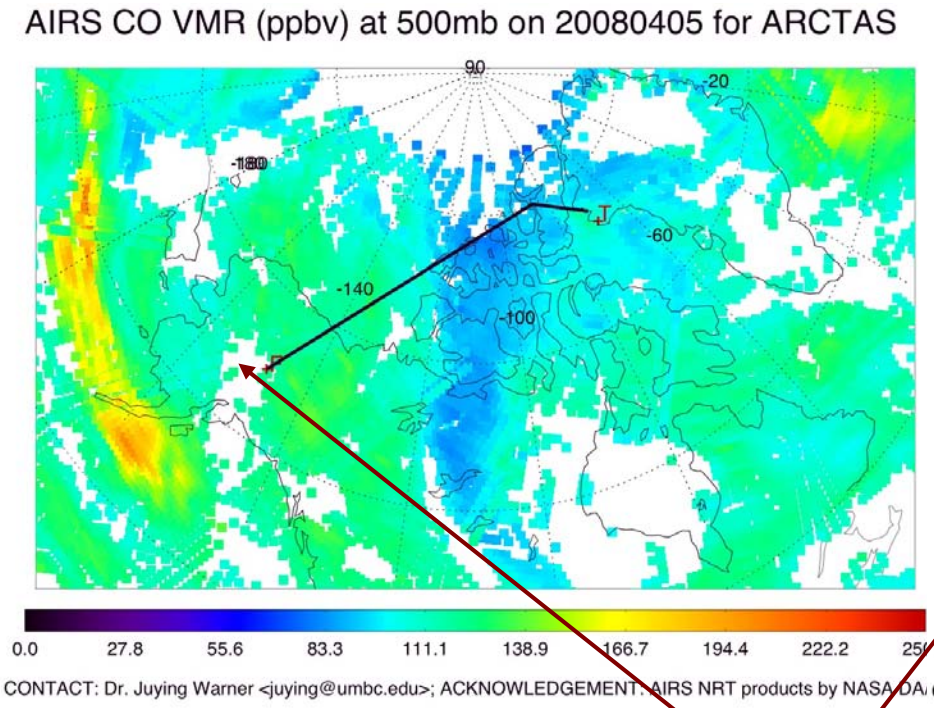
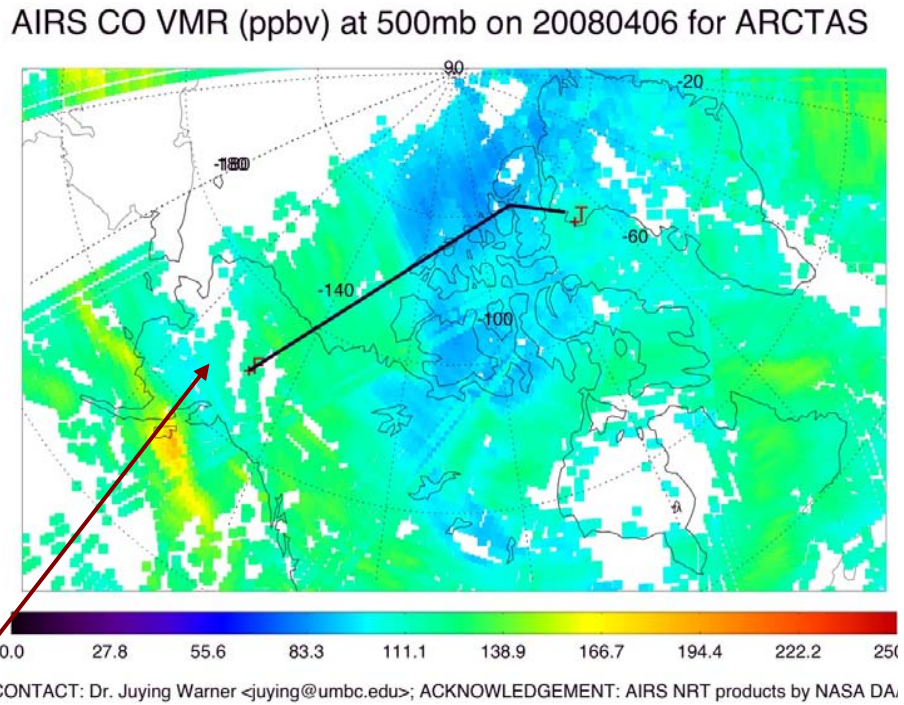
AIRS NRT ARCTAS Support:

Latest AIRS CO

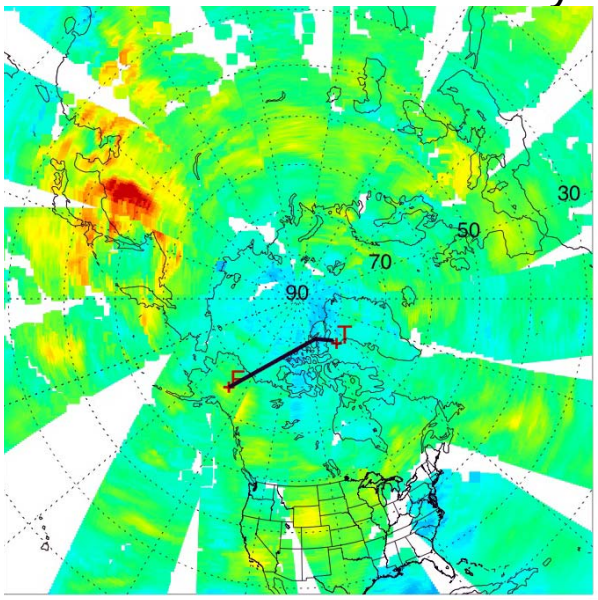




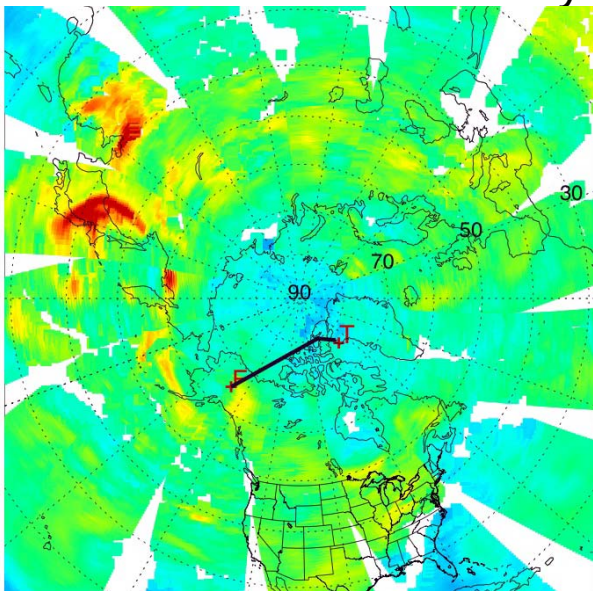
Latest AIRS CO shows cleaner air near Fairbanks based on the nighttime measurements between April 05 and 06.

AIRS NRT ARCTAS Support: Asian Transport Continues

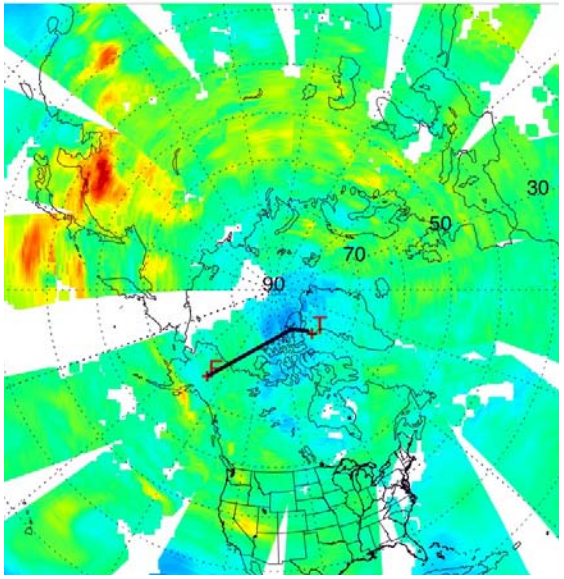
CO 500mb 20080404 day



CO 500mb 20080405 day



CO 500mb 20080406 Full

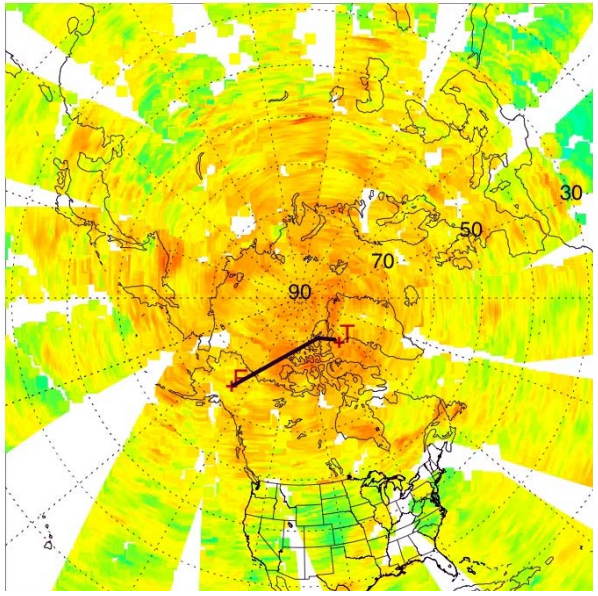


CONTACT: Dr. Juying Warner <juying@umbc.edu>; ACKNOWLEDGEMENT: AIRS NRT products by NASA DAAC

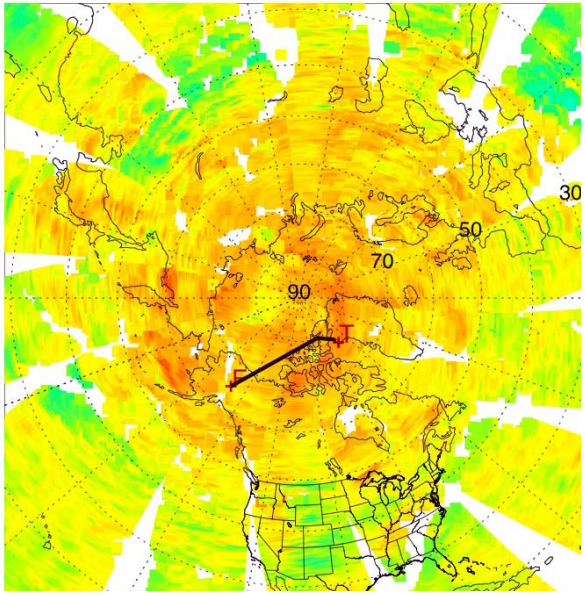
AIRS NRT ARCTAS Support:

CH_4 April 4-6, 08

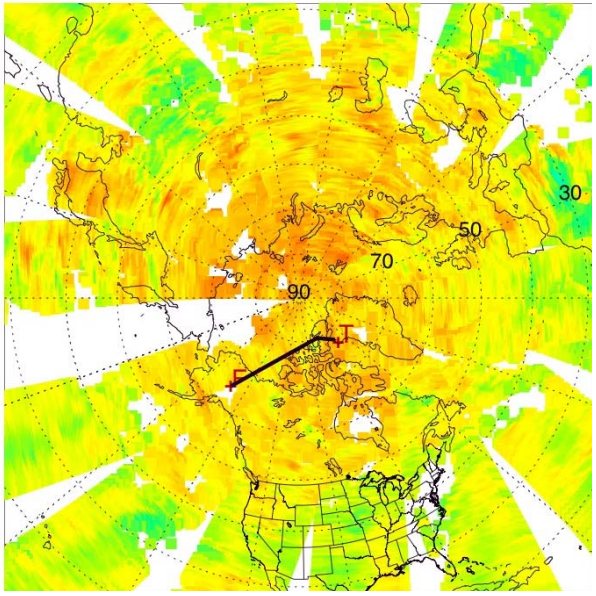
CH_4 500mb 20080404



CH_4 500mb 20080405



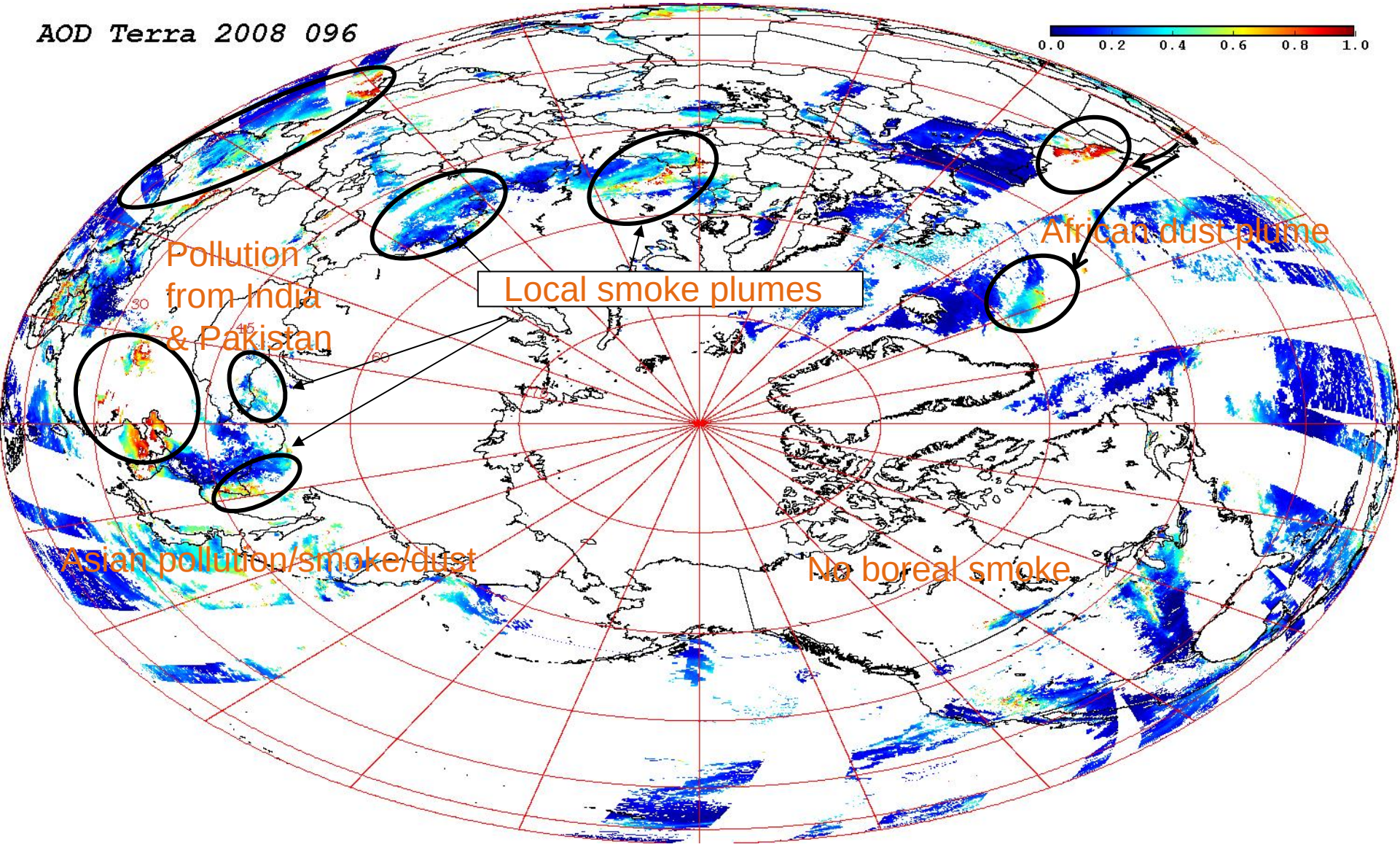
CH_4 500mb 20080406



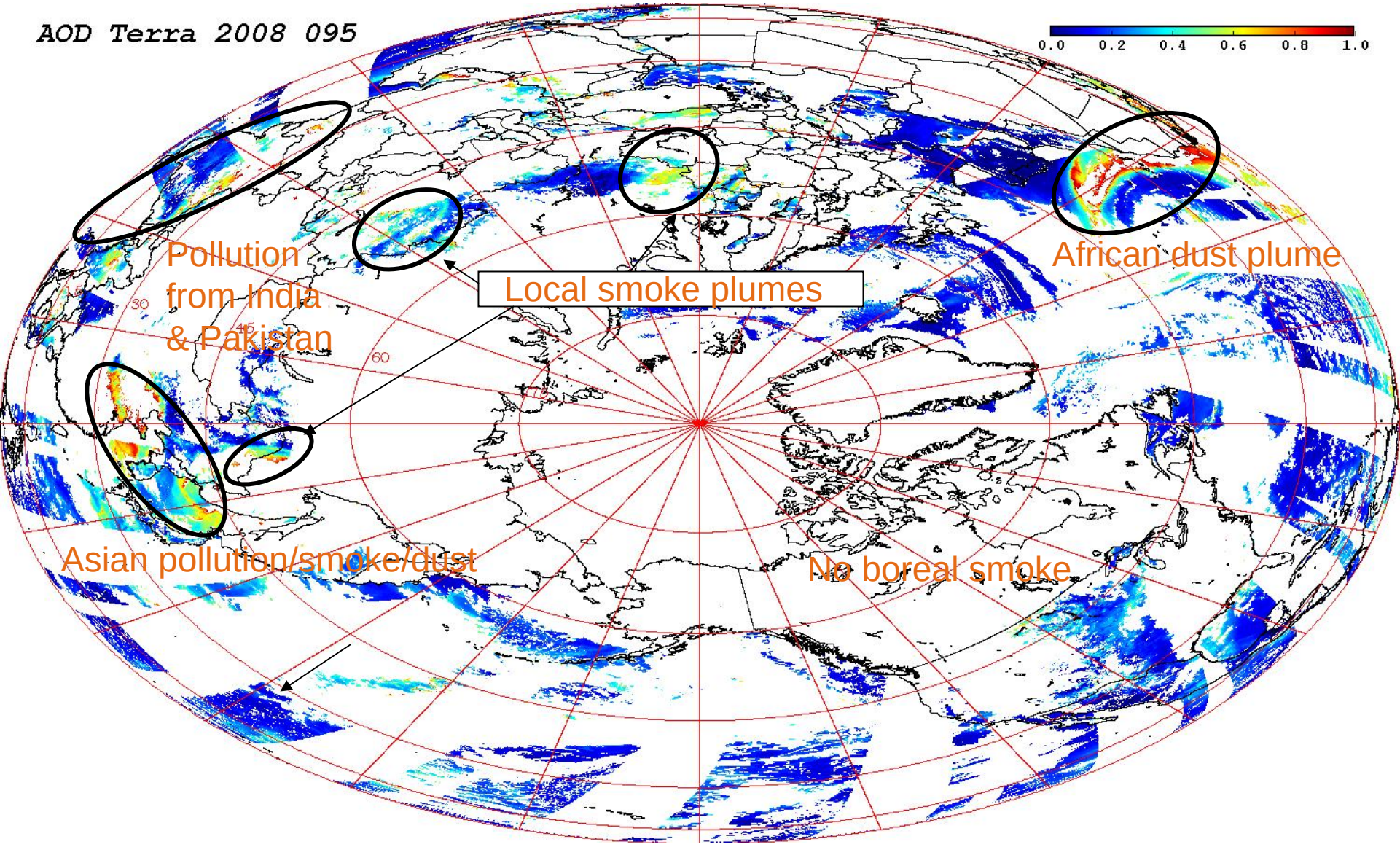
CONTACT: Dr. Juying Warner <juying@umbc.edu>; ACKNOWLEDGEMENT: AIRS NRT products by NASA DAAC

- CH4 concentrations consistently high at 500mb over the Arctic.
- AIRS CH_4 needs validation with ARCTAS measurements.

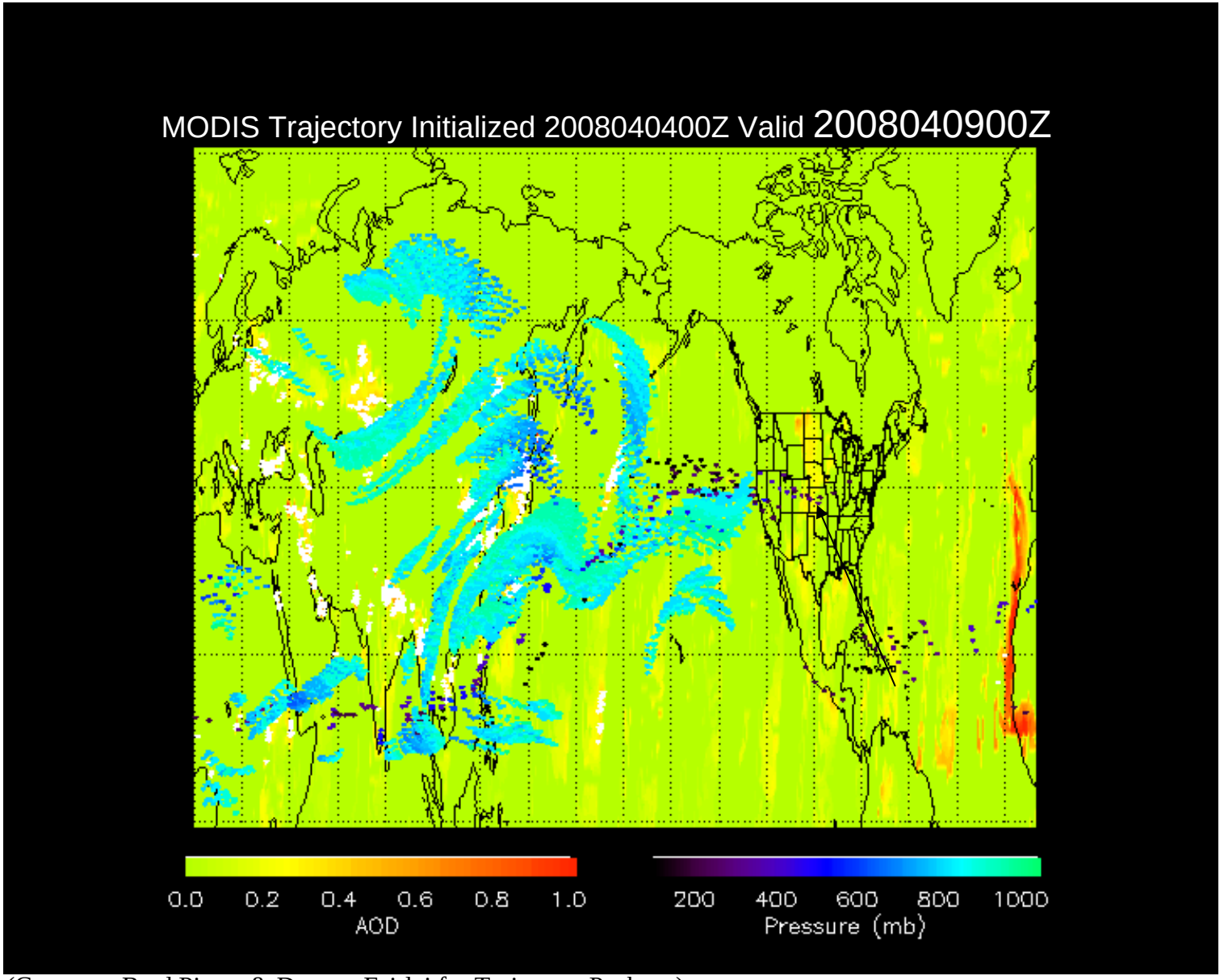
MODIS AOD Hot Spots in Northern Hemisphere (0° - 90°N)



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

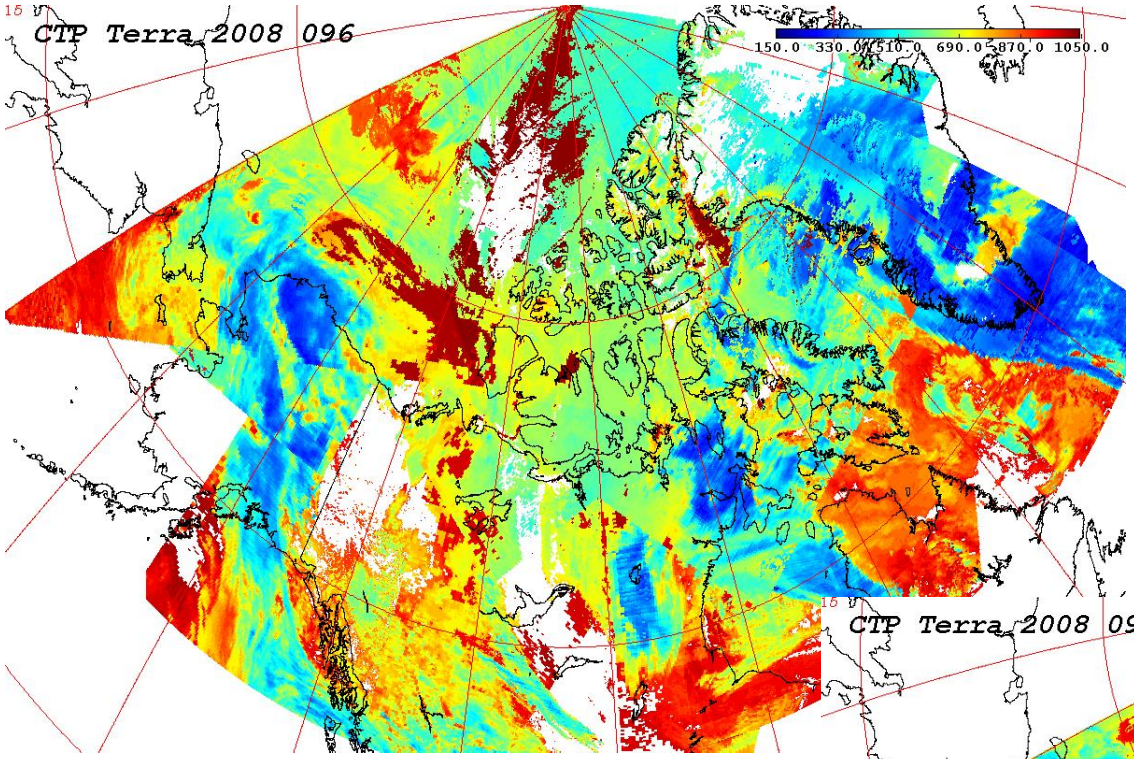


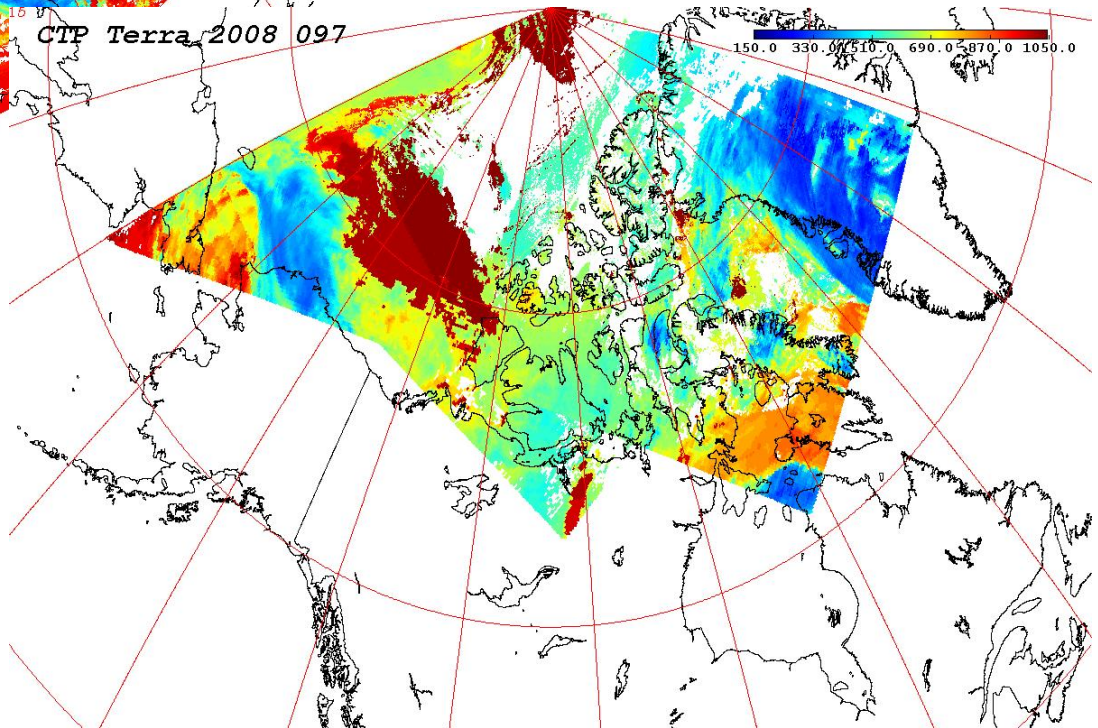
Aerosol Trajectory Based Upon MODIS AOD and GEOS-5 Winds



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

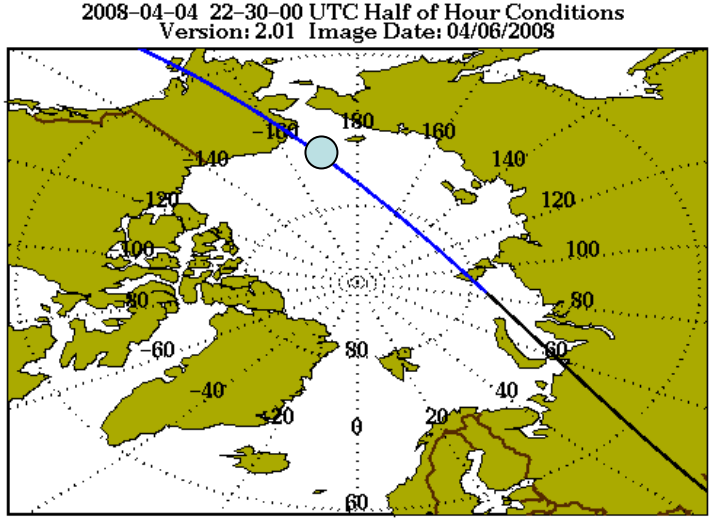
MODIS Cloud Top Pressure



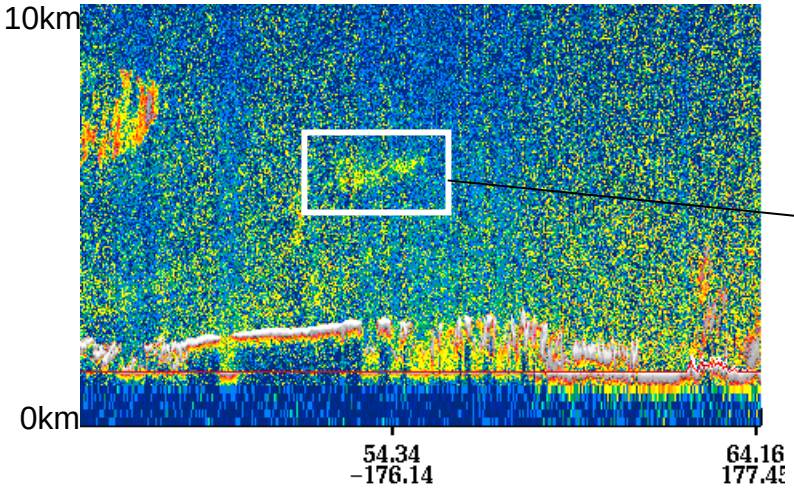


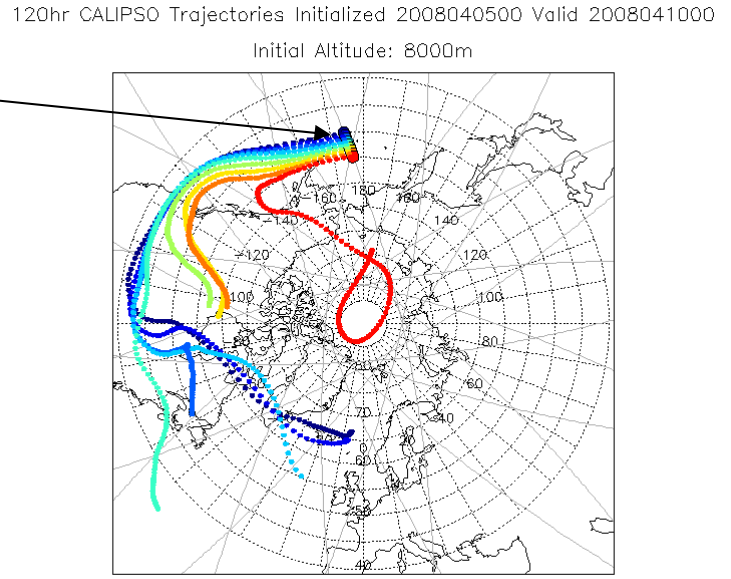
CALIPSO Observations
4 April 2008

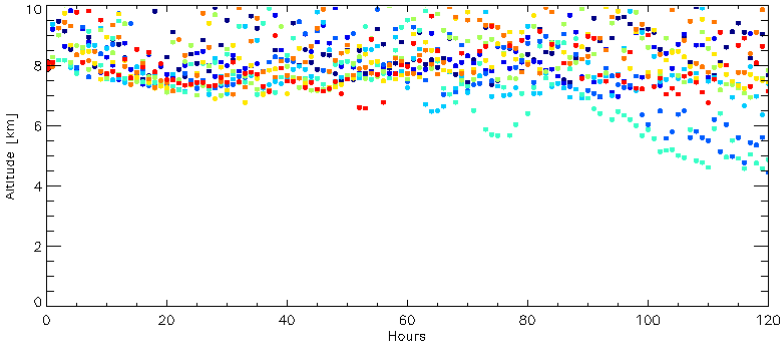
04 April 2230Z



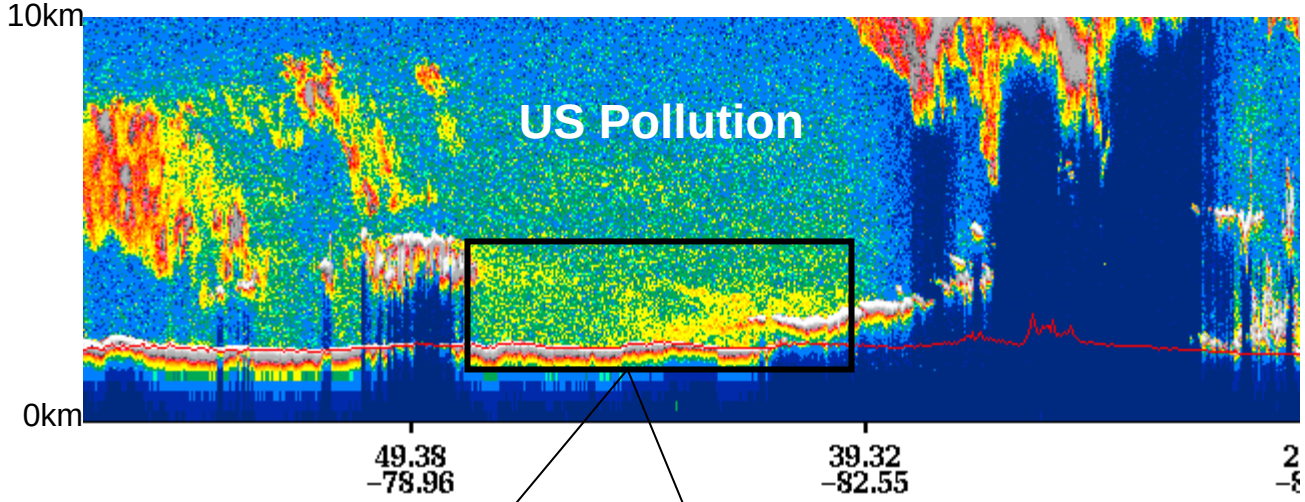
CALIPSO Obs 04/05

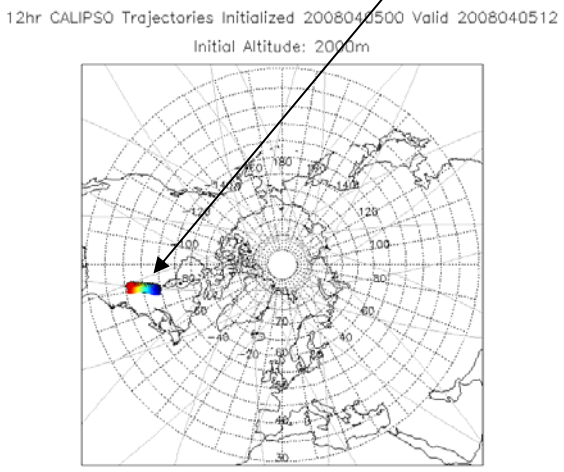


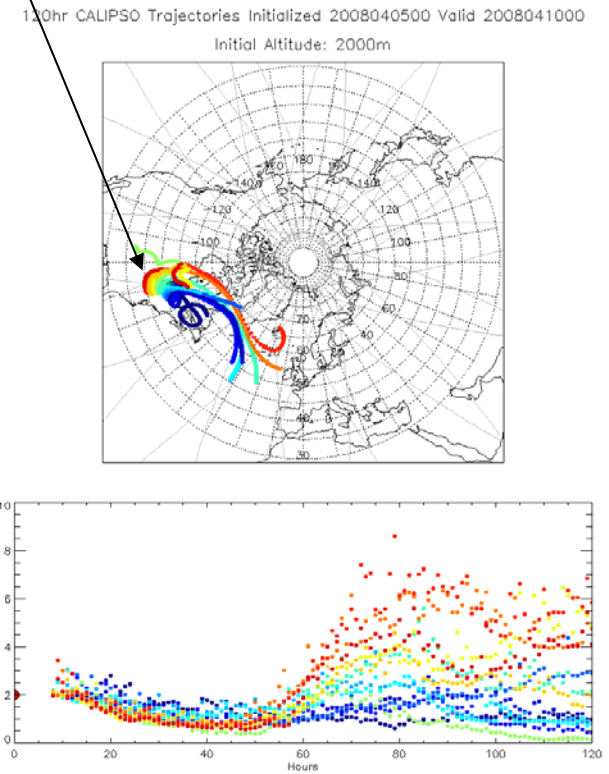




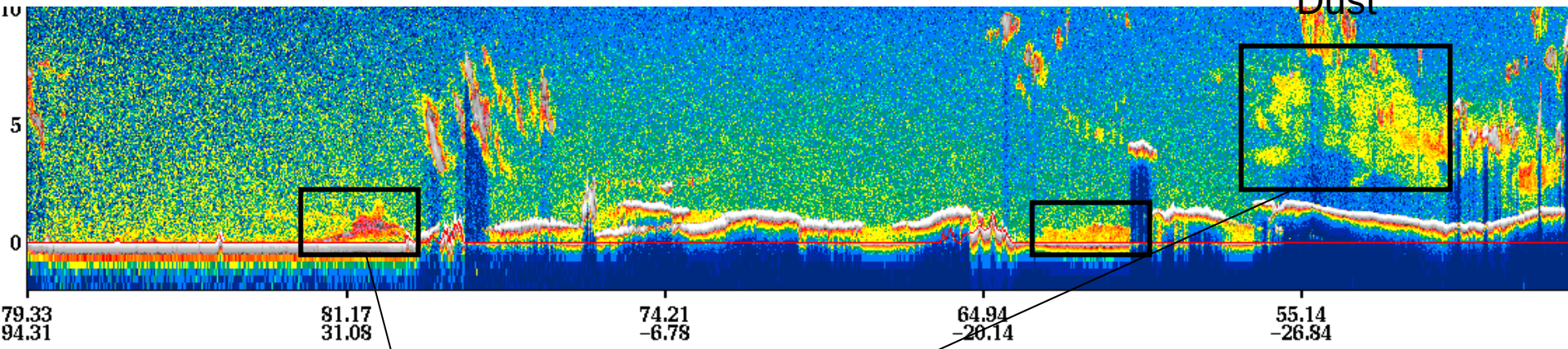
CALIPSO Obs 04/05

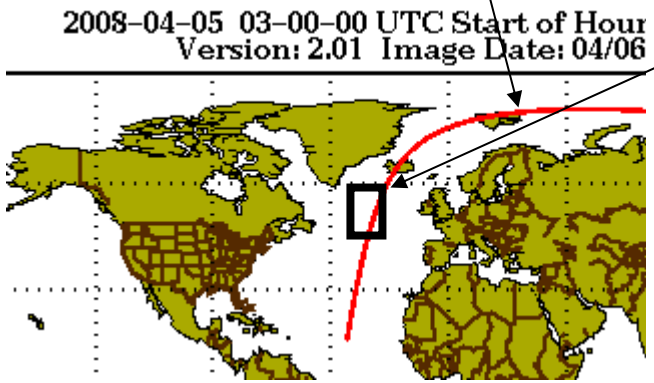


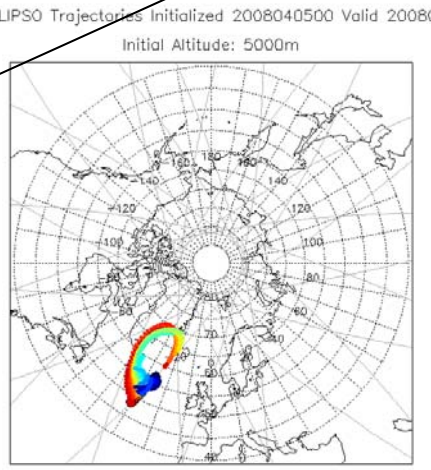


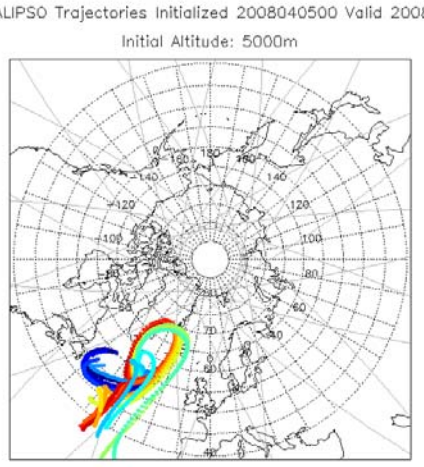


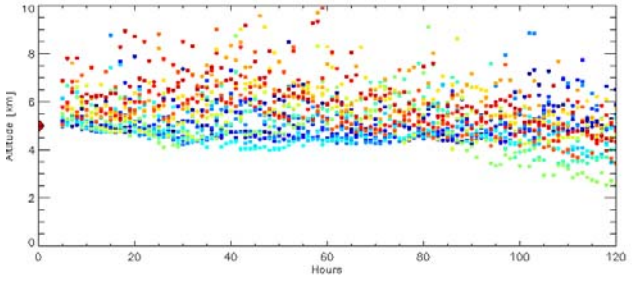
CALIPSO Obs 04/05



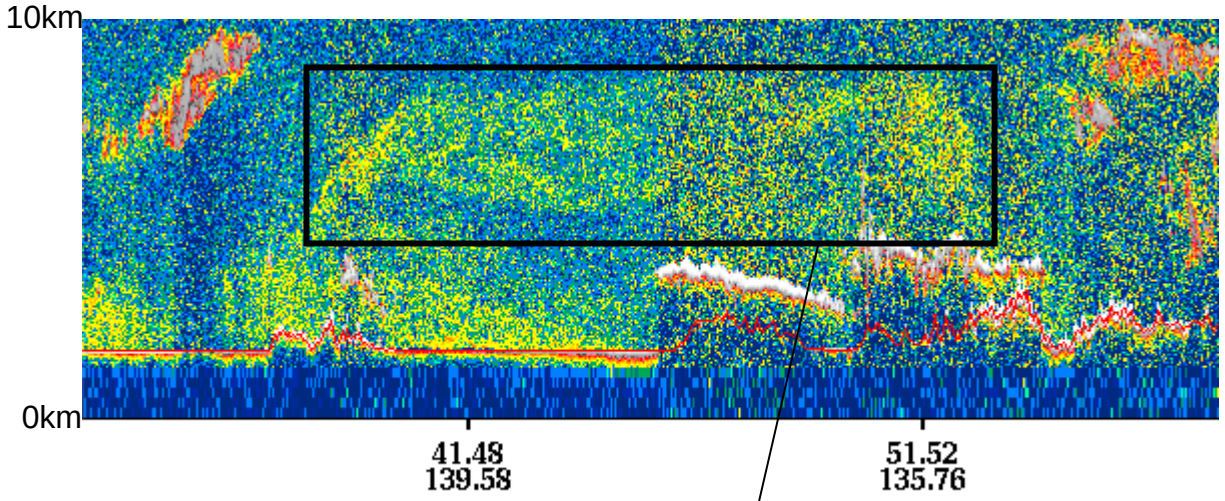


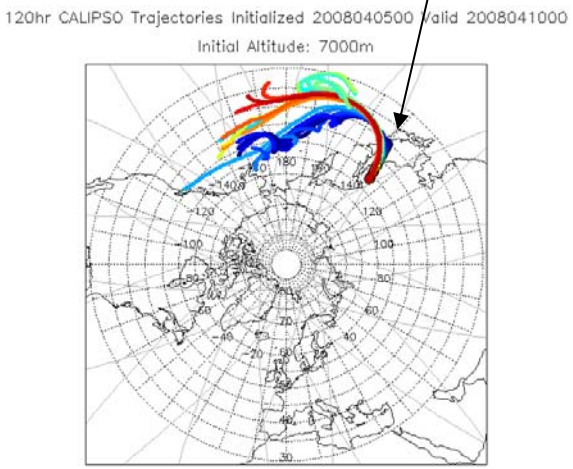


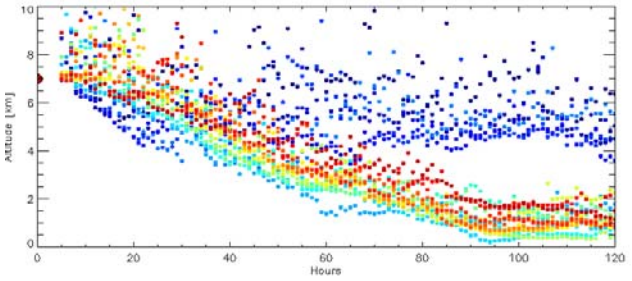




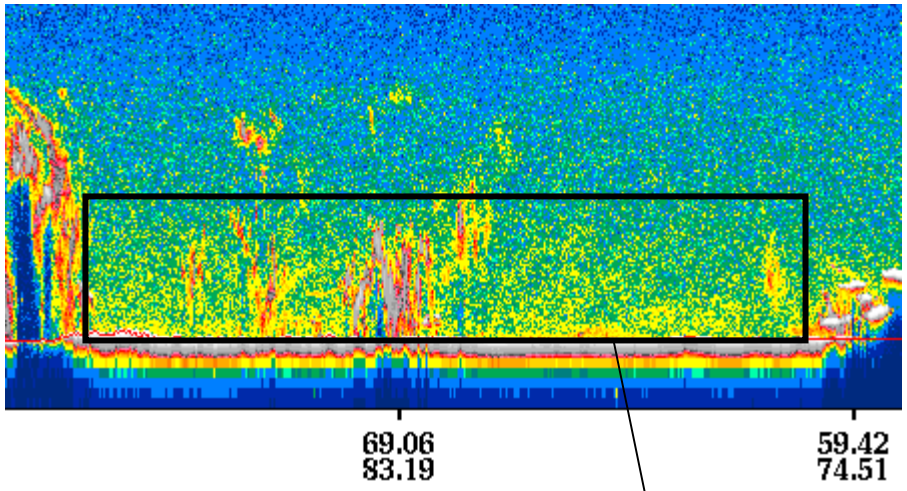
CALIPSO Obs 04/05

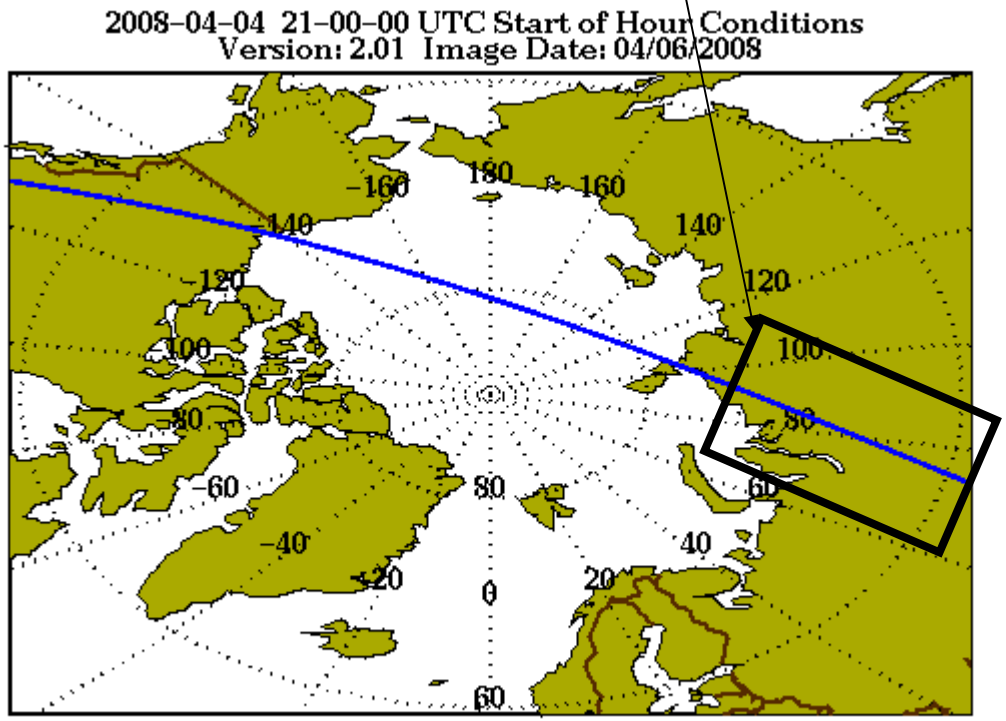






CALIPSO Obs 04/04





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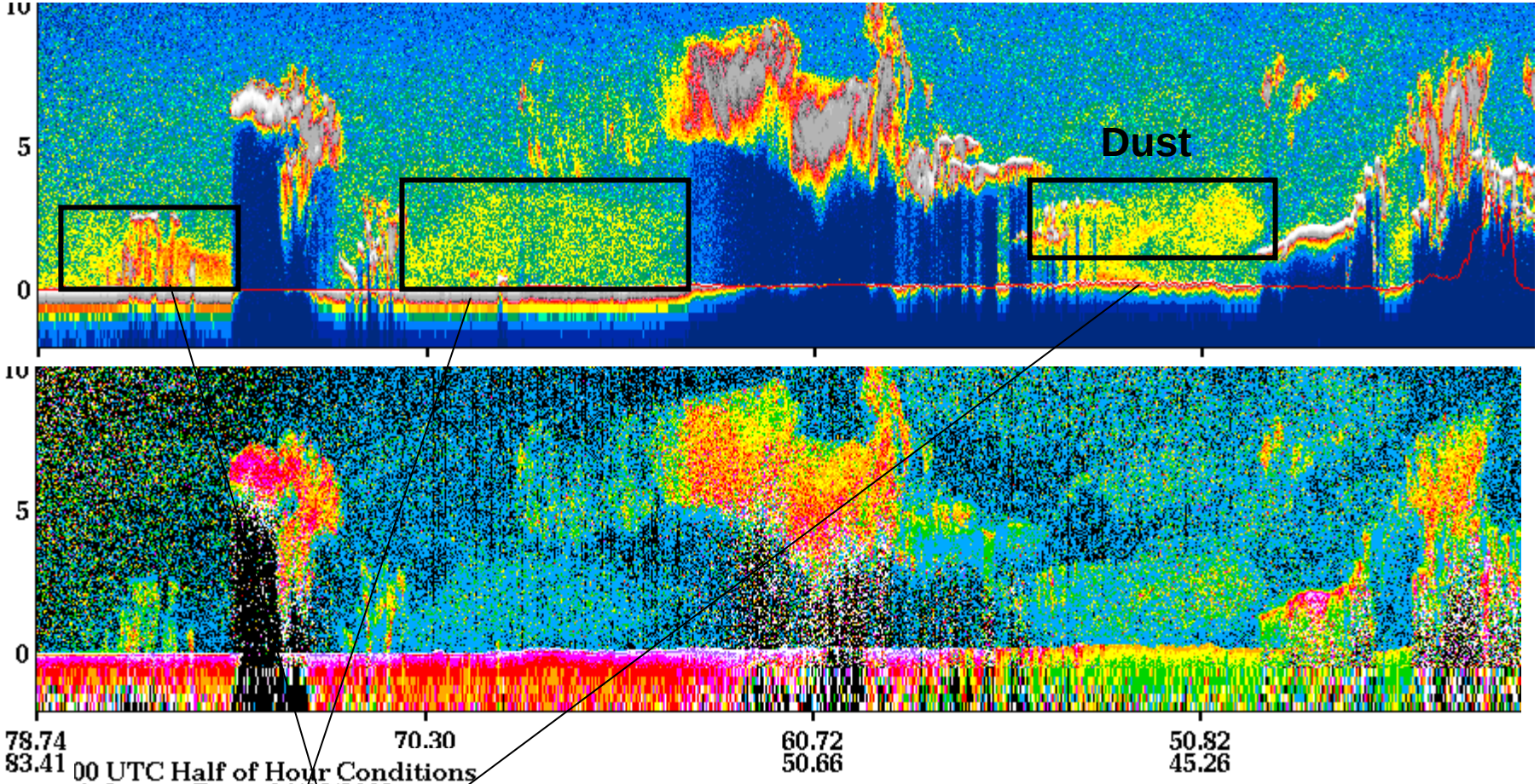
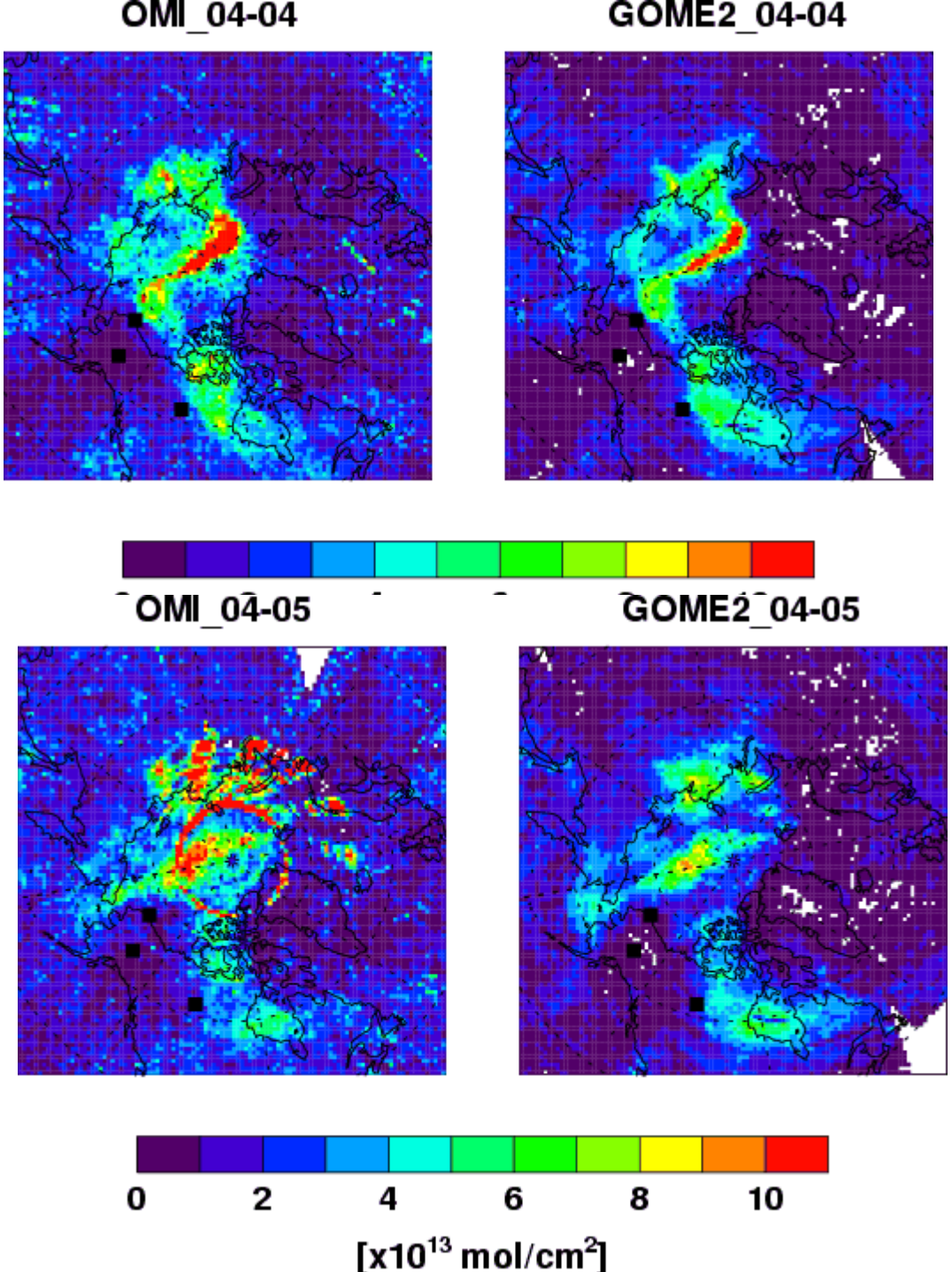
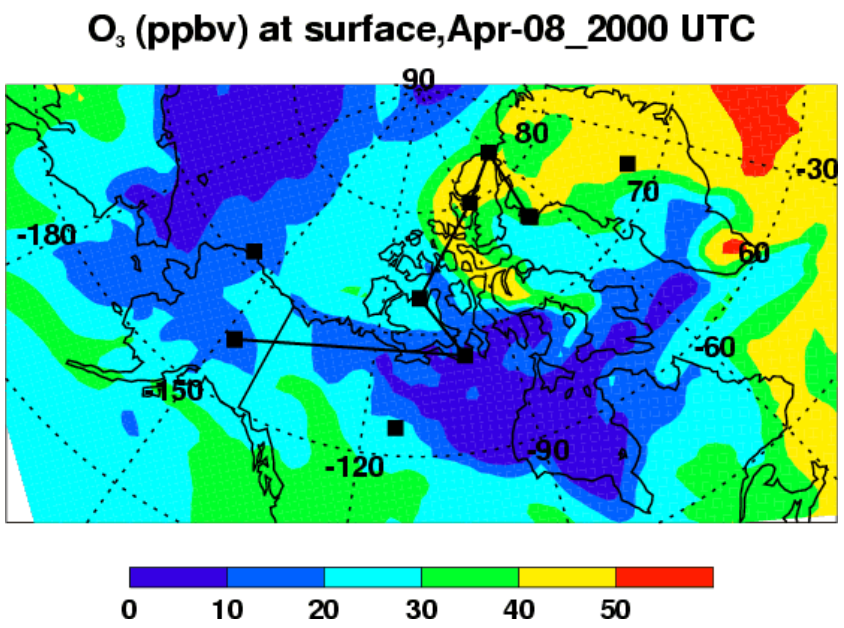
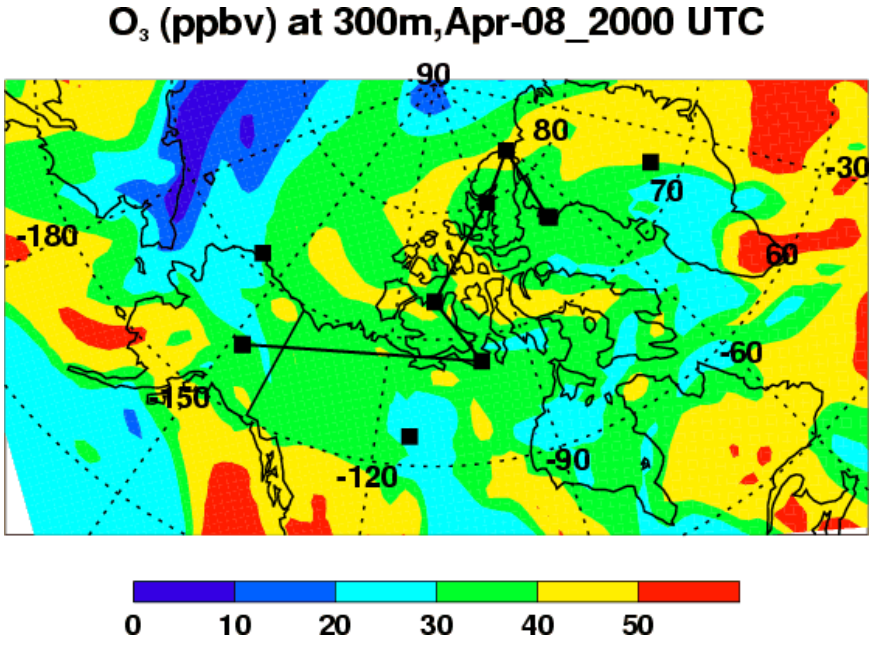


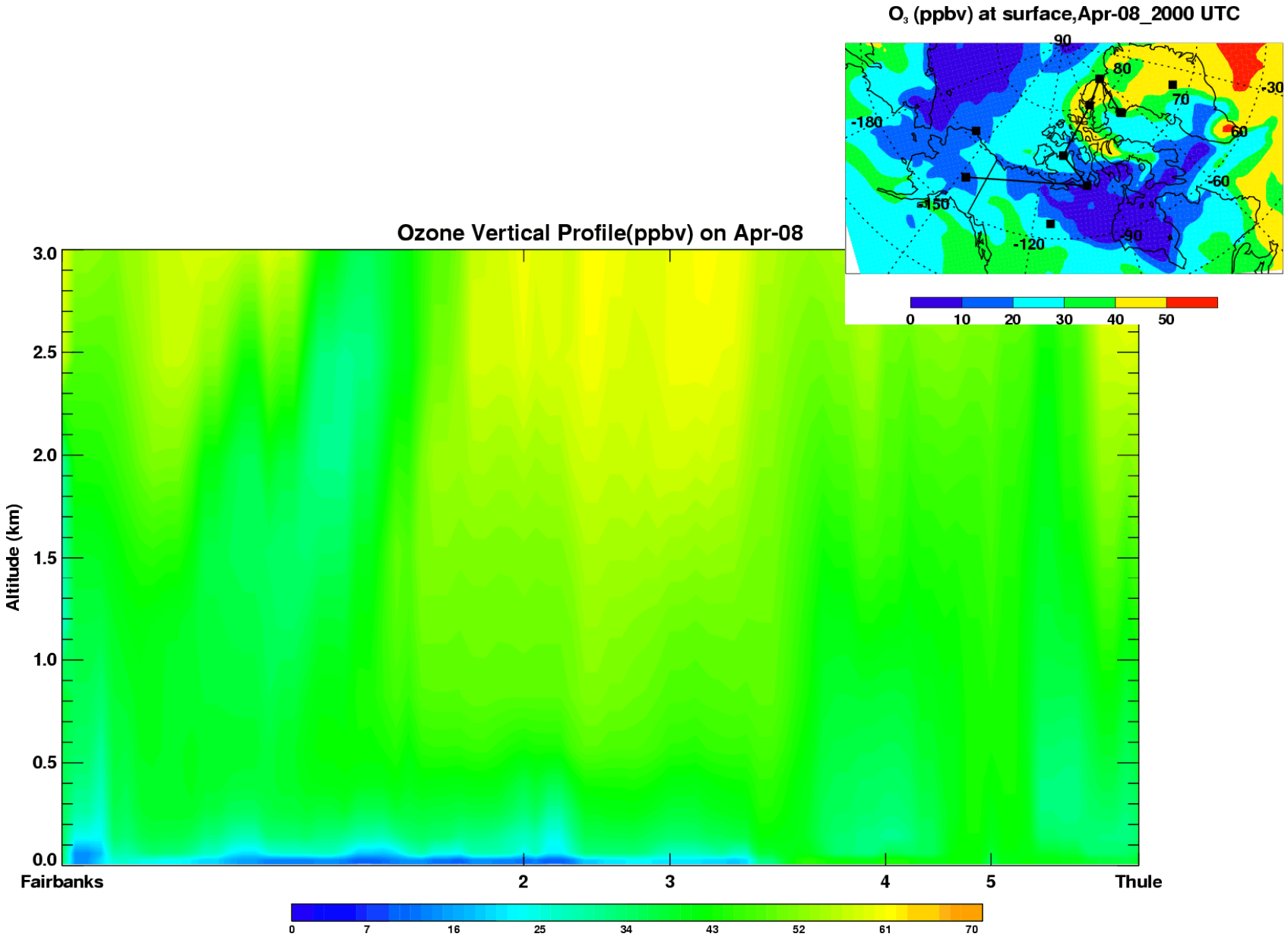


BrO signal in over the northern part of Hudson Bay is weakening





Low O_3 features are very close to surface

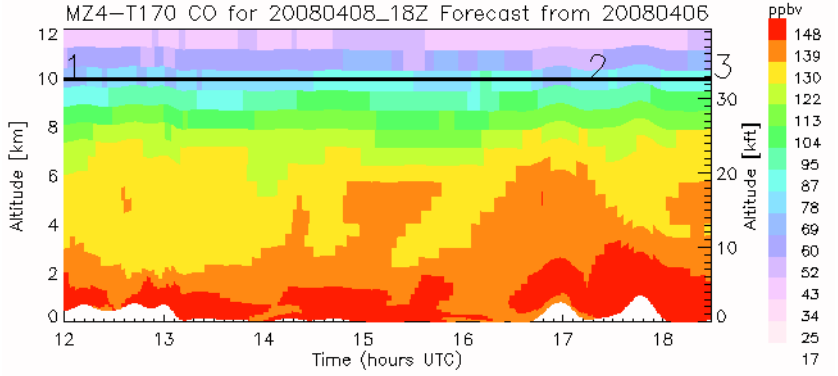

O3 (ppbv) at surface,Apr-08_2000 UTC
90
80
70
60
-30
-60
-90
-120
-150
-180
0
10
20
30
40
50
Ozone Vertical Profile(ppbv) on Apr-08
Altitude (km)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Fairbanks
2
3
4
5
Thule
0
7
16
25
34
43
52
61
70

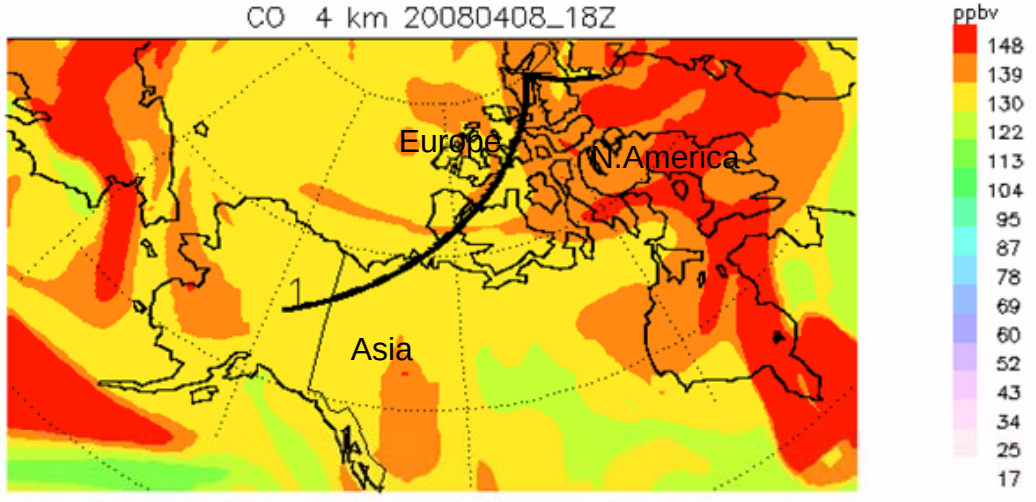
Apr 8 Fairbanks-Eureka-Thule

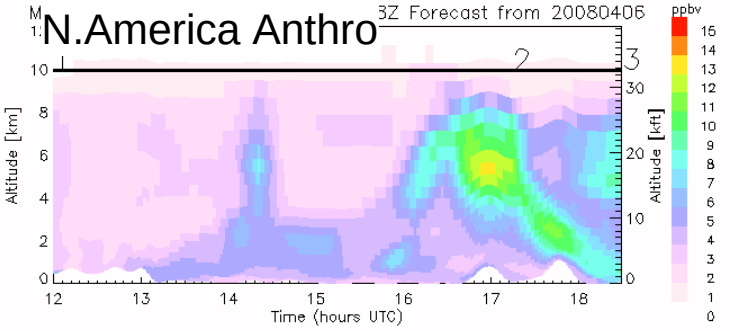
MZ4 forecast from Apr 6 for Apr 8 18Z

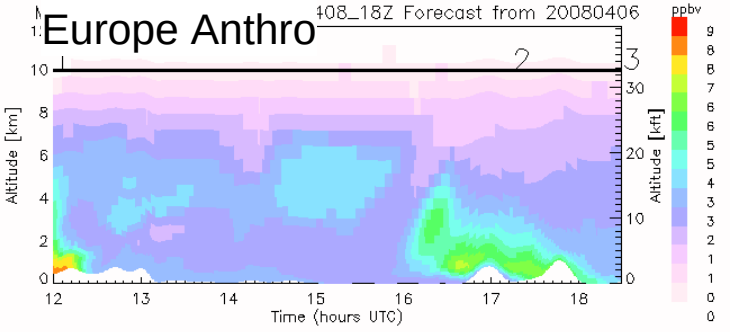
Weak plumes, aged pollution for whole flight
Primarily Asian at start of flight, N. American and European over Eureka and Thule

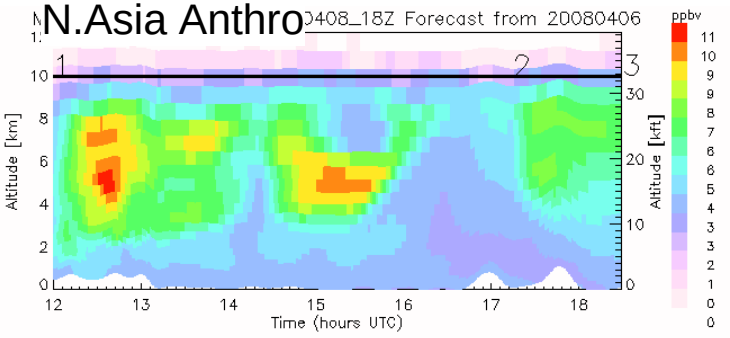
CO

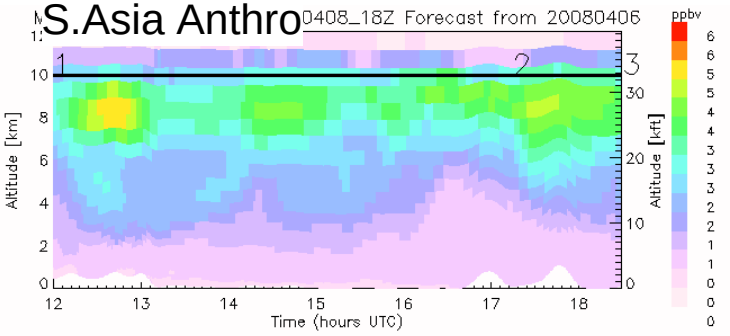












Apr 8 Fairbanks-Eureka-Thule

CAM forecast from Apr 5 for Apr 8 18Z

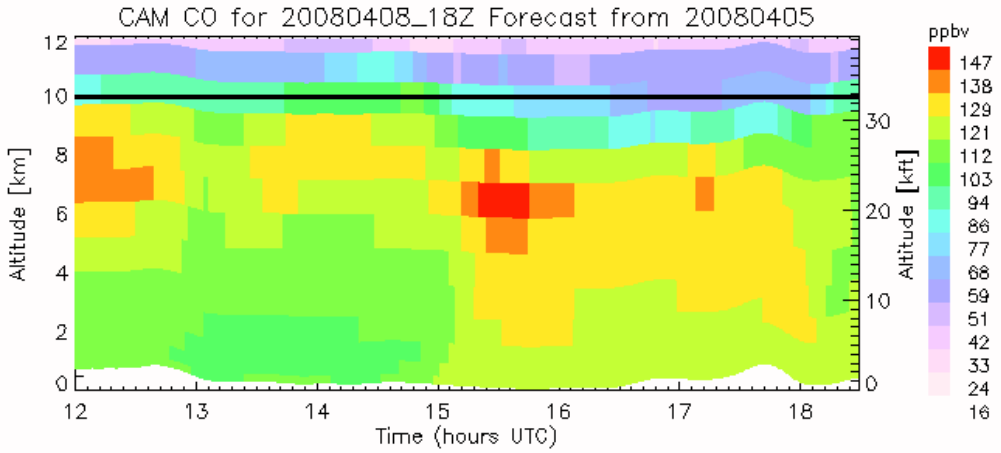
CO – assimilated MOPITT

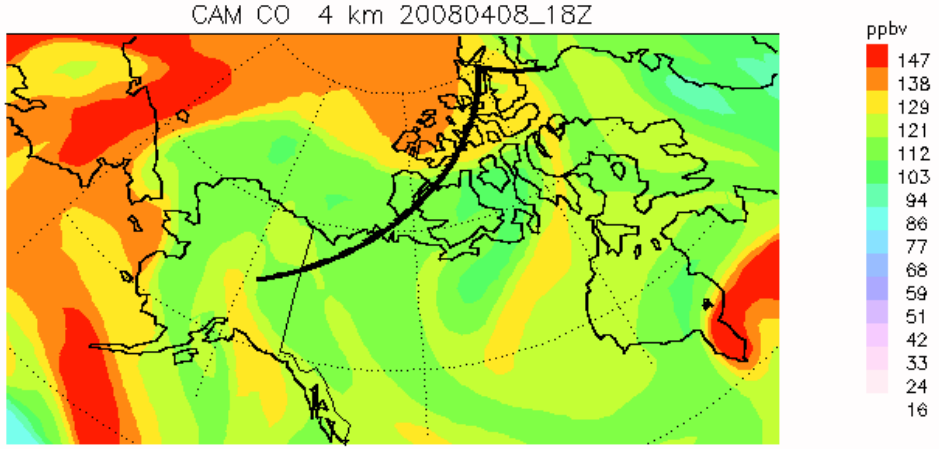
CO at higher altitudes than MOZART

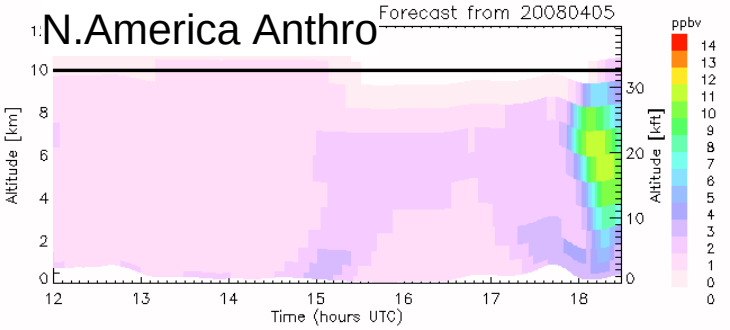
Tracers – independent of assim.

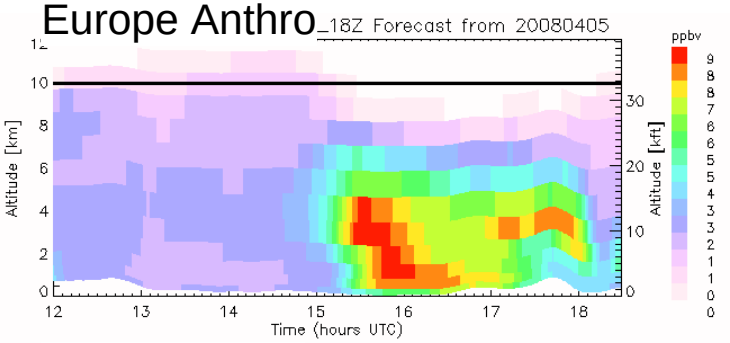
Similar to MOZART

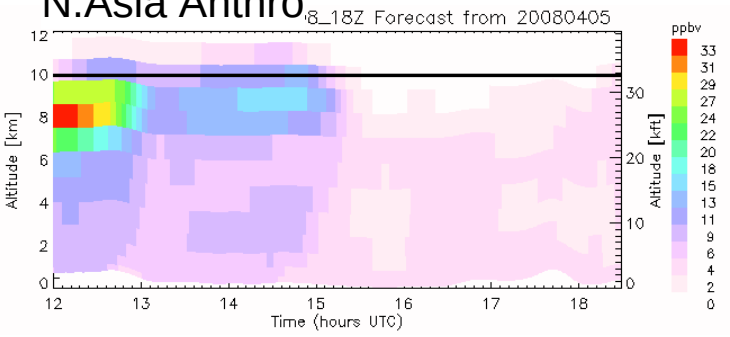
CO

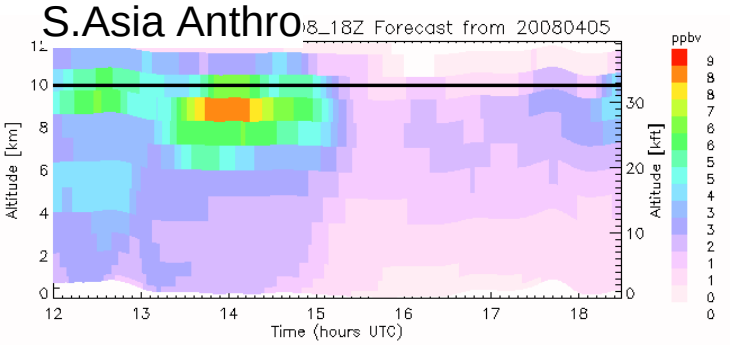










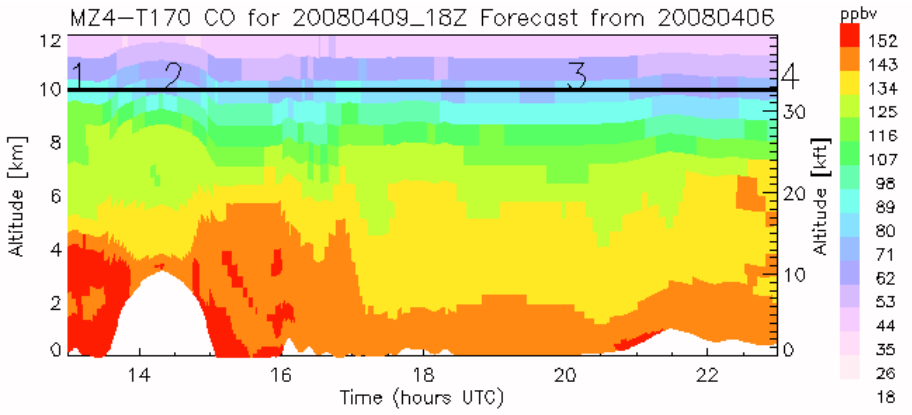


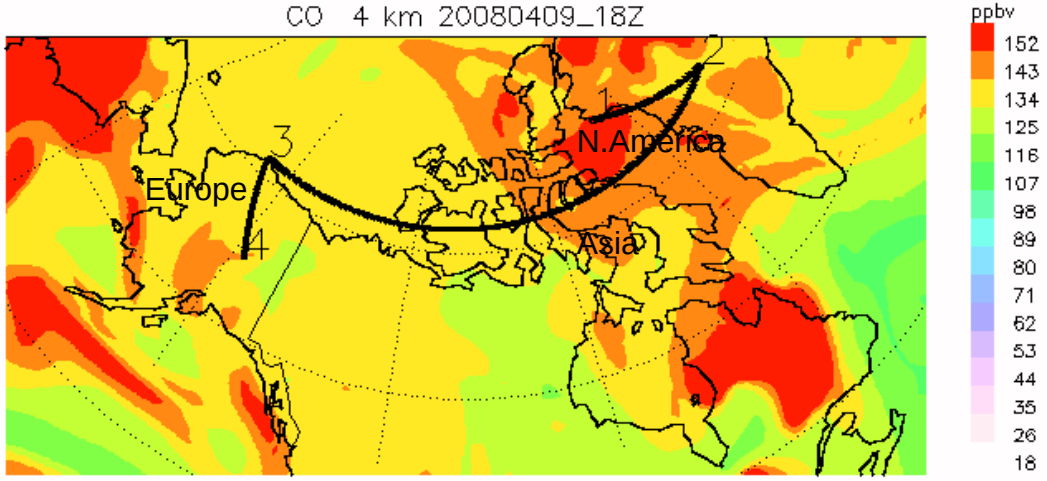
Apr 9 Thule-Summit-Barrow-FAI

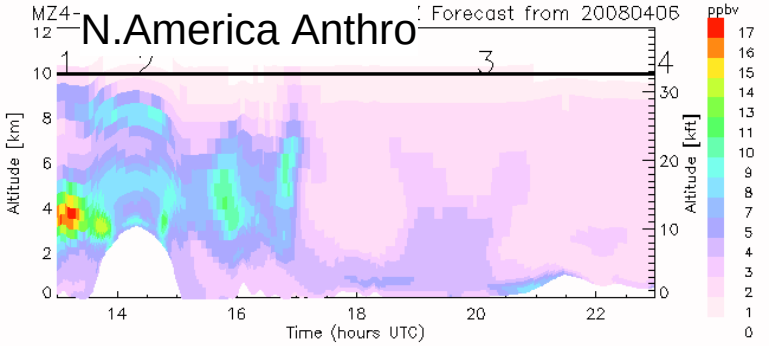
MZ4 forecast from Apr 6 for Apr 9 18Z

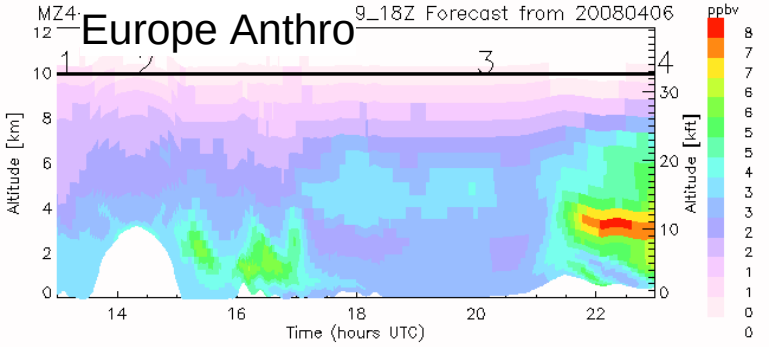
Similar conditions to 8th – aged pollution
Asian at 6-9 km
European plume between Barrow and FAI

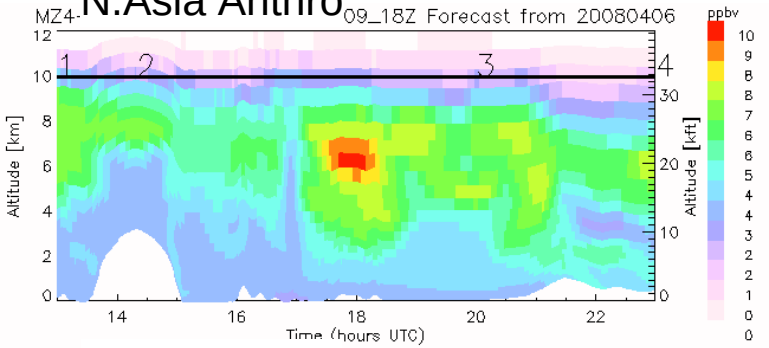
CO

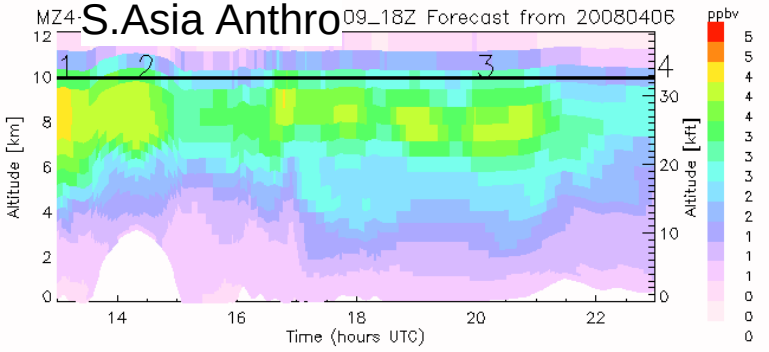




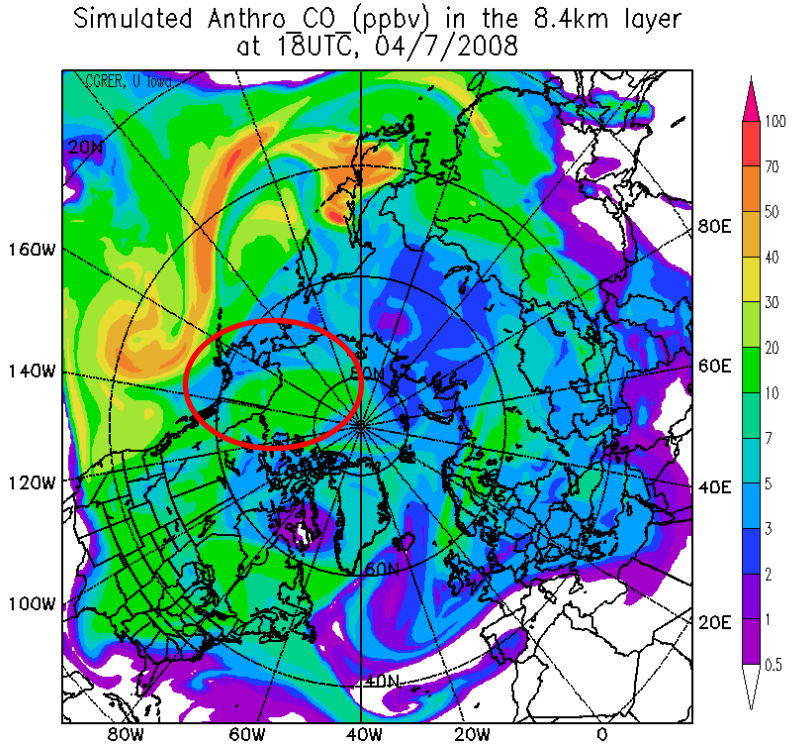


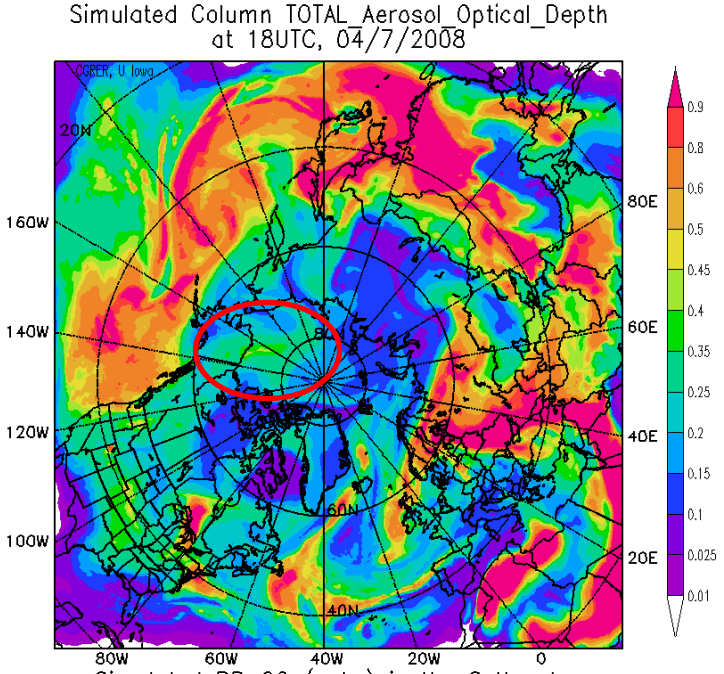


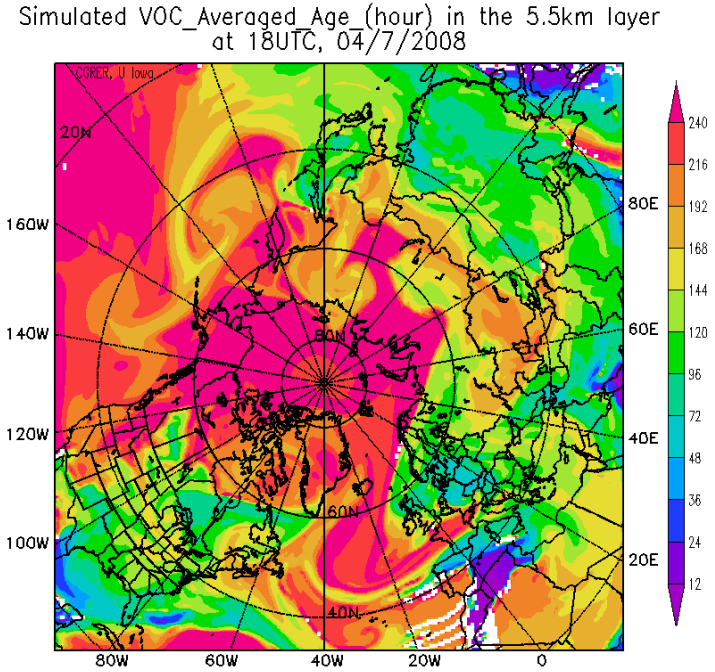


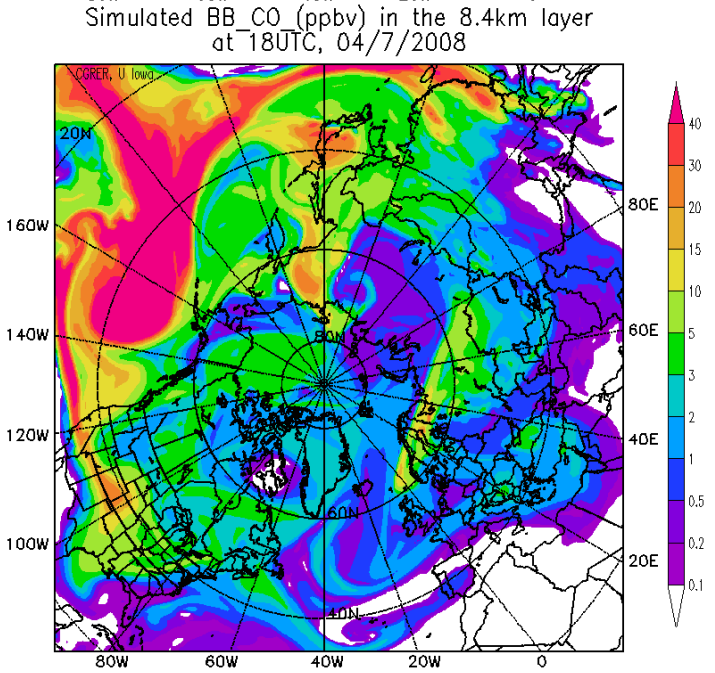


April 7th Possible Sortie?

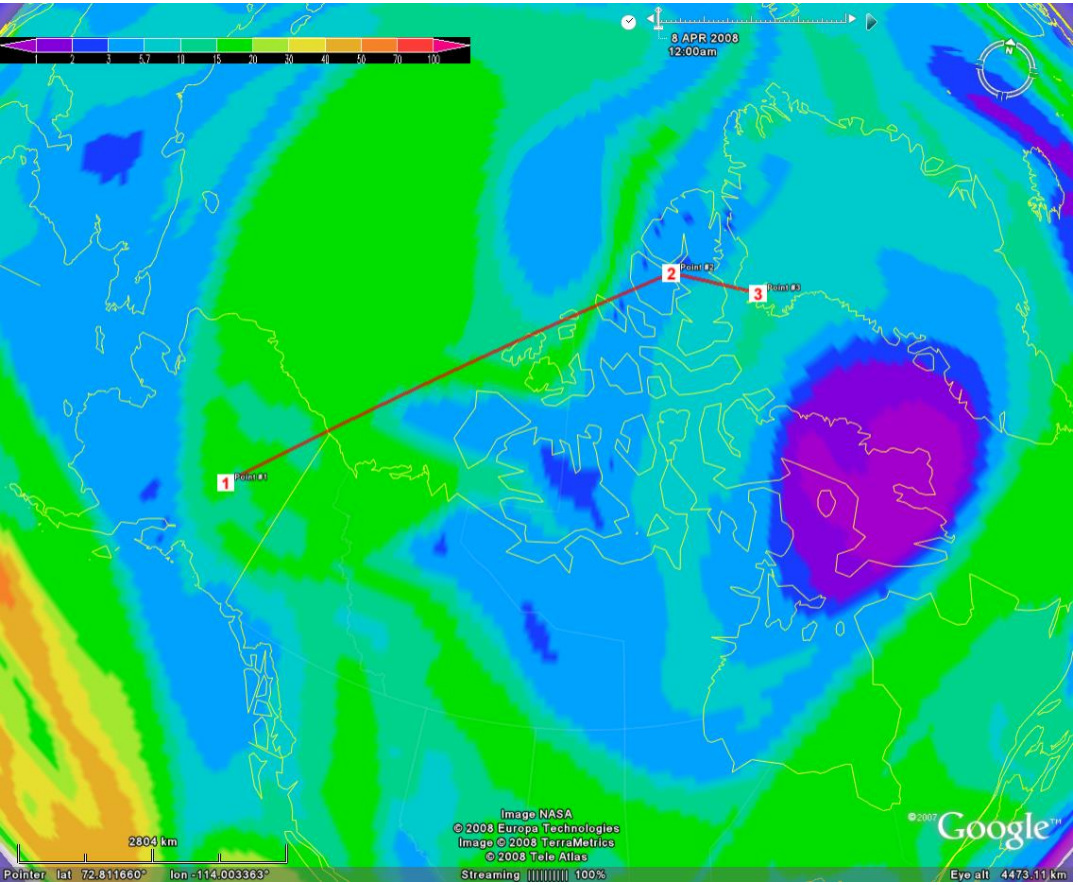






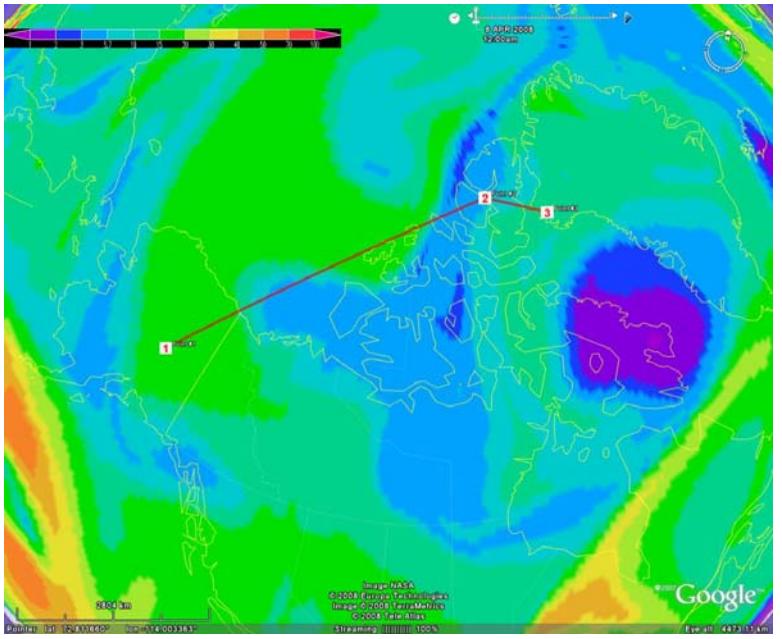


Thule Suitcase for both P3 and DC8 April 8

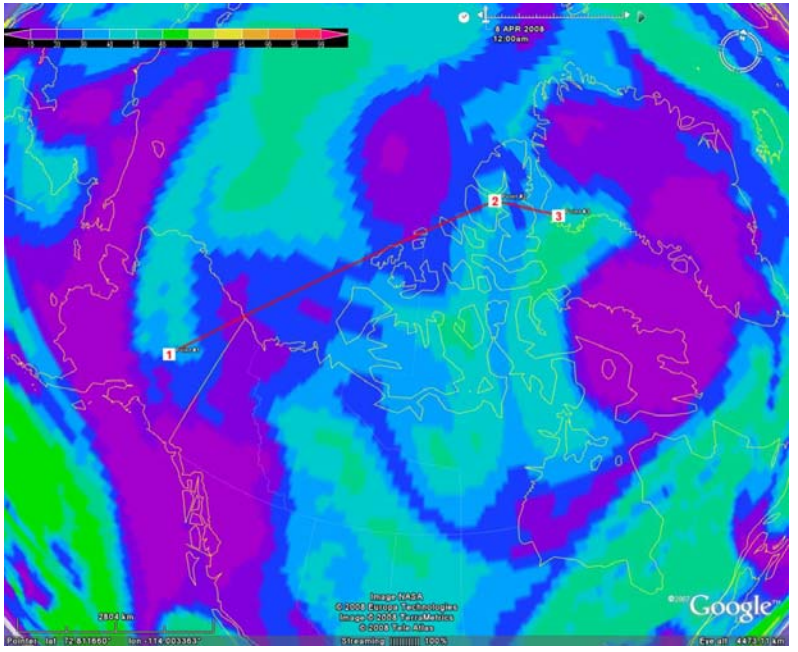


CO 8.4 km for DC8

CO 5.5 km for P3

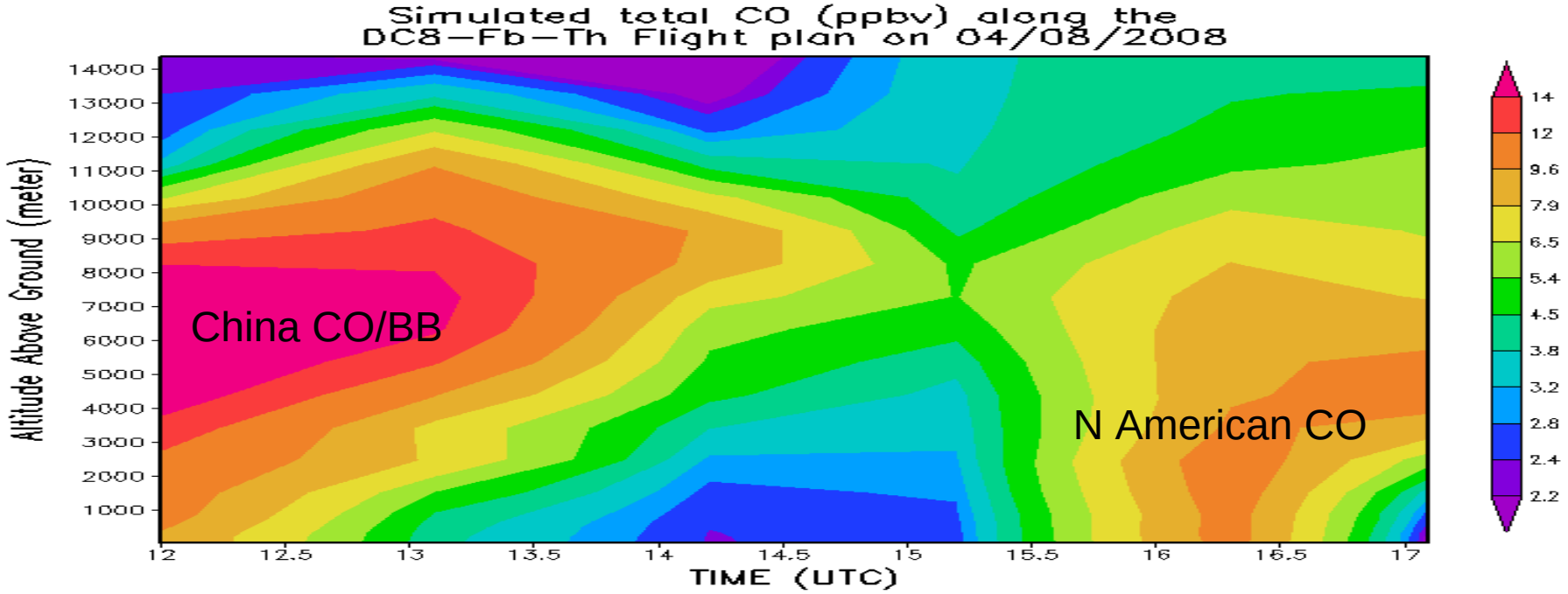


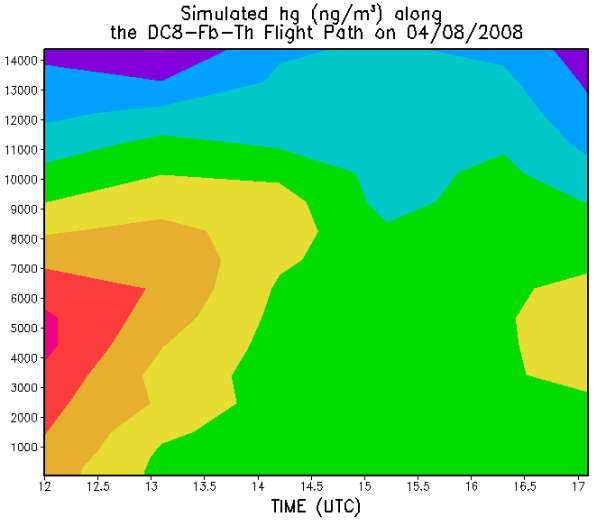
RH 8.4 km

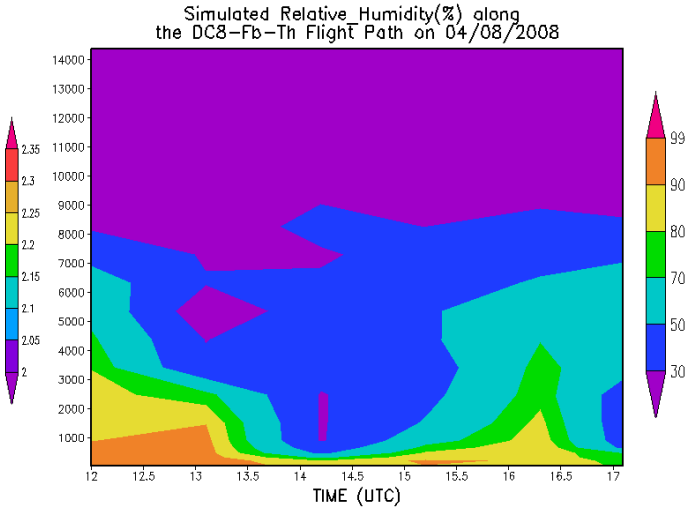


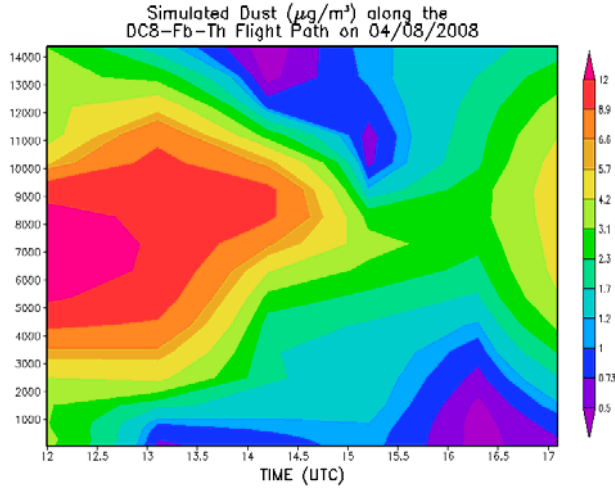
Both Flight start at 12Z and go through Eureka

FAI to Thule for April 8 DC8 Flight Path



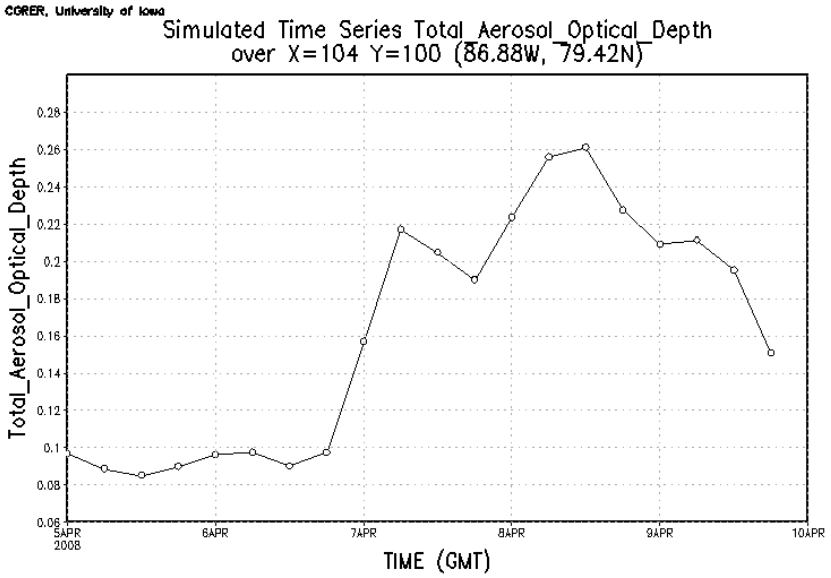




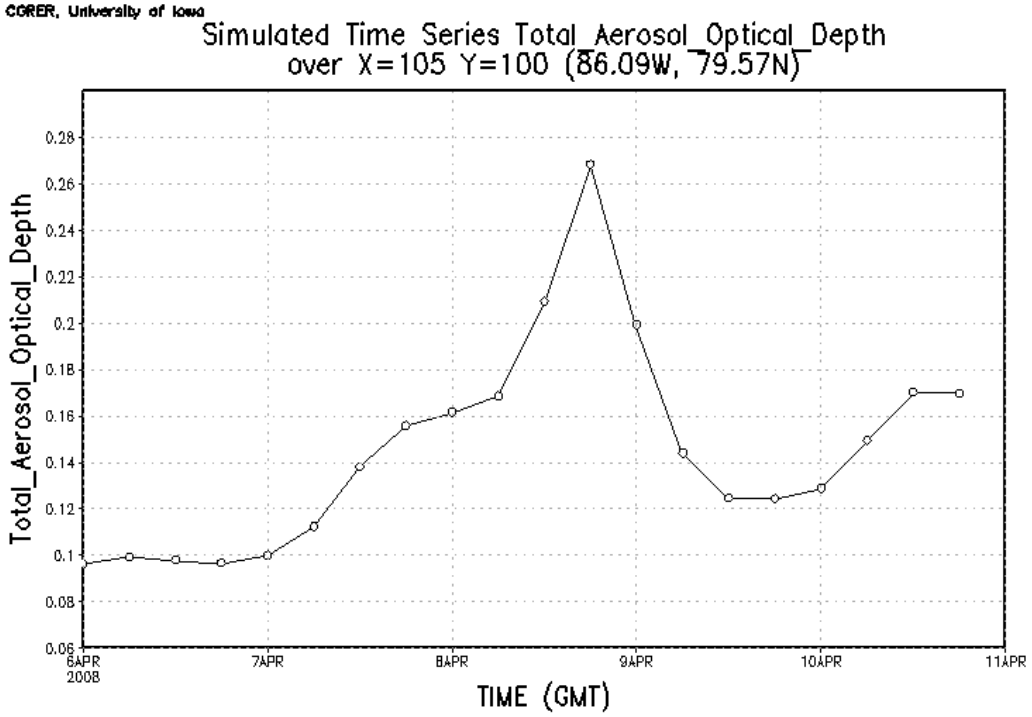


Eureka & Surrounding Total AOD

Yesterday Forecast

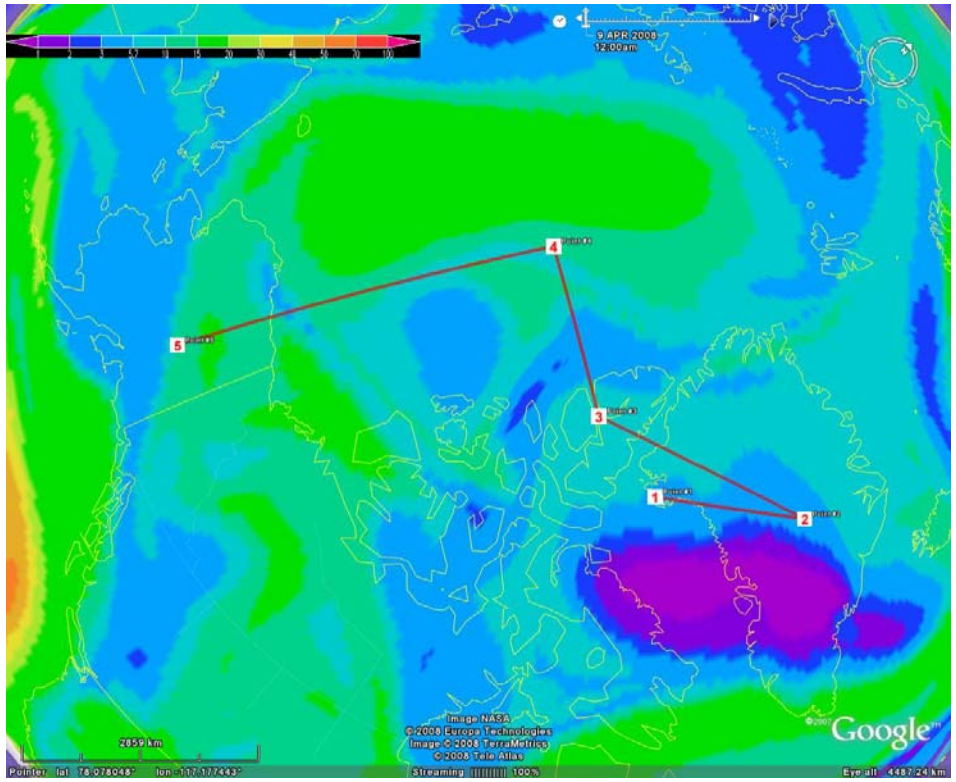


Latest Forecast

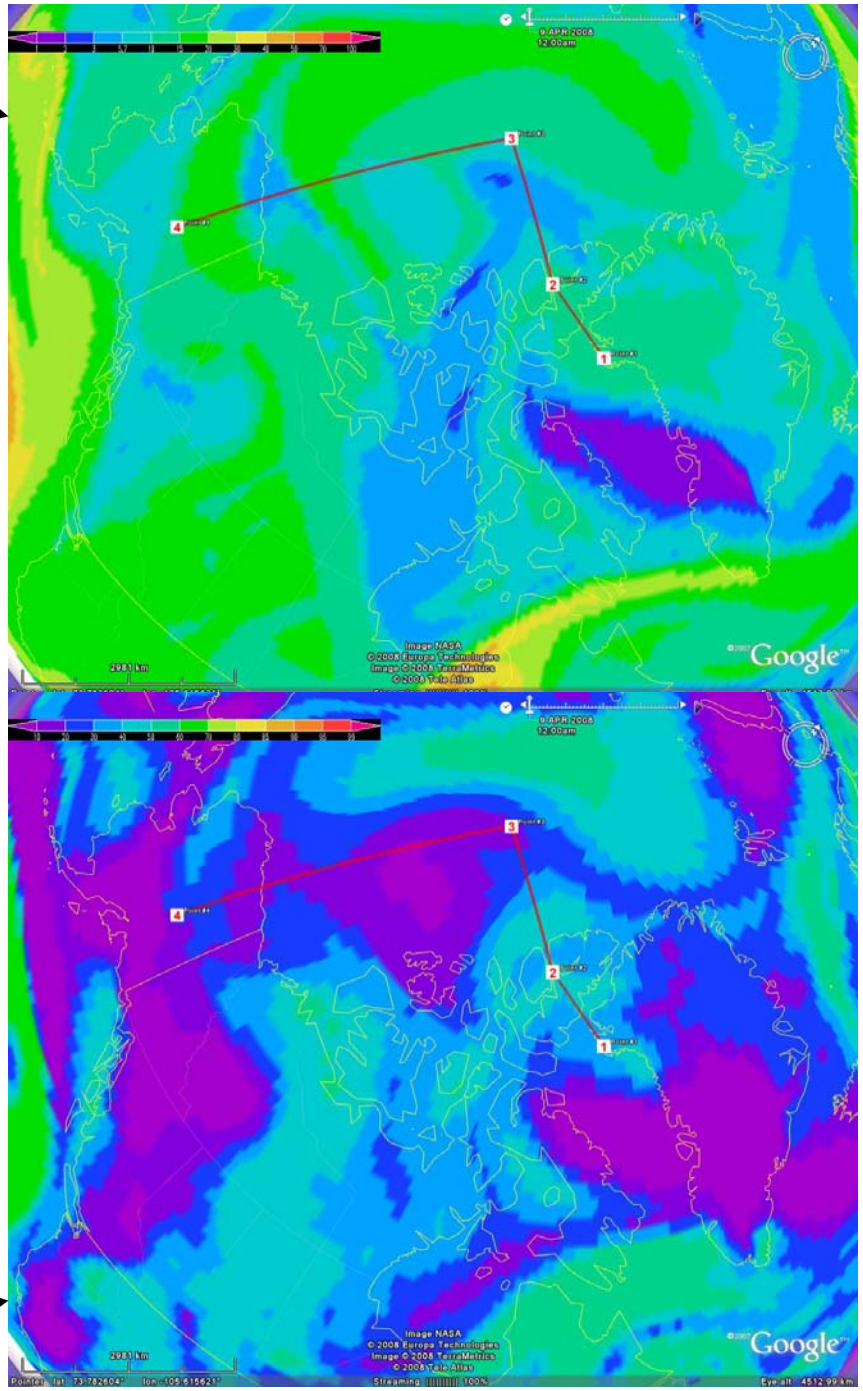


For P3 CO-5.5 km

DC8 - and P3 Return 9 April

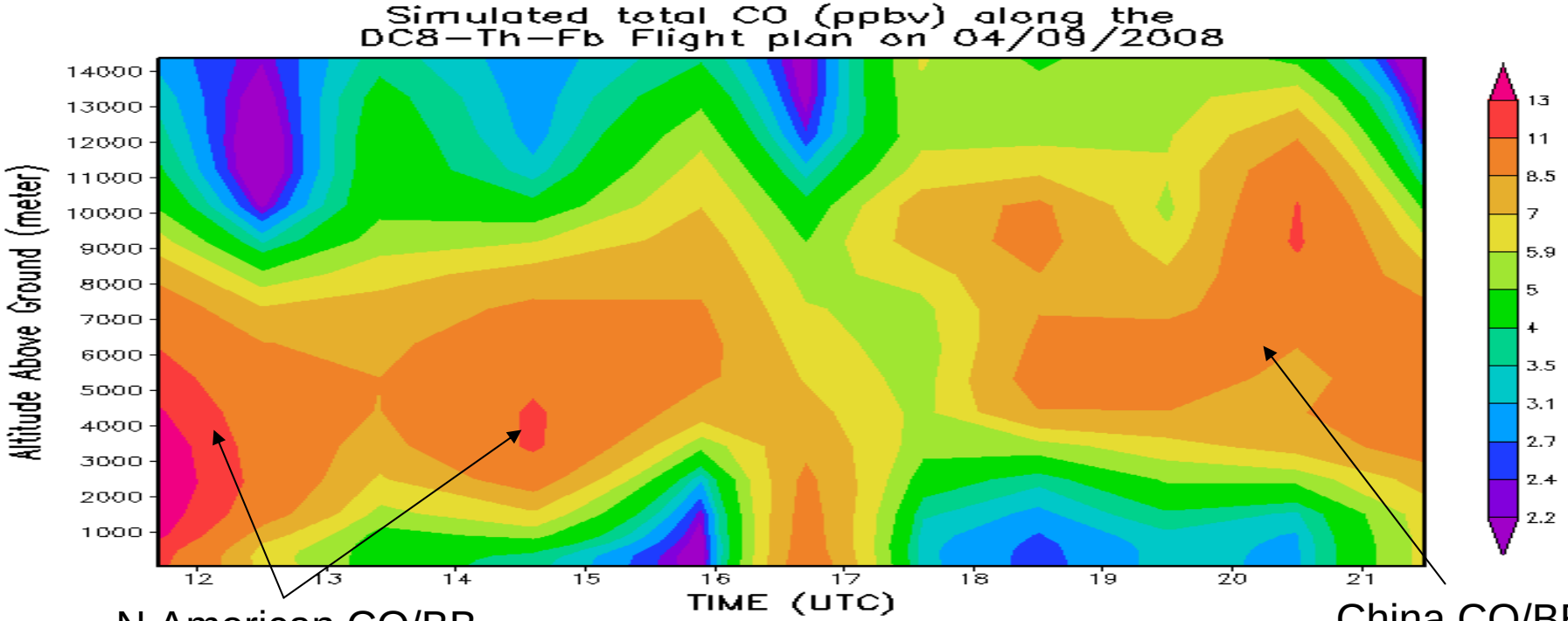


For DC8 – Anthropogenic CO, 8.4 km, 12Z



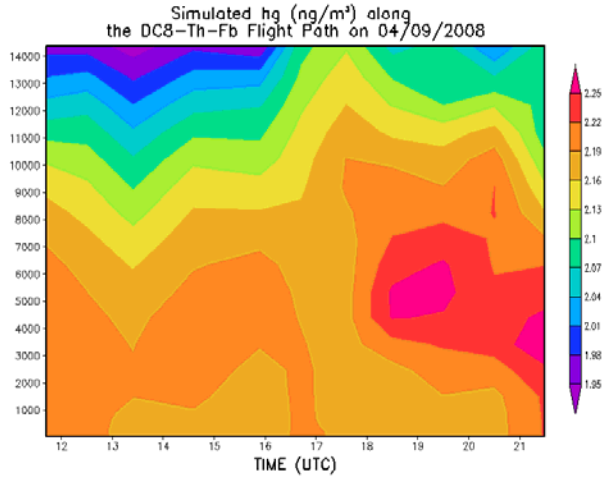
RH-8.4

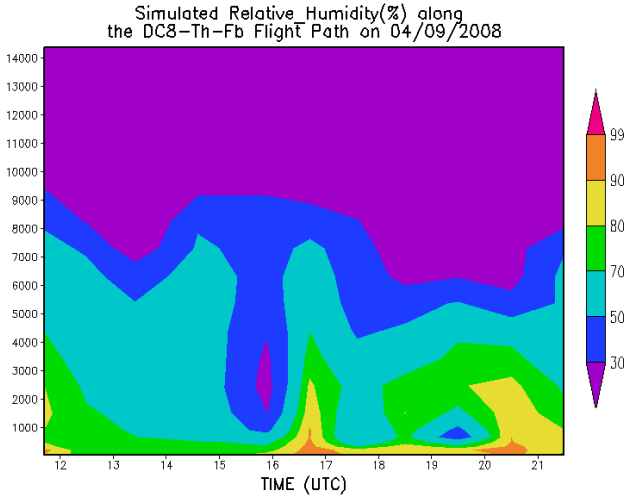
Thule to FAI for April 9 DC8 Flight Path

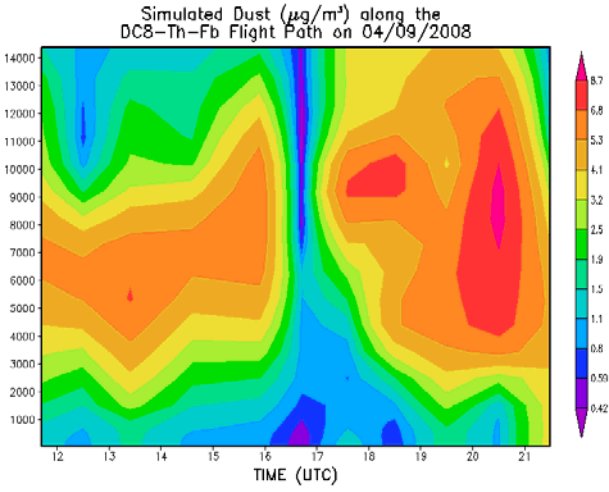


N American CO/BB

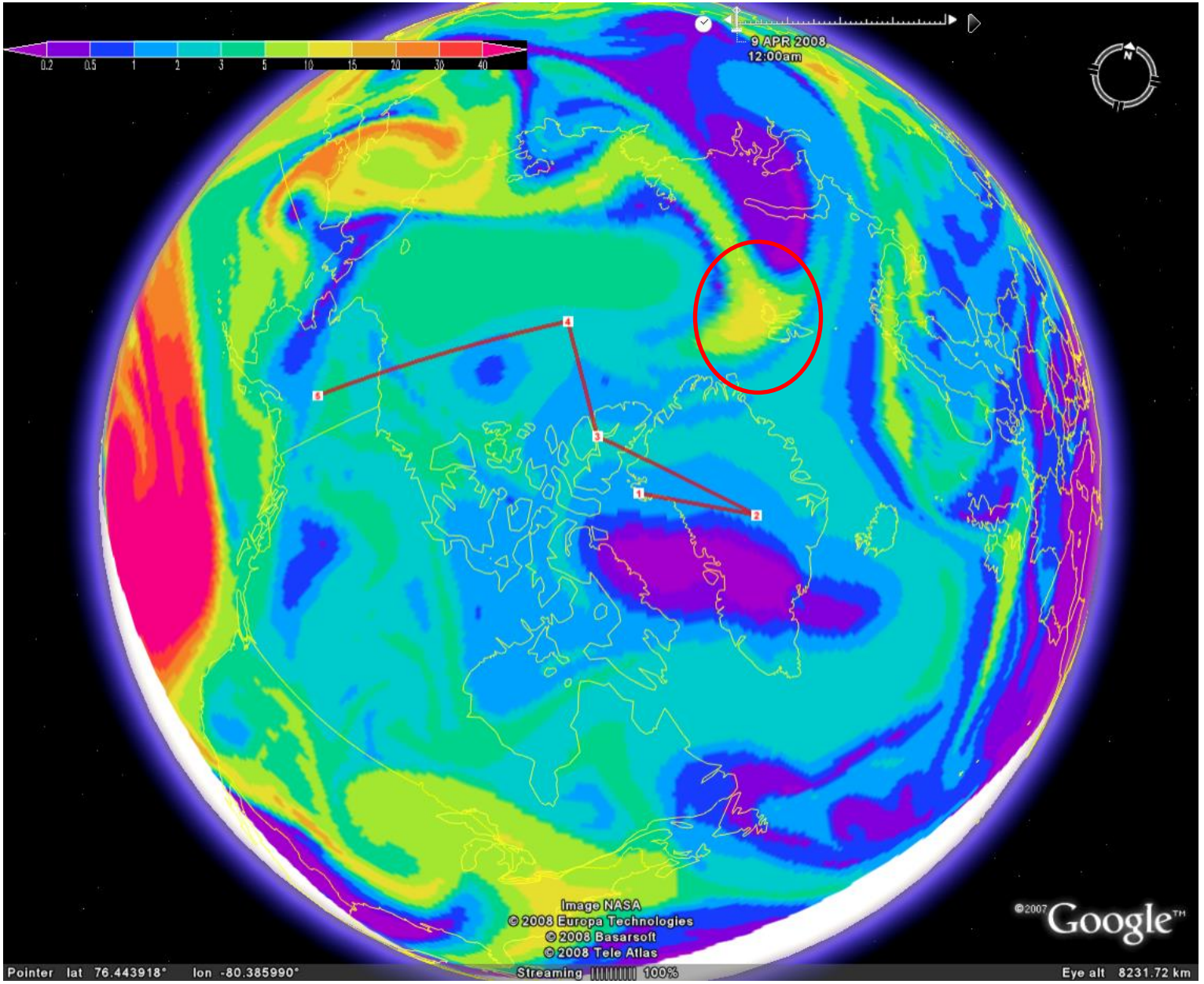
China CO/BB





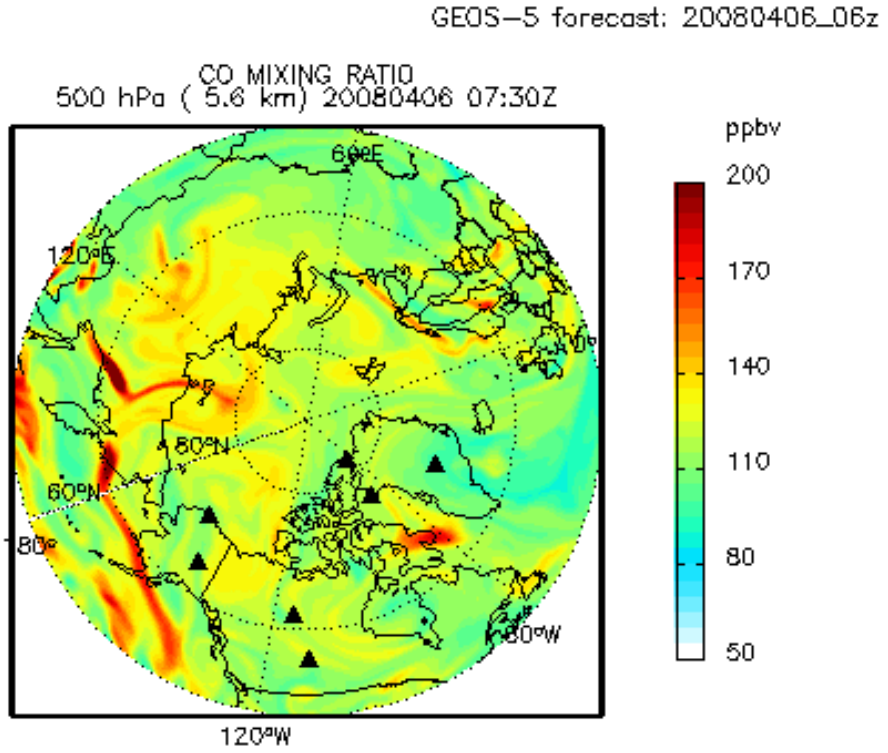


Biomass-CO on the 9th for DC8 ??

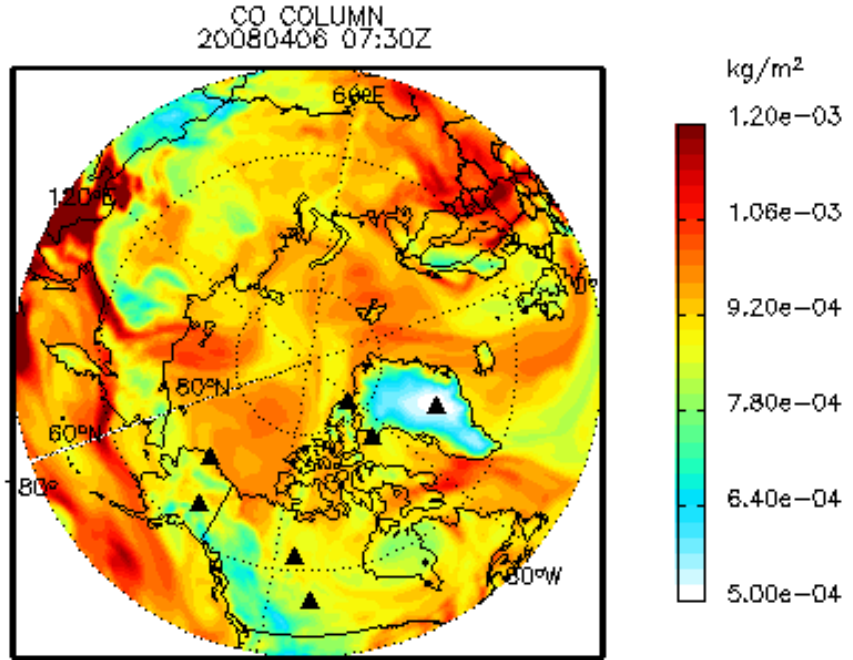


CO evolution: 4/6 – 4/11

500 mb CO

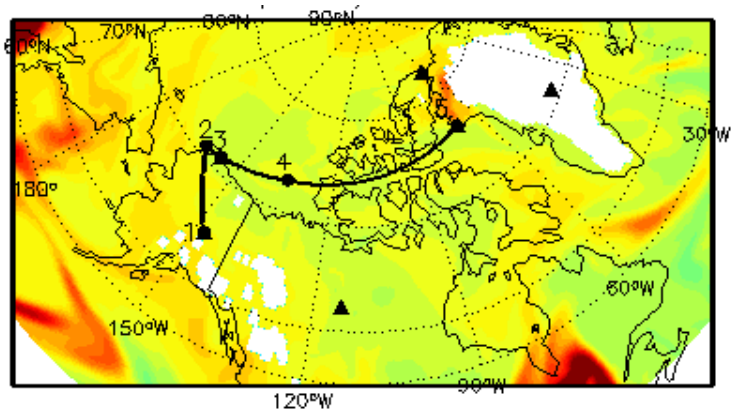


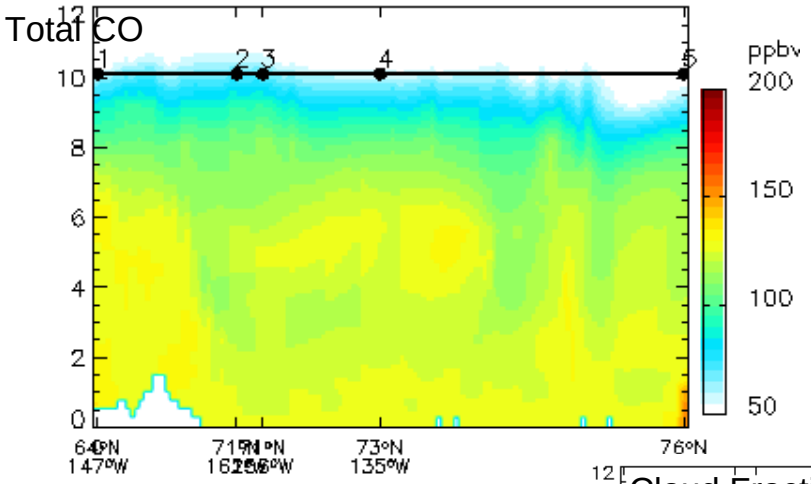
Total CO Column

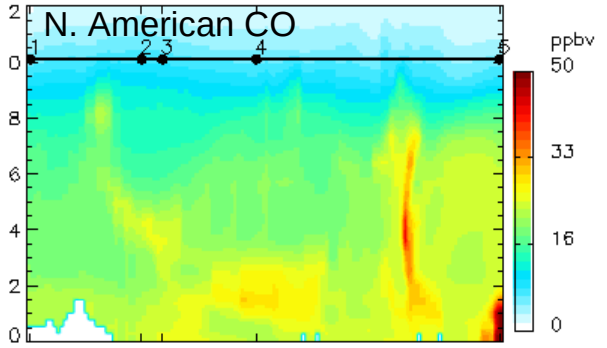


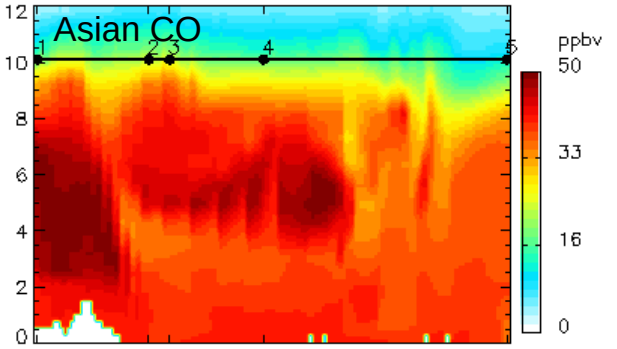
DC-8 Flight Opportunity 4/8

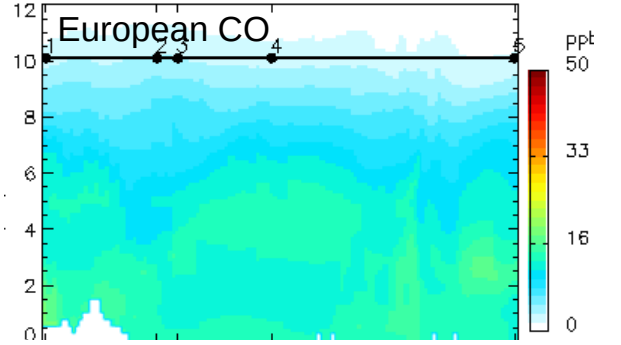
Total CO

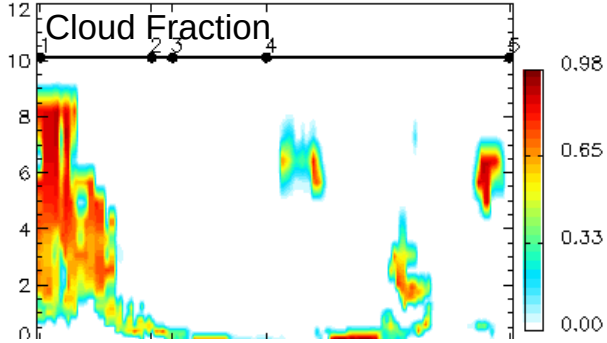


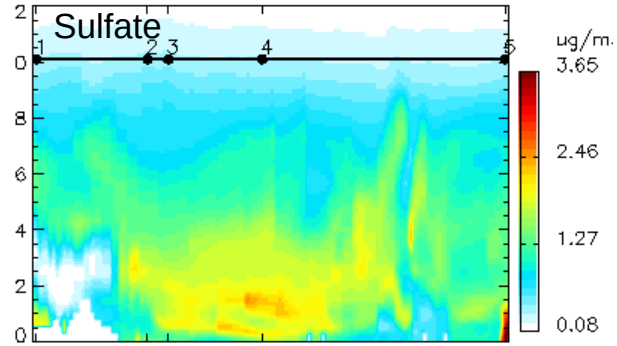








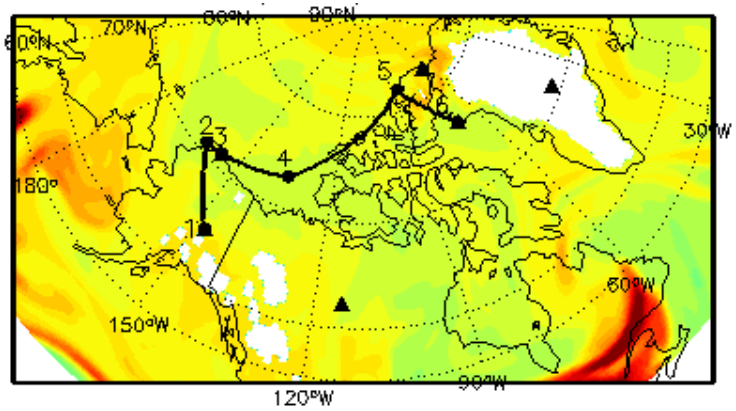


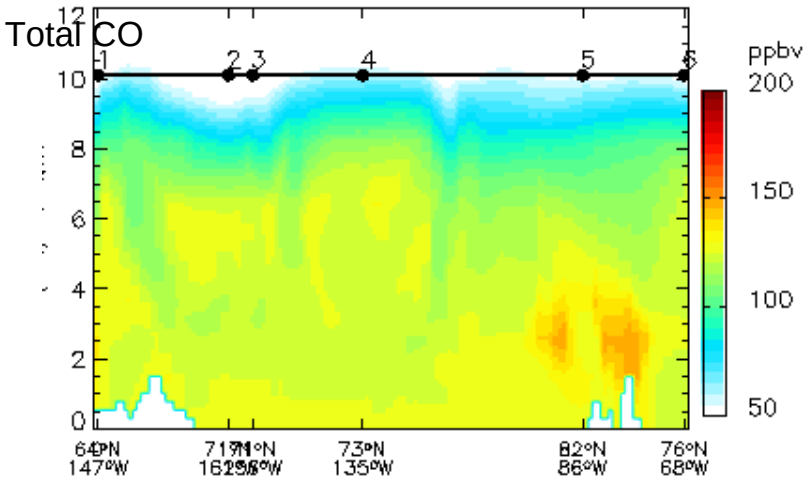


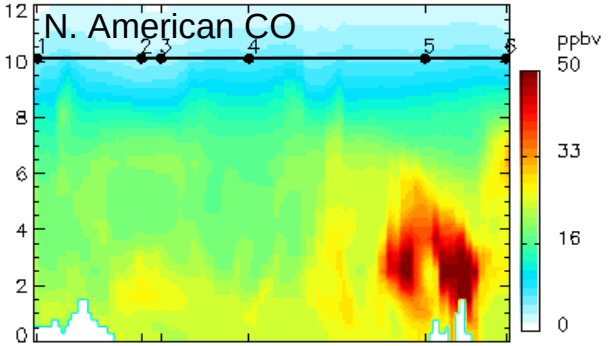
Features:
TES track near Barrow
Fair winds (easterly) for BrO at Barrow
Stagnating air near point 4

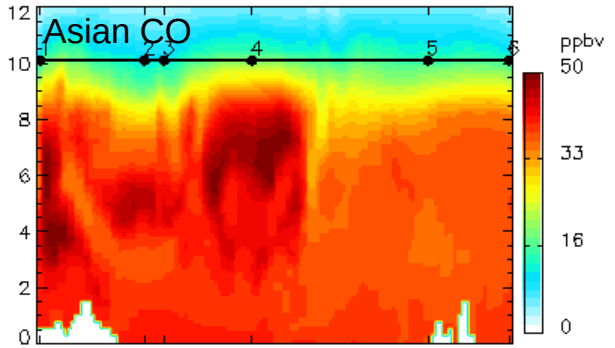
DC-8 Flight Opportunity 4/9

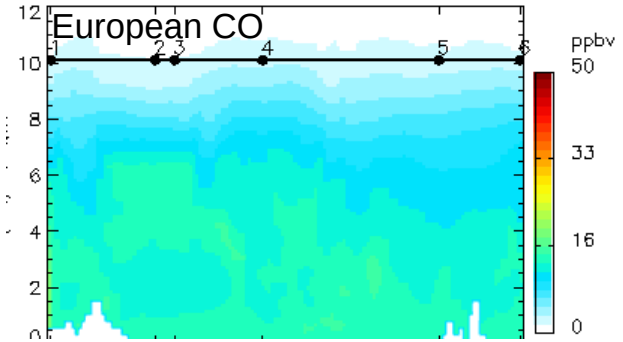
Total CO

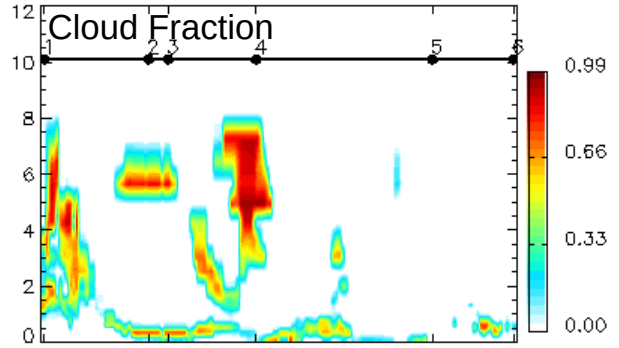


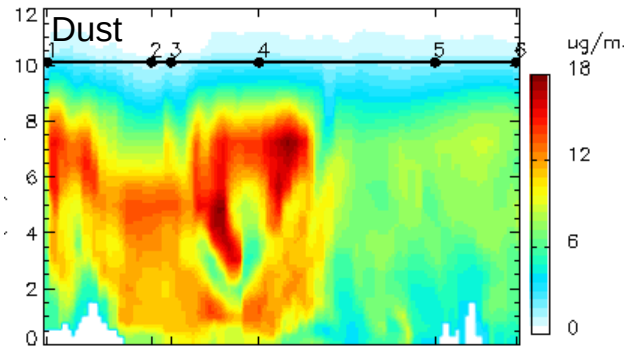


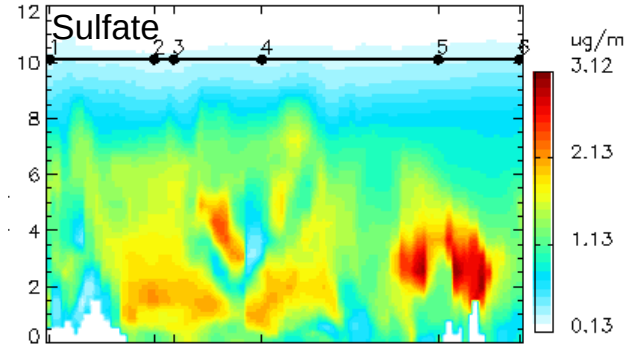






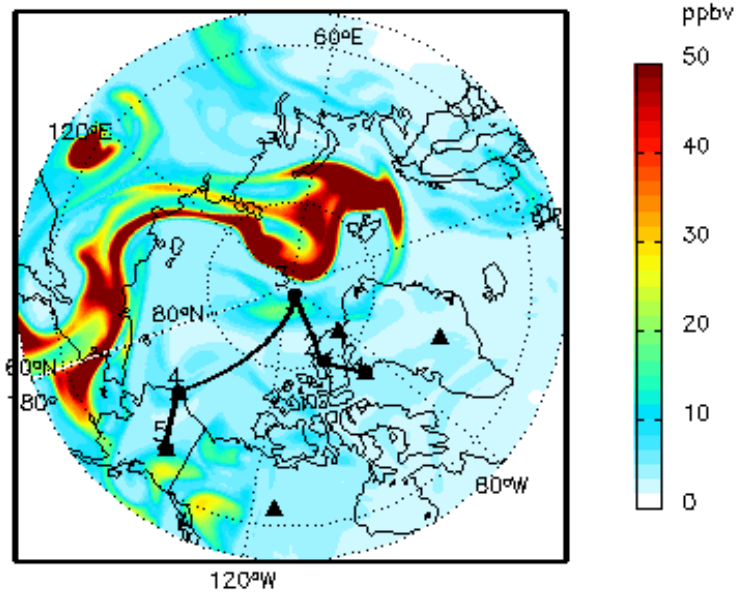




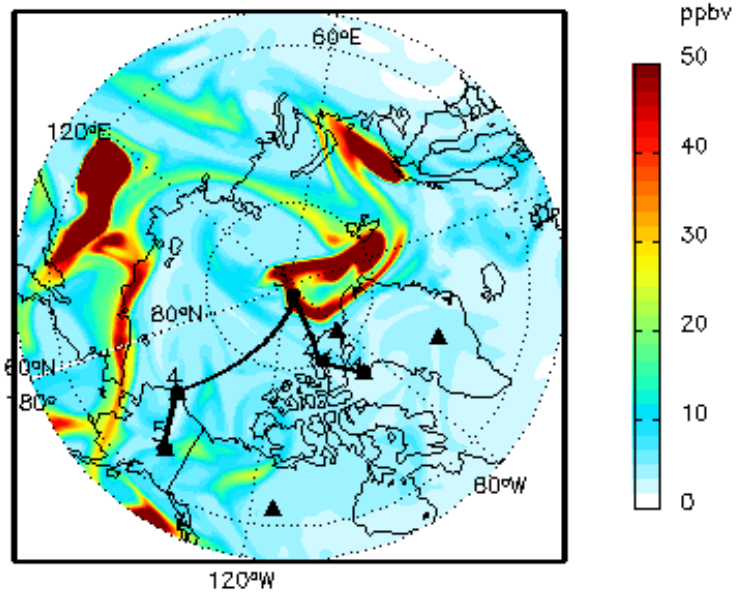


DC8 Thule transit: April 8/9 or 9/10?

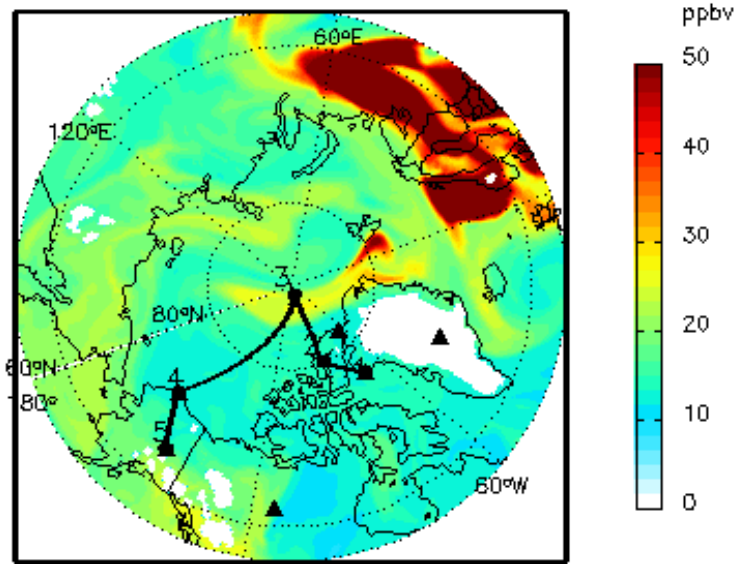
April 9 Boreal burning (500 hPa)



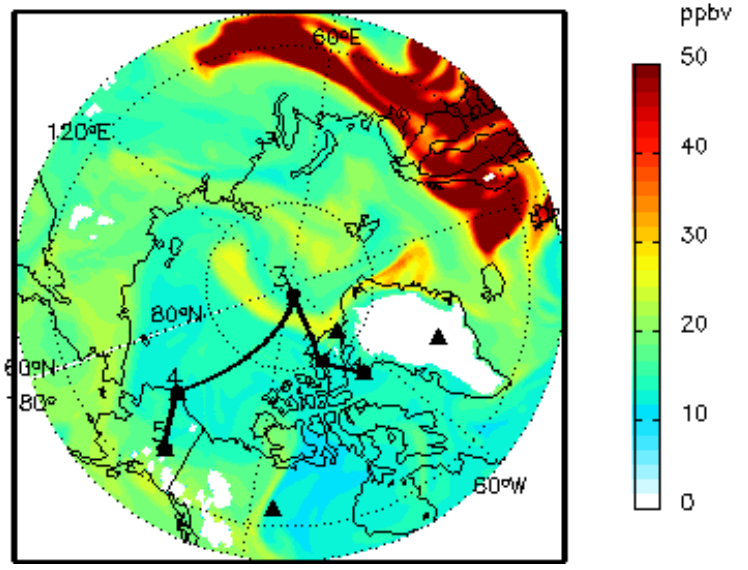
April 10 Boreal burning (500 hPa)



European CO (850 hPa)



European CO (850 hPa)



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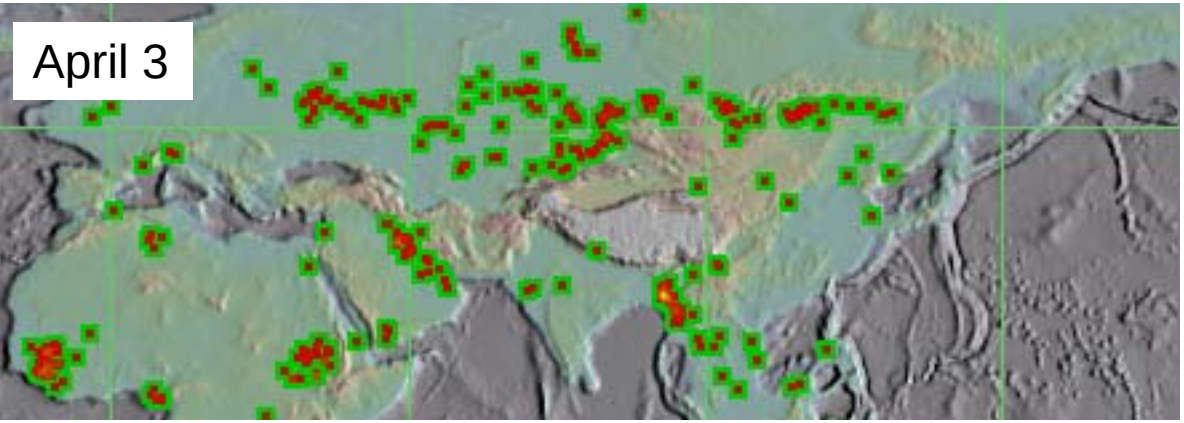
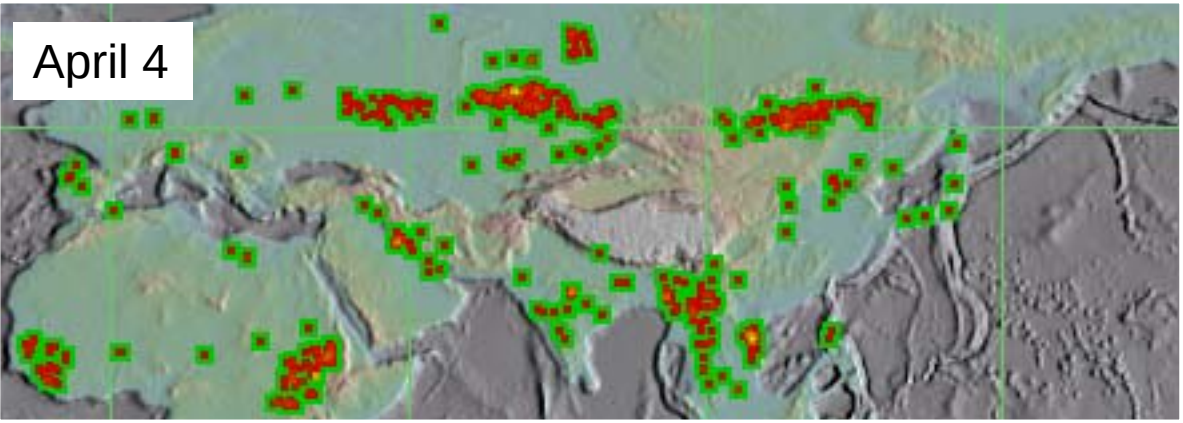
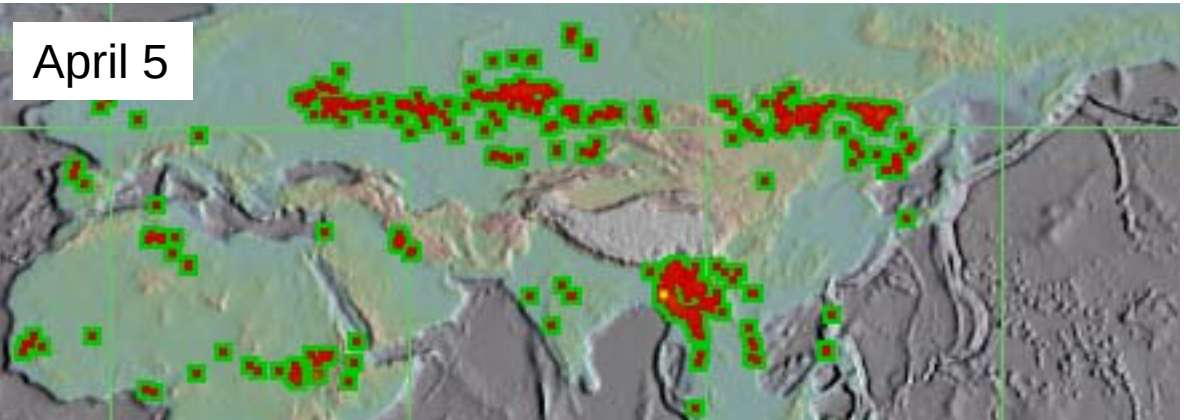
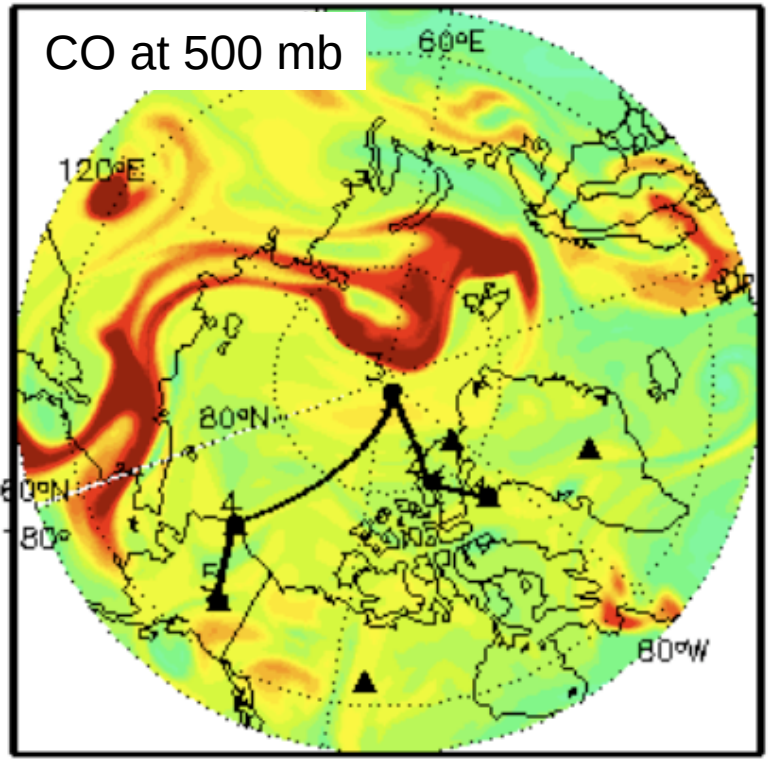
MODIS Hot Spots



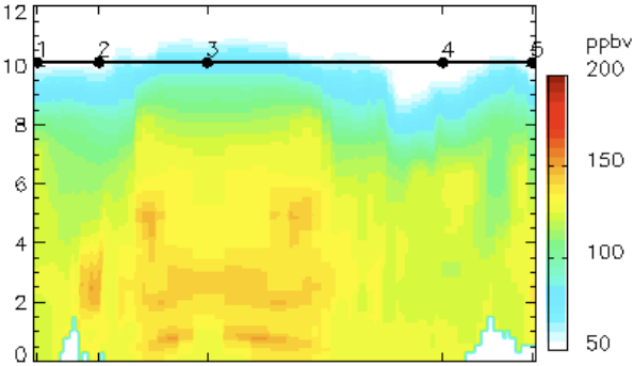




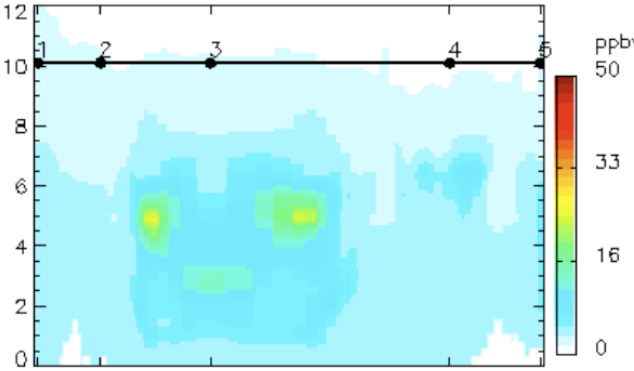
April 9 return: capture haze but miss boreal biomass burning plume



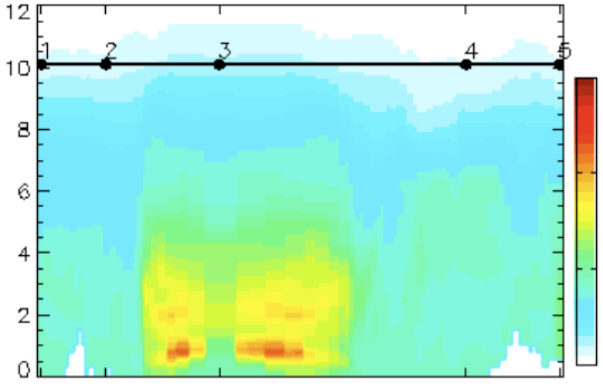
Total CO



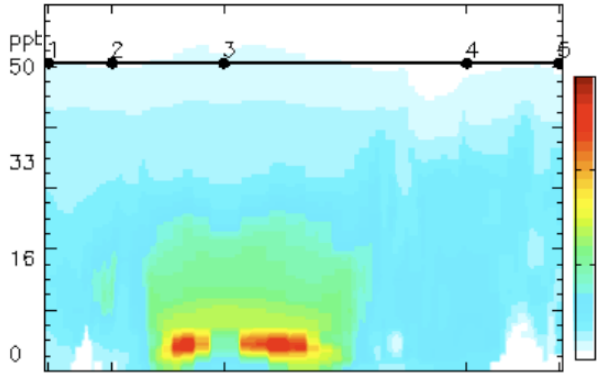
Boreal biomass burning CO



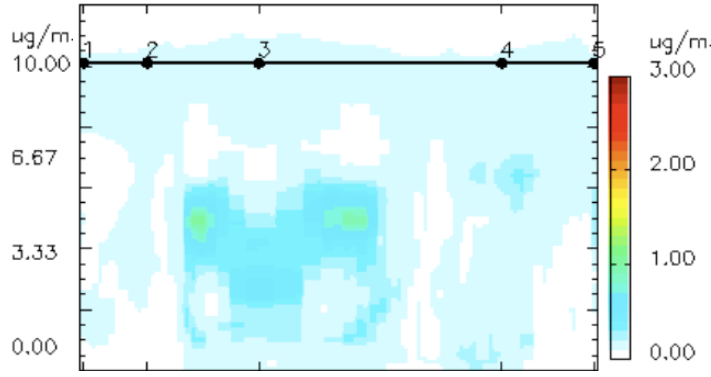
European CO



Sulfate aerosol



Organic Carbon



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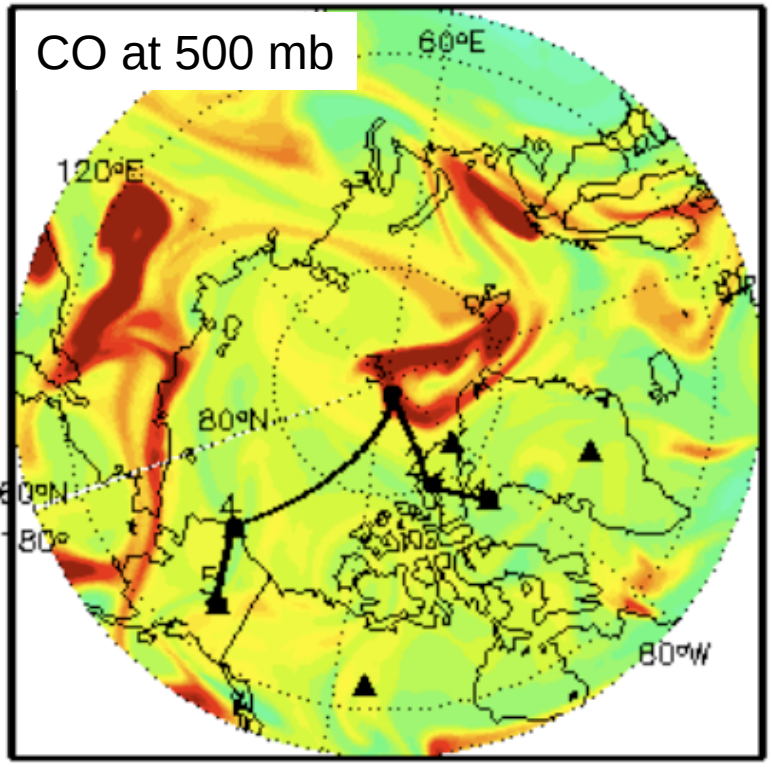
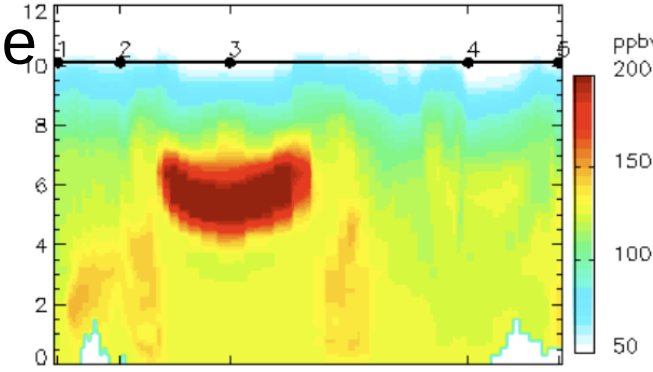
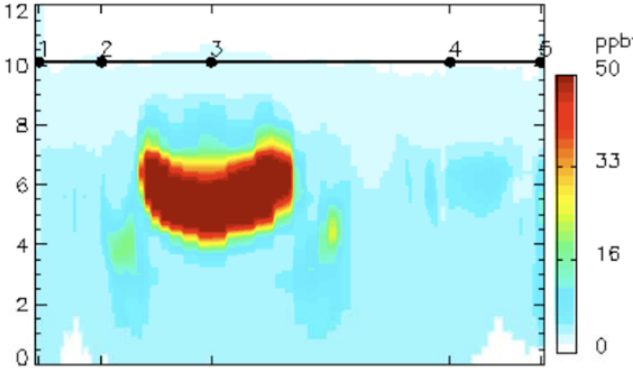
April 10 return: lower levels of haze but much stronger boreal biomass burning plume



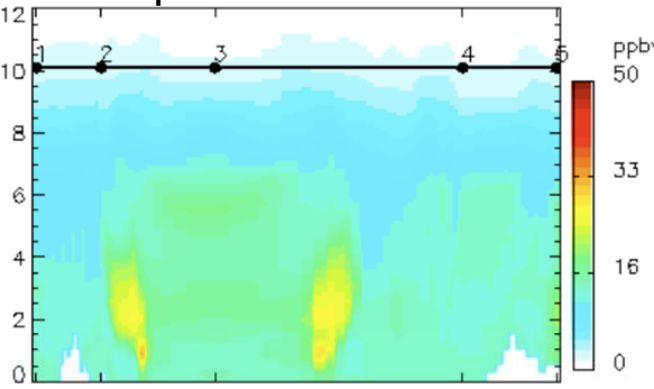
Total CO



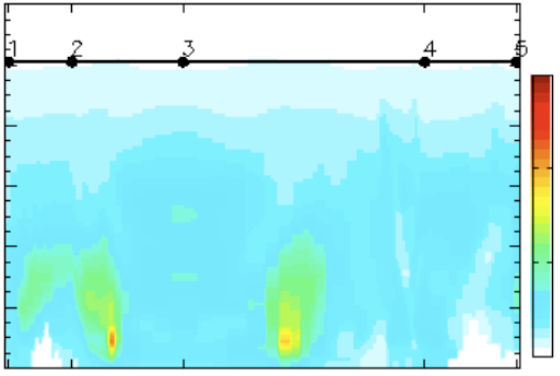
Boreal biomass burning CO



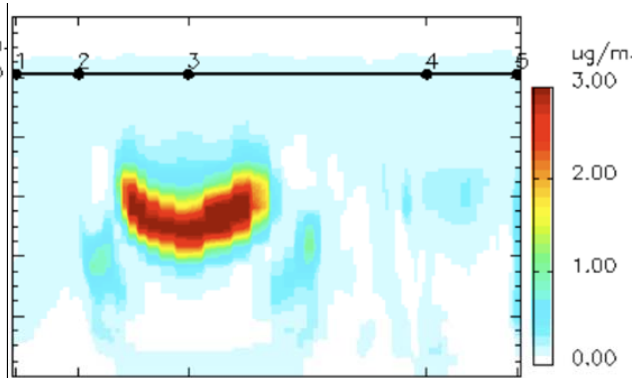
European CO



Sulfate aerosol



Organic Carbon



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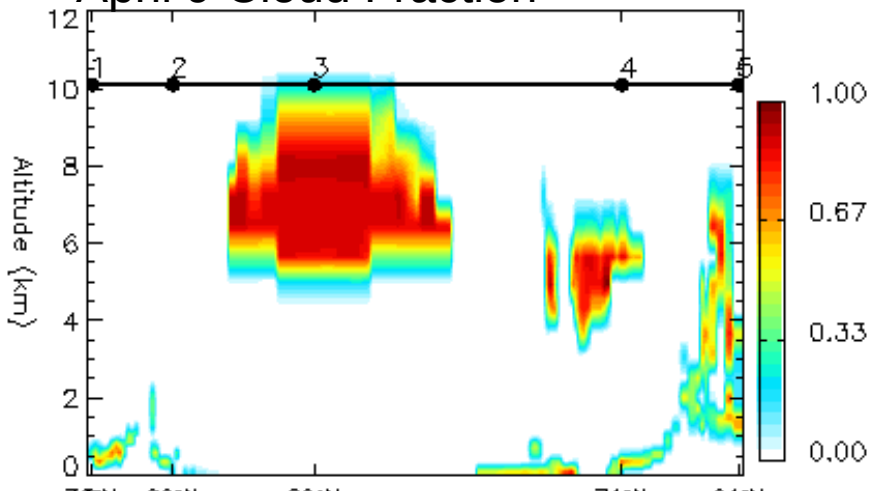
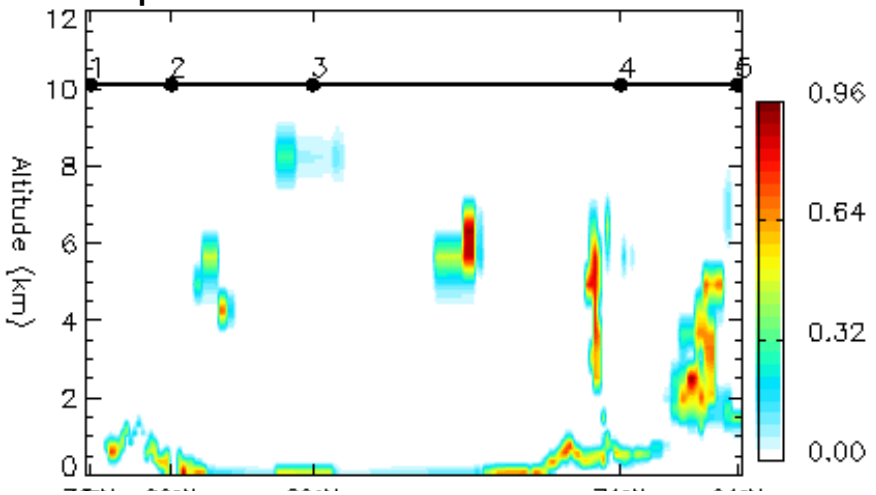
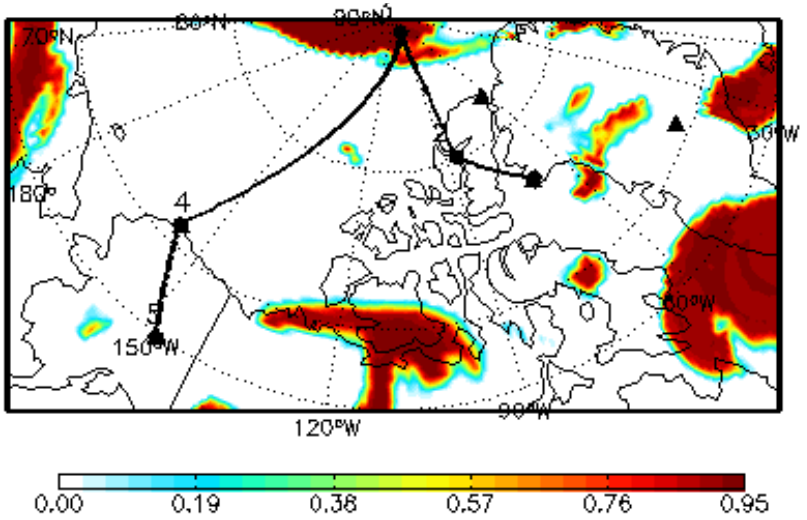
April 9 Cloud Fraction



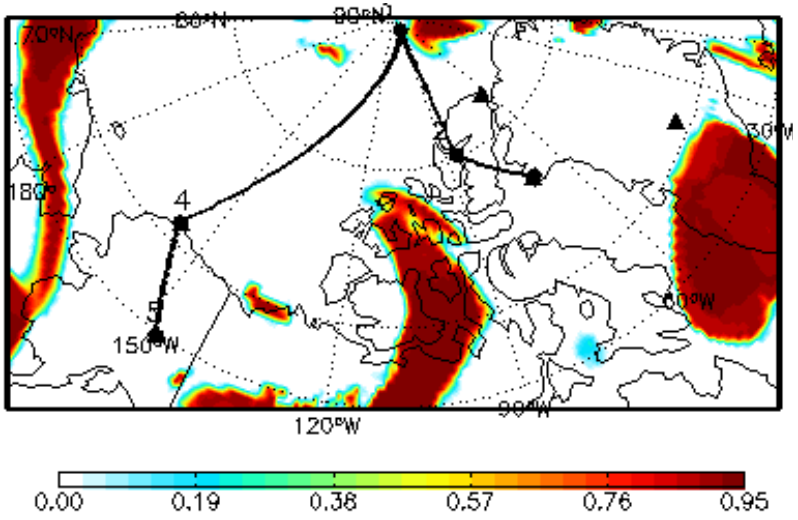
April 10 Cloud Fraction



April 9 High Clouds



April 10 High Clouds



Initialized 20080406 – 06Z