

Flight Scientist Report
Wednesday 5/19/2021 ACTIVATE RF67

Flight Type: Statistical Survey Flight
Flight Route: KLFI ECG OXANA 32.75/-71.75 OXANA ECG KLFI
Special Notes:

King Air

Pilot report (Wusk):
Take-off 1230 Z

Landing 1556Z

3.4 hours

First flight of a two flight day. 2-ship cooperative flight with the HU-25; routing KLFI ECG OXANA 3245N 07145W OXANA ECG KLFI, FL280. ATC delay after takeoff with initial departure turning us out to the North. Eventually turned onto course and worked to catch up with the HU. Path flown as planned. Winds about 30kts at altitude. Asked about off-coastline RTB through W-72, unable due to exclusive Navy activities. Commenced descent and at FL240 ECG on return to field, maintained reasonable proximity with HU-25. Clear visibility at altitude. Crew was Jamison, Wusk, Shingler. Aircraft performed nominally with no issues and expected ready for next flight.

Flight scientist report (Shingler):

Severe clear skies (no clouds) for most of the flight. Aerosols were seen up to about 4kft halfway between coast and OXANA. The HU25 ran three 'HSRL legs' at 800 m throughout the flight (just past OXANA on the way out, near the turn around point, and near navaid KEVNN on the return). No clouds were seen on the return trip. Possible smoke was seen from the window at aircraft altitude and possibly in the HSRL data. A few pockets of moisture were seen in the boundary layer where the scattering didn't really change and the depolarization increased appreciably. The scattering increased over a much longer time period between the coast and the end point. 4 successful sondes were dropped (OXANA on the way out, end point, mid point between end and OXANA, and coast). There was one failed (fast fall) sonde (at end point, and a second drop was made). All instruments were operational.

Falcon

Pilot report (Delaney):

Takeoff: 0826 / Land: 1150 EDT

Science flight for the HU-25 in support of ACTIVATE Campaign #4, conducted cooperatively with the UC-12. Departed Rwy08 with circuitous vectors to ECG, climbing to 5k ft MSL for initial transit. Winds were light and variable for majority of the flight. Research profiles conducted from ECG-OXANA-3245N/07145W-OXANA-ECG-KLFI. Clear air modules executed throughout flight from 500 – 5500 ft MSL, with some quick in-cloud data collection at the turn-around point leveraging an isolated cloud formation at ~3500 ft MSL. Upon reaching shoreline, conducted VFR RTB at 1000 ft MSL from ECG around ORF to KLFI. Aircraft geolocation was within ~20 nmi throughout the flight. All objectives were achieved and with no discrepancies noted.

Pilots: Delaney/Elder

QNCs: Crosbie/Winstead

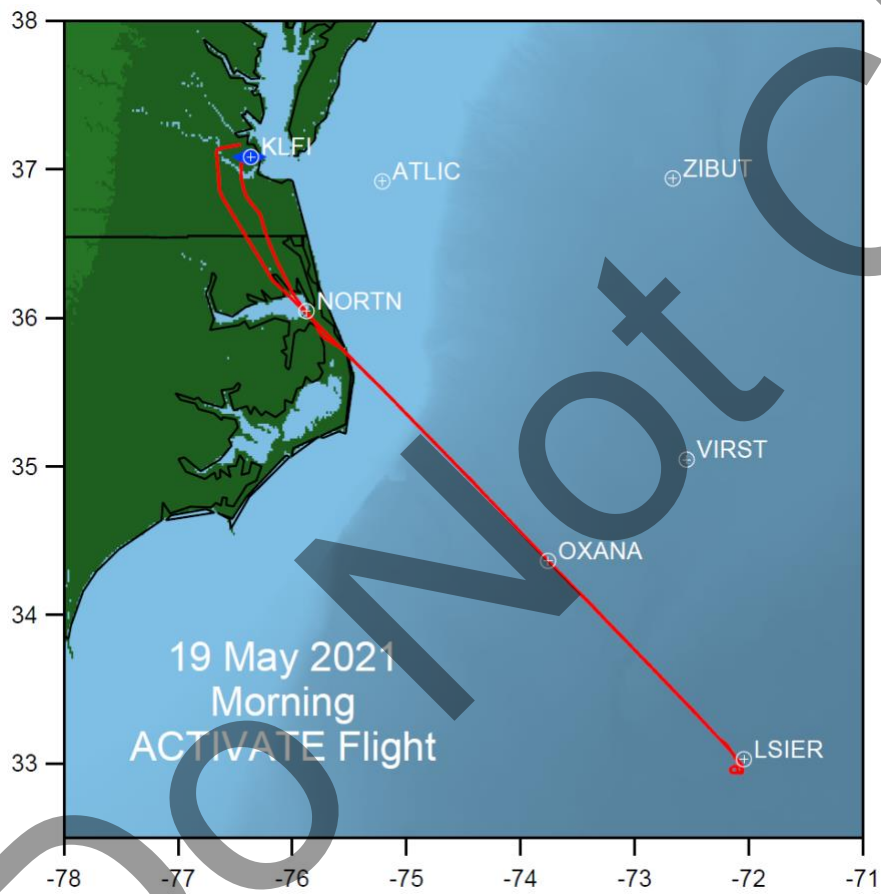
Flight scientist report (Crosbie): Largely clear air survey. There was one patch of clouds at the end of the line that was targeted for in-cloud sampling and involved cutting the end point short to spend some time in the clouds. There was also a line of clouds that extended northeast of the flight track that was just missed on the outbound but visible and appeared to be located over the Gulf Stream. Nothing really that notable about this flight.

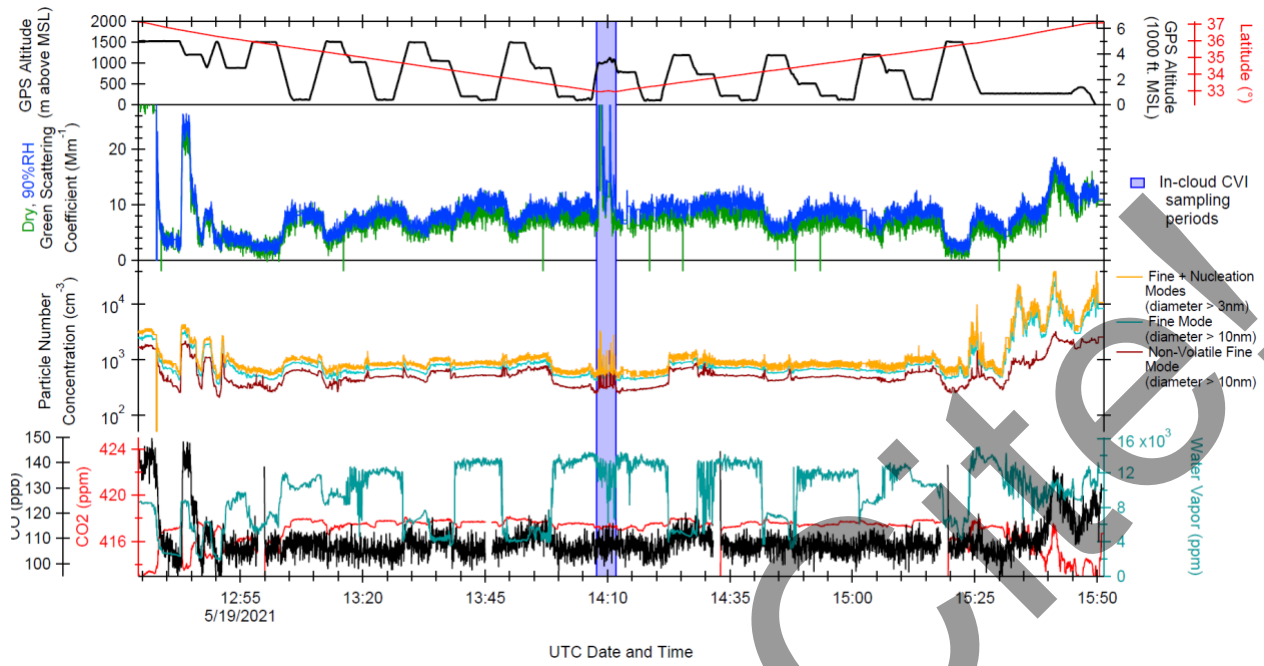
Notes from Eddie:

Morning Flight: During taxi, lost serial connection with nephelometers and CVI. Had to restart DAQ software to restore connections.

12:43:40 – In haze layer at 4000 ft; Fog on ground below.

12:47:00 Porpoise from 3Kft to 5Kft to bracket haze layer



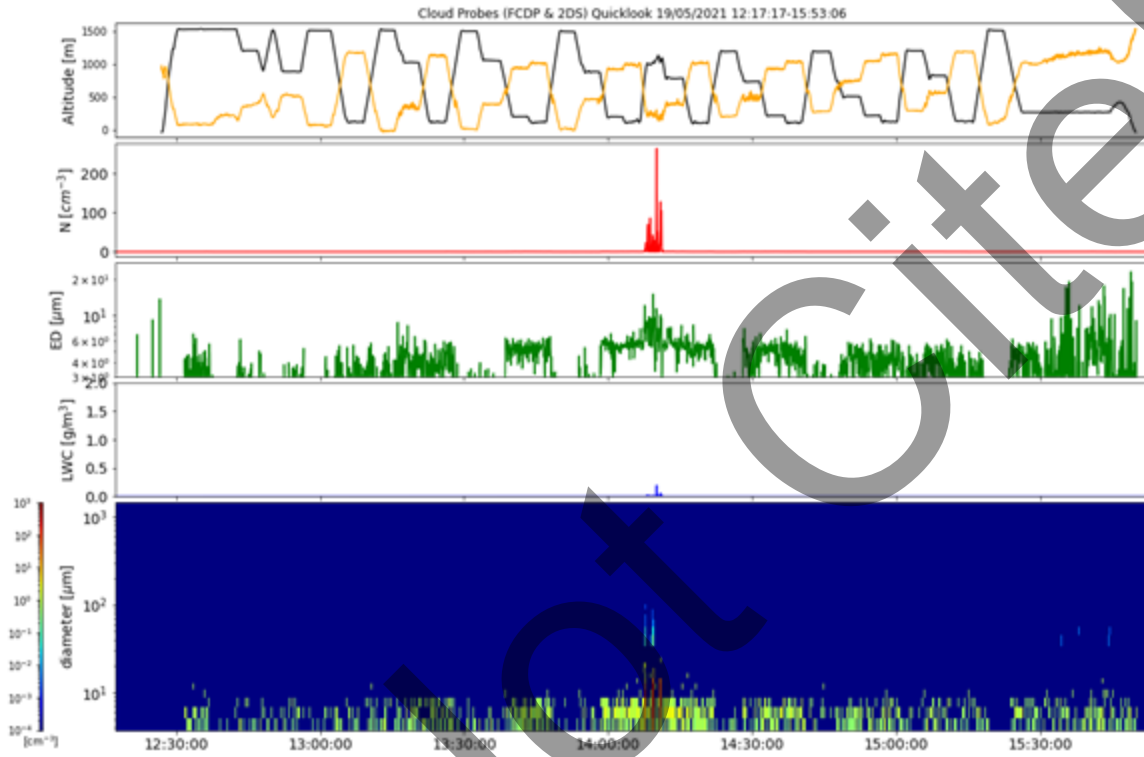


Do Not

Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



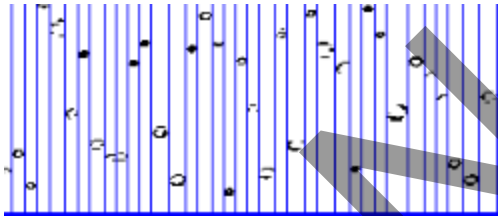
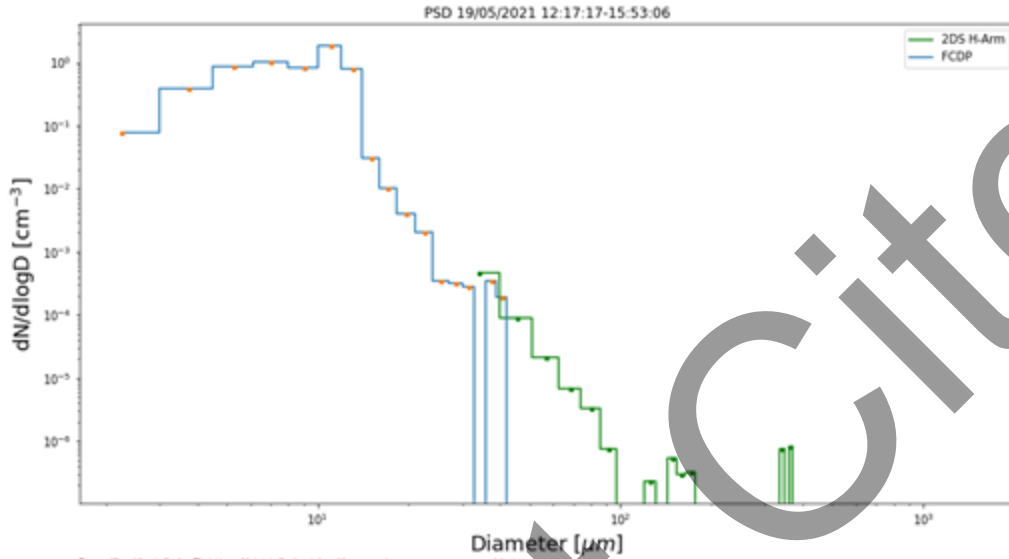
Simon.Kirschler@dlr.de, Christiane.Voigt@dlr.de, richard.h.moore@nasa.gov, ewan.c.crosbie@nasa.gov

Static Temperature [C]

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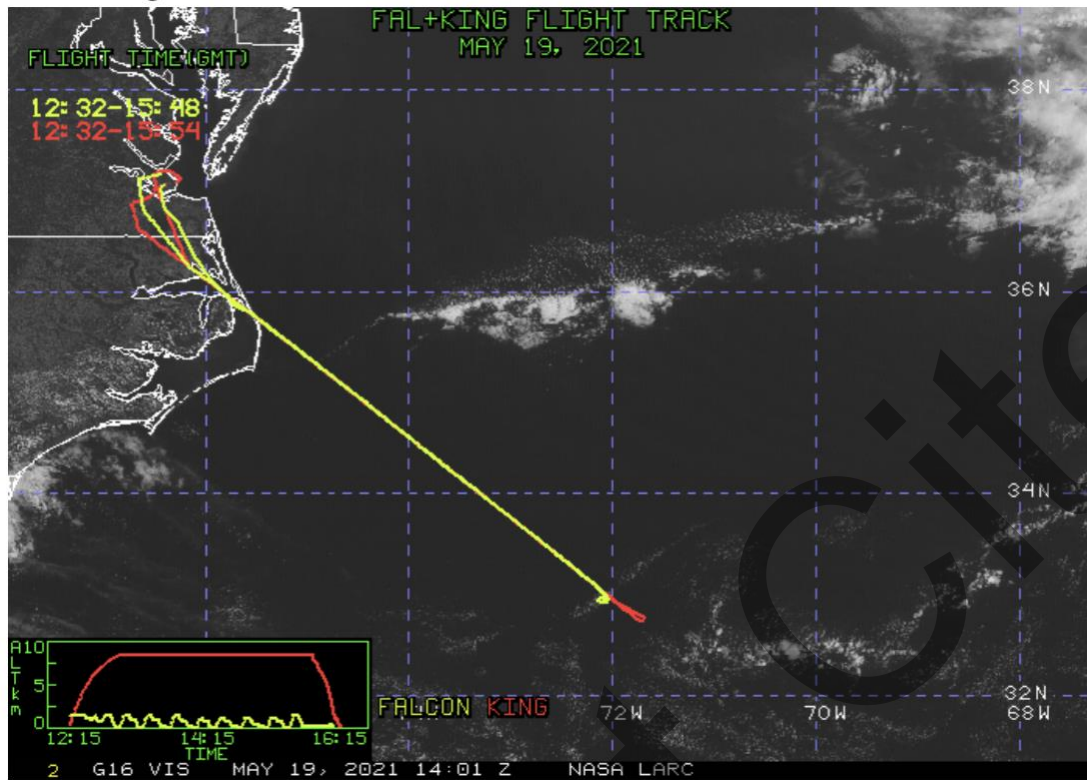
PSD ACTIVATE

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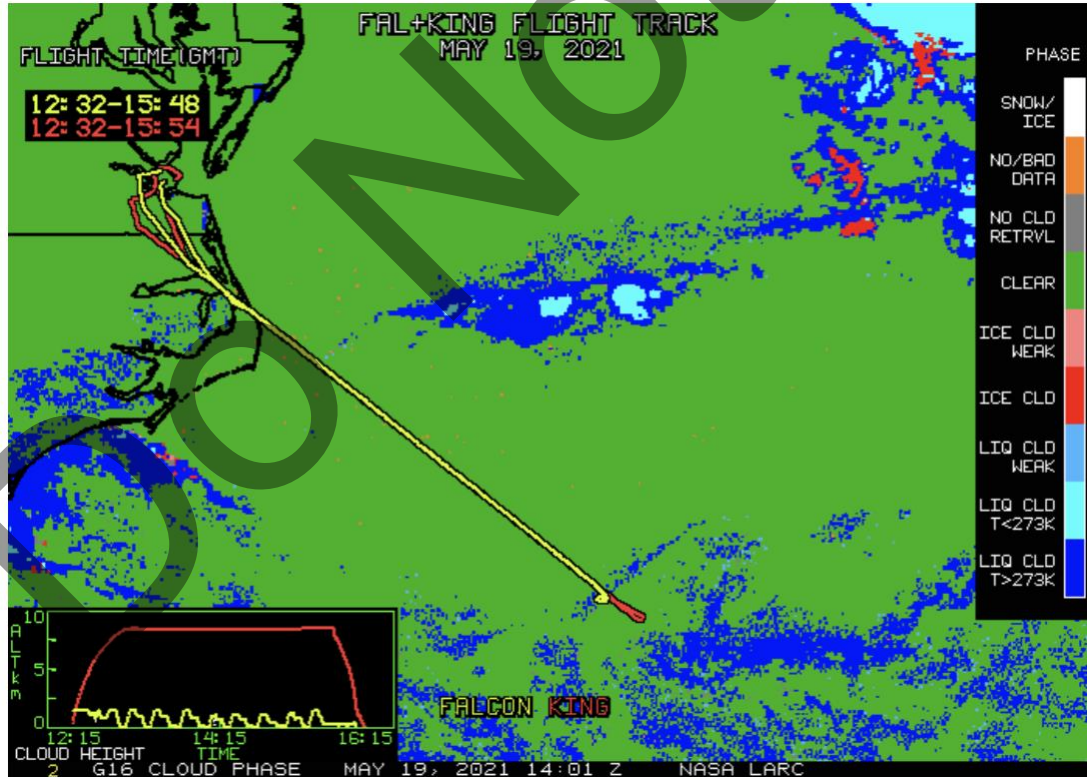


Cloud free, only occurrence at 14:09 with drizzle.

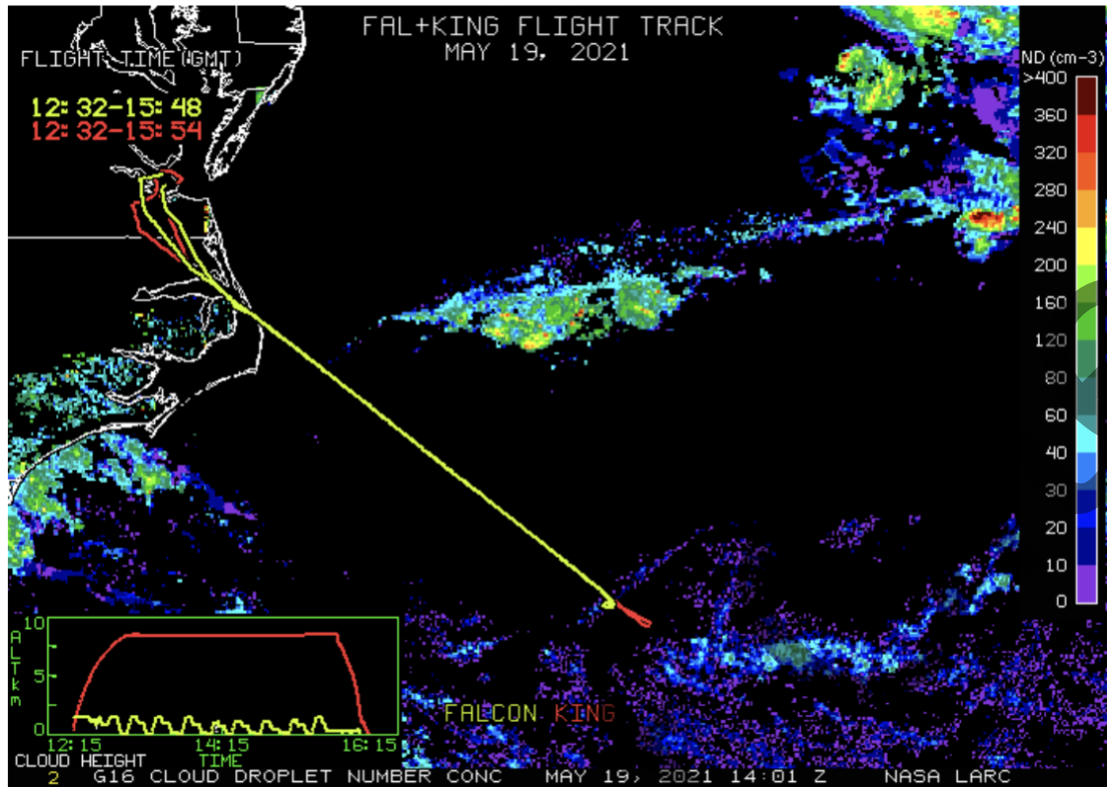
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm⁻³)



Cloud-Top Height (Kft-ASL)

