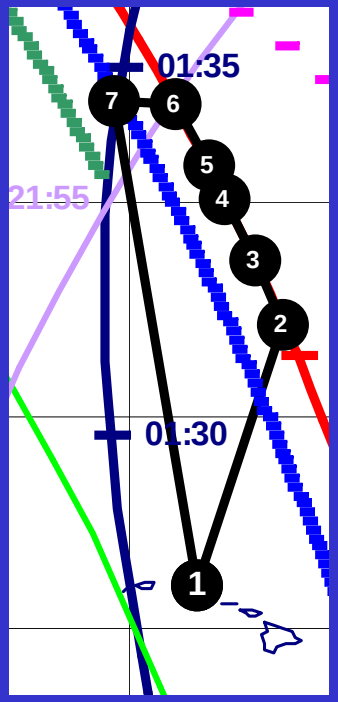
Plan for INTEX-B flight#12 – Hawaii local 2 on Tuesday 4/25 updated Monday 4/24 @22Z



Objectives:

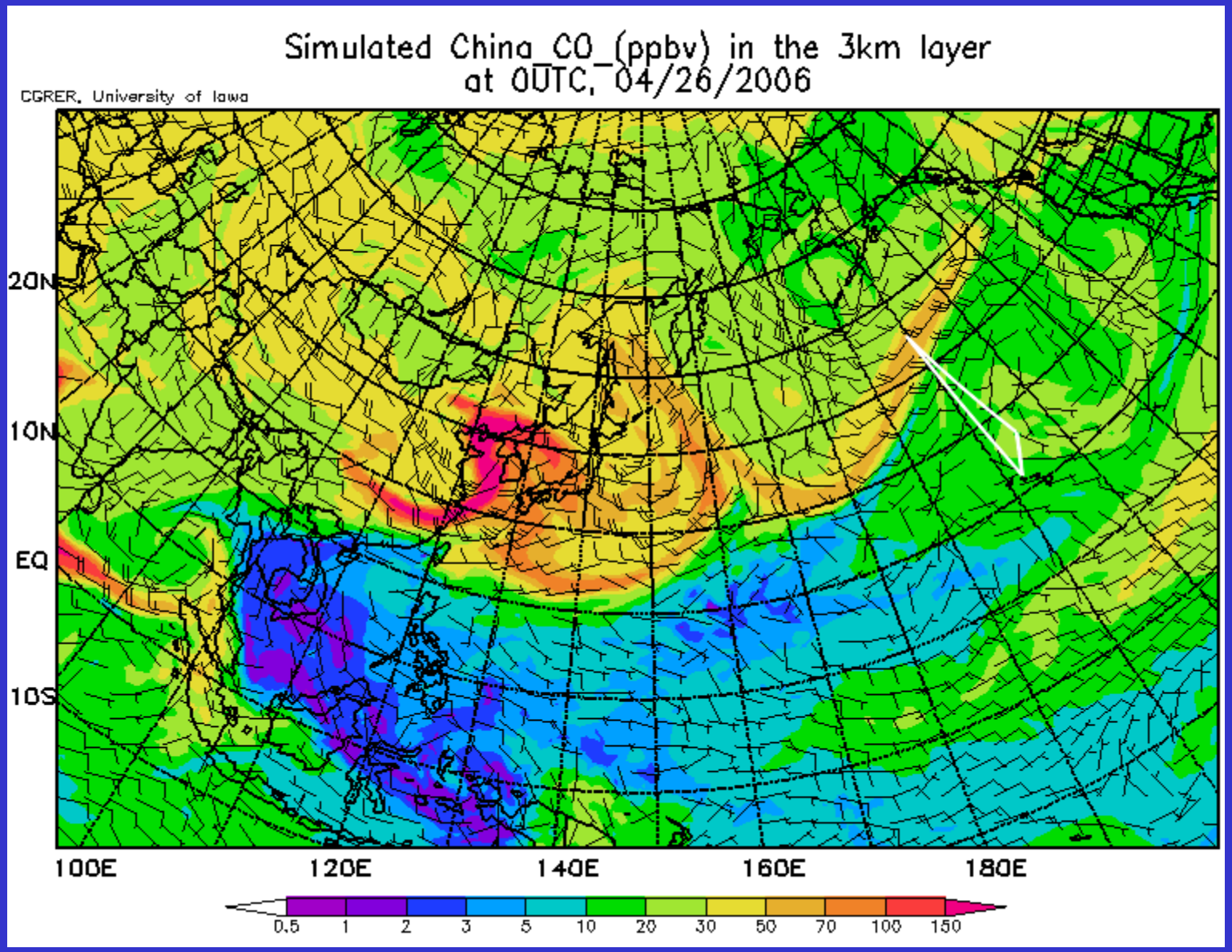
- Aged, stagnating Asian pollution south of 40N
- Fresher Asian plume north of 40N
- MLS and TES validation

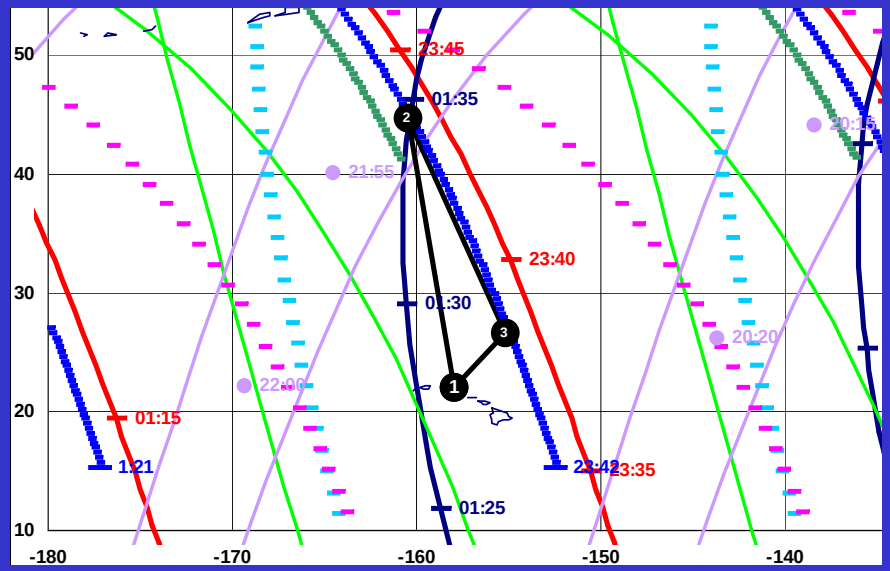
Point	1	2	3	4	5	6	7	8
Latitude	22	34.272	37.239	40.203	41.684	44.641	44.75	22
Longitude	-158	-155.36	-156.217	-157.128	-157.607	-158.62	-160.46	-158

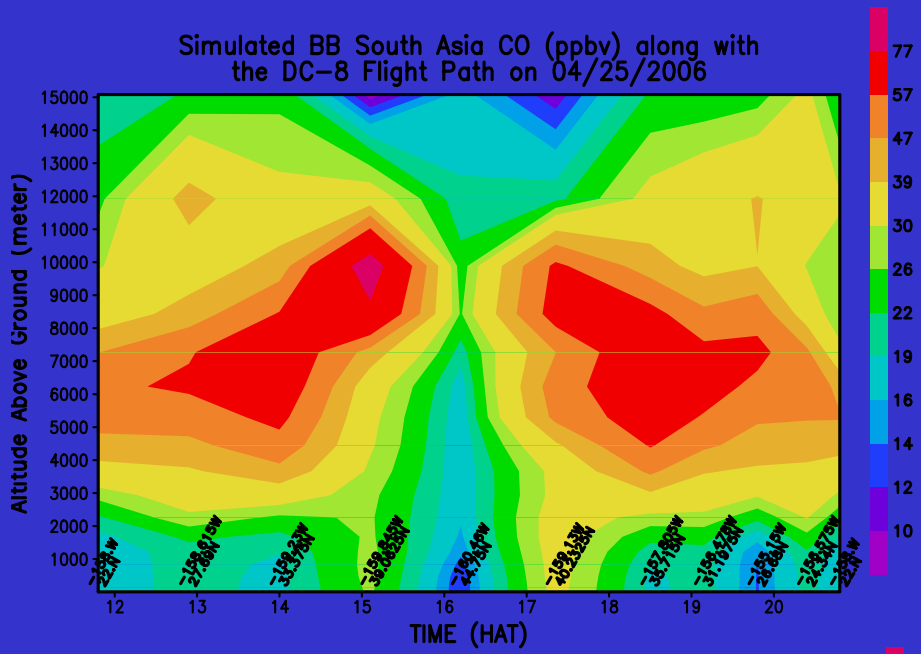
- Points 1-2: Vertical profiling through aged Asian pollution
- Points 2-6: High-altitude leg along MLS track with vertical profiling at 25-37K
- Point 7: TES validation spiral, fresh Asian plume at low altitude
- Point 7-1: vertical profiling through aged Asian plumes

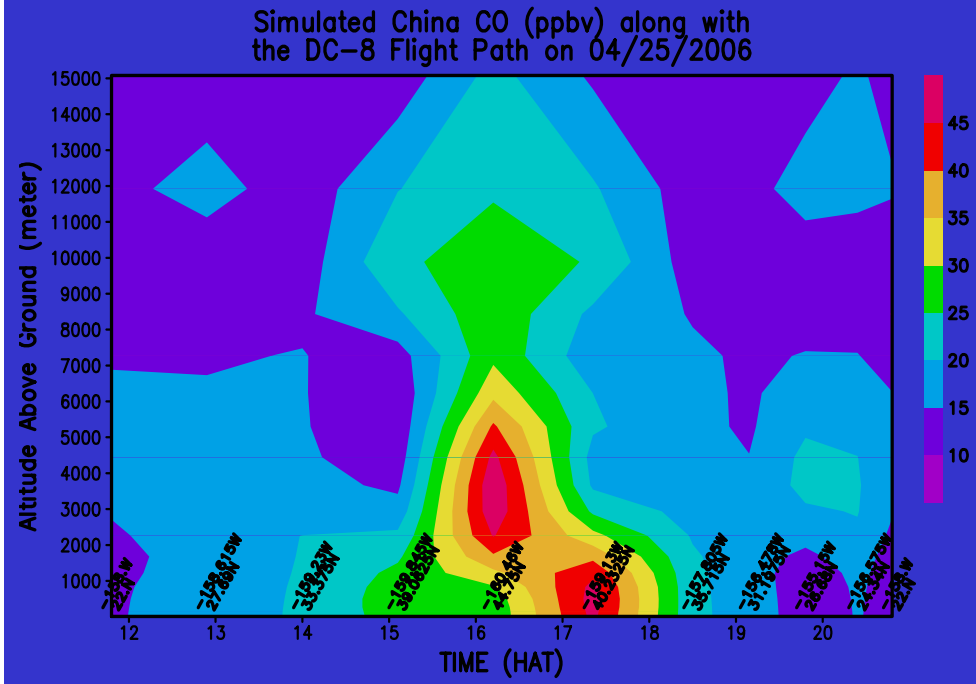
Take-off time 0950 local, 8:54 h flight

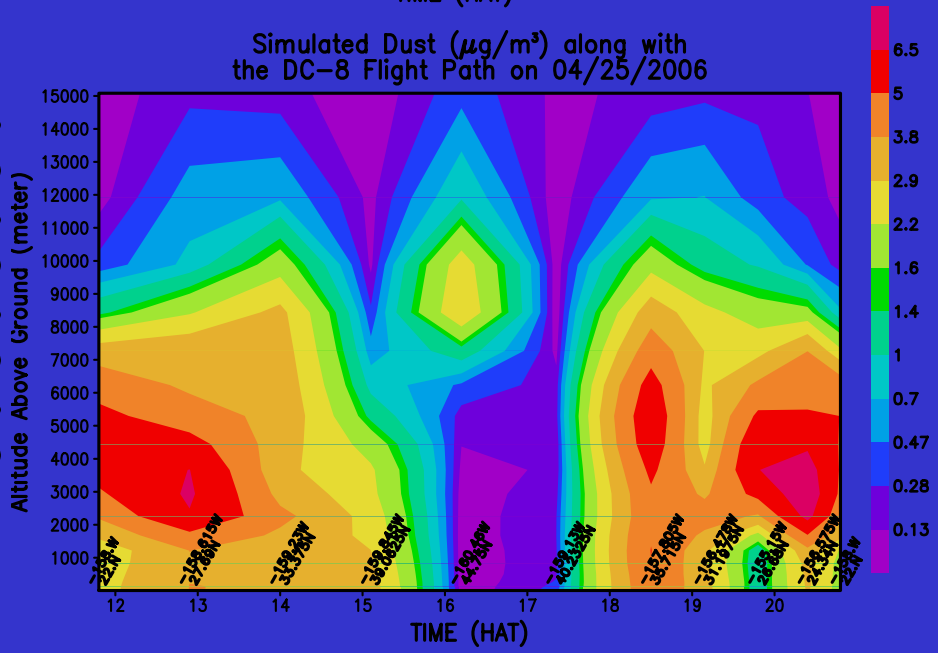
For the Tuesday tentative flight route heading north




23:45
01:35
21:55
20:15
23:40
01:30
20:20
22:00
01:15
1:21
23:42
23:35
01:25
50
40
30
20
10
-180
-170
-160
-150
-140


Simulated BB South Asia CO (ppbv) along with
the DC-8 Flight Path on 04/25/2006
Altitude Above Ground (meter)
TIME (HAT)
77
57
47
39
30
26
22
19
16
14
12
10

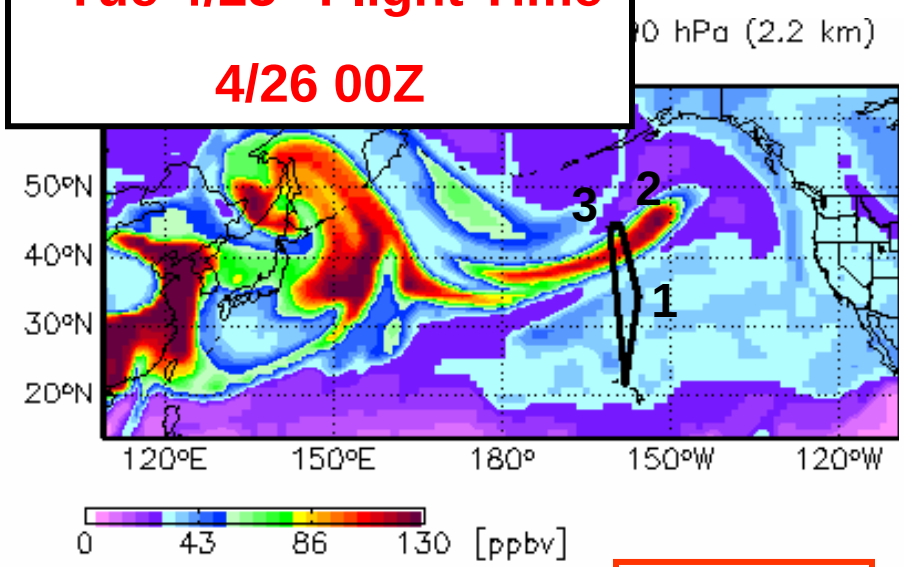

Simulated China CO (ppbv) along with
the DC-8 Flight Path on 04/25/2006
Altitude Above Ground (meter)
TIME (HAT)
45
40
35
30
25
20
15
10


Simulated Dust (μg/m³) along with
the DC-8 Flight Path on 04/25/2006
Altitude Above Ground (meter)
TIME (HAT)
6.5
5
3.8
2.9
2.2
1.6
1.4
1
0.7
0.47
0.28
0.13

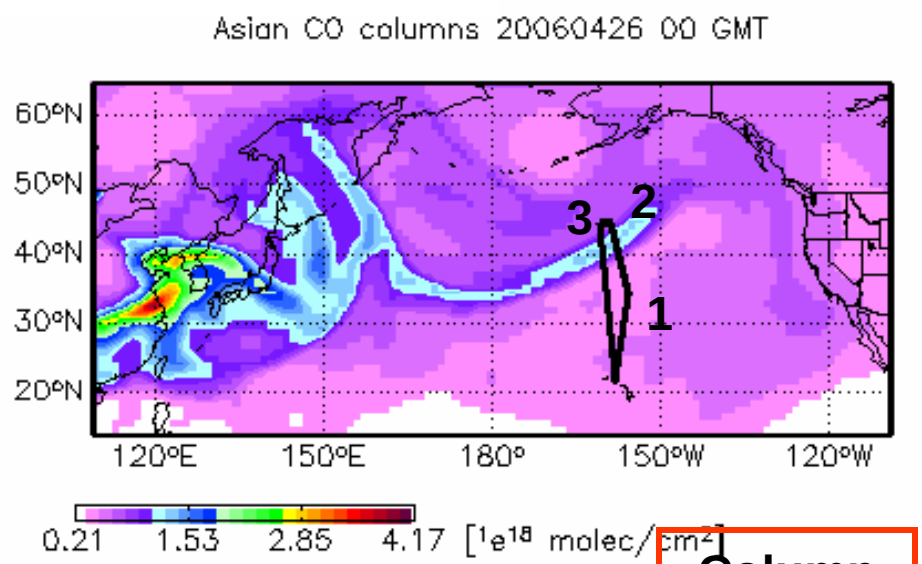
GMAO Asian CO

"Tue 4/25" Flight Time

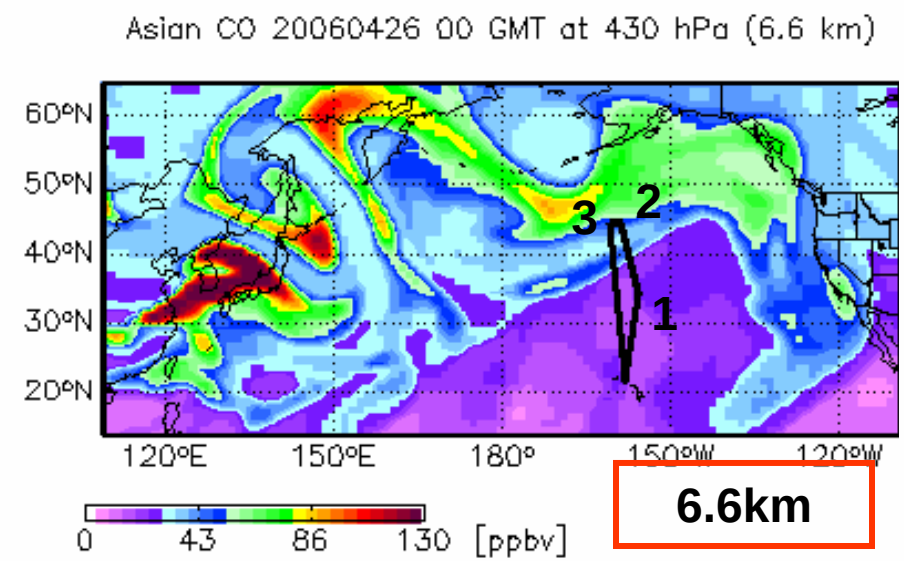
4/26 00Z



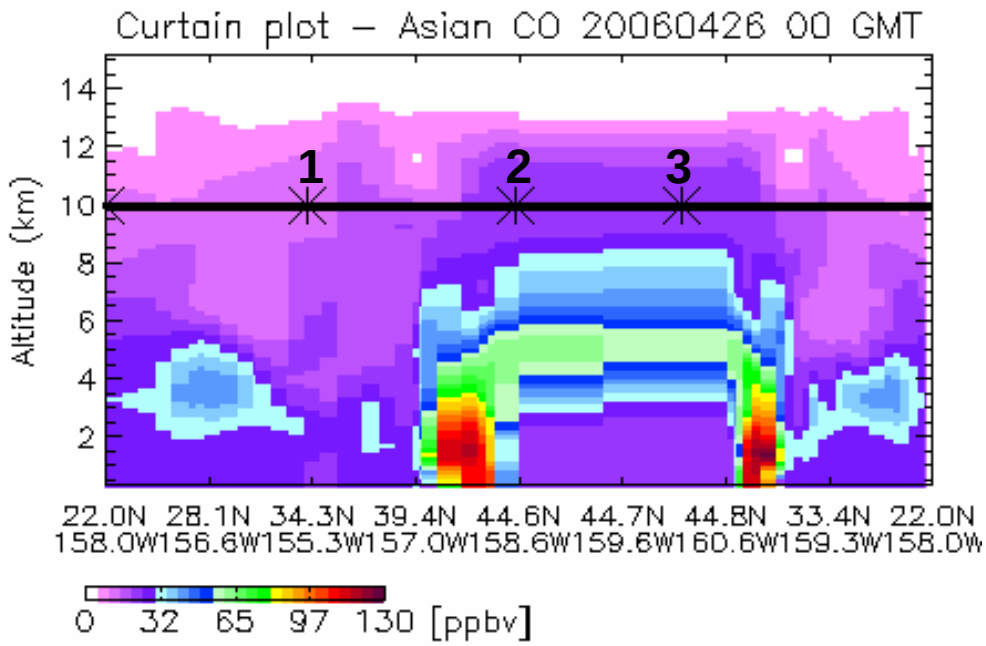
2.2km



Column



6.6km

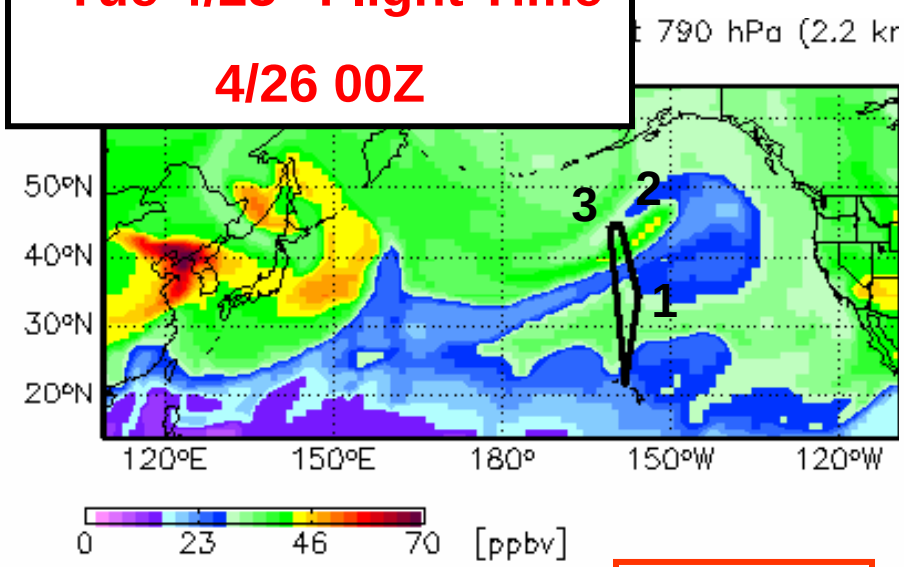


Initialized 4/24 0Z

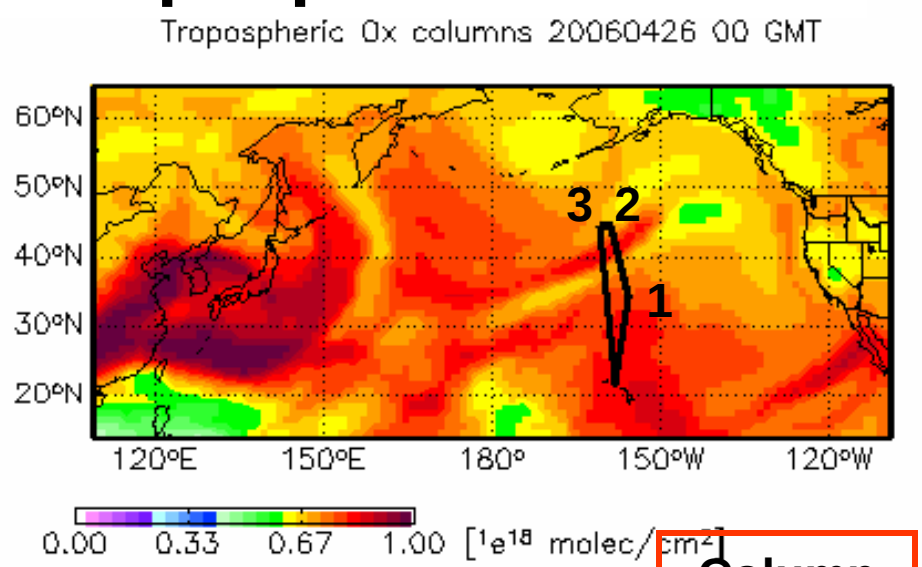
GMAO Tropospheric ozone

"Tue 4/25" Flight Time

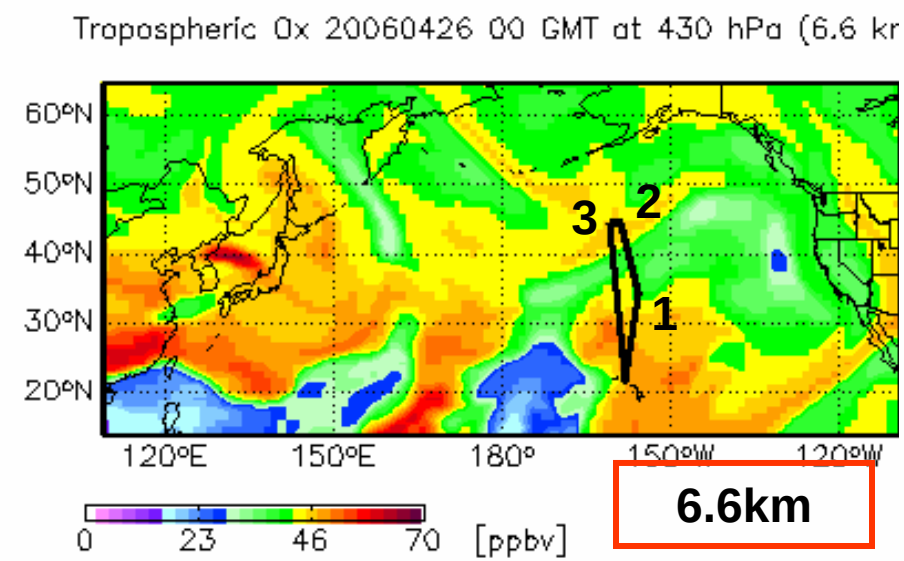
4/26 00Z



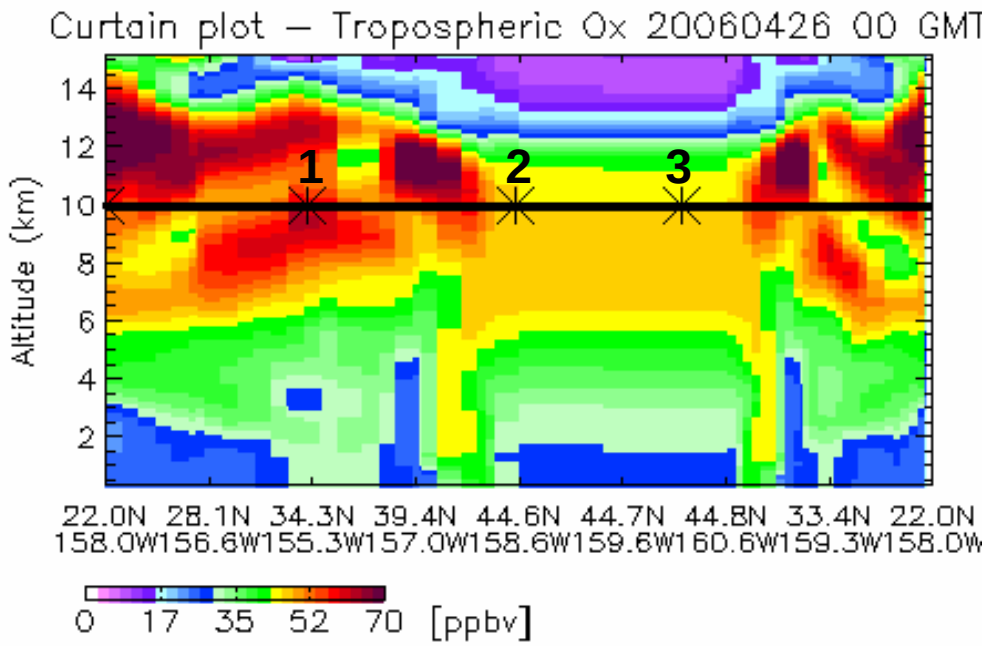
2.2km



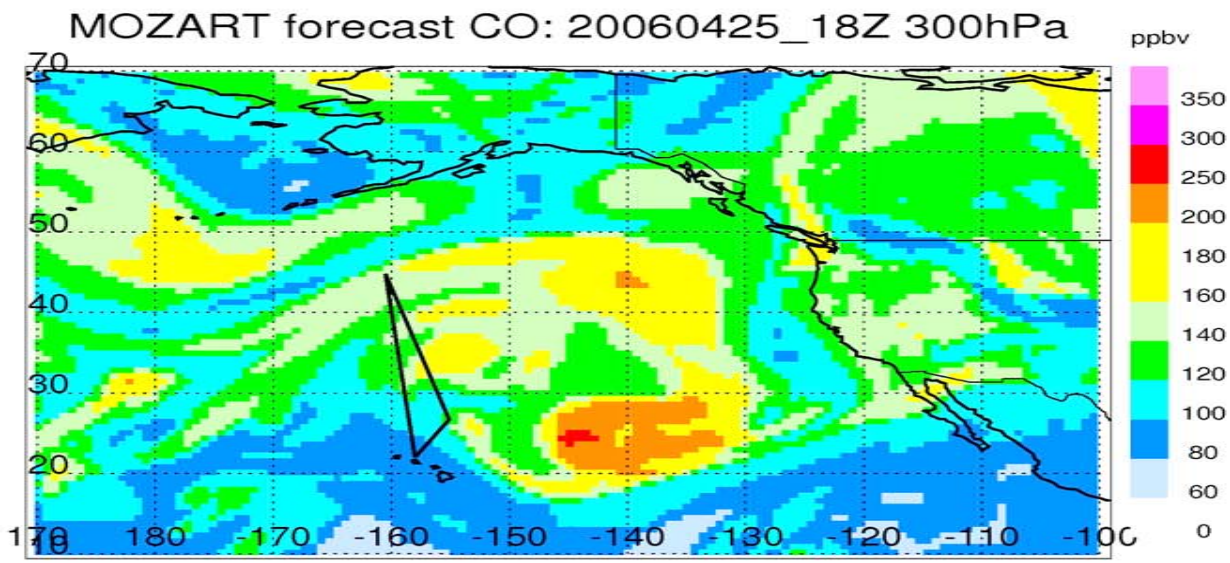
Column

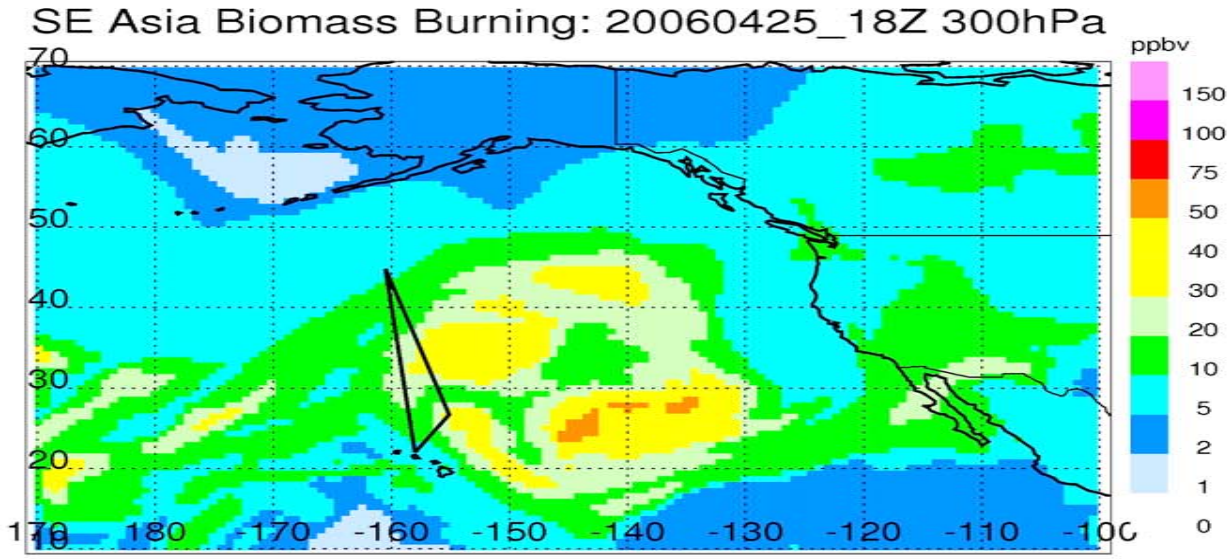


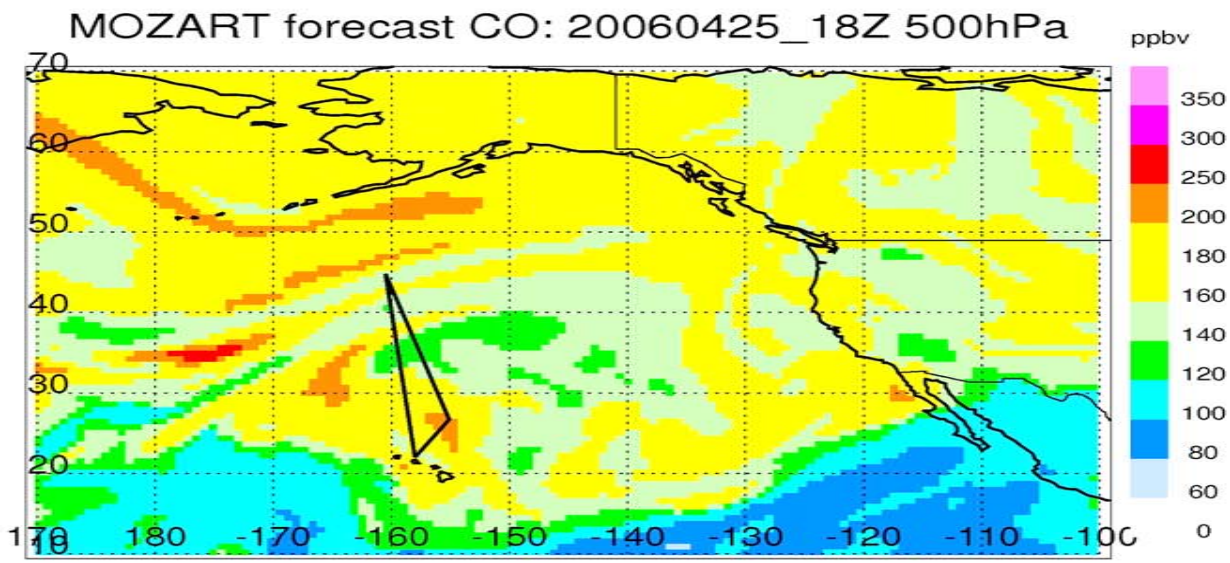
6.6km

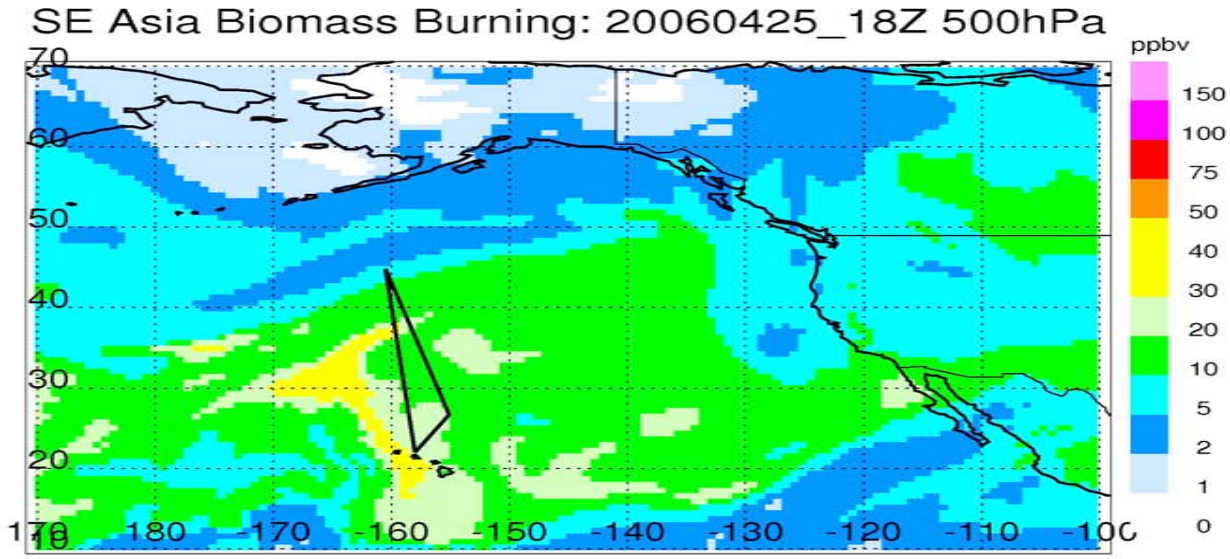


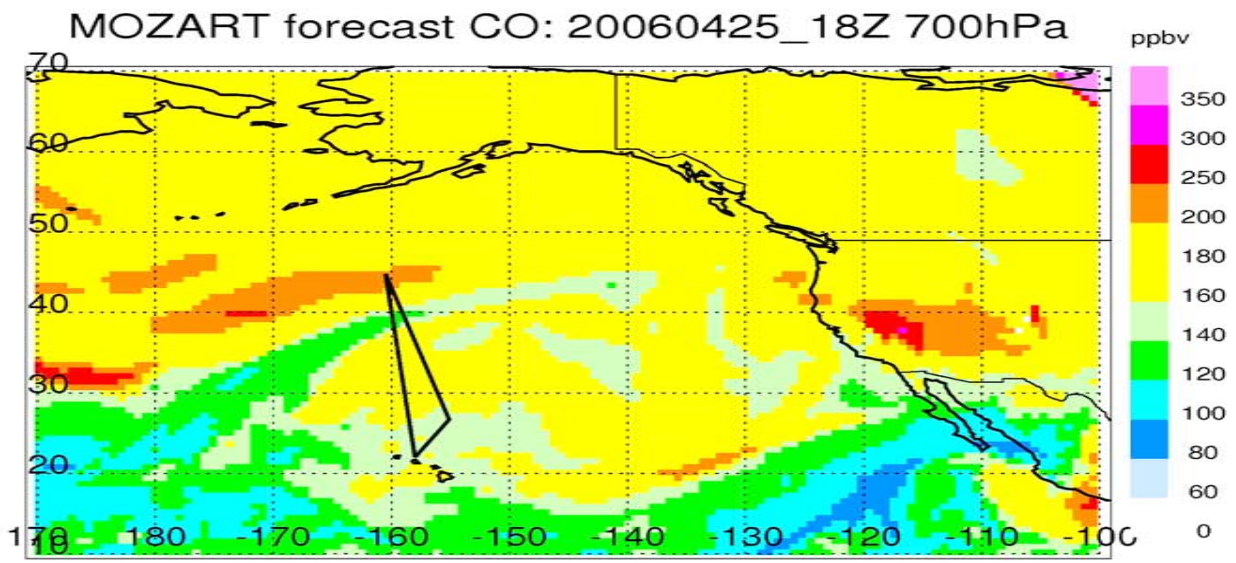
Initialized 4/24 0Z

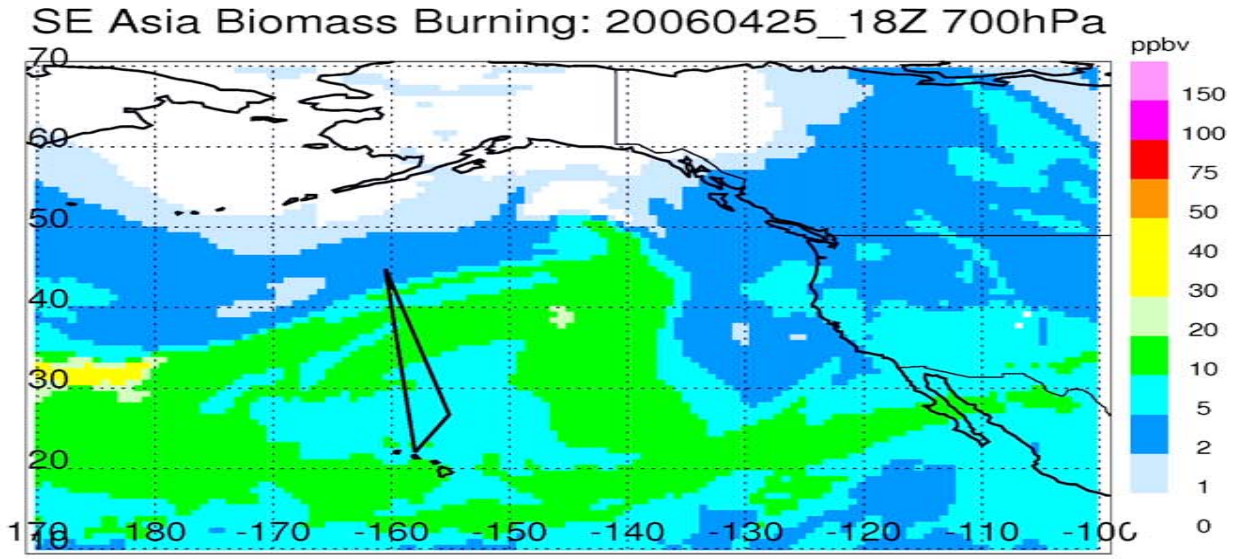

MOZART forecast CO: 20060425_18Z 300hPa
ppbv
350
300
250
200
180
160
140
120
100
80
60
0
70
60
50
40
30
20
10
180
-170
-160
-150
-140
-130
-120
-110
-100


SE Asia Biomass Burning: 20060425_18Z 300hPa
ppbv
150
100
75
50
40
30
20
10
5
2
1
0
70
60
50
40
30
20
10
180
-170
-160
-150
-140
-130
-120
-110
-100


MOZART forecast CO: 20060425_18Z 500hPa
ppbv
350
300
250
200
180
160
140
120
100
80
60
0
70
60
50
40
30
20
10
180
-170
-160
-150
-140
-130
-120
-110


SE Asia Biomass Burning: 20060425_18Z 500hPa
ppbv
150
100
75
50
40
30
20
10
5
2
1
0
70
60
50
40
30
20
10
180
-170
-160
-150
-140
-130
-120
-110


MOZART forecast CO: 20060425_18Z 700hPa
ppbv
350
300
250
200
180
160
140
120
100
80
60
0
70
60
50
40
30
20
10
180
-170
-160
-150
-140
-130
-120
-110

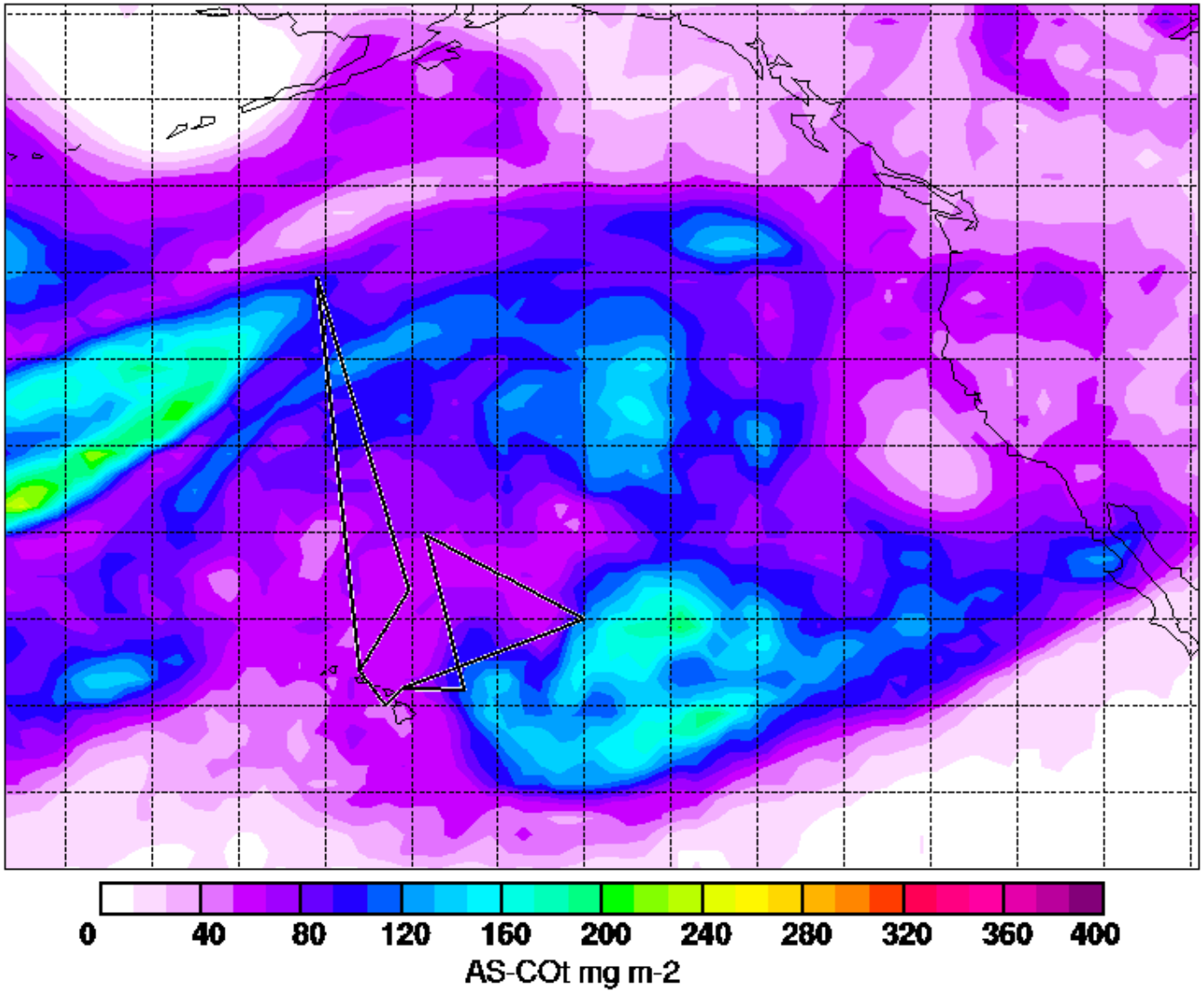

SE Asia Biomass Burning: 20060425_18Z 700hPa
ppbv
150
100
75
50
40
30
20
10
5
2
1
0
70
60
50
40
30
20
10
180
-170
-160
-150
-140
-130
-120
-110

Total column of species AS-COt for age class 0 - 20.00 DAYS

Latest analysis time 20060424. 60000 Actual time 20060426. 0

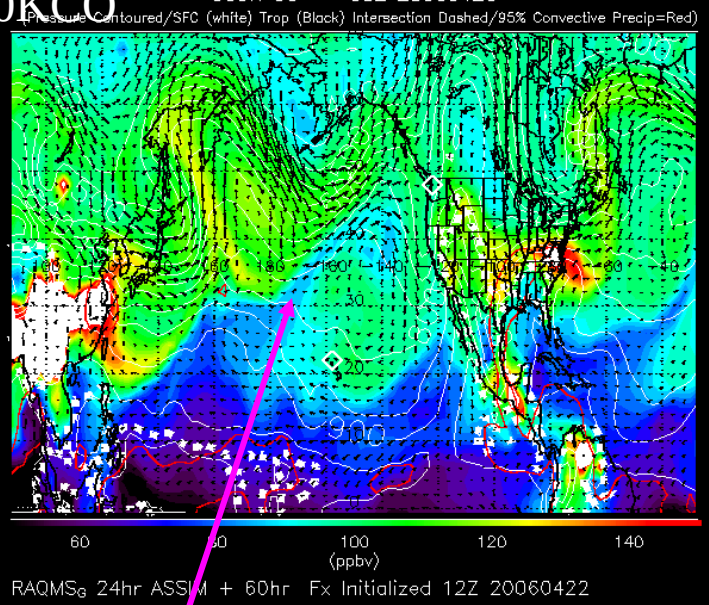
Mean value 0.415E+02 Maximum value 0.887E+03 Minimum value 0.000E+00

Distance of grid lines 5.0 deg

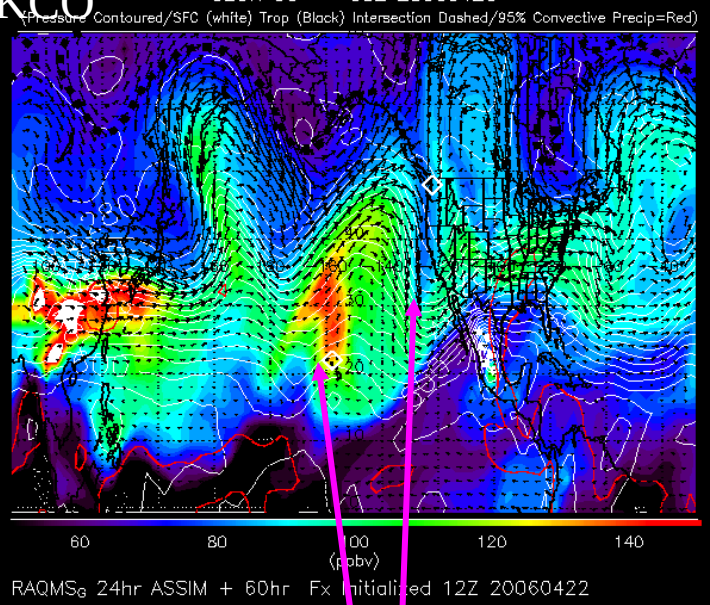


RAQMS CO 60hr Fx valid 00Z 04/26 (2PM Tues. 04/25 Hawaii local) “OPTION 2”

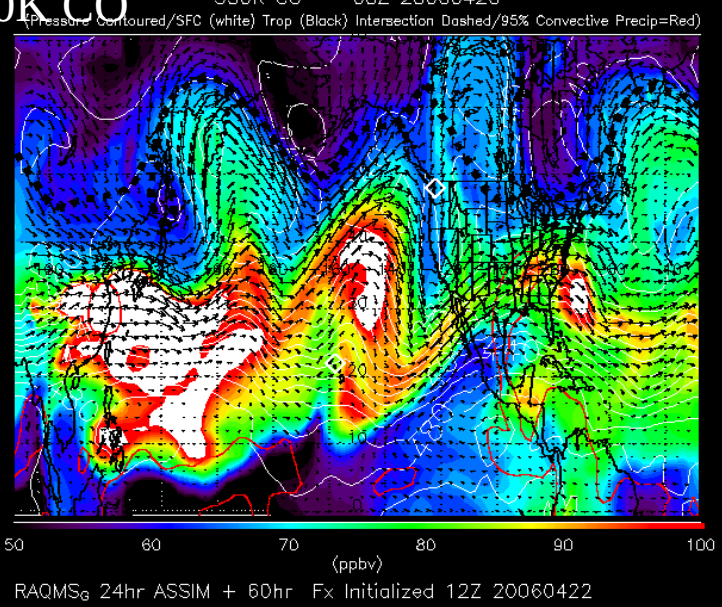
300KCO



320KCO



330K CO



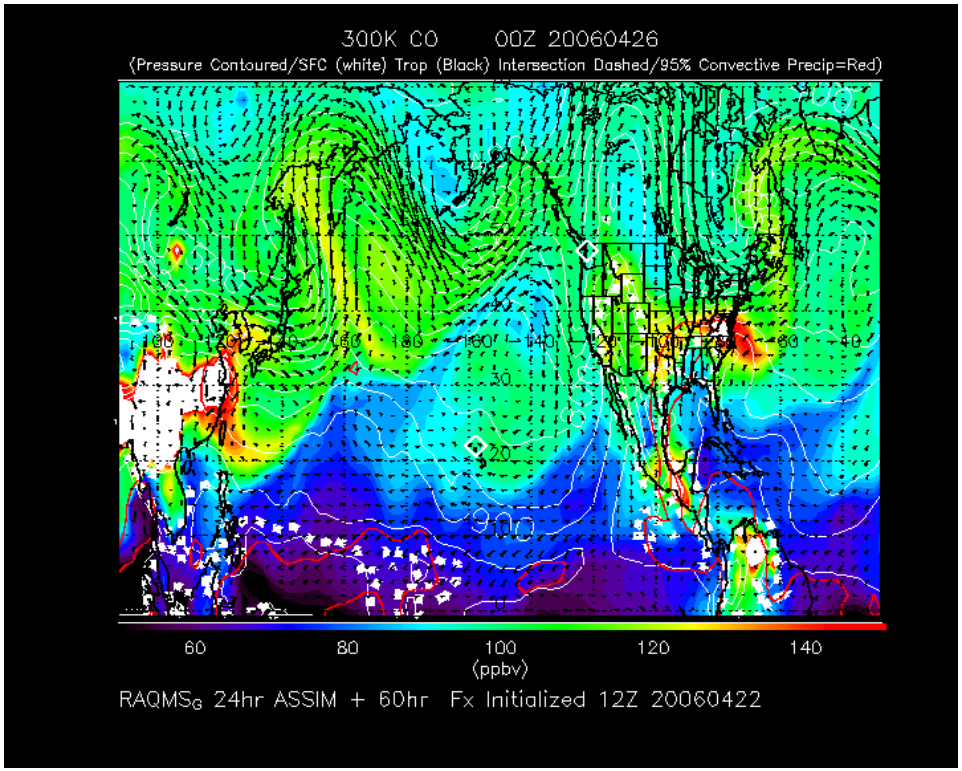
Clean entrainment behind WF/ahead of CF; diffuse aged to southeast, fresher to northwest

Part of current plume recirculating and aging, part advecting toward US Pacific coast

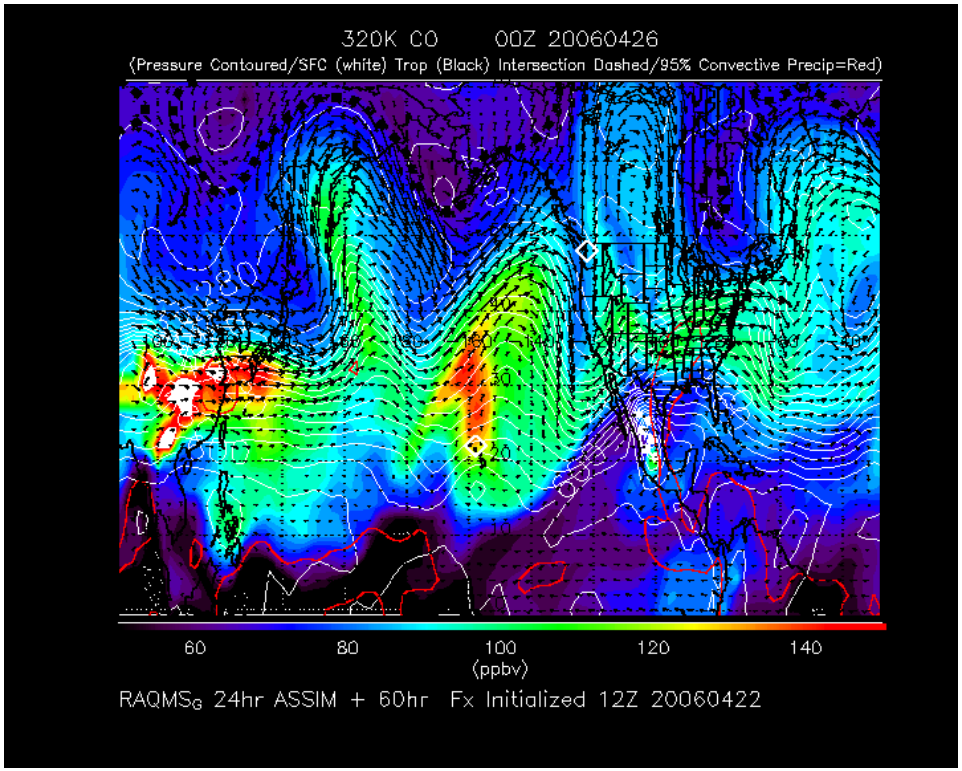
Looking ahead to Thursday/Friday…

Looking ahead… Tues 2PM local (60hr fx)

300K CO

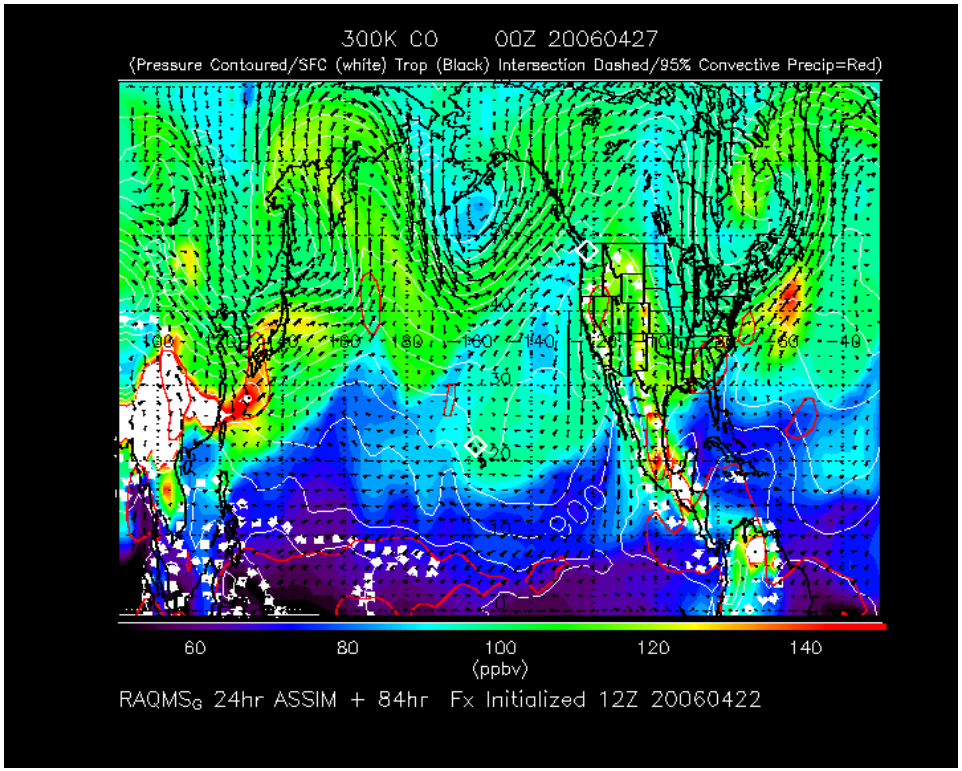


320K CO

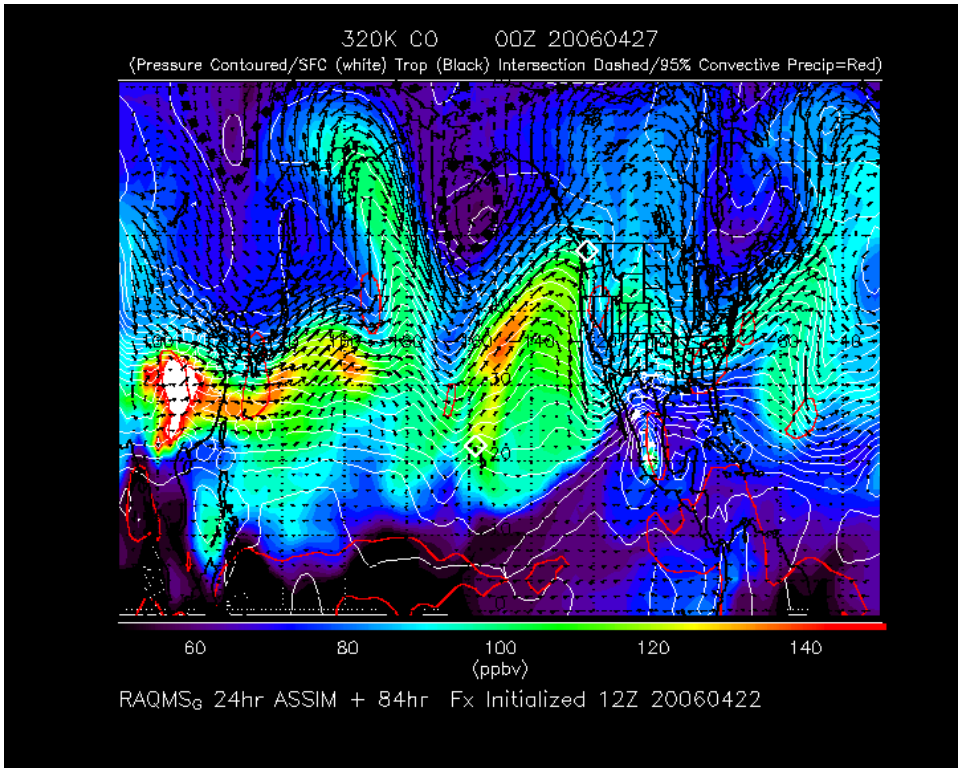


Looking ahead… Wed 2PM local (84hr fx)

300K CO

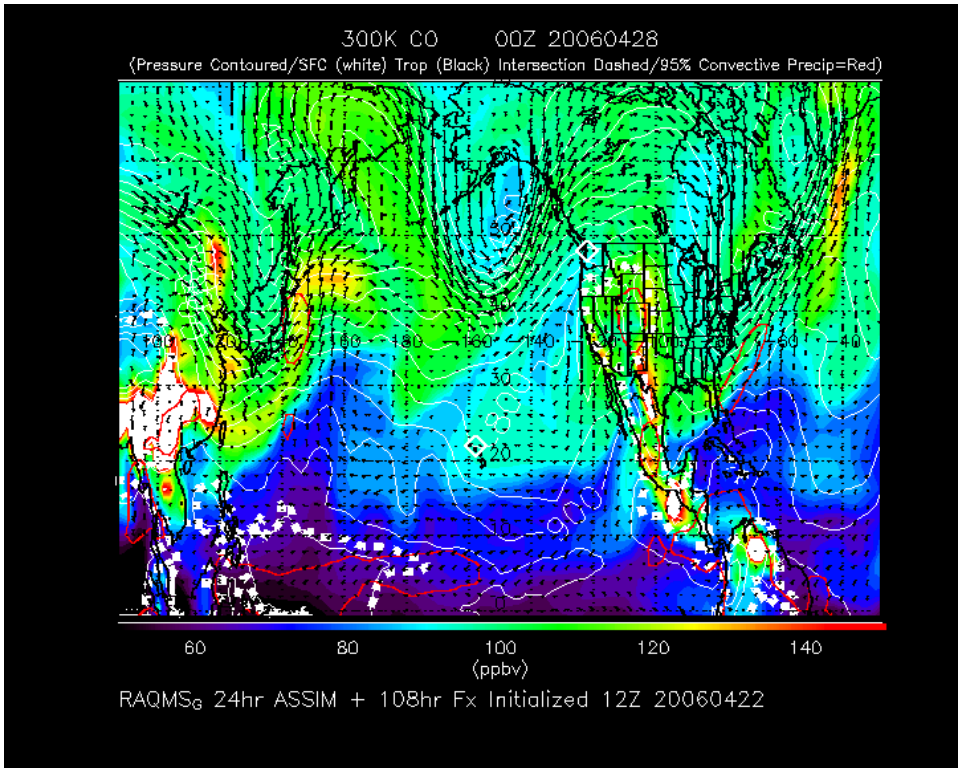


320K CO

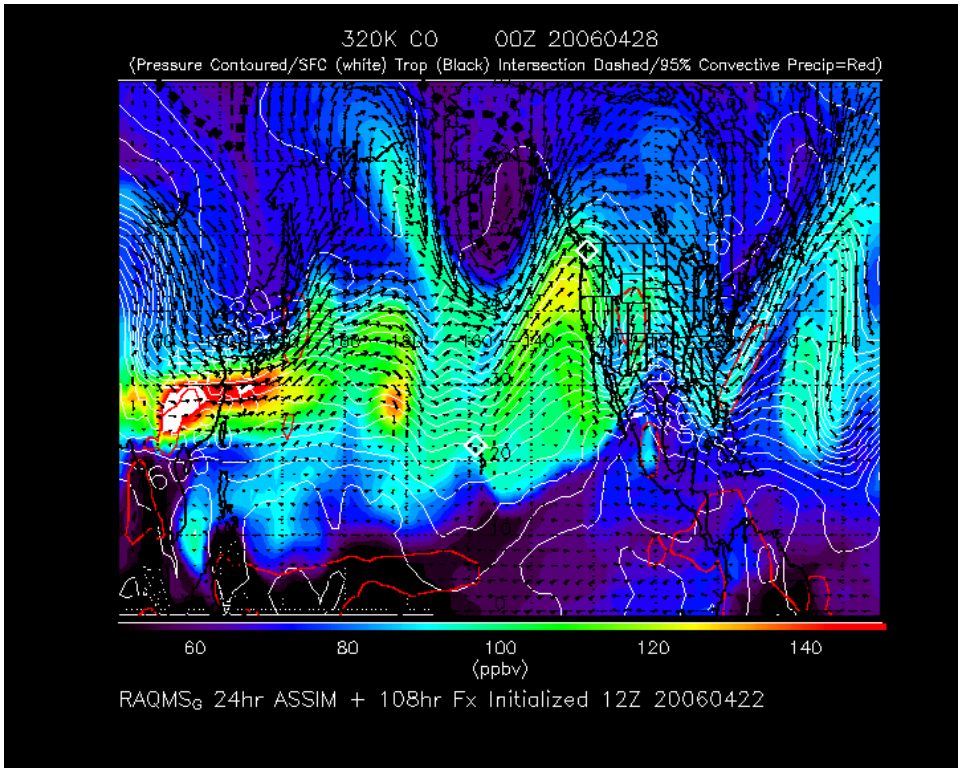


Looking ahead… Thurs 2PM local (108hr fx)

300K CO

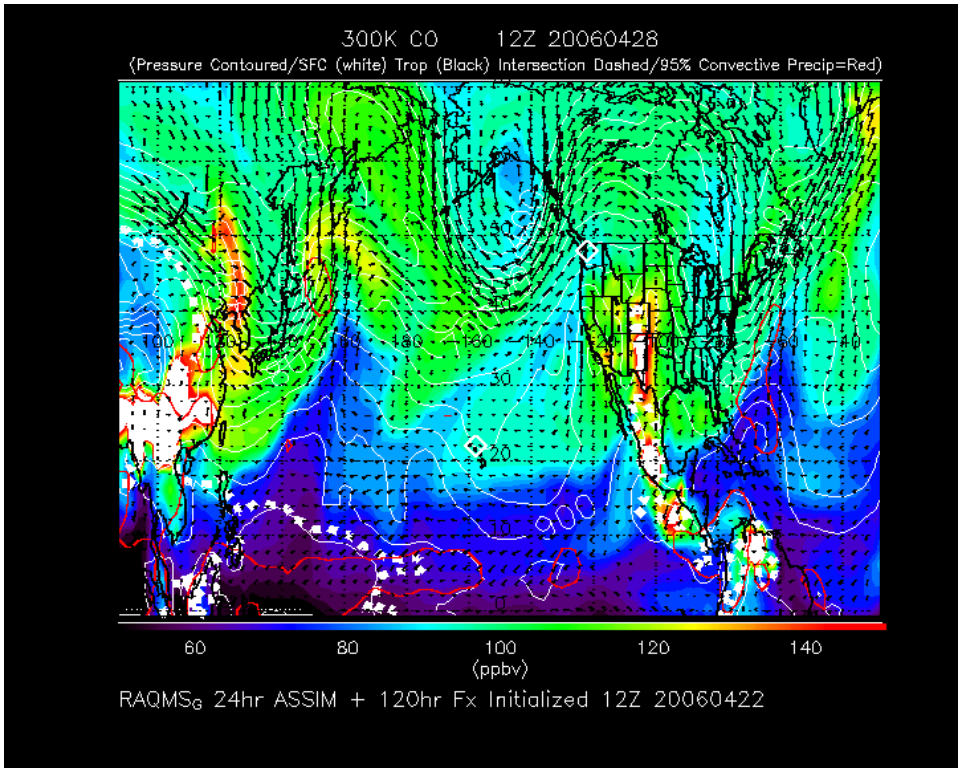


320K CO

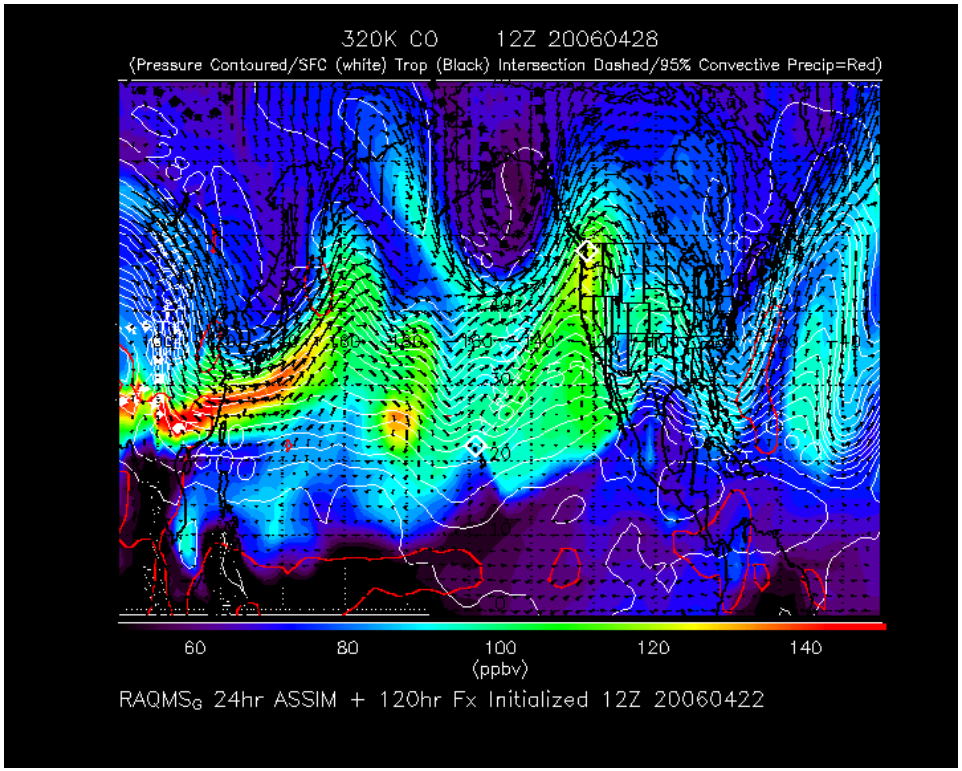


Looking ahead… Fri 2AM local (120hr fx)

300K CO



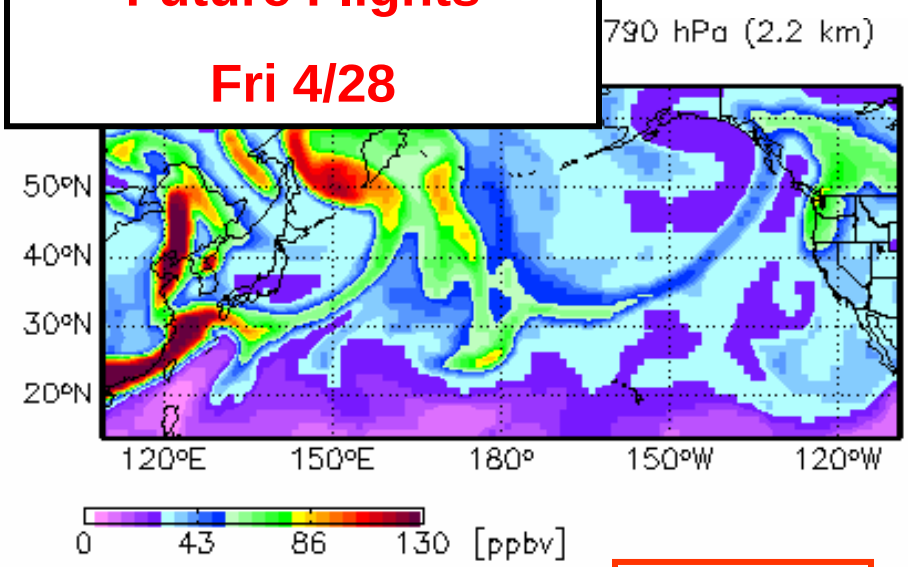
320K CO



GMAO Asian CO

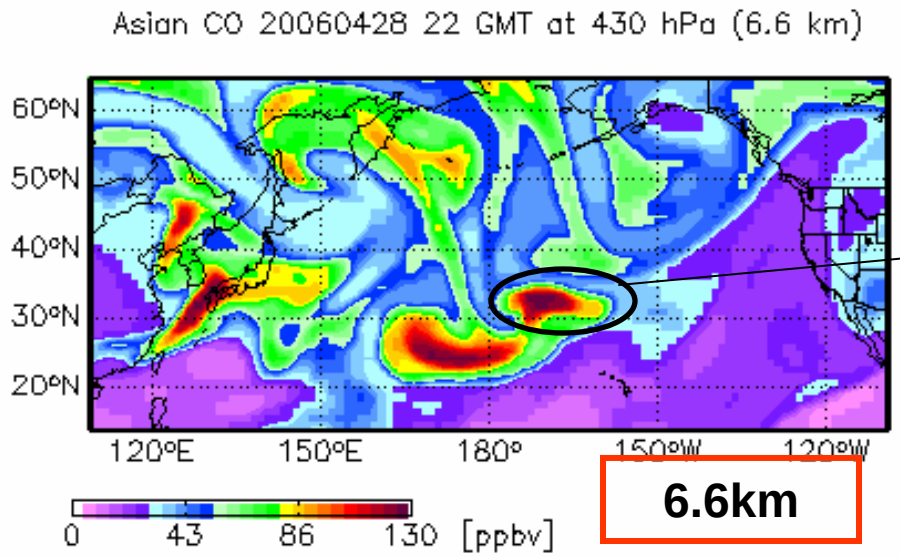
Future Flights

Fri 4/28



2.2km

Similar to Thursday:
Fresh and old air within reach



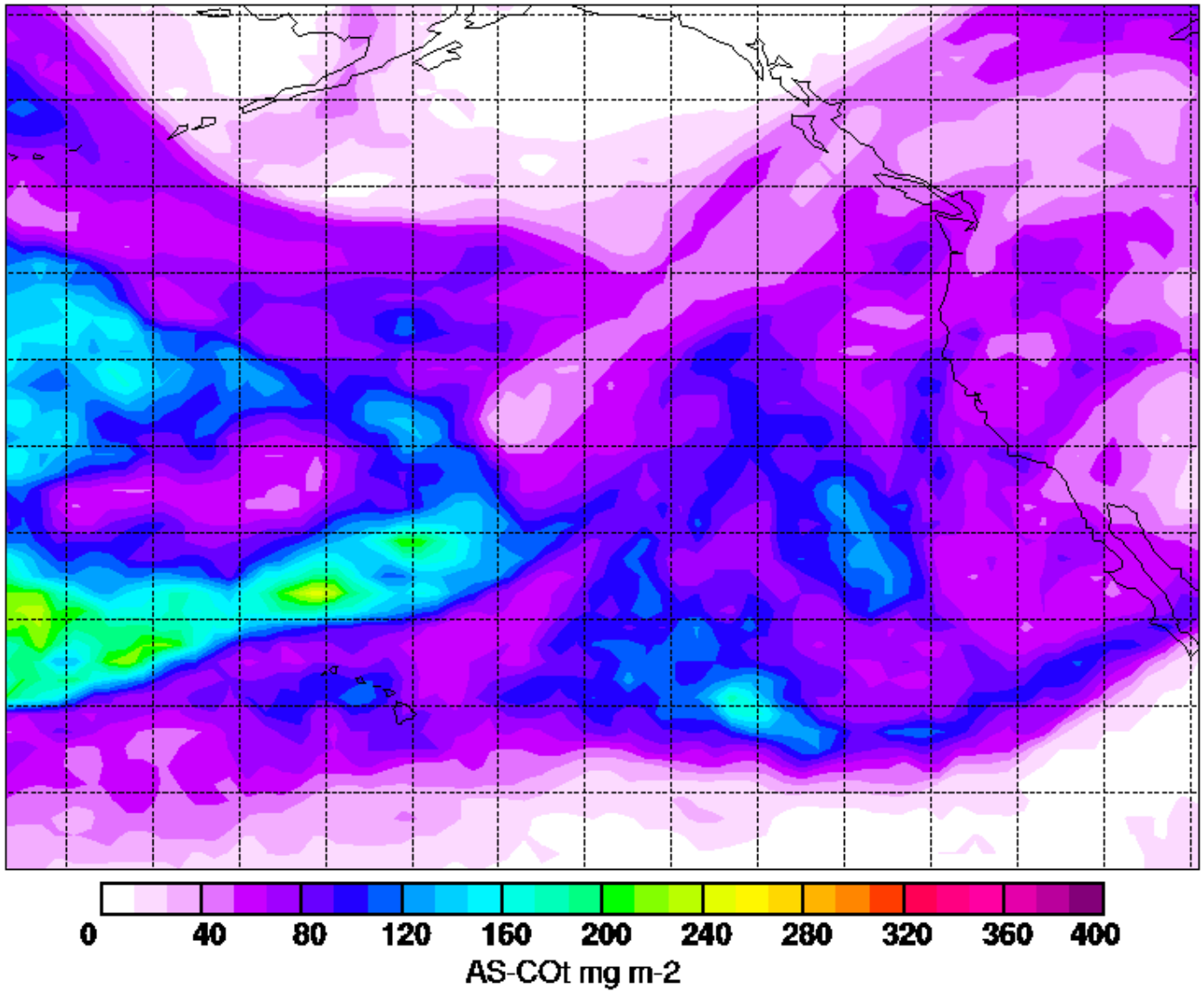
6.6km

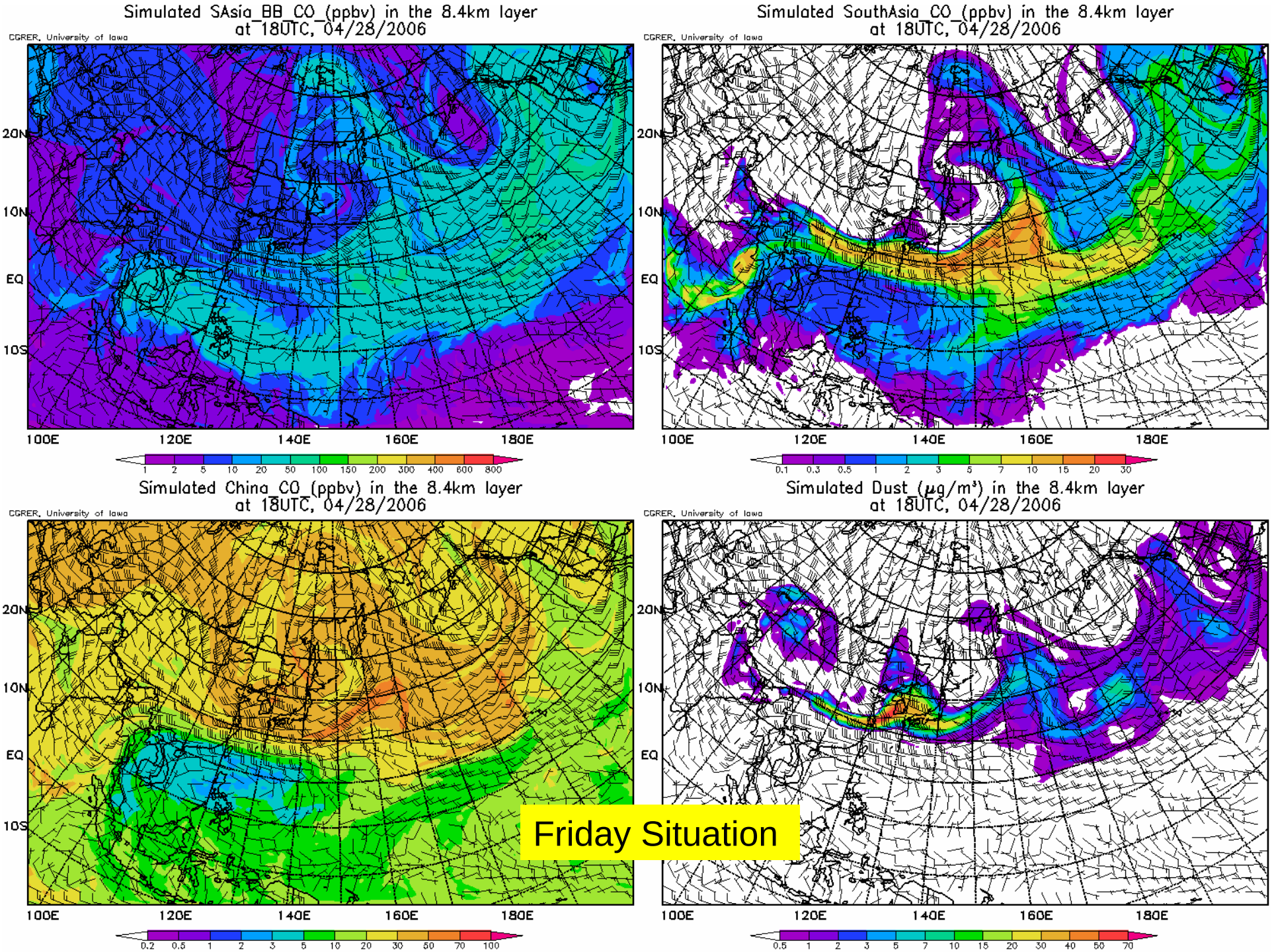
Plume could reach NA

Initialized 4/24 0Z

Friday
2 pm local

Total column of species AS-COt for age class 0 - 20.00 DAYS
Latest analysis time 20060424. 60000 Actual time 20060429. 0
Mean value 0.426E+02 Maximum value 0.784E+03 Minimum value 0.000E+00
Distance of grid lines 5.0 deg




Simulated SAsia_BB_CO_(ppbv) in the 8.4km layer
at 18UTC, 04/28/2006
CGRER, University of Iowa
20N
10N
EQ
10S
100E
120E
140E
160E
180E
1 2 5 10 20 50 100 150 200 300 400 600 800
Simulated SouthAsia_CO_(ppbv) in the 8.4km layer
at 18UTC, 04/28/2006
CGRER, University of Iowa
0.1 0.3 0.5 1 2 3 5 7 10 15 20 30
Simulated China_CO_(ppbv) in the 8.4km layer
at 18UTC, 04/28/2006
CGRER, University of Iowa
0.2 0.5 1 2 3 5 10 20 30 50 70 100
Simulated Dust (μg/m³) in the 8.4km layer
at 18UTC, 04/28/2006
CGRER, University of Iowa
0.5 1 2 3 5 7 10 15 20 30 40 50 70
Friday Situation