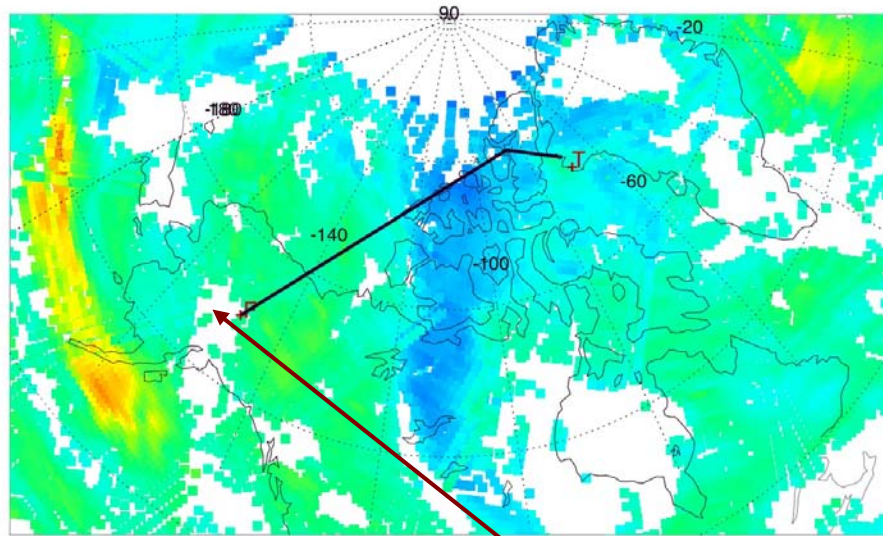


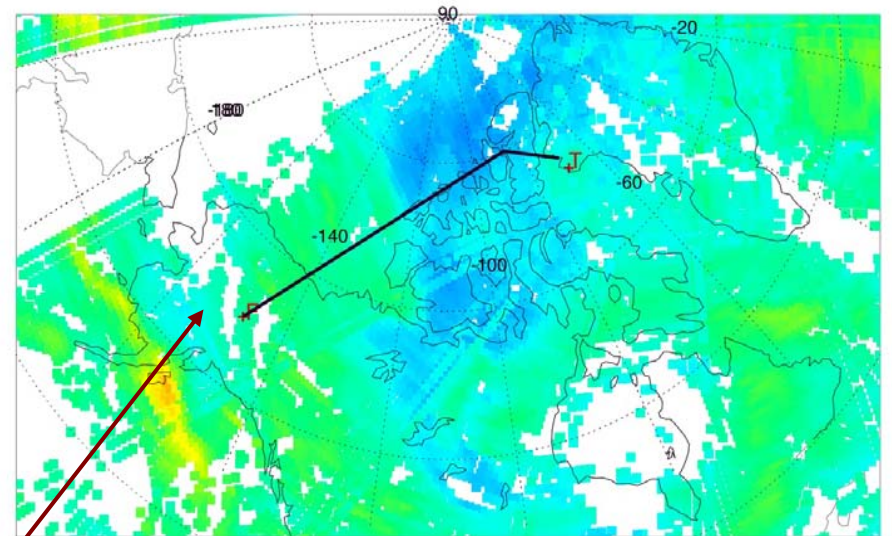
AIRS NRT ARCTAS Support:

Latest AIRS CO

AIRS CO VMR (ppbv) at 500mb on 20080405 for ARCTAS



AIRS CO VMR (ppbv) at 500mb on 20080406 for ARCTAS



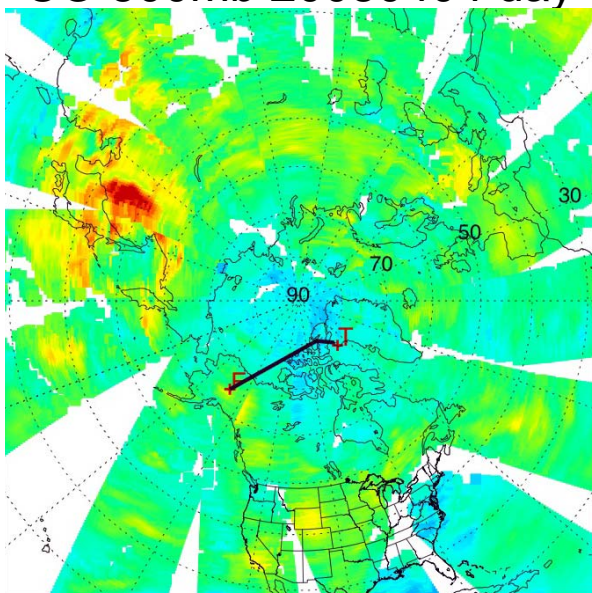
0.0 27.8 55.6 83.3 111.1 138.9 166.7 194.4 222.2 250.0

CONTACT: Dr. Juying Warner <juying@umbc.edu>; ACKNOWLEDGEMENT: AIRS NRT products by NASA DA. CONTACT: Dr. Juying Warner <juying@umbc.edu>; ACKNOWLEDGEMENT: AIRS NRT products by NASA DA.

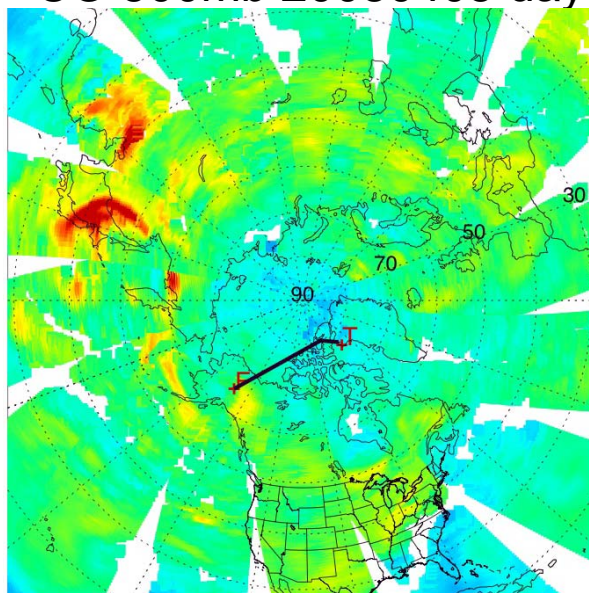
Latest AIRS CO shows cleaner air near Fairbanks based on the nighttime measurements between April 05 and 06.

AIRS NRT ARCTAS Support: Asian Transport Continues

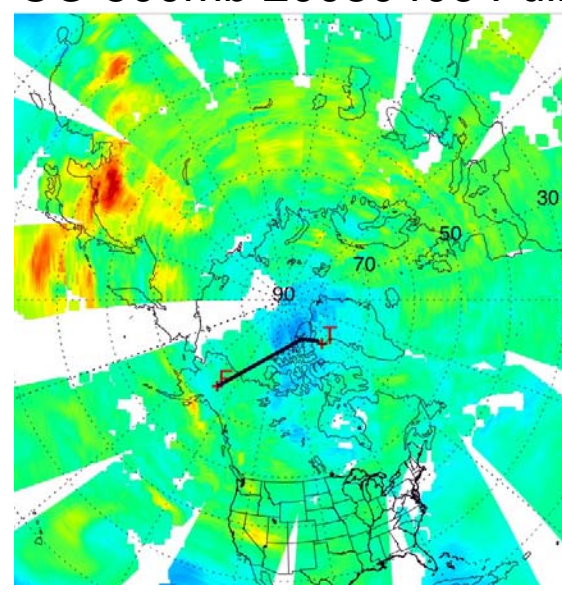
CO 500mb 20080404 day



CO 500mb 20080405 day



CO 500mb 20080406 Full

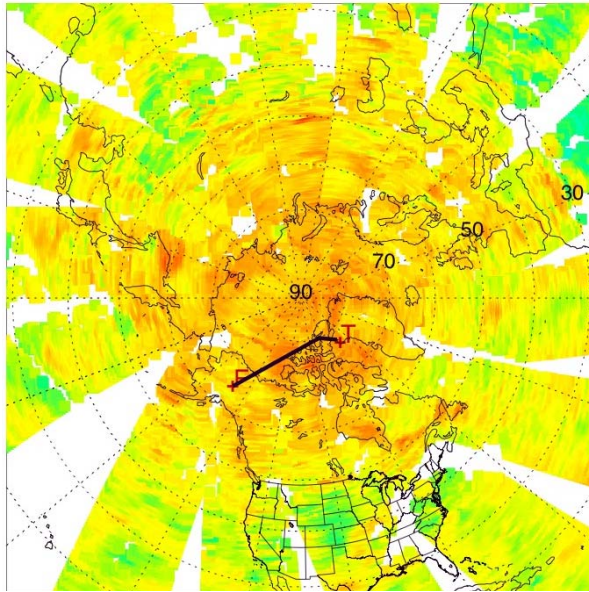


CONTACT: Dr. Juying Warner <juying@umbc.edu>; ACKNOWLEDGEMENT: AIRS NRT products by NASA DAAC

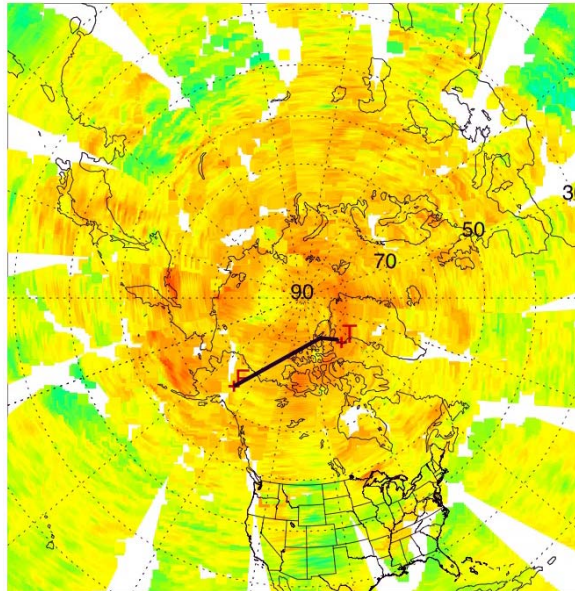
AIRS NRT ARCTAS Support:

CH₄ April 4-6, 08

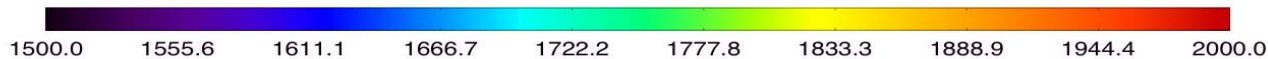
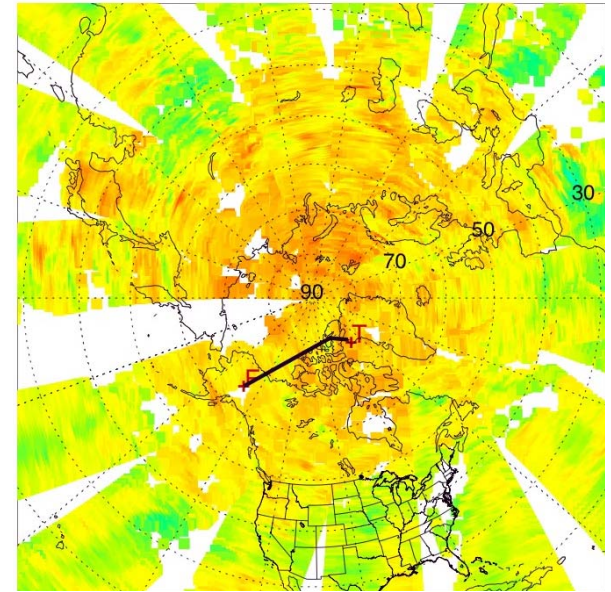
CH₄ 500mb 20080404



CH₄ 500mb 20080405



CH₄ 500mb 20080406

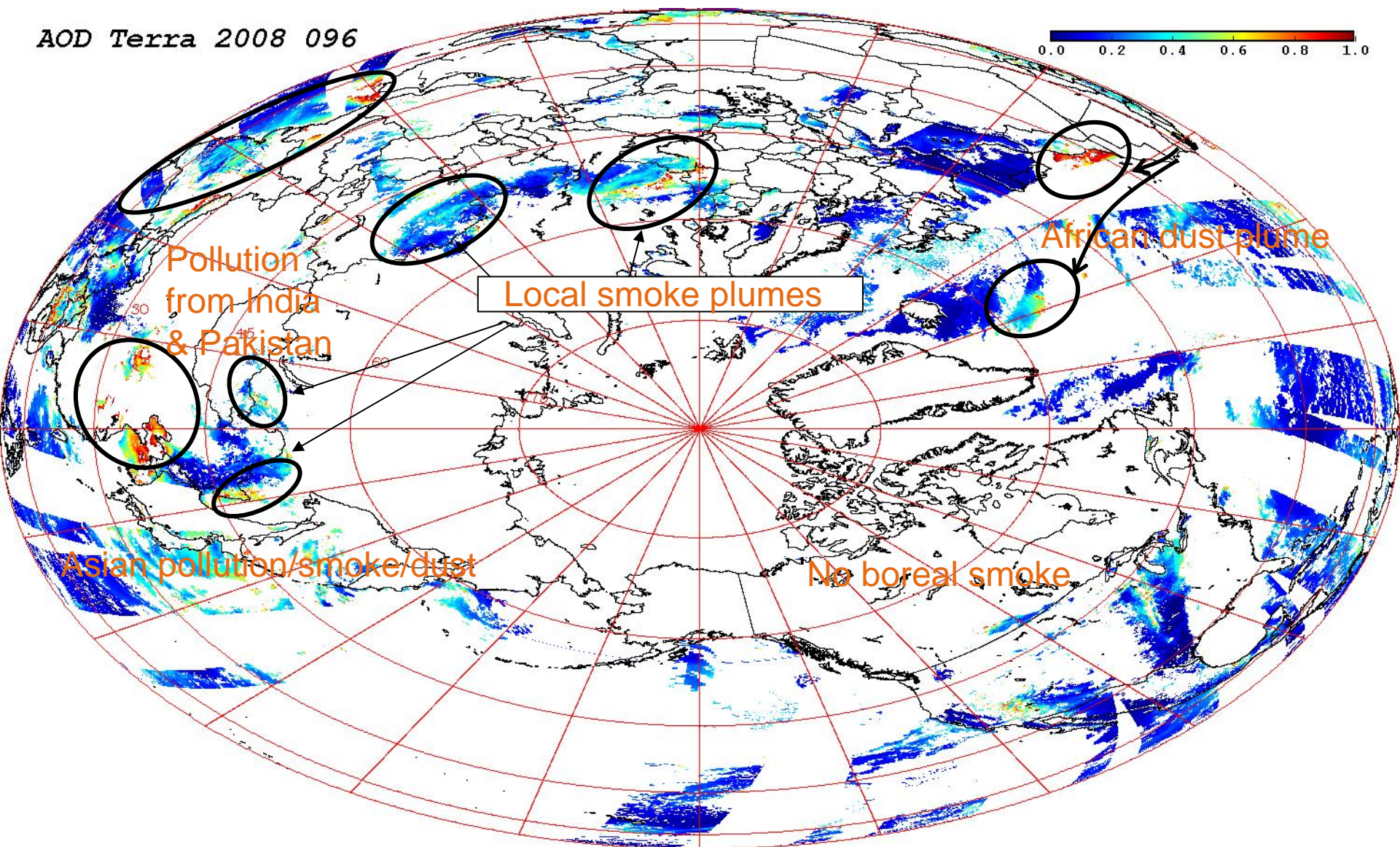


CONTACT: Dr. Juying Warner <juying@umbc.edu>; ACKNOWLEDGEMENT: AIRS NRT products by NASA DAAC

- CH₄ concentrations consistently high at 500mb over the Arctic.
- AIRS CH₄ needs validation with ARCTAS measurements.

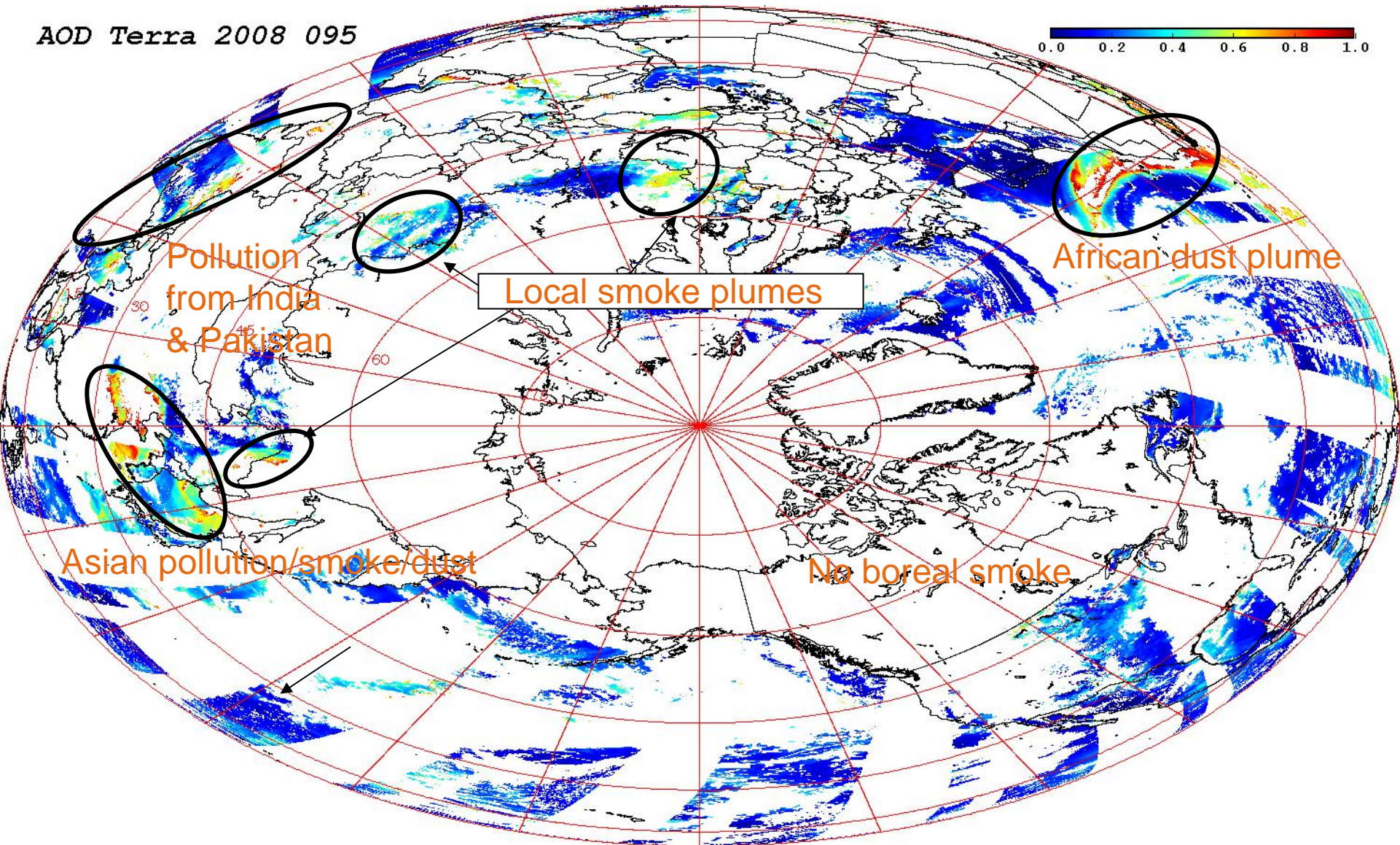
MODIS AOD Hot Spots in Northern Hemisphere (0° - 90°N)

AOD Terra 2008 096



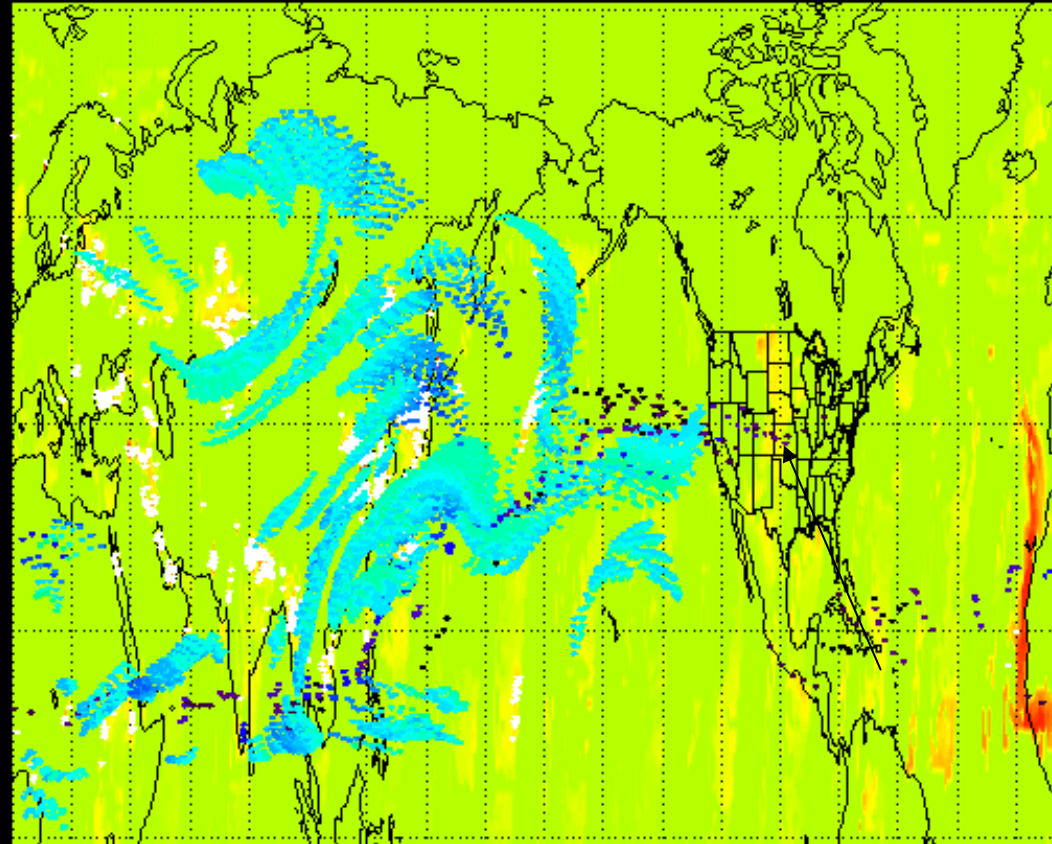
MODIS AOD Hot Spots in Northern Hemisphere (0° - 90°N)

AOD Terra 2008 095



Aerosol Trajectory Based Upon MODIS AOD and GEOS-5 Winds

MODIS Trajectory Initialized 2008040400Z Valid 2008040900Z

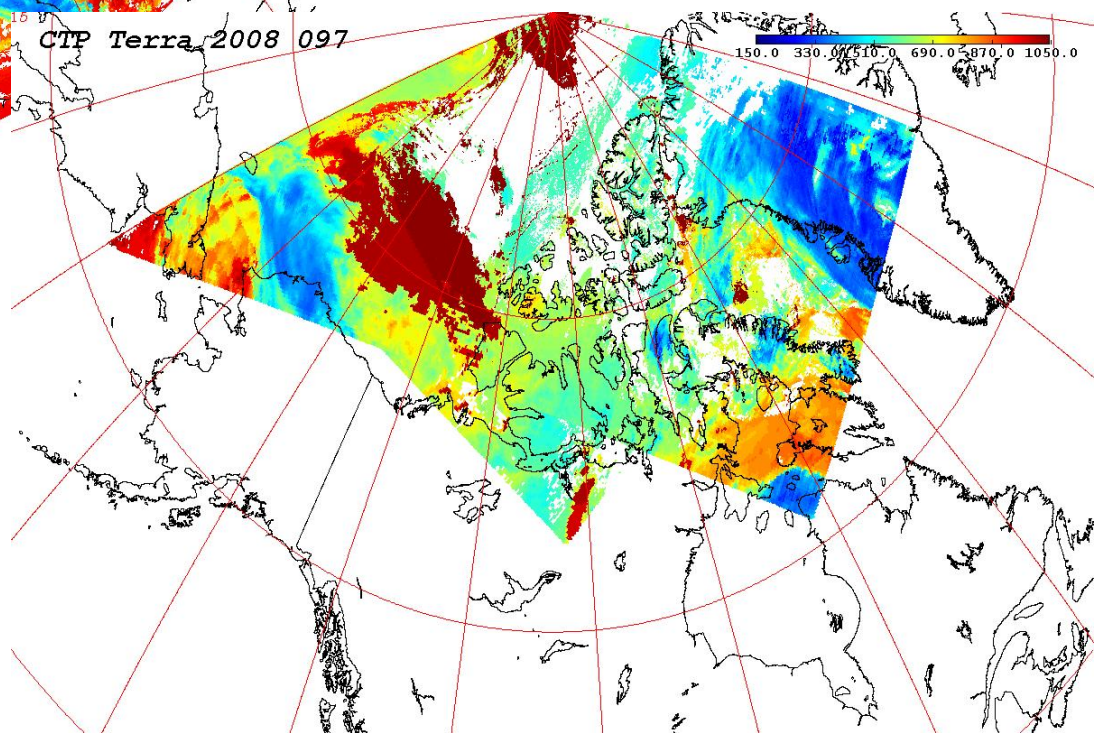
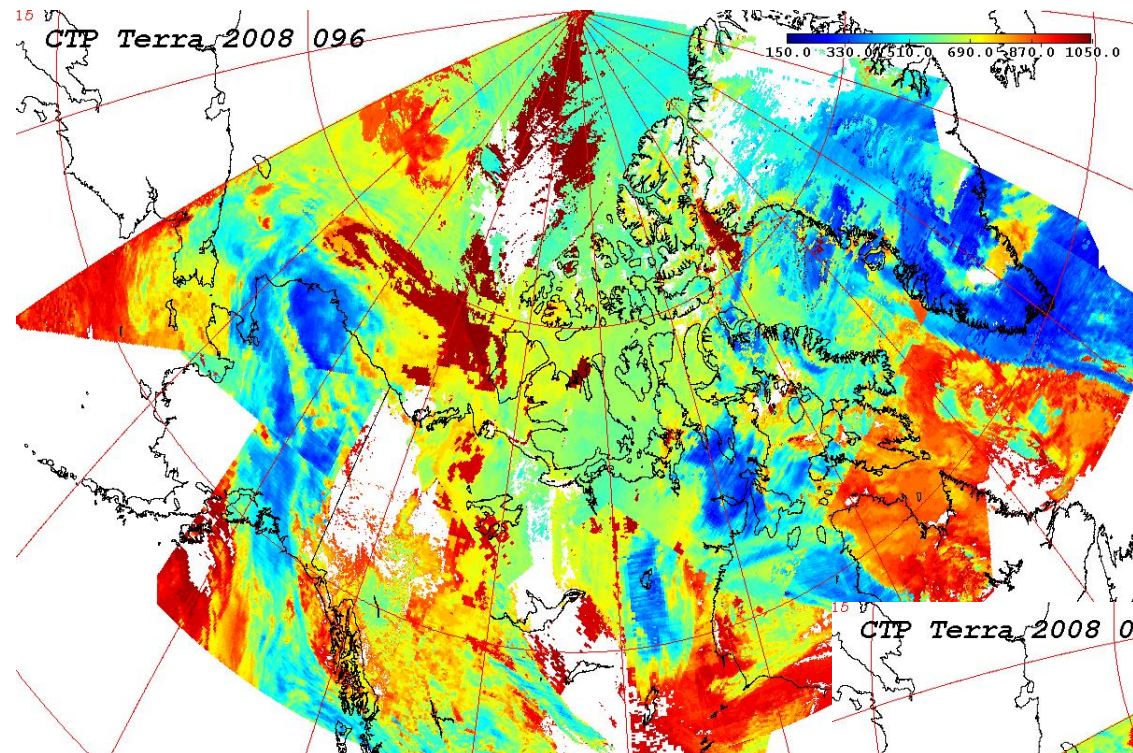


0.0 0.2 0.4 0.6 0.8 1.0
AOD

200 400 600 800 1000
Pressure (mb)

(Courtesy: Brad Pierce & Duncan Fairlei for Trajectory Package)

MODIS Cloud Top Pressure

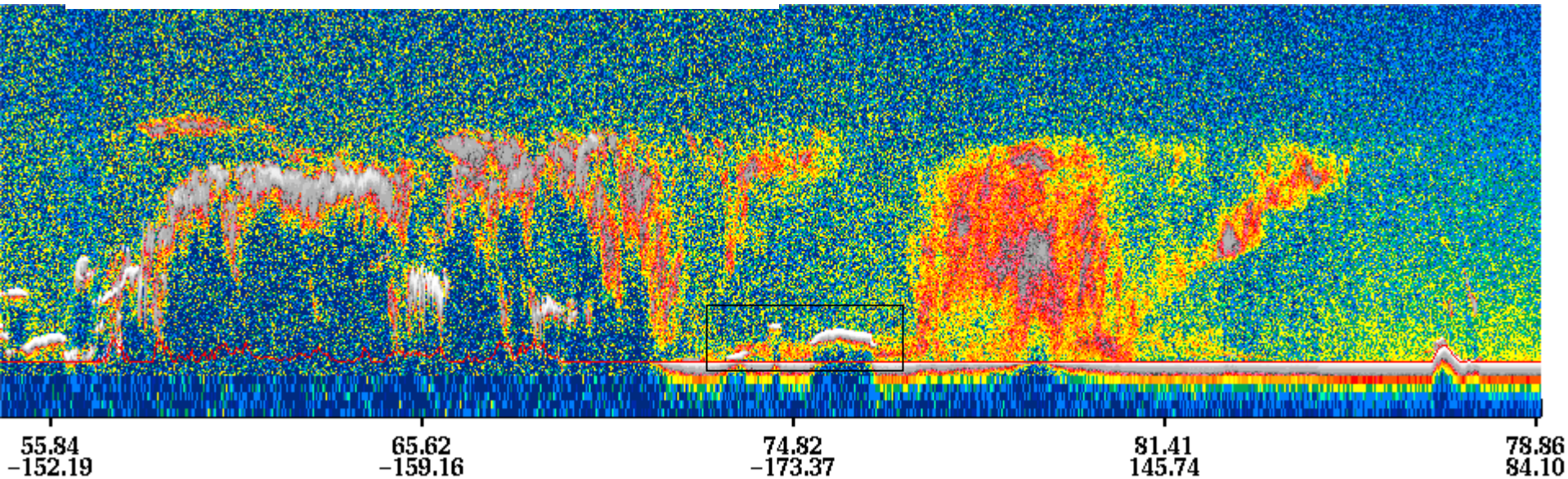
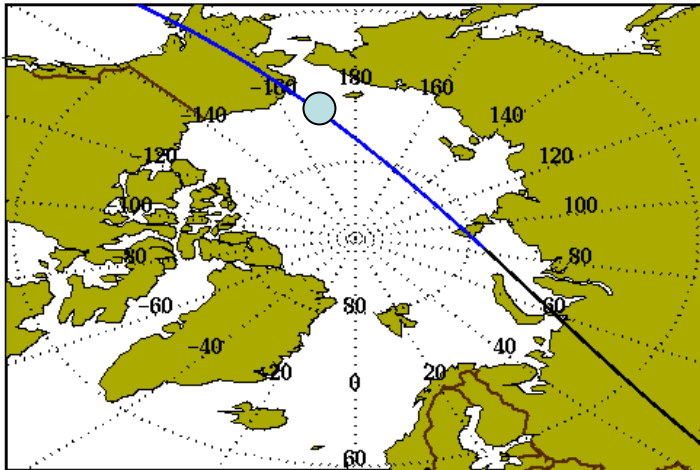


CALIPSO Observations

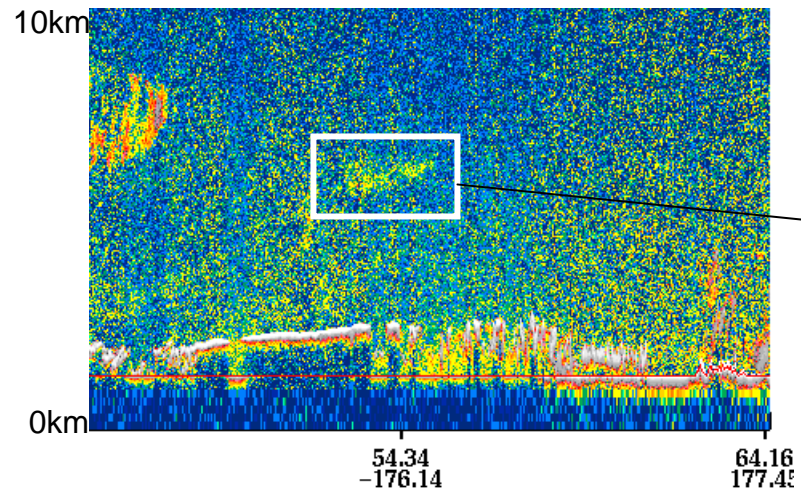
4 April 2008

04 April 2230Z

2008-04-04 22-30-00 UTC Half of Hour Conditions
Version: 2.01 Image Date: 04/06/2008

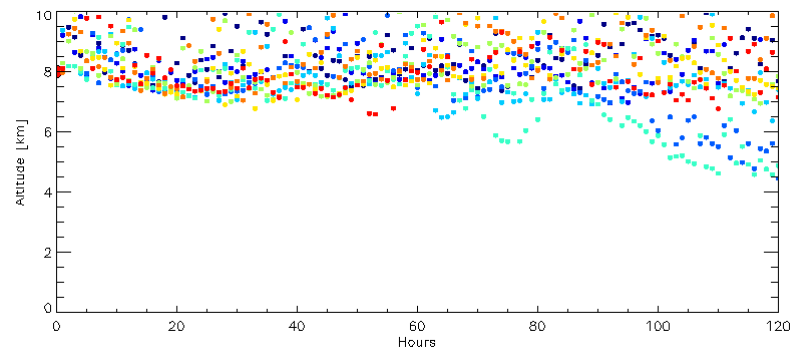
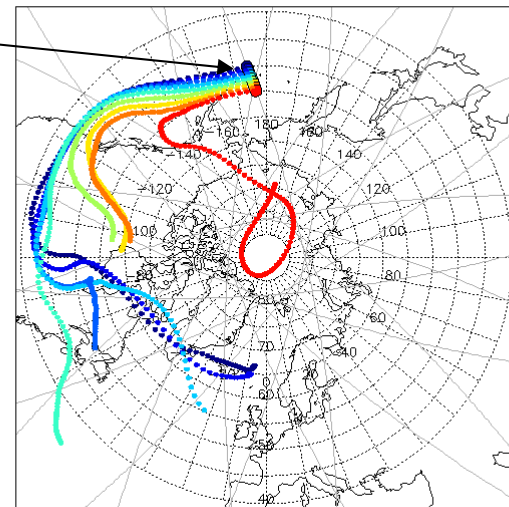


CALIPSO Obs 04/05

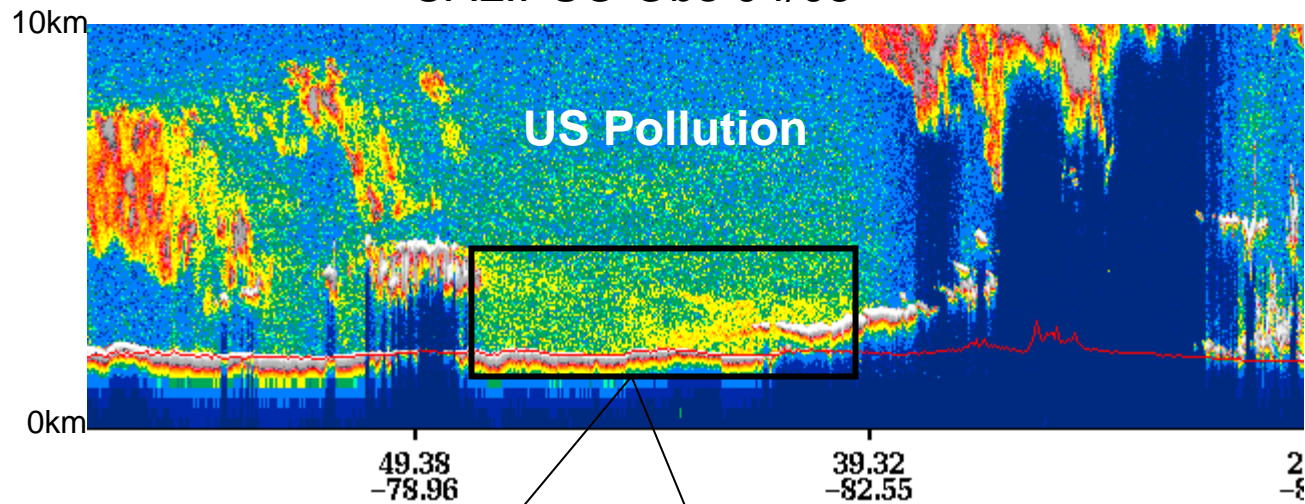


120hr CALIPSO Trajectories Initialized 2008040500 Valid 2008041000

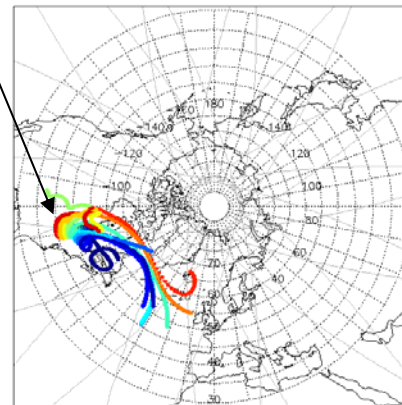
Initial Altitude: 8000m



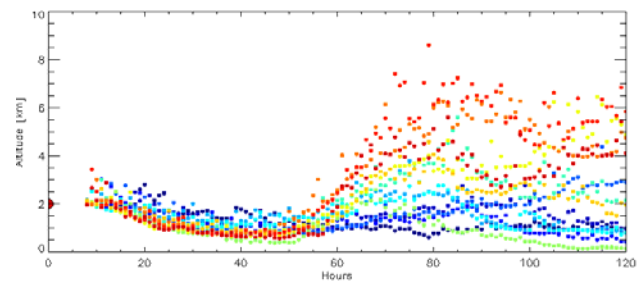
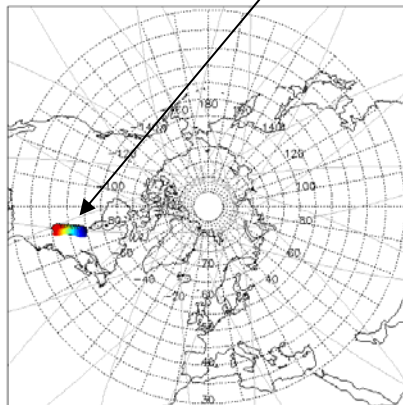
CALIPSO Obs 04/05



130hr CALIPSO Trajectories Initialized 2008040500 Valid 2008041000
Initial Altitude: 2000m

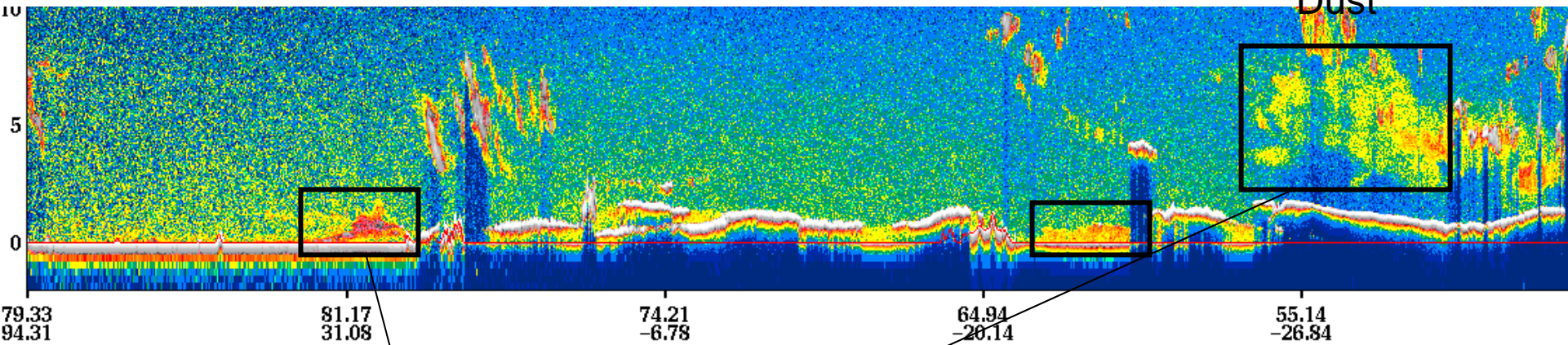


12hr CALIPSO Trajectories Initialized 2008040500 Valid 2008040512
Initial Altitude: 2000m

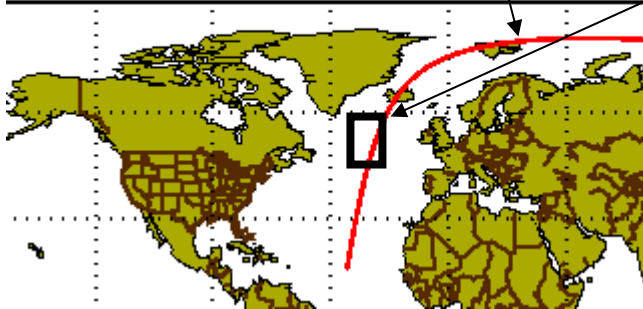


CALIPSO Obs 04/05

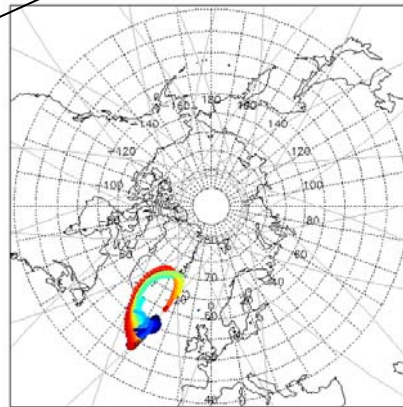
Dust



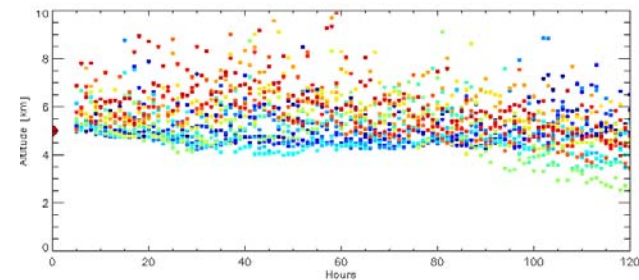
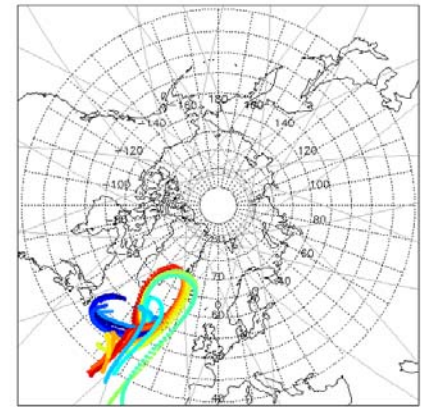
2008-04-05 03-00-00 UTC Start of Hour
Version: 2.01 Image Date: 04/06



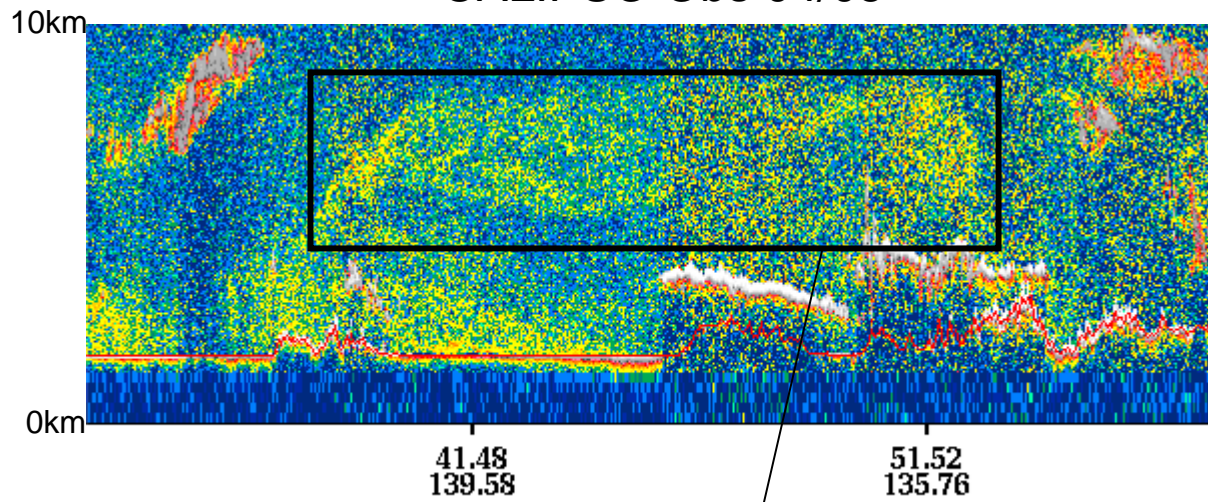
48hr CALIPSO Trajectories Initialized 2008040500 Valid 2008040700
Initial Altitude: 5000m



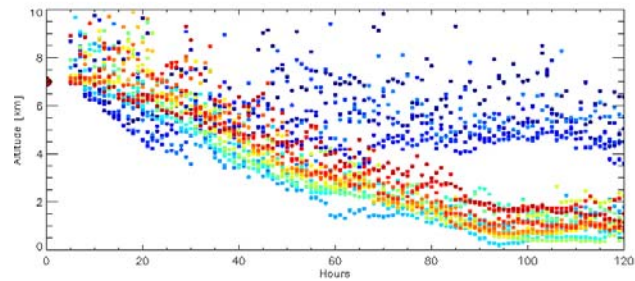
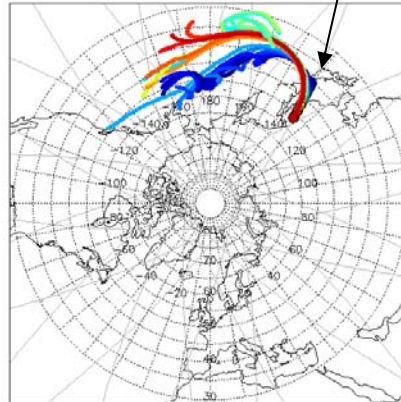
120hr CALIPSO Trajectories Initialized 2008040500 Valid 2008041000
Initial Altitude: 5000m



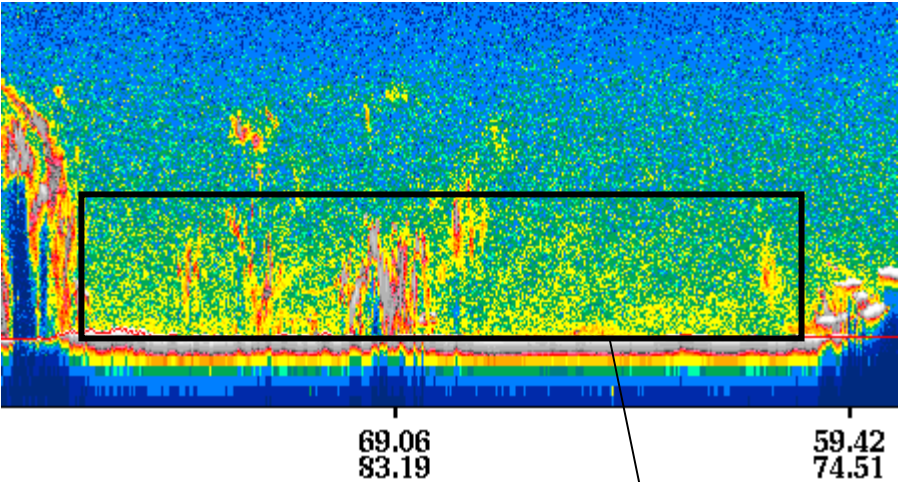
CALIPSO Obs 04/05



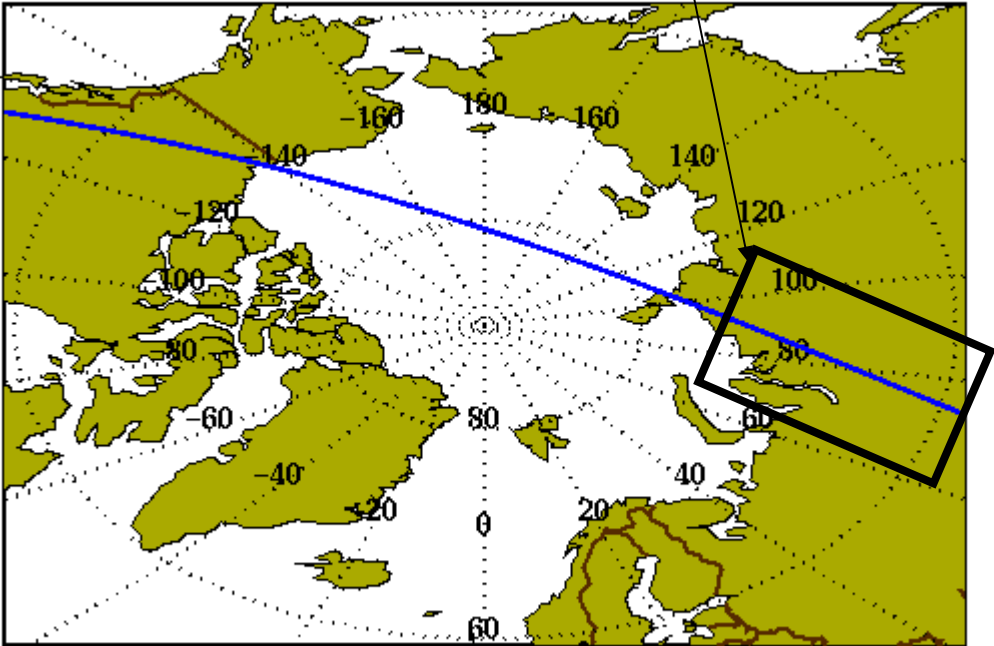
120hr CALIPSO Trajectories Initialized 2008040500 Valid 2008041000
Initial Altitude: 7000m



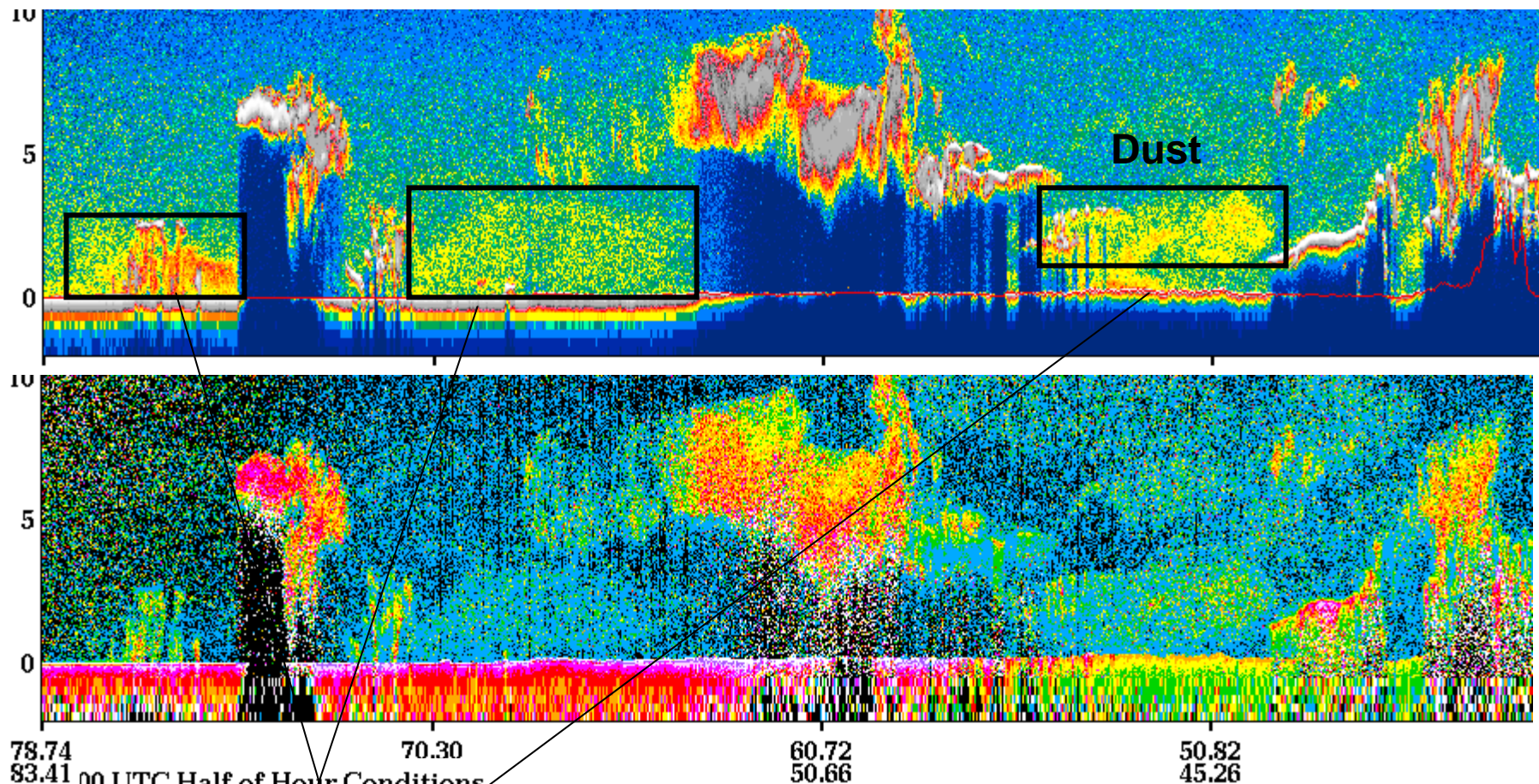
CALIPSO Obs 04/04



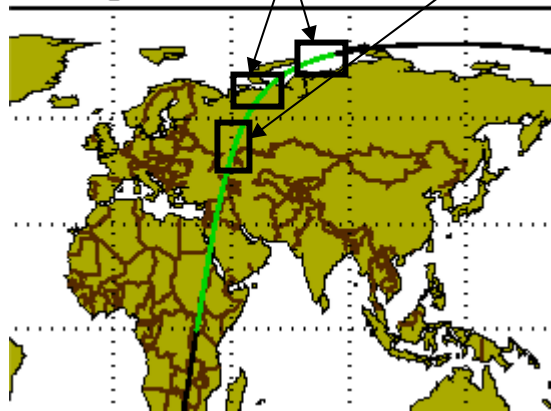
2008-04-04 21-00-00 UTC Start of Hour Conditions
Version: 2.01 Image Date: 04/06/2008



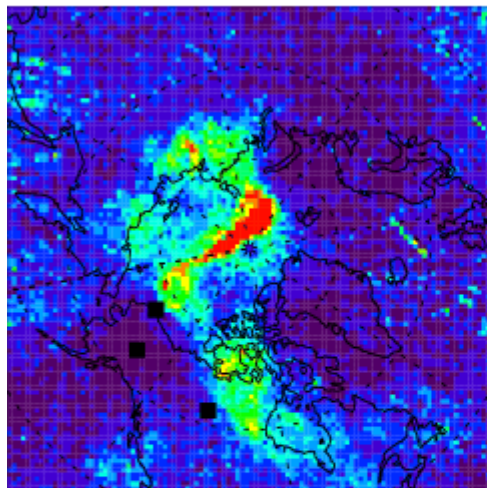
CALIPSO Obs 04/04



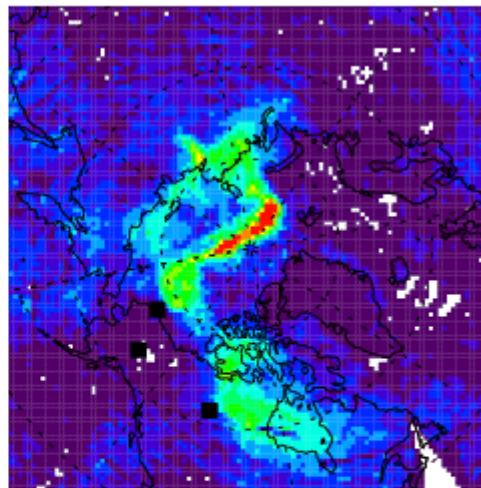
78.74
83.41 00 UTC Half of Hour Conditions
01 Image Date: 04/06/2008



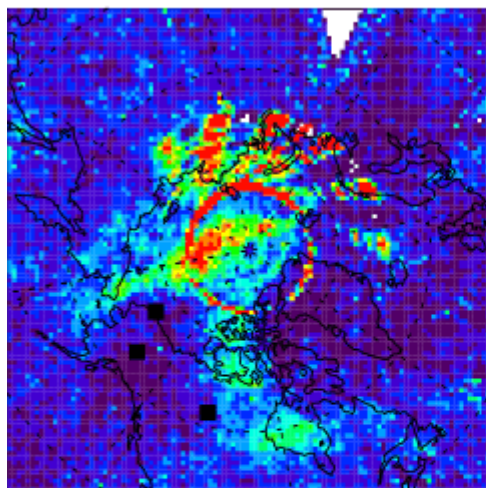
OMI_04-04



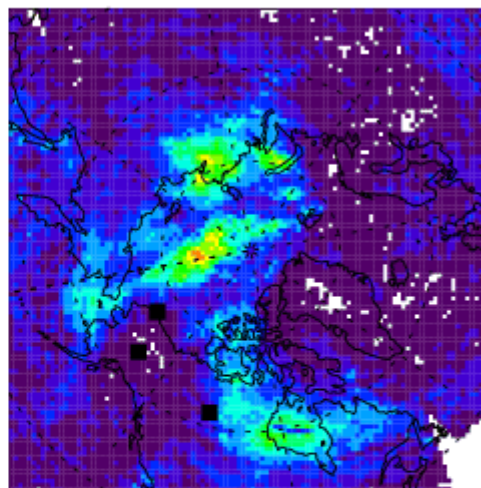
GOME2_04-04



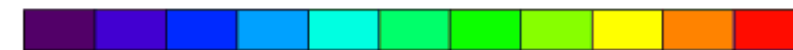
OMI_04-05



GOME2_04-05



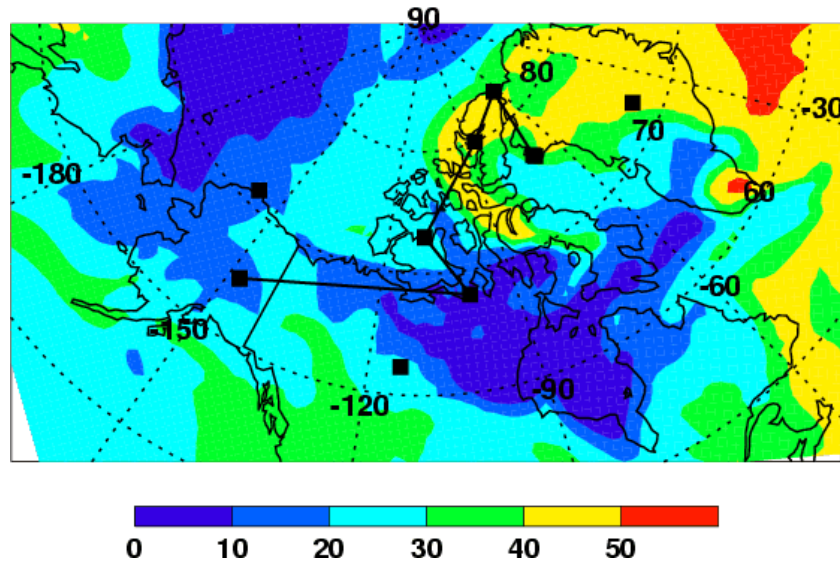
BrO signal in over the northern part of Hudson Bay is weakening



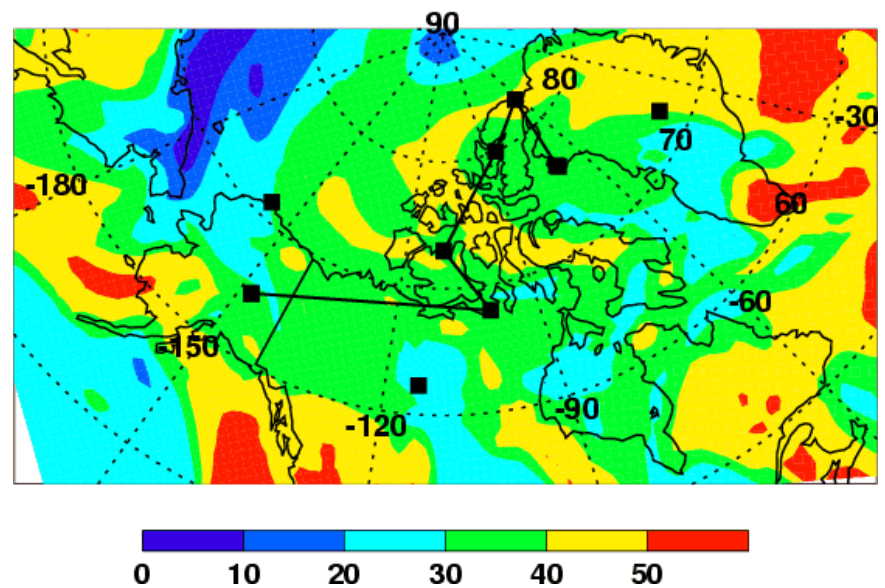
0 2 4 6 8 10

[$\times 10^{13}$ mol/cm²]

O_3 (ppbv) at surface, Apr-08_2000 UTC

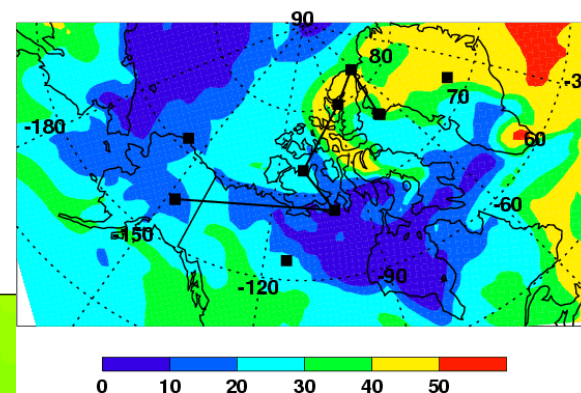


O_3 (ppbv) at 300m, Apr-08_2000 UTC

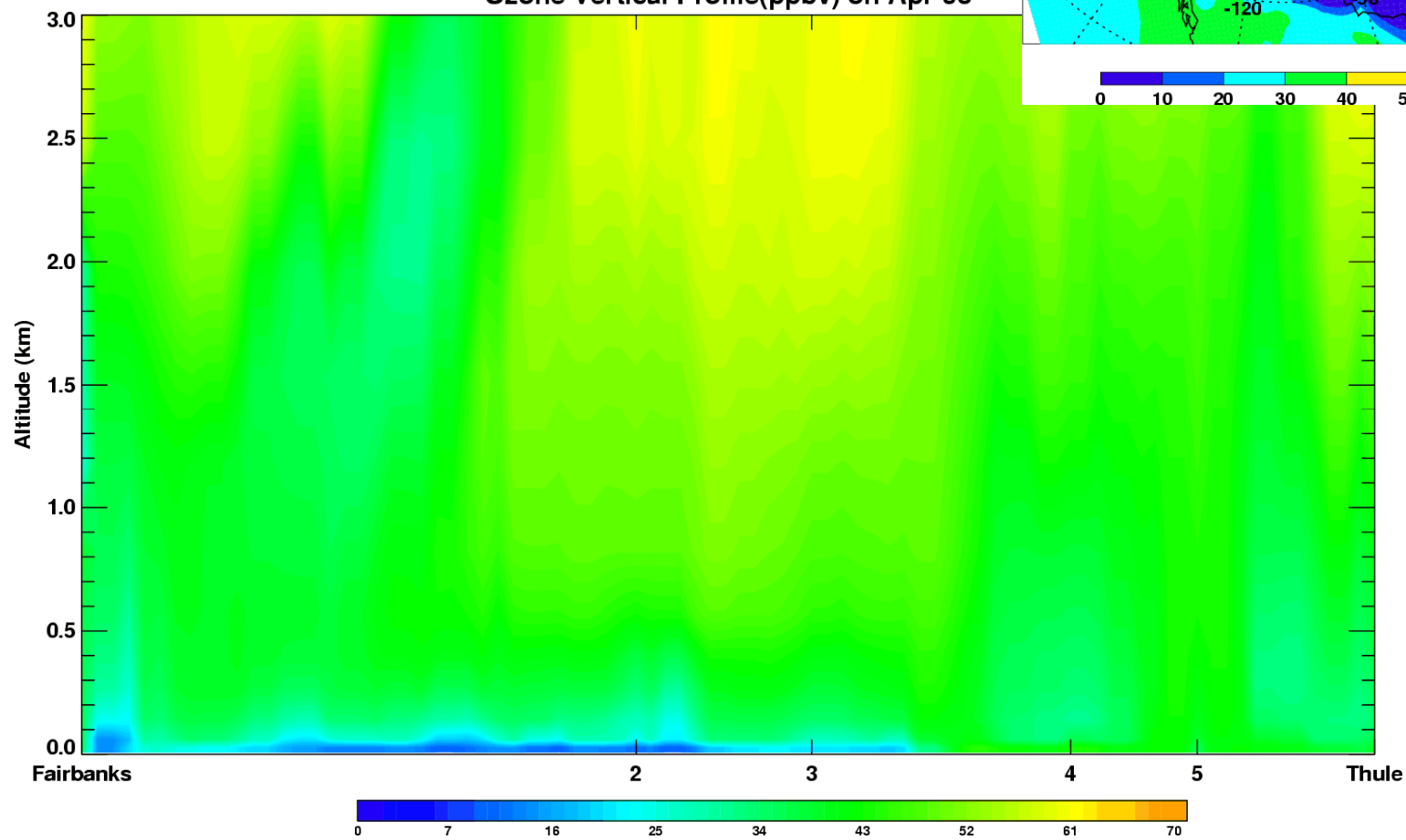


Low O_3 features are
very close to surface

O₃ (ppbv) at surface, Apr-08_2000 UTC



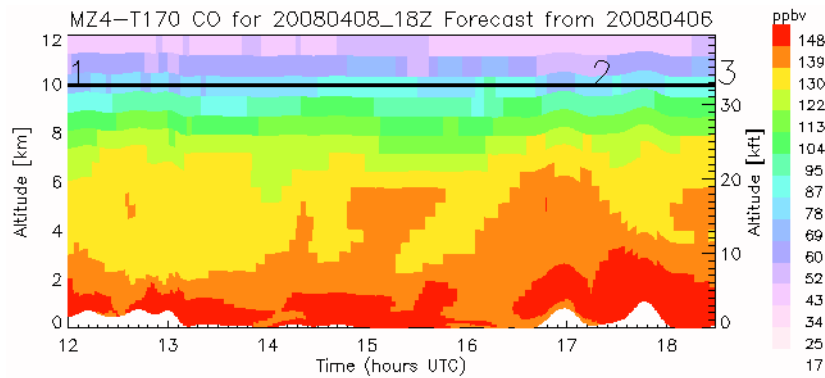
Ozone Vertical Profile(ppbv) on Apr-08



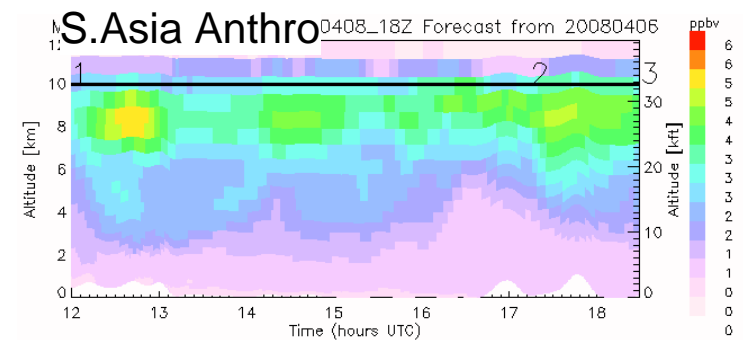
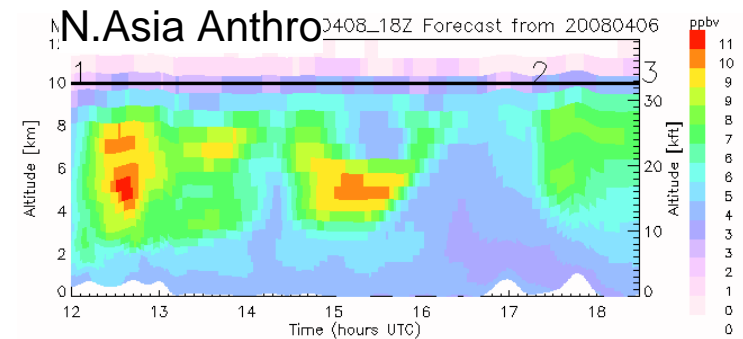
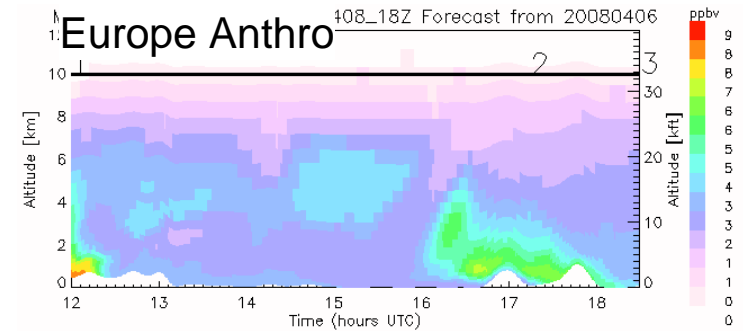
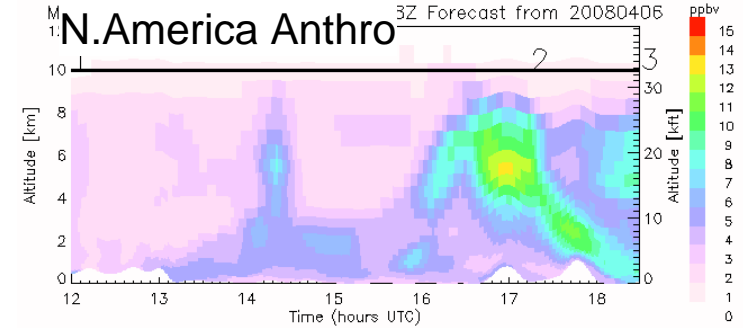
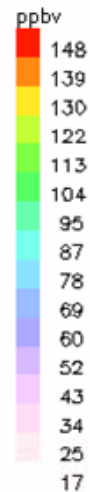
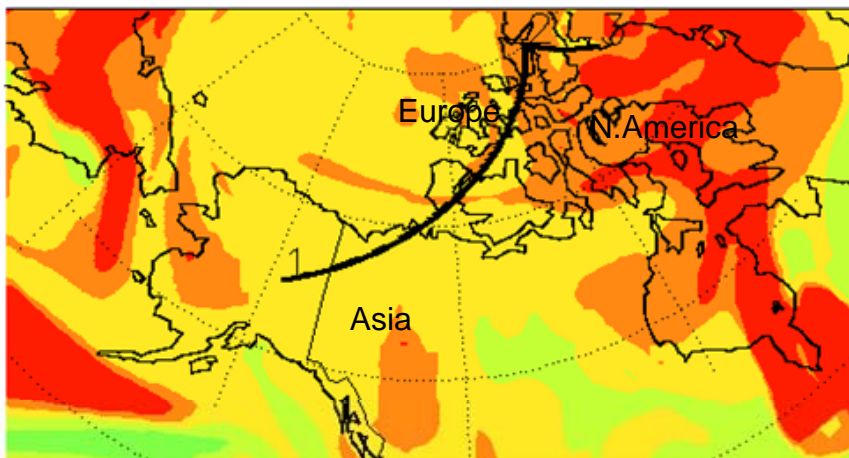
Apr 8 Fairbanks-Eureka-Thule MZ4 forecast from Apr 6 for Apr 8 18Z

Weak plumes, aged pollution for whole flight
Primarily Asian at start of flight, N. American and European over Eureka and Thule

CO



CO 4 km 20080408_18Z



Apr 8 Fairbanks-Eureka-Thule CAM forecast from Apr 5 for Apr 8 18Z

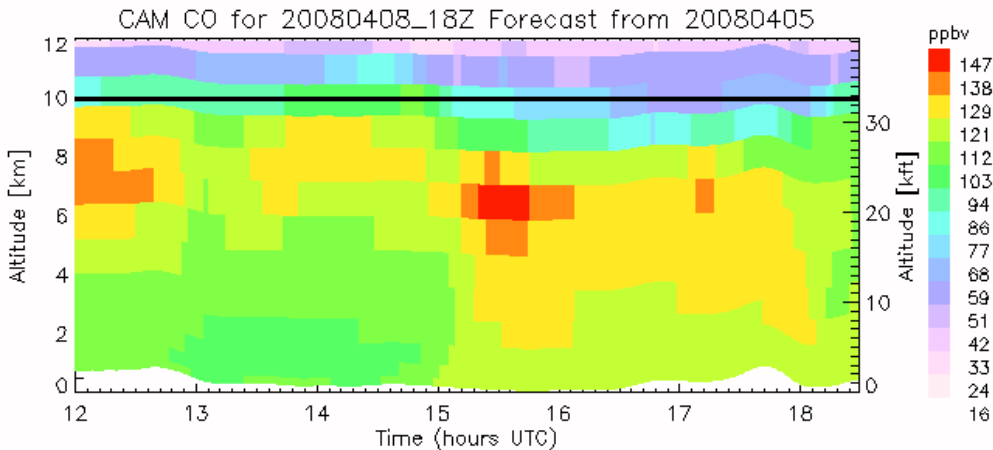
CO – assimilated MOPITT

CO at higher altitudes than MOZART

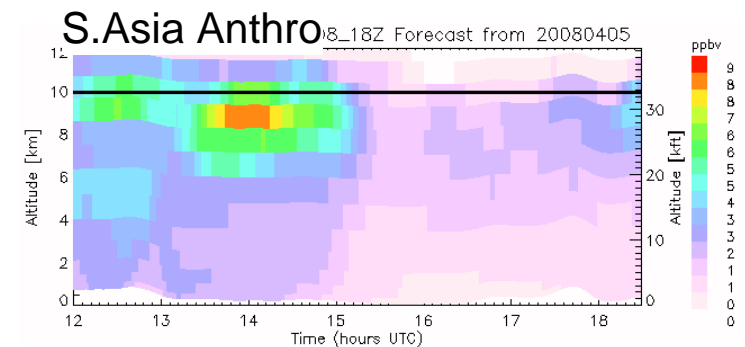
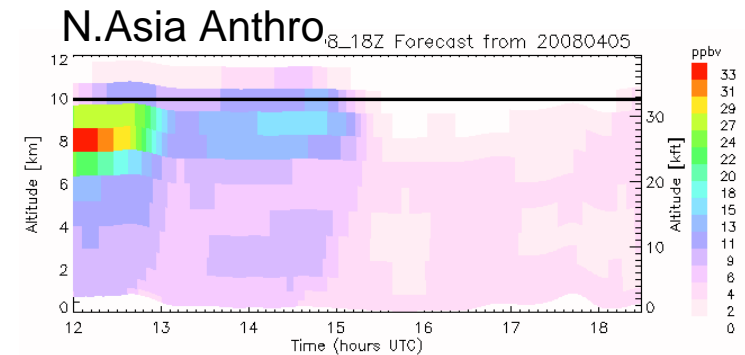
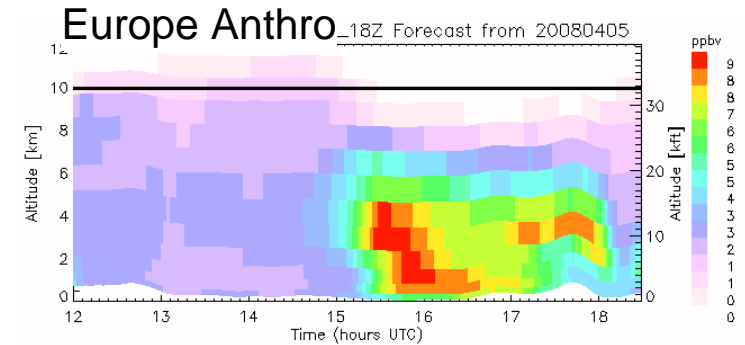
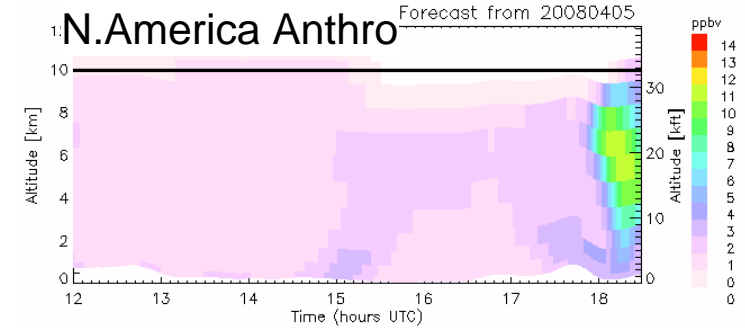
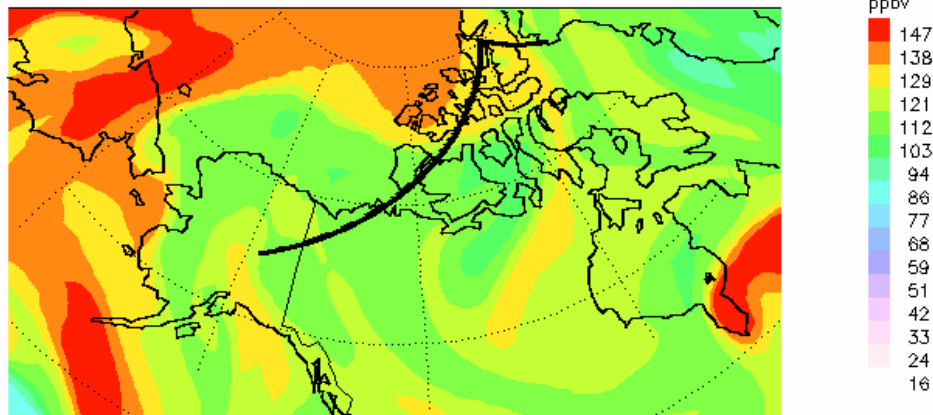
Tracers – independent of assim.

Similar to MOZART

CO



CAM CO 4 km 20080408_18Z



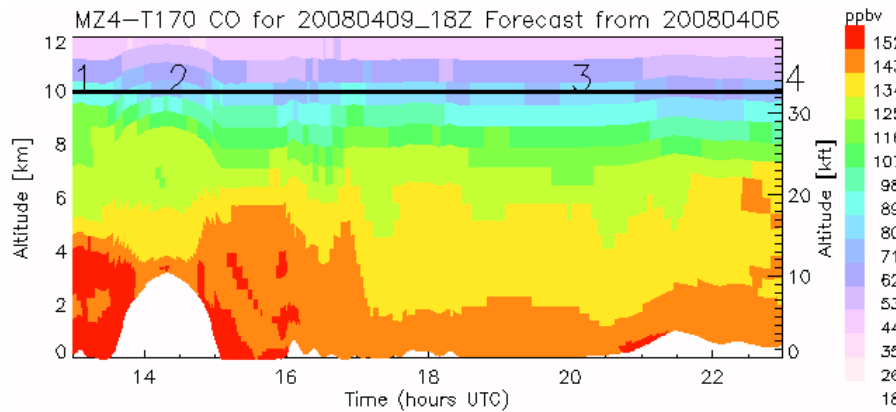
Apr 9 Thule-Summit-Barrow-FAI MZ4 forecast from Apr 6 for Apr 9 18Z

Similar conditions to 8th – aged pollution

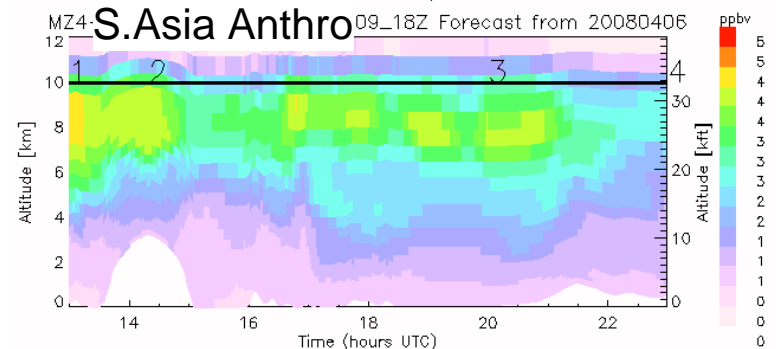
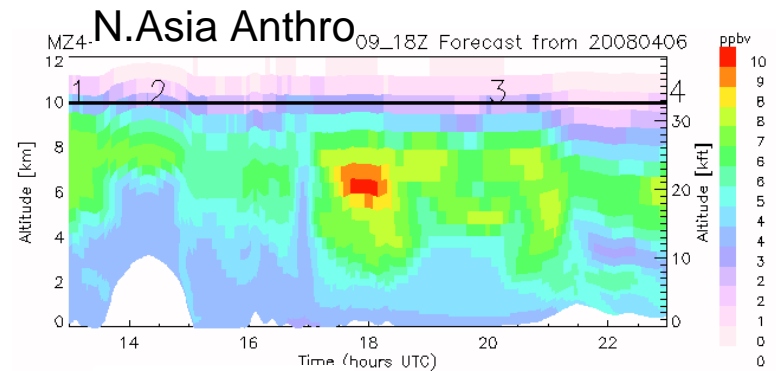
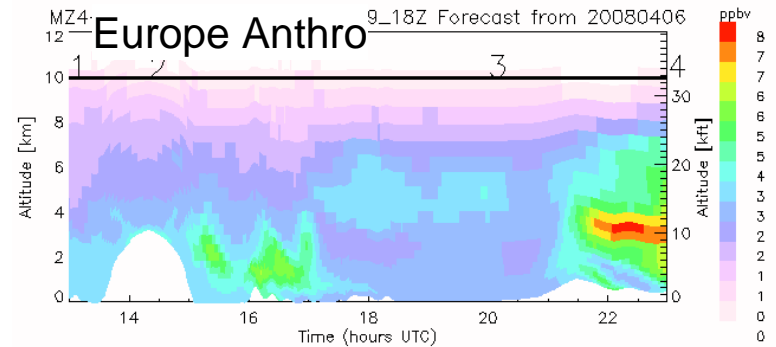
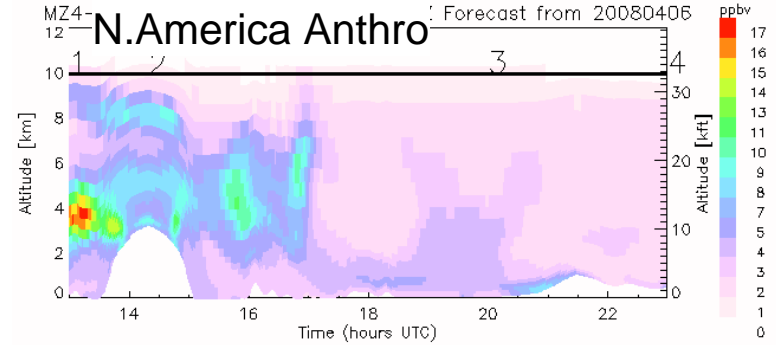
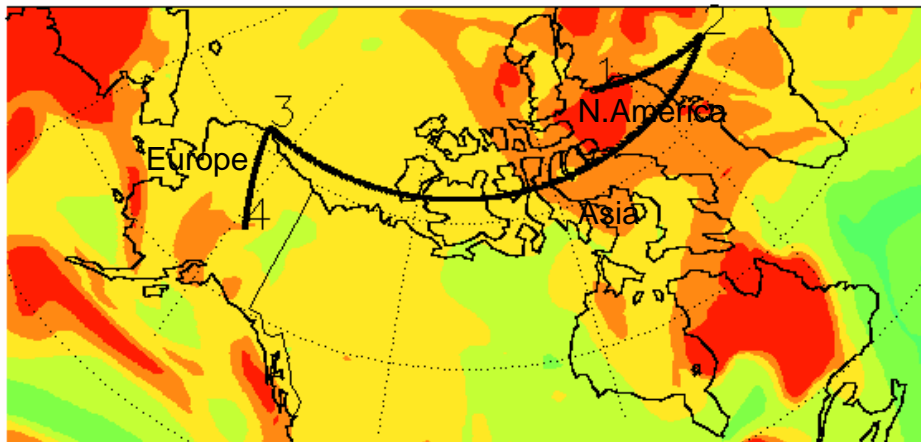
Asian at 6-9 km

European plume between Barrow and FAI

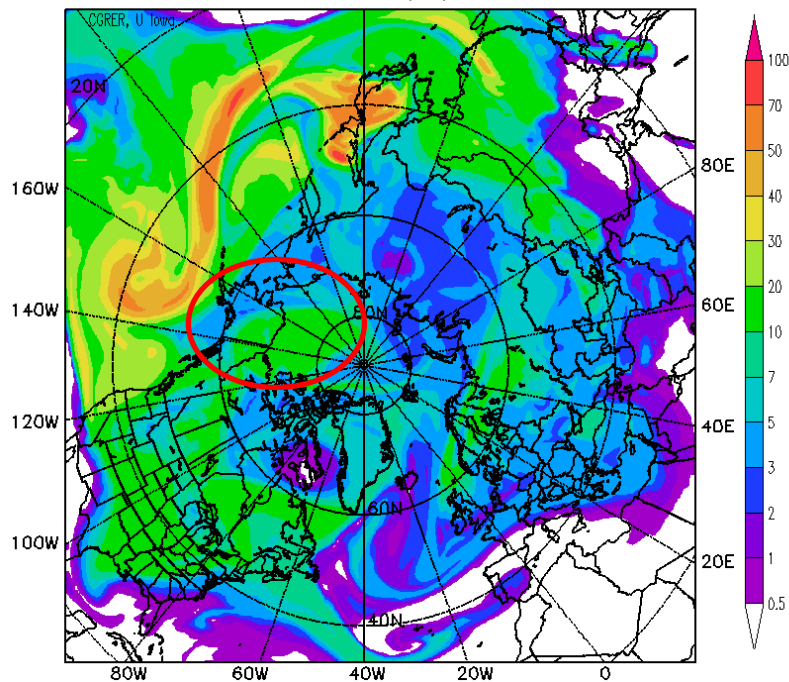
CO



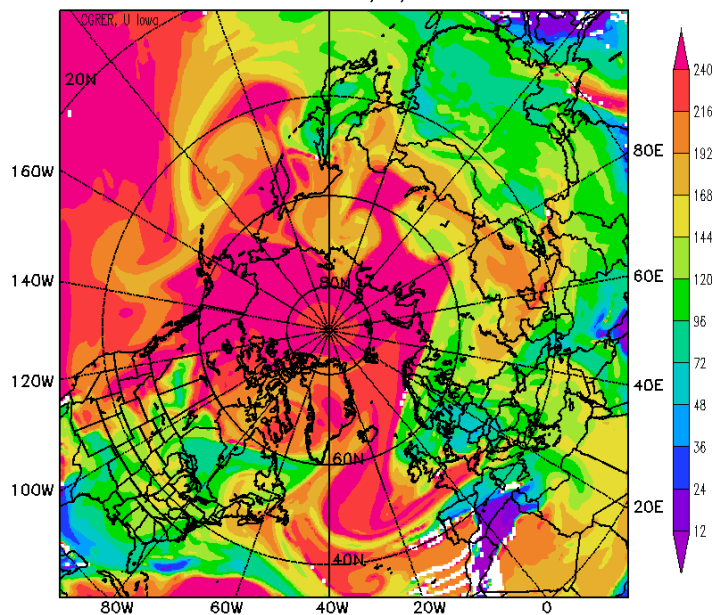
CO 4 km 20080409_18Z



Simulated Anthro_CO (ppbv) in the 8.4km layer
at 18UTC, 04/7/2008

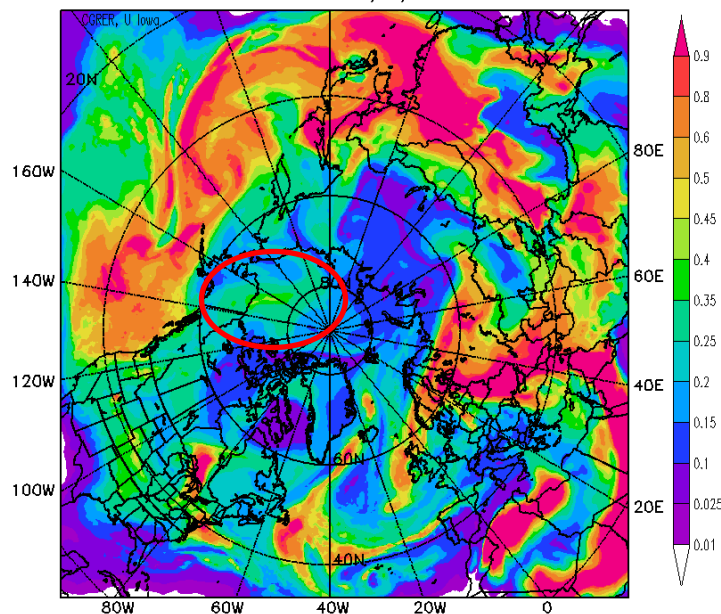


Simulated VOC_Averaged Age (hour) in the 5.5km layer
at 18UTC, 04/7/2008

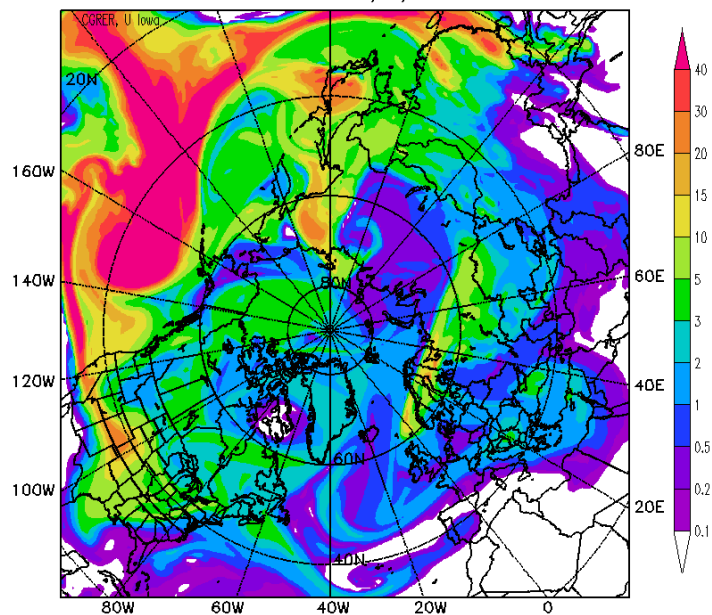


April 7th Possible Sortie?

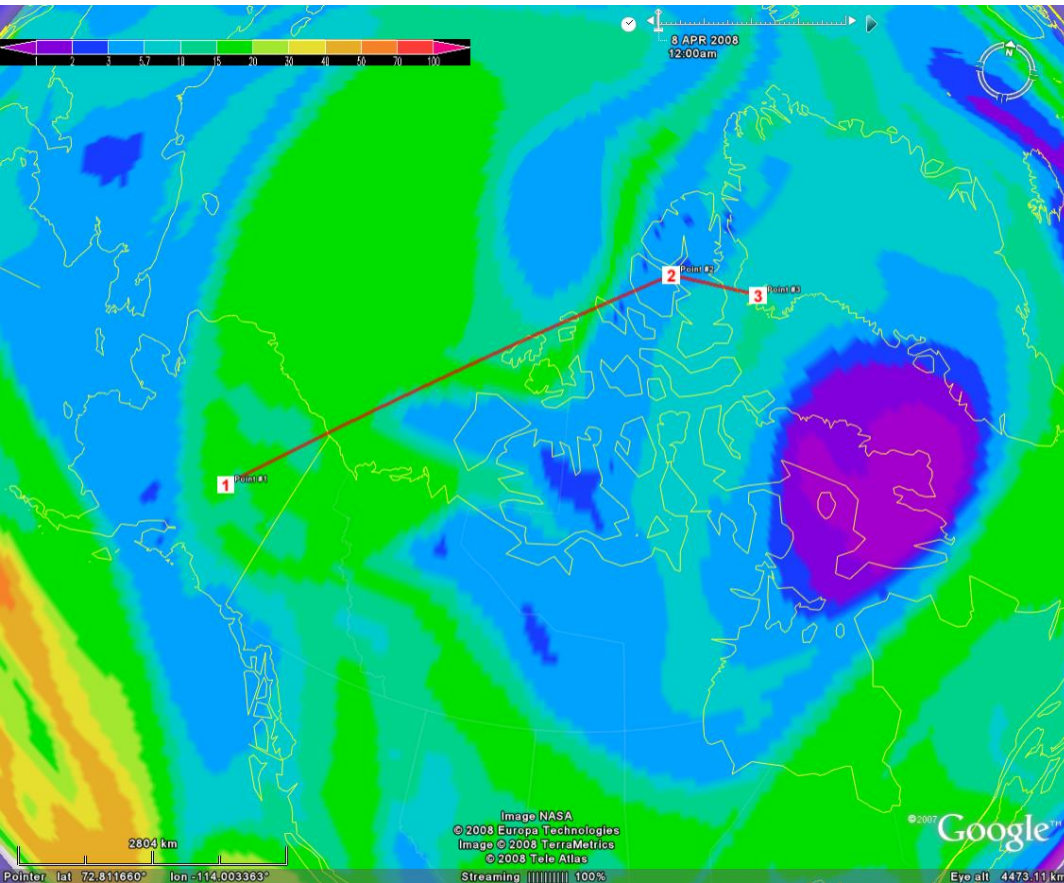
Simulated Column TOTAL_Aerosol_Optical_Depth
at 18UTC, 04/7/2008



Simulated BB_CO (ppbv) in the 8.4km layer
at 18UTC, 04/7/2008



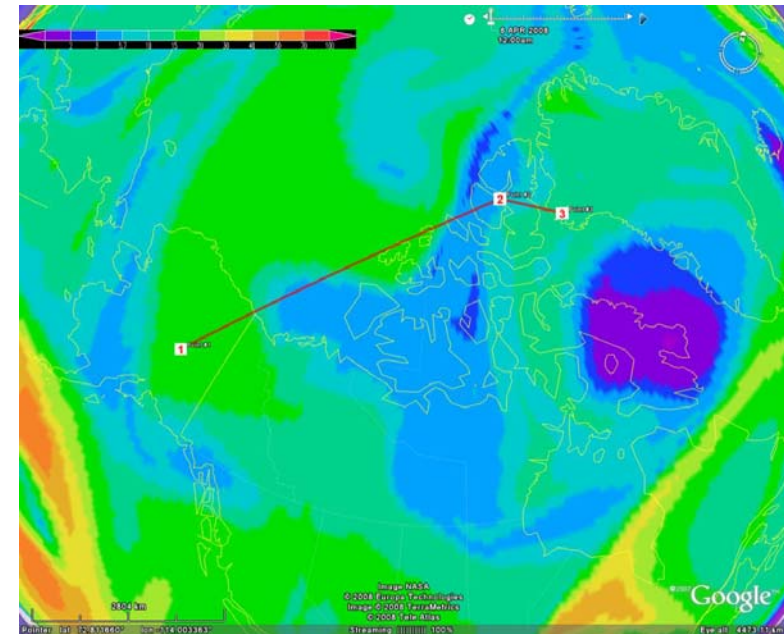
Thule Suitcase for both P3 and DC8 April 8



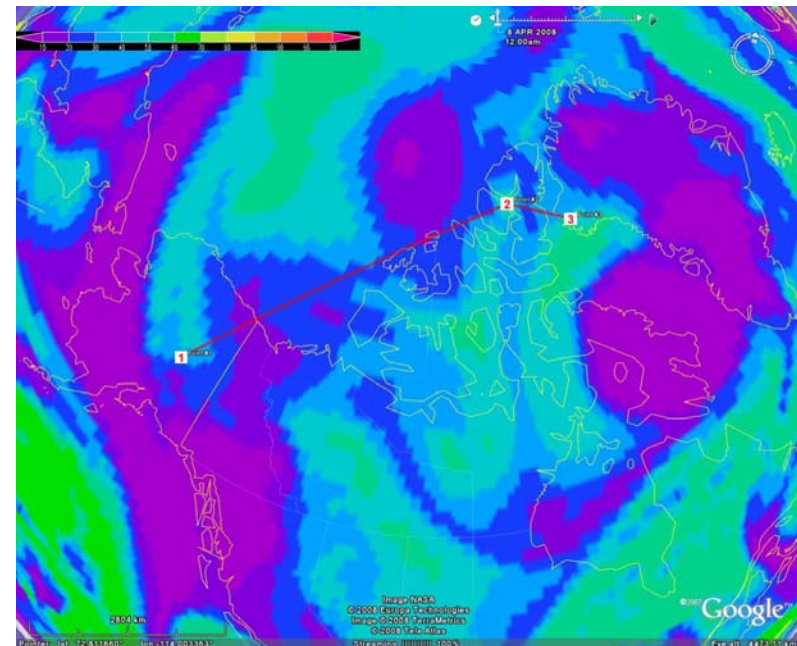
CO 8.4 km for DC8

Both Flight start at 12Z and go through Eureka

CO 5.5 km for P3

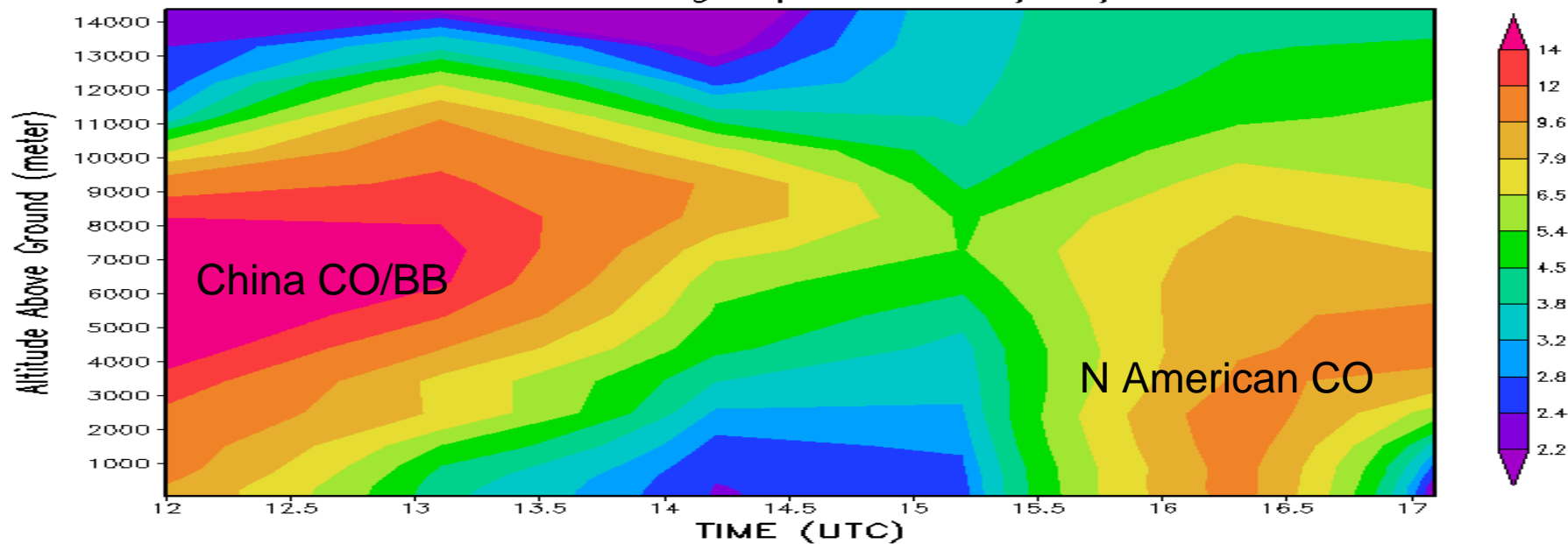


RH 8.4 km

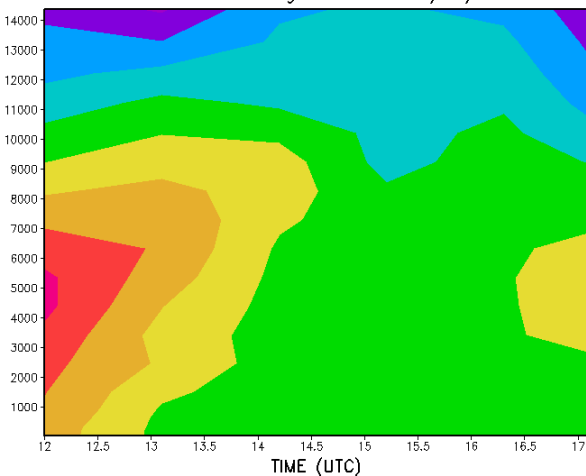


FAI to Thule for April 8 DC8 Flight Path

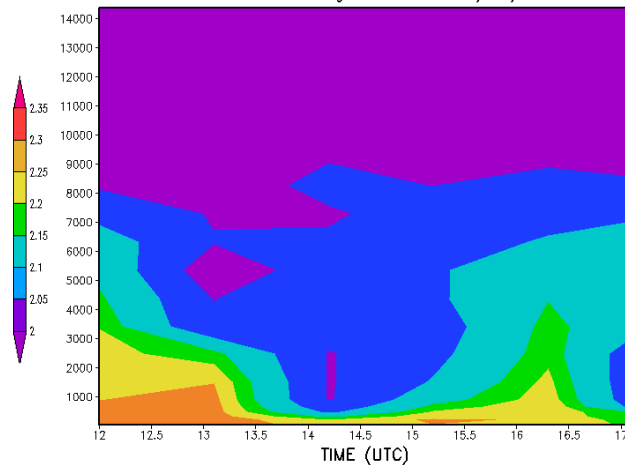
Simulated total CO (ppbv) along the DC8-Fb-Th Flight plan on 04/08/2008



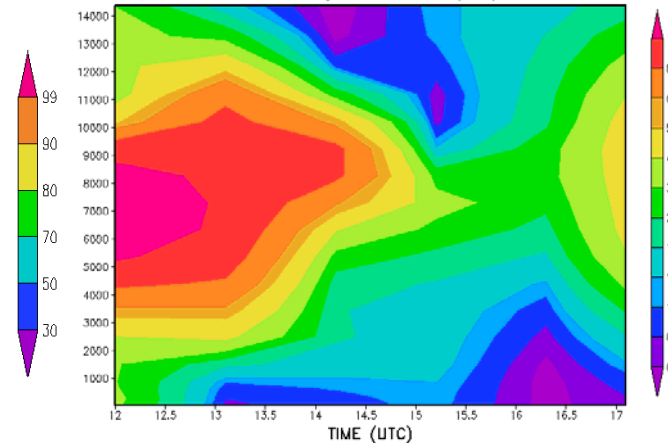
Simulated hg (ng/m³) along the DC8-Fb-Th Flight Path on 04/08/2008



Simulated Relative Humidity(%) along the DC8-Fb-Th Flight Path on 04/08/2008



Simulated Dust (μg/m³) along the DC8-Fb-Th Flight Path on 04/08/2008



Latest Forecast

CORER, University of Iowa

CORER, University of Iowa

The graph displays the Total Aerosol Optical Depth (AOD) as a function of time in GMT. The data points are connected by a solid line, and the y-axis is labeled 'Total_Aerosol_Depth'.

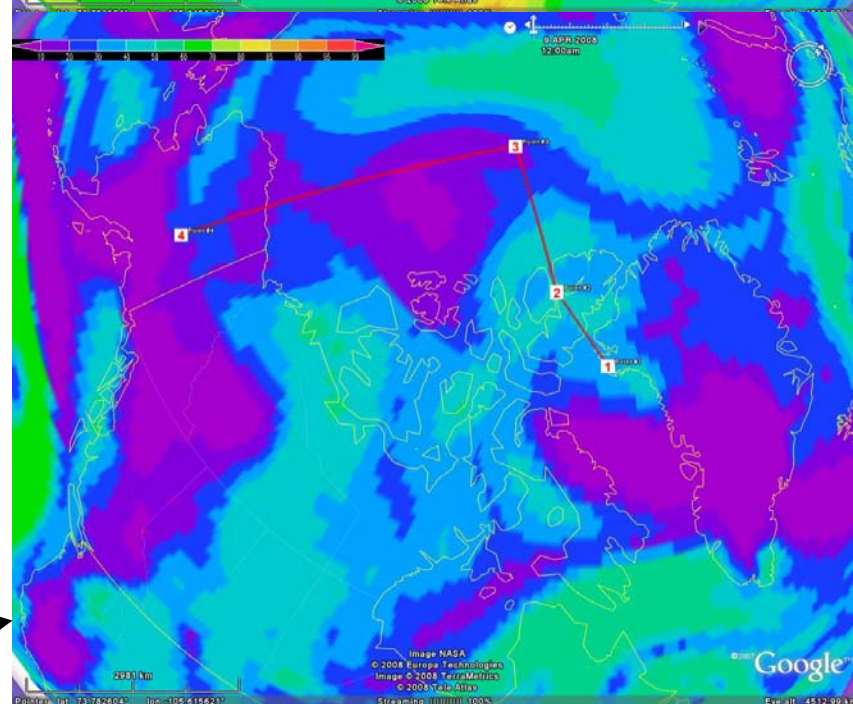
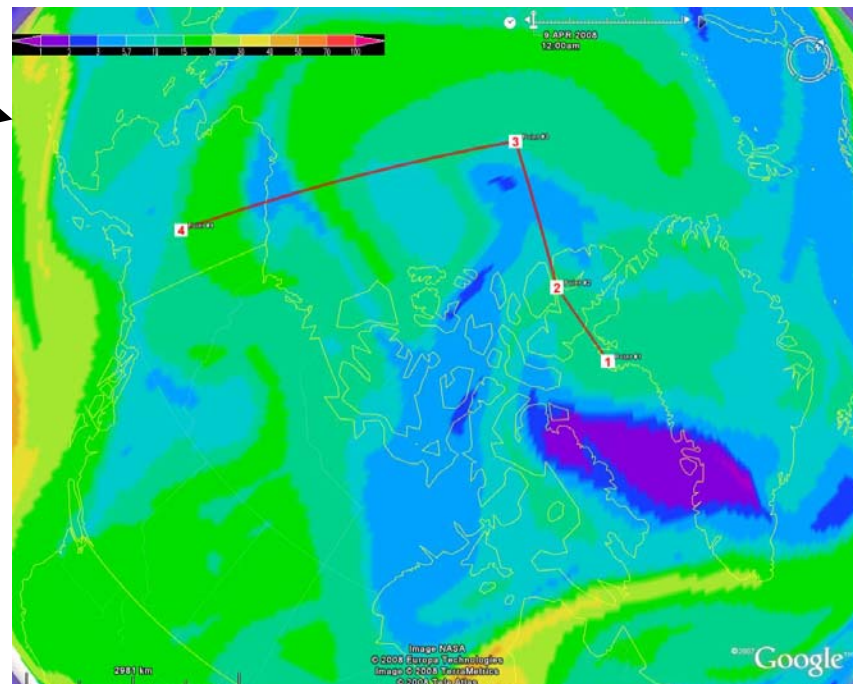
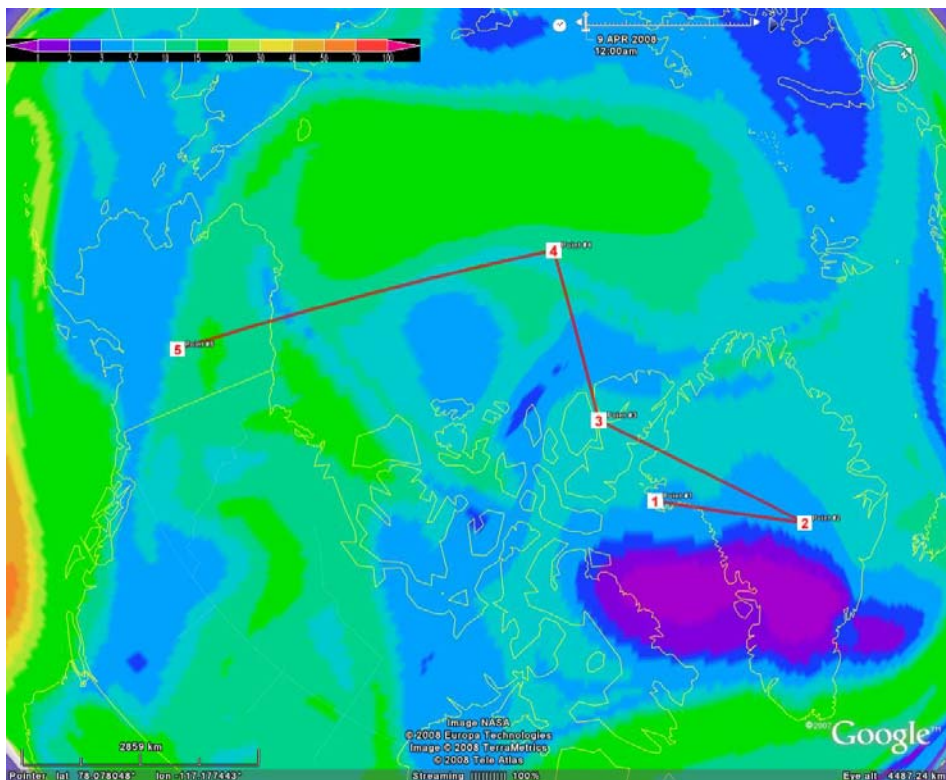
Time (GMT)	Total_Aerosol_Depth
5 APR 2008 00:00	0.095
5 APR 2008 04:00	0.088
5 APR 2008 08:00	0.085
5 APR 2008 12:00	0.090
6 APR 2008 00:00	0.095
6 APR 2008 04:00	0.098
6 APR 2008 08:00	0.090
6 APR 2008 12:00	0.098
7 APR 2008 00:00	0.158
7 APR 2008 04:00	0.218
7 APR 2008 08:00	0.205
7 APR 2008 12:00	0.190
8 APR 2008 00:00	0.225
8 APR 2008 04:00	0.255
8 APR 2008 08:00	0.262
8 APR 2008 12:00	0.228
9 APR 2008 00:00	0.210
9 APR 2008 04:00	0.212
9 APR 2008 08:00	0.195
9 APR 2008 12:00	0.152

CORER, University of Iowa

TIME (GMT)	Total Aerosol Optical Depth
6 APR 2008 00:00	0.095
6 APR 2008 06:00	0.098
6 APR 2008 12:00	0.098
6 APR 2008 18:00	0.095
7 APR 00:00	0.100
7 APR 06:00	0.112
7 APR 12:00	0.138
7 APR 18:00	0.155
8 APR 00:00	0.162
8 APR 06:00	0.170
8 APR 12:00	0.210
8 APR 18:00	0.270
9 APR 00:00	0.200
9 APR 06:00	0.145
9 APR 12:00	0.125
9 APR 18:00	0.125
10 APR 00:00	0.130
10 APR 06:00	0.150
10 APR 12:00	0.170
10 APR 18:00	0.170

For P3 CO-5.5 km

DC8 - and P3 Return 9 April

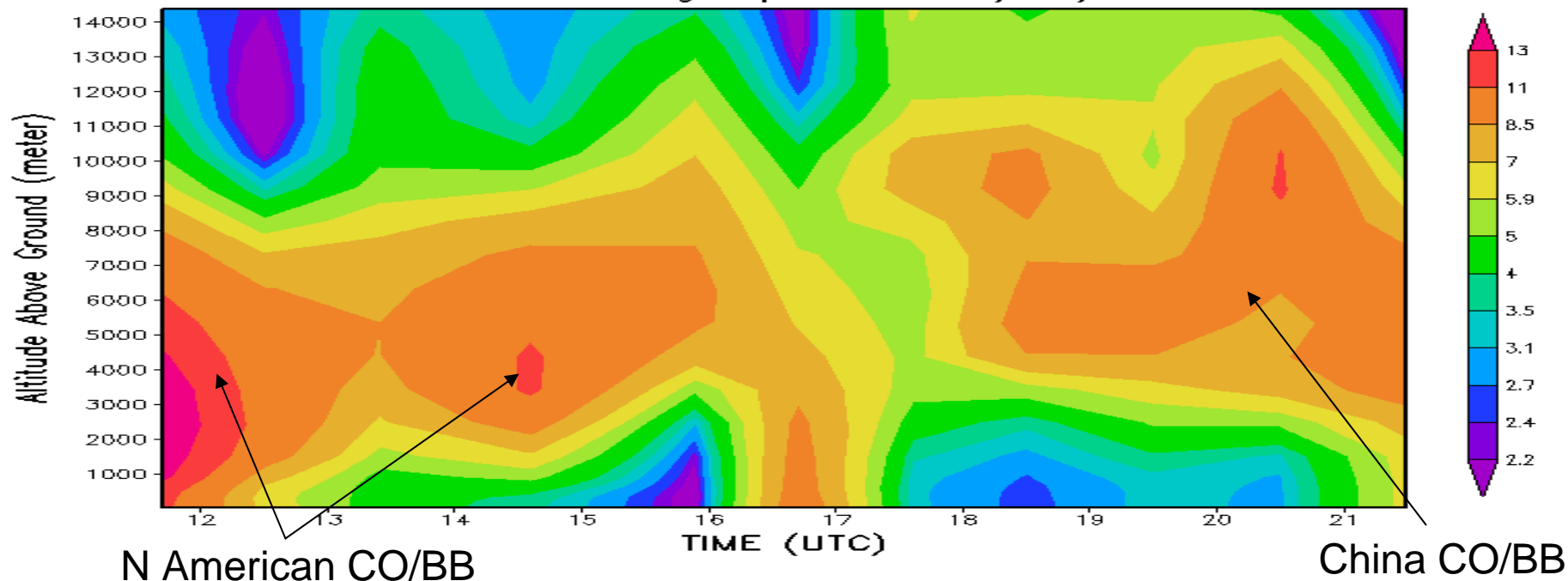


For DC8 – Anthropogenic CO, 8.4 km, 12Z

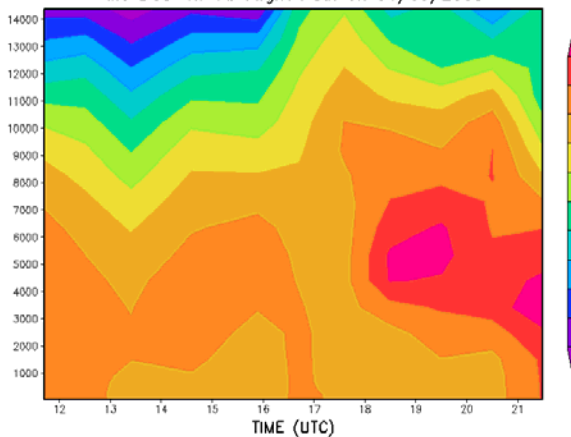
RH-8.4

Thule to FAI for April 9 DC8 Flight Path

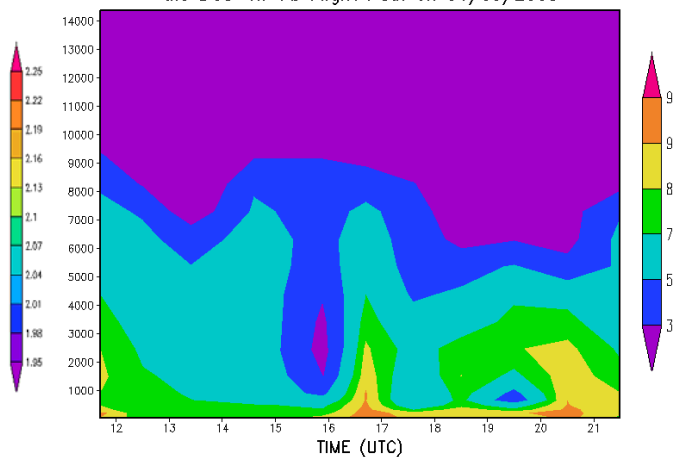
Simulated total CO (ppbv) along the DC8-Th-Fb Flight plan on 04/09/2008



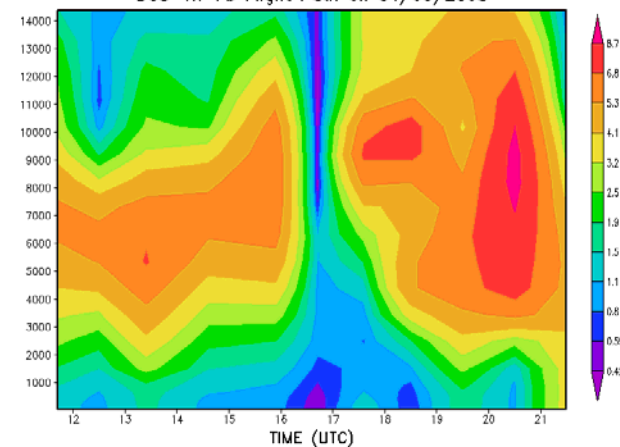
Simulated hg (ng/m³) along the DC8-Th-Fb Flight Path on 04/09/2008



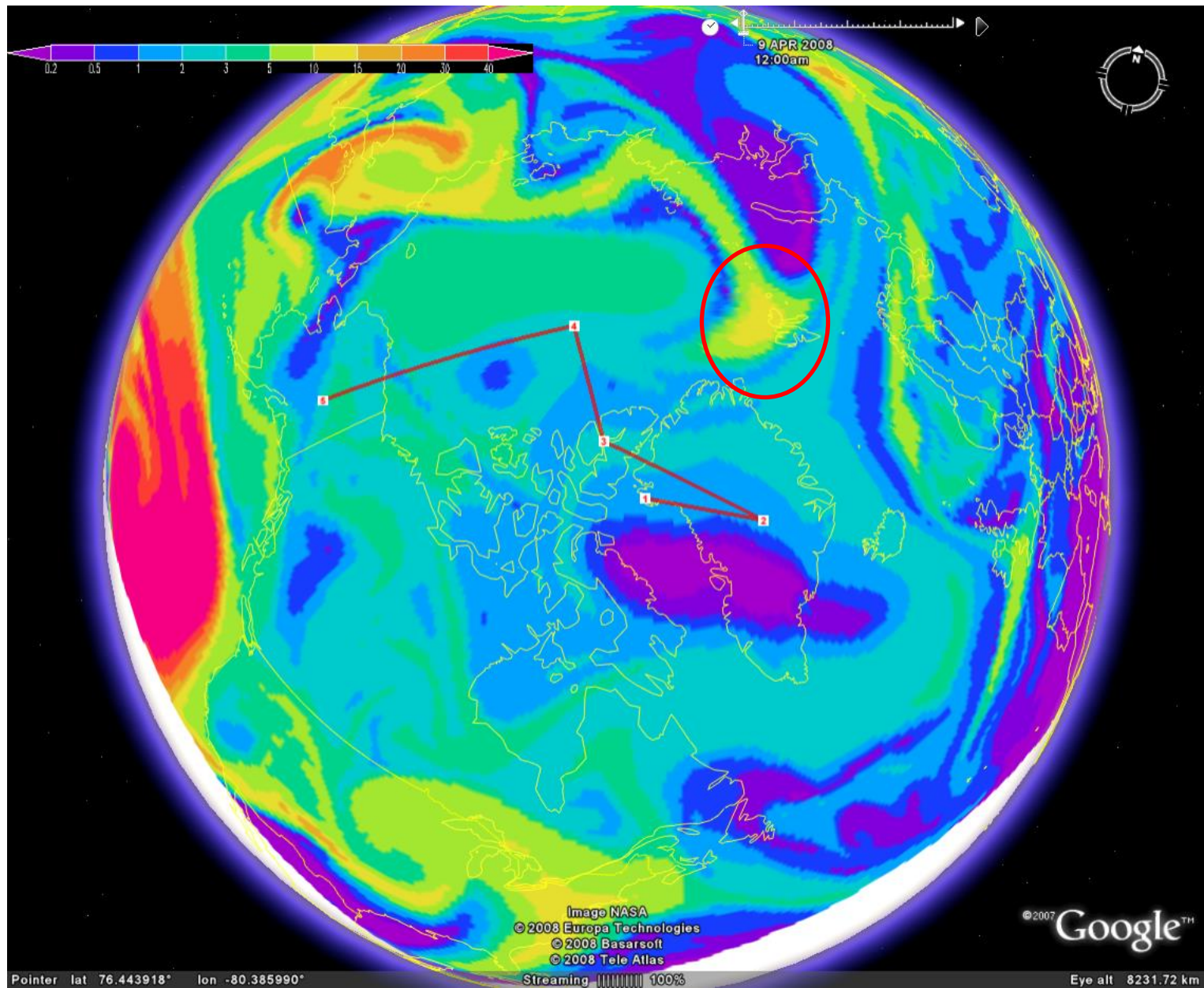
Simulated Relative Humidity(%) along the DC8-Th-Fb Flight Path on 04/09/2008



Simulated Dust (μg/m³) along the DC8-Th-Fb Flight Path on 04/09/2008

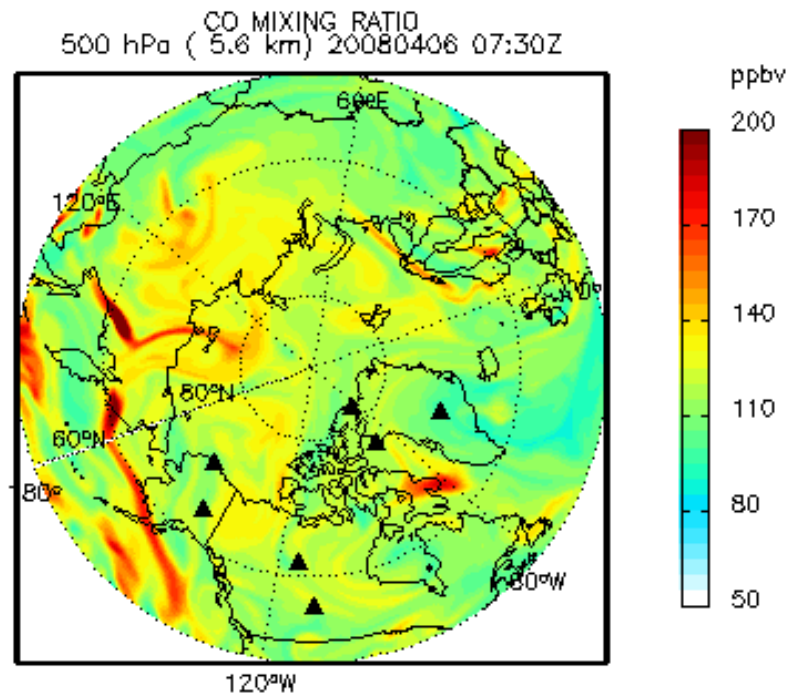


Biomass-CO on the 9th for DC8 ??

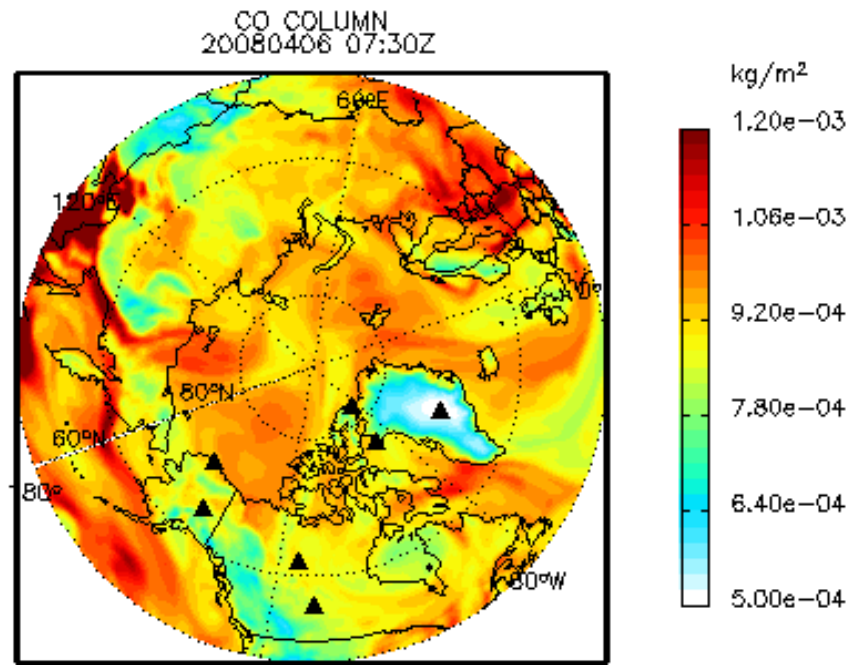


CO evolution: 4/6 – 4/11

500 mb CO

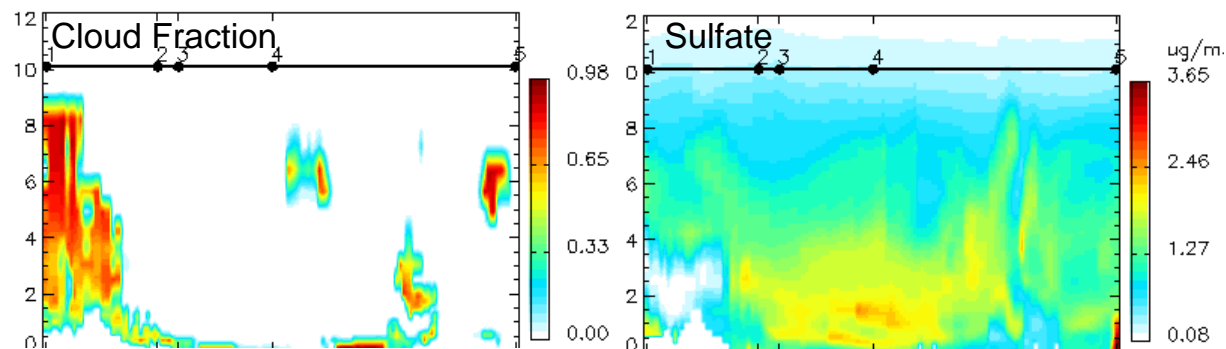
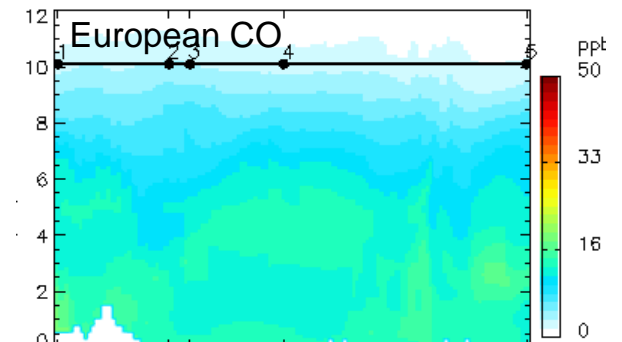
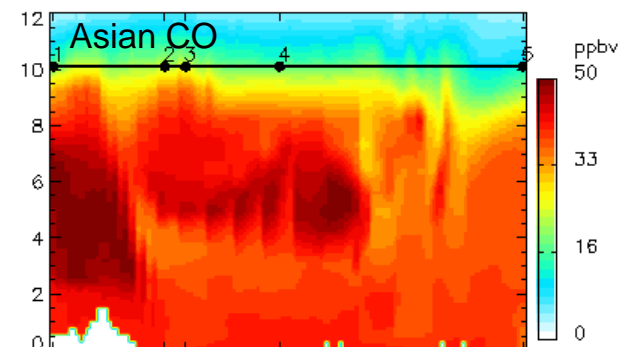
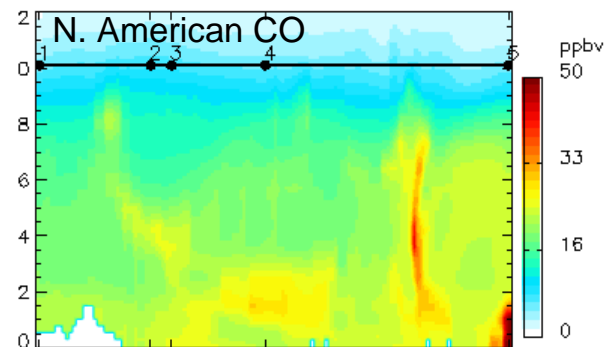
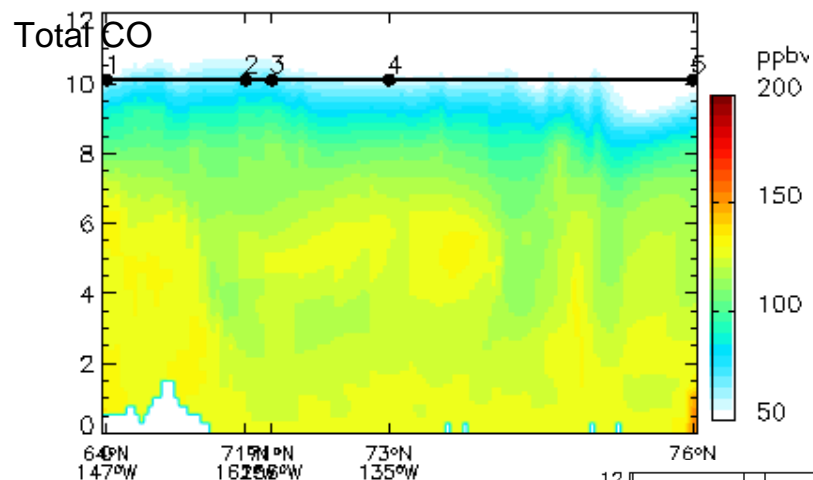
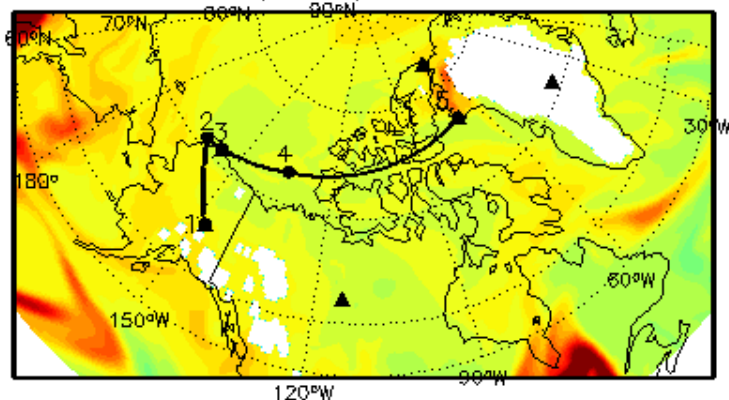


Total CO Column



DC-8 Flight Opportunity 4/8

Total CO



Features:

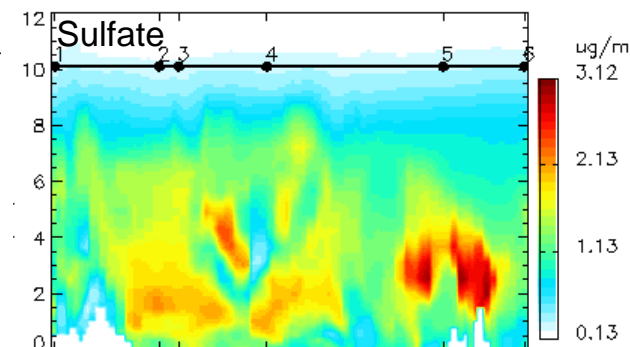
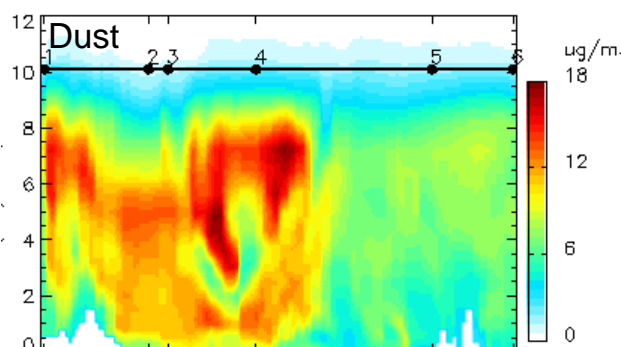
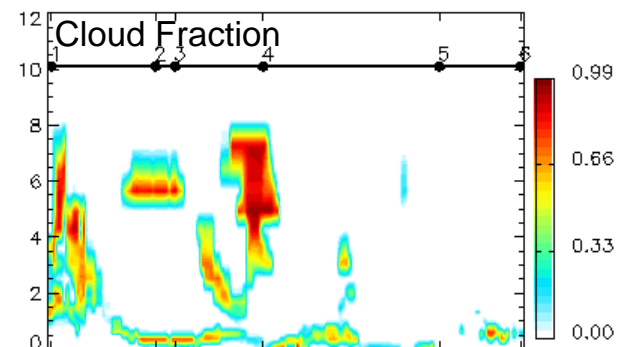
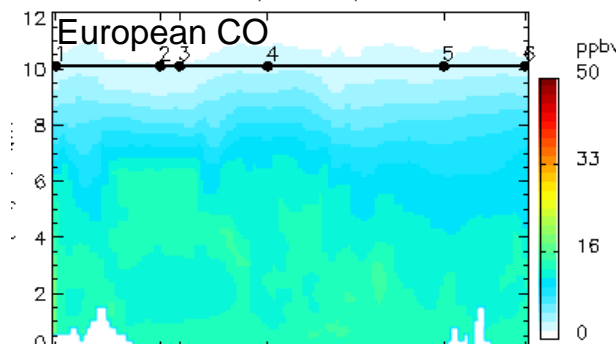
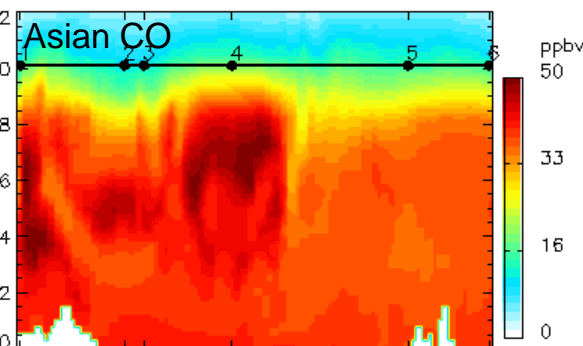
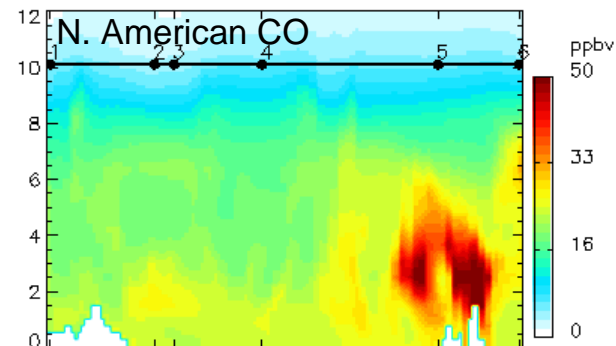
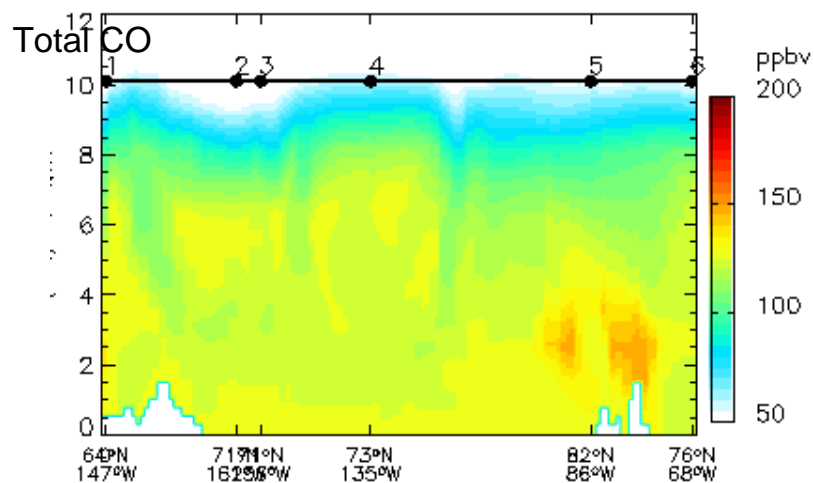
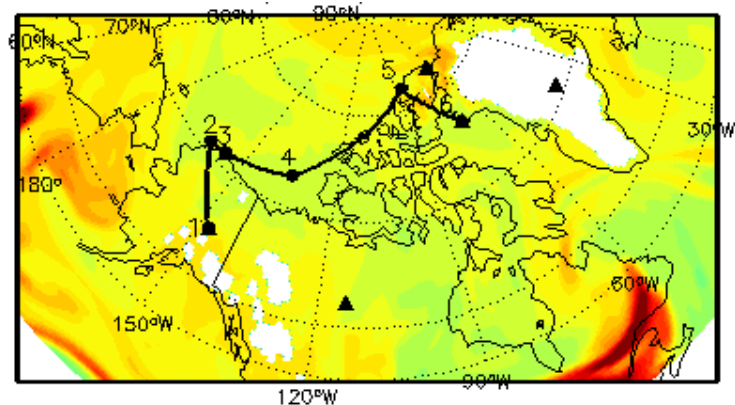
TES track near Barrow

Fair winds (easterly) for BrO at Barrow

Stagnating air near point 4

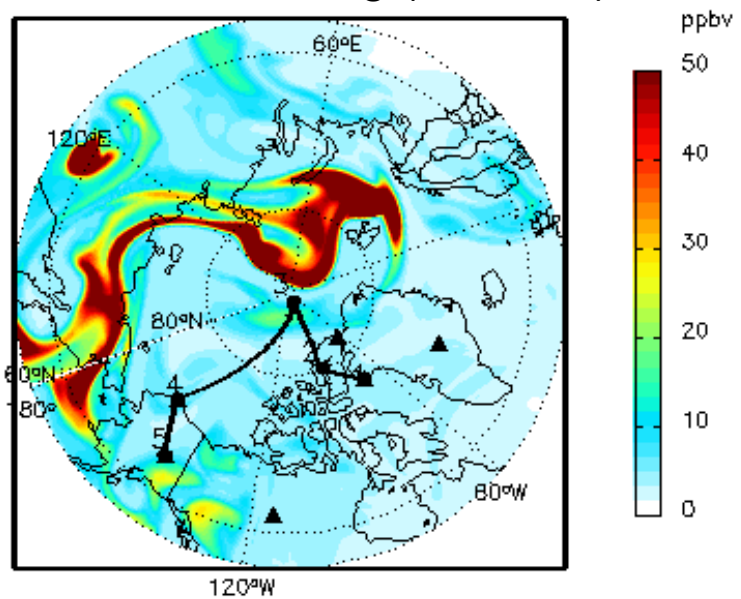
DC-8 Flight Opportunity 4/9

Total CO

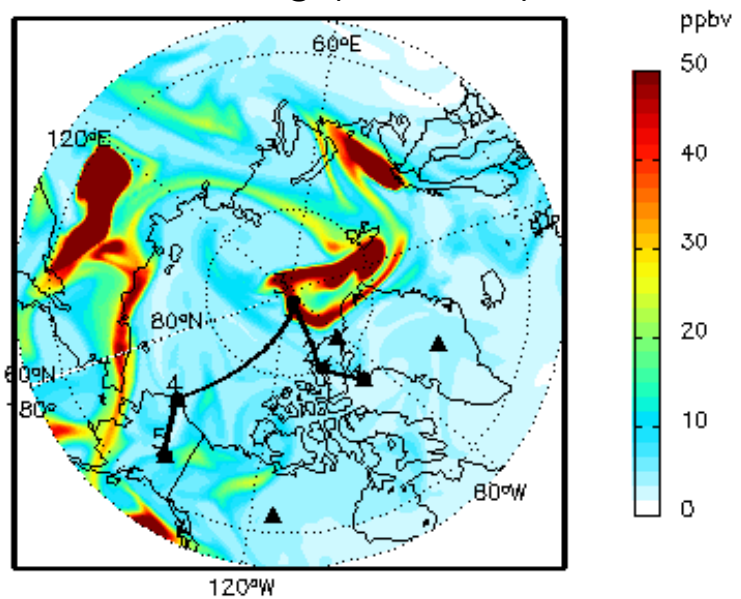


DC8 Thule transit: April 8/9 or 9/10?

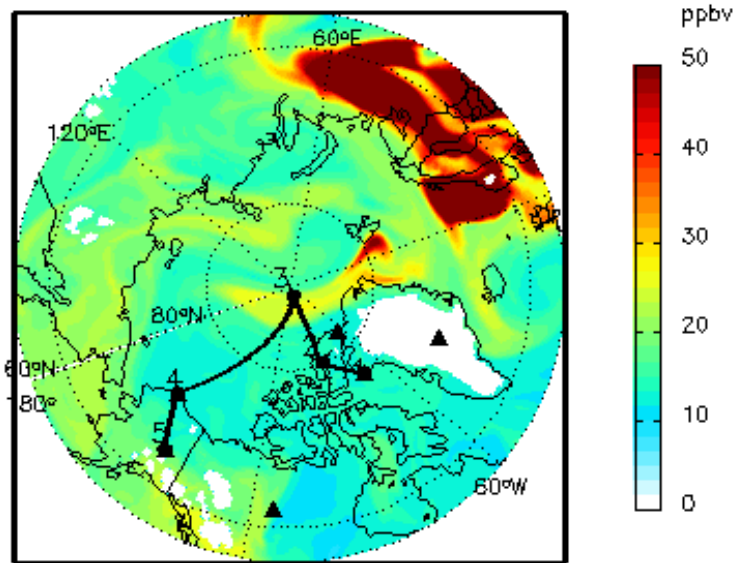
April 9 Boreal burning (500 hPa)



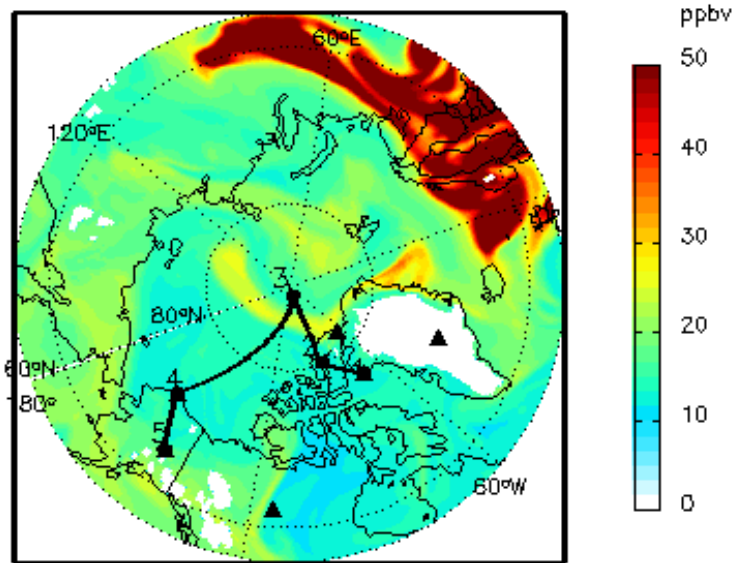
April 10 Boreal burning (500 hPa)



European CO (850 hPa)

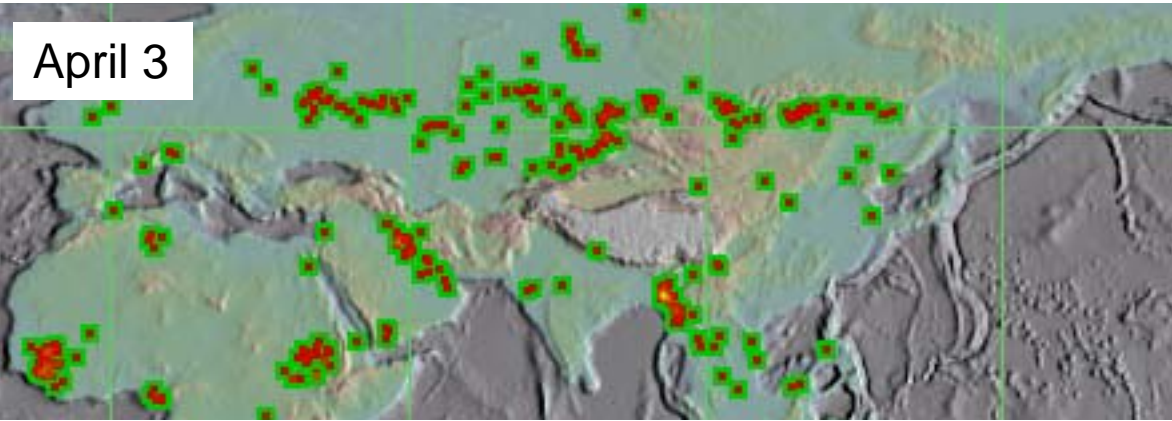


European CO (850 hPa)

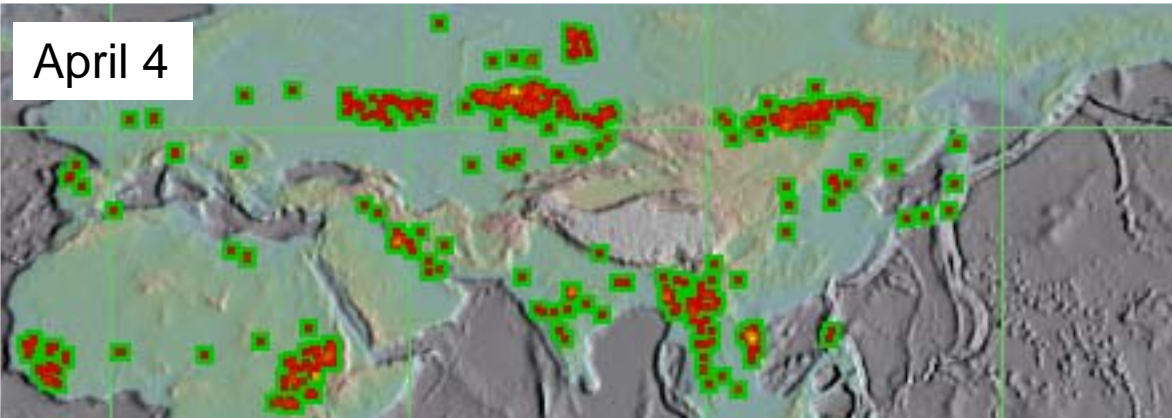


MODIS Hot Spots

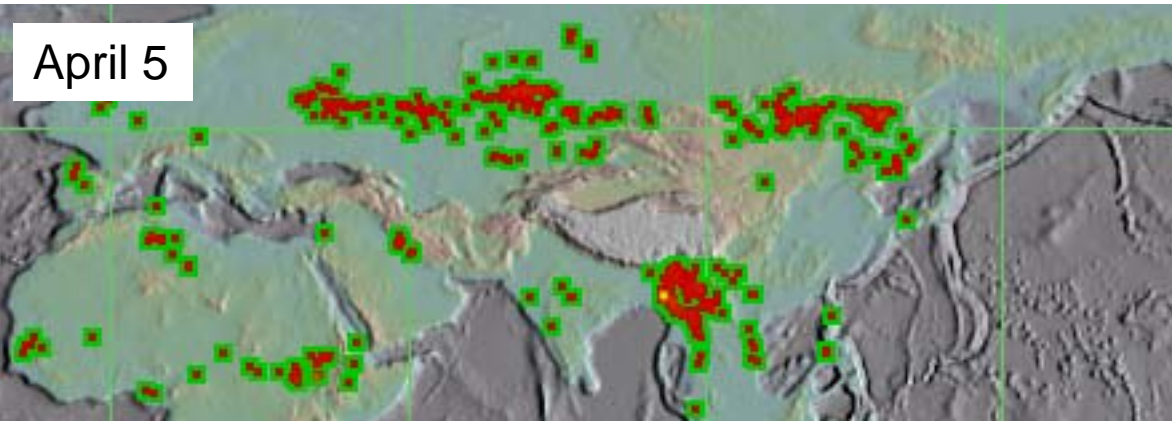
April 3



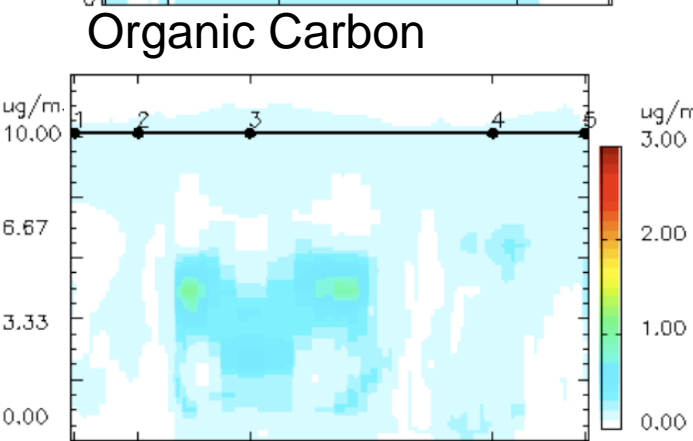
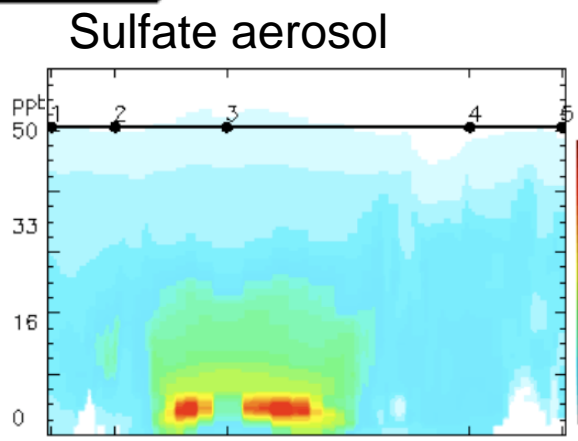
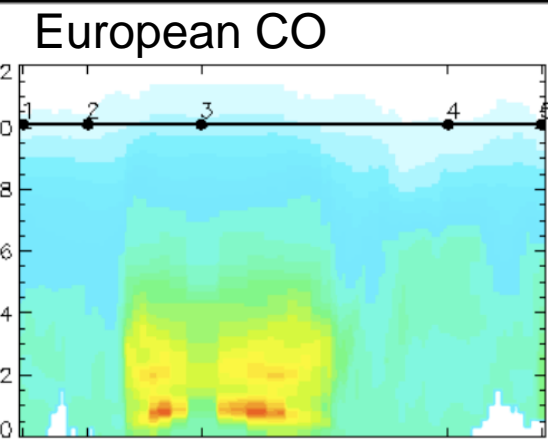
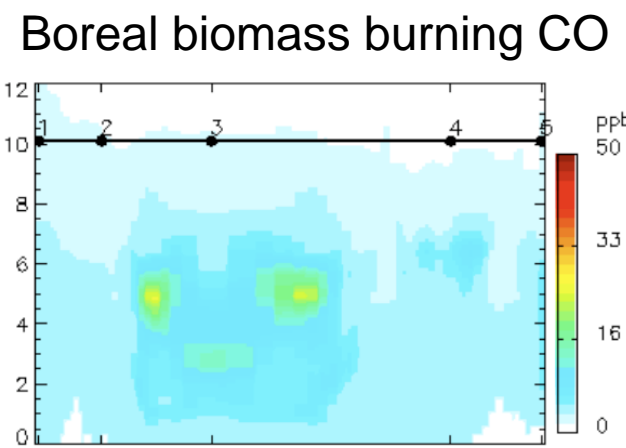
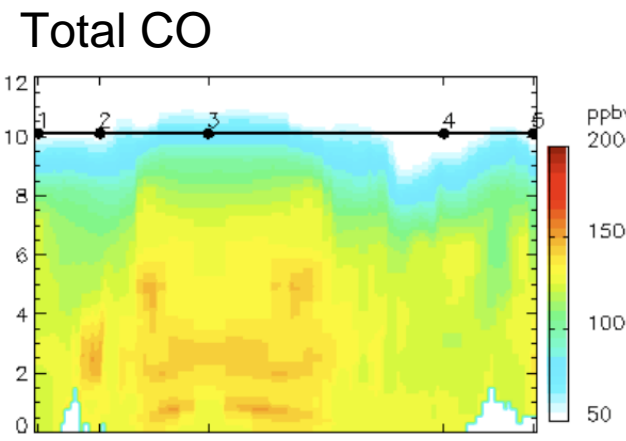
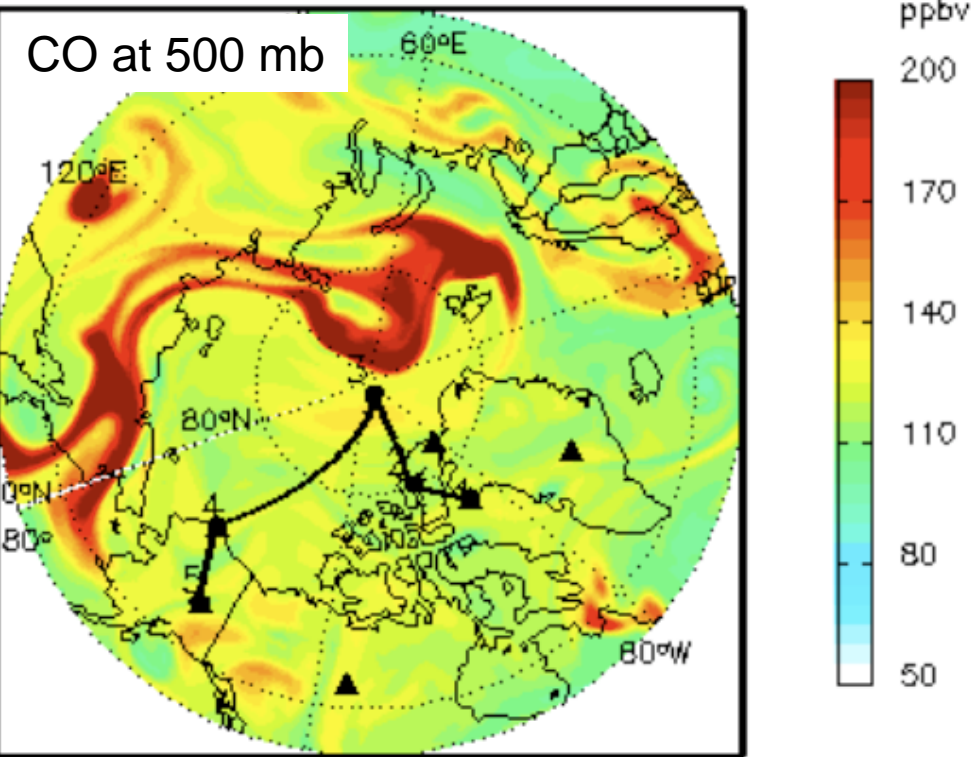
April 4



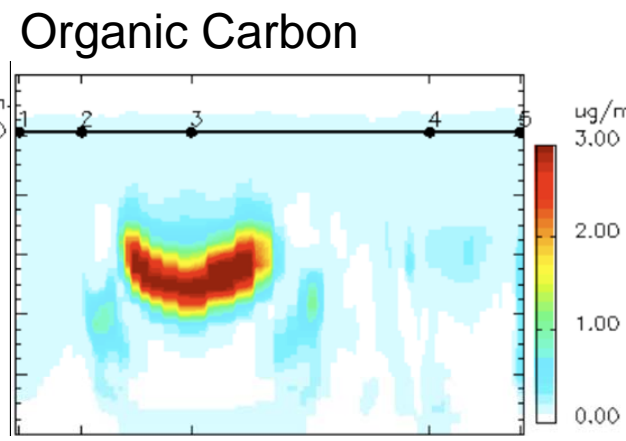
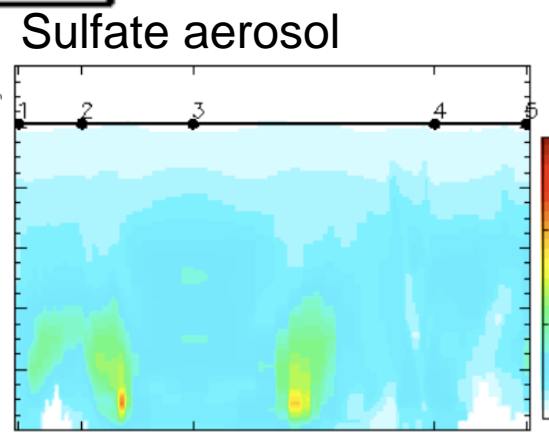
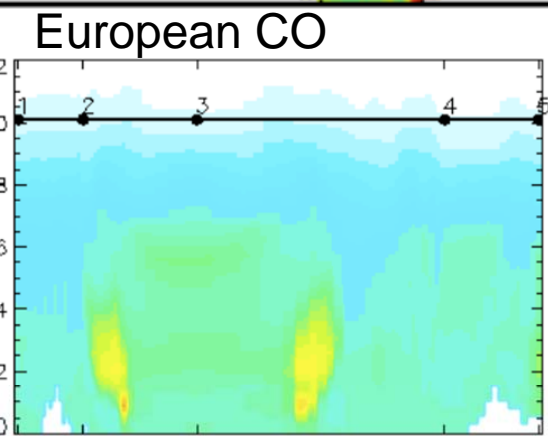
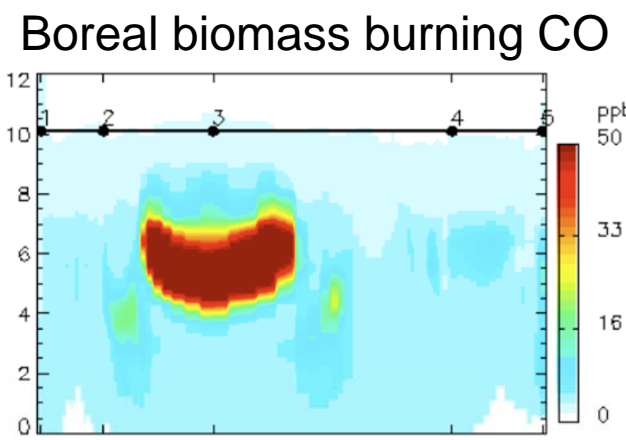
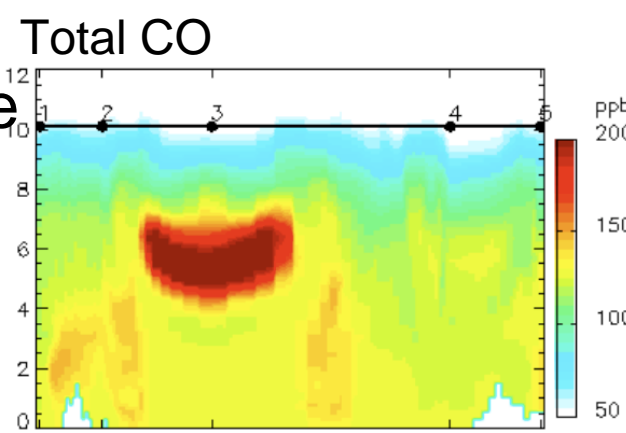
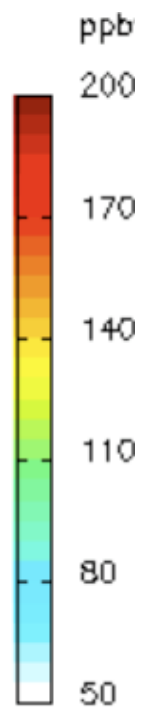
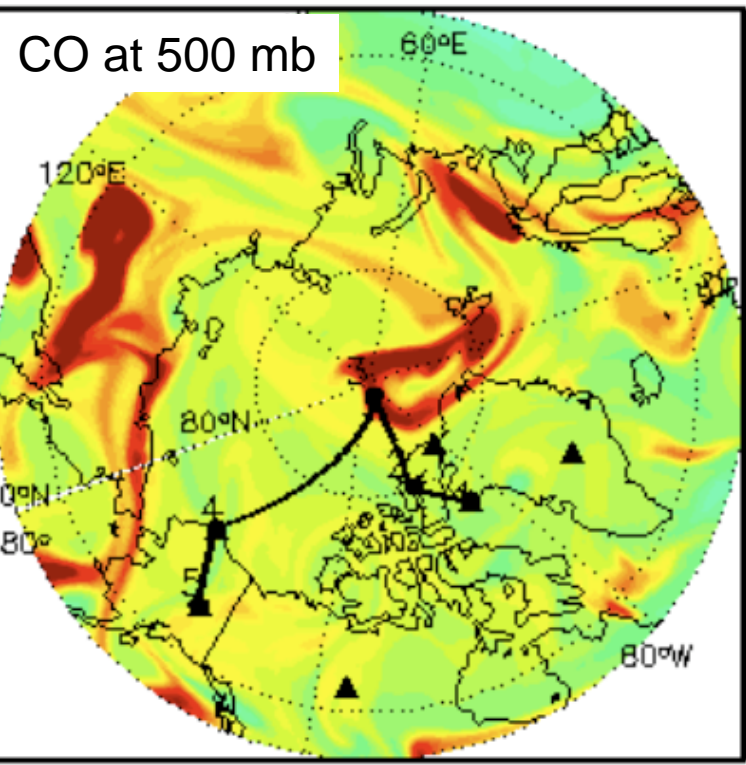
April 5



April 9 return: capture haze but miss boreal biomass burning plume

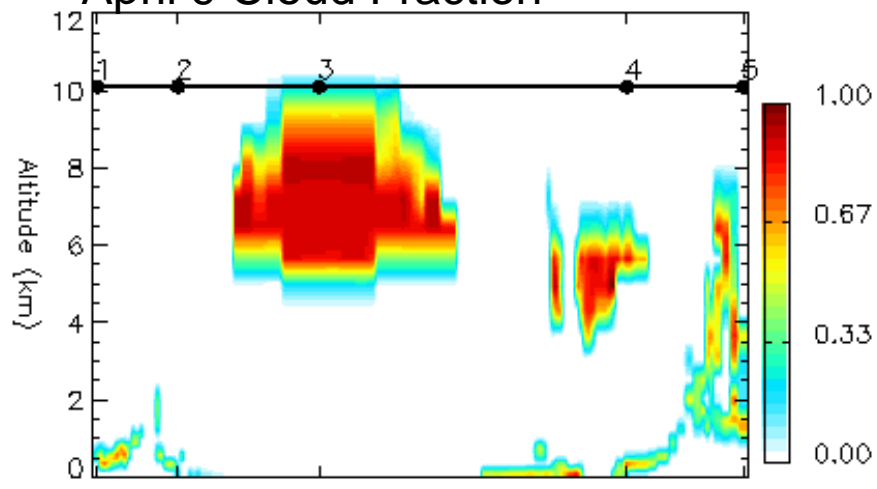


April 10 return: lower levels of haze but
much stronger boreal biomass burning plume

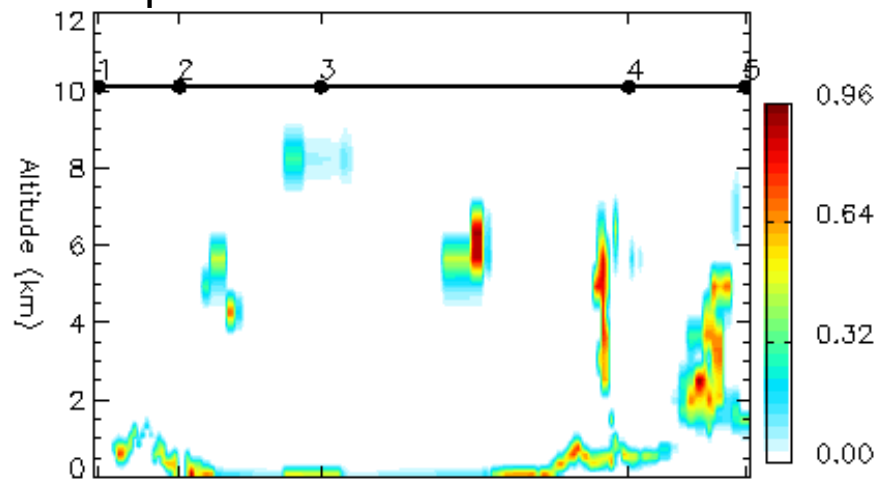


Initialized 20080406 – 06Z

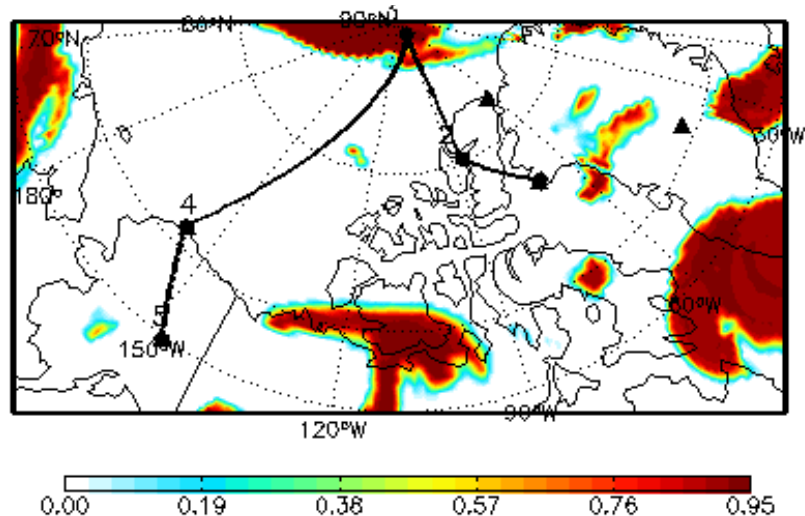
April 9 Cloud Fraction



April 10 Cloud Fraction



April 9 High Clouds



April 10 High Clouds

