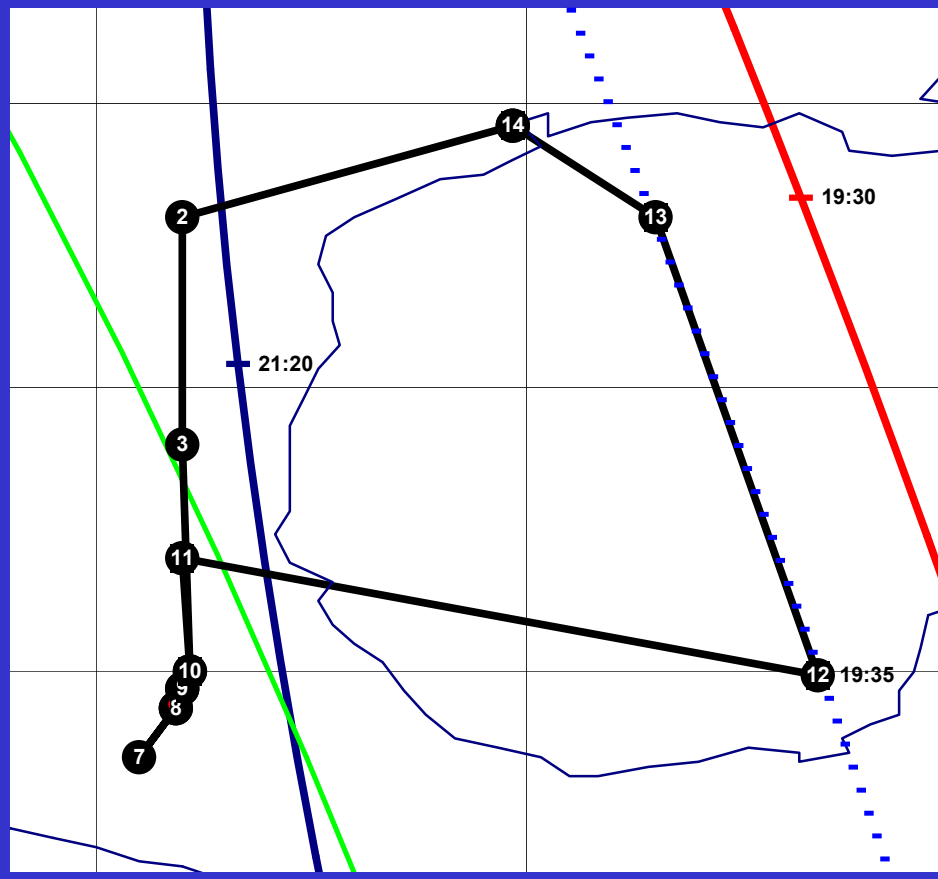
# Plan for INTEX-B flight#7 – Houston local 5 on Thursday 3/16
# updated 3/15 @18Z

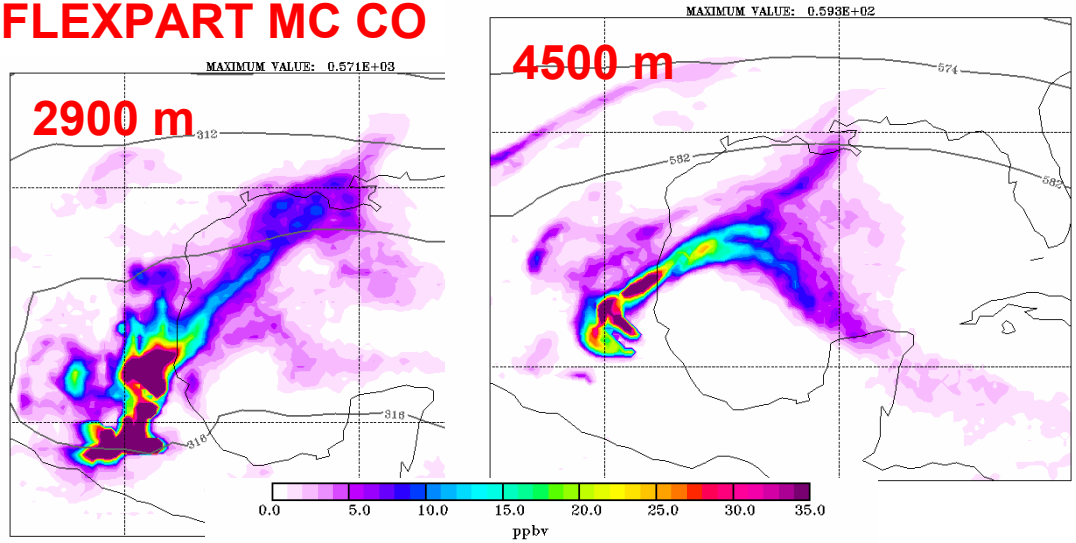
Objectives:

- MC plume, pollution & fires in northern Mexico
- MC overpass to guide C-130 Thursday pm flight
- MC Basin weekday sampling
- Intercomparison with J-130
- TES validation

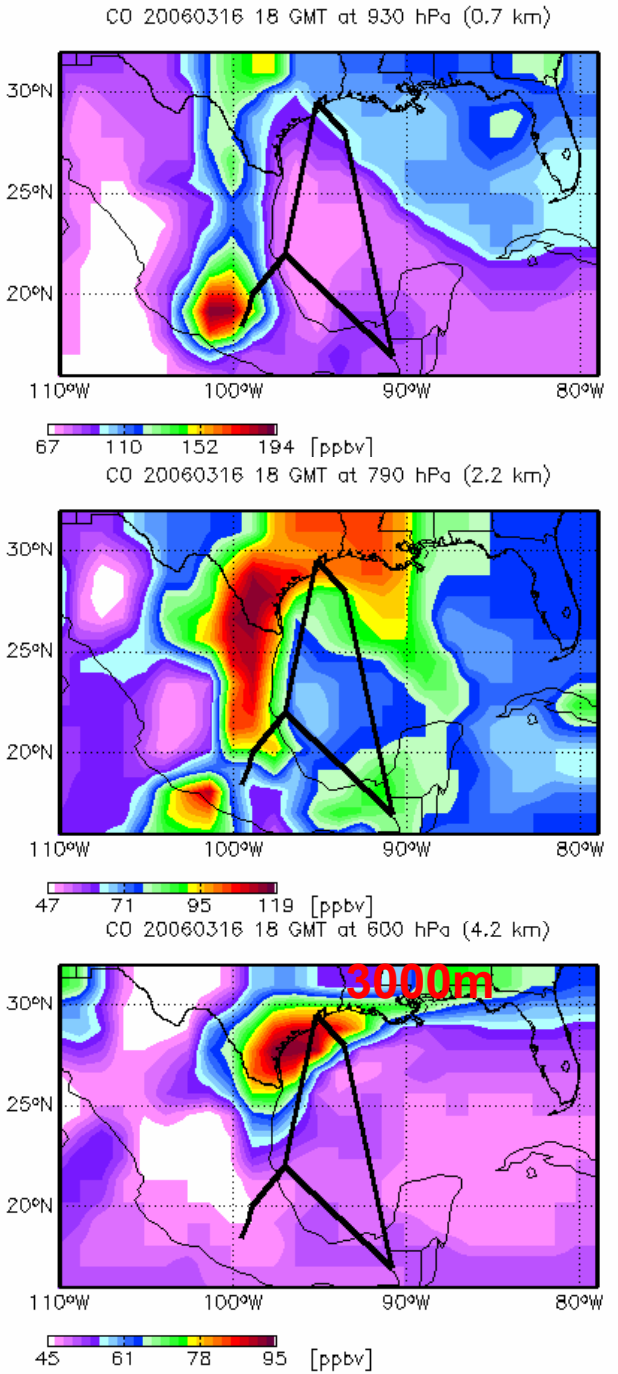



- Points 1-3: vertical profiling at 1-25K
- Points 3-7: MC high-altitude overflight w/DIAL mapping
- Points 7-11: descent to boundary layer and MC sampling
- Points 11-12: vertical profiling, intercomparison with J-130
- Point 12: TES validation spiral
- Points 12-13: TES validation track, aged MC plume & high-altitude convection

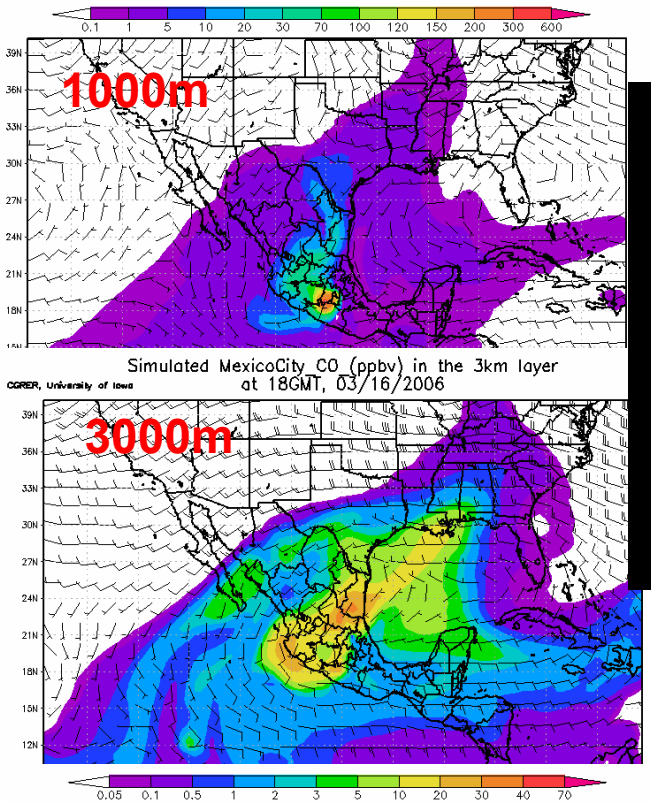
# FLEXPART MC CO



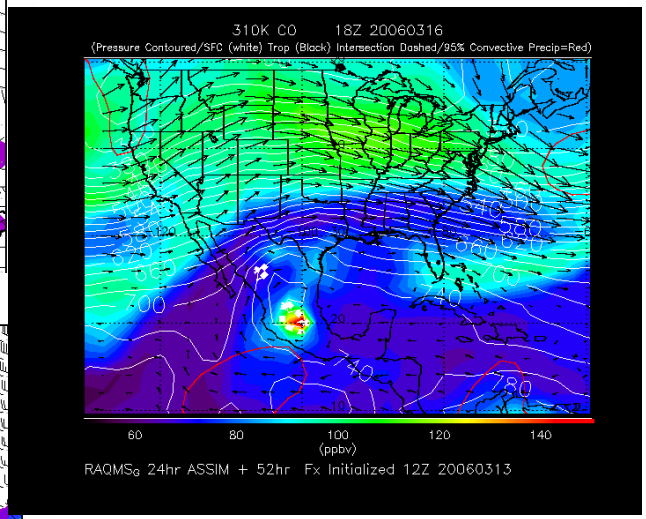

# GMAO/GEOS-Chem CO




# STEM MC CO




# RAQMS CO (310K)

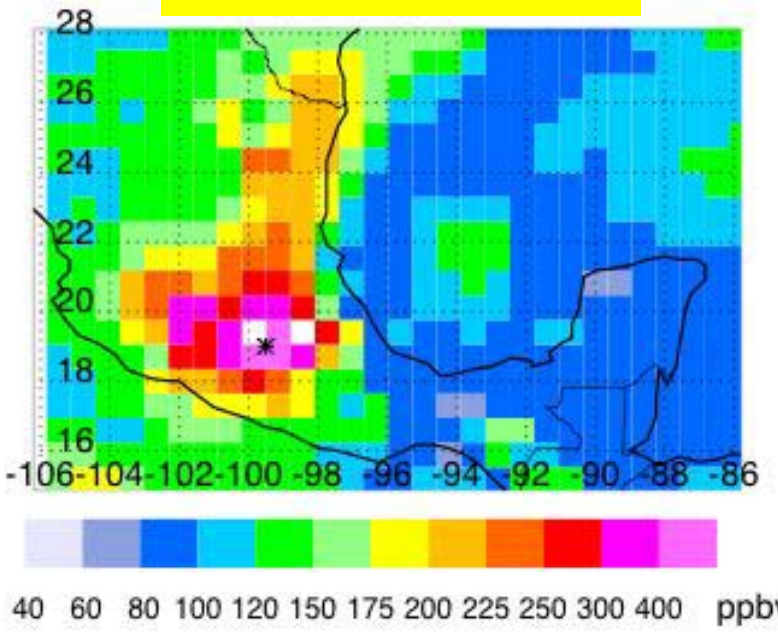



**Chemical forecasts for tomorrow's flight**

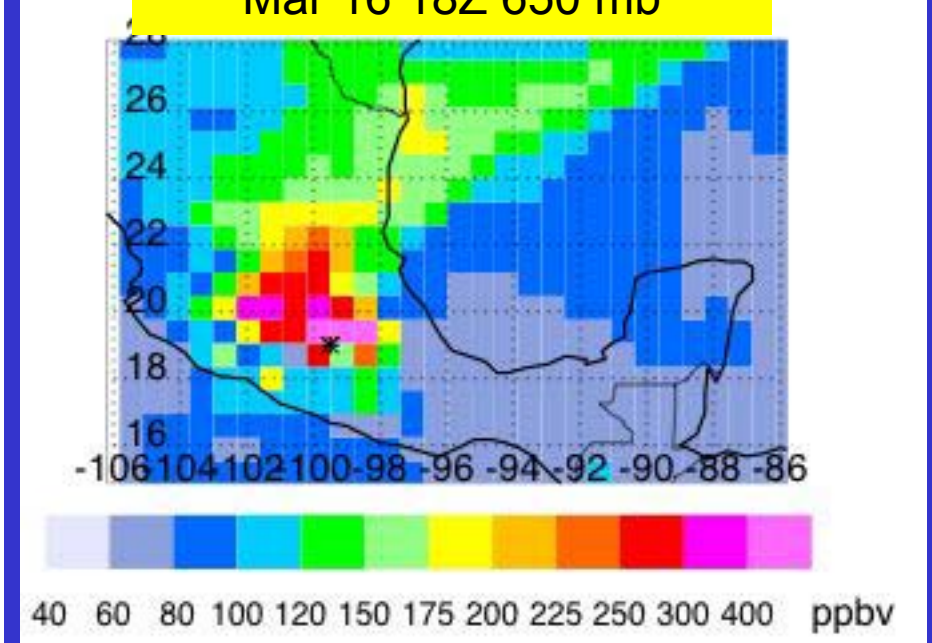
QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.

# MOZART CO Forecasts

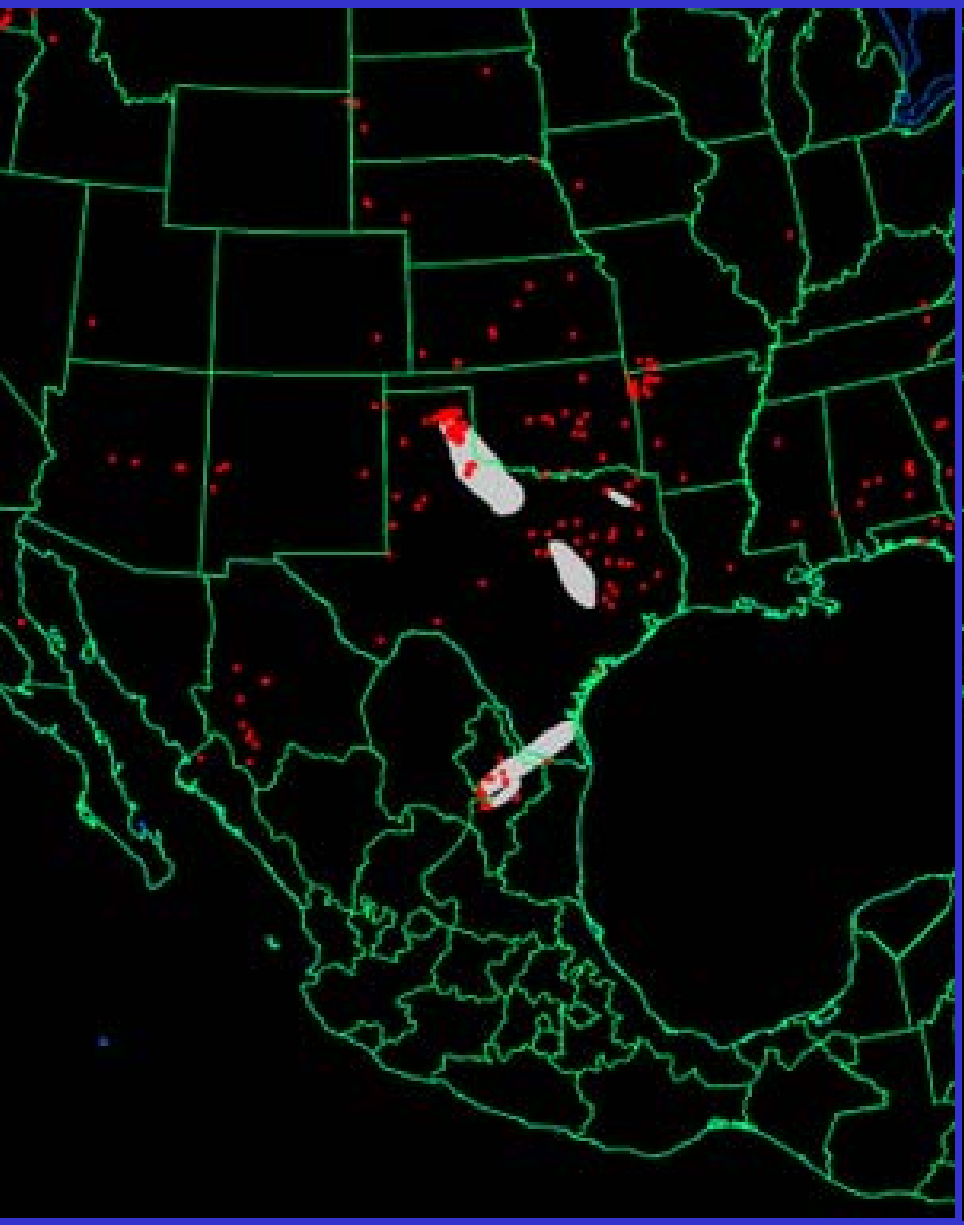
Mar 16 18Z 750 mb



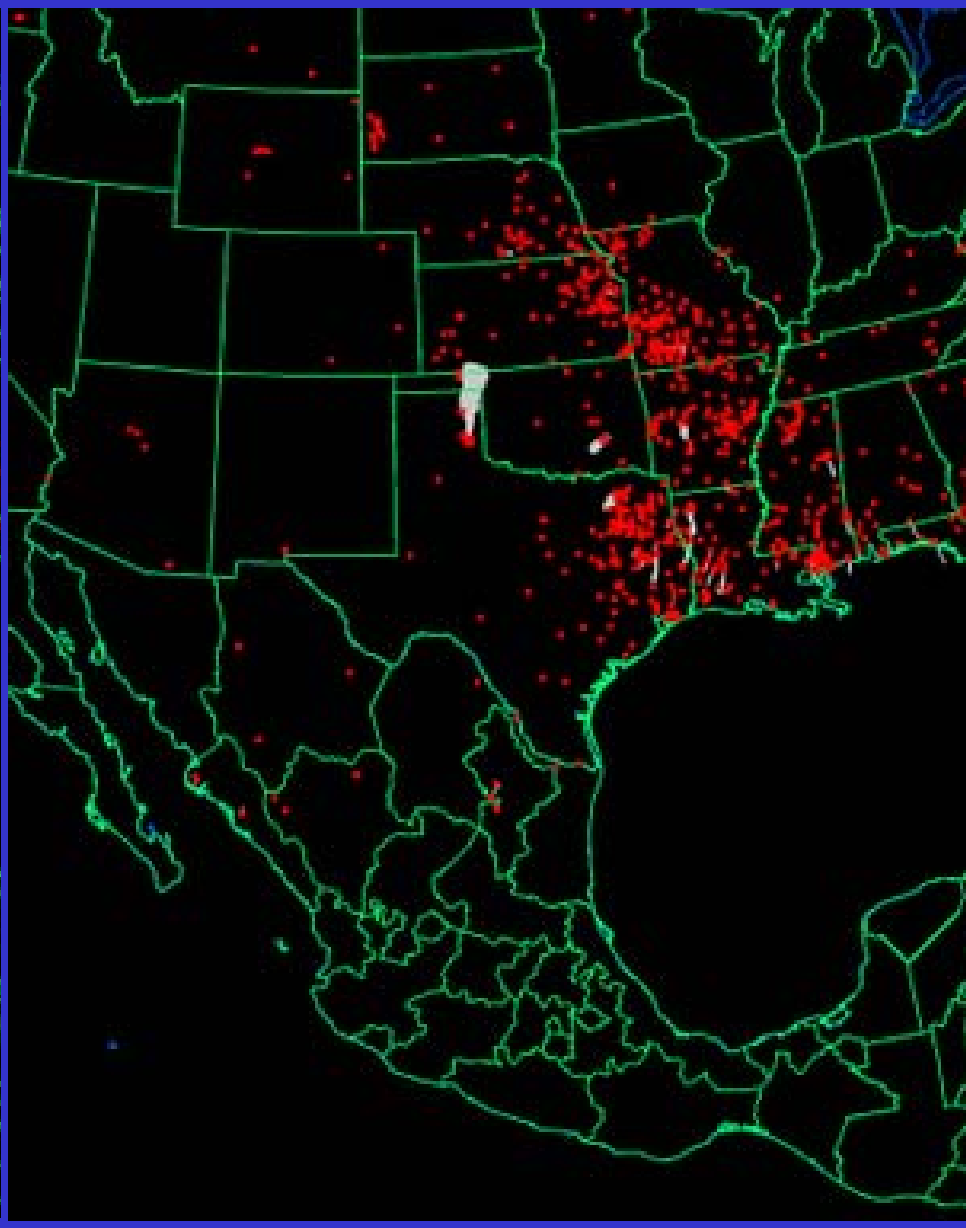

Mar 16 18Z 650 mb



**Previous HMS (03/13/06)**

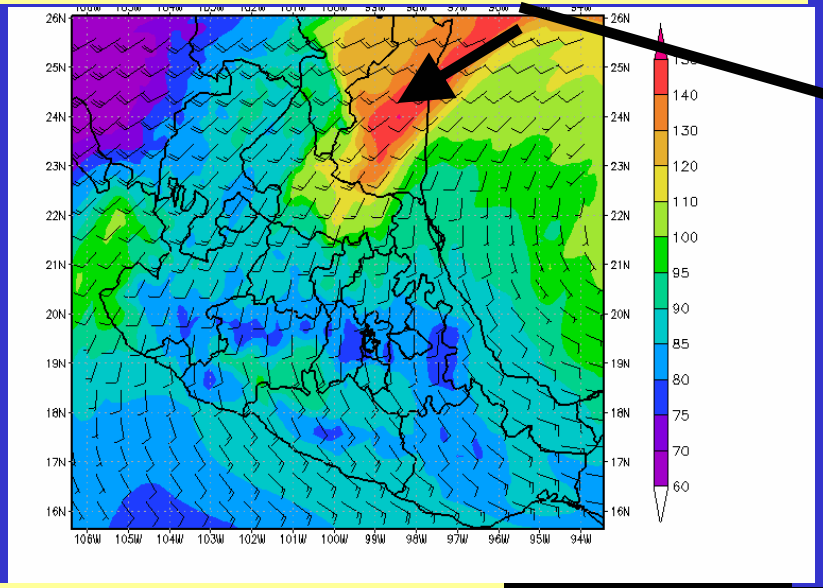


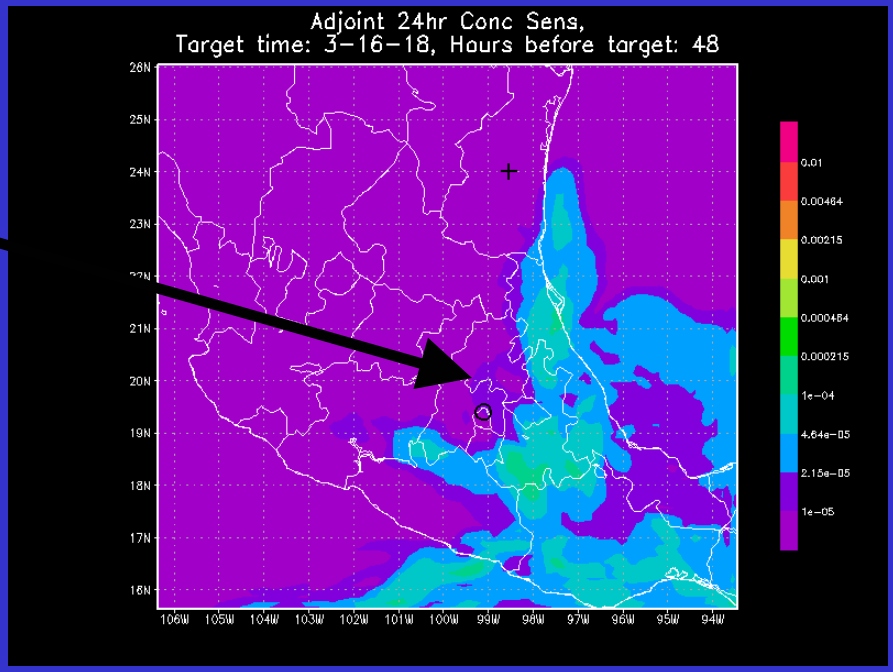
**Current HMS (03/14/06)**



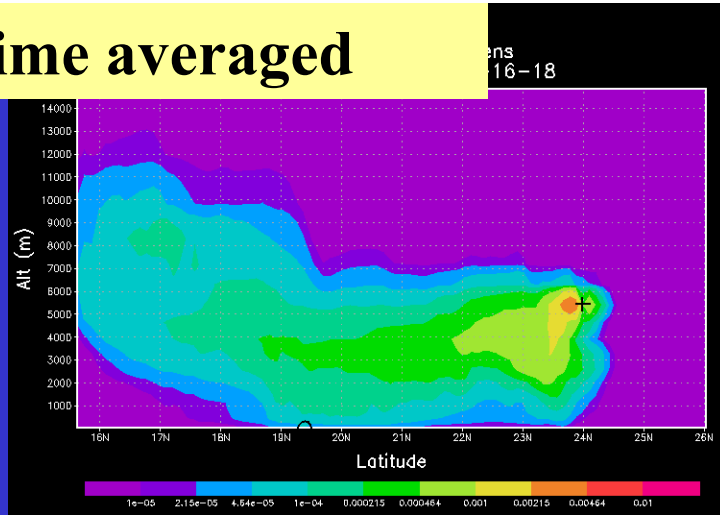
# Adjoint Influence Region

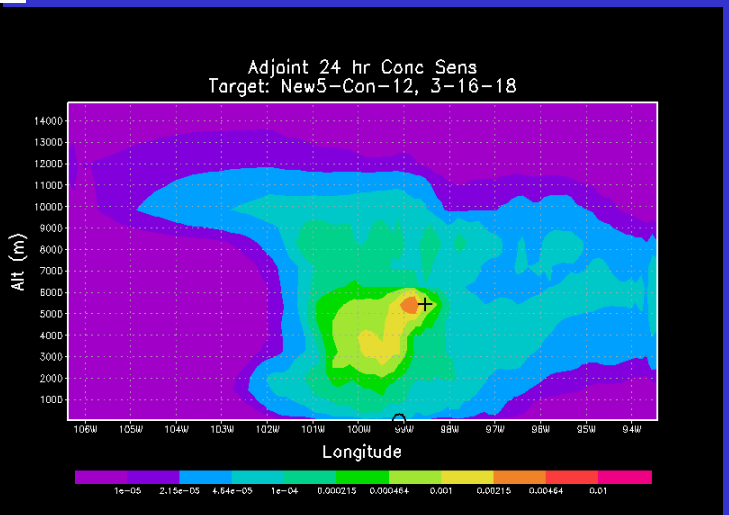
**Target in Thursday flight path in MC Plume**



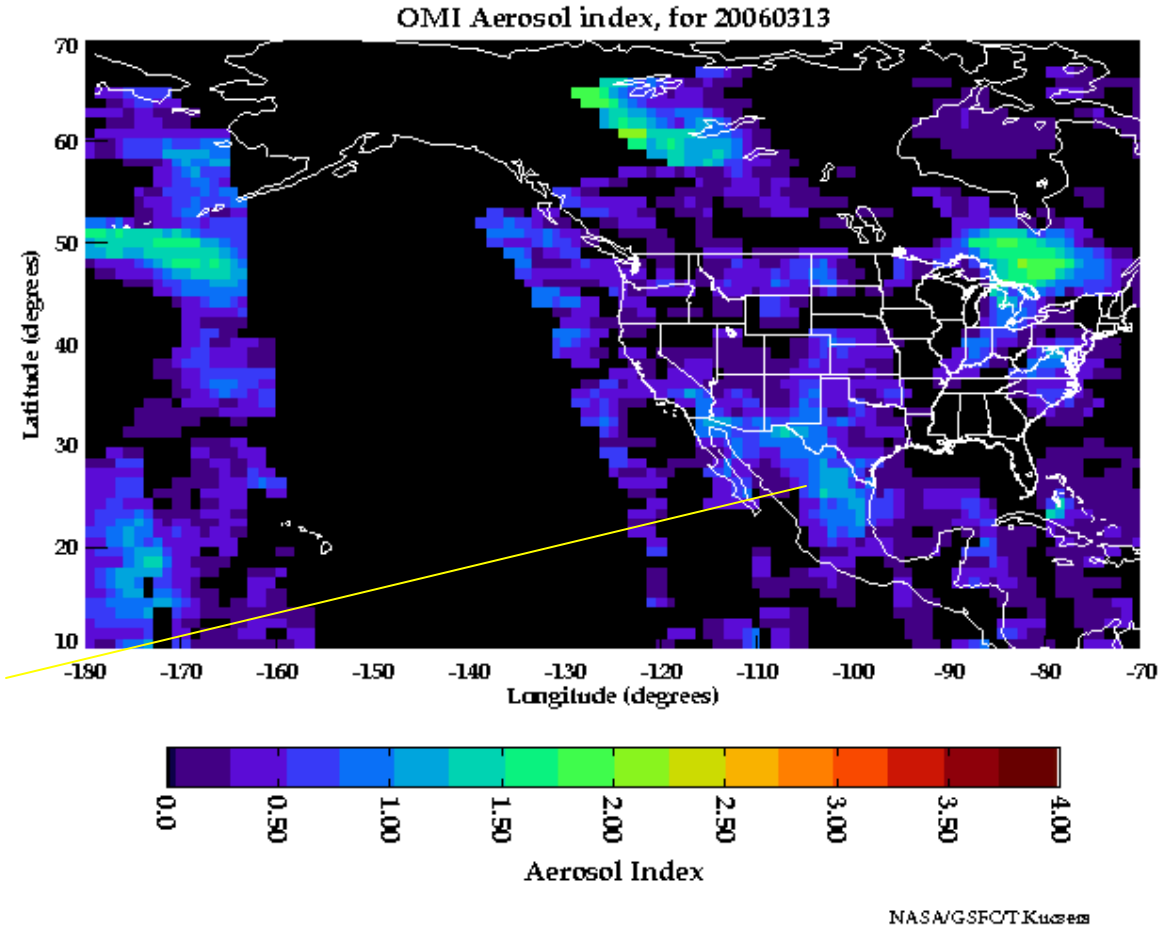

**Time averaged**



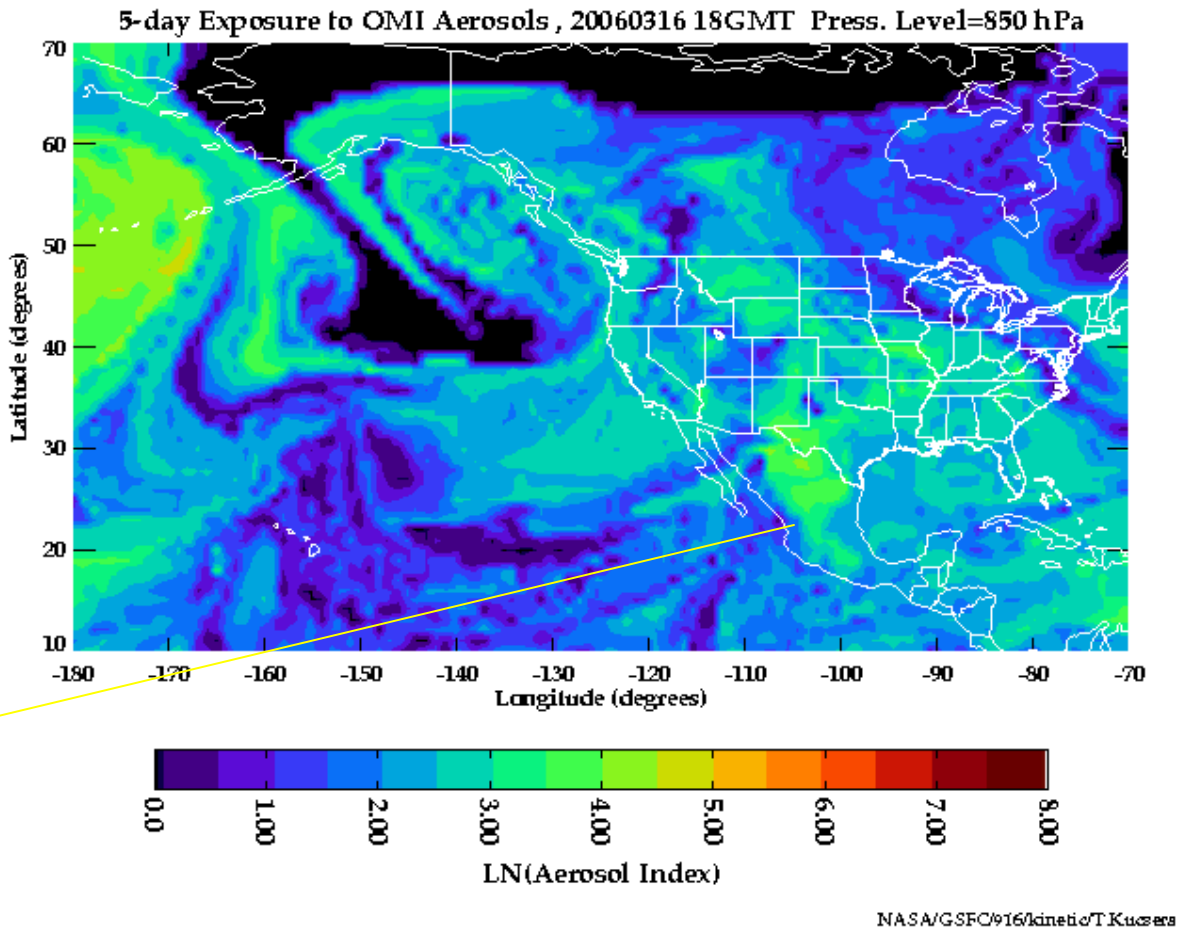
## *Global Sensing*

**Obs Aerosols**
**13 March**

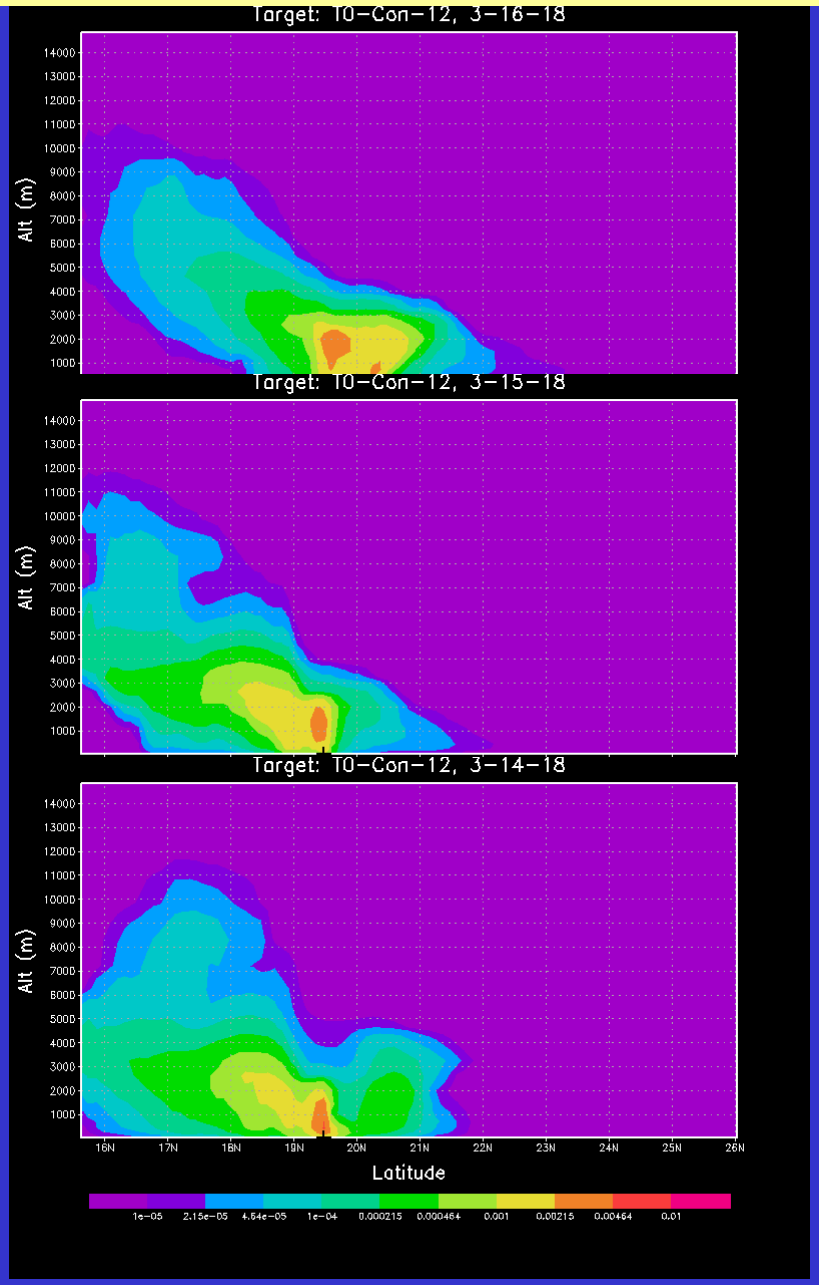


## *Aerosol Influence …low, 850 hPa (???)*

**Potential Aerosols 16 March**



# Mexico City Source Transition



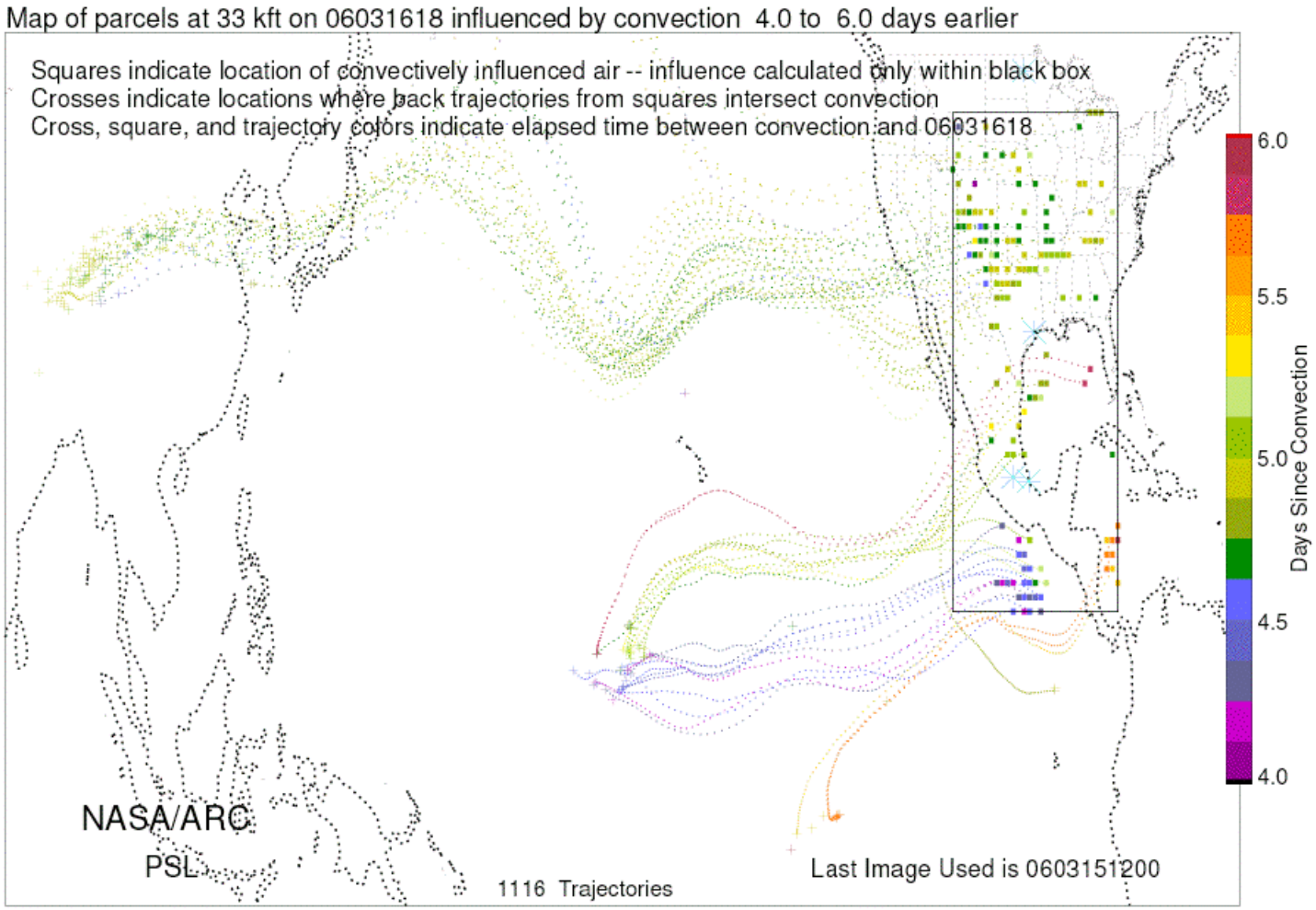

**Thurs**

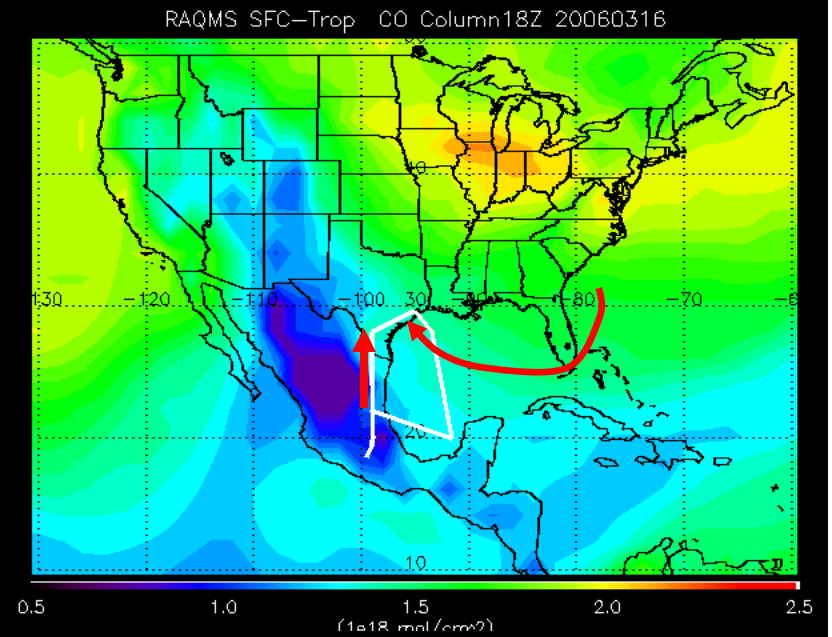
**Wed**

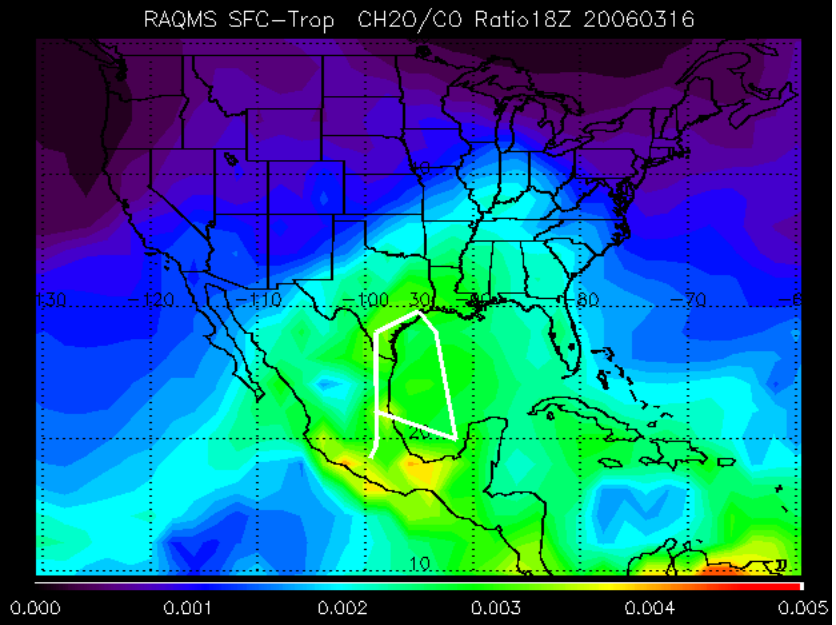
**Tues**

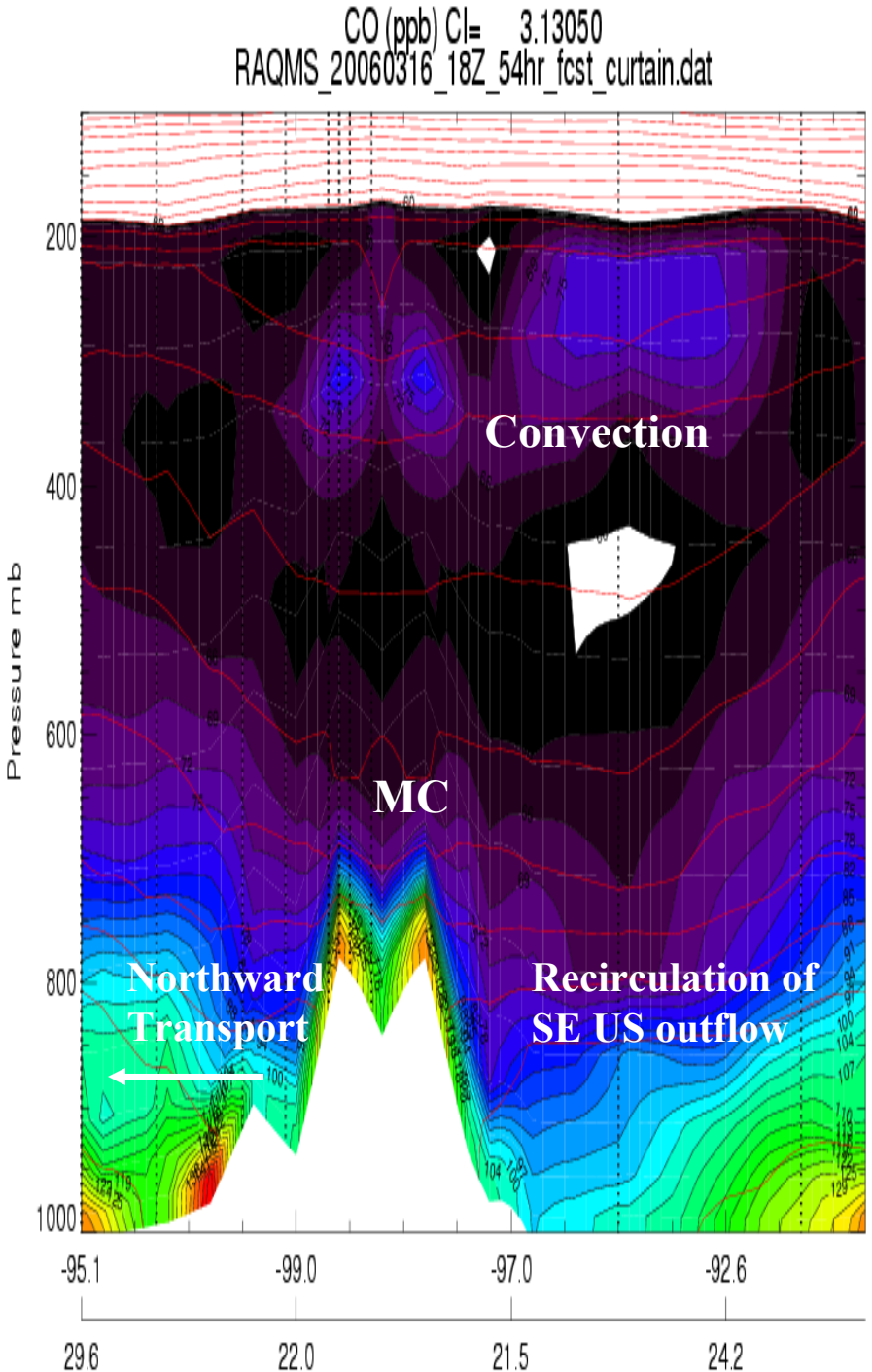
**Heaviest cooking on Thursday**

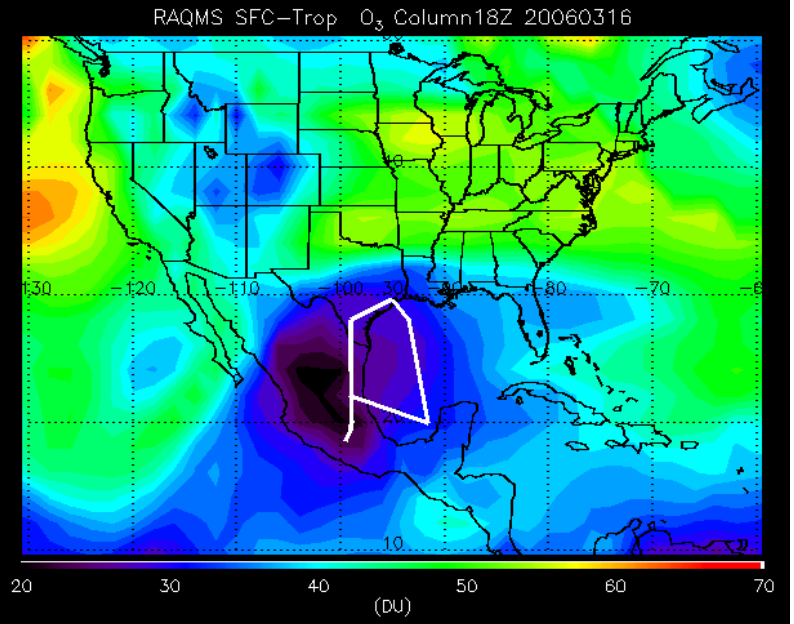
# Little Convective Influence 16th

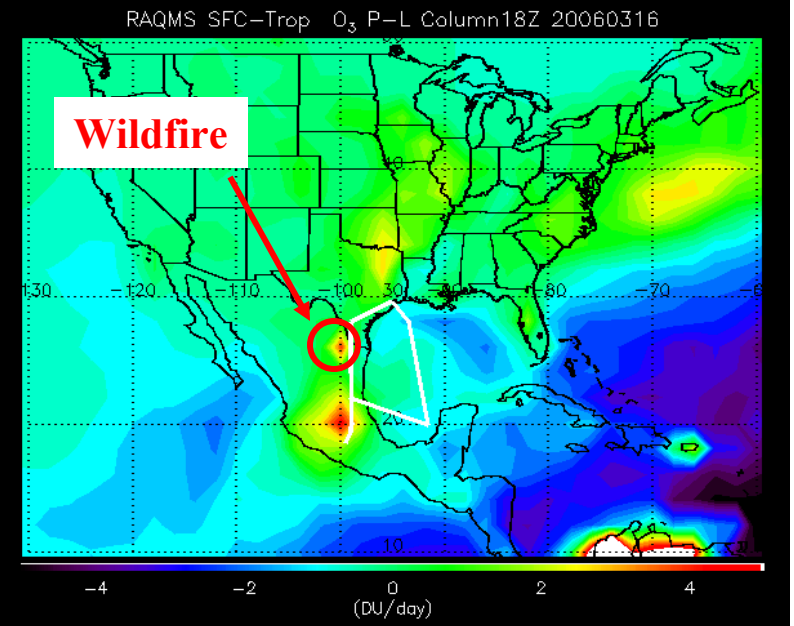


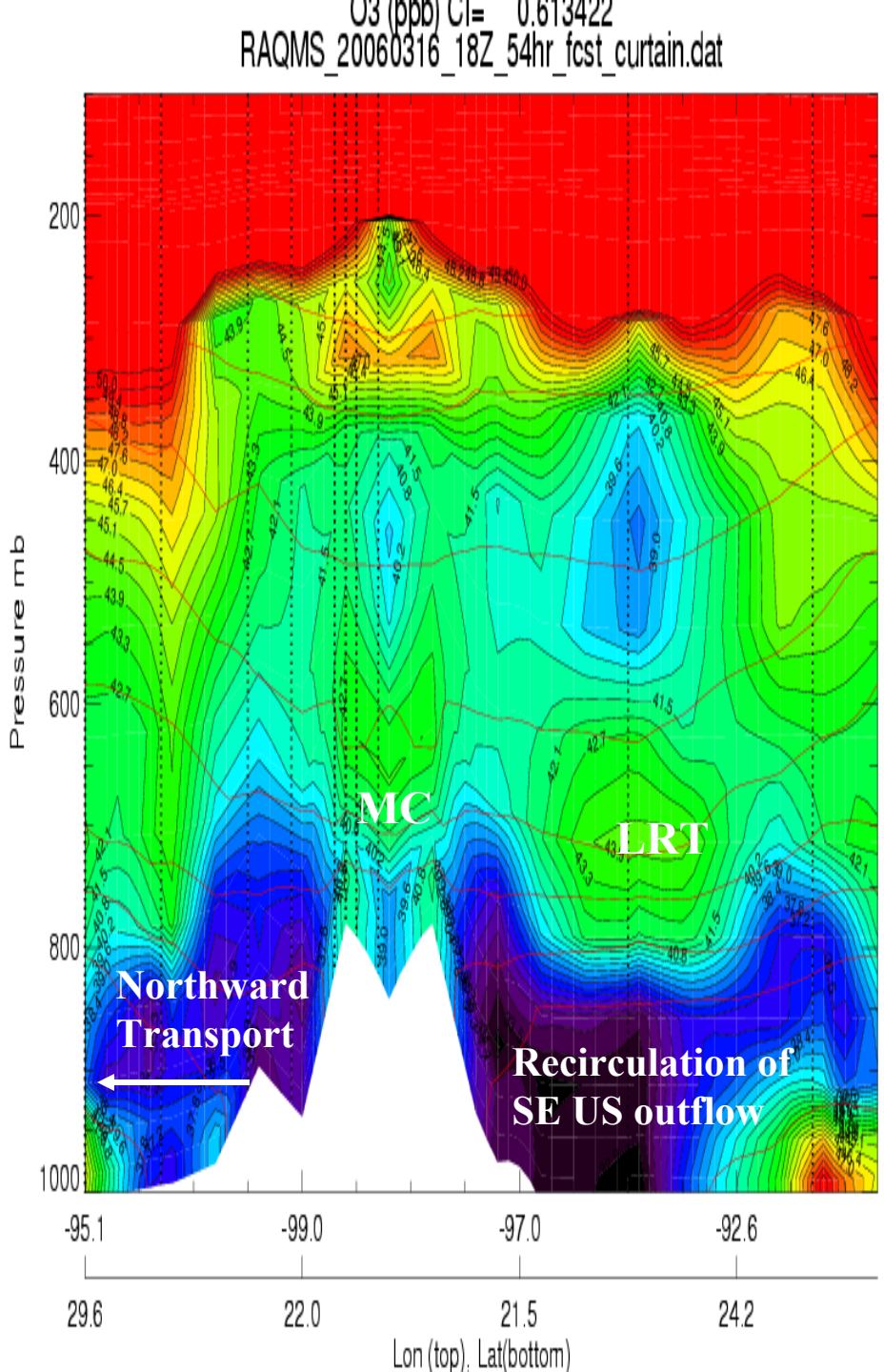

RAQMS SFC-Trop CO Column18Z 20060316
0.5
1.0
1.5
2.0
2.5
(1e18 mol/cm2)


RAQMS SFC-Trop CH2O/CO Ratio18Z 20060316
0.000
0.001
0.002
0.003
0.004
0.005


CO (ppb) CI= 3.13050
RAQMS_20060316_18Z_54hr_fcst_curtain.dat
Pressure mb
200
400
600
800
1000
Convection
MC
Northward
Transport
Recirculation of
SE US outflow
-95.1
-99.0
-97.0
-92.6
29.6
22.0
21.5
24.2


RAQMS SFC–Trop $O_3$ Column18Z 20060316
20
30
40
50
60
70
(DU)


RAQMS SFC–Trop $O_3$ P–L Column18Z 20060316
Wildfire
−4
−2
0
2
4
(DU/day)


O3 (ppb) CI= 0.613422
RAQMS_20060316_18Z_54hr_fcst_curtain.dat
Pressure mb
200
400
600
800
1000
MC
LRT
Northward Transport
Recirculation of SE US outflow
-95.1
-99.0
-97.0
-92.6
29.6
22.0
21.5
24.2
Lon (top), Lat(bottom)

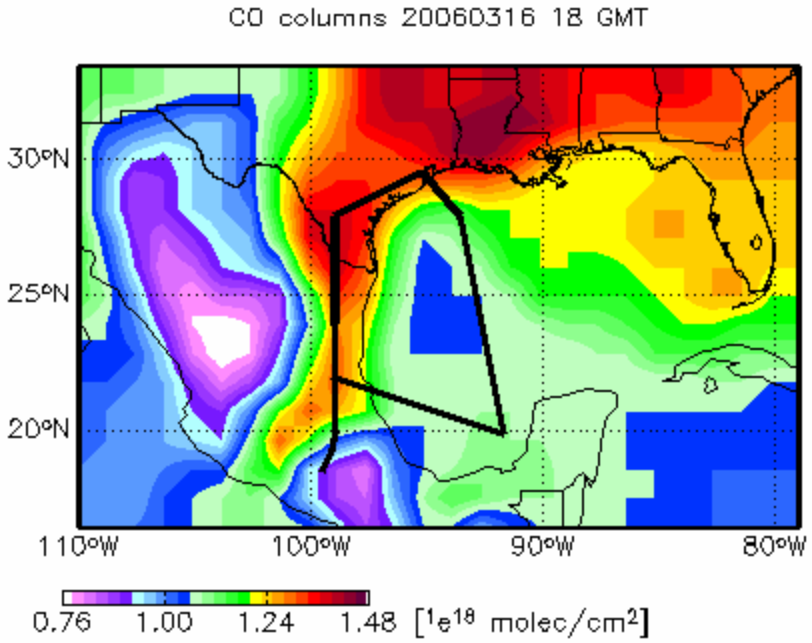
# GMAO Forecast: Thursday flight (18Z)

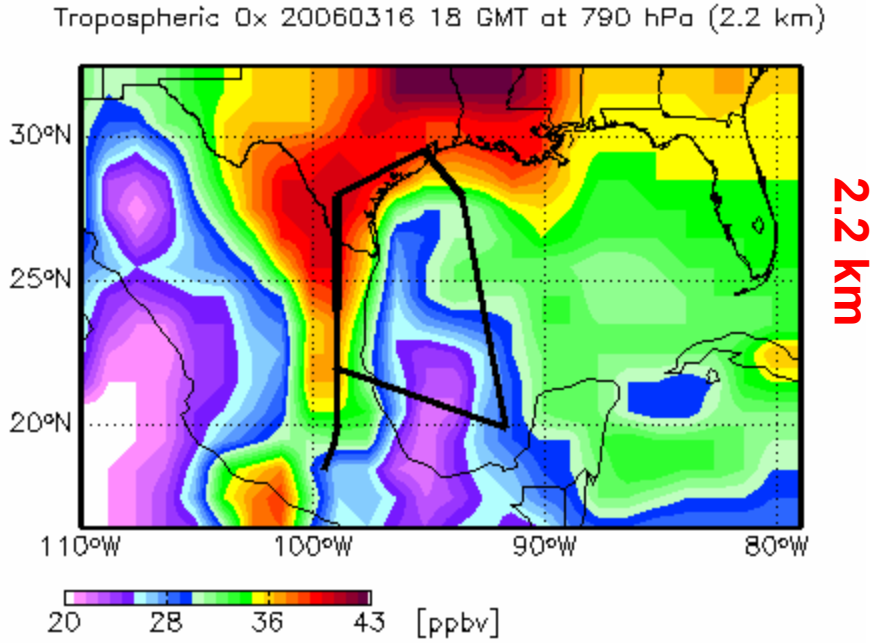
**Total CO**

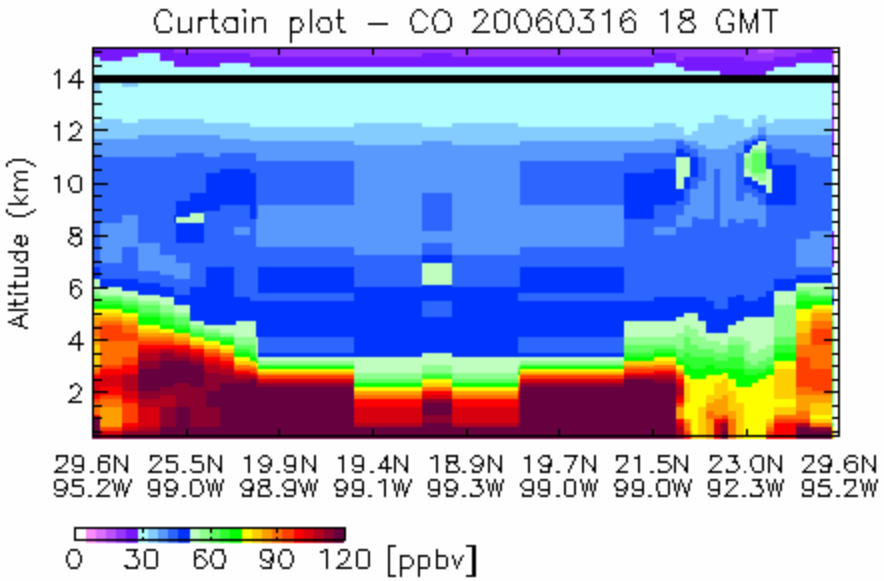
**$O_x$**

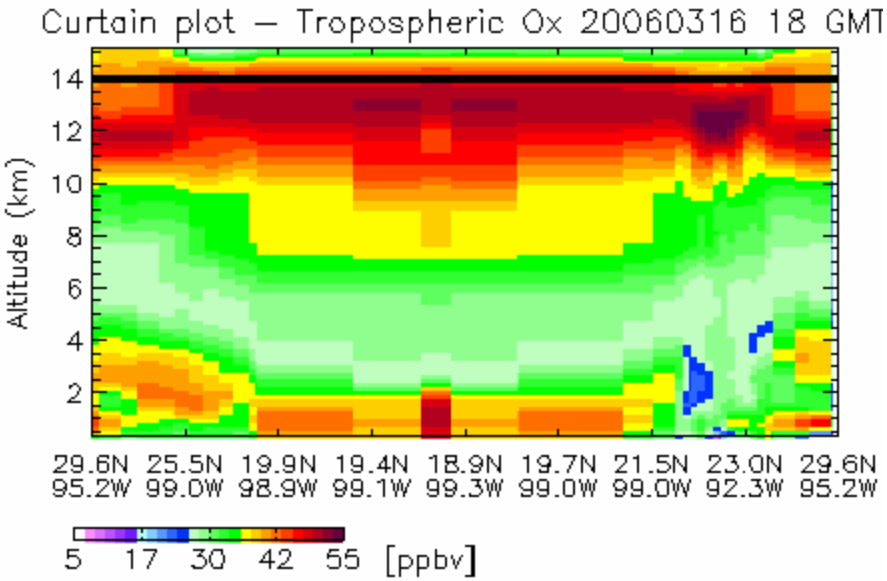
**Columns**

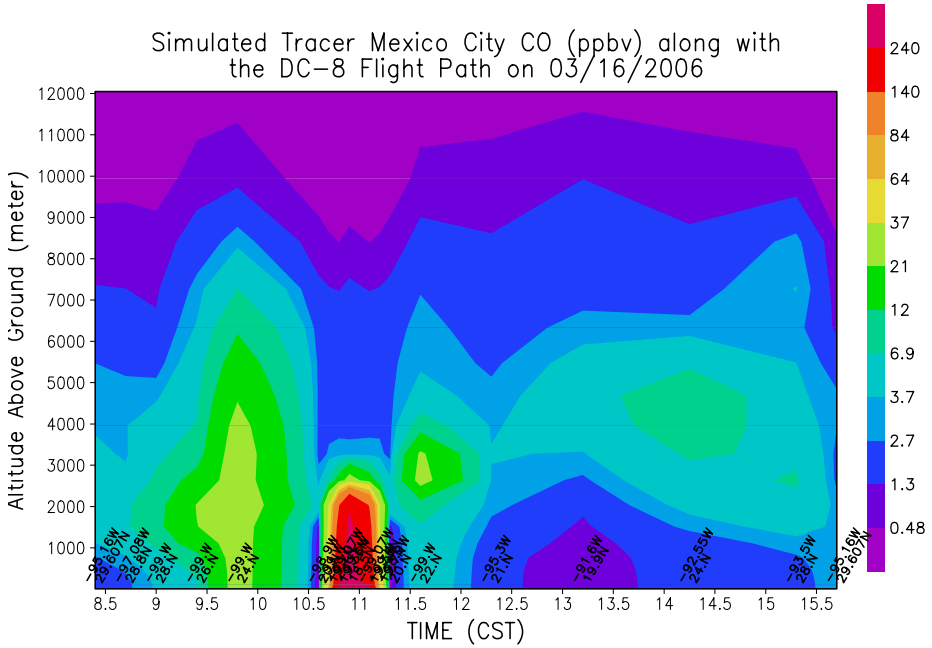
**2.2 km**

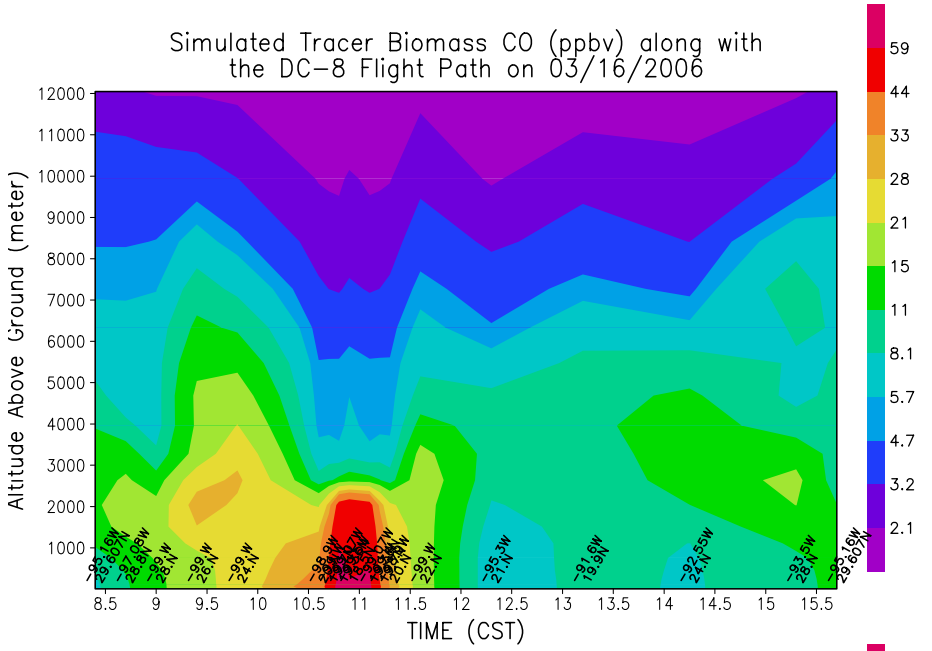


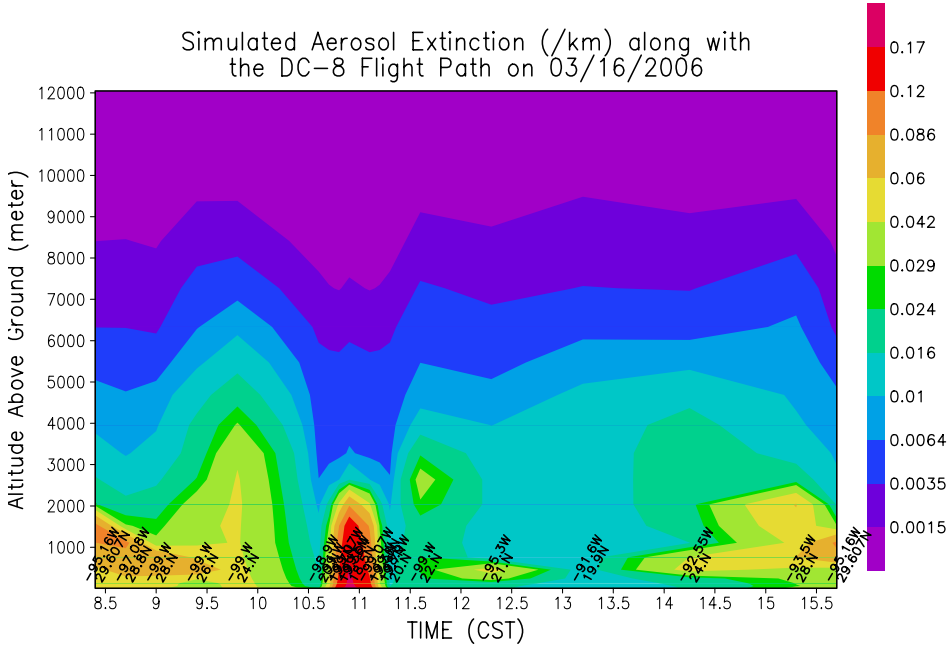



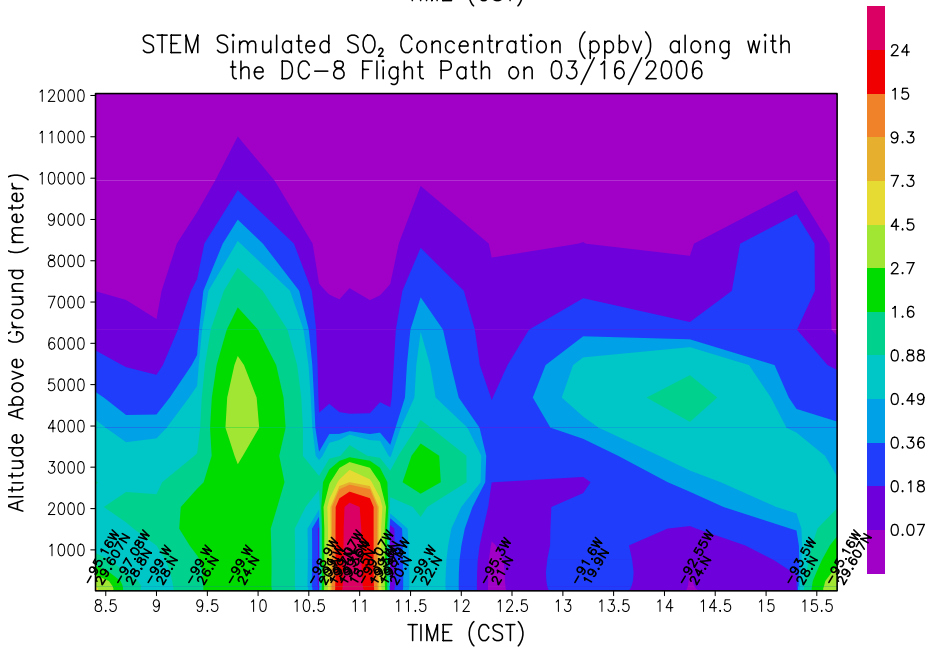




Simulated Tracer Mexico City CO (ppbv) along with
the DC-8 Flight Path on 03/16/2006
Altitude Above Ground (meter)
TIME (CST)
240
140
84
64
37
21
12
6.9
3.7
2.7
1.3
0.48

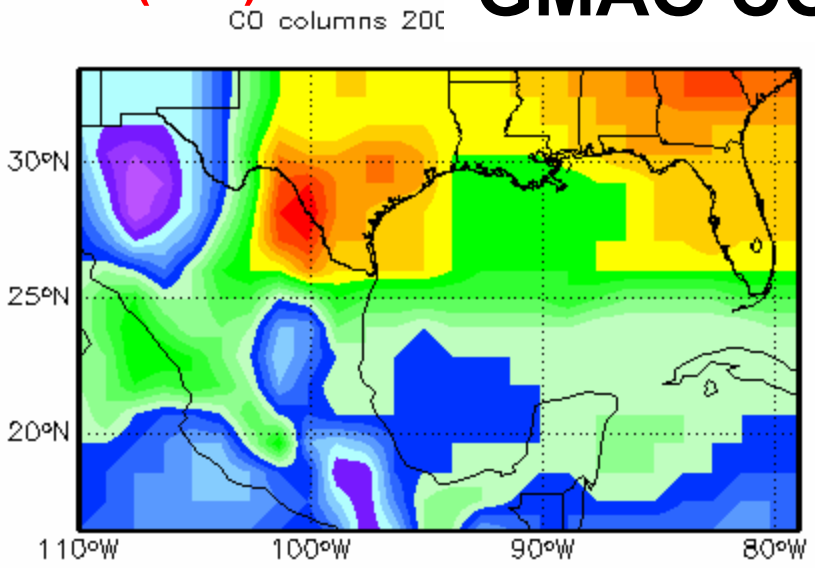

Simulated Tracer Biomass CO (ppbv) along with
the DC-8 Flight Path on 03/16/2006
Altitude Above Ground (meter)
TIME (CST)
59
44
33
28
21
15
11
8.1
5.7
4.7
3.2
2.1


Simulated Aerosol Extinction (/km) along with
the DC-8 Flight Path on 03/16/2006
Altitude Above Ground (meter)
TIME (CST)
0.17
0.12
0.086
0.06
0.042
0.029
0.024
0.016
0.01
0.0064
0.0035
0.0015

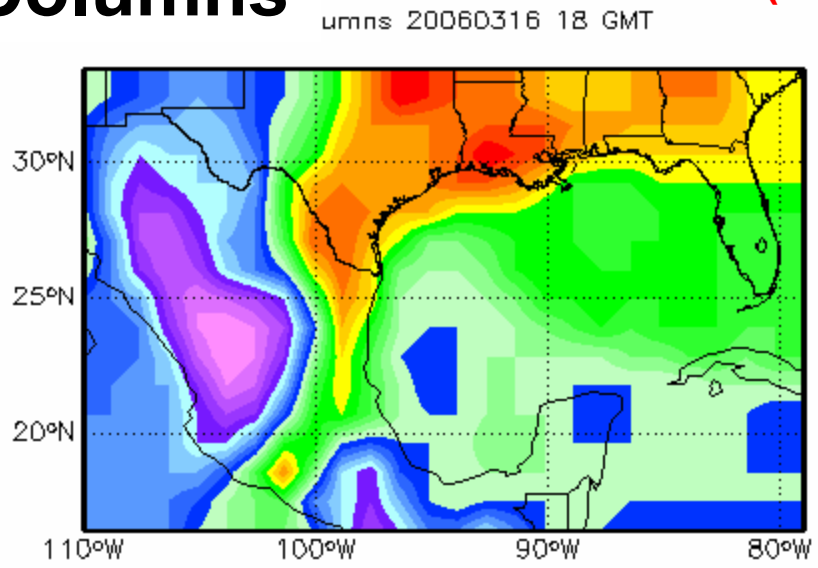

STEM Simulated SO2 Concentration (ppbv) along with
the DC-8 Flight Path on 03/16/2006
Altitude Above Ground (meter)
TIME (CST)
24
15
9.3
7.3
4.5
2.7
1.6
0.88
0.49
0.36
0.18
0.07

# GMAO CO Columns

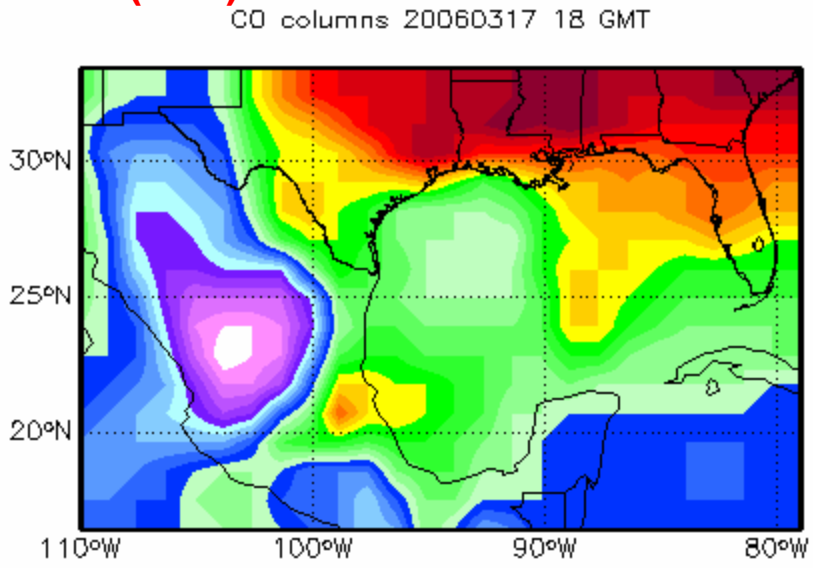
**Wed 3/15 (18Z)**



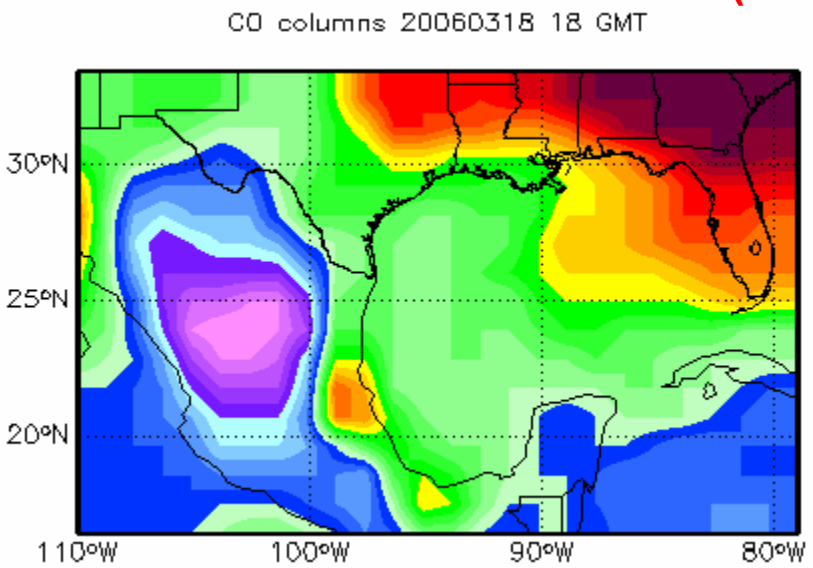
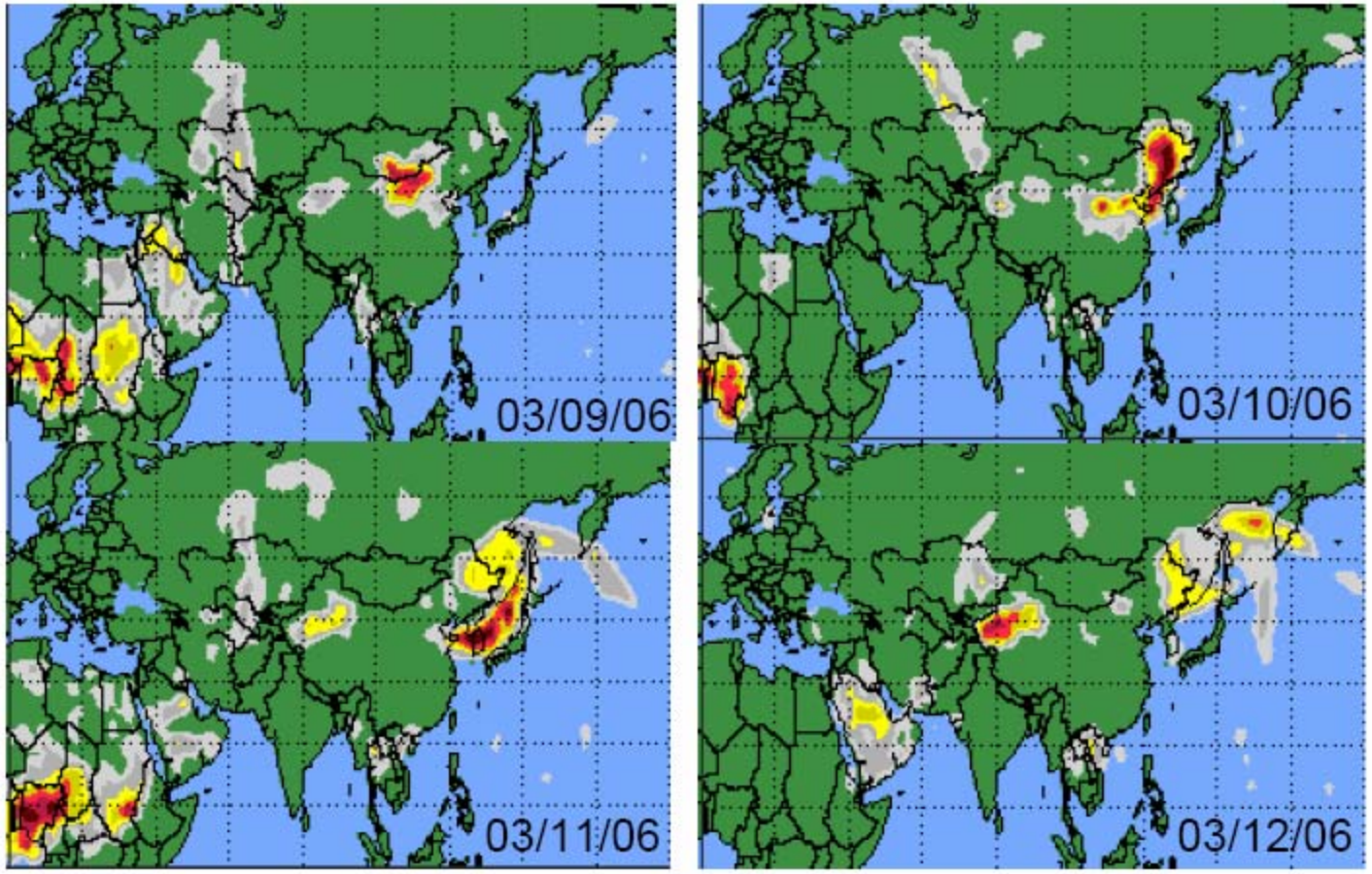

**Thurs 3/16 (18Z)**




**Fri 3/18 (18Z)**




**Sat 3/19 (18Z)**



March 9 dust storm viewed by OMI Aerosol Index