

ACLOUD Flight #07 – Polar 6 – 170527

Mission PI P6: Johannes Schneider

Objectives: Coordinated flight with Polar 5, low level cloud sampling, aerosol sampling below and above cloud, vertical profile to 10000 ft.

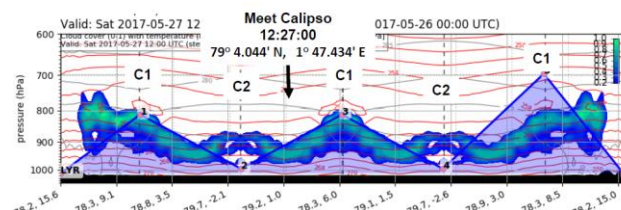
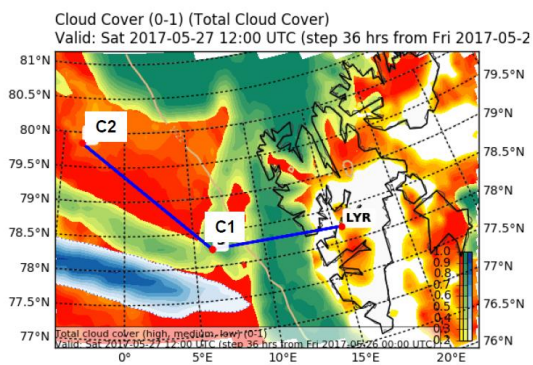
Crew:

Polar 6	
PI	Johannes Schneider
Basis Data Acq.	Martin Gehrman Daniel Damaske
ALABAMA	Hans-Christian Clemen
CVI	Stephan Mertes
Gas/AWI-Aerosol	Heiko Bozem
PMS	Emma Järvinen Christophe Goubeyre

Flight times:

Polar 6	
Take off	13:02 UTC
Touch down	16:27 UTC

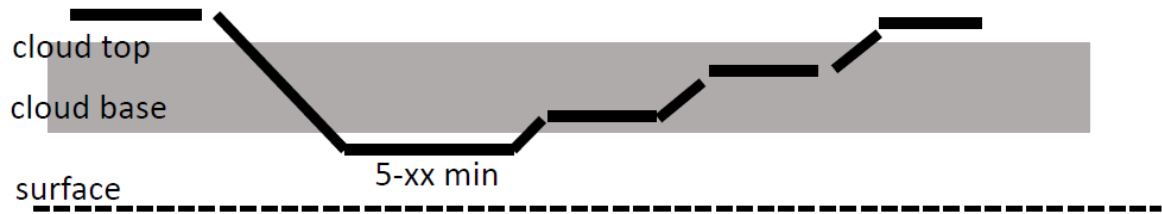
Weather situation as observed during the flight (compare to forecast):



Cloud situation was similar to forecast: cloud top higher at C1 and lower towards C2. Cloud base was between 400 and 600 ft, lower over the ice compared to open water, also as predicted. The clouds were mainly liquid, but occasionally ice was observed. Little precipitation was observed below the clouds.

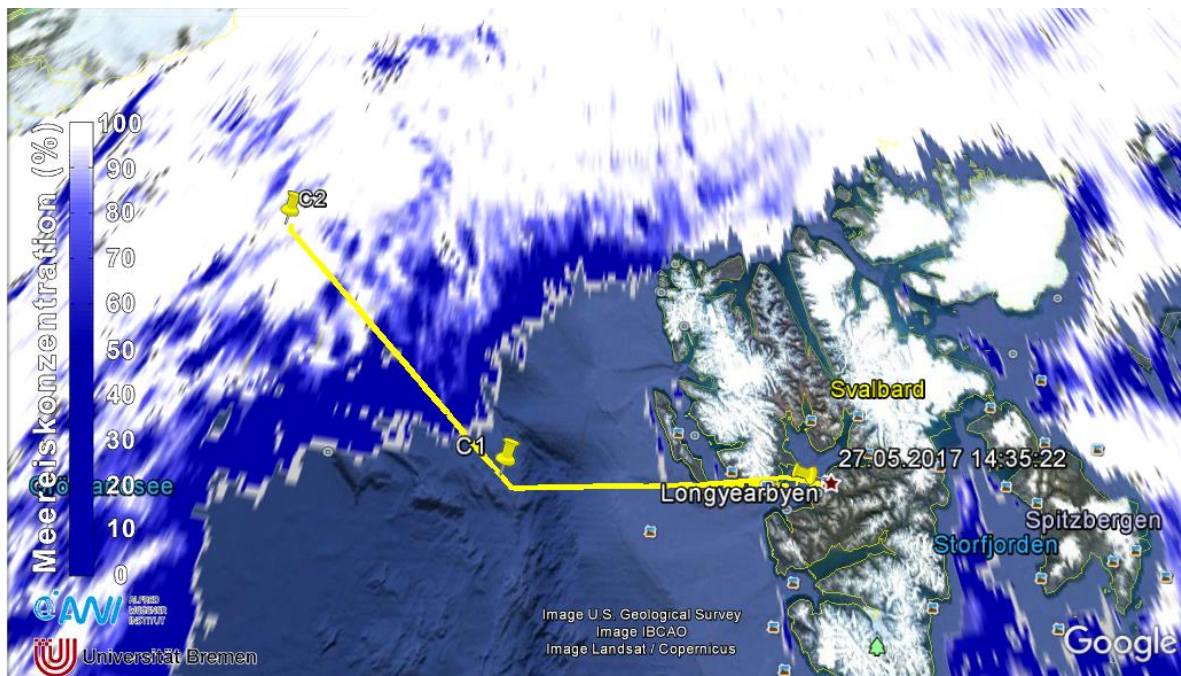
Overview:

Flight pattern was flown as planned, with approach to C1 at 6000 ft (briefly passing through clouds), then cloud profiling between C1 and C2 as sketched below:

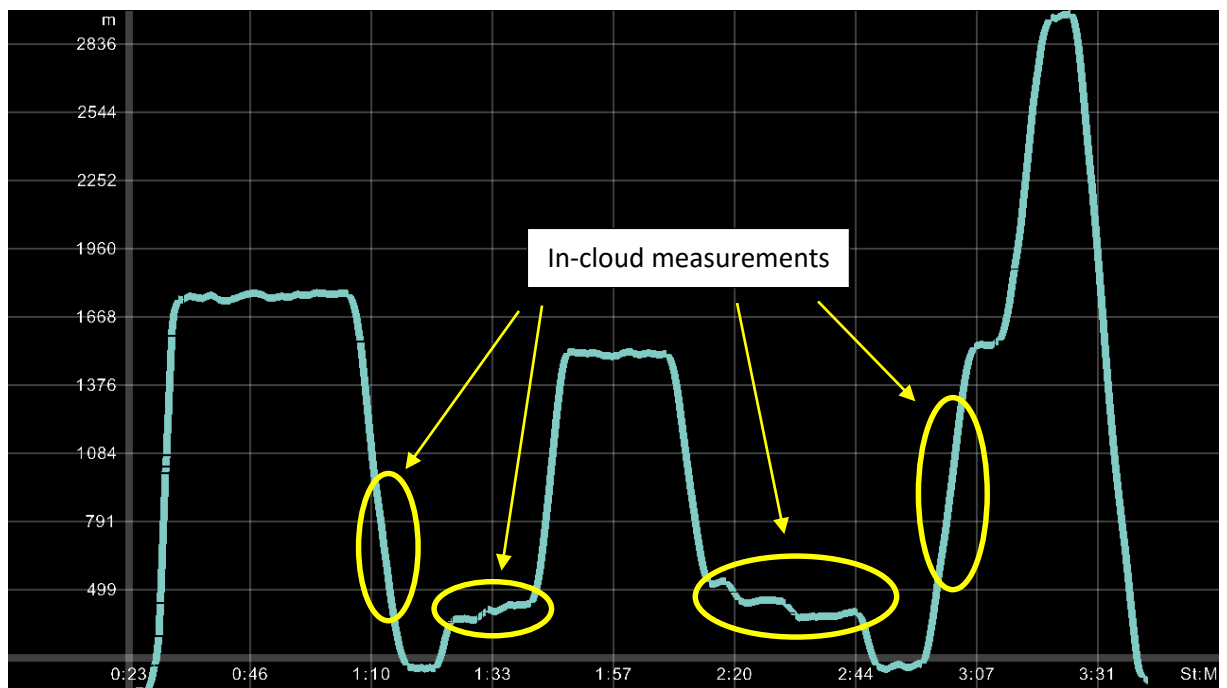


On the return between C2 and C1 three cloud levels and one leg below the clouds were flown. Between C1 and LYB ascent to 5000 ft, short level, then ascent to 10000 ft, then descent to LYB,

Flight track and pattern:



Altitude profile:



Instrument Status:

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

Comments:

No instrumental problems were reported.

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

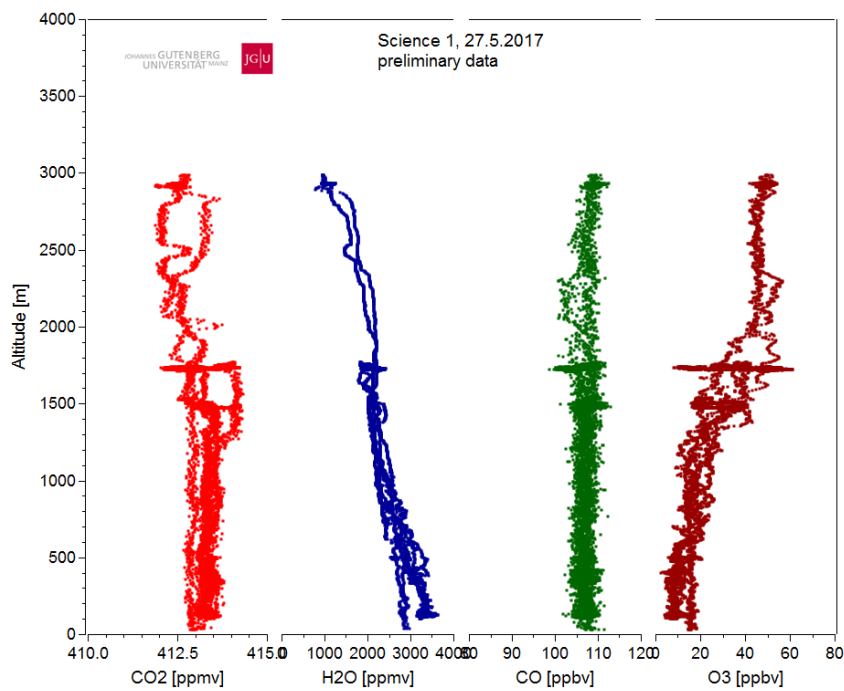
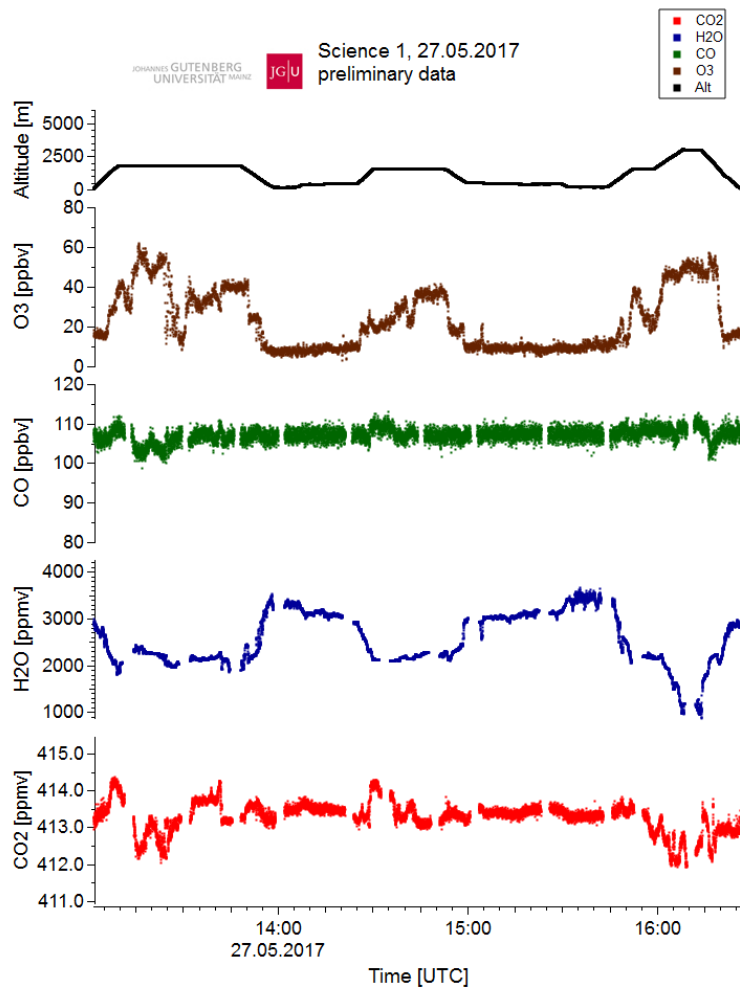
Johannes Schneider (times UTC)

13:02 Take off
climb to 6000 ft, 160 knots

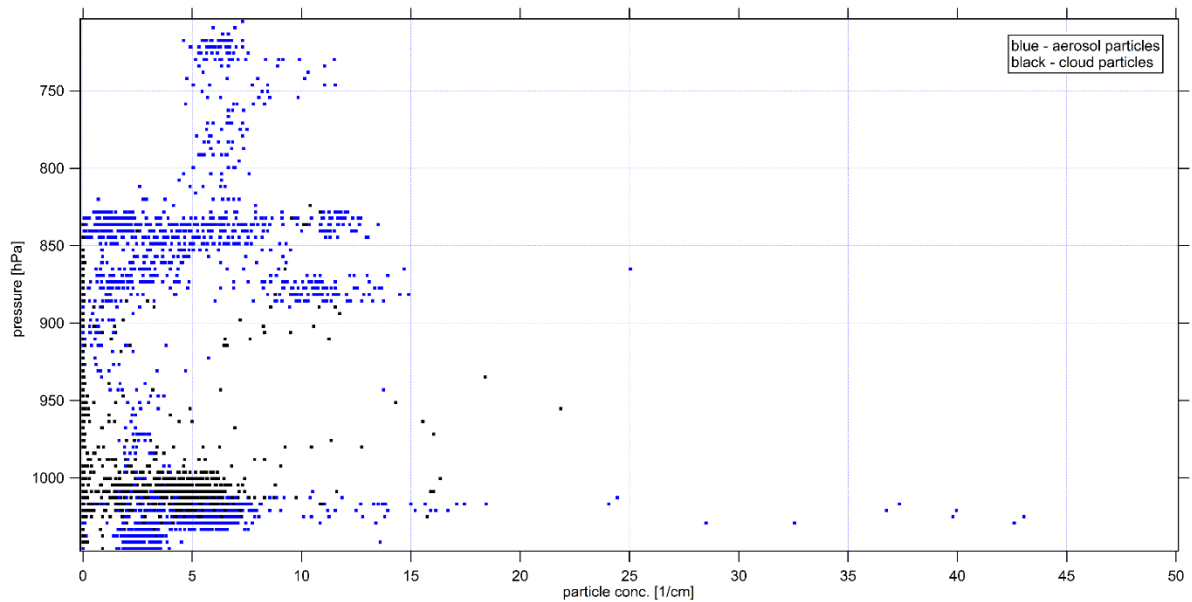
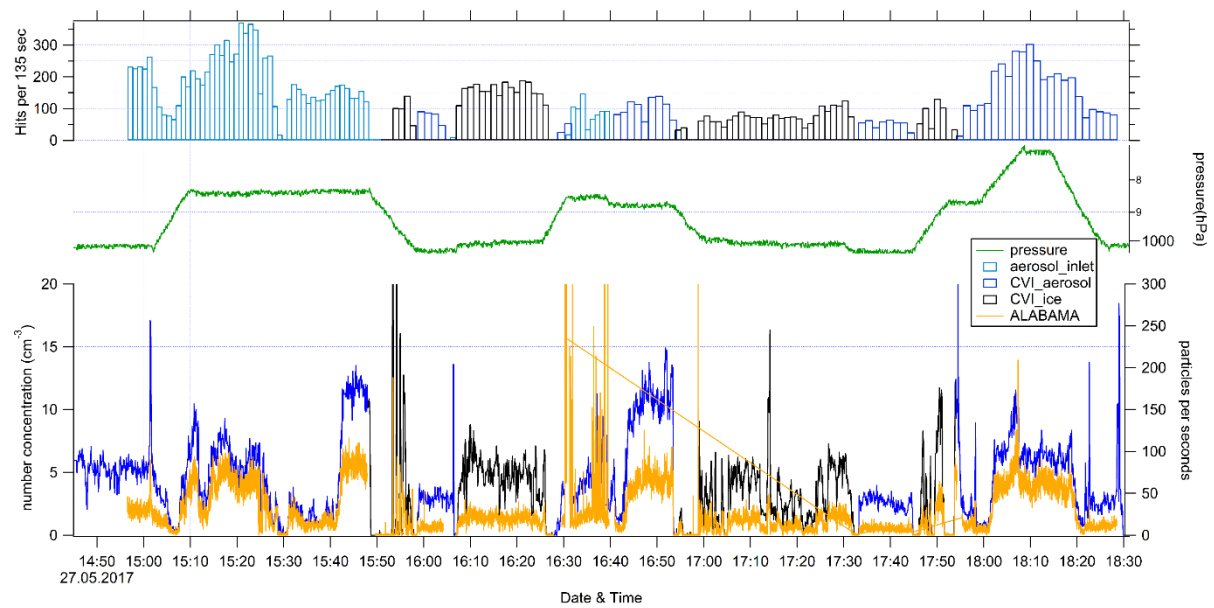
13:24	slow to 150 knot to allow P5 to approach
13:28	above clouds
13:30	again in clouds, T = -11°C
13:33	between mid and low clouds, CVI residuals decrease
	135 knots
	140 knots
13:47	turn
13:48	descent (500 ft/min) starts
13:54	cloud top (3300 ft)
13:58	cloud base (400 ft)
13:59	200 ft (stay for 5 min) below clouds
14:01	ice edge
14:08	climb into cloud (cloud base 600 ft)
14:09	1000 ft (in cloud)
14:16	1200 ft (in cloud) 150 knots
14:22	Emma reports ice in clouds
	Pilots: Ice on PMS probes
14:26	go above cloud
14:31	5000 ft
	Continue to C2, then turn, then try cloud profile in 3 levels
14:50 – 53	descent (500 ft/min)
	Try 3 cloud levels
	Some mid-level clouds at 3500 ft
15:00	1500 ft (stay 5 min), over sea ice
15:05	go down to 1200 ft (175 knots ground speed)
15:12	to 1000 ft (around cloud base, but mainly inside)
	Emma: ice in this cloud
	(10 more minutes, -6°C)
15:30	go below cloud
15:33	200 ft, stay until C1
15:45	C1
	Climb to 5000 ft
	Cloud base at 1300 ft
	Cloud top at 4800 ft
15:53	5000 ft, stay for a few minutes
16:00	start ascent to 10000 ft
16:13	start descent (fast)
16:27	Touch down

Quicklooks:

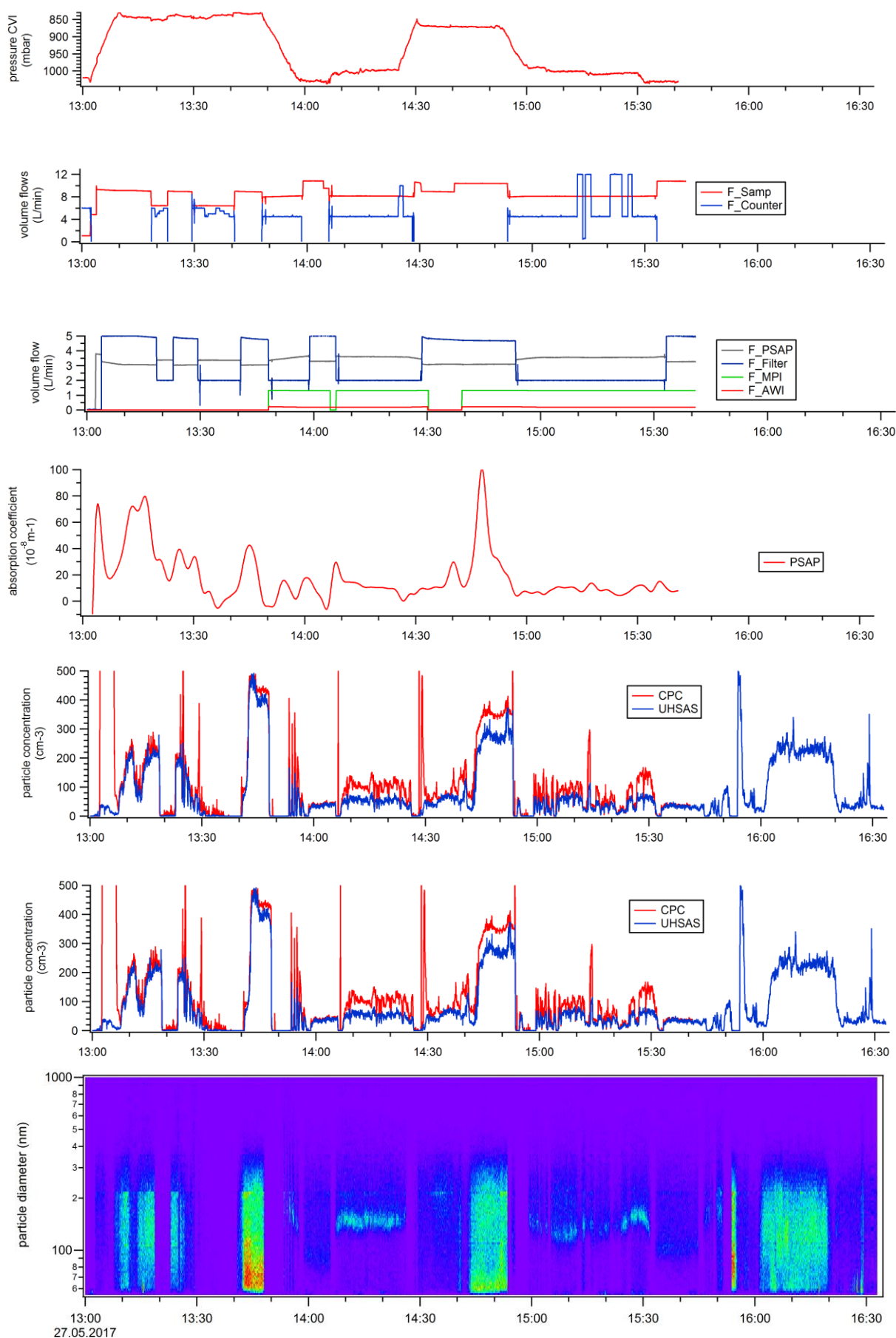
Trace gases (Uni Mz)



ALABAMA + OPC:



CVI



CIP / PIP

