

**Alkene/NO<sub>y</sub> Emission Ratios**  
observed from the **Baylor Aztec** during the  
**2006 TexAQS II study** and  
**Comparison with results obtained during 2001-2002**  
**rapidsciencesynthesis** workshop  
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# outline

- **measurement** system and flights conducted
- review **results** from 2001-2002
- initial **results** from 2006
- **comparison** of observations and inventory results

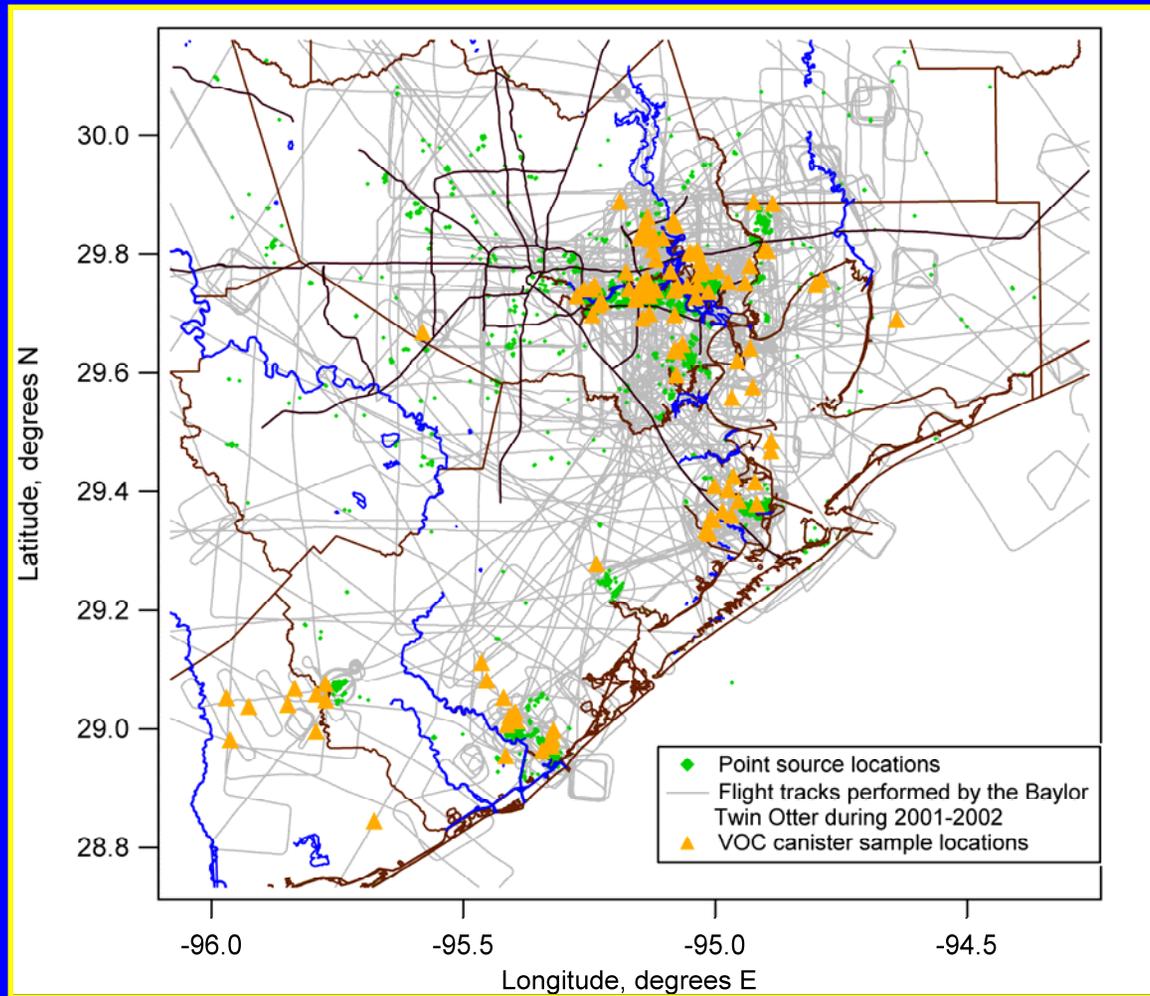
# measurement systems

- NO, NO<sub>2</sub>, NO<sub>y</sub>
  - Chemiluminescence with photolytic and catalytic converters
- Alkenes
  - Reactive Alkene Detector (RAD) - chemiluminescence.
  - Instrument has been characterized for response to ethene, propene, butadiene, and isoprene. Results reported as propene.

## 2001-2002 measurements

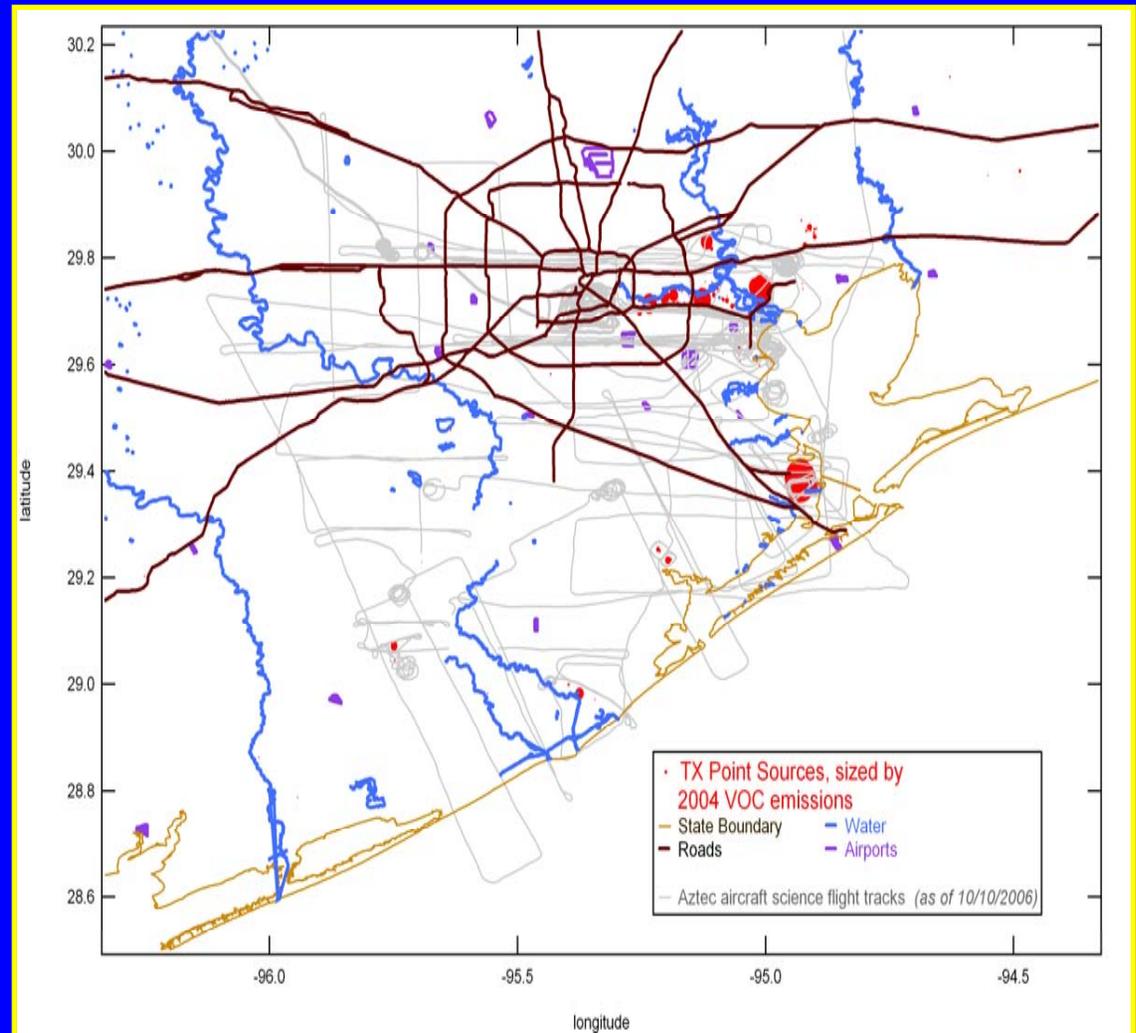
- **baylor** twin otter
- **130** VOC canisters – 10 second integrated samples in HGA plumes (DRI canister analysis)
- **60** samples **positively identified** with individual source plumes
- **results** compared with **inventory** values

# 2001-2002 measurements - continued

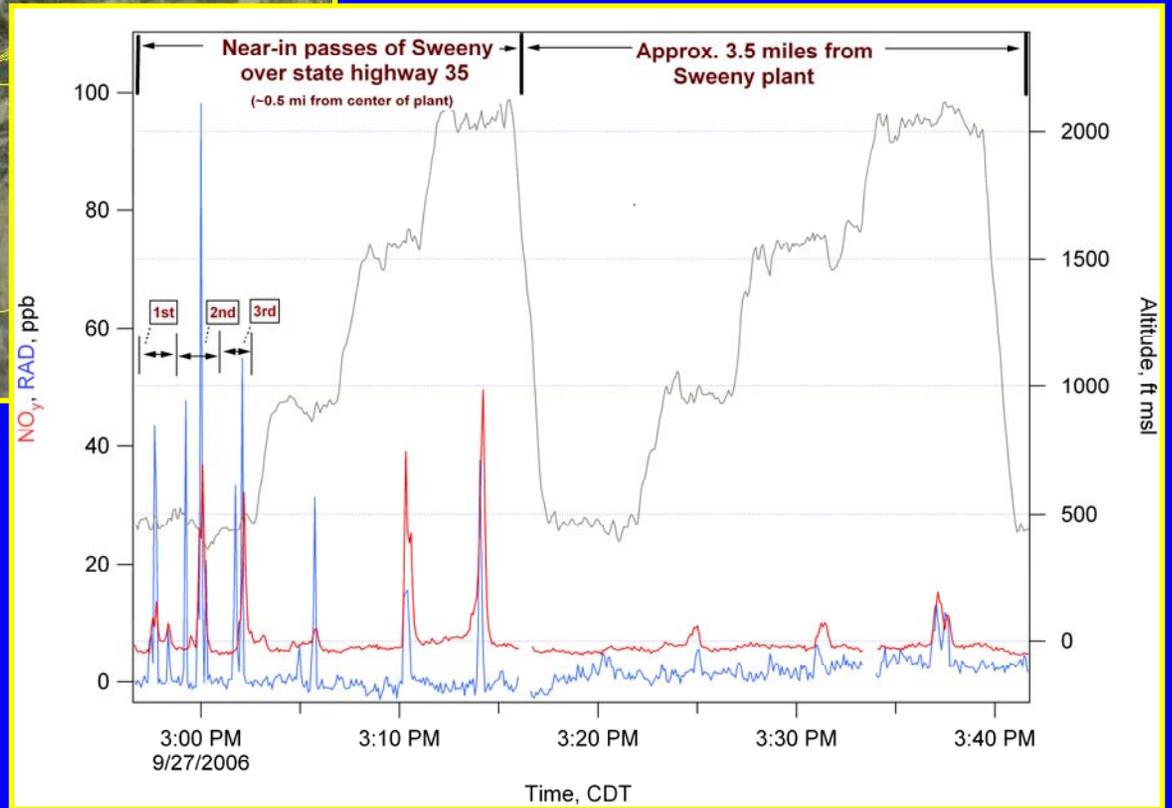
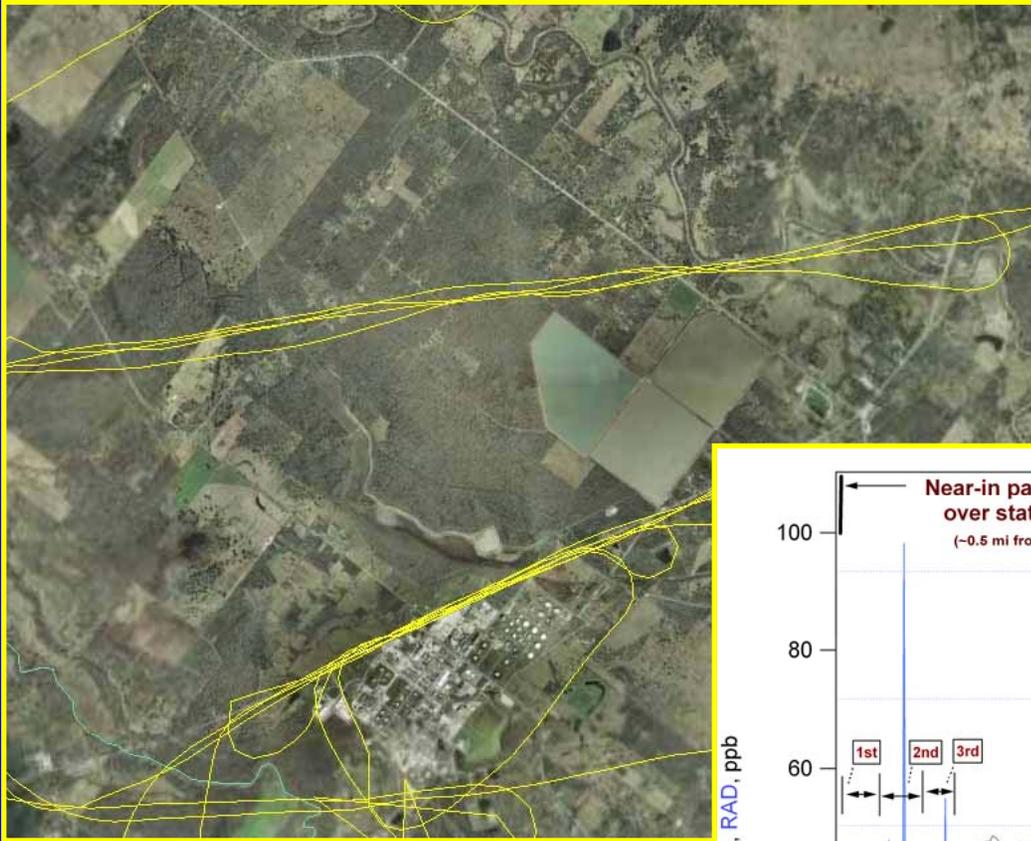


# 2006 measurements

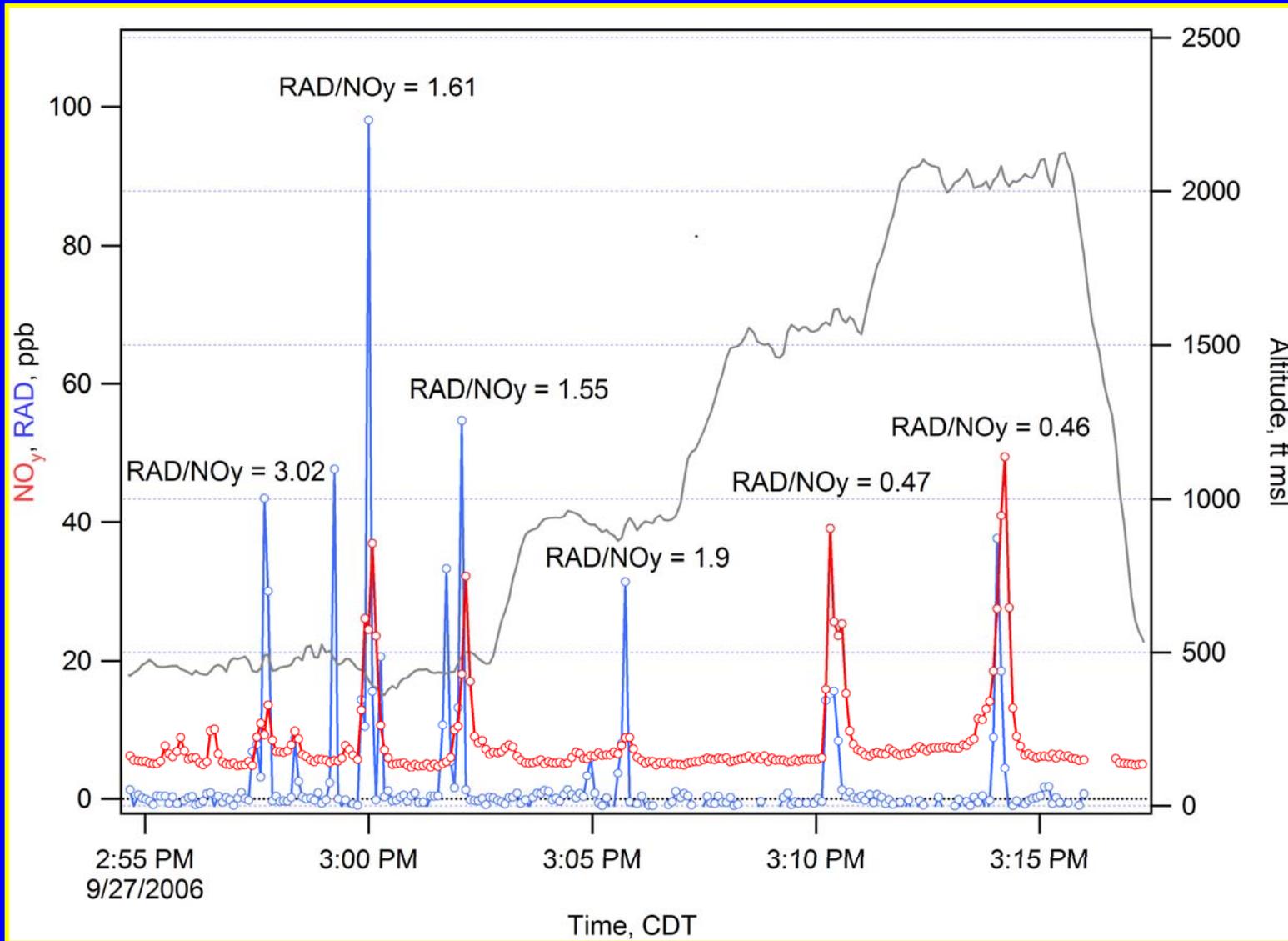
- eight flights coordinated with the SOF team
  - Ship channel
  - **Freeport**
  - Texas city
  - **Sweeney**



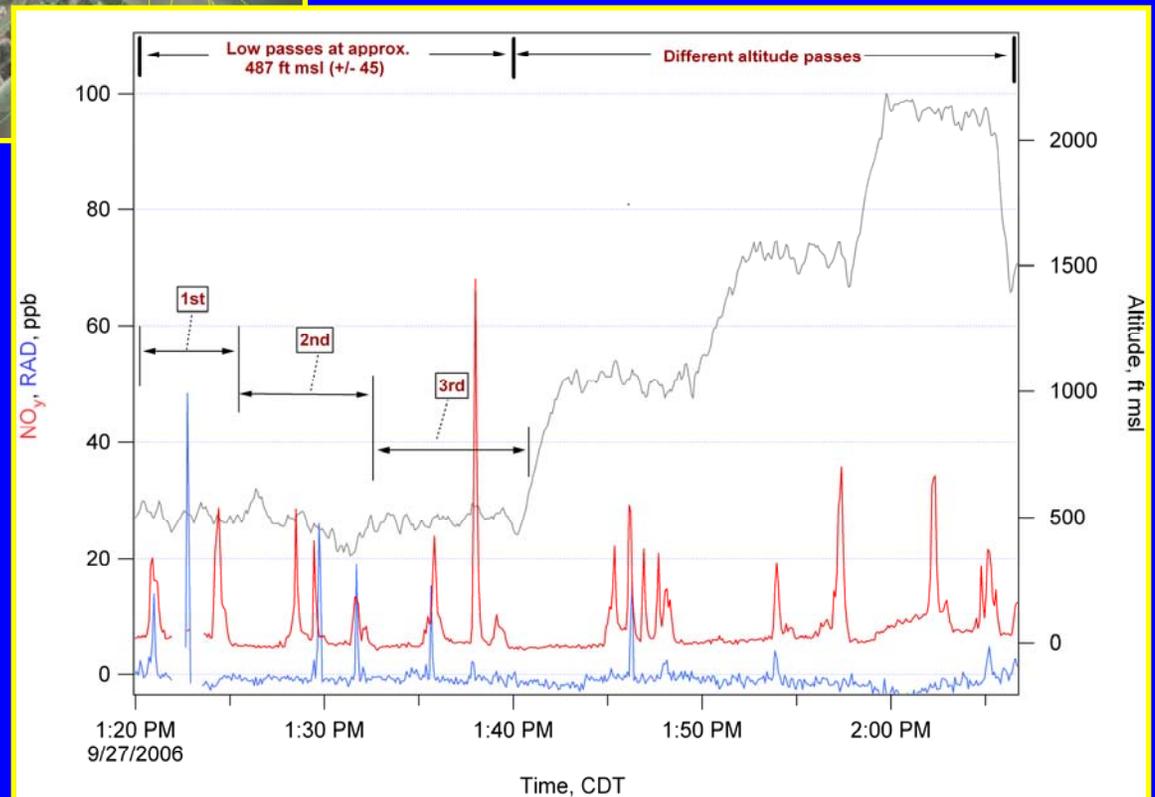
# sweeny



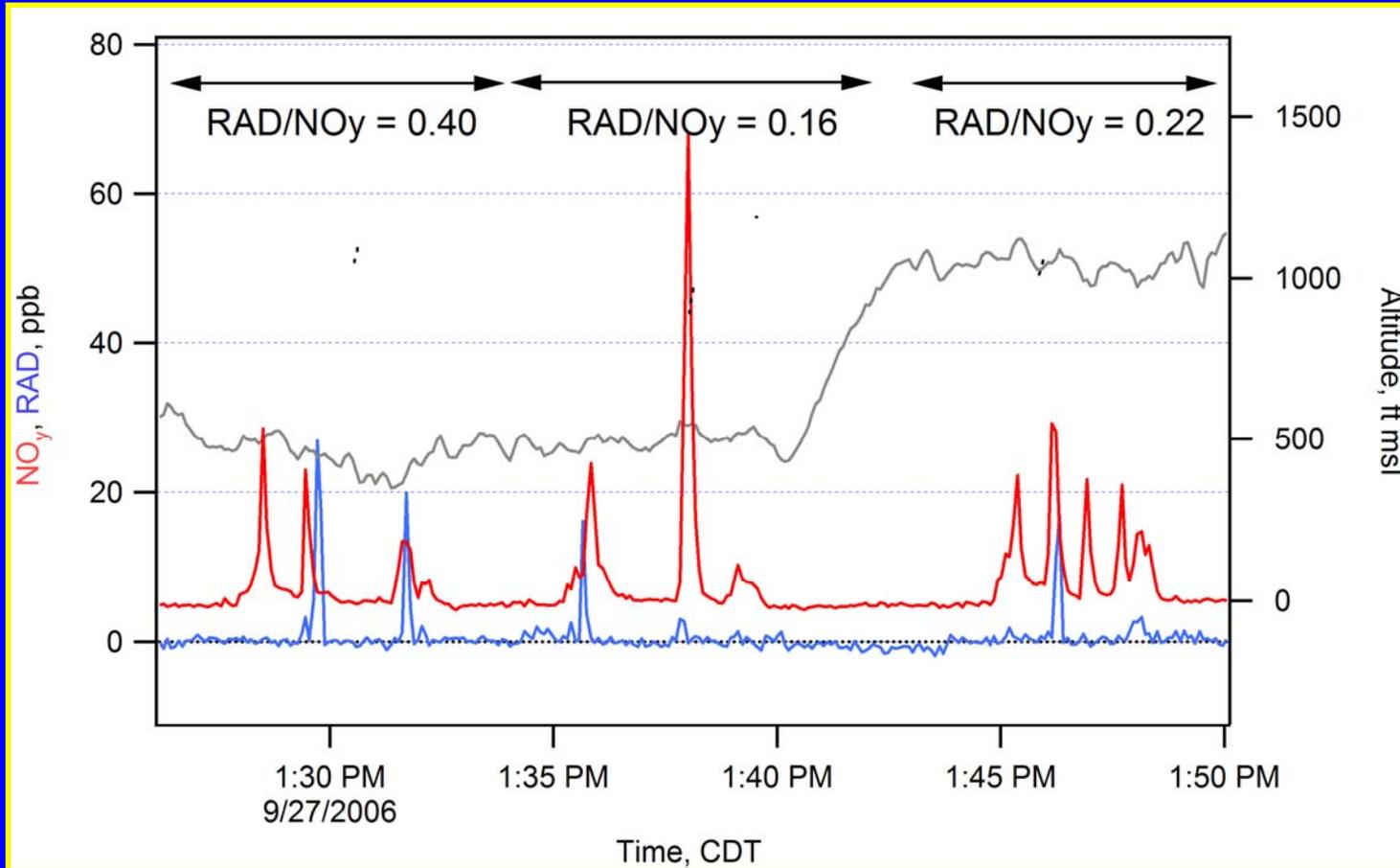
# sweeny emissions



# freeport



# freeport emissions



# comparisons

	Sweeny observations	Sweeny inventory	Freeport observations	Freeport inventory
<b>2001</b> 1999 inventory; Salkenes/NOy	3.7 +/- 3.1 9 canisters	0.108	2.0 +/- 2.4 9 canisters	0.047 +/- 0.01
<b>2006</b> 2004 inventory; RAD/NOy	1.5 +/-0.96 6 plume transects	0.06	0.26 +/- 0.13 3 multi-plume transects	0.001

# summary

- **initial** look at the 2006 data set
- 2001 observation/inventory **comparison** showed a factor of **2-20 underestimate** of emissions in the inventory
- 2006 observations are **lower** in magnitude than the 2001 results – but within the standard deviation
- Comparison to the 2004 inventory shows **similar results** to the 2001 results (gross underestimate of ratio)