

# **ACLOUD Flight #18 - Polar 5 - 20170616**

**Mission PI P5: Mario Mech**

**Objectives:**

**Crew:**

<b>Polar 5</b>	
<b>PI</b>	<b>Mario Mech</b>
<b>Basis Data Acq.</b>	<b>Lukas Kandra</b>
<b>SMART</b>	<b>Johannes Stapf</b>
<b>Eagle/Hawk</b>	<b>Elena Ruiz</b>
<b>MiRAC</b>	<b>Tobias Doktorowski</b>
<b>AMALi</b>	<b>Marek Jacob</b>

**Flight times:**

<b>Polar 5</b>	
<b>Take off</b>	<b>04:45 UTC</b>
<b>Touch down</b>	<b>10:01 UTC</b>

**Important remarks:**

- **distances in flight plan were in miles and not nautical miles. Therefore both aircraft were ahead of time at their respective waypoints.**
- **2 power outages of 230 V in the beginning during transfer to first satellite meeting.**

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

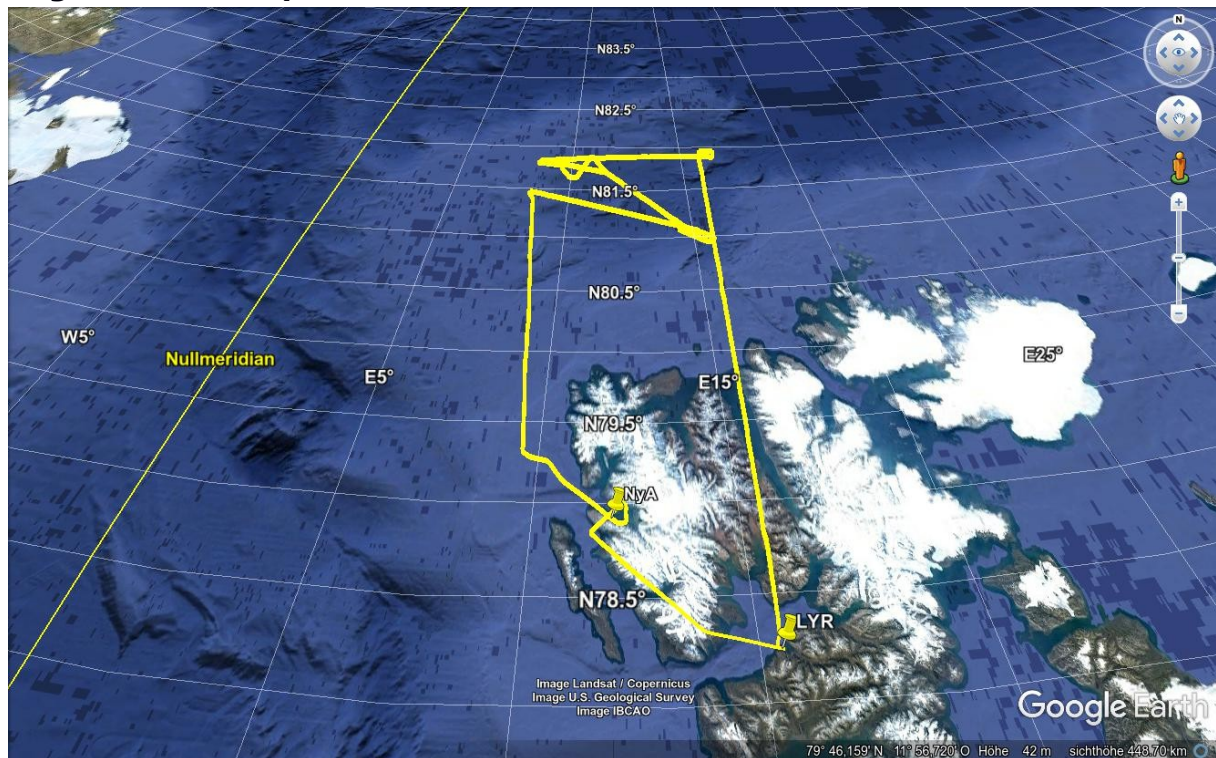
The flow direction on the flight day was from the north bringing colder air north and west of Svalbard. For the flight day a high cloudiness was predicted. In the area west and north west of Svalbard the GFS model predicted low level clouds and the ECMWF model both low and medium level clouds. During the flight a solid cloud deck was observed that continued unbroken from Longyearbyen to Polarstern (PS). The cloud top after Longyearbyen was found at 7000 ft and at PS around 3000 ft. Unlike predicted, the clouds were more uniform and mainly in one layer. Some brokenness was observed in the lower parts of the cloud layer. Below 2000 ft only thin and broken clouds were seen. The solid cloud deck began to dissipate in the west coast of Svalbard but over Ny Ålesund still a thinner cloud layer from 4500 ft to 5000 ft existed.

**Overview:**

The flight has been performed as planned. Taking off in Longyearbyen and heading North towards the starting point of the first satellite overpass. Once there we realized that we were early and performed a holding pattern. From C1 to C2 the A-train has been underflown before heading to Polarstern. Since there was again

time, a double triangle over Polarstern has been performed as well as another holding pattern over C3. After 20 min on satellite track we headed straight South to fly after C5 towards Ny Alesund along the valley axes. Directly after C5 we turned slightly a bit towards East to have a small section over open water without clouds underneath. Shortly before a drop sonde has been launched. Over Ny Alesund a half triangle was included.

**Flight track and pattern:**



Left: Pictures from cloud or ice

**Instrument Status:**

<b>Polar 6</b>	
Basis data acquisition	
Nose Boom	
SMART	
MiRAC Radar	
MiRAC Radiometer	
AMALi	
Eagle/Hawk	
Sunphotometer	
Dropsondes	

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

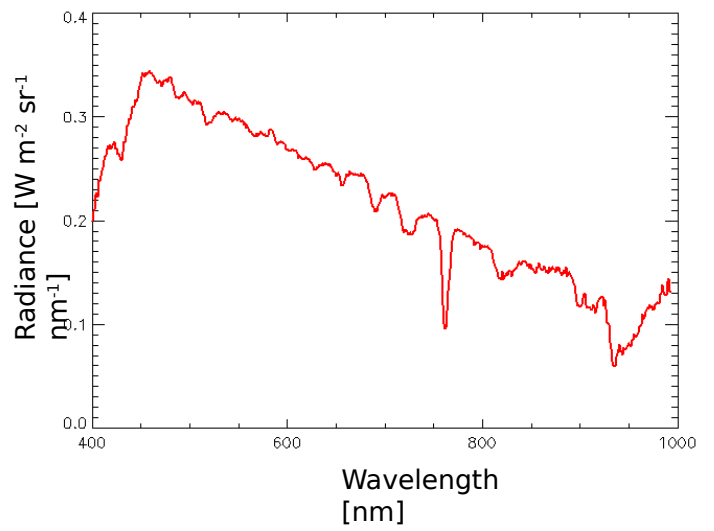
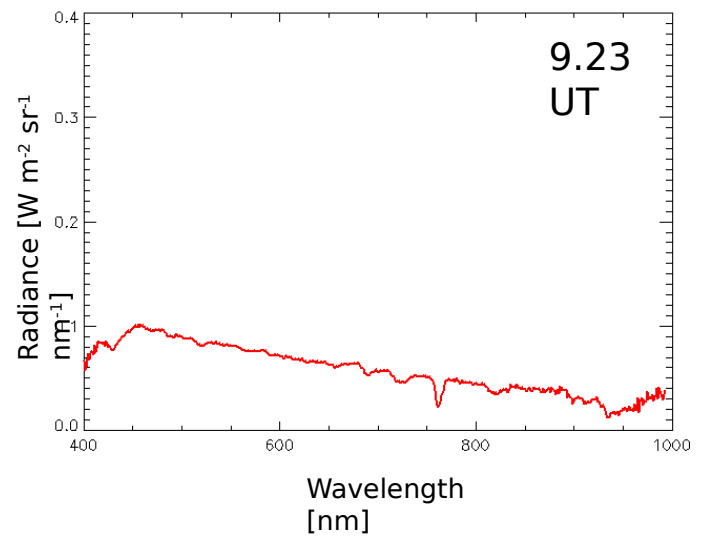
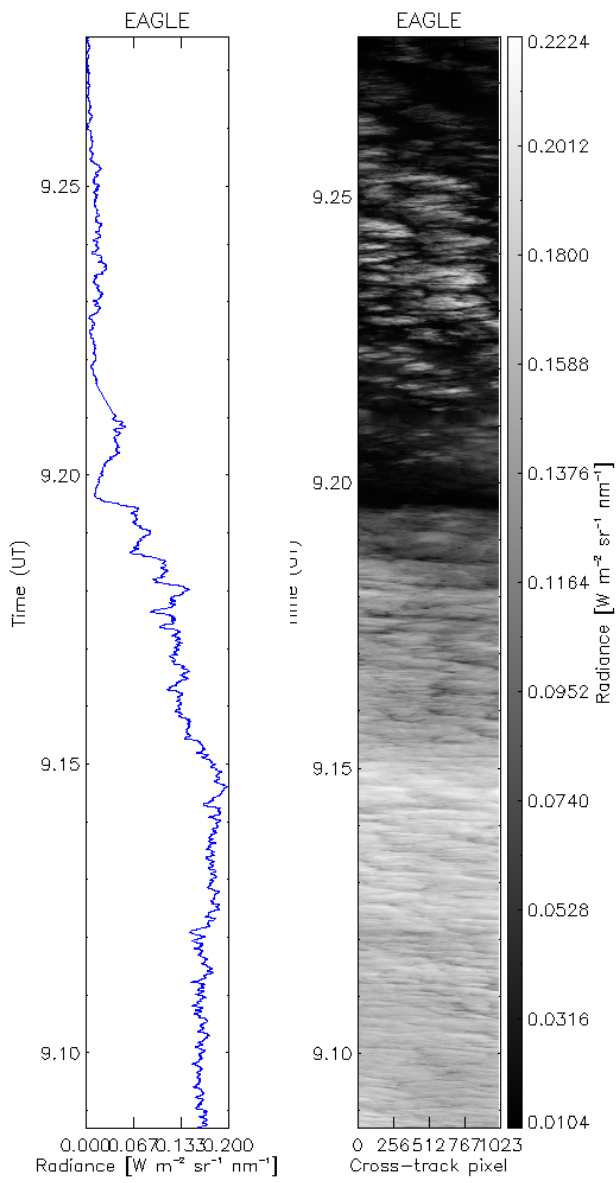
**Mario Mech (times UTC)**

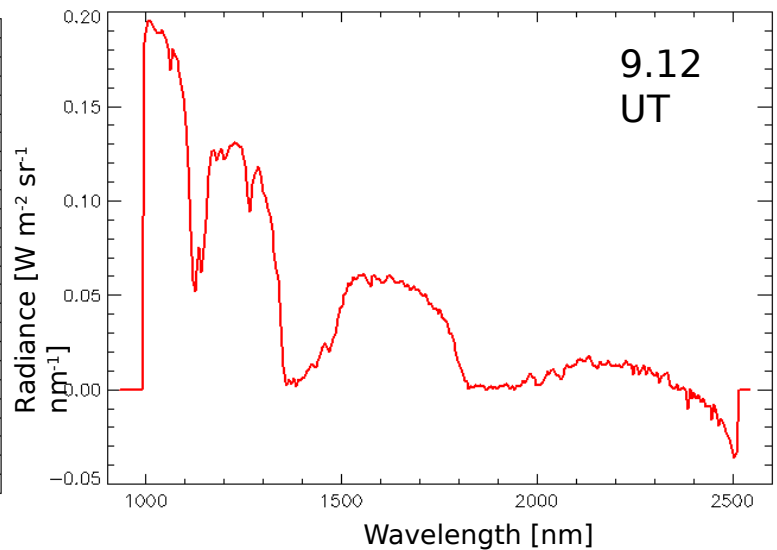
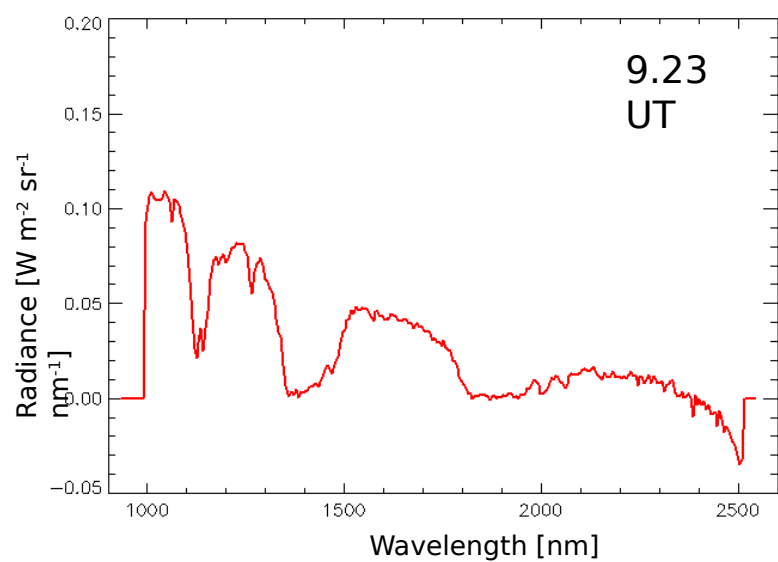
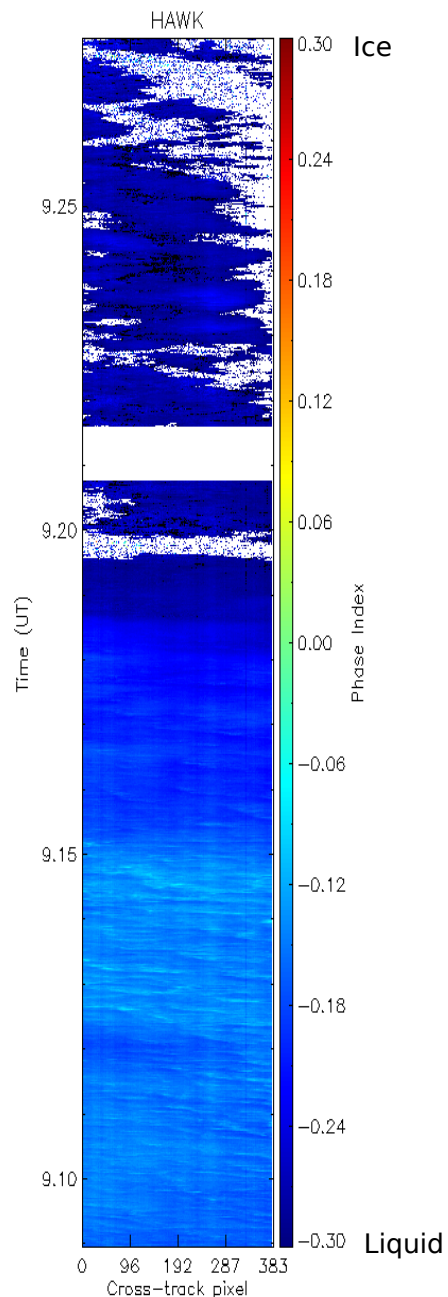
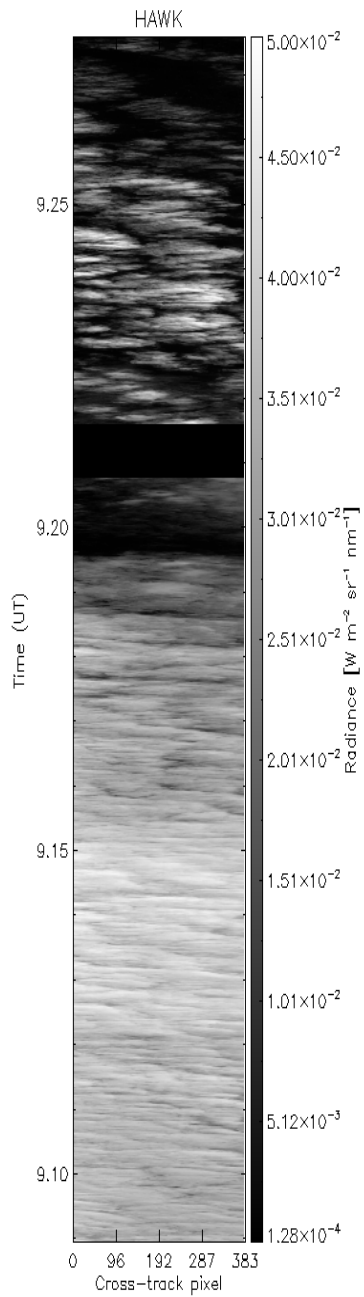
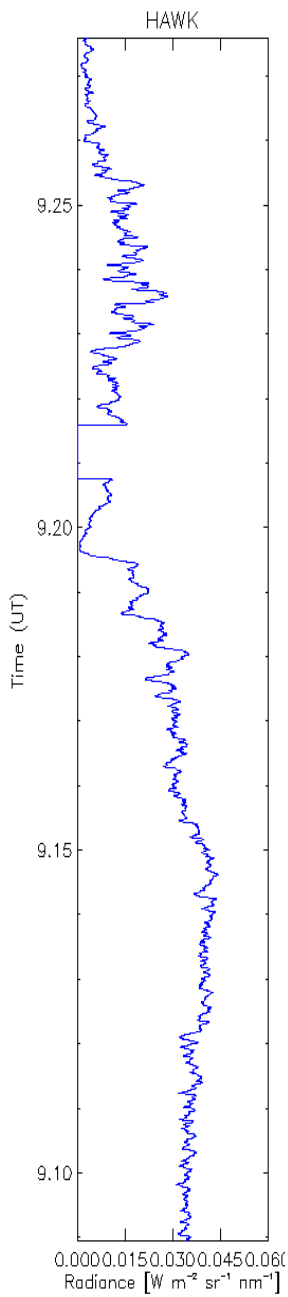
04:45 take off

04:47 1000 ft in clouds

04:53 above clouds in 6000 ft  
04:54 cirrus to the West  
05:05 power outage 230 V  
05:11 power outage 230 V  
05:23 since breaking through clouds, strato cumulus 4000 ft below us  
05:38 halo to the West  
05:54 thin cirrus above to the West  
    a lot of cirrus to the East  
06:00 cloud top at 4500 ft  
06:23 C1 circle clockwise to be at C1 at 6:31  
06:31 DS1 at C1  
06:34 120 kt  
06:46 DS2  
07:02 DS3 after C3  
07:12 cross pattern over Polarstern  
    clouds with precip over Polarstern  
08:09 DS4  
08:24 DS5  
08:38 DS6 but no GPS  
09:05 broken clouds  
09:13 satellite showed whole West of Svalbard  
09:18 C7 very few clouds  
09:21 DS7  
    2 min clear leg after DS7  
09:31 loop over NyA  
09:45 start descend  
09:48 6300 ft cloud top  
09:56 2900 ft cloud base  
    patchy clouds below  
09:58 1300 ft cloud base  
12:01 touch down

## **Quicklooks:**





16.06.2017

