

# **National Science Foundation Lower Atmosphere Observing Facilities**

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# Current Fleet

- **C130Q**



- **Gulfstream G-V**



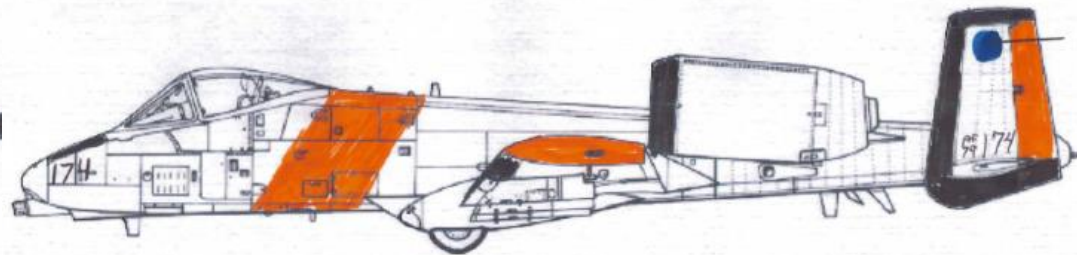
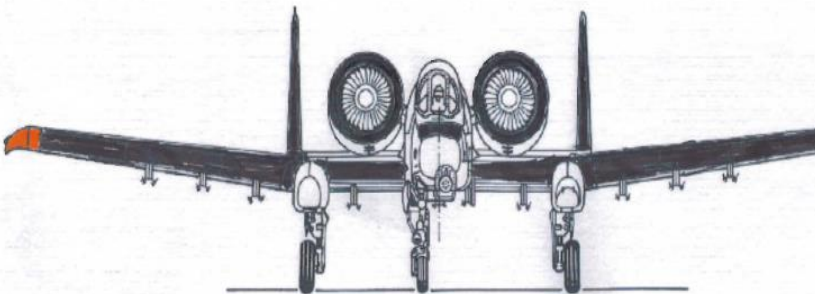
- **Beech King Air 200T**





# Future Capability

- **Fairchild A10 “Thunderhog”:**
  - Remains property of US Air Force/operated by CIRPAS/US Navy
  - Primary mission – severe storm penetration
  - 4 hour endurance, range – 695 nm/1290 km
  - Ceiling of 45,000 ft
  - Cloud microphysics, electric fields, chemistry?
  - Expect to be operational in FY15





# Current Fleet - Utilization

## Approved flight hours in FY13

- C130 - 140 hours in support of Southeast Atmosphere Study (SAS)
- G-V - about 200 hours in support of four projects: Mesoscale Predictability Experiment (MPEX), Sprites Spectra II, and 2 test campaigns
- Wyoming King Air – 160 hours in support of Convective Precipitation Experiment – Microphysics and Entrainment Dependencies (COPE-MED)



# Current Fleet - Utilization

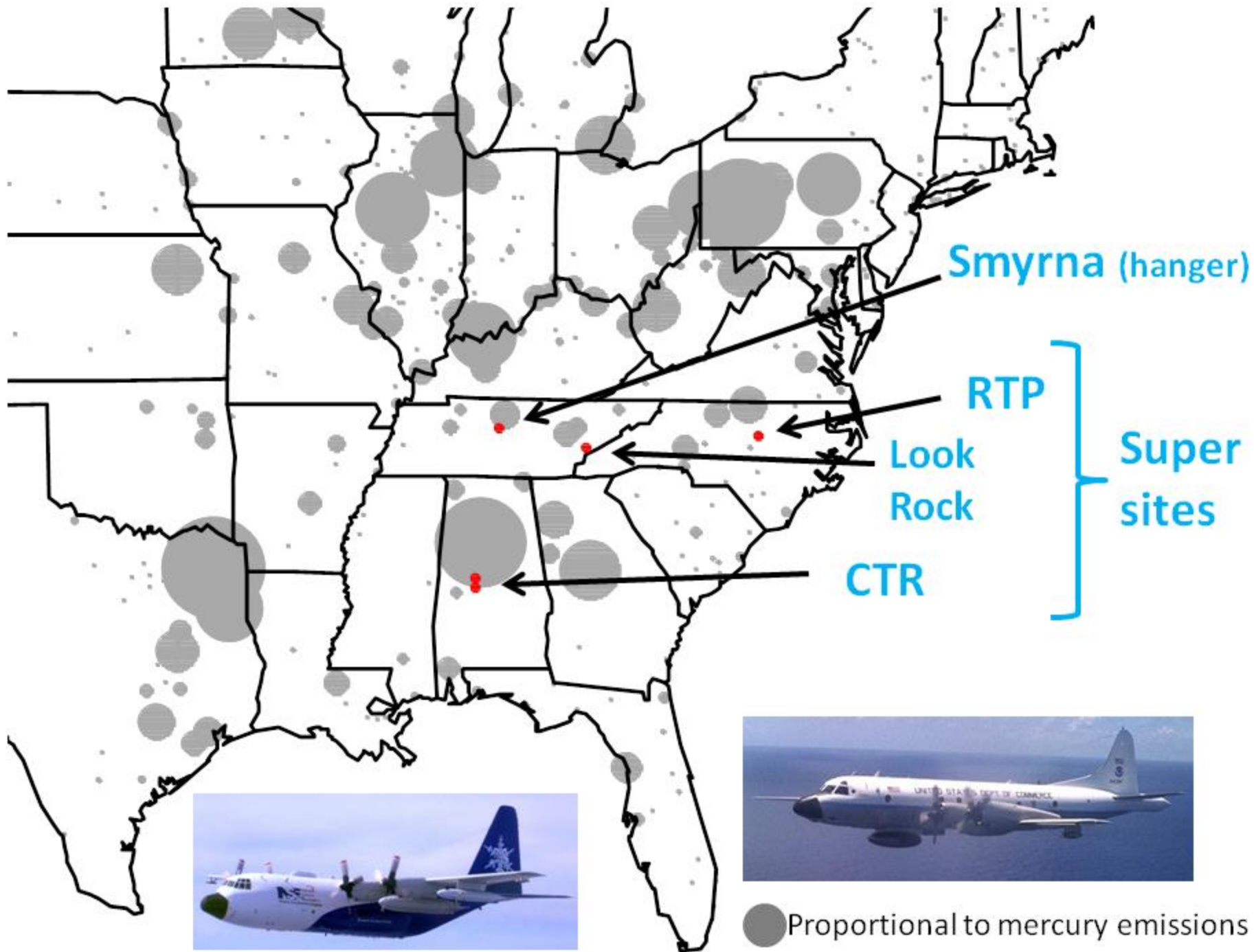
## Approved and requested flight hours in FY14

- C130 - 80 hours – under review
- G-V - about 365 hours in support of DEEPWAVE-NZ and Convective Transport of Active Species in the Tropics (CONTRAST); 130 hours under review
- Wyoming King Air – 95 hours in support of Ontario Winter Lake-Effect Systems (OWLeS); 75 hours under review



# Southeast Atmosphere Study (SAS)

- **Goal: Understand interaction of anthropogenic and natural emissions in SE US**
- **Large, collaborative, multi-agency project**
  - NSF, NOAA, EPA, EPRI
- **Taking place in June/July 2013**
- **NSF C-130 and NOAA P-3 based in Smyrna, TN**
- **Ground-based facilities in Brent, AL and other sites**
- **Complex logistics**
- **Operations in busy air space**

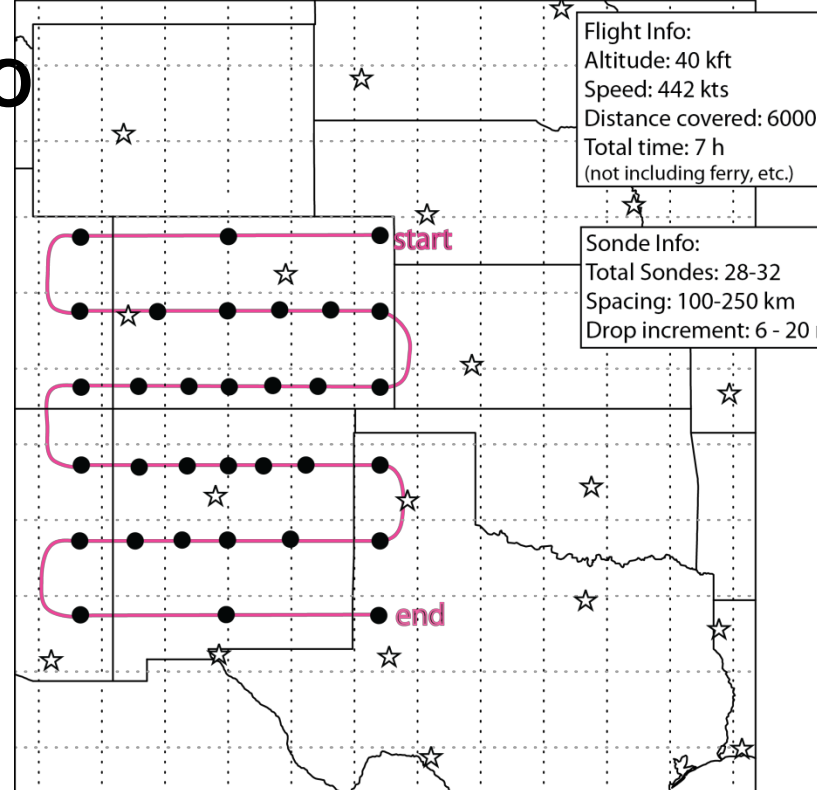




# Mesoscale Predictability Experiment (MPEX)

- **Goal: Improve predictability of severe weather 6-24 hours ahead**
- **May/June 2013**
- **NSF G-V in Broomfield, CO**
- **Ground-based facilities (radars and sondes) throughout the Great Plains**

Type D-R: Dropsonde - Regional







## Sample MPEX Cases:

