

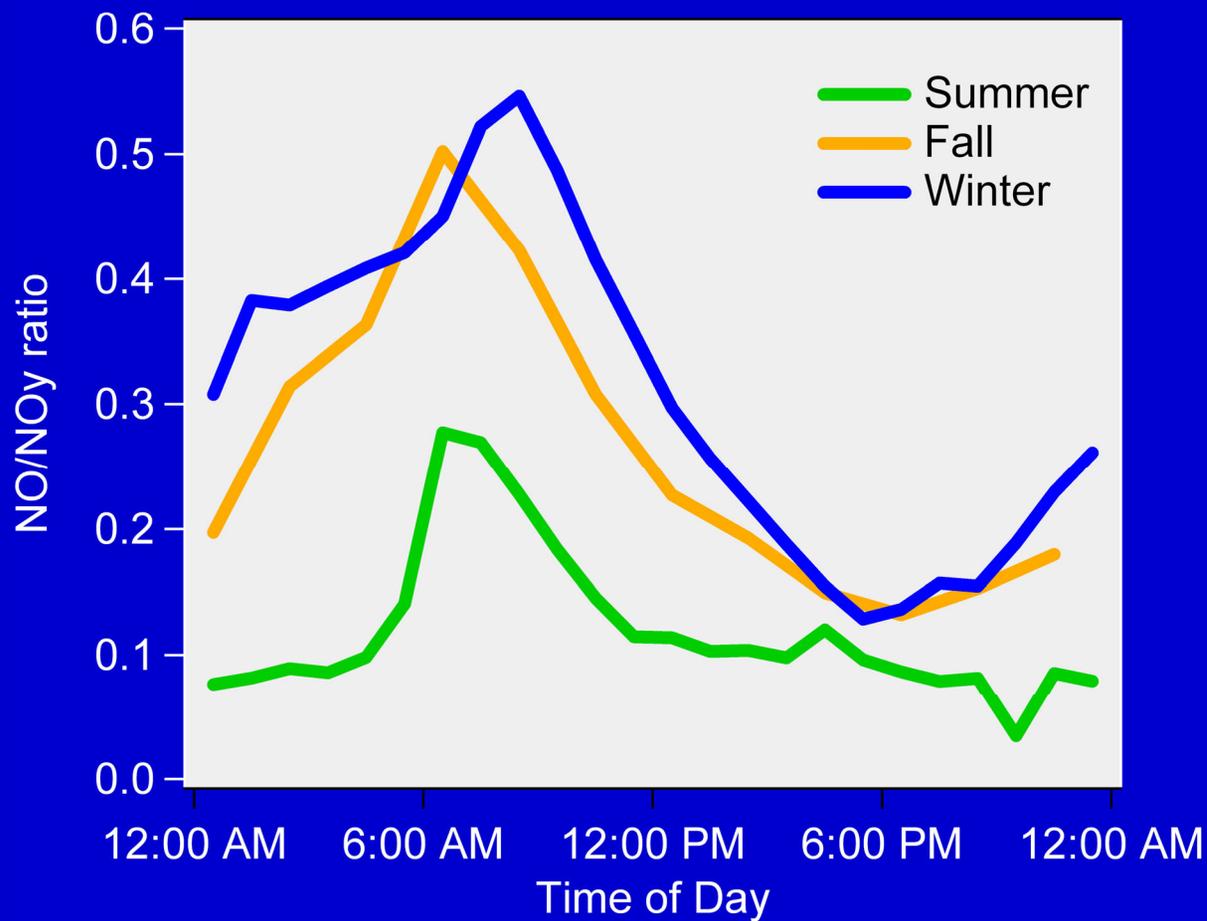
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**Task 1.1b Examination of the reactive nitrogen partitioning  
at the CRPAQS anchor sites**

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# Overview



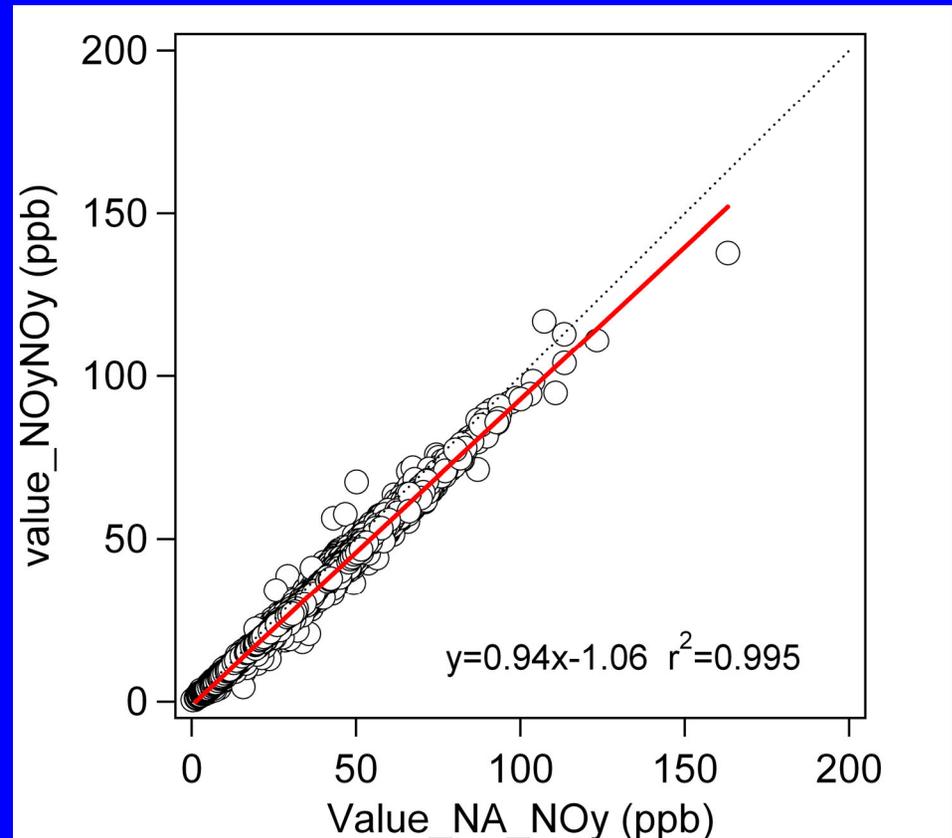


# Questions addressed

- What is the comparability and equivalence among collocated sampling methods?
- What are the biases of one instrument with respect to others?
- What is the quality of the NO<sub>y</sub> and NO<sub>y</sub>(i) species data collected?

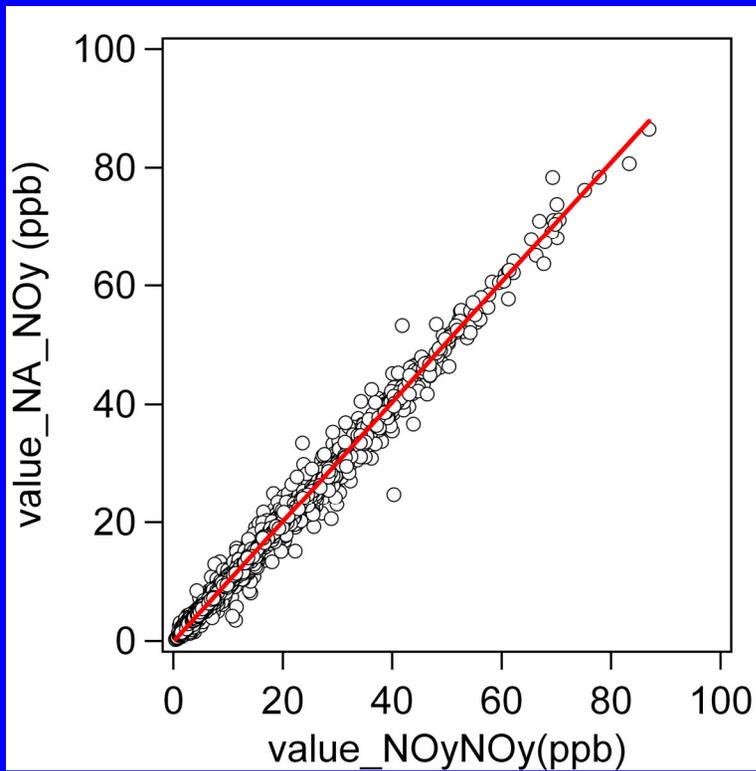
# Results – Collocated NO<sub>y</sub> measurements

- Collocated NO<sub>y</sub> measurements agreed well.
- Measurements collected at the Angiola and Sierra Nevada foothills sites.

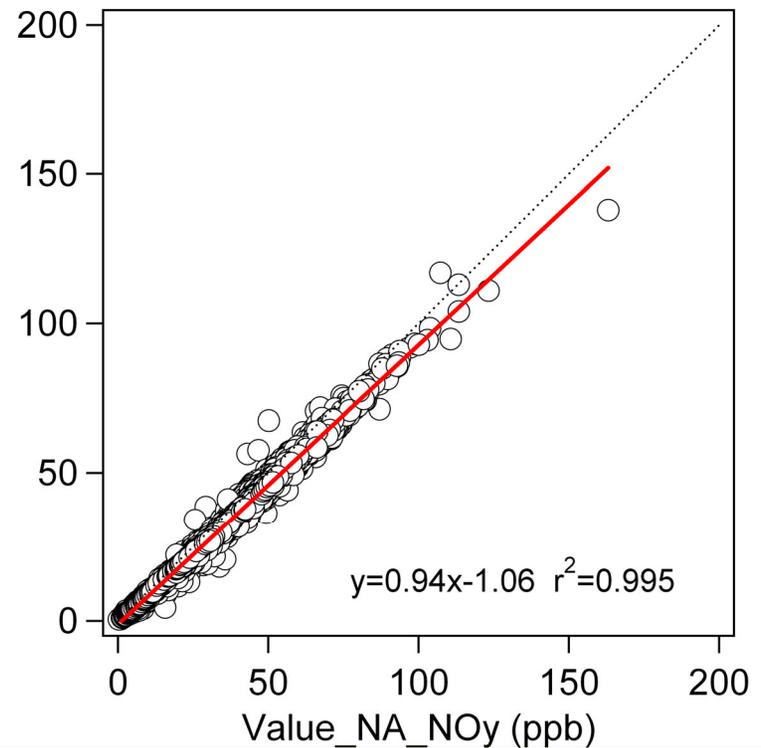


# Results – Collocated NO<sub>y</sub> measurements

## Sierra Nevada

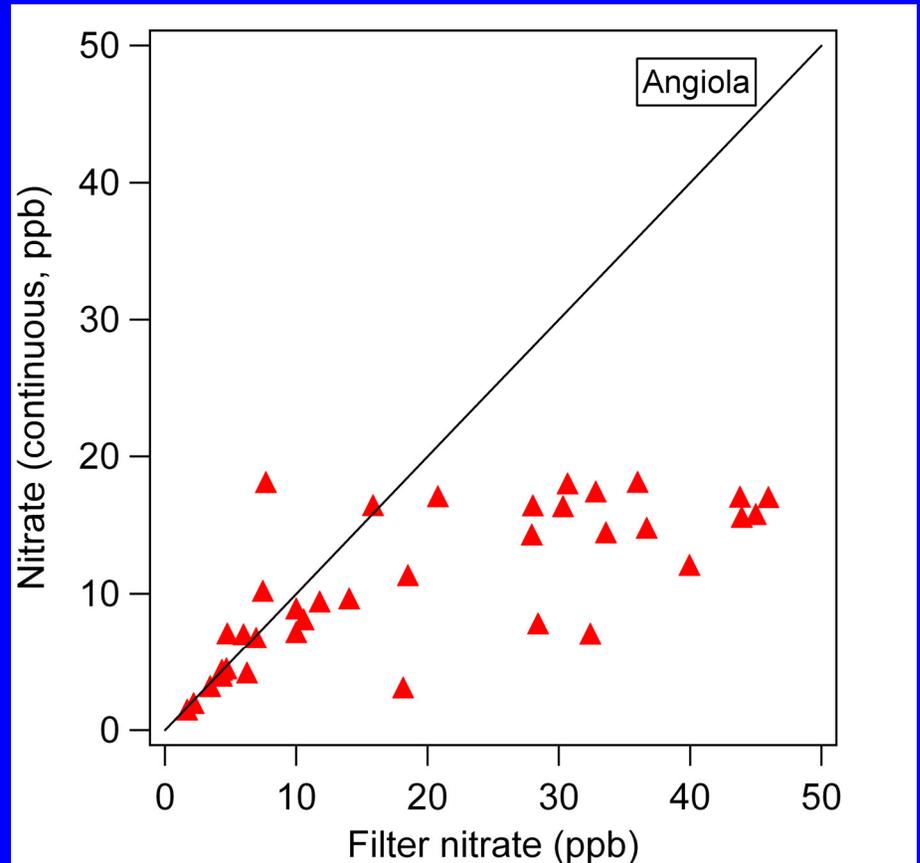


## Angiola

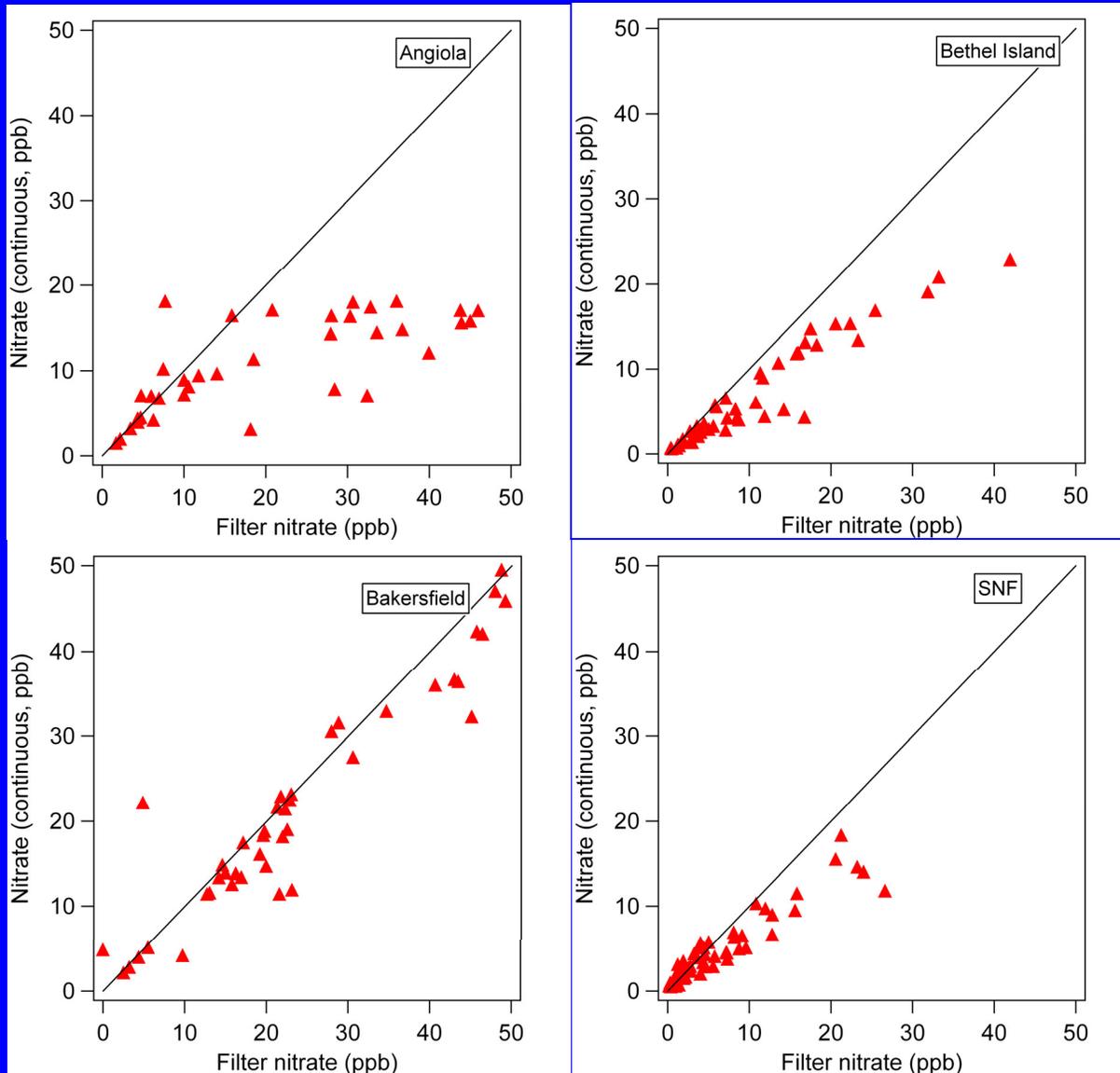


# Results - Collocated Nitrate measurements

- Collocated nitrate measurements do not agree well.
- Measurements collected at the Angiola, Bakersfield, Bethel Island, and Sierra Nevada foothills sites.

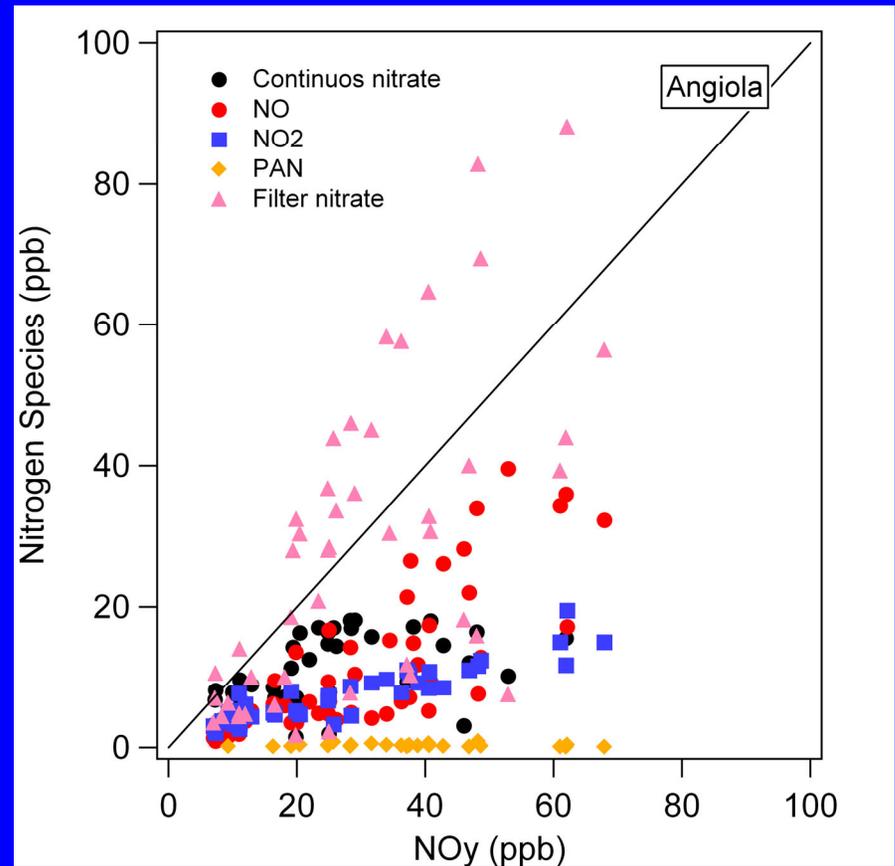


# Results - Collocated Nitrate measurements

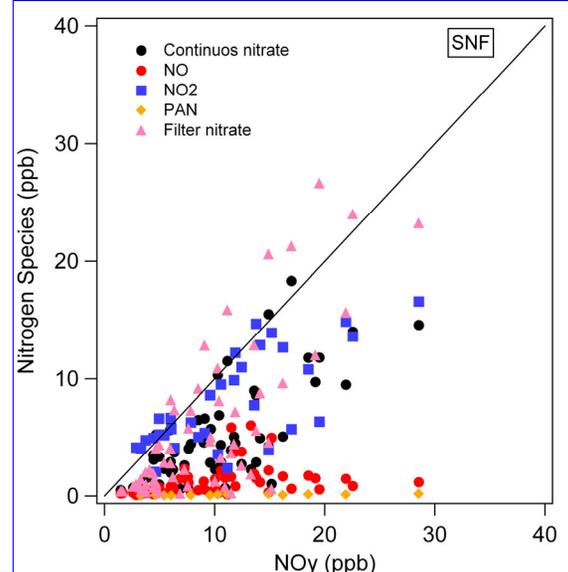
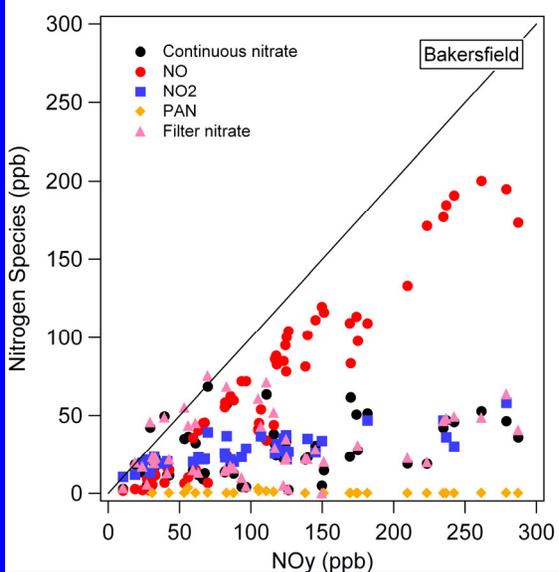
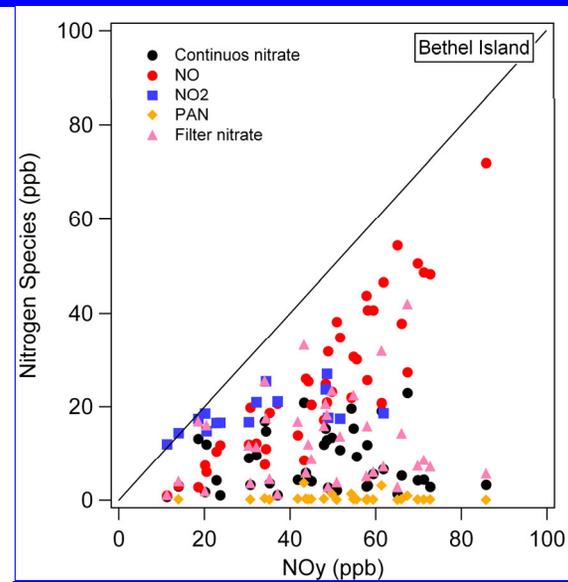
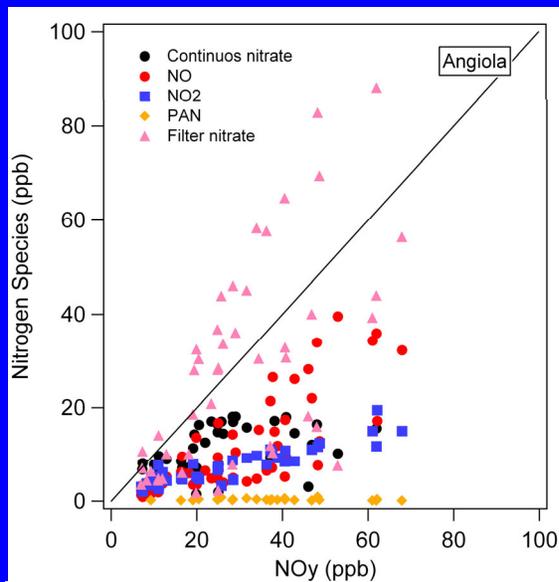


# Results - $\text{NO}_y$ relationship to $\text{NO}_y$

- Good relationship observed between the individual species and  $\text{NO}_y$
- Some individual species greater than  $\text{NO}_y$ .

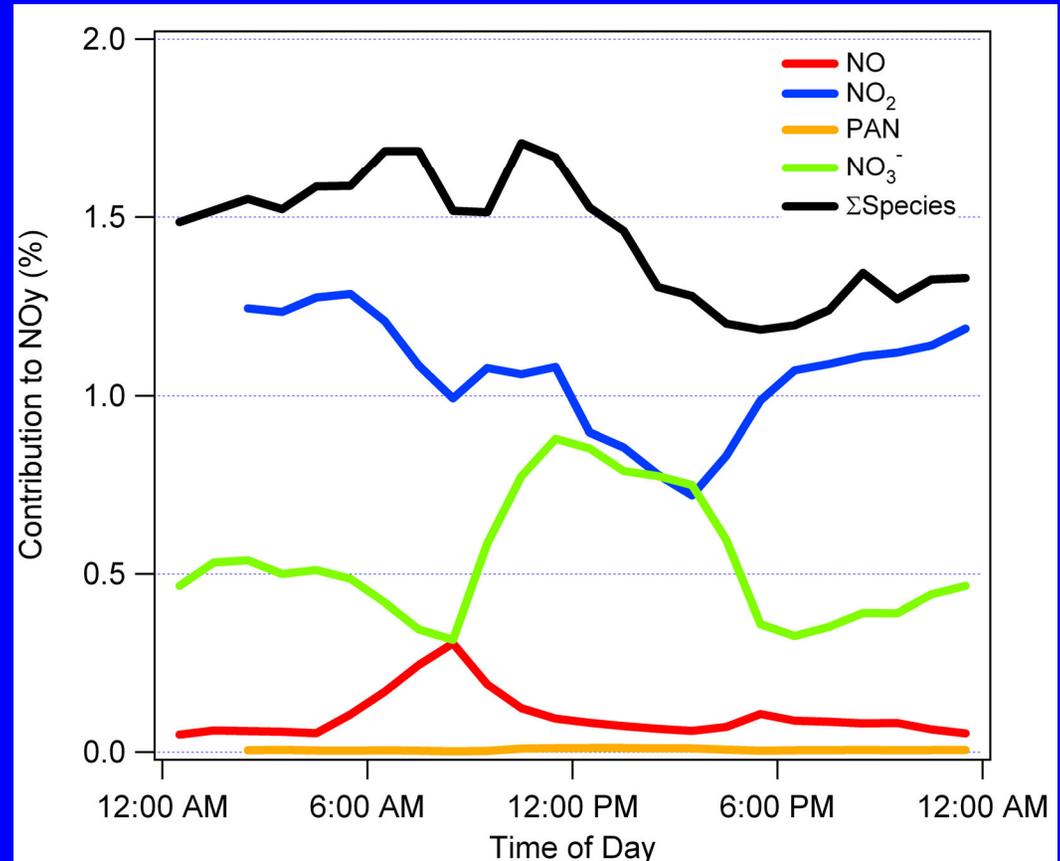


# Results - $\text{NO}_y$ relationship to $\text{NO}_y$

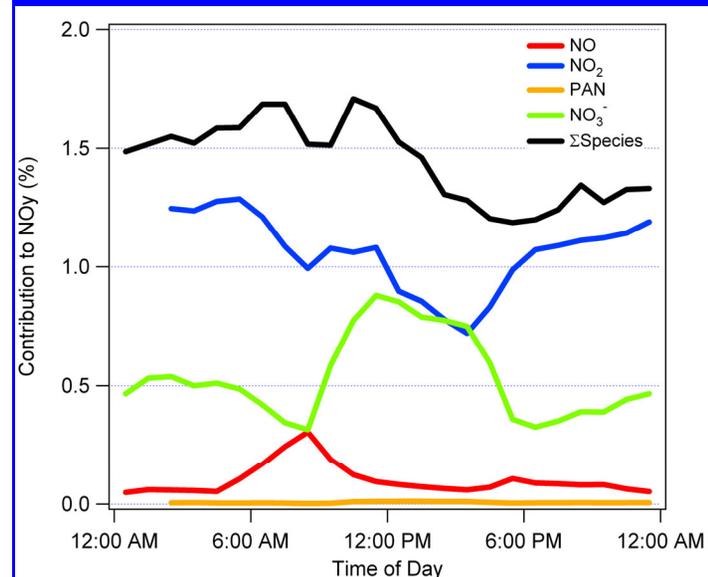
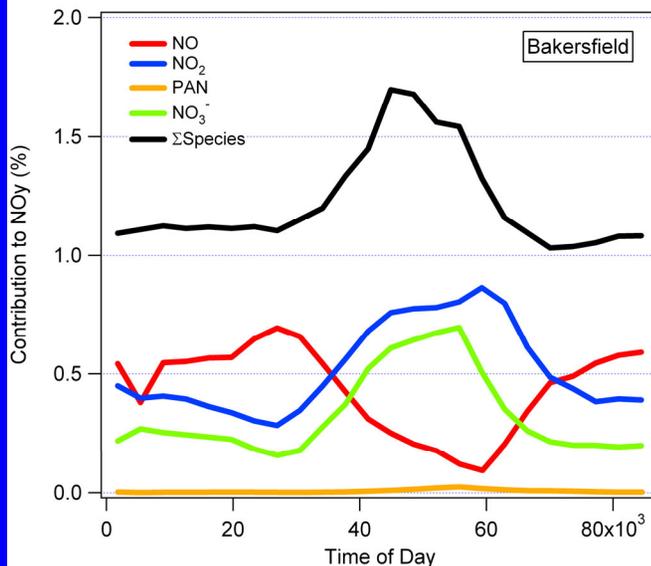
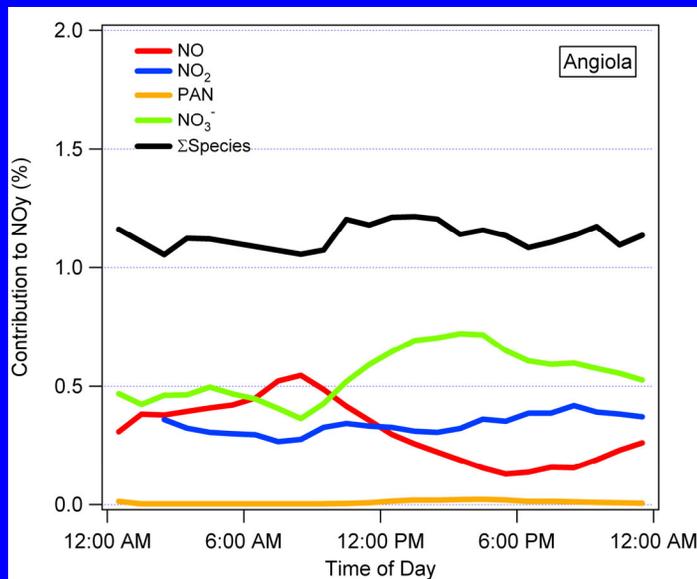


# Results - Diurnal variation of $\text{NO}_y$ / $\text{NO}_y$ ratio

- Diurnal variation observed in  $\Sigma\text{NO}_y$
- “Excess”  $\text{NO}_y$  correlates with  $\text{NO}_2$



# Results - Diurnal variation of $\text{NO}_y$ / $\text{NO}_y$ ratio



# Summary

- Questions
  - Can we understand better the difference between continuous and filter nitrate?
  - Utility of NO<sub>y</sub> lies in the balance.
- Near certainty
  - NO<sub>2</sub> measurement are biased high.
  - Can we calculate NO<sub>2</sub> (O<sub>3</sub>, NO, UV?)
- Still need to integrate the Fresno measurements.
- Currently we have confidence in filter nitrate, NO, HNO<sub>3</sub>, and PAN.