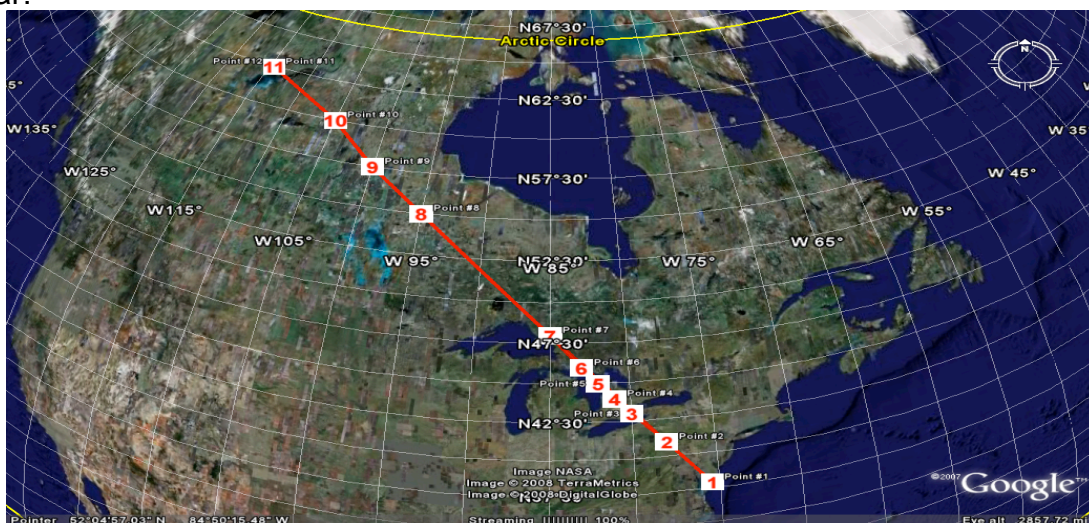
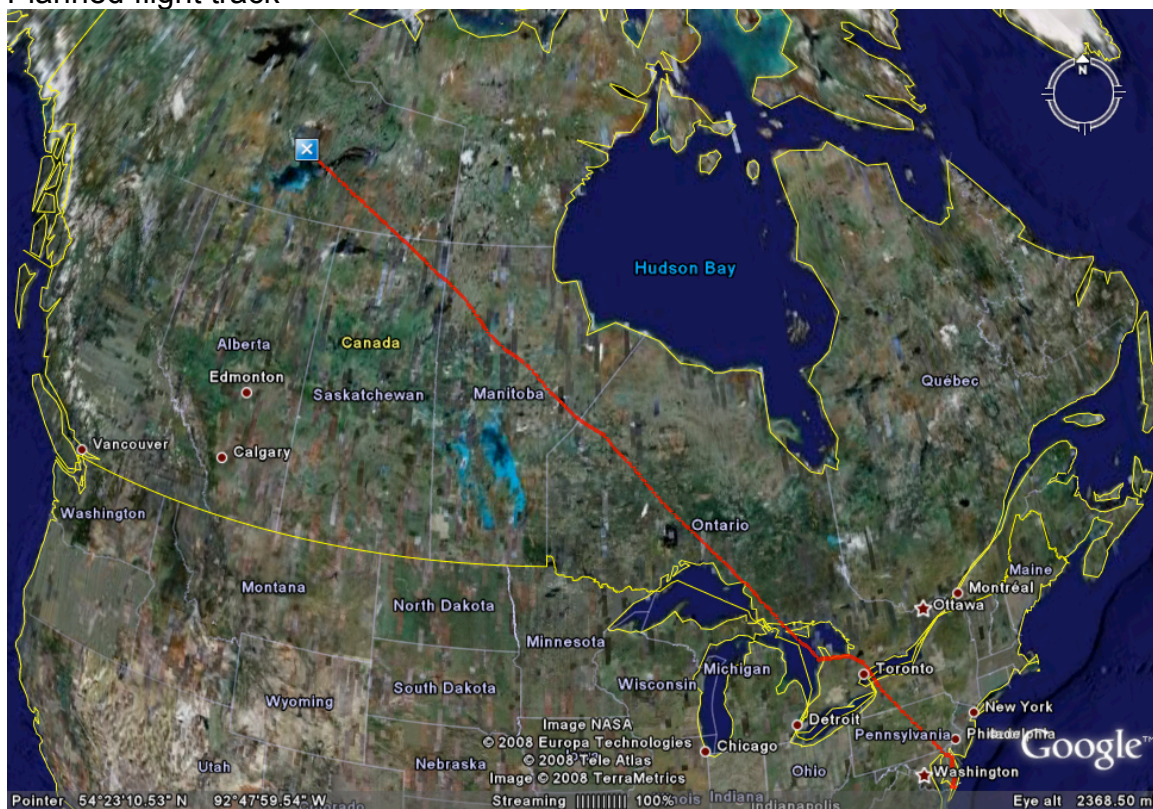


ARCTAS P-3 Flight of 31 Mar 2008 (Transit/Science)
WFF Flight Number: Transit 541
Submitted by Phil Russell

Goals: Transit Wallops-Yellowknife; science of opportunity along the way. Try to intercept CO plume over great lakes. Different models predict different heights, 4-9 km, core 5.5-7 km. Try stepping down below cruise altitude (clouds permitting) if not found at cruise altitude. Profile in clear area south of Yellowknife if found. Spiral at Yellowknife if clear.

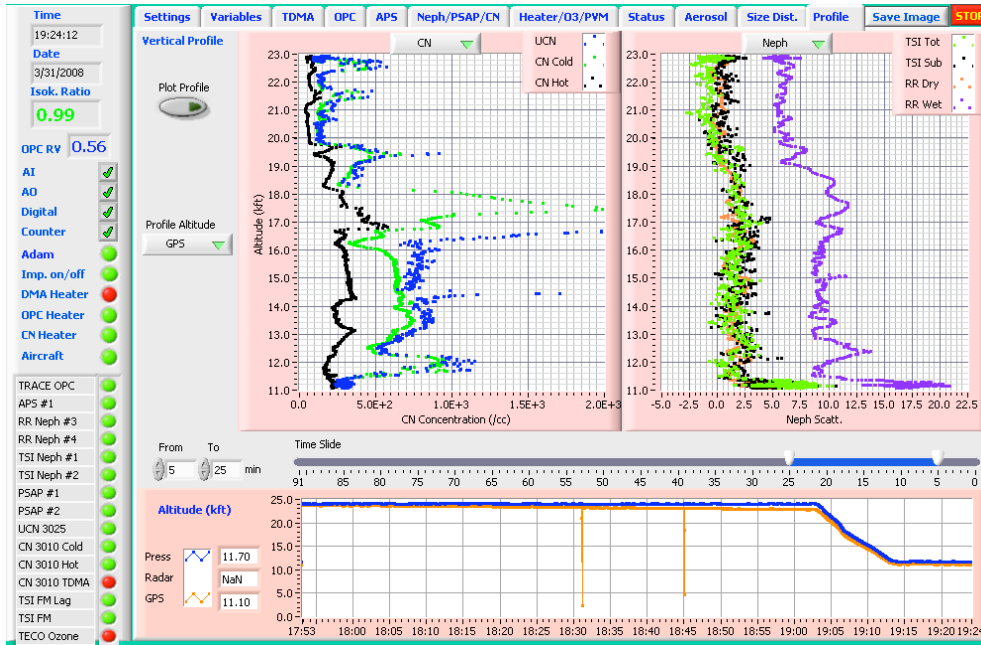


Planned flight track

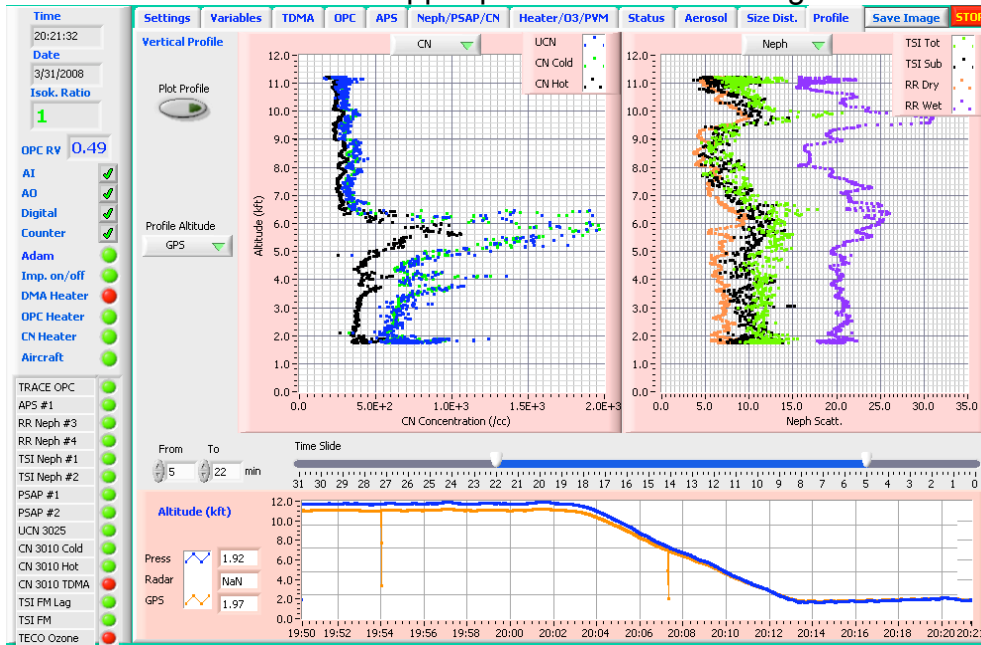


Actual flight track

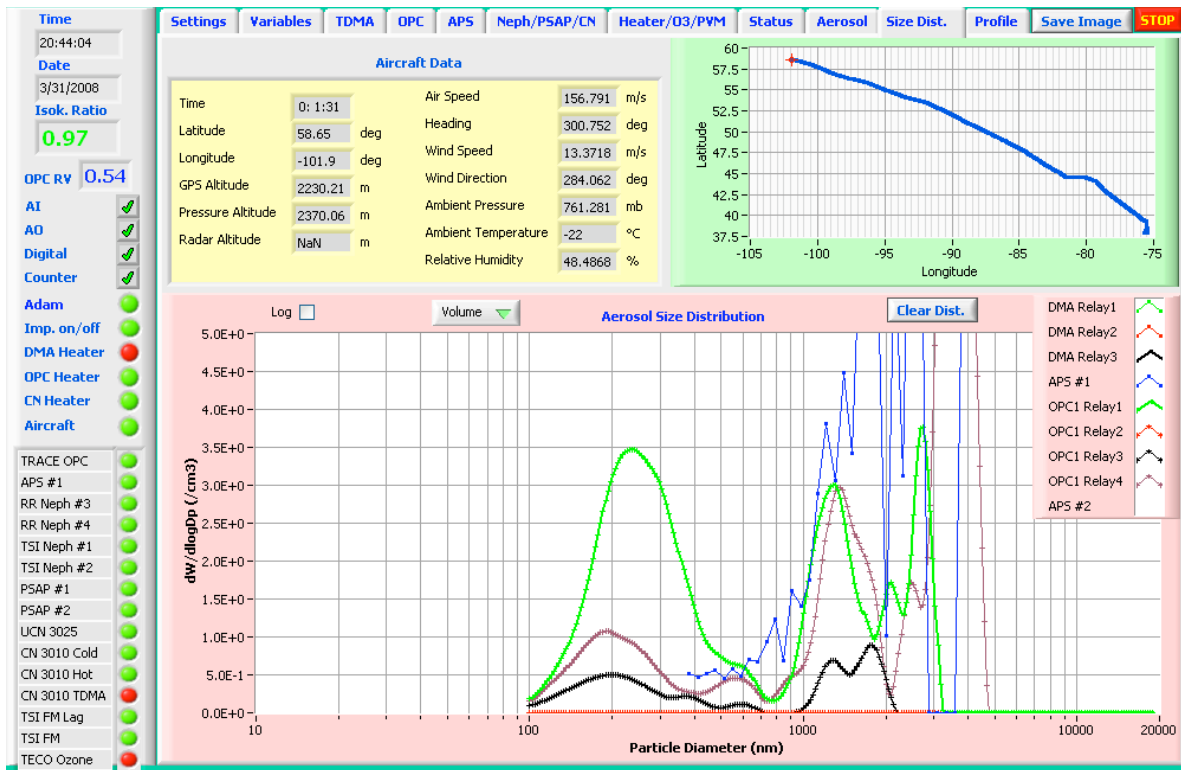
The flight was a success in that we transited successfully Wallops-Yellowknife, measured CO structure at several altitudes over and South of the Great Lakes where models had predicted a CO plume, and frequently sampled Arctic haze aerosols with varying composition, including dust. Data examples from the HiGEAR suite are shown below.



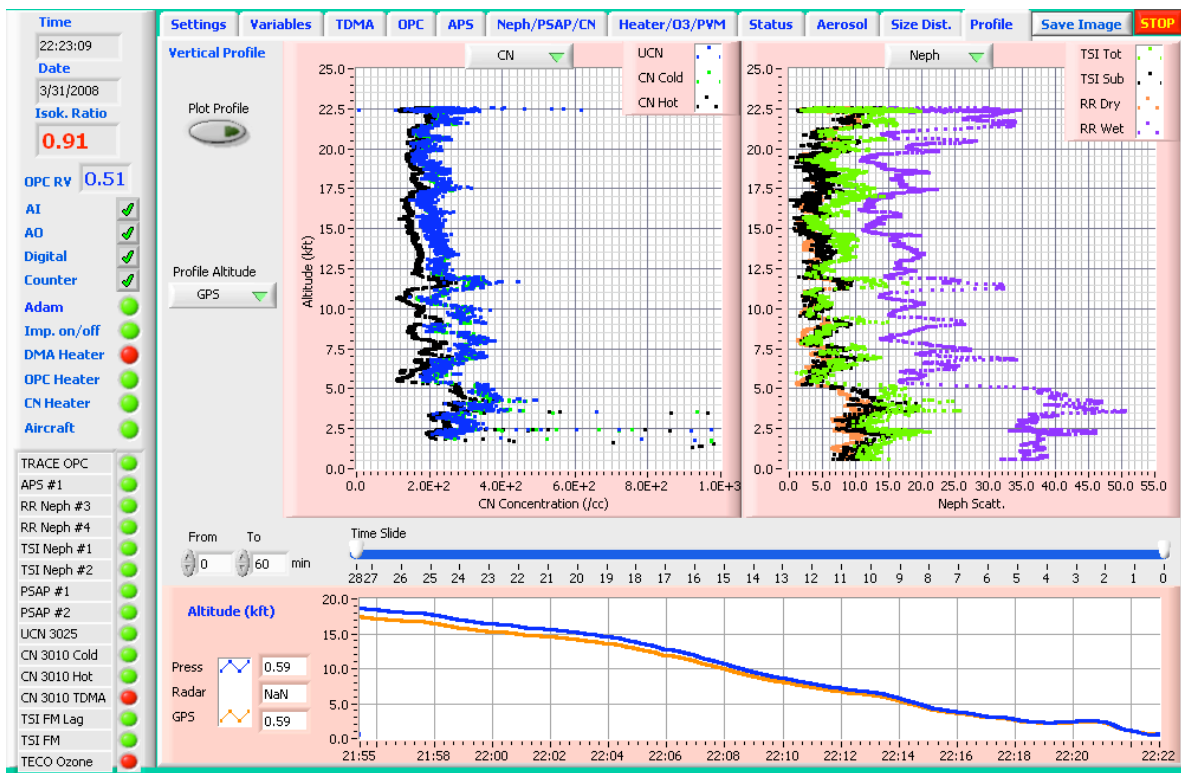
HiGEAR data from 19:24 - upper profile CN & Scattering.



HiGEAR data from 20:21 - lower profile CN & Scattering



HiGEAR data from 20:44 - dusty size distribution, 1 ug/m3 acc. mode, 1 ug/m3 dust



HiGEAR data from 22:23 - full profile CN & Scattering

Instrument Reports

AATS: Operating in parked position whole flight. Purging most of flight. Unparking unsuccessful despite many attempts.

AERO3X: Exhaust port ices up. All units except AERO3X venting to cabin (2 Radiance Research nephelometers and aethalometer). f(RH) working.

BBR: Worked fine whole flight.

CAR: Not operated on transit flights.

CCN: Looks good. Flow issue from previous flight is gone.

COBALT: Worked well, found interesting structure.

HiGEAR

Front: Worked pretty well & sampled many aerosols (see examples above). Flooded DMA. SP2 behavior strange, but got it working. f(RH) OK.

Rear (AMS): Leak in beginning, then OK. Worked at high altitude better than expected.

PDS: Everything went well. Ready to fly tomorrow.

REVEAL: No report.

SSFR: Looked OK whole flight.

WFF Flight Report

Aircraft :	NASA P-3B
Operating Site(s) From / To :	KWAL/YZF
Flight Date :	March 31, 2008
Flight Number :	Transit 541
Time out:	1058 (L)
Time in:	1634 (L)
Flight Time :	7.6
Flt Request # / PI:	8P301/ Phil Russell
Purpose of Flight :	Data [] Ferry [X] Functional Check [] Other []
Sensor Payload :	ARCTAS
Comments :	Transit flight from WFF to Yellowknife Canada. ATTS-14 is still experiencing some problems. The Aircraft performed with no problems and logistics at Yellow knife was great. The next flight will be a transit/science mission with a proposed take-off time of 1000 (L) and is estimated to be 7.5 hours.

SUBMITTED BY: Dave Easmunt 31 March, 2008

