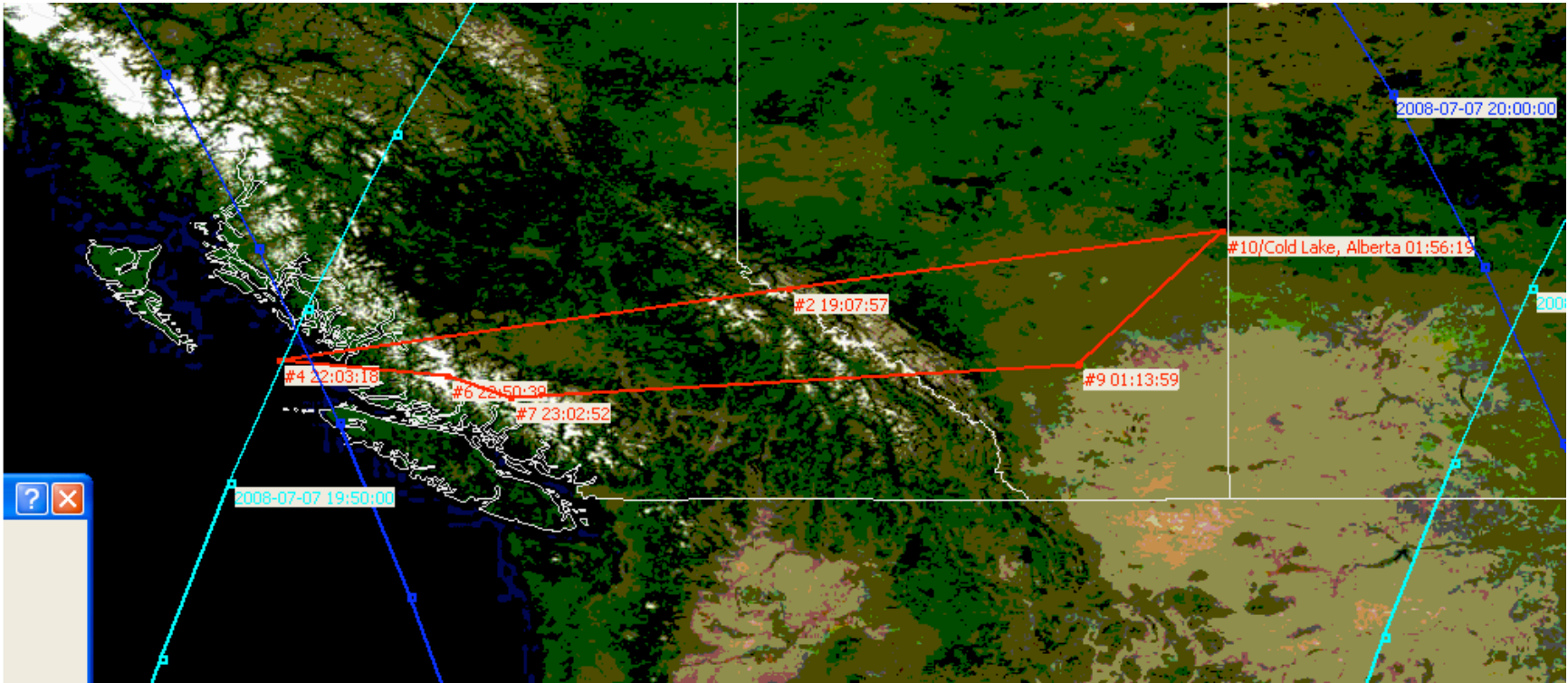


**Report for
ARCTAS P-3 Data Flight #21
Flown 7 Jul 2008**

Phil Russell, NASA Ames

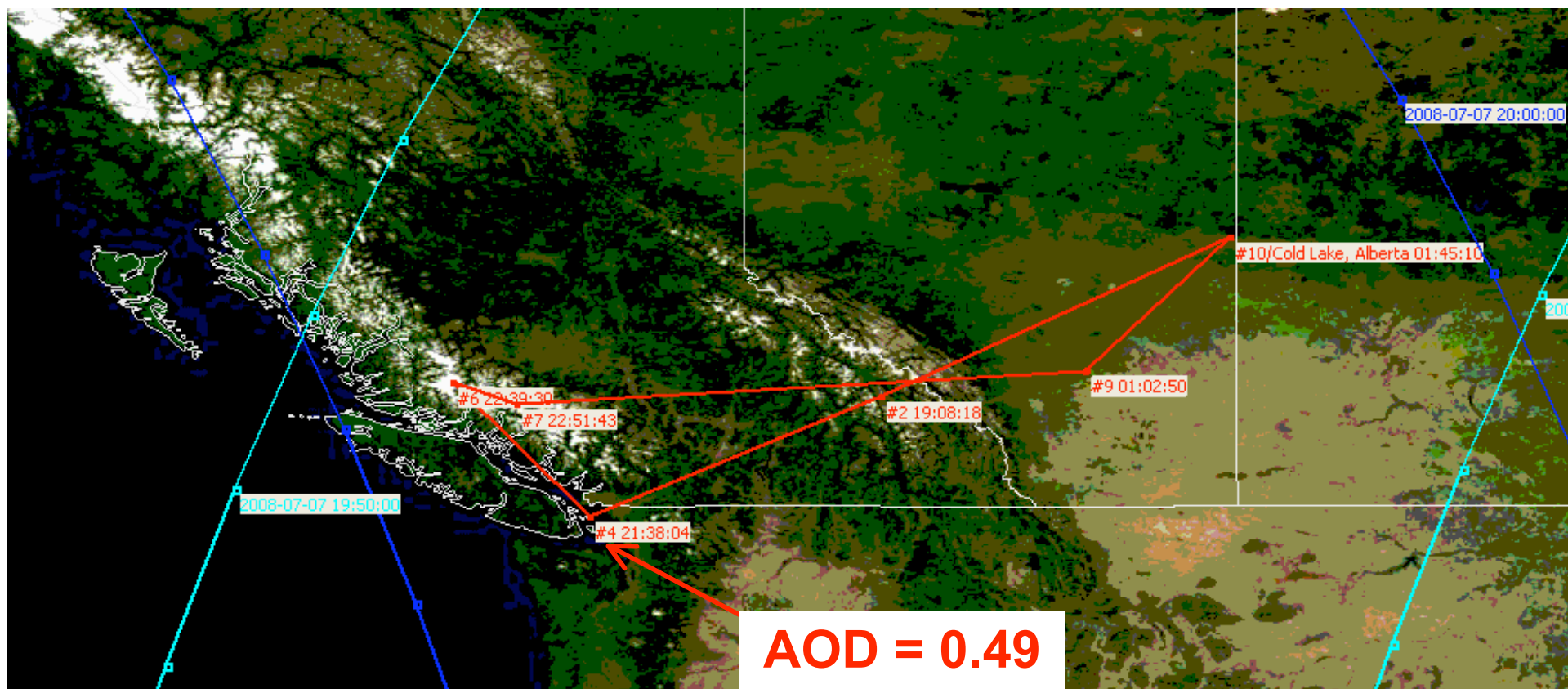
P3 Plan A Mon 7 Jul



Goals:

1. Asian-Siberian plume above low cloud in A-Train footprints (in situ aer, CO, O₃, rad gradient & stack, CAR cloud BRDF, CALIPSO val, aer effects on MODIS PM cloud retrievals)
2. Ice Field BRDF
3. Clear-sky work at WP 6 as fallback.

P3 Plan B Mon 7 Jul



**AOD = 0.49
on 6 Jul**

Goals:

1. Asian-Siberian plume above Saturn Island AERONET (in situ aer, CO, O₃ -AATS spiral, rad gradient & stack, CAR-AERONET)
2. Ice Field BRDF
3. Clear-sky work at WP 6 as fallback.

P3 Actual Mon 7 Jul



Summary:

A very successful flight that required combining elements of Plan A and Plan B while in flight, in response to very challenging cloud conditions. The in-flight changes required exceptionally good communication with collaborators on the ground, as well as a tremendous effort by the P-3 Pilots to execute desired maneuvers in challenging locations. Accomplishments are listed on next slide.

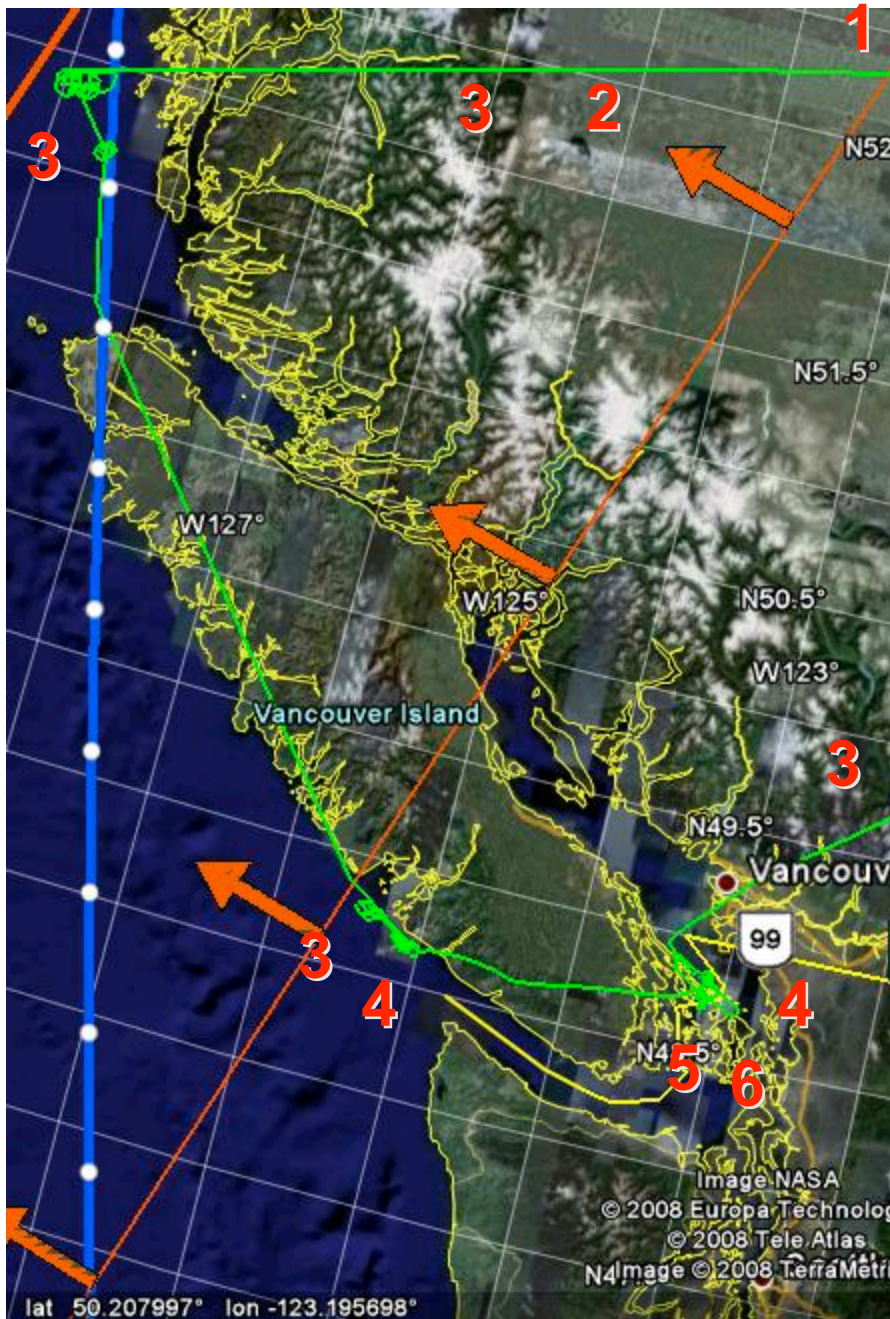
P3 Actual Mon 7 Jul



Accomplishments:

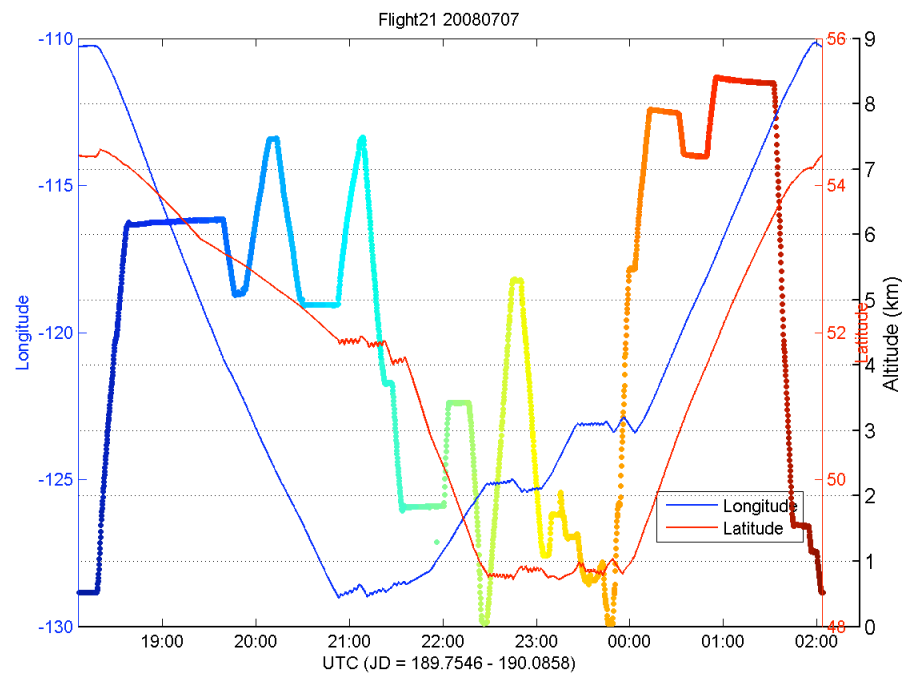
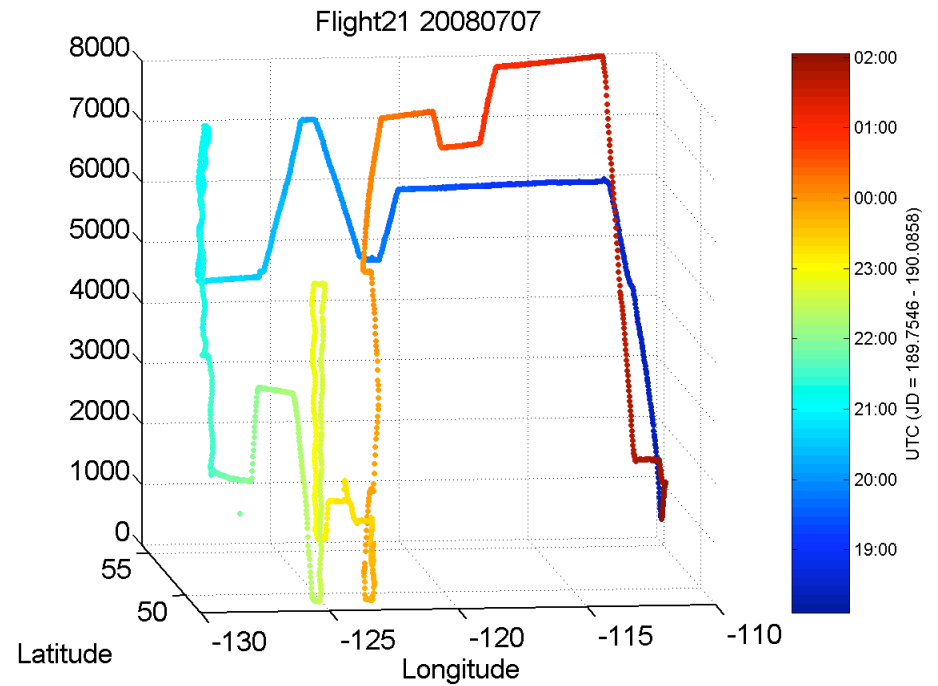
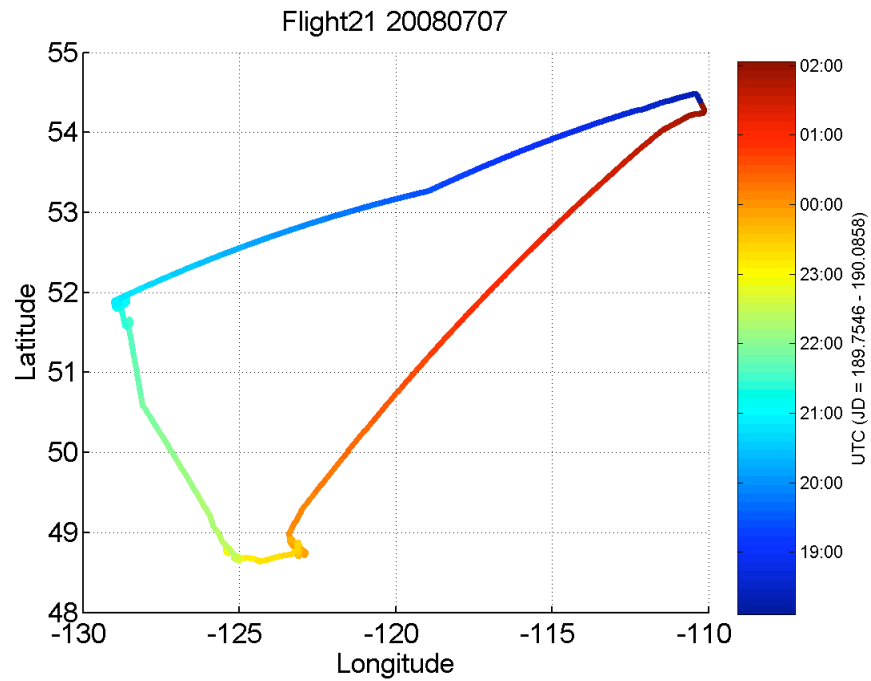
1. Aerosol radiative forcing efficiency ($\Delta F/\Delta AOT$) under edge of advancing Asian/Siberian plume
2. Aerosol effects on MODIS-Terra cloud remote sensing
3. Tests of model aerosol, CO, & O₃ predictions @ many locations
4. Radiant flux divergence stacks for SSA(λ) @ 2 locations
5. CAR circles over AERONET for CAR-AERONET retrievals
6. 3-way closure (in situ, AATS, AERONET) in spiral

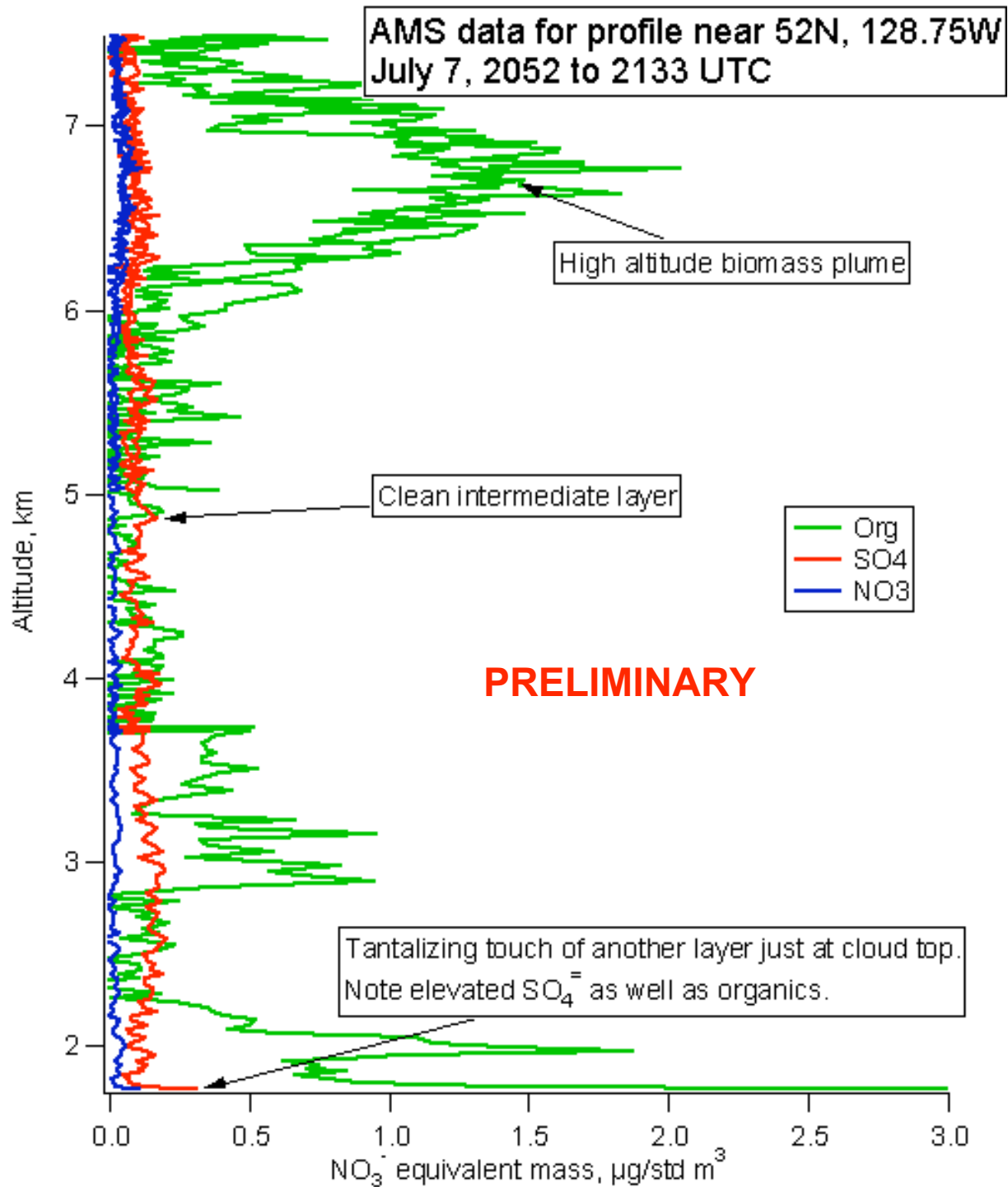
P3 Actual Mon 7 Jul



Accomplishments:

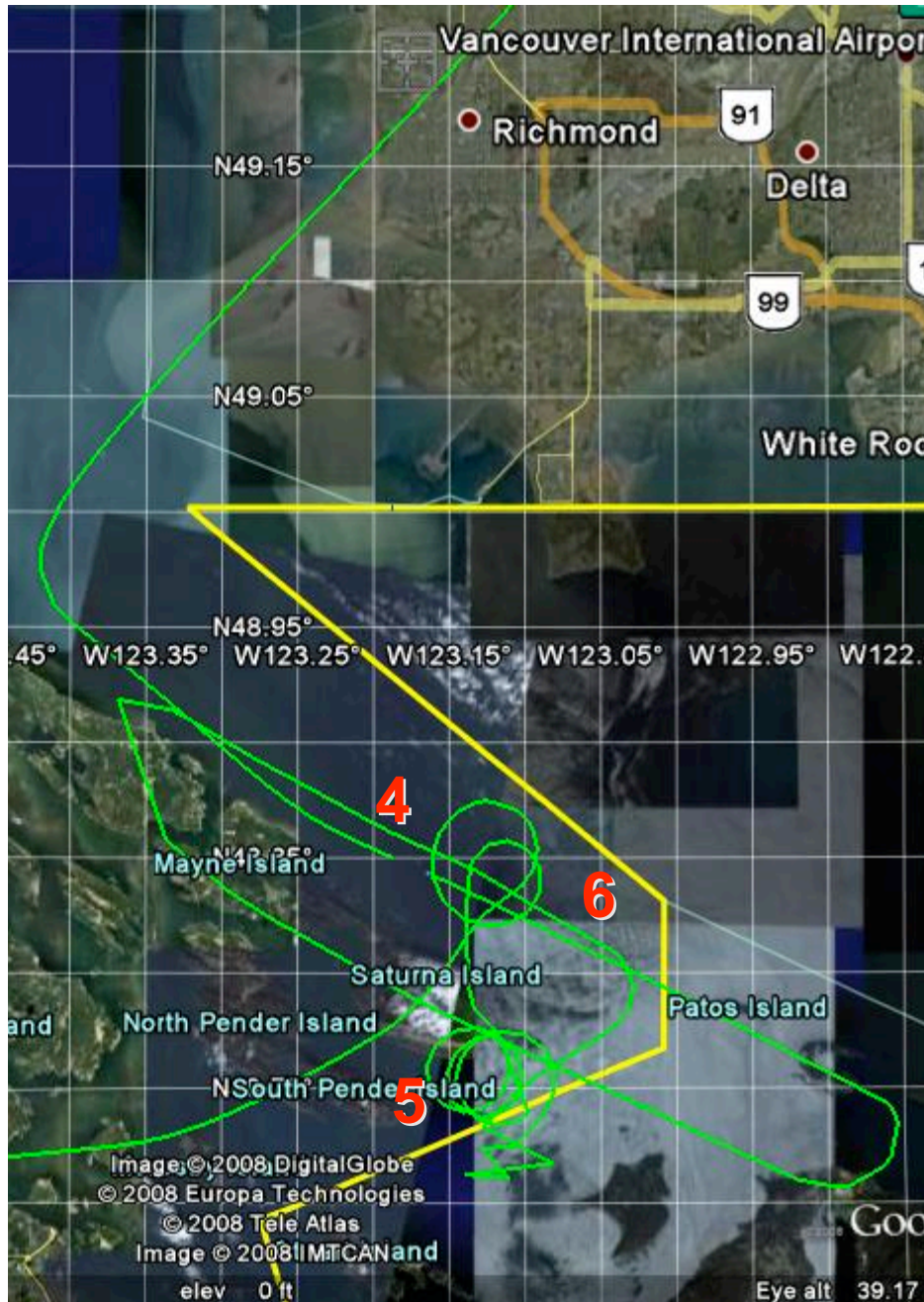
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S. Howell et al., HiGEAR

P3 Actual Mon 7 Jul



Accomplishments:

4. Radiant flux divergence stacks for $SSA(\lambda)$ @ 2 locations

locations

5. CAR circles over AERONET for CAR-AERONET retrievals

6. 3-way closure (in situ, AATS, AERONET) in spiral