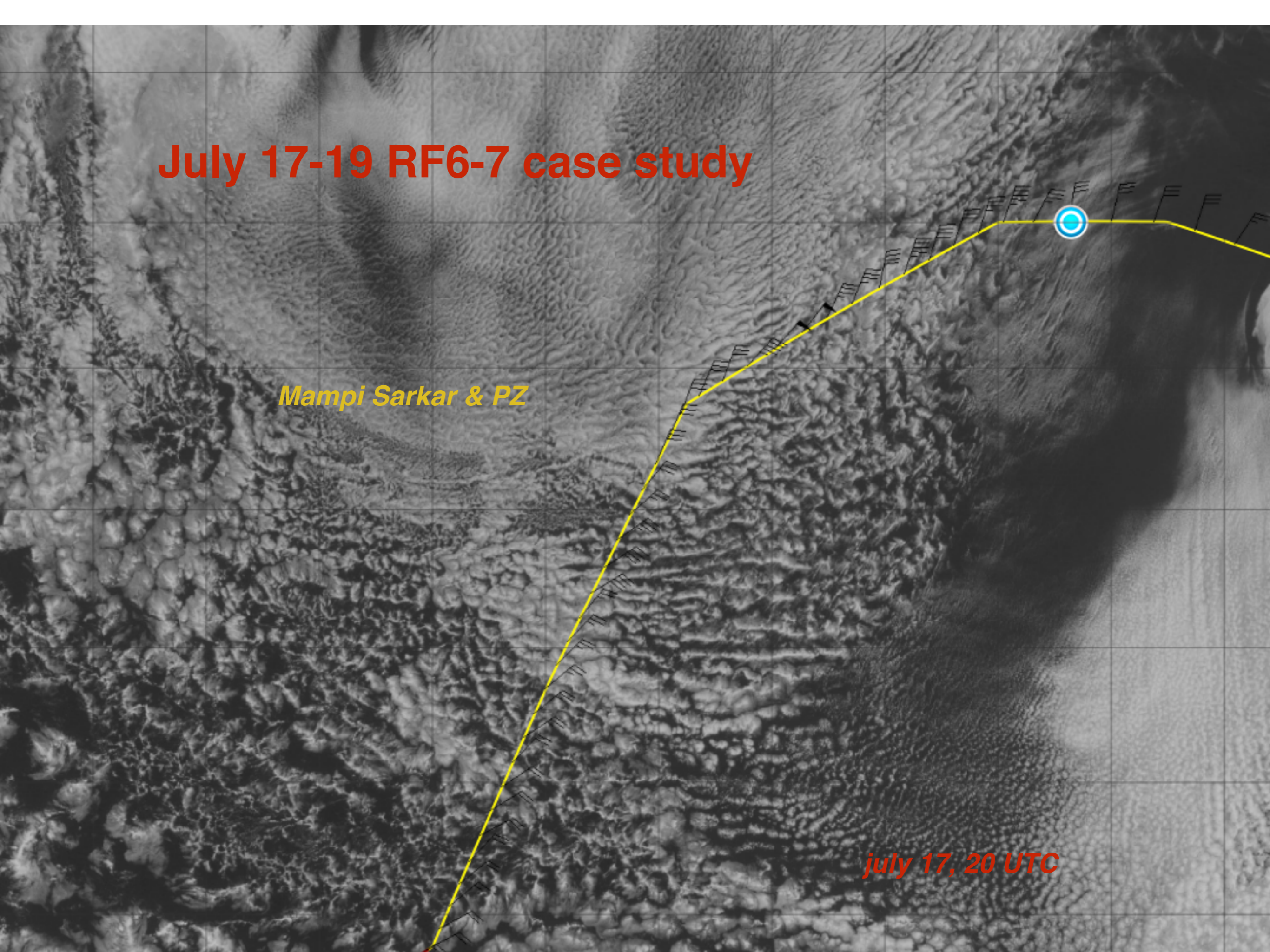
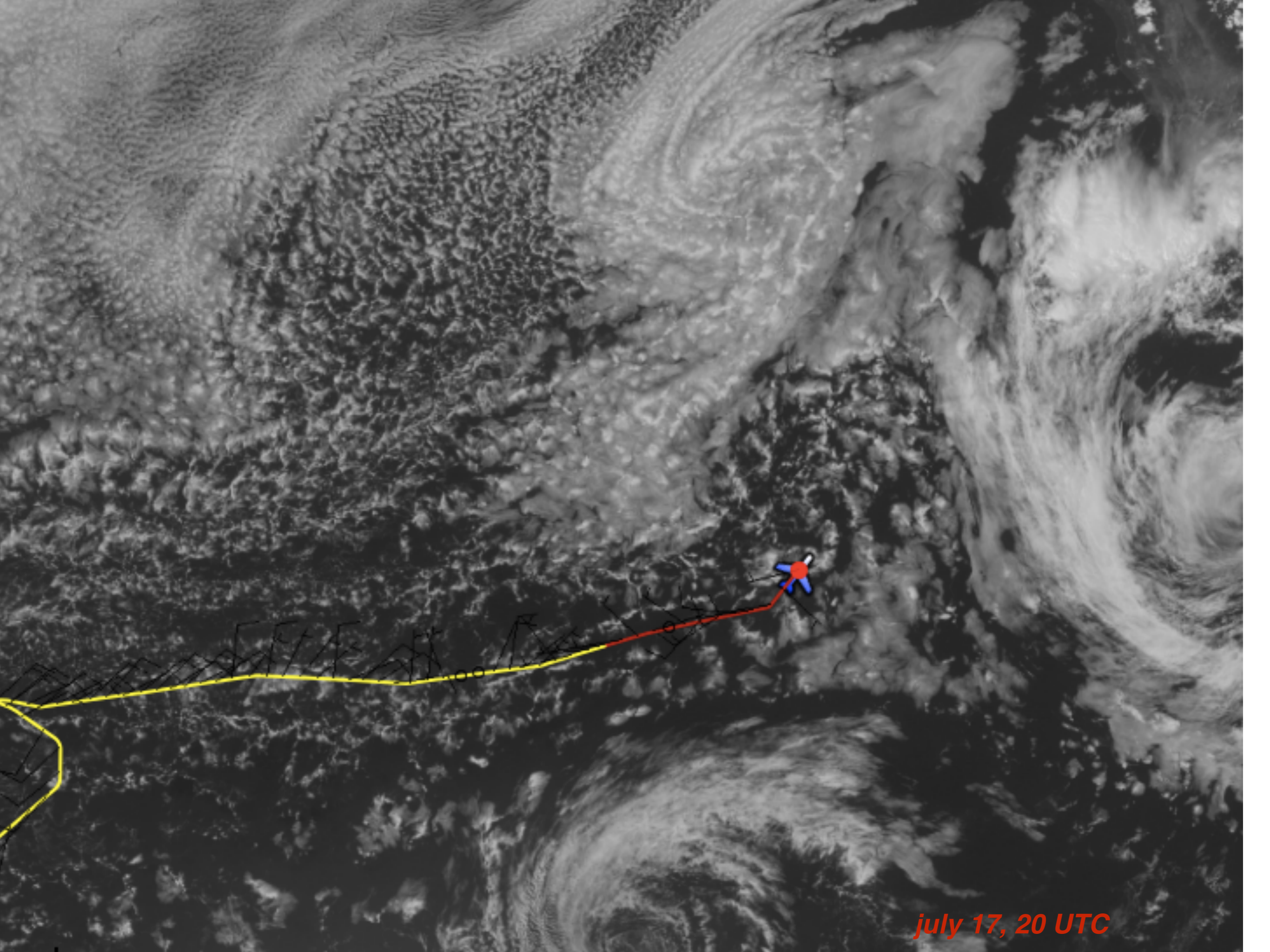


July 17-19 RF6-7 case study

Mampi Sarkar & PZ

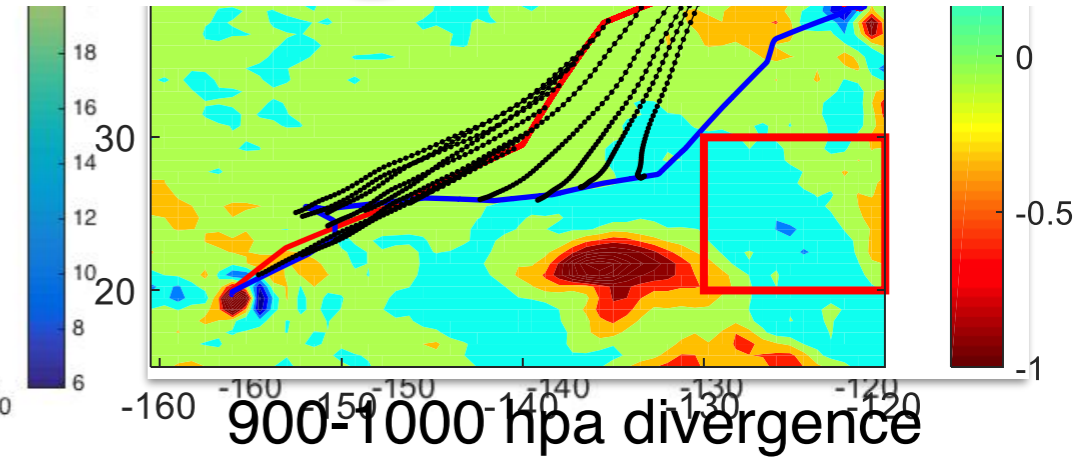
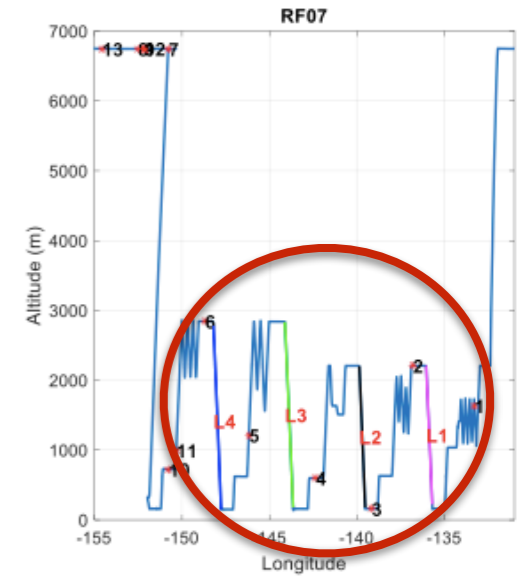
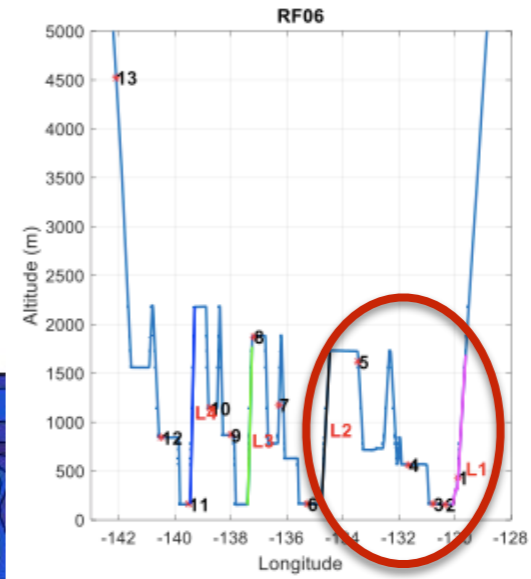
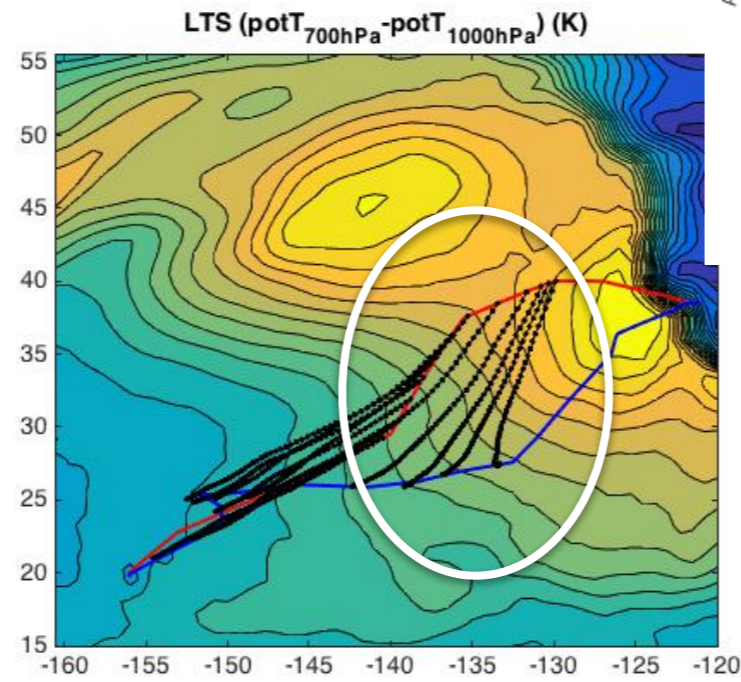
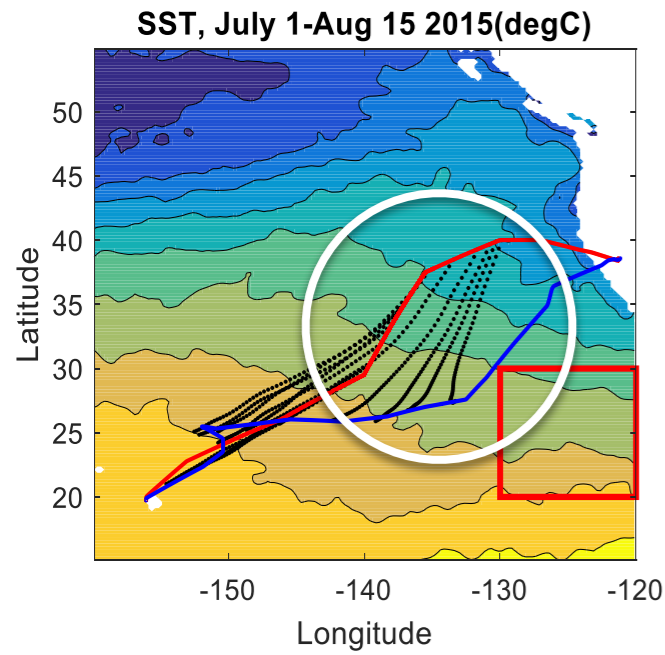
July 17, 20 UTC



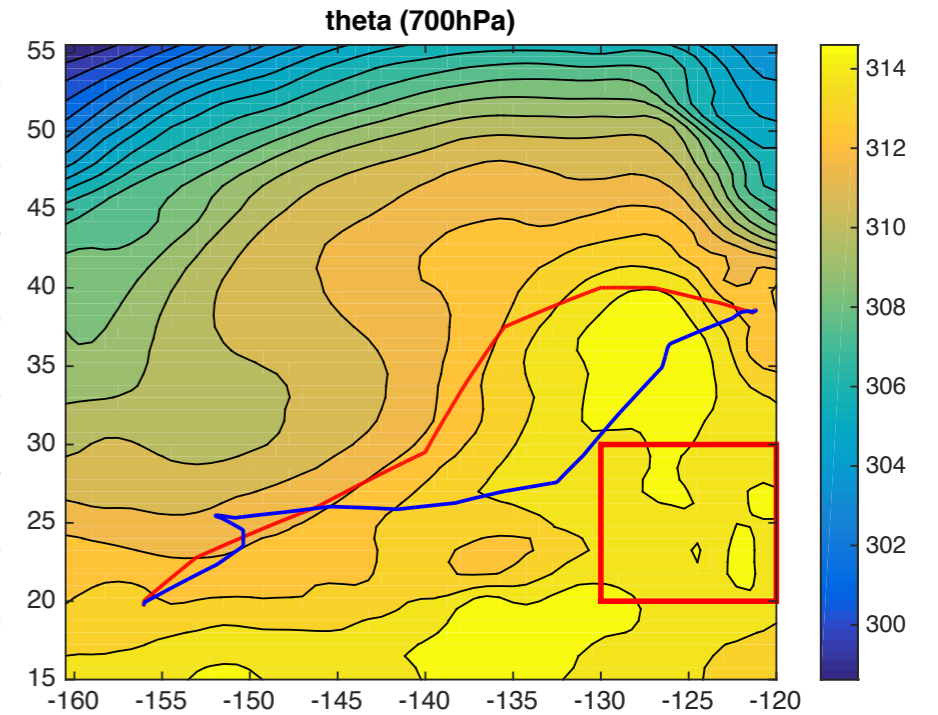
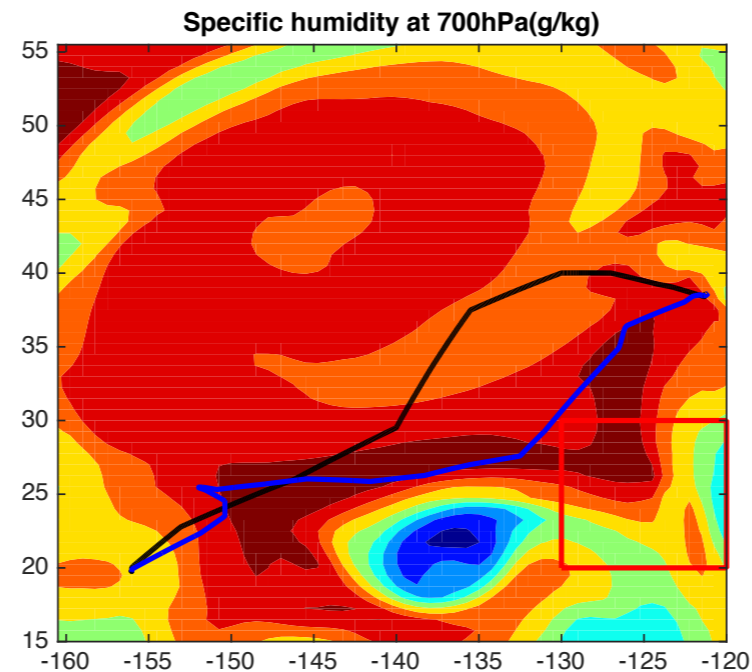
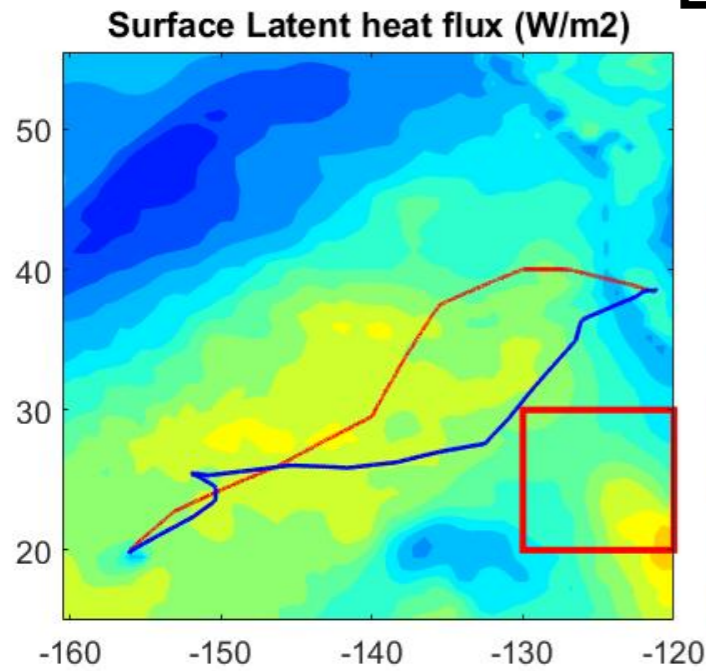


July 17, 20 UTC

first 5 trajectories within first sampling sequence disperse over 15deg longitude in july 19 trajectory

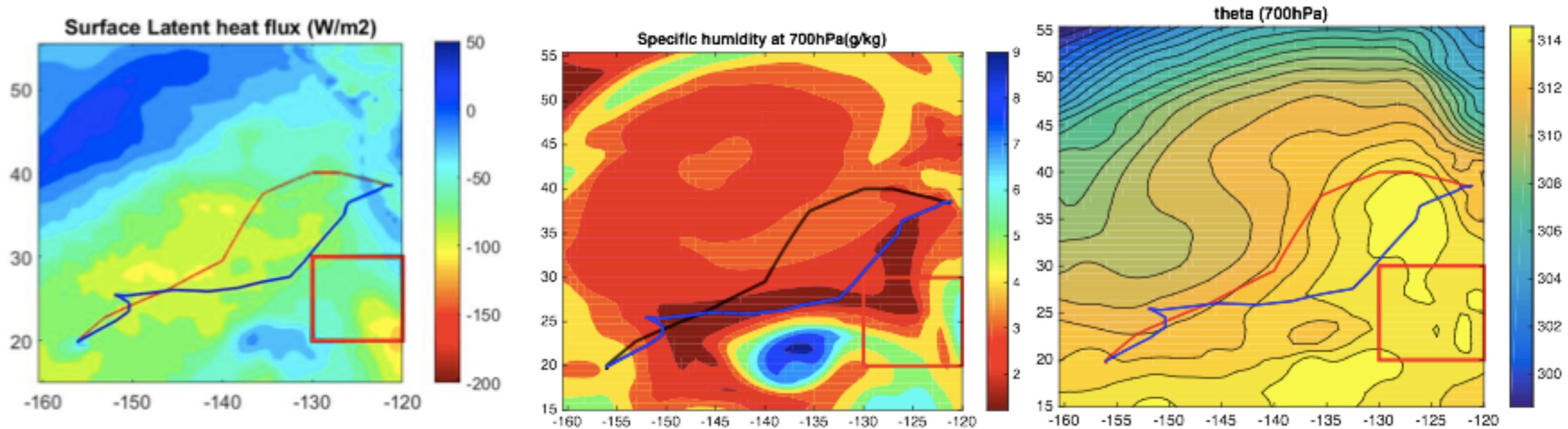


ERA-Interim

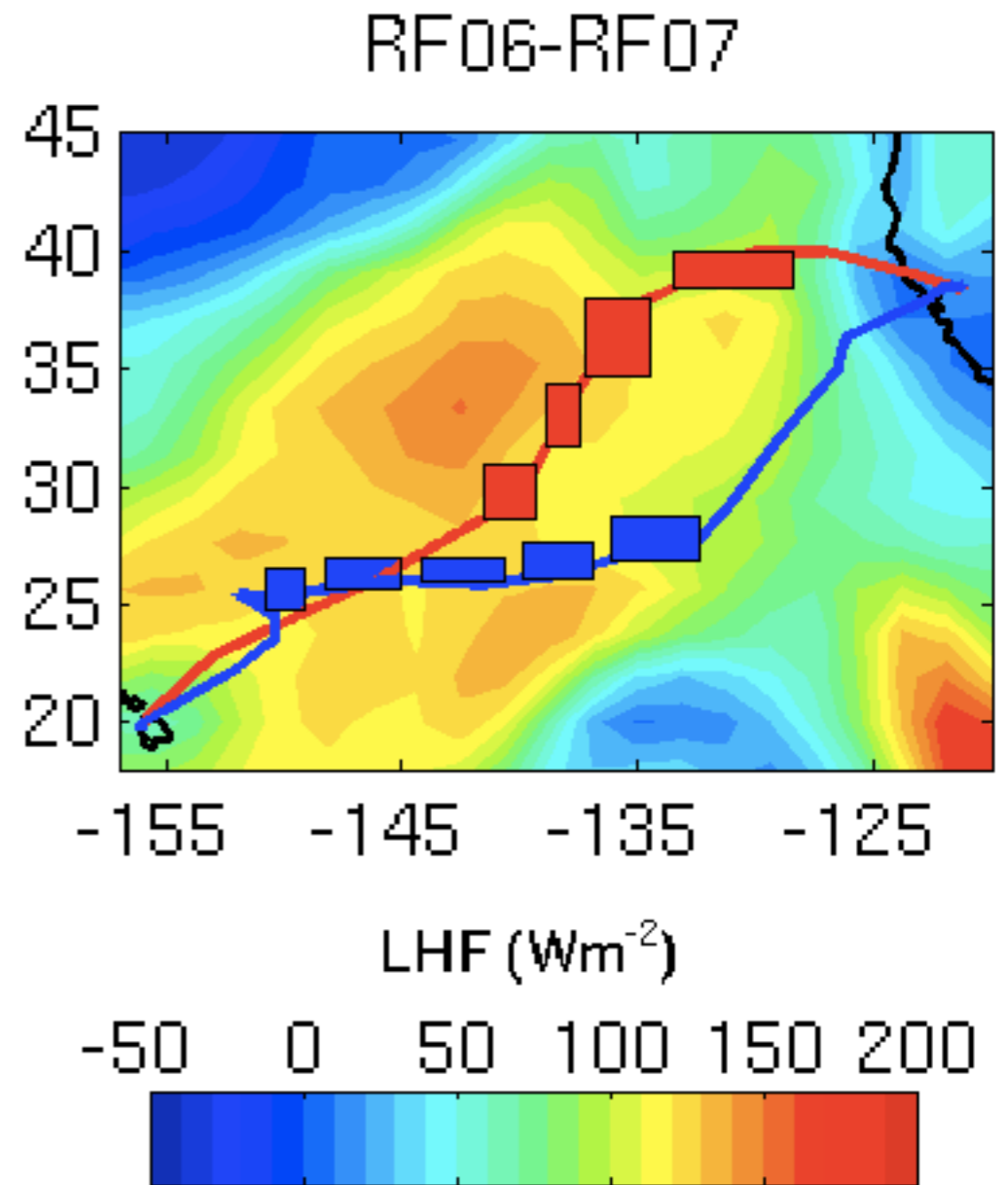
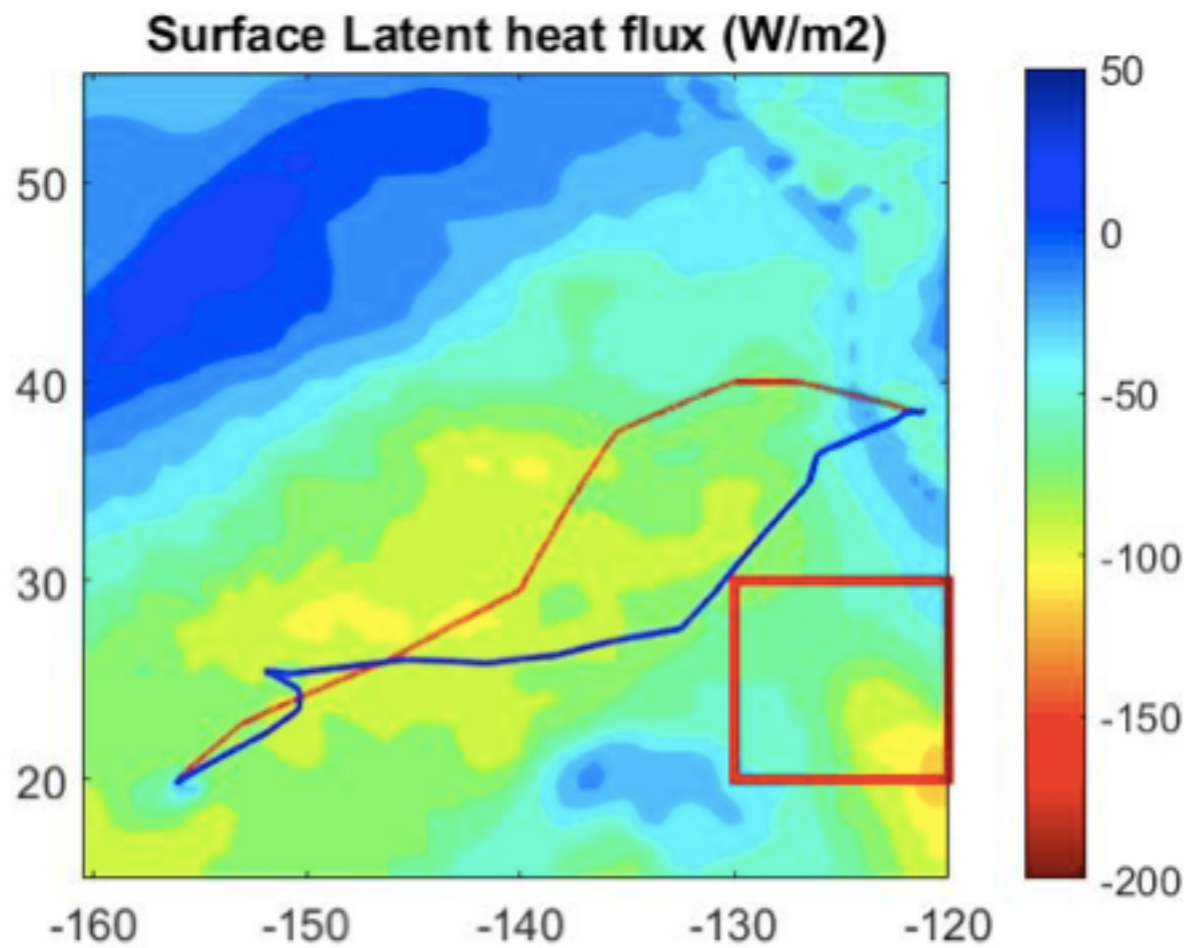


compared to the other cases, SLP maximum is larger & surface latent heat fluxes/winds are higher (Ghate)

enhanced lower-level subsidence drying and warming during RF07 from tropical storm to south



significant differences between ERA-I & NCEP - and both known to overestimate

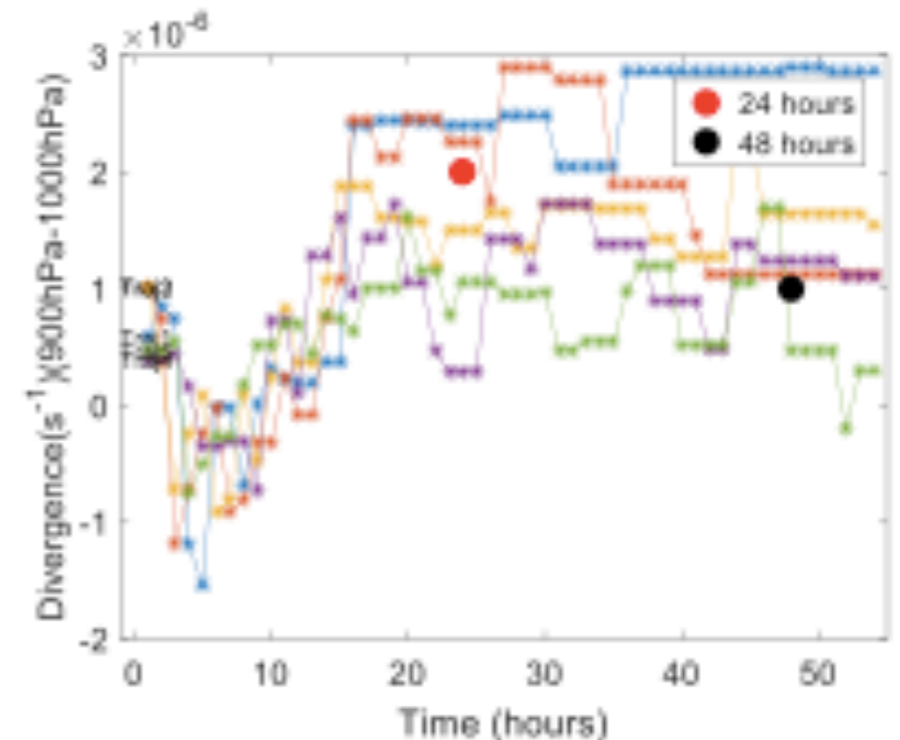
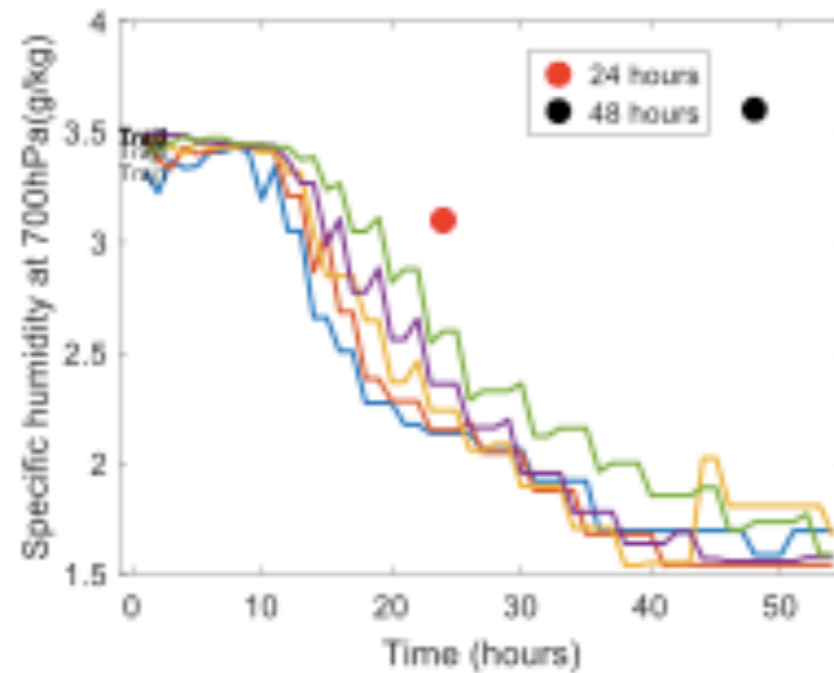
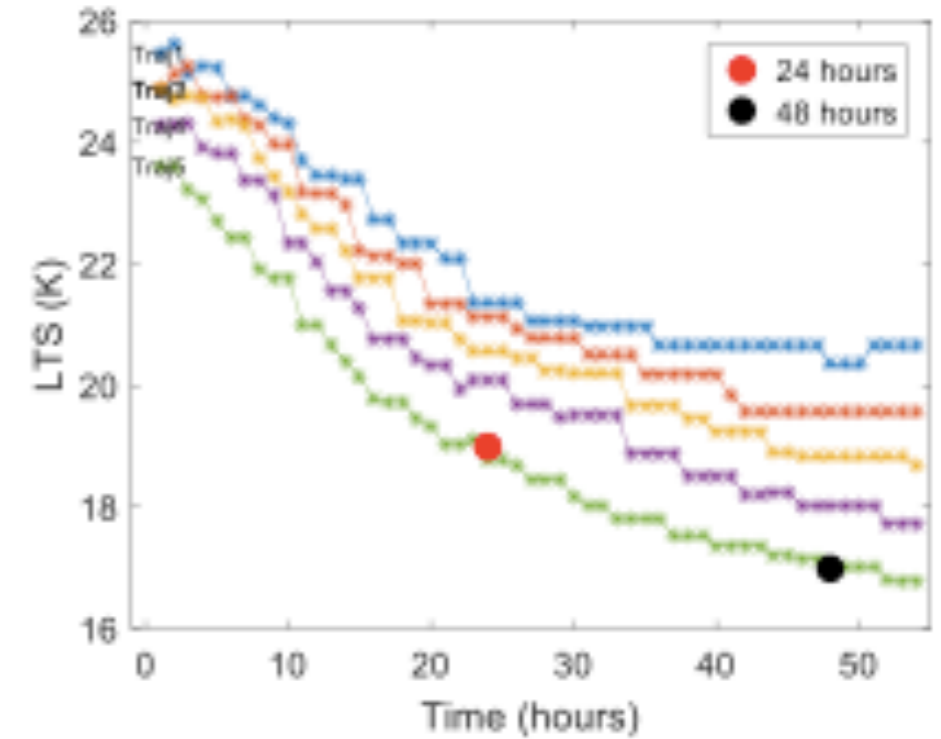
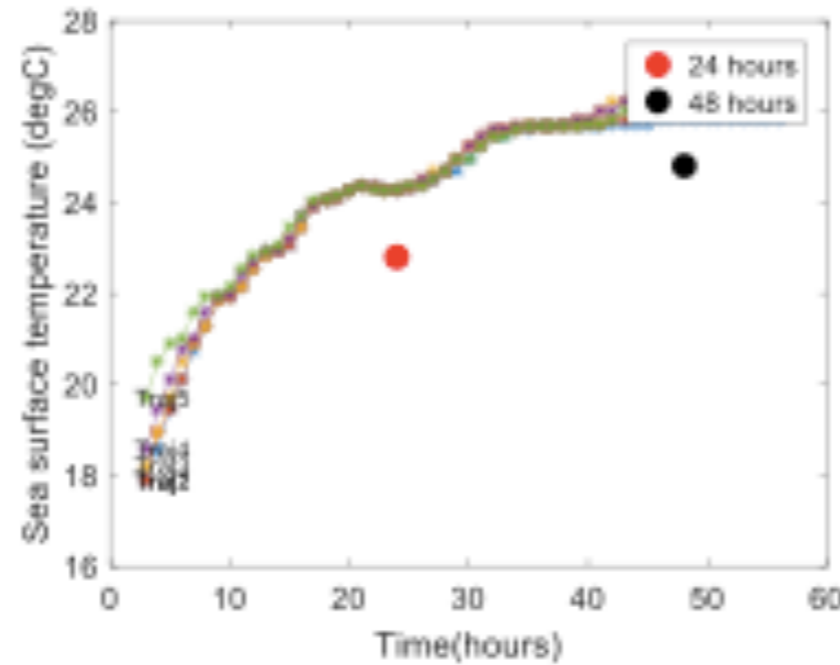


compared to Sandu et al., 2010: transition occurring over warmer SSTs, higher LTS (implying higher 700-hpa theta), drier 700-hpa, arguably similar large-scale divergence

>Changes along the first five trajectories (showing the maximum gradient of change in SST)

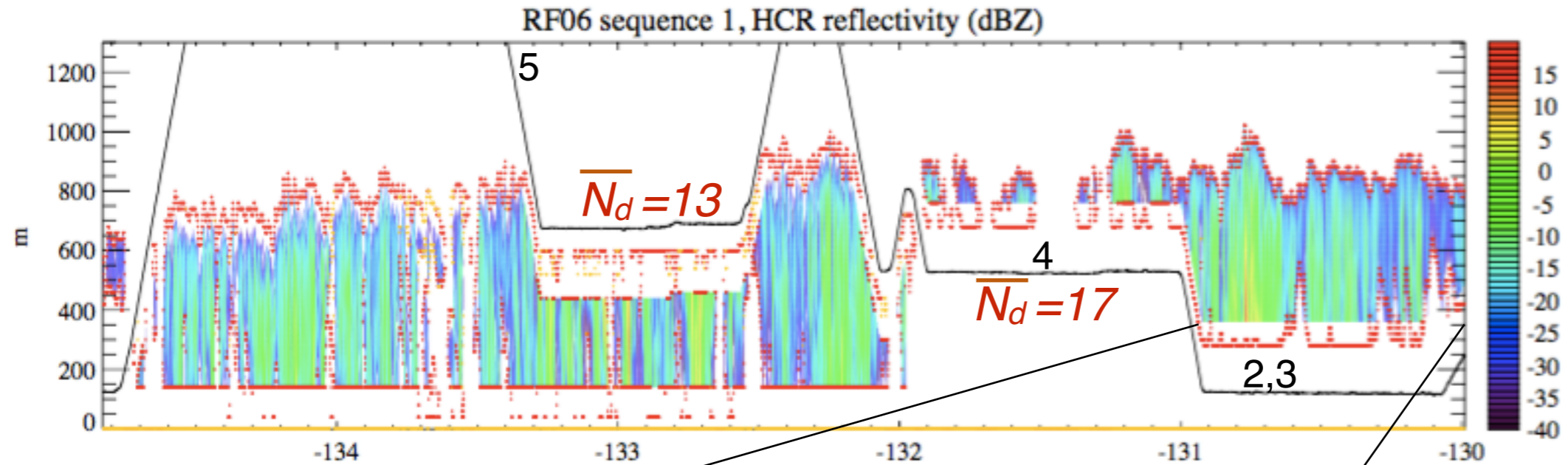
>Comparison with Sandu et al. 2010 obtained values for SST, LTS, SH, Divergence (as shown on right).

>Red and black dots represent the values (approximate) obtained by Sandu at the end of 1st and 2nd day respectively.

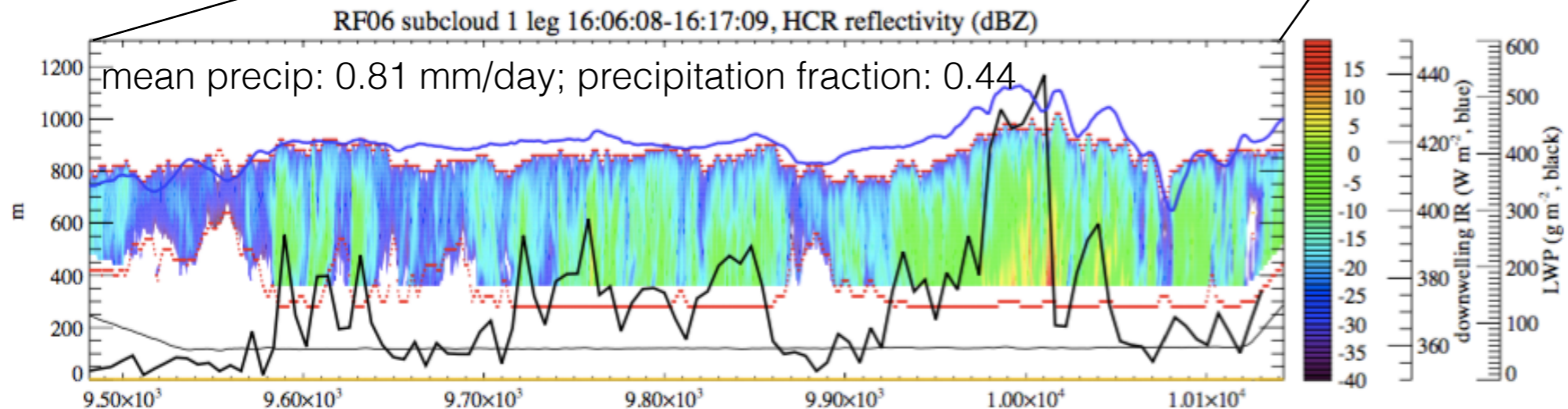


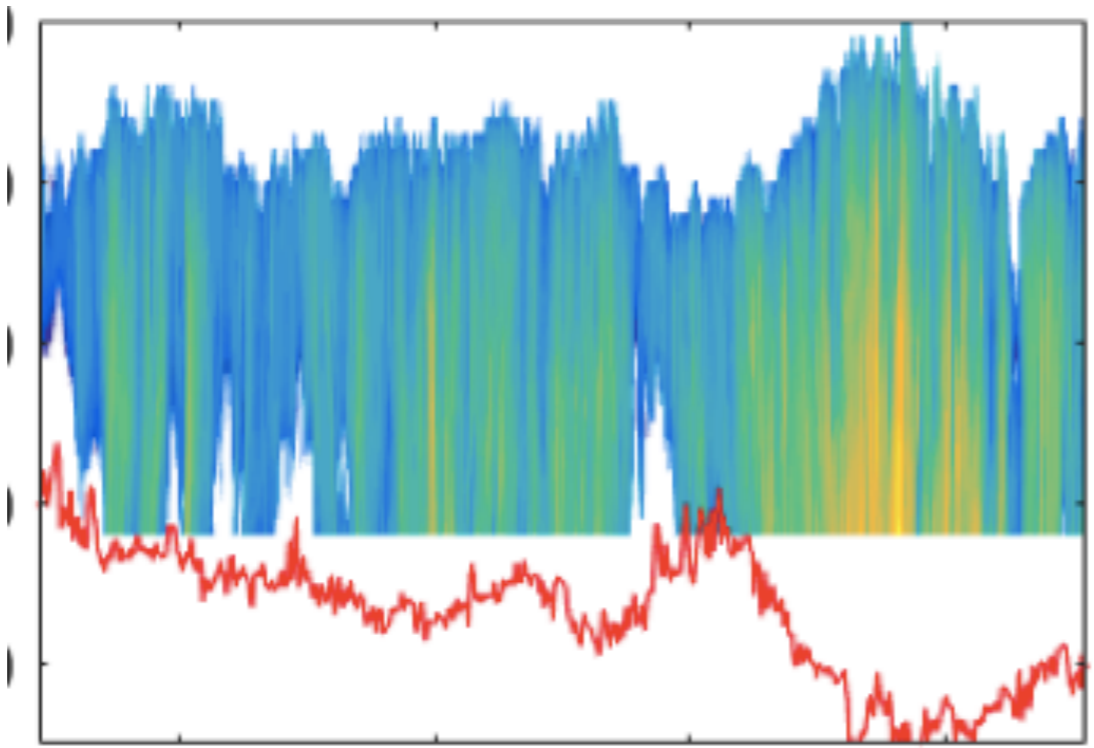
beginning of trajectory: overcast, light drizzle, clean, well-mixed
consistent across sequence 1

mean precipitation at cloud base (for > -20 dbz): 0.41 mm/day



good correspondence between radar-perceived vertical structure and LWP
mean cloud top height: 855 m mean LWP: 125 g m⁻²



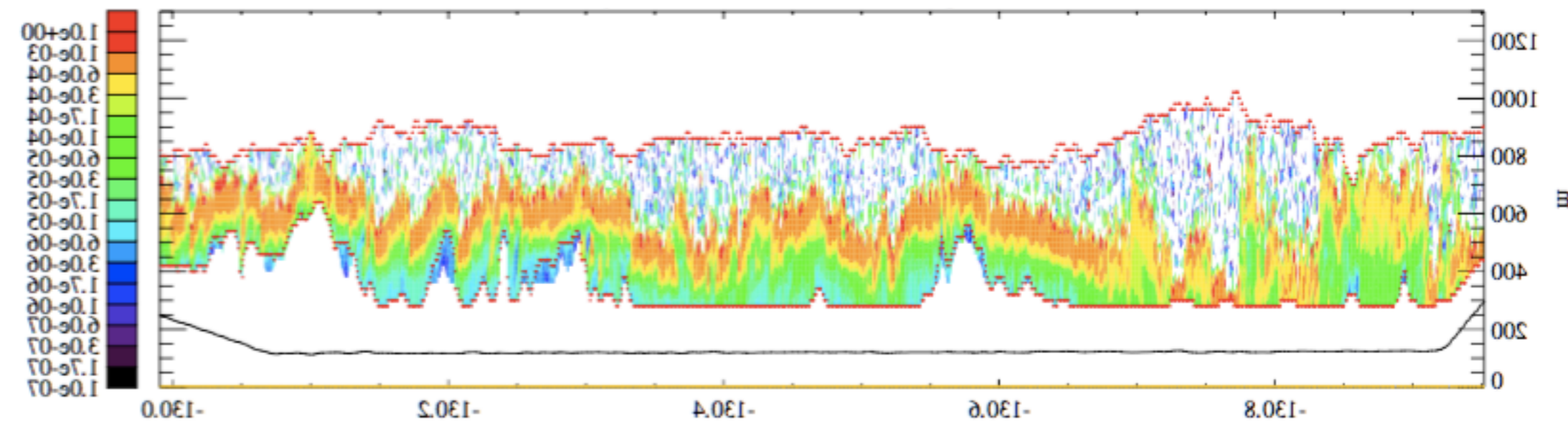
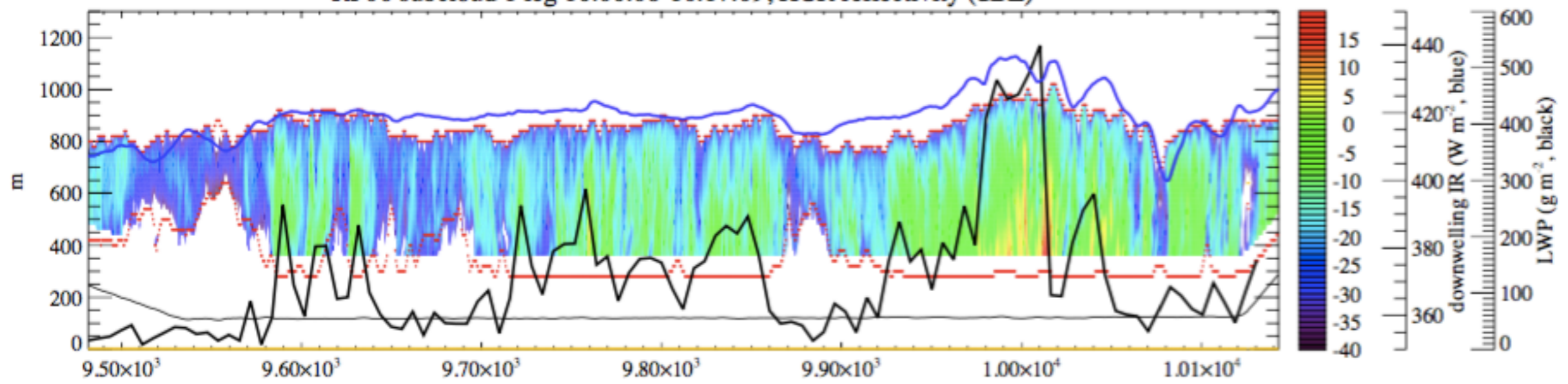


LCL well matches lidar-derived cloud base & LWP fluctuations

LCL



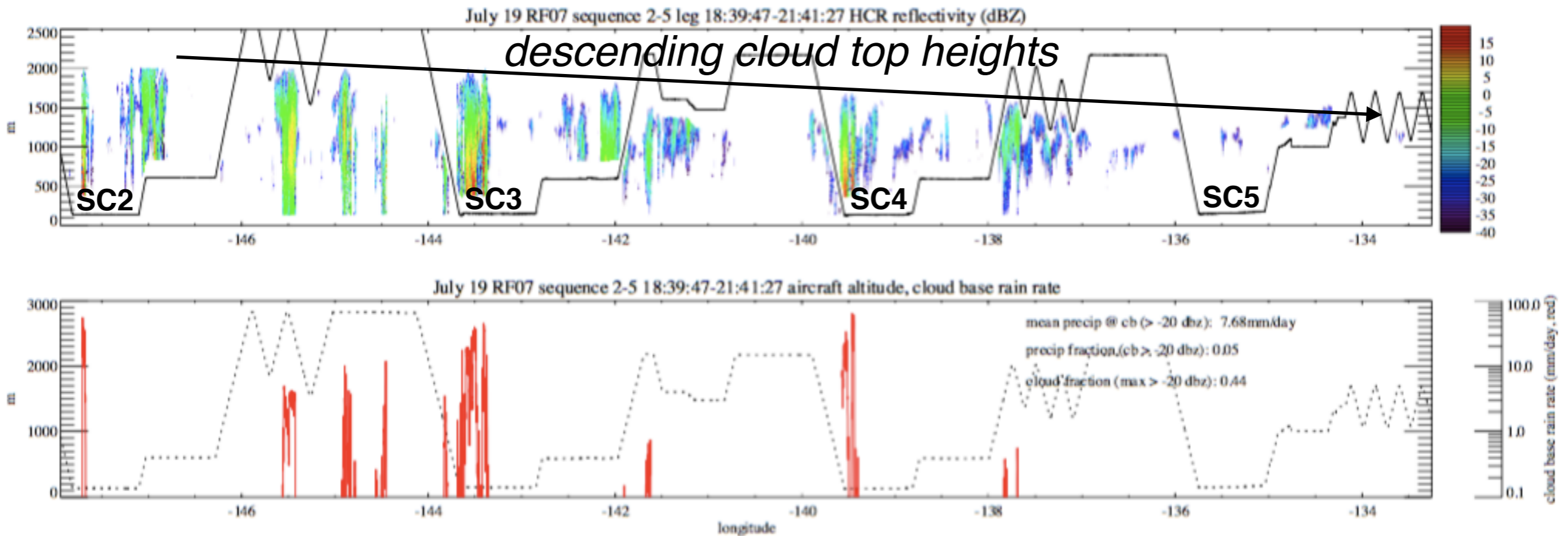
RF06 subcloud 1 leg 16:06:08-16:17:09, HCR reflectivity (dBZ)



evolving into fewer, deeper, more heavily precipitating clouds
 mean cloud base precipitation (> -20 dbz): 7.7 mm/day

	rain rate cloud base* mm/day	precip fraction*	cloud fraction
SC2	21.4	0.05	0.5
SC3	10.5	0.27	0.6
SC4	14.0	0.08	0.77

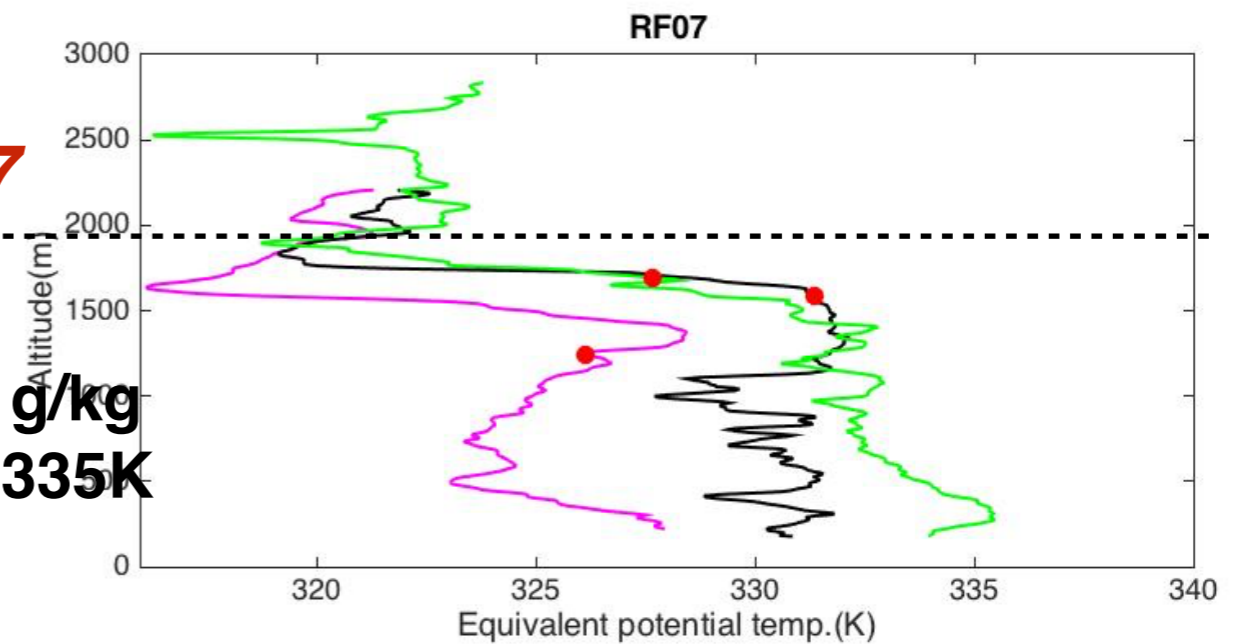
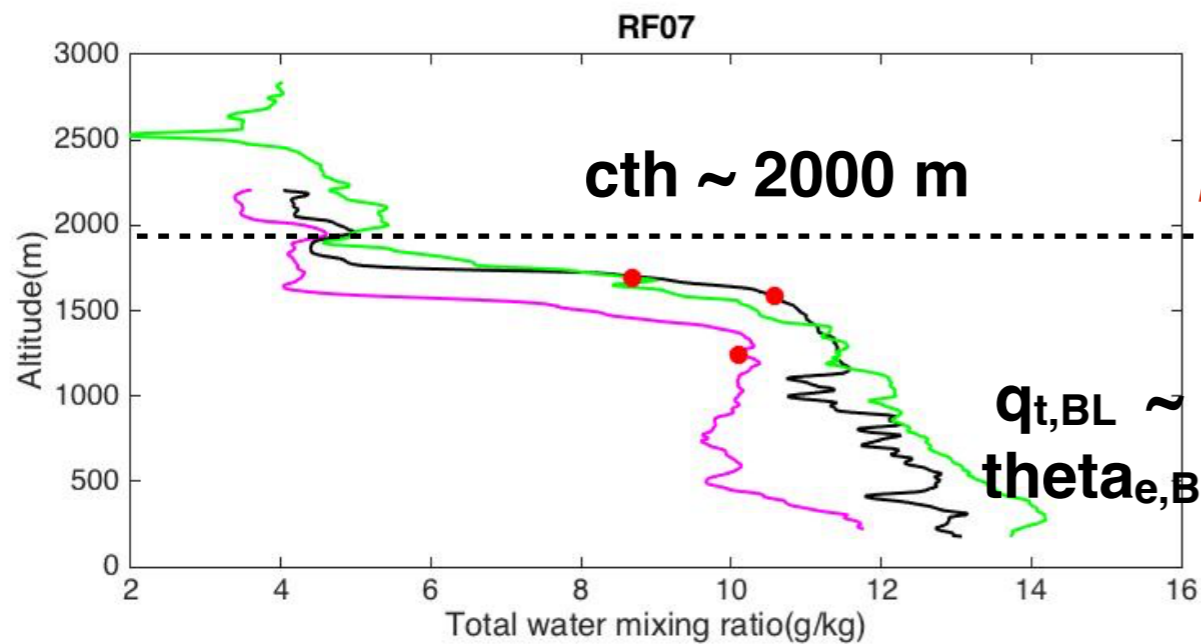
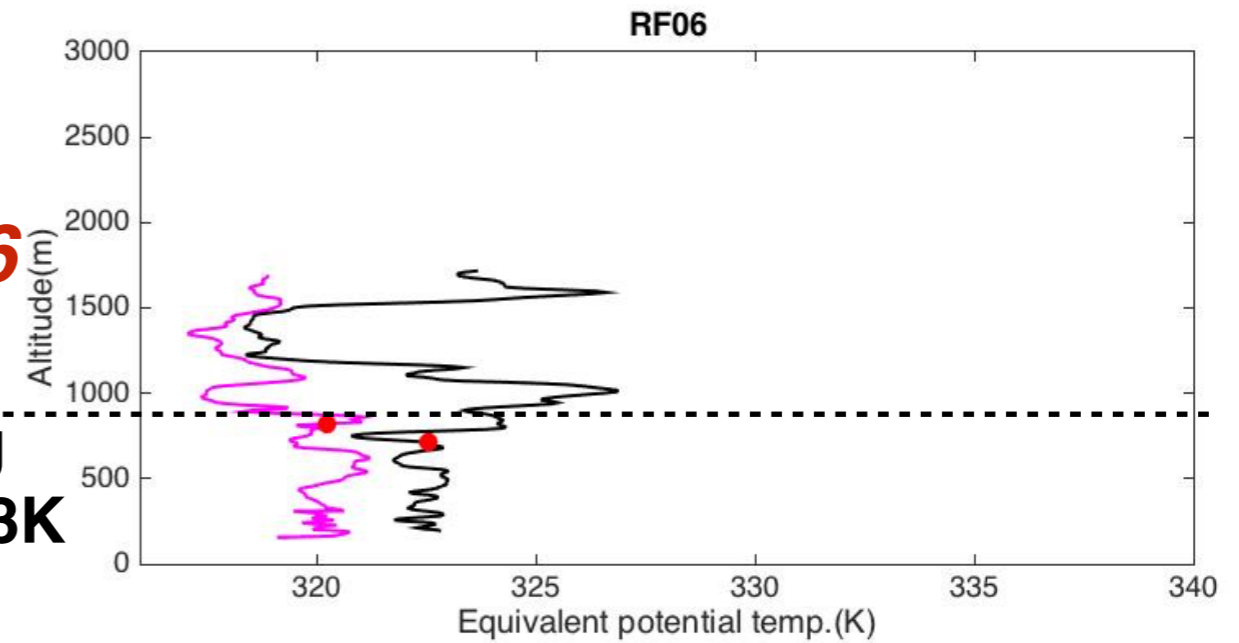
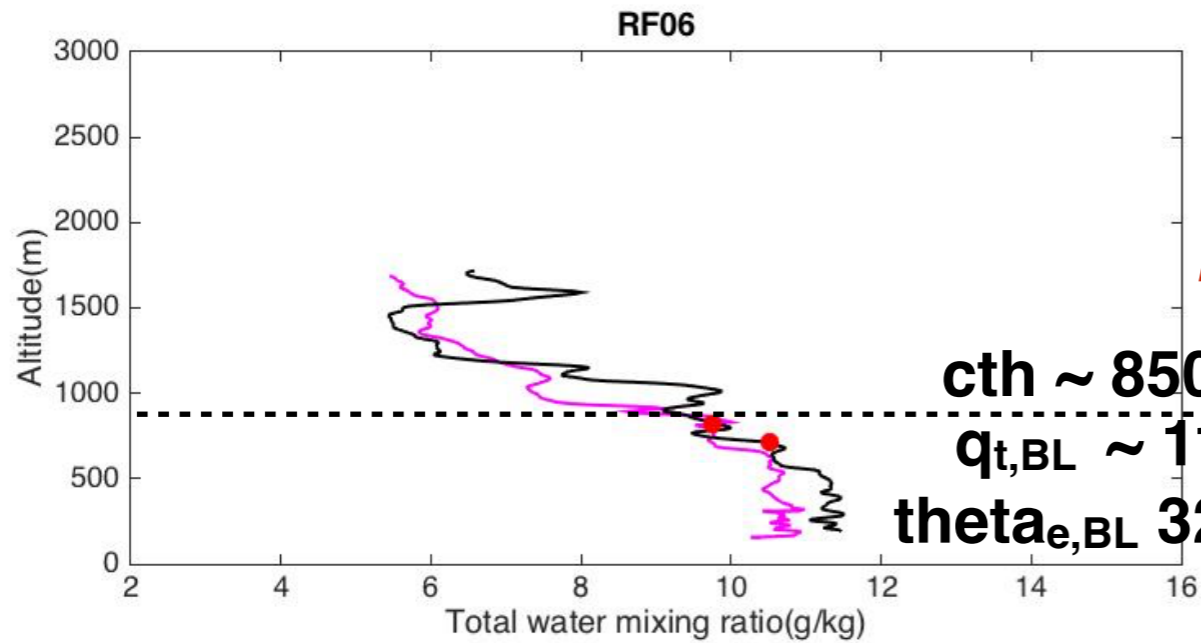
*mean of dbz, 500 m, > -20dbz

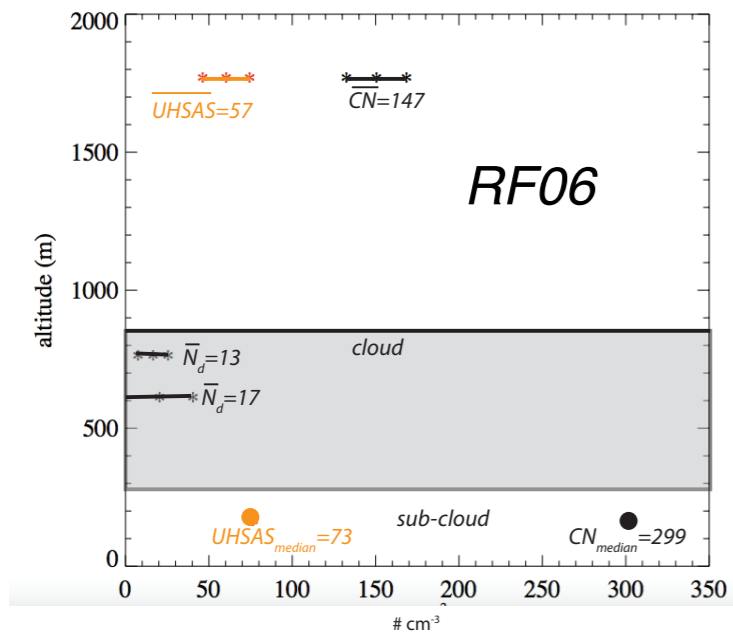


well-mixed during RF06 -> decoupled during RF07
significant warming, moistening

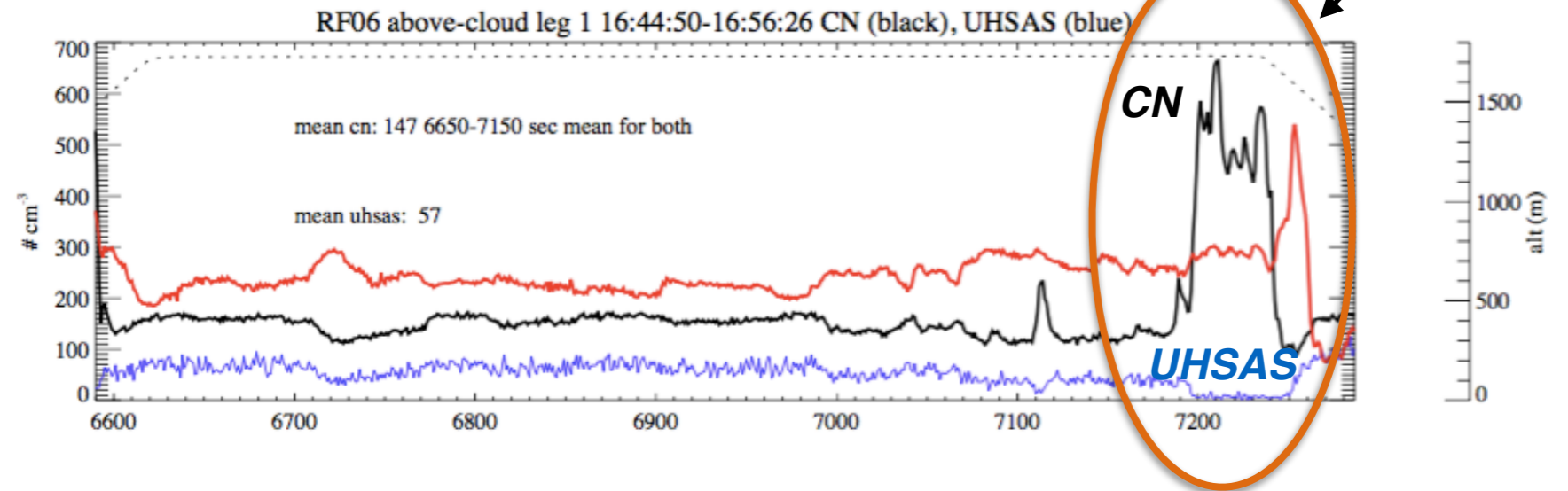
q_t

theta

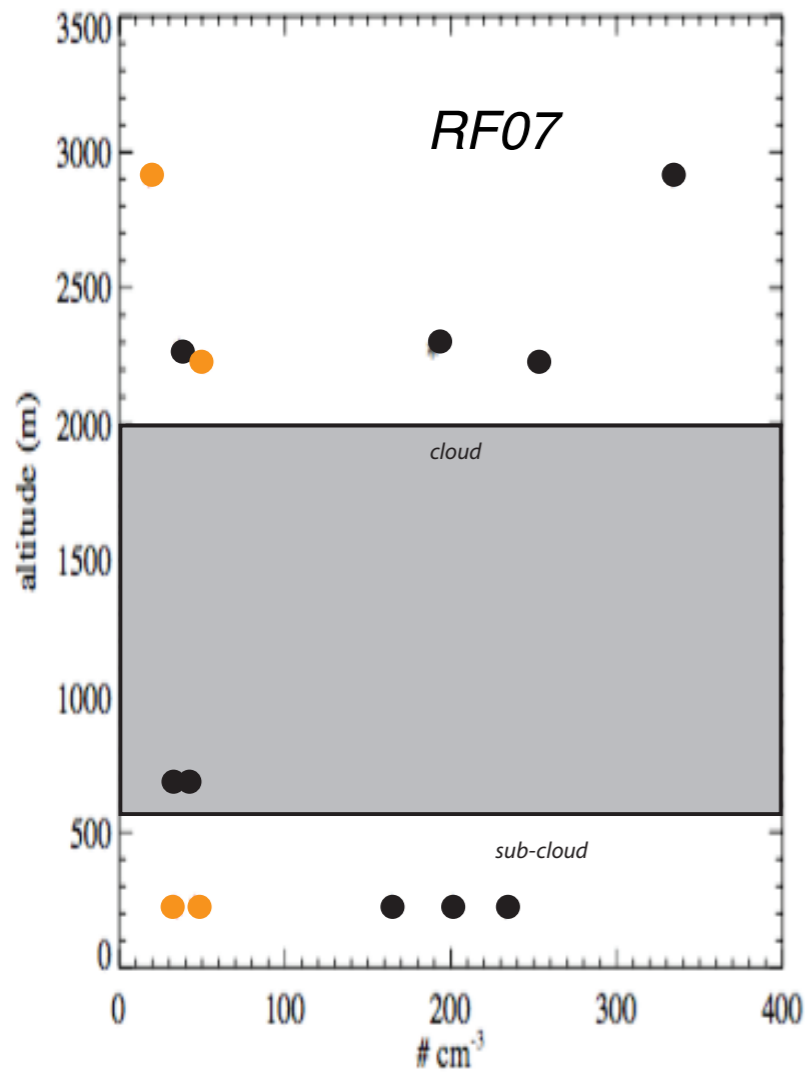




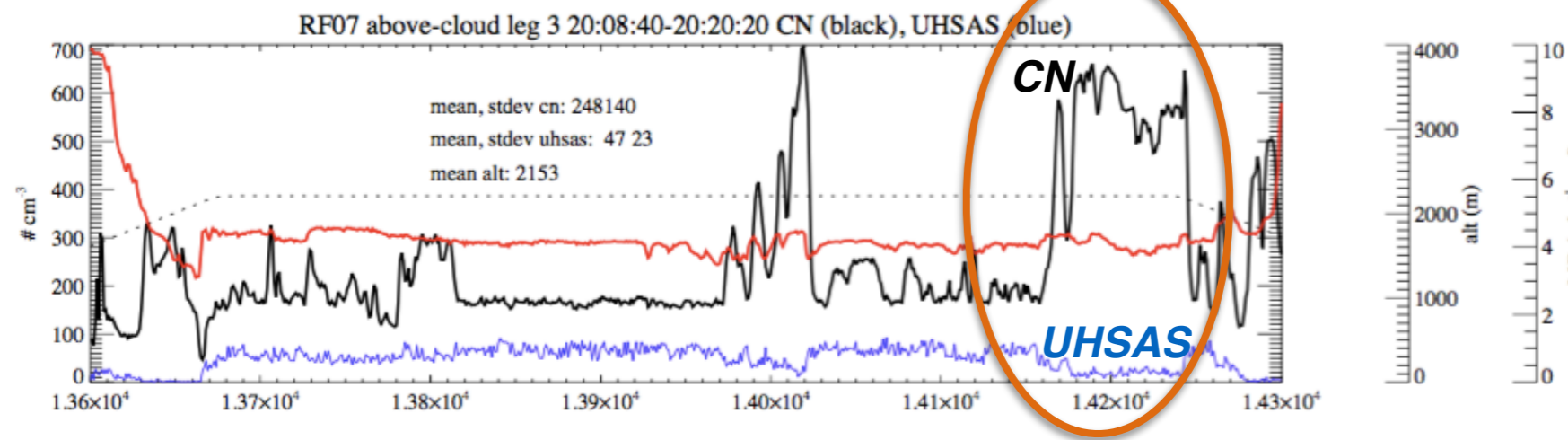
RF06 July 17 above-cloud leg 1



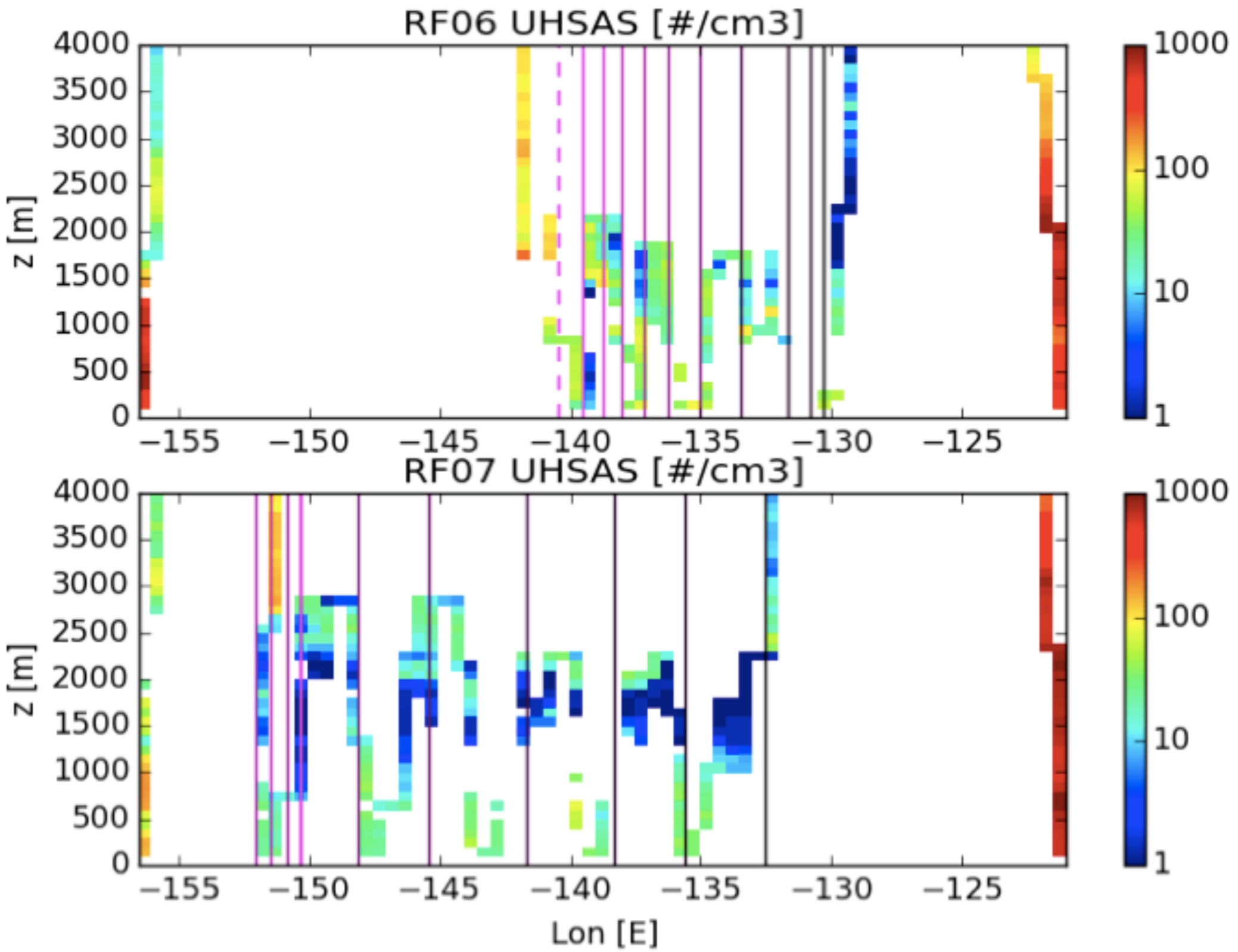
... pristine conditions with suggestion of new particle formation at both beginning and end of trajectory



RF07 July 19 above-cloud leg 3

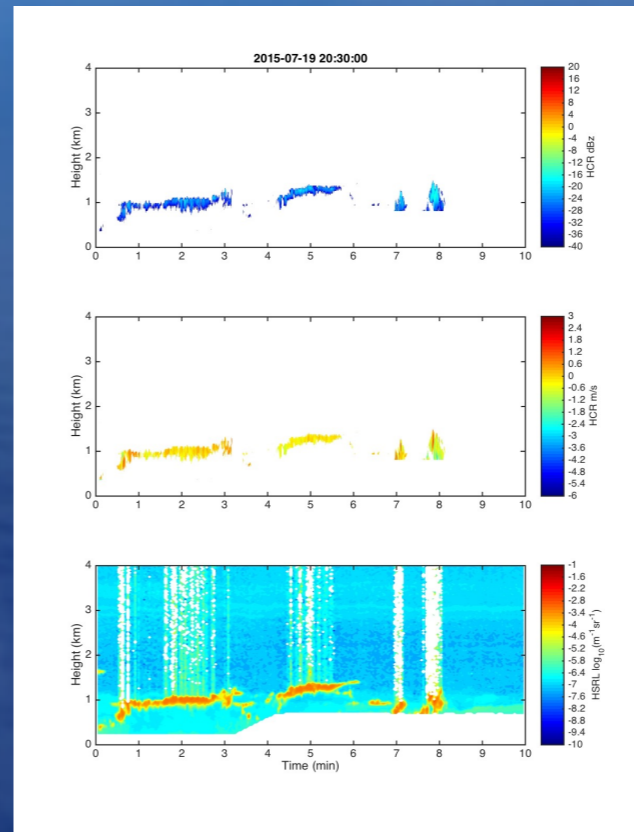
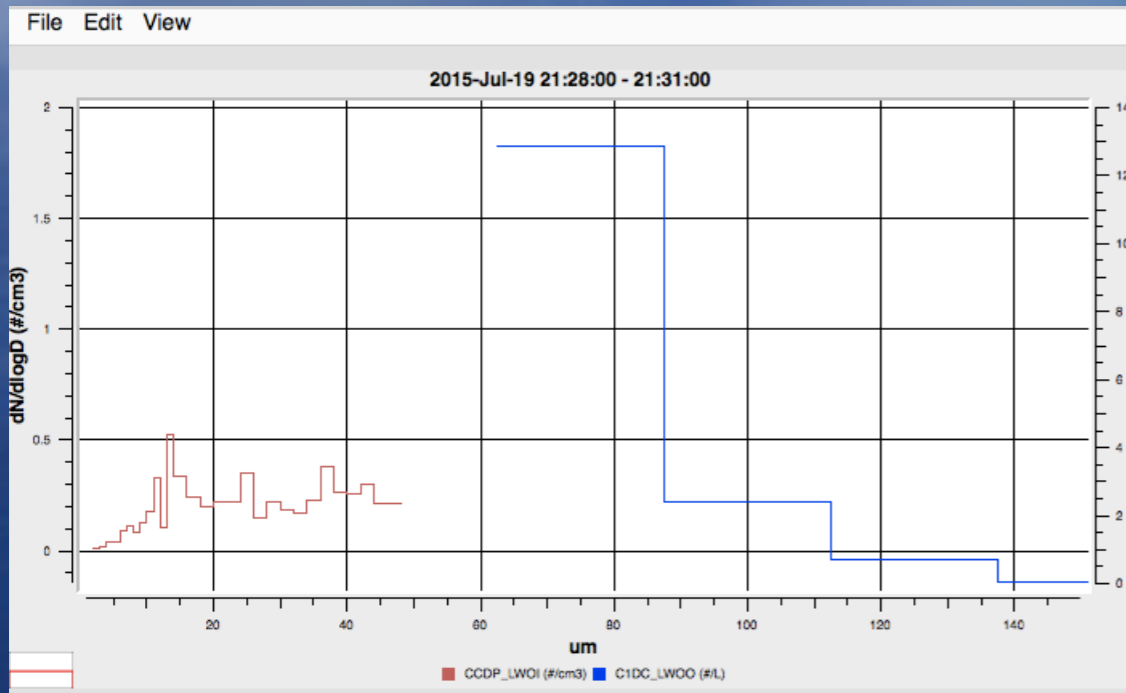


clean initial conditions cleanse even further...



grey clouds/UCLs:

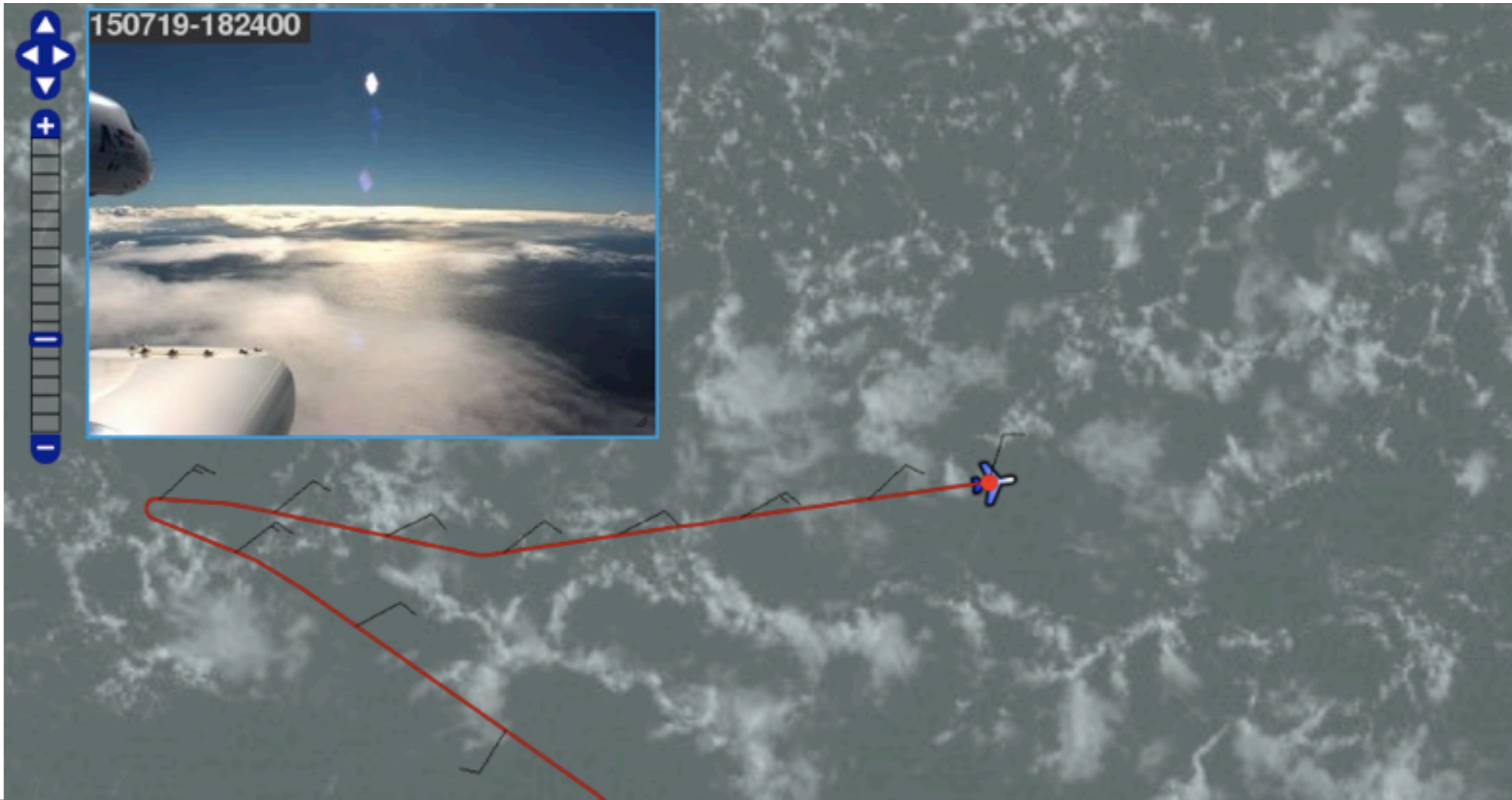
21:28-21:30



07 19 2015

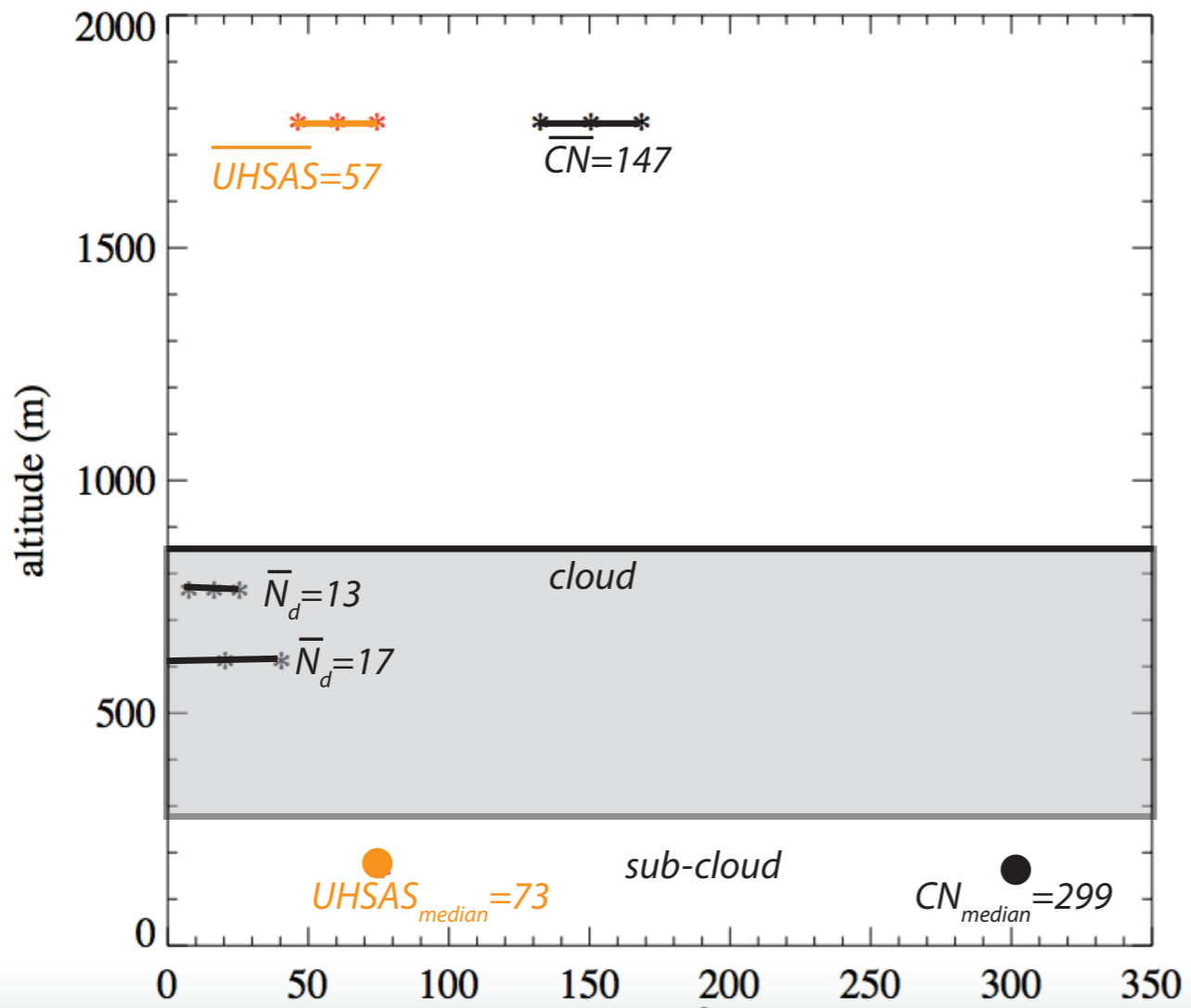


150719-182400



Mampi basing MS thesis on this pair
would like to integrate all CSET datasets for this

(last slide)



... within very clean conditions

