Flight Scientist Report
Wednesday 02/16/2022 ACTIVATE RF123

Flight Type: Statistical Survey Flight
Flight Route: LFI ATLIC ZIBUT KINER ZIBUT ATLIC LFI
Special Notes: Second of 2 flights today.

King Air

Pilot report (Coldsnow):Flight flown as briefed (LFI ATLIC ZIBUT KINER ZIBUT ATLIC LFI) at FL280. Timing was within 5 minutes of the FALCON all day. Laser shutter switch was turned off once during flight for traffic on the way back to LFI between points ZIBUT and ATLIC. Three dropsonds were released (ZIBUT, KINNER, ATLIC). All were nominal. No issues with cirrus clouds. Winds were generally out of the west/southwest at 20-50 knots.

Flight scientist report (Seaman):

Takeoff time: 18:24:32 UTC

Landing time: 22:03:02 UTC

All instruments operated nominally.

Dropped 3 sondes on track:

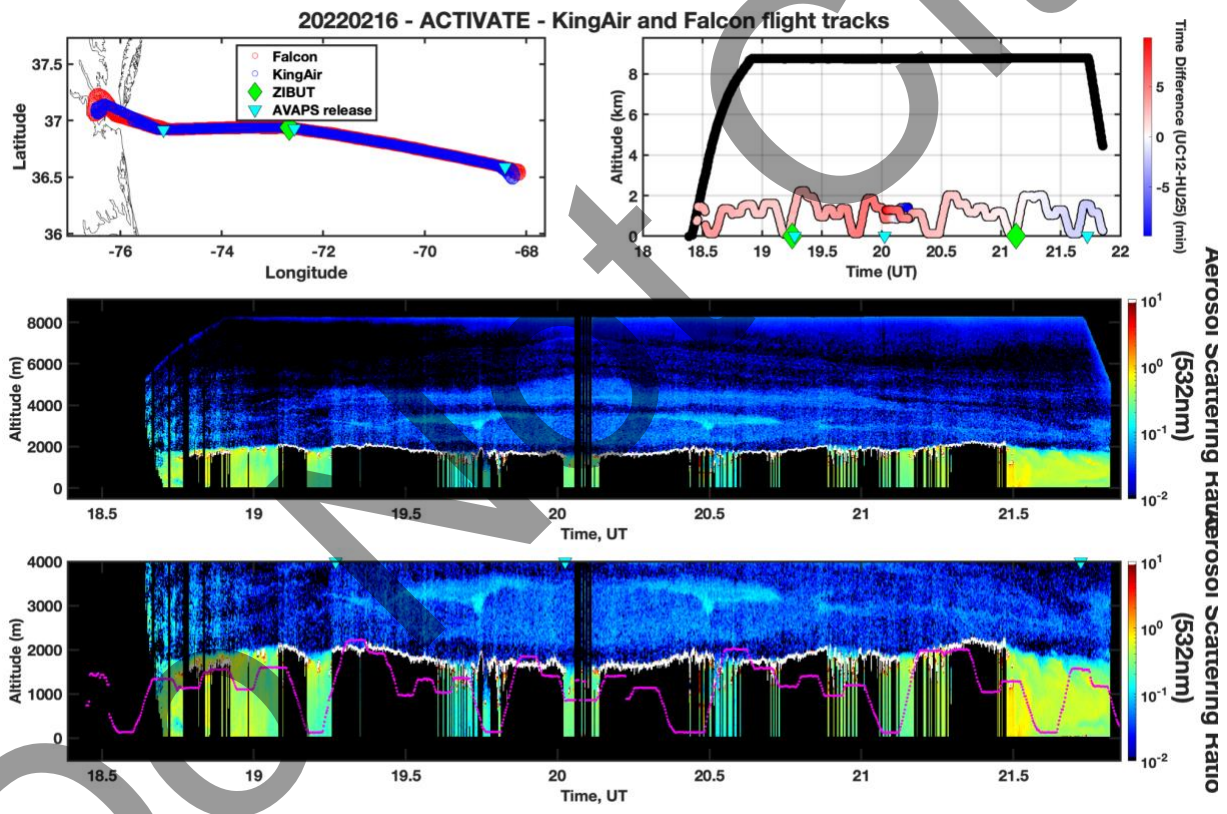
1. OXANA
2. TURN
3. Coast

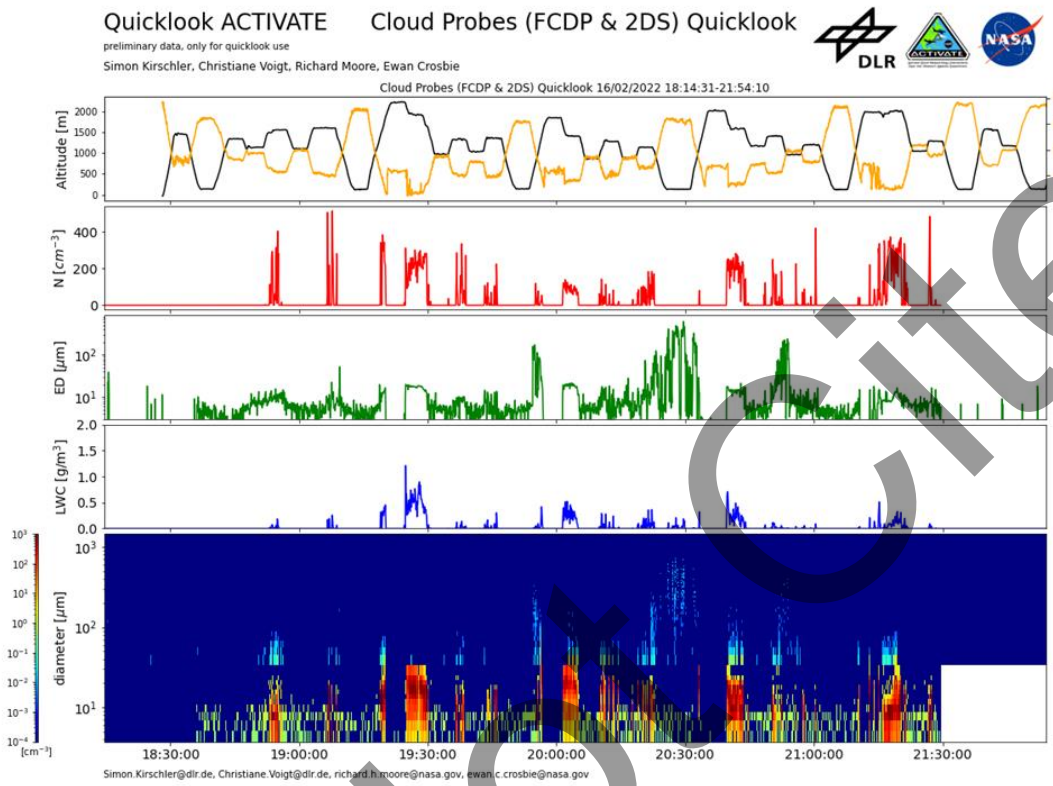
Falcon

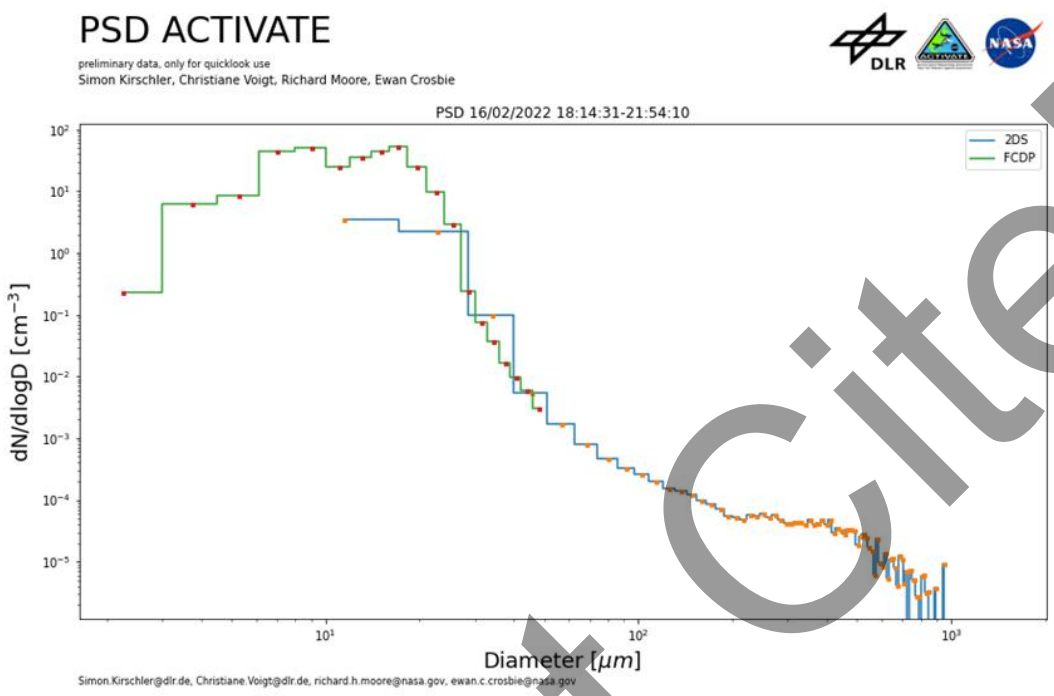
Pilot report (Baxley):
Pilots: Thorson/Baxley; QNCs: Crosbie/Winstead KLFI-ATLIC-ZIBUT-KINER-ZIBUT-ATLIC-KFLI
Mission flown as briefed, weather as expected (clear within ~100nm of KLFI, clouds farther east). No anomalies, flight was nominal.

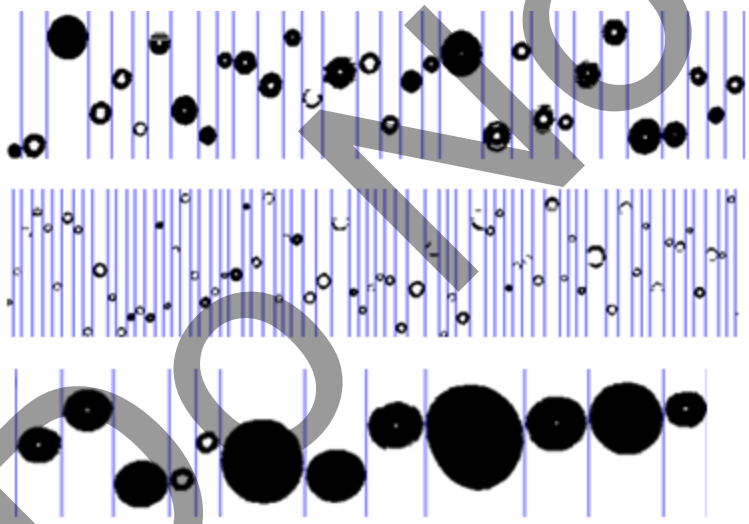
Flight scientist report (Crosbie):

Stat survey ZIBUT-KINER. Cloudy conditions began shortly after ATLIC with enough time to conduct partial clear module before. The boundary layer structure near the coast was complex with little to no vertical mixing but moisture profile that indicated marine air was previously lofted and then had become disconnected from the surface. Once in the cloud conditions, the same indication of complex but disorganized structure remained with cloud debris near the top of the boundary layer. A marked inversion was present above. Further east, the clouds became thicker with cumulus atop a dry convective mixed layer and at the tops of the cumulus, a widespread overcast formed. In places this overcast thickened and encompassed much of the cloud layer and in other places it thinned occupying only ~100m near the inversion while in other regions, only small Cu were present with no overlying detrained stratiform. This pattern seemed to be organized in zones along the track such that we traversed several regions of more extensive cloud and several holes. There was some evidence of warm drizzle in the thicker clouds. A gradient in Nd was observed decreasing to the east.




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 16/02/2022 18:14:31-21:54:10
Altitude [m]
Static Temperatur [°C]
N [cm⁻³]
ED [µm]
LWC [g/m³]
diameter [µm]
[cm⁻³]
18:30:00
19:00:00
19:30:00
20:00:00
20:30:00
21:00:00
21:30:00
Simon.Kirschler@dlr.de, Christiane.Voigt@dlr.de, richard.h.moore@nasa.gov, ewan.c.crosbie@nasa.gov

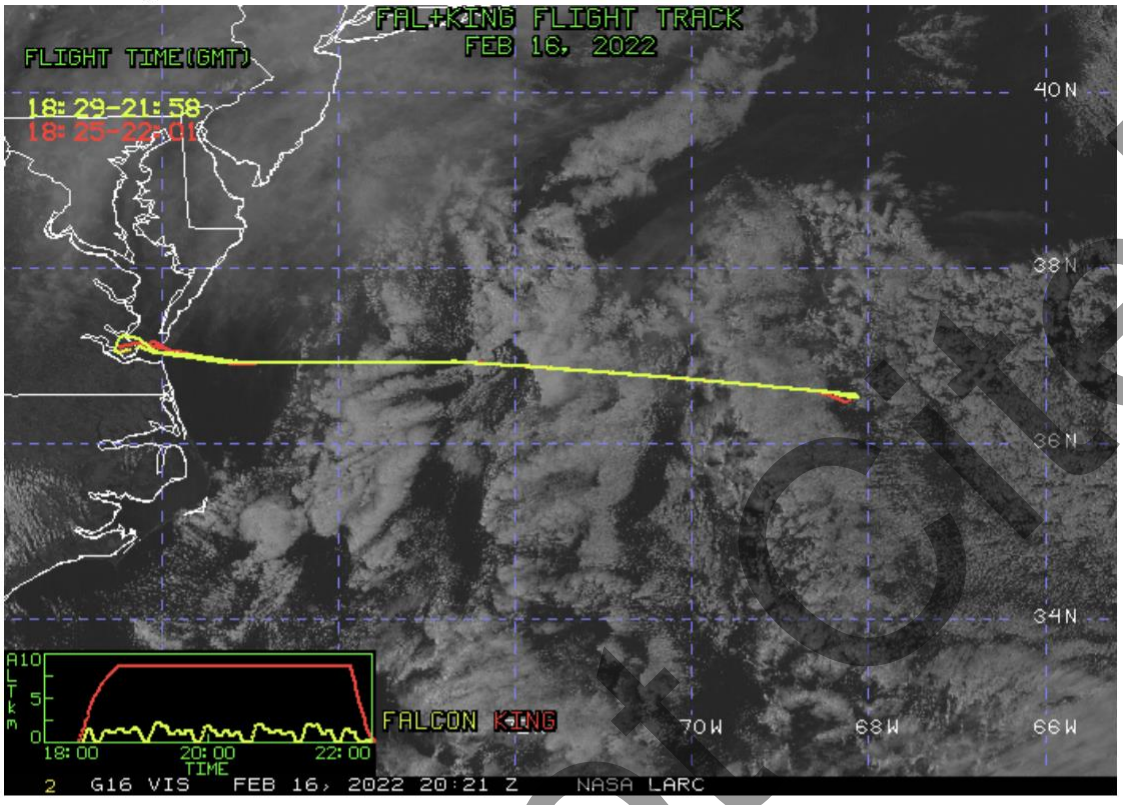




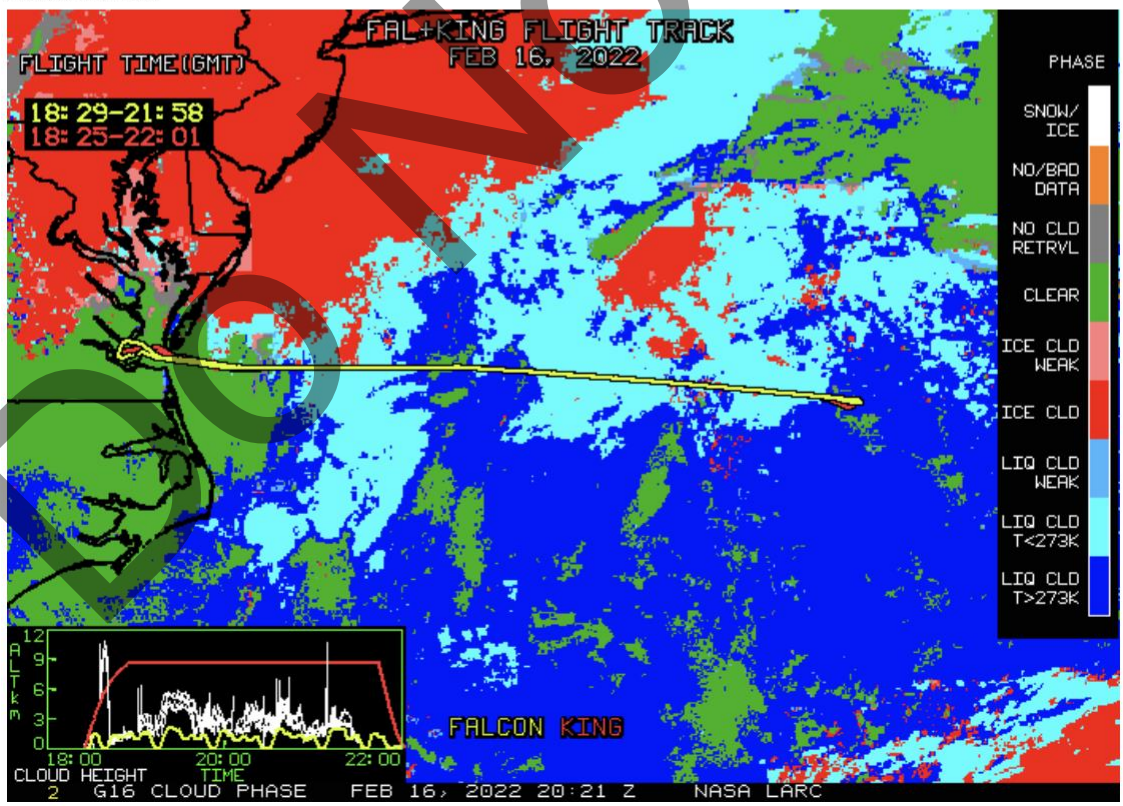
Only pure liquid clouds with Precip.

NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 123, 20:21 UTC Feb 16, 2022

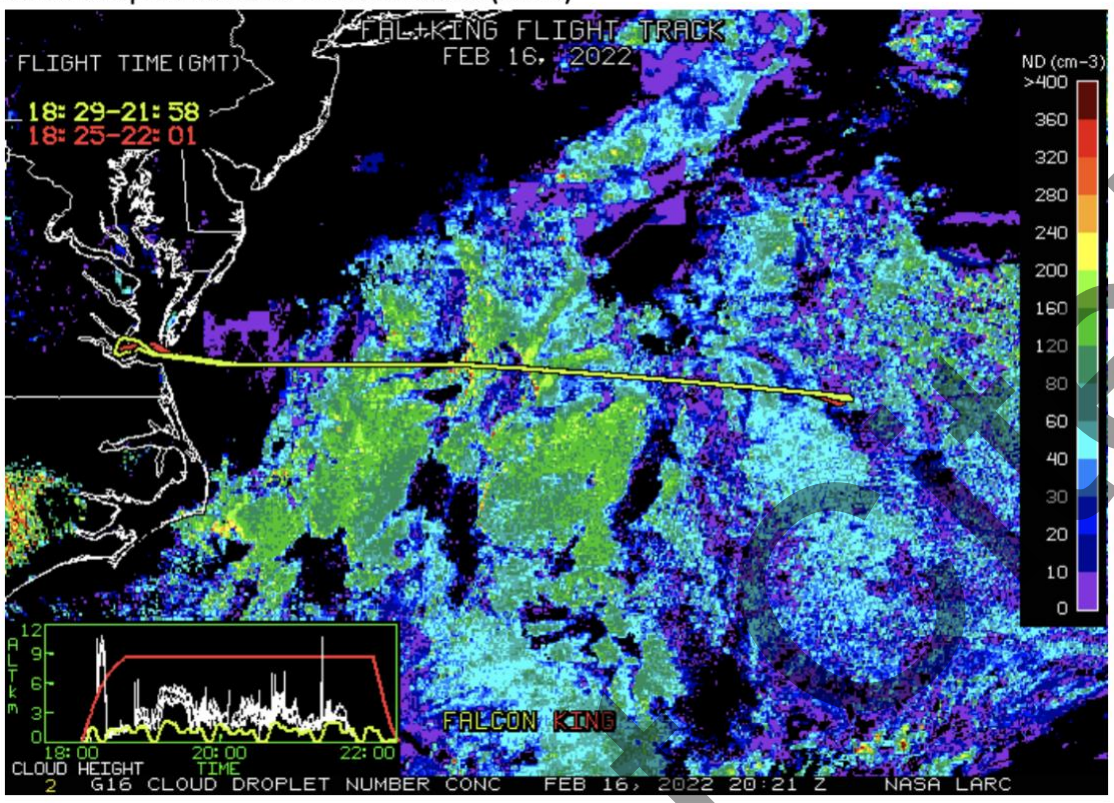
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)