

Flight Scientist Report  
Sunday 02/23/2020 ACTIVATE RF07

Flight Type: Statistical Survey Flight - Clouds  
Flight Route: OXANA to 33.468/-70.297  
Special Notes: King Air down due to maintenance

### King Air

NA

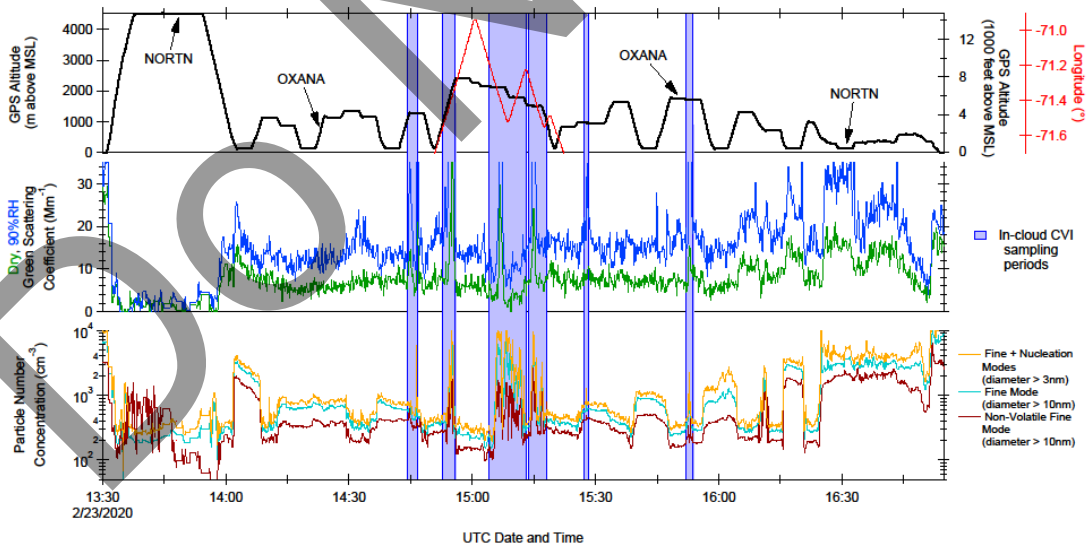
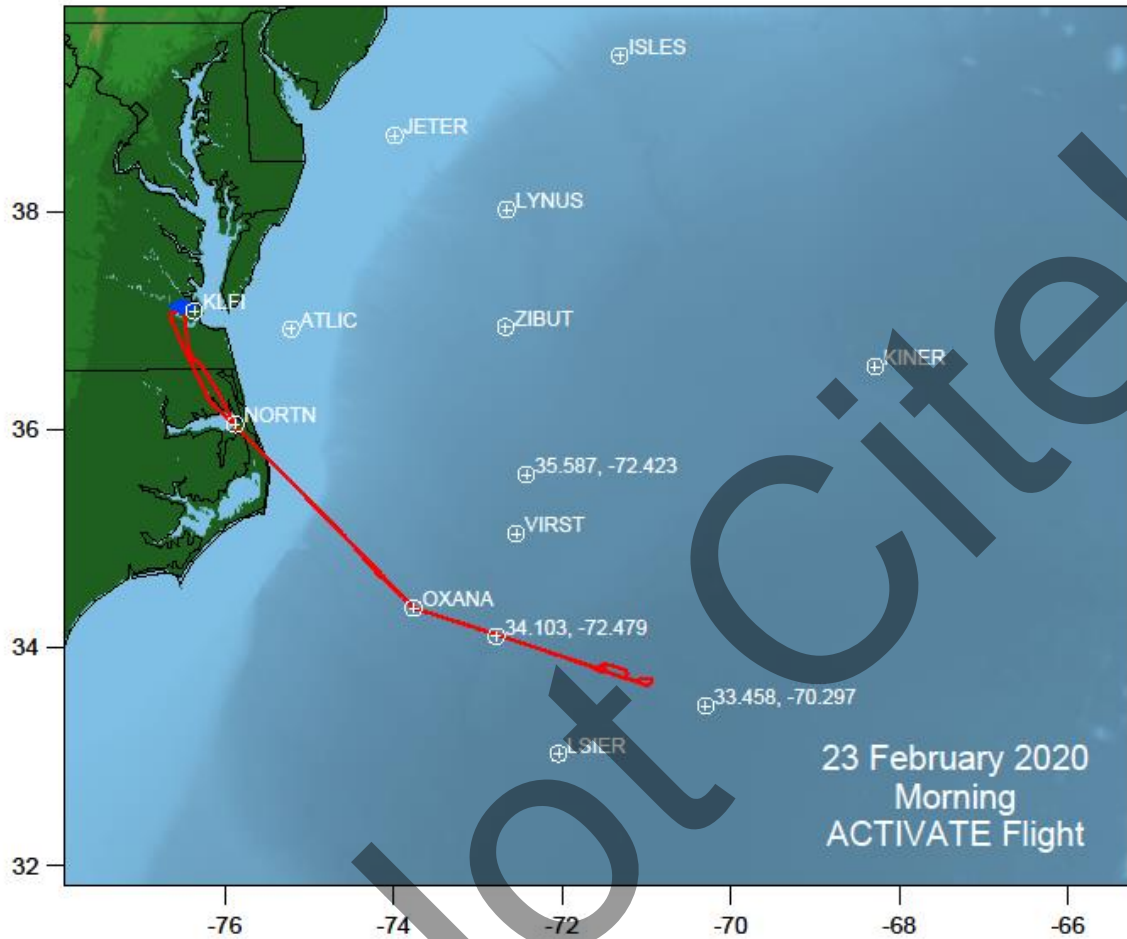
### Falcon

- Transit out high was a bit longer than normal
- Did clear stat survey out.
- First cloudy stat survey started when there was scattered cloud and stayed complicated as clouds stayed broken/scattered; limited ACB time in actual clouds; swapped order of MINALT and 2<sup>nd</sup> ACB to hit MINALT during clear patch; profile noted to be good in cloud; there was an impressive band of clouds during this ensemble nearby but we didn't hit it and was visually observed from plane; turned early during this ensemble at end of ACT to maximize in-cloud time for BCT leg and that bought ~10 extra min to do a mini-wall
- Way back was more traditional except that for 2<sup>nd</sup> cloud stat survey, the ACB leg was above the boundary layer; even though on 2<sup>nd</sup> cloud survey we executed it as normal, we got low in-cloud time.
- On way back it was noted that the MBL shallowed a lot closer to land with colder water
- End of flight included bonus time characterizing the MBL at low altitudes

Instruments:

Not much reported – all fine

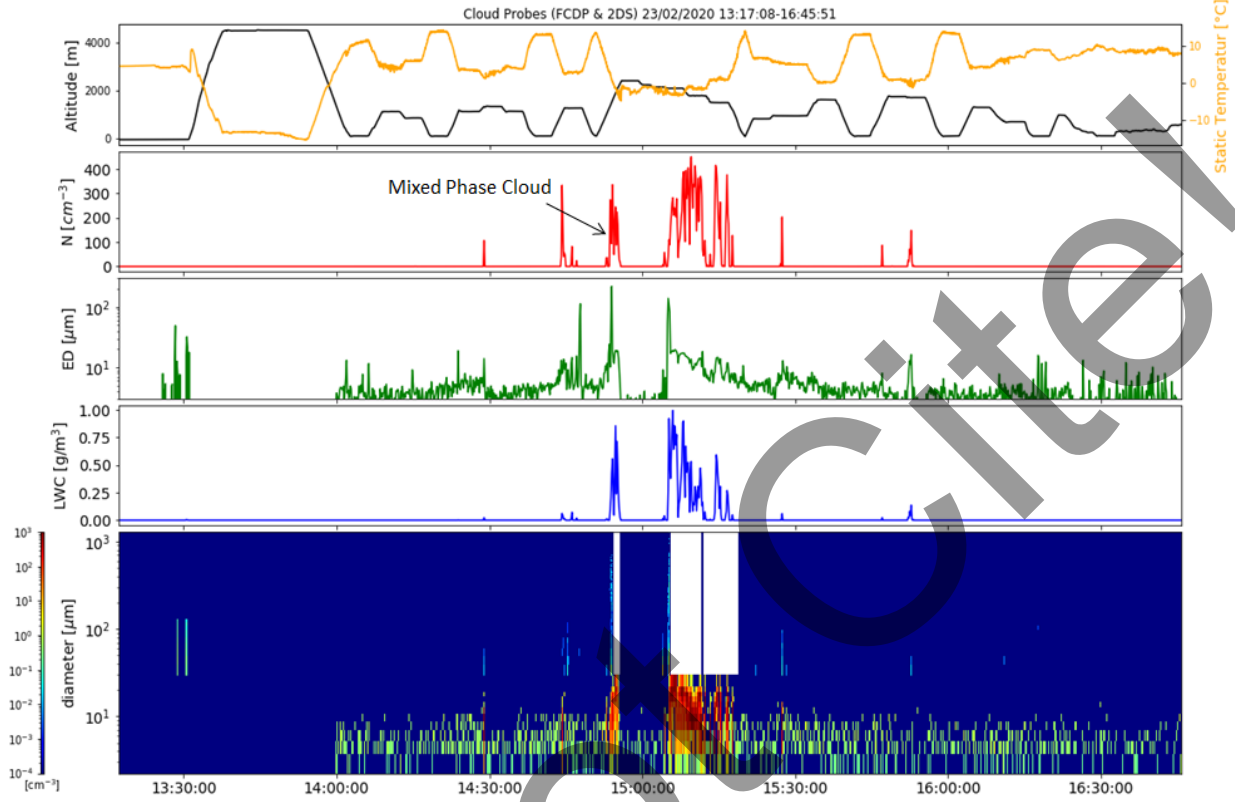
Rich Moore Quicklook Images:



# Quicklook ACTIVATE Cloud Probes (FCDP & 2DS)

preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



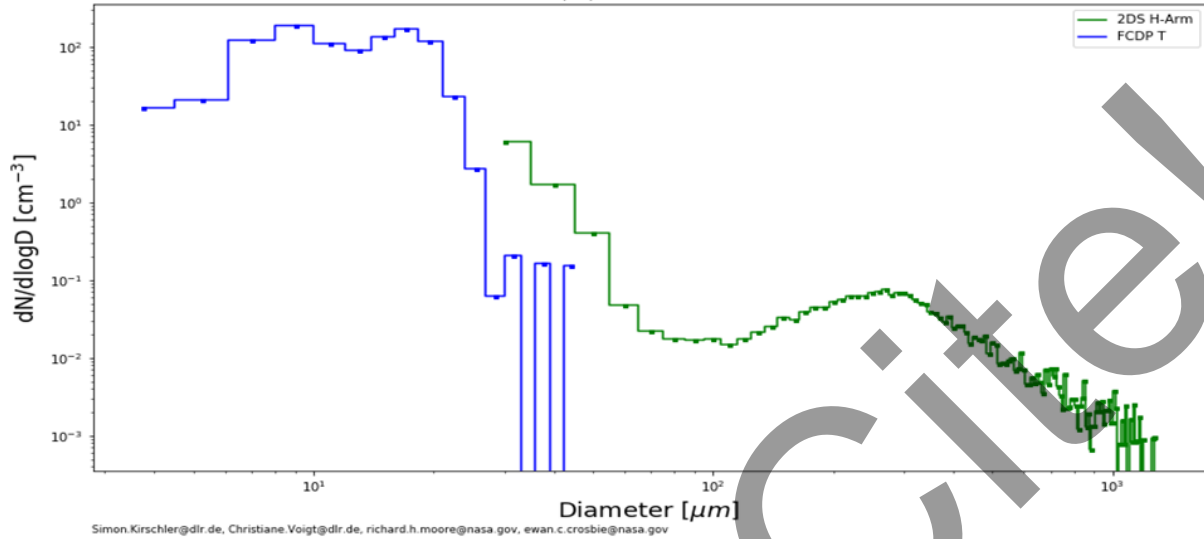
Simon.Kirschler@dlr.de, Christiane.Voigt@dlr.de, richard.h.moore@nasa.gov, ewan.c.crosbie@nasa.gov

# PSD ACTIVATE

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



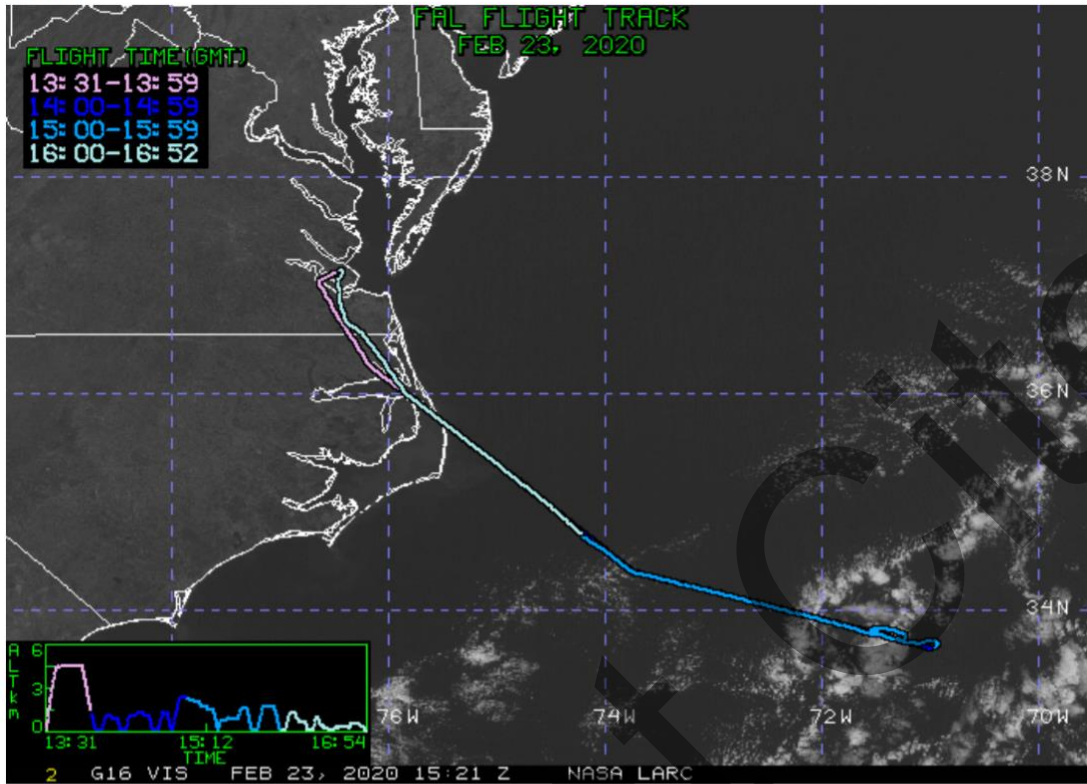
PSD 23/02/2020 15:05:05-15:05:30



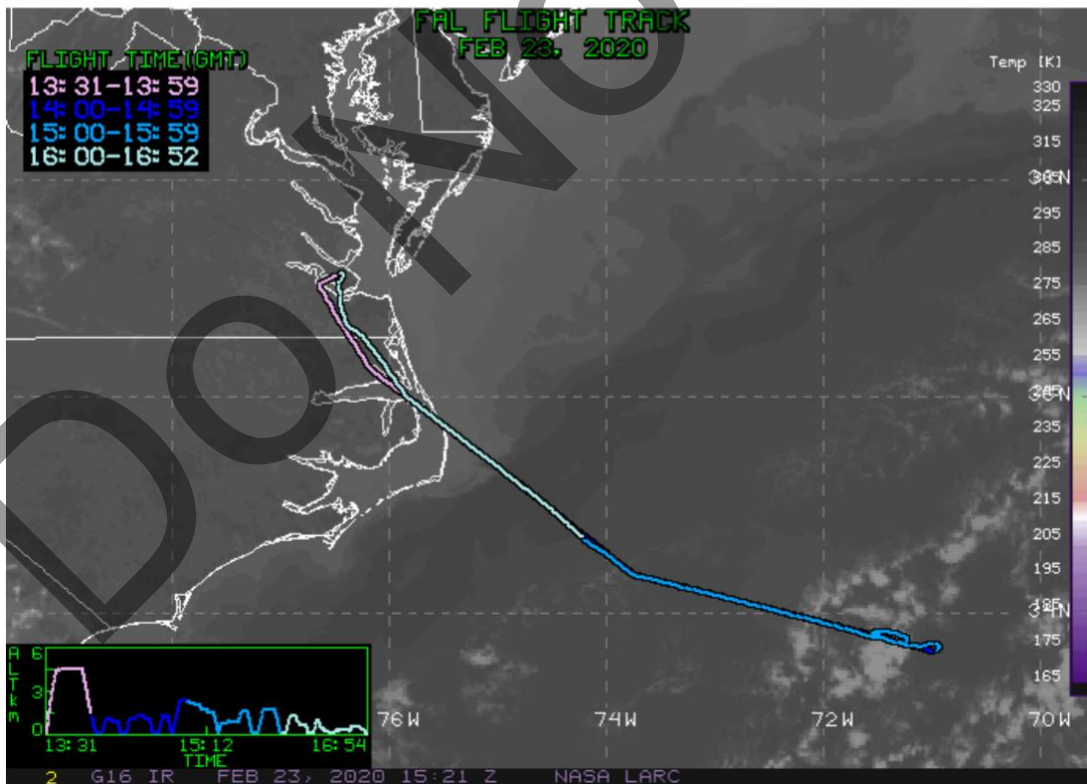
Mixed Phase Cloud: 14:53:58



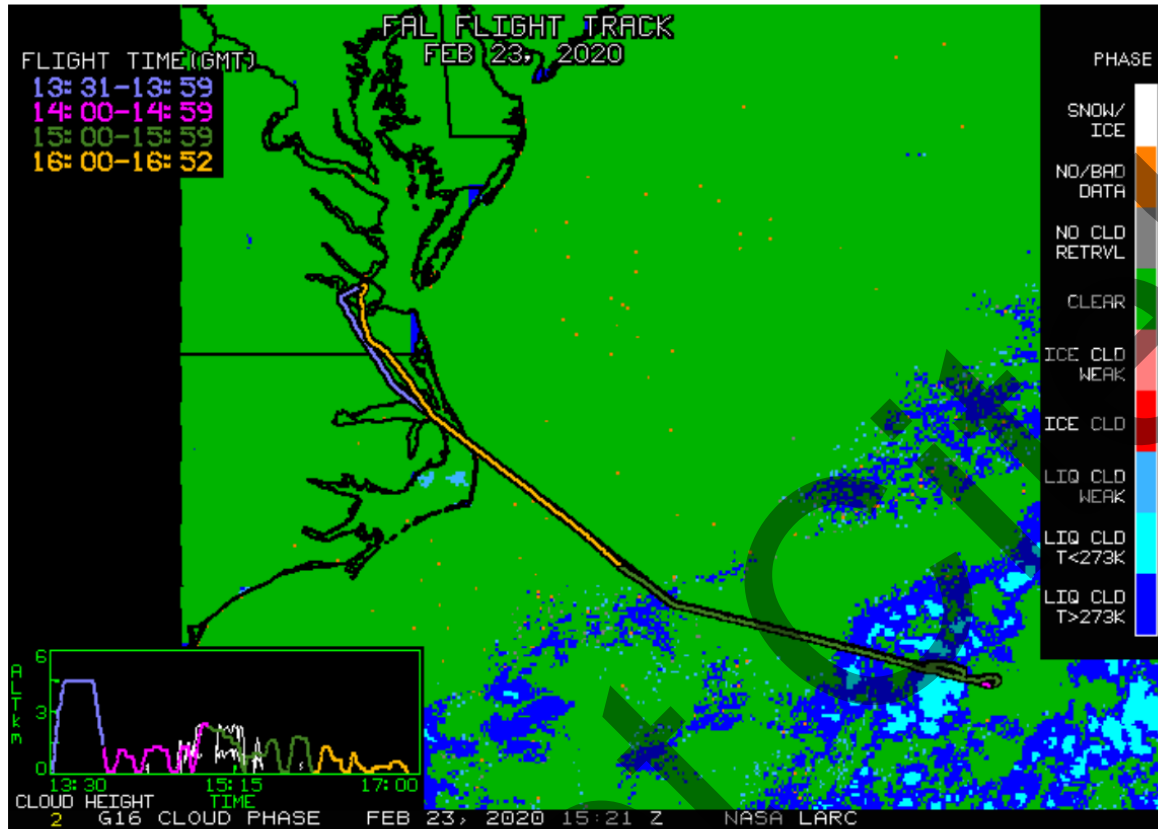
Satellite Group GOES-16 Images (near middle of flight):  
Visible



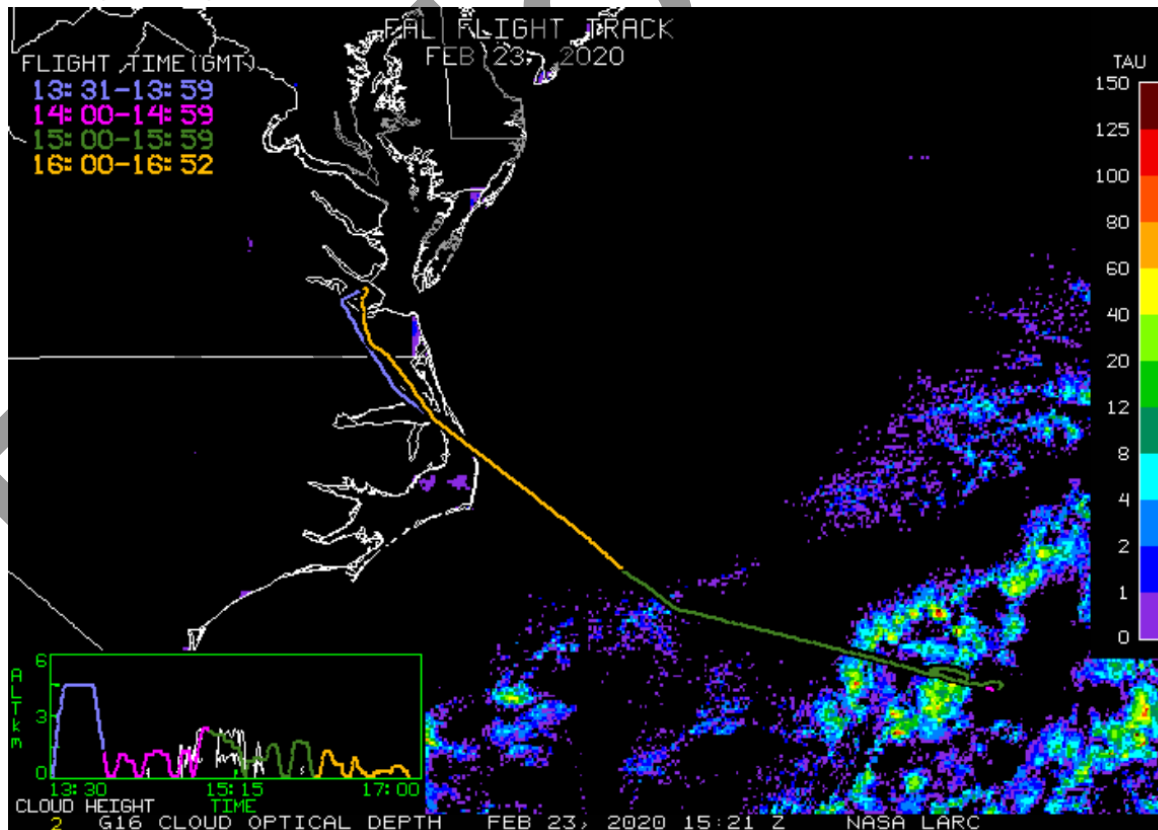
Infrared



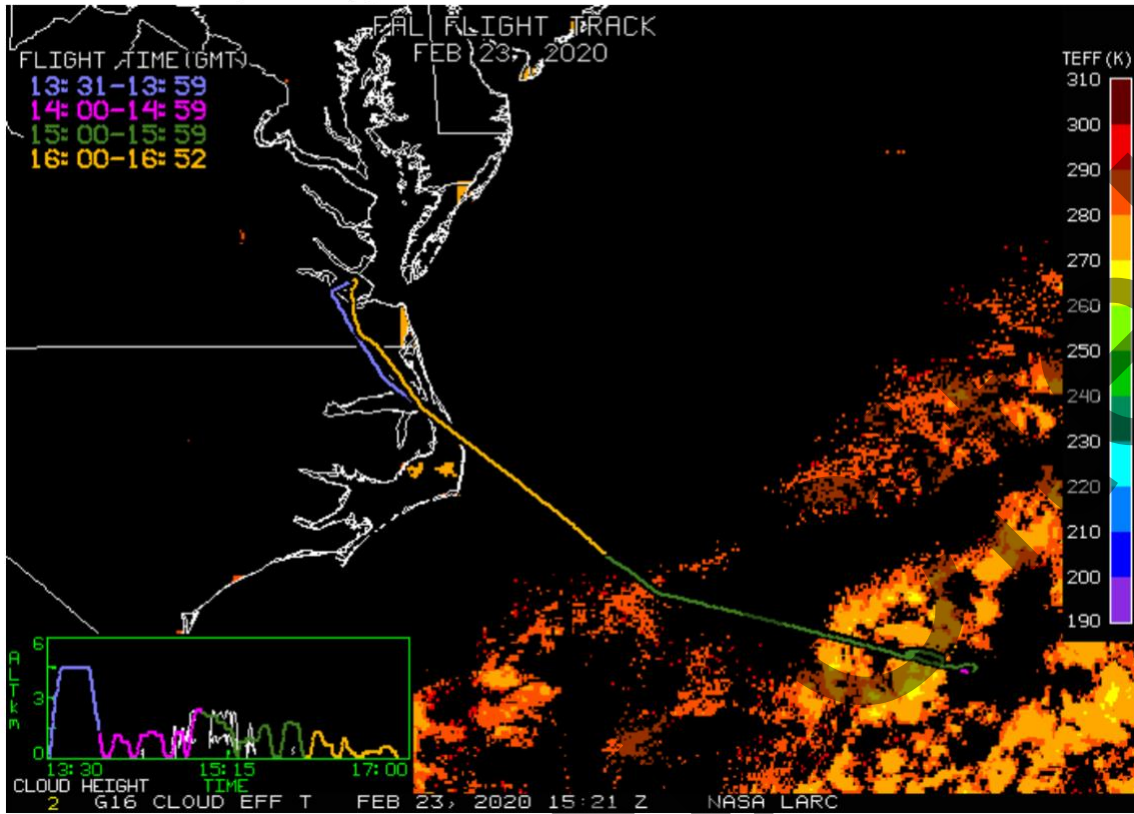
### Cloud Phase



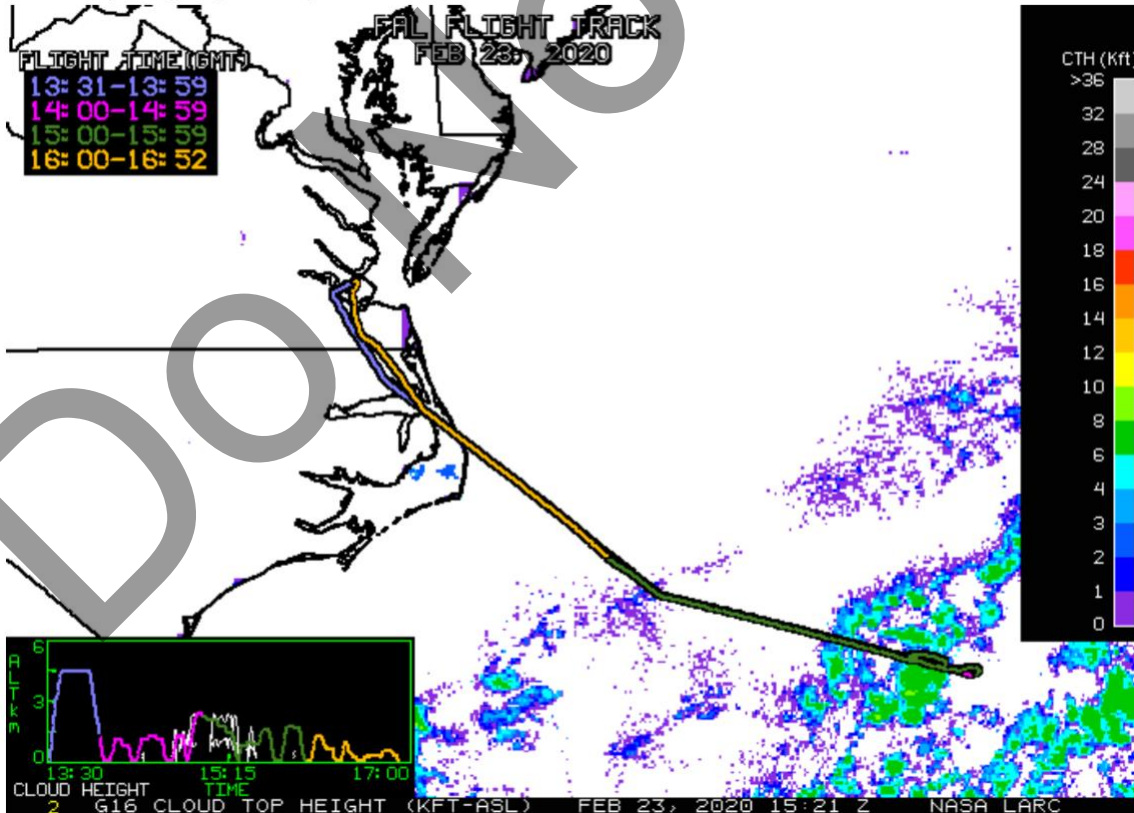
### Cloud Optical Depth



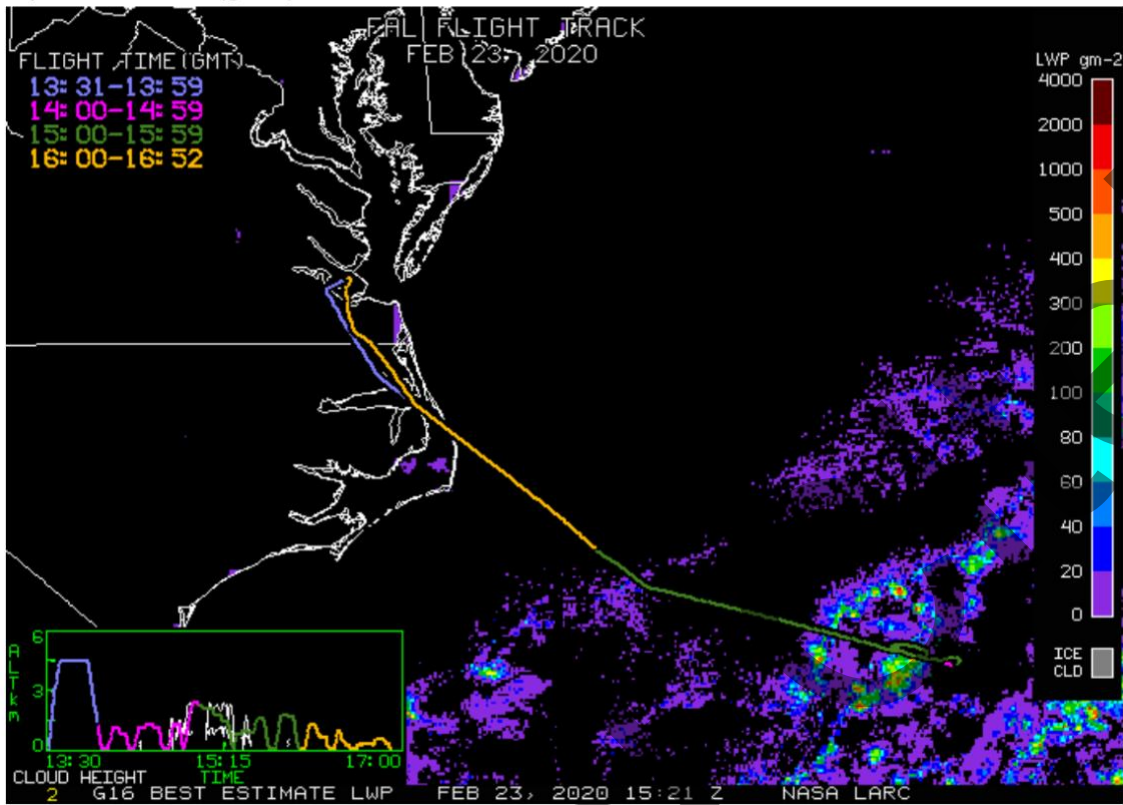
Cloud Effective Temperature (K)



Cloud-Top Height (Kft-ASL)



Liquid Water Path (gm-2)



Cloud Droplet Number Concentration (cm-3)

