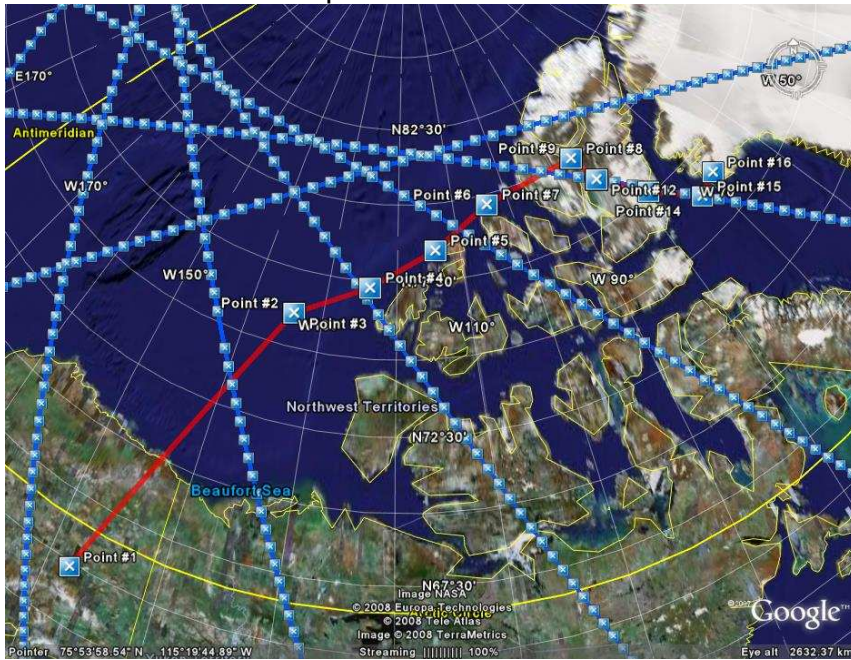
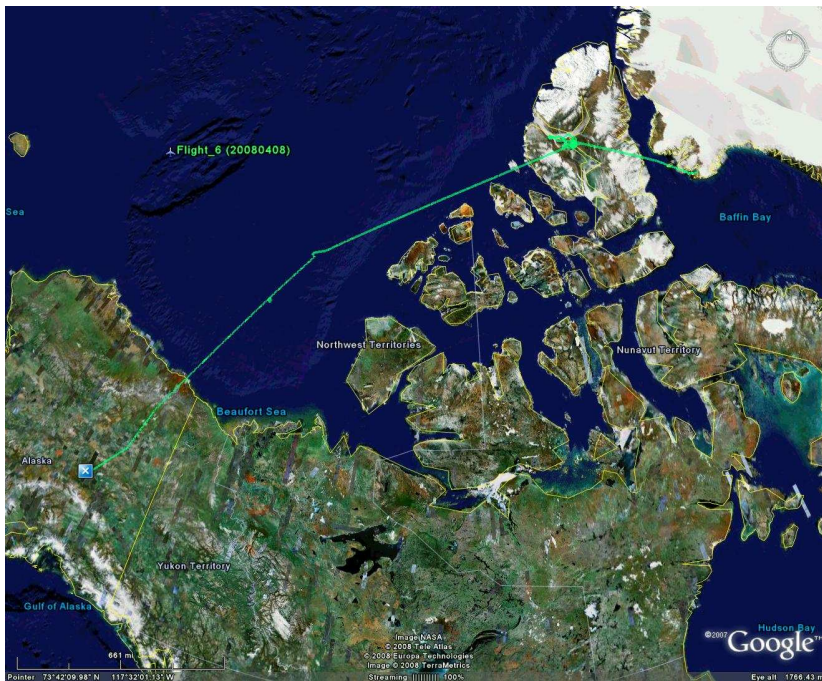


**Flight Report**  
**ARCTAS P-3B Data Flight 6, flown 8 Apr 2008**  
Submitted by Phil Russell

**Goals:** Intercomparison w DC-8 in stairsteps, climb & spiral w DC-8 over Eureka lidar/CALIPSO track. Optional BRDF or CALIPSO transect.



Planned flight track



Actual flight track

Takeoff 1039 UT. Land 1815 UT. A very successful flight that accomplished its goals, including the DC-8 comparison stairsteps at 3 planned levels (plus a fourth leg with the DC-8 at 500 ft and the P-3B at 200'), a spiral over Eureka during CALIPSO overpass, and surface albedo + BRDF measurements.

### Instrument Reports

- AATS-14. Good flight. Came up on first try. One small problem at top of CALIPSO spiral due to frost on window. Solution – more purging. Optical depth was very moderate: max of 0.1. One small gradient of .03 during 200' level run. Would like to purge and go up on top of the plane to clean after we land, providing there's sun.
- AERO3X. Progress over prior flight although still struggling. Ethylometer took data entire flight. First part of flight was terrible, but once mirrors cleaned before DC-8 rendezvous and descent, much better. No scattering channels but extinction on both wavelengths. Lost it again during ascent. Flow regime breakdown in cell during ascent – turbulent flow. Blue extinctions since last ascent. SSRH ran all the time but struggling on wet side. Dry and 75%. Tomorrow would like extra time before flight.
- BBR. Worked fine entire flight.
- CAR. Operated most of the flight. When not measuring did calibration. Instrument performing great, all channels worked well. Would have liked more time for CAR circles, hoping for more time tomorrow. Issues – navigation data (pitch & roll) during 600' level were not correct; not agreeing with PDS and REVEAL. Would like to work on correcting the disagreement between them.
- CCN. Worked well. Had to dry OPC once.
- COBALT. Good flight. Minor mods to system and only had current scan kick off twice during flight. Issue getting liquid nitrogen this morning so need to get it off DC-8 tomorrow morning.
- HIGEAR. Sampled off of inlet entire flight. SP2 healthier than ever. Too wet in the wet nephelometer – FFRH quite high.
- PDS. Still kicking, ready to fly tomorrow.
- REVEAL. Pretty good flight – making progress. Got images although not quite on time. Will be doing some reconfiguration. If anyone else is at plane, would like access.
- SSFR. Fine for whole flight. Got more than was expected – got surface albedo during last run. Will check on pitch & roll based on Charles' comments.
- AMS. Worked well.

## WFF Flight Report

<b>Aircraft :</b>	NASA P-3B
<b>Operating Site(s) From / To :</b>	PAFA / BGTL
<b>Flight Date :</b>	April 8, 2008
<b>Flight Number / Data Flight # :</b>	548-1 / 6
<b>Time out:</b>	<b>1030 (Z)</b>
<b>Time in:</b>	<b>1905 (Z)</b>
<b>Flight Time :</b>	8.6
<b>Flt Request # / PI:</b>	<b>8P301/ Phil Russell</b>
<b>Purpose of Flight :</b>	<b>Data [ X ] Ferry [ ] Functional Check [ ] Other [ ]</b>
<b>Sensor Payload :</b>	ARCTAS
<b>Comments :</b>	The science flight was fully successful and included several inter-comparison flights between the DC-8 and the P-3, one of which was under a CALIPSO overpass. The aircraft and all instruments are in an up status. The next flight is a science flight scheduled for 1530Z today and returning to Fairbanks.

**SUBMITTED BY: Cate Fairchild      9 April, 2008**

### Flight Hours for ARCTAS Campaign

<b>Flight</b>	<b>Date</b>	<b>Aircraft Flight #</b>	<b>Data Flight#</b>	<b>Duration (hr)</b>	<b>Remaining Hours*</b>
<i>Total Allocated</i>					75
Engineering Check Flt 1	3/14/2008	535		2.8	72.2
Engineering Check Flt 2	3/24/2008	537		2.3 (1.0)*	71.2
Project Check Flight 1	3/25/2008	536	1	3.0	68.2
Project Check Flight 2	3/27/2008	538	2	3.4	64.8
Transit to Yellowknife	3/31/2008	541	3	7.6	57.2
Transit to Fairbanks	4/1/04	542	4	6.5	50.7
Functional check flight	4/5/08	546		0.5**	50.7
Science flight	4/6/08	545	5	8.6	42.1
Science flight	4/8/08	548-1	6	8.6	33.5

\* Science only charged 1 hour for ECF #2

\*\* Science not charged for 4/5/08 functional check flight