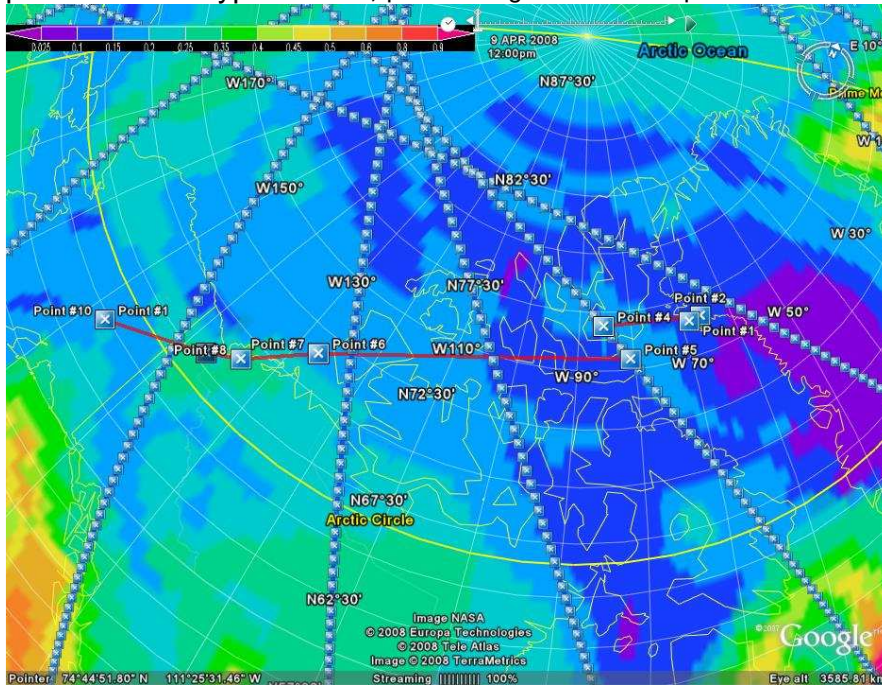
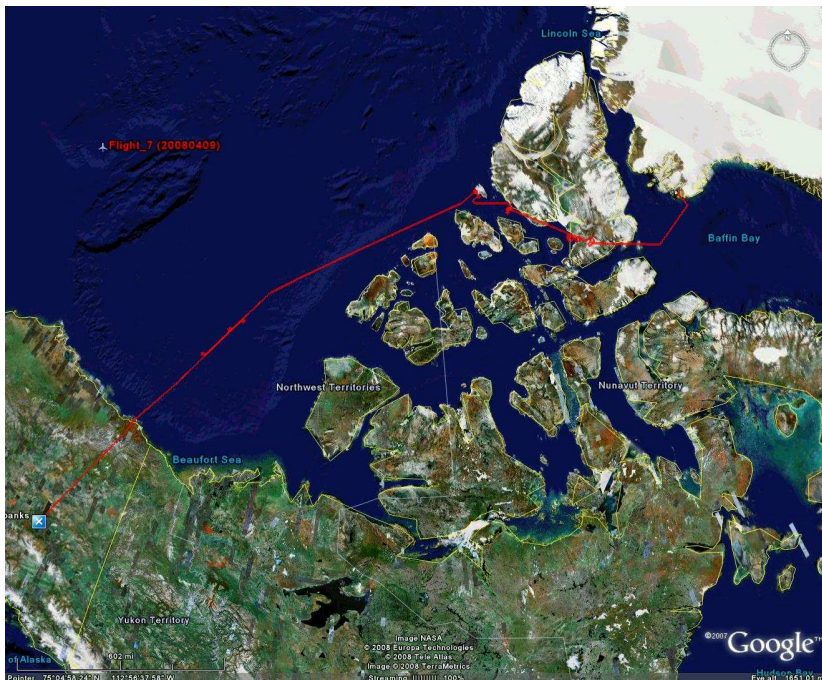


**Flight Report**  
**ARCTAS P-3B Data Flight 7, flown 9 Apr 2008**  
Submitted by Phil Russell

**Goals:** BRDF of Arctic surface (clouds permitting) CALIPSO intercomparison, AOD plume near Waypoints 7-8, possible significant Asian plume near Fairbanks, possibly cloud free.



Planned flight track



Actual flight track

Takeoff 1533 UT. Land ~2415 UT. Flight track was moved to north because Thule base meteorologist predicted clouds along planned track.

Highlights: Square spiral & low-alt run on CALIPSO track. BRDF & albedo for 2 cases (sea ice & cloud). AOD gradient & stack. CO & aerosol structure in predicted plume aloft.

### Instrument Reports

AATS:. Had a very good flight except one minor loss of track early in the flight. Have good data. Would like access and power on Friday.

AERO3X: Aethalometer and f(RH) running the entire flight. AERO3X has a problem maintaining flow regime which seems to worsen when ascending and descending. Today tried to strategically clean mirror to (1) characterize and (2) avoid. Were able to successfully avoid on blue channel. Have been taking extinction measurements in the blue channel for the last 5 hours which is best ever. Would like an extra 15 minutes tonight to remove AERO3X from the plane.

BBR:. Fine for the whole flight and good data from albedo runs and gradient patterns.

CAR: Up and running the whole time. Data is excellent; nice and even. Sea ice was different from measurements taken over Barrow on Sunday. UV and NIR looks interesting and worth investigating further – seem to be differences over clouds vs. sea ice. Correlation of BRDF on different channels. Coordination with flight crew was great. Concern: When entering BRDF circles without first doing straight & level legs there seems to be a problem.

CCN:. Operated fairly well.

COBALT: Had a good flight because (1) PI was happy to be warm the entire flight (2) most dramatic features last 10 minutes. Instrument worked well other than kicking off a few times when at 200 feet.

HiGEAR: Had an excellent flight. Low scattering throughout entire flight. SP2 and CCN both operated fairly well. Learning how better to integrate with radiation instruments and feels that during phase 2 that we can really make a big contribution.

PDS:. Everything worked well. Would like 10 minutes after landing to download data.

REVEAL: Outstanding flight. COBALT data available and HiGEAR was using it. Routing figured out and weather maps could be pulled up. Had partial DC-8 tracks – could see both planes.

SSFR:. Worked 98% of the time, and got good data.

## WFF Flight Report

<b>Aircraft :</b>	NASA P-3B
<b>Operating Site(s) From / To :</b>	BGTL / PAFA
<b>Flight Date :</b>	April 9, 2008
<b>Flight Number / Data Flight # :</b>	548-2 / 7
<b>Time out:</b>	<b>1525 (Z)</b>
<b>Time in:</b>	<b>0006 (Z)</b>
<b>Flight Time :</b>	8.7
<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 a line under a CALIPSO overpass. The aircraft and all instruments are in an up status. Tomorrow is a hard down day for all flight crew. Next flight date TBD but no earlier than Saturday April 12.

**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 flight	4/9/08	548-2	7	8.7	24.8
Return Transit+	TBD			9.5	15.3

+ Estimating 9.5 hours for return transit

\* Science only charged 1 hour for ECF #2

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