

Flight Scientist Report  
Thursday 08/13/2020 ACTIVATE RF23

Flight Type: Statistical Survey Flight – ZIBUT then SSE  
Flight Route: KLF1 – FUMES – OUTES – HOBOH – 34.0799623/-71.7626953 – HOBOH – OUTES – FUMES – KLF1 – KFAF – KLF1

Special Notes:

HU25 was delayed on getting pulled out from the hangar. The preflight crew was able to catch up on still make TO time.

The preflight briefings at 2 hours before takeoff work well for those doing preflight and flying on the aircraft. It allows sufficient time to not be rushed.

There was uncertainty in the convection along the route. The choice was made to change the flight path to head south rather than north to avoid convection.

Reports of lightning in flight. Lots of convection. Tough day to get clean modules where we hit all the levels we want relative to where clouds are. Flight scientists on Falcons felt good about how modules went considering the complexity of the convective systems during the flight.

Cirrus at a bunch of different levels, some above and some below.  
Ewan: ended up in some cold pools.

Slover: 3.4 hours, airplane is in good condition, crew coordination went well. Switching between clear and cloudy profiles. Did divert around convective systems near ZIBUT. Coordination was very good during most of the flight. UC12 did have extra flight time but HU25 landed at minimum reserves.

**King Air**

Instruments:

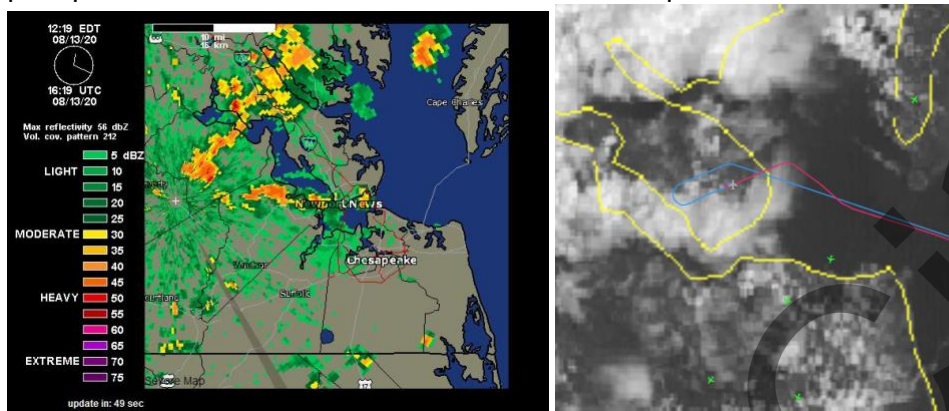
UC12: RSP start up ran into issues, due learning the process for starting up and shutting down the computer. This was resolved within the first ~20minutes of the flight over the chat server from RSP and Taylor onboard.

Taylor: minimal diverting around convection otherwise flight went well. Dropped 5 sondes spaced out over the flight.

Sondes were dropped on the way out, one near the coast, one at turn point (mid distance on the way out) and the southern point. This followed the plan as expected. Didn't drop one

closer to coast on way back since the overflight over the LaRC MPL/AERONET site was cancelled due to bad weather.

We canceled the MPL, AERONET overflight today due to overcast skies and precipitation in the area which were building as the afternoon started. We will target this in a latter flight. The precip and cloud cover are shown below over Hampton.



### Falcon

Complicated clouds switching between clear air and cloud modules. There was a clear gradient in the CO<sub>2</sub> and CH<sub>4</sub> on the southern end where we transitioned to a different airmass.

#### Instruments:

PILS needle snapped early and so PILS was down

Rest of instruments mostly fine.

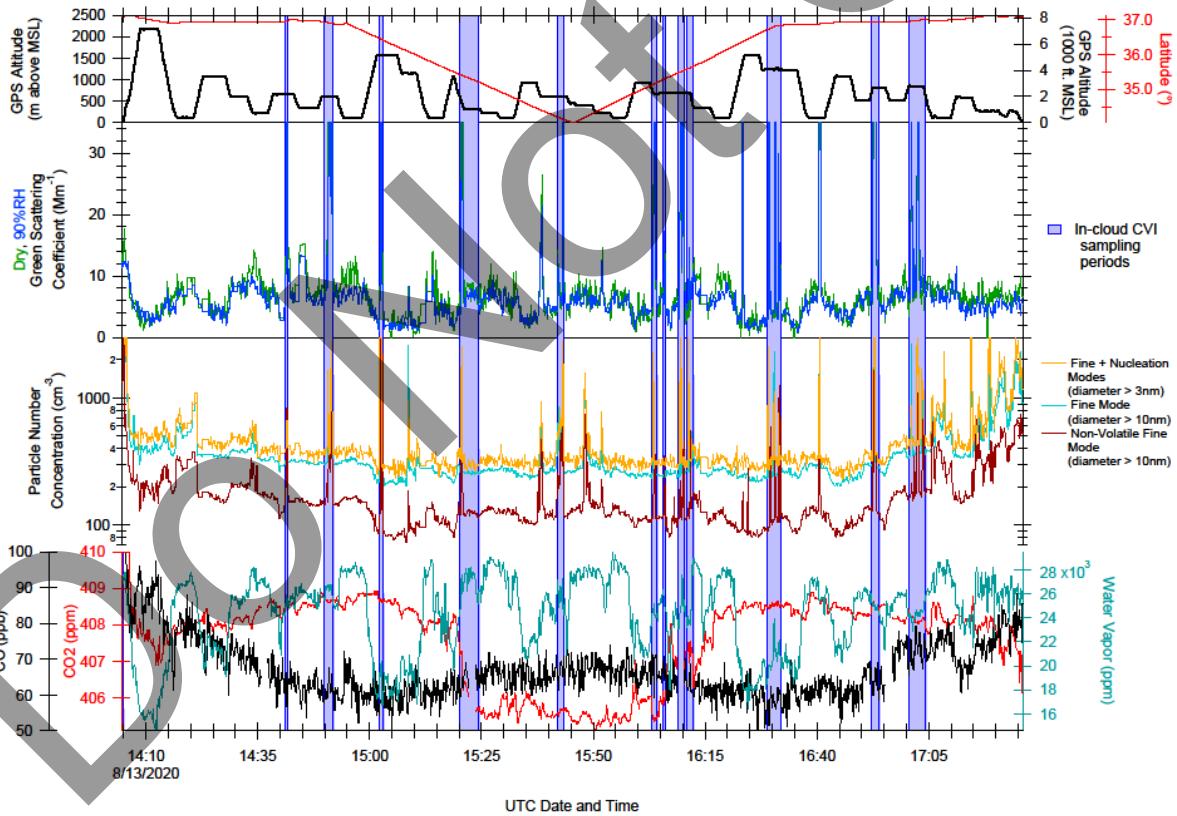
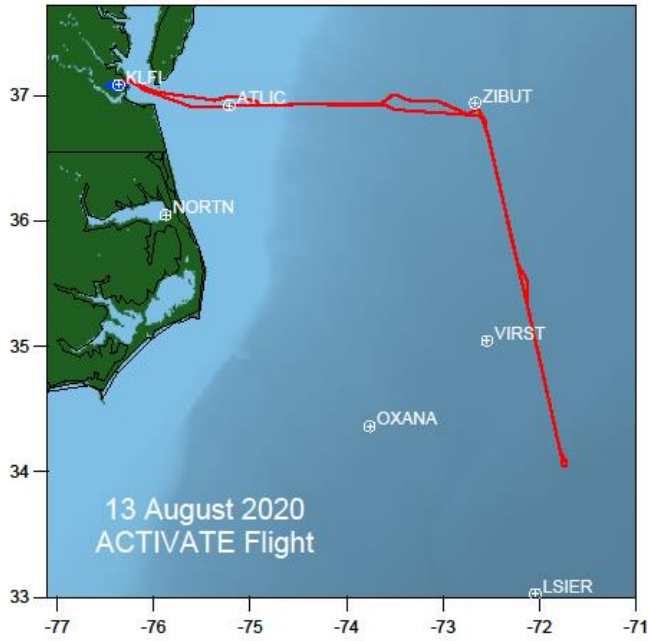
f(RH) wires need to be checked to see if dry and wet channels were mixed up.

Eddie: WCM initially had issues but got going shortly after takeoff. Hot in the cabin but not much we can do. GoPro shut down during the flight, swapped out during the flight that worked.

CIP worked better this flight and images were coming in. 2DS shutdown a few times and required to restart.

Luke: Little late start, 0725 but things worked out as they were able to catch up to launch on time.

Rich Moore Quicklook Images:



NASA-LaRC Clouds Group GOES-16 Quicklook Image for Flight 23, 15:41 UTC Aug 13, 2020

Visible Image

