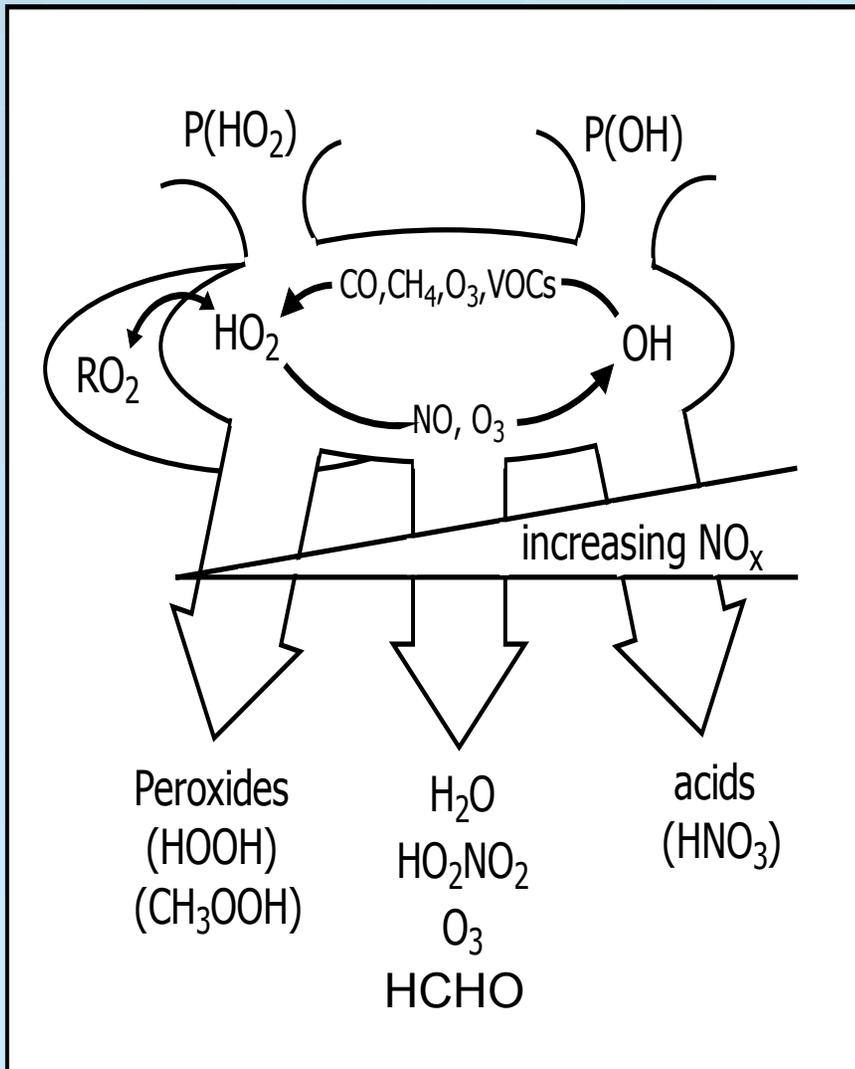
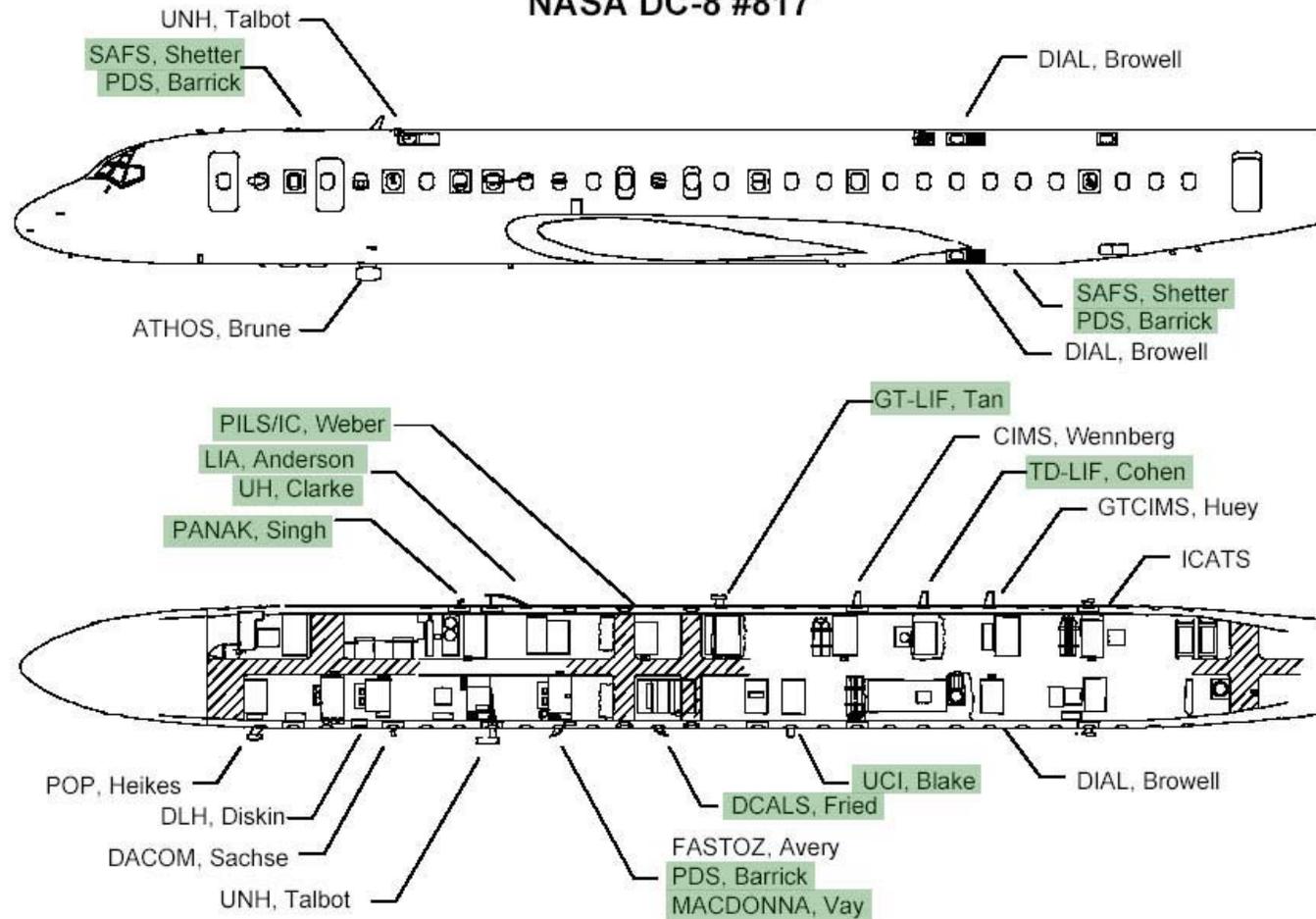


INTEX NA 2004 – examining HOx-NOx photochemistry



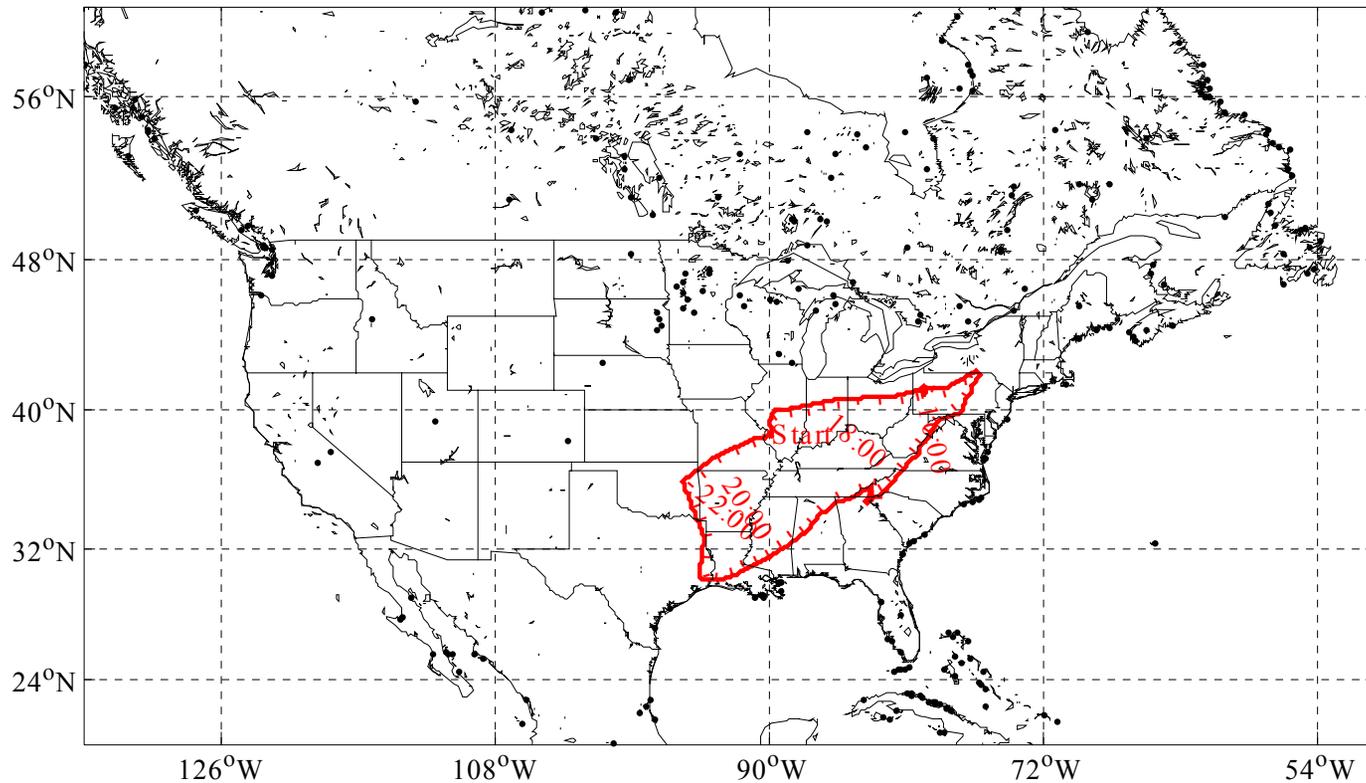
- Most atmospheric species & conditions are measured.
- Data test modeled transport evolution.
- Data test simple photochemical theory.
- (e.g., HO_2NO_2)
- Data products illustrate photochemical behavior.
- (e.g., O_3 production)

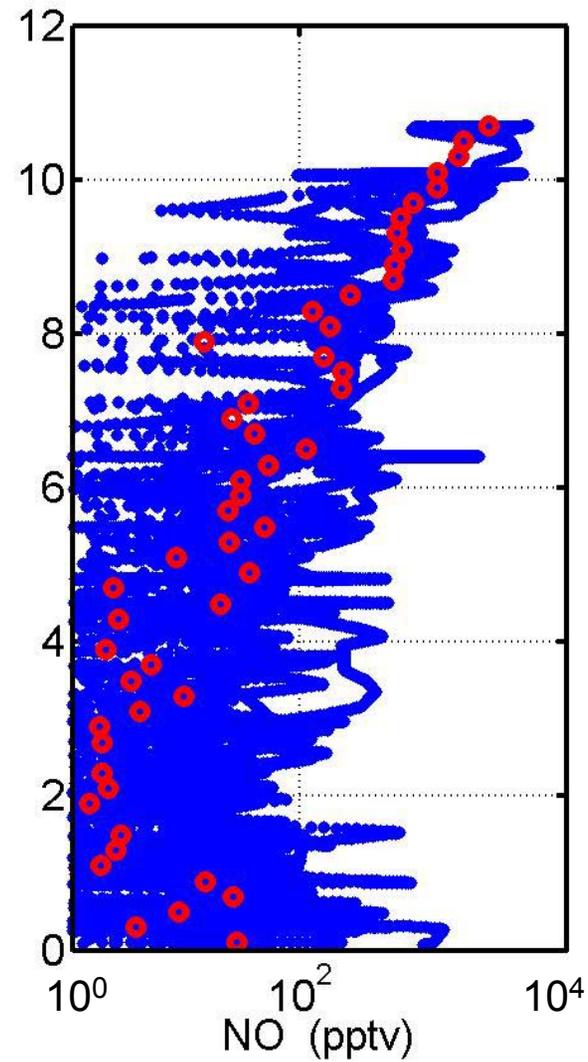
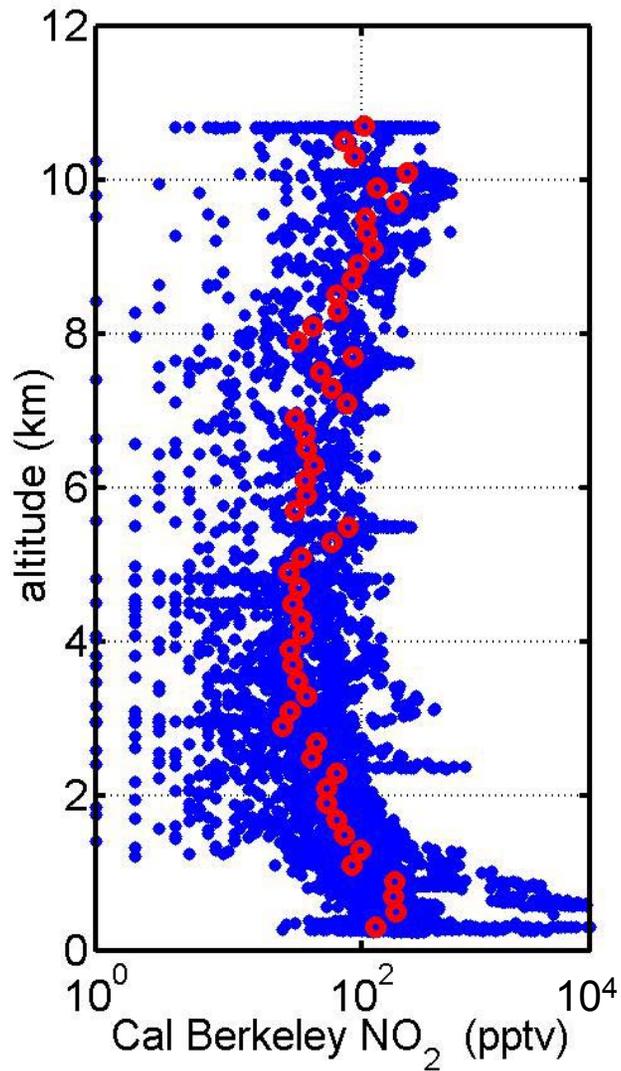
INTEX-NA NASA DC-8 #817



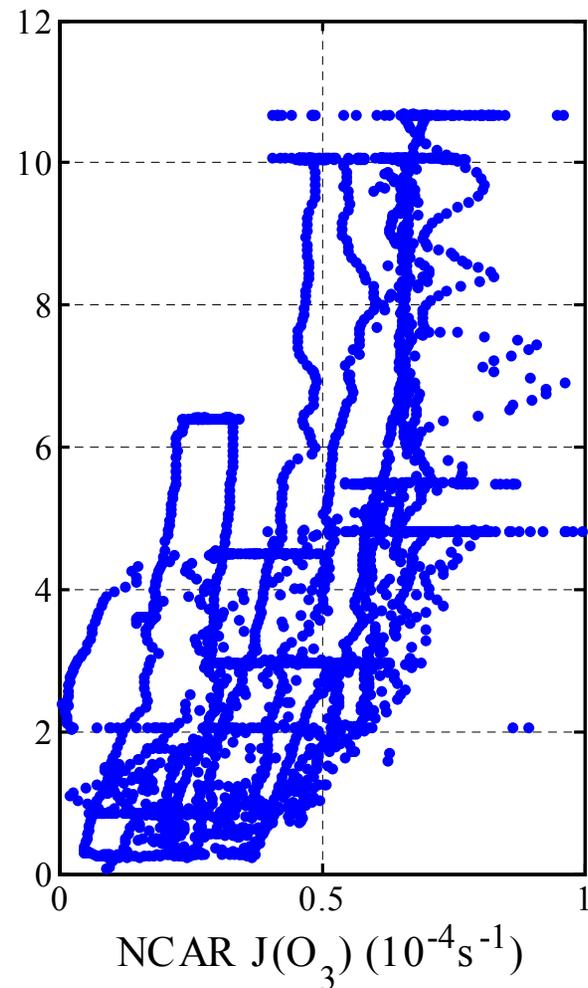
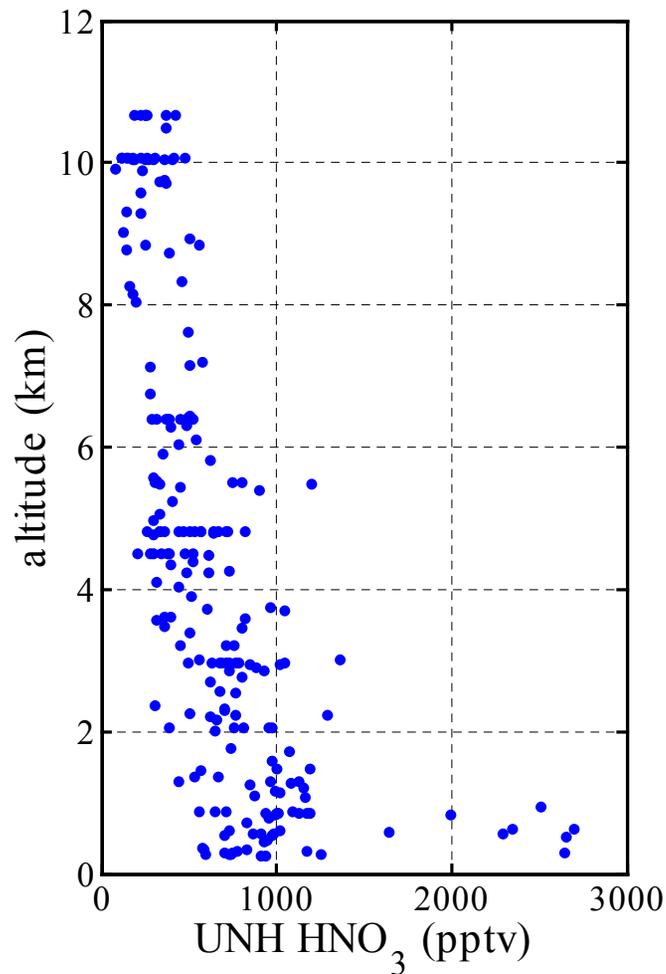
It takes a airplane full of instruments & lots of excellent people to study photochemistry.

An example of preliminary data and results – Farmer call-in show #2 – 10 July 2004

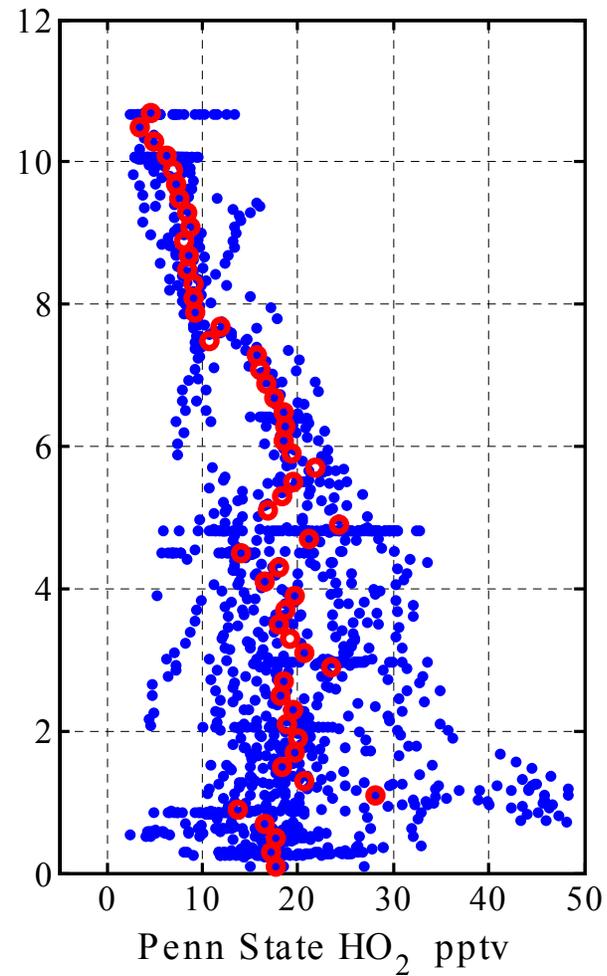
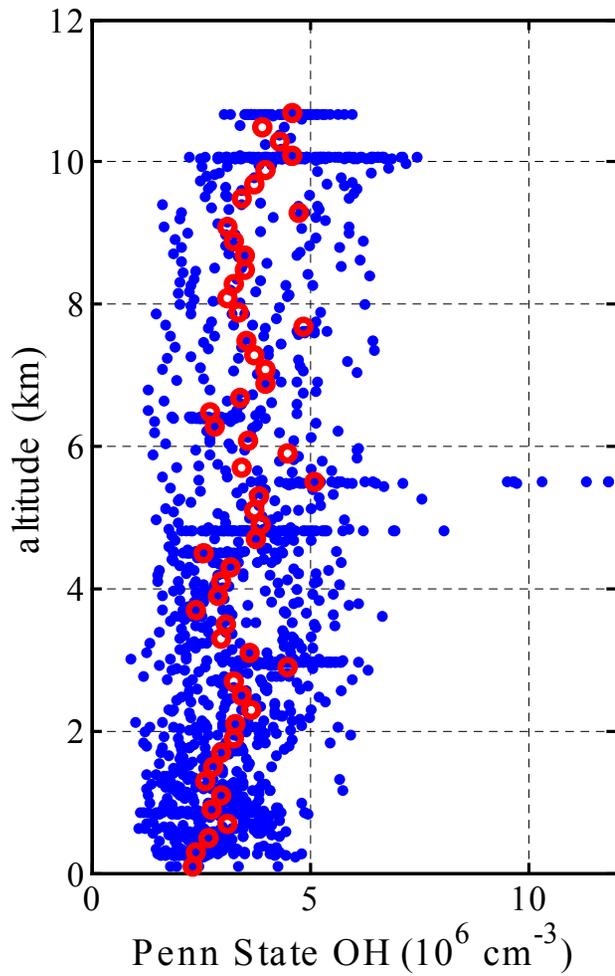




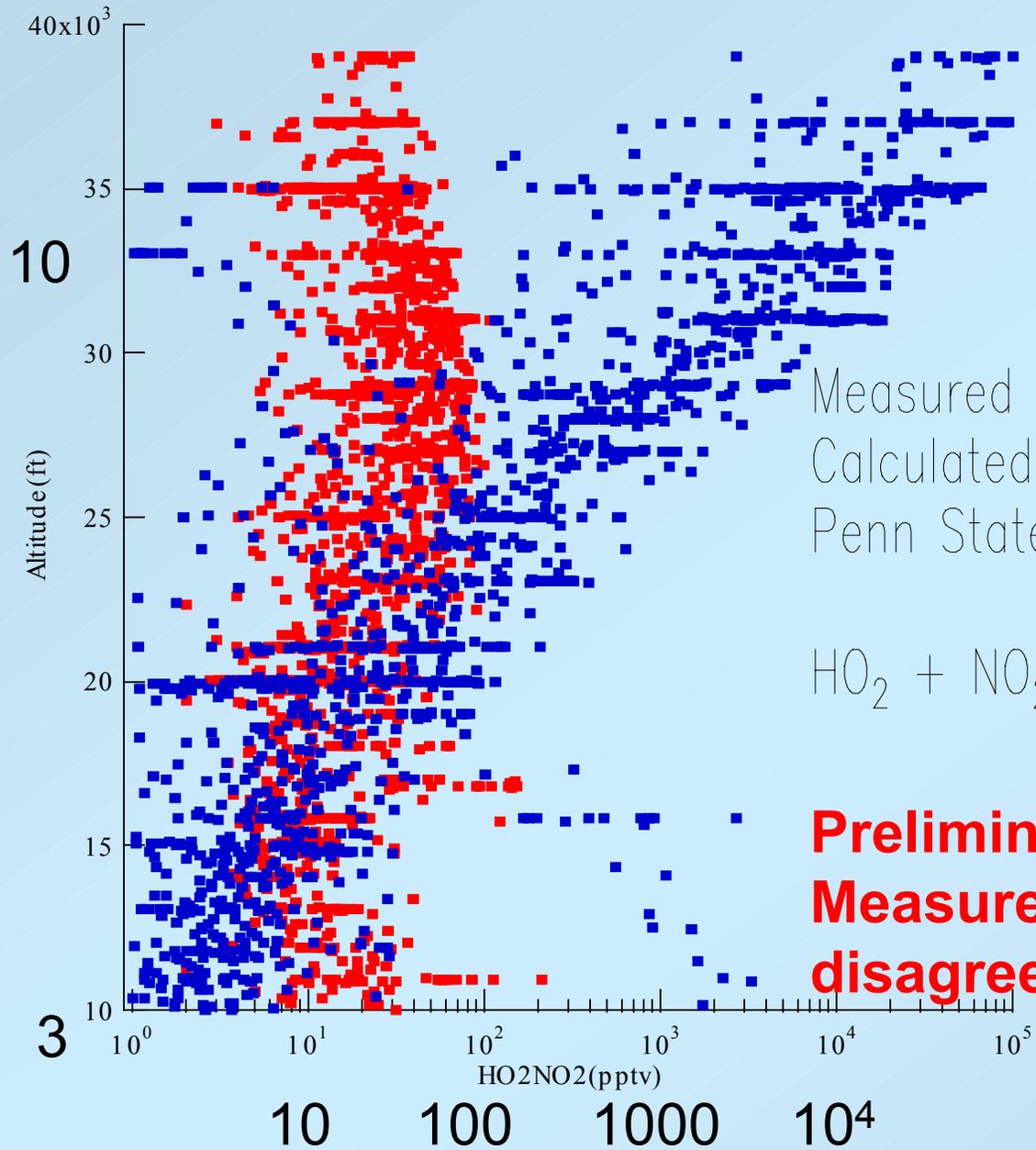
NO_x was highest at lowest and highest altitudes, lowest from 2-6 km.



HNO₃ generally decreases with height;
J(O₃) varies daily, increases with height, & has spikes!



OH increases and HO_2 decreases with height in response to NO and to HO_x production rates.

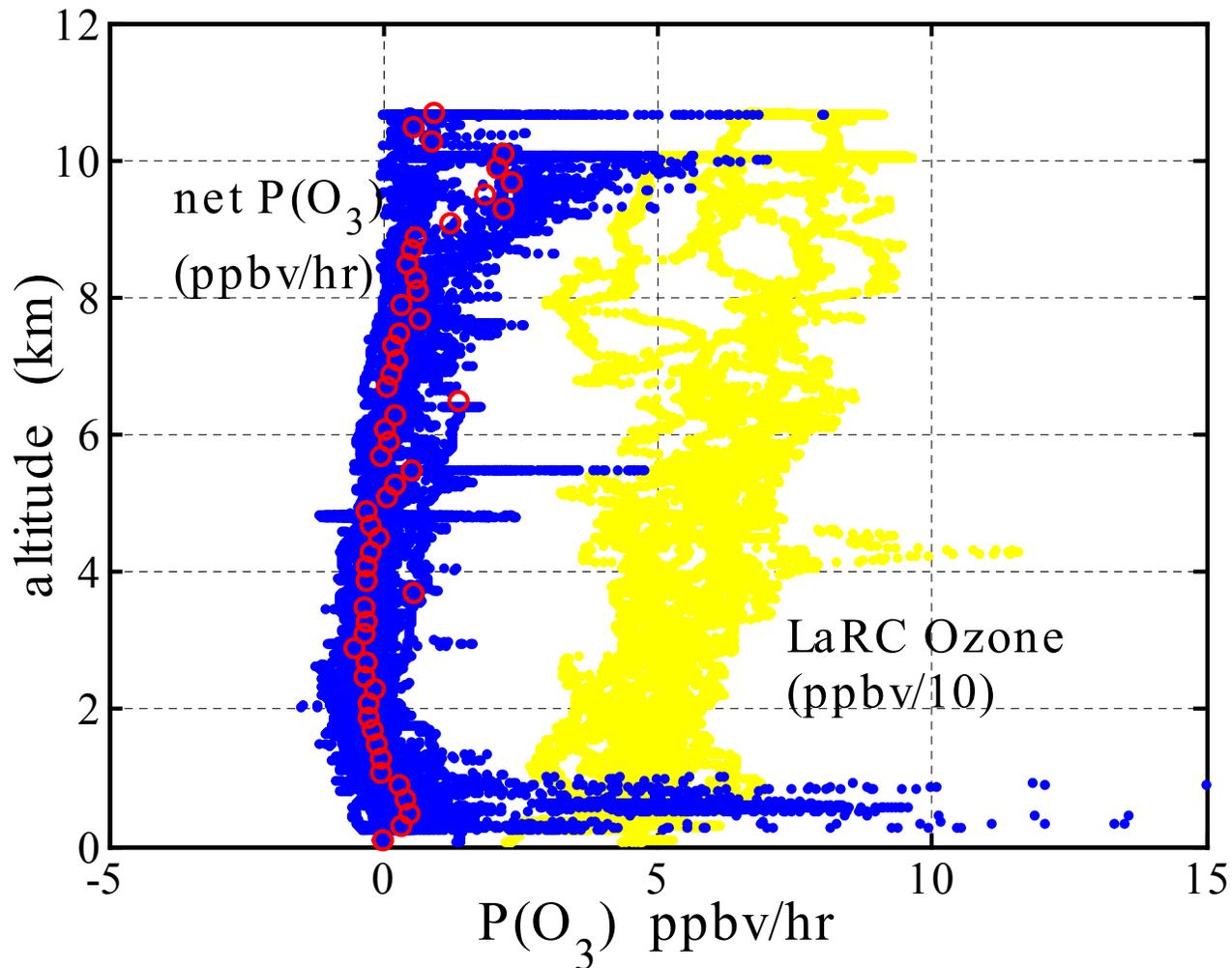


Measured HO₂NO₂ (Huey: red)
Calculated HO₂NO₂ (from Cal,
Penn State, NCAR: blue)



**Preliminary Conclusion:
Measured and calculated
disagree by at least x10.**

Eastern US 10 July 2004



**Net $P(O_3)$ occurs mostly in plumes of different sizes.
(Daytime $P(O_3)$ in cities is typically 5-40 ppbv.)
Net $P(O_3)$ is almost neutral for much of the free troposphere.**