

Flight Scientist Report  
Saturday 01/15/2022 ACTIVATE RF104

Flight Type: Statistical Survey Flight

Flight Route:

Special Notes: Went 'overgross' on this flight with extra fuel to extend our range into the transition region where the solid cloud deck changes into a lower cloud fraction region farther offshore. Dropped an extra dropsonde (more than the usual 4) to capitalize on the transition region. There were some cirrus approaching towards the latter half of the flight.

### King Air

Pilot report (Wusk):

Morning cooperative flight with HU-25. Route of flight: KLF1-ATLIC-ZIBUT-35.75N068-ZIBUT-ATLIC-TURET-KLF1. Overweight fuel for HU was requested at morning brief. Ground Crew only able to load about 500# extra. During outbound leg the turn point was altered to 3556N 06845W due to limited fuel upload. Weather clear with winds out of the NE for KLF1 08 departure. Uneventful climb with no undue delays from departure control; continued uninterrupted climb to FL280 and turn towards ATLIC. Positioning with HU-25 was maintained within 10 minutes through duration of science collection. Conditions at altitude were smooth air and clear the most of routing. As expected cirrus cloud cover at flight levels started to appear on second half of return. Descended to FL220 and continued research. 5x dropsondes deployed; ZIBUT, turn/reverse point, 2 evenly spaced between turn point and ZIBUT, and at ATLIC prior to descent. Maintained FL220 until final dropsonde release at ATLIC then commenced descent to achieve 12,000 ft altitude by TURET per ATC instructions. Uneventful recovery to runway 08 at KLF1.

Flight scientist report (Shingler):

KLF1 ATLIC ZIBUT 3556N06845W ZIBUT ATLIC KLF1

New camera lens added to nadir camera before flight. Fairly uniform shallow stratocu with tops between 4-6 kft throughout the entire flight. Descended to FL220 on return 2/3 of the way to ZIBUT from the turn to avoid cirrus above. Cameras had a delta time of +00:03:20, synced times to GPS at 16:25:00 UTC.

6 Sondes dropped (1 failure)

ZIBUT

TURN

1/3 TURN-TO-ZIBUT

2/3 TURN-TO-ZIBUT (Lost GPS)

2/3 TURN-TO-ZIBUT (Success)  
ATLIC

**Falcon**

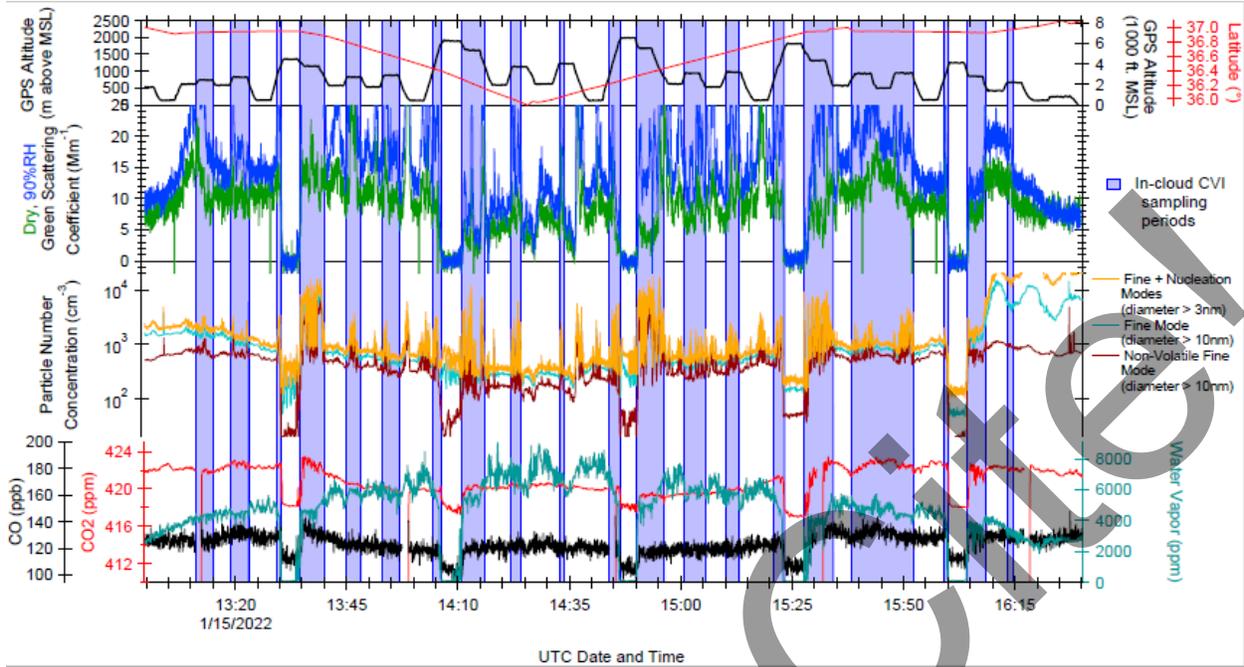
Pilot report (Slover):

Flight flown as planned with the addition of a little extra distance from uploading extra fuel. KLFI - ATLIC - ZIBUT - N3556/W06845 - ZIBUT - ATLIC - KLFI. Over gross weight takeoff by about 500 lbs. Excellent statistical survey day with clouds generally between 2000 and 5500 feet. No icing issues on instruments. Aircraft up status.

Flight scientist report (Crosbie):

Stat survey to the east. Low clouds were prevalent throughout with cirrus cloud approaching from the west throughout the flight. Low cloud conditions began near ATLIC with one clear module completed prior. Clouds thickened substantially from near overcast at ZIBUT with ice and liquid precip observed to the east and subsequent breakup of the overcast to broken but deeper cells.





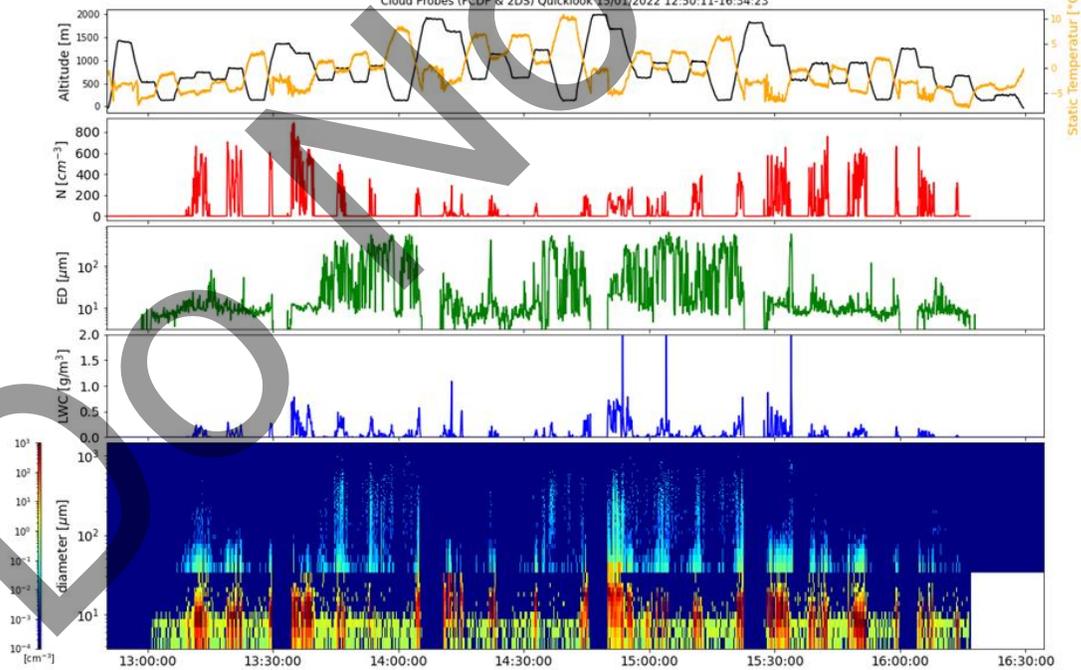
Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



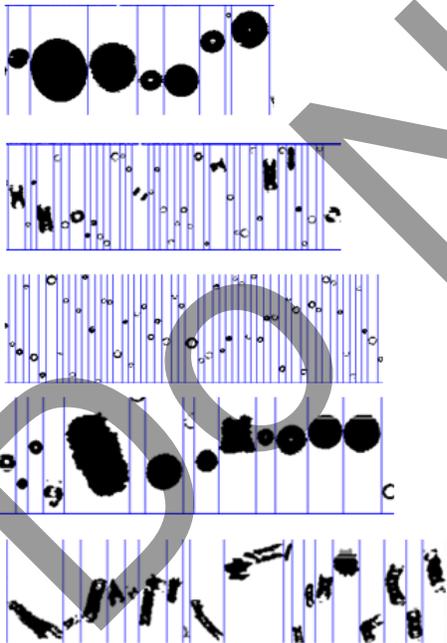
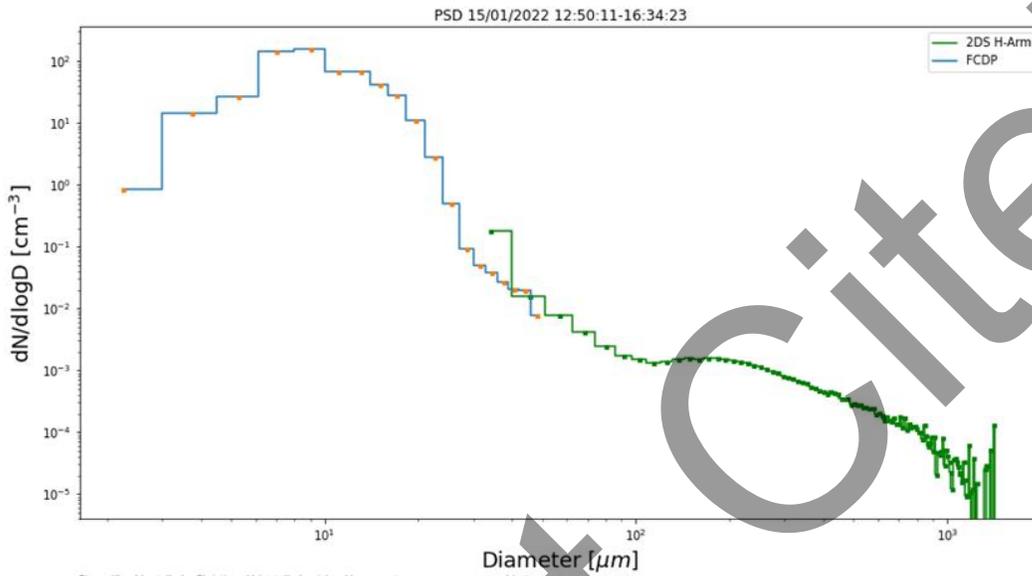
Cloud Probes (FCDP & 2DS) Quicklook 15/01/2022 12:50:11-16:34:23



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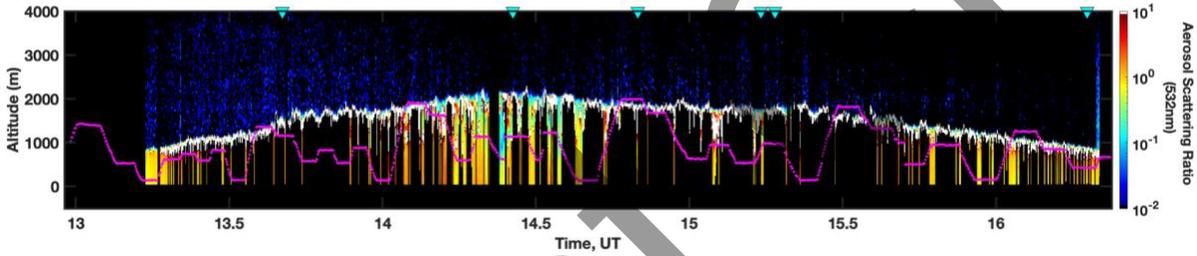
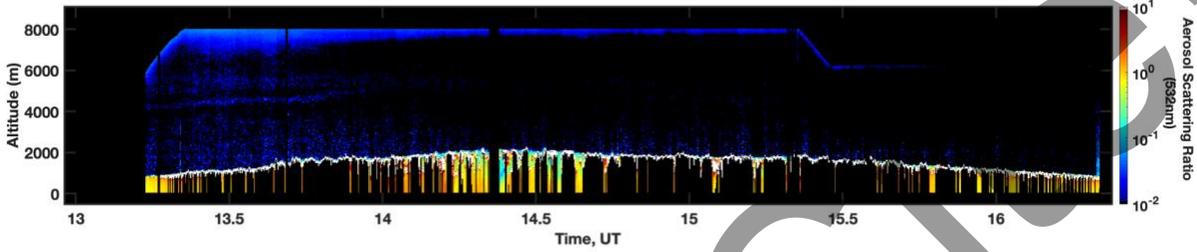
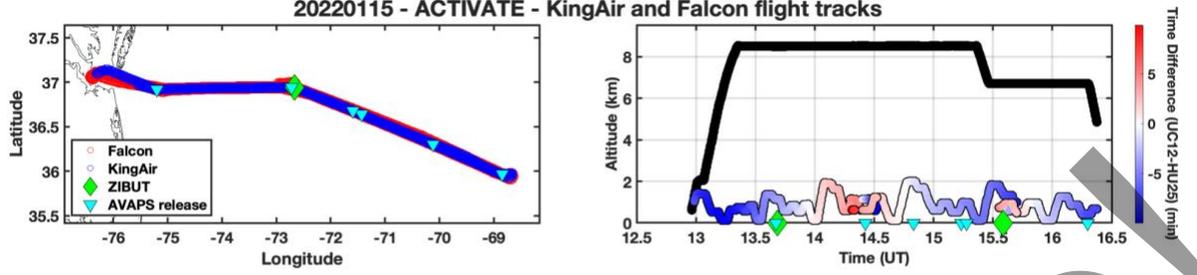
# PSD ACTIVATE

preliminary data, only for quicklook use  
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Mixed phase clouds of all kinds with  
Drizzle and large ice/liquid precip.

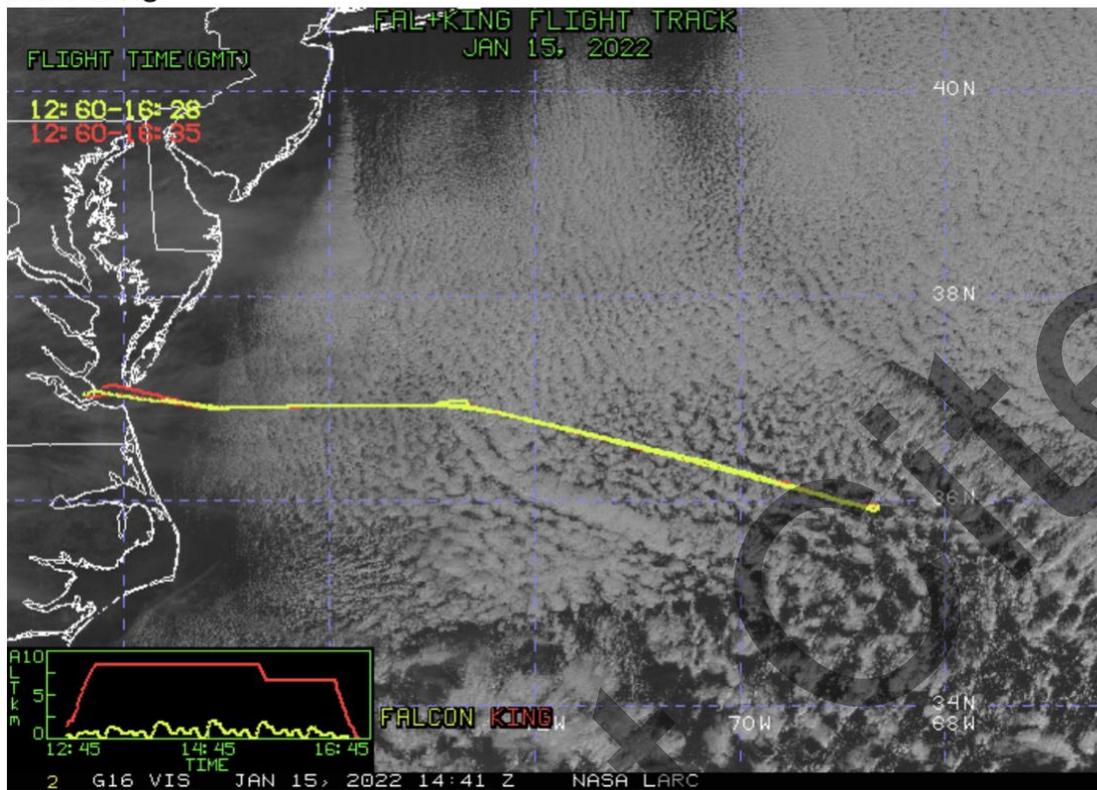
### 20220115 - ACTIVATE - KingAir and Falcon flight tracks



DO NOT

NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 104, 14:41 UTC Jan 15, 2022

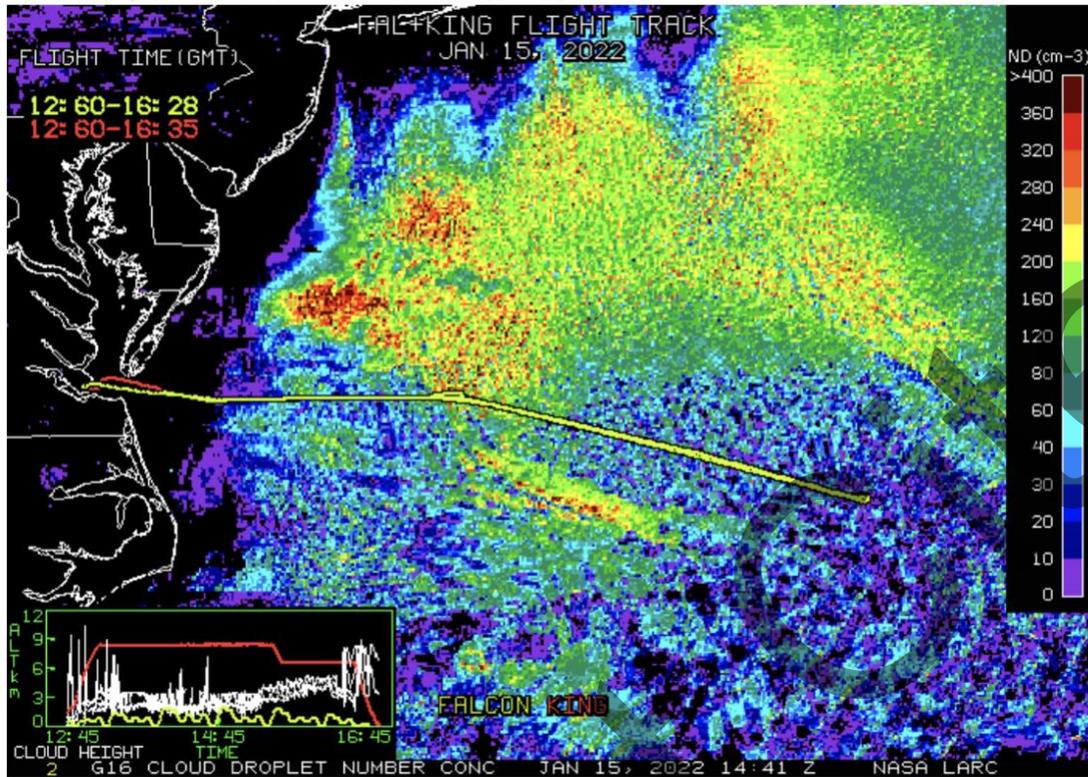
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm<sup>-3</sup>)



Cloud-Top Height (Kft-ASL)

