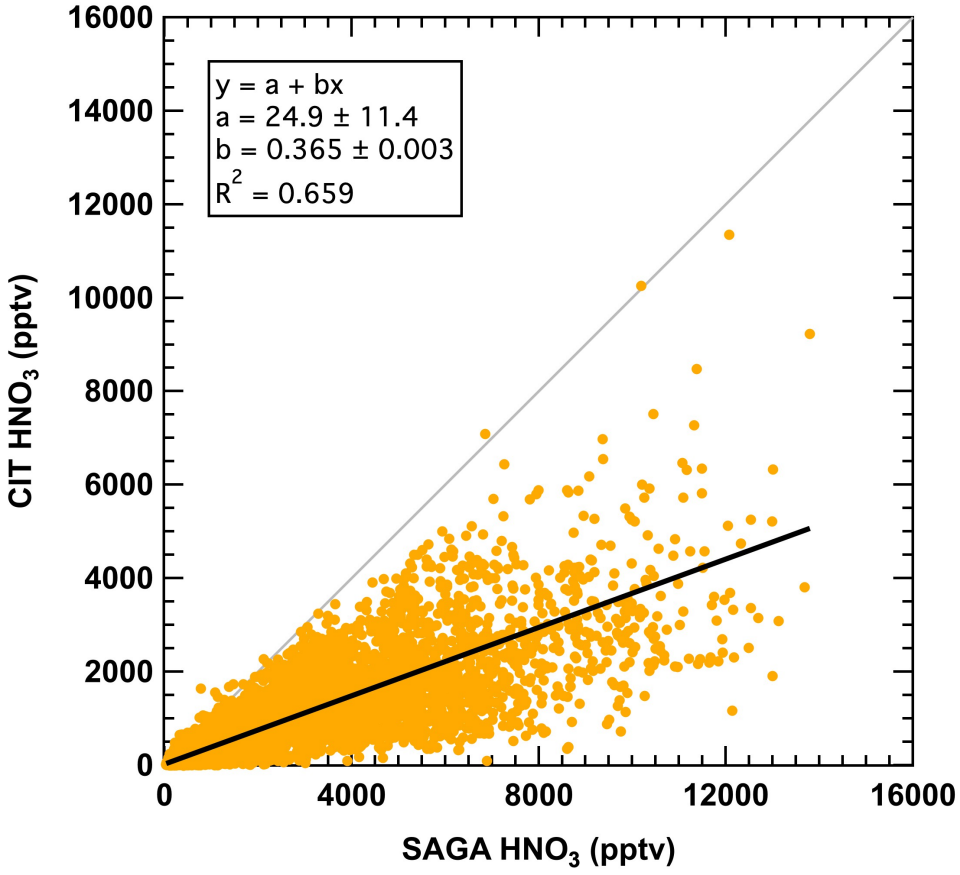
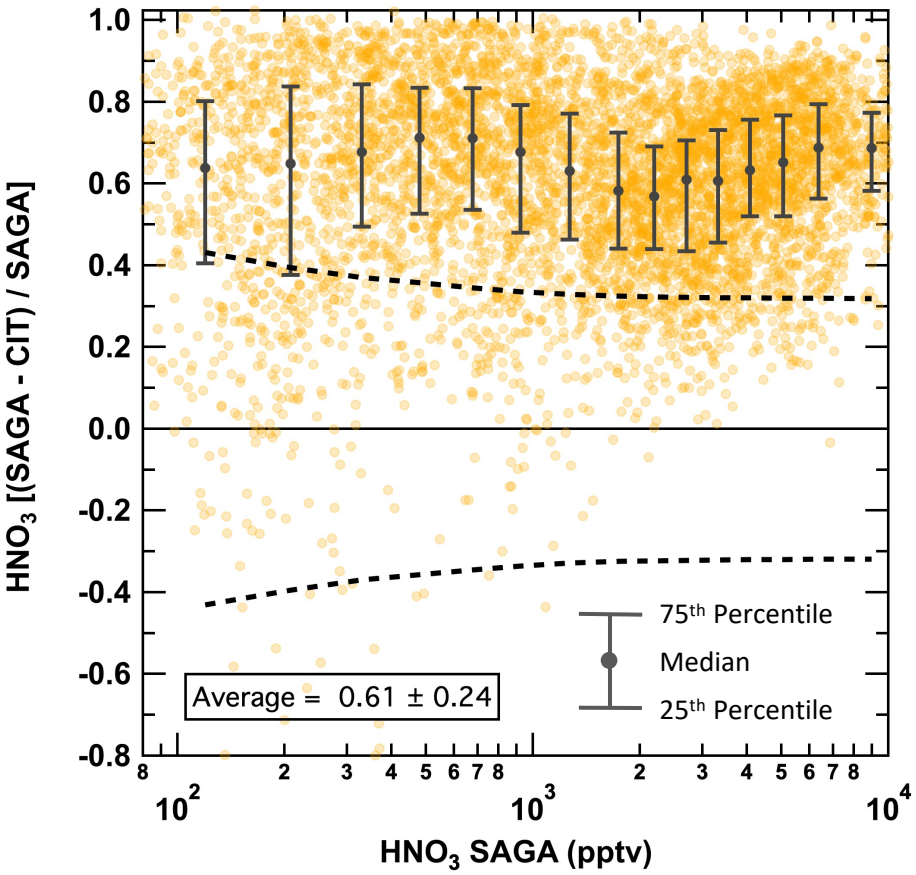
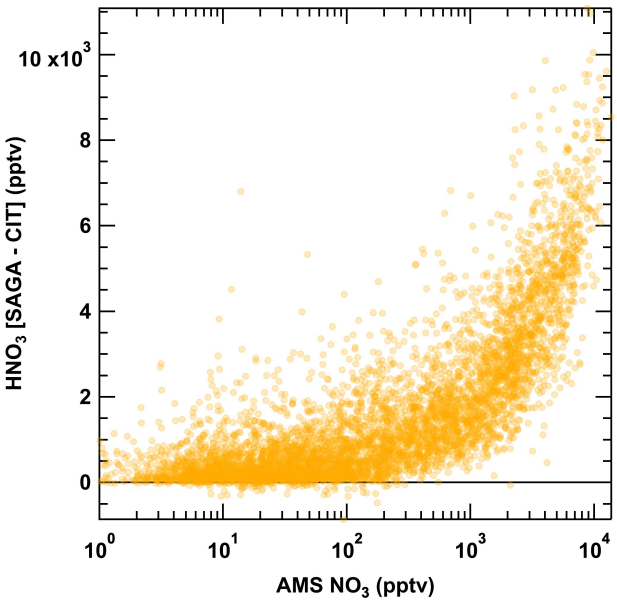
HNO_3 – CIT CIMS vs UNH SAGA-MC

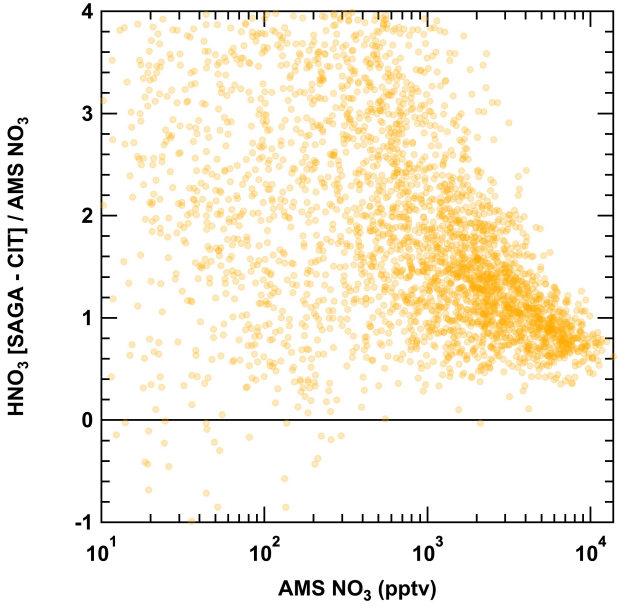


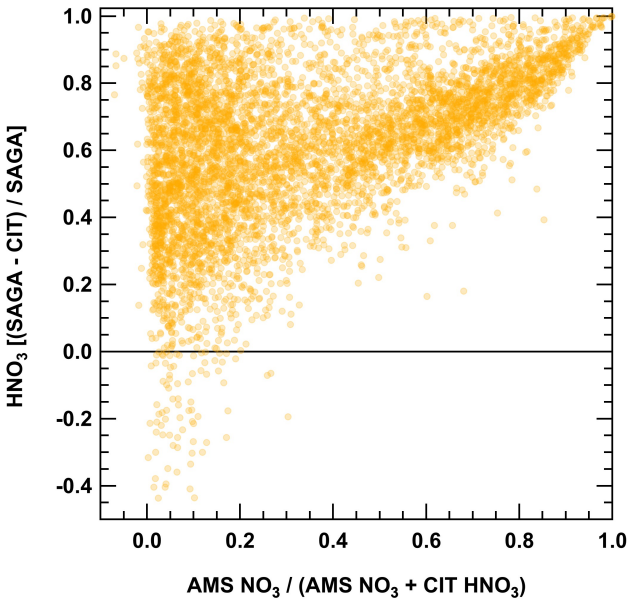


- Uncertainty envelopes based on SAGA-MC time base combined data uncertainty.
  - CIT = ± (50 pptv + 30%)
  - SAGA = ± (5 pptv + 10%)

HNO_3 – CIT CIMS vs UNH SAGA-MC







Summary: Archived SAGA-MC merge

Data Range	# Points	# Pts within Combined Unc.	# Pts within 2*Combined Unc.
All	5907	410 (7%)	1140 (19%)

Data:

- korusaq-mrgSAGA-MC-dc8_merge_20160426_R3_thru20160618.ict (only data from flights 20160501-20160609 used in analysis – non-transit flights).

Correlation:

- Fit lines are derived from orthogonal distance regressions.
- R^2 values are calculated independently, not from orthogonal distance regression.

Uncertainty propagation (Uncertainties provided by PIs).

- CIT 1s uncertainty: $\pm$ [50 pptv + 30%]; SAGA-MC time interval: $\pm$ [5.6 pptv + 30%], calculated using (50 pptv/sqrt(80)).
- SAGA-MC uncertainty: $\pm$ [5 pptv + 10%].

Difference dependence on HNO_3 value:

- Relative Difference calculated by [SAGA – CIT] / SAGA.
- Median, 25^{th}, and 75^{th} percentiles based on 400 data point bins after data is sorted by SAGA-MC values.
- Uncertainty envelopes based on uncertainty reported in PI data files.