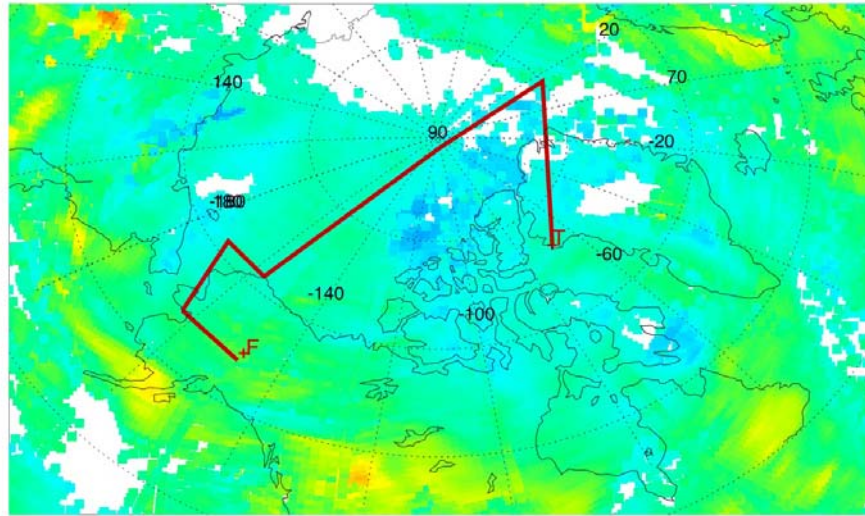
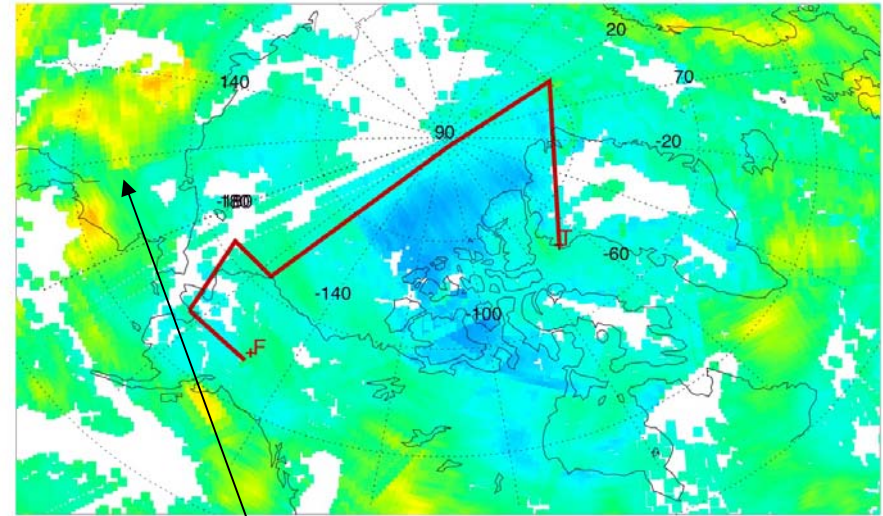


AIRS NRT ARCTAS Support: Latest AIRS CO

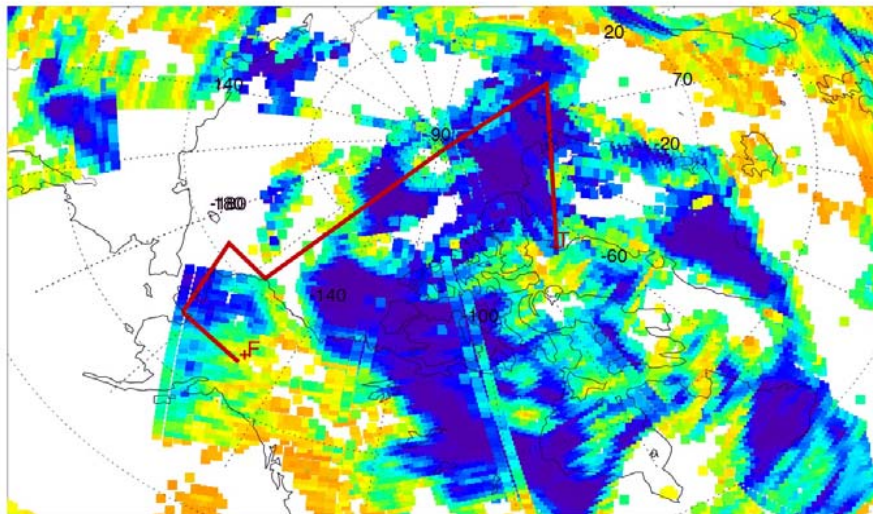
AIRS CO VMR (ppbv) at 500mb on 20080407 for ARCTAS



AIRS CO VMR (ppbv) at 500mb on 20080408 for ARCTAS



MODIS CLOUD RATIO on 20080408 for ARCTAS



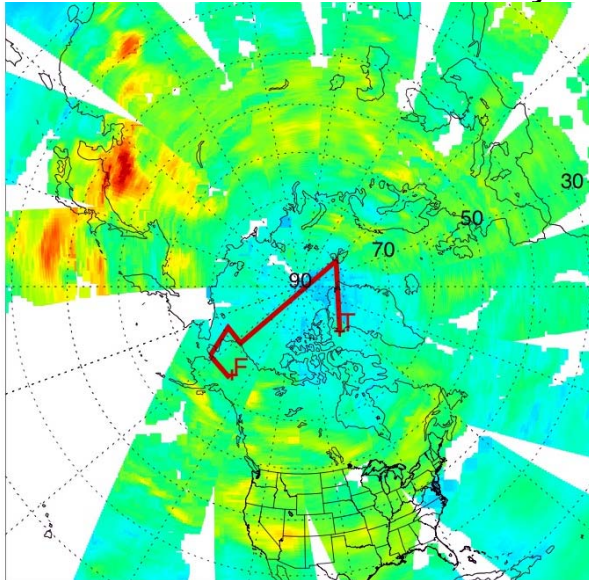
CONTACT: Dr. Juying Warner <juying@umbc.edu>; ACKNOWLEDGEMENT: AIRS NRT products by NASA DA.

- High CO features surrounding to study area
- MODIS cloud mask shows yesterday's cloud ratios <0.9

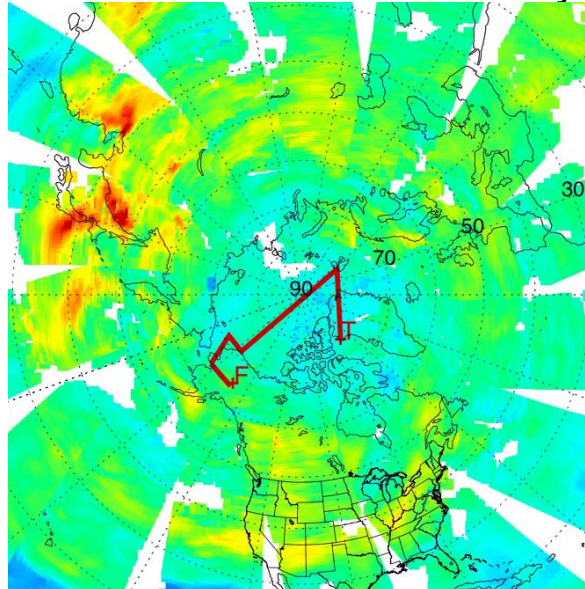
AIRS NRT ARCTAS Support:

Asian Transport Continues, slowly

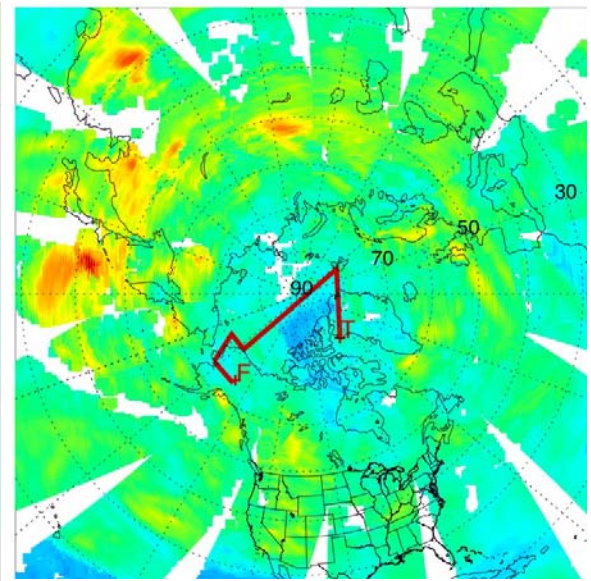
CO 500mb 20080406 day



CO 500mb 20080407 day



CO 500mb 20080408 Full

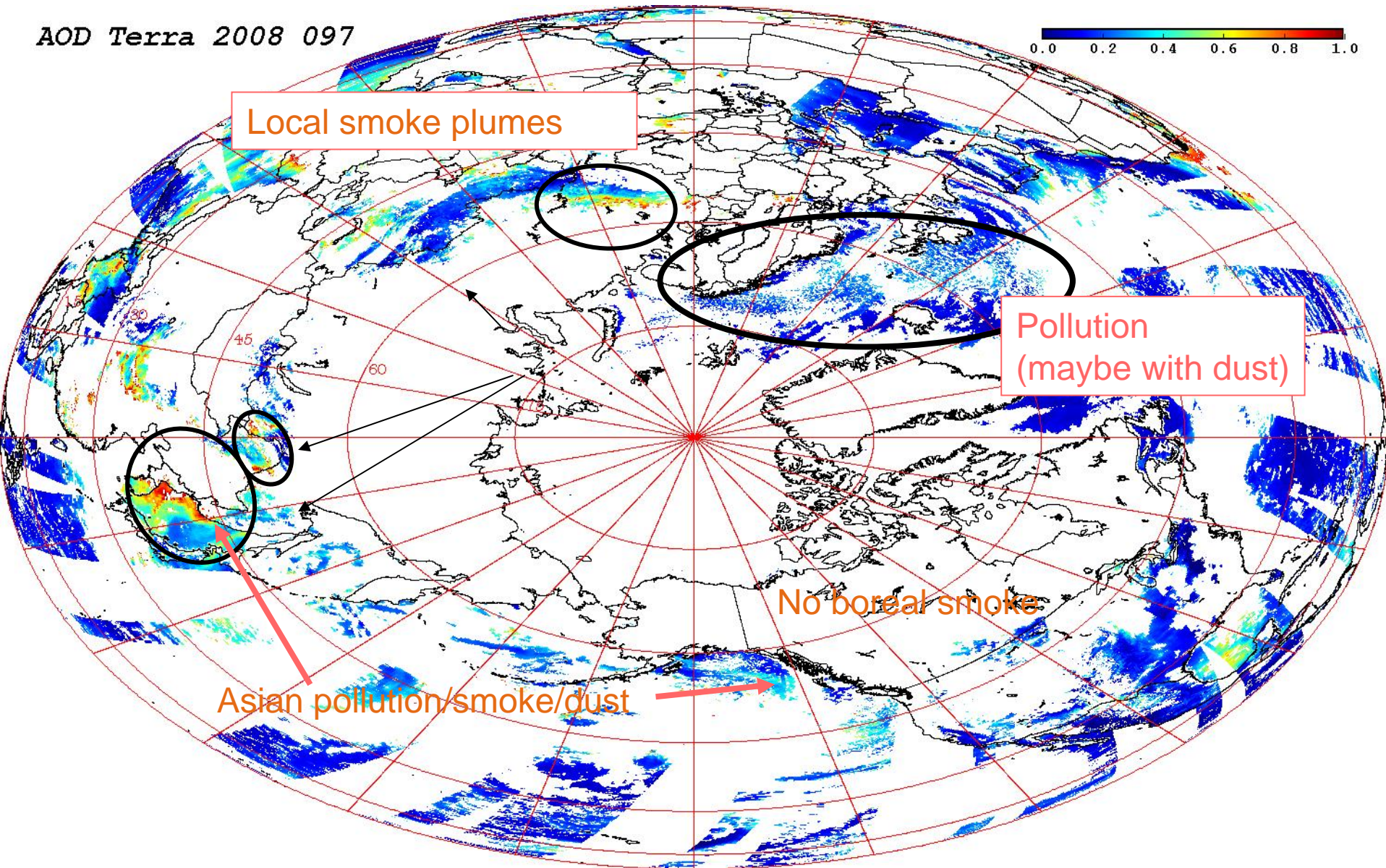


CONTACT: Dr. Juying Warner <juying@umbc.edu>; ACKNOWLEDGEMENT: AIRS NRT products by NASA DAAC

April 6, Sunday

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

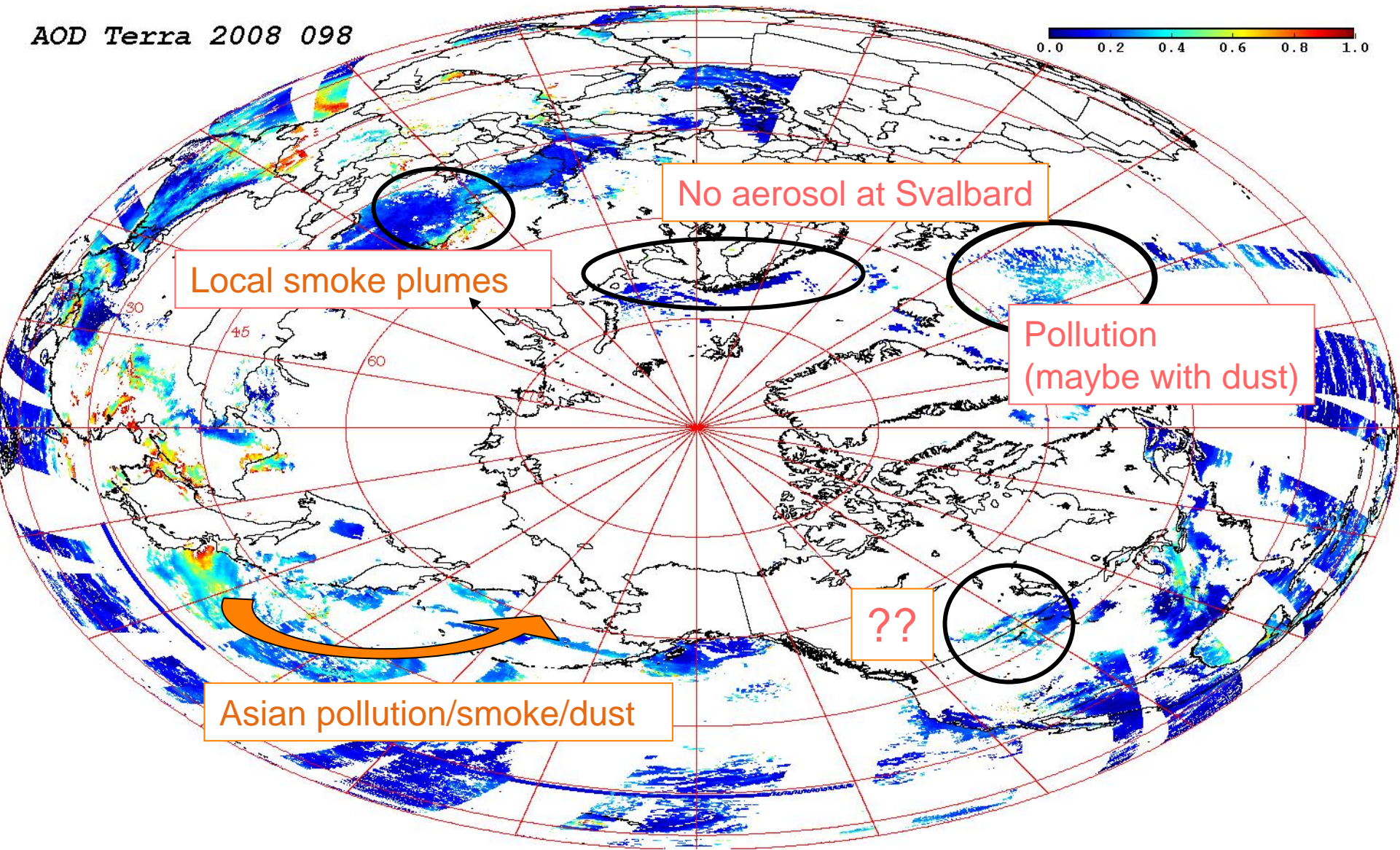
AOD Terra 2008 097



Monday April 7

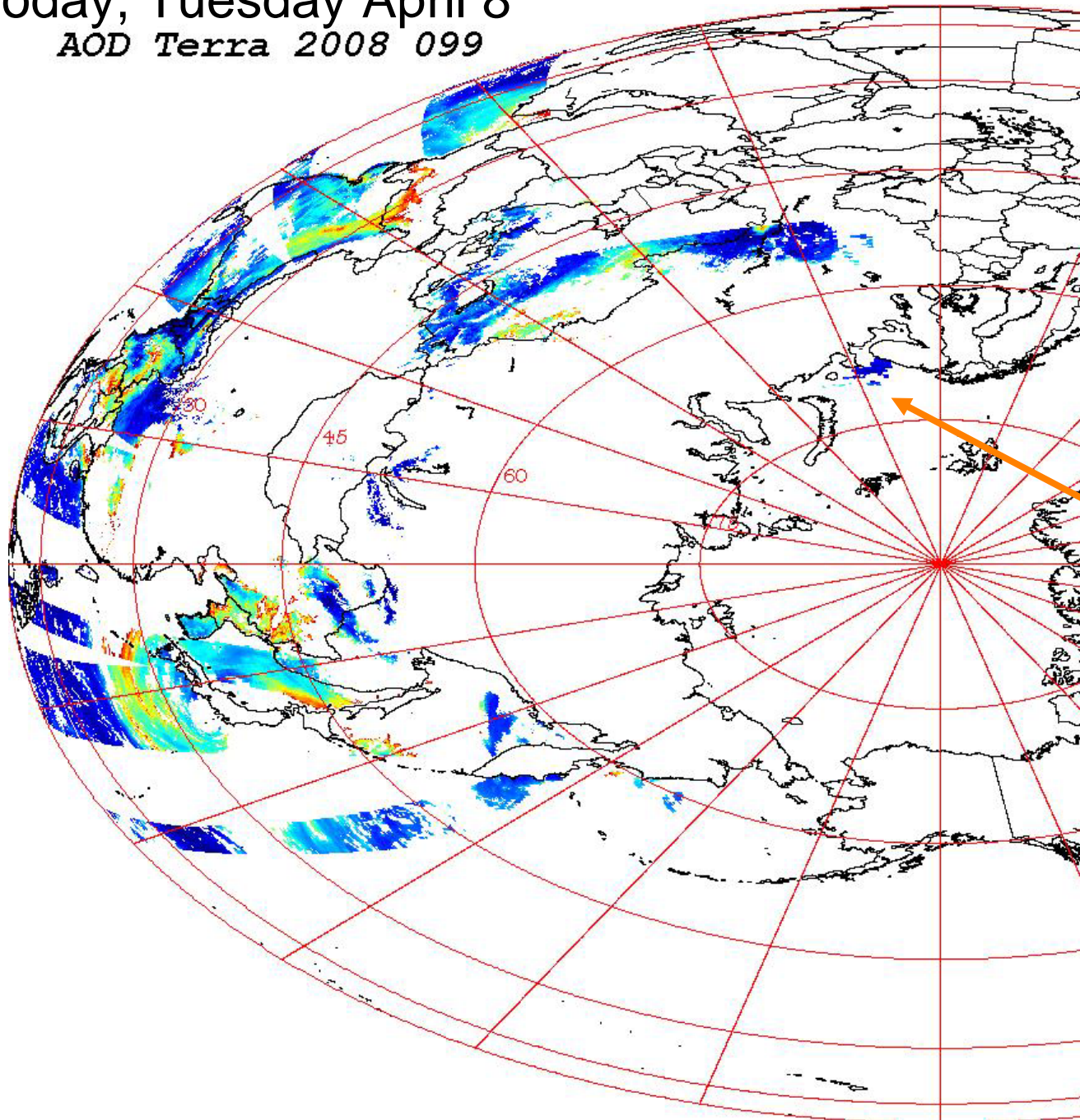
MODIS AOD Hot Spots in Northern Hemisphere (0° - 90°N)

AOD Terra 2008 098



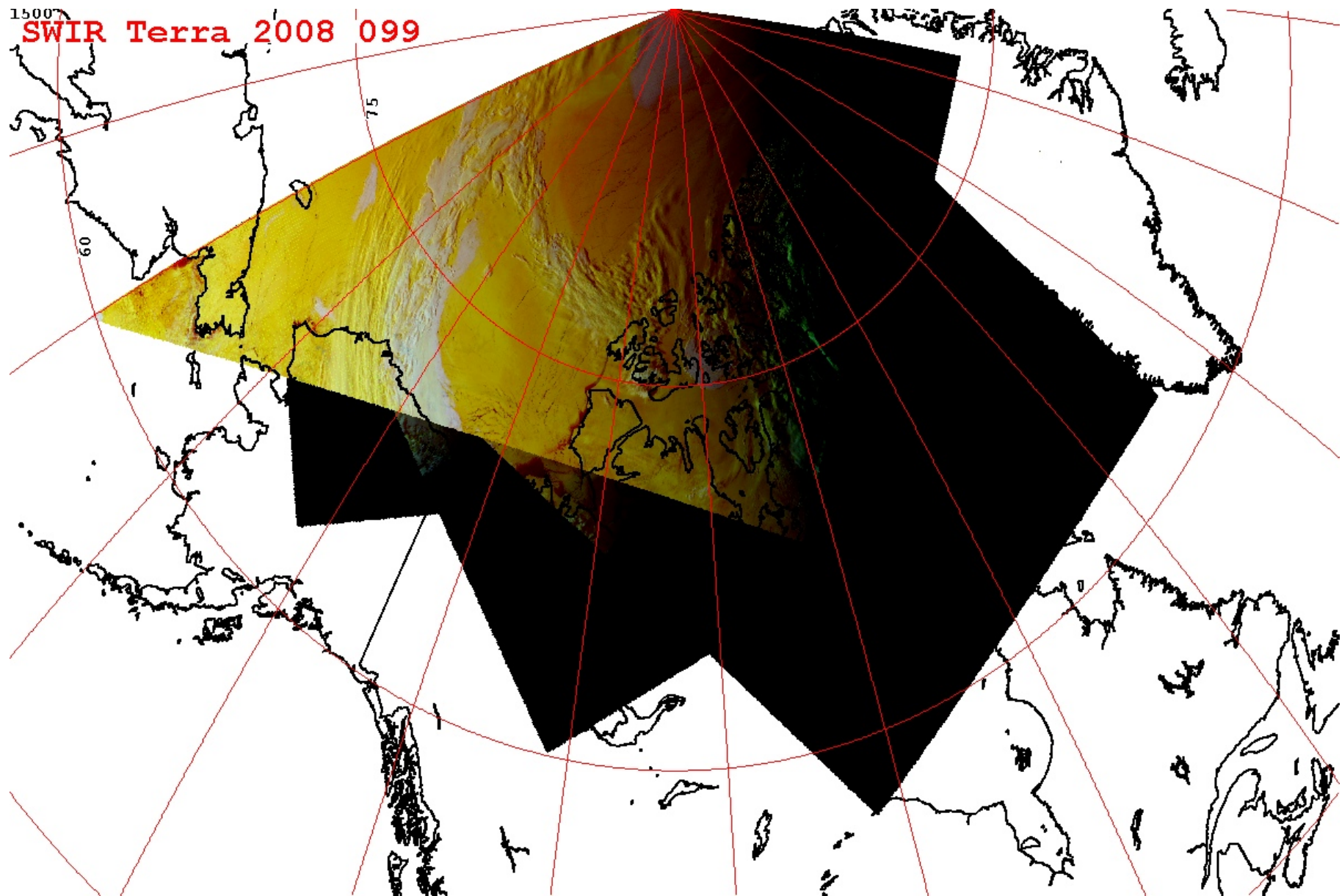
Today, Tuesday April 8

AOD Terra 2008 099



Today's
AOD in
Arctic
is very clean

Today Tuesday April 8

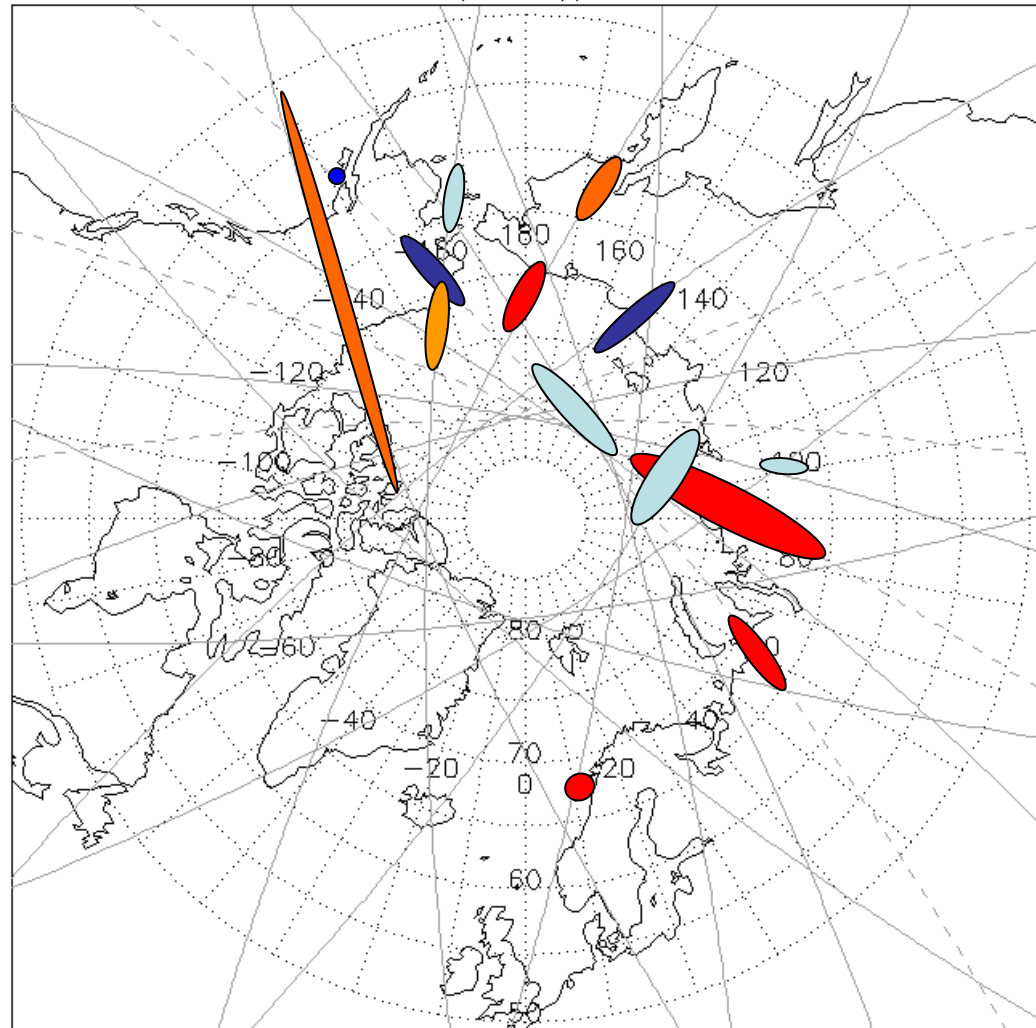
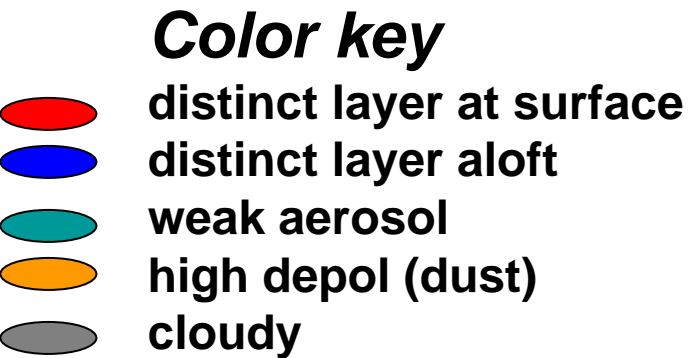


CALIPSO Observations

6/7 April 2008

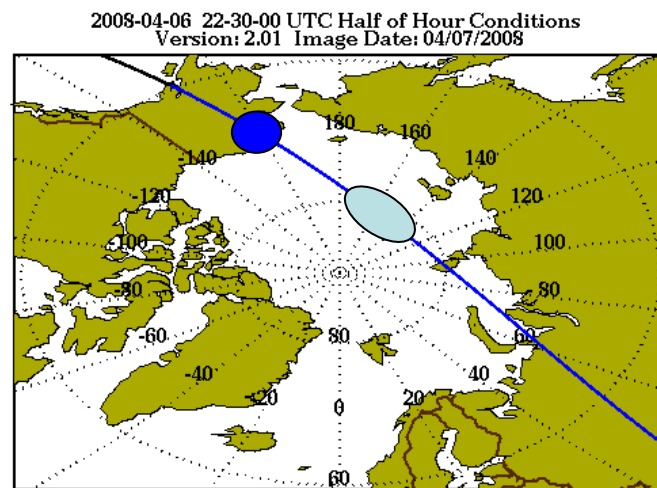
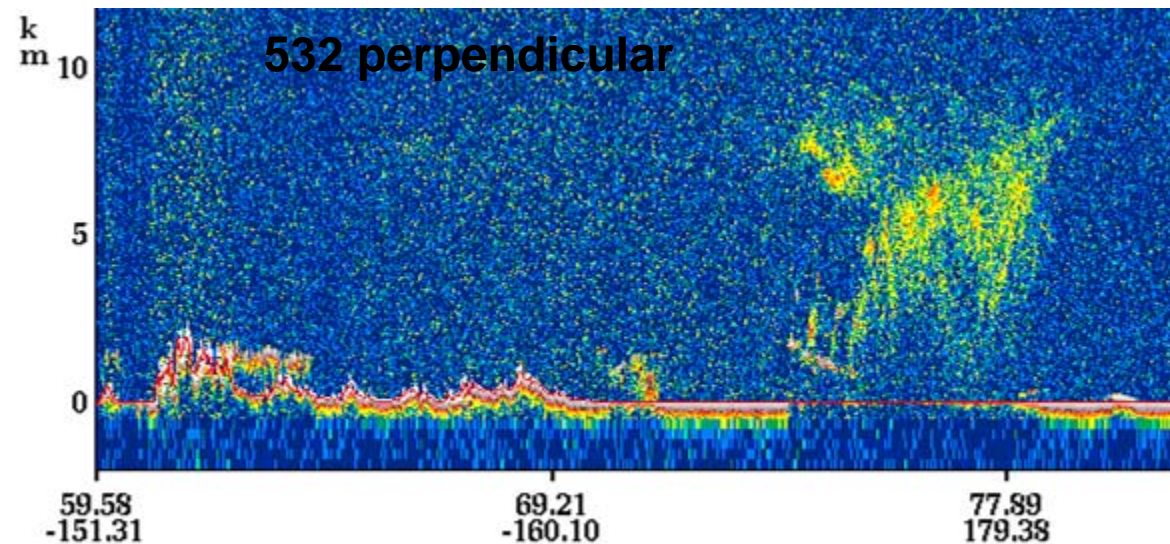
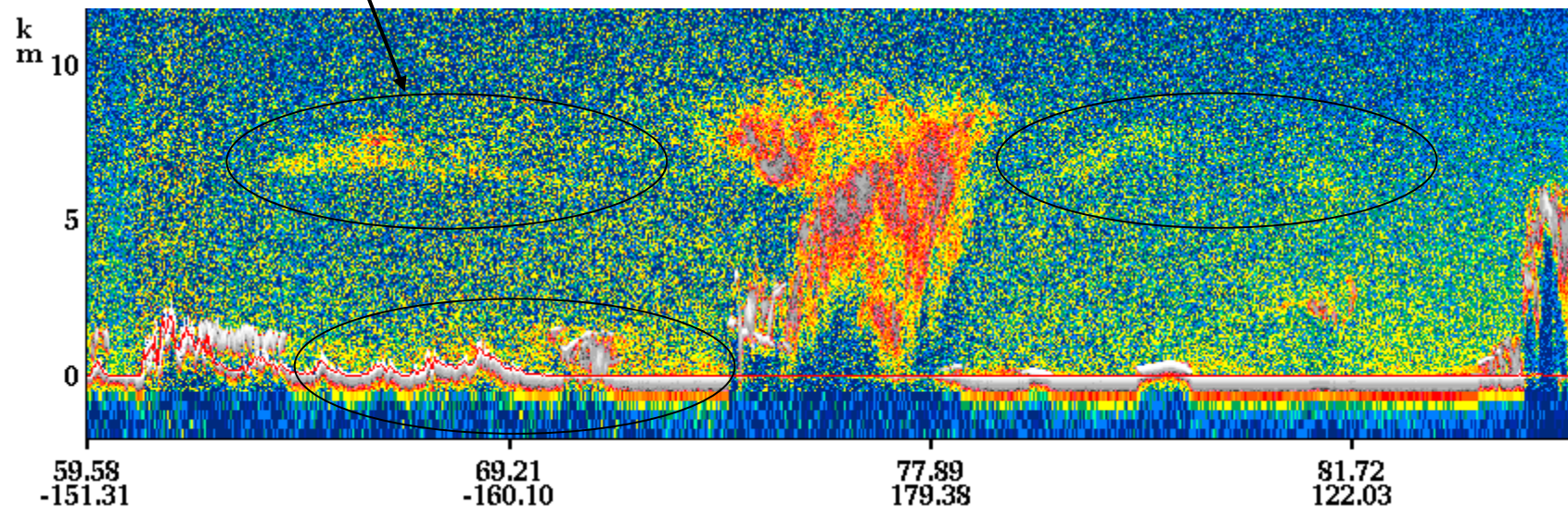
CALIPSO Hot Spots - 6/7 April

20080406(>18Z)/20080407

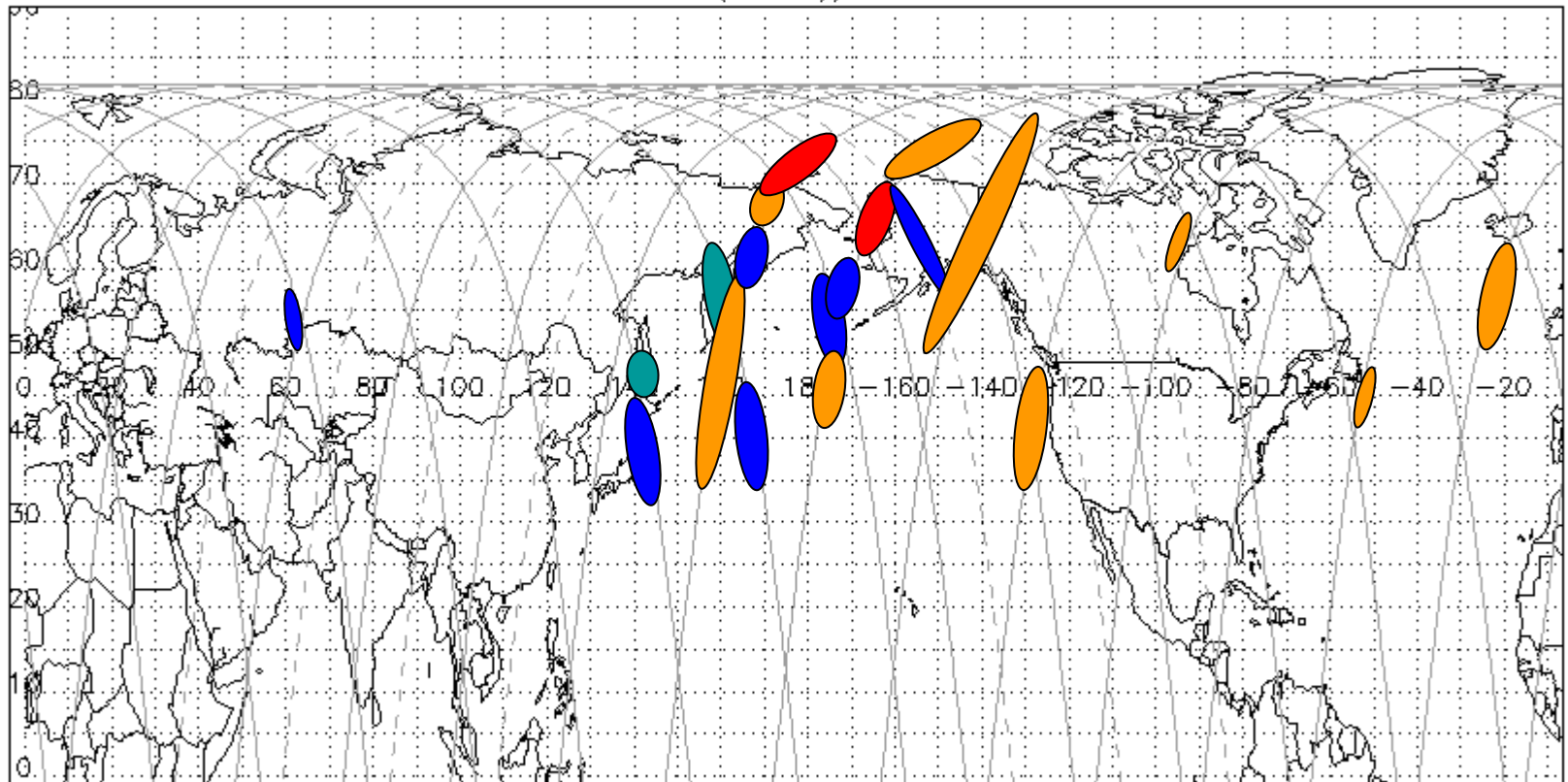


6 April, 2230Z

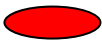
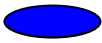



B200 Underflight



20080406(>18Z)/20080407

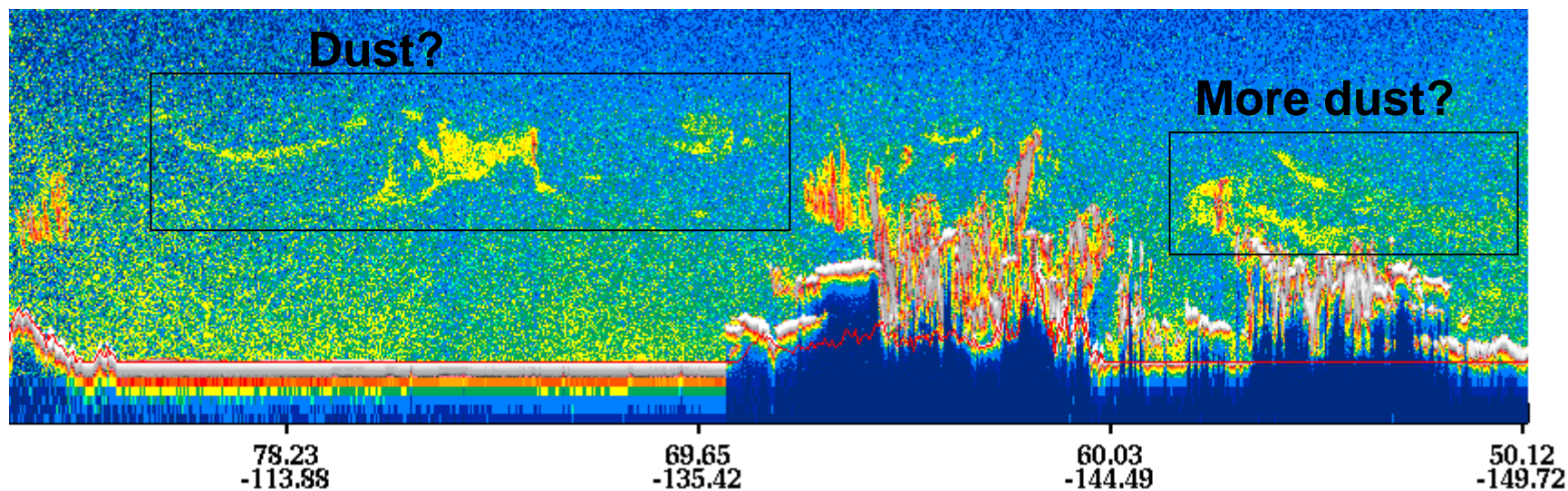
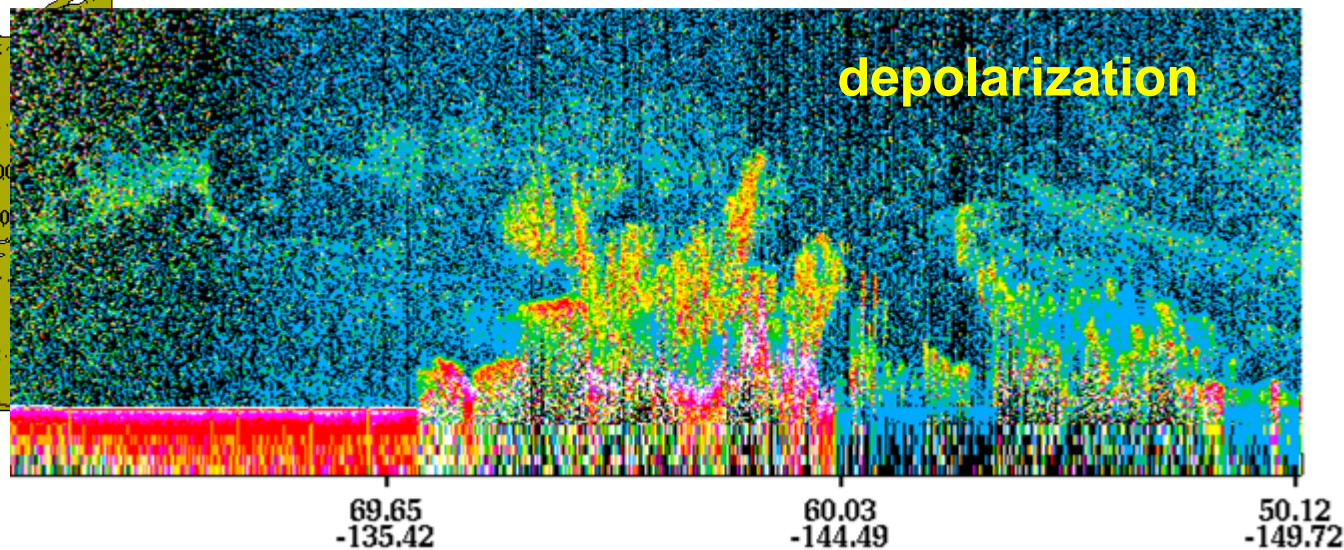
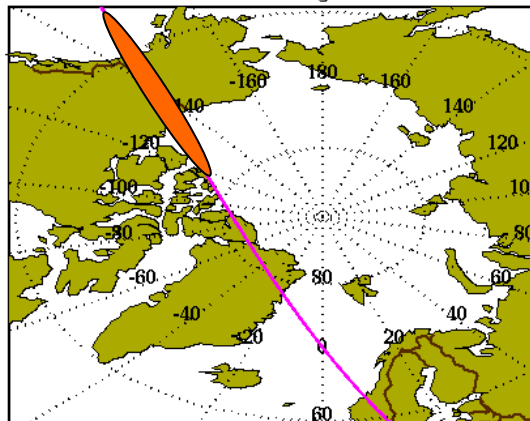


Color key

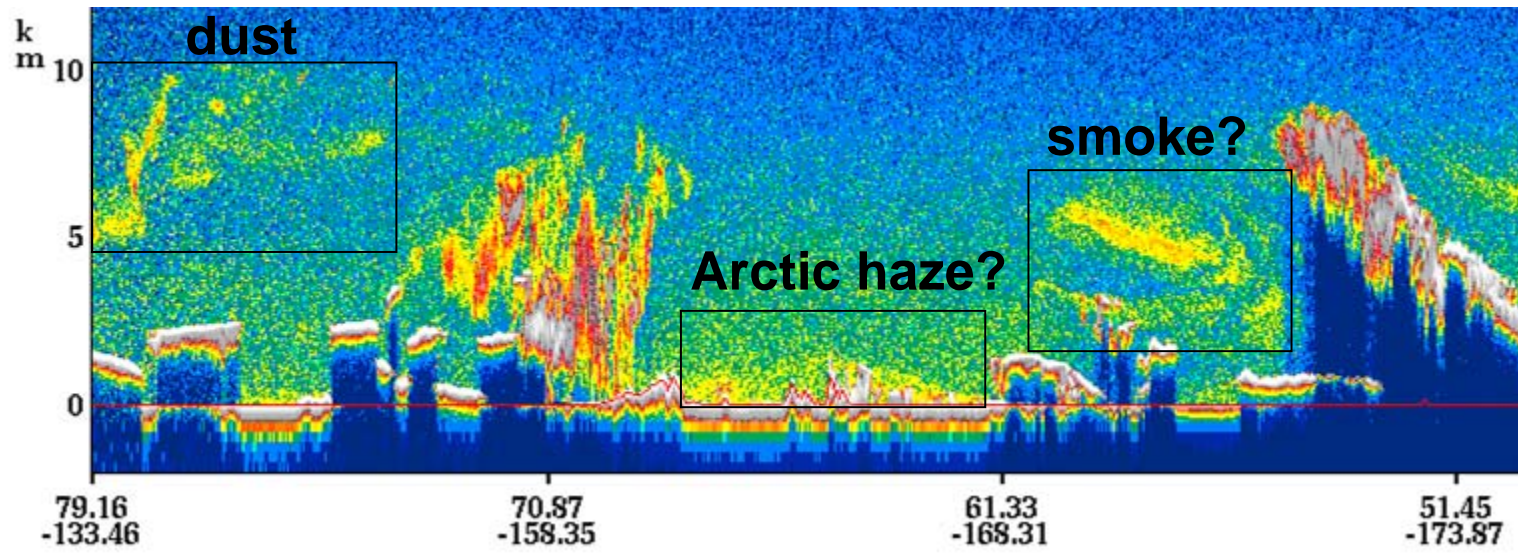
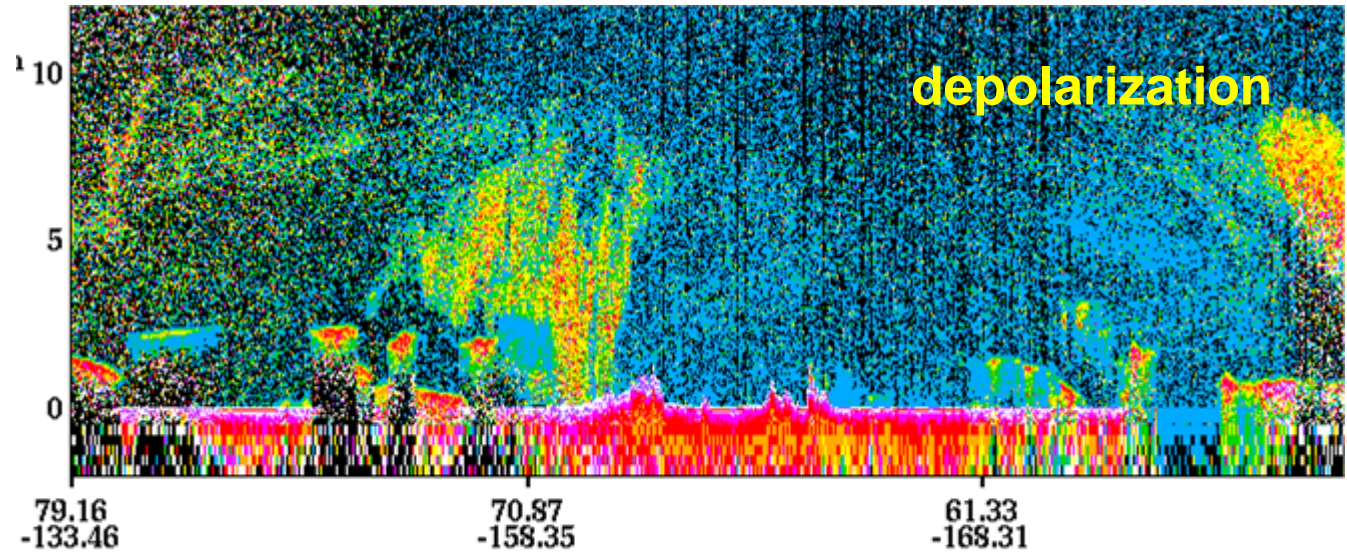
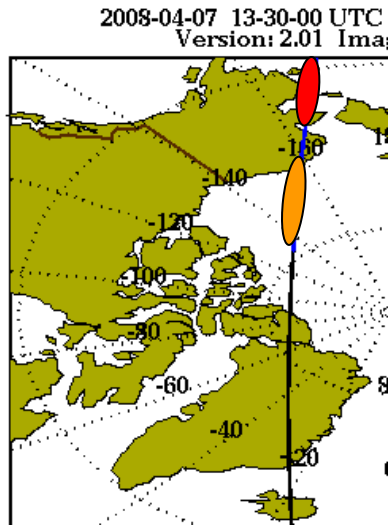
-  distinct layer at surface
-  distinct layer aloft
-  weak aerosol
-  high depol (dust)
-  cloudy

7 April, 1200Z

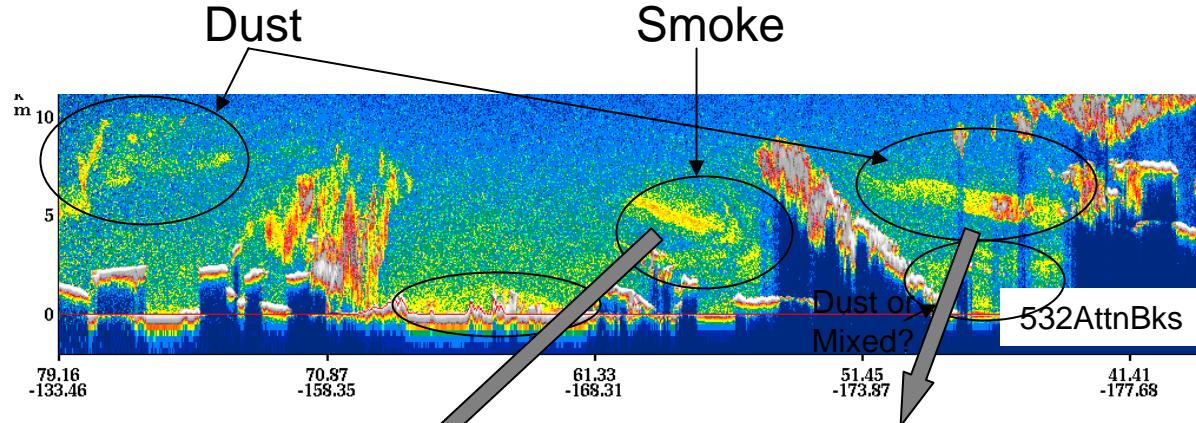
2008-04-07 12-00-00 UTC Start of Hour Conditions
Version: 2.01 Image Date: 04/08/2008



7 April, 1330Z

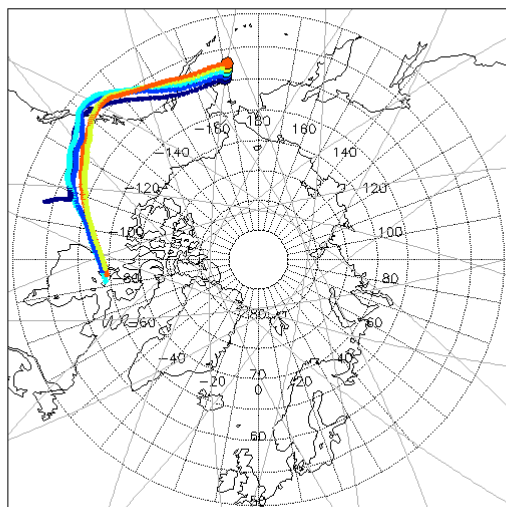


5-day Forward Trajectory Analysis



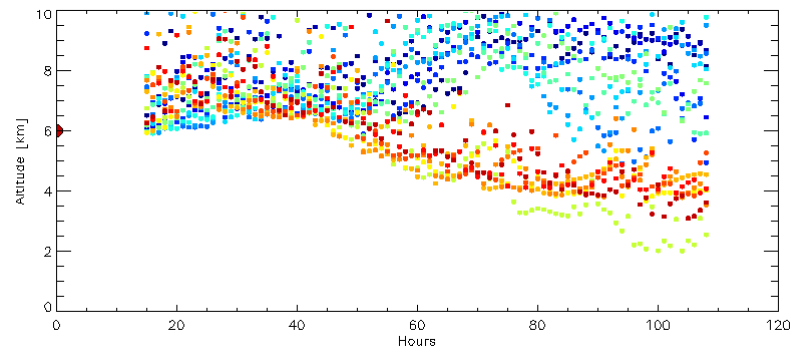
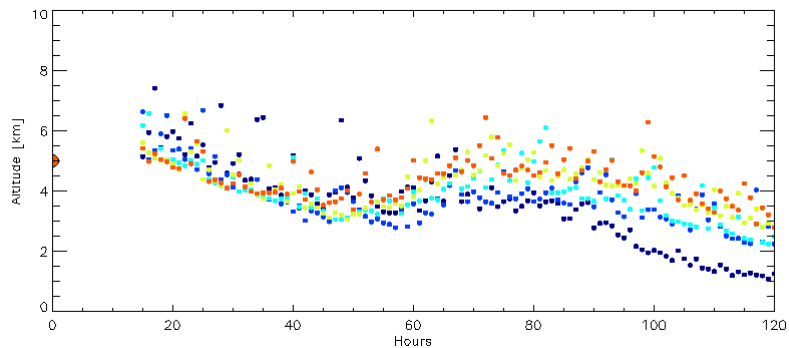
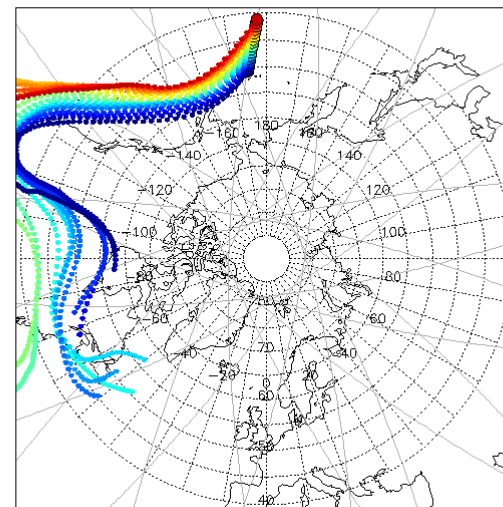
120hr CALIPSO Trajectories Initialized 2008040700 Valid 2008041200

Initial Altitude: 5000m

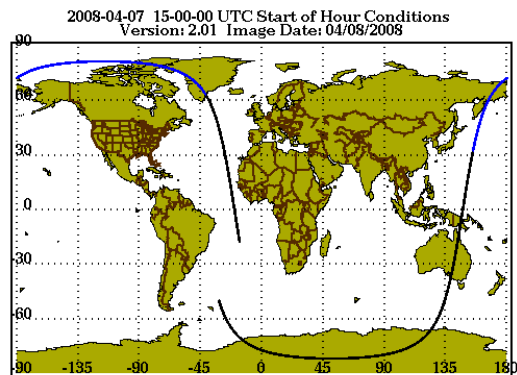


108hr CALIPSO Trajectories Initialized 2008040700 Valid 2008041112

Initial Altitude: 6000m

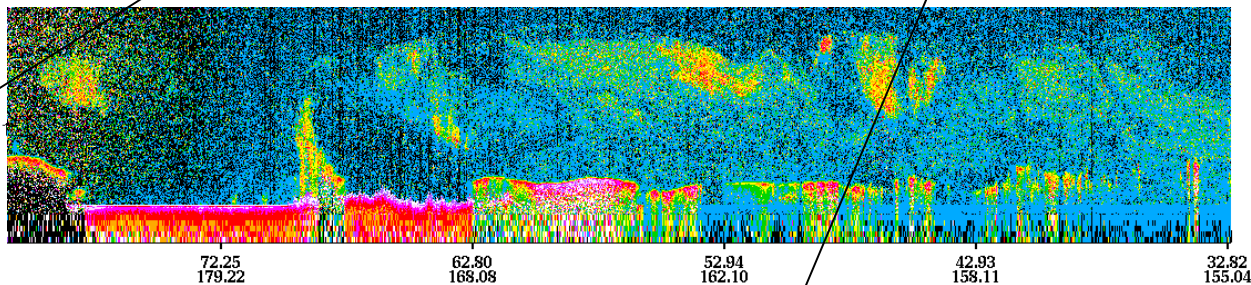
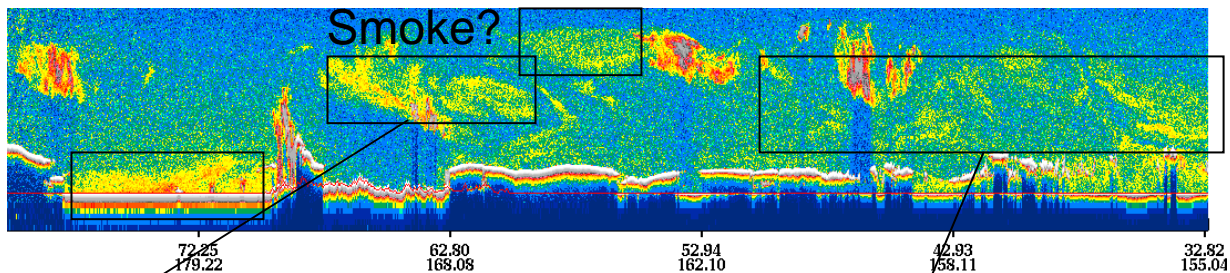
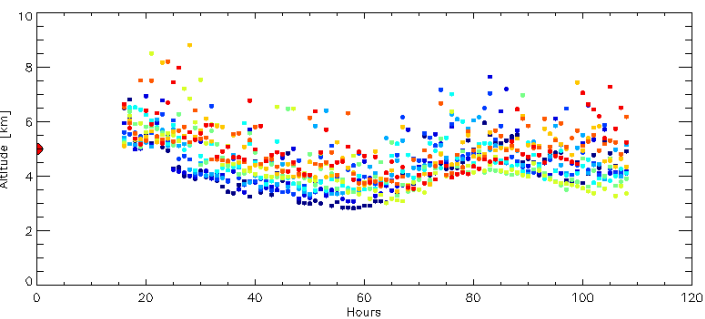
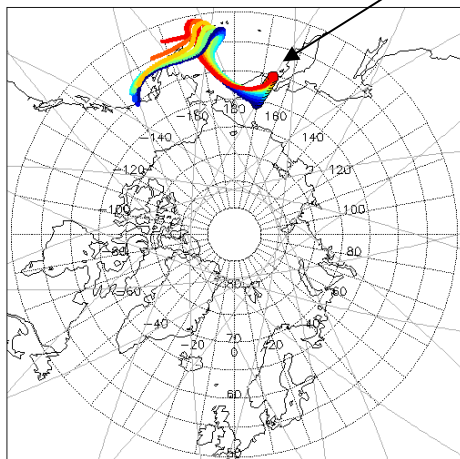


Trajectory analysis provided by Brad Pierce (NOAA/NESDIS)



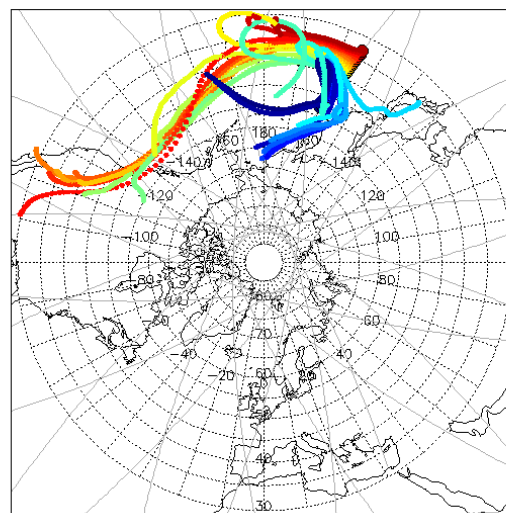
108hr CALIPSO Trajectories Initialized 2008040700 Valid 2008041200

Initial Altitude: 5000m

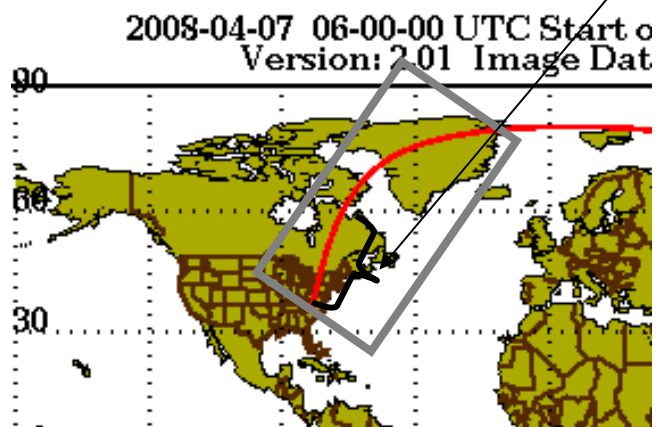
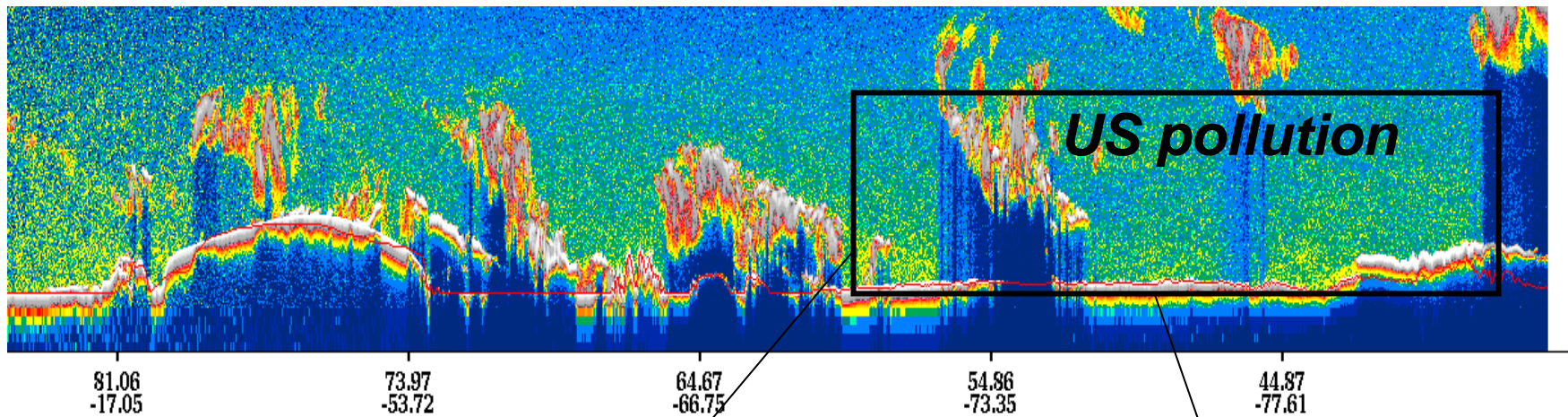


120hr CALIPSO Trajectories Initialized 2008040700 Valid 2008041200

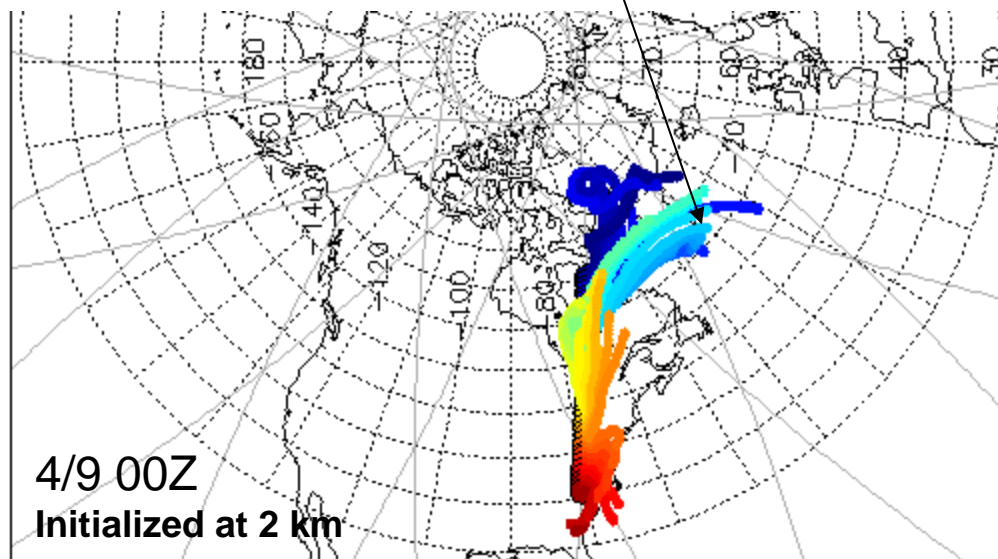
Initial Altitude: 5000m



Trajectory analysis provided by Brad Pierce (NOAA/NESDIS)

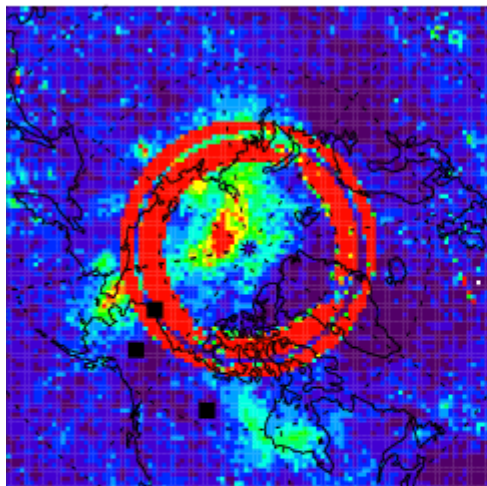


Initial Altitude

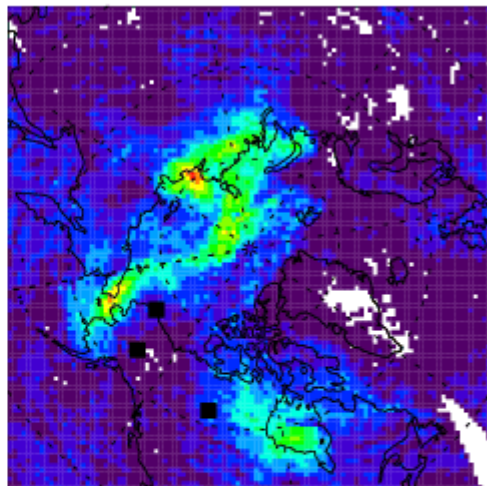


Trajectory analysis provided by
Brad Pierce (NOAA/NESDIS)

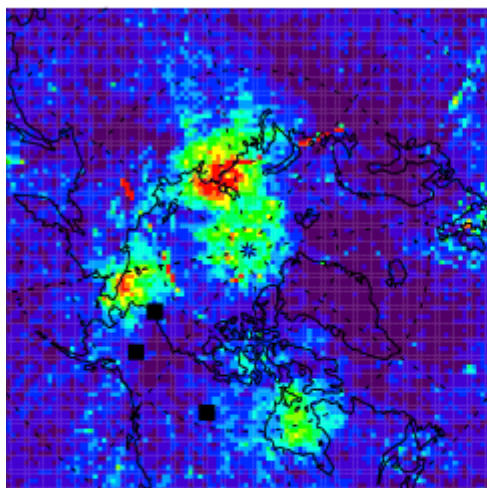
OMI_04-06



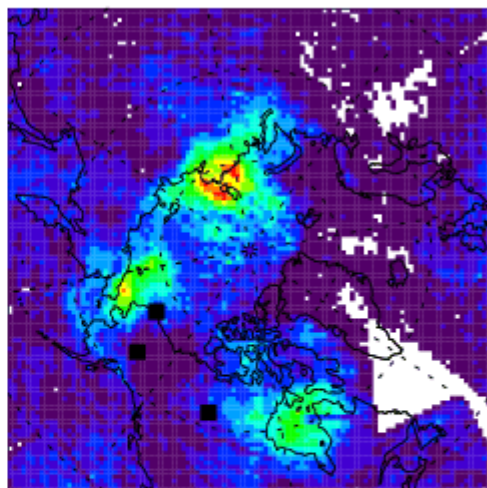
GOME2_04-06



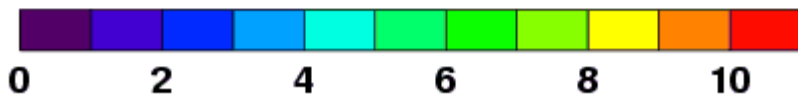
OMI_04-07



GOME2_04-07

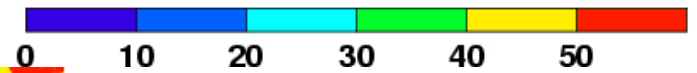
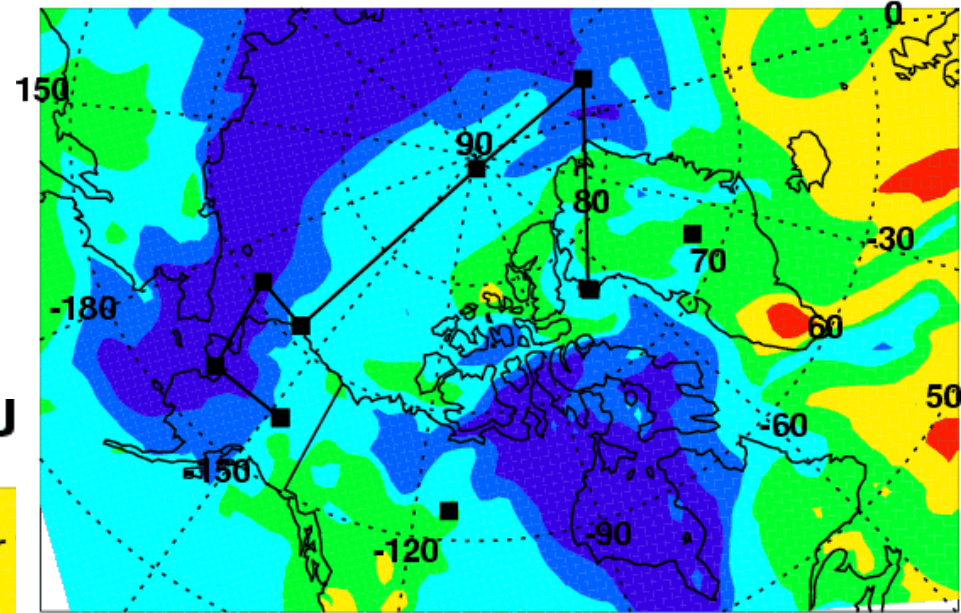


Bering Sea
hotspot remains



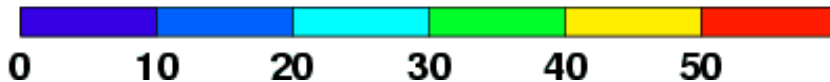
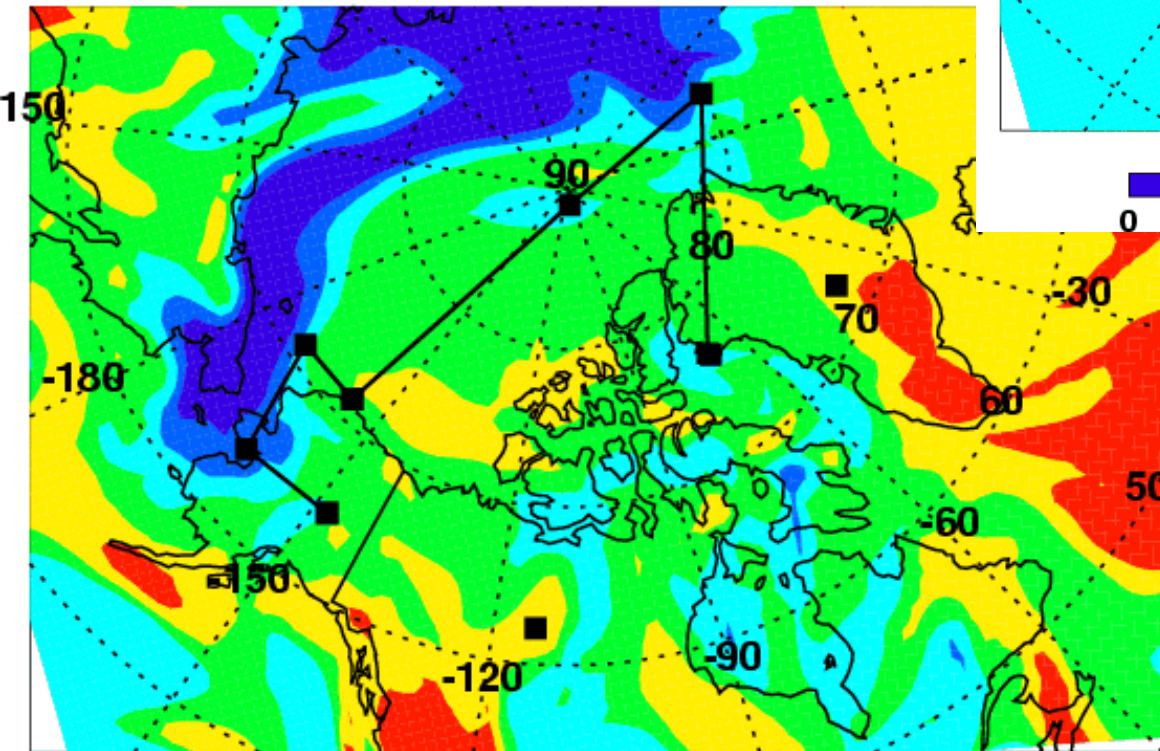
[$\times 10^{13}$ mol/cm²]

O_3 (ppbv) at surface, Apr-09_2000 UTC

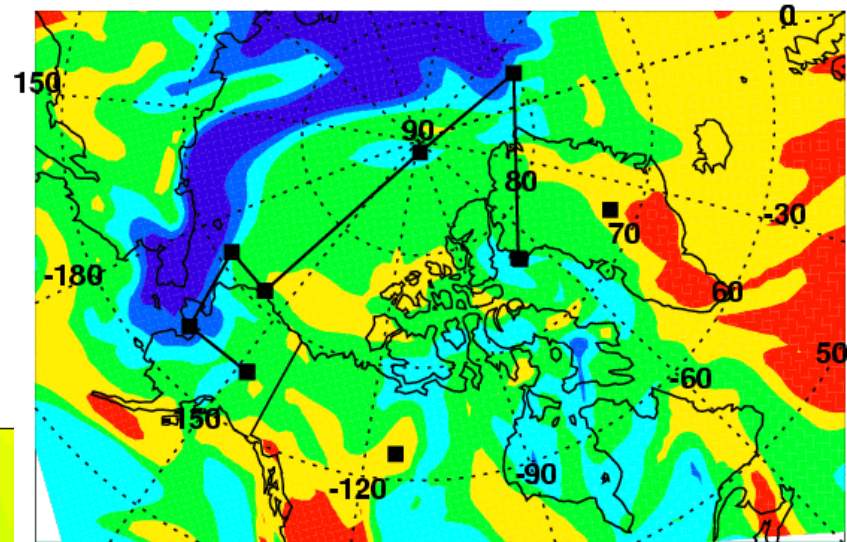


So far so good for tomorrow, although the track is just around the edge at 300 m

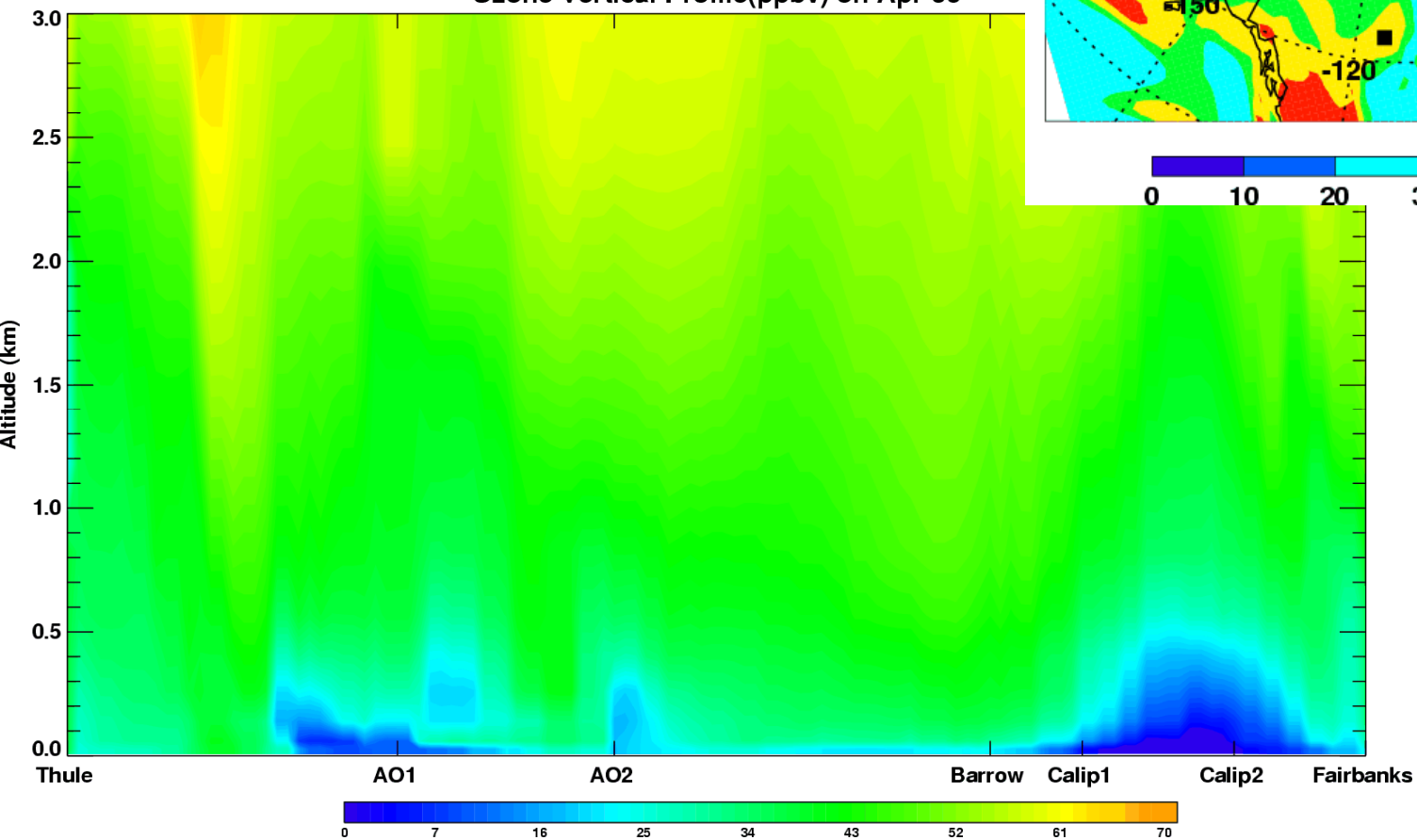
O_3 (ppbv) at 300m, Apr-09_2000 U



O₃ (ppbv) at 300m, Apr-09_2000 UTC

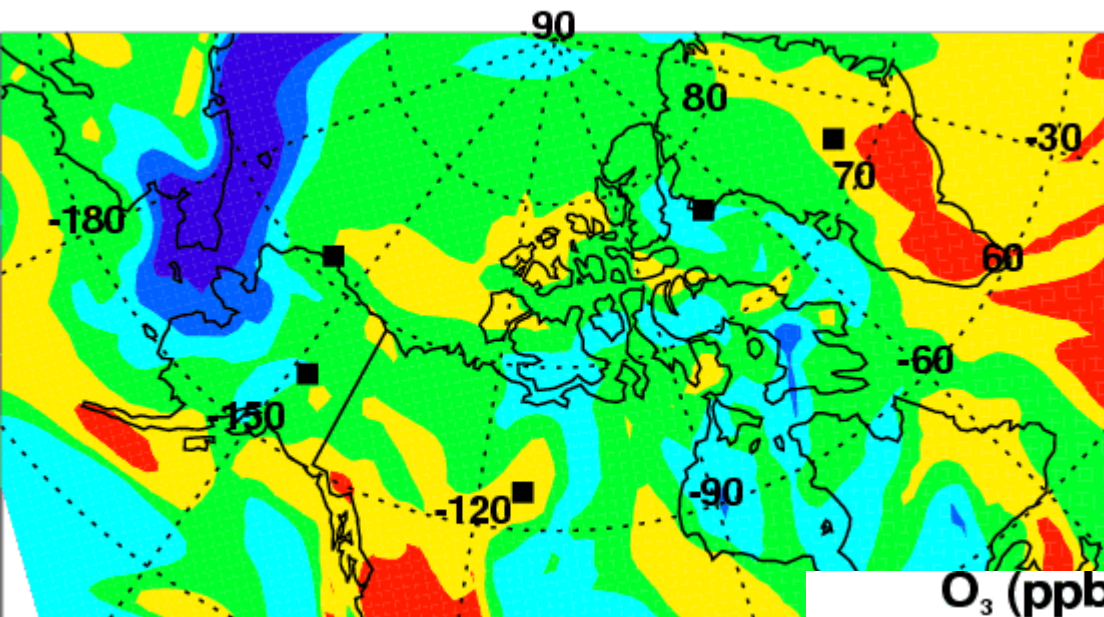


Ozone Vertical Profile(ppbv) on Apr-09



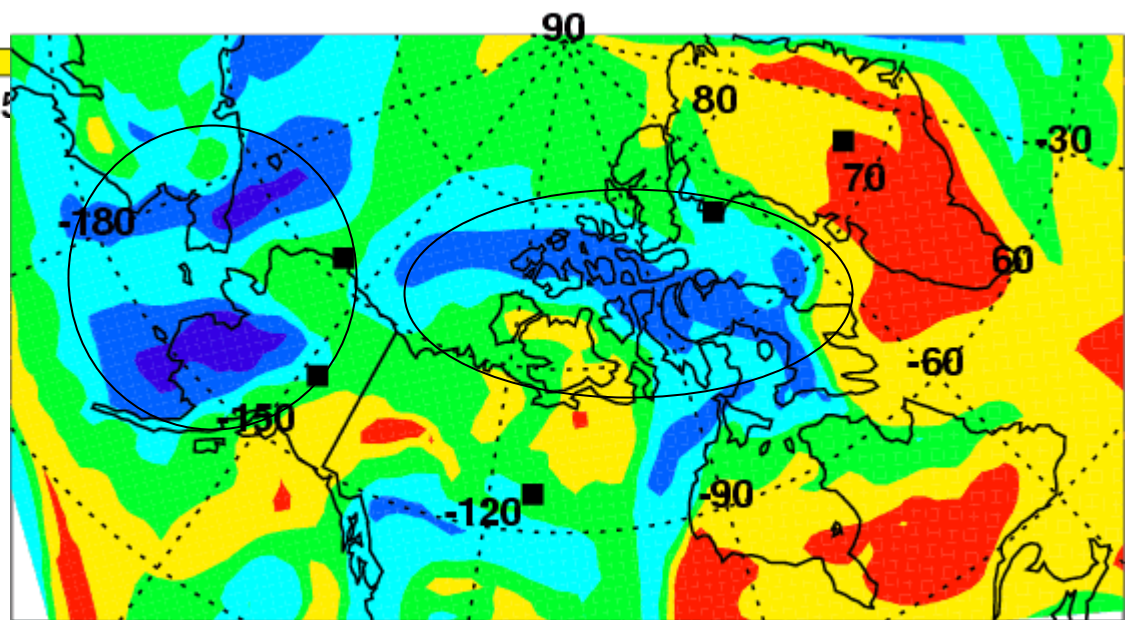
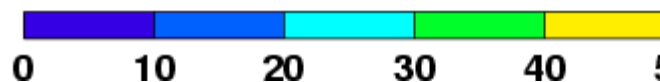
There is a good chance for the feature to stay

O_3 (ppbv) at 300m, Apr-09_2000 UTC



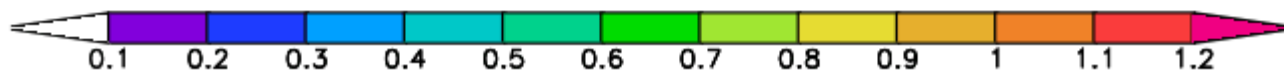
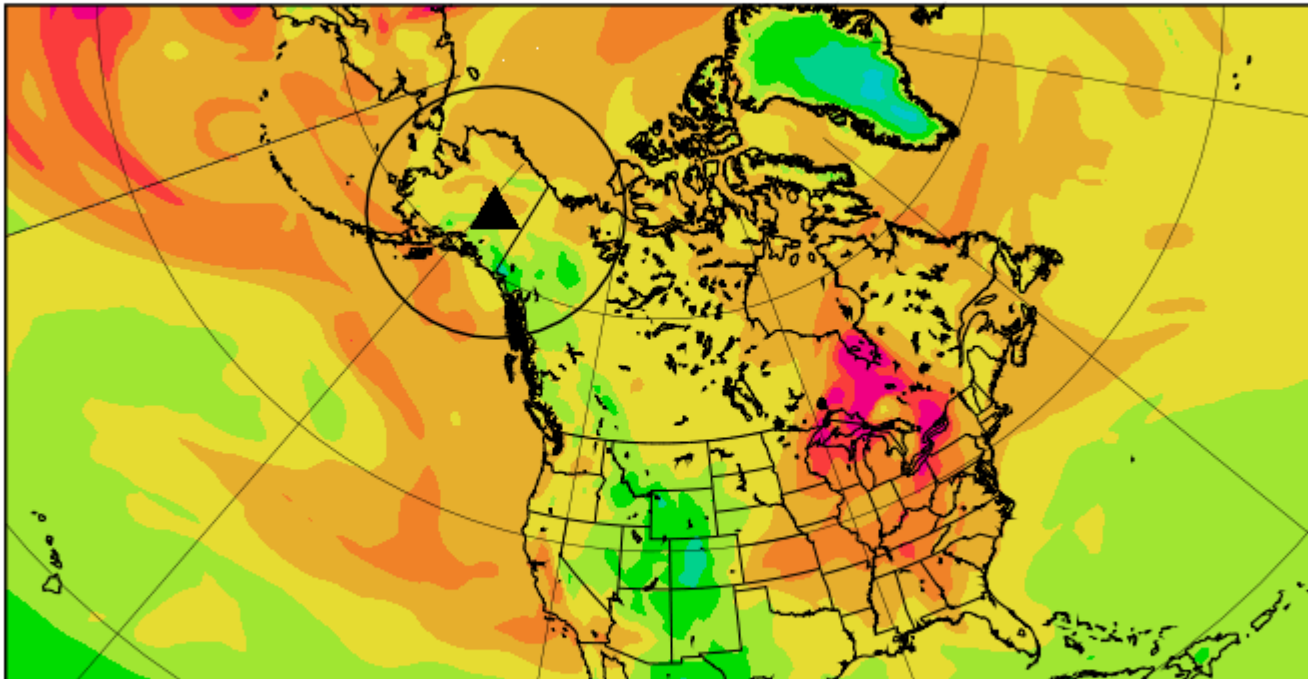
Outlook

O_3 (ppbv) at 300m, Apr-13_0000 UTC

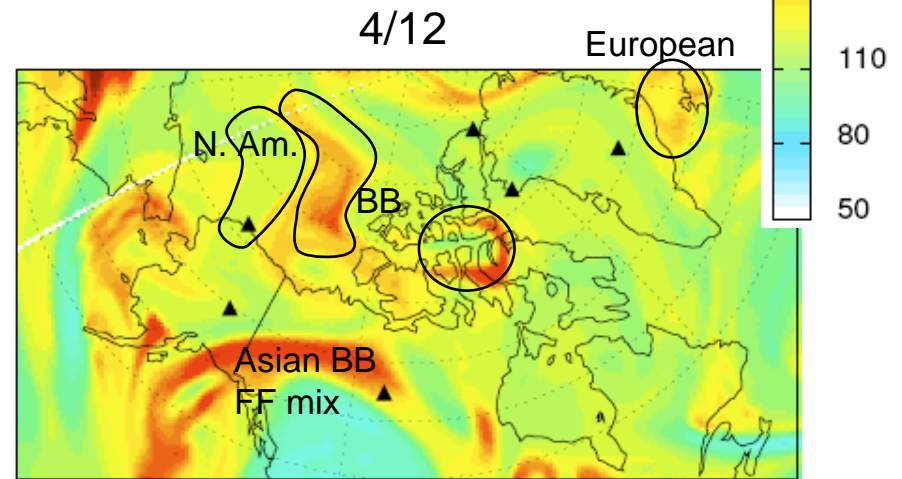
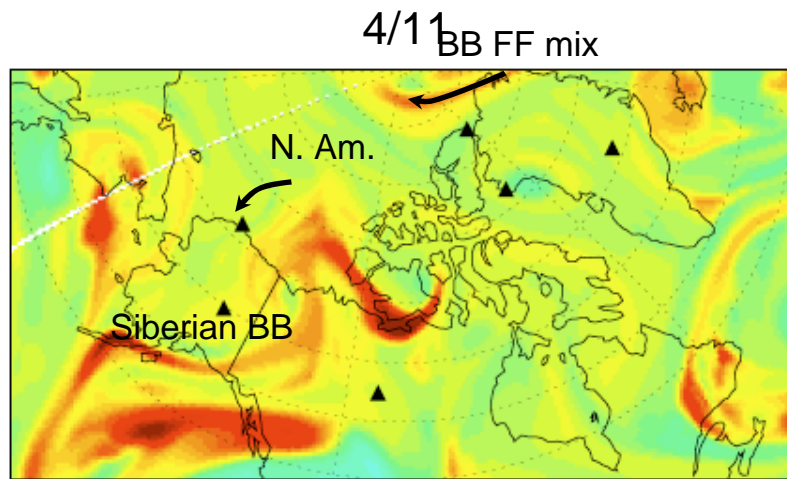
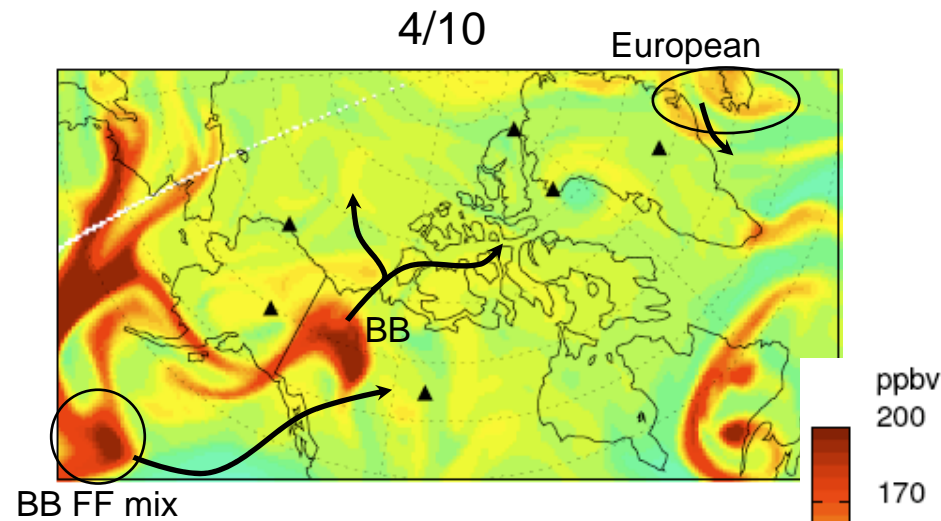
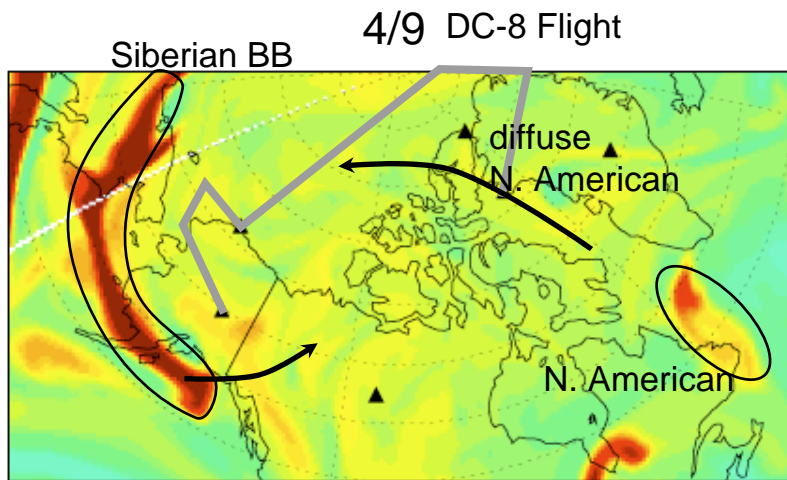


GEOS5 Fx 20080408_06Z: CO column 4/8-4/12

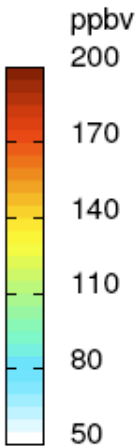
CO Column Burden [g m⁻²] on 07:30Z08APR2008



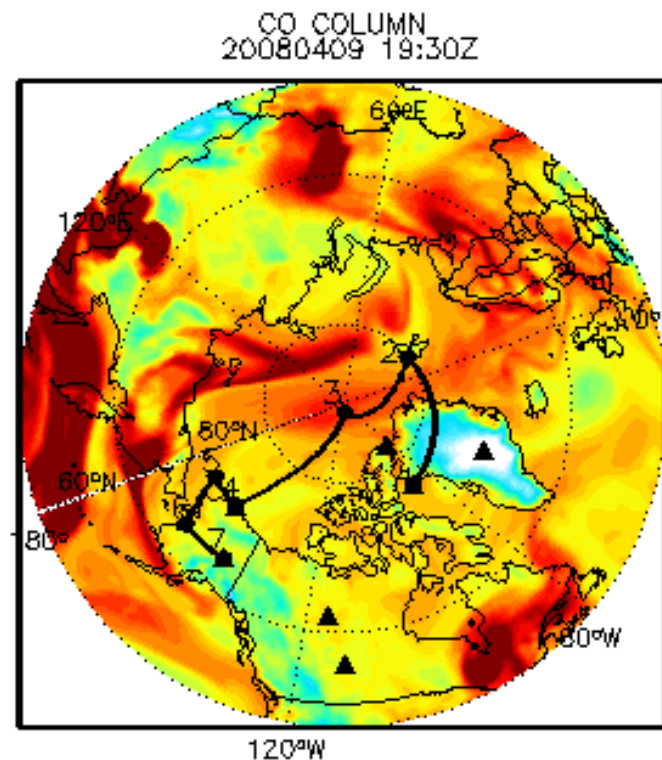
GEOS Total CO 500 hPa



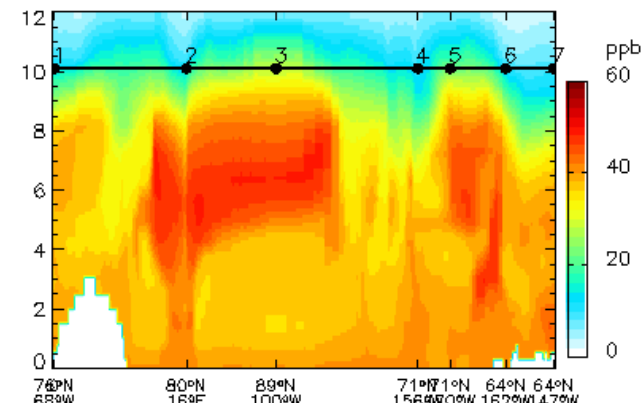
4/12 good for transects through many pollution sources



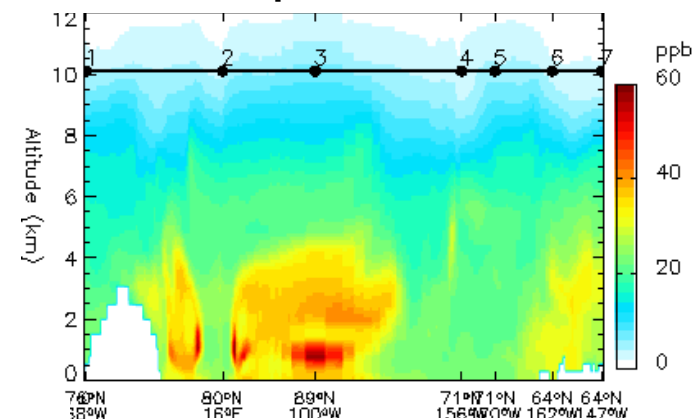
GEOS5 Fx 20080408_06Z: 04/09 Thule → Fairbanks



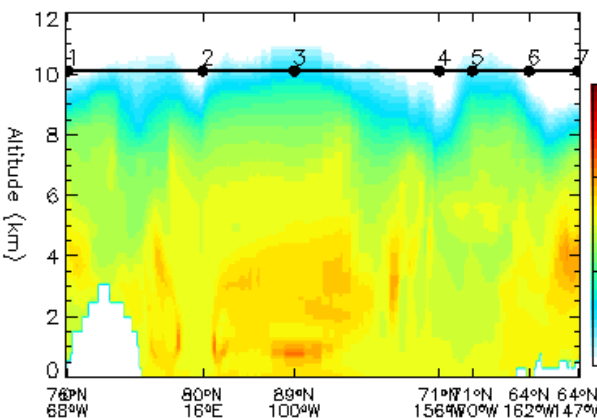
Asian CO



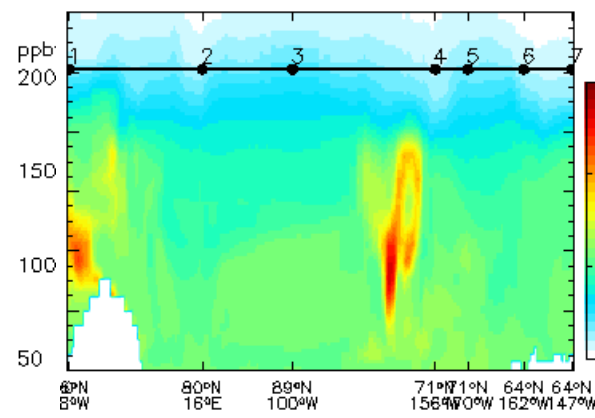
Europe+Russia CO



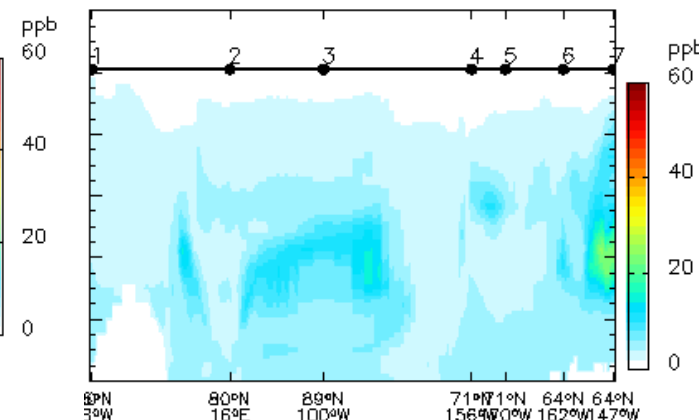
Total CO



N. American CO



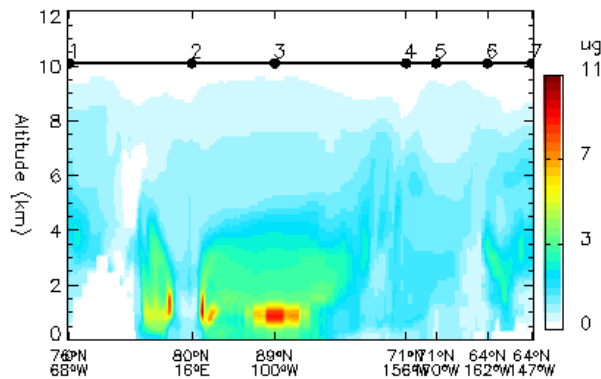
Boreal Biomass CO



GEOS5 Fx 20080408_06Z: 04/09 Thule → Fairbanks

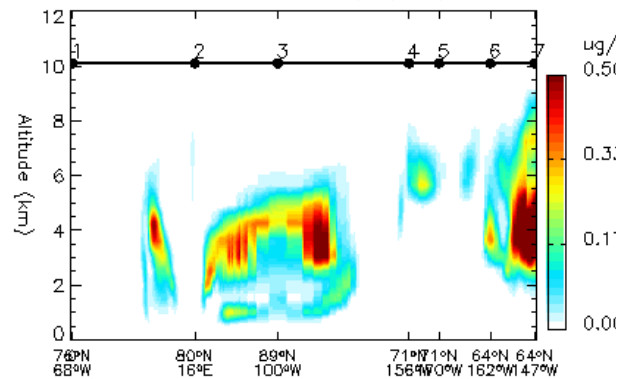
GEOS-5 forecast: 20080408_01

Sulphate

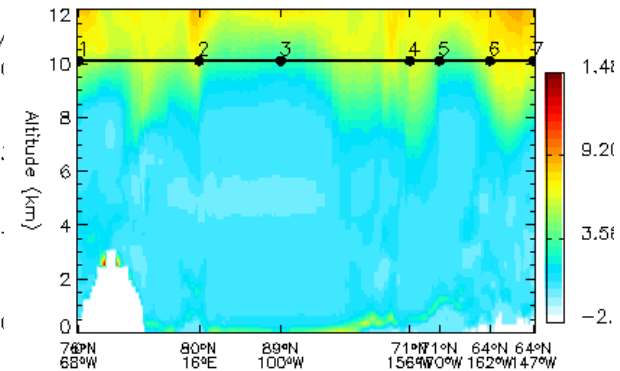


GEOS-5 forecast: 20080408_01

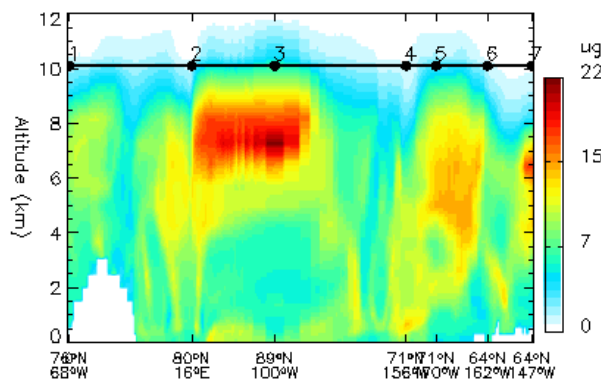
Boreal Biomass Organic Carbon



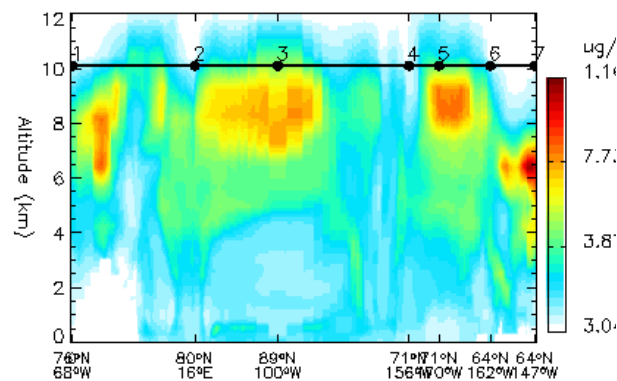
PV



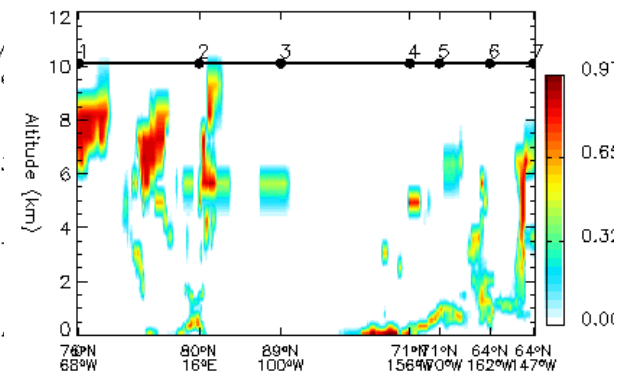
Dust



Nonboreal Biomass Organic Carbon

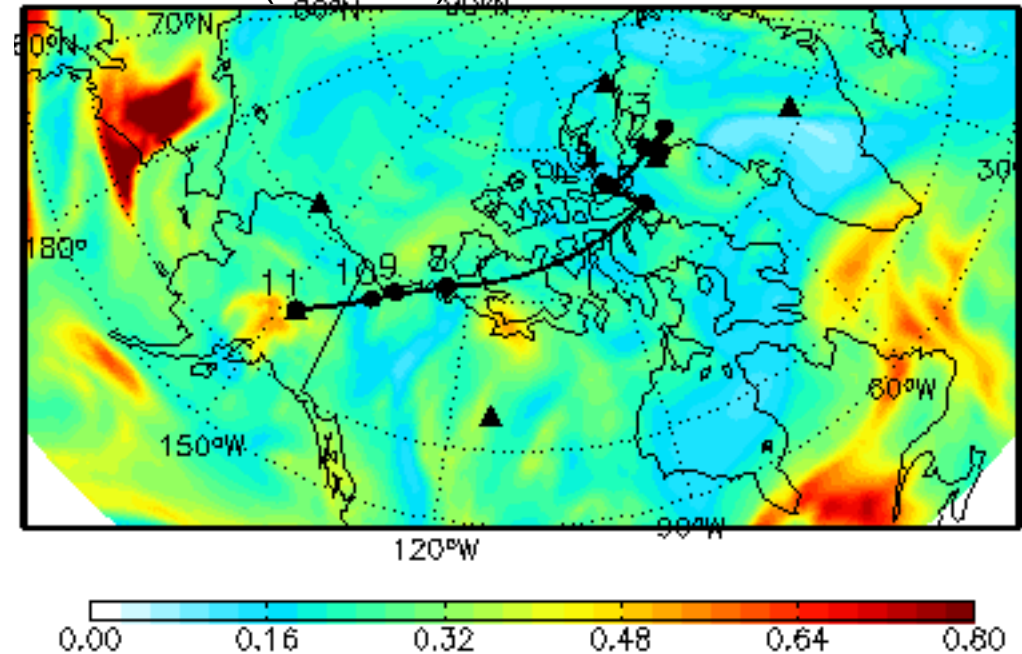


Cloud

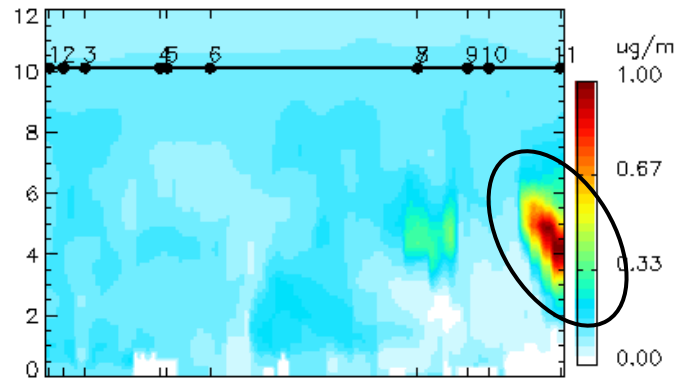


P3 Return – Interesting mix at Fairbanks

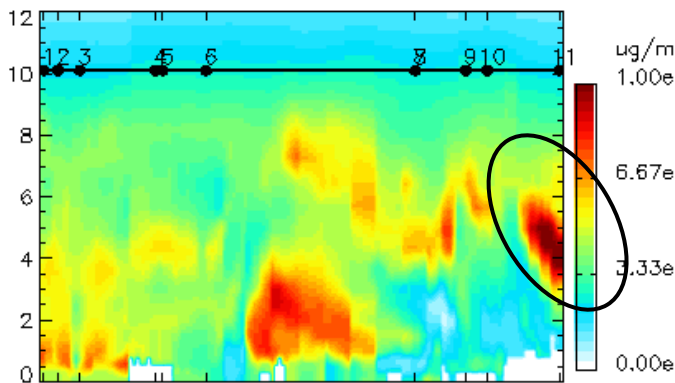
Total AOT (550 nm)



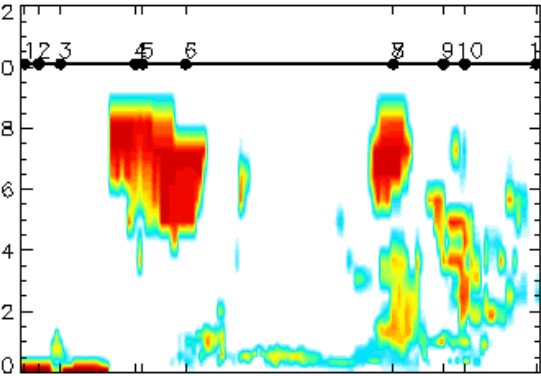
OC



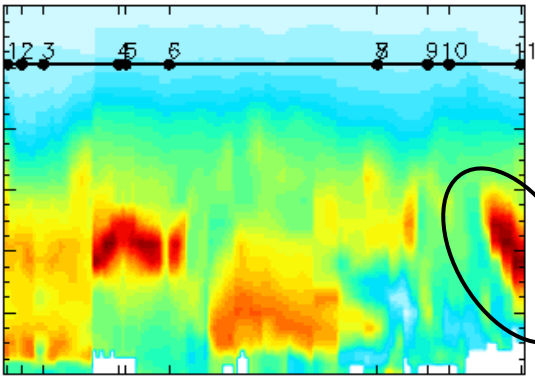
BC



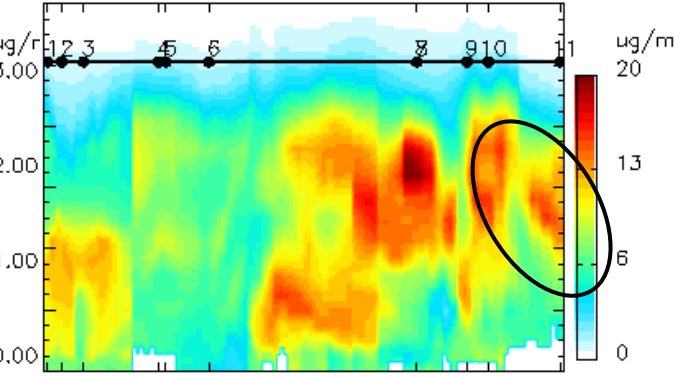
Cloud Fraction



Sulfate

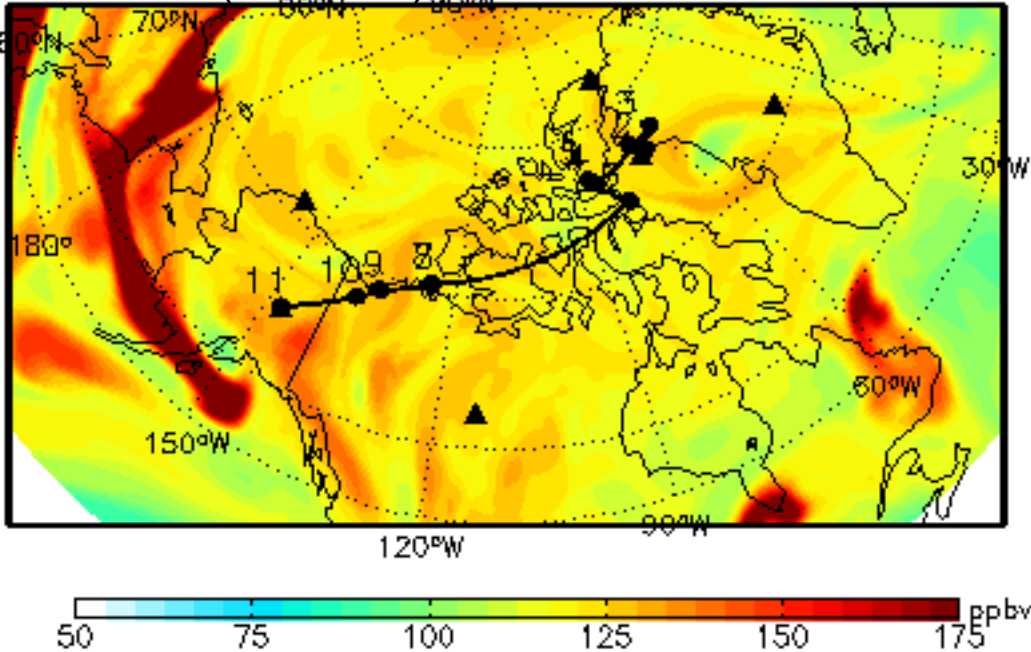


Dust

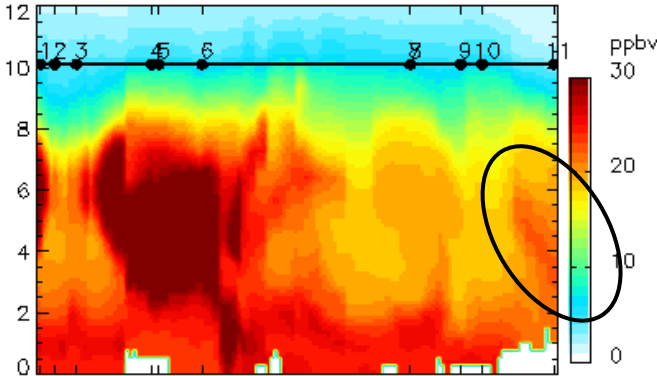


P3 Return – Interesting mix at Fairbanks

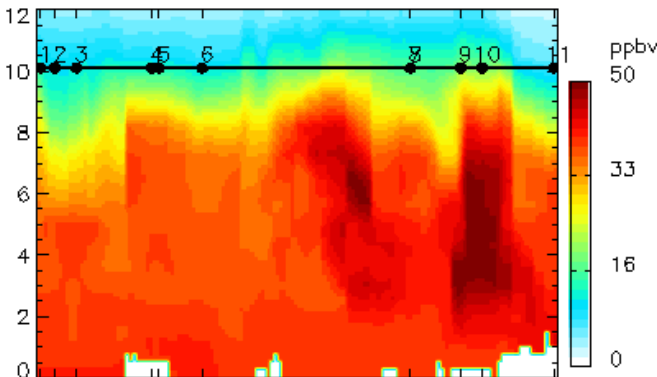
Total CO (500 hPa)



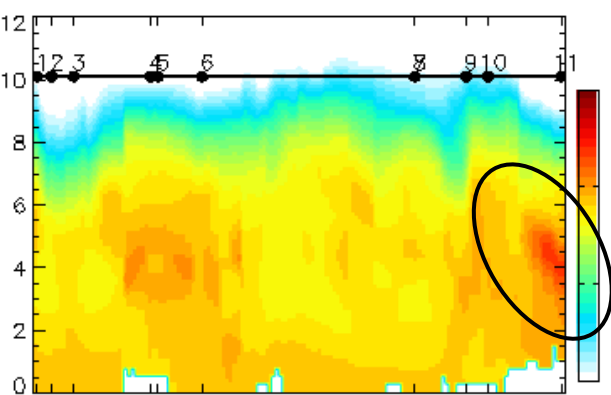
North American CO



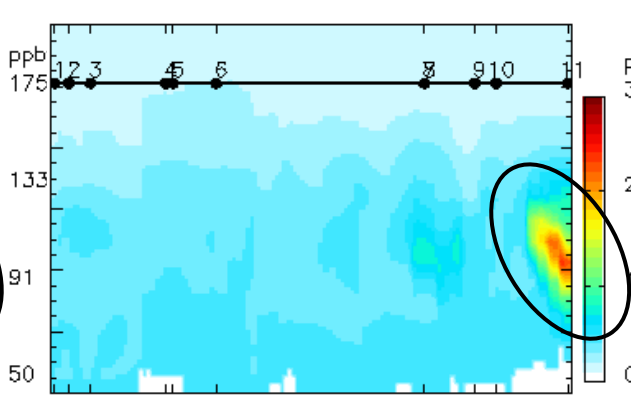
Asian CO



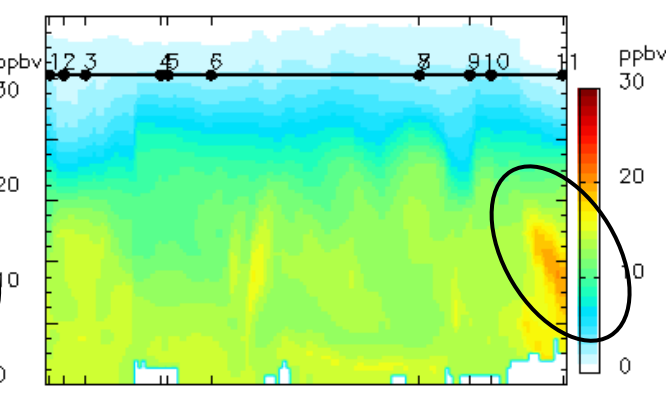
Total CO



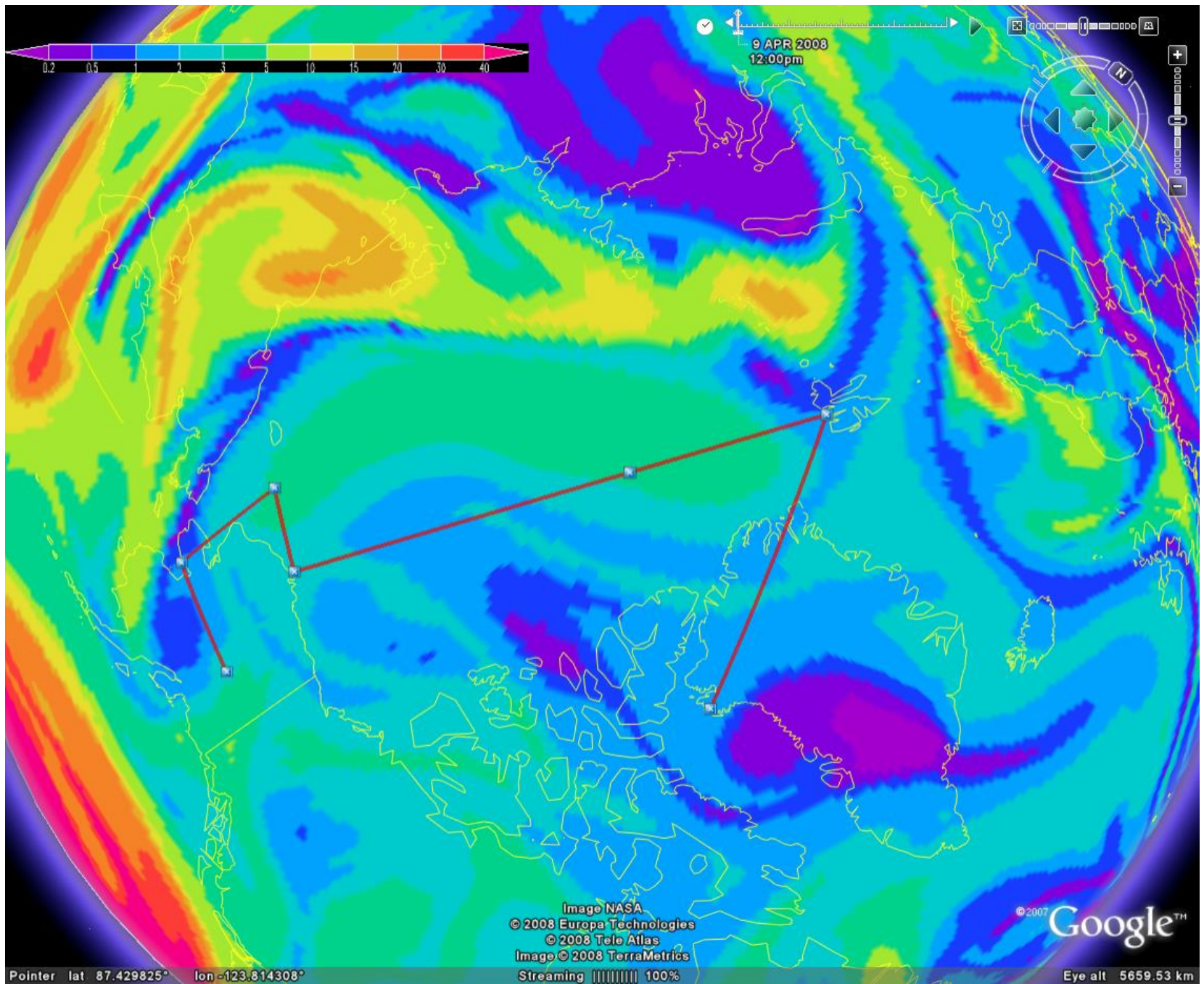
Boreal burning CO



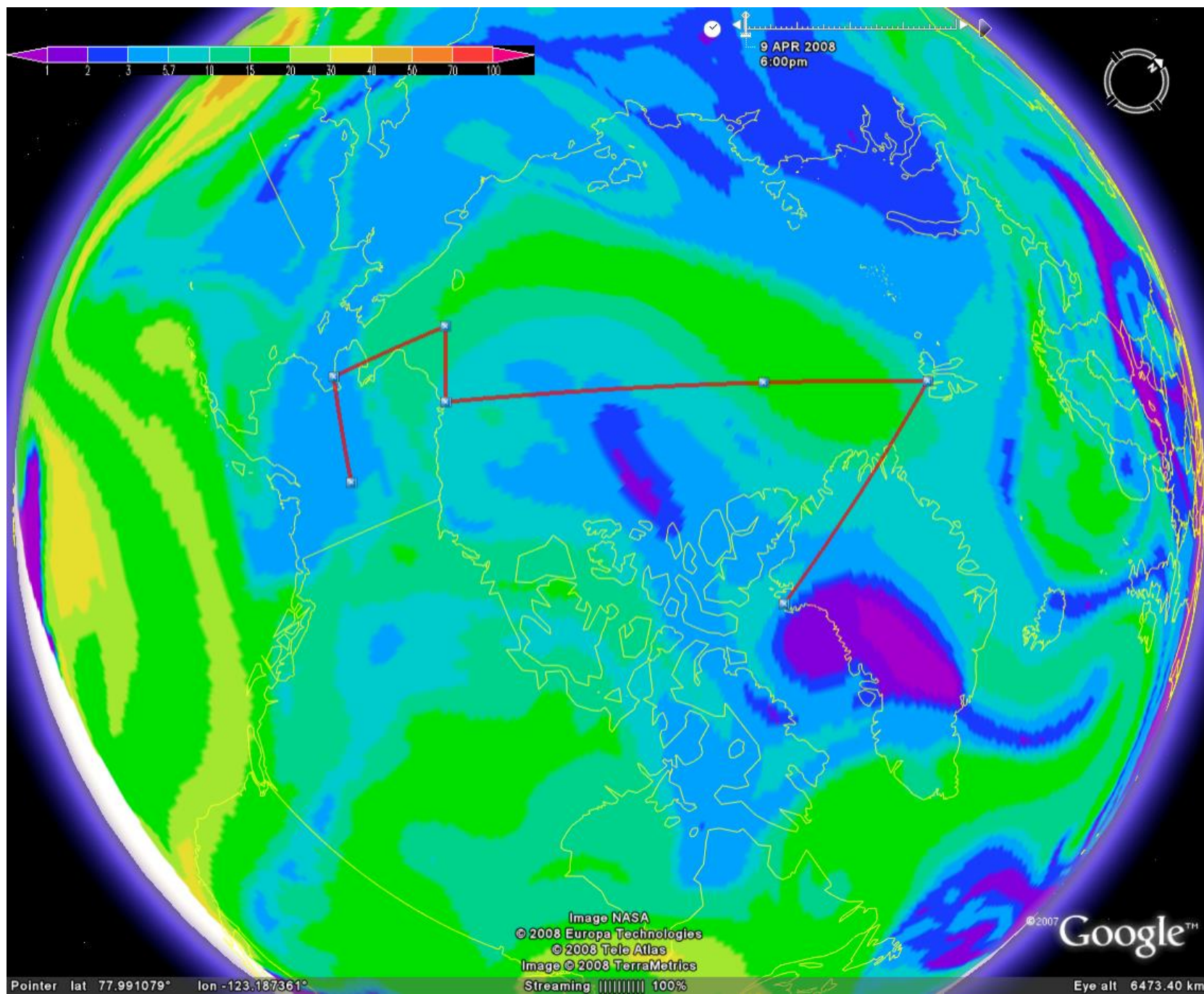
European CO



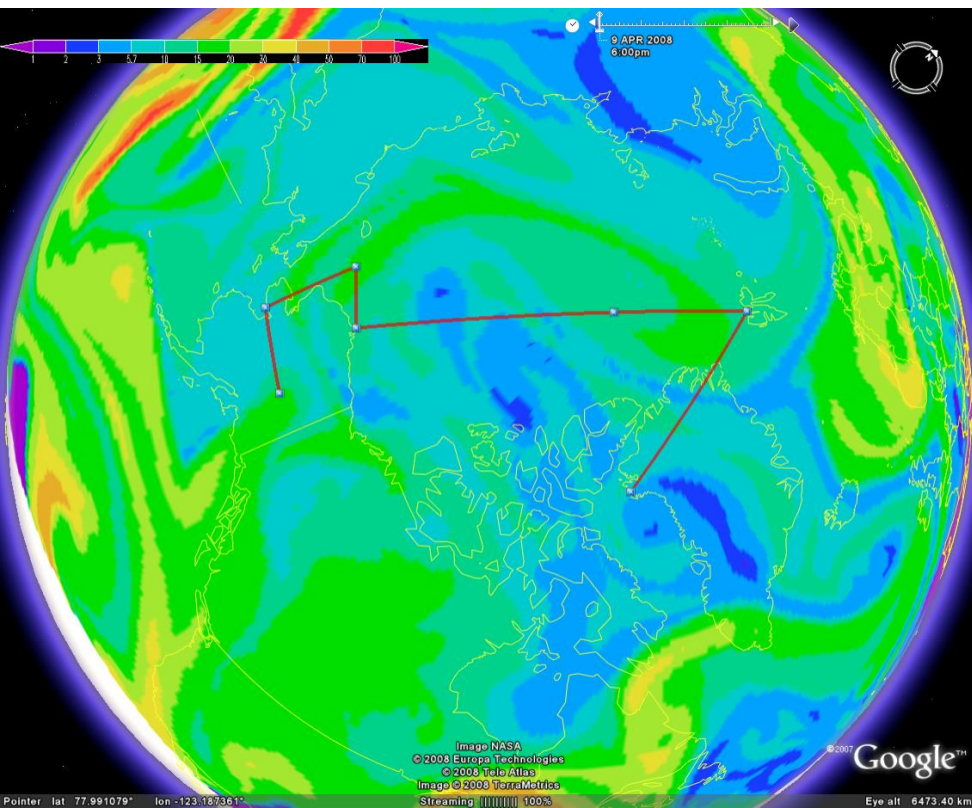
DC 8, April 9th, Biomass CO, 8.4 km, 36hr (12Z)



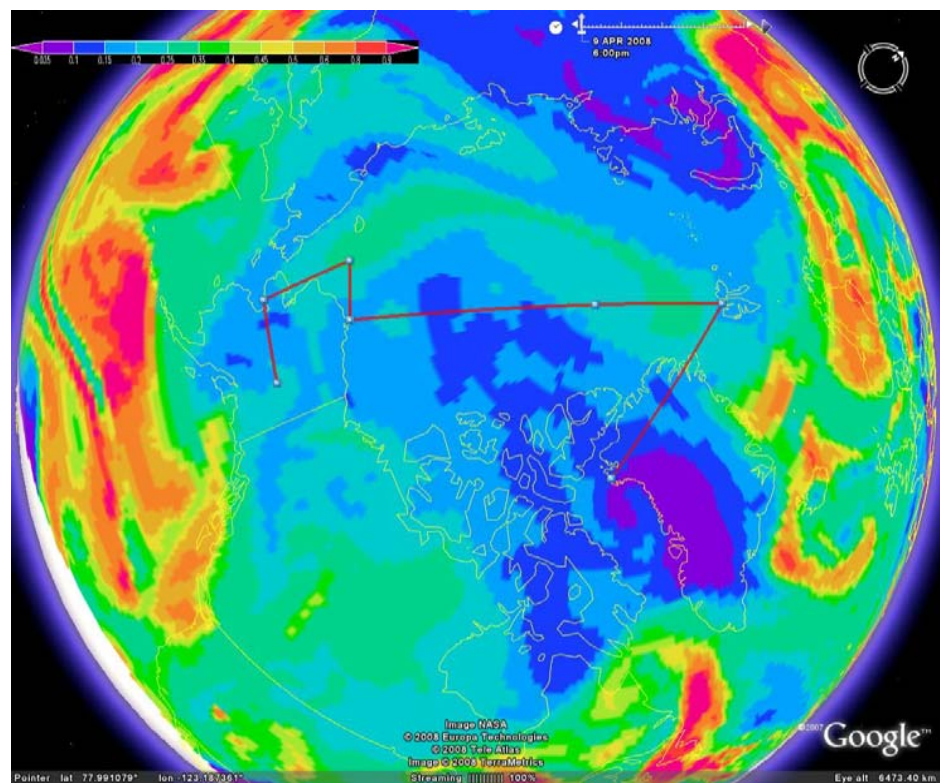
DC 8, April 9th, Anthropogenic CO₂, 8.4 km, 42hr (18Z)



DC 8, April 9th, Anthropogenic CO,
5.5 km, 42hr forecast (18Z)

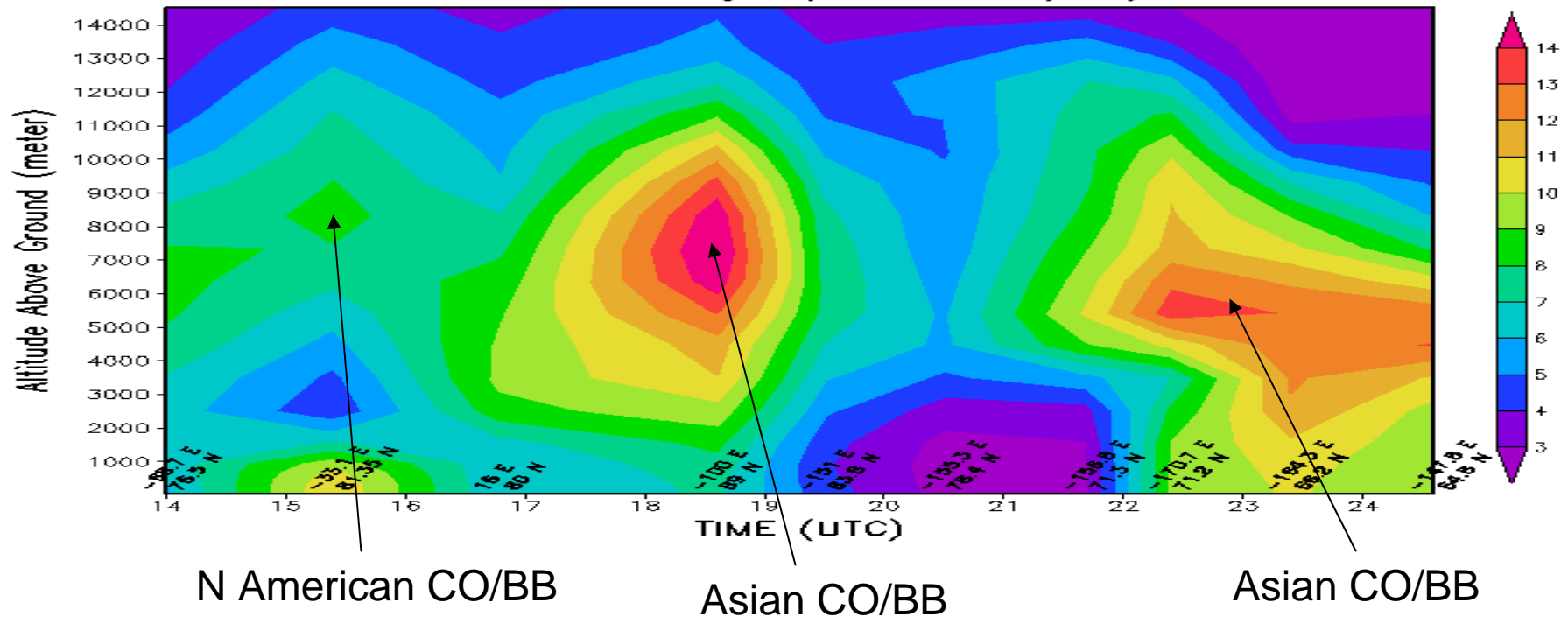


DC 8, April 9th, AOD,
42hr forecast (18Z)

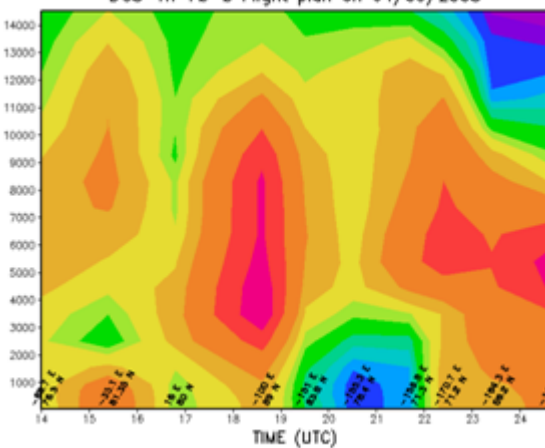


DC-8 April 9 Thule to FAI Flight Plan Curtains

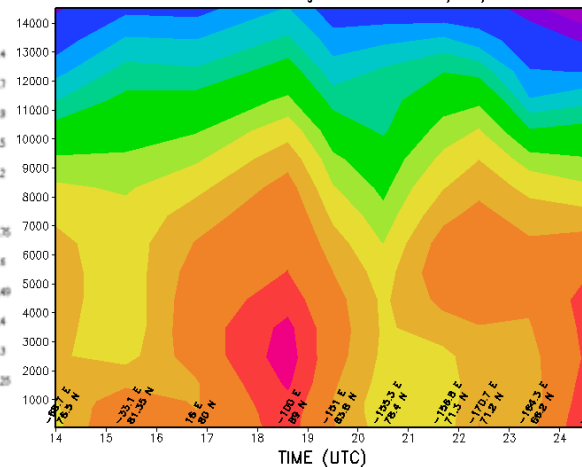
Simulated total CO (ppbv) along the DC8-Th-Fb-b Flight plan on 04/09/2008



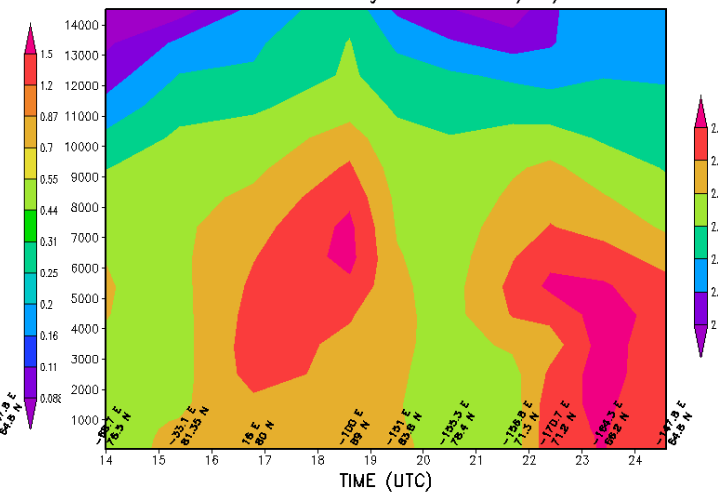
Simulated BiomassCO (ppbv) along the DC8-Th-Fb-b Flight plan on 04/09/2008



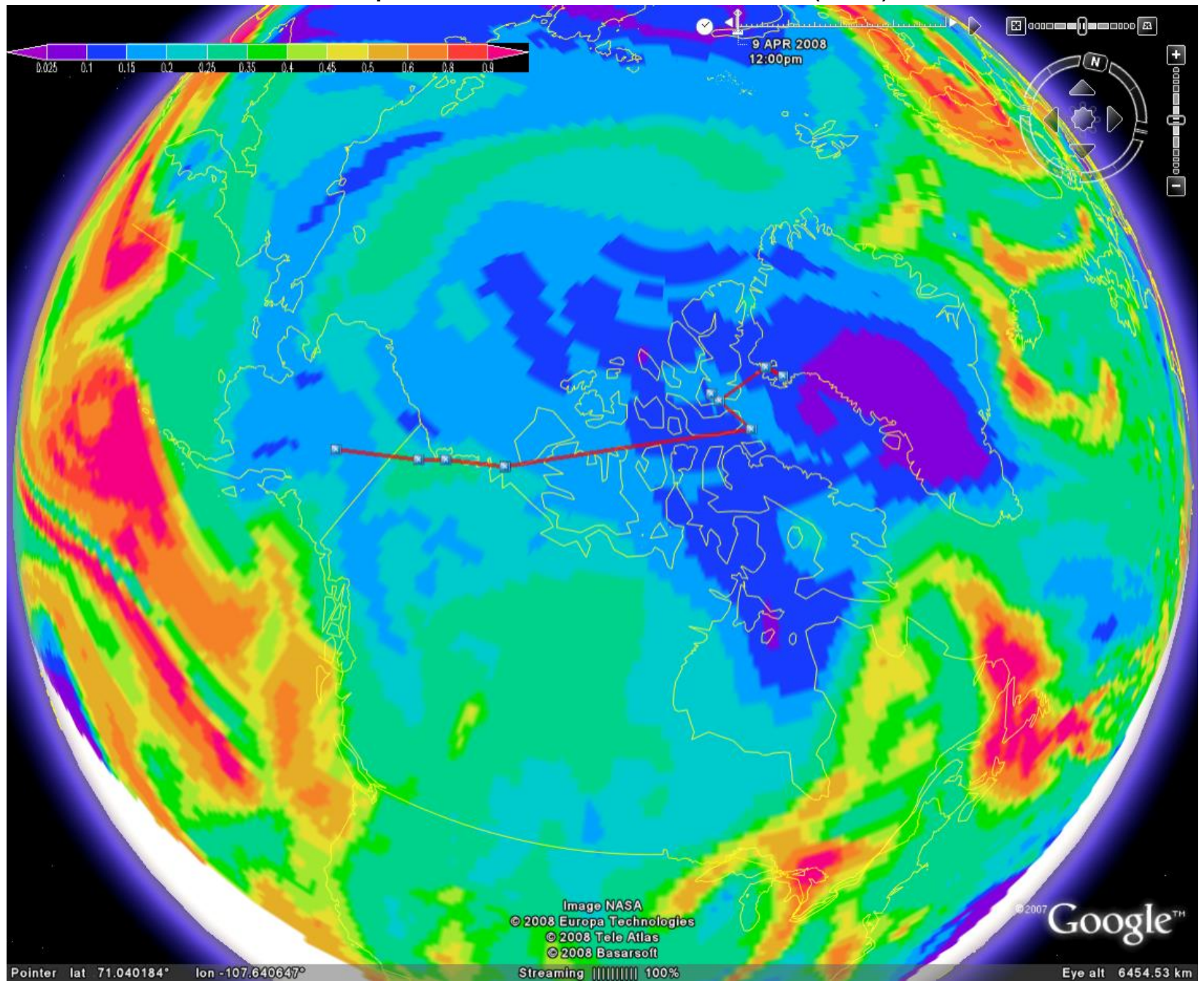
Simulated Total Sulfate ($\mu\text{g}/\text{m}^3$) along the DC8-Th-Fb-b Flight Path on 04/09/2008



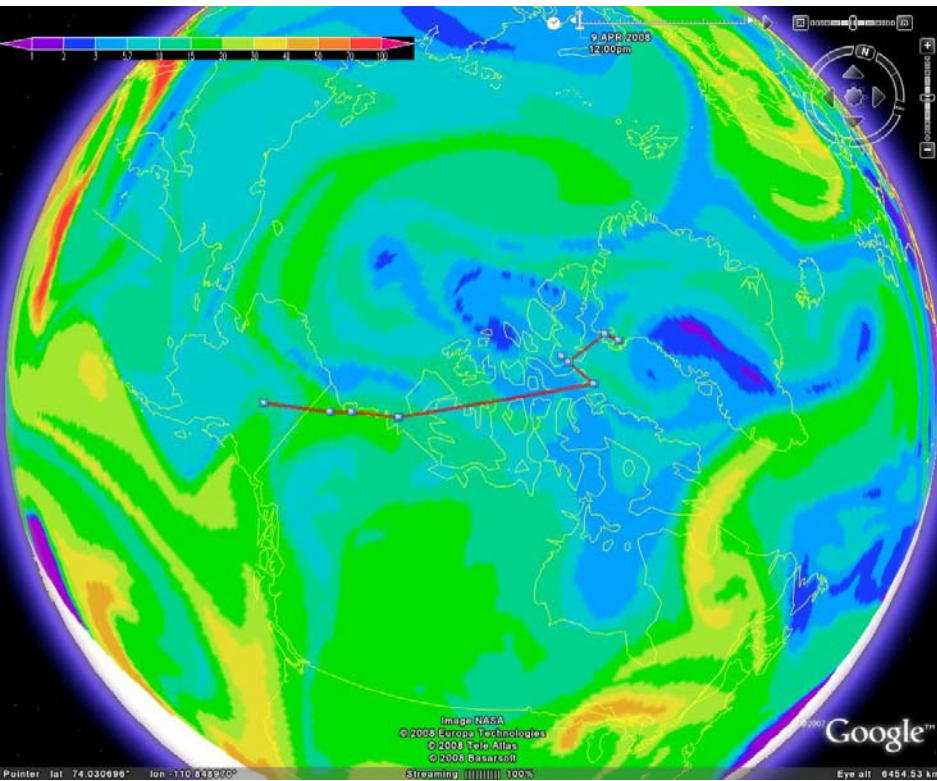
Simulated hg (ng/m^3) along the DC8-Th-Fb-b Flight Path on 04/09/2008



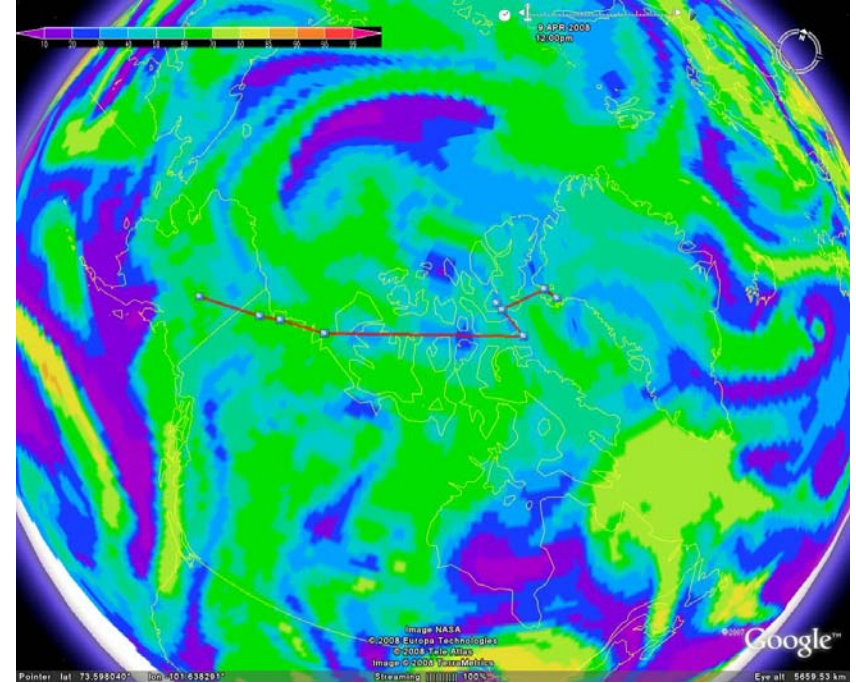
P3, April 9th, AOD, 36hr forecast (12Z)



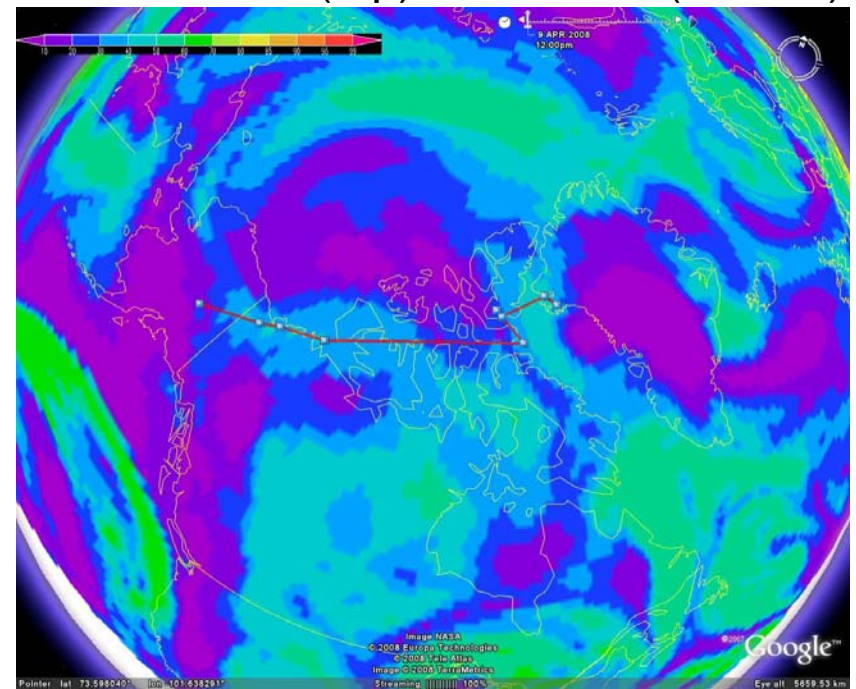
P3 Return to FAI



Anthropogenic CO₂, 5.4 km 12Z
36 hour forecast

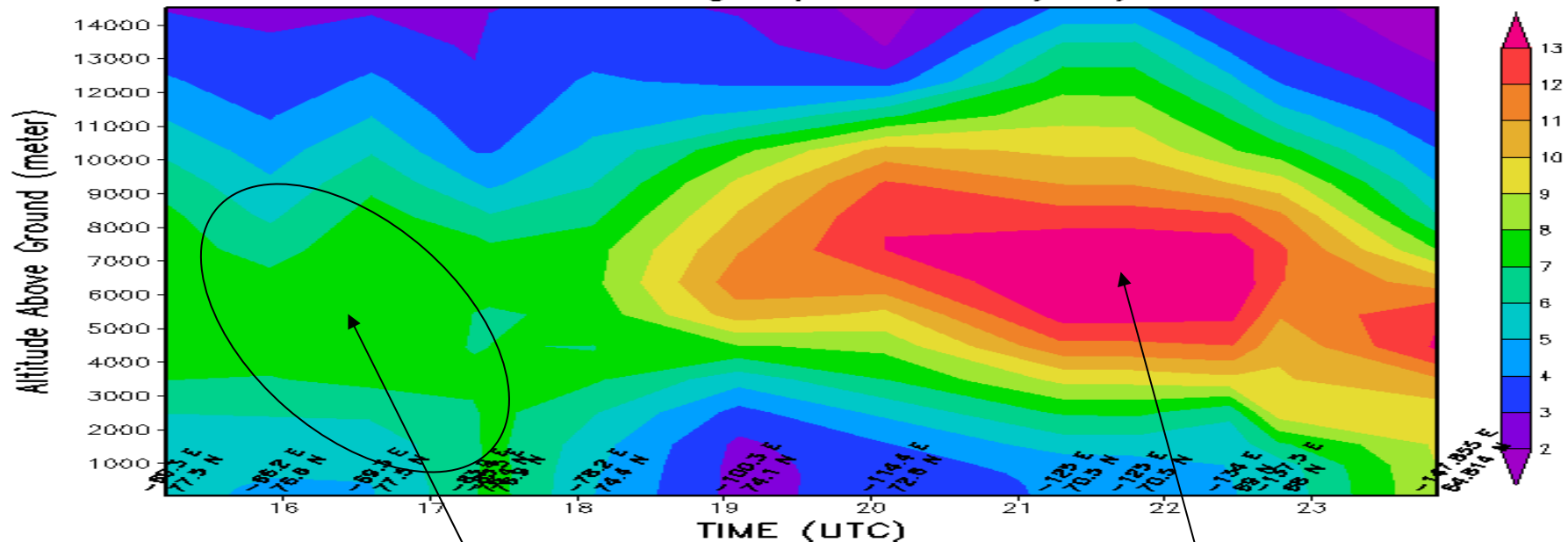


RH at 5.5km (top) and 8.4km (bottom)



P-3 Thule to FAI Flight Track for April 9

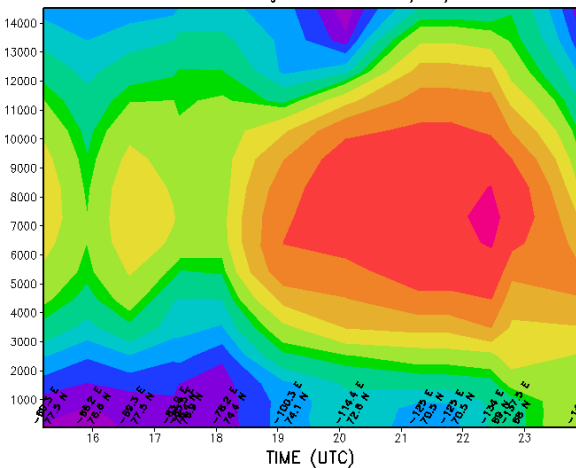
Simulated total CO (ppbv) along the
P3-Th-Fb-a Flight plan on 04/09/2008



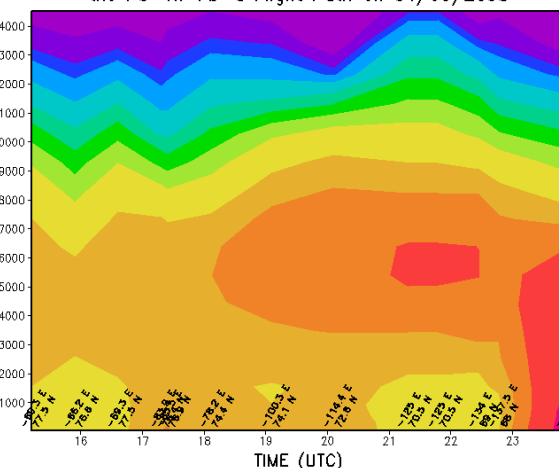
N American CO/BB

Asian CO/BB

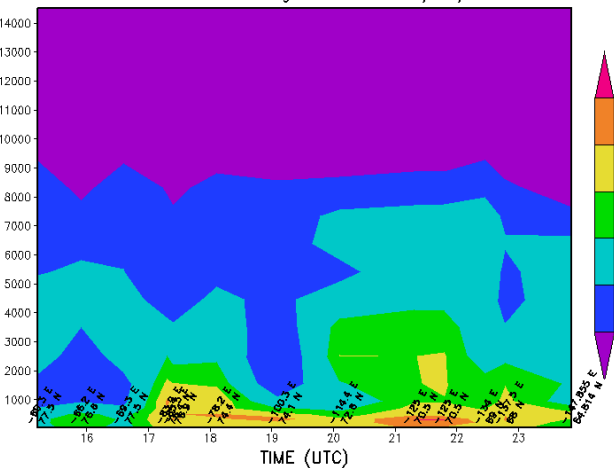
Simulated Dust ($\mu\text{g}/\text{m}^3$) along the
P3-Th-Fb-a Flight Path on 04/09/2008



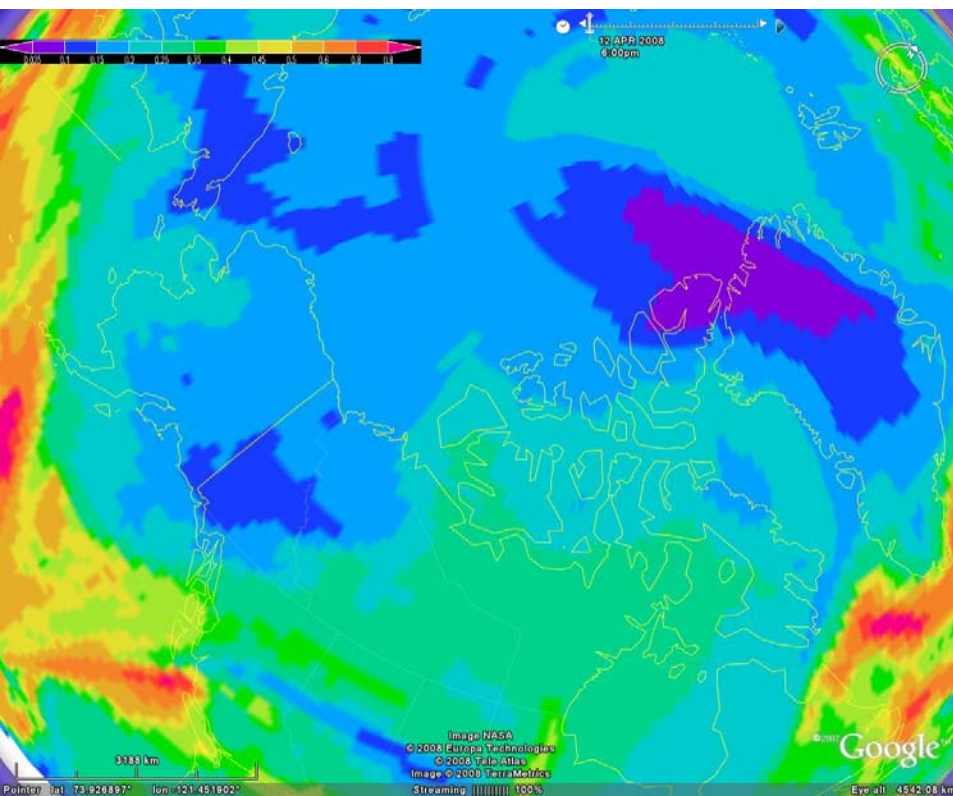
Simulated Total Sulfate ($\mu\text{g}/\text{m}^3$) along
the P3-Th-Fb-a Flight Path on 04/09/2008



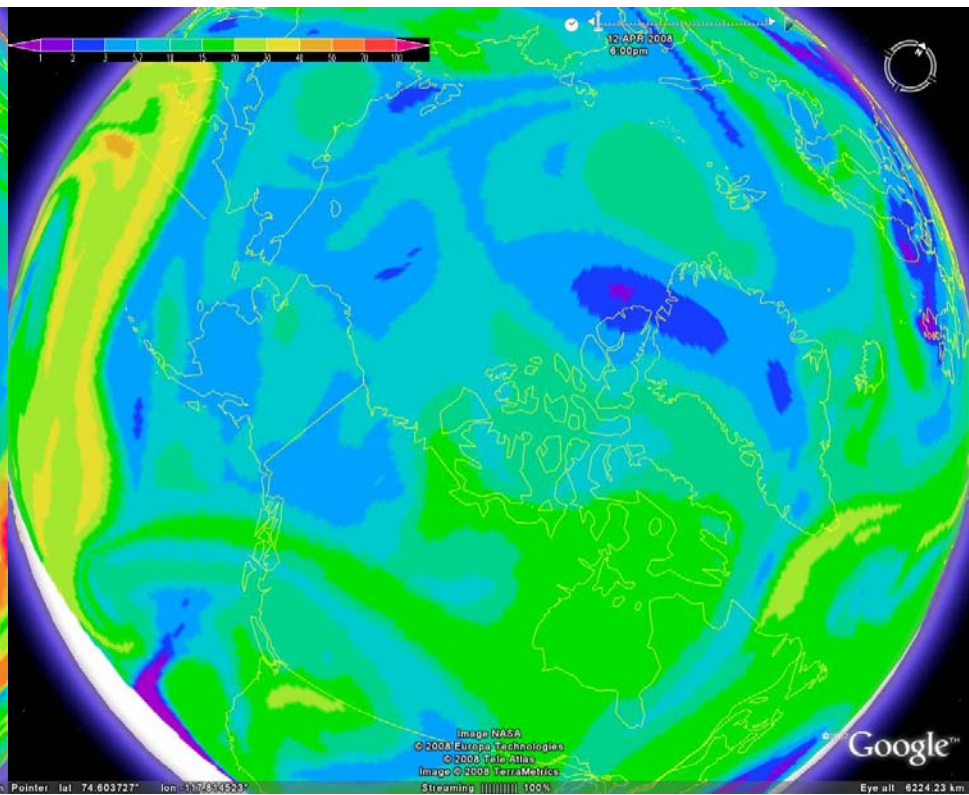
Simulated Relative Humidity(%) along
the P3-Th-Fb-a Flight Path on 04/09/2008



Later April 18Z 12th, 114 hr forecast



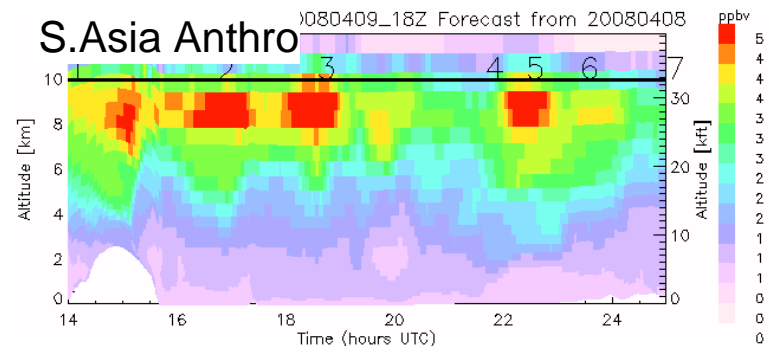
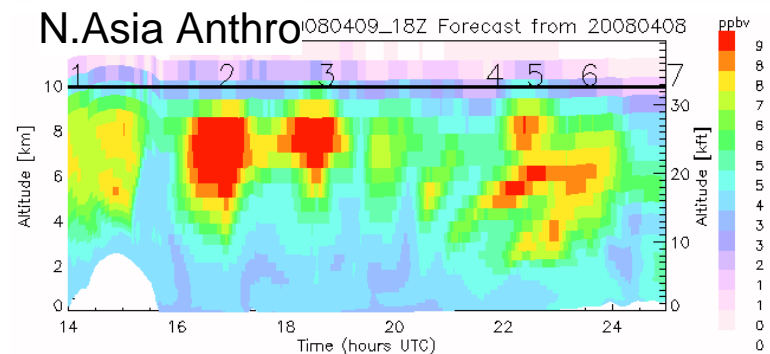
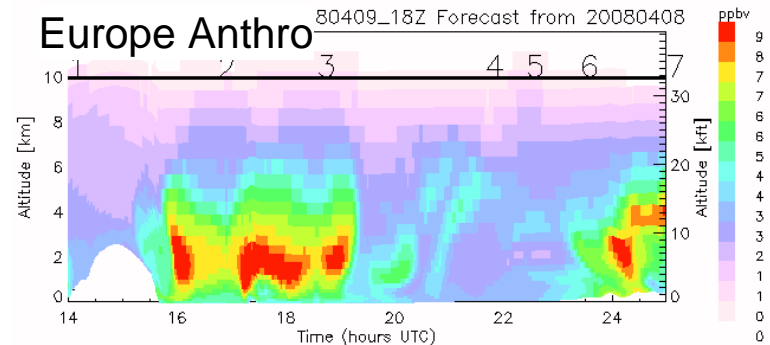
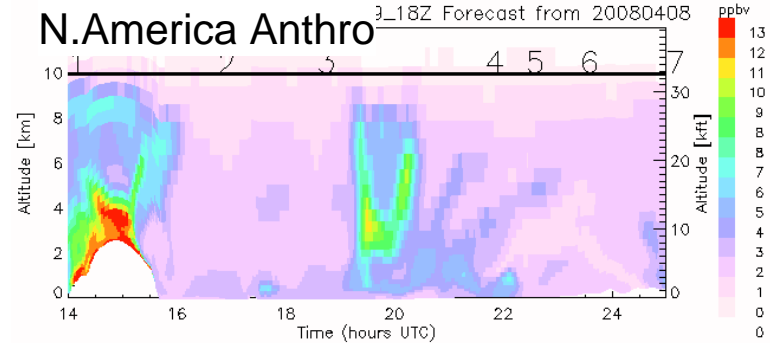
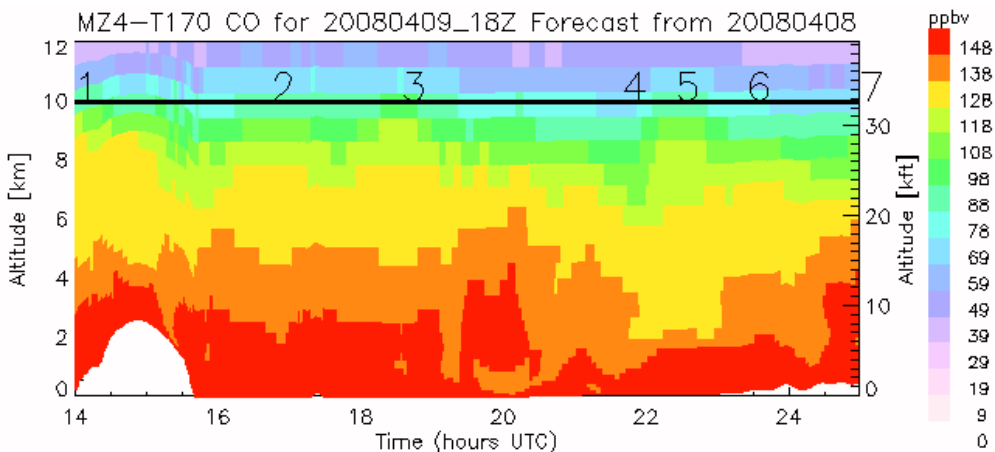
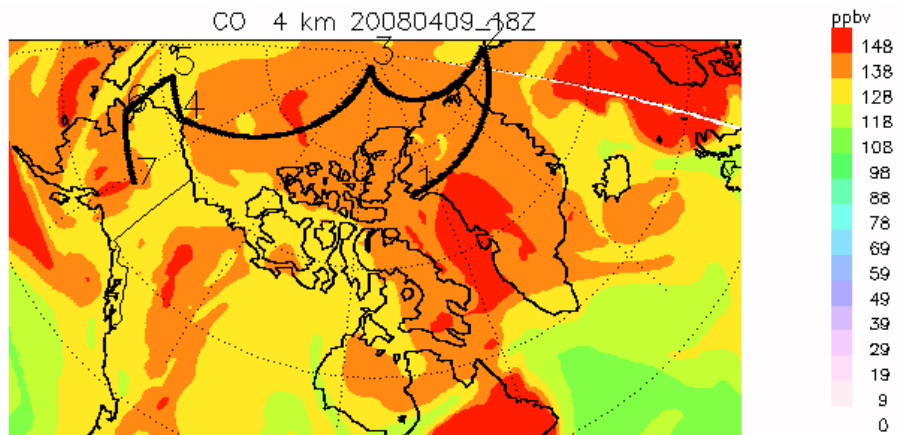
Column AOD



Anthropogenic CO at 8.4 km layer

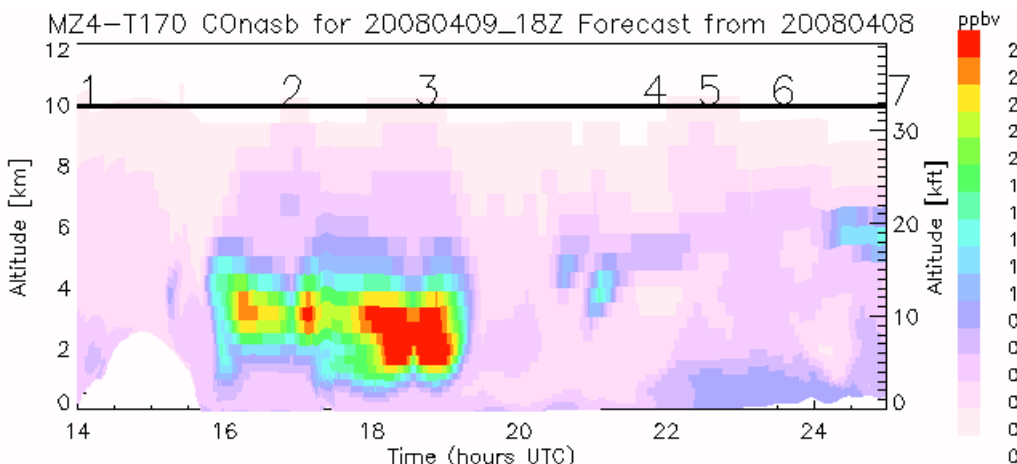
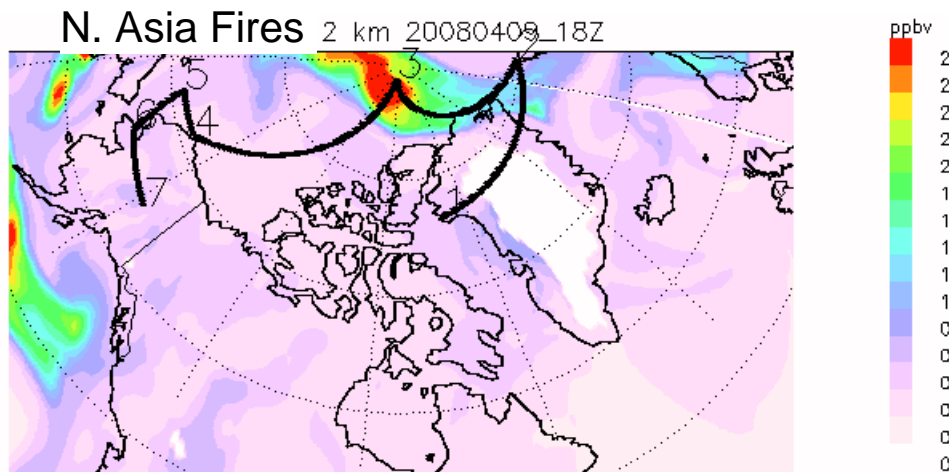
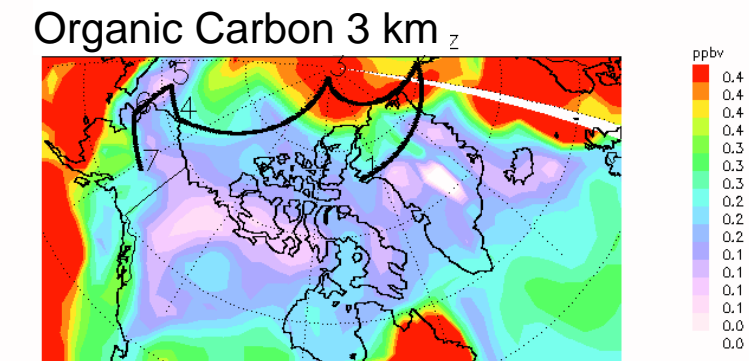
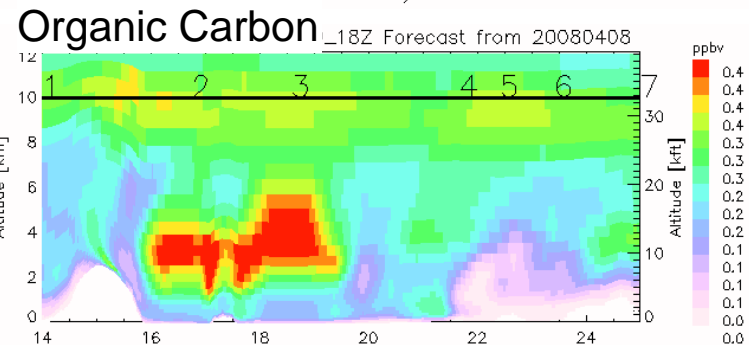
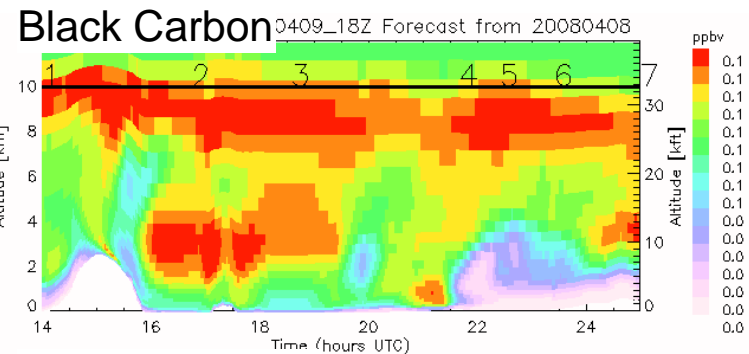
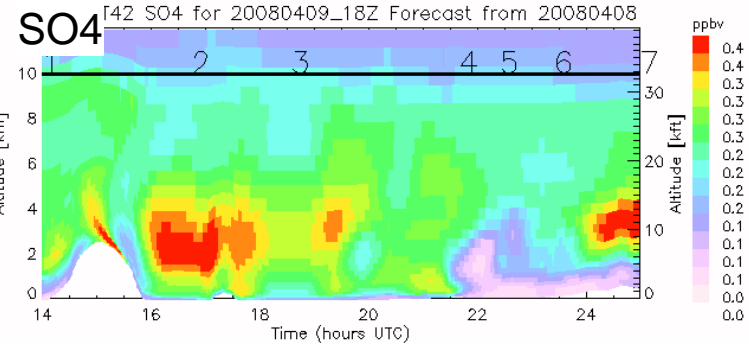
Apr 9 Thule-Svalbard-Fairbanks MZ4 forecast from Apr 8 for Apr 9 18Z

N.American pollution over Greenland and near Pole
European pollution in lower troposphere
Aged Asian pollution 6-10 km



Apr 9 Thule-Svalbard-Fairbanks MZ4 forecast from Apr 8 for Apr 9 18Z

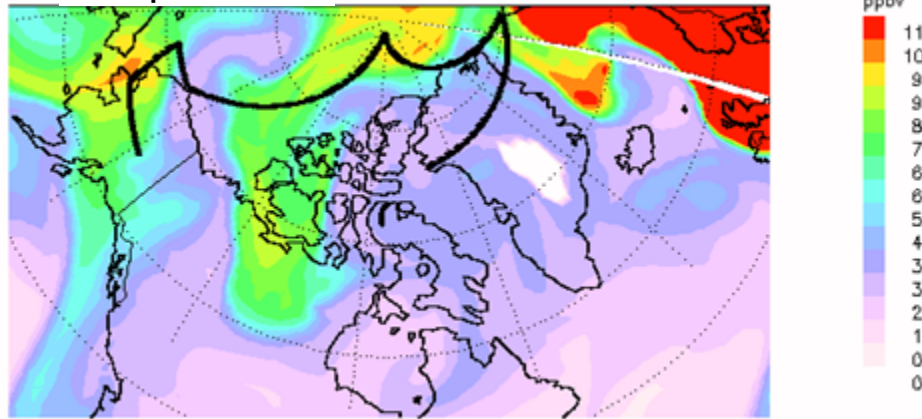
Weak fire plume near pole (pt 3)
– CO tracer and OC with less SO4



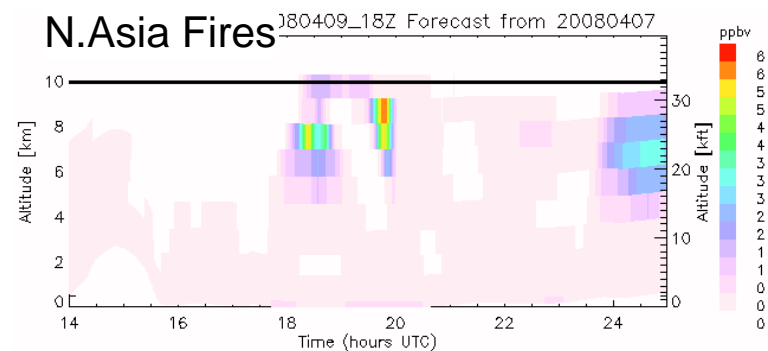
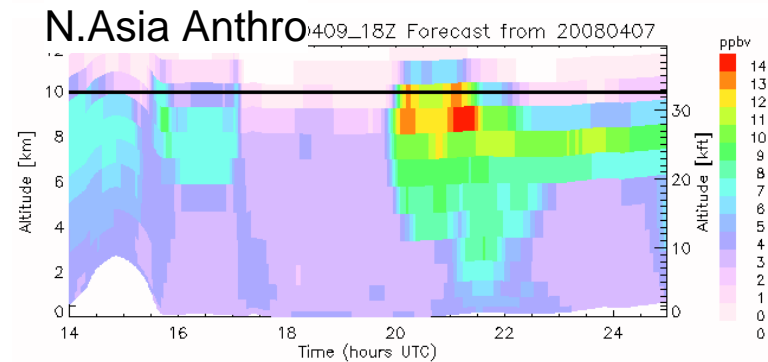
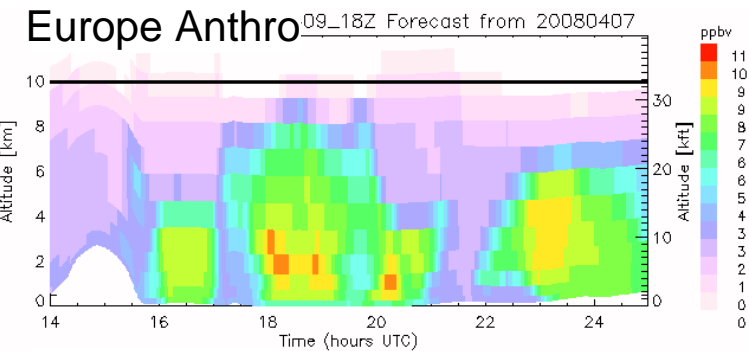
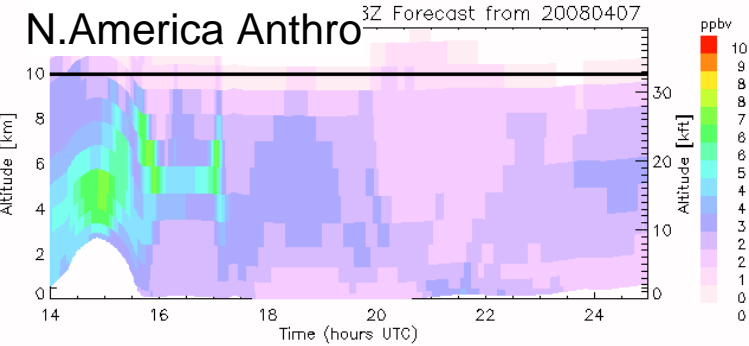
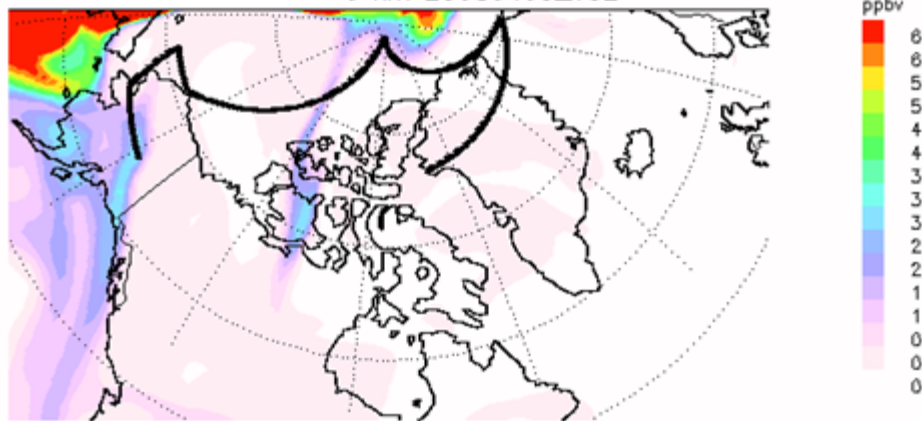
Apr 9 Thule-Svalbard-Fairbanks CAM forecast from Apr 8 for Apr 9 18Z

Generally same as MZ4, with some differences in
altitudes of pollution

Europe Anthro 3 km 20080409_18Z



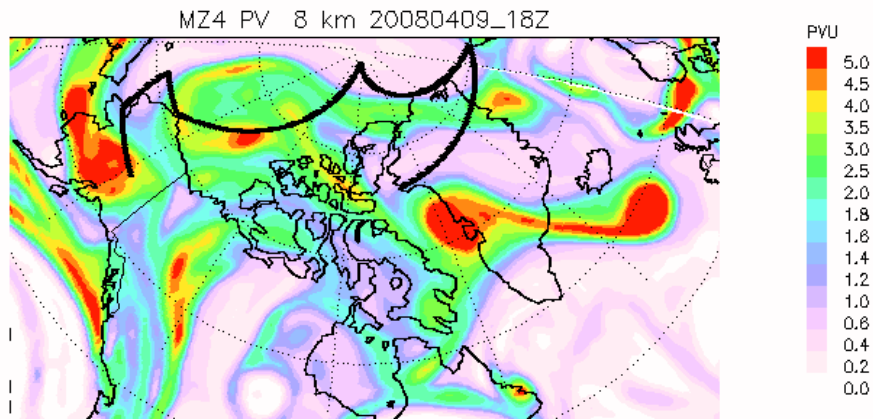
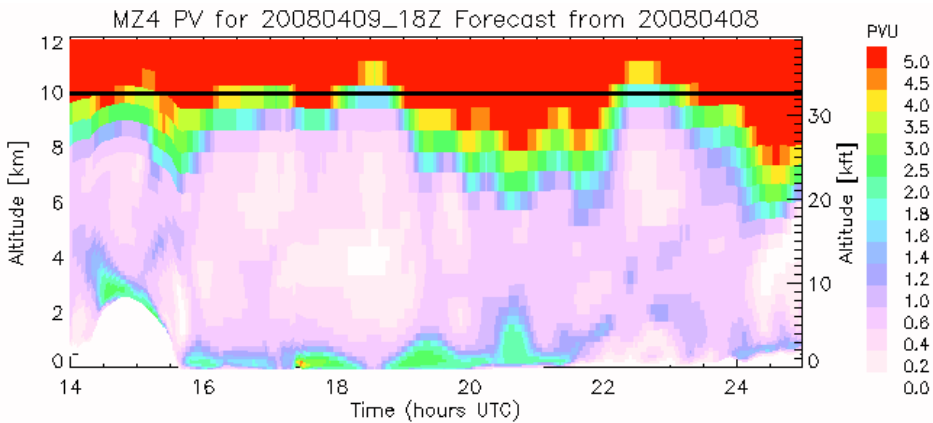
N.Asia Fires 6 km 20080409_18Z



Apr 9 Thule-Svalbard-Fairbanks

Potential Vorticity

MZ4/GFS forecast from Apr 8 for Apr 9/18Z



CAM/DART forecast from Apr 7 for Apr 9/18Z

