

# Supplementary materials for ACP manuscript: Aerosol Optical Extinction during the Front Range Air Pollution and Photochemistry Experiment (FRAPPÉ) 2014 Summertime Field Campaign, Colorado U.S.A.

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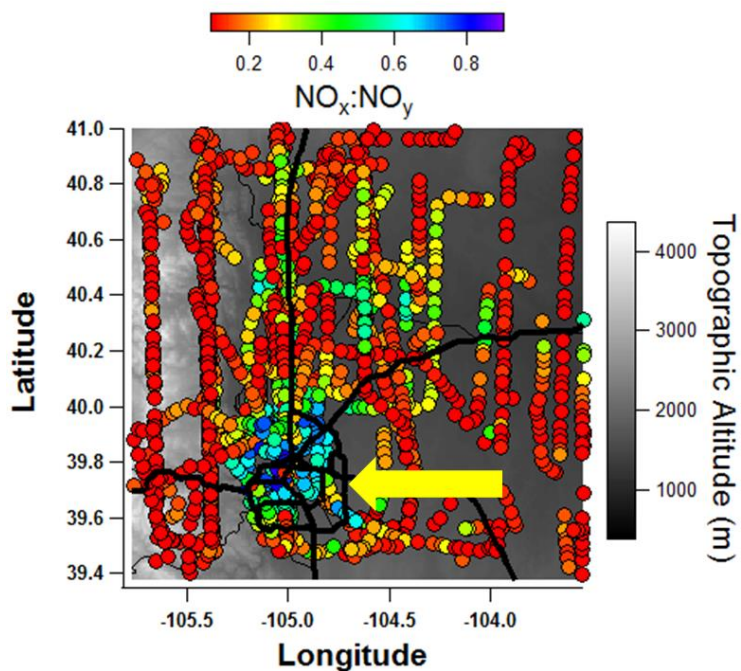
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## Supplementary Table and Figures

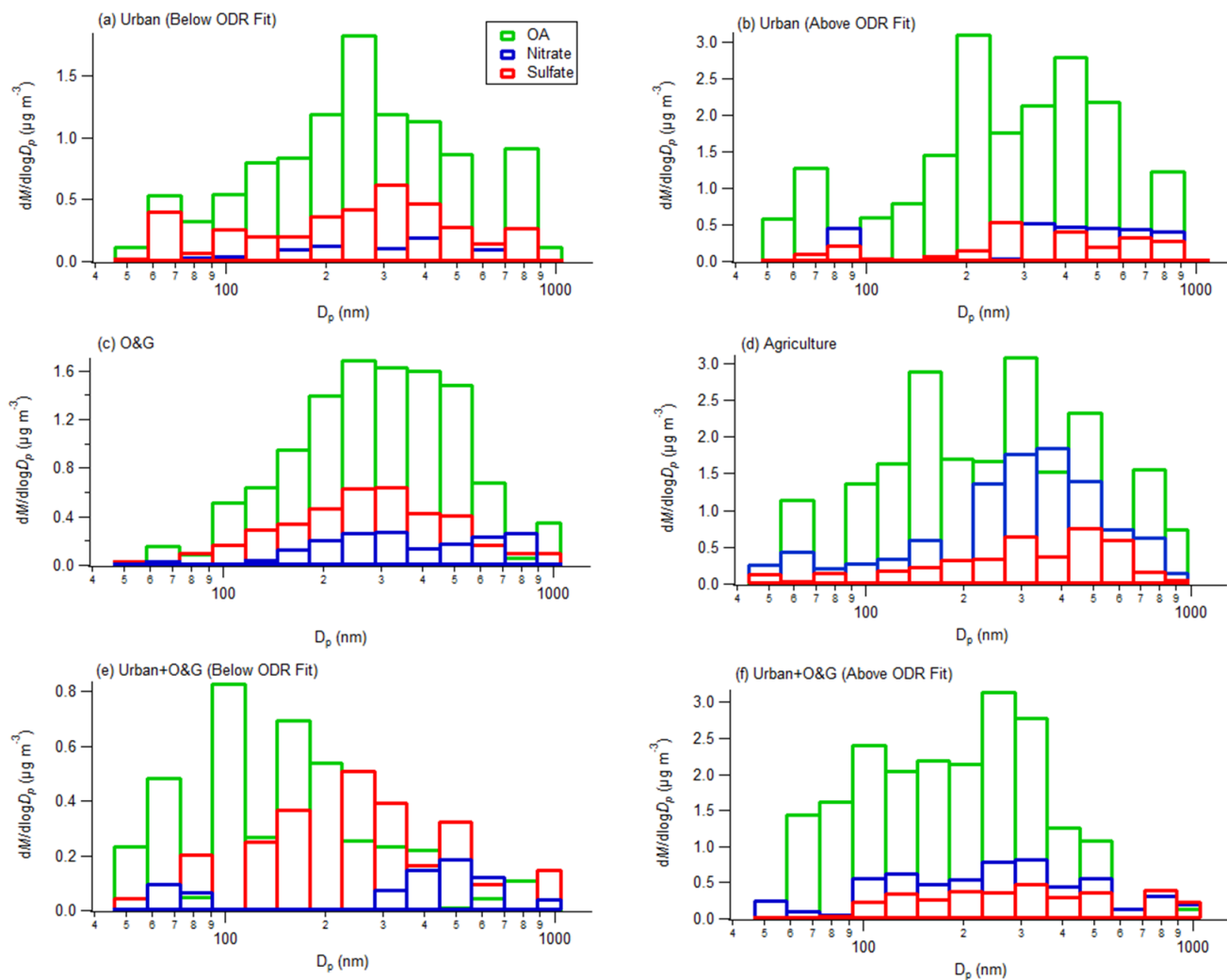
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Air Mass Type	Mean Temperature (°C)	Mean Relative Humidity (%)
Urban	20.48 ± 5.57	36.85 ± 12.55
O&G	19.29 ± 5.98	39.65 ± 16.36
Agriculture	23.11 ± 3.71	38.98 ± 15.80
Urban+O&G	20.59 ± 3.53	45.91 ± 8.21

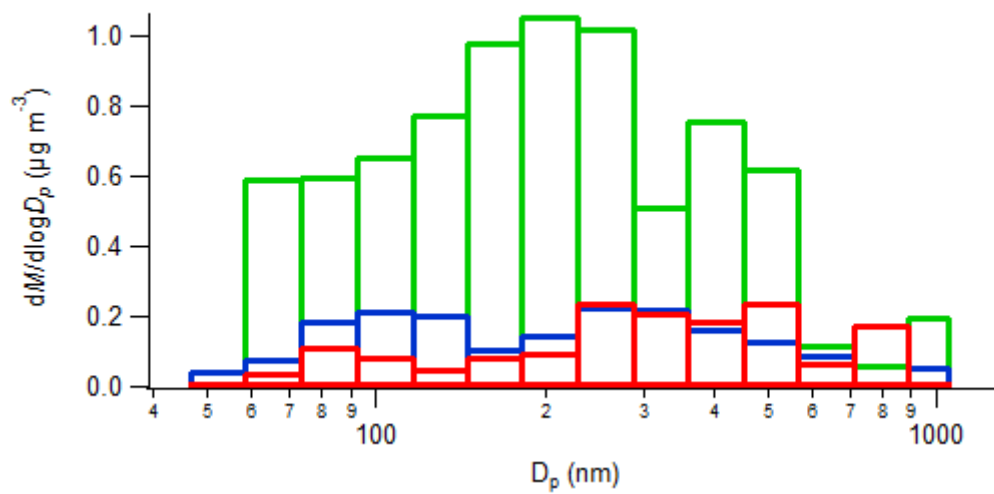
**Table S1.** Mean temperature and relative humidity under the urban, O&G, agriculture, and urban+O&G air mass types.



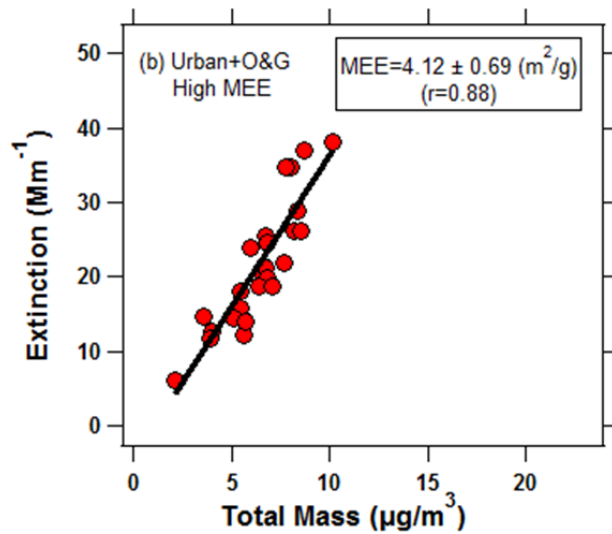
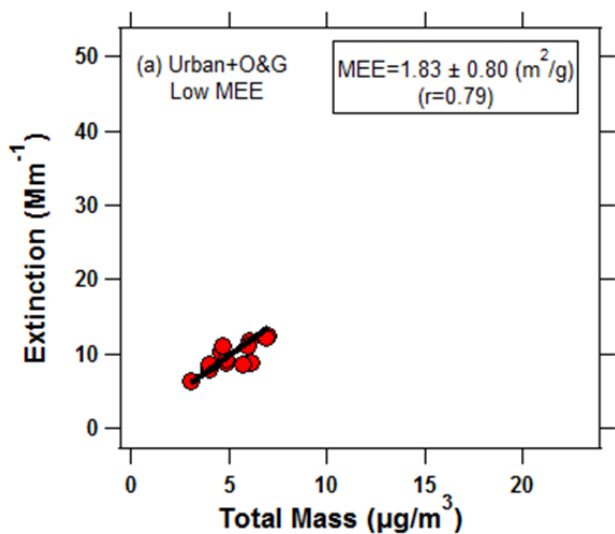
5 **Figure S1.** C-130 flight tracks in the Colorado Front Range, color coded by the observed  $\text{NO}_x:\text{NO}_y$  ratio to examine the photochemical processing of the pollutants in the area during all flights excluding the days when the Denver Cyclone and biomass burning were experienced. The arrow indicates the Denver metropolitan area. To the west of the Denver metropolitan area are the Rocky Mountain foothills depicted by the topographic color scheme.



**Figure S2.** Aerosol mass distributions for OA (green), nitrate (blue), and sulfate aerosols under (a-b) urban, (c) O&G, (d) agriculture and (e-f) urban+O&G air masses.

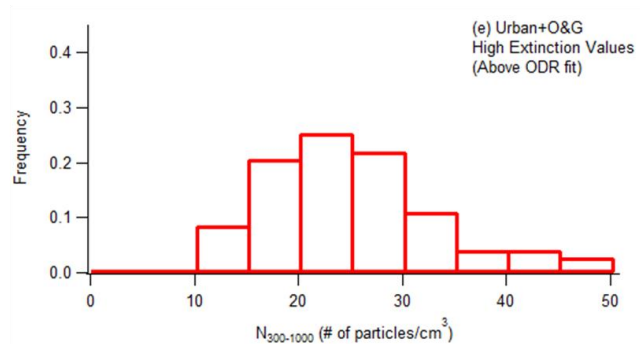
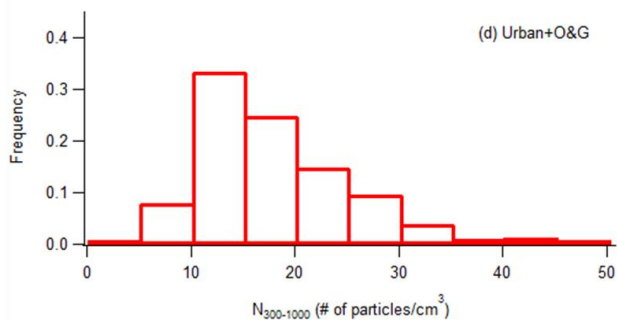
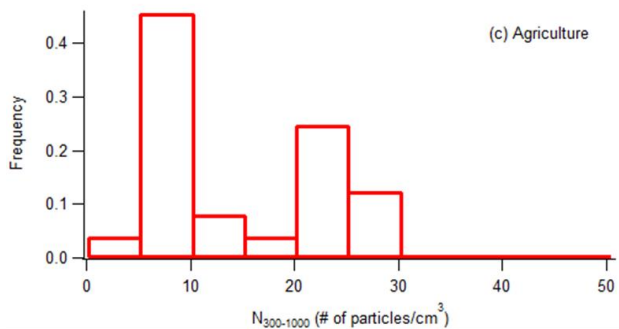
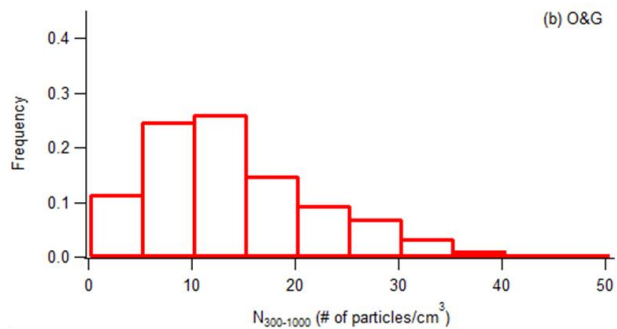
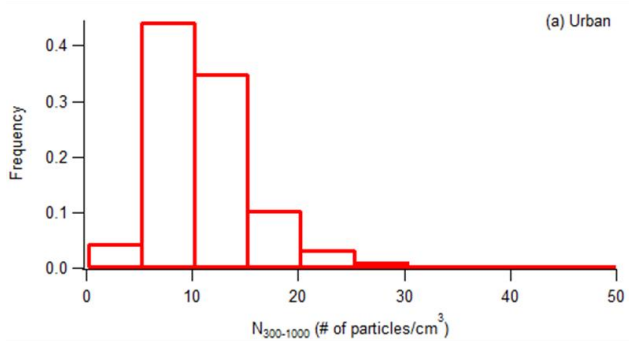


**Figure S3.** Mass distribution for an urban air mass for data points along the ODR fit line of Figure 4a from the Aug. 02 flight.

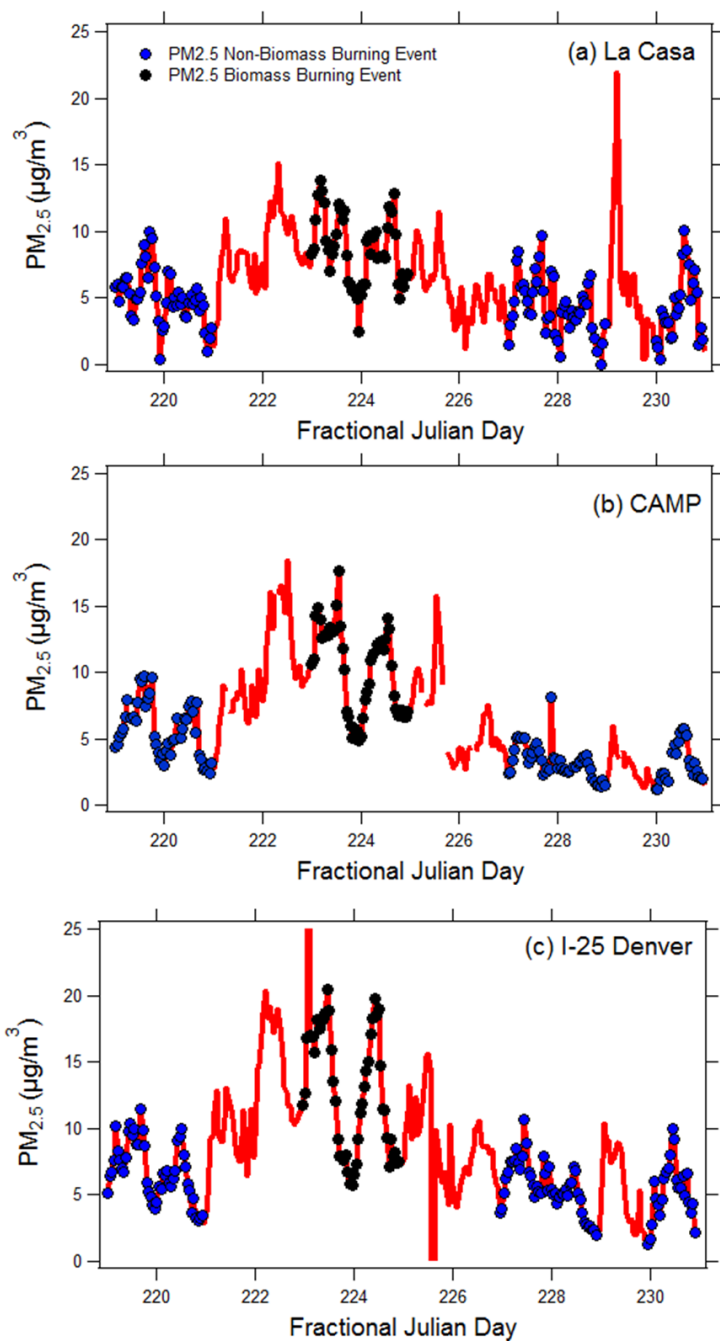


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**Figure S4.** MEE for urban+O&G air masses with data points (a) below the ODR fit and (b) above the ODR fit in Figure 4d.



**Figure S5.** Frequency distributions of particle number concentrations in the size range of 300-1000 nm in different air masses from PCASP data in units of  $\#/cm^3$ .



**Figure S6.** Time series for PM<sub>2.5</sub> at La Casa (a), CAMP (b) and I-25 (c) ground sites located in the Front Range during July 26 - August 18. Markers highlight the periods corresponding to the C130 flights.