

Flight Scientist Report
Tuesday 02/01/2022 ACTIVATE RF115

Flight Type: Statistical Survey Flight

Flight Route: KLF1-ATLIC-ZIBUT-ISLES-ZIBUT-ATLIC-KLF1

Special Notes: First of what was planned to be two flights on this day; however, a power issue scrubbed the second flight.

King Air

Pilot report (Wusk):

Morning flight of a planned two flight day, cooperative flight with the HU 25. Planned take-off for 0830. LFI temporary tower still struggling with radio communications. B200 taxi out J and HU out H. Eventual Take-off Clearance on UHF for both. Climb out and normal on course with Norfolk. FL280 as planned. Good coincidence with the HU25 for duration. 4 drop sondes as planned (ZIBUT, ISLES, 1/2 leg south, off shore). Normal descent into KLF1. KLF1 temporary closed due to airfield emergency. HU held over KLF1 at 3500' for a turn or two, then cleared in. B200 set up for a RNAV 8, nominal approach to land. Normal ground turn for second flight. HU experienced research power issues that precluded conducted mission. Both aircraft shut down. Mx troubleshoot HU, PM flights scrubbed and tomorrow AM flight scrubbed. Plan for tomorrow PM flight pending successful Mx actions.

Flight scientist report (Shingler):

KLF1 ATLIC ZIBUT ISLES ZIBUT ATLIC KLF1

Shooting for an 0815-0830 takeoff time.

Tower comm issues on takeoff slowed things down a bit. Took off at 0822 though.

On the trip out of the corridor, there was a boundary layer present from about 1kft near the coast up to 2kft with a residual layer up to 4kft. Boundary layer grew into some puffy shallow cu with tops at 4kft. Near ZIBUT, puffy cu at varying altitudes between 2-6kft. Shortly after the turn, cloud deck has become stratified and capped at 6. 5kft, slowly descending down to 5kft halfway up the leg and down to 4kft at ISLES. Scene looks similar on the return trip. Noted pockets of depolarization below the cloud deck in some areas in the corridor. Strong scattering (~3 ASR) near surface inside of ATLIC.

154820-154910 falcon in nadir camera

4 SONDES
ZIBUT
ISLES
1/2 ISLES/ZIBUT
ATLIC

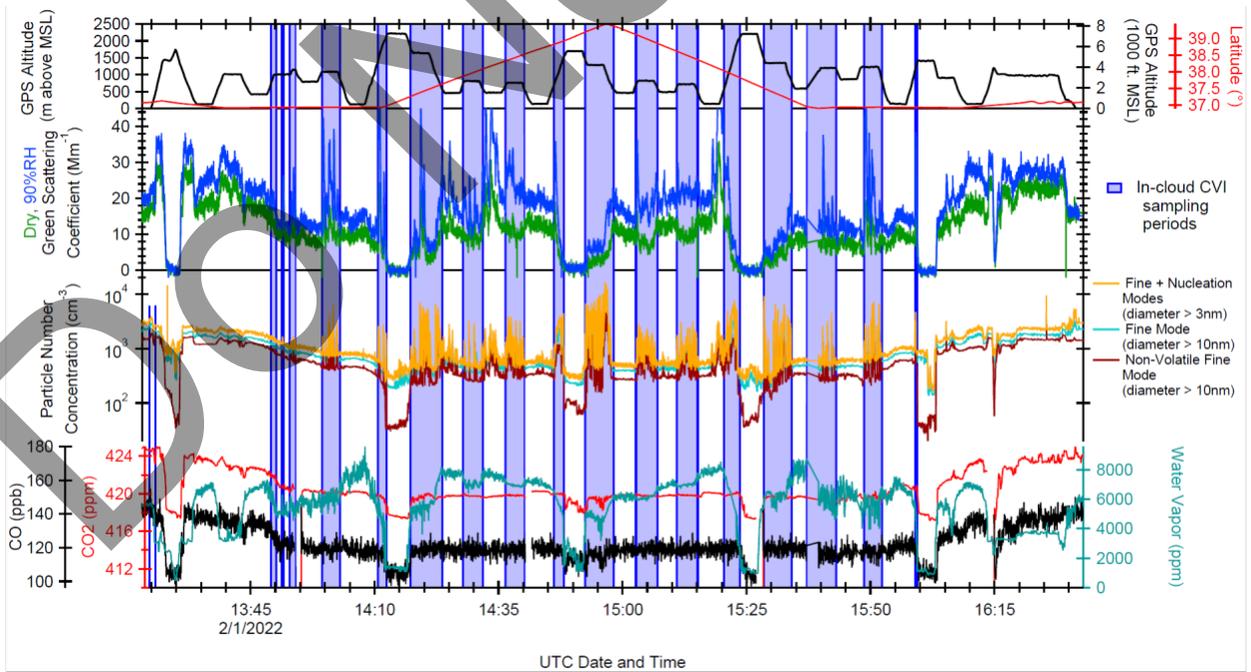
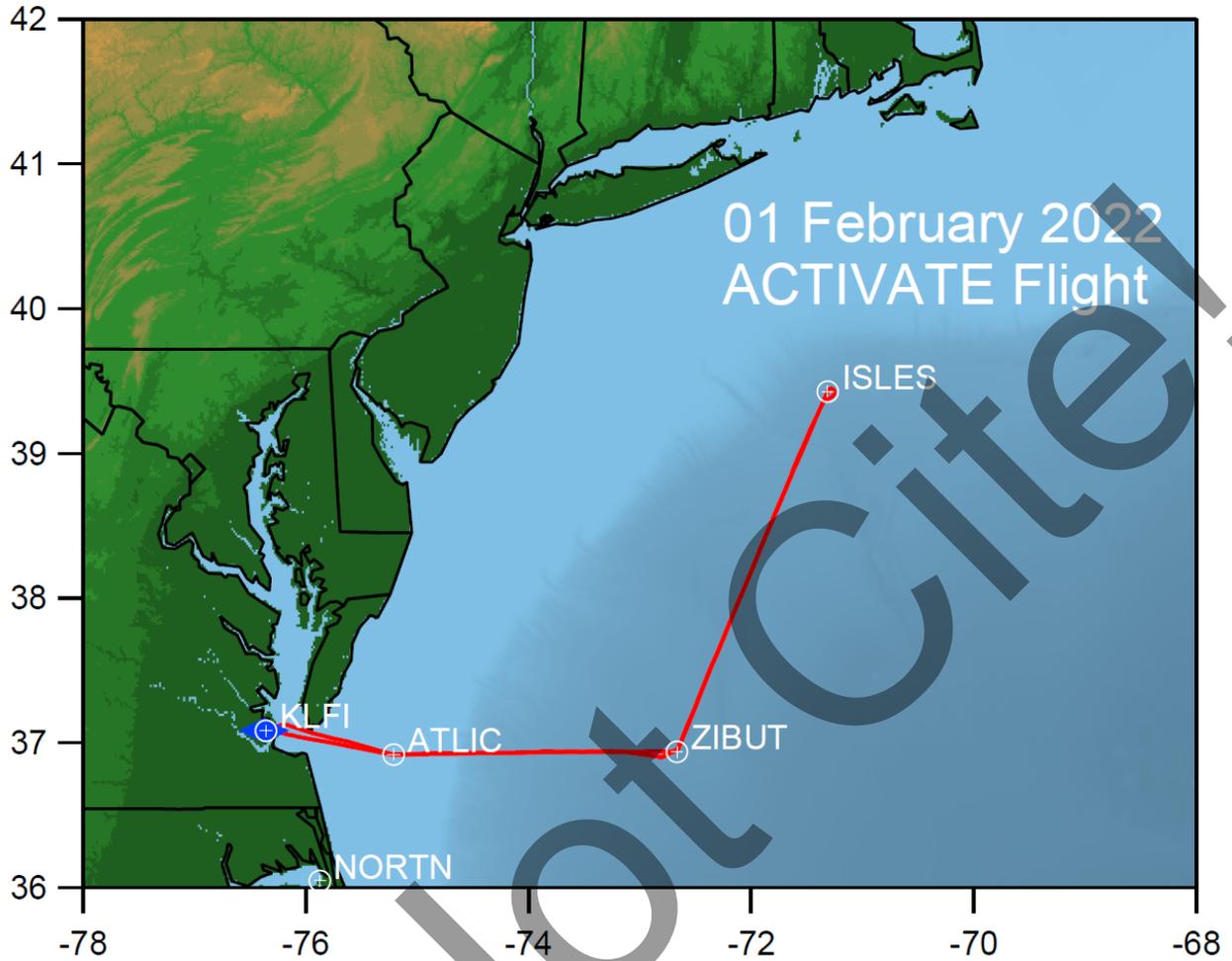
Falcon

Pilot report (Baxley):

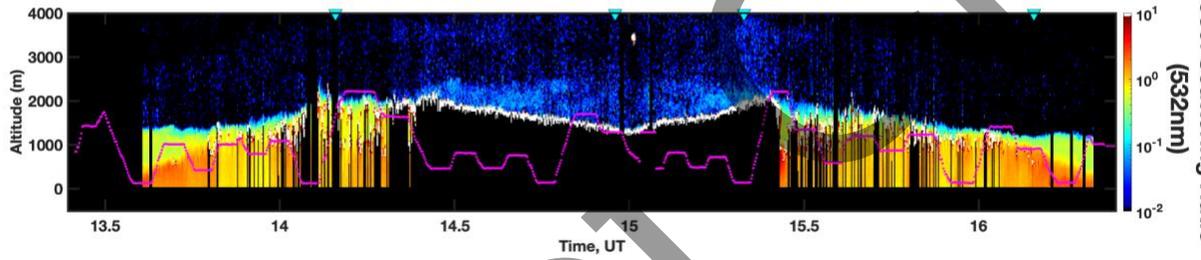
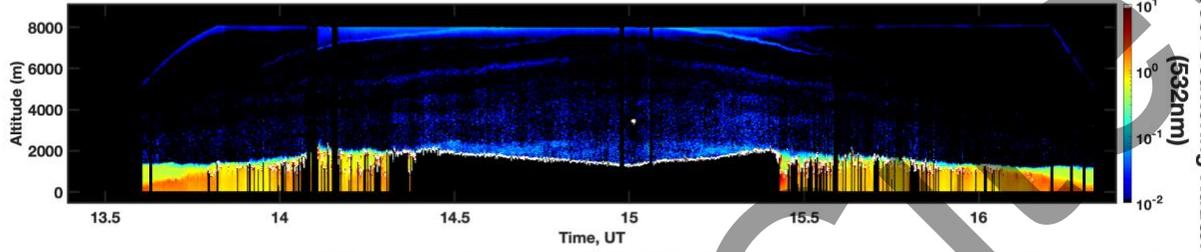
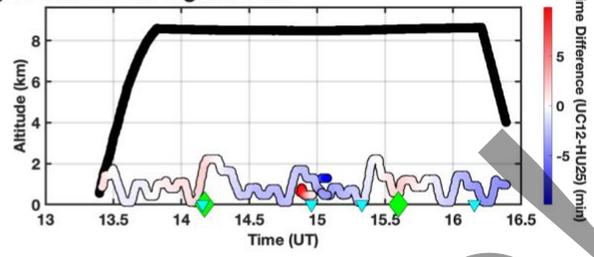
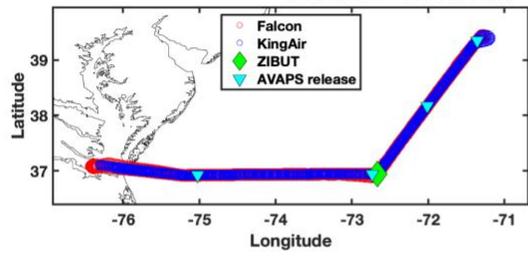
Thorson/Baxley, Crosbie/Winstead KLFI-ATLIC-ZIBUT-ISLES-ZIBUT-ATLIC-KLFI (no changes to route inflight). Science flight for HU-25, flown with UC-12, always within 10 minutes of each other and frequently well less than 5 minutes apart. Large sections with clouds, other sections without clouds. No known anomalies or issues with the flight.

Flight scientist report (Crosbie):

Stat survey ZIBUT-ISLES. Mostly cloudy conditions, starting east of ATLIC. Clouds were initially scattered and then rapidly started to deepen and fill in forming an overcast deck by ZIBUT on the outbound leg. North east of ZIBUT the clouds took on a distinctly decoupled appearance with cumulus clouds feeding an upper stratiform deck. The thicker regions of the clouds were precipitating and in some regions it was quite significant with visible showers below cloud base. The cloud tops in this region were not well capped and some cells were overshooting our ACT altitude. Further north, the clouds became more vertically constrained with a stronger and sharper capping inversion, and more uniform cloud bases. On the return the scene was similar except that the region of precipitation had receded upwind to the NE with more broken/scattered ShCu conditions near ZIBUT and inbound. An aerosol gradient was observed from coast to ZIBUT with enhanced aerosol residing in a layer 2000-4000ft approx. This was enhanced in both ORG and SO4.



20220201 - ACTIVATE - KingAir and Falcon flight tracks



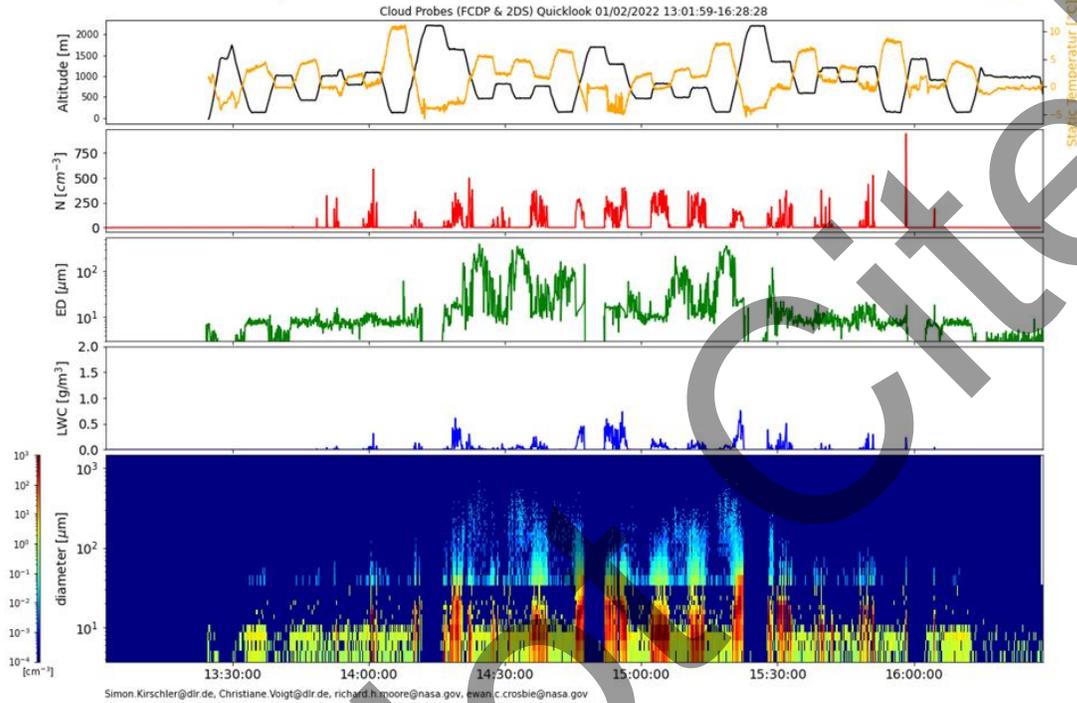
Aerosol Scattering Ratio (532nm)

DO NOT

Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

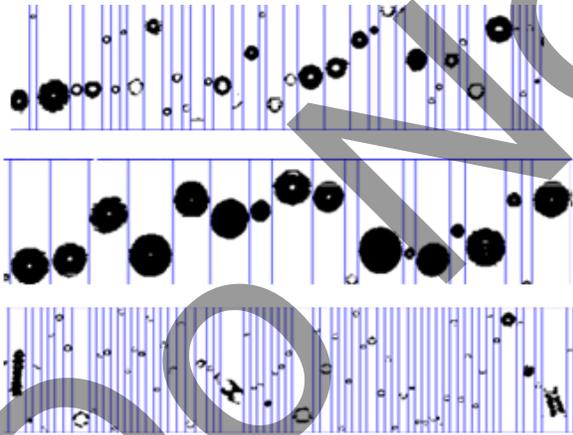
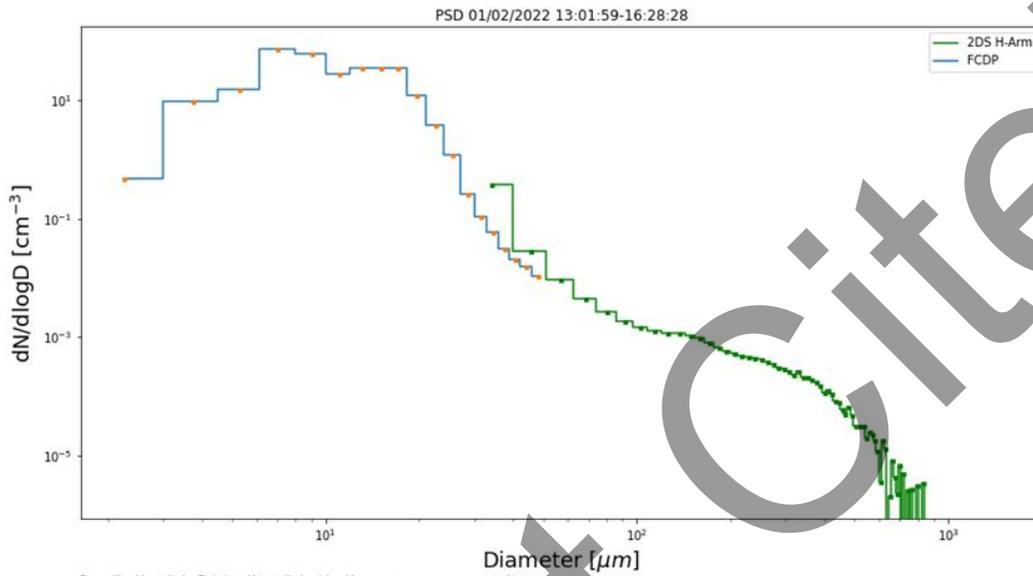
preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie

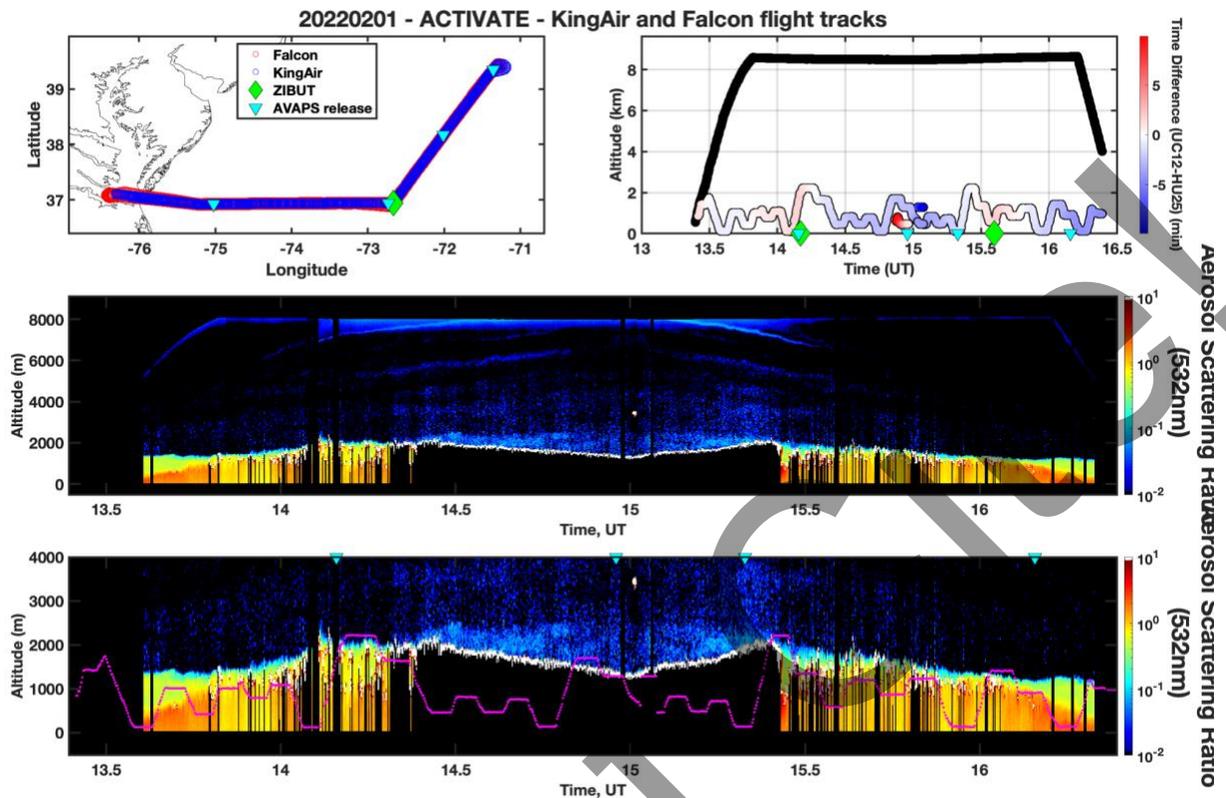


PSD ACTIVATE

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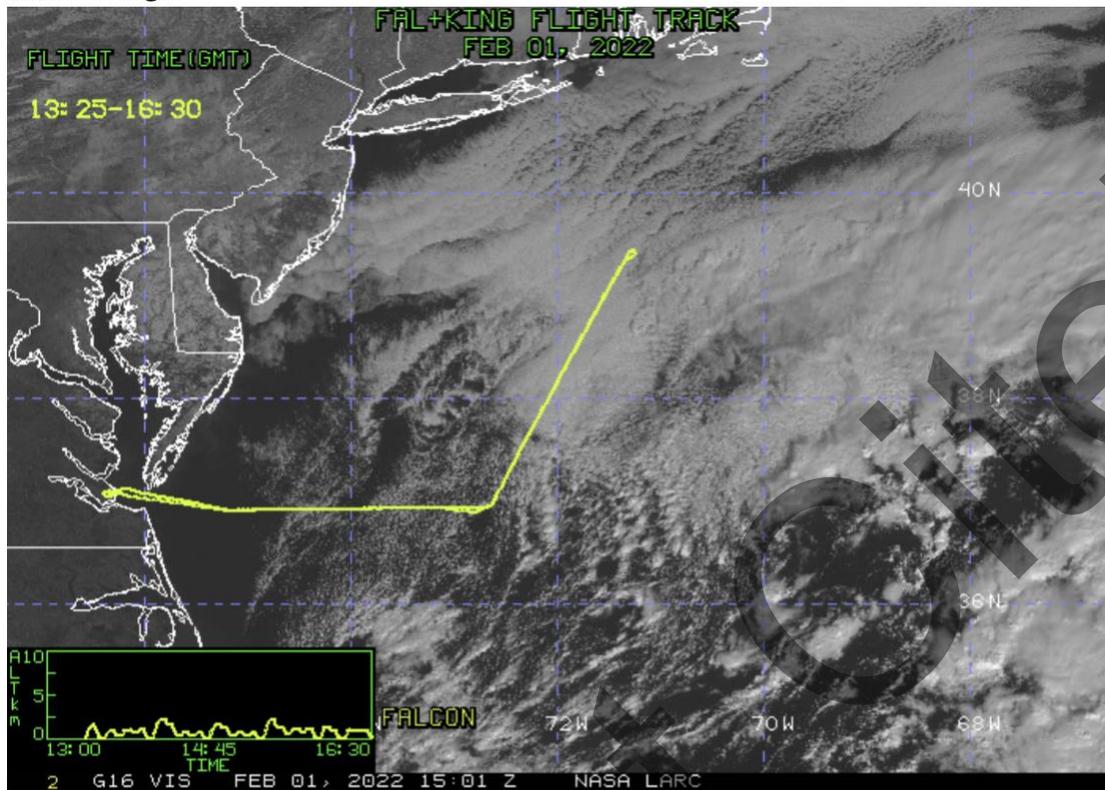


Almost only pure liquid clouds and rarely mixed phase clouds. Only liquid precip.

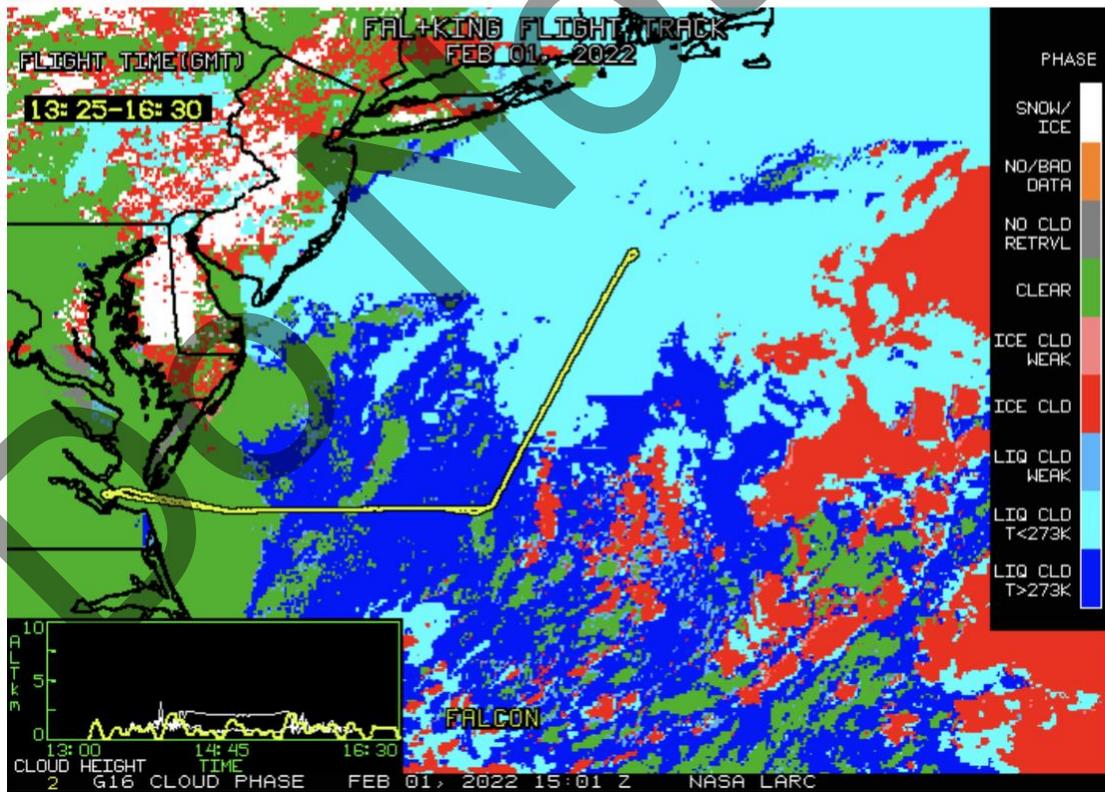


NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 115, 15:01 UTC Feb 01, 2022

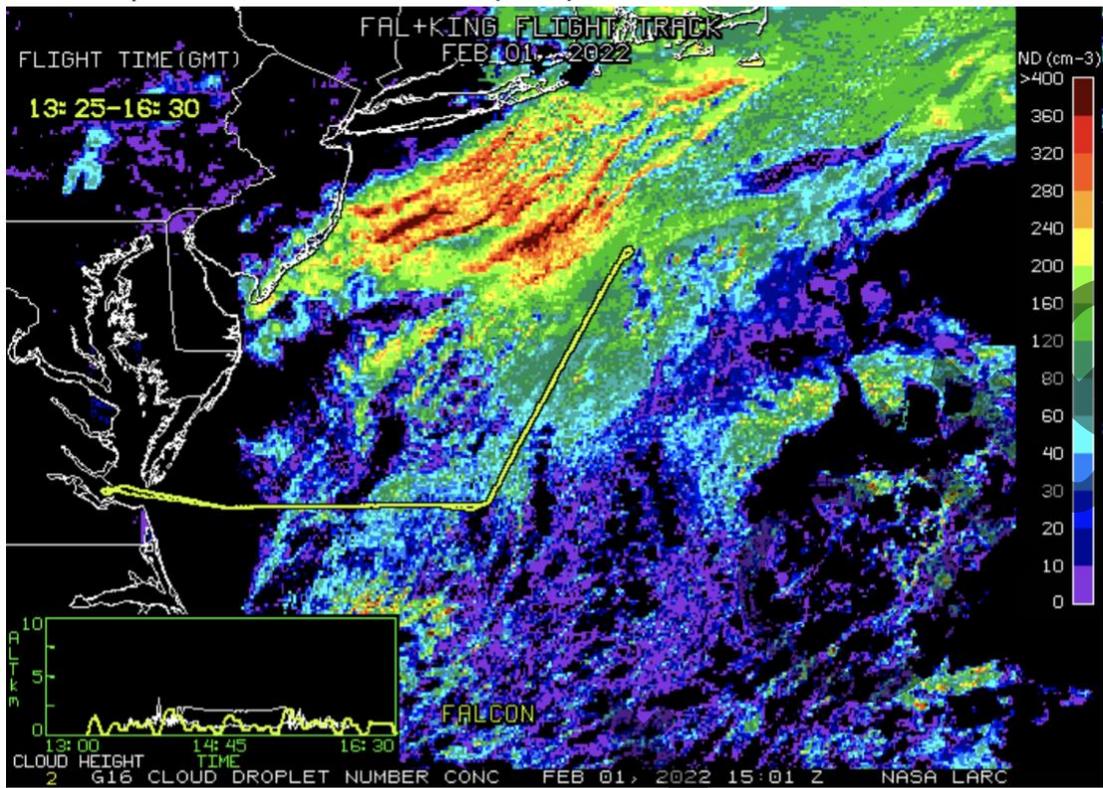
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)

