Weather Briefing 20050612

The latest model runs suggest that the anticipated dry period (by this is meant a period where there are not even isolated showers in the area) will be shorter than expected. Specifically, we might expect some rain on Wednesday (which was not anticipated in the previous model runs).

As of 6 AM June 12 (CDT), TD Arlene was producing extensive rain in an arc from northern Alabama through southeastern Missouri up to Indiana. Though 500 mb trough is still over the western US, but is set to move eastward and flatten, to be replaced by a largely zonal pattern by Monday afternoon. Superimposed on this zonal pattern is a strong short wave that will move from northern Nebraska on Monday afternoon to the western Great Lakes by Wednesday. For us, the flatter pattern at 500 mb means that the midlatitude jet has minimal impact on our weather. The compensating subsidence from Arlene indicates fair weather with suppressed convection (puffies) for today. These dry conditions should hold through Tuesday due to dry air at midlevels and subsidence (capping of convection). On Wednesday, the AVN brings in an what looks like an easterly wave. Most of the action appears to be on the Texas south and central coast, and the ETA model keeps everything in the southern Gulf of Mexico. What little information I have on other models (the UKMO) suggests better agreement with the AVN than the ETA. The conclusion is that it is too early to be very specific given the noise level of medium term tropical forecasts, and the Houston office has called for the climatological 20% chance of showers and T-storms on Wednesday. A ridge builds just to the west of us (Colorado), bringing some mid level (700-500 mb) northwesterly flow to our region. The local forecasters indicate that this is the time when Mesoscale Convective Systems have the opportunity to enter our region. Indeed, the models show reduced southeasterly winds at the surface. My simpleminded interpretation is that these reduced winds suppress the supply of moisture to big inland systems, allowing them to develop closer to the coast, where we nearly always have significant precipitable water and instability. It is too early to know where these MCS's might be. Again, the forecast is for the climatological 20% chance of showers and T-storms Thursday and Friday.

Science:

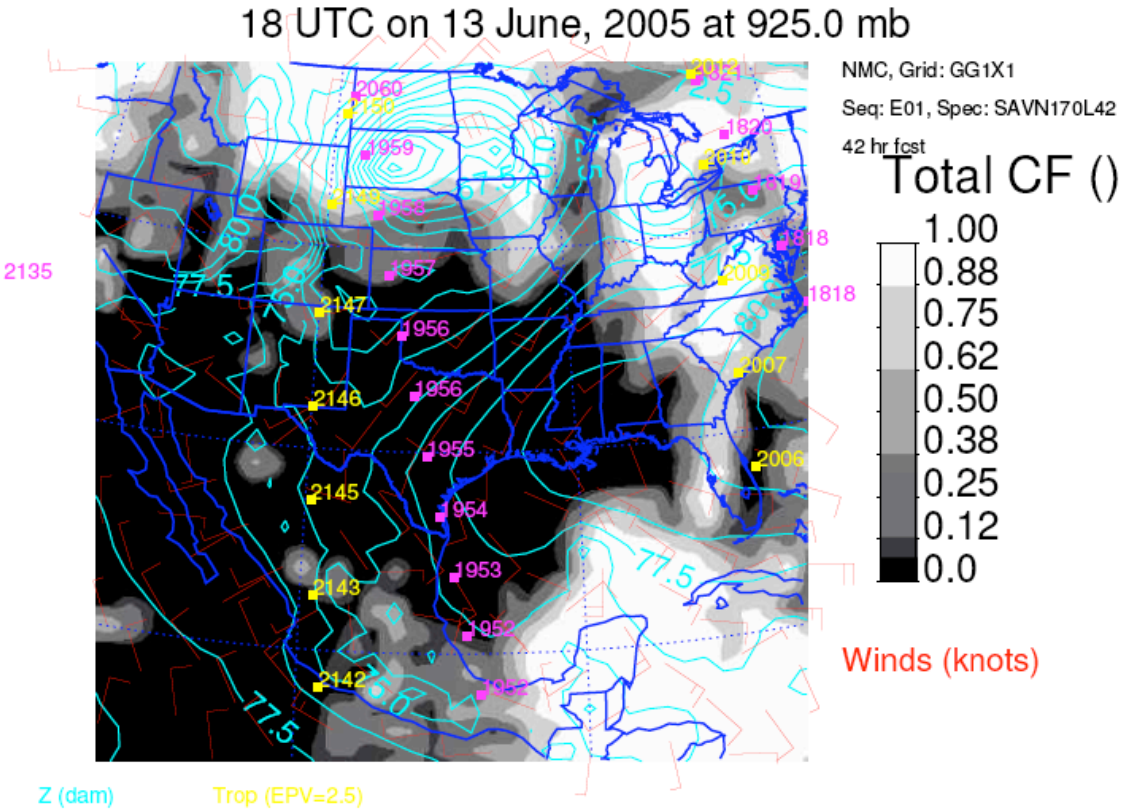
6/13: Some disagreement on the cloud forecast for tomorrow over the Texas region, with the ETA (as usual) suggesting substantially more cloud (probably low or boundary layer) than the AVN, which gives us total clarity. I think we will have low level puffies both today (6/12) and tomorrow (6/13), with more tomorrow than today (which describes the trend in the ETA model and is consistent with the suppressive effects of Arlene moving off. In other words, the AVN has too little cloud, and the ETA too much for 6/13. Winds will be from the south. The upper level (350K) plot suggests a good MLS opportunity just to our west. An air pollution run should also be considered.

6/14: An easterly wave (inverted trough) approaches, but should not affect our area – it might skirt southeastern Louisiana. We might even have better cloud conditions over our area than 6/13, with some subsidence indicated ahead of this wave. There is a HIRDLS

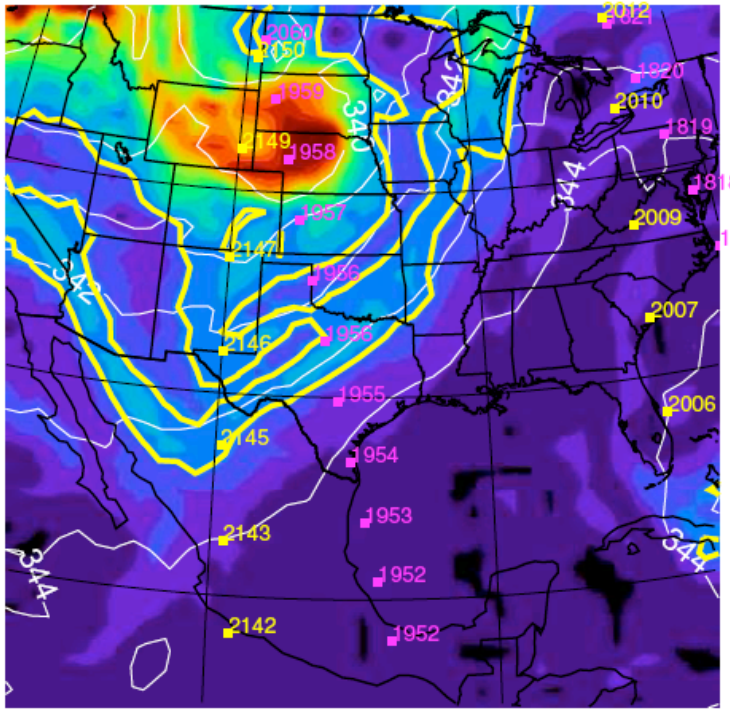
track up the Mississippi river valley, but no real penetration to high PV values until Wisconsin – probably out of range.

6/15: As indicated in the overall outlook, Wednesday is definitely more dicey than earlier days for clear skies for any air pollution run. An MLS track is right over us, with HIRDLS over the Texas panhandle. Both satellite tracks penetrate a region of weak PV gradients over the central and northern Great Plains.

6/16: There seems to be little to recommend this day for flying, mostly because of the pathologically unfavorable position of the satellite tracks. It looks like we are near the edge even of the broad OMI swaths. I would argue that, at this early stage, there is evidence that this would be a better day for minimal cloud cover than Wednesday, but not as good as Tuesday (6/14). I suspect a flight is unlikely on this day because of the favorable conditions on 6/17 for satellite overpasses.



18 UTC on 13 June, 2005 at 350.0 K



NMC, Grid: GG1X1

Seq: E01, Spec: SAVN170L42

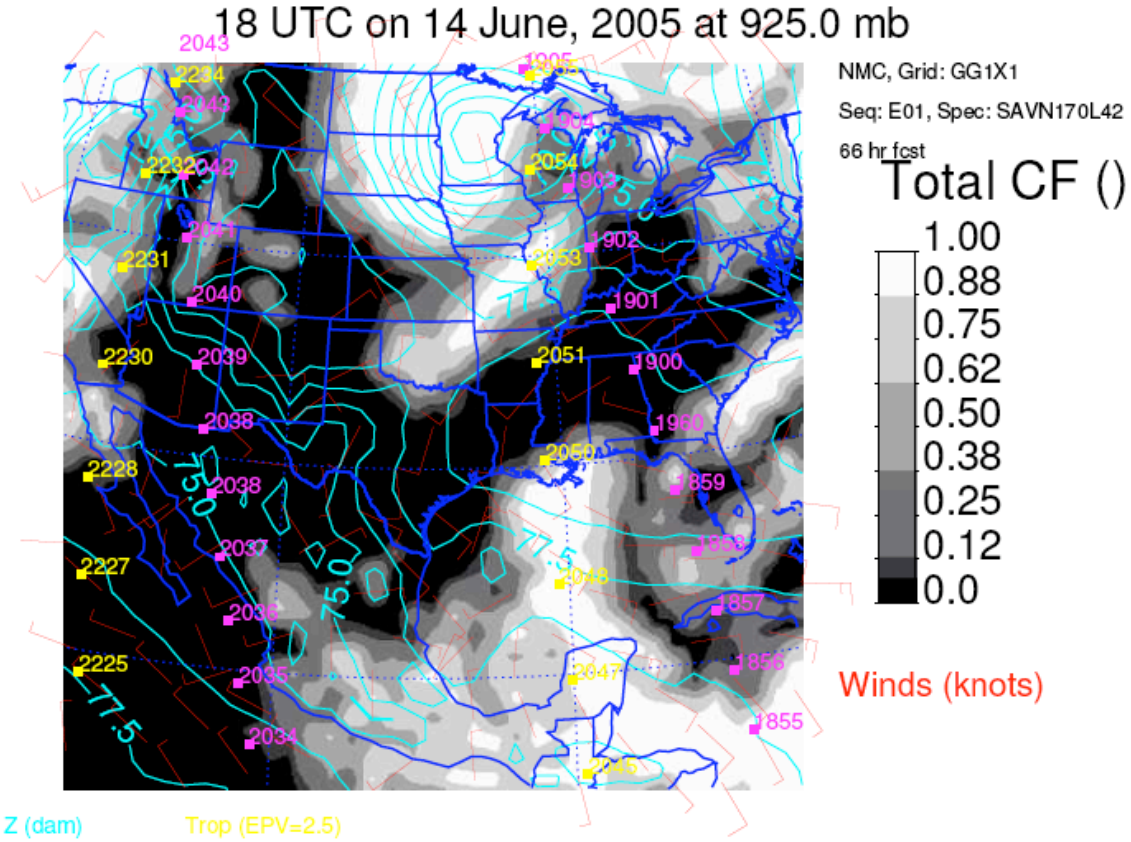
42 hr fcst

EPV (K m^2/kg s)

1.2e-05
1.0e-05
9.0e-06
7.5e-06
6.0e-06
4.5e-06
3.0e-06
1.5e-06
0.0

MNST (x 1.00E+03 J/kg^-1)

SMR 5 10 20 (ppmv)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66 hr fcst
Total CF ()
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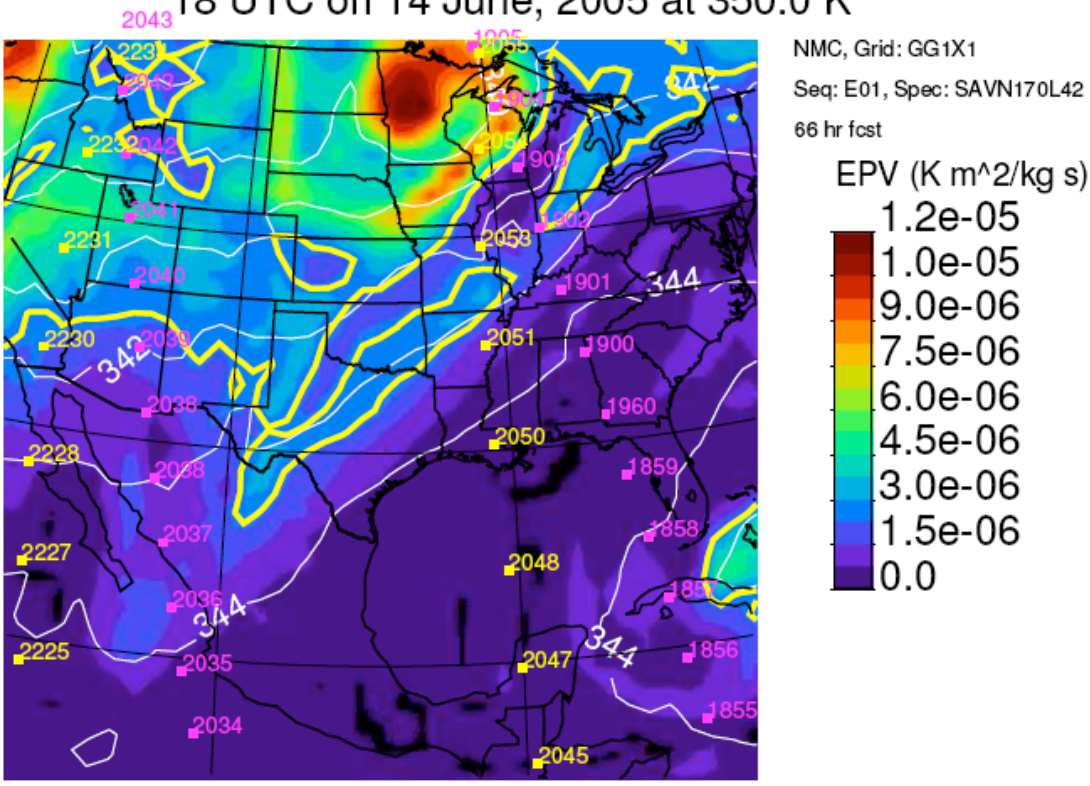
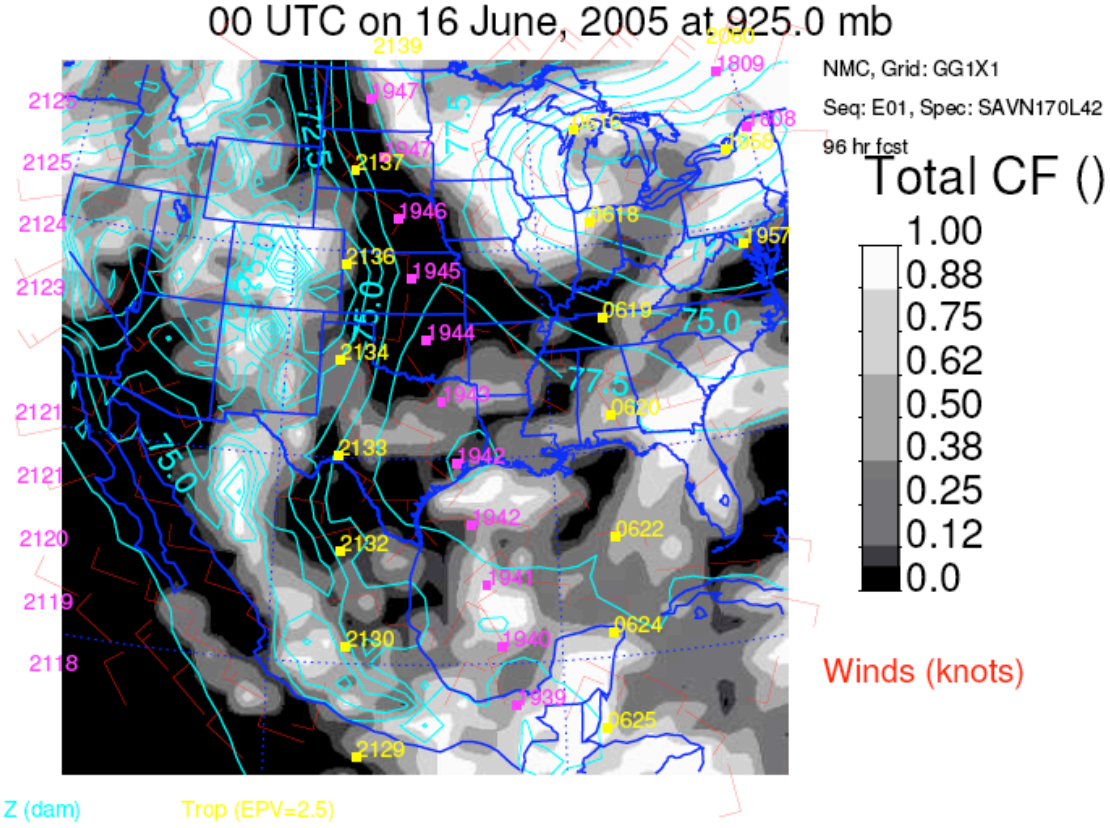
0.88
0.75
0.62
0.50
0.38
0.25
0.12
0.0
Winds (knots)
Z (dam)
Trop (EPV=2.5)

18 UTC on 14 June, 2005 at 350.0 K



MNST (x 1.00E+03 J/kg^-1)

SMR 5 10 20 (ppmv)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Seq: E01, Spec: SAVN170L42
96 hr fcst
Total CF ()
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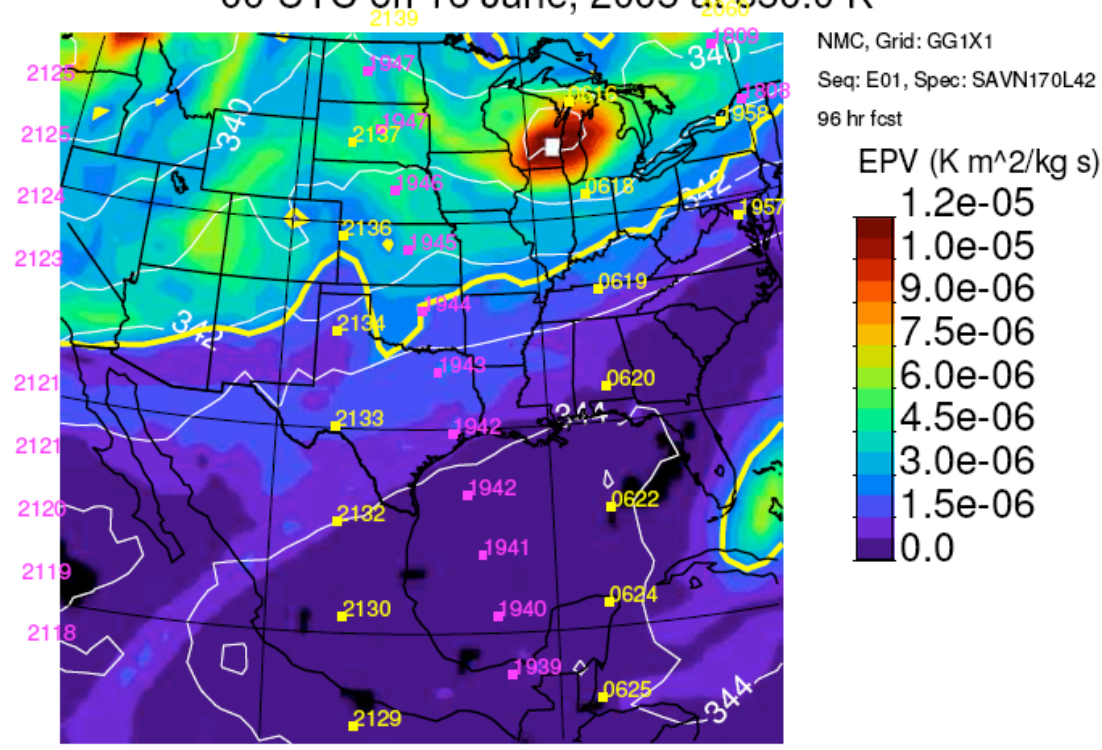
0.88
0.75
0.62
0.50
0.38
0.25
0.12
0.0
Winds (knots)
Z (dam)
Trop (EPV=2.5)

00 UTC on 16 June, 2005 at 350.0 K



00 UTC on 17 June, 2005 at 925.0 mb