Flight Scientist Report
Tuesday 02/22/2022 ACTIVATE RF126

Flight Type: Statistical Survey Flight
Flight Route:
Special Notes: First of two flights today.

King Air

Pilot report (Wusk):
First flight of a planned two flight day, coincident flights with the HU25. Flight route changed at step time due to trying to find cloud fields. Route flown was KLFI ECG OXANA ROBBB 33N07512W. The HU25 used 3240N07540W as turn point. While both planes taxied out together and were in position for a in-sequence take-off, the Air Force inserted 2 F-15s in between us, and one of the F-15 caused a grass fire just off the runway as it took off. Airfield ops were suspended for about 25 minutes as they put out the fire. As soon as the airfield reopened we took off. The UC was about 100 nm behind the HU on the route. With a good tail wind beyond OXANA we caught up some. We negotiated a turn point for us that would be short of the HU TP by about 30 nm, but allow us to turn and be coincident on the return leg. We turned slightly before the HU reached our position and stayed about 10 nm ahead until returning back in at OXANA where the HU pulled ahead as the UC battled the headwind. Three sondes were dropped. The plane and instruments all operated nominally. Crew was Sandeen, Wusk, and Shingler.

Flight scientist report (Shingler):

KLFI ECG OXANA ROBBB 33N07512W ROBBB OXANA ECG KLFI

Delayed on take off due to small fire off runway causing approx 30 min aircraft separation early in the flight.

Mid cloud present along the ECG-OXANA leg clearing up around FULTN. The mid cloud deck was solid at approx 10-11 kft. Upon dissipating, there was a decoupled aerosol layer aloft between 6-8 kft with depol approx 10% (smoke?). The lower boundary layer thickness was between 2500-4kft along outbound legs. Aerosol layer aloft remained present for the duration of the flight, with weak scattering but distinct extents. The mid level cloud layer reappeared near TOMMZ on the return. No appreciable cirrus aloft today.

3 Sondes dropped:

OXANA

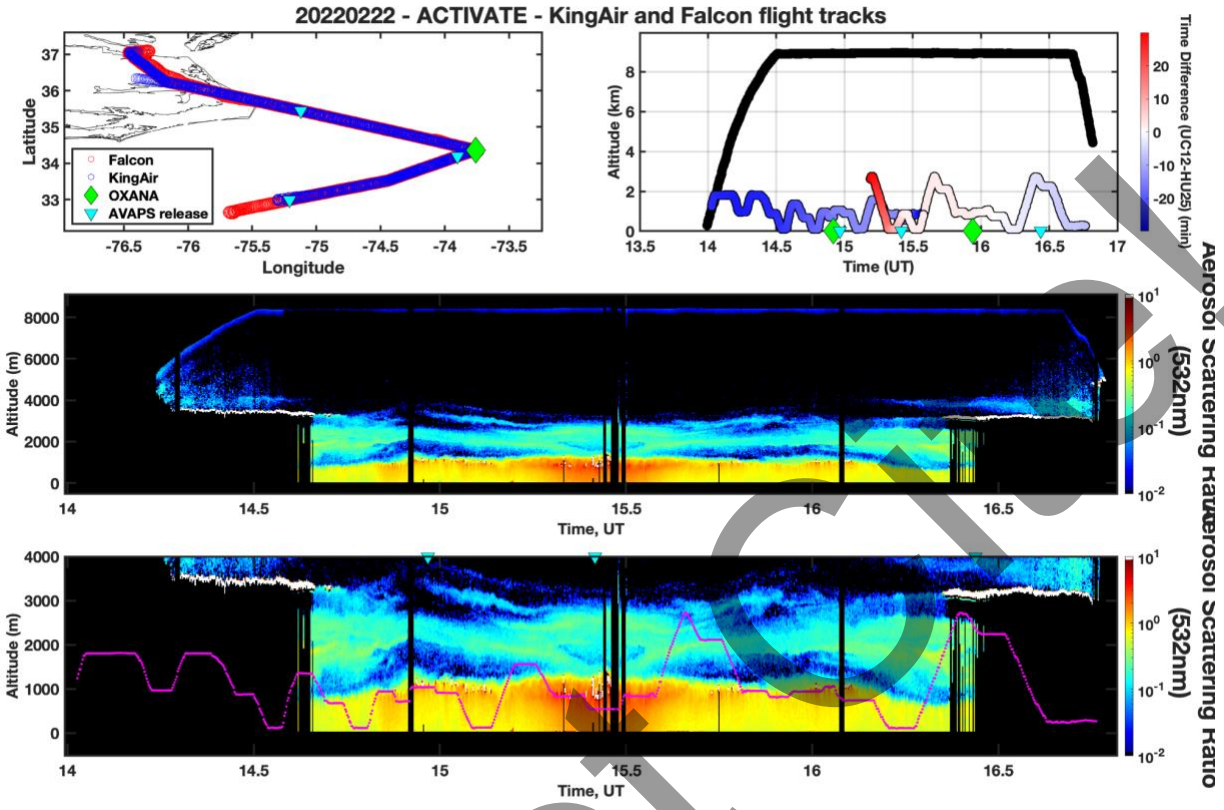
TURN

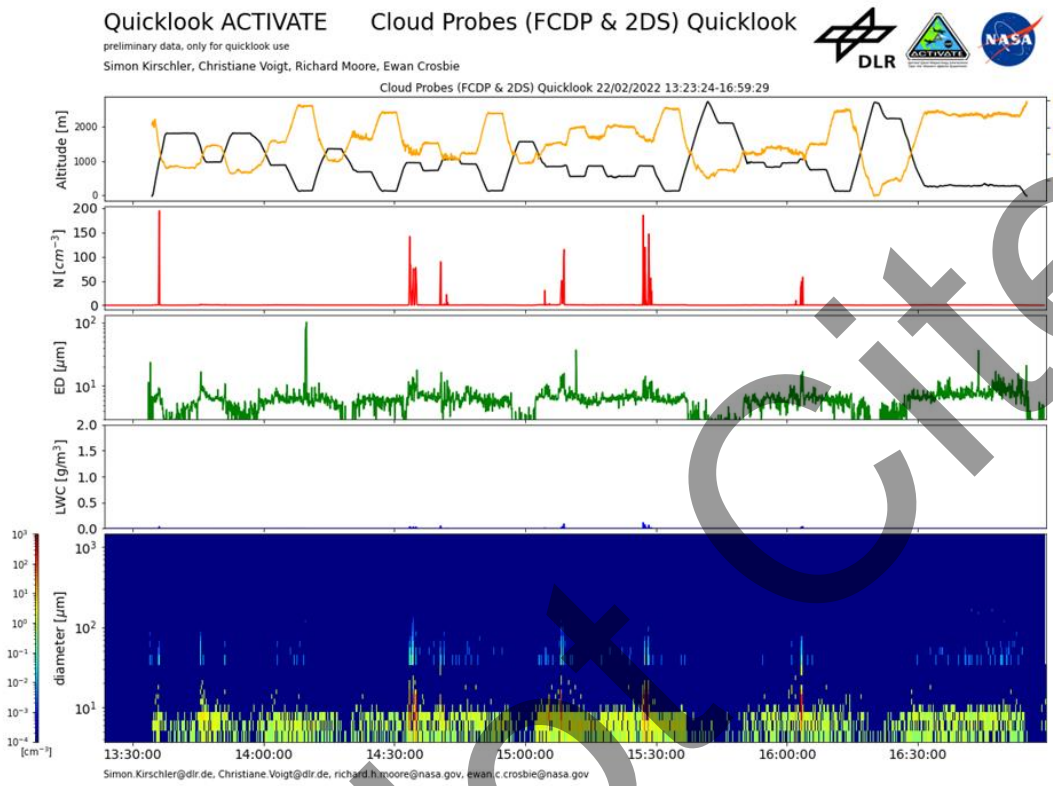
COAST

Falcon

Pilot report (Baxley):
Pilots: Baxley/Slover; QNCs: Crosbie/Winstead KLFI-ECG-OXANA-ROBBB-3240N07540W-ROBBB-OXANA-ECG-KLFI Mission flown as briefed and weather as expected. No anomalies noted.

Flight scientist report (Crosbie):
Stat survey OXANA-SW. Clouds were very sparse and small. Often there were clearings with no clouds present. On the return leg, we extended the ACT higher to sample an aerosol layer flagged by HSRL at 7000ft. This was conducted twice. Some mid cloud was observed near the OBX and over land which was not sampled.

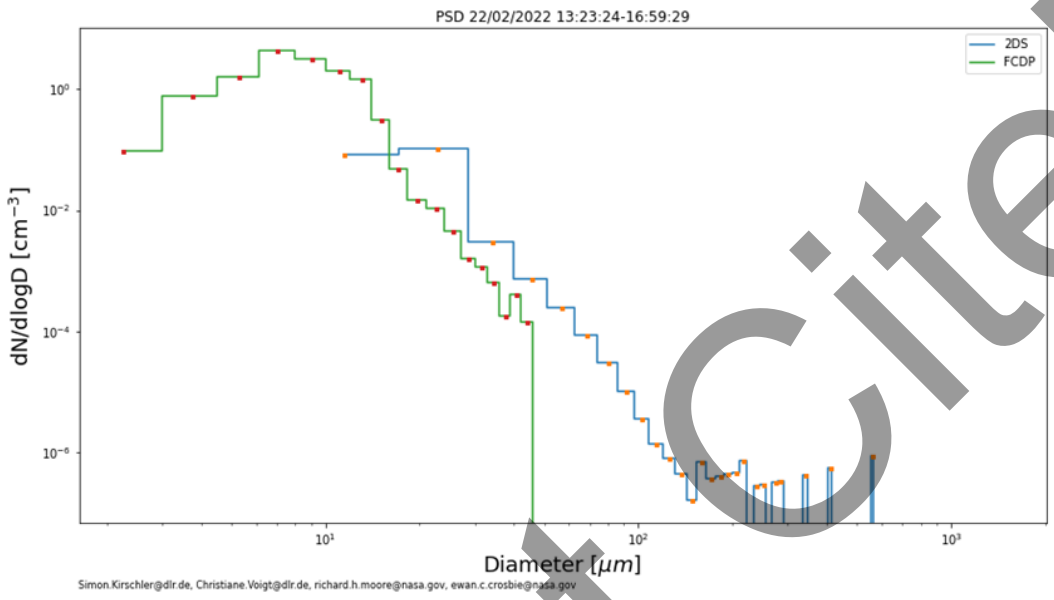

20220222 - ACTIVATE - KingAir and Falcon flight tracks
Latitude
Longitude
Falcon
KingAir
OXANA
AVAPS release
Altitude (km)
Time (UT)
Time Difference (UC12-HU25) (min)
Altitude (m)
Time, UT
Aerosol Scattering Ratio (532nm)


Quicklook ACTIVATE
Cloud Probes (FCDP & 2DS) Quicklook
preliminary data, only for quicklook use
Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie
Cloud Probes (FCDP & 2DS) Quicklook 22/02/2022 13:23:24-16:59:29
Altitude [m]
Static Temperatur [°C]
N [cm⁻³]
ED [µm]
LWC [g/m³]
diameter [µm]
[cm⁻³]
13:30:00
14:00:00
14:30:00
15:00:00
15:30:00
16:00:00
16:30:00
Simon.Kirschler@dlr.de, Christiane.Voigt@dlr.de, richard.h.moore@nasa.gov, ewan.c.crosbie@nasa.gov

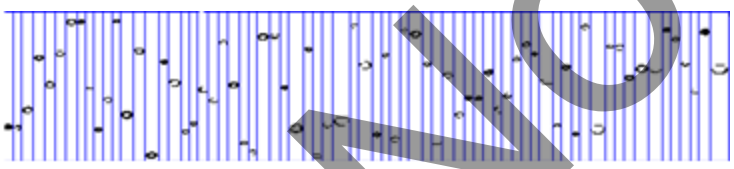
PSD ACTIVATE

preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



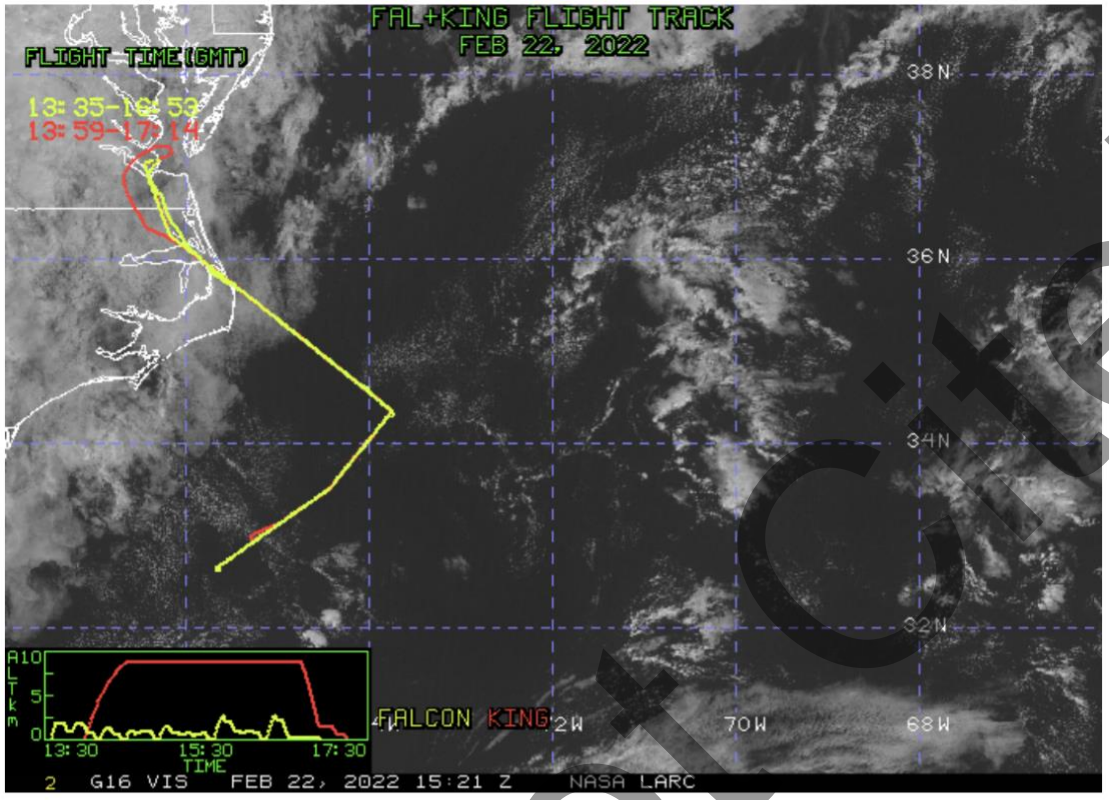
Simon.Kirschler@dlr.de, Christiane.Voigt@dlr.de, richard.h.moore@nasa.gov, ewan.c.crosbie@nasa.gov



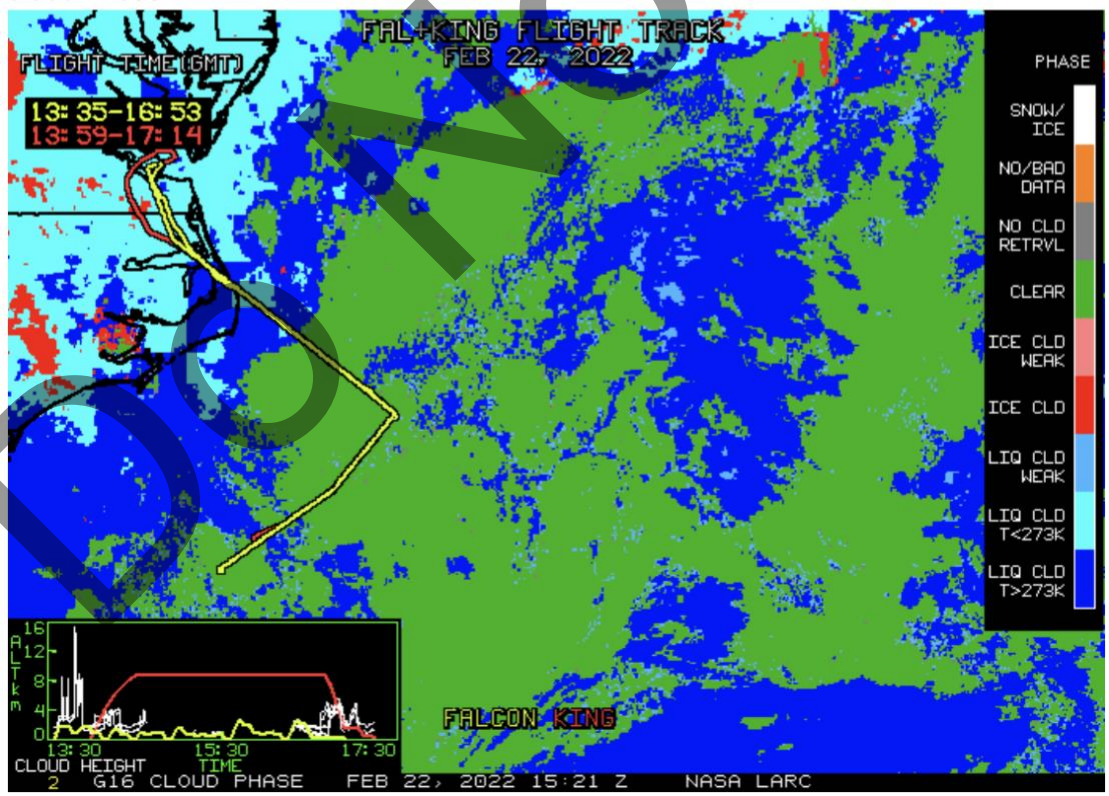
Only pure liquid clouds.

NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 126, 15:21 UTC Feb 22, 2022

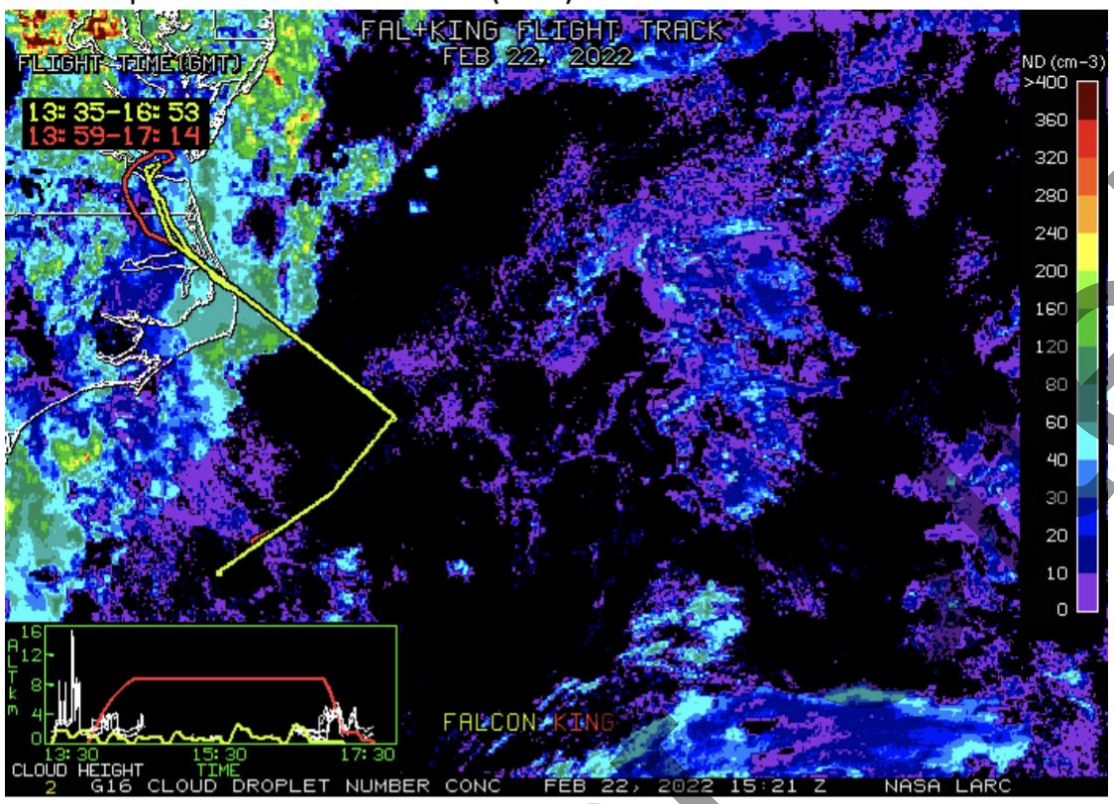
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)