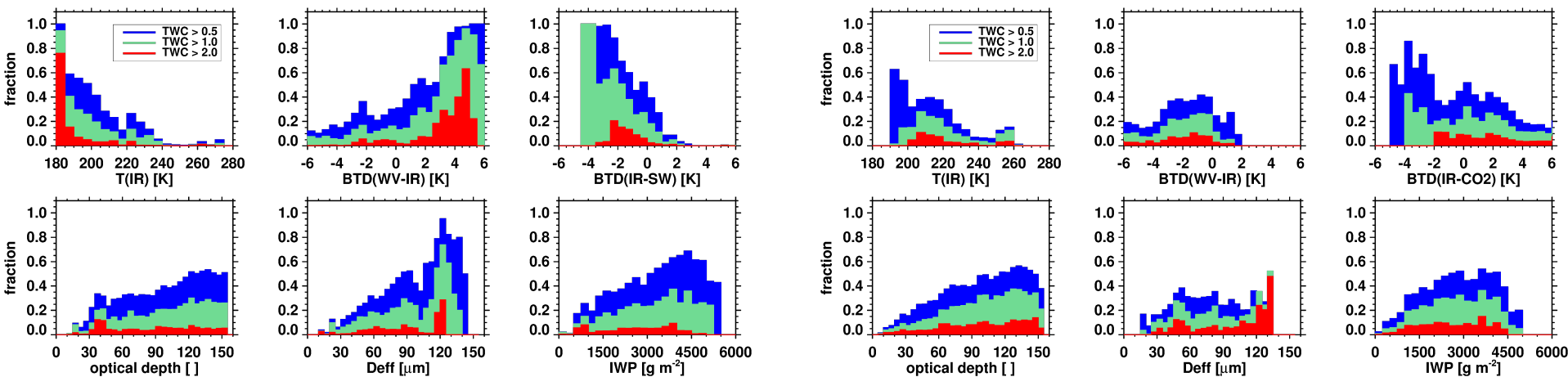


- HIWC probability for nowcasting

- Darwin cloud tops colder than at Cayenne, so probability will be lower for Cayenne
- Normalize T11 across different field campaigns and locations to tropopause temperature or mean anvil temperature as determined from OT product
- Artifacts in WV channel at cold end of range or navigation errors (MTSAT)?
- Incorporate COD and/or IWP

Darwin 2014

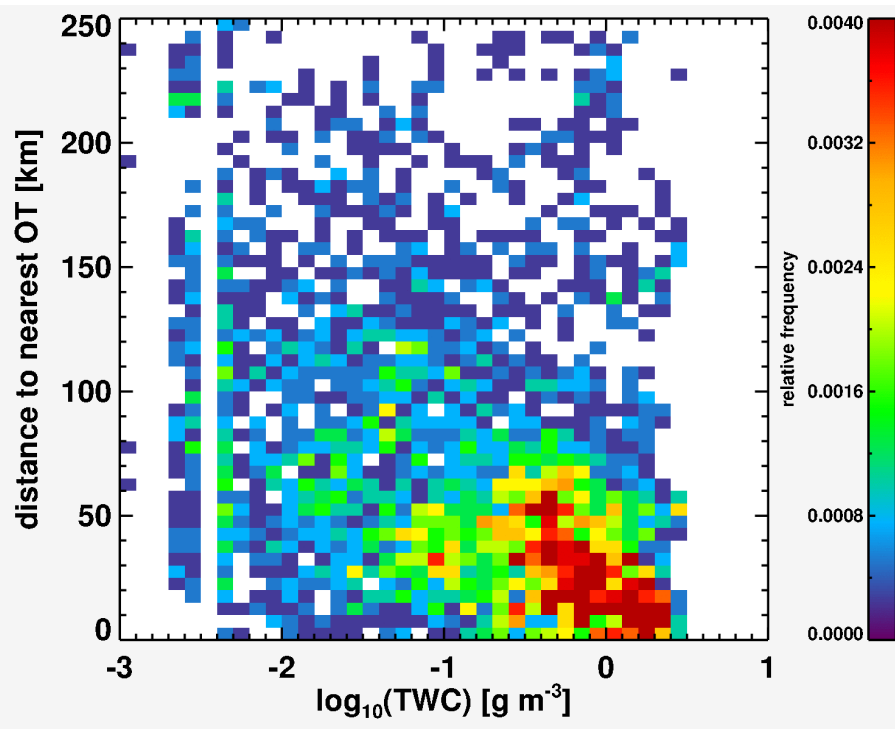
Cayenne 2015



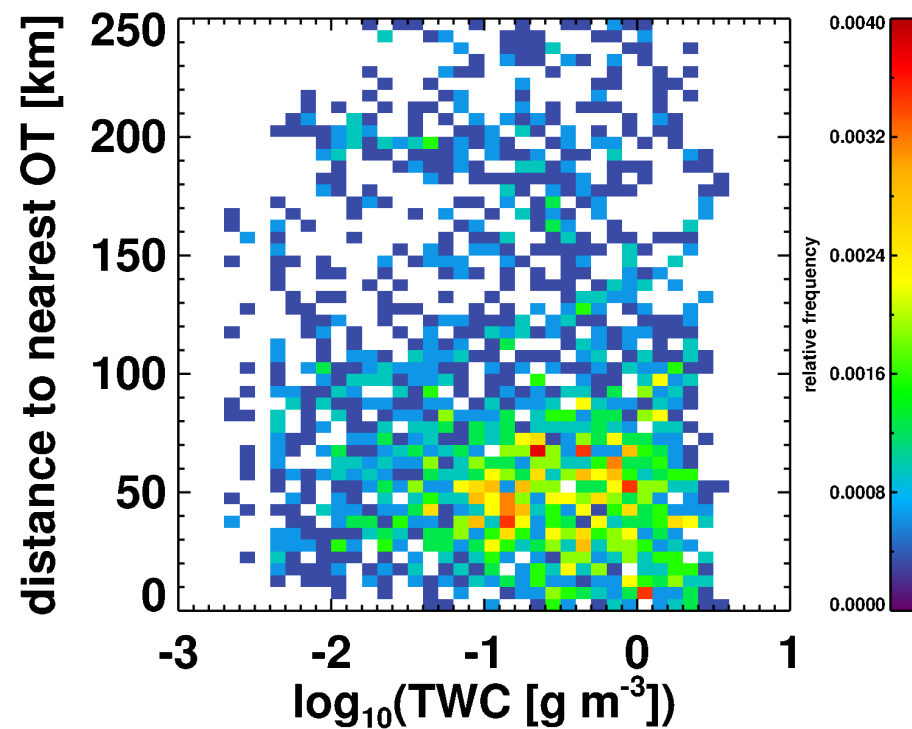
- Overshooting tops

- Darwin: 10-min imagery from MTSAT-1R
- Cayenne: 15-min imagery from GOES-13
- Underscores need for imagery with high temporal resolution
- What about HIWC that doesn't appear to be associated with OTs, anvils?
- HIWC advected away from OTs?
- TWC vs short- and long-lived OT/anvil regions

Darwin 2014

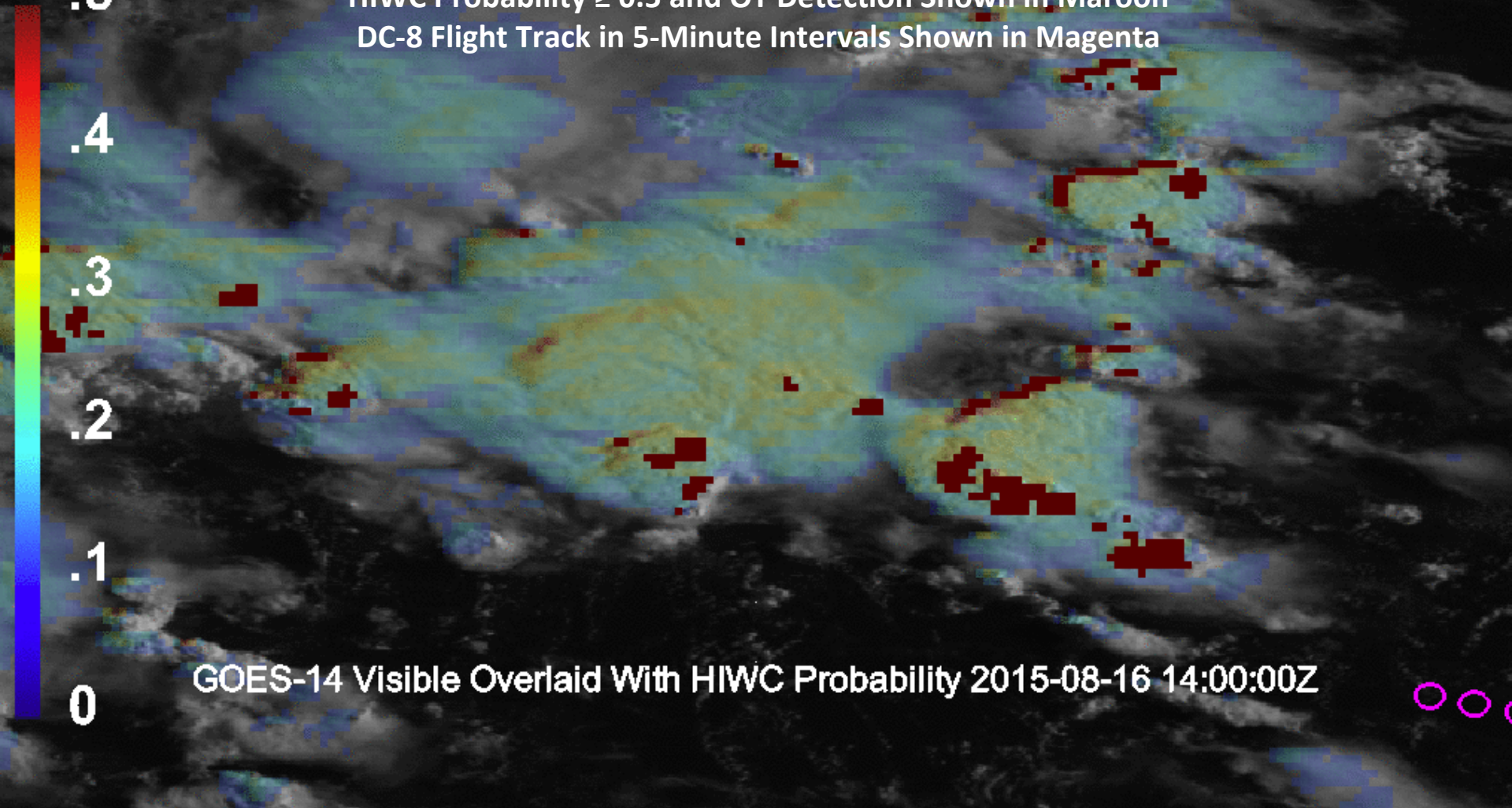


Cayenne 2015



GOES-14 Super Rapid Scan HIWC Probability and OT Detection: 16 August 2015

.5
HIWC Probability ≥ 0.5 and OT Detection Shown in Maroon
DC-8 Flight Track in 5-Minute Intervals Shown in Magenta

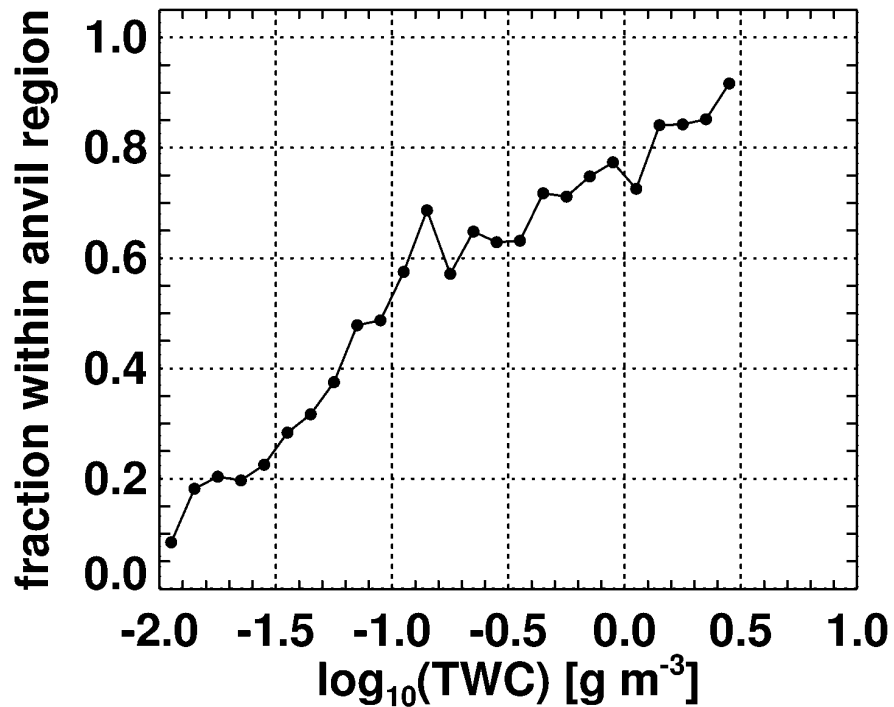


- *Based upon proximity to OTs alone, HIWC likely to be observed at 1421-1424, 1505, 1519, 1525, 1546, 1624, 1658-1703, 1758, 1825, 1915, and 1930 UTC*

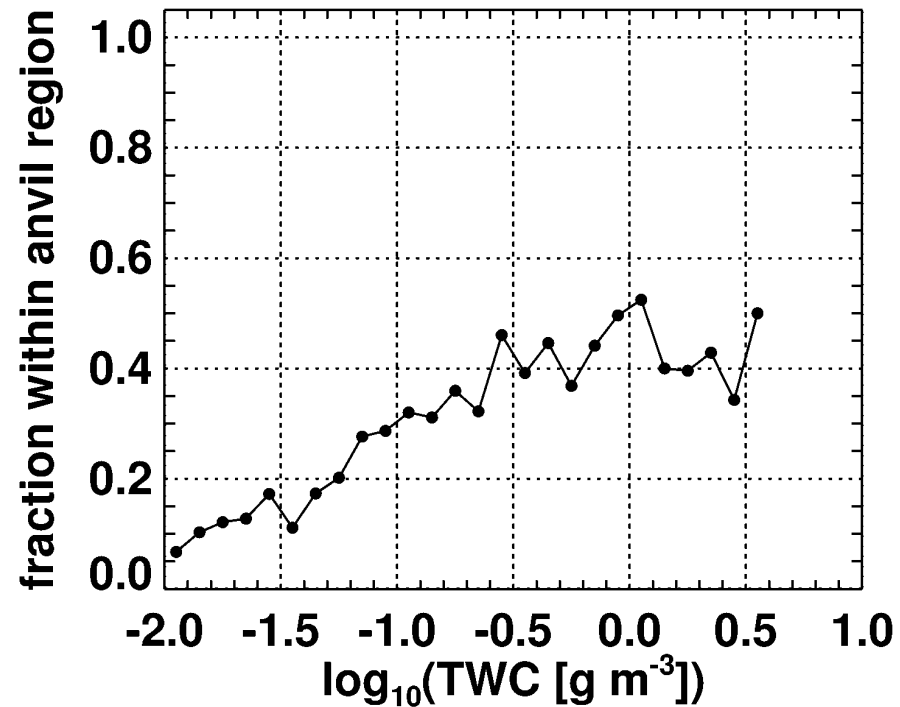
- Overshooting tops

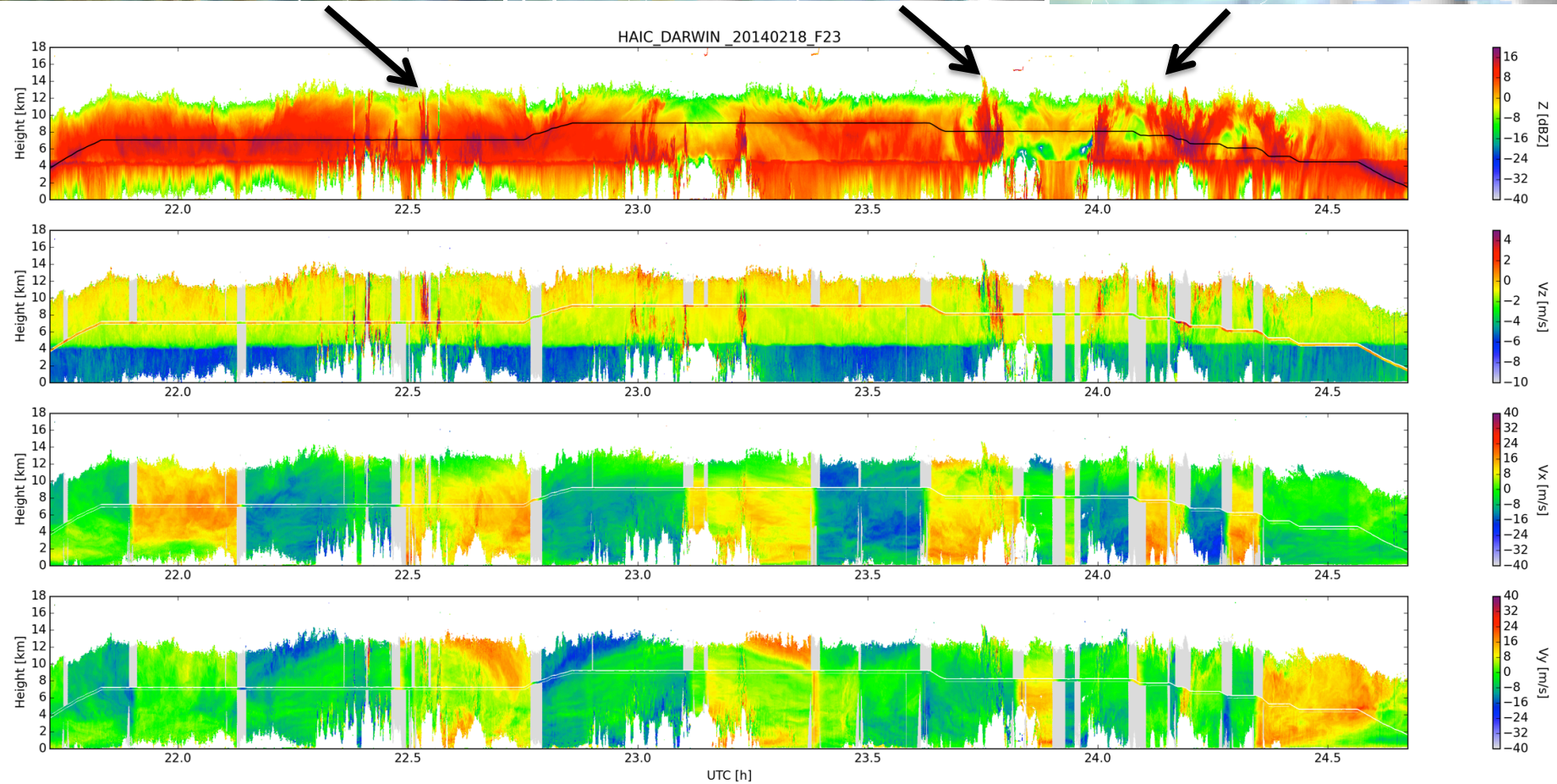
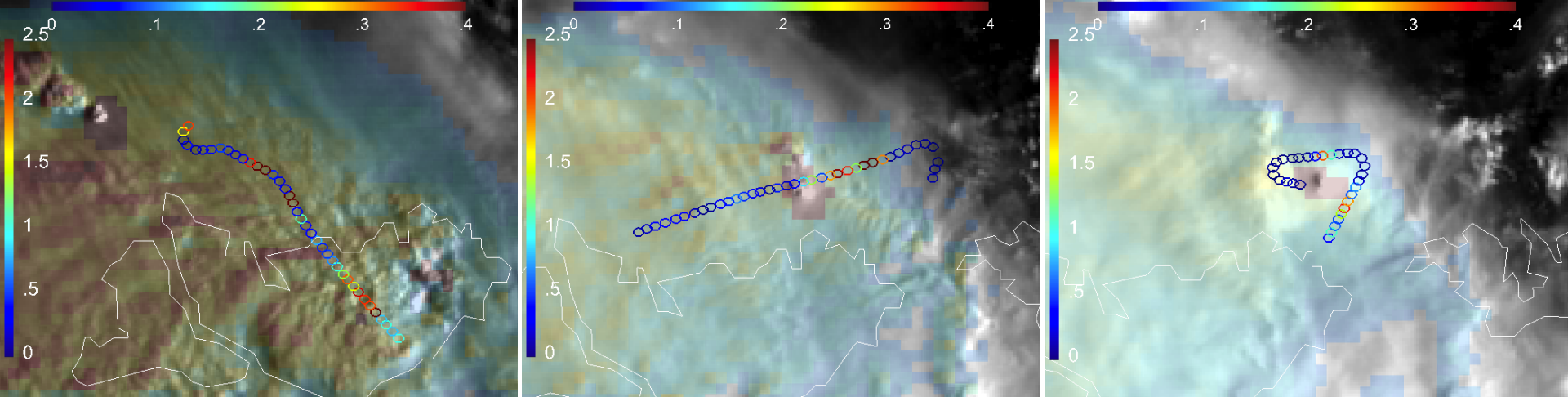
- Darwin: 10-min imagery from MTSAT-1R
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Darwin 2014



Cayenne 2015

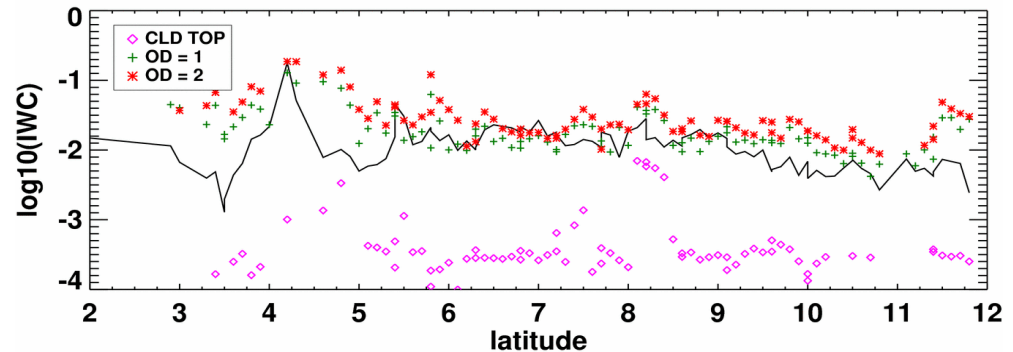
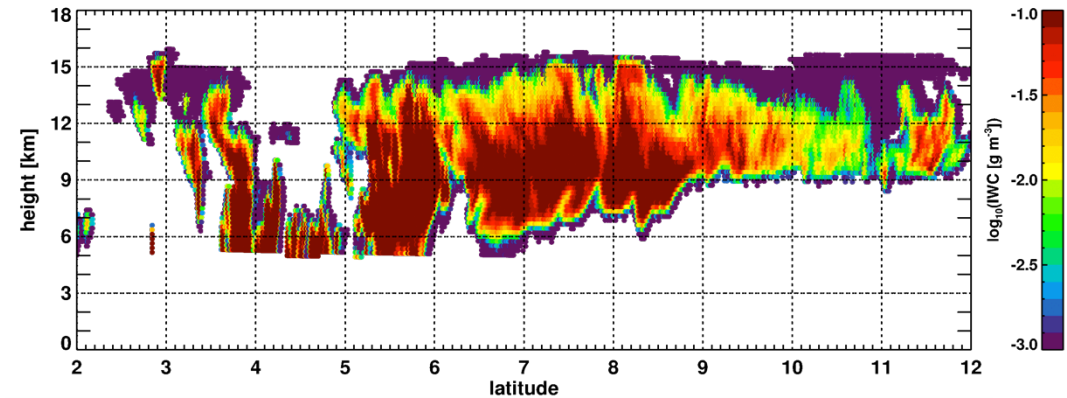
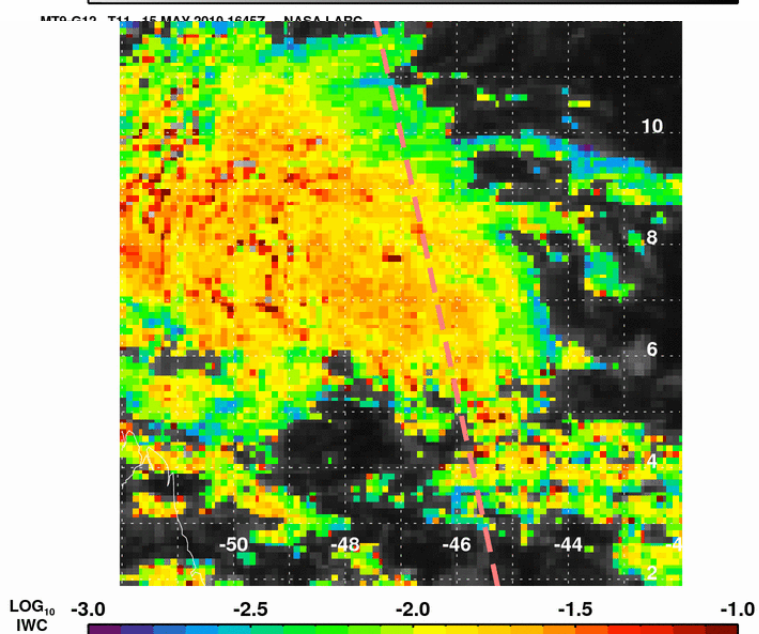
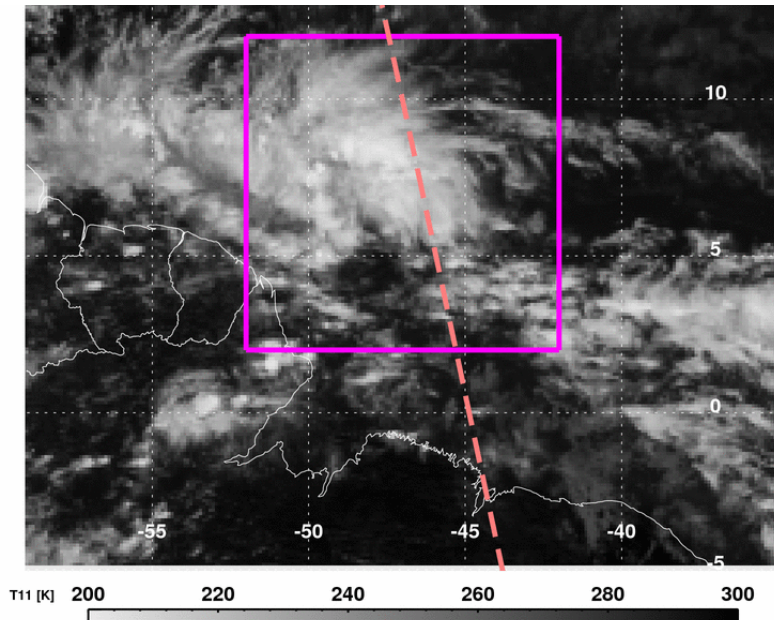




Dual-Angle IWC vs. CloudSat

French Guiana: 15 May 2010

- Lat/lons are parallax corrected
- Put into 0.10x0.10-degree grid
- CloudSat overpass @ 16:47 UTC
- Retrieved IWC resembles CloudSat IWC (2C-ICE product) corresponding to 1-2 optical depth units beneath cloud top
- IWC decrease near edge of anvil and cirrus shield
- Compare with TWC and RASTA



- CWC Profiling

- CloudSat likely not seeing the max IWC due to attenuation by large particles
- Use RASTA data to fill in cloud mid-levels