

Flight Scientist Report

Friday 02/21/2020 ACTIVATE RF04

Flight Type: Single Flight with Falcon, Stat Survey – Cloud Wall – Stat Survey

Flight Route: ATLIC - ZIBUT

Special Notes: King Air down due to maintenance

King Air

- No flight

Instruments: NA

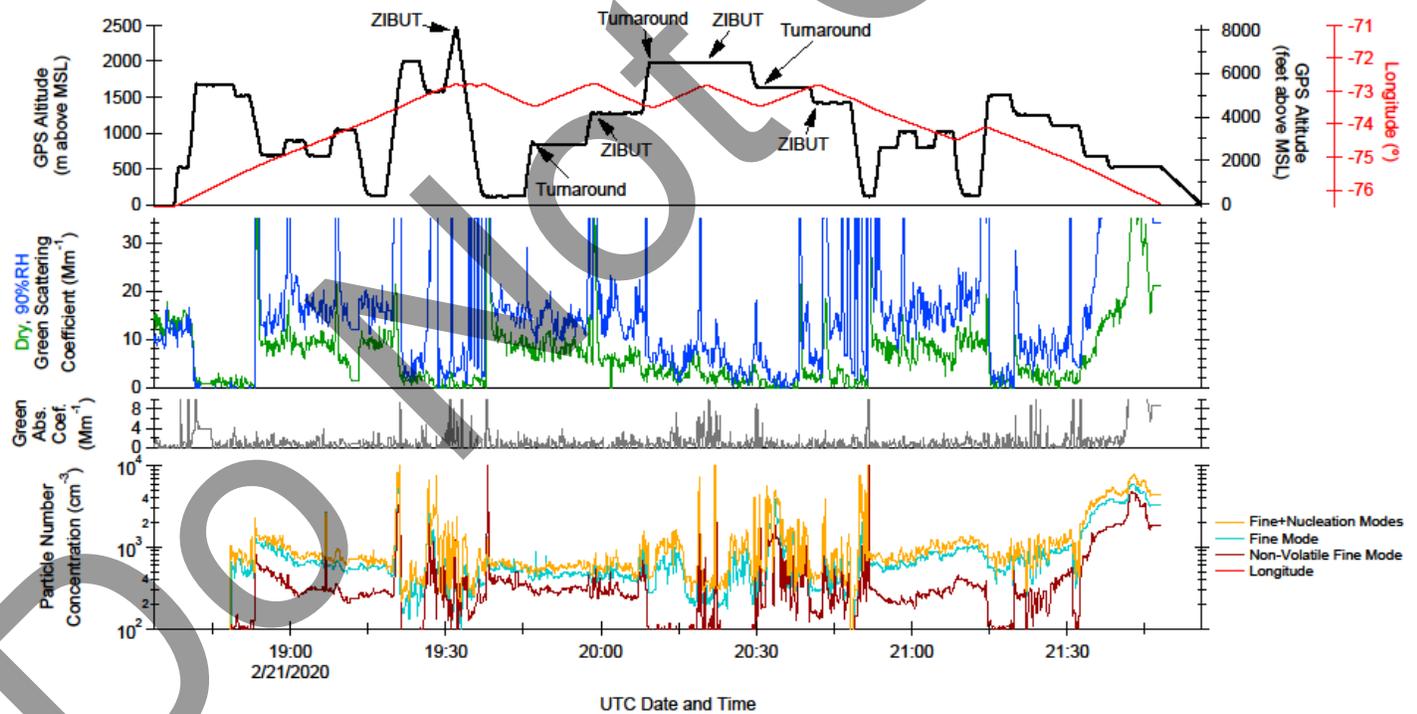
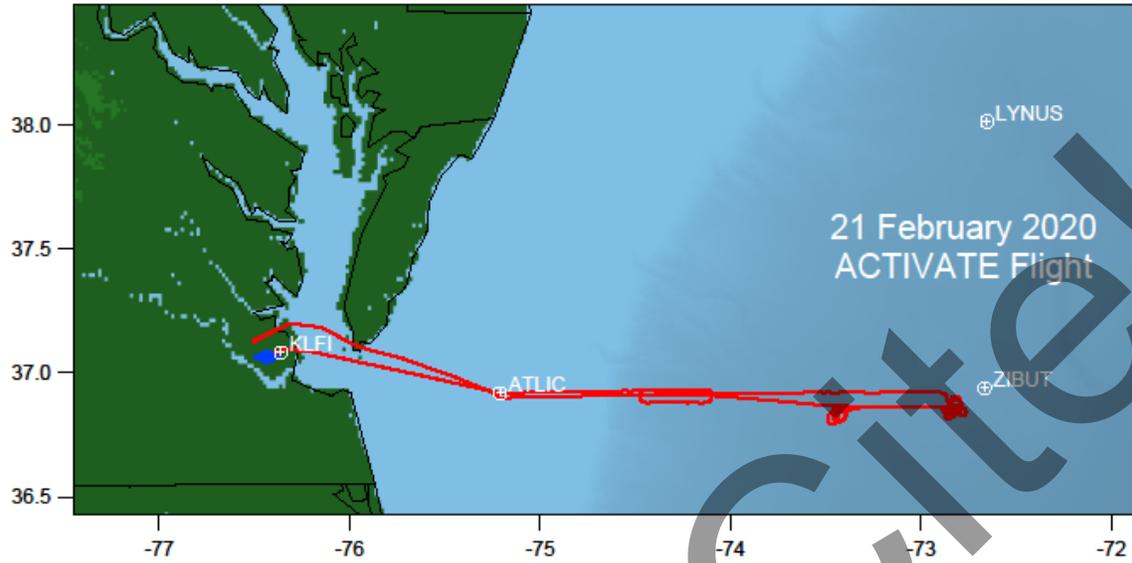
Falcon

- Ensemble 1: statistical survey towards ZIBUT
- Spiral down to start next ensemble, ~8000 ft to MINALT
- Ensemble 2: wall pattern (MINALT, BCB, ACB, ACT and twice to do cross wind calibration, BCT, mid-cloud, MINALT)
- Note that for icing, it helps much more to go near surface than above cloud top
- Suspected electrical component failure (odor, fumes detected by science and reported to flight crew) near end of flight but it could not be reproduced

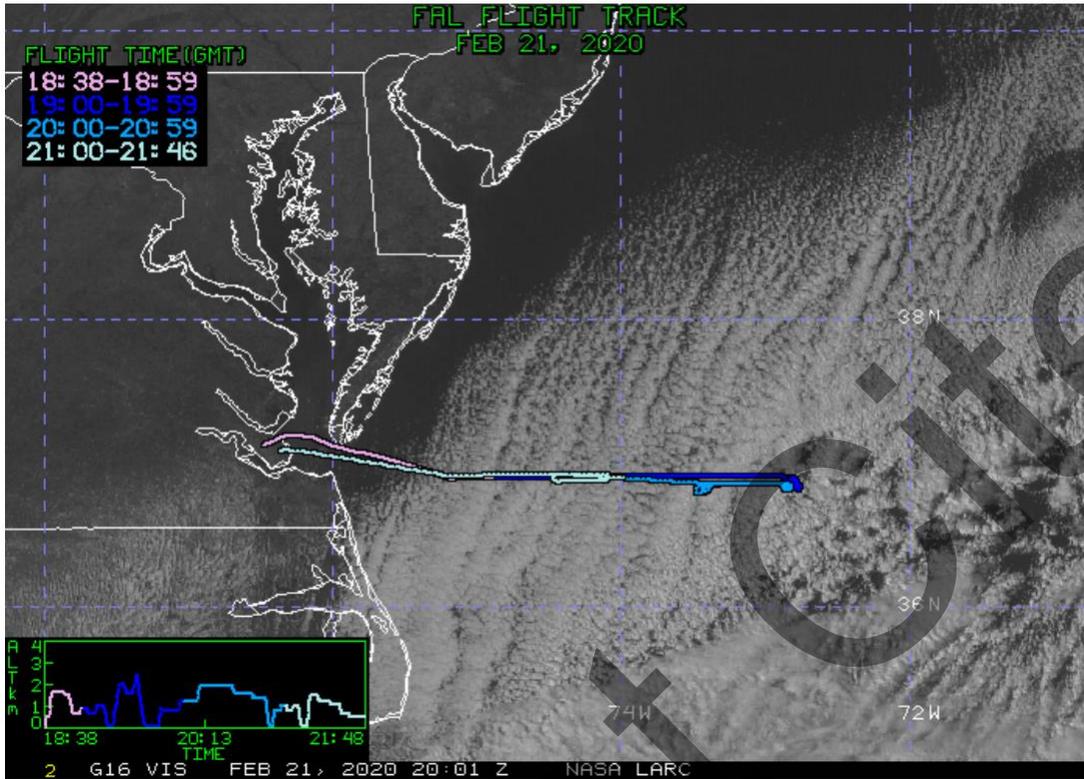
Instruments:

- o Port side KVM switch was not functional, could not monitor CCN and winds during flight
- o WCM was not operational because of the KVM issue – could not get local control of that computer (bypassing KVM)
- o SPEC 2DS appeared to have erroneous readings in the heaviest icing conditions, all wing probes had visible ice accumulation, aerosol inlet experienced a pressure drop in a few locations during icing conditions, no anticipated aerosol data loss
- o DLH lost DC voltage during one cloud penetration but was returned to normal immediately after descending below cloud, suspect that the issue was ice buildup on the retro reflector located on the CAPS wing probe
- o CIP imaging was not operational

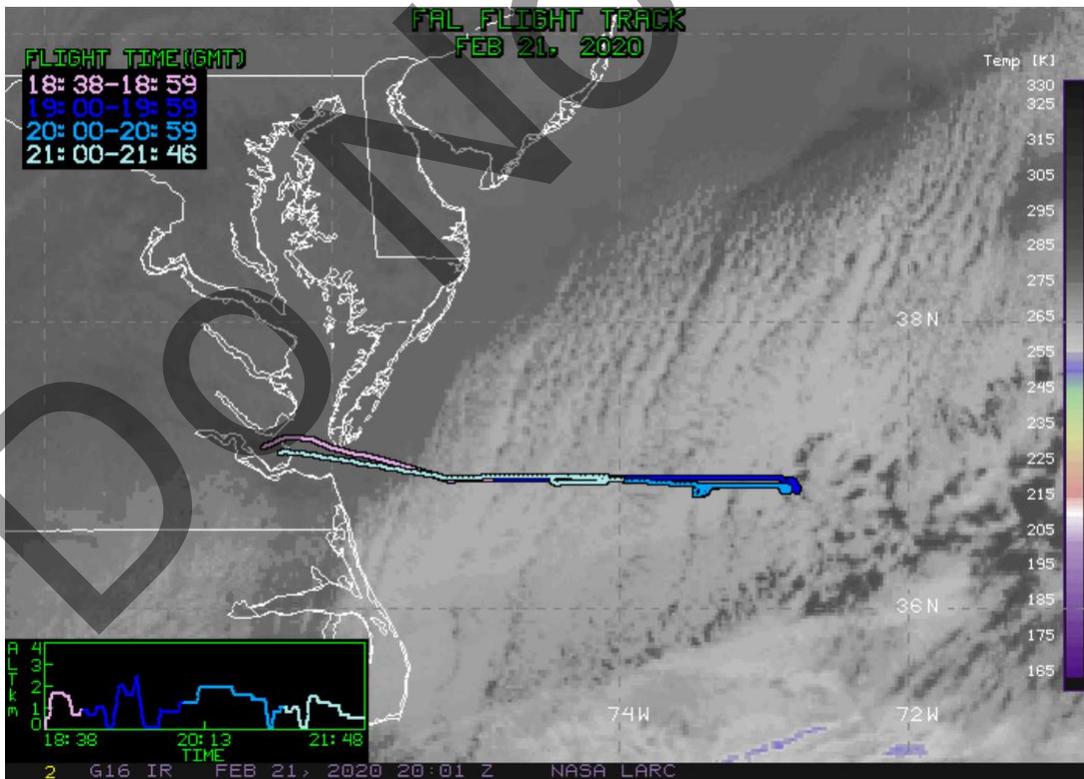
Rich Moore Quicklook Images



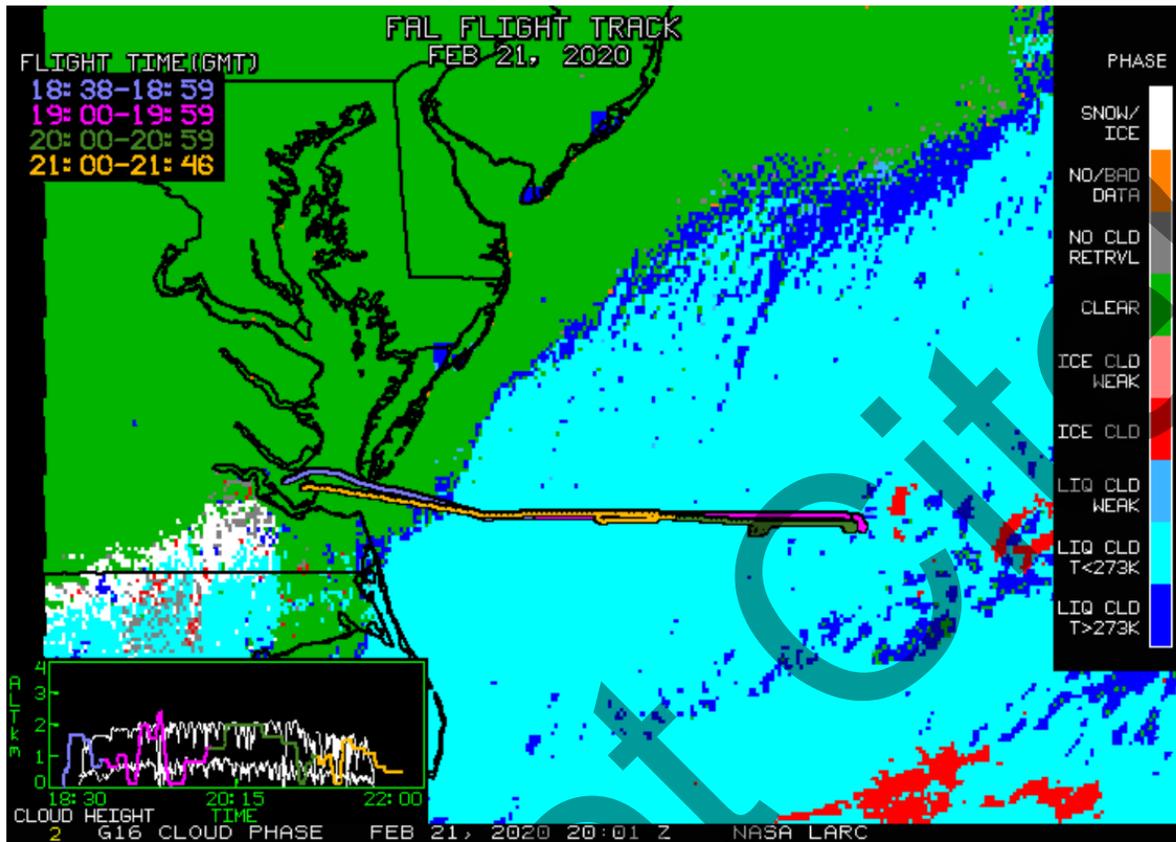
Satellite Group Images (from middle of flight):
Visible



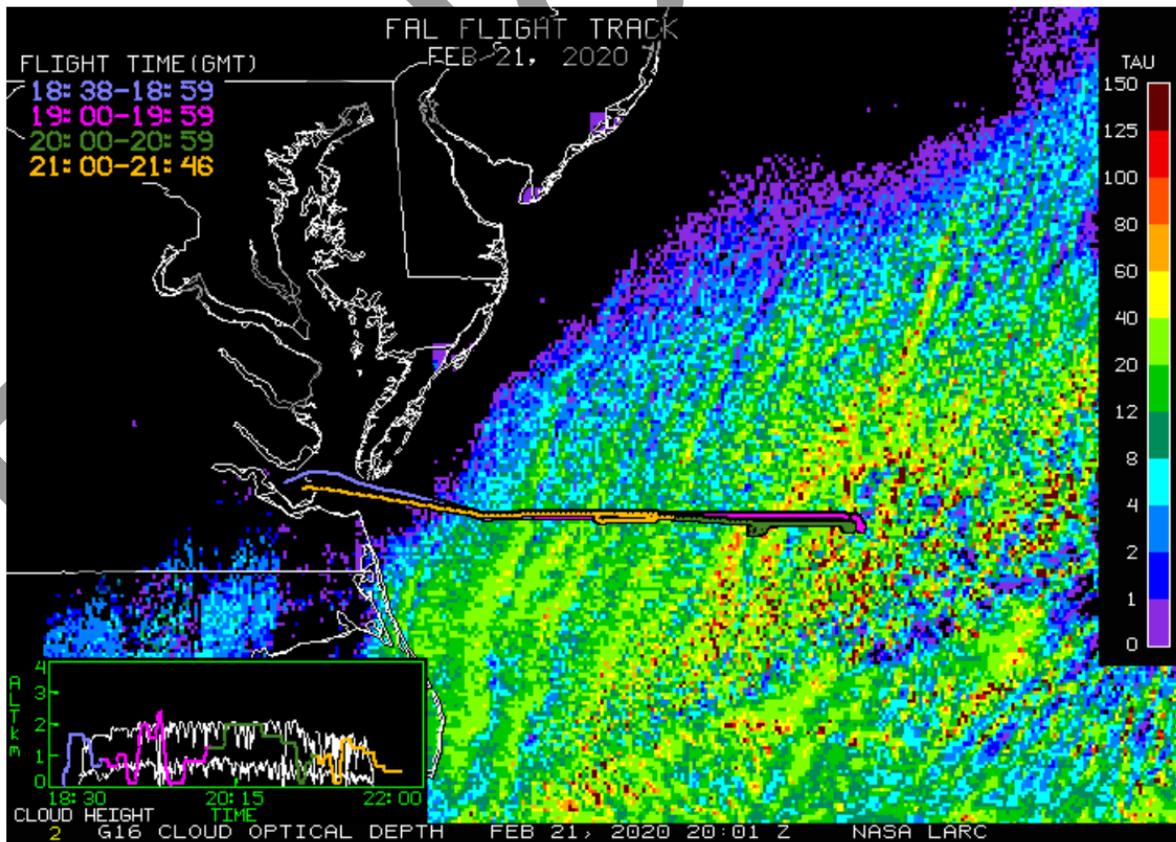
Infrared



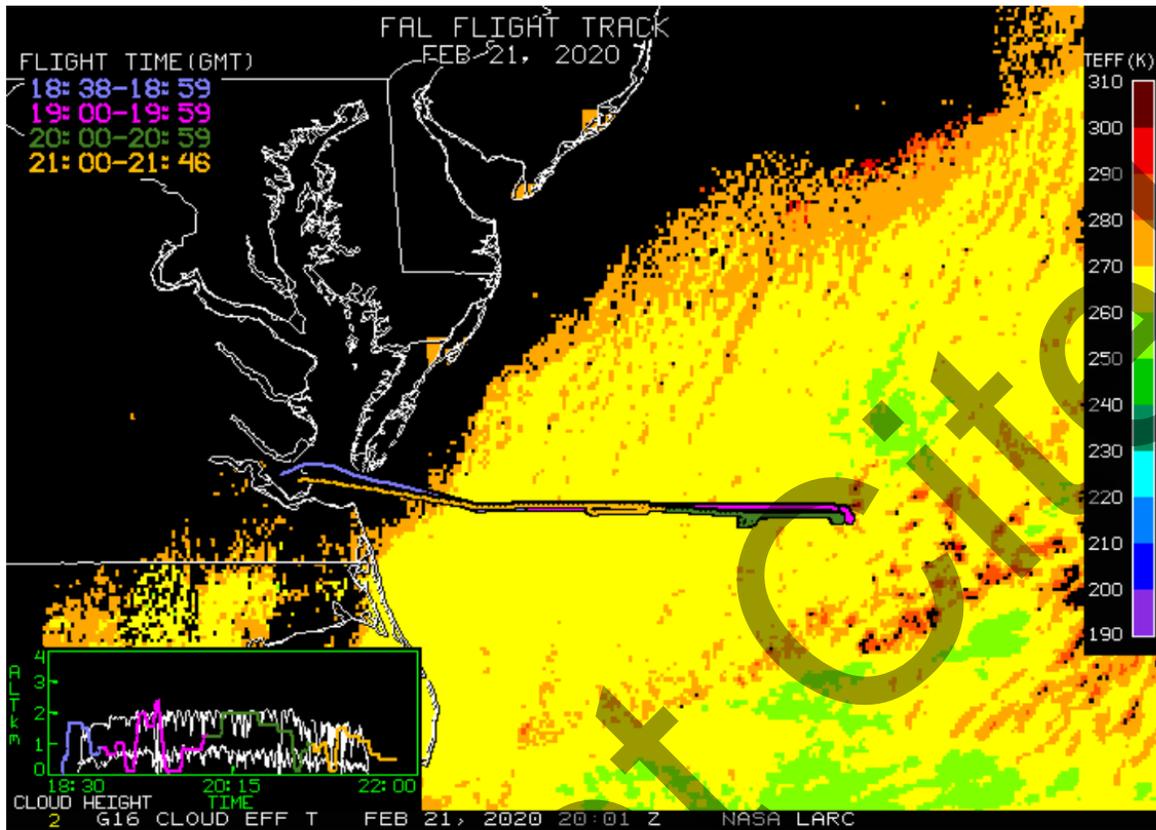
Cloud Phase



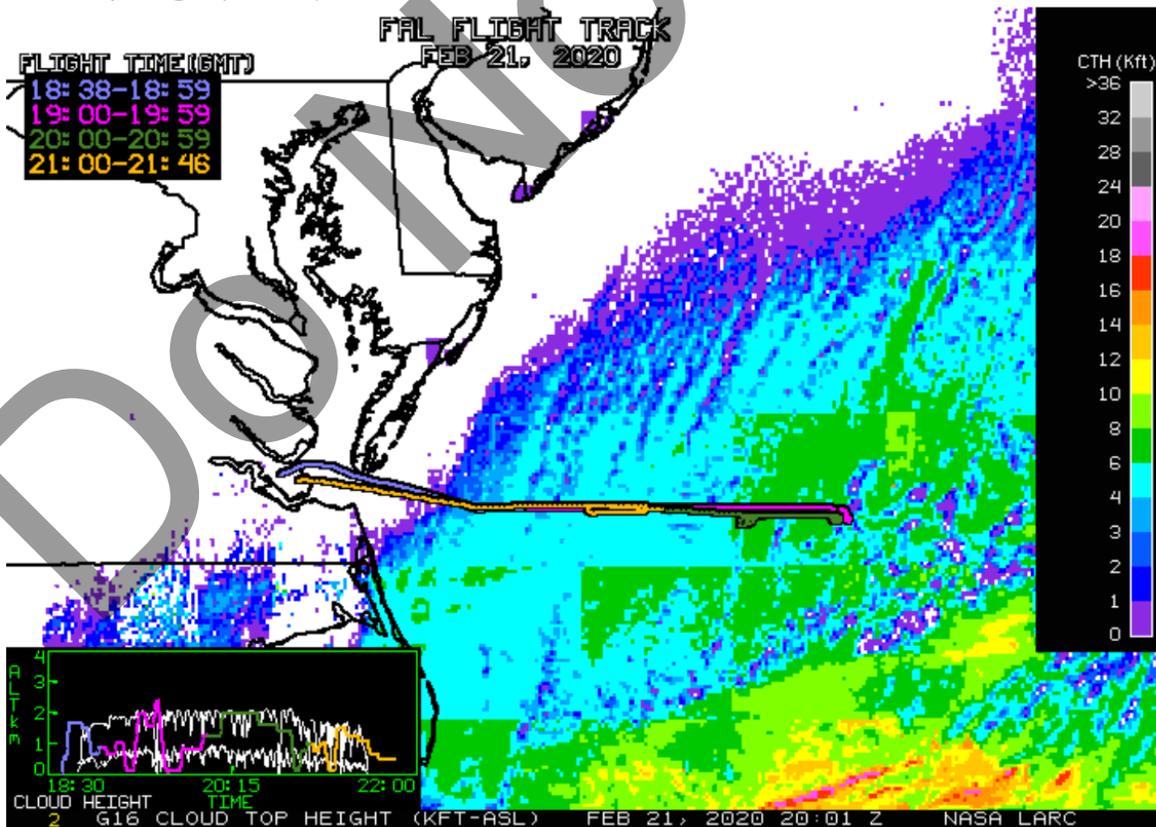
Cloud Optical Depth



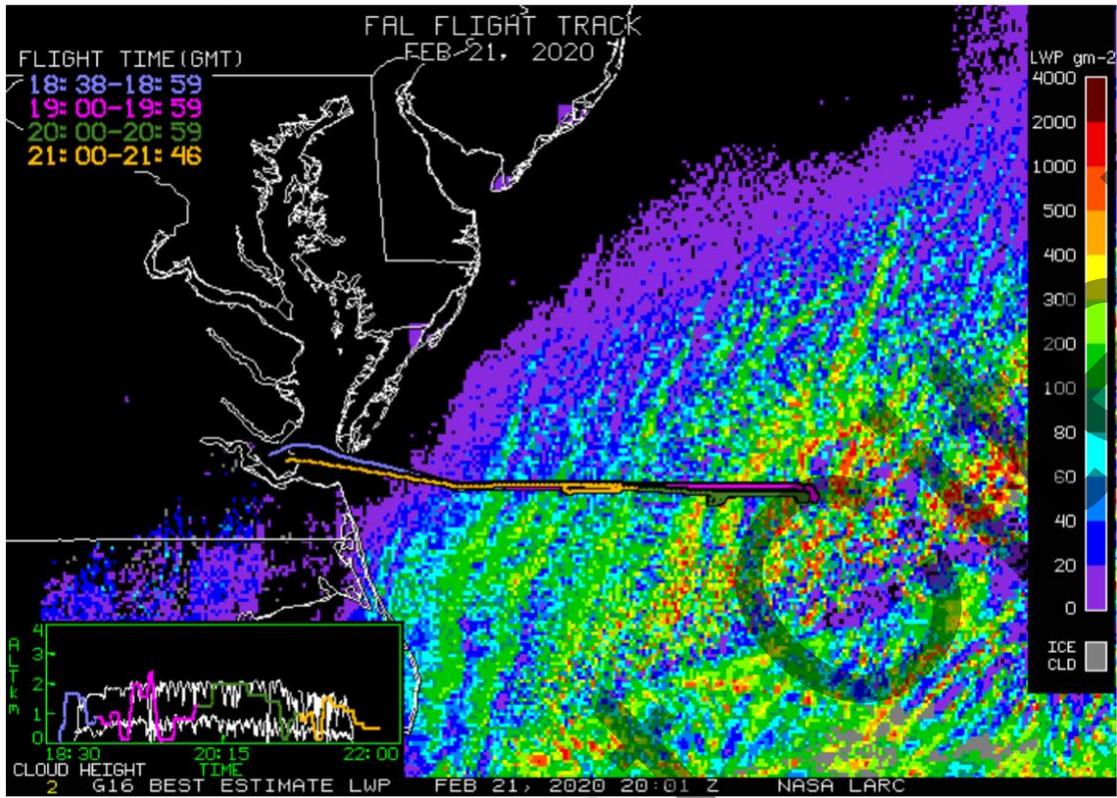
Cloud Effective Temperature (K)



Cloud-Top Height (Kft-ASL)



Liquid Water Path (gm-2)



Cloud Droplet Number Concentration (cm-3)

