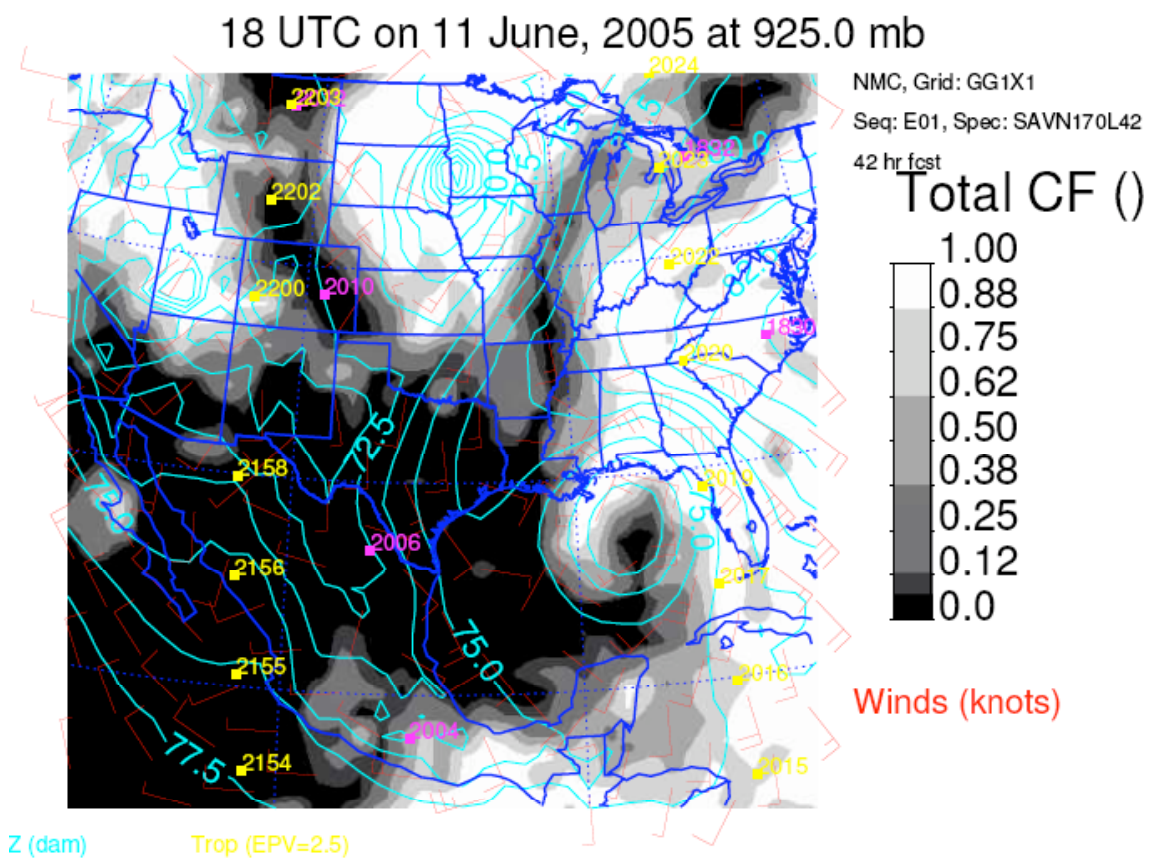
Weather briefing for 6/10/05

Houston area

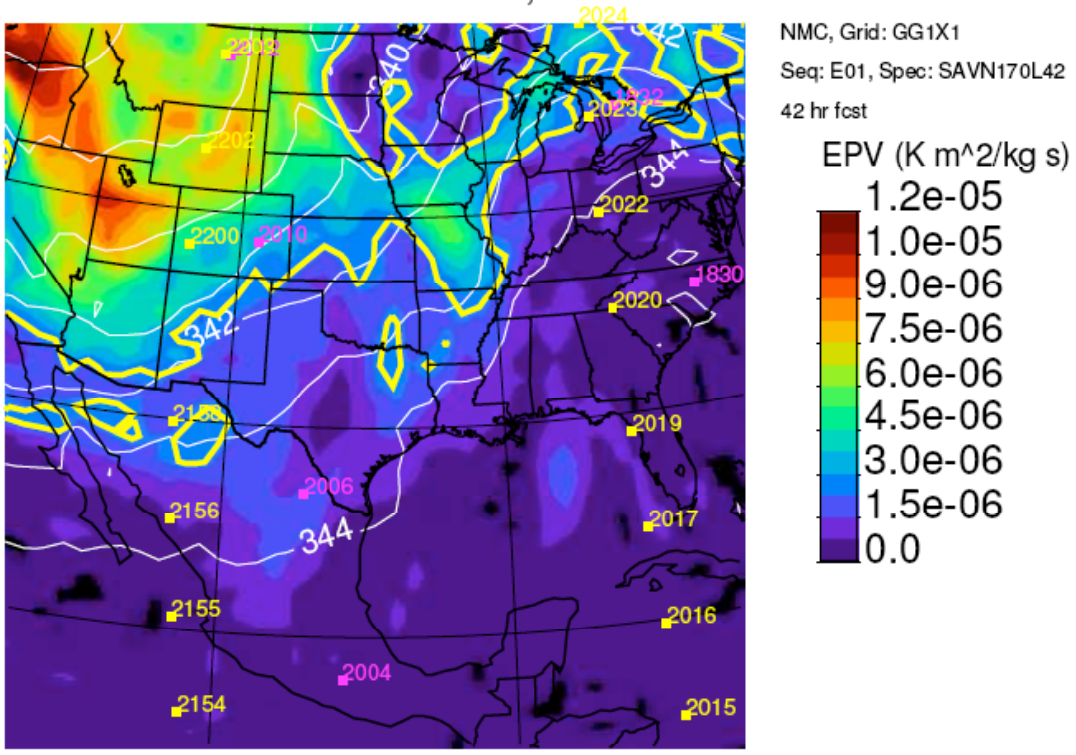
The national picture at midlevels (500 mb) shows a trough currently over the Arizona-New Mexico border, with a strong ridge just off the east coast. Short waves will rotate through this trough producing significant weather. However, this will remain well to the north and west of us. Currently there is a big system extending from Oklahoma into Nebraska moving north-northeastward. As we progress through the five-day forecast period, the ridge-trough pattern will flatten. The implication for us is that the midlatitude weather will move even further away from us, with local weather in a tropical regime. The AVN shows significant drying over our area, with downward motion at 700 mb through Tuesday. Thus, the official forecast (with which I concur) has no rain until Tuesday (where we expect the climatological 20% chance of showers and T-storms due To weakening subsidence). Winds should hold to the basic southeasterlies/southerlies within limits, except possibly for Saturday afternoon where the approaching tropical storm Arlene perturbs them somewhat. Arlene, which is causing headaches for the oil markets, is arguably a blessing for us, since it is responsible for much of the subsidence. I have reasonable confidence in the track forecasts, since they have not changed significantly in the last 24 hours, with landfall expected at about Mississippi at 6Z Sunday.

Science:

I am sticking with the AVN model for cloud forecasts, since the ETA has had trouble with Arlene. Based on the subsidence pattern, we should have reasonably clear skies (with suppressed cumuli) through Monday in the Houston area. For tomorrow, we are looking at a possible MLS flight into Colorado and Wyoming, with a Boulder radiosonde. Though the synoptic situation in Colorado is not unusually favorable for thunderstorms, there is still a 50% chance expected. There has been a slight slowing down in the eastward movement of the trough in the last few forecasts (implying slightly Less penetration into high PV air), but the bottom line is that the forecasts on this point are fairly stable. For Sunday, there is a HIRDLS track almost over us; however, it is almost parallel to the PV surfaces at 350K, with some cross gradient component at 370K. Forecasts again have been stable on this point. For Monday, we have another MLS opportunity to penetrate the same slow-moving trough. Because the track is closer, we have an arguably better opportunity to penetrate the high PV air in 350K than on Saturday. All these days might also be considered good air pollution days because of the clear weather expected over our area. Note that Tuesday (last figure) has a good HIRDLS opportunity to fly perpendicular to the PV surfaces.


18 UTC on 11 June, 2005 at 925.0 mb
NMC, Grid: GG1X1
Seq: E01, Spec: SAVN170L42
42 hr fcst
Total CF ()
1.00
0.88
0.75
0.62
0.50
0.38
0.25
0.12
0.0
Winds (knots)
Z (dam)
Trop (EPV=2.5)
2203
2202
2200
2010
2158
2156
2155
2154
2006
2004
2024
2022
2020
2018
2017
2016
2015
72.5
75.0
77.5

18 UTC on 11 June, 2005 at 350.0 K



NMC, Grid: GG1X1

Seq: E01, Spec: SAVN170L42

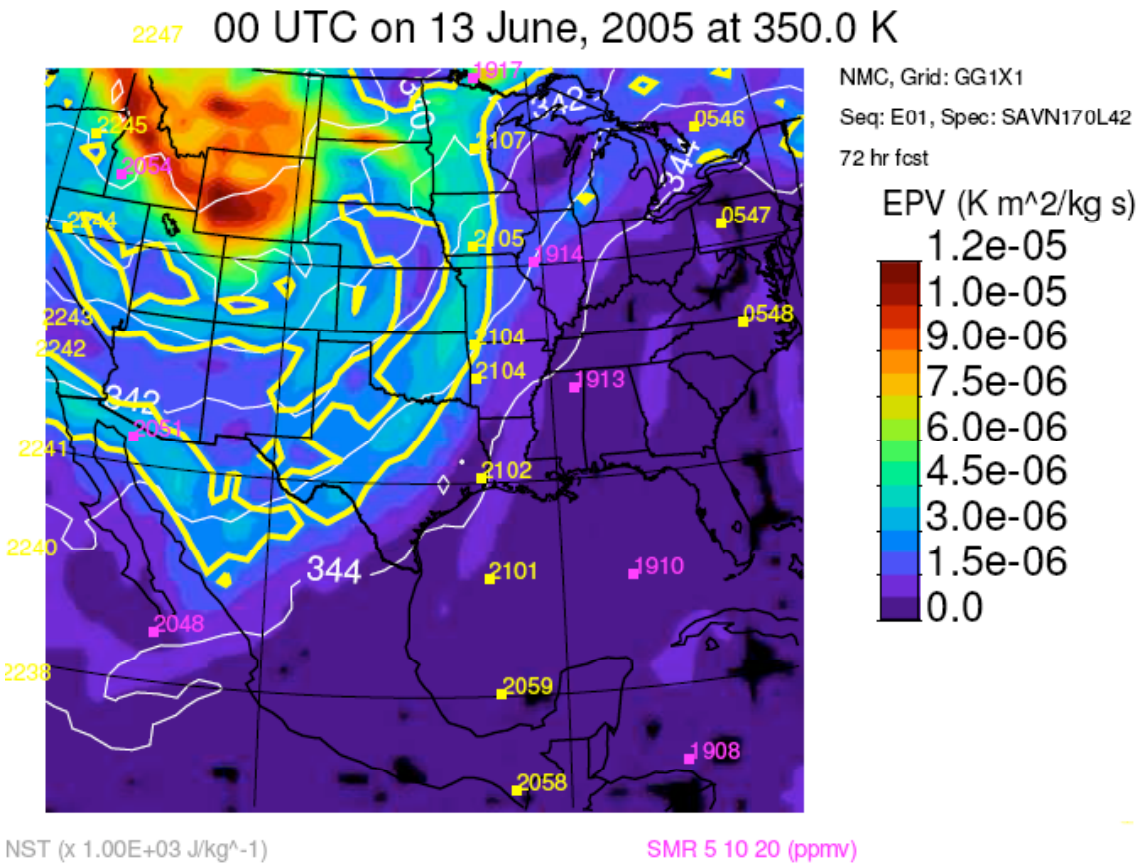
42 hr fcst

EPV (K m^2/kg s)

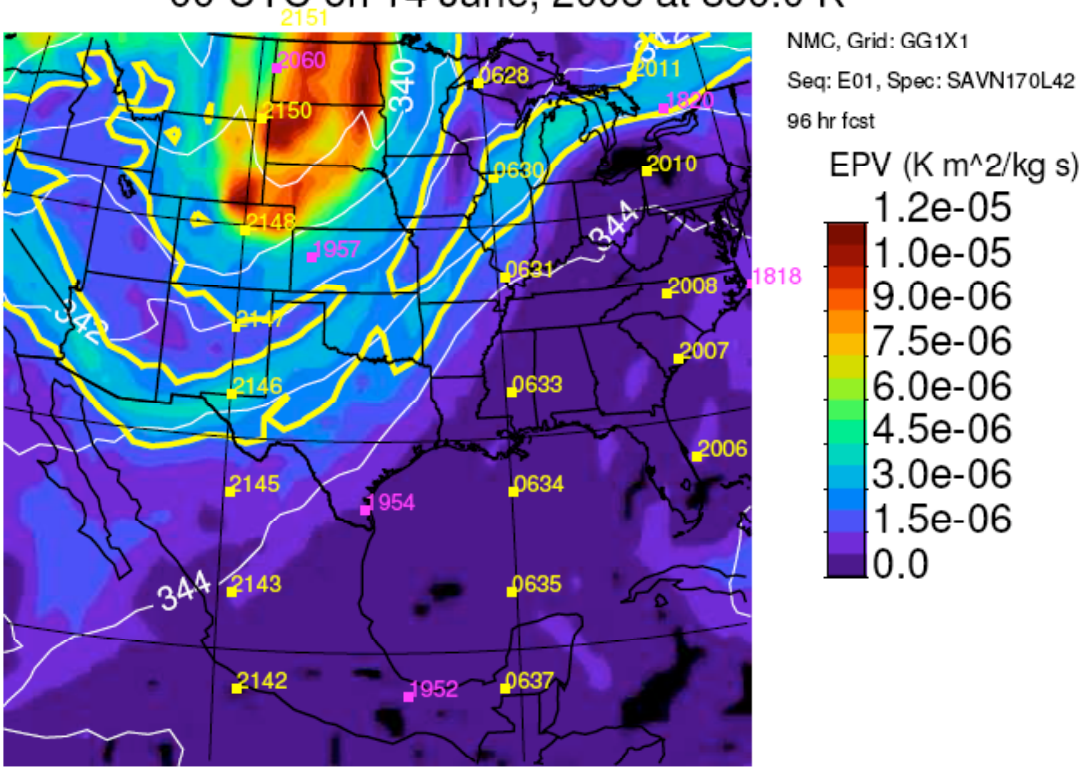
1.2e-05
1.0e-05
9.0e-06
7.5e-06
6.0e-06
4.5e-06
3.0e-06
1.5e-06
0.0

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

SMR 5 10 20 (ppmv)


00 UTC on 13 June, 2005 at 350.0 K
NMC, Grid: GG1X1
Seq: E01, Spec: SAVN170L42
72 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
NST (x 1.00E+03 J/kg^-1)
SMR 5 10 20 (ppmv)

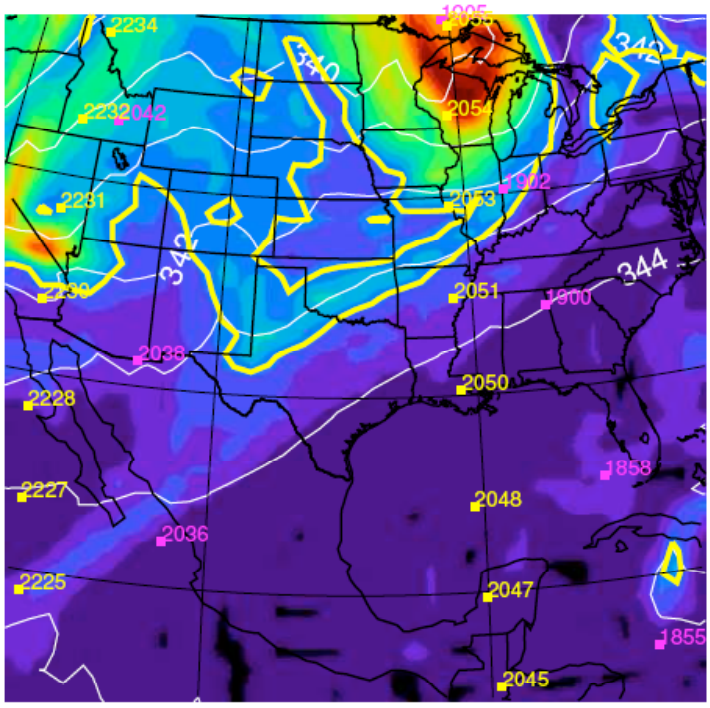
00 UTC on 14 June, 2005 at 350.0 K



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

SMR 5 10 20 (ppmv)

00 UTC on 15 June, 2005 at 350.0 K



NMC, Grid: GG1X1

Seq: E01, Spec: SAVN170L42

120 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)