

Flight Scientist Report  
Saturday 5/15/2021 ACTIVATE RF65

Flight Type: Statistical Survey Flight

Flight Route: KECG OXANA 32/-73 OXANA KECG

Special Notes: Some convection around OXANA today. We are trying to maximize low clouds on the end location of the flight after turning at OXANA. This was an evolving situation today and we decided to go more to the south rather than more southeast towards LSIER.

### King Air

Pilot report (Sandeem): Activate dual aircraft research flight, route LFI ECG OXANA N32W73 OXANA ECG LFI. Crew: Jamison/Sandeem QNC Shingler No issues with aircraft, 4 sondes dropped. Some convective activity but generally smooth air at research altitude of FL280. HU-25 and UC-12 remained within 20 min. Aircraft ready for next sortie.

3.5 hours.

Flight scientist report (Shingler): Dynamic cloud scene between coast and OXANA on the way out with cloud tops of cells ranging between 1.5-14k ft. Mostly tops were between 8-10kft. Weakly scattering probable smoke layer (depol 9-13) seen near the UC12 flight altitude just south of OXANA. A large convective system to the north of the track was skirted near OXANA on the way out and back. Passed over a juicy cloud with tops near 22kft followed up by small scattered cu between 1.5-6kft near the end of the run. A very thin and weak scattering (~0.2 ASR) residual layer with higher deploy maybe 200 m thick seen fluctuating between 18-24k f. Cloud tops were near 2-4 kft near the turn around point. On the return trip, the large cell that we flew over on the way out had clean air down to the surface on the north side of this cell. 4 sondes were dropped: first one near OXANA on the way out, second at the turn around point, third midway between turnaround and OXANA on the return, and the last one near the coast.

### Falcon

Pilot report (Delaney): Takeoff: 1339 / Land: 1709 EDT

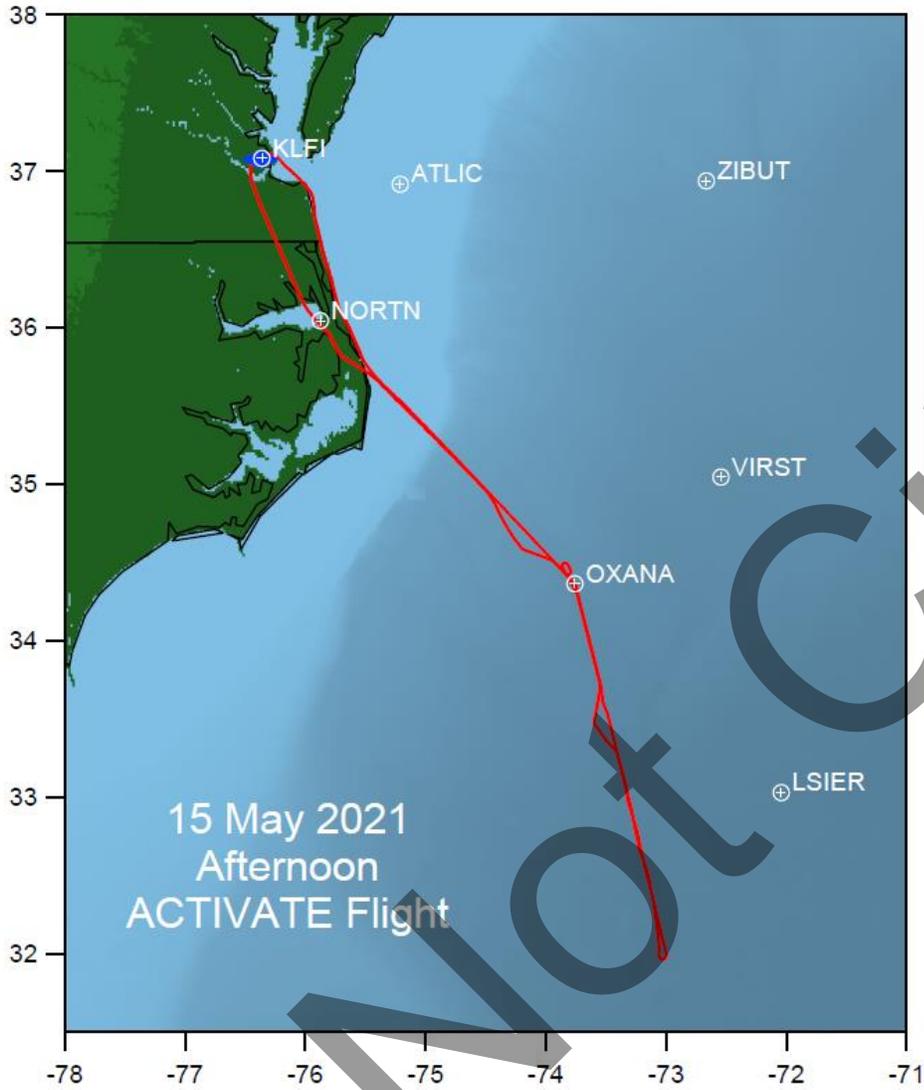
Science flight for the HU-25 in support of ACTIVATE Campaign #4, conducted cooperatively with the UC-12. Departed Rwy08 to OXANA climbing to 3k ft MSL for initial transit down the coastline. Research profiles conducted from HAAYY-OXANA-32N/073W-OXANA-ECG-KLFI. Winds were predominantly from the NE at ~10-20 kts. A complex, offshore layer was initially encountered midway to OXANA from ~1.5 - 8 k FT MSL, followed by convective activity until midway to 32N073W. Mostly cloud-based modules completed throughout the flight as conditions warranted, ranging from 500 – 9500 FT MSL. Some clear air data collection initiated during RTB at ~50 nmi offshore. Aircraft geolocation was within ~20 nmi throughout the flight.

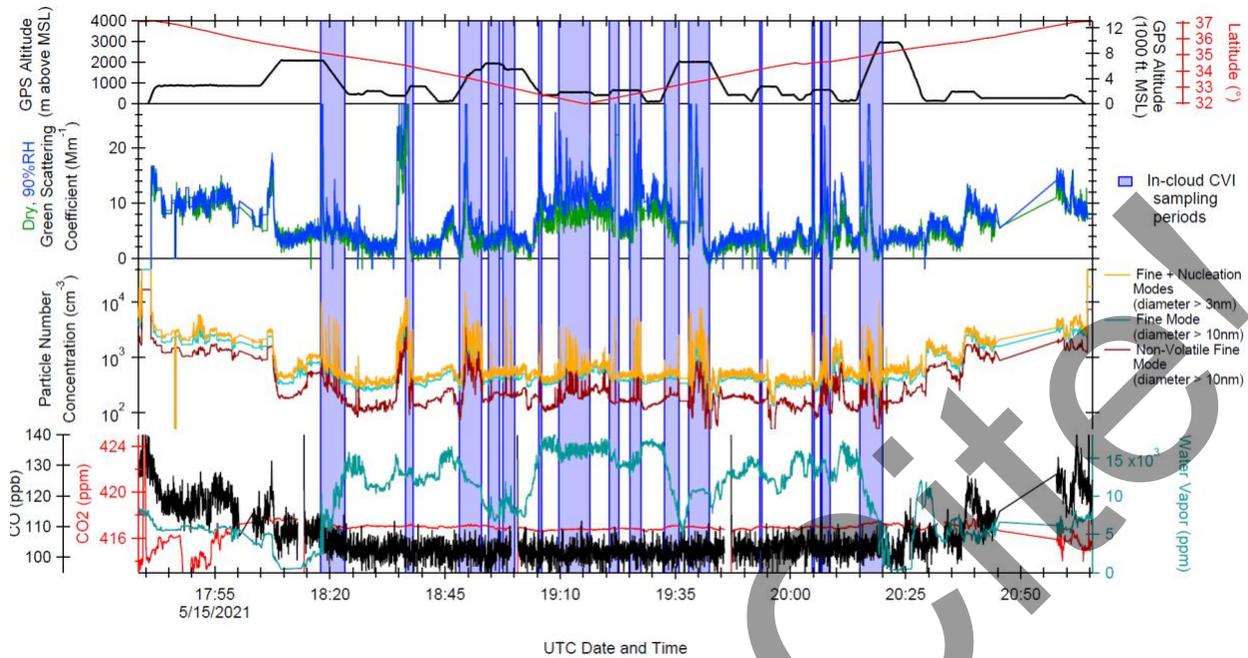
All objectives were achieved and no system discrepancies were noted - pending post-flight data analysis.

Pilots: Baxley/Delaney

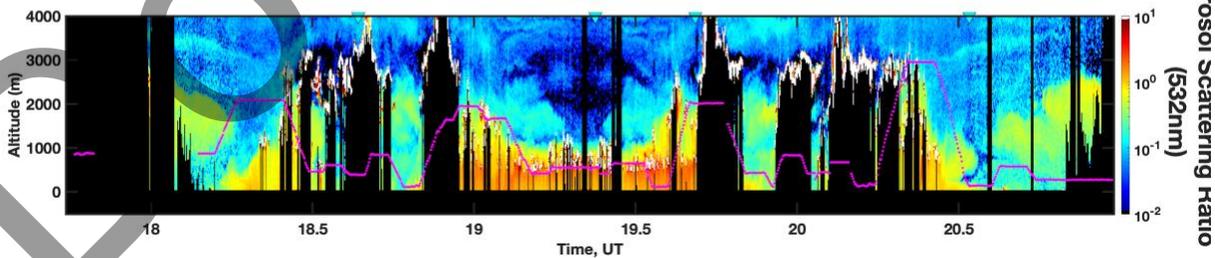
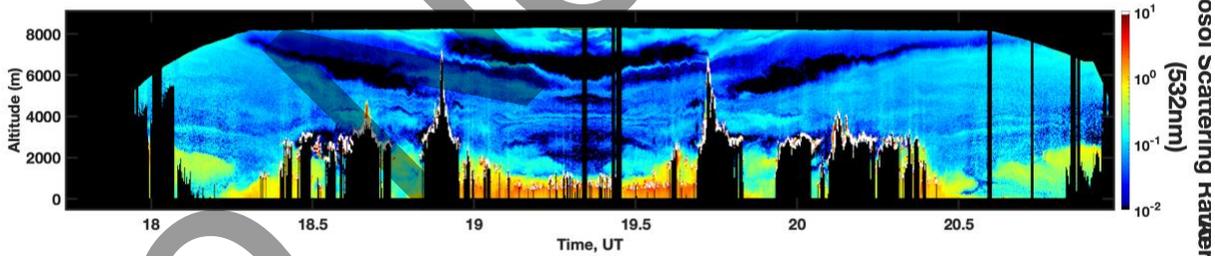
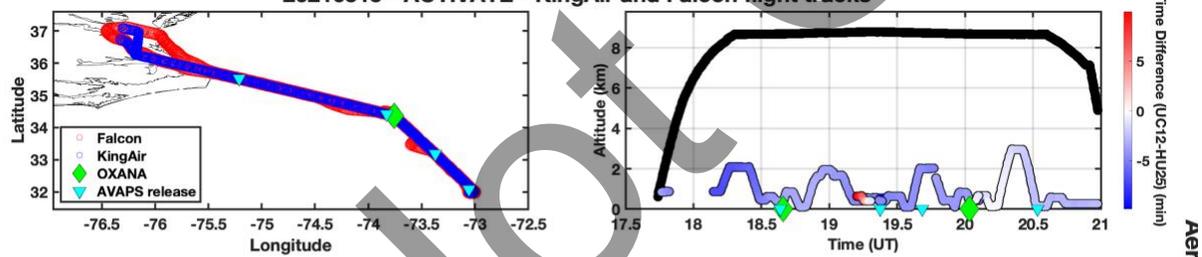
QNCs: Crosbie/Winstead

Flight scientist report (Crosbie): Slight delay in starting the cloudy modules because of ATC restrictions off the OBX. Convection set up off the coast extending above the HU25 operating altitudes. On the other side of the two regions of convection, clouds returned to fair weather cumulus with decreasing tops with distance to the southeast. Some clouds were punching up higher than the Falcon operating levels. Minor enhancement in SO4 in the airmass on the southeast side of the region of convection. (3 cloudy)



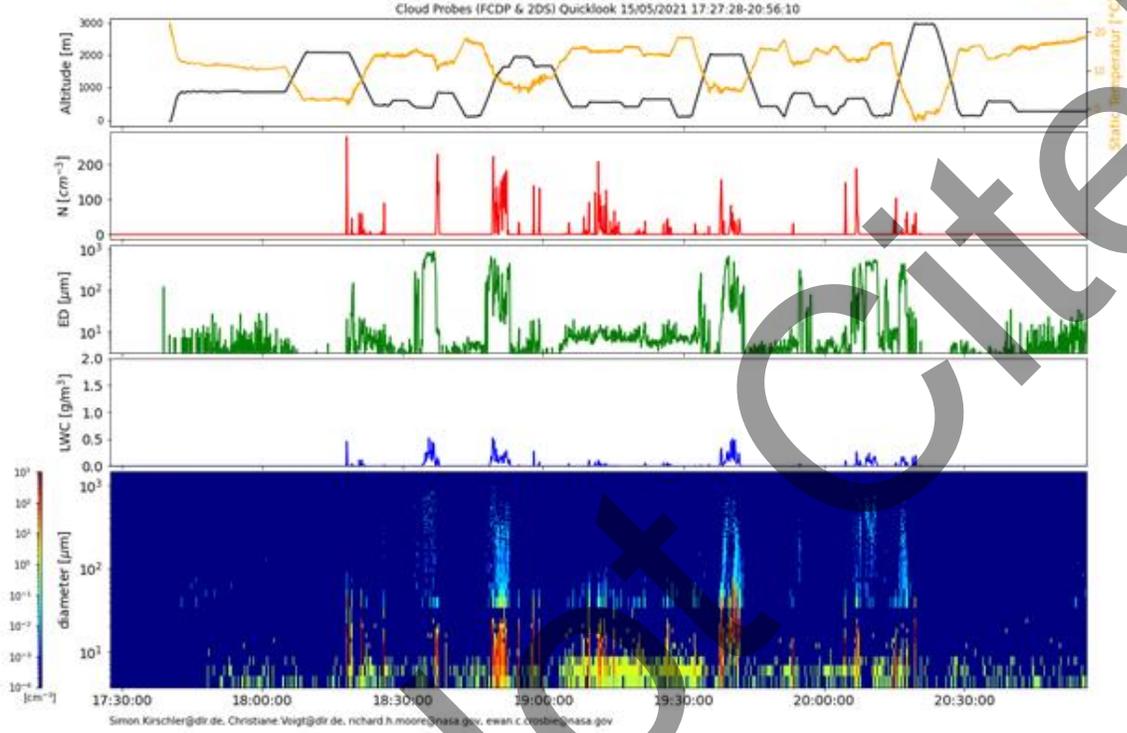


20210515 - ACTIVATE - KingAir and Falcon flight tracks



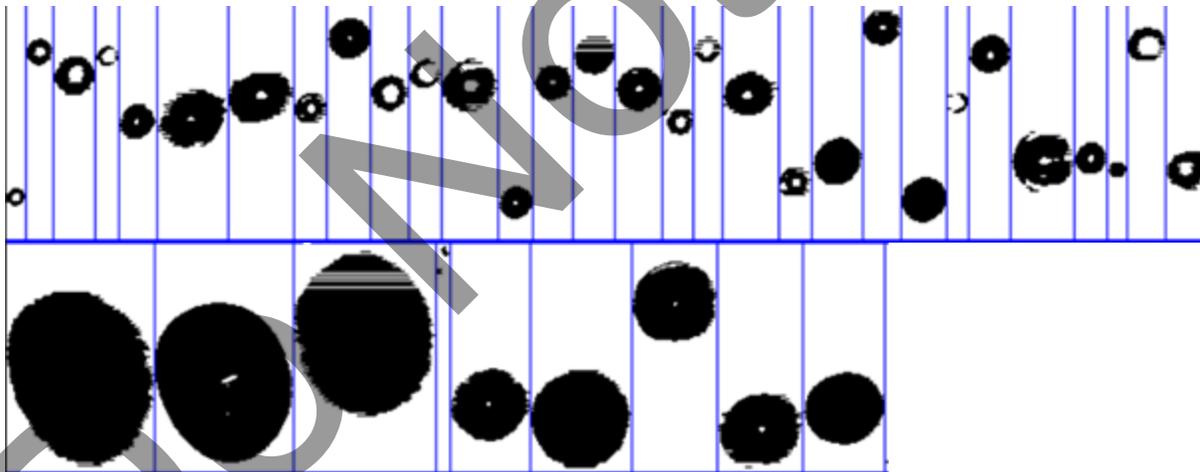
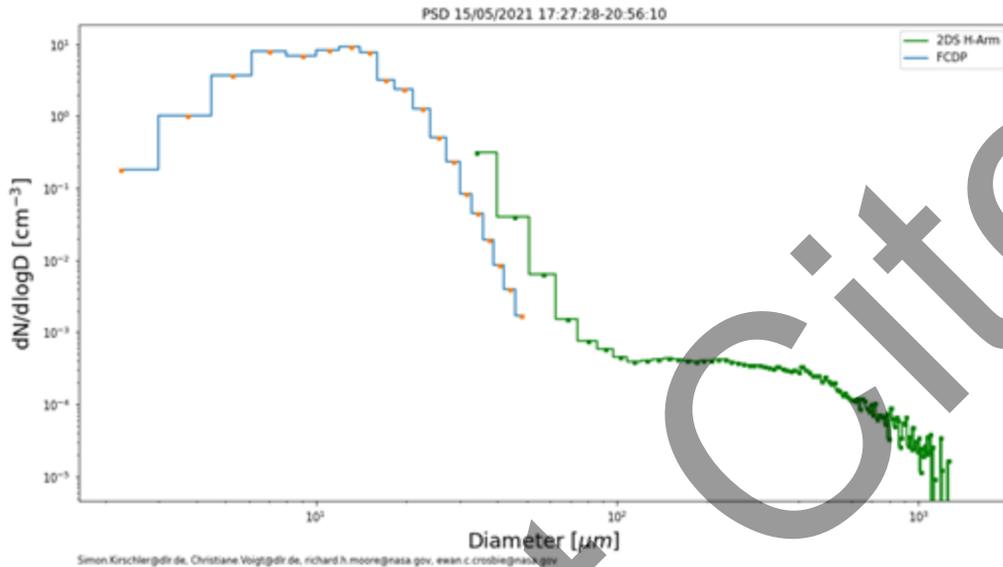
# Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

preliminary data, only for quicklook use  
Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



# PSD ACTIVATE

preliminary data, only for quicklook use  
Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie

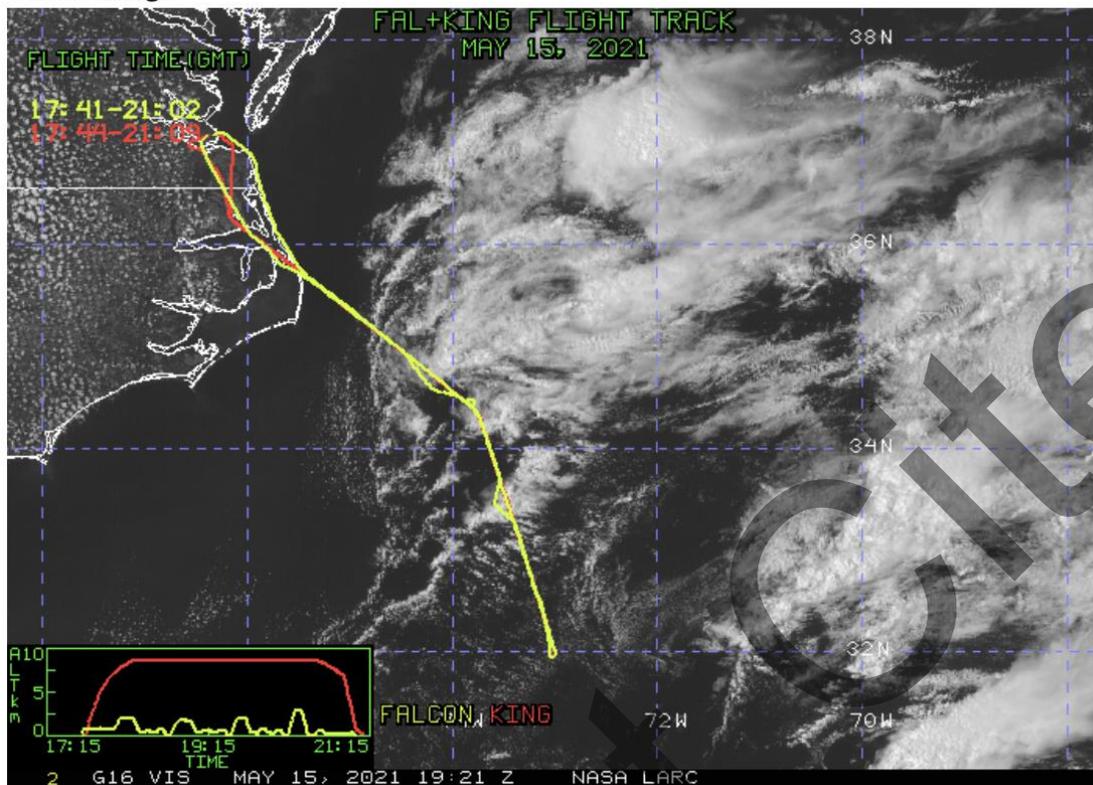


Only pure liquid clouds.

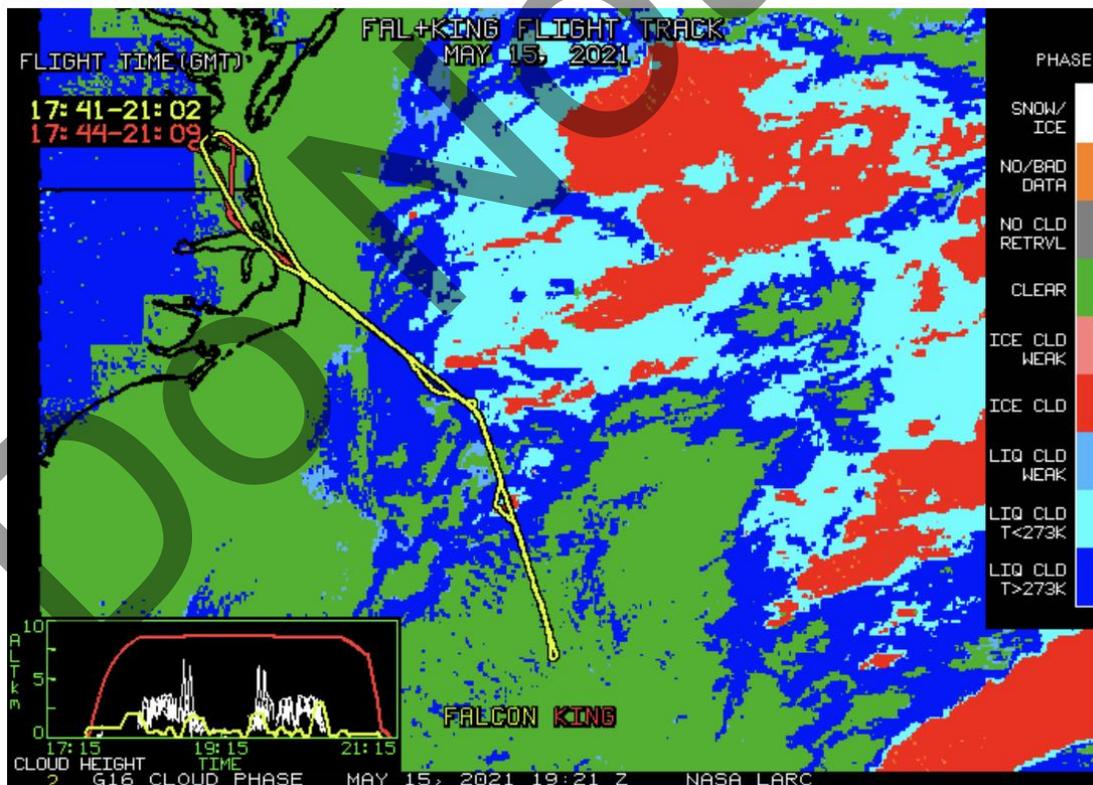
NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 65, 19:21 UTC May 15, 2021

Do Not Cite!

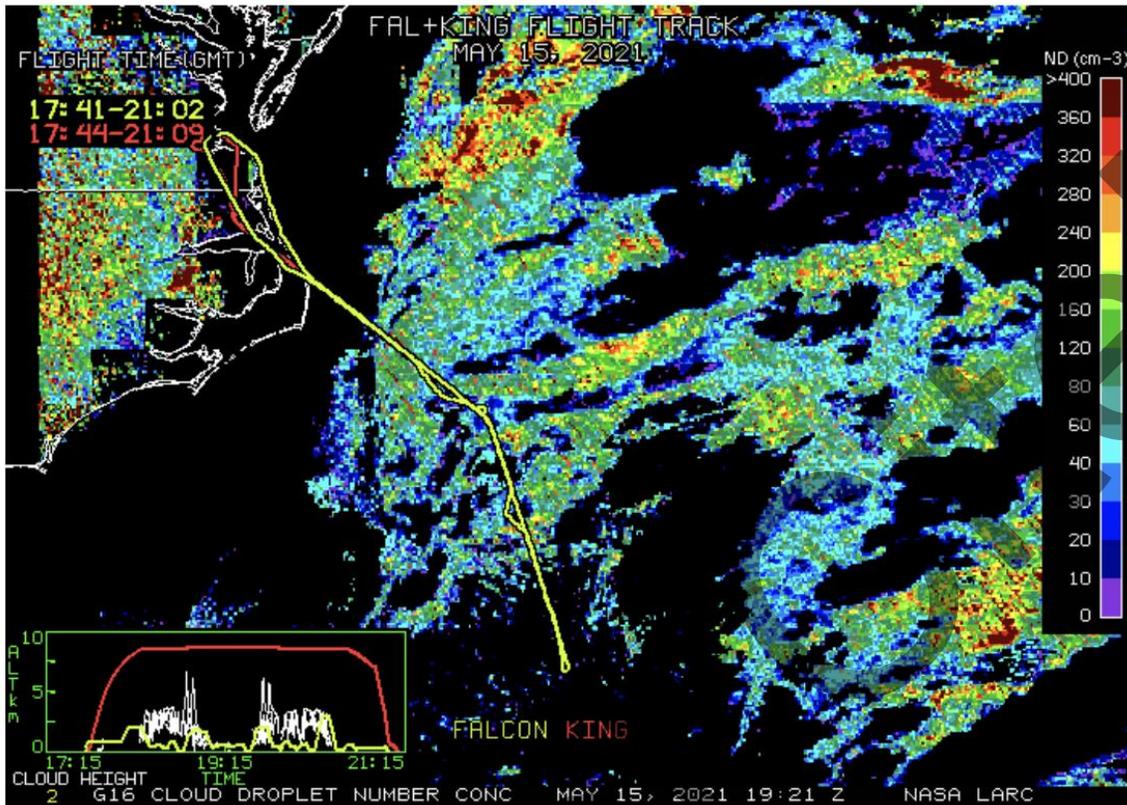
Visible Image



Cloud Phase



### Cloud Droplet Number Concentration (cm-3)



### Cloud-Top Height (Kft-ASL)

