Flight Scientist Report
Tuesday 5/18/2021 ACTIVATE RF66

Flight Type: Statistical Survey Flight
Flight Route: KECG OXANA 32/-74 OXANA KECG
Special Notes:

King Air
Pilot report (Wusk):
Take-off 1529 Z

Landing 1905Z

3.6 hours

2-ship cooperative flight with the HU-25; routing KLFI ECG OXANA 3200N 07400W OXANA ECG KLFI, FL280. 4x dropsondes deployed, at OXANA, turn point, half way back to OXANA, just off coast line. Commenced descent out of FL280 over ECG on return to field, Winds at altitude ~ 60 kts from the northwest; maintained reasonable proximity with HU-25. UC12 took off just after the HU25 and was ahead until headed back from OXANA to ECG. Clear visibility at altitude. Some wispy cirrus above out near turn point. Crew was Jamison, Wusk, Shingler. Aircraft performed nominally with no issues and expected ready for next flight.

Flight scientist report (Shingler): Cloud scene was fairly static between the coast and OXANA with a cloud layer between 2-4kft with a few more shallow cu puffs developed on the southern side of OXANA and intermittent cells between 1-6 kft. Scattered shallow cu between OXANA and the end point. Light cirrus was seen directly above flight altitude near the Outer Banks. 4 sondes were dropped on this flight (OXANA, end point, mid point between end and OXANA, near coast).

Falcon
Pilot report (Delaney):
Takeoff: 1127 / Land: 1455 EDT

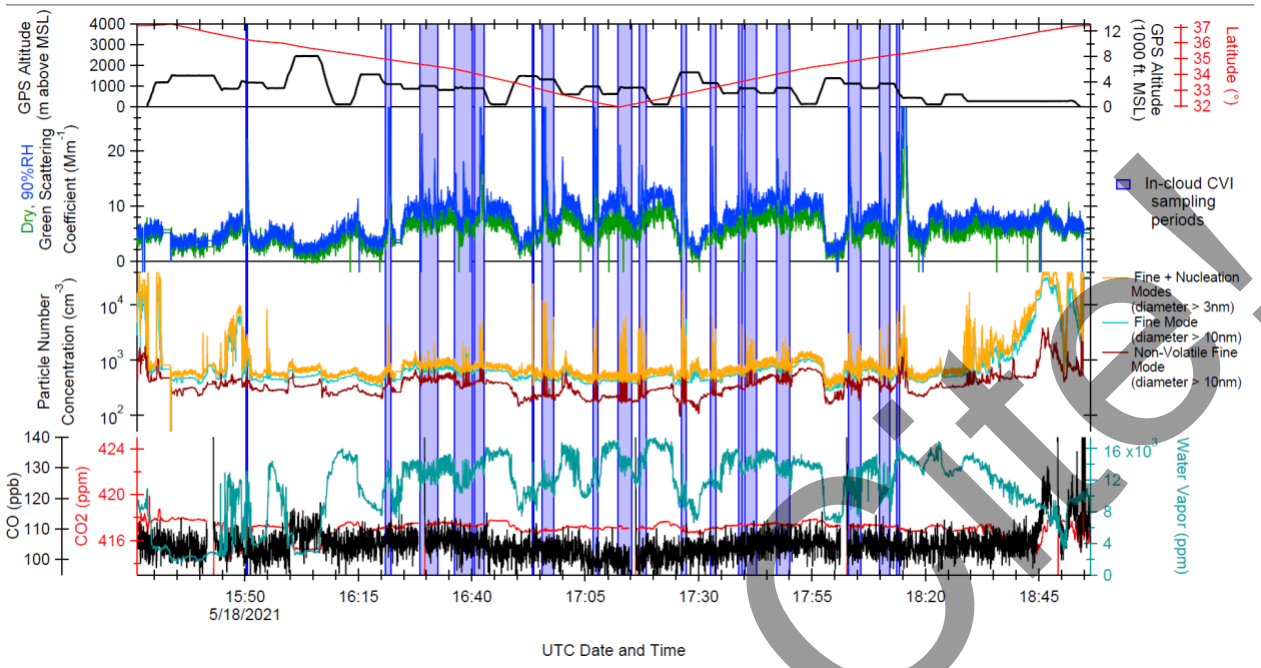
Science flight for the HU-25 in support of ACTIVATE Campaign #4, conducted cooperatively with the UC-12. Departed Rwy08 to OXANA climbing to 3k ft MSL for initial transit down the coastline to ECG. Research profiles conducted from ECG-OXANA-32N/074W-OXANA-ECG-KLFI. Winds were predominantly from the E at ~10kts. Offshore layer consisted of few clouds at ~3000 ft MSL initially, but became more scattered with buildups extending to ~6000 ft MSL in

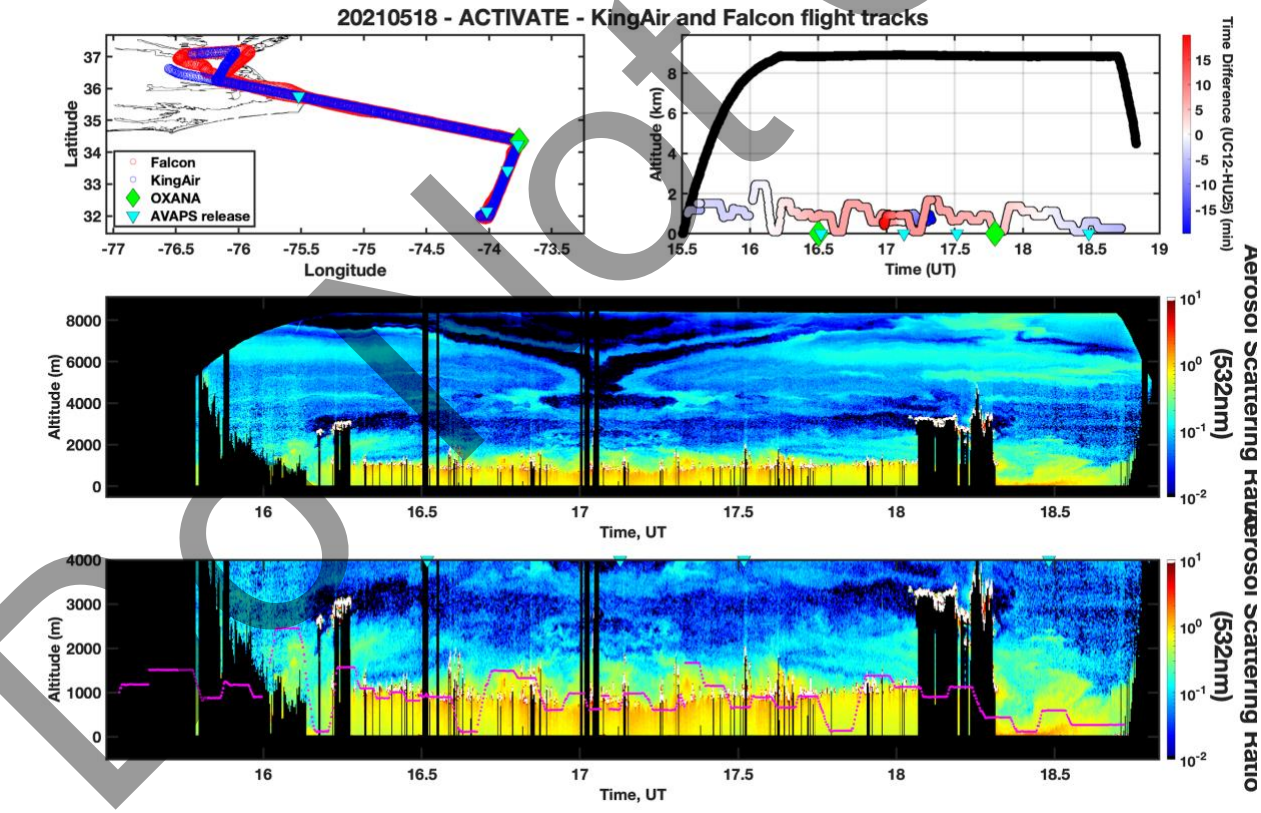
the vicinity of OXANA. Some light shower activity was encounter midway between OXANA and ECG during the return leg. Mostly cloud-based modules completed throughout the flight as conditions warranted, ranging from 500 – 5500 FT MSL. Some clear air data collection during RTB at ~50 nmi offshore. Aircraft geolocation was within ~30 nmi throughout the flight. All objectives were achieved with some aircraft discrepancies noted during system startup and transition from research external power to aircraft inverter-generators. The event was investigated on-deck and cleared/corrected for flight operations. Will monitor for future occurrences.

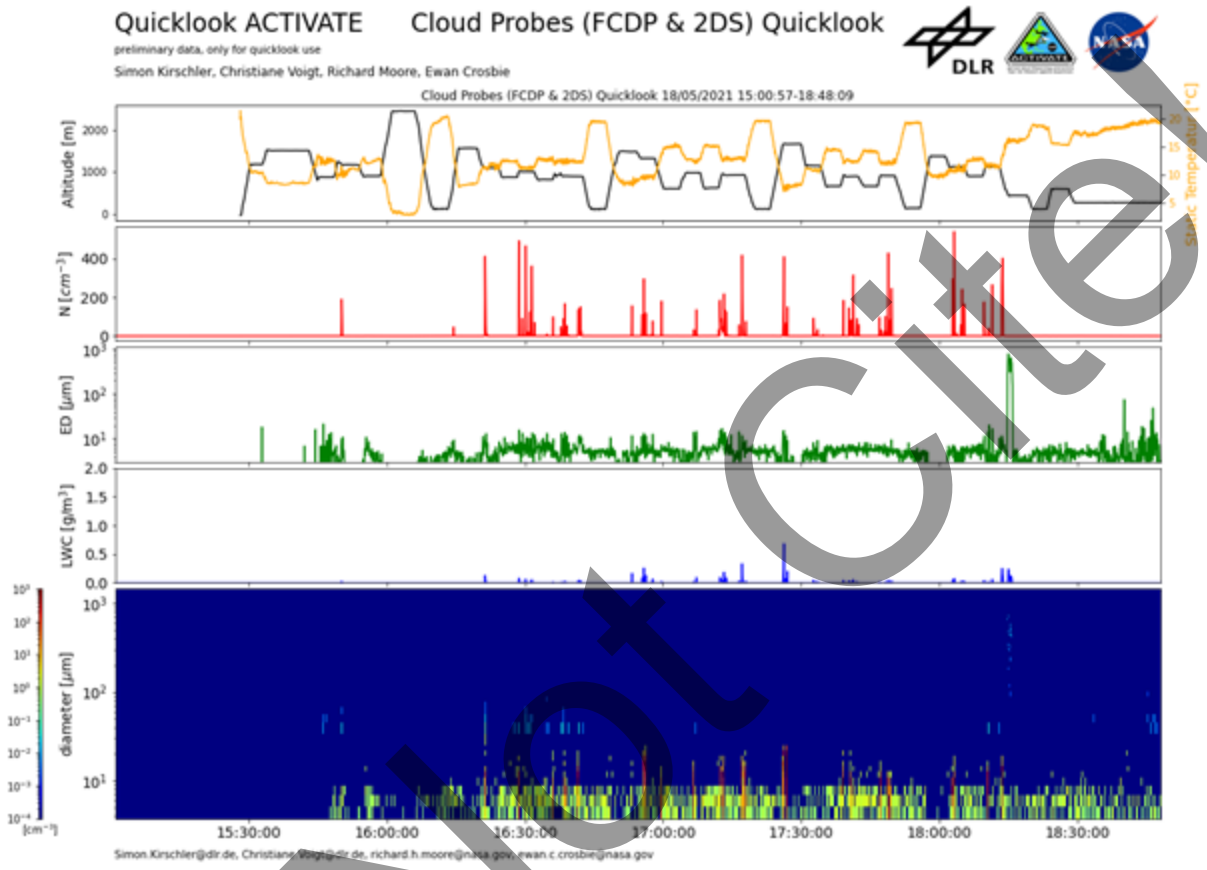
Pilots: Slover/Delaney

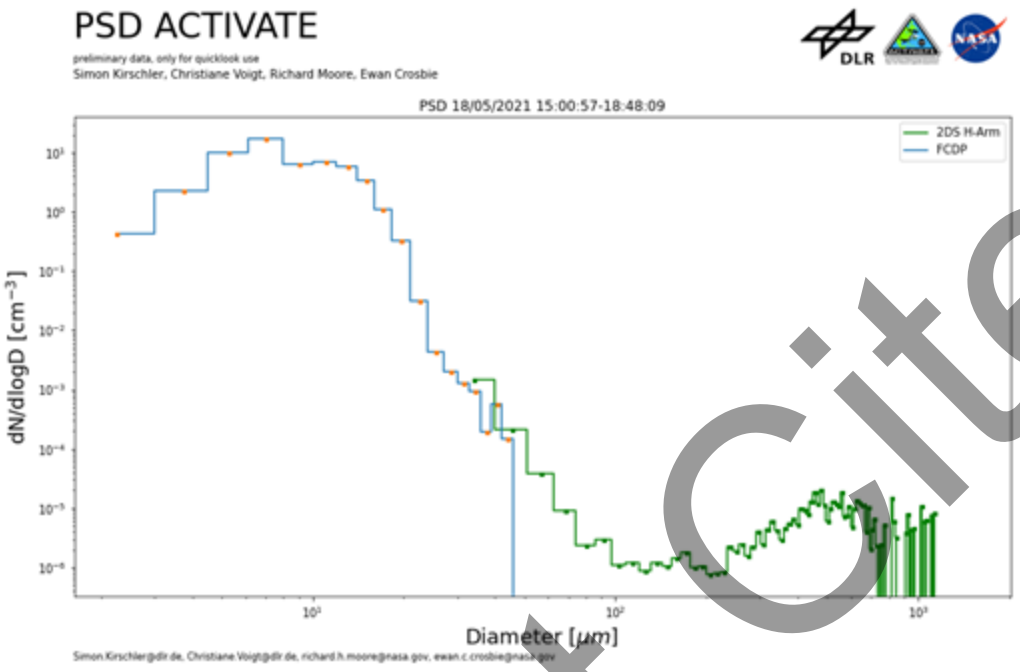
QNCs: Crosbie/Winstead

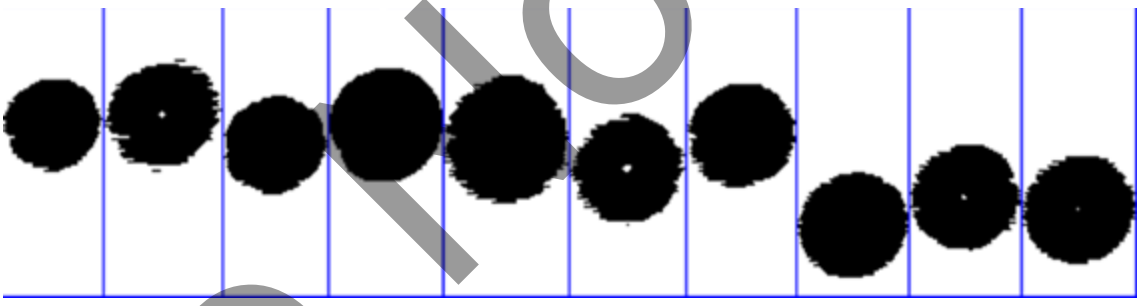
Flight scientist report (Crosbie):Conditions were quite similar to RF65 except that there was less convection on the outbound, a few showers on the inbound around the Gulf Stream. Good cloud conditions in general some of the clouds were starting to develop a bit more vertically and there were some clear regions starting to form around deeper clusters of cloud but we estimated no tops to be extending much past 8000ft. Similar to RF65 there seemed to be enhanced aerosol further offshore compared to the coastal (over water) region (3 cloudy, 1 part cloudy)


GPS Altitude (m above MSL)
Dry, 90%RH Green Scattering Coefficient (Mm-1)
Particle Number Concentration (cm-3)
CO (ppb)
CO2 (ppm)
GPS Altitude (1000 ft. MSL)
Latitude (°)
Water Vapor (ppm)
In-cloud CVI sampling periods
Fine + Nucleation Modes (diameter > 3nm)
Fine Mode (diameter > 10nm)
Non-Volatile Fine Mode (diameter > 10nm)
15:50
5/18/2021
16:15
16:40
17:05
17:30
17:55
18:20
18:45
UTC Date and Time


20210518 - 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
DLR
Cloud Probes (FCDP & 2DS) Quicklook 18/05/2021 15:00:57-18:48:09
Altitude [m]
Static Temperature [°C]
N [cm⁻³]
ED [µm]
LWC [g/m³]
diameter [µm]
[cm⁻³]
15:30:00
16:00:00
16:30:00
17:00:00
17:30:00
18:00:00
18:30:00
Simon.Kirschler@dlr.de, Christiane.Voigt@dlr.de, richard.h.moore@nasa.gov, ewan.c.crosbie@nasa.gov

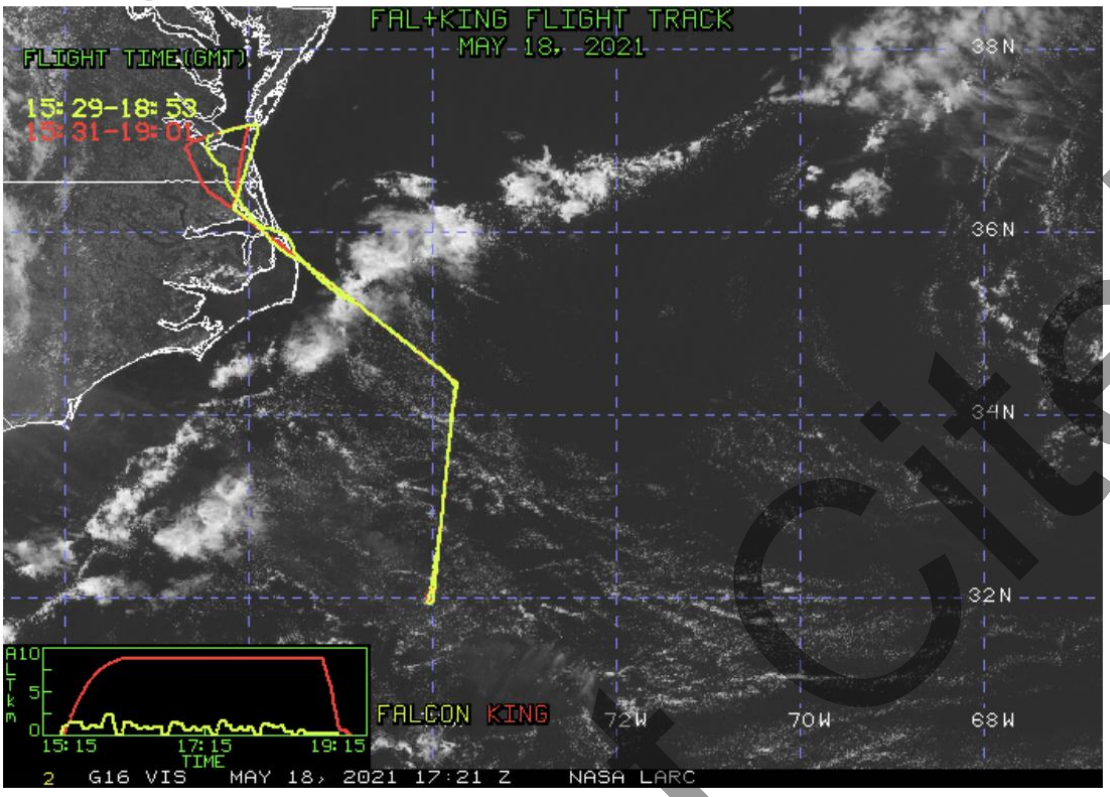




Precip at 18:15.

NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 66, 17:21 UTC May 18, 2021

Visible Image



IR Image