

## ACLOUD Flight #08 – Polar 6 – 170529

Mission PI P6: Johannes Schneider

Objectives: Rectangle over ice in different levels, noseboom wind calibration square, cloud in situ sampling, vertical profile to 10000 ft.

Crew:

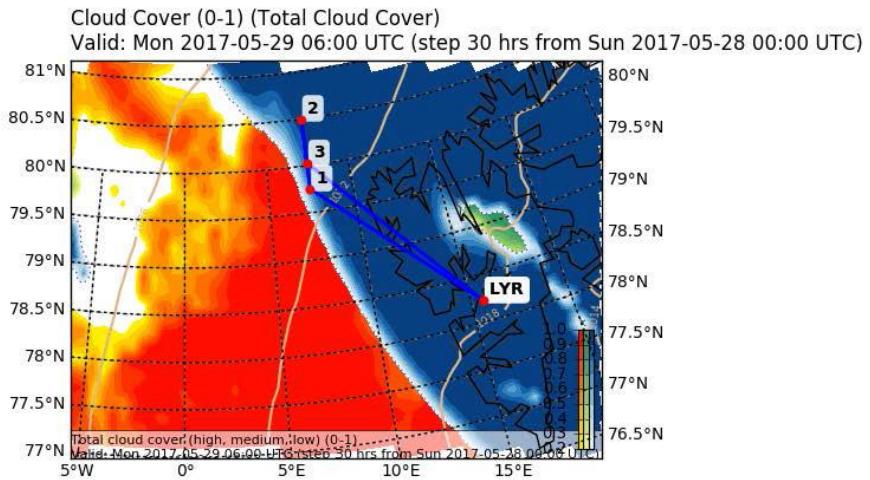
Polar 6	
PI	Johannes Schneider
Basis Data Acq.	Daniel Damaske
ALABAMA	Hans-Christian Clemen
CVI	Stephan Mertes
Gas/AWI-Aerosol	Heiko Bozem
PMS	Delphine Leroy

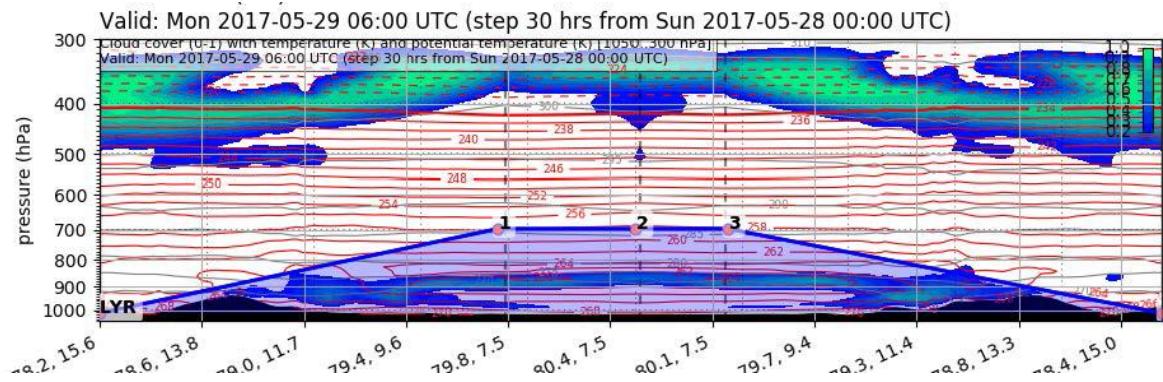
Flight times:

Polar 6	
Take off	05:11:20 UTC
Touch down	09:16:41 UTC

Weather situation as observed during the flight (compare to forecast):

Forecast:





Over the ice where rectangle pattern (S10-S11-S12-S13) was conducted clouds were between 800 ft and 300 ft, thus thicker than expected. At the beginning of the flight (after Ny Alesund overpass) clouds were around 1500 ft, but below 3000 ft. Some high level cloud were observed as predicted.

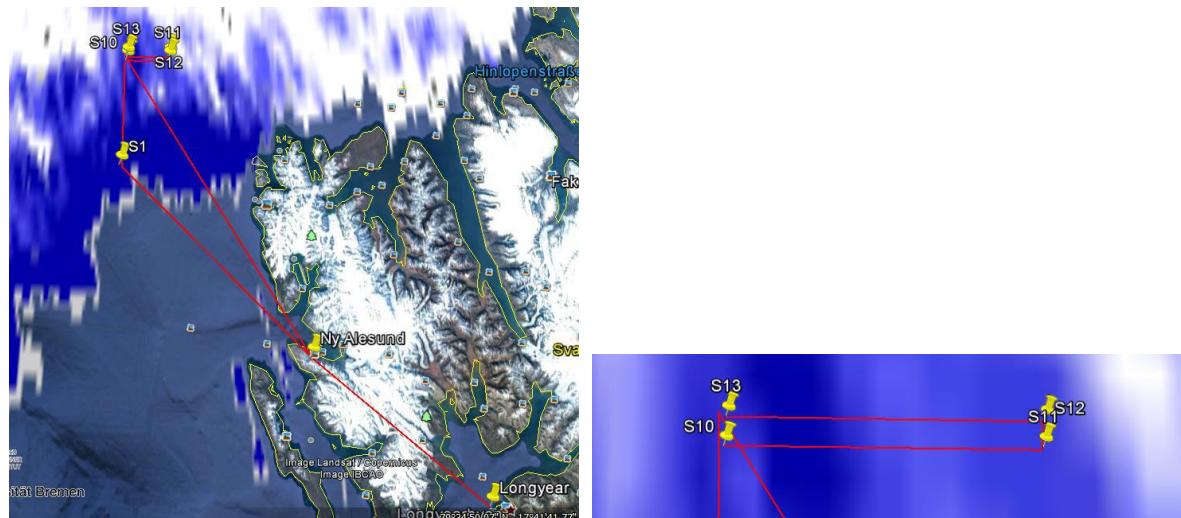
#### **Overview:**

The flight pattern was flown as planned. The rectangle pattern (S10-S11-S12-S13) was flown in legs of 200, 400, 600, 1000, 1200, 3000, 3300, 3600 ft, with two layers (1000 and 1200) in clouds. The noseboom calibration square was flown (due to a misunderstanding during the flight) over Ny Alesund at 10000 ft altitude with 100, 120, 150 and 100 knots.

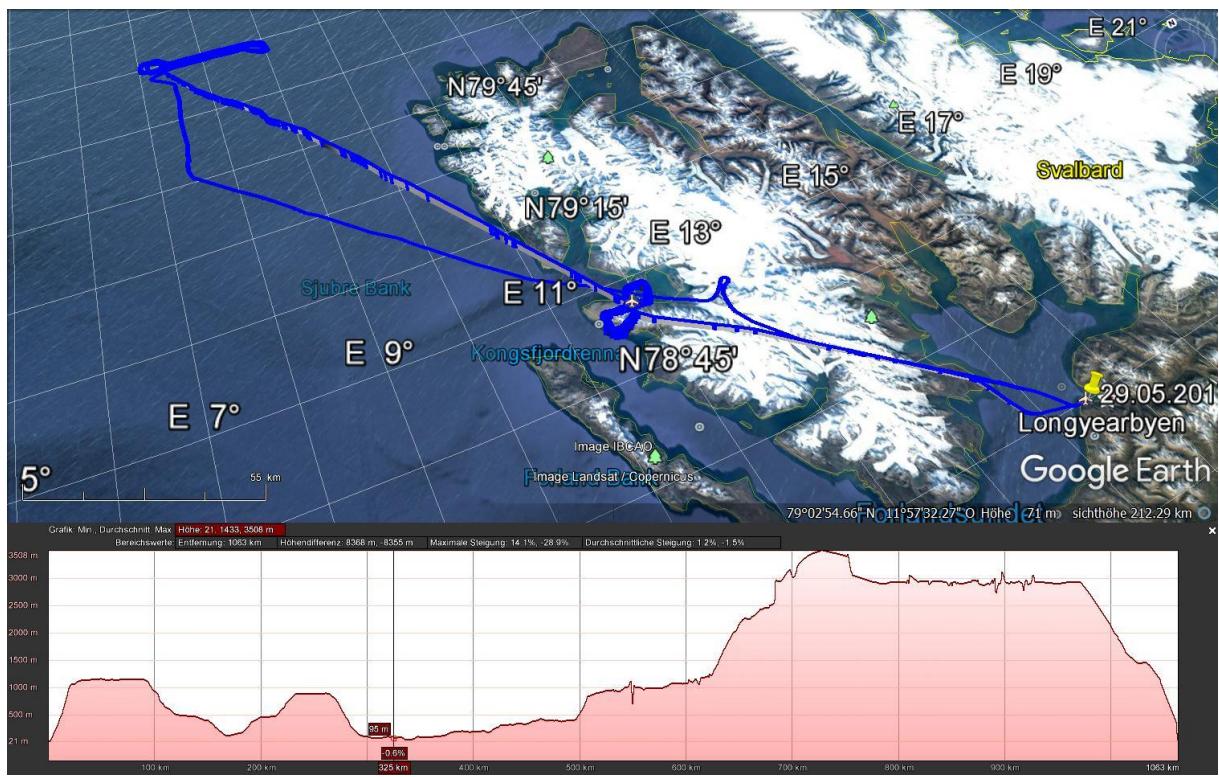
Highest altitude was 12000 ft.

#### **Flight track and pattern:**

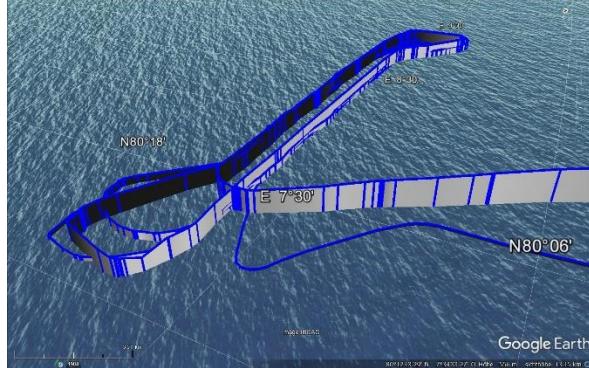
Flight plan:



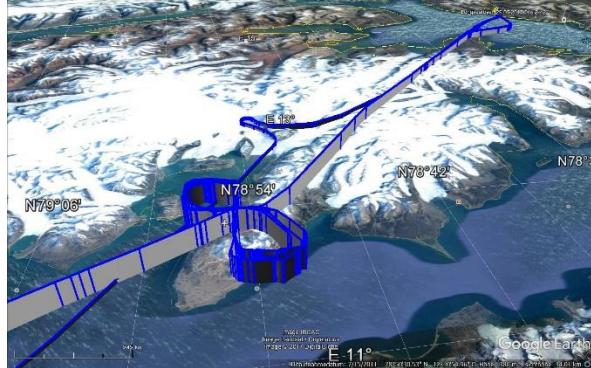
Actual flight track:



Rectangle pattern:



Noseboom calibration square:



Instrument Status:

Polar 6	
Basis data acquisition	Green
Nose Boom	Green
ALABAMA	Green
CVI	Green
Trace Gases	Green
AWI Aerosol	Green
KIT PMS	Red
LAMP PMS	Green
	White

**Comments:**

PHIPS and SID not operational due to inverter problems. Before start operators noticed that connection to the probes was not possible, but the crew assumed that the probes were working and decided to take off.

**Detailed Flight Logs (Name of author... more than one is possible):**

**Johannes Schneider (times UTC)**

05:11:20 Take off  
climb to 4000 ft, fly over fjord toward Ny Alesund, over glacier. Some cirrus above, otherwise cloud-free  
05:35 – 40 fly over fjord near Ny Alesund at 1500 ft  
05:41 start descent to 200 ft  
05:43 ship overpass, have to stay higher than 200  
05:44:30 reach 200 ft, flowmeter aerosol 50 l/min  
05:49:30 start ascent to 1500 ft  
05:53:20 at 1500 ft into clouds  
05:58:00 climb above clouds (inversion, ambient T -2°C)  
06:00 3000 ft  
06:06:30 S1, start descent to 200 ft, through clouds. Below clouds we are over ice  
06:17 leave track to the right to start turn toward leg S10-S11  
06:21:37 S10, start rectangle pattern, 200 ft  
06:27:20 S11, turn and climb to 400 ft  
06:29:30 reach 400 ft  
06:31:55 S12, start 400 ft leg  
06:37:16 S13, climb to 600 ft  
06:42:15 S10, start 600 ft leg  
06:48:50 S11, climb to 1000ft  
06:53:44 S12 (in clouds), start 1000 ft leg  
06:59 S13, climb to 1200 ft  
07:04:10 S10, start 1200 ft leg, in clouds  
07:09:59 S11, climb to get above cloud, have to go to 3000 ft  
07:15:55 S12, start 3000 ft leg. Very low aerosol concentration so close above cloud!  
07:25:55 S10, start 3000 ft leg  
07:31:40 S11, climb to 3600 ft  
07:36:40 S12, start 3600 ft leg  
07:41:15 S13, end of rectangle pattern, turn towards Ny Alesund, climb to 10000 ft, then to 12000 ft  
08:00:00 12000 ft  
08:05:00 start descent to 10000 ft  
08:17 start noseboom calibration square, 100 knots, 1<sup>st</sup> square  
08:28 start 2<sup>nd</sup> square, 220 knots  
08:38 start 3<sup>rd</sup> square, 150 knots  
08:41 start 4<sup>th</sup> square, 100 knots

2 more minutes at 10000 ft  
Descent to 5000 ft (3 minutes)  
Approach to LYB

09:16:41 Touch down

**Pictures:**

07:20 3000 ft leg above clouds:

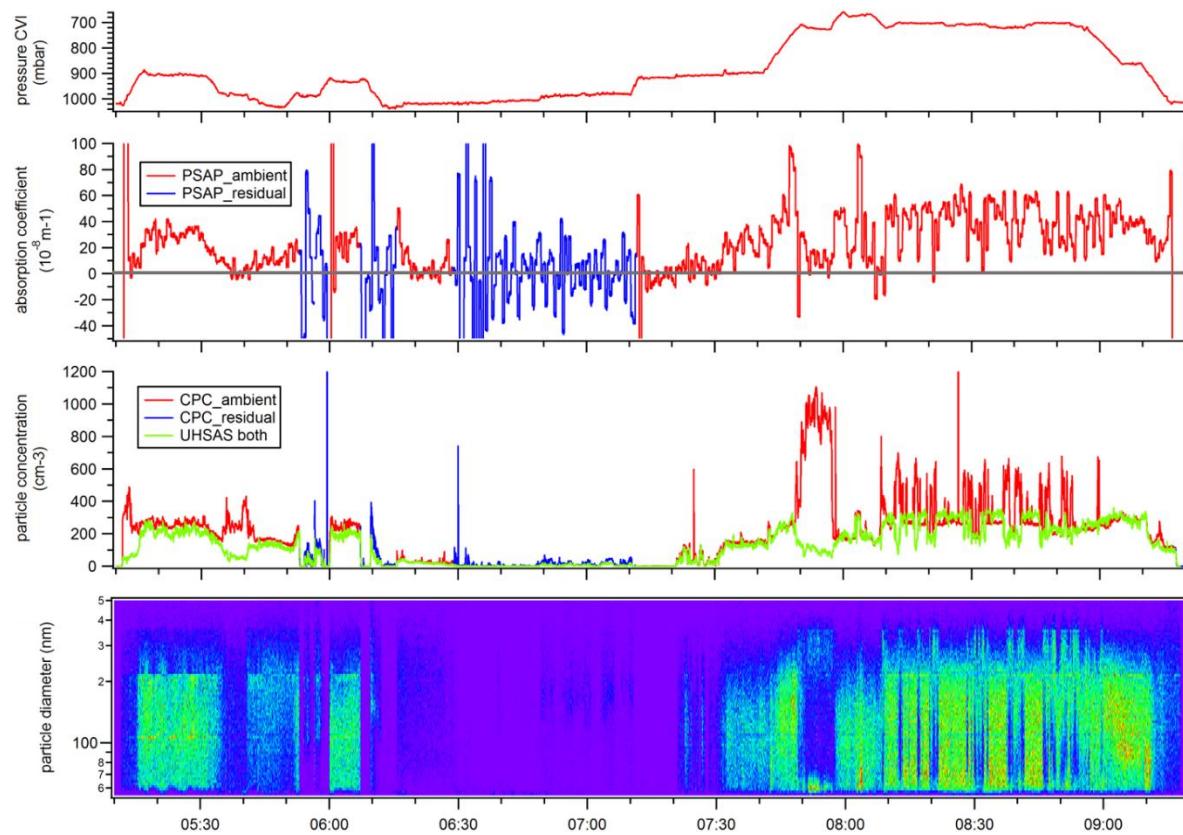


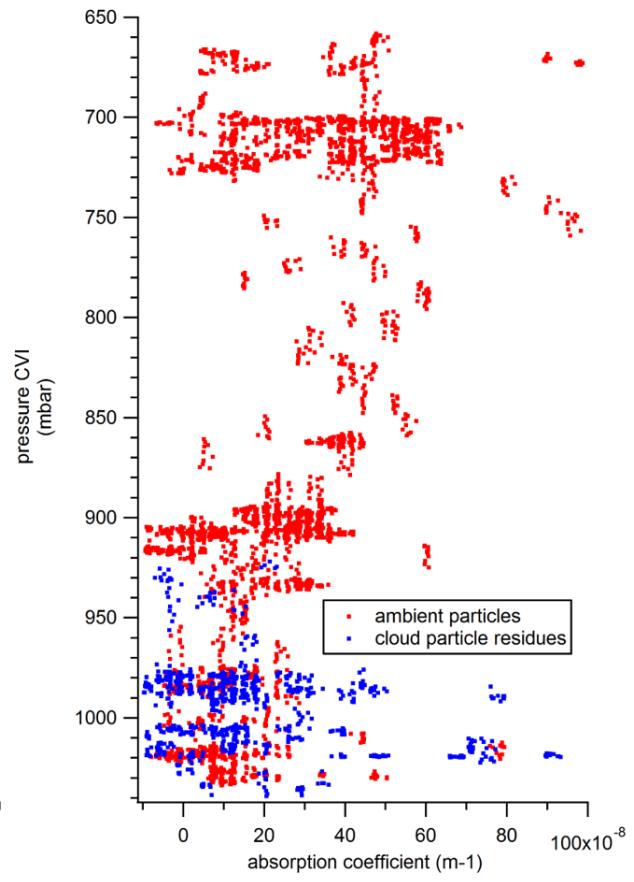
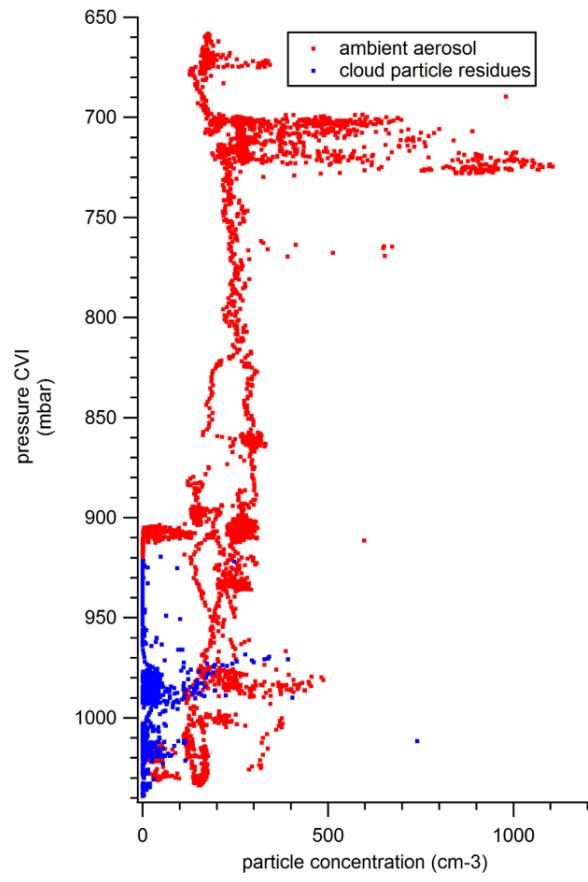
07:58 ascent to 12000 ft after rectangle pattern



## Quicklooks:

CVI





## CIP / PIP

