



2007 Cloud and Land Surface Interactions Campaign (CLASIC)

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Overview

- June 9-30, 2007 at SGP ACRF
- Dedicated Aircraft
 - CIRPAS Twin Otter (CLASIC)
 - NASA ER-2 (ARM UAV)
 - Duke HOP (NASA-pending; Avissar)
- Three Surface Sites—Flux measurements
- Other Platforms
 - CIRPAS-Mobile Rapid Scanning X-Band
 - SMART-Mobile C-Bands (NOAA-pending)

CLASIC Science Questions

- What is the role of cumulus convection and spatial variations in land cover in depleting low-level water vapor as it is advected to the SGP from the Gulf of Mexico?
- How do cumulus clouds and aerosols impact the carbon flux and evapotranspiration and the coupling between the carbon flux and transpiration, and how does this impact feed back to cloud processes?

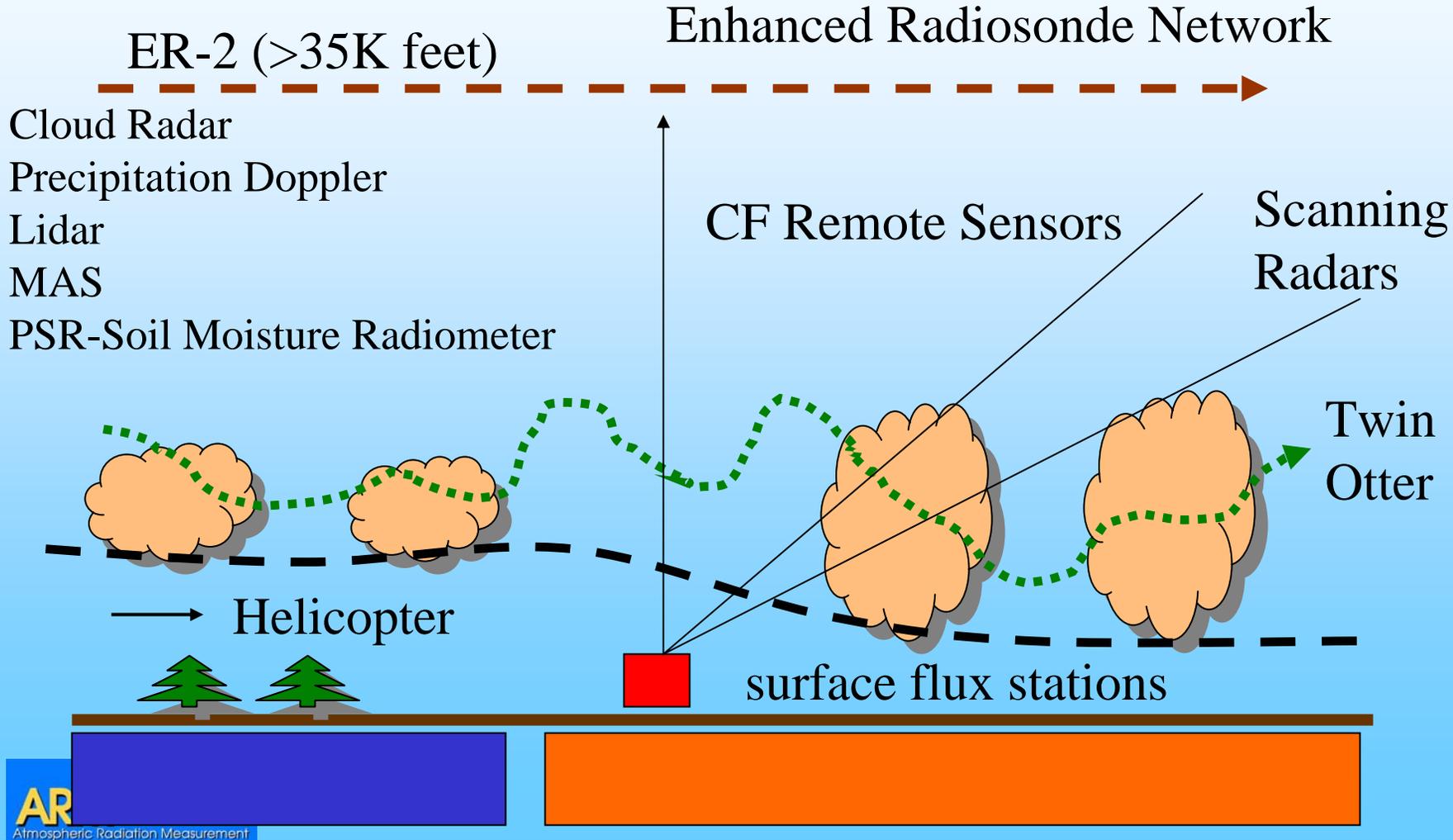
CLASIC Science Questions

- How does the winter wheat harvest impact the surface fluxes, boundary layer cloud structure, and aerosol loading?
- What is the role of aerosol loading and chemistry in varying the microphysical and macrophysical properties of cumulus clouds, and how is this loading related to land surface processes?

Duke Helicopter Observation Platform (HOP)



Schematic

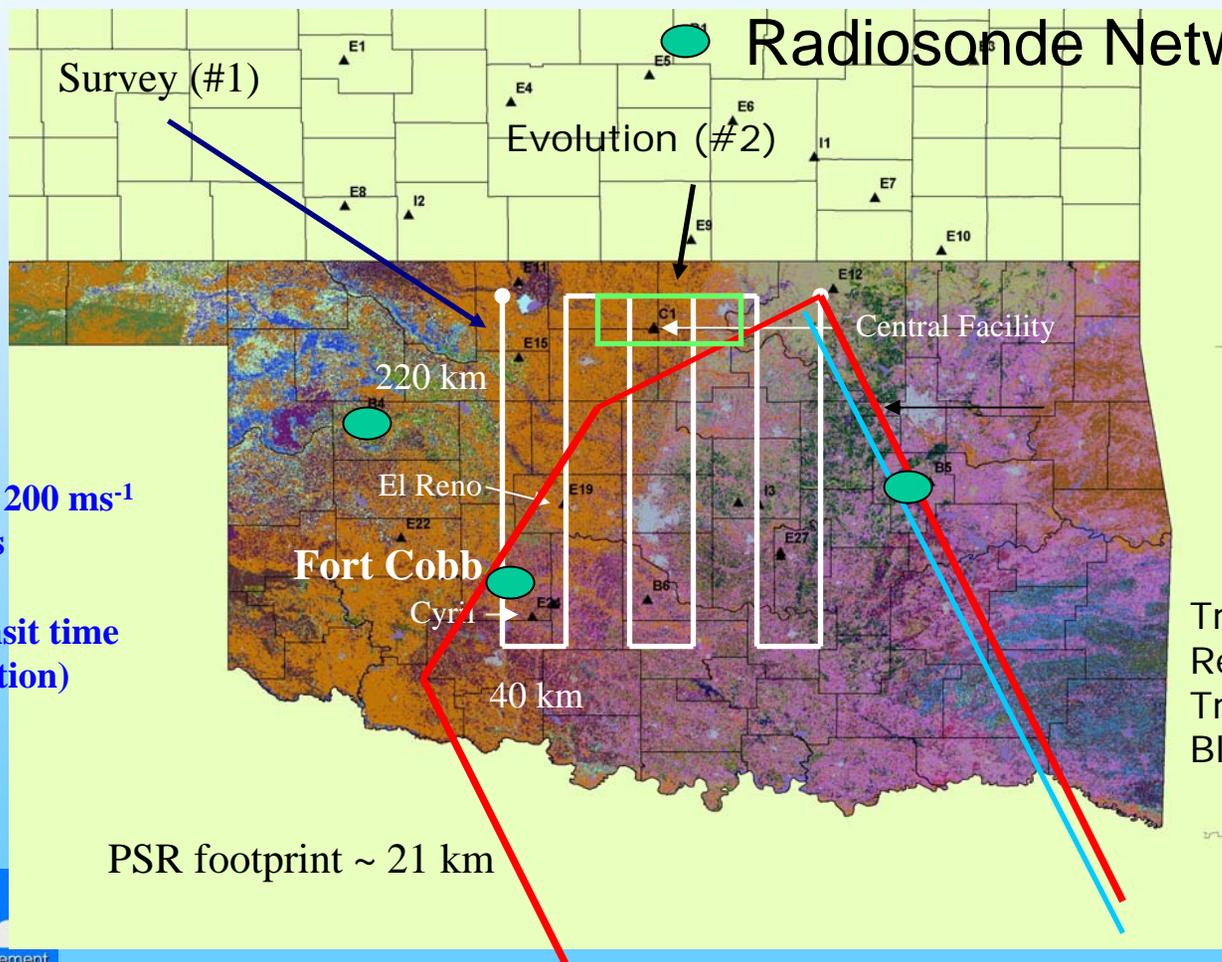


ER-2 Flight Track—Draft #3

SGP to Gulf Coast at Houston=800 km

— Gulf Trajectory
— Cloud Development

Circuit
~1520 km
Airspeed = 200 ms⁻¹
2.8 Circuits
in 6 hours
1 hour transit time
(each direction)



Radiosonde Network

Survey (#1)

Evolution (#2)

Central Facility

Fort Cobb

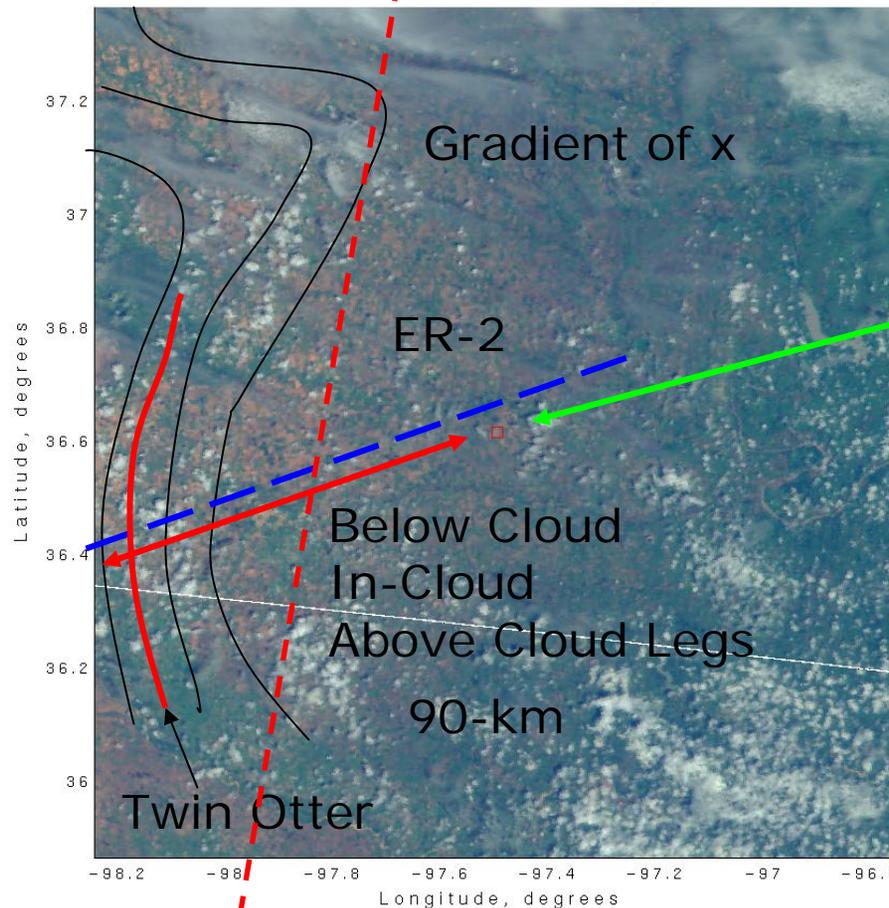
Trajectory (#3)
Red
Trajectory (#4)
Blue

PSR footprint ~ 21 km

Mission #3: Gradient Sampling

A-Train

MISR Nadir View SGP 2000-06-23 orbit 002743 path 028 time 17.67 UTC



SGP
Central Facility

MISR Images
Courtesy of
Roger Marchand
PNNL

Summary

- Good interagency support!
- Continued expansion---reaching time limit for additional contributions
- Land surface subgroup
- New and innovative measurement schemes
- Upcoming aircraft coordination and mission exercise meetings
- Science Plan nearly complete