Flight Scientist Report
Saturday 02/19/2022 ACTIVATE RF124

Flight Type: Statistical Survey Flight
Flight Route: KLFI OXANA TOMMZ OXANA DOUGS OXANA ECG
Special Notes: First of 2 flights today. There were a host of air traffic restrictions today limiting where we could fly in the morning.

King Air

Pilot report (Sandeen):
Flight flown as planned, joint flight with N524NA on route KLFI OXANA TOMMZ OXANA DOUGS OXANA ECG @ FL280 and 140 KCAS/220 KTAS. Maintained within 10 minutes once on OXANA between aircraft during flight, as 524 was initially delayed on takeoff due to a maintenance issue but later caught up to 529 to provide coincidence. Aircrew: Sandeen, Coldsnow, Seaman. No significant clouds at altitude. Significant winds at altitude (~100 knots from West) causing a longer flight due to strong headwind on return. 2 dropsondes, one at endpoint and one 12 nm from coastline. No aircraft or instrumentation issues during flight.

Flight scientist report (Seaman):

Takeoff: 13:32 utc

Landing:17:27 utc

Flight path:

KLFI ECG OXANA TOMMZ OXANA DOUGS OXANA ECG KLFI

Ops Notes:

Falcon had to delay takeoff so coordination was poor until

UC12 had a power issue during ascent. Pilots noticed the inverter had a fault warning for about 3 seconds before correcting itself. At this same time the HSRL software froze. Required full system restart. RSP did not appear to have any issues, but restarted RSPGA

software just in case. HSRL measurements started at about 22kft as a result of the restart.

Inflight data downlink did not work.

Science notes:

Thick cloud at 7kft around LOZER and TOMMZ

Thin cloud at 2.5kft to OXANA

Strong depolarization layer from 13kft down to 5kft.

Cals and baseline done in endpoint turn.

Sonde drops:

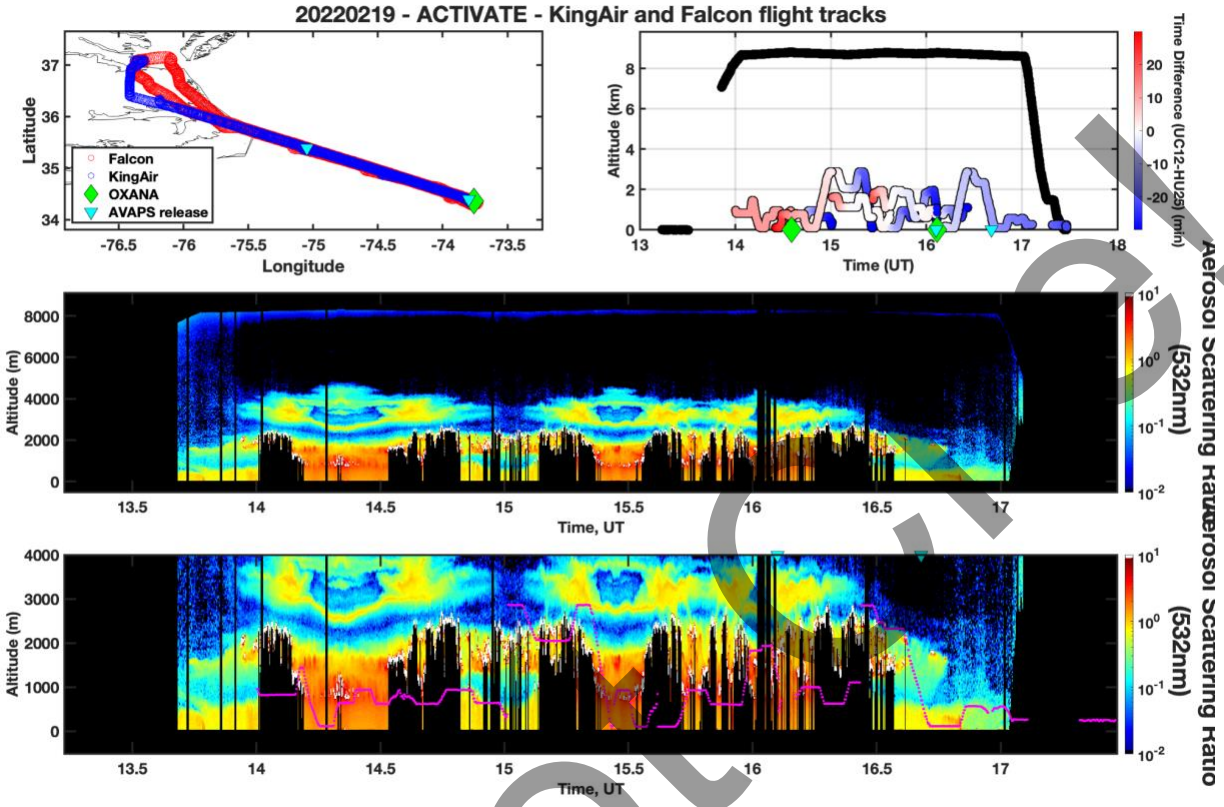
1) On last turn at OXANA

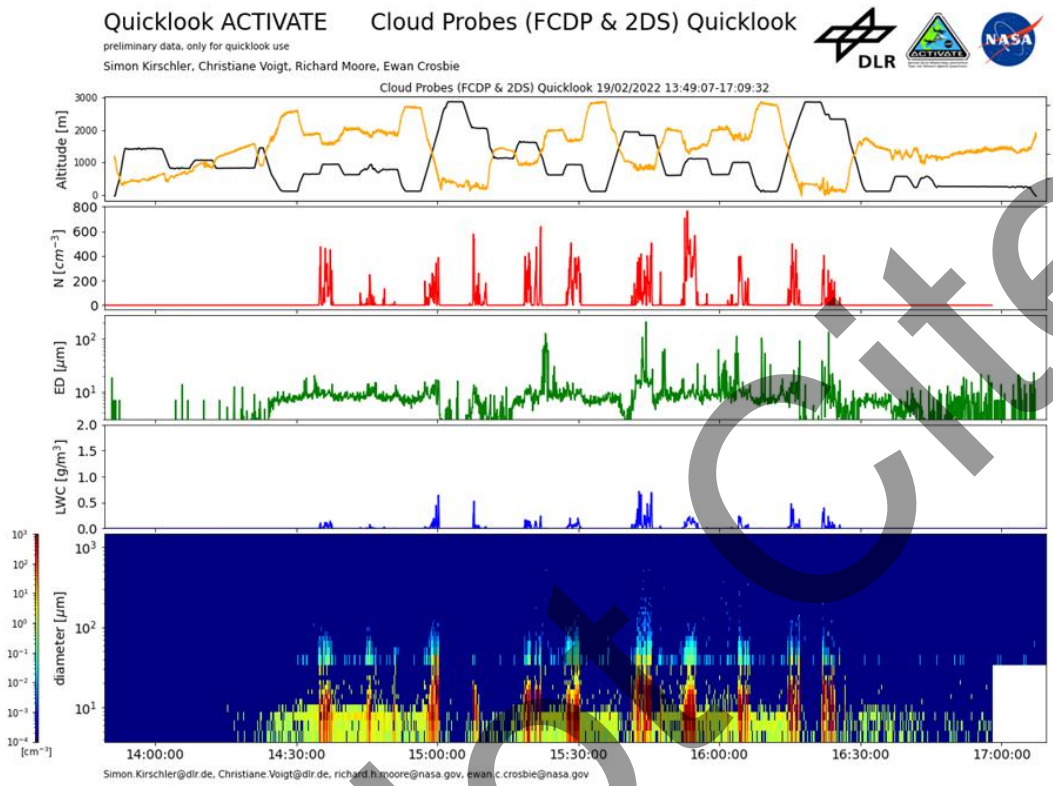
2) At TOMMZ near coast

Falcon

Pilot report (Slover):
ACTIVATE statistical survey within AR-8 W-110 corridor. Chose to delay in W-110 due to front just on other side of OXANA. Cloud altitudes were varying from 2000' to 9000' MSL. Slight takeoff delay while troubleshooting two aircraft systems.

Flight scientist report (Crosbie):
Stat survey OXANA. The survey was performed in the inshore region from OXANA because of airspace restrictions and a front that was outside OXANA causing unfavorable cloud conditions. The standard module was used but the path of flight involved repeated sampling over the same line from near the OBX to OXANA. There was an area of enhanced cloudiness about half way along the line that may have been associated with a convergence and/or associated with SST contrast. Outbound of this region, the clouds were small Cu. In the enhanced region, there was evidence of a double layer structure with some coupling between layers.

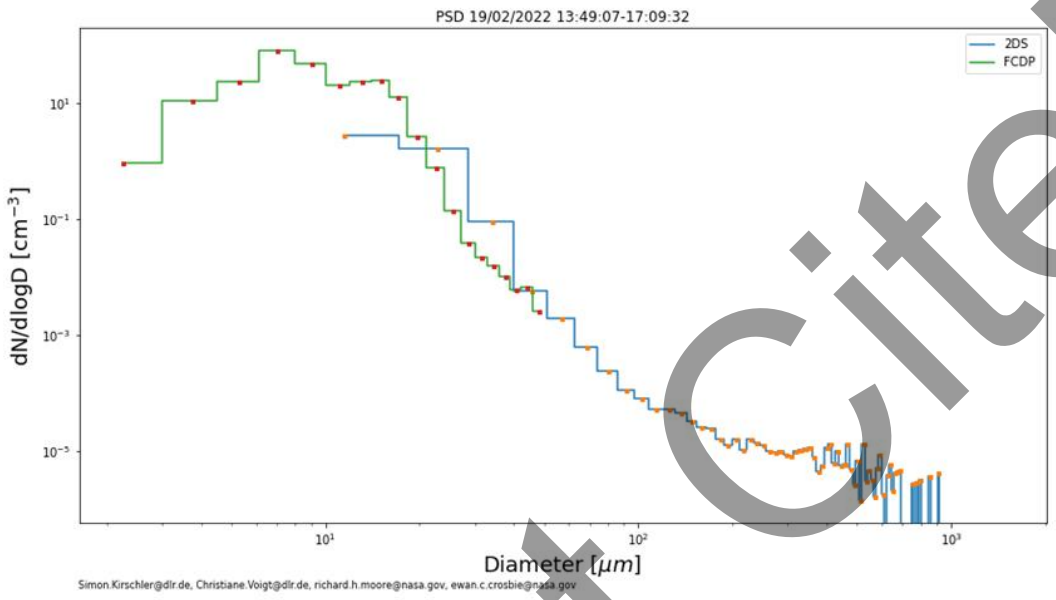

20220219 - ACTIVATE - KingAir and Falcon flight tracks
Latitude
Longitude
Falcon
KingAir
OXANA
AVAPS release
Altitude (km)
Time (UT)
Time Difference (UC12-HU25) (min)
Altitude (m)
Time, UT
Aerosol Scattering Ratio (532nm)
Aerosol Scattering Ratio (532nm)


Quicklook ACTIVATE
Cloud Probes (FCDP & 2DS) Quicklook
preliminary data, only for quicklook use
Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie
DLR
Cloud Probes (FCDP & 2DS) Quicklook 19/02/2022 13:49:07-17:09:32
Altitude [m]
Static Temperatur [°C]
N [cm⁻³]
ED [µm]
LWC [g/m³]
diameter [µm]
[cm⁻³]
14:00:00
14:30:00
15:00:00
15:30:00
16:00:00
16:30:00
17:00:00
Simon.Kirschler@dlr.de, Christiane.Voigt@dlr.de, richard.h.moore@nasa.gov, ewan.c.crosbie@nasa.gov

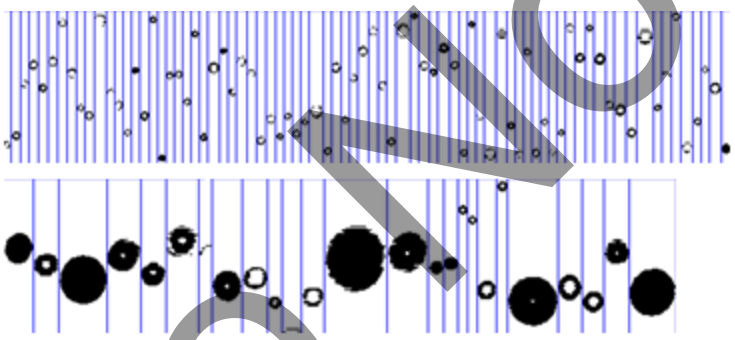
PSD ACTIVATE

preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



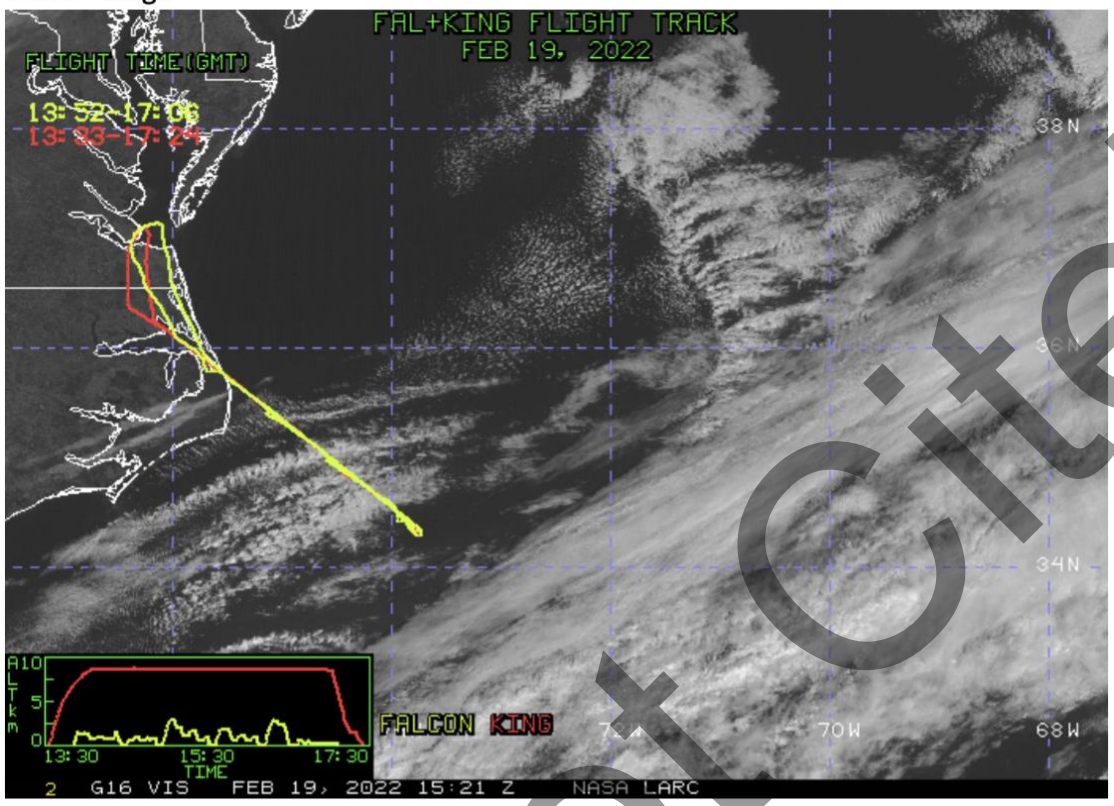
Simon.Kirschler@dlr.de, Christiane.Voigt@dlr.de, richard.h.moore@nasa.gov, ewan.c.crosbie@nasa.gov



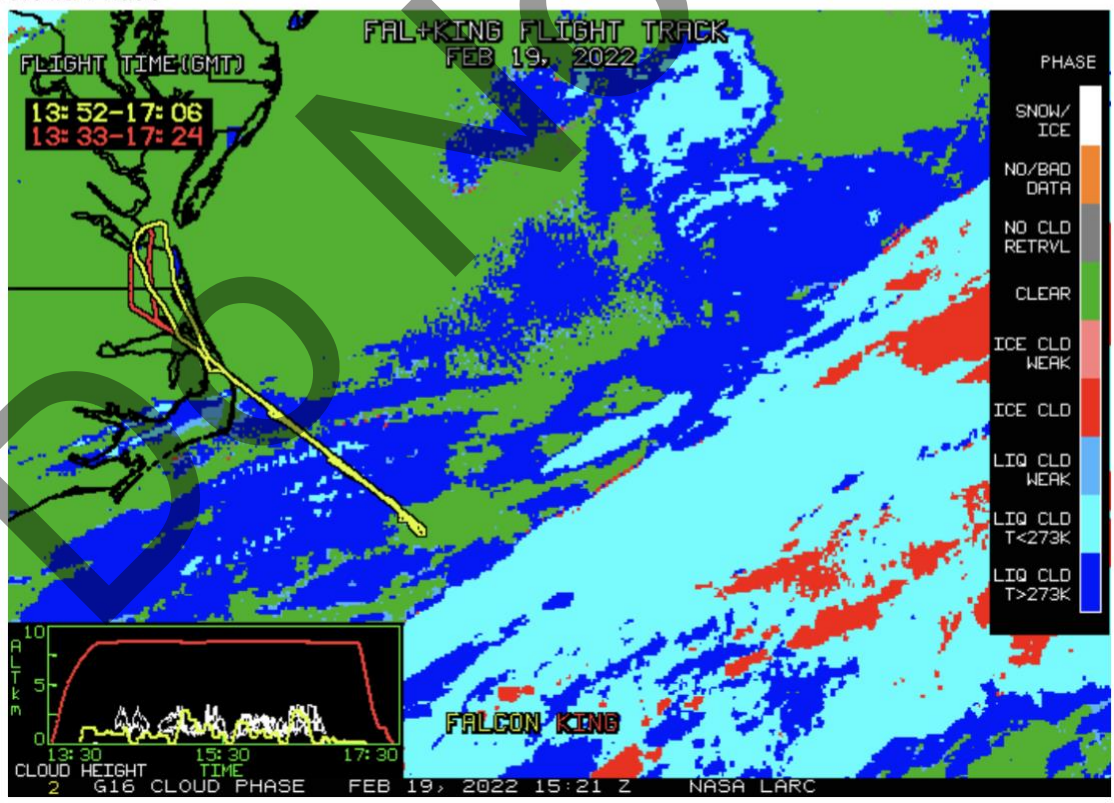
Only pure liquid clouds with Precip.

NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 124, 15:21 UTC Feb 19, 2022

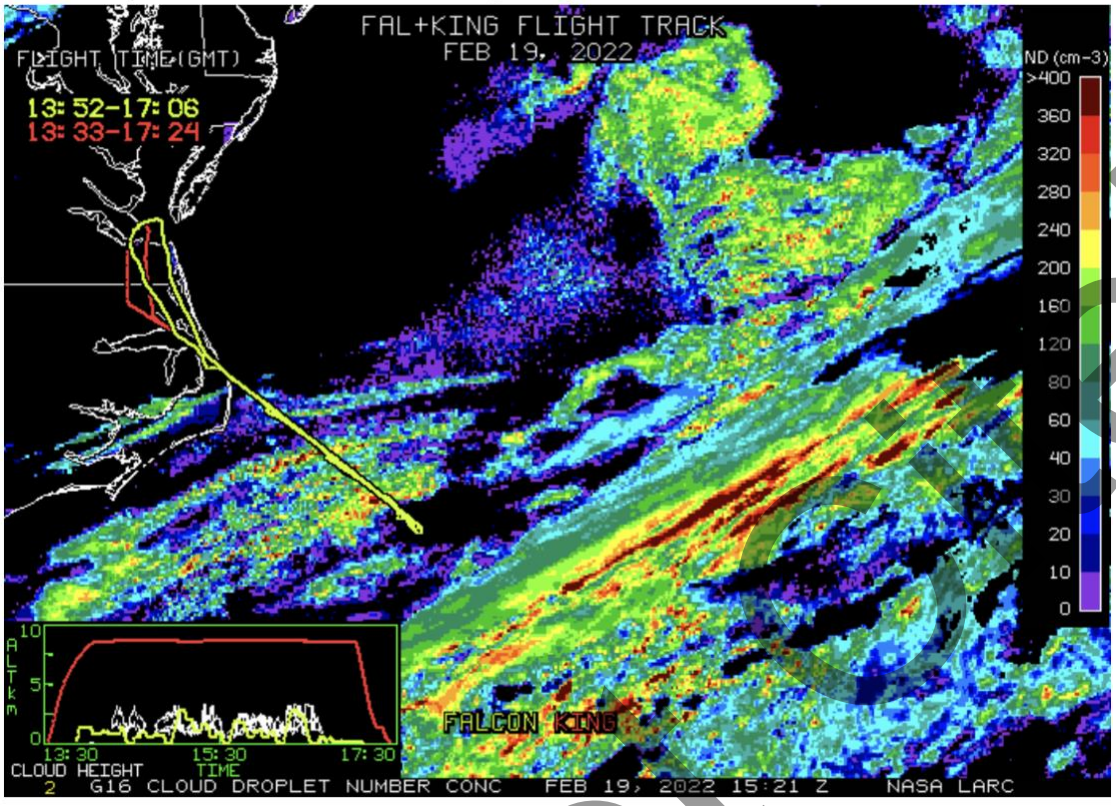
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)