

2.

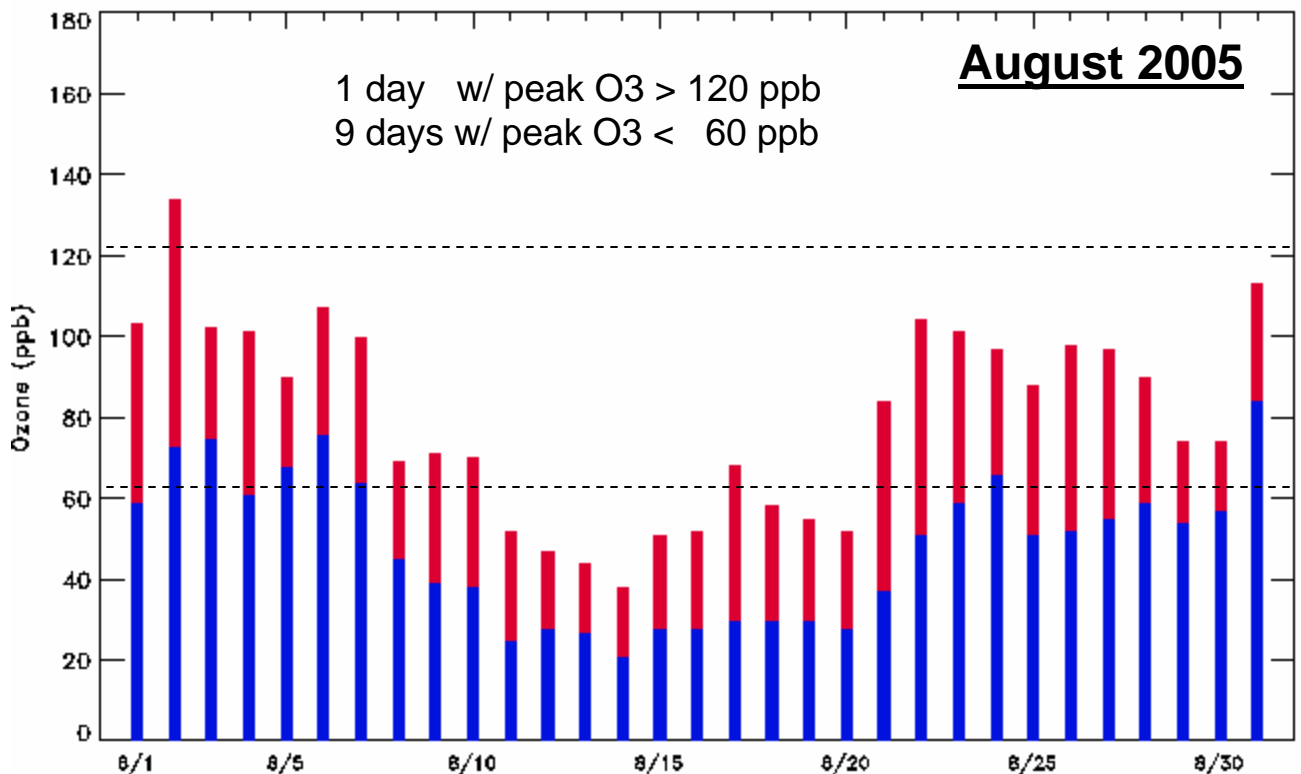
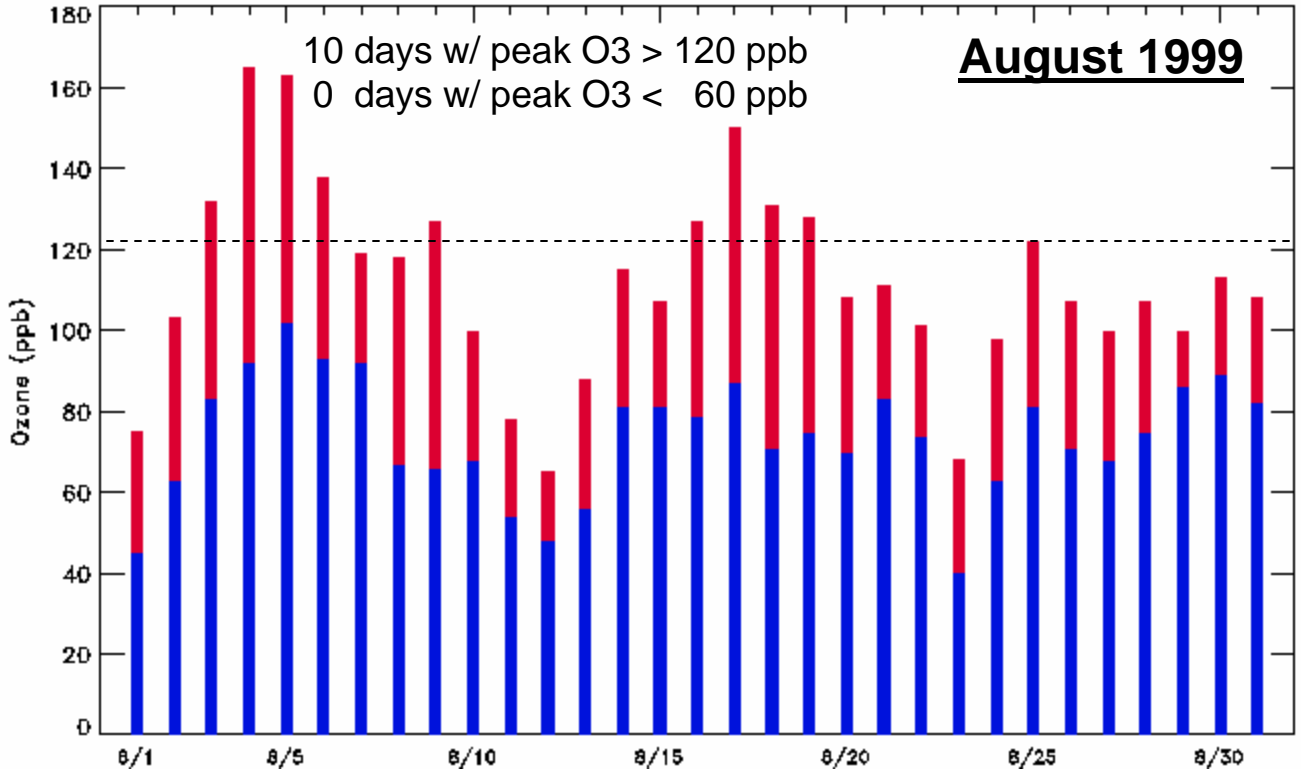
Actual measurement conditions
(much short of ideal)

and

Overview of missions
performed

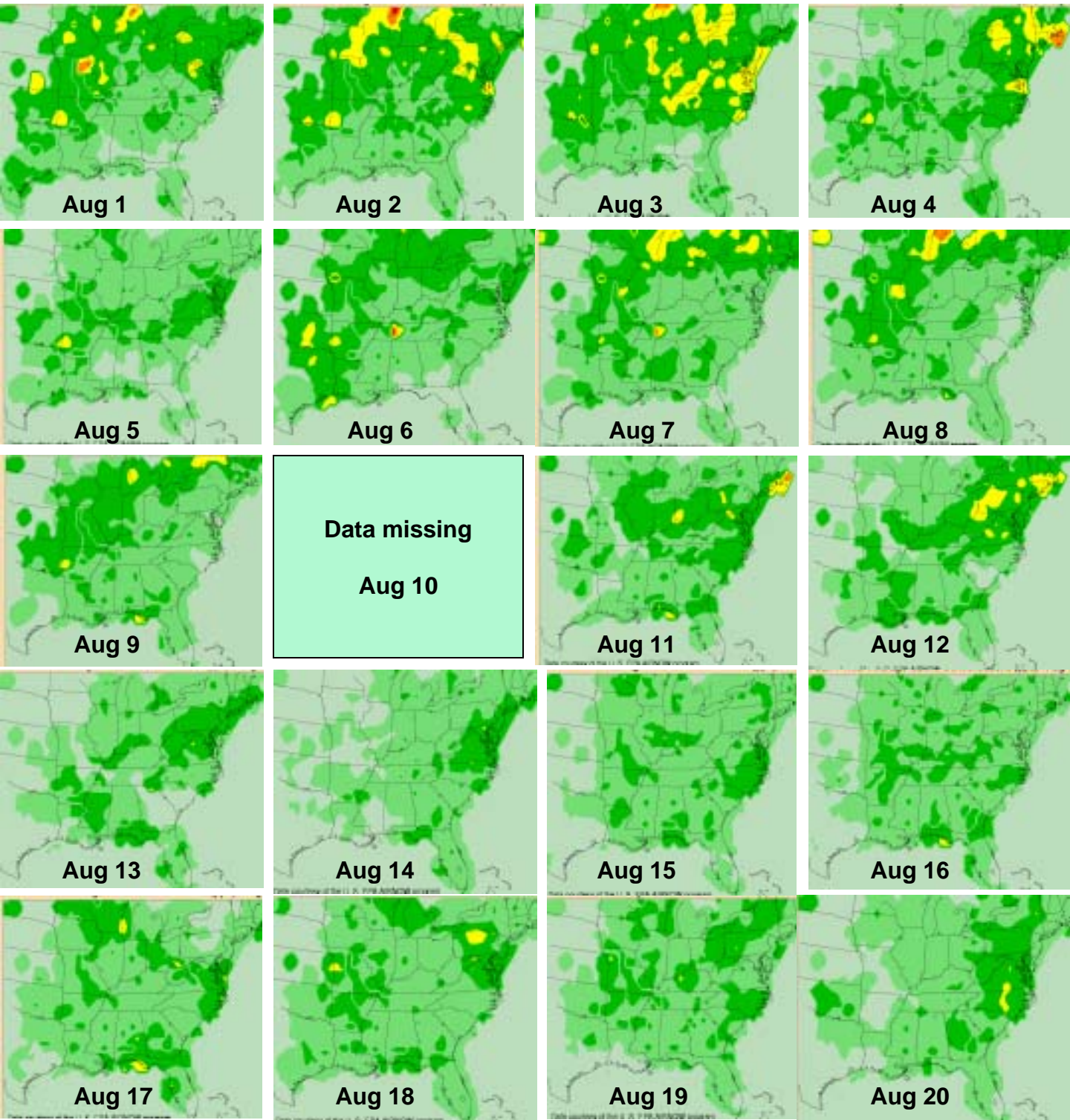
Peak Hourly Ozone in DFW Area

Upwind and Downwind



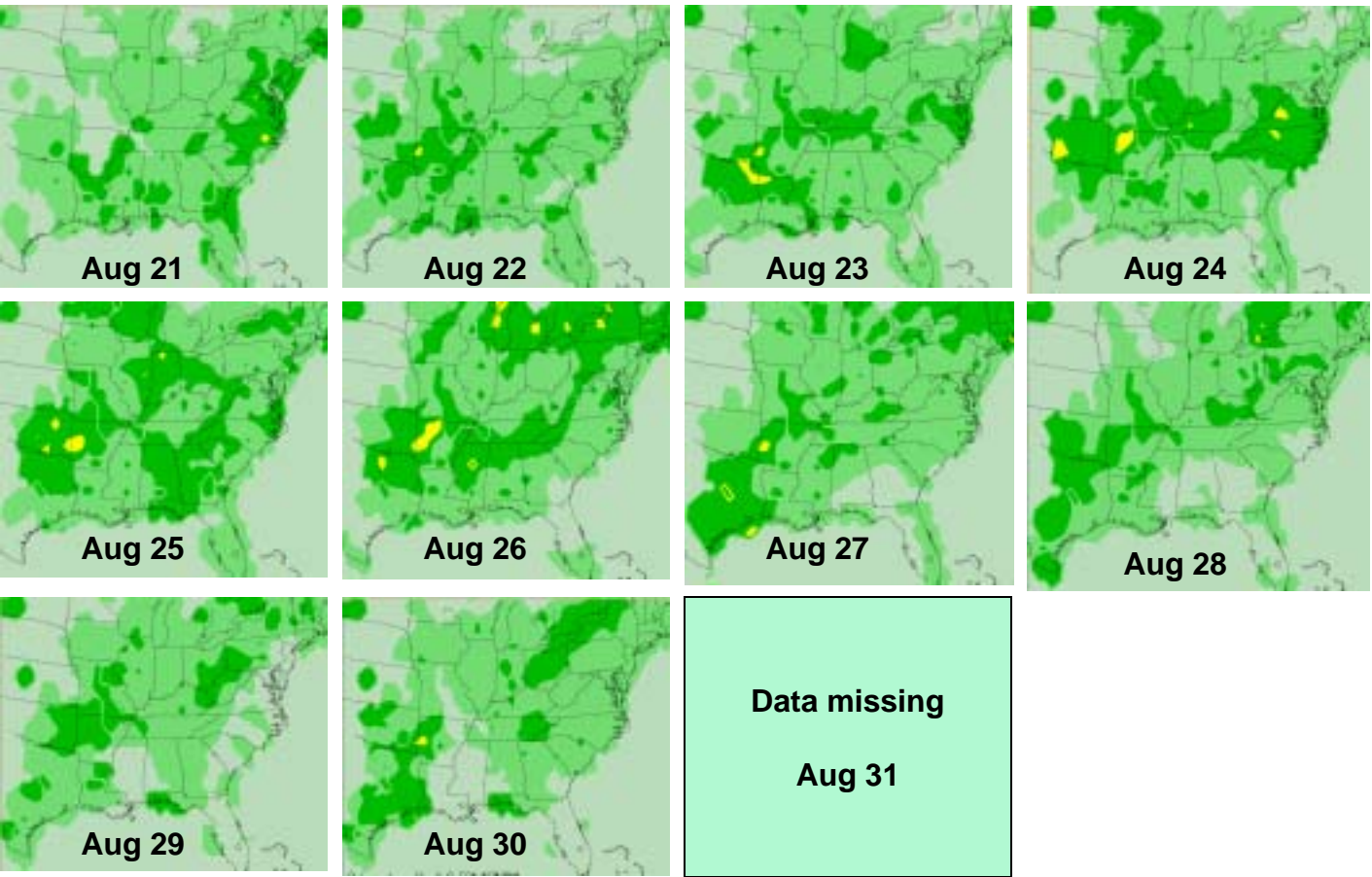
Why such low ozone in Aug 2005? → ...

E. USA Regional Distribution of Peak Hourly Ozone --- August 2005



Data courtesy of the EPA AIRNOW program

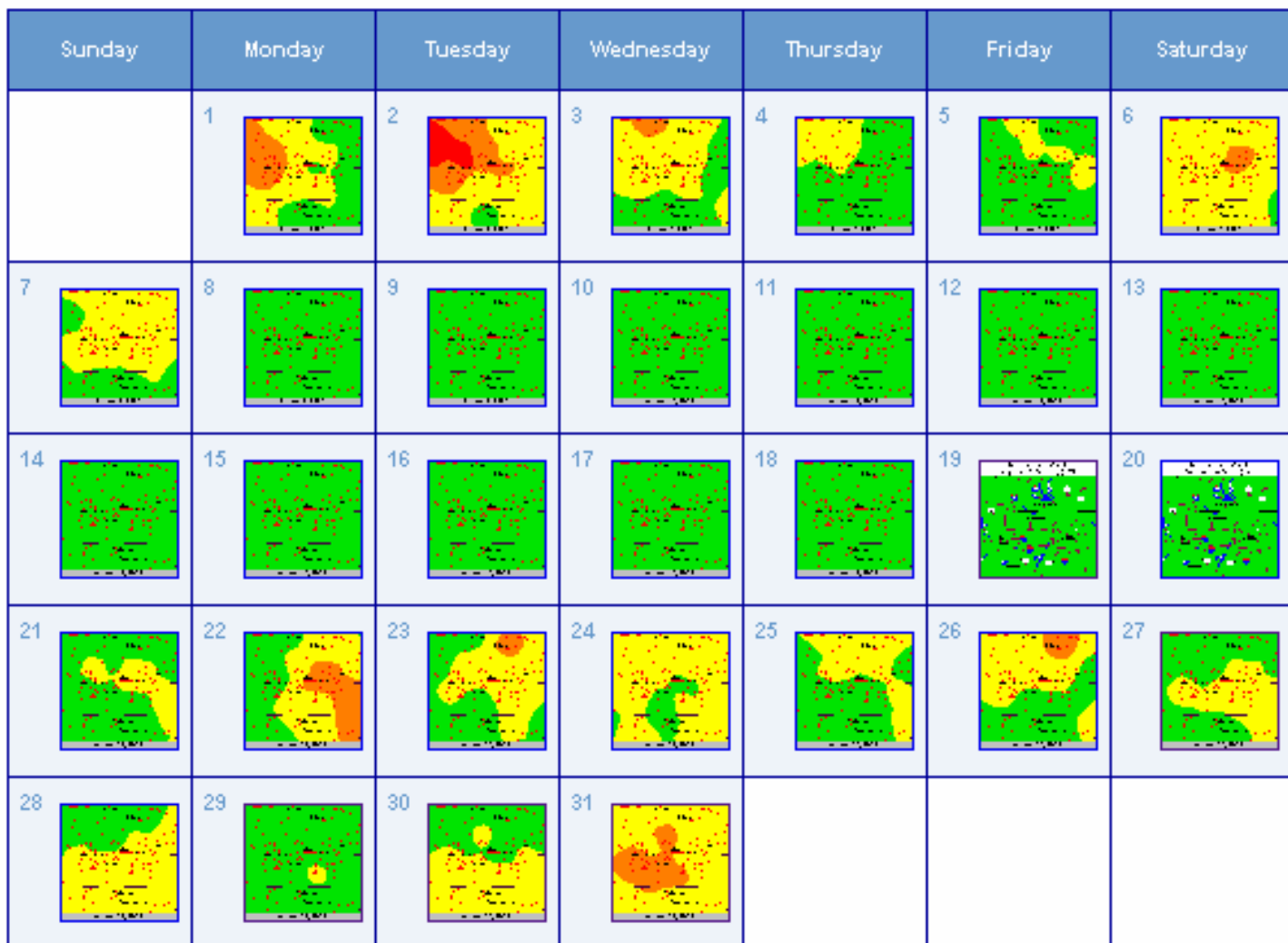
E. USA Regional Distribution of Peak Hourly Ozone --- August 2005



Data courtesy of the EPA AIRNOW program

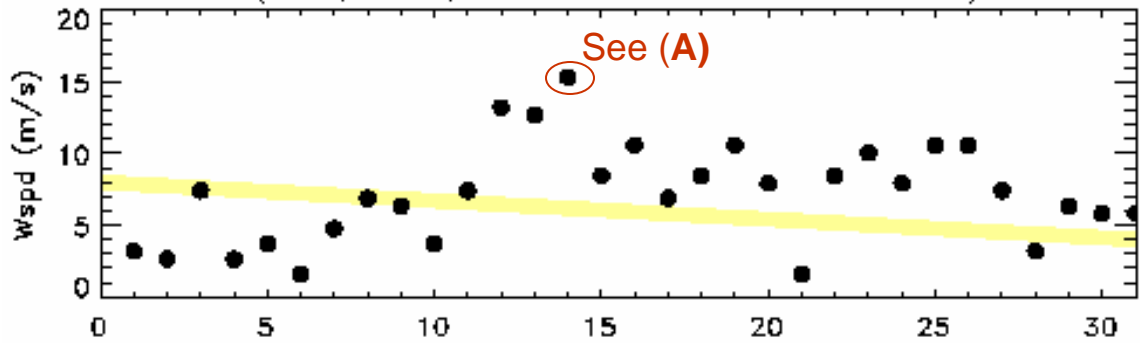
Dallas/Fort Worth Ozone Maps for August, 2005

Ozone - Peak AQI

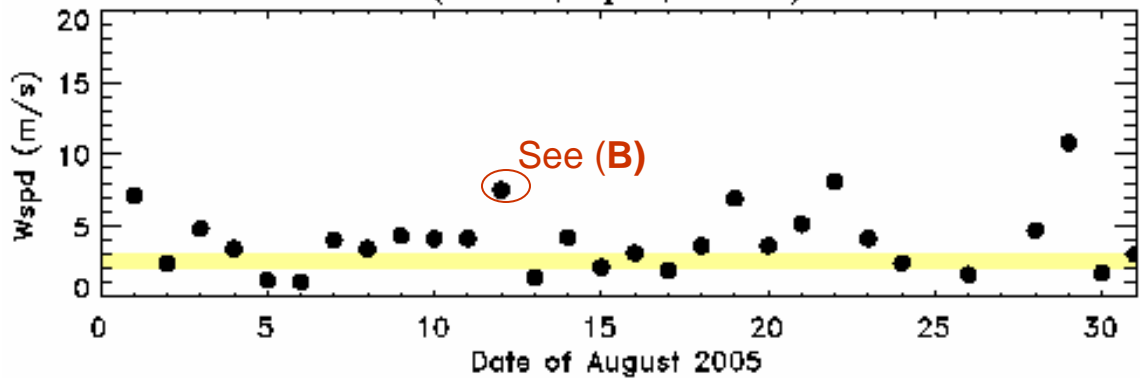


NETPS: Wind Speed Story

(DFW, 7am, 300m or nearest available)

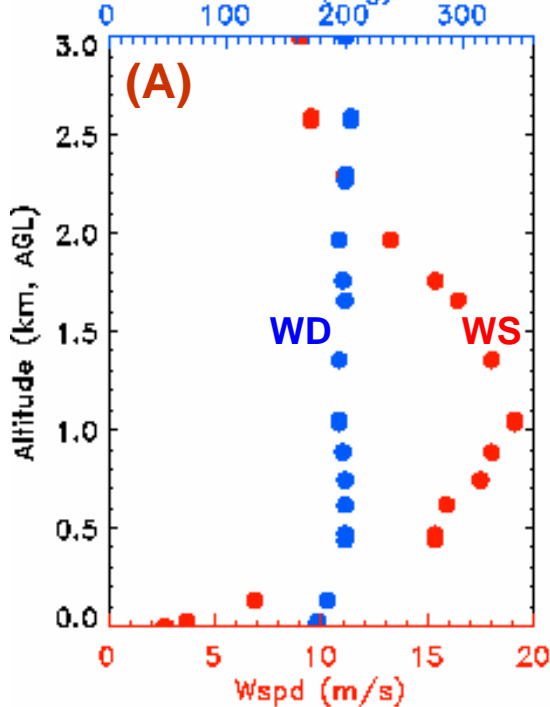


(PATT2, 2pm, 500m)



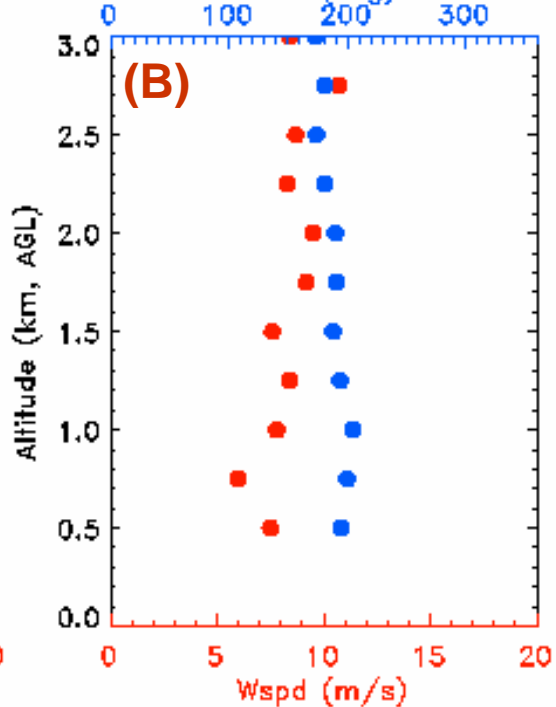
Aug. 14 (DFW, 7am)

Wdir (deg)



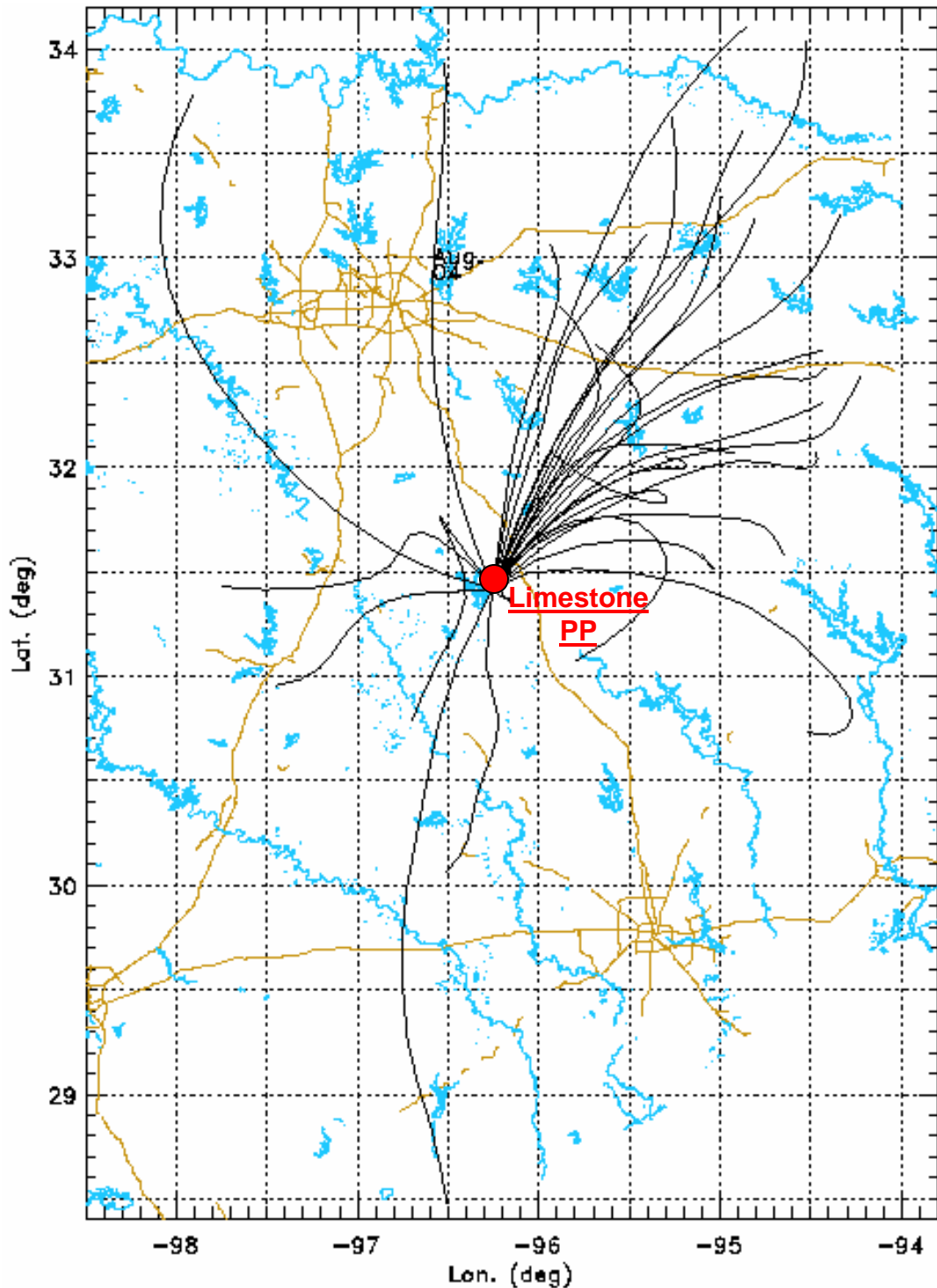
Aug. 12 (PATT2, 2pm)

Wdir (deg)



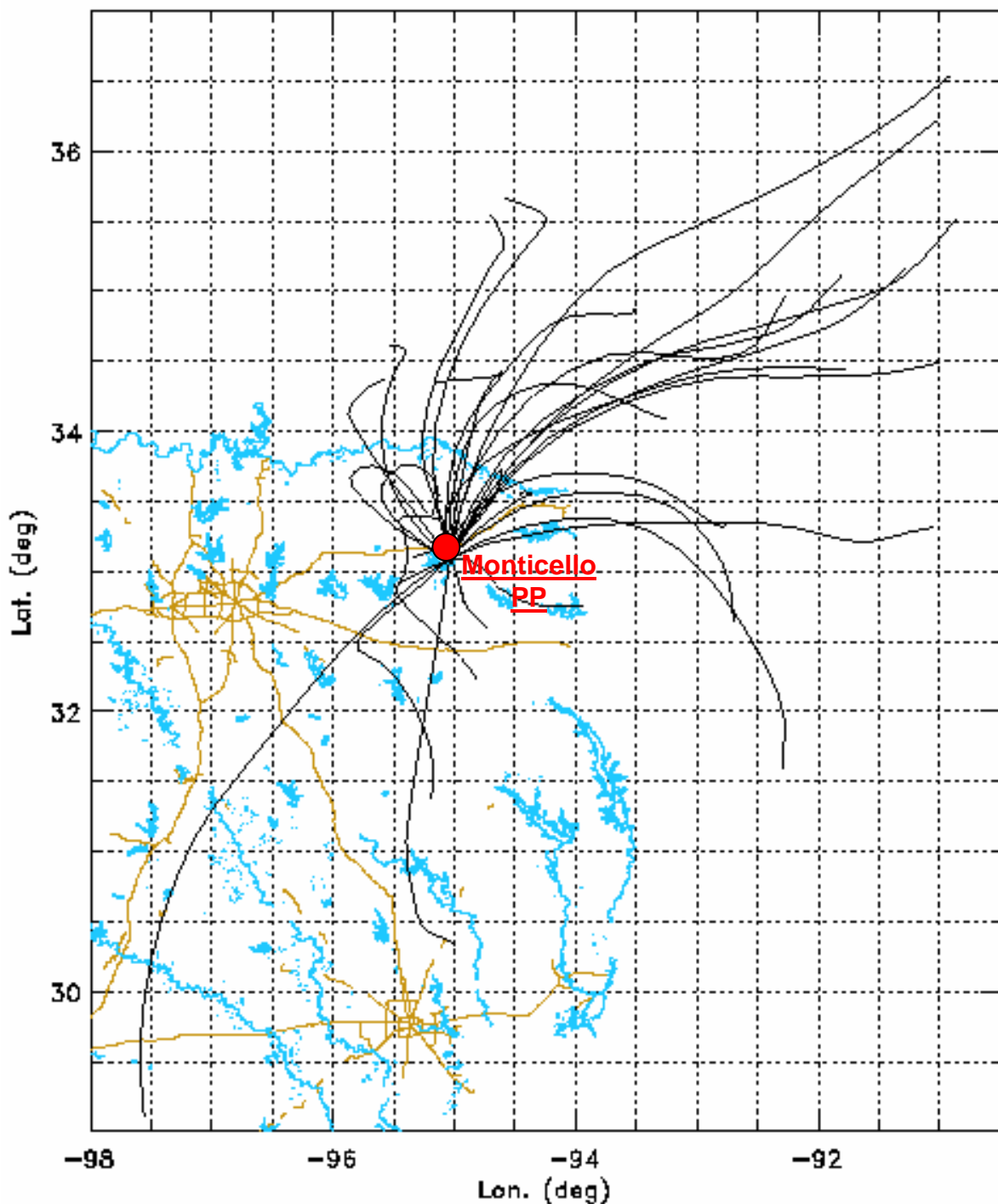
NETPS: Wind Direction Story --- 1

Daily 12-hour Forward Trajectories (0400 – 1600) 300m release over Limestone Powerplant (Zone B)



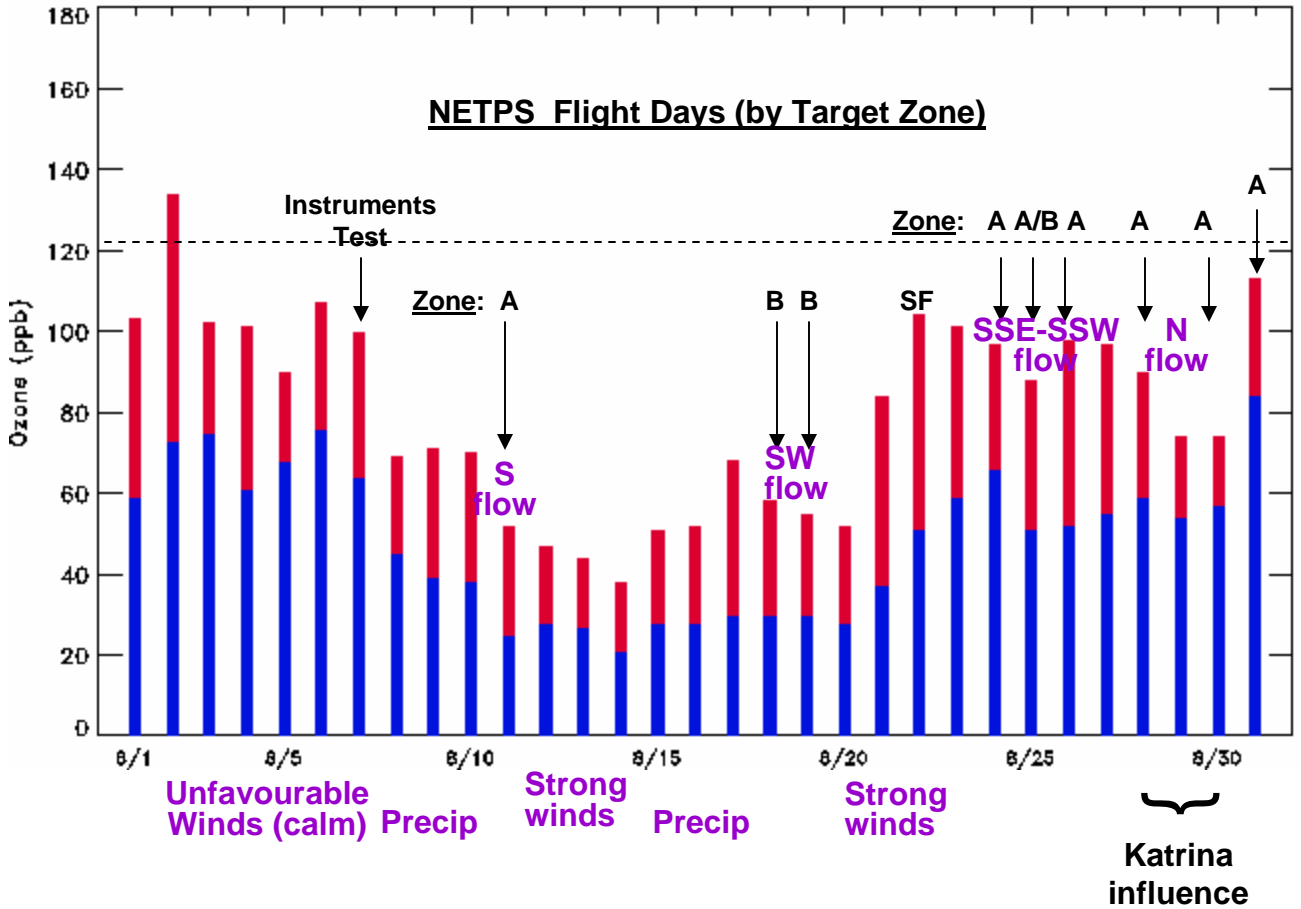
NETPS: Wind Direction Story --- 2

Daily 15-hour Forward Trajectories (0000 – 1500) 300m release over Monticello Powerplant (Zone C)



Overview of NETPS Aircraft Mission Days

August 2005



Distribution of Missions by Primary Target Zone

	<u>Planned</u>
Zone A : 6 ½	} 6
Zone B: 2 ½	
Zone C: 0	1

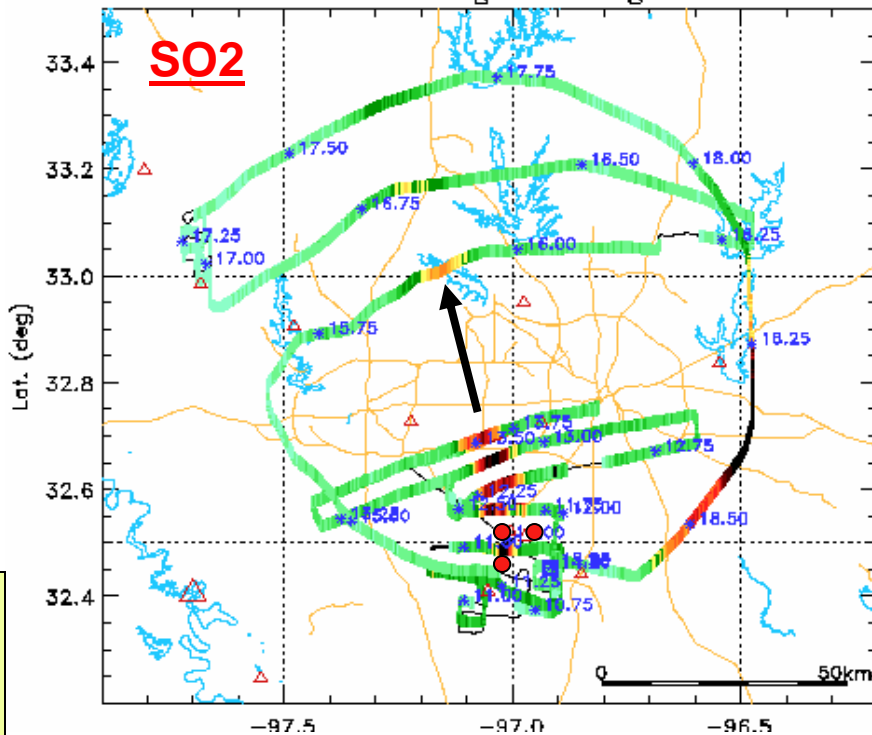
3.

Some key observations
based on aircraft measurements*
and overall assessment of
what we got

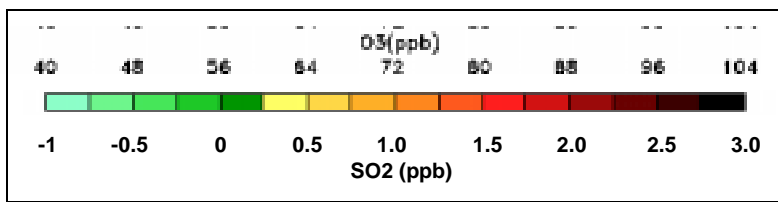
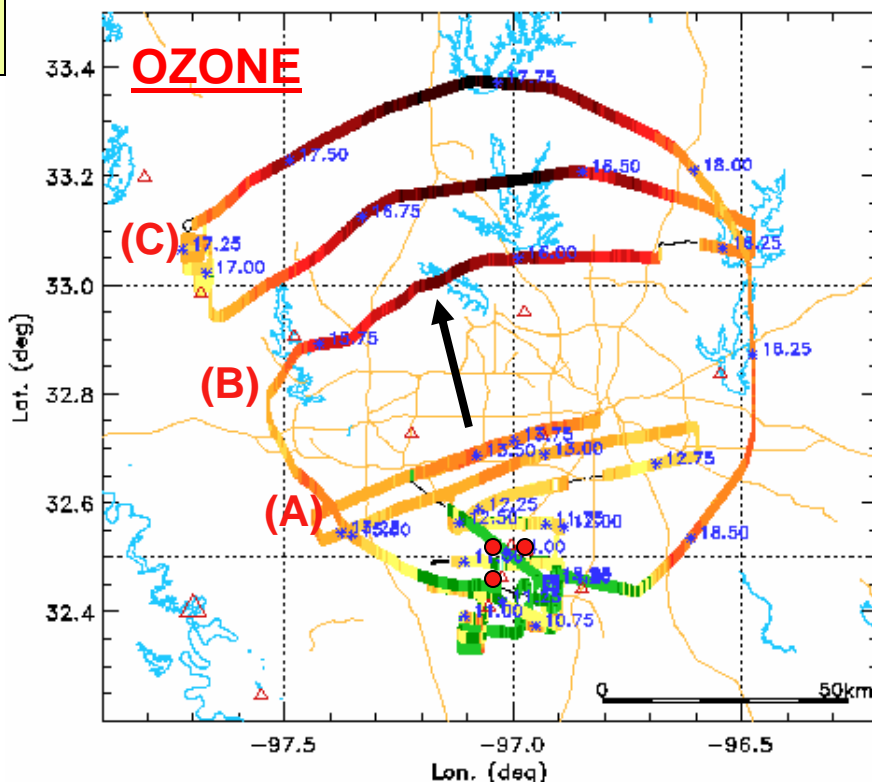
* Caution: aircraft data presented here are
Level 0 raw data

24 August 2005 --- Zone A Mission

TVA Twin Otter Flight: 24 August 2005



**IMPACT OF
ELLIS CO
SOURCES ON
DFW OZONE**



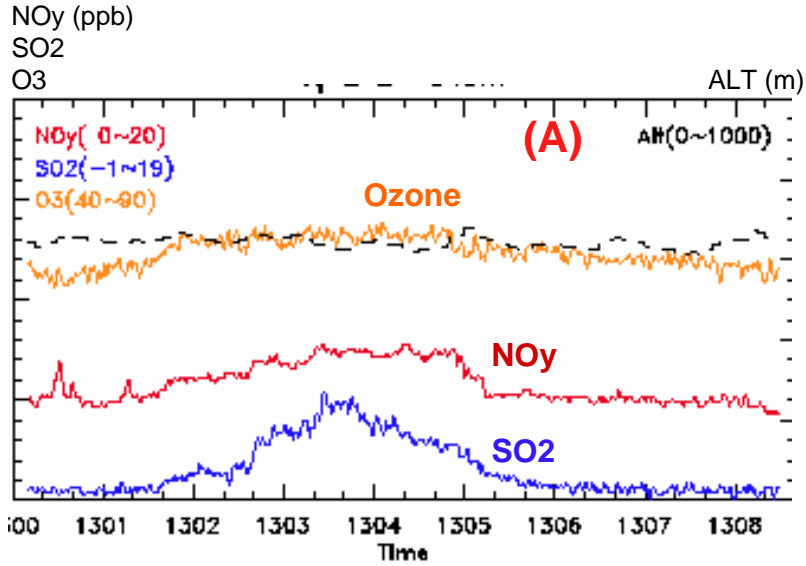
IMPACT OF ELLIS CO SOURCES ON DFW OZONE

24 Aug 2005

(A)

Ellis CO plumes arriving into DFW

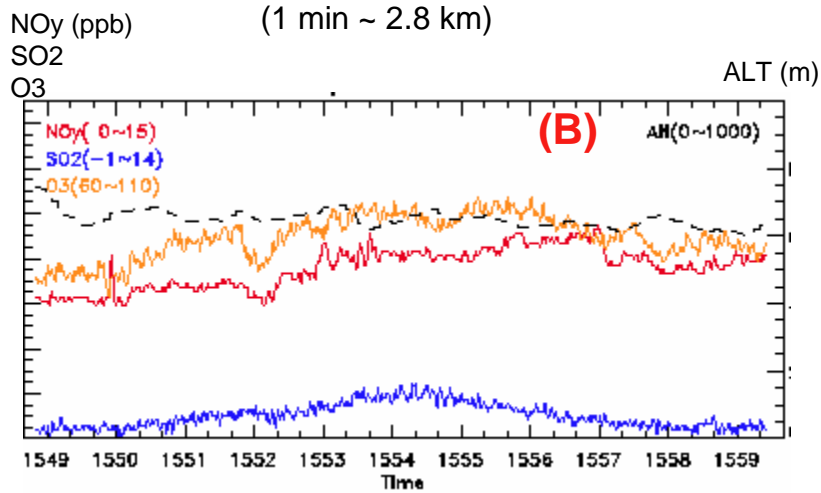
delivering peak excess ozone of about 7 ppb (10-15 km width) over ~67 ppb local background



(B)

Broad Ellis CO plume (see SO2) still delineated in first traverse downwind of DFW

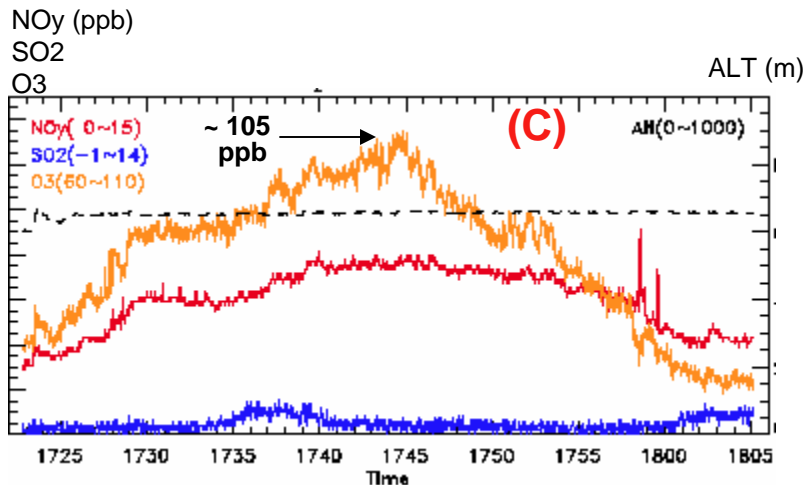
Not possible to distinguish relative Ellis CO v. urban contributions of ozone from just these data (need modeling)



(C)

Last traverse downwind of DFW

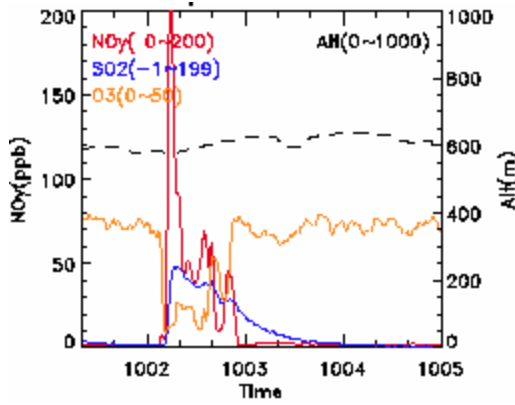
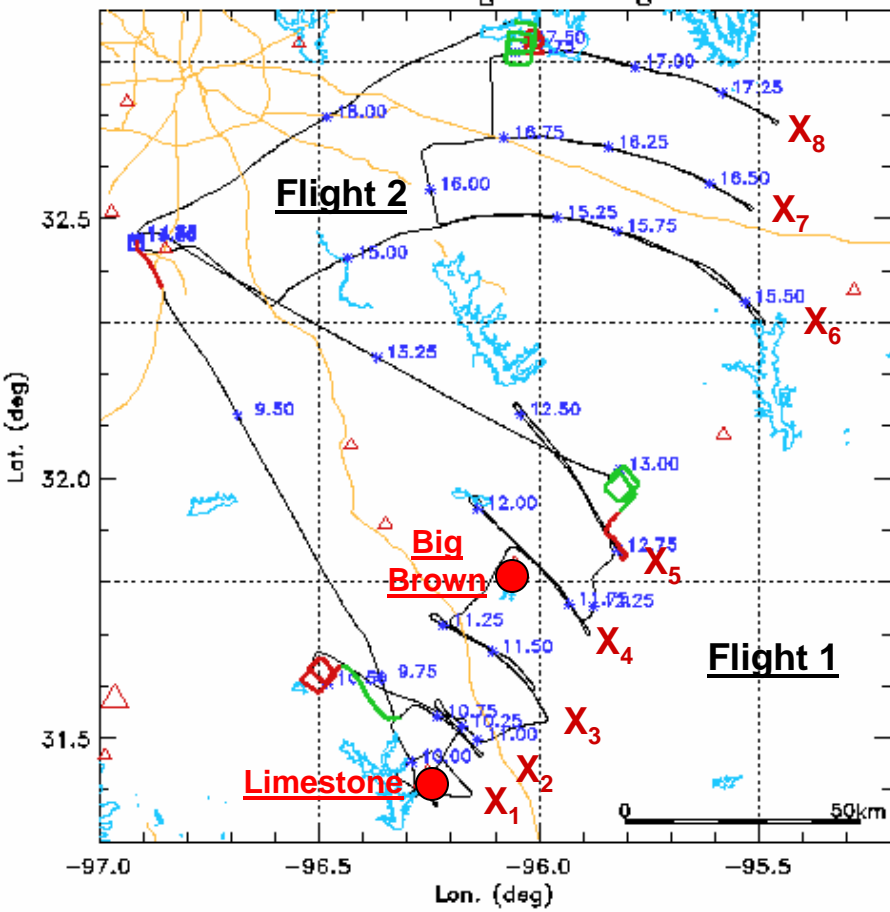
Peak downwind ozone in urban plume ~75 km downwind of DFW line
~ 105 ppb over a reg'l b/g of ~ 68 ppb (~37 ppb excess)



**Zone B plumes:
Emissions verification**

18 Aug 2005

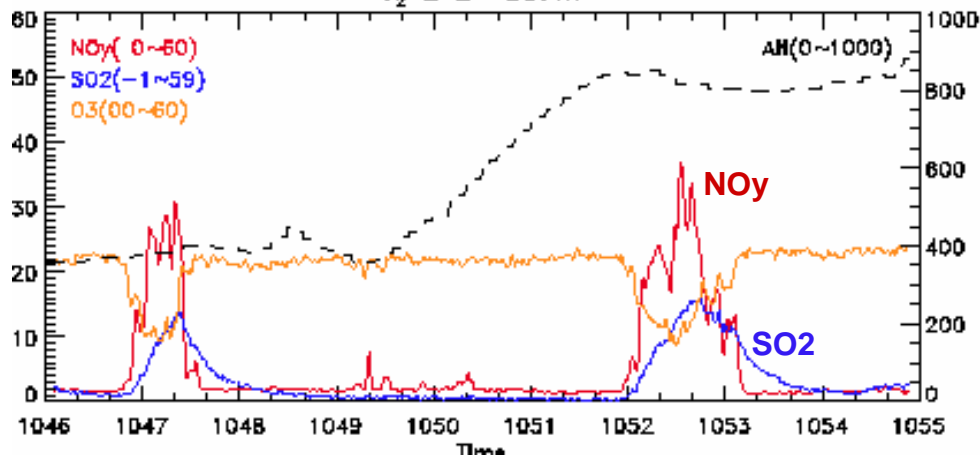
**Limestone traverse
at X₁**



**Limestone
Traverses at X₂**

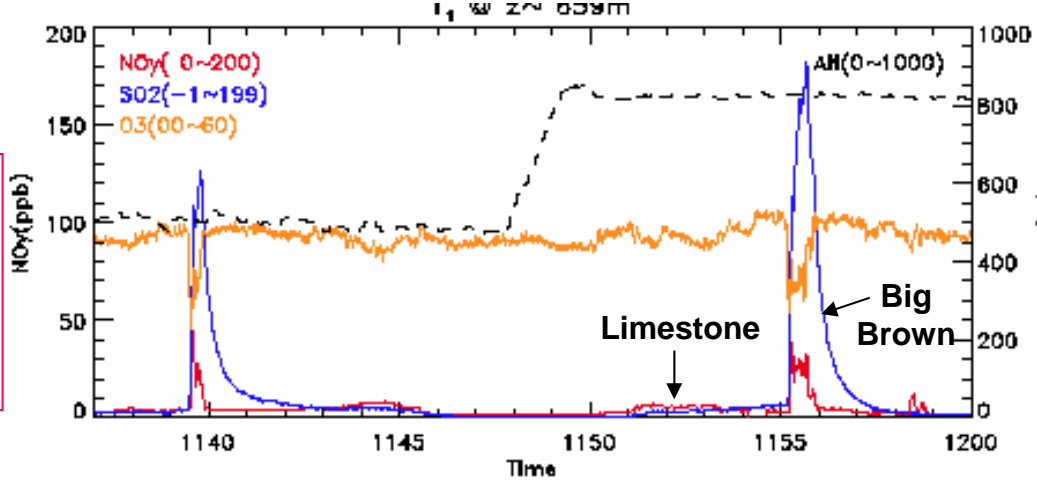
Limestone
SO₂/NO_y < 1
Measured: 0.4 – 0.6*
2002 EI: 4.60
2003 EI: 1.77

* Based on Aug 18/19



**Big Brown and
Limestone
Traverses at X₄**

Big Brown
SO₂/NO_y > 1
Measured: 2.2 - 4.5*
2002 EI: 6.62
2003 EI: 8.69

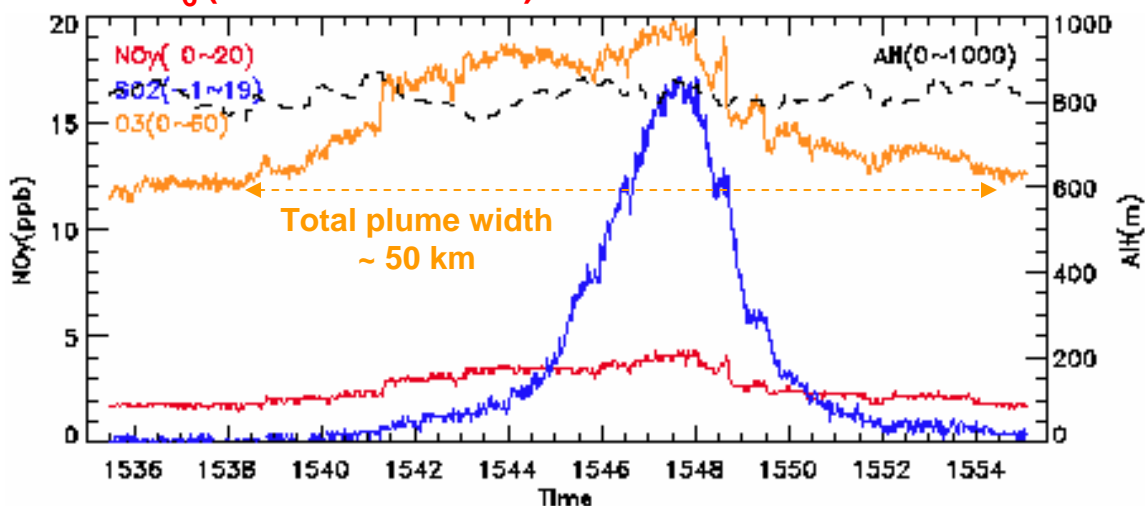


18 Aug 2005

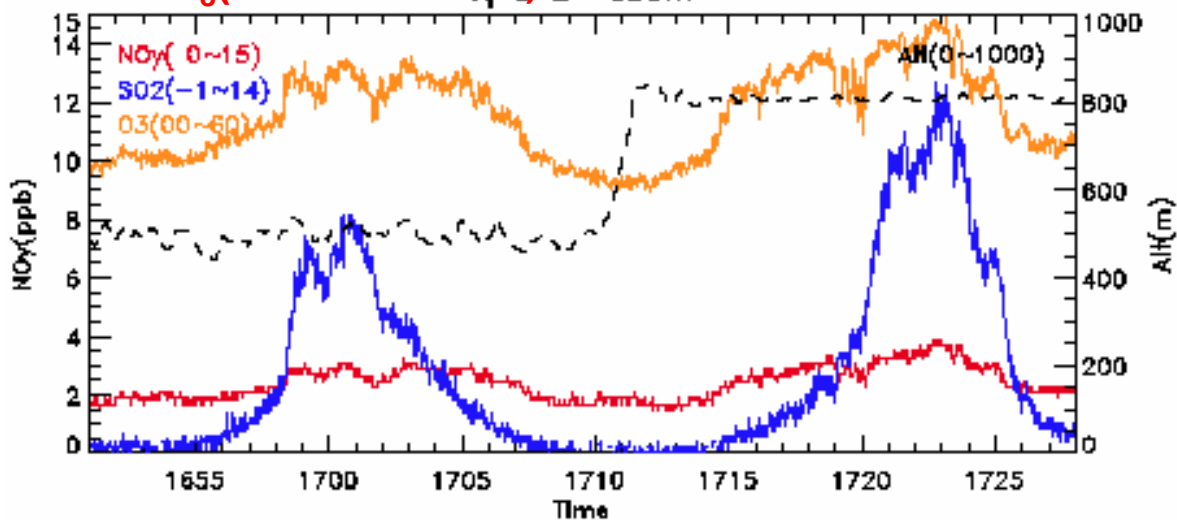
Ozone Impact of LIMESTONE & BIG BROWN combined

Plume ozone as much as 60 ppb (b/g ~ 36 ppb),
over a width of ~ 50km

Traverse at X_6 (~100 km from BB)



Traverses at X_8 (~150km from BB)



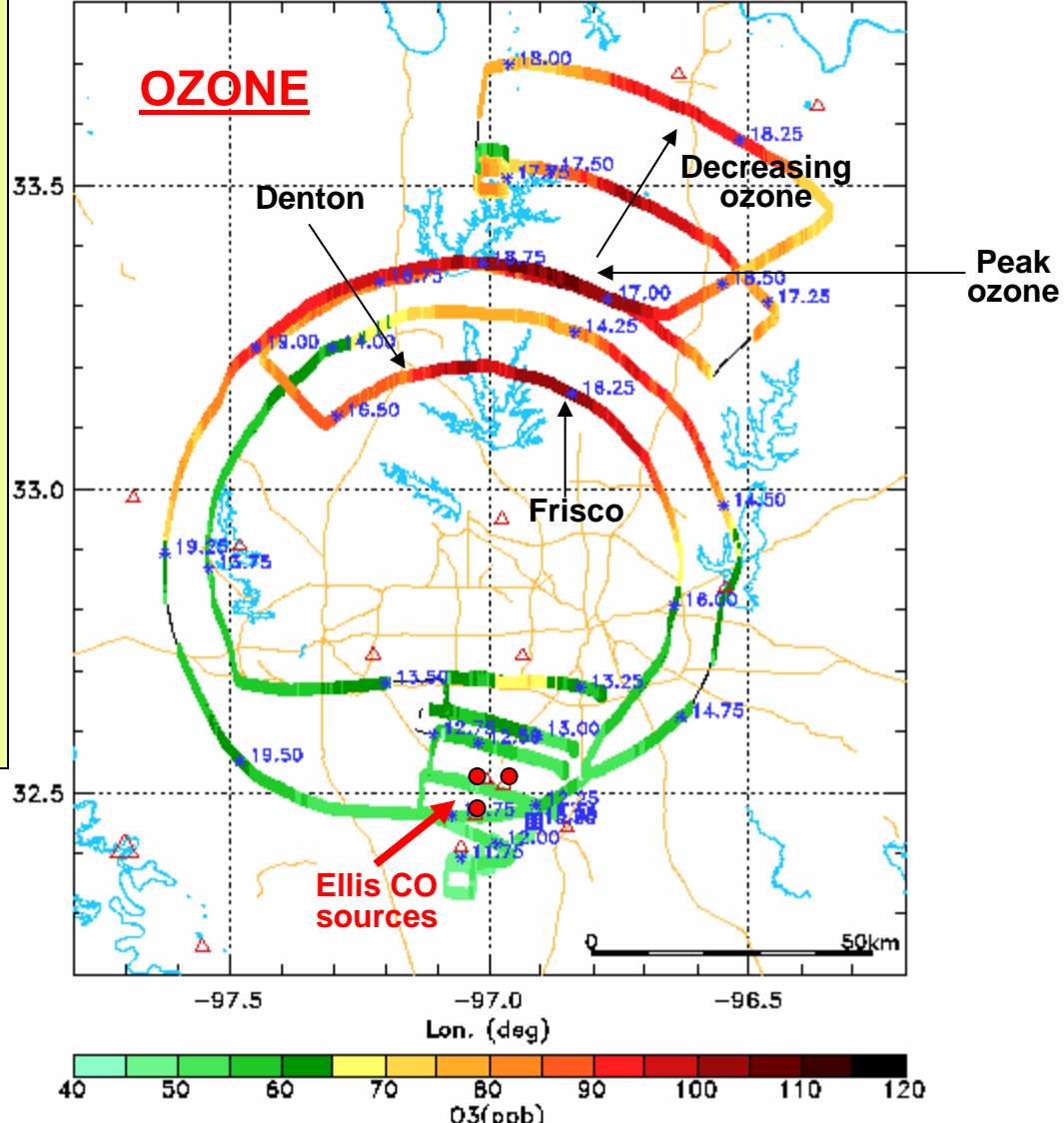
Impact of Ellis CO sources on DFW

and

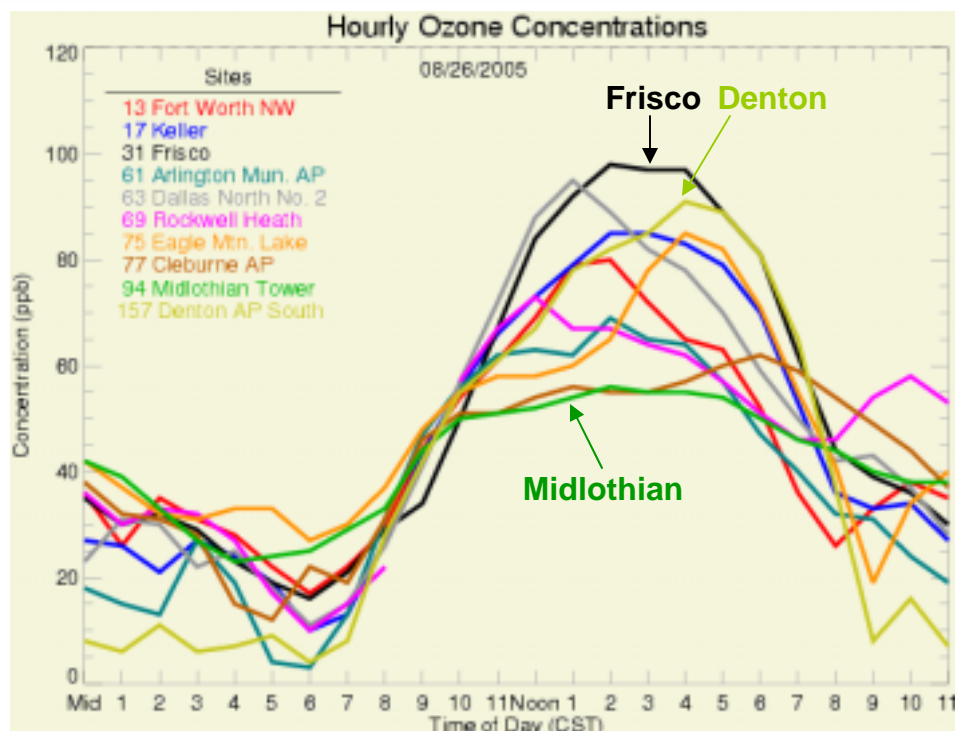
Evolution of the DFW plume upto ~125km from the DFW line

Ozone peaked ~50km downwind of Frisco, and then decreased

TVA Twin Otter Flight: 26 August 2005



26 Aug 2005



PRELIMINARY CONCLUSION

**NETPS was not an ideal field study
mainly because ambient conditions
(both met and chem)
were far less than ideal.**

**Nevertheless,
we have a substantial database which,
in conjunction with a
state-of-the-art Reactive Plume Model,
will make possible model verification and
application to deduce fairly reliably
considerable information about the
relative impact of upwind and local emissions
on DFW-area ozone
(and also farther downwind).**