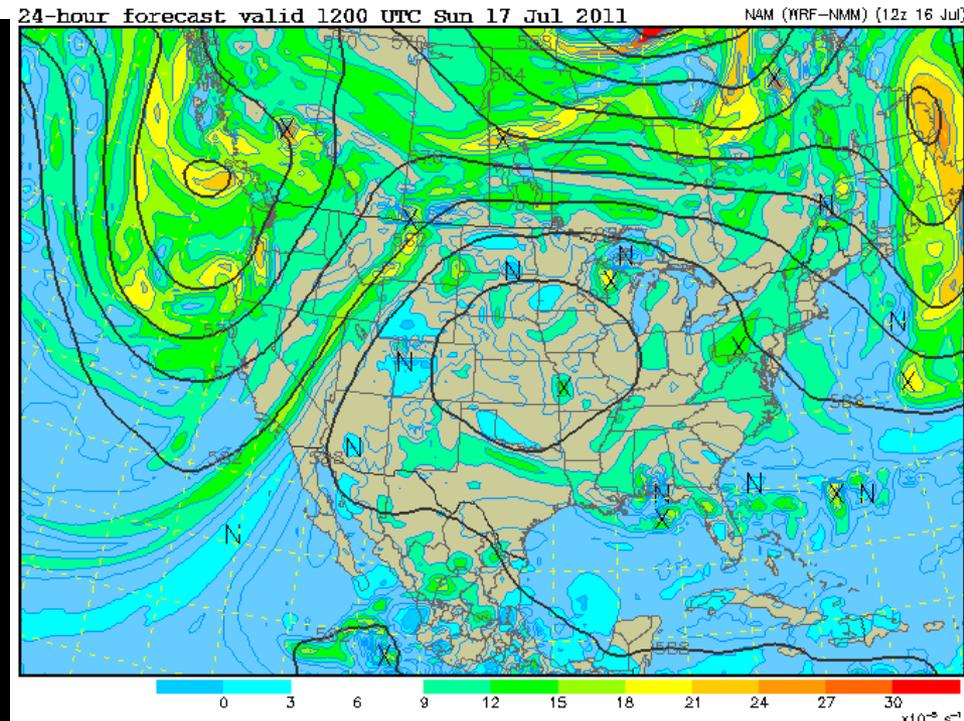
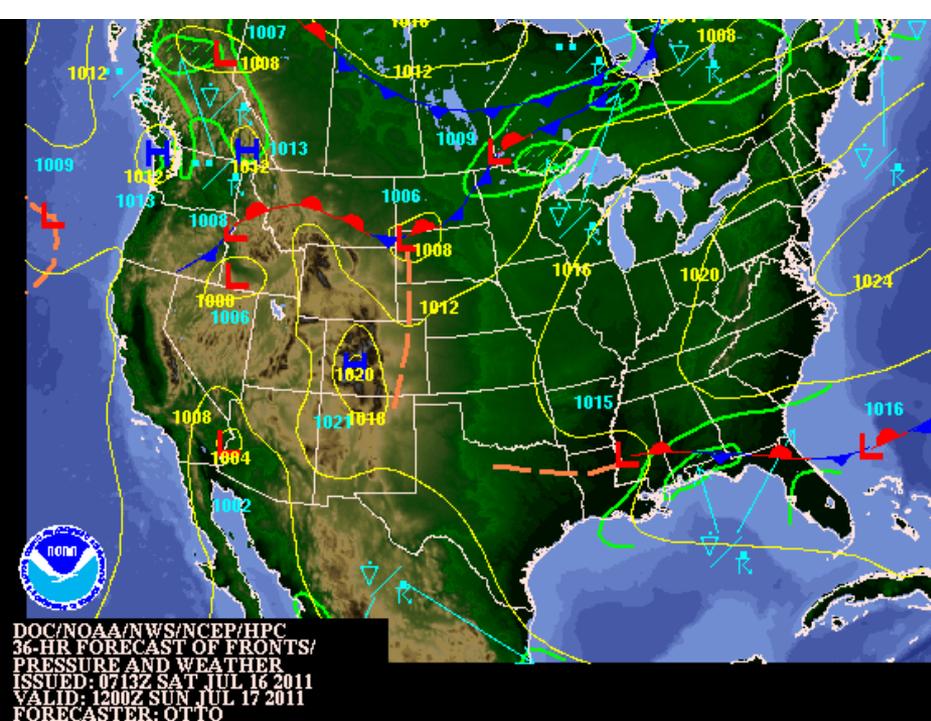
MONDAY EVENING THROUGH TUESDAY...A [TROUGH](#) ASSOCIATED WITH A LOW UP OVER NRN QUEBEC PUSHES SOUTHEAST THROUGH THE MID ATLANTIC. GIVEN THE HOT/HUMID AIRMASS...A PERTURBATION SUCH AS THIS [TROUGH](#) SHOULD SET OFF SOME THUNDERSTORMS. CHANCE [POPS](#) WERE BROAD-BRUSHED ACROSS THE [CWA](#) FOR MONDAY NIGHT FOR NOW. WOULD NOT BE SURPRISED IF THIS BECAME MORE OF A MONDAY AFTERNOON EVENT. MAX TEMPS TUESDAY IN THE LOW TO POSSIBLY MID 90S...DEPENDING ON CLOUD COVER/DOWNSLOPING EFFECTS FROM THE [NWLY](#) POST-[TROUGH FLOW](#). &&

.LONG TERM /TUESDAY NIGHT THROUGH FRIDAY/... [BERMUDA HIGH](#) PROVIDES SLY/SWLY [FLOW](#) TO THE MID ATLANTIC WEDNESDAY THROUGH NEXT WEEKEND. [MOISTURE](#)/TEMPERATURE [ADVECTION](#) TO BRING ABOUT HIGH HEAT...WITH HEADLINES APPEARING TO BE [LIKELY](#) FOR THURSDAY AND INTO THE WEEKEND. THIS PERIOD WILL BE MAINLY DRY...WITH LOW CHANCES FOR AFTERNOON CONVECTIVE STORMS WEST OF THE SHENANDOAH VALLEY IN THE SECOND HALF OF NEXT WEEK.

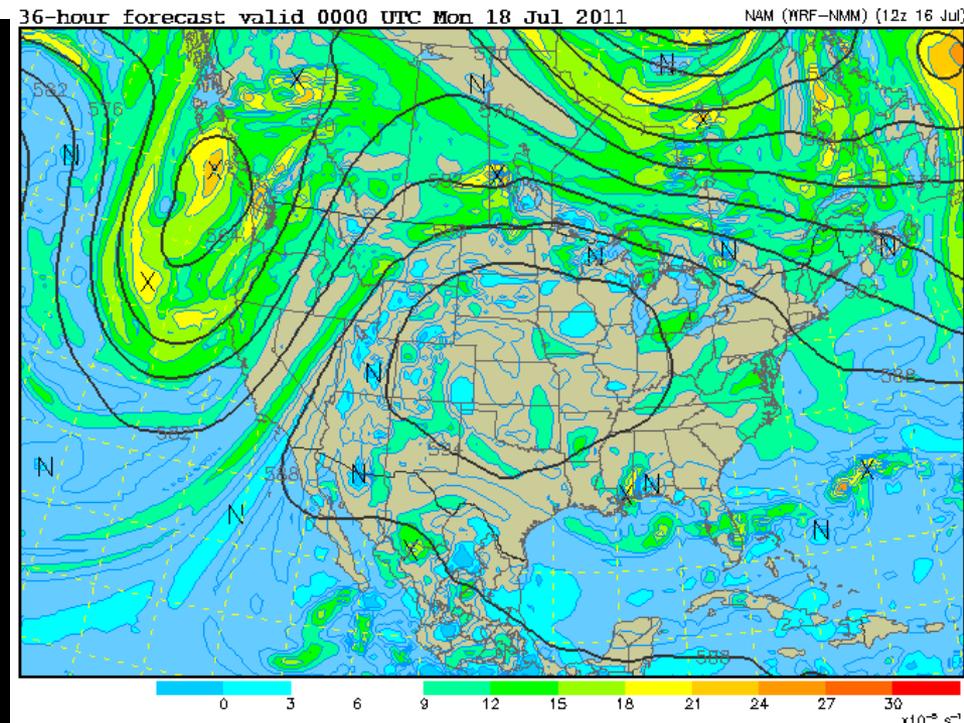
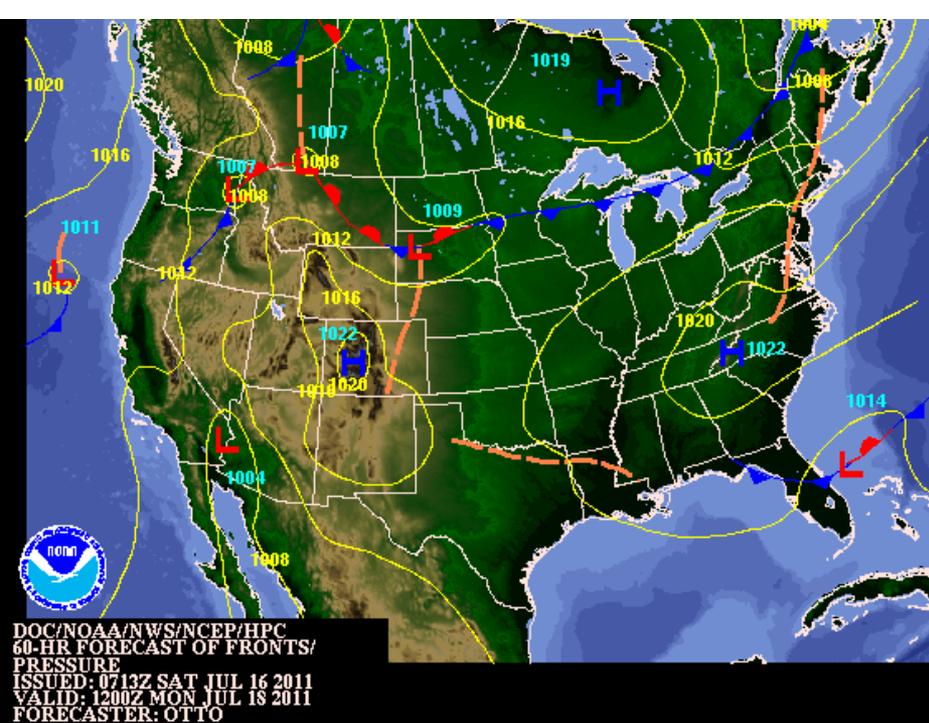
Today 2 pm:
High pressure sits off East Coast, light
southerly winds



Tomorrow (Sunday) 8 am:
High moves further off coast, flow
from SW. Upper level ridge still
intense over Midwest.



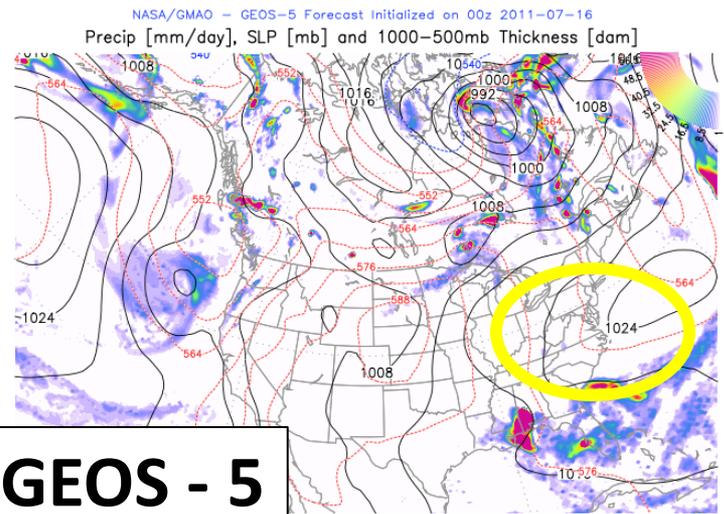
Monday 8 am: Westerly winds and increasing temperatures. Upper level trough over the East Coast. Weak cold front to our north.



NWS discussion

- Trough expected to set off some thunderstorms Monday afternoon / evening
- Downsloping effects of northwesterly flow from the passing trough could bring clouds Tuesday

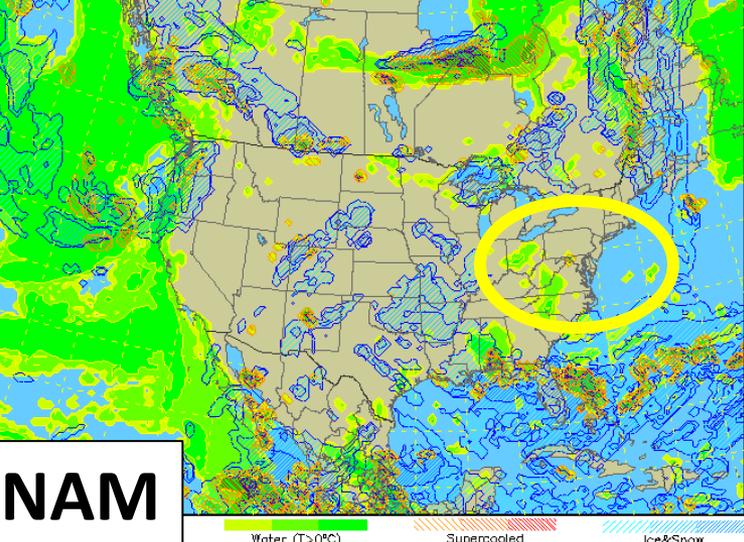
Sunday 8 am: Clear conditions forecast



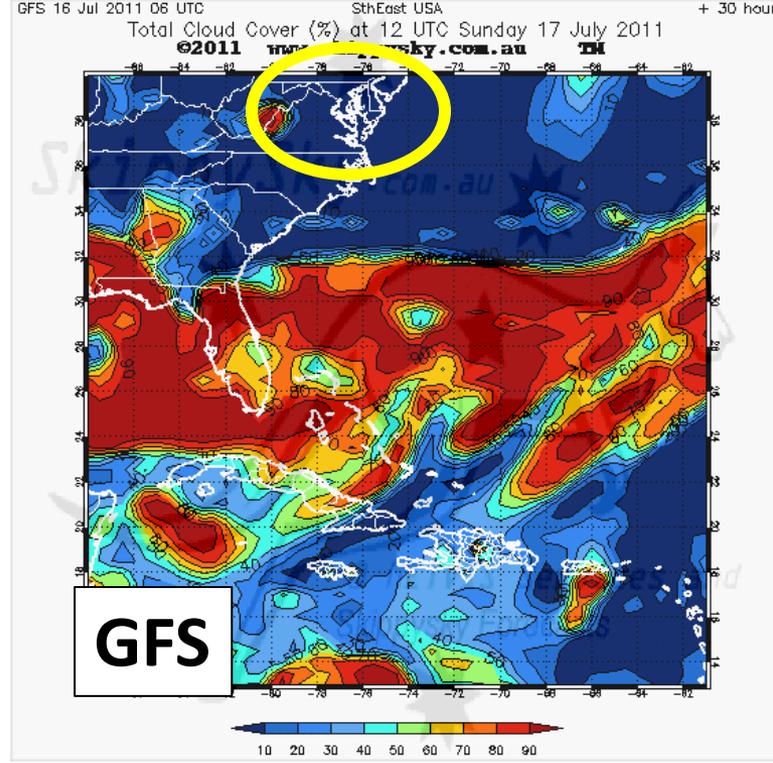
GEOS - 5

36-hr forecast valid Sun 12z 2011-07-17

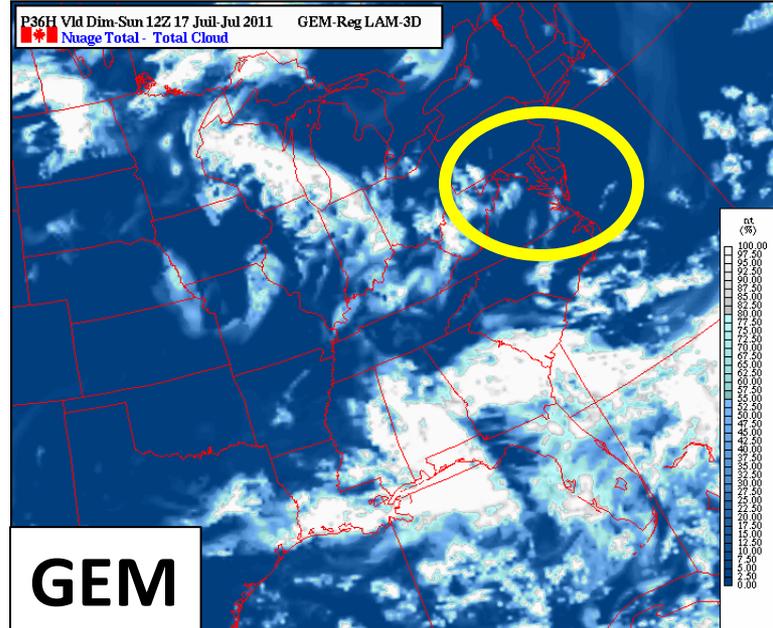
24-hour forecast valid 1200 UTC Sun 17 Jul 2011 NAM (MRF-NMM) (12z 16 Jul)



NAM

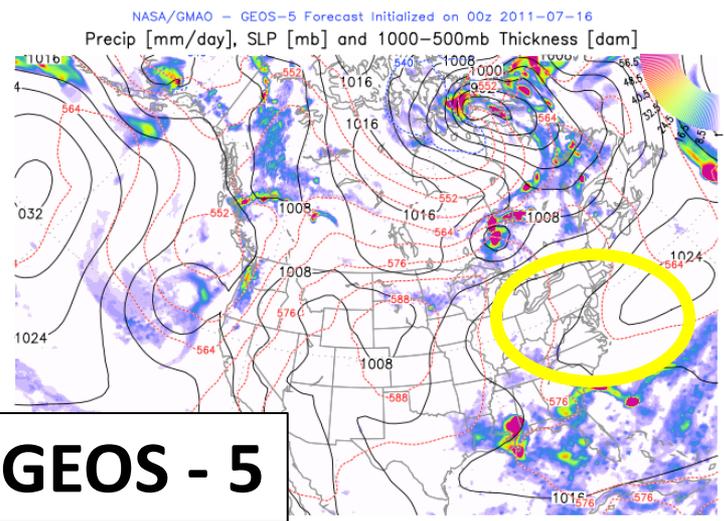


GFS



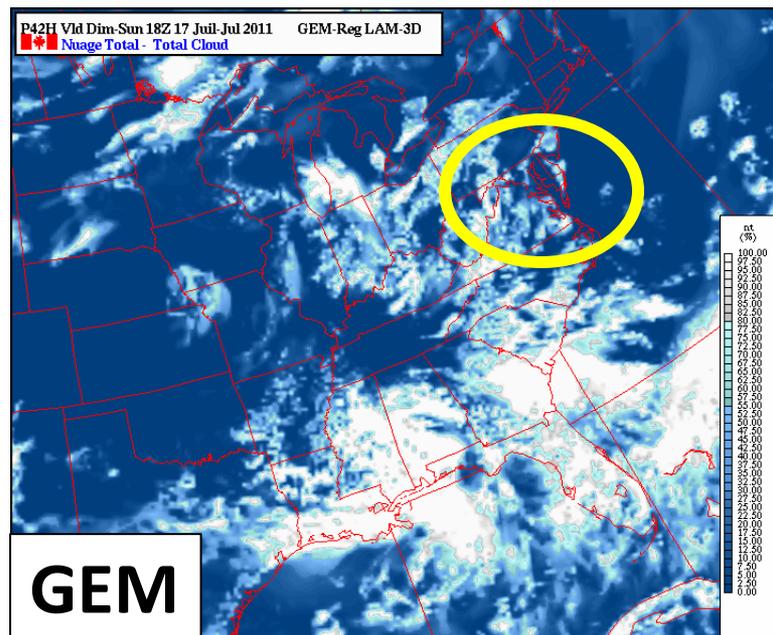
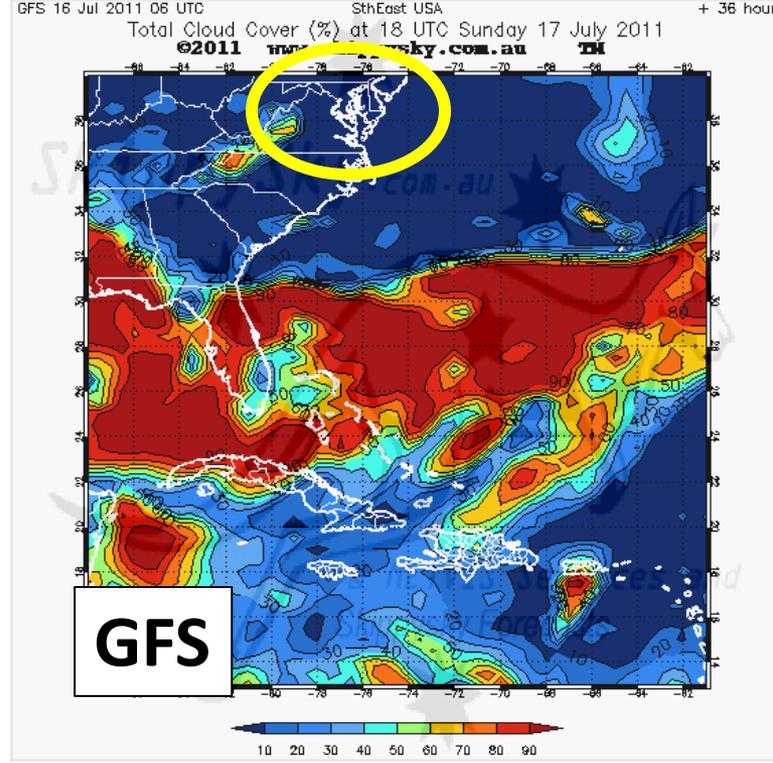
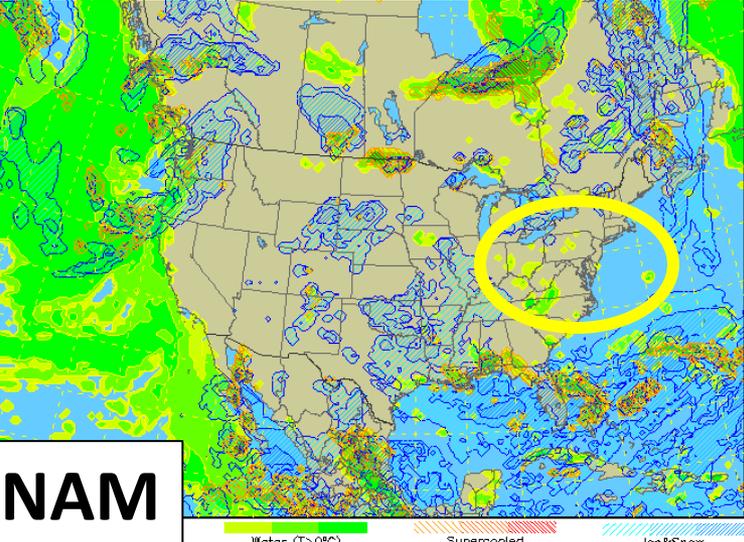
GEM

Sunday 2 pm: GEM model has clouds

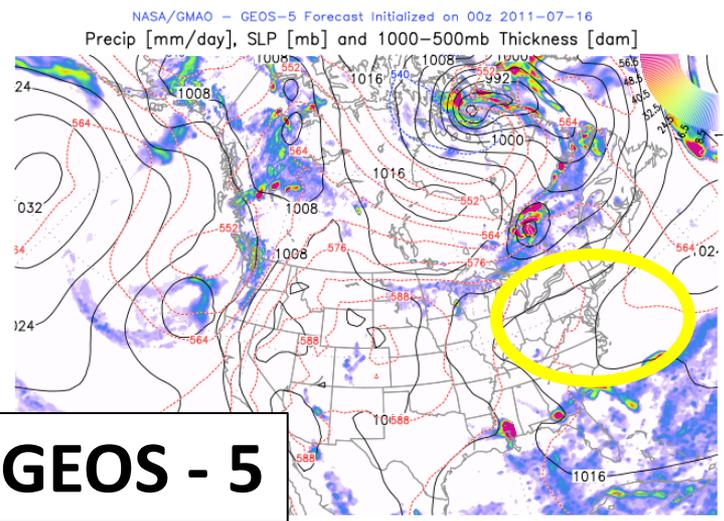


42-hr forecast valid Sun 18z 2011-07-17

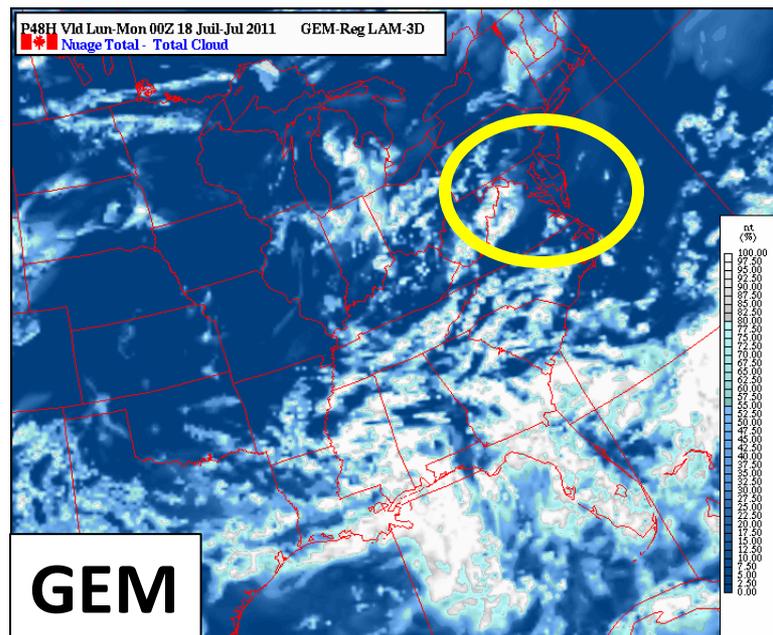
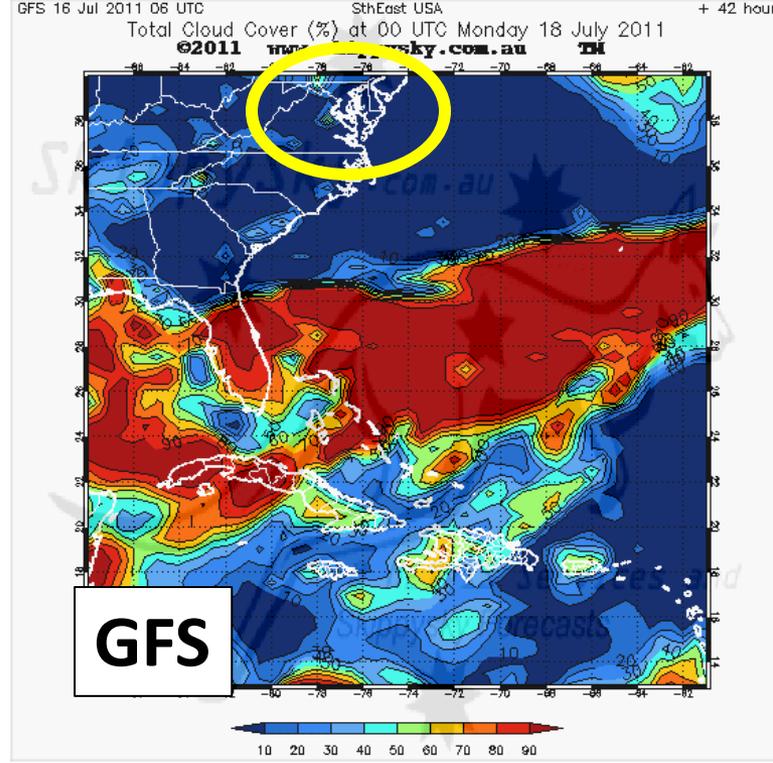
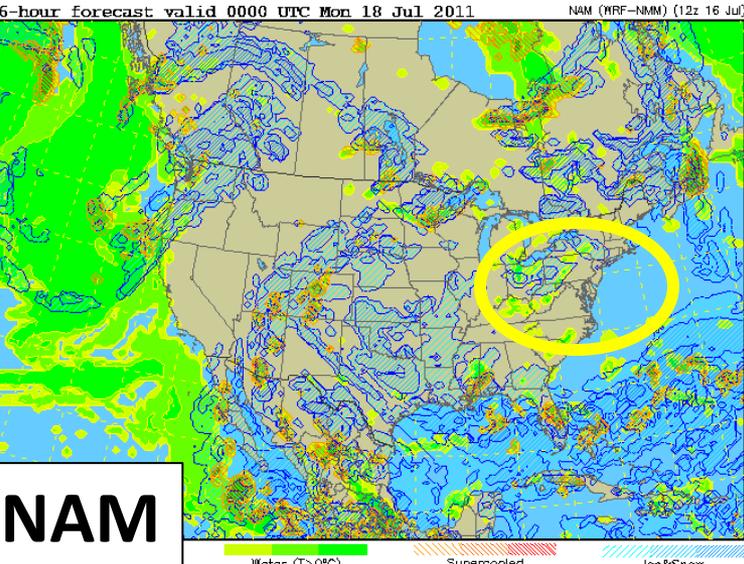
30-hour forecast valid 1800 UTC Sun 17 Jul 2011 NAM (MRF-NMM) (12z 16 Jul)



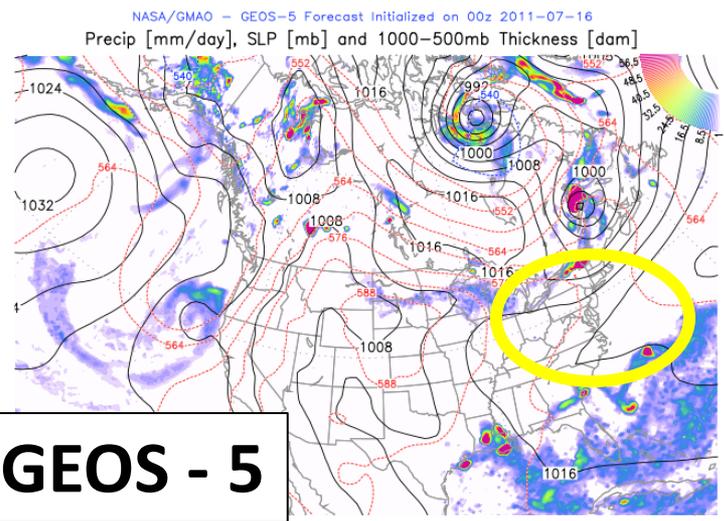
Sunday 8 pm: GEM model some clouds. NAM and GFS show low clouds to our west and high clouds to our north



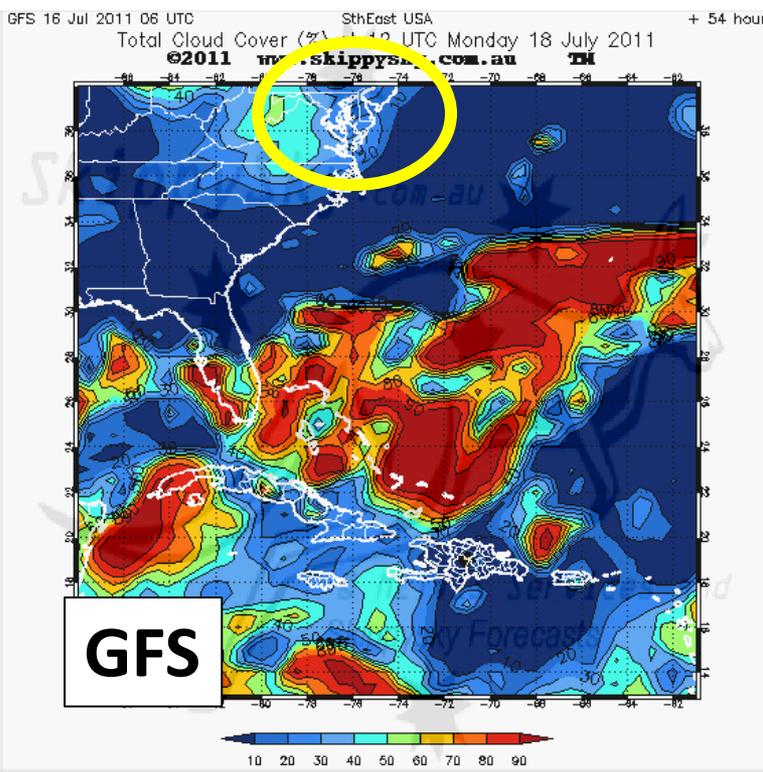
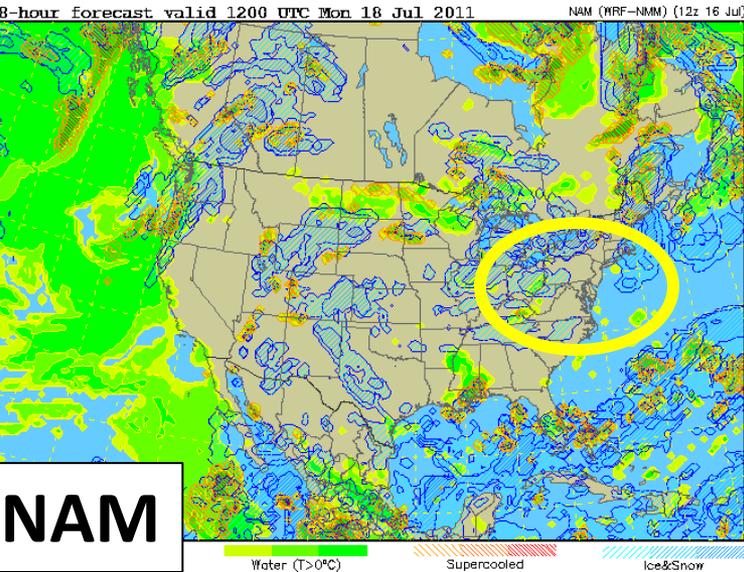
48-hr forecast valid Mon 00z 2011-07-18



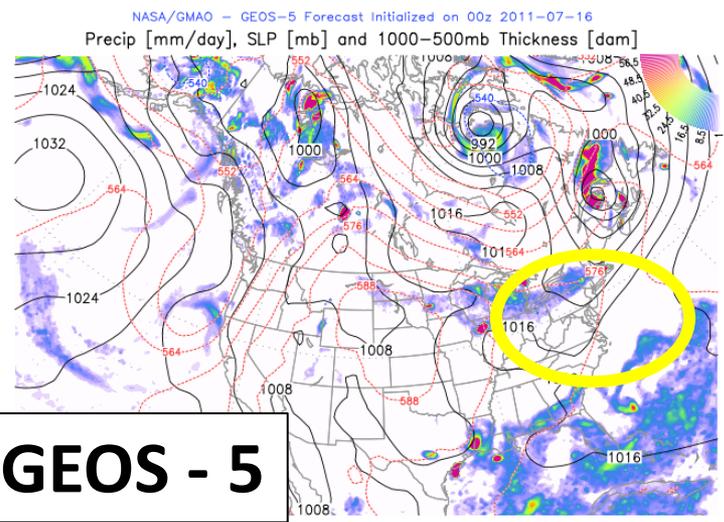
Monday 8 am: GFS shows ~20% high cloud cover over our area. NAM is clear.



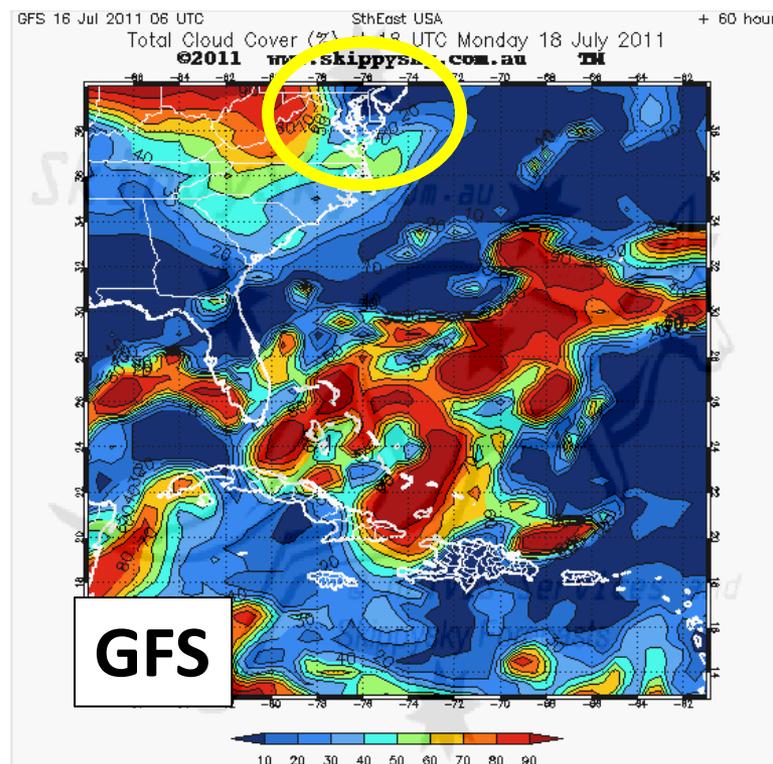
60-hr forecast valid Mon 12z 2011-07-18



Monday 2 pm: GFS shows 20-30% high level cloud cover

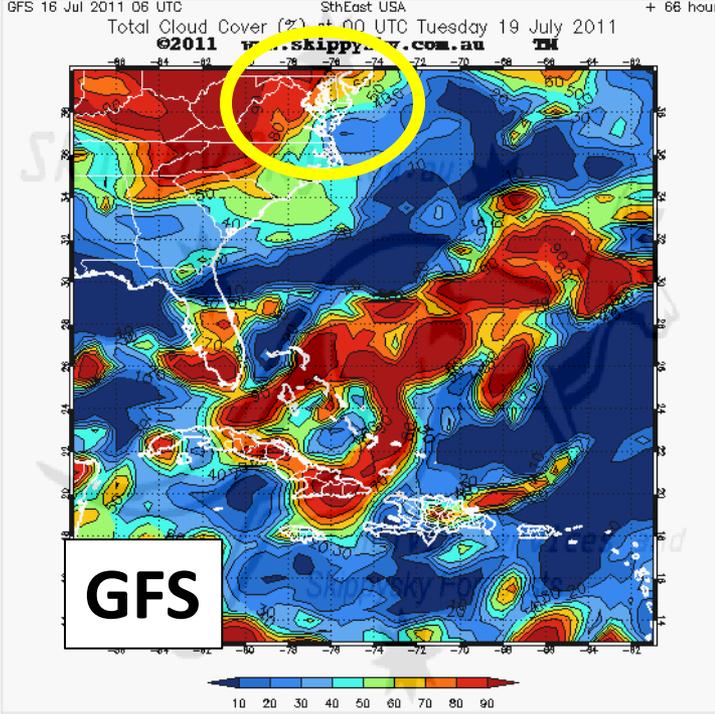


66-hr forecast valid Mon 18z 2011-07-18

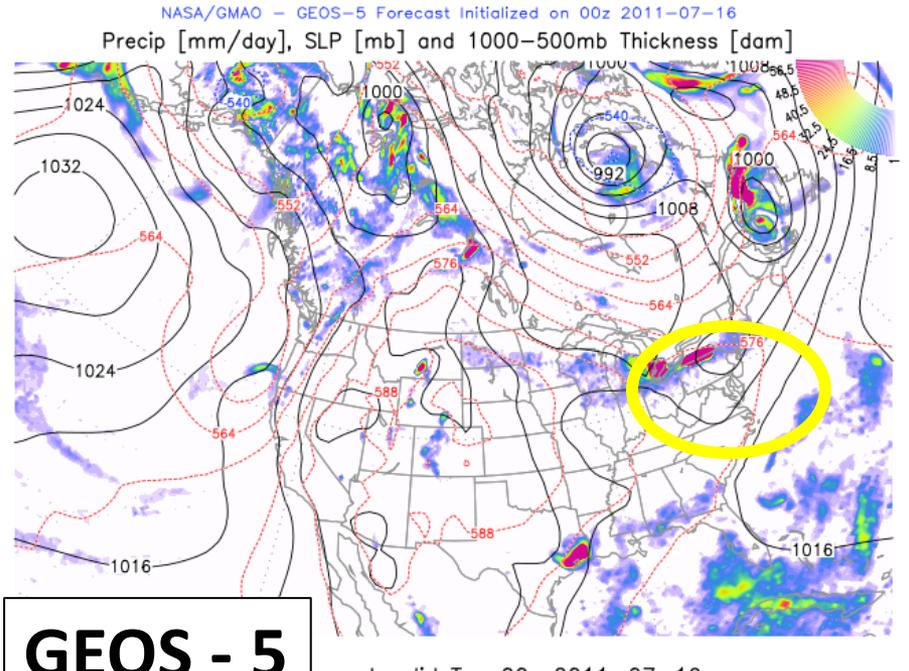
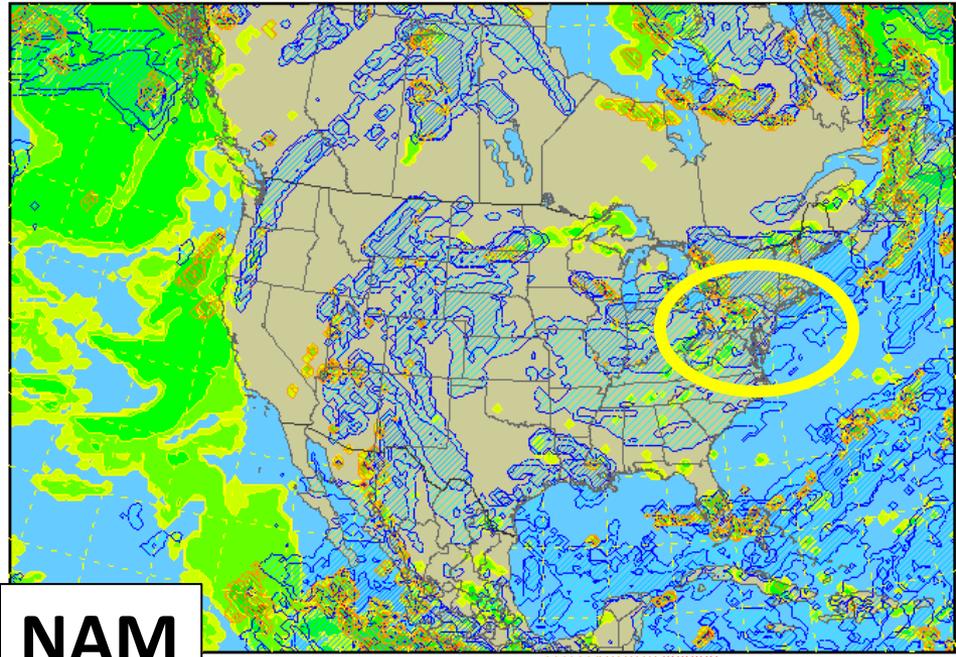


Monday 8 pm: NAM predicts high level clouds over our area

GFS predicting 20-30% mid-level cloud cover, and 70-80% high-level cloud cover

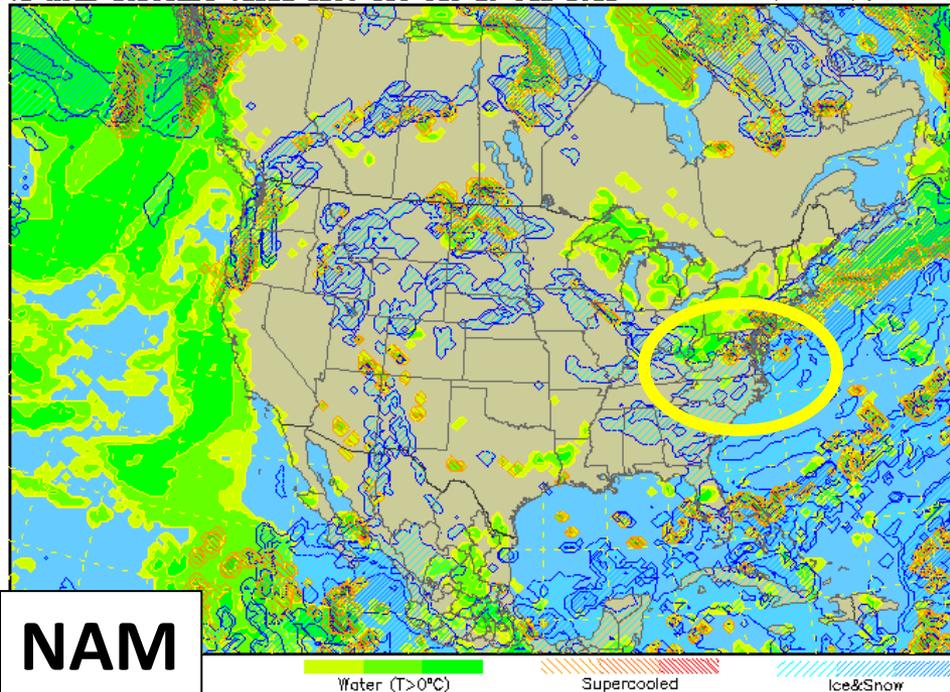


60-hour forecast valid 0000 UTC Tue 19 Jul 2011 NAM (MRF-NMM) (12z 16 Jul)

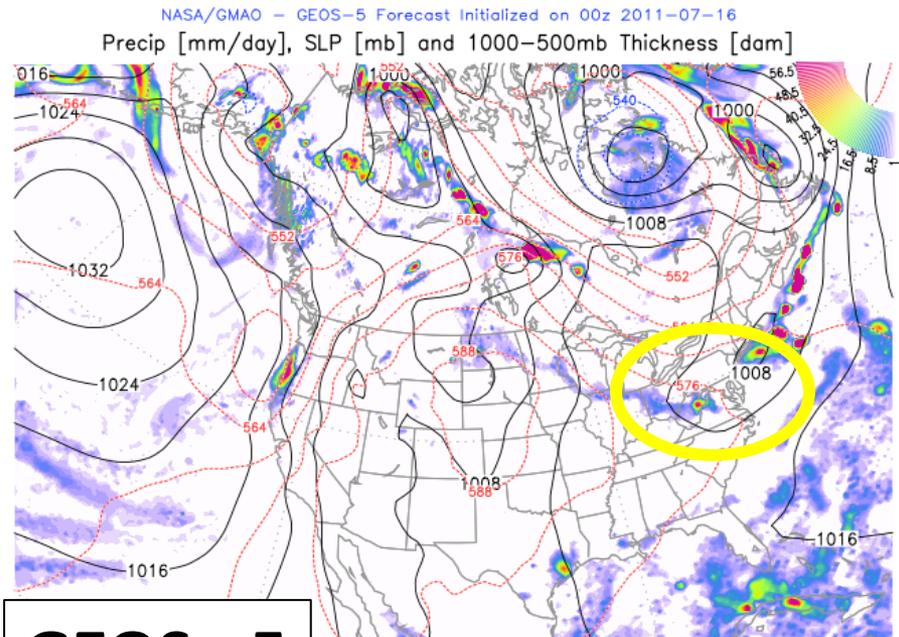


Tuesday 8 am: NAM continues to forecast cloudy skies

72-hour forecast valid 1200 UTC Tue 19 Jul 2011 NAM (MRF-NMM) (12z 16 Jul)



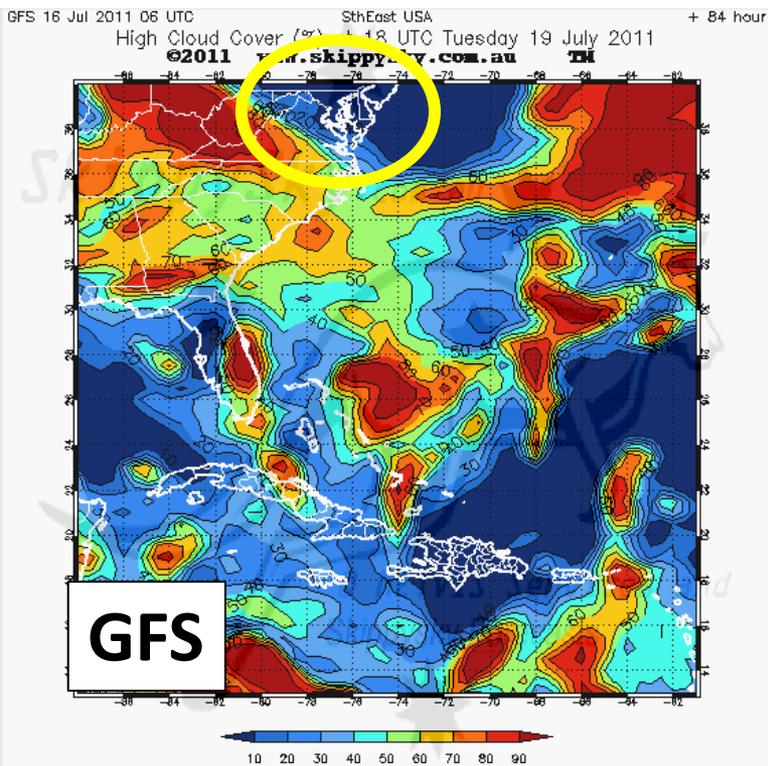
NAM



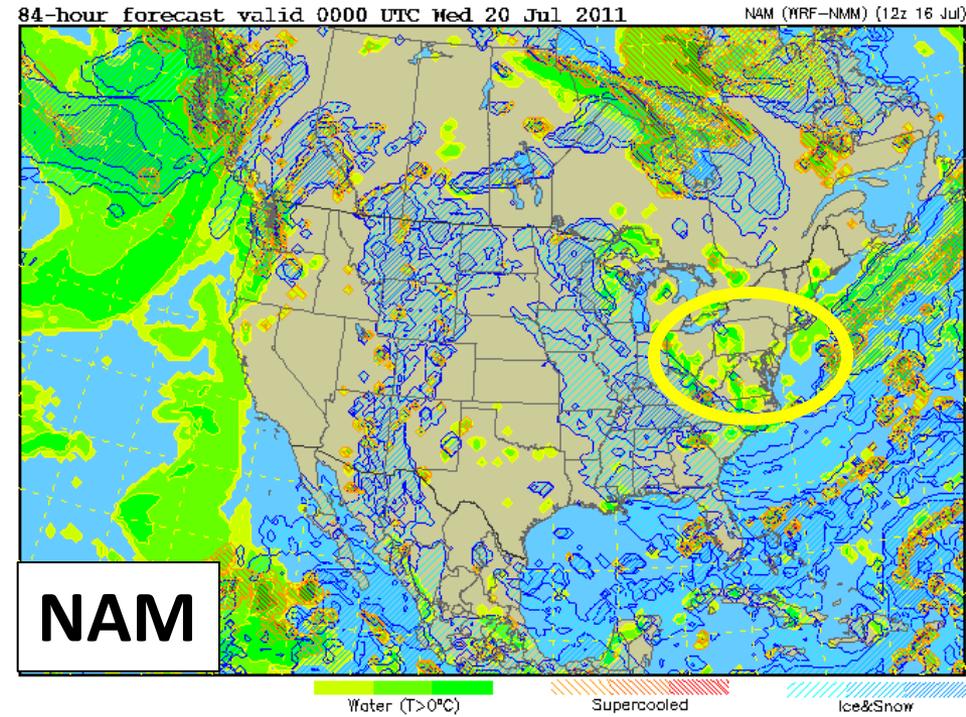
GEOS - 5

forecast valid Tue 12z 2011-07-19

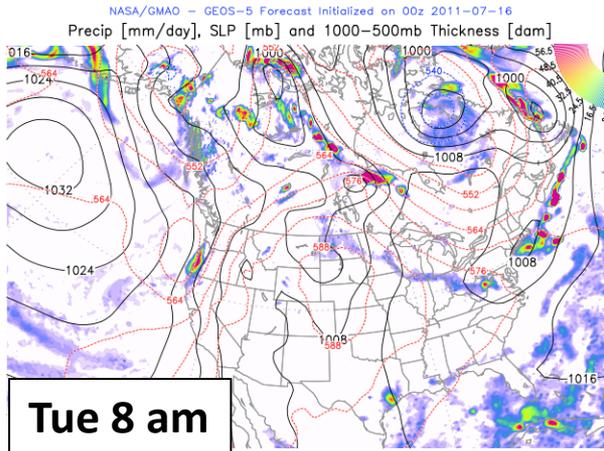
Tuesday 2 pm: GFS shows clear conditions



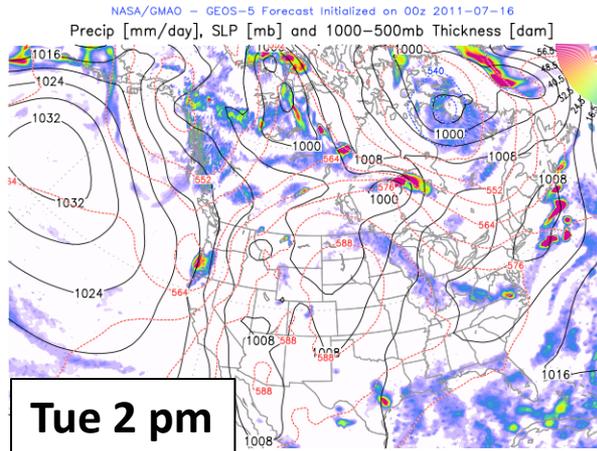
Tuesday 8 pm: NAM shows low-level cloud cover



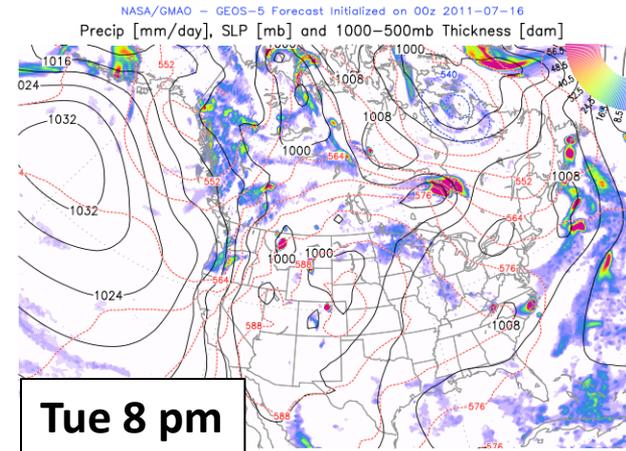
GEOS-5 Extended forecast: No precip in forecast



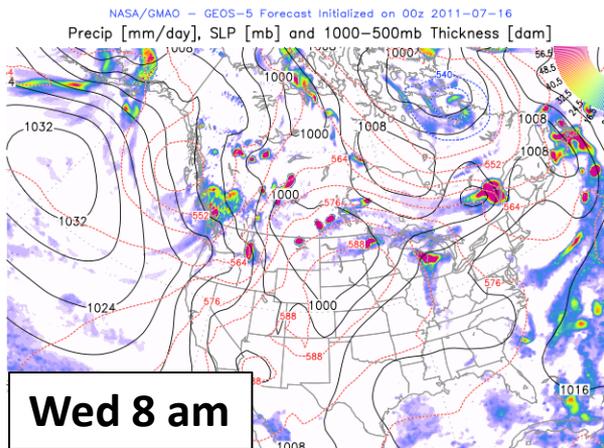
84-hr forecast valid Tue 12z 2011-07-19



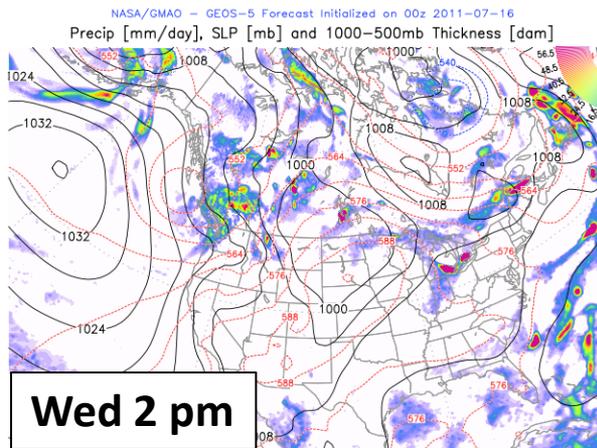
90-hr forecast valid Tue 18z 2011-07-19



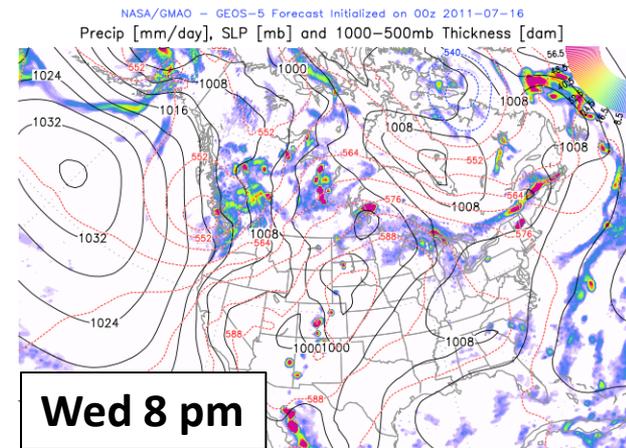
96-hr forecast valid Wed 00z 2011-07-20



108-hr forecast valid Wed 12z 2011-07-20

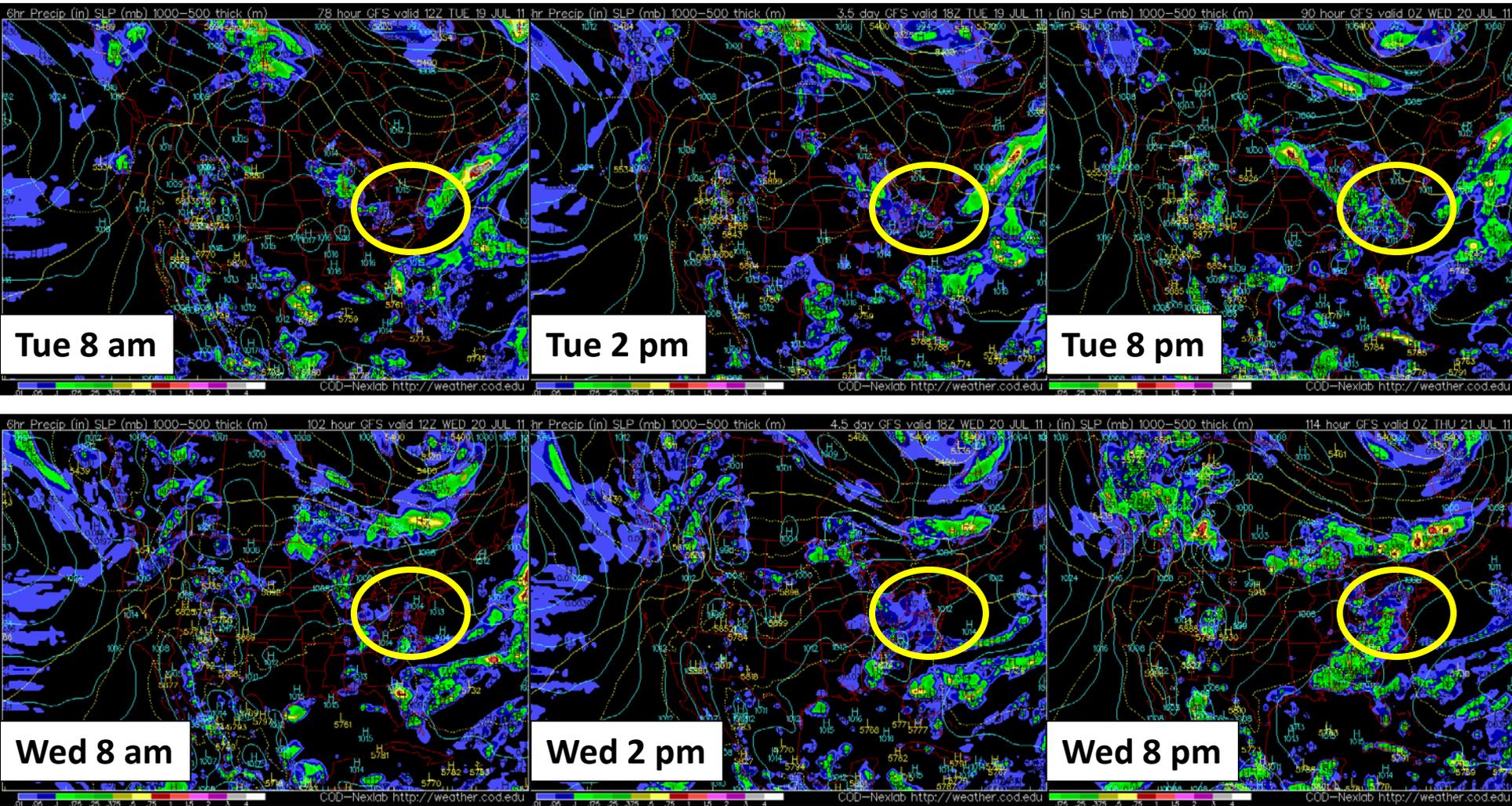


114-hr forecast valid Wed 18z 2011-07-20



120-hr forecast valid Thu 00z 2011-07-21

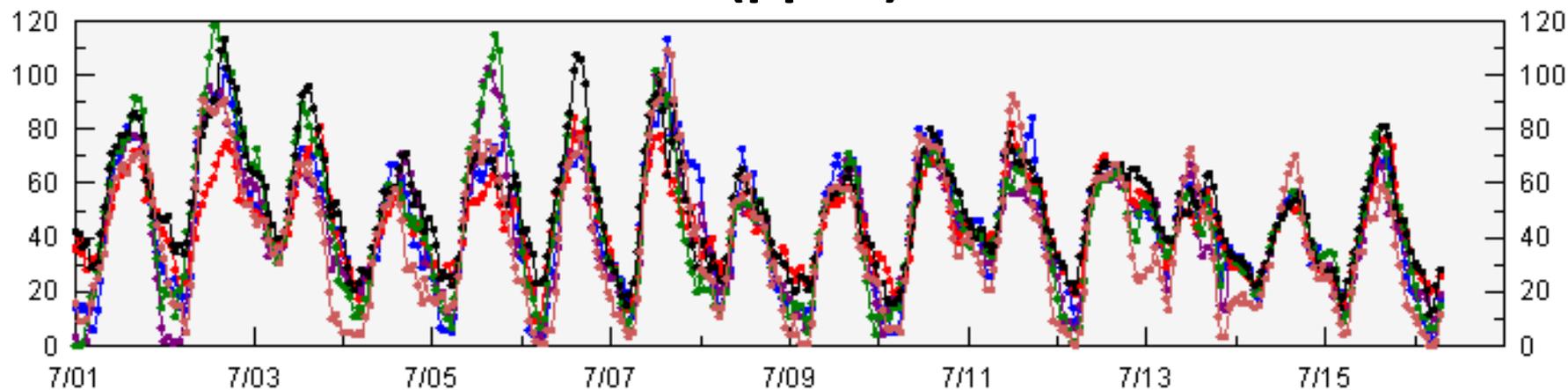
GFS Extended forecast: Precip forecast for midday and evening for Tuesday and Wednesday



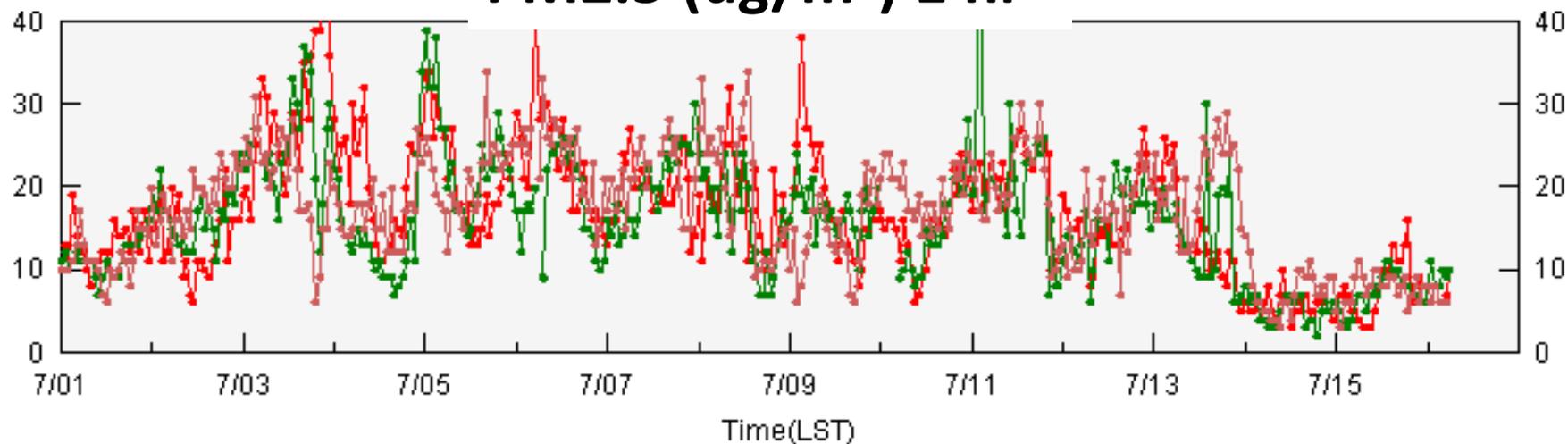
MDE Surface Sites

Padonia Beltsville Edgewood Aldino Essex Fairhill

Ozone (ppbv) 1hr



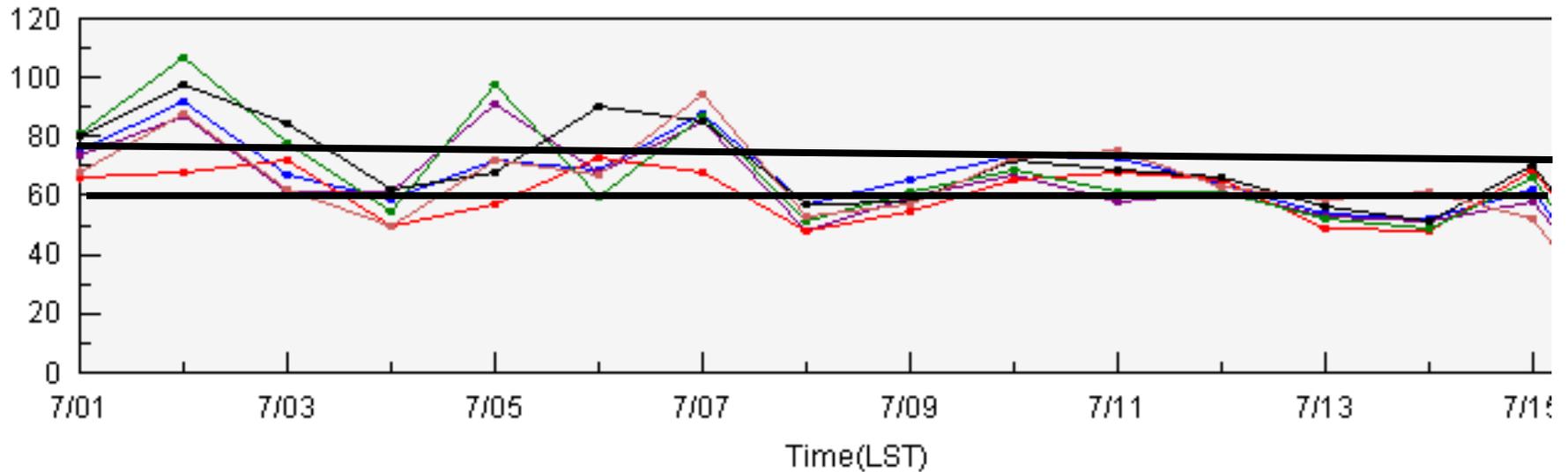
PM2.5 ($\mu\text{g}/\text{m}^3$) 1 hr



MDE Surface Sites

Padonia Beltsville Edgewood Aldino Essex Fairhill

Ozone (ppbv) 8hr max



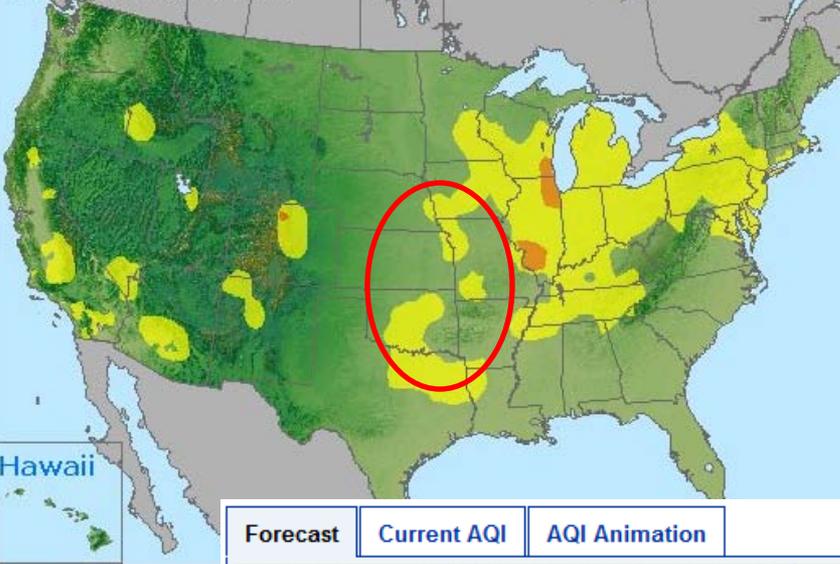
AQI Forecast Discussion

Forecast Discussion: A high pressure system off the Mid-Atlantic coast will continue to bring south/southeasterly flow across the region on Sunday. This air-mass is maritime in nature; thus, it's somewhat clean. Ozone levels is expected to reach into the low Moderate range along the Baltimore-Washington corridor due to mostly clear skies and light winds. Elsewhere, ozone levels will be Good. Particle pollution levels are currently in the single digit and are expected to remain in the Good range for Sunday. On Monday, this high pressure extends back over the southern Mid-Atlantic. Coupled with the approaching cold front, southwesterly winds will be enhanced over the region. This situation is typical for ozone production and AQI is expected to increase into the Unhealthy for Sensitive Groups (USG) category along the Baltimore-Washington corridor. Elsewhere will observe Moderate ozone. Particle pollution will increase into the Moderate range due to increasing humidity and transported aerosols. On Tuesday, the approach of the cold front could initiate some thunderstorms although it's still uncertain. At this time, USG conditions are still anticipated to continue on Tuesday along the I-95 corridor and east of it. Particle pollution will continue to increase well into the Moderate range. - MDE

Weekend

Monday

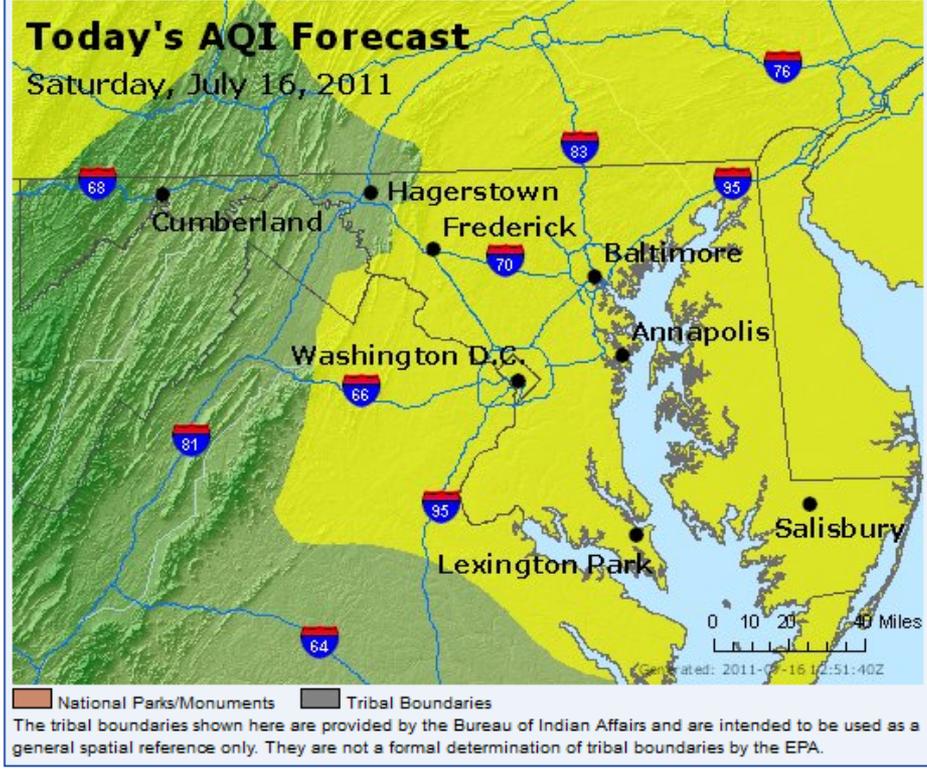
Today's AQI Forecast
Saturday, July 16, 2011



Horrible heat wave in the central U.S for last week. Why no major AQI?

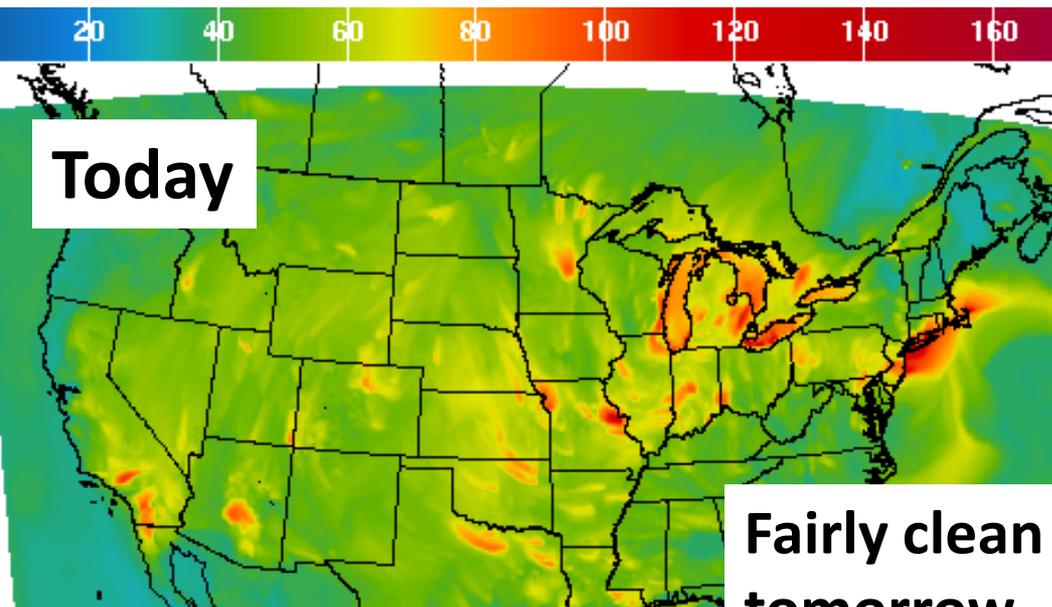
Good Moderate

Forecast Current AQI AQI Animation



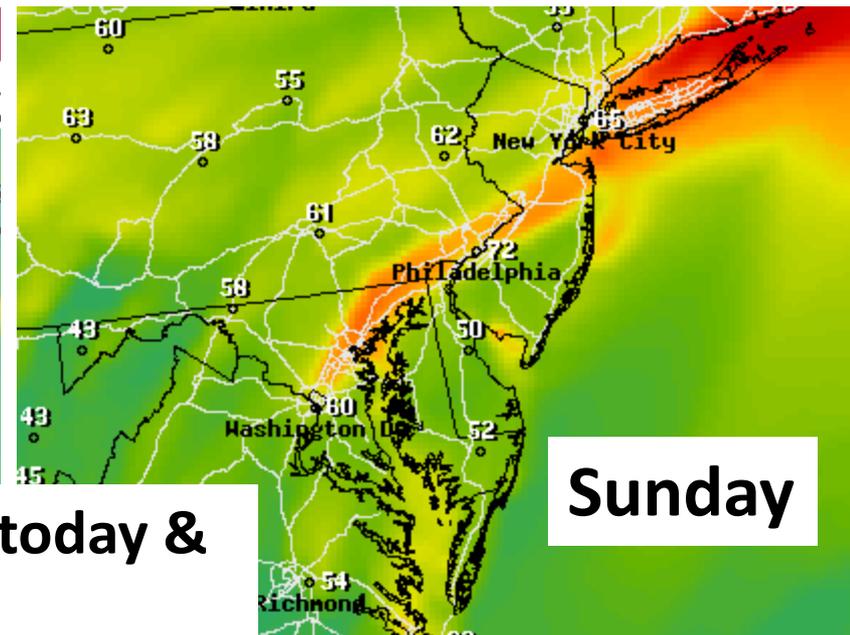
Air Quality Forecast			
Today's High		Tomorrow's High	
Air Quality Index (AQI)		Air Quality Index (AQI)	
67	Moderate	67	Moderate
Health Message: Unusually sensitive people should consider reducing prolonged or heavy exertion outdoors.		Health Message: Unusually sensitive people should consider reducing prolonged or heavy exertion outdoors.	
AQI - Pollutant Details			
Ozone	67 Moderate	Ozone	67 Moderate
Particles (PM2.5)	52 Moderate	Particles (PM2.5)	49 Good
<p>Forecast Discussion: A high pressure system off the Mid-Atlantic coast will continue to bring south/southeasterly flow across the region on Sunday. This air-mass is maritime in nature; thus, it's somewhat clean. Ozone levels is expected to reach into the low Moderate range along the Baltimore-Washington corridor due to mostly clear skies and light winds. Elsewhere, ozone levels will be Good. Particle pollution levels are currently in the single digit and are expected to remain in the Good range for Sunday. On Monday, this high pressure extends back over the southern Mid-Atlantic. Coupled with the approaching cold front, southwesterly winds will be enhanced over the region. This situation is typical for ozone production and AQI is expected to increase into the Unhealthy for Sensitive Groups (USG) category along the</p>			

1-hr Max Ozone (ppbv)

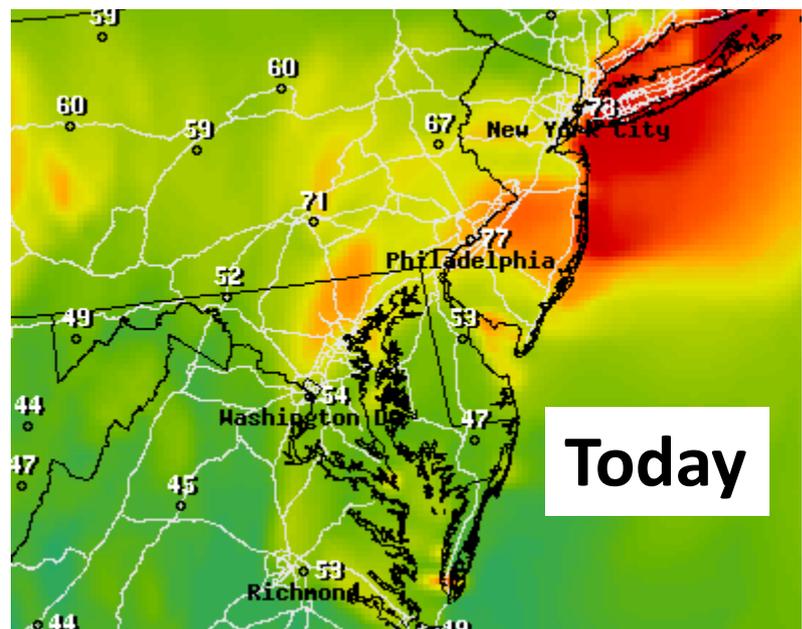


Fairly clean today & tomorrow.

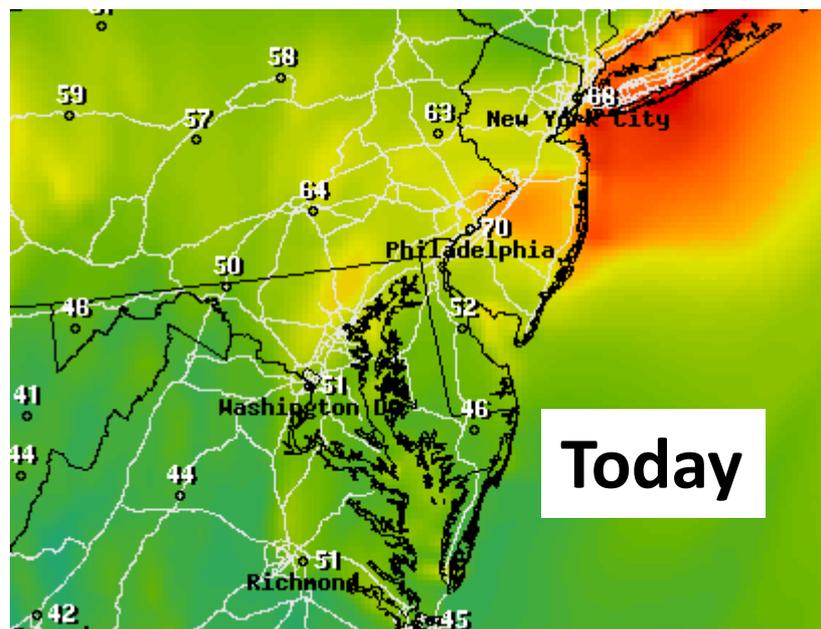
1-hr Max Ozone (ppbv)



1-hr Max Ozone (ppbv)

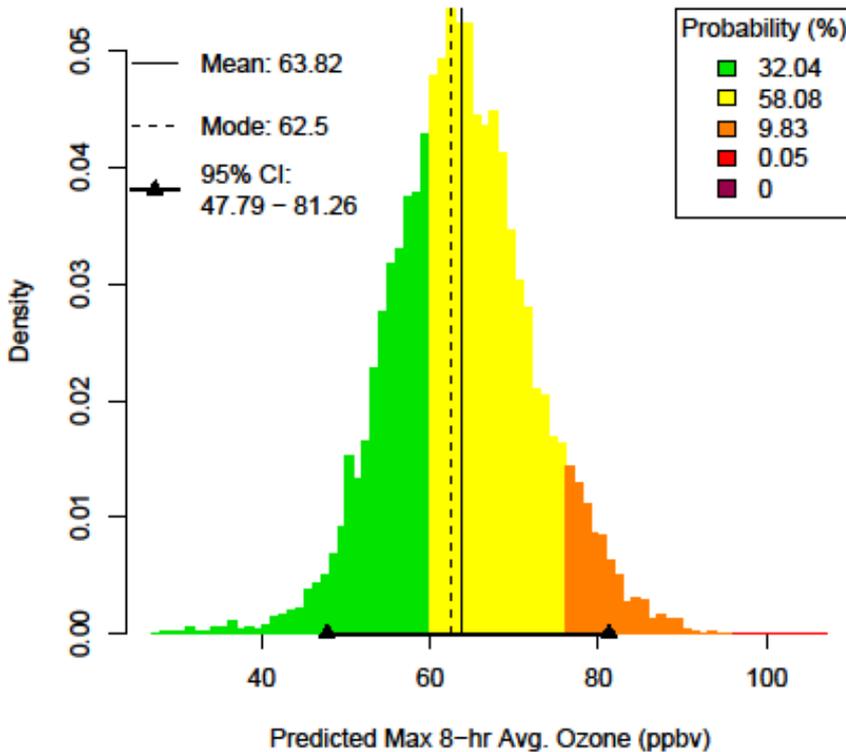


8-hr Max Ozone (ppbv)



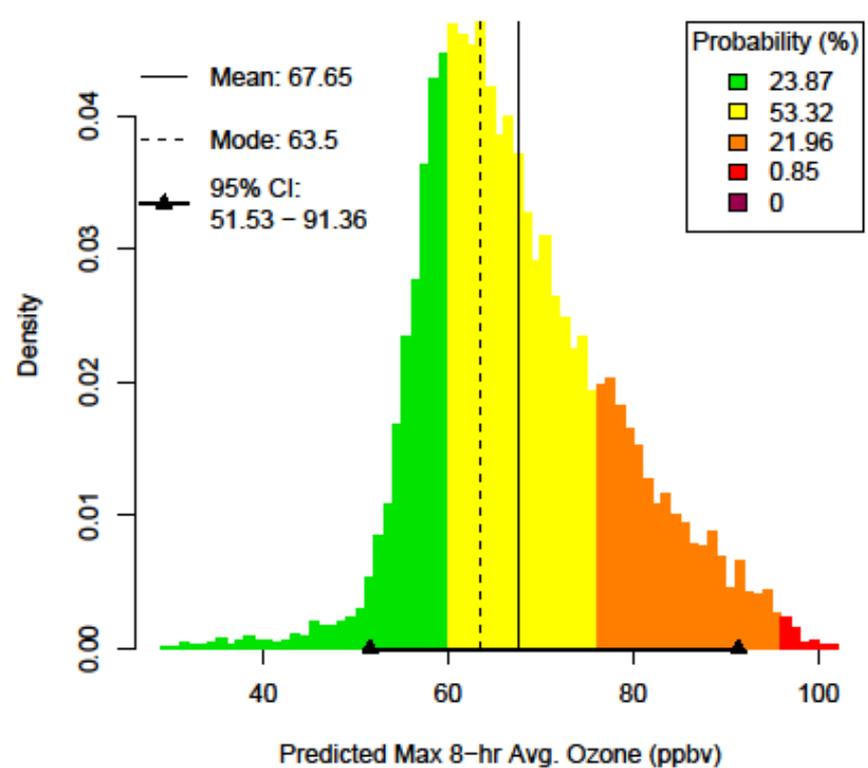
NAQFC-MOS valid for Sunday

ID: 240251001 VALID: 2011-07-17



Edgewood

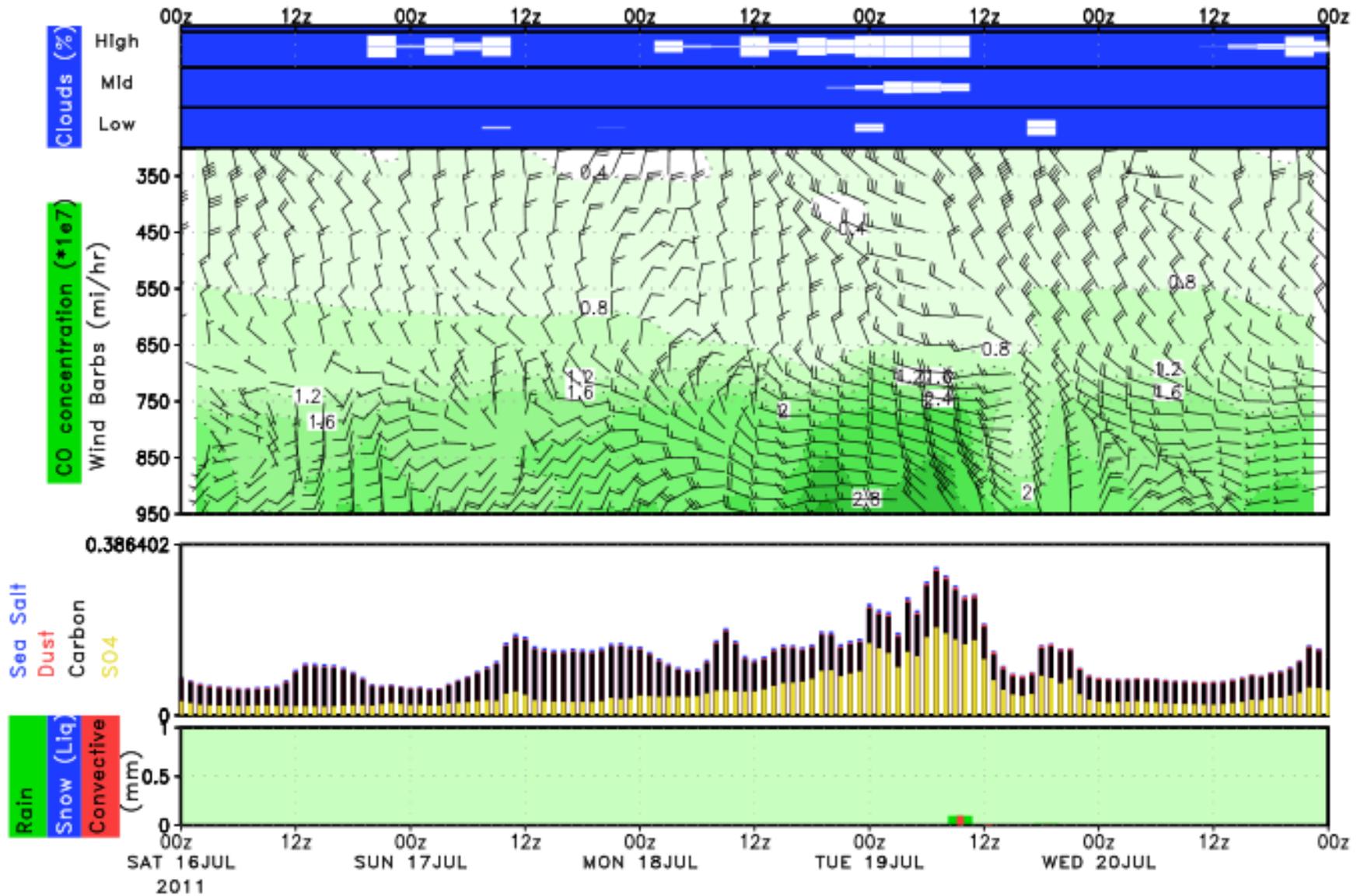
ID: 240330030 VALID: 2011-07-17



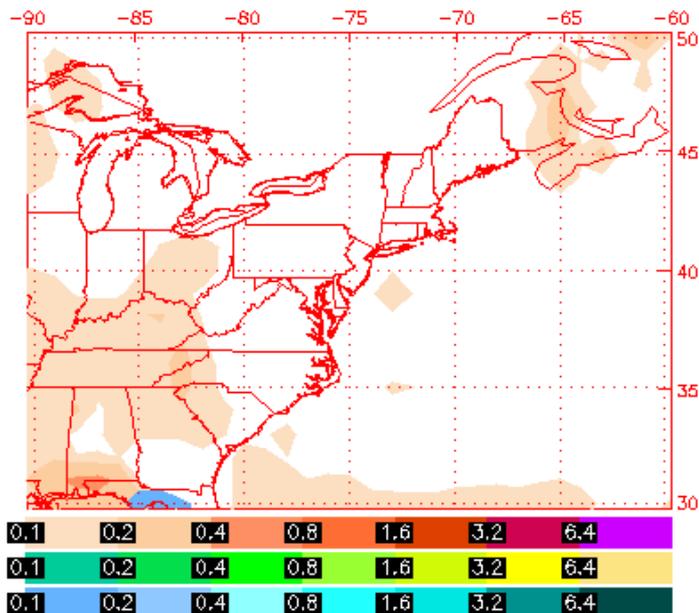
Beltsville

GMAO GEOS AOT low for mid-Atlantic

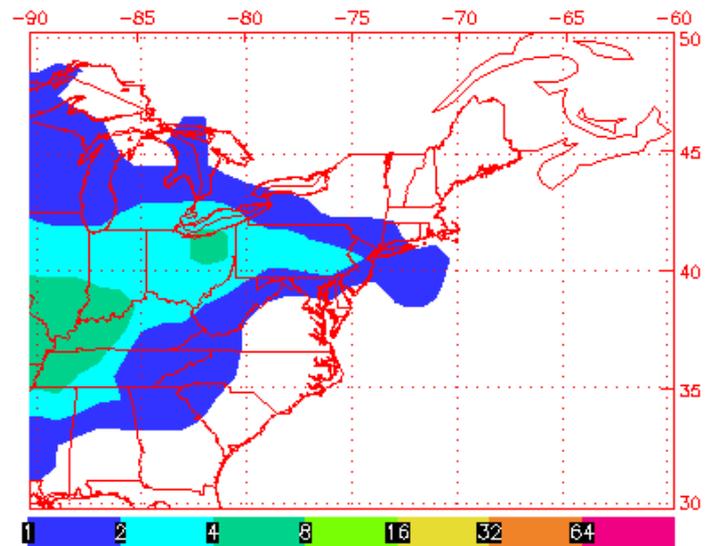
Beltsville



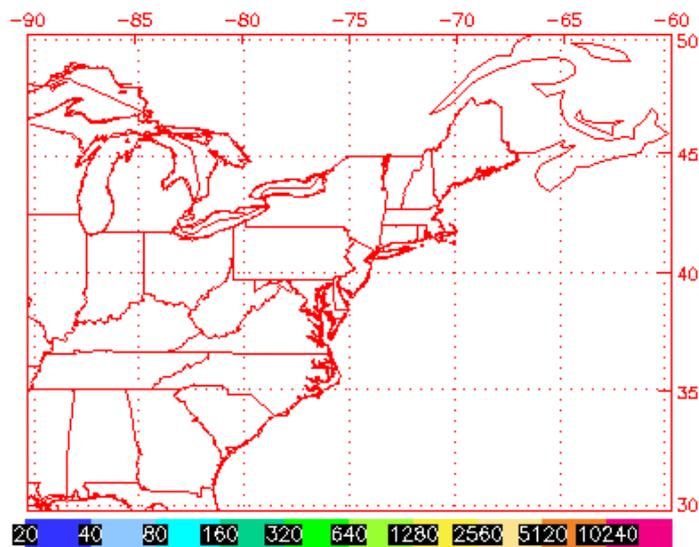
NAAPS Total Optical Depth for 00:00Z 16 Jul 2011
 Sulfate: Orange/Red, Dust: Green/Yellow, Smoke: Blue



Sulfate Surface Concentration ($\mu\text{g}/\text{m}^3$)
 for 00:00Z 16 Jul 2011



Dust Surface Concentration ($\mu\text{g}/\text{m}^3$)
 for 00:00Z 16 Jul 2011



Smoke Surface Concentration ($\mu\text{g}/\text{m}^3$)
 for 00:00Z 16 Jul 2011

