DISCOVER-AQ Outlook for Sunday, July 10, 2011

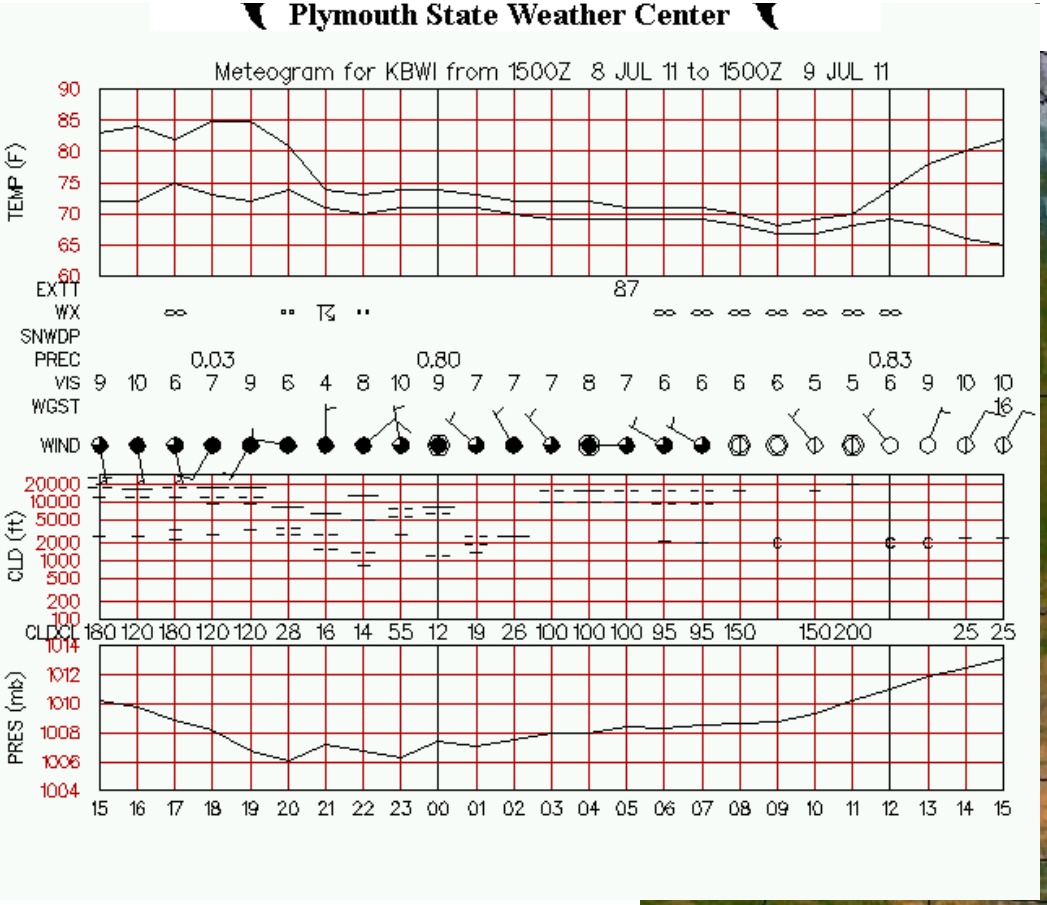
Sunday looks like a great day to fly as high pressure intensifies over our study region leading to generally clear skies with southerly flow at low levels. Fair weather cumulus clouds may develop in the afternoon. The high pressure area merges with the Bermuda High on Monday and puts us into a more southwesterly flow regime. A frontal system will be approaching from the Midwest on Monday afternoon. Convection in that region may lead to high level cirrus by late in the day on Monday, but more certainly overnight Monday night into Tuesday. As the front gets closer on Tuesday, some local thunderstorm activity may occur. Frontal passage will likely be Tuesday night. Some of the region, especially along the western shore of the Bay will likely experience Code Orange O3 tomorrow. With near stagnation conditions and considerable ozone in the residual layer to mix downward on Monday AM (as indicated by the experimental CMAQ), widespread Code Orange with some Code Red ozone is expected Monday afternoon. GEOS-5 is predicting relatively low AOD tomorrow, with somewhat more (up to 0.4 -0.5 on Monday). We recommend flights on both Sunday and Monday.

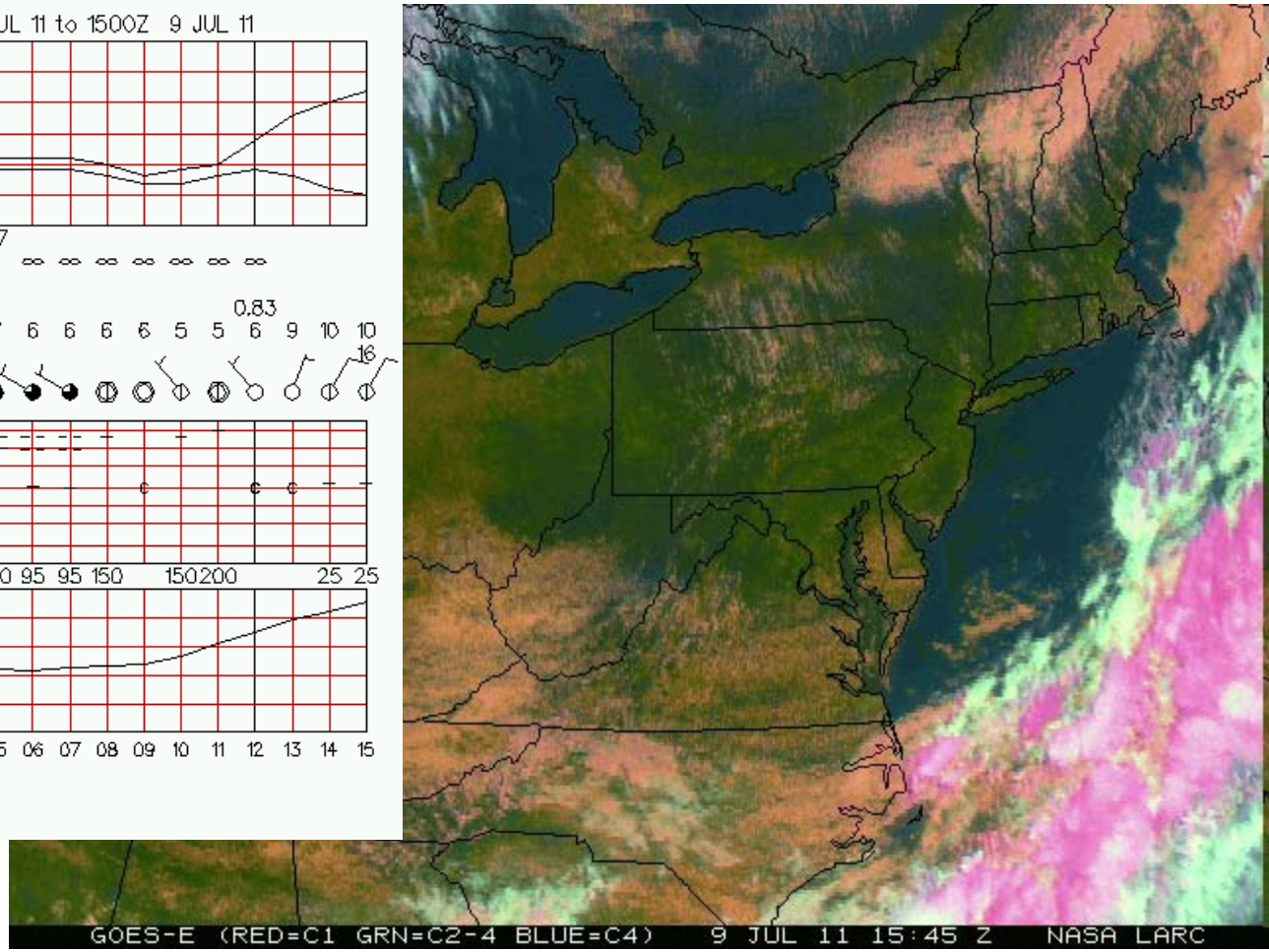
Flight Recommendation 10-13 July

- Sunday: FLY – Clear skies, possible BL Cu in afternoon
- Monday: FLY – Front stays to the west
- Tuesday: NO FLY – Possible high clouds from upwind storm outflow; possible afternoon convection ahead of frontal passage overnight
- Wednesday: FLY? – Conditions behind front improve, possible residual clouds in the morning

Gregory Garner, Ken Pickering – Prepared
09 July 2011

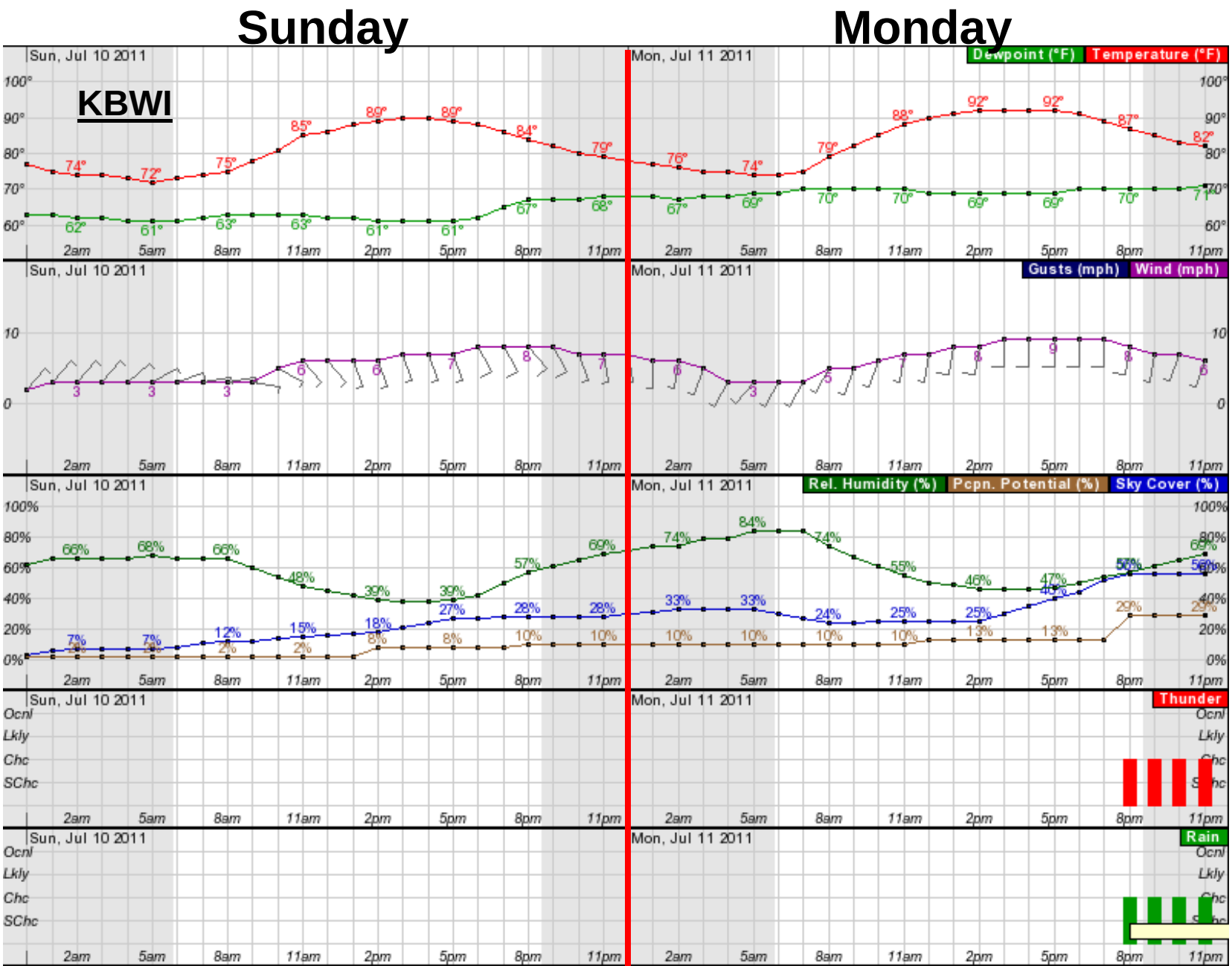
Today's Conditions



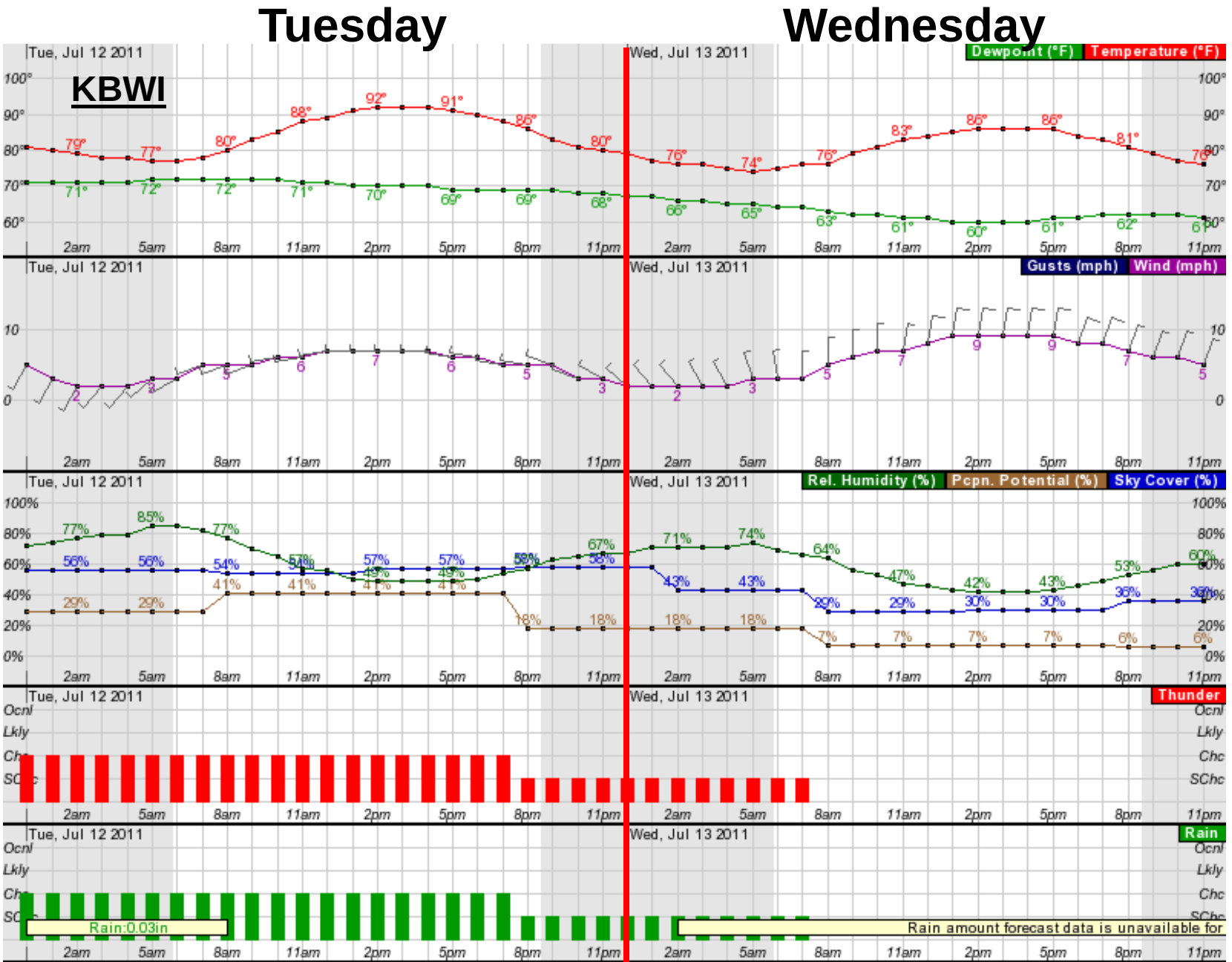


- Temp: 82°F, Dew: 65°F
- Hazy morning, some low clouds
- SLP: 1013 and rising
- Clearing advancing southeastward behind the front

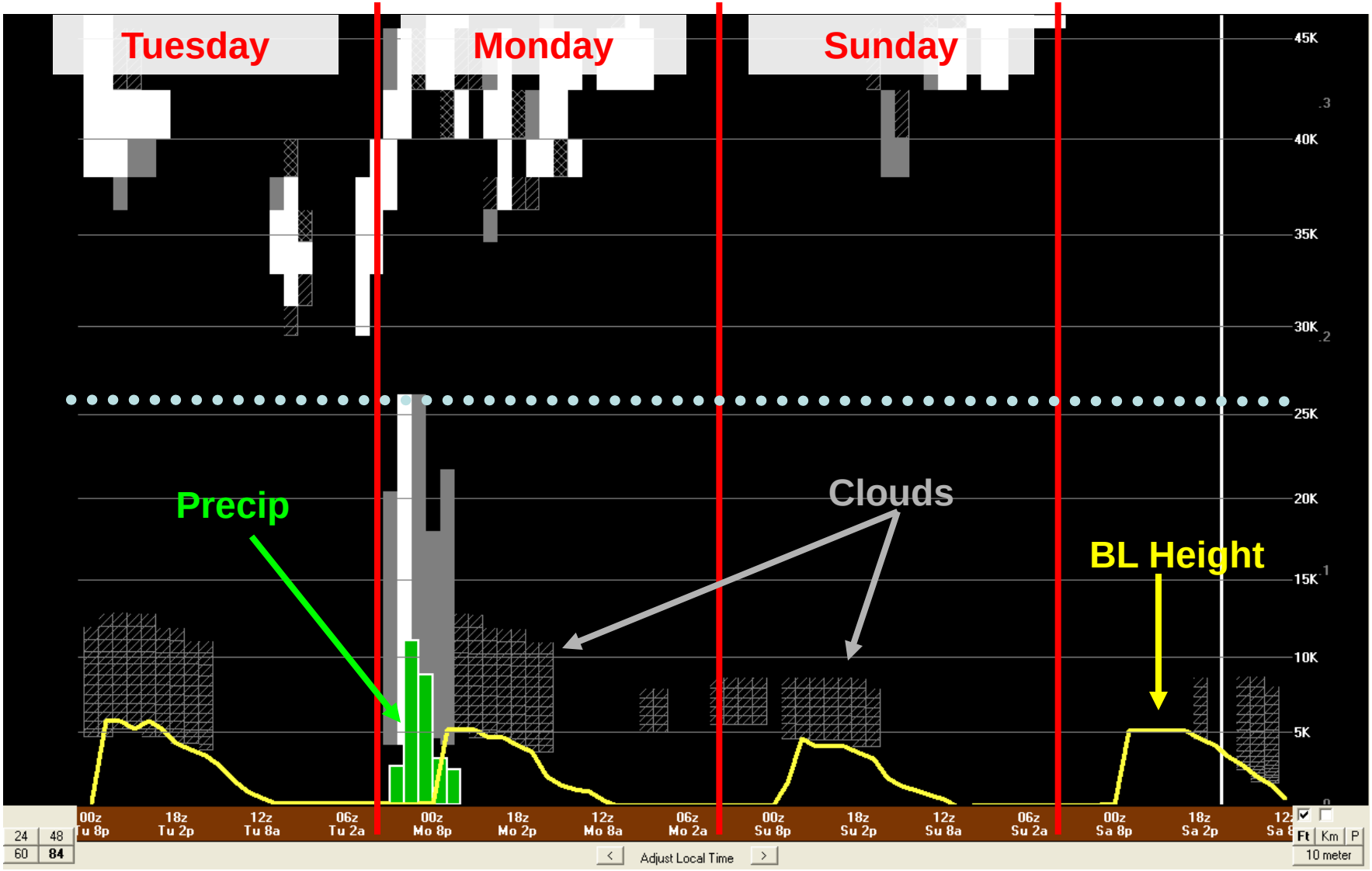
NAM-MOS: 10 - 11 July 2011



NAM-MOS: 12 - 13 July 2011



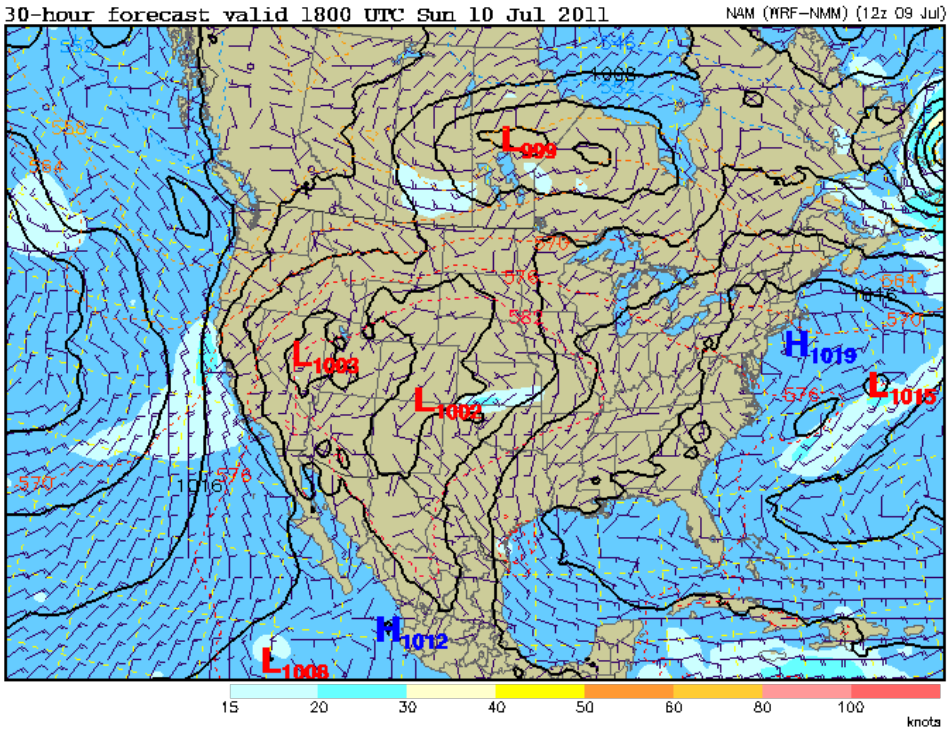
Bufkit – NAM (12 UTC 09 July)



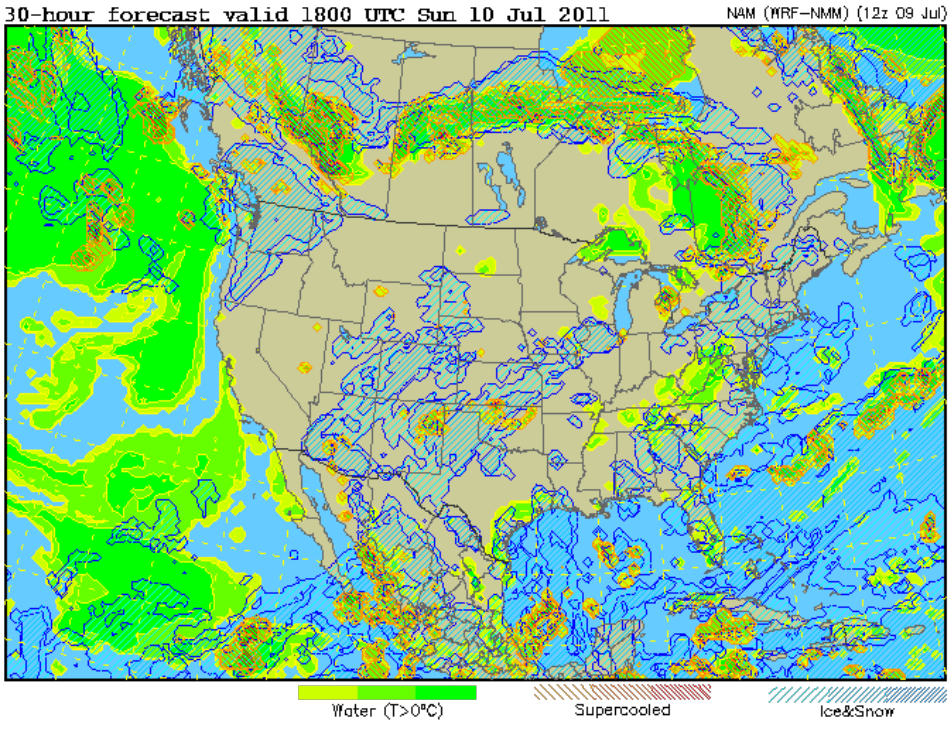
- Generally cloud-free on Sunday and Monday
- Chance of thin low-level BL clouds

NAM – MSLP and Clouds Sunday Afternoon

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



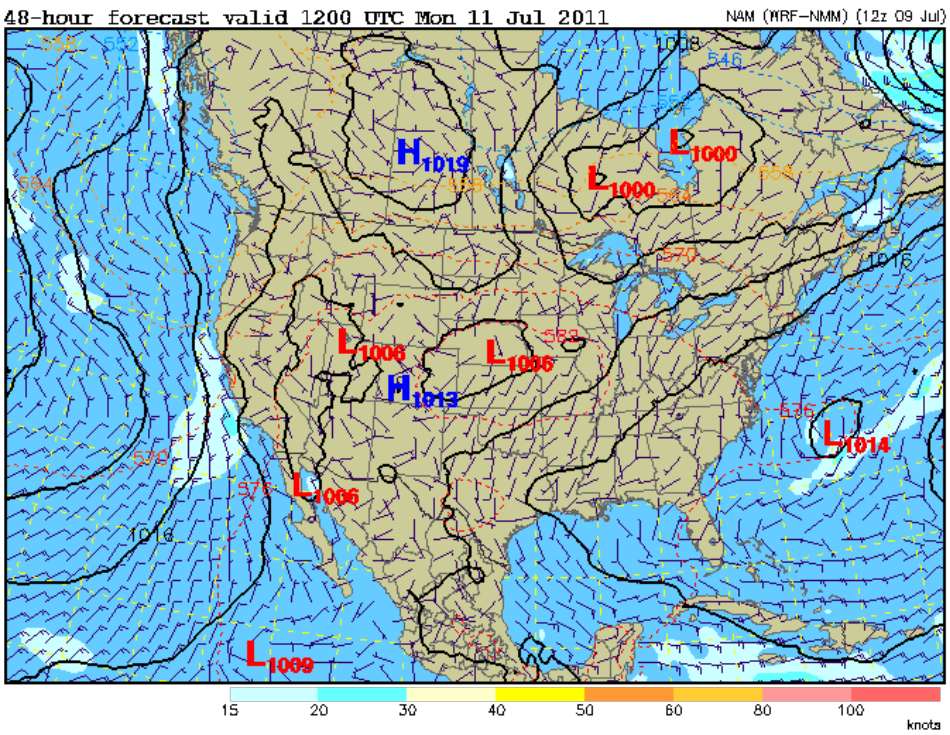
Integrated liquid and frozen hydrometeors (all levels)



- High pressure over east-coast
- Slight chance for low-level convective clouds

NAM – MSLP and Clouds Monday Morning

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



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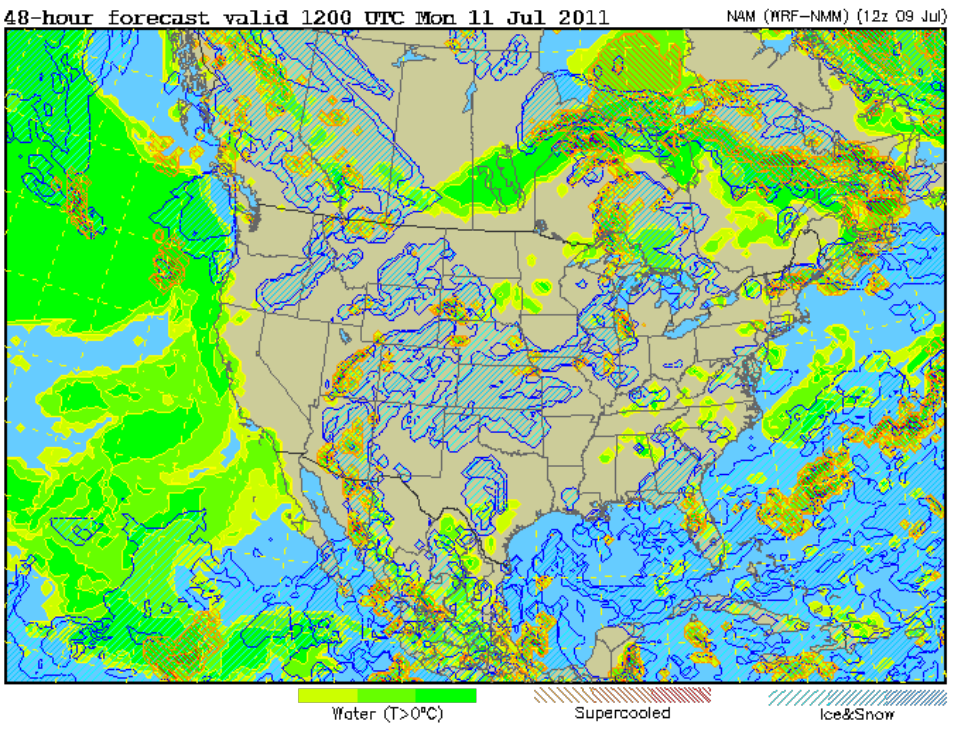
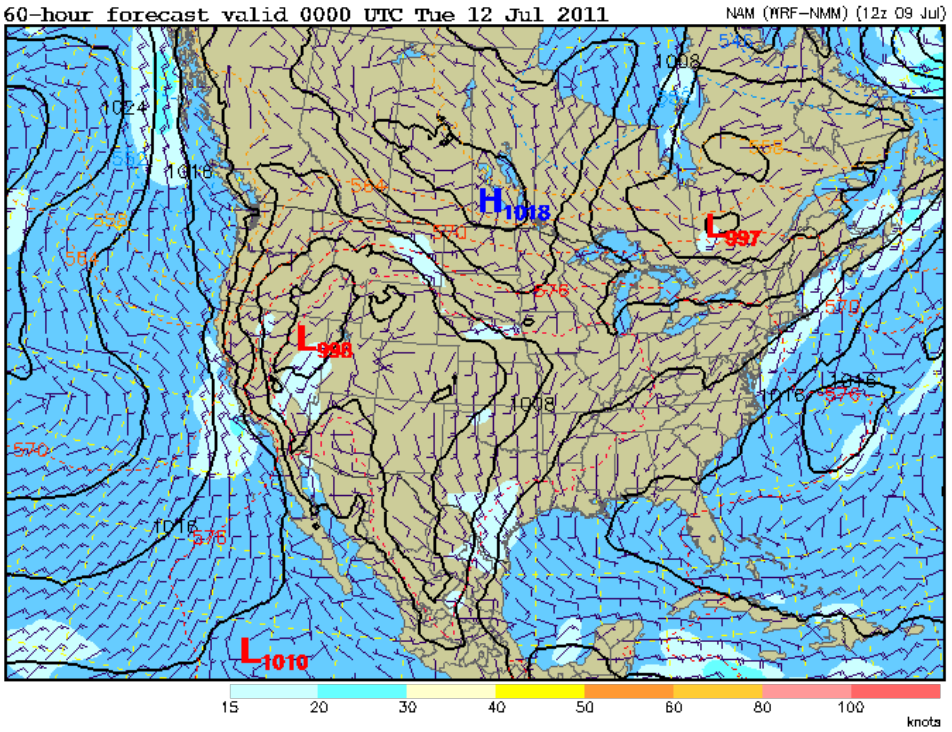


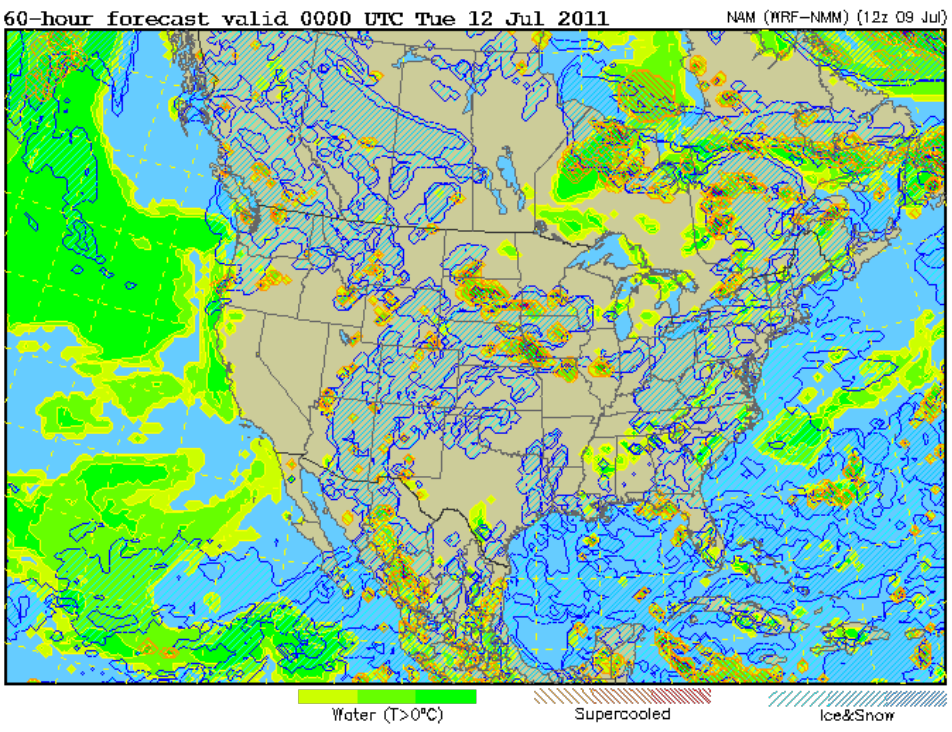
- Next frontal system slow to move east
- South westerly flow and slight chance for convective clouds
- Possibly see some Ci outflow from convection on Sunday to our west

NAM – MSLP and Clouds Monday Evening

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

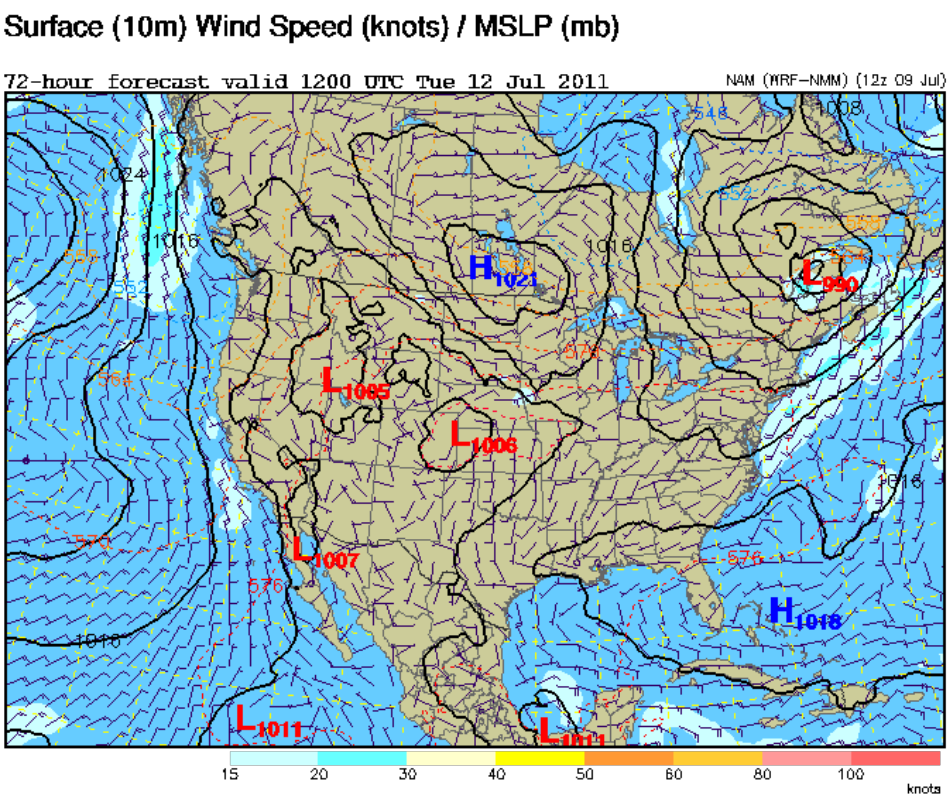


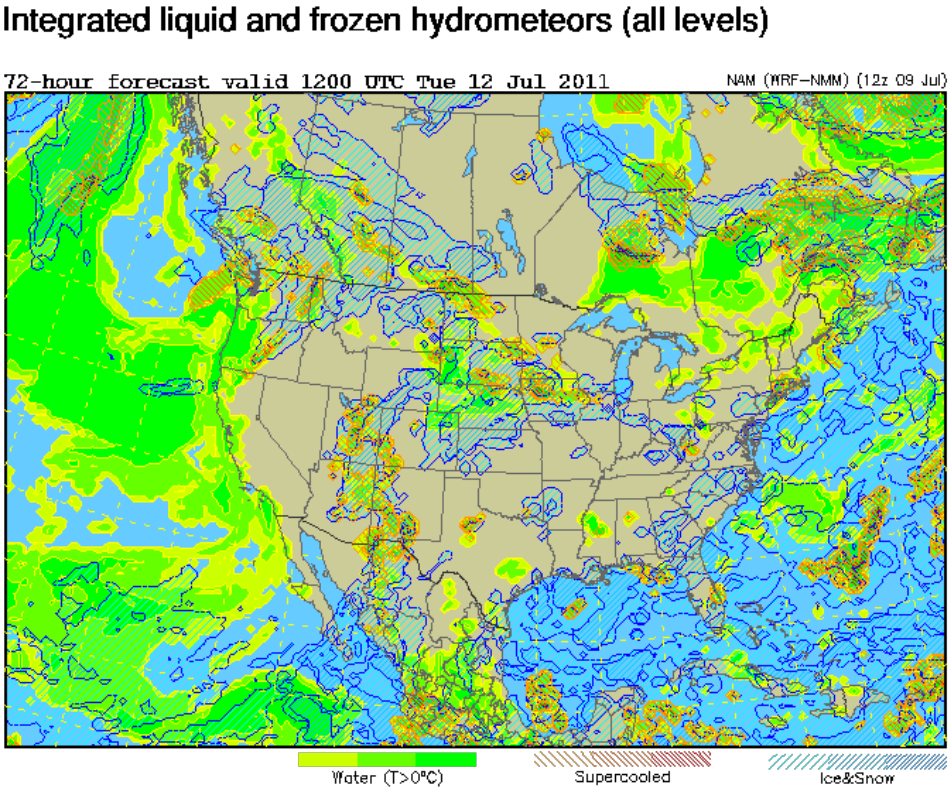
Integrated liquid and frozen hydrometeors (all levels)



- Front remains to the west, possible slightly better chance for convective storms ahead of the front
- Mix of clouds over the mid-west and mid-Atlantic

NAM – MSLP and Clouds Tuesday Morning

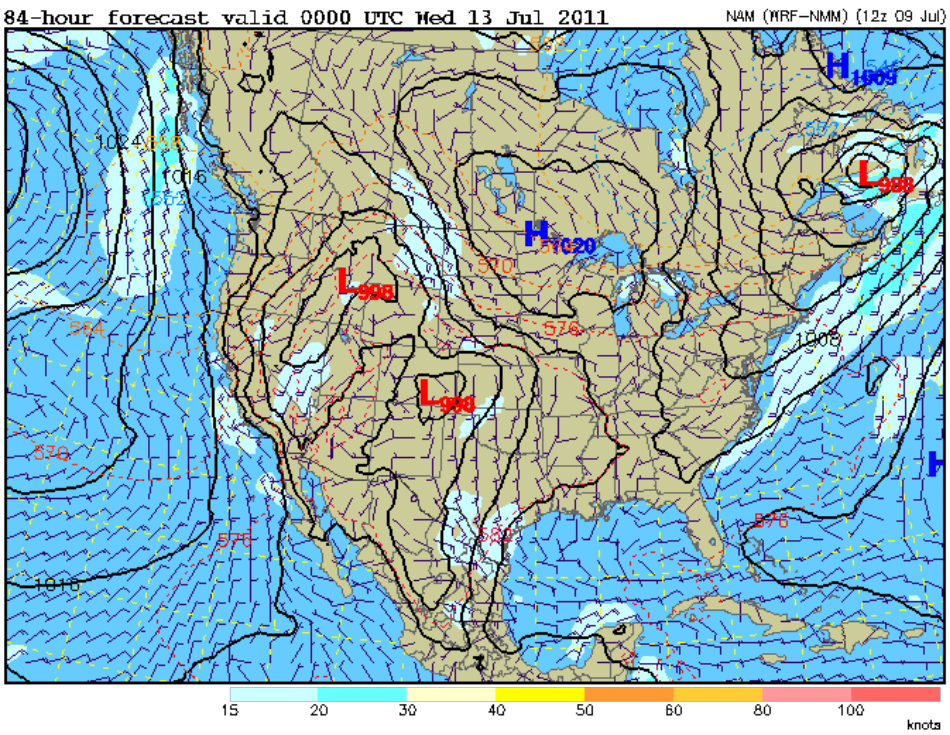




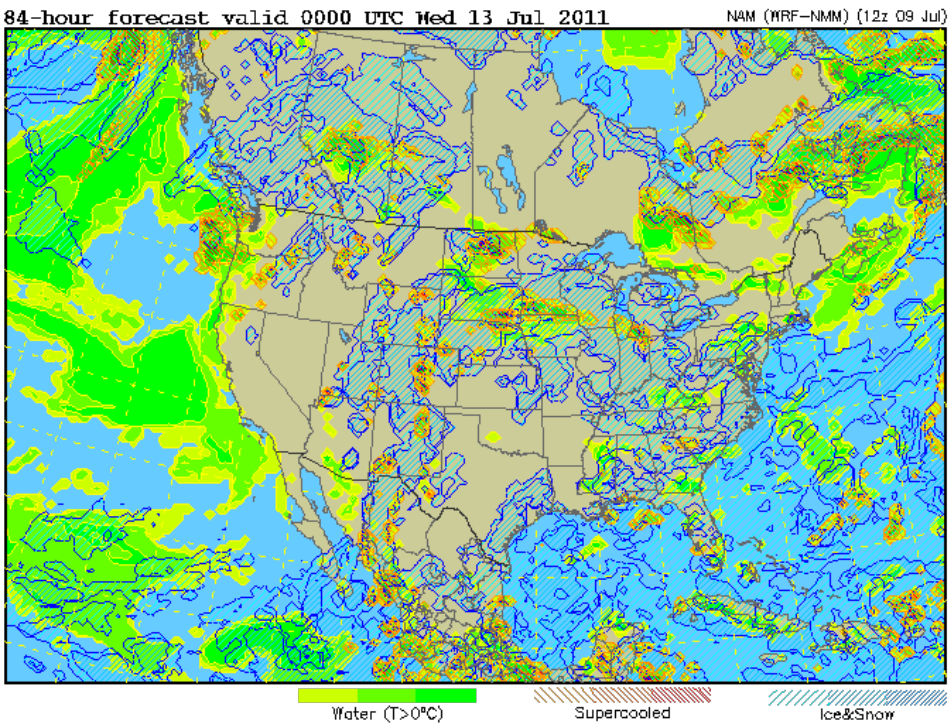
- Front passes through overnight
- Clouds linger throughout the day

NAM – MSLP and clouds Tuesday Evening

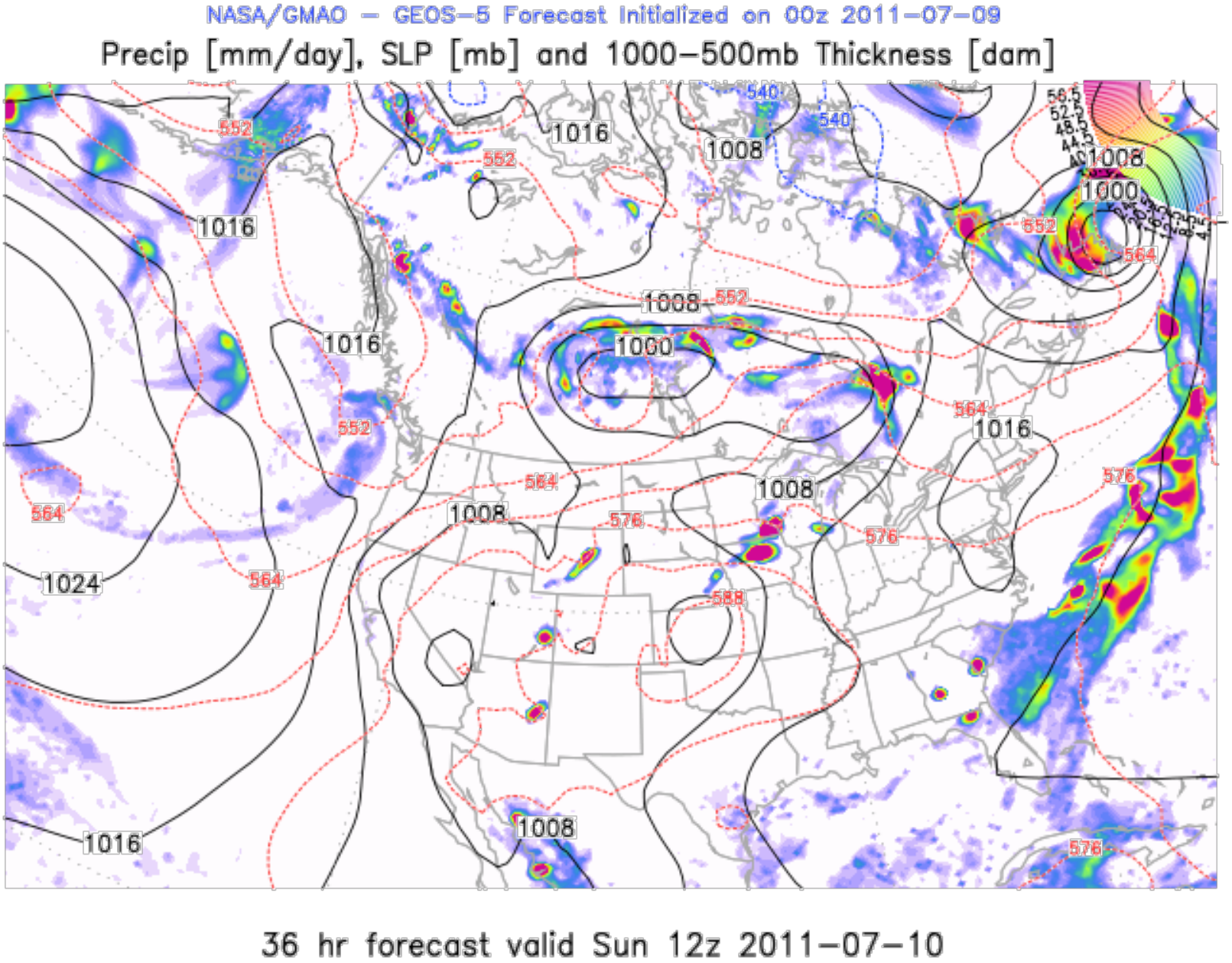
Surface (10m) Wind Speed (knots) / MSLP (mb)



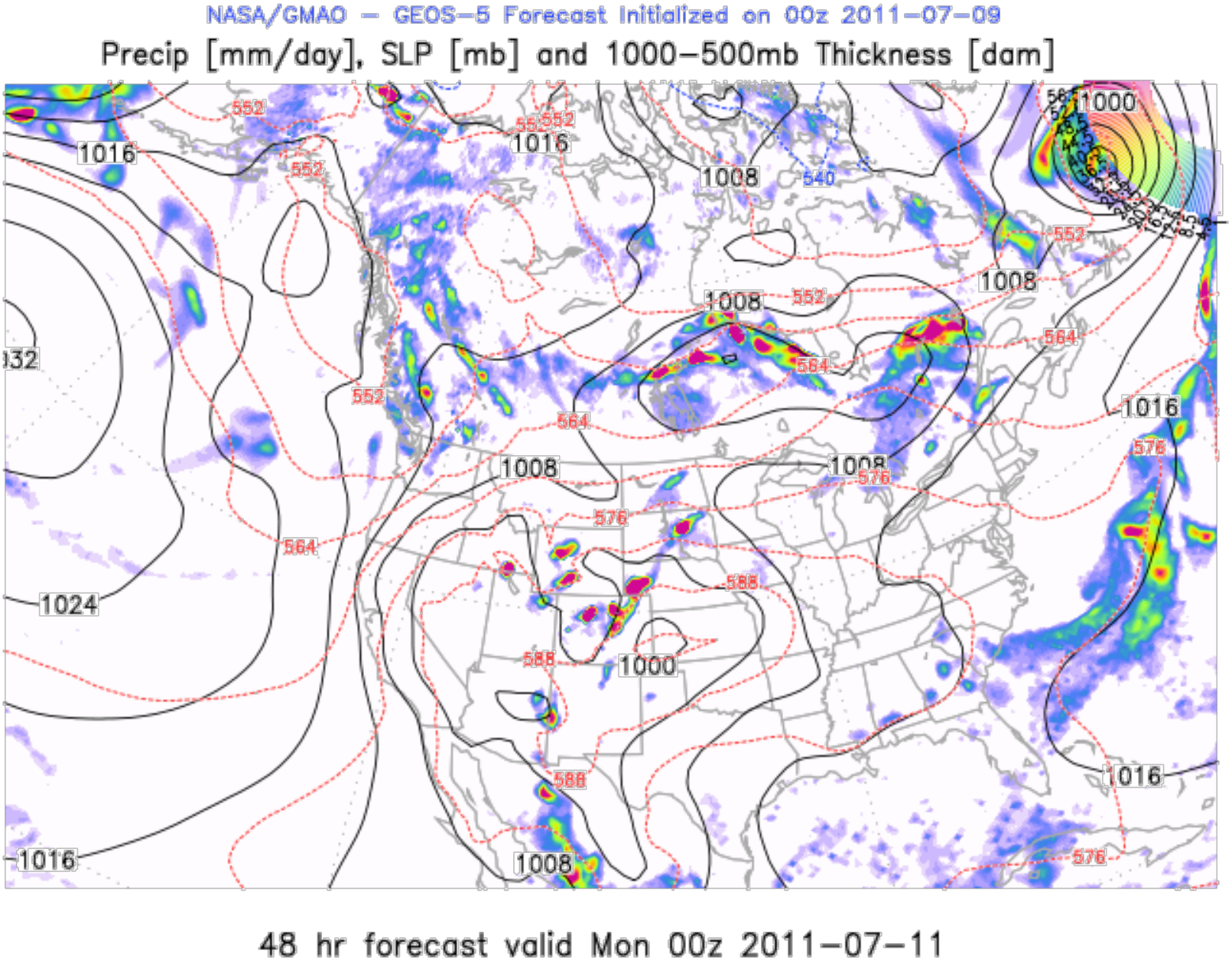
Integrated liquid and frozen hydrometeors (all levels)



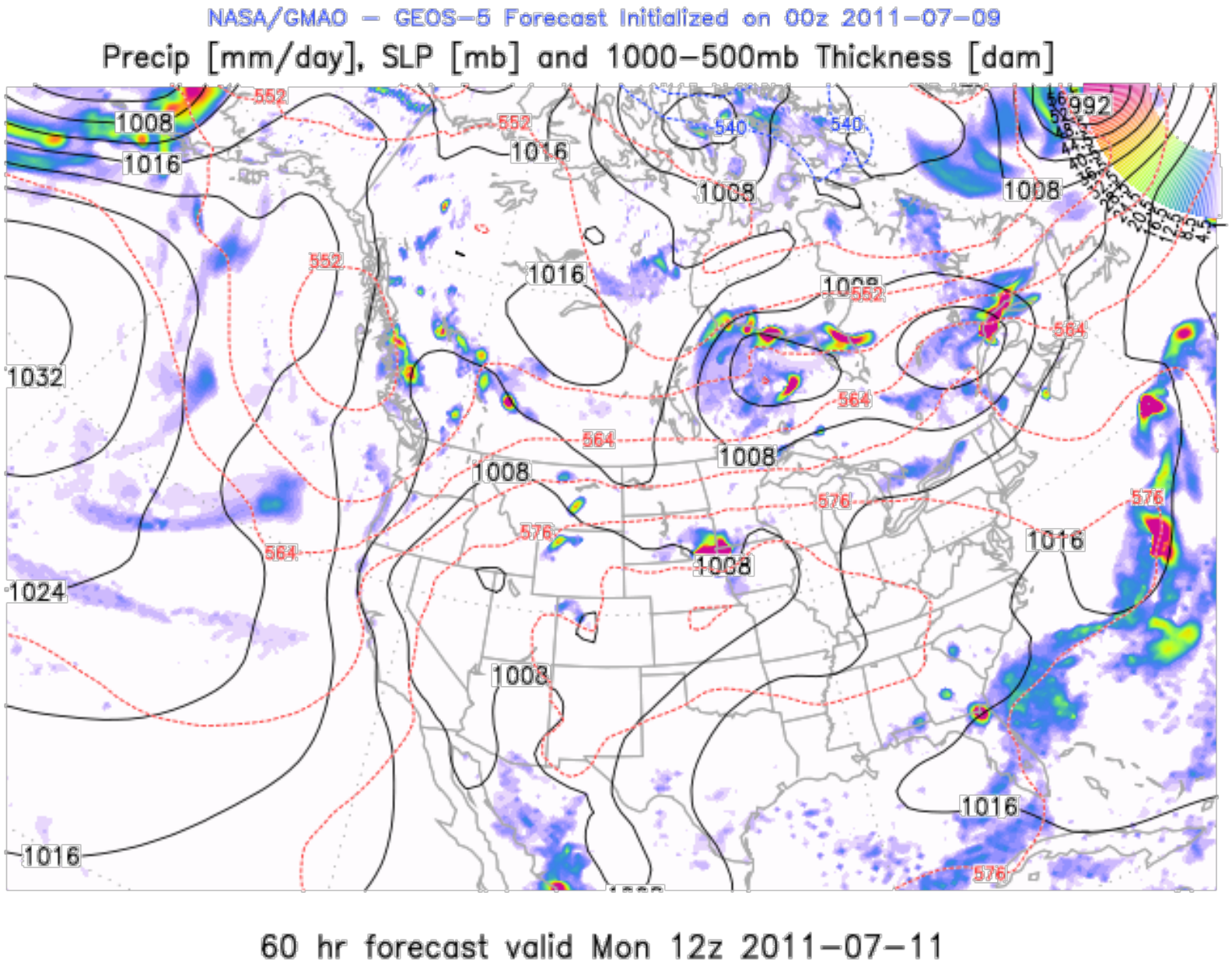
GEOS-5: Sunday Morning



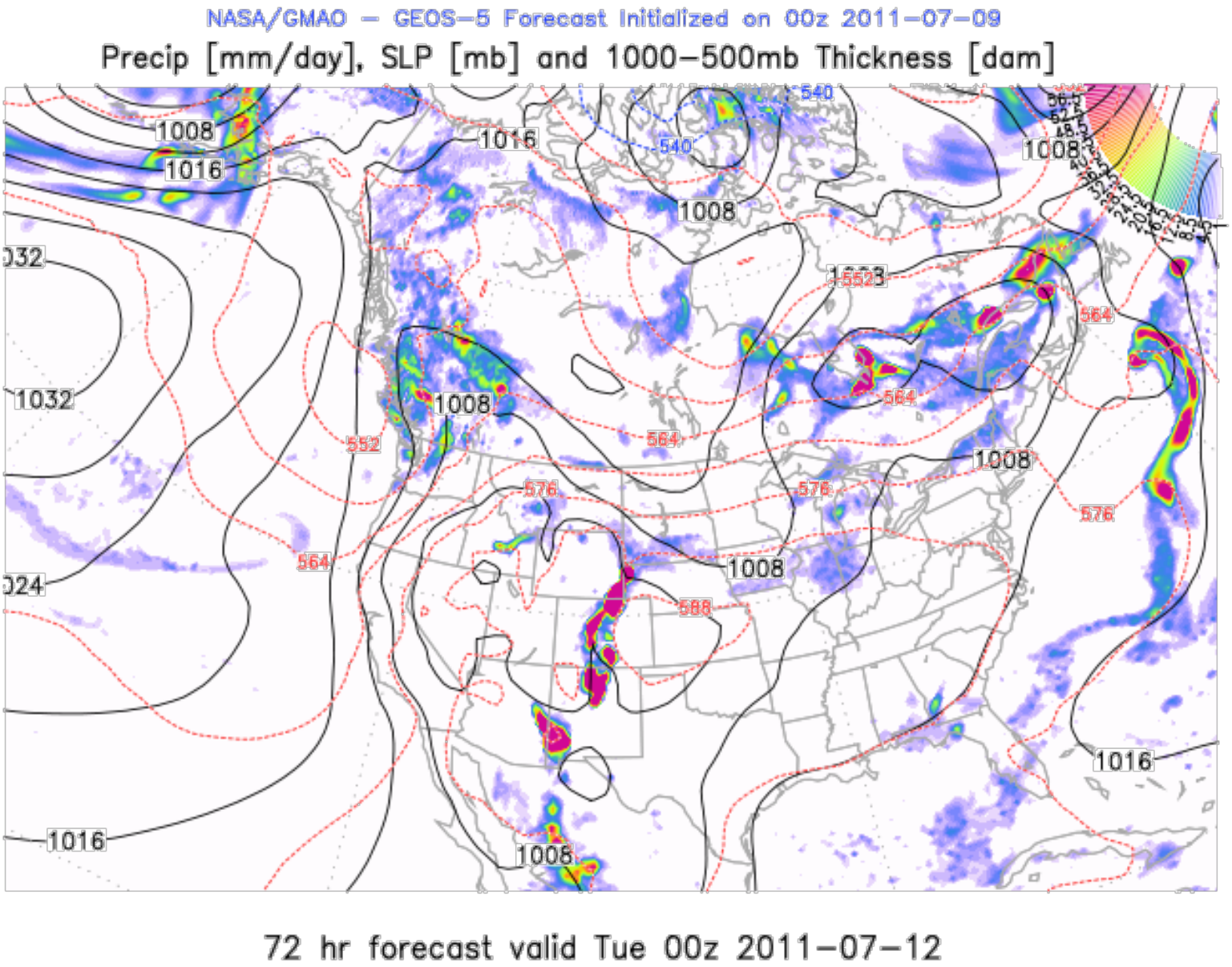
GEOS-5: Sunday Evening



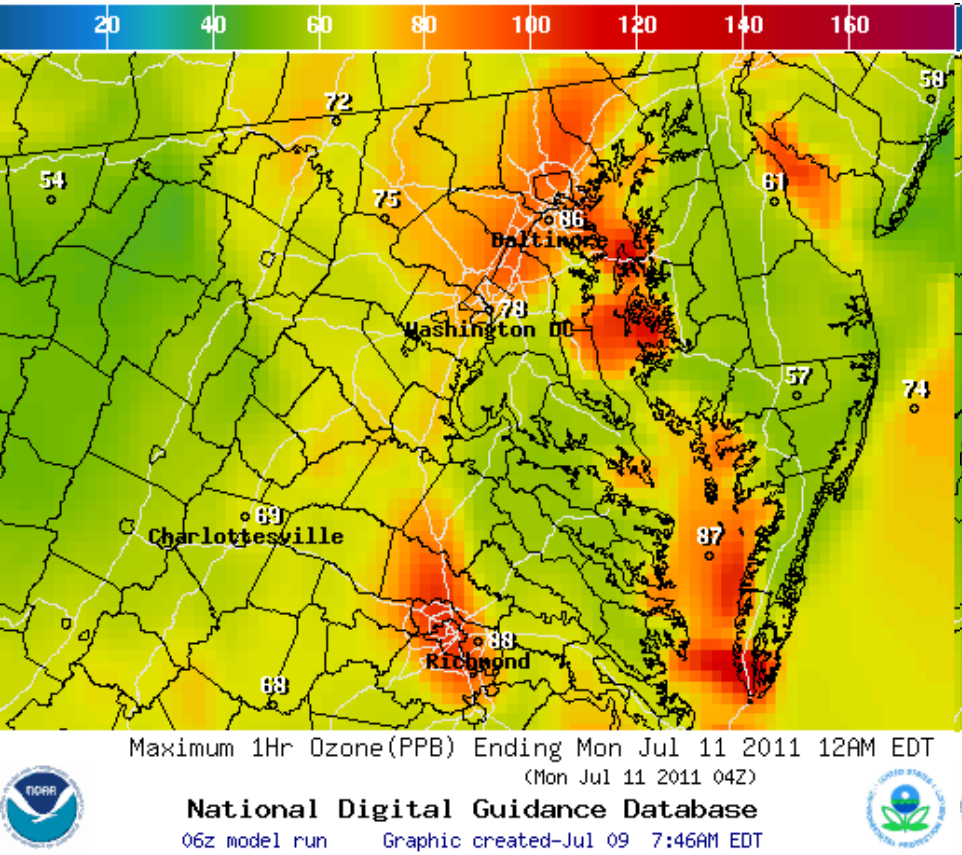
GEOS-5: Monday Morning

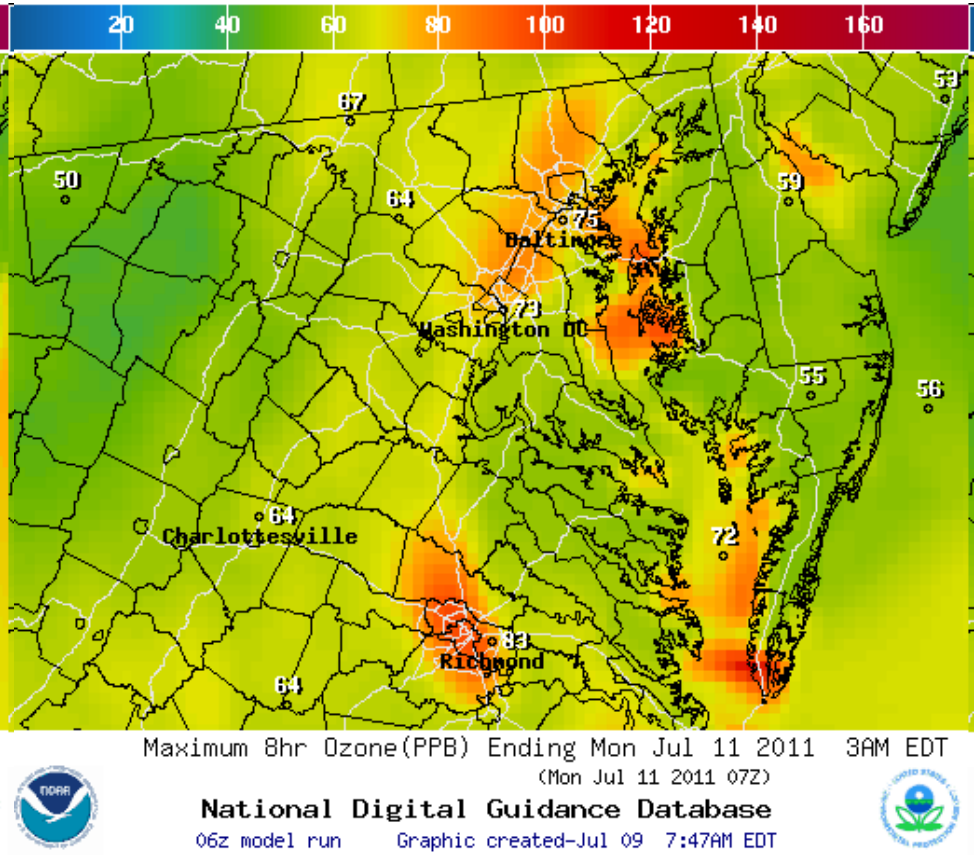


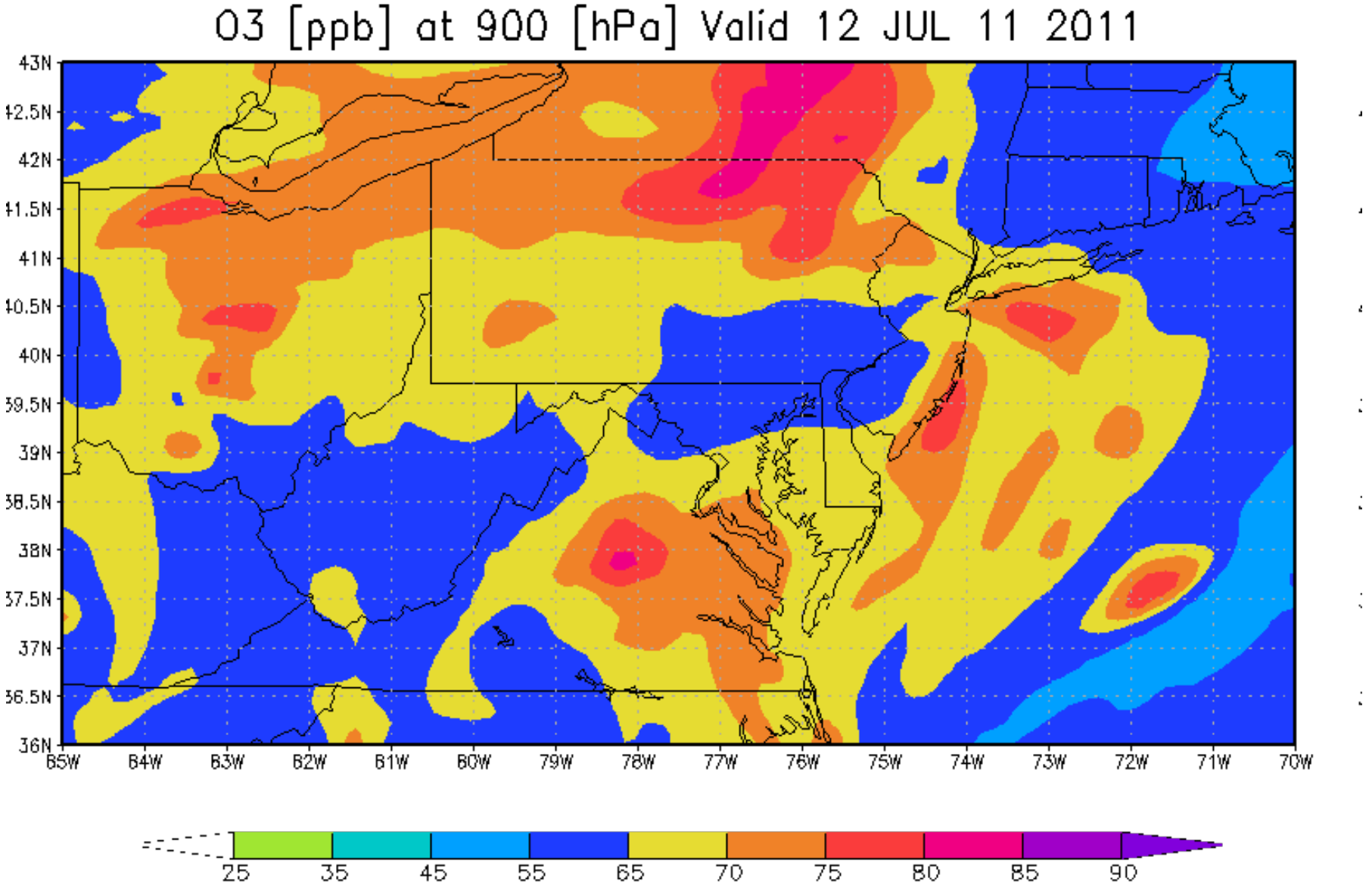
GEOS-5: Monday Evening



NAQFC: Ozone Forecast valid Sunday






O3 [ppb] at 900 [hPa] Valid 12 JUL 11 2011
43N
42.5N
42N
41.5N
41N
40.5N
40N
39.5N
39N
38.5N
38N
37.5N
37N
36.5N
36N
85W
84W
83W
82W
81W
80W
79W
78W
77W
76W
75W
74W
73W
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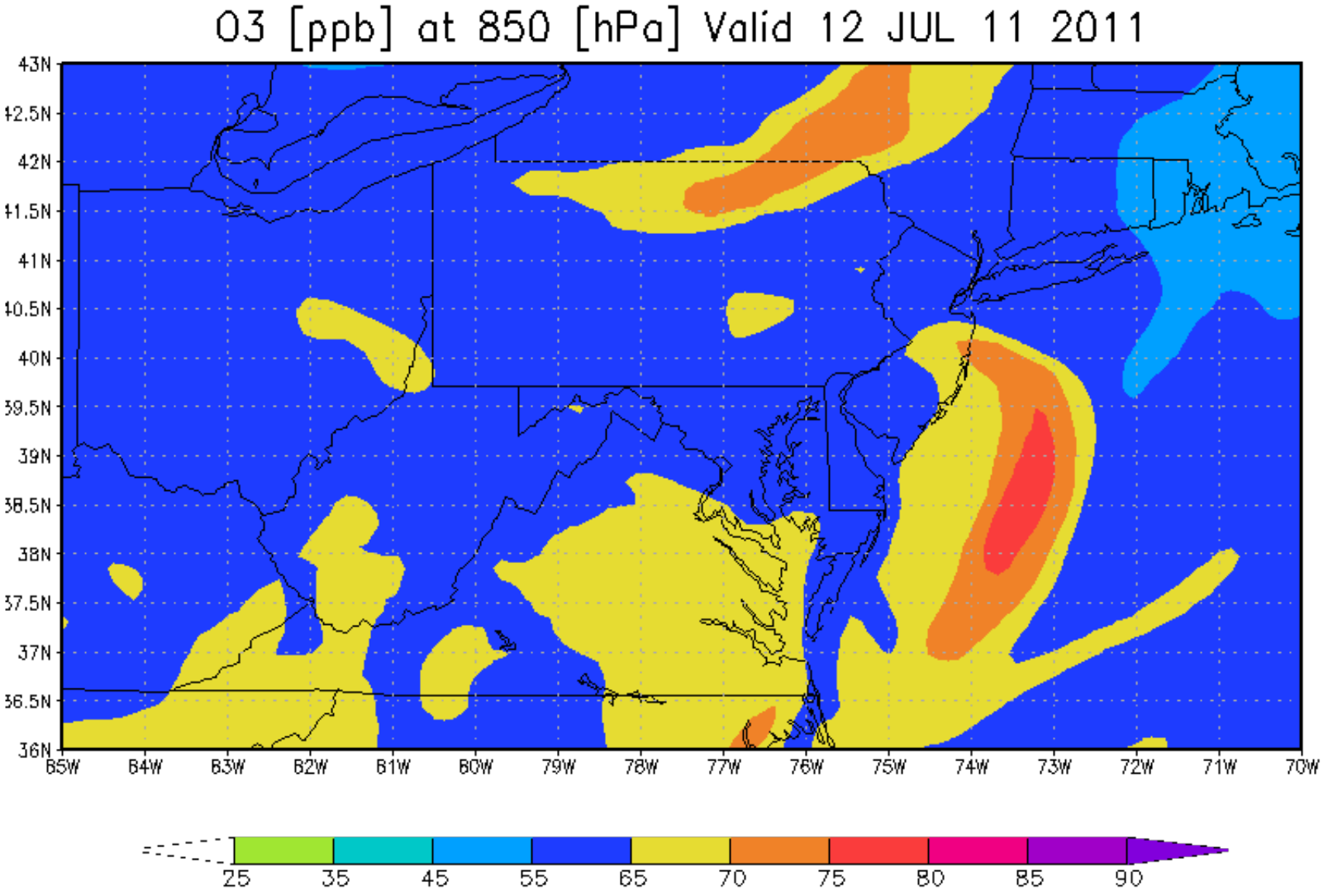
25
35
45
55
65
70
75
80
85
90


O3 [ppb] at 850 [hPa] Valid 12 JUL 11 2011
43N
42.5N
42N
41.5N
41N
40.5N
40N
39.5N
39N
38.5N
38N
37.5N
37N
36.5N
36N
85W
84W
83W
82W
81W
80W
79W
78W
77W
76W
75W
74W
73W
72W
71W
70W
25
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75
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85
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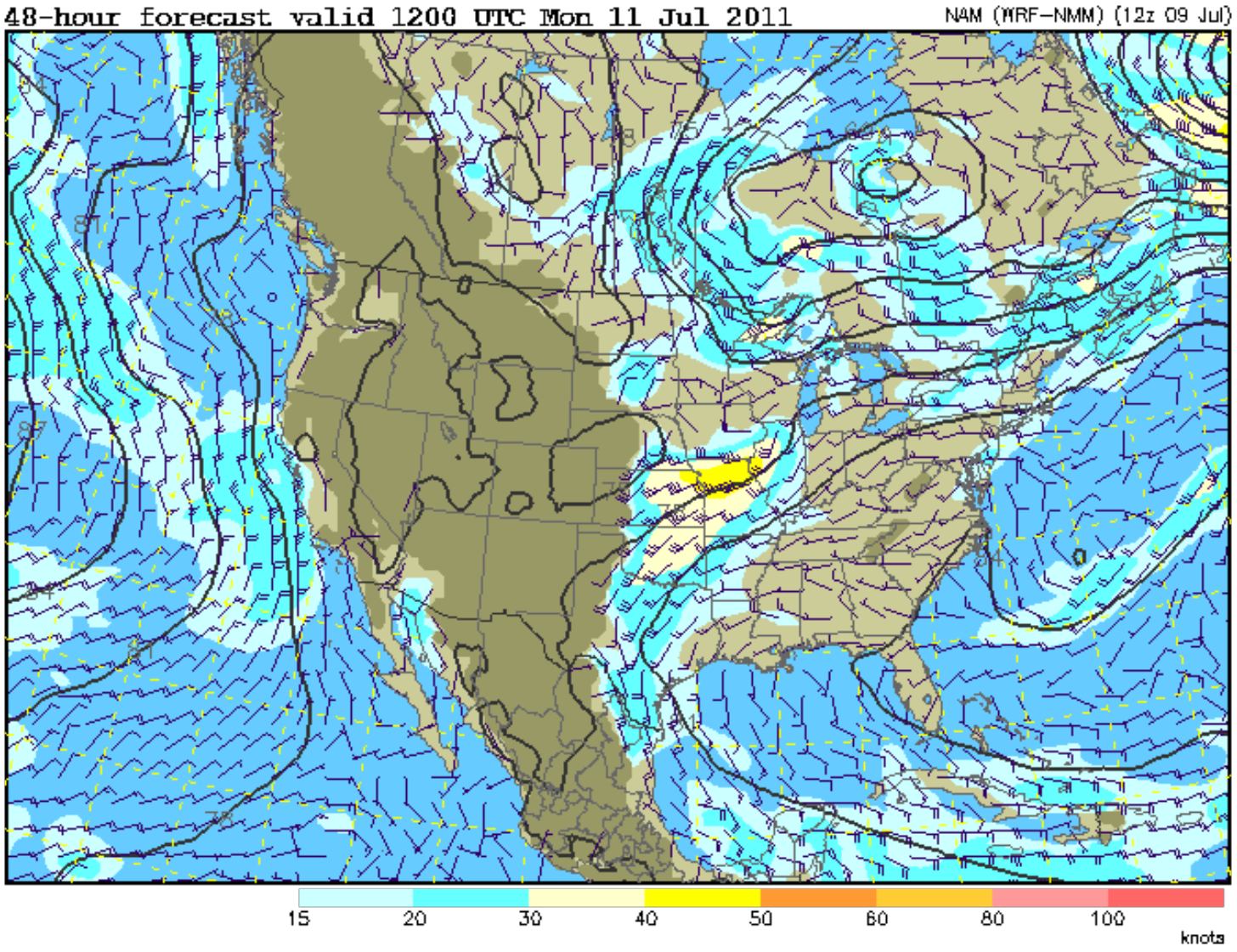
925 mb Heights (dm) / Isotachs (knots)



GEOS-5 Envirogram through 13 July 2011