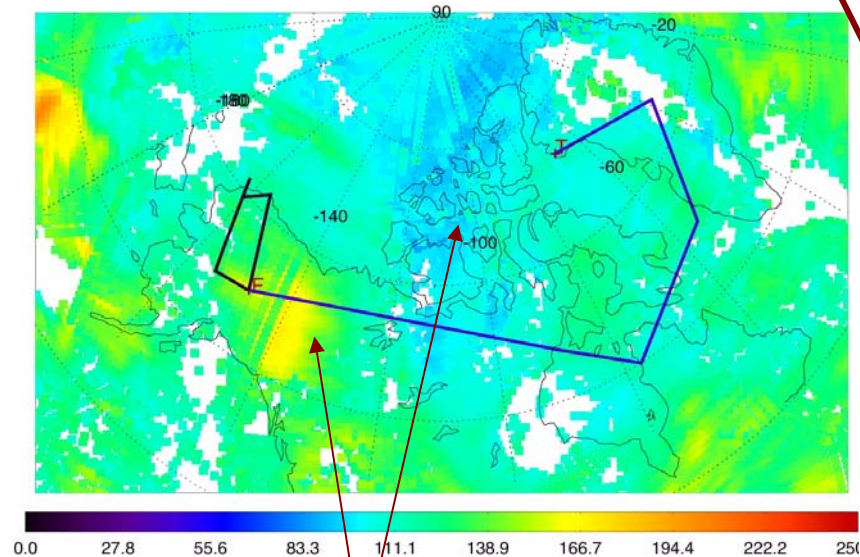


AIRS NRT ARCTAS Support: Latest CO

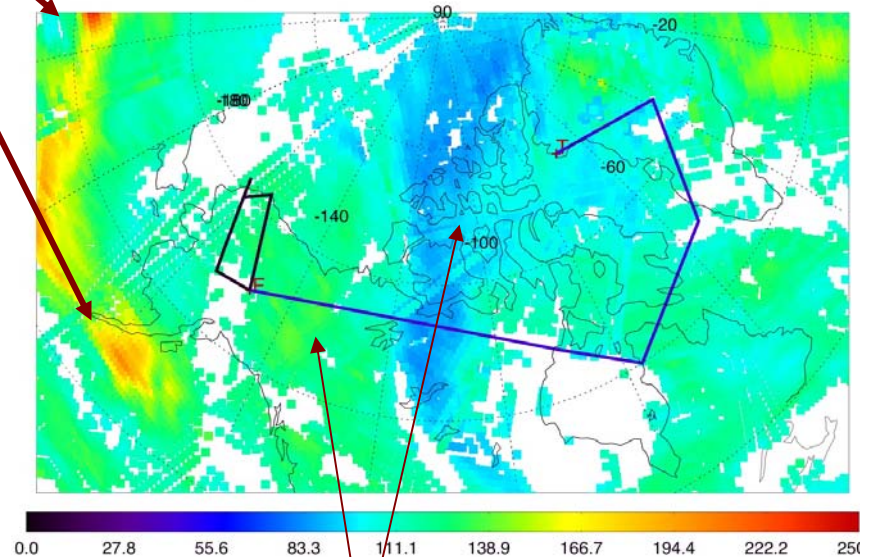
Fast moving Asian transport component into the study areas.

AIRS CO VMR (ppbv) at 500mb on 20080404 for ARCTAS



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

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

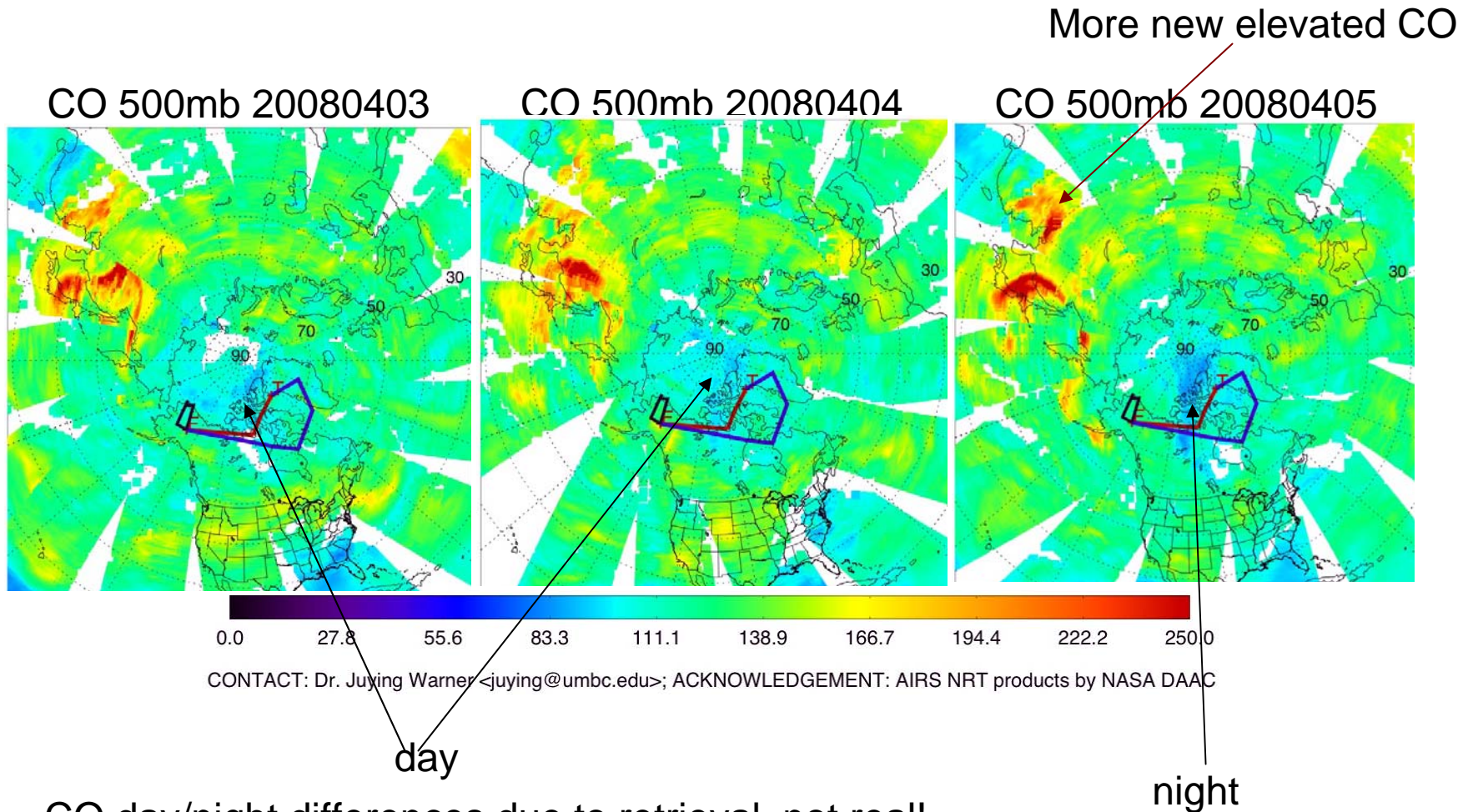


CONTACT: Dr. Juying Warner <juying@umbc.edu>; ACKNOWLEDGEMENT: AIRS NRT products by NASA DA.

Higher values due to daytime values,
no strong variations in these regions.

Nighttime values

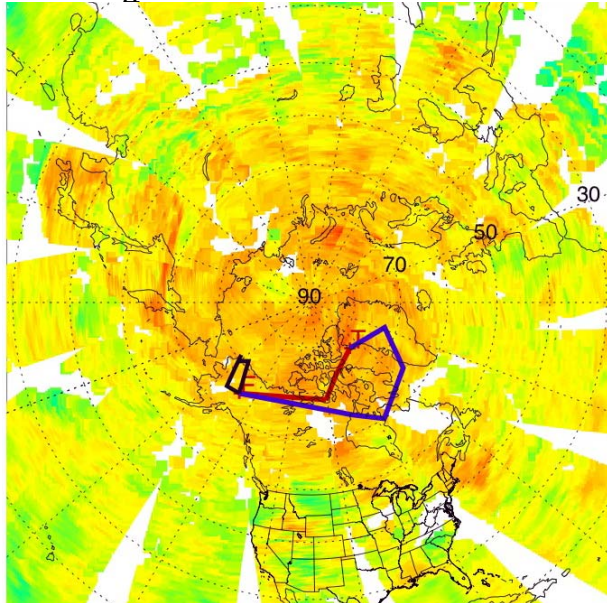
AIRS NRT ARCTAS Support: CO Asian Transport Continues



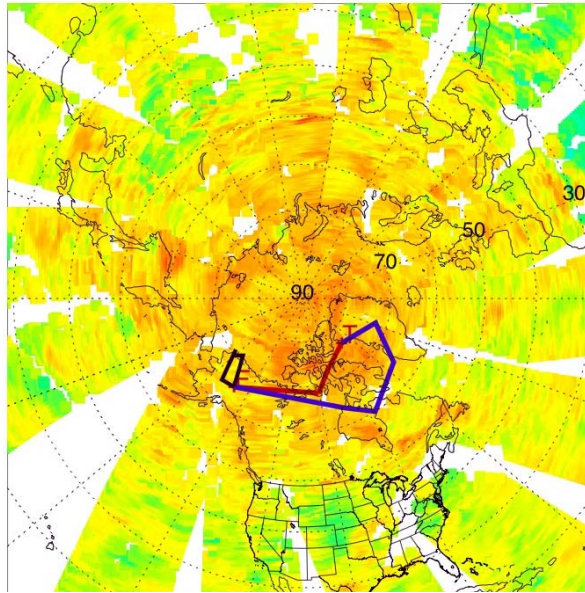
AIRS NRT ARCTAS Support:

CH₄ April 2-4, 08

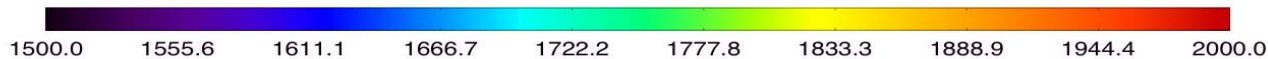
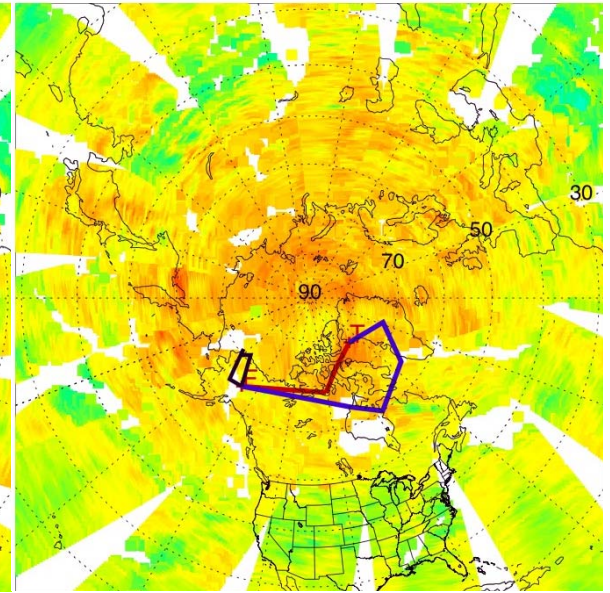
CH₄ 300mb 20080403



CH₄ 300mb 20080404



CH₄ 300mb 20080405

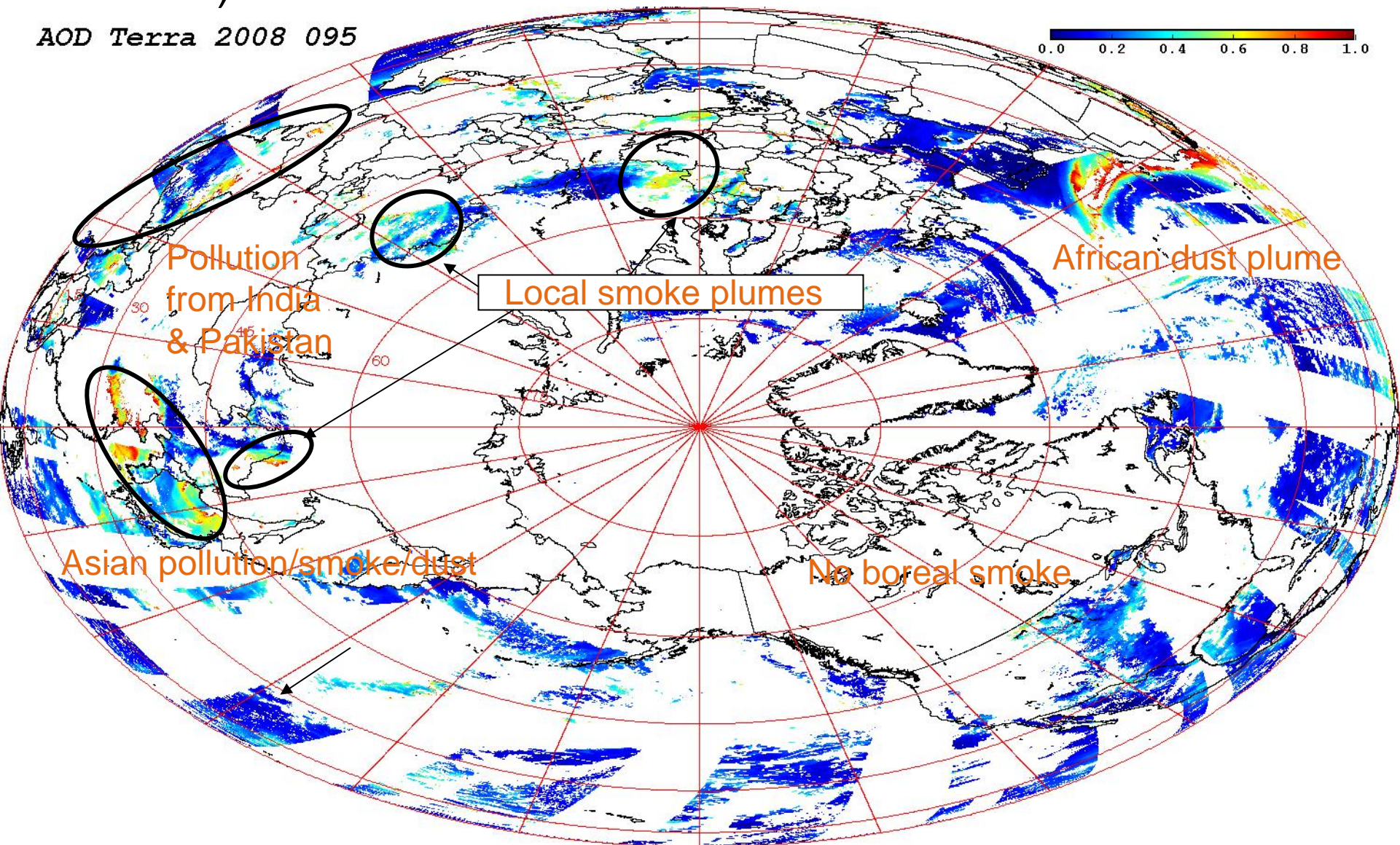


CONTACT: Dr. Juying Warner <juying@umbc.edu>; ACKNOWLEDGEMENT: AIRS NRT products by NASA DAAC

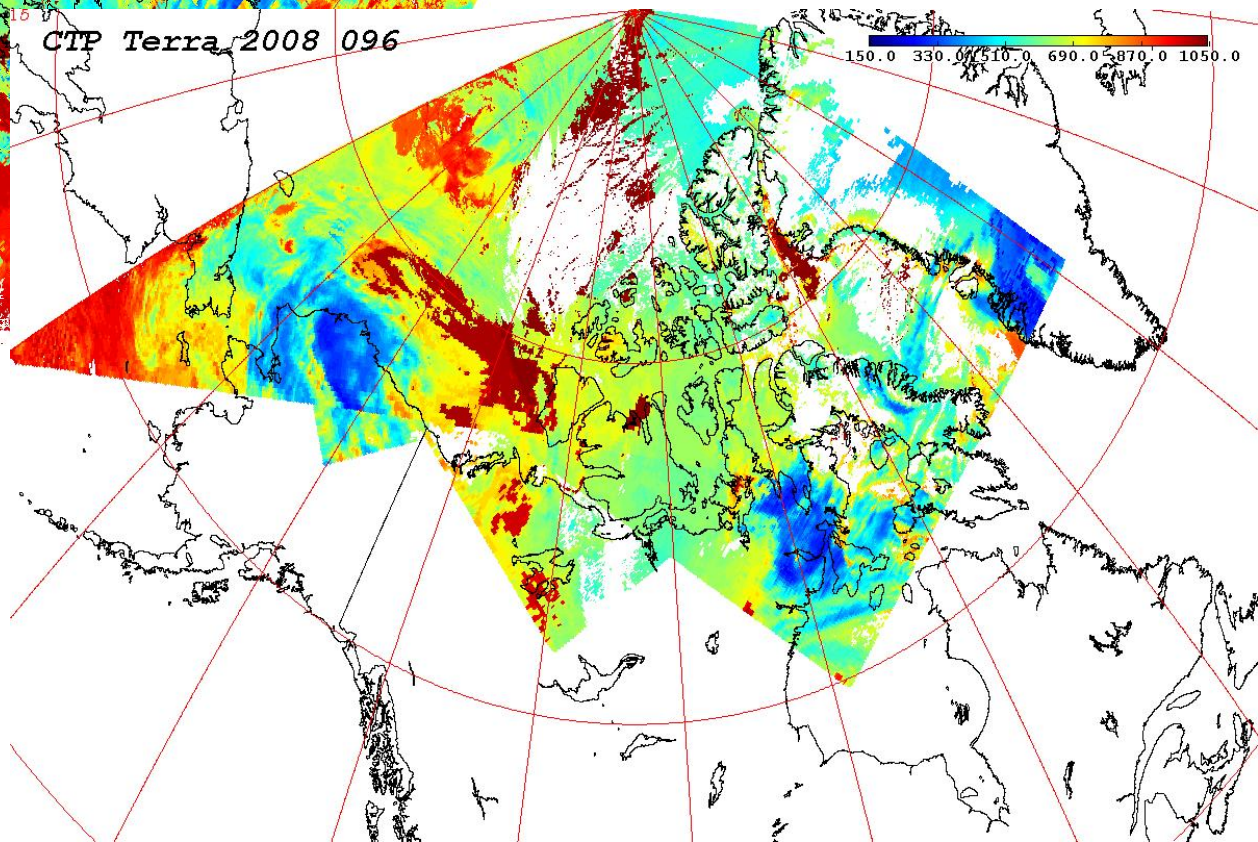
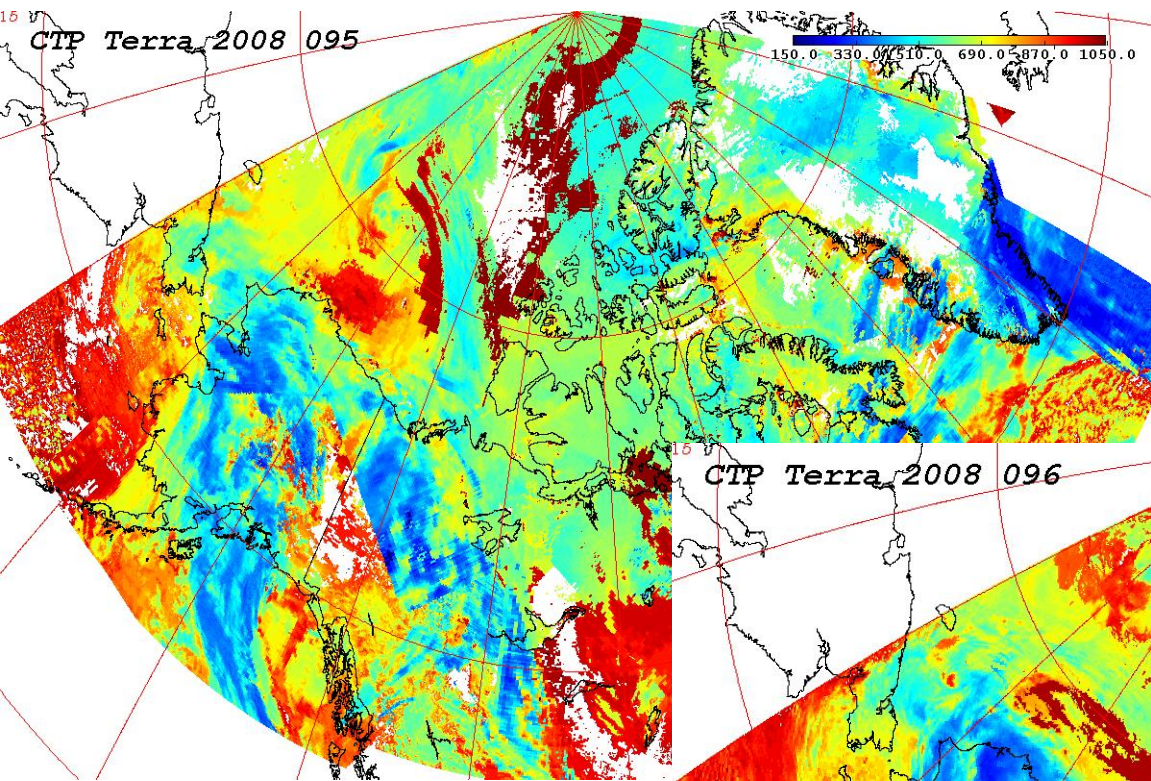
- CH₄ concentrations also high at 500mb as previously only showed at 300mb
- Looking forward to validating AIRS CH₄ with ARCTAS measurement

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

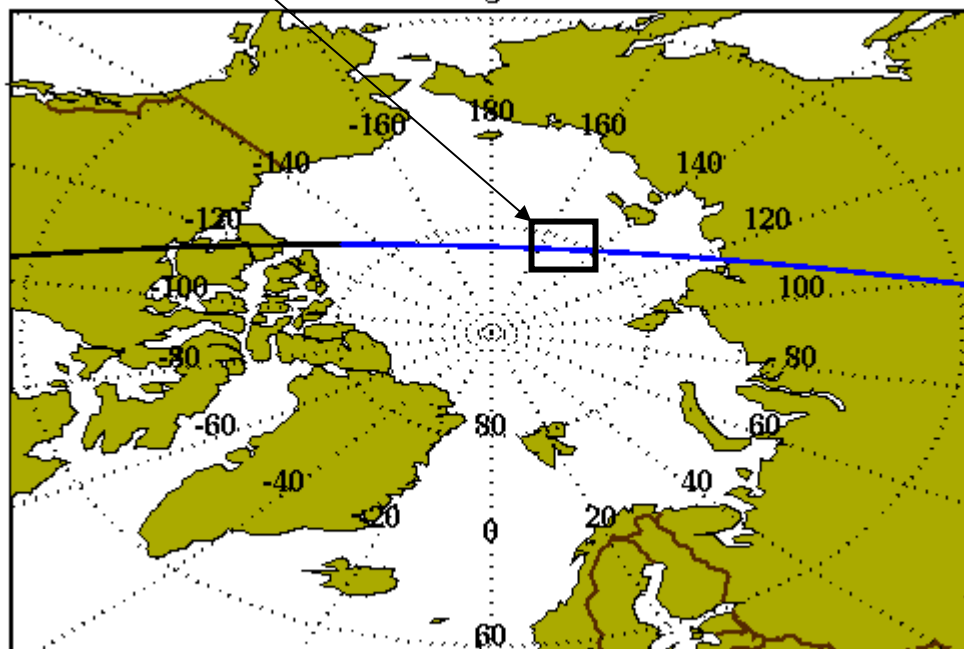
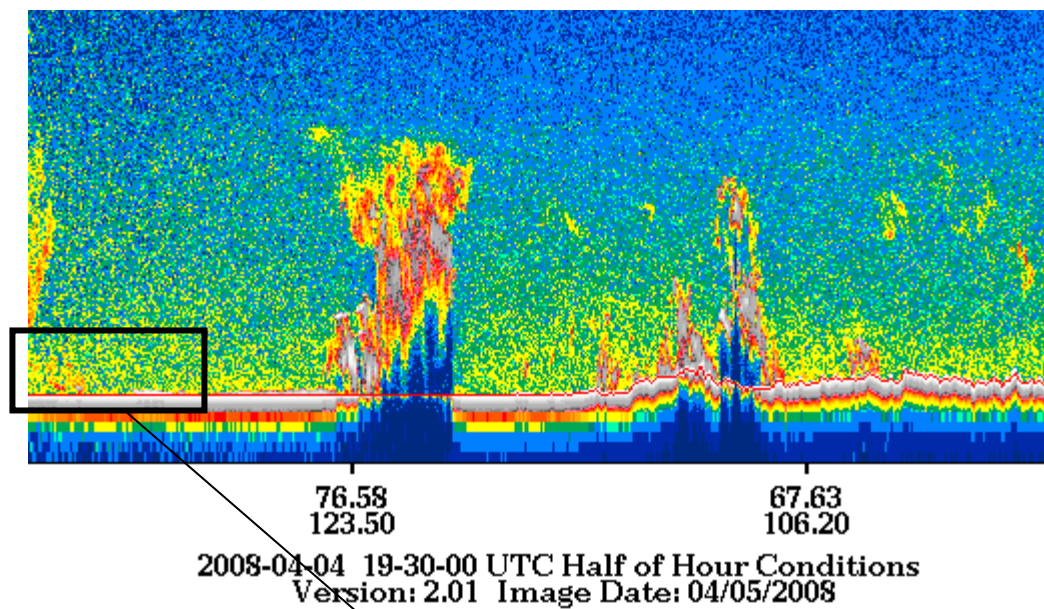
AOD Terra 2008 095



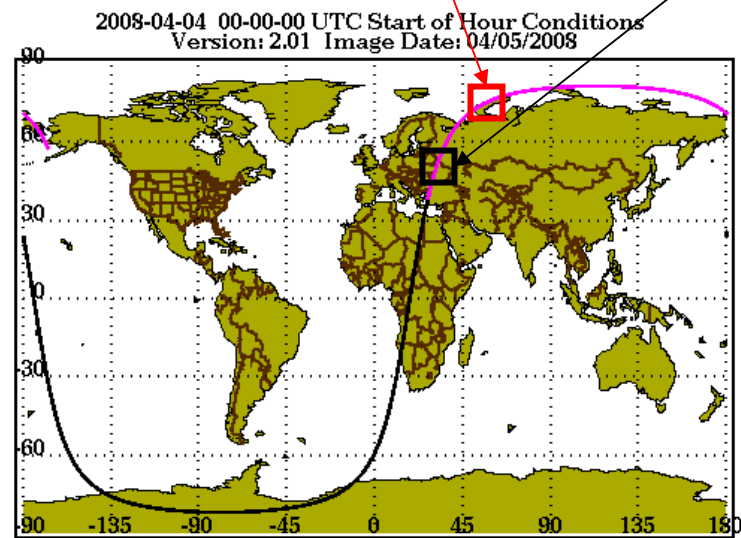
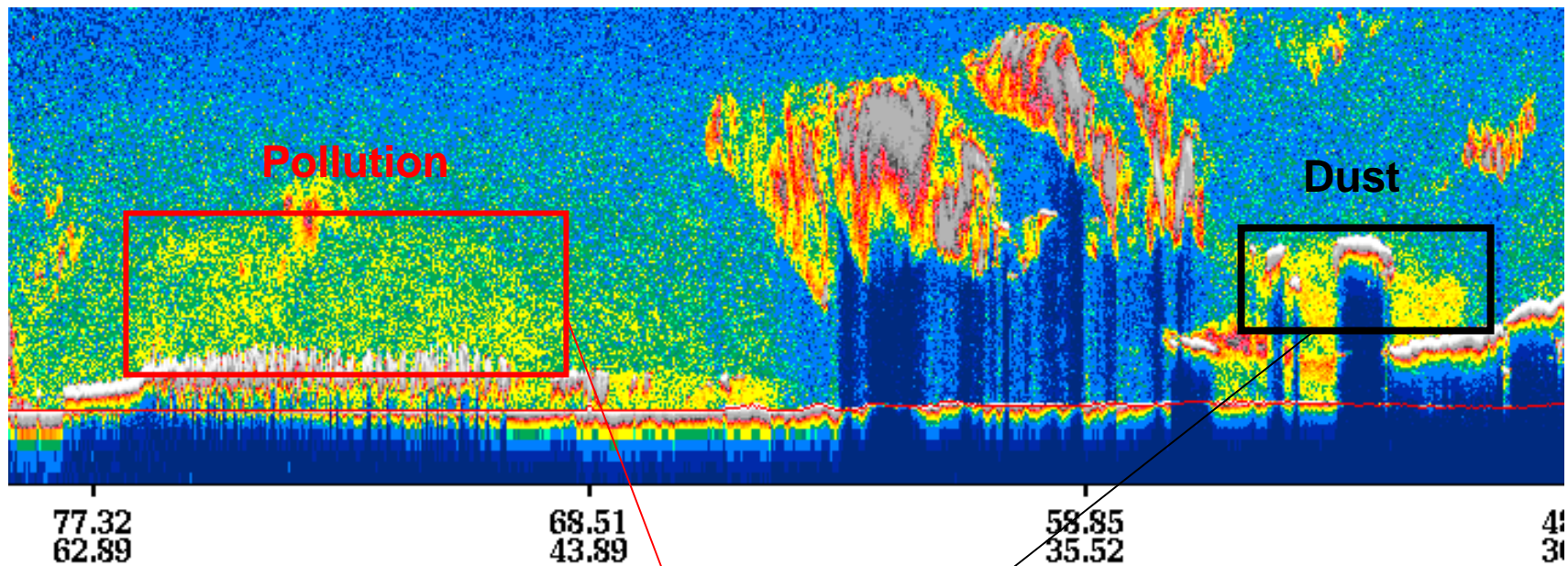
MODIS Cloud Top Pressure



CALIPSO Observation on 4/4

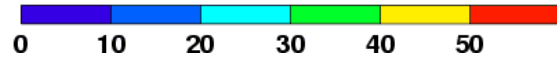
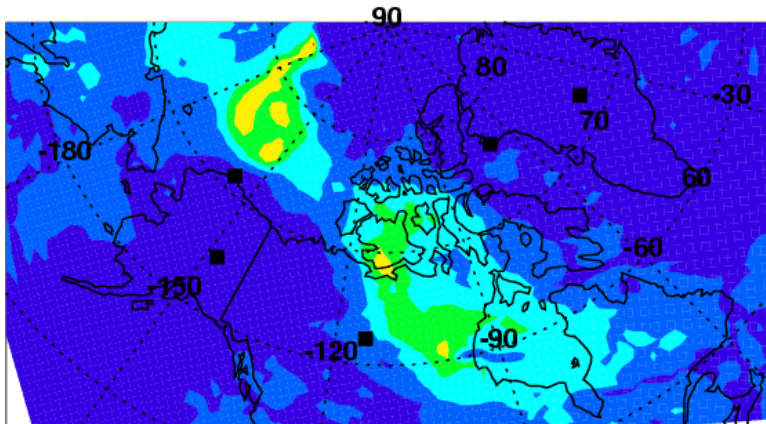


CALIPSO Observation on 4/4

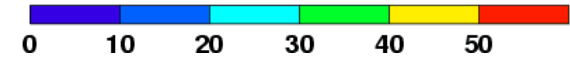
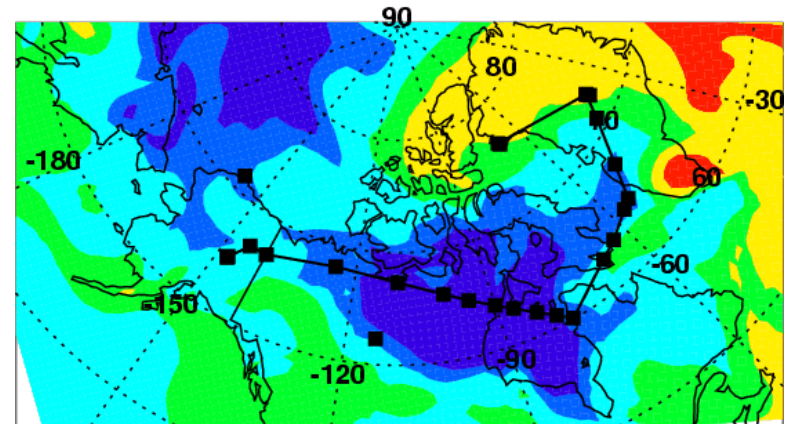


O3 from Thule - Fairbanks on 4/8

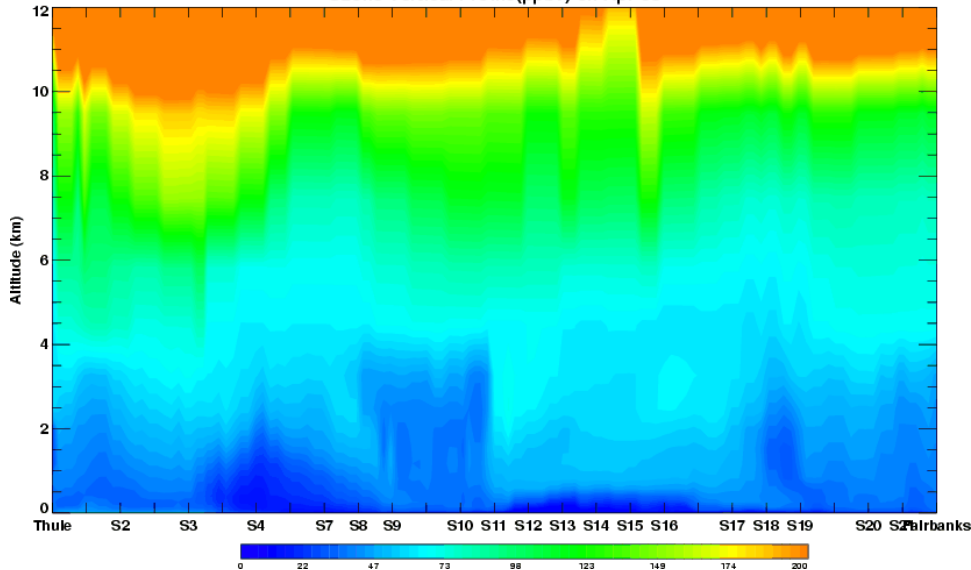
BrOx5 (pptv) at surface, Apr-05_0100 UTC



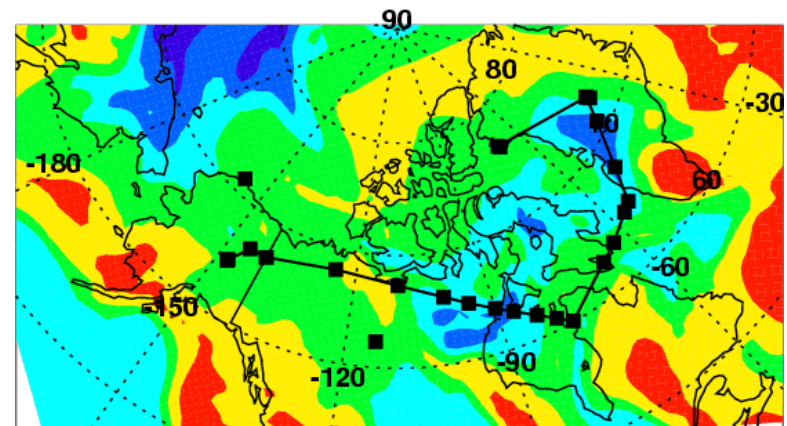
O₃ (ppbv) at surface, Apr-08_2000 UTC



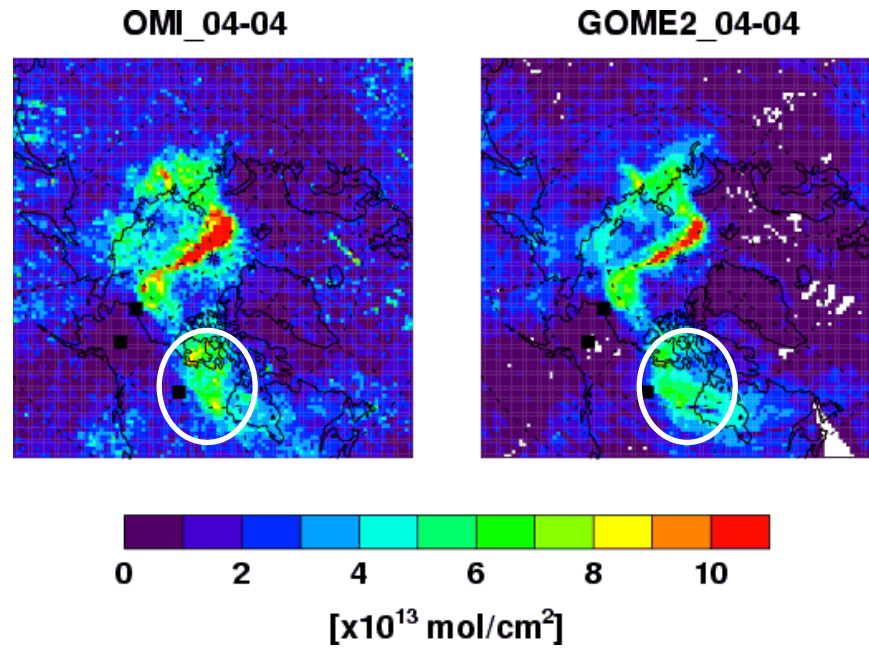
Ozone Vertical Profile(ppbv) on Apr-08



O₃ (ppbv) at 300m, Apr-08_2000 UTC



Boundary layer
BrO on 4/4

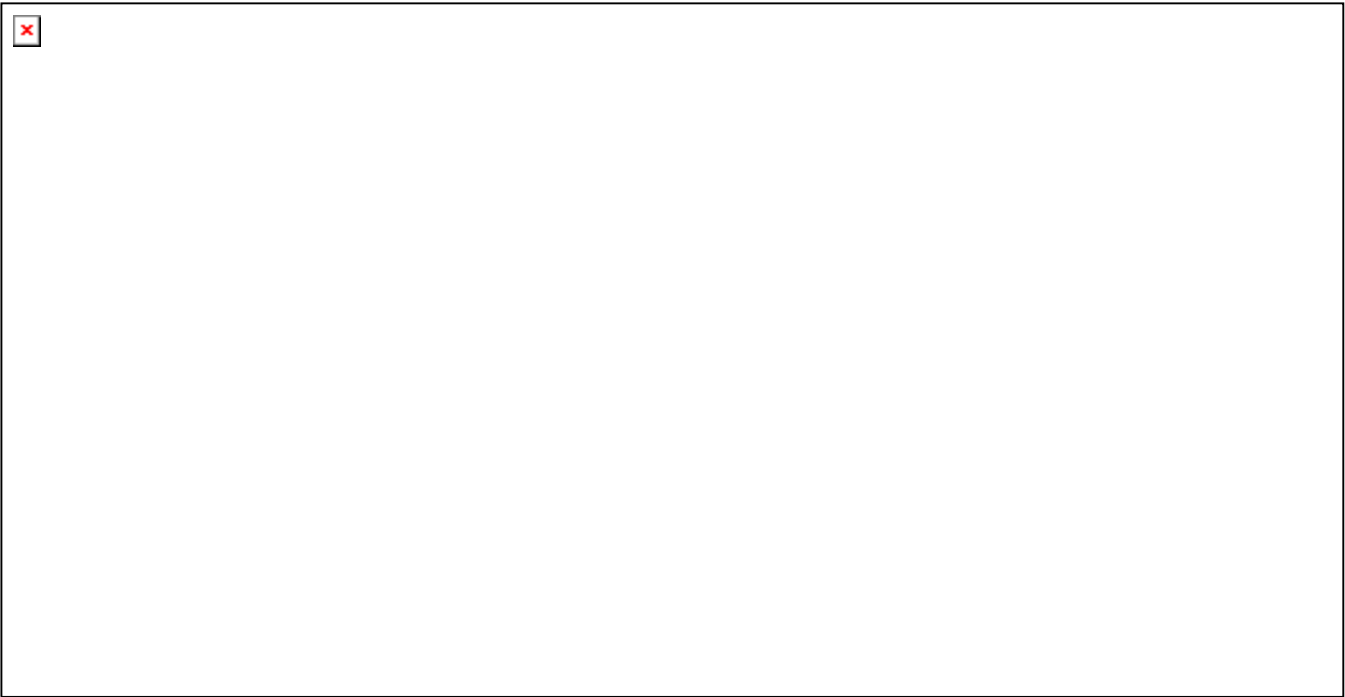


Surface T
on 4/4

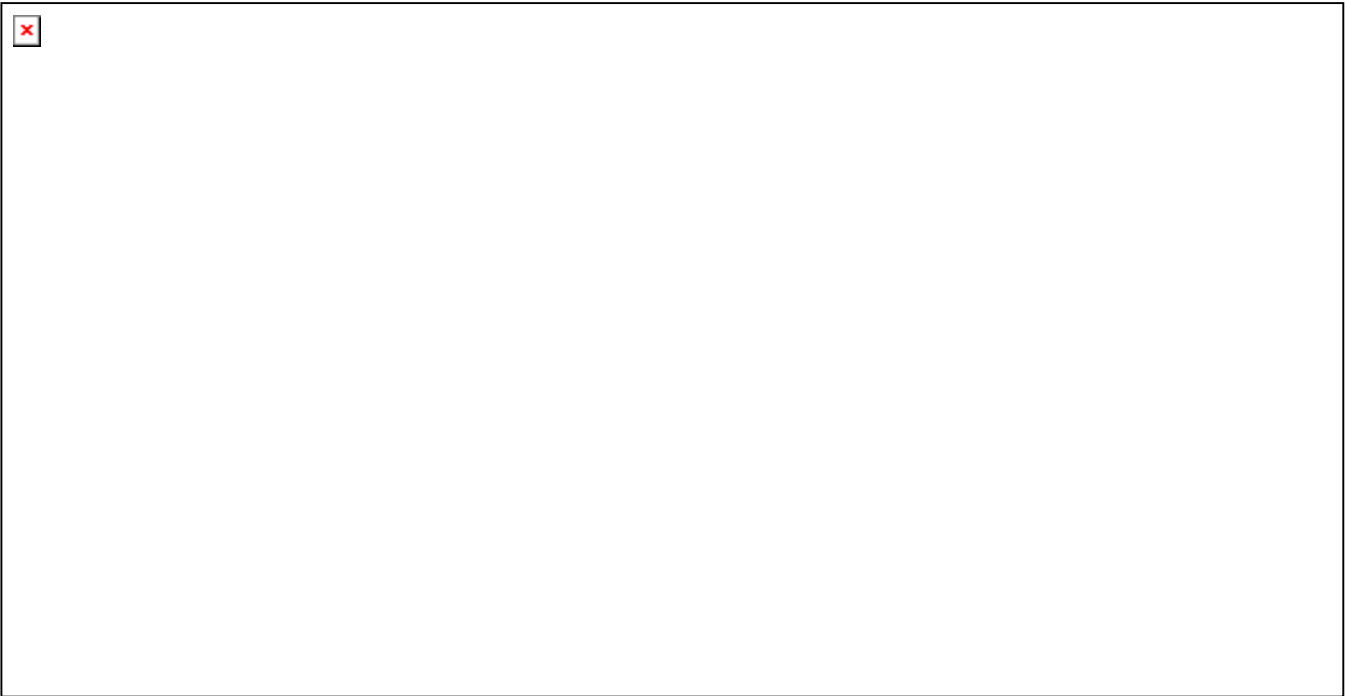


sfc T

Monday, 4/7



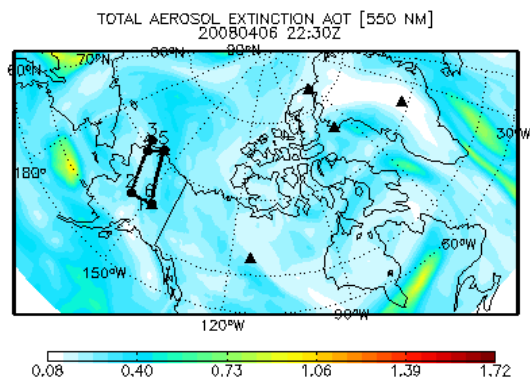
Tuesday, 4/8



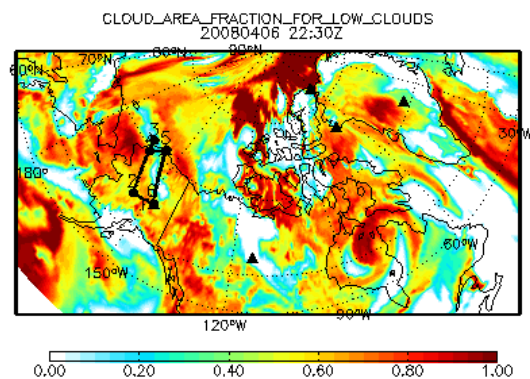
GEOS-5 Forecast for Sunday, Apr. 6, 2230Z

Proposed P-3 track

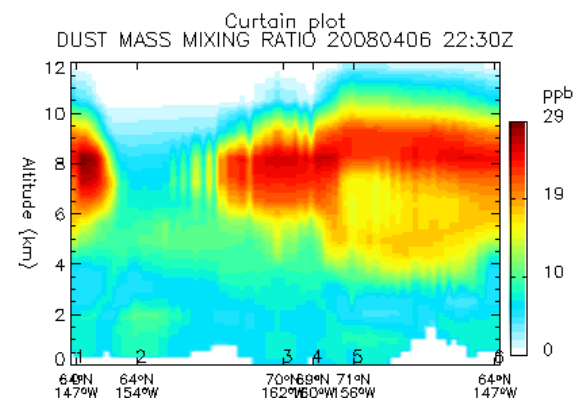
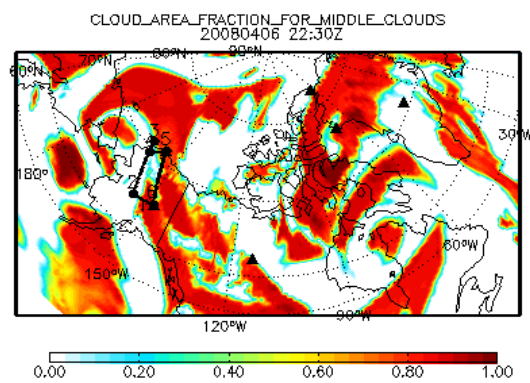
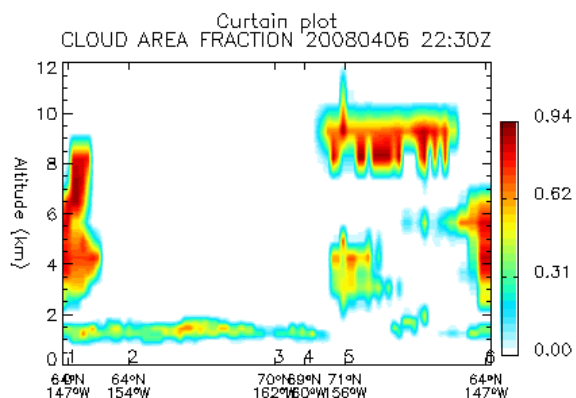
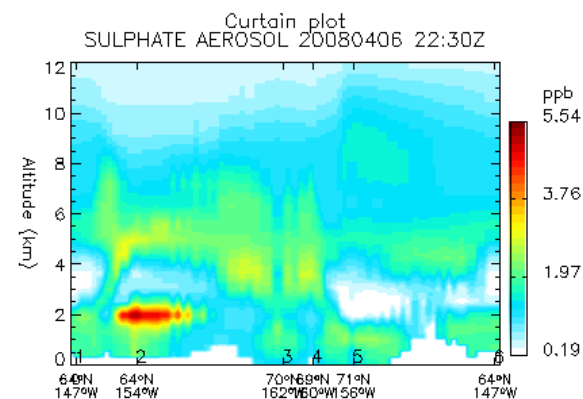
GEOS-5 forecast: 20080405_06z



GEOS-5 forecast: 20080405_06z



GEOS-5 forecast: 20080405_06z

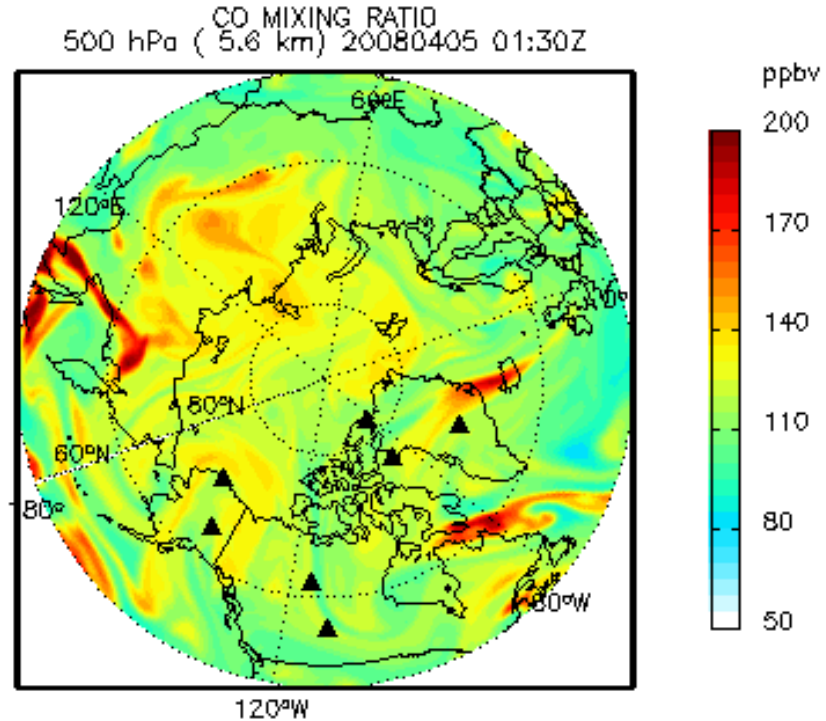


Pretty anemic aerosols

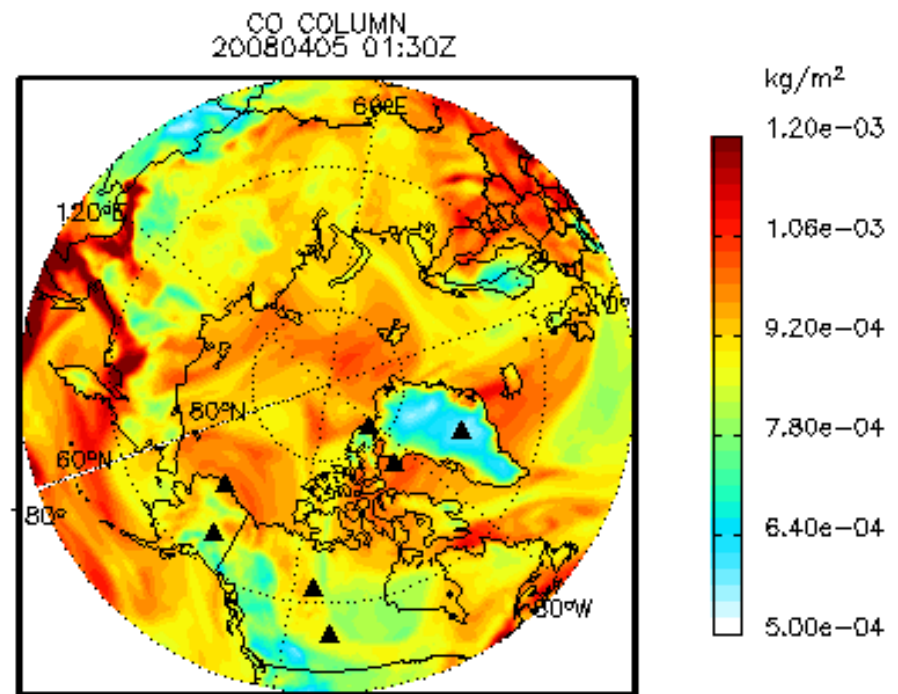
Low-level clouds on CALIPSO line,
But cloud-free at high levels

CO evolution: 4/5 – 4/9

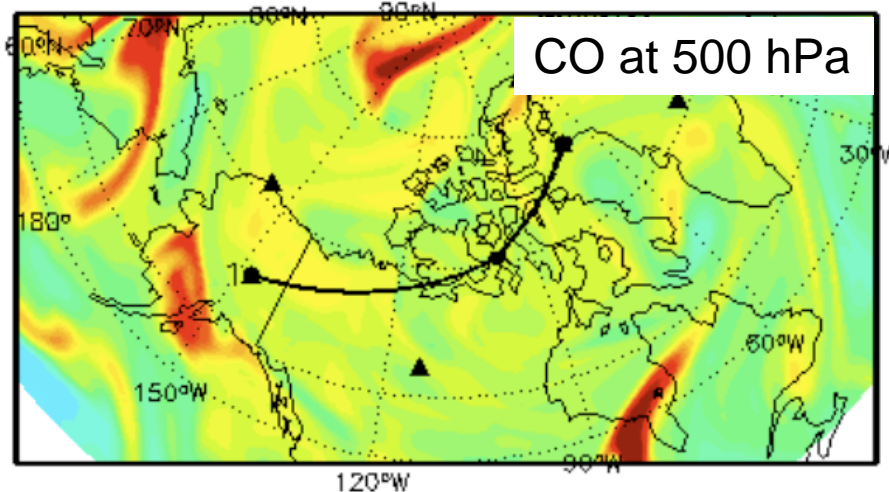
500 mb CO



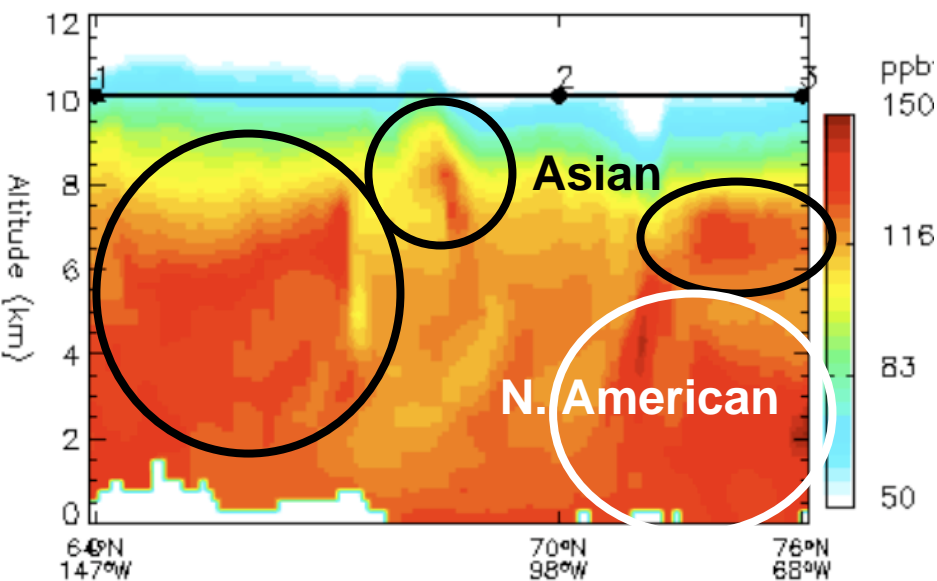
Total CO Column



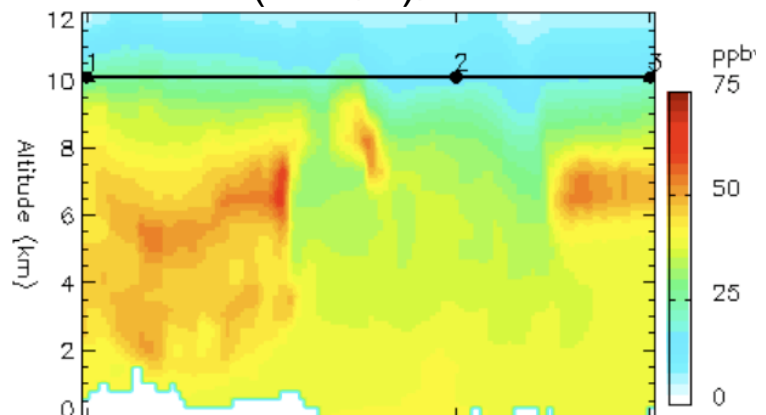
DC8 flight on April 7: repeat 4/4 track



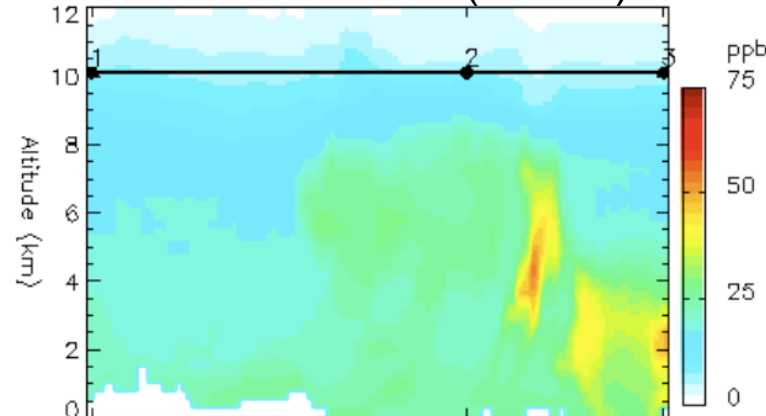
Total CO



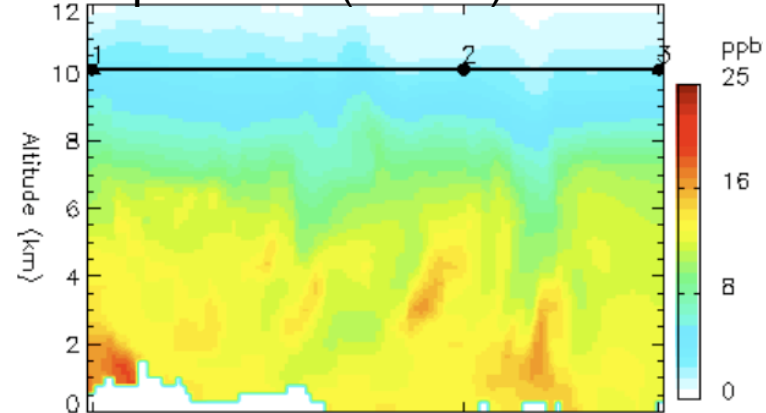
Asian CO (anthro)



North American CO (anthro)

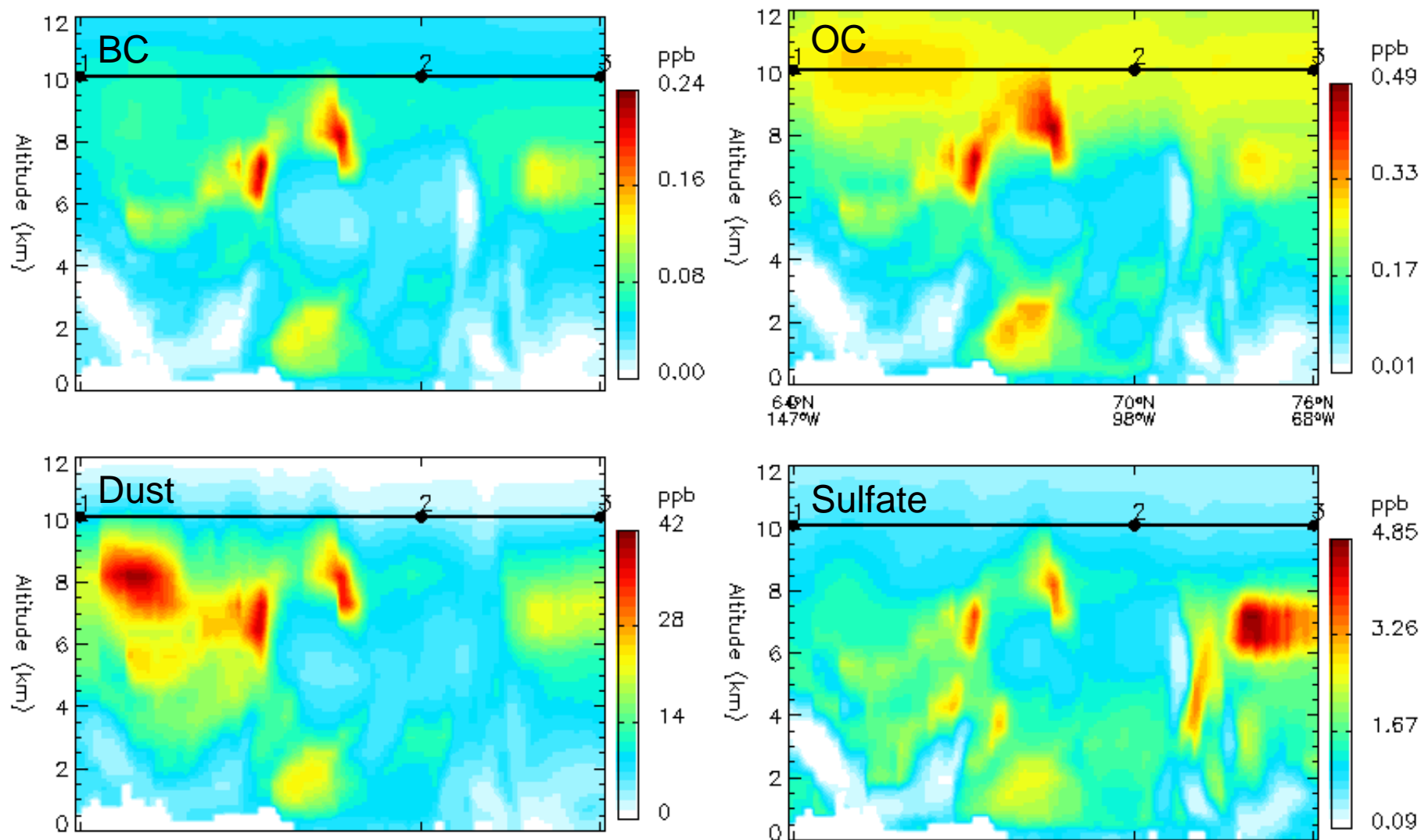


European CO (anthro)



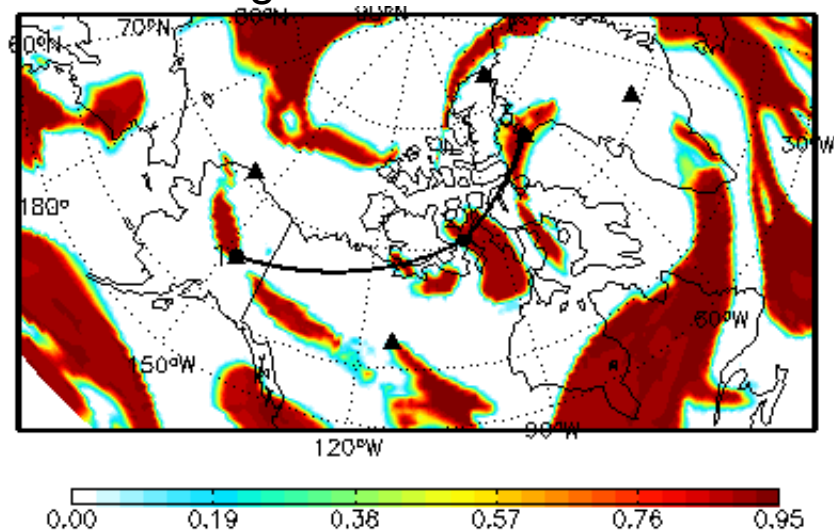
Initialized 20080405 - 06Z

DC8 flight on April 7: repeat 4/4 track

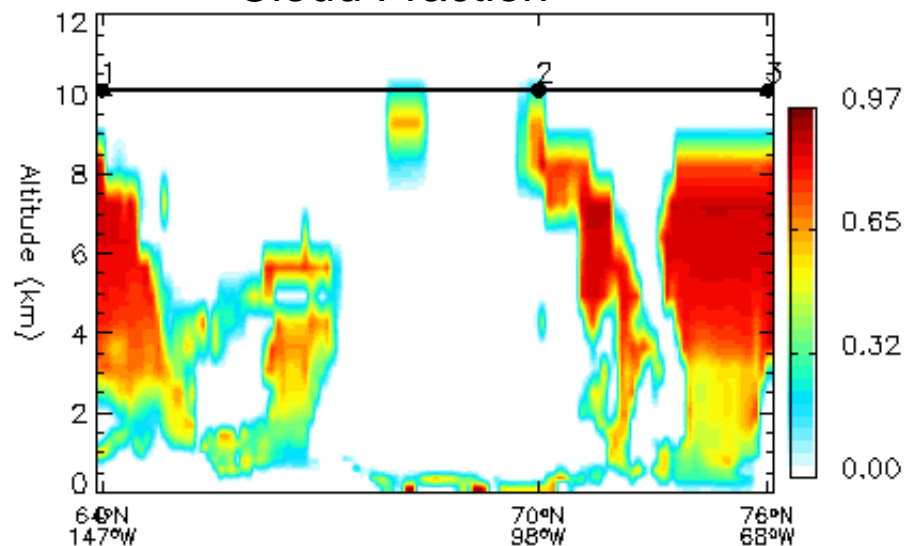


DC8 flight on April 7: repeat 4/4 track

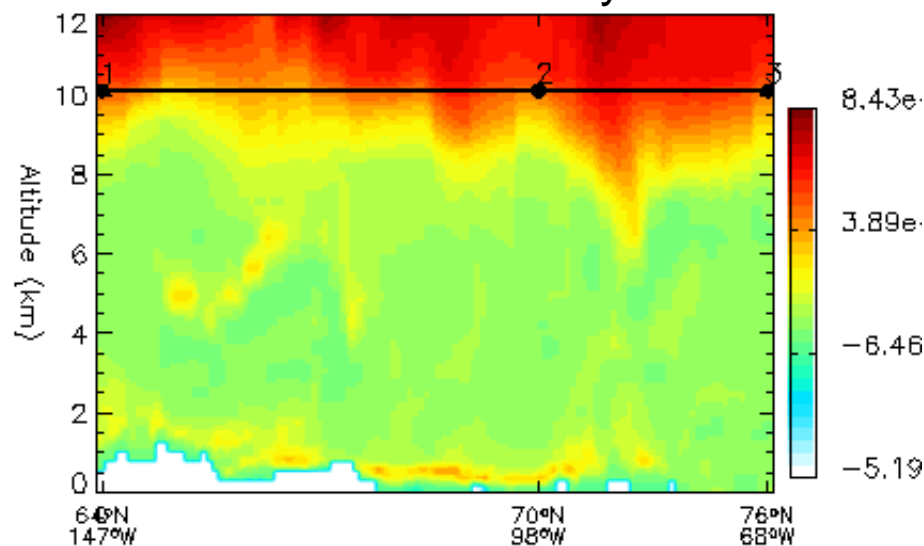
High Cloud Fraction



Cloud Fraction



Potential Vorticity

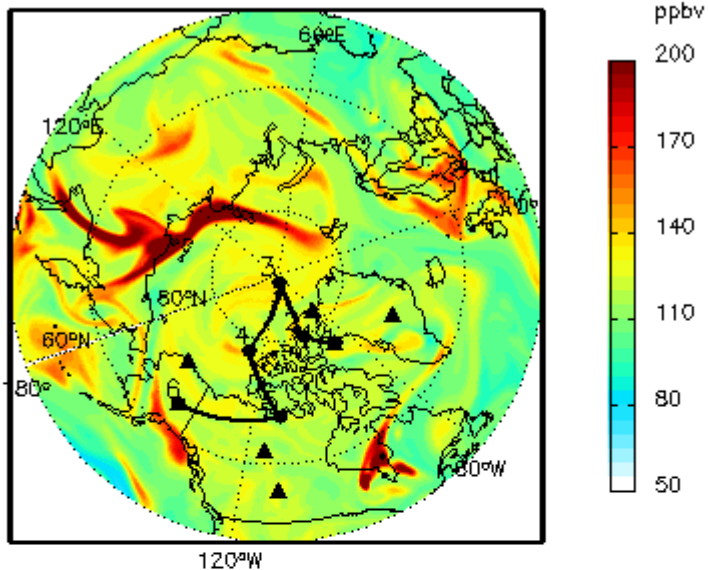


DC8 Return: April 8 – lots of options!

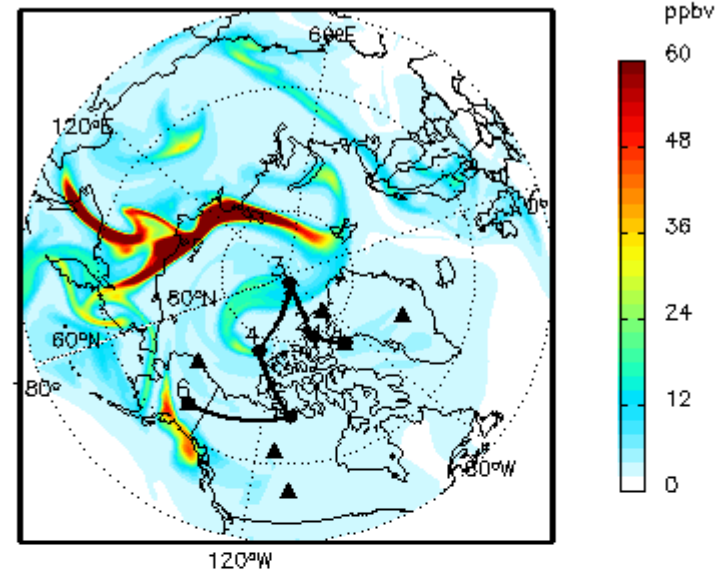
GEOS-5 forecast: 20080405_06

GEOS-5 forecast: 20080405_06z

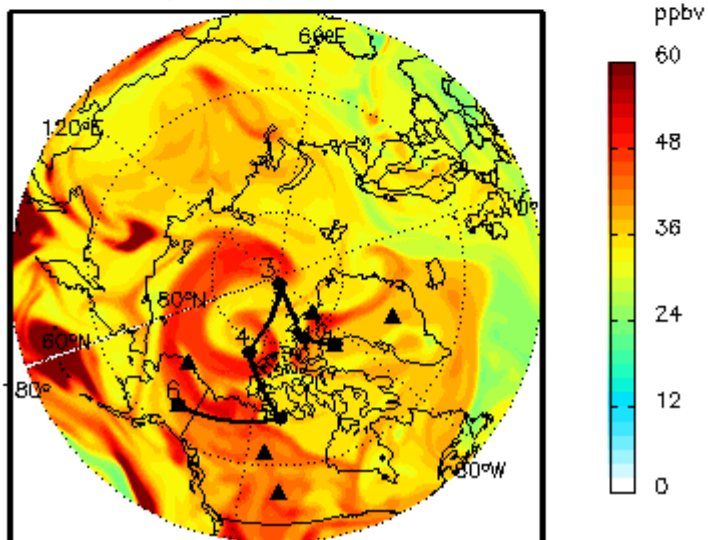
500 mb CO



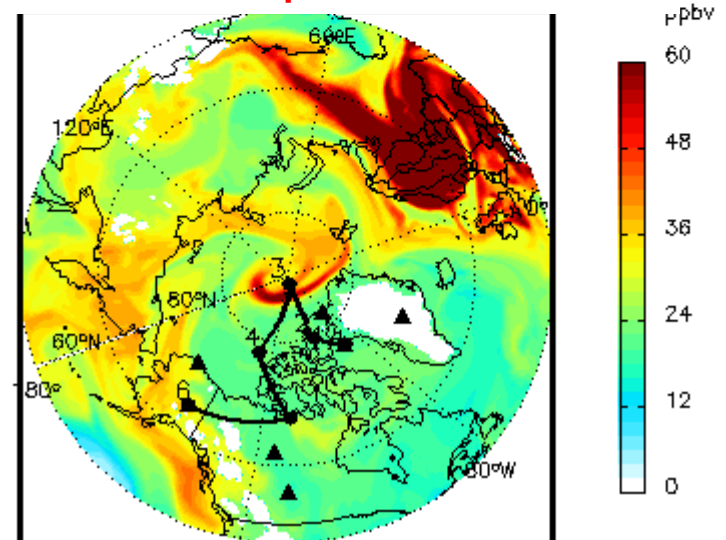
500 mb Boreal Biomass Burning CO



500 mb Asian CO

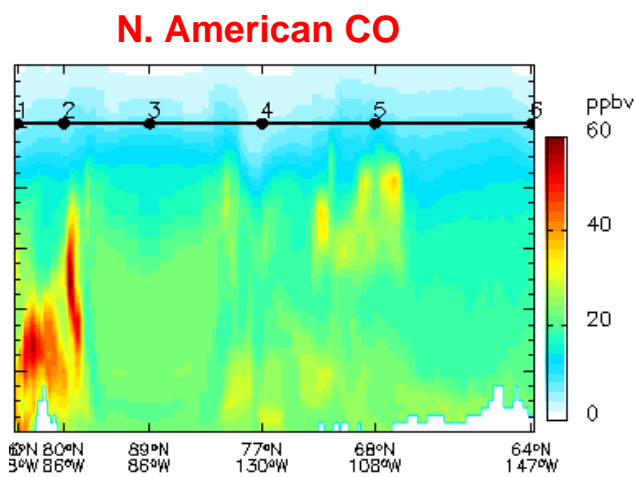
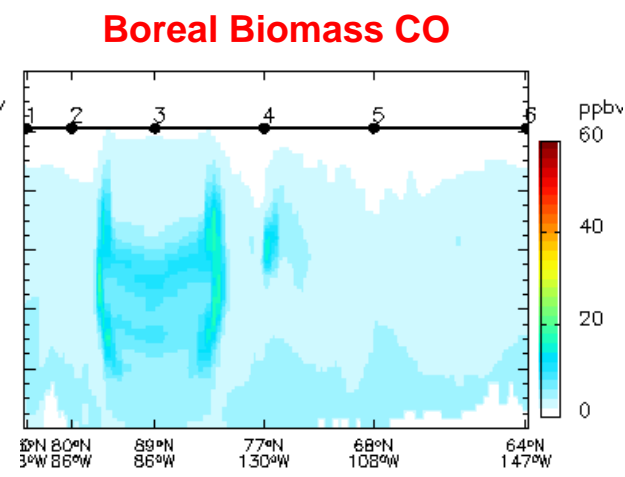
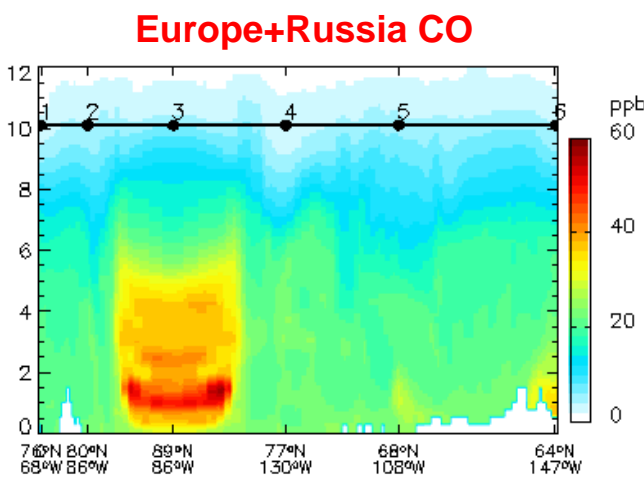
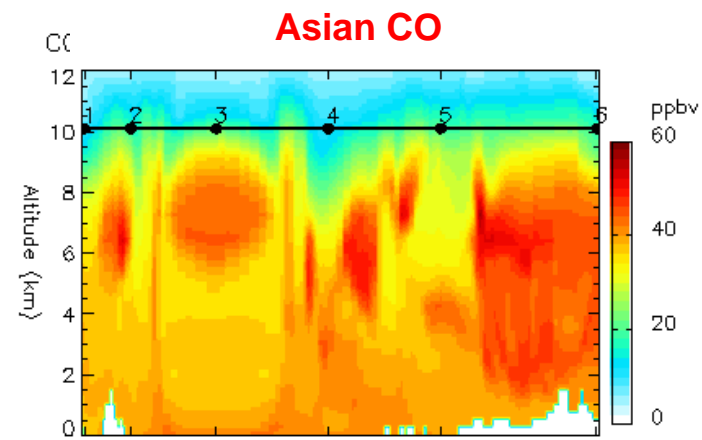
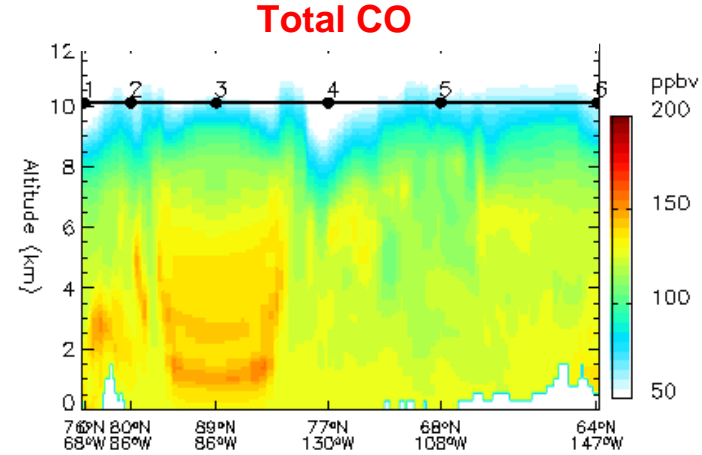
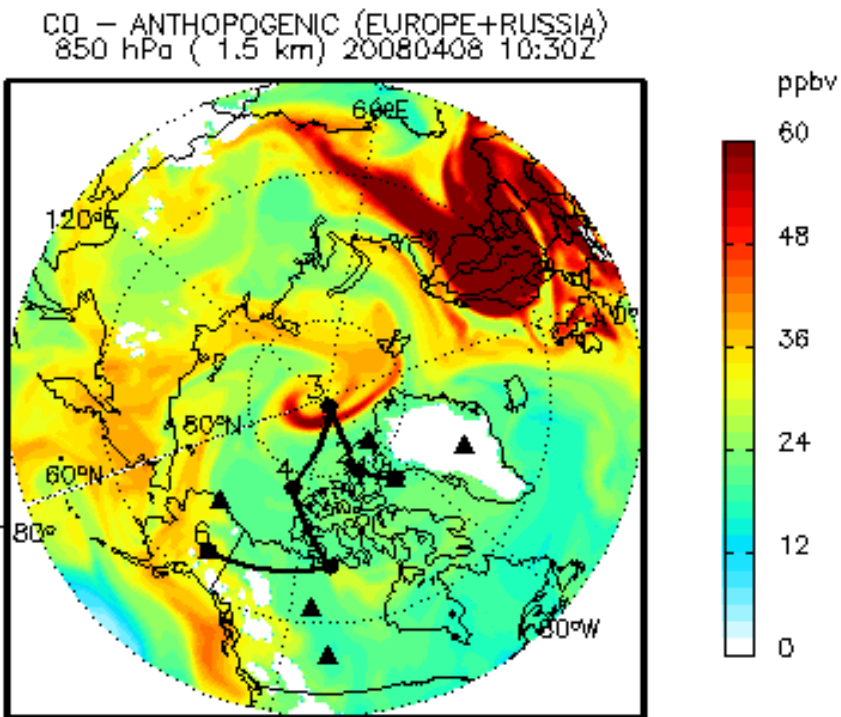


850 mb Europe+Russia CO



DC8 Return: April 8

Europe+Russia CO @ 850 mb



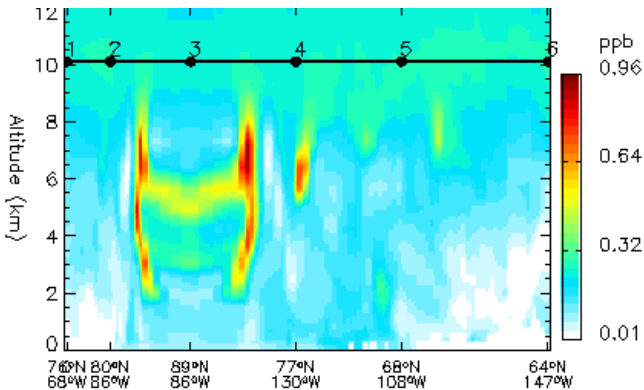
DC8 Return: April 8

GEOS-5 forecast: 20080405_06z

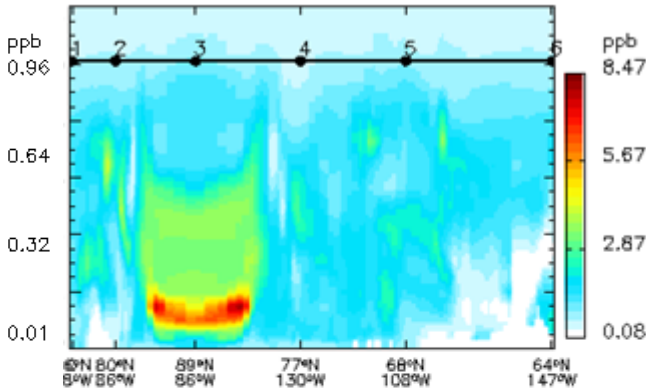
GEOS-5 forecast: 20080405_06z

GEOS-5 forecast: 20080405_06z

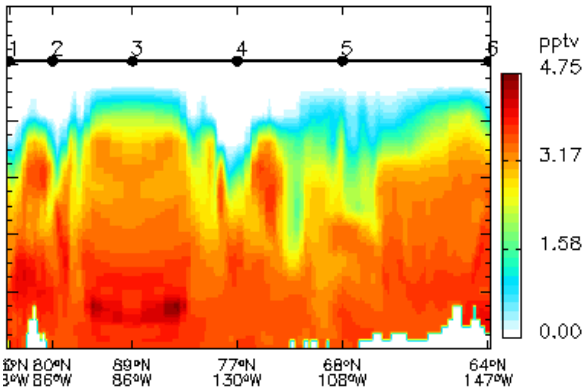
Organic Carbon



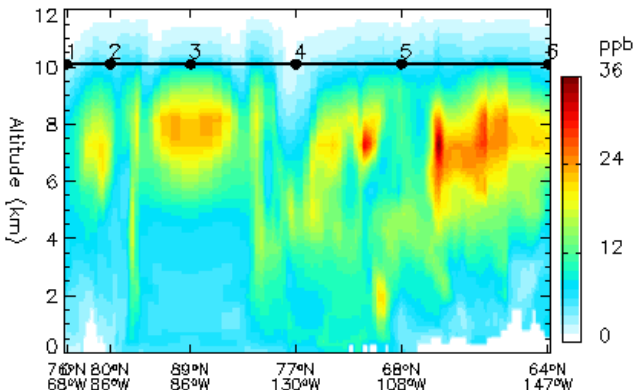
Sulfate



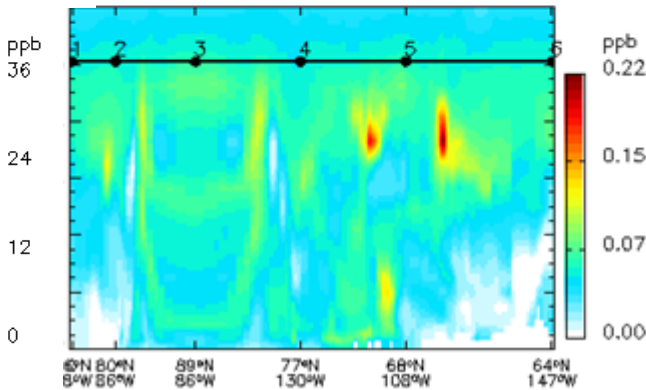
Tropospheric CFC-12



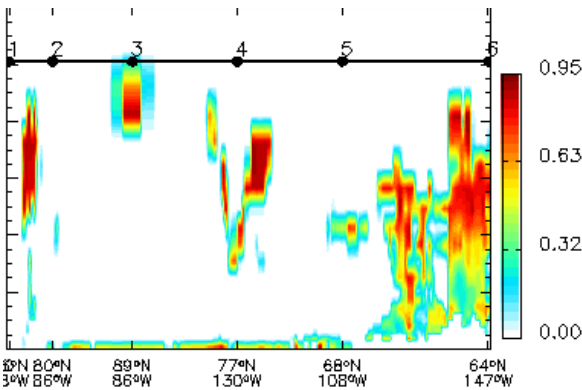
Dust



Black Carbon

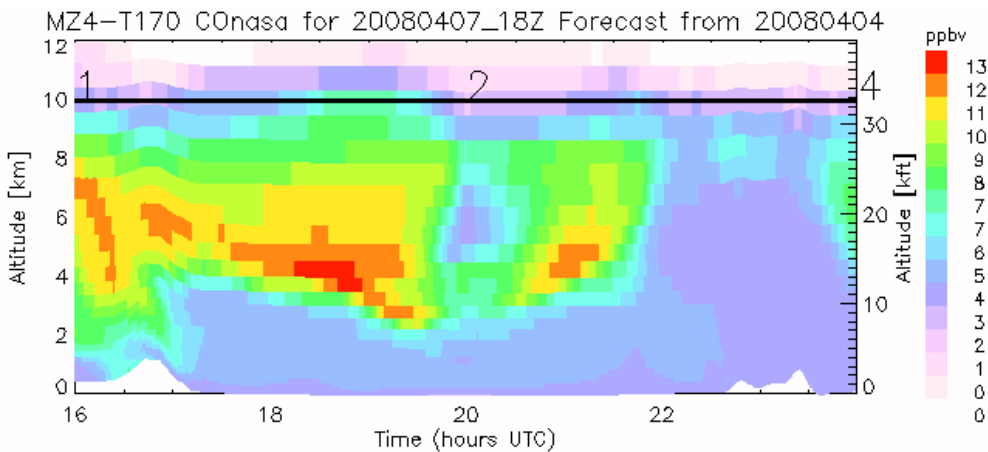


Cloud

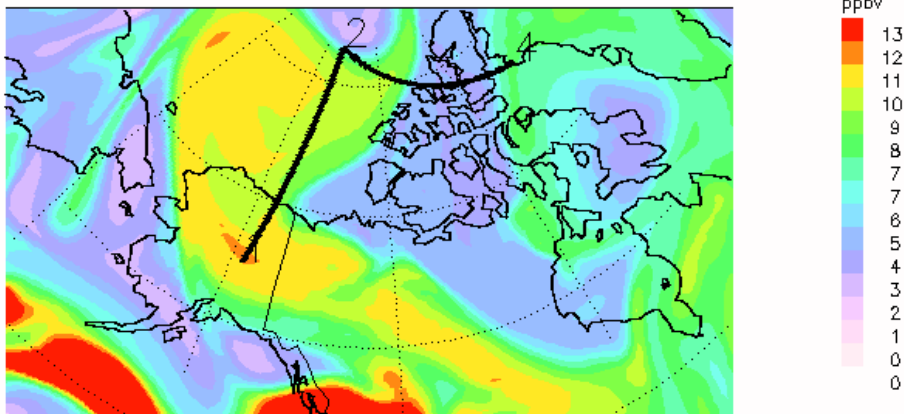


Apr 7 Fairbanks local MOZART forecast from Apr 4 for Apr 7 18Z

N.Asia Anthro

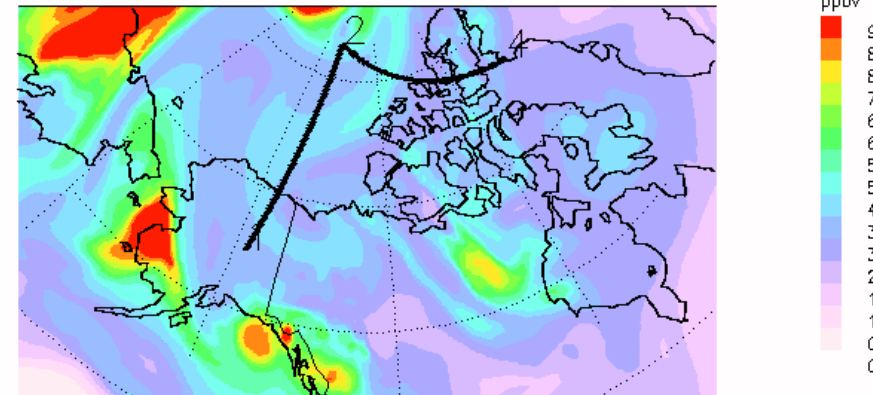


CONasa 7 km 20080407_18Z



Europe Anthro

COeura 4 km 20080407_18Z



S.Asia Fires



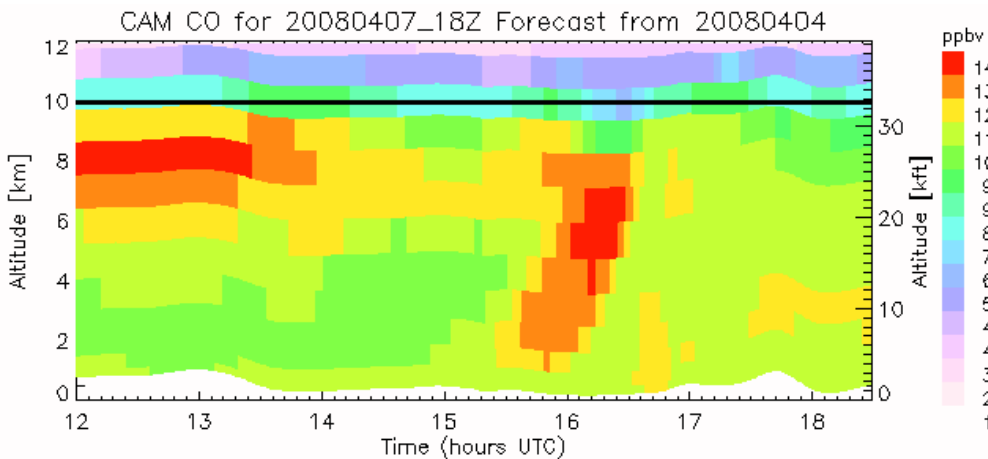
Apr 7 Fairbanks-Eureka-Thule CAM forecast from Apr 4 for Apr 7 18Z

Asian pollution at 8-10 km over Alaska

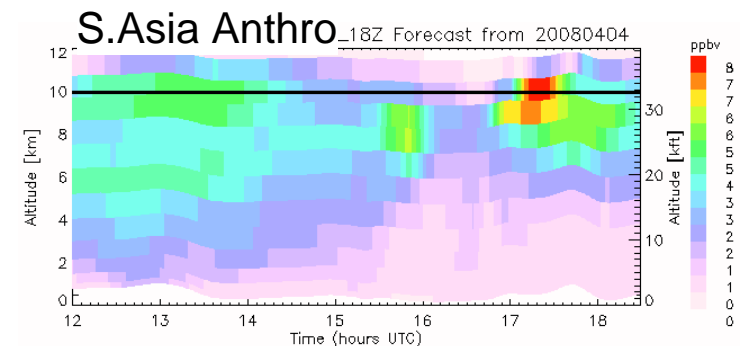
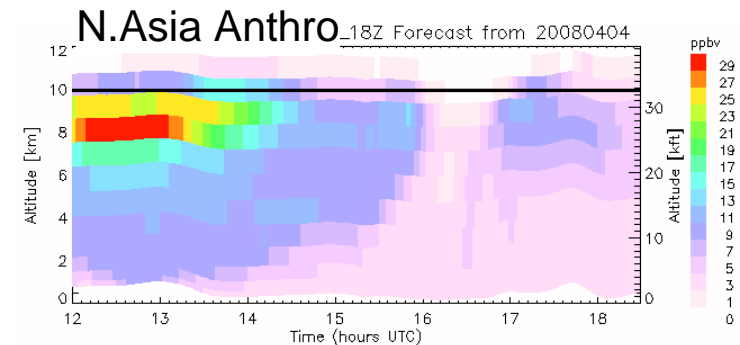
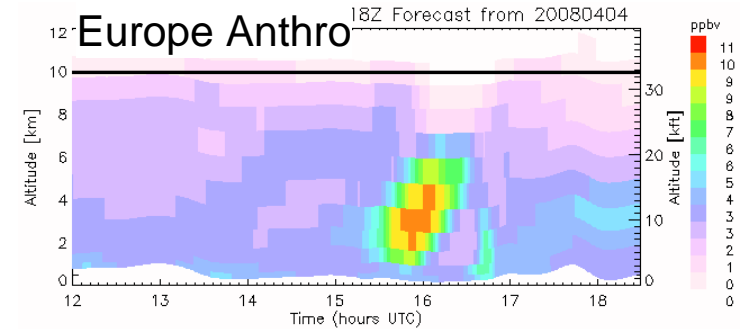
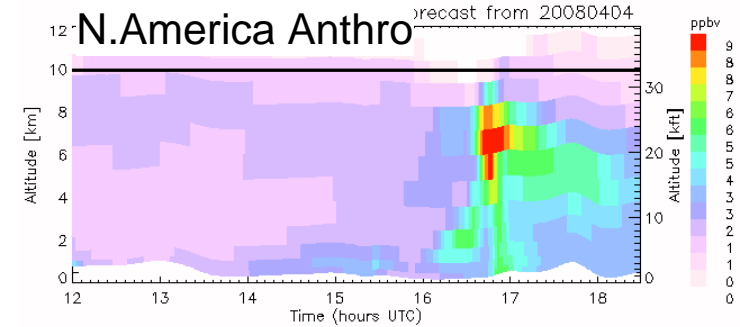
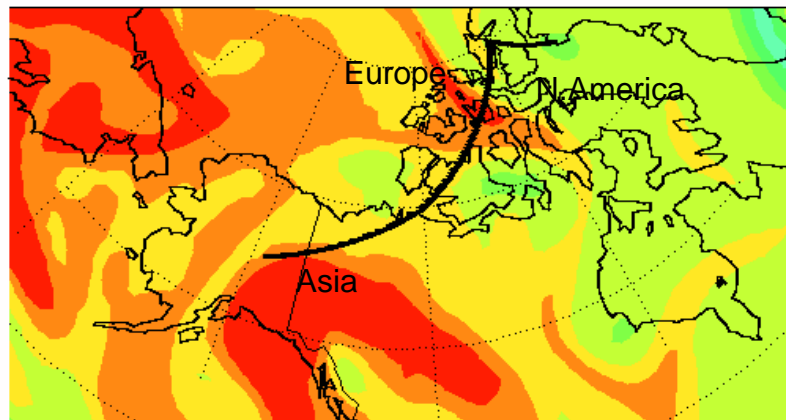
European pollution at mid-alt over islands

N.America pollution 6-8 km towards Eureka

CO

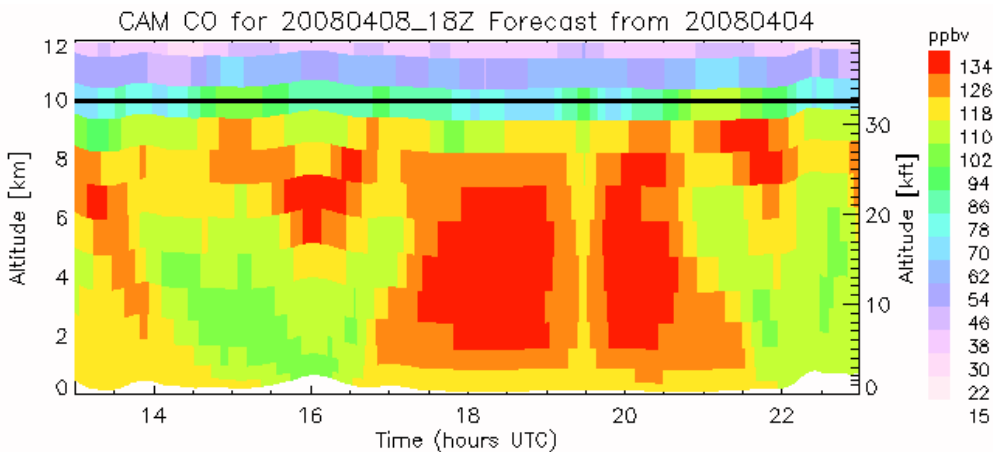


CAM CO 7 km 20080407_18Z

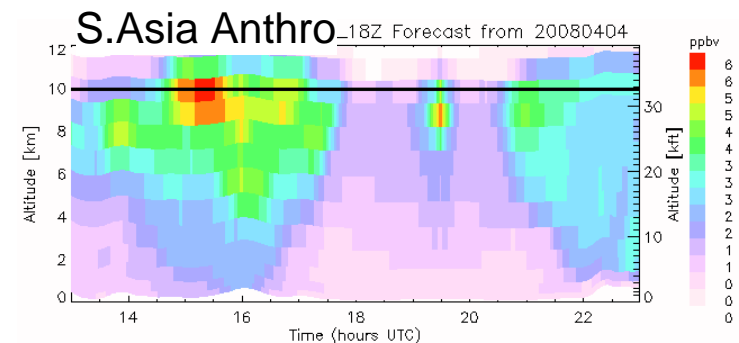
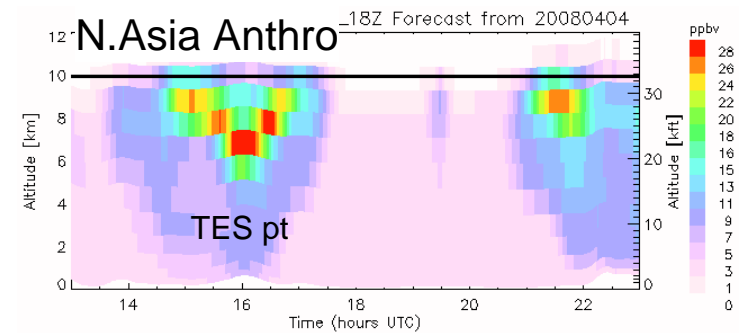
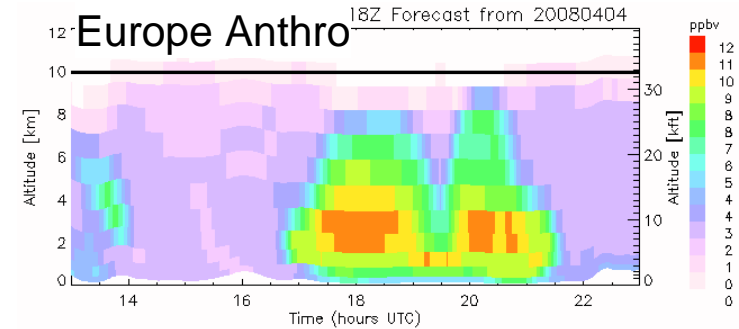
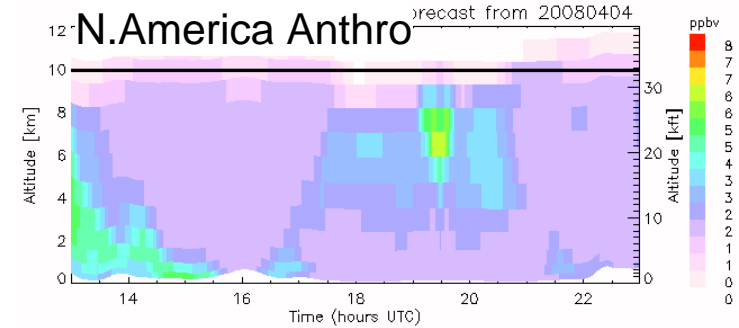
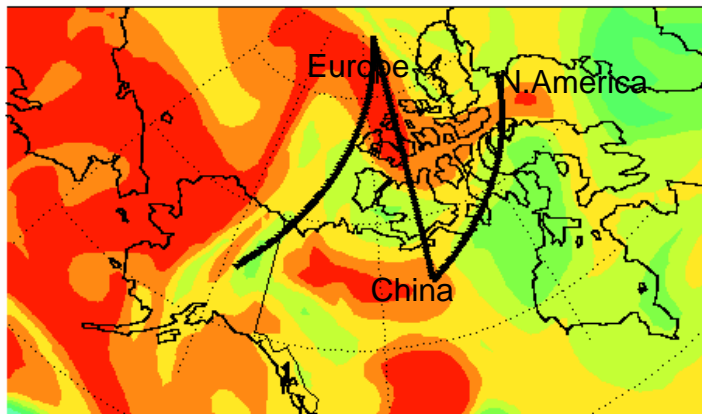


Apr 8 Thule-Fairbanks CAM forecast from Apr 4 for Apr 8 18Z

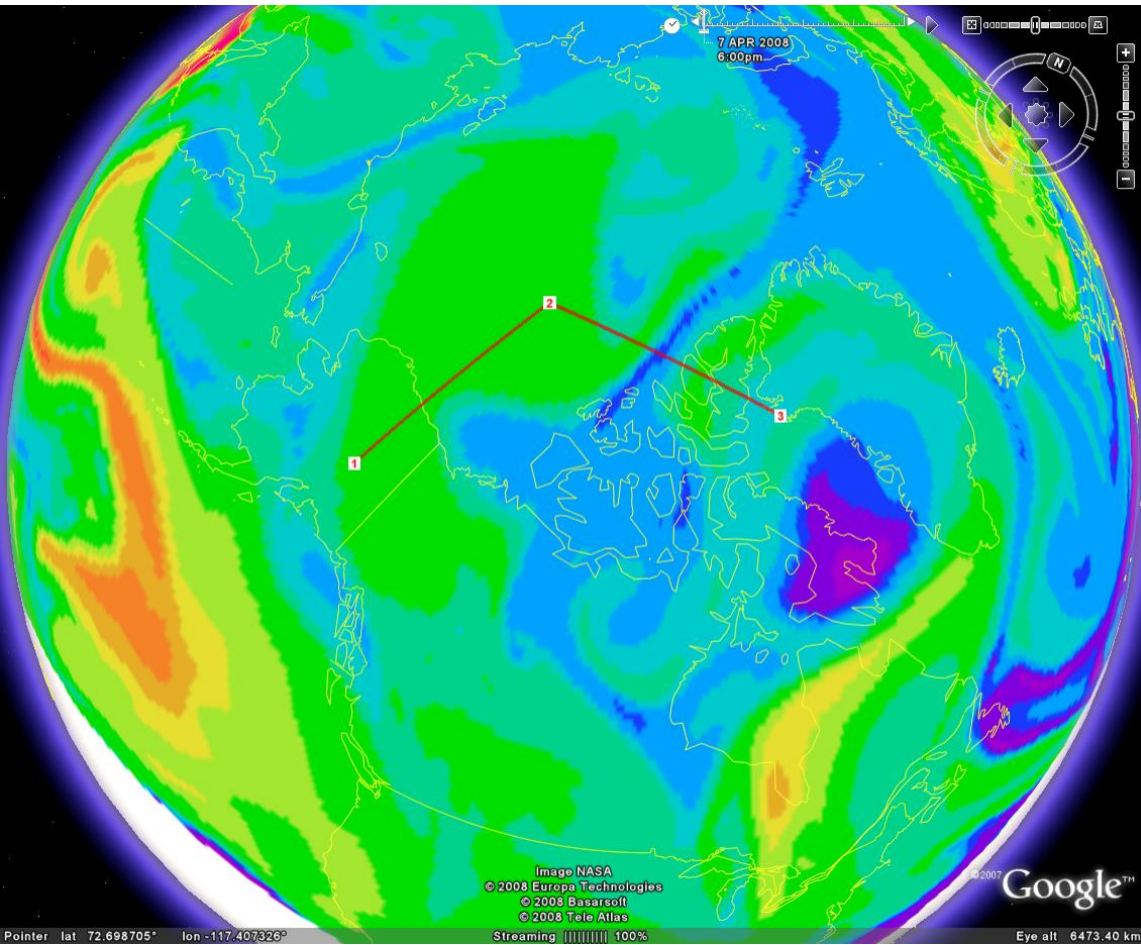
CO



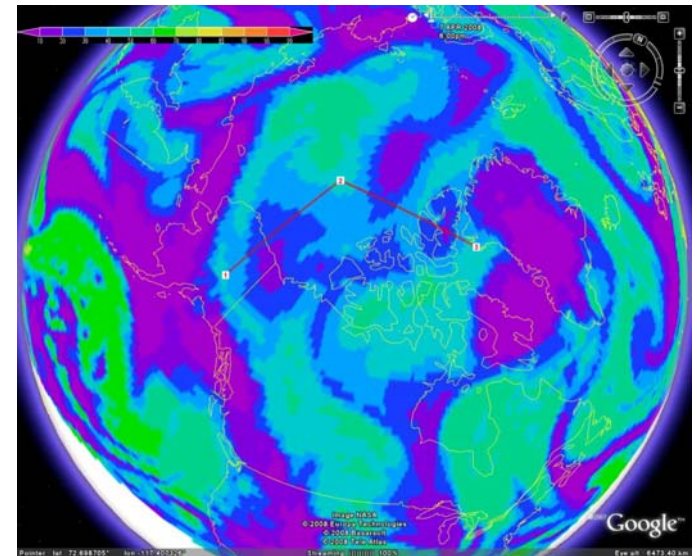
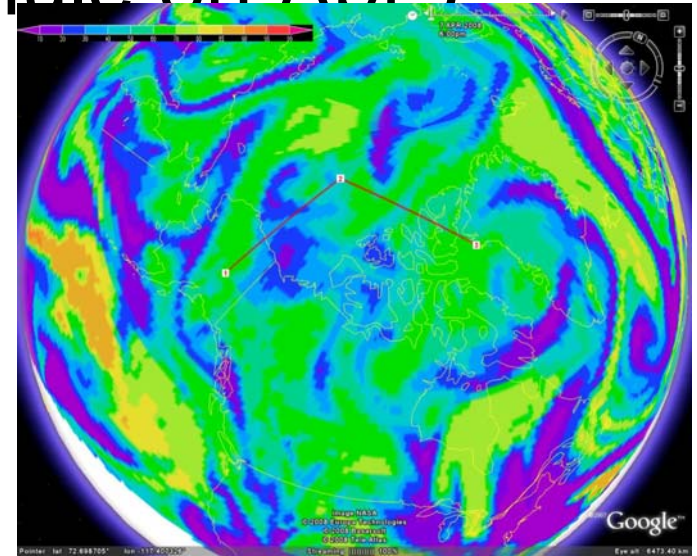
CAM CO 5 km 20080408_18Z



Possible P3 flights to Thule on Apr 7

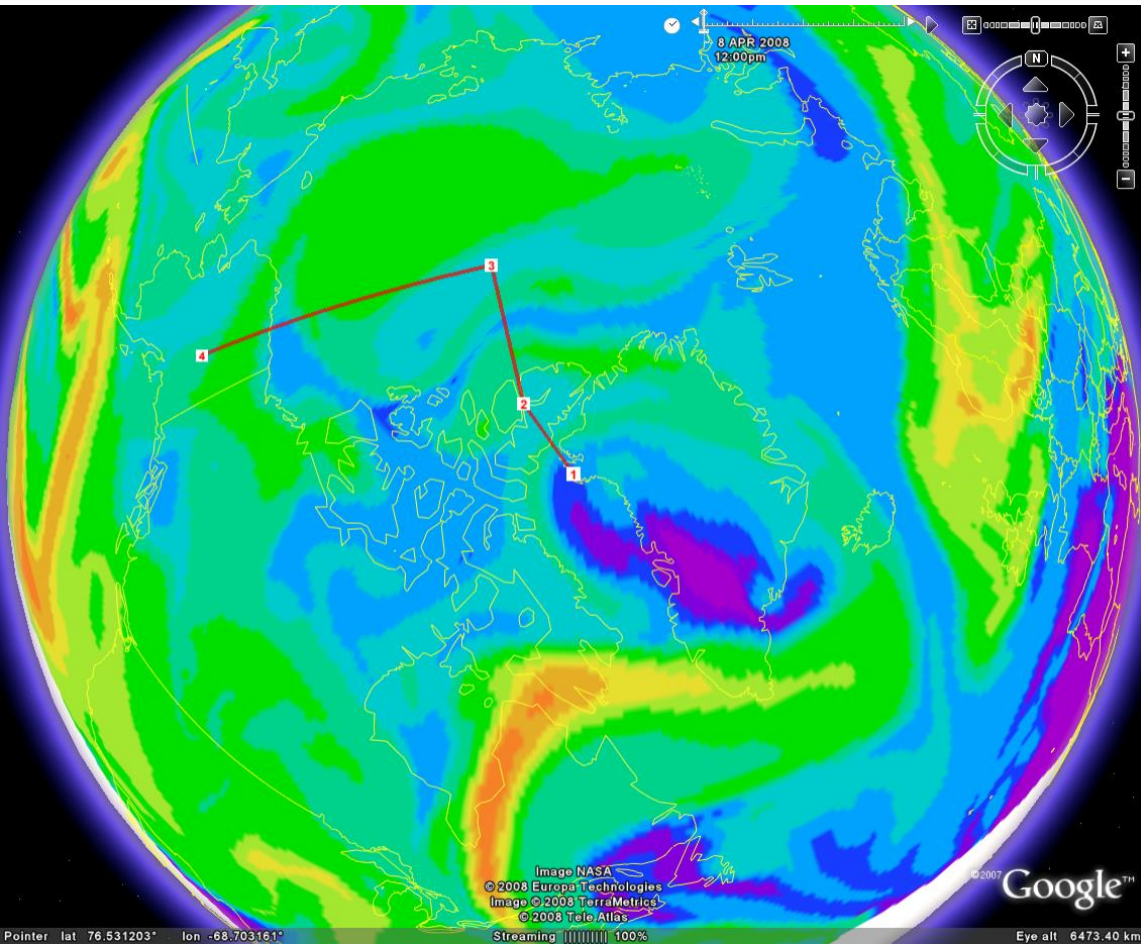


Anthropogenic CO, 5.5km, 12Z, Apr7

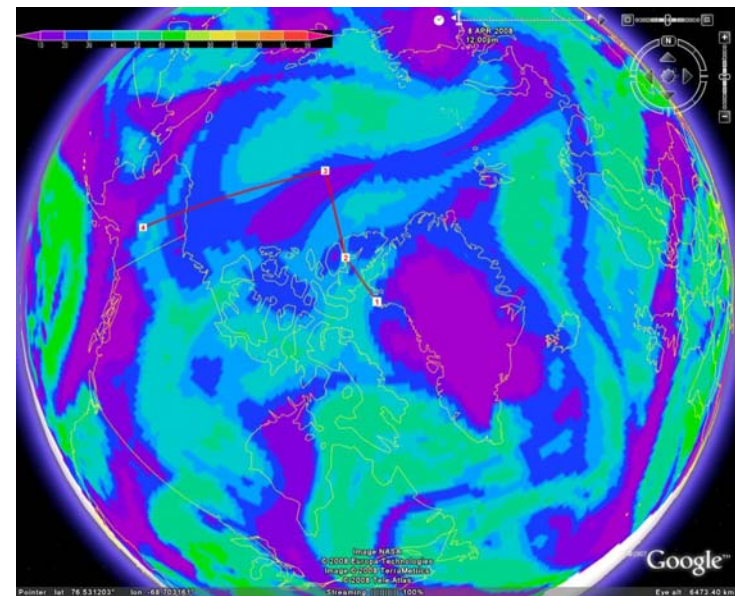
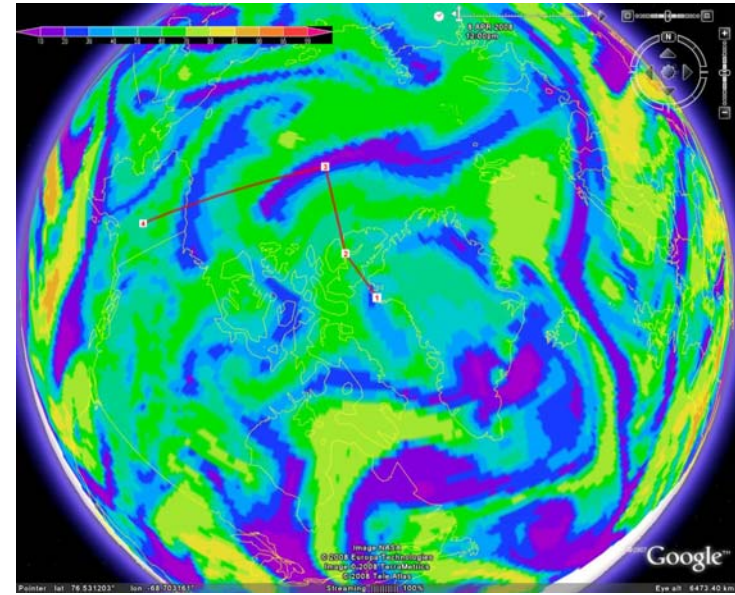


RH at 5.5 and 8.4km

P3 Return, Apr 8



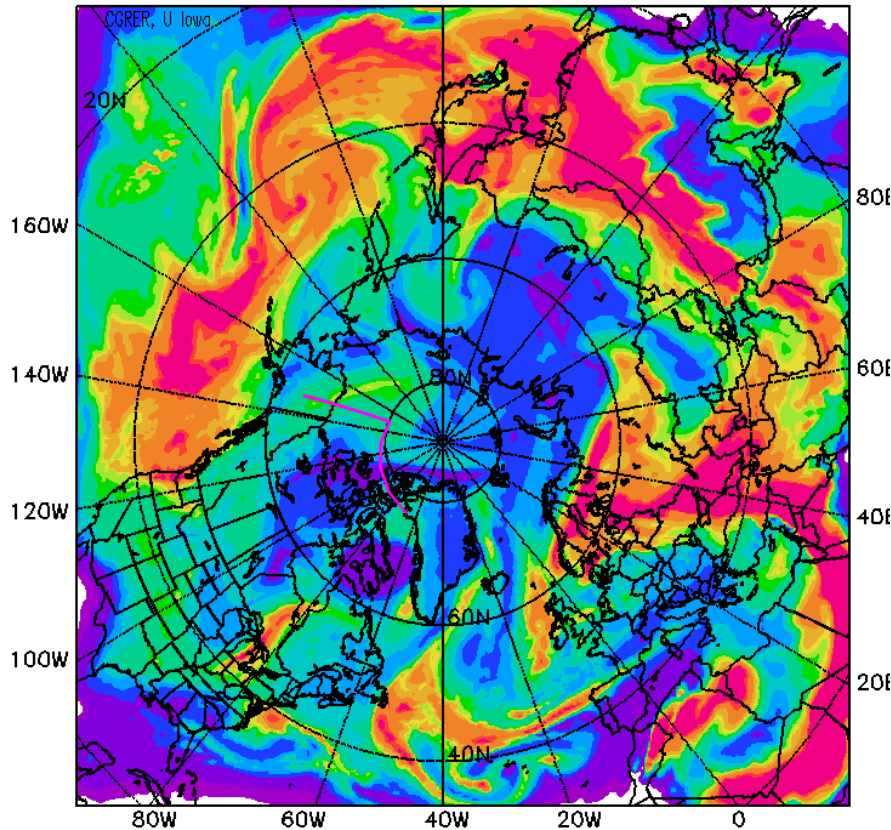
Anthropogenic CO, 5.5km, 12Z, Apr8



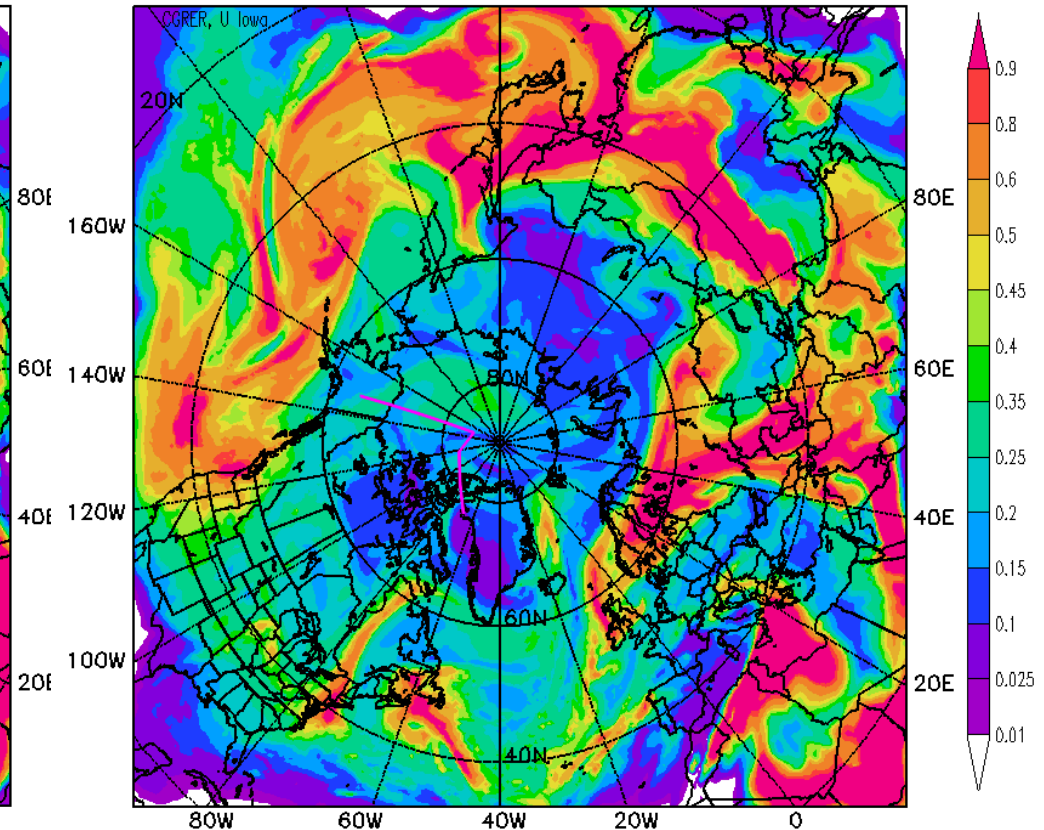
RH at 5.5 and 8.4 km

P3-Total AOD

Simulated Column TOTAL Aerosol Optical_Depth
at 12UTC, 04/7/2008



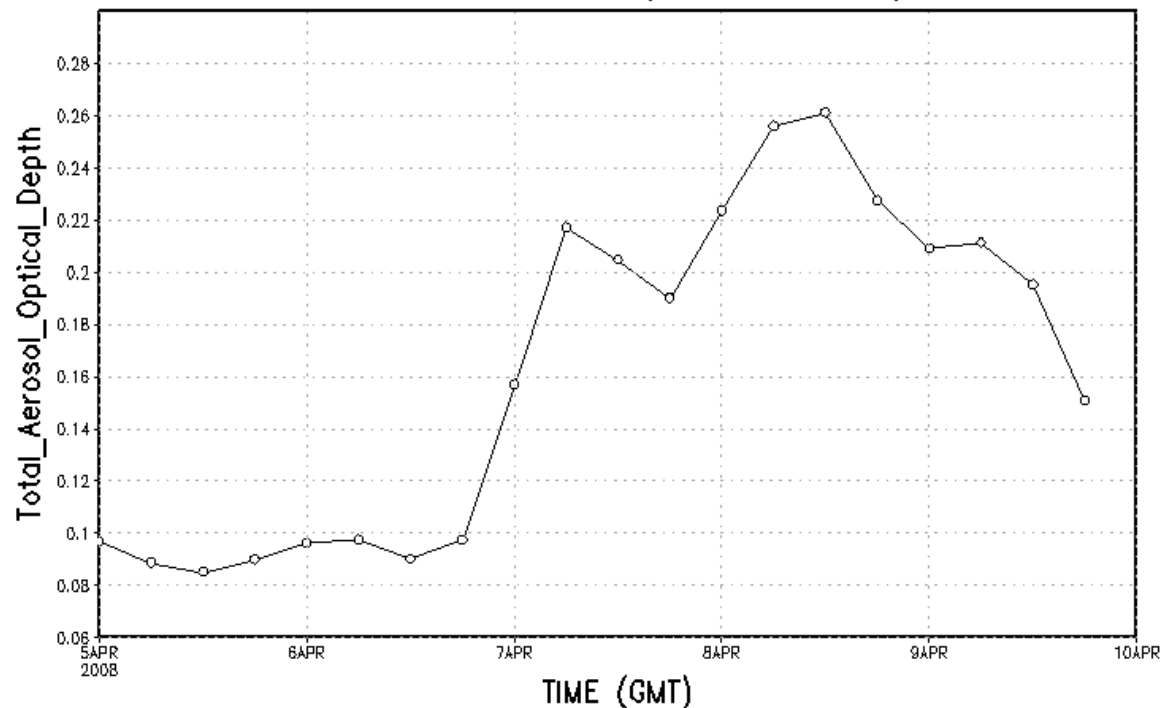
Simulated Column TOTAL Aerosol Optical_Depth
at 12UTC, 04/8/2008



Total AOD over Eureka and Surrounding

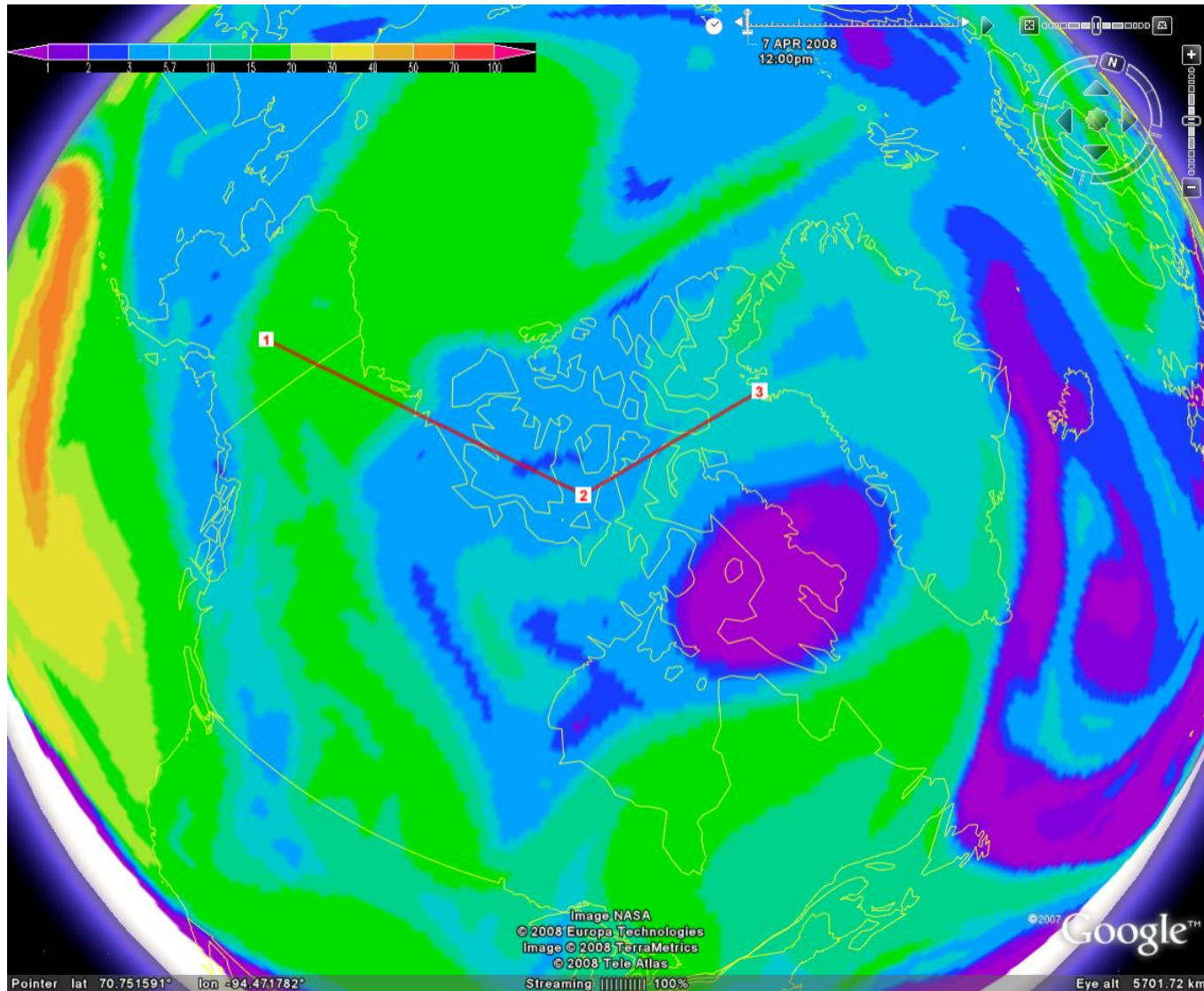
CORER, University of Iowa

Simulated Time Series Total Aerosol Optical Depth
over X=104 Y=100 (86.88W, 79.42N)



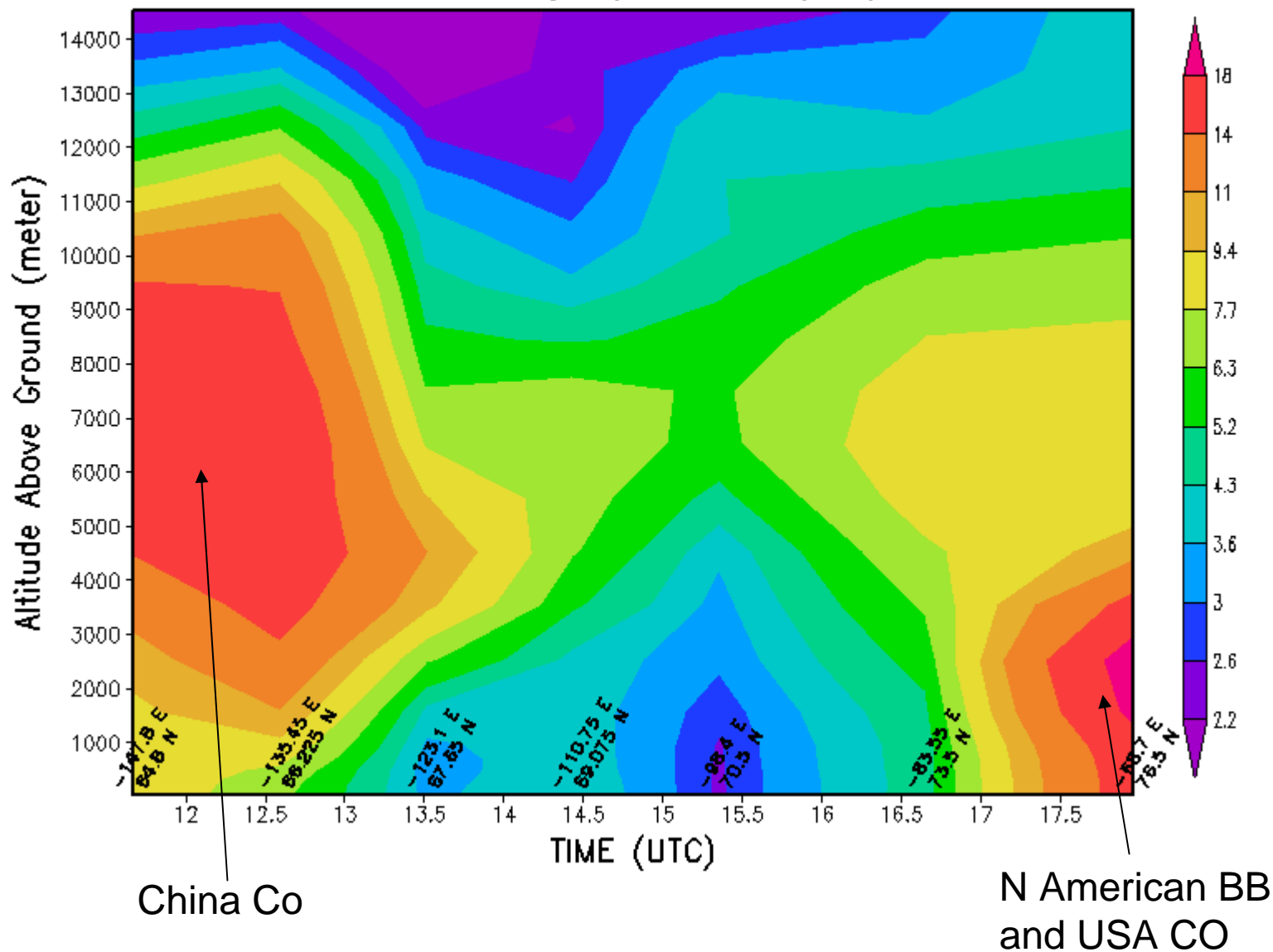
AOD contribution mainly coming from North American Pollution

Option 1: DC-8 ReRun of the BrO Track



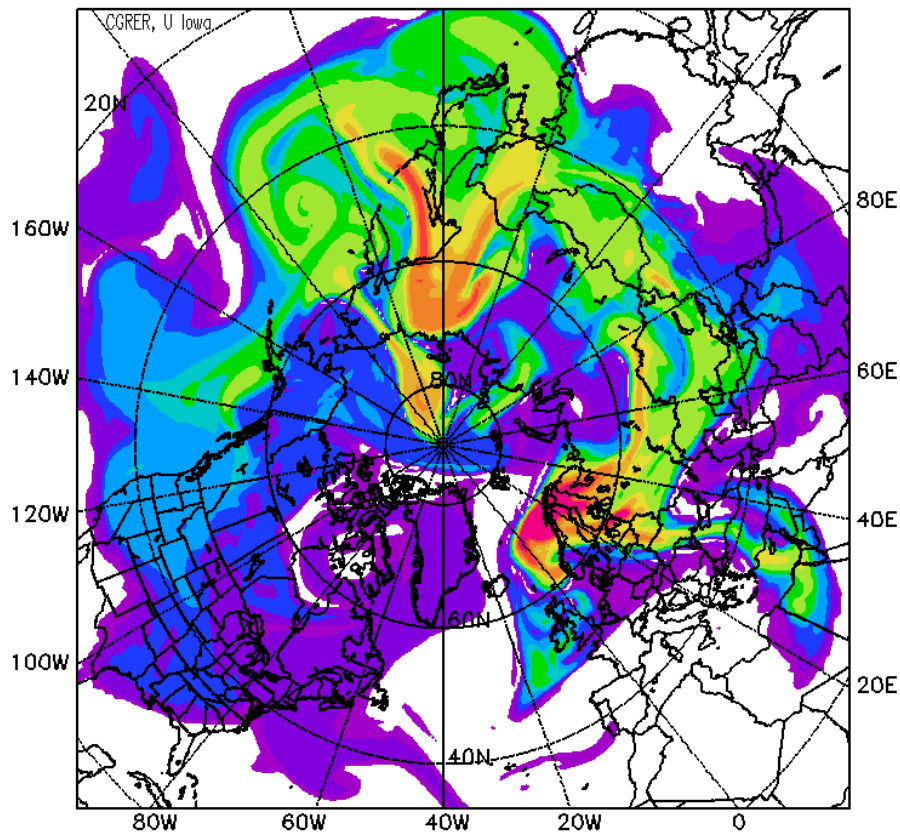
Anthropogenic CO, 8.4 km, 12Z Apr 7

Simulated total CO (ppbv) along the
DC8-Fb-Th Flight plan on 04/07/2008

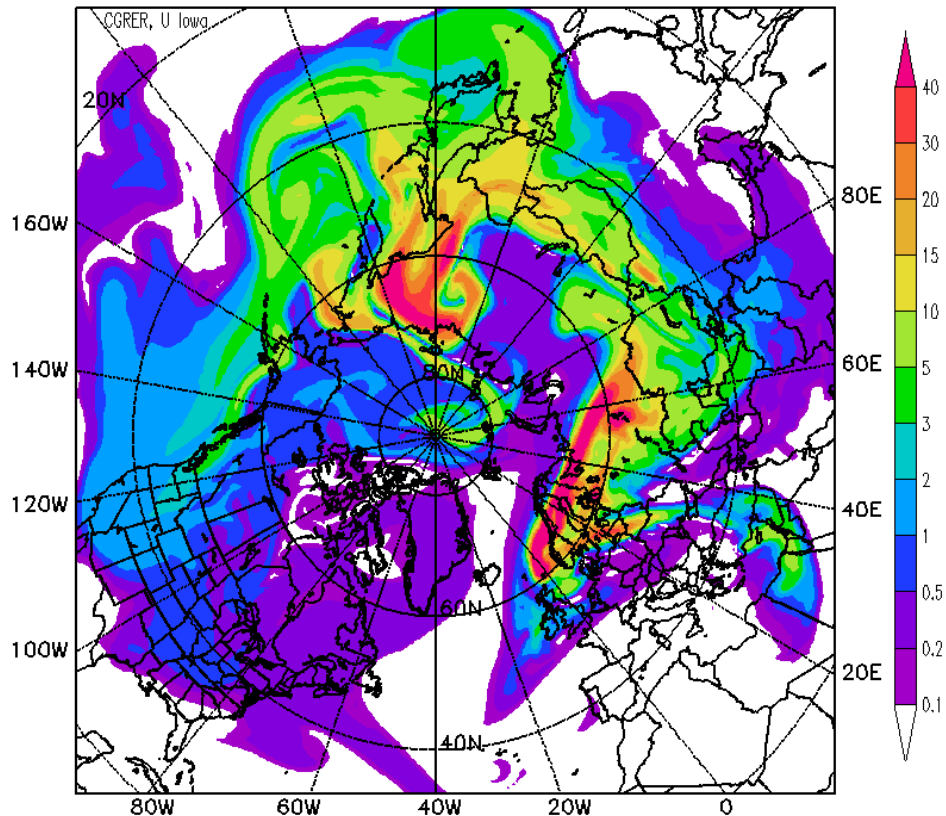


Siberian Biomass has moved North-East of Greenland

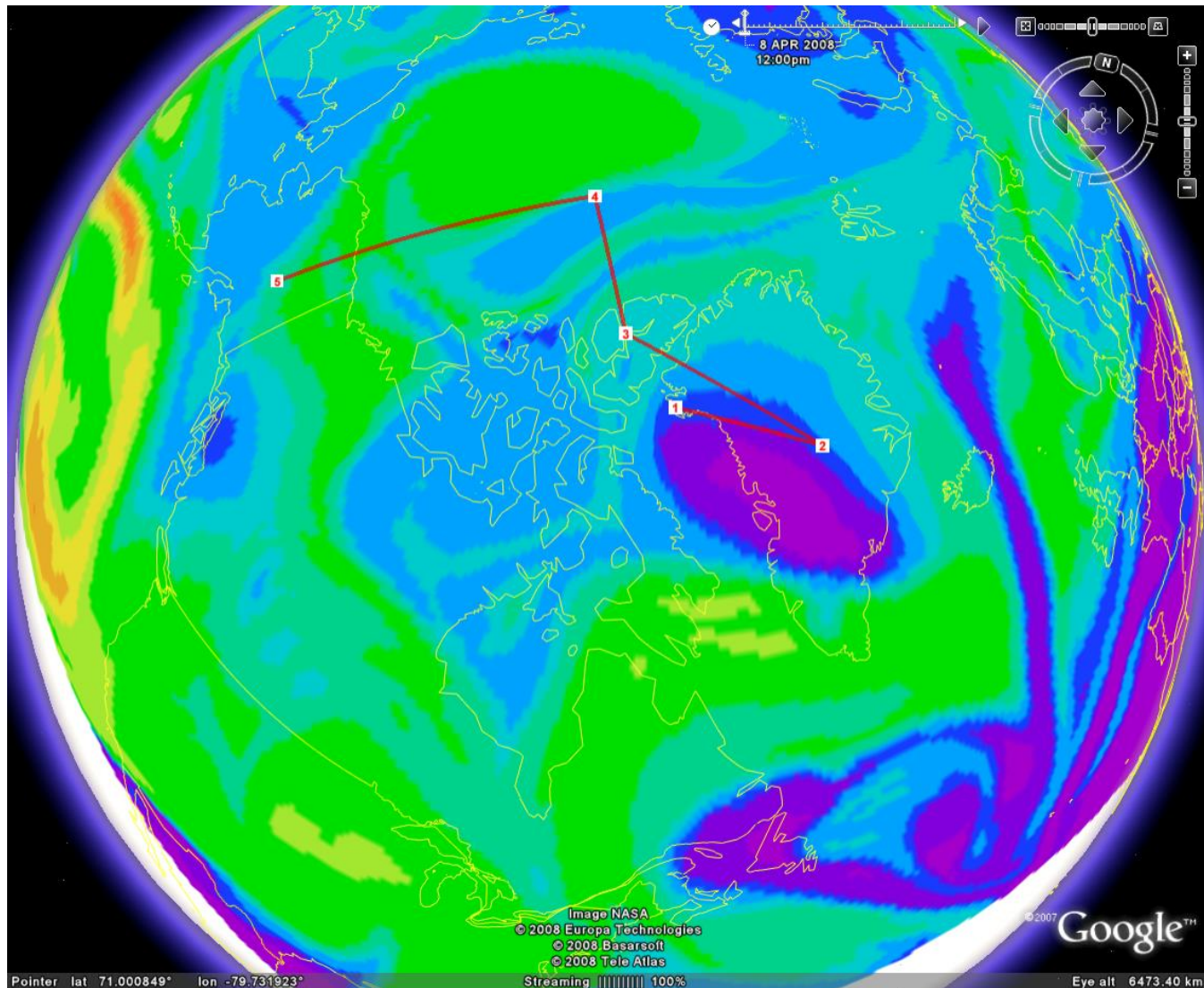
Simulated NAsia_BB_CO (ppbv) in the 5.5km layer
at 18UTC, 04/7/2008



Simulated NAsia_BB_CO (ppbv) in the 5.5km layer
at 18UTC, 04/7/2008

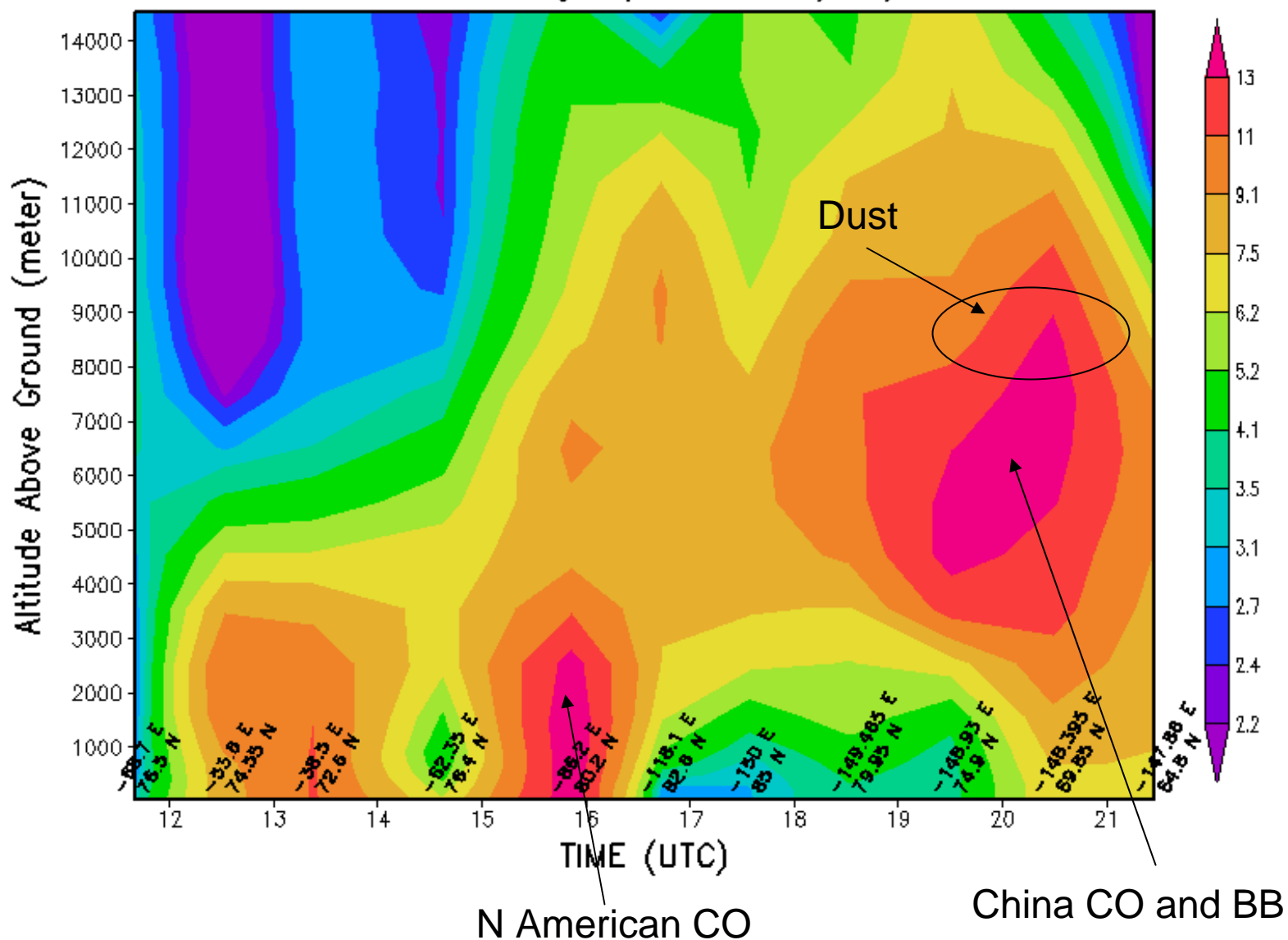


DC 8 Return to FAI



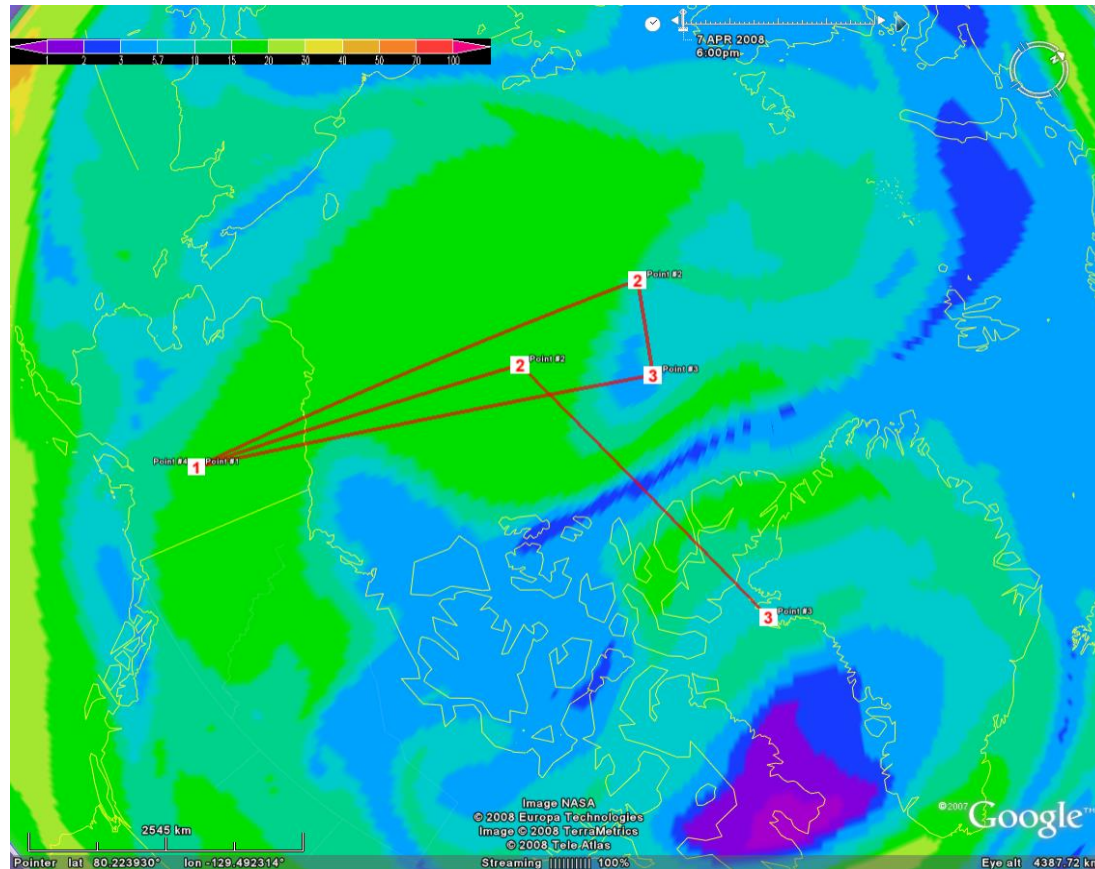
Anthropogenic CO 8.4km, 12Z April 8, flight time 9.48 at 160 no spirals

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



Option 2:

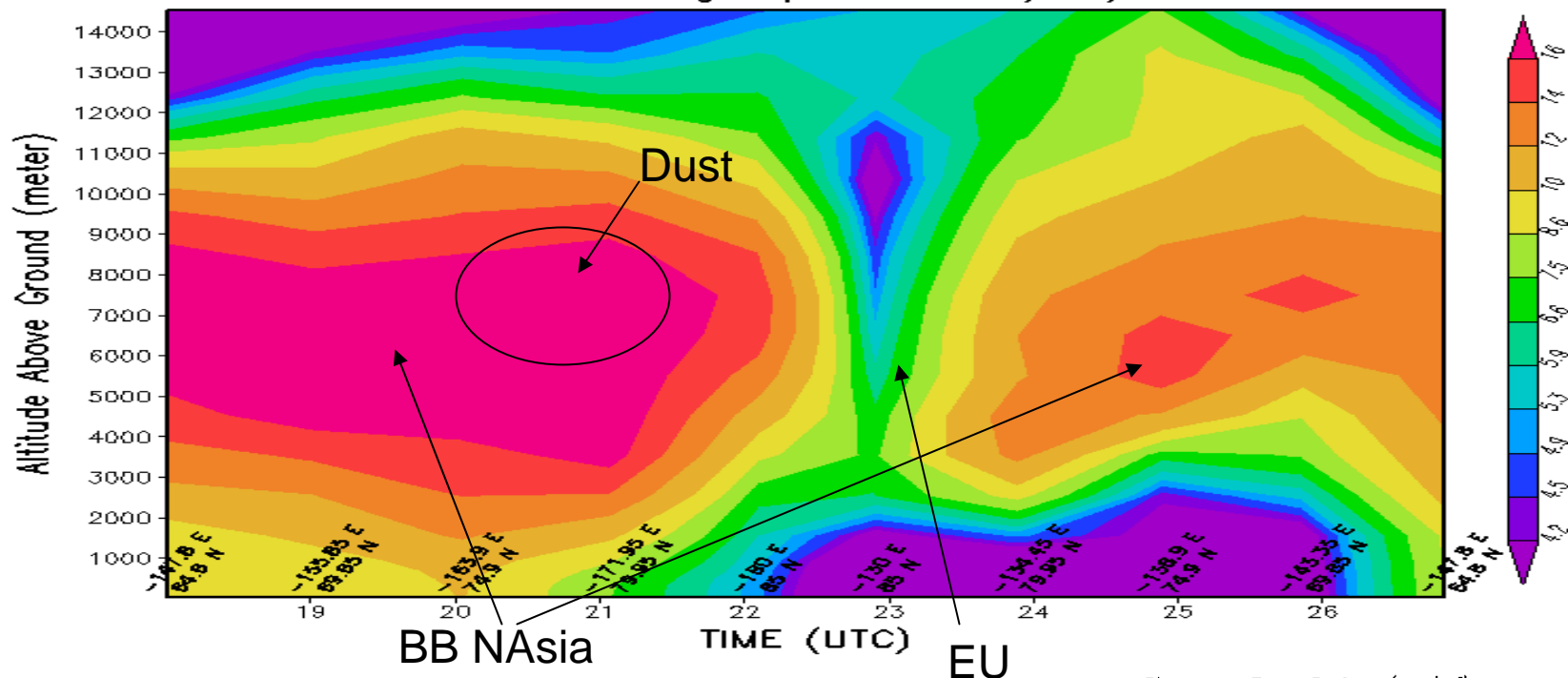
DC-8 Local with comparison with P3 on the 7th
if not going to Thule or do it on the return on the 8th



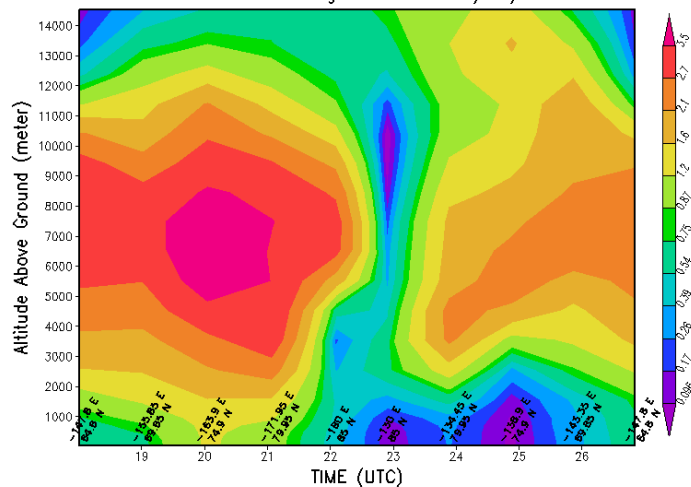
CO at 5.5 km, 12Z flight time

DC8-FAI-FAI 18Z

Simulated total CO (ppbv) along the DC8-Fb-Fb Flight plan on 04/07/2008



Simulated BB North Asia and Europe CO (ppbv) along the DC8-Fb-Fb Flight Path on 04/07/2008



Simulated Total Sulfate ($\mu\text{g}/\text{m}^3$) along the DC8-Fb-Fb Flight Path on 04/07/2008

