

RACORO "1st Sniff" for FASTER

RACORO

Routine

ARM Aerial Facility (AAF)

Clouds with Low Optical Water Depths (CLOWD)

Optical

Radiative

Observations



Website: <http://acrf-campaign.arm.gov/racoro/>

Steering Committee

Andy Vogelmann, Jennifer Comstock, Graham Feingold,
Chuck Long, Greg McFarquhar, John Ogren, Dave Turner

Acknowledgements

Tami Toto, Greg McFarquhar, Haf Jonsson, Betsy Andrews, Anne Jefferson

Wednesday, 10:30 –10:45

Effects of Aerosols on Shallow Cumuli Sampled During RACORO

Hee-Jung Yang, Greg McFarquhar, Haf Jonsson

What Was RACORO, and What can it contribute to FASTER?

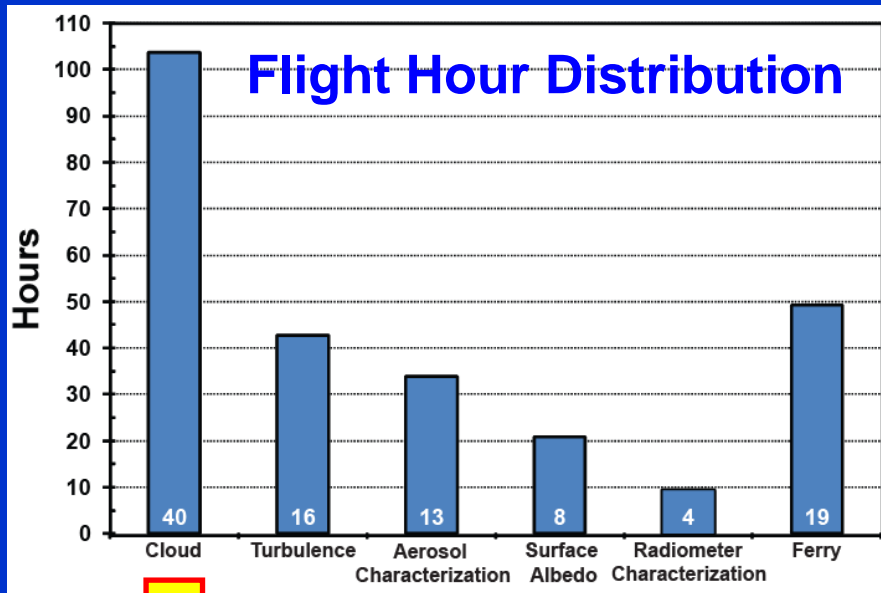
- ❖ 5-Month aircraft campaign over the SGP obtaining boundary layer, liquid-water cloud field statistics (Long legs, 2xProfiles)
 - **Microphysical properties**
LWC, Drop size distribution
 - **Aerosol properties**
CCN, Size distributions, Number concentrations
 - **Atmospheric state**
Temperature, Water vapor, Vertical velocity, Turbulence
 - **Radiative fluxes and Optical properties**
Cloud extinction, Reff, SW & LW fluxes



❖ Other Data

- SGP Observations
 - Variational analysis
- King Air Flights (HSRL, RSP)
- Tomography IOP (Dong Huang)
- EOS Overpasses

What We Got

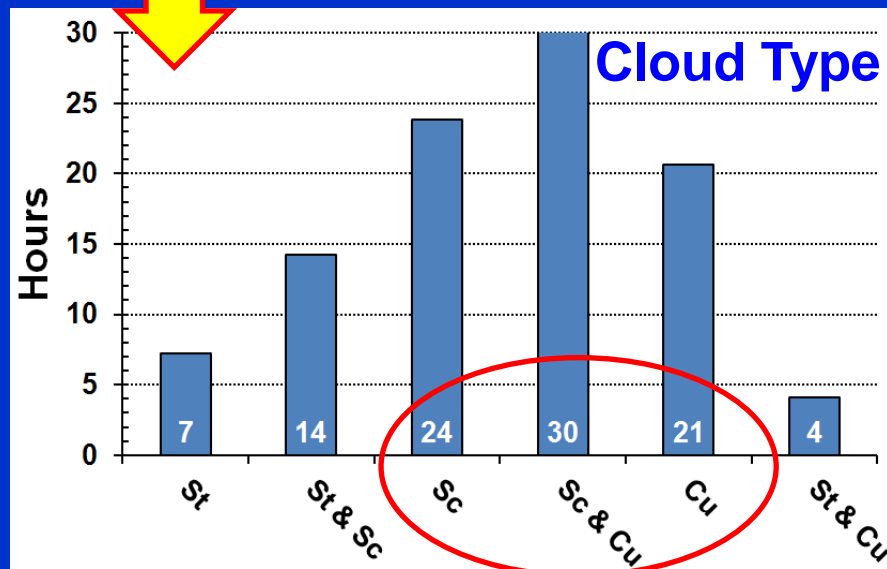


24 January to 29 June 2009

260 hrs in 59 Research flights

“Non-Cloud” Flights

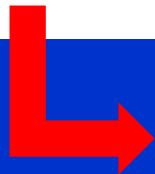
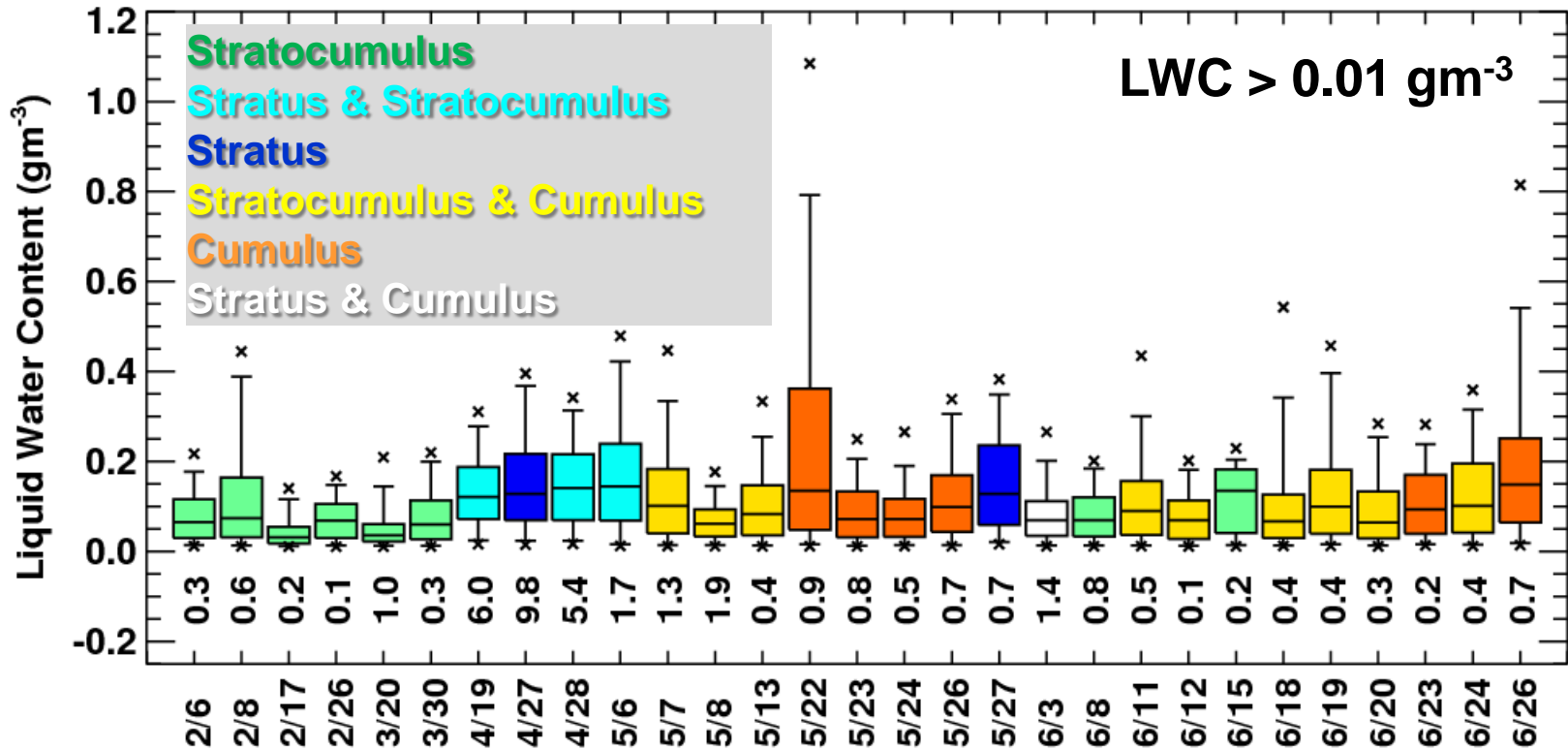
**Boundary layer turbulence
Aerosol characterization**



> 75% in Sc & Cu

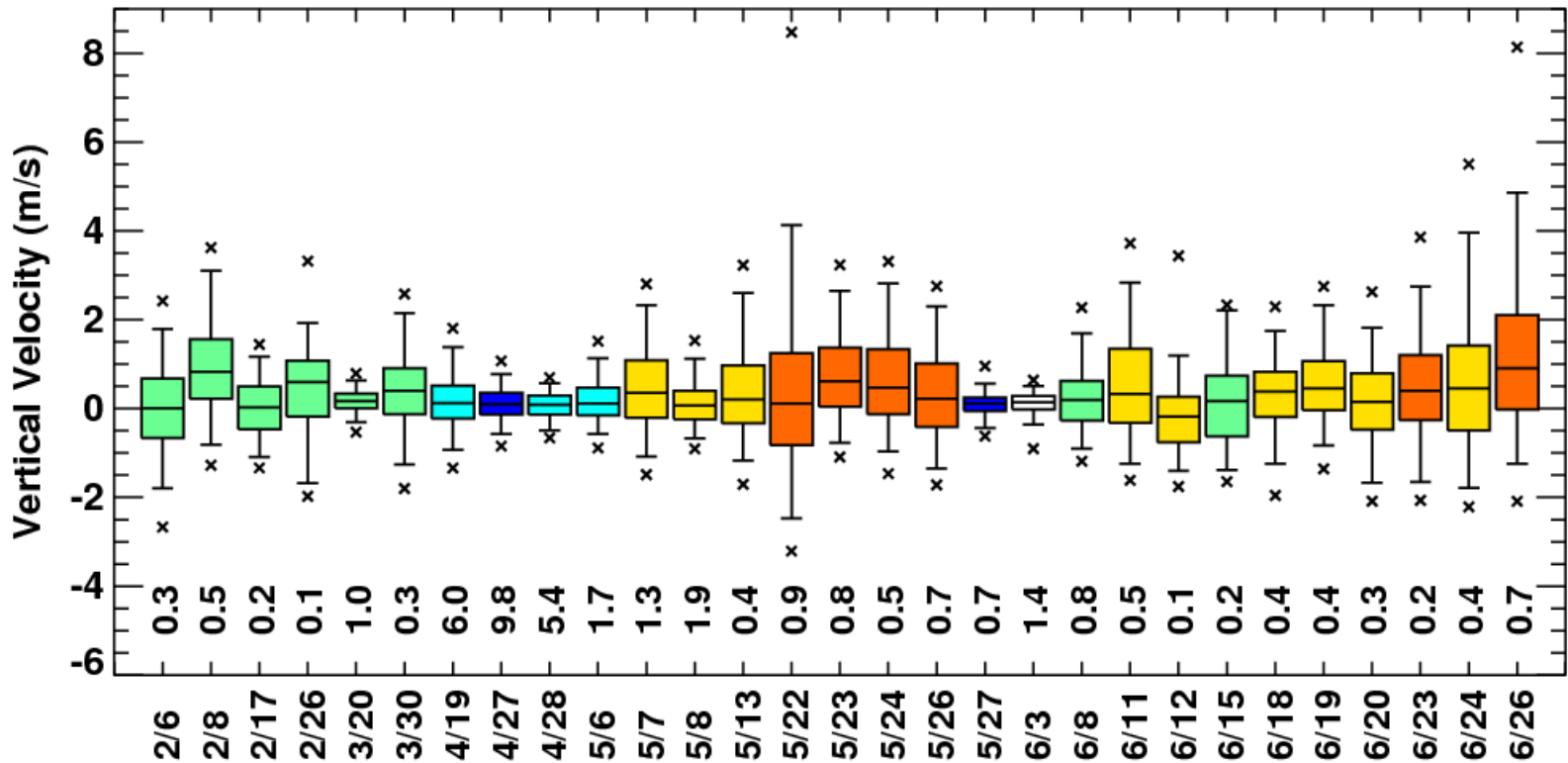
What They Look Like

Cloud Liquid-Water Content



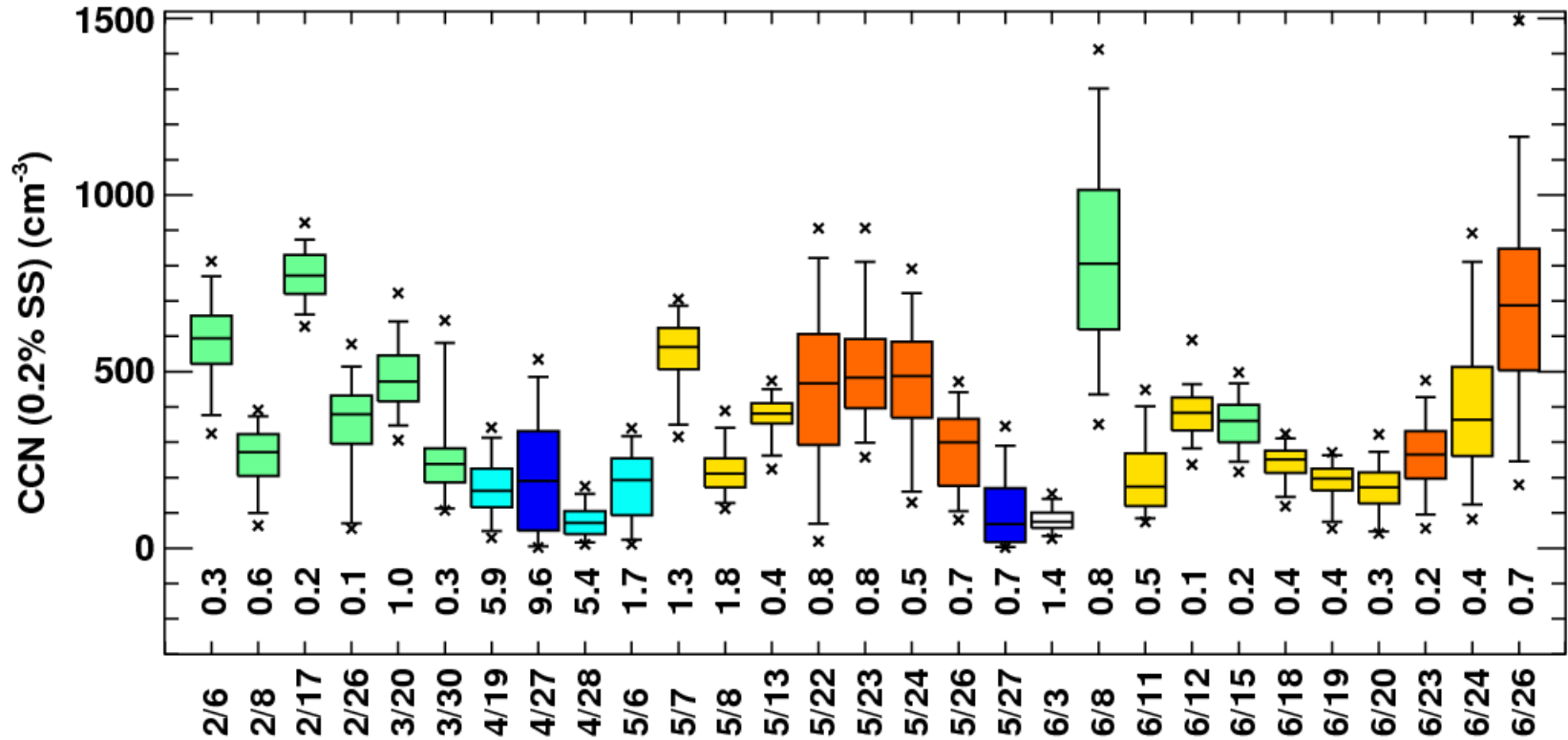
What They Look Like

In-Cloud Vertical Velocity



What They Look Like

CCN (0.2% Supersaturation)



What They Look Like

Cloud Extinction

