

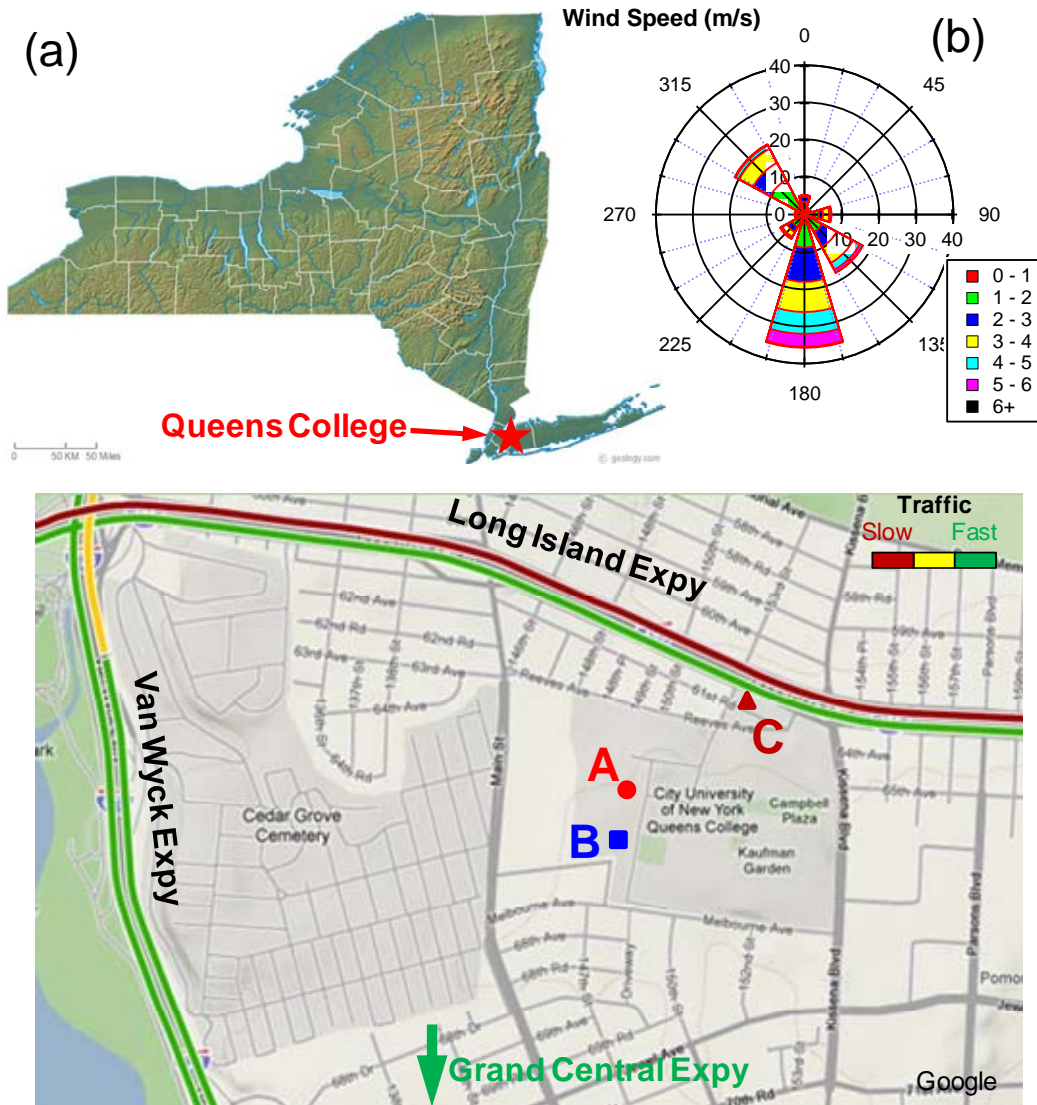
26 Table S1. Description of PMF solution

No. of factors	Q/Q _{exp}	Description of solution
2	5.02	Too few factors, large residual, more than one OOA-like factors, MS appear mixed
3	4.32	Too few factors, much higher m/z 44 in HOA factor than source spectra of primary OA, e.g., diesel and gasoline emissions.
4	3.85	HOA, COA, SV-OOA, and LV-OOA factors resolved, but the physically-meaningful NOA factor was not identified.
5	3.57	HOA, COA, SV-OOA, LV-OOA, and NOA factors found.
6-8	3.19-3.38	SV-OOA splitting evident. Similar spectra and time series

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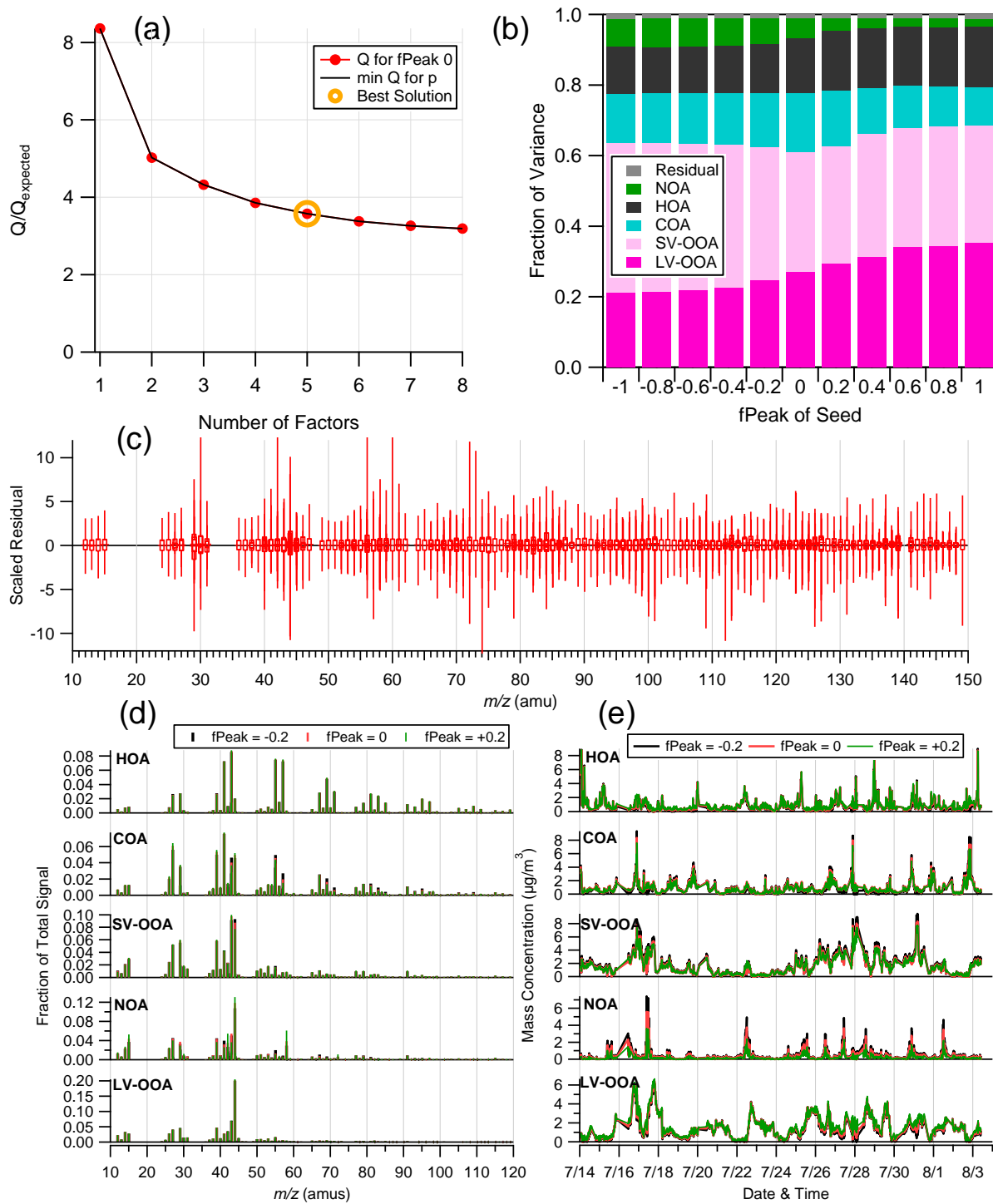
28 Table S2. Summary of mass concentrations of aerosol species for different clusters

	Cluster 1		Cluster 2		Cluster 3		Cluster 4	
	Northwest (7.3%)		West (37.3%)		Atlantic Ocean (24.5%)		Southwest (30.8%)	
	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.
Org	4.78	1.86	6.07	2.34	4.51	2.93	7.80	2.81
SO ₄ ²⁻	0.56	0.53	2.84	1.42	2.55	1.96	3.57	1.89
NO ₃ ⁻	0.13	0.05	0.46	0.50	0.62	0.72	0.49	0.40
NH ₄ ⁺	0.22	0.18	1.28	0.62	1.25	0.74	1.54	0.74
Chl	0.00	0.01	0.03	0.03	0.02	0.02	0.04	0.03
EC	0.95	0.72	0.74	0.64	0.66	0.41	0.63	0.30
LV-OOA	0.69	0.41	1.81	0.94	1.80	1.47	2.56	1.63
SV-OOA	1.51	0.57	1.88	1.36	0.90	1.04	2.92	1.72
NOA	0.21	0.31	0.39	0.54	0.33	0.47	0.43	0.48
COA	0.75	0.60	1.13	0.76	0.68	0.75	1.12	0.95
HOA	1.54	1.45	0.82	0.75	0.74	0.53	0.89	0.70



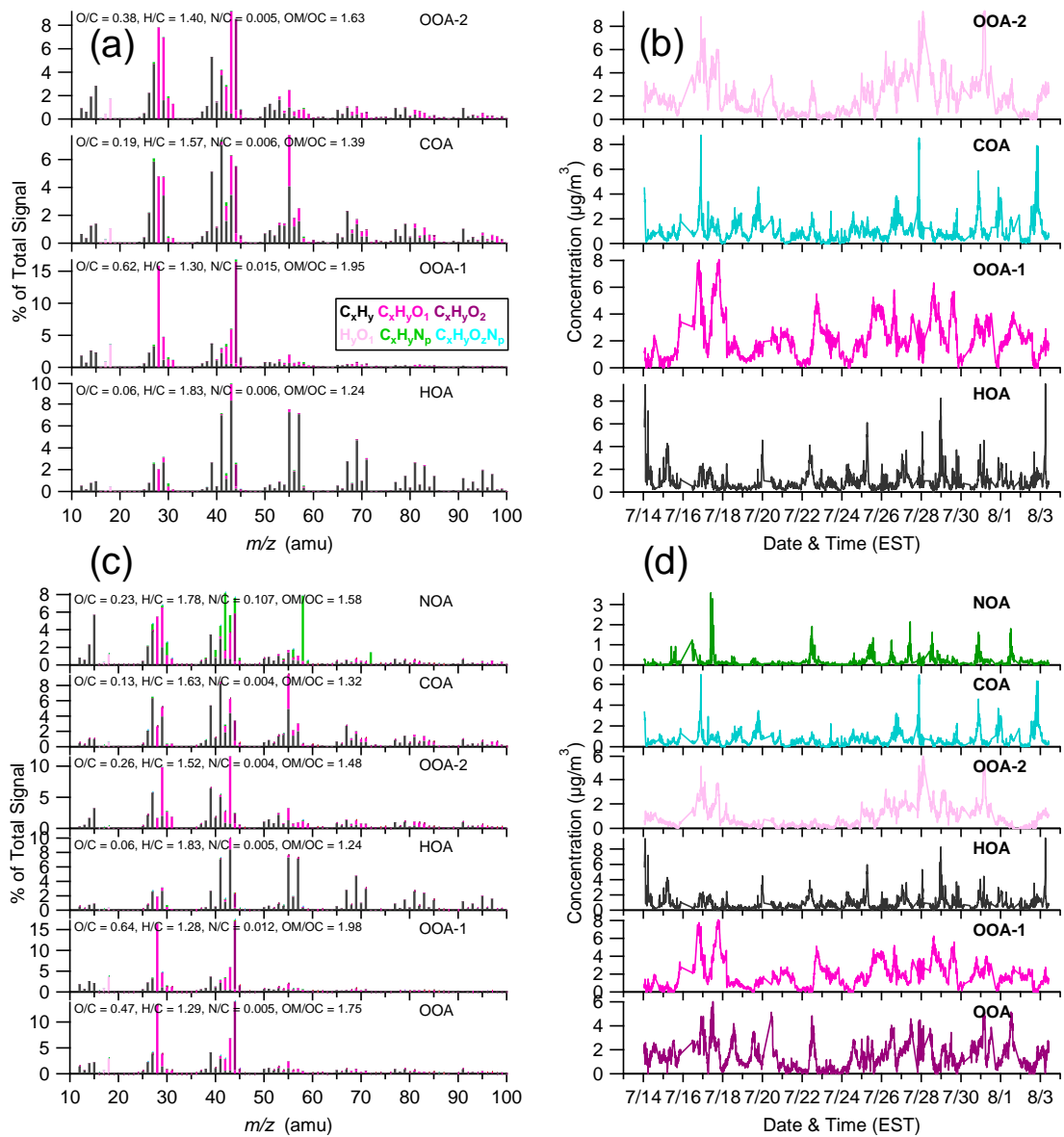
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30 Fig. S1. (a) Map of sampling sites of (A) DEC fixed site, (B) Parking Lot6, and (C)
 31 Lot15; (b) wind roses for the entire study.



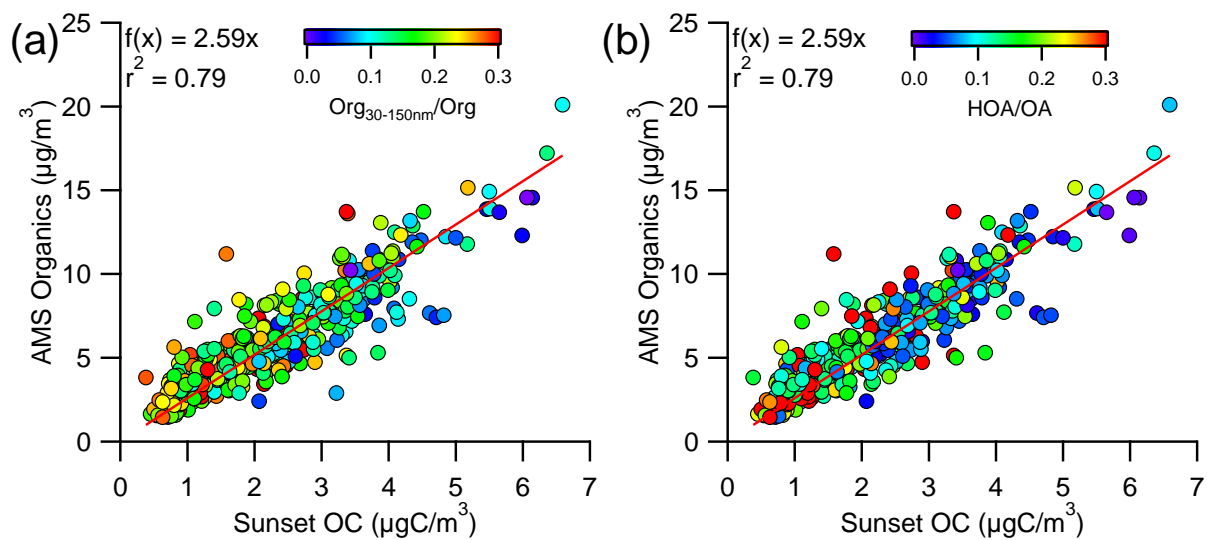
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33 Fig. S2. Q/Q_{expected} as a function of number of factors; (b) fraction of OA components vs. f_{Peak}
 34 values for 5-factor solution; (c) scaled residuals as a function of m/z ; (d,e) comparison of mass
 35 spectra and time series of OA components with different f_{Peak} values (-0.2, 0, and 0.2) for 5-
 36 factor solution.

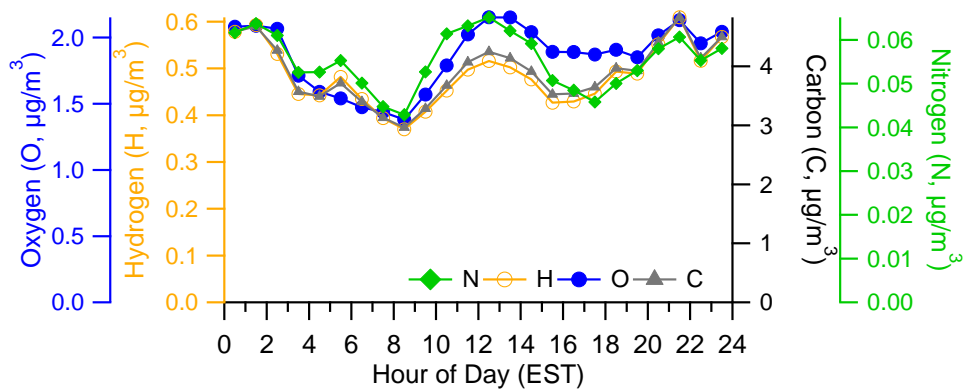


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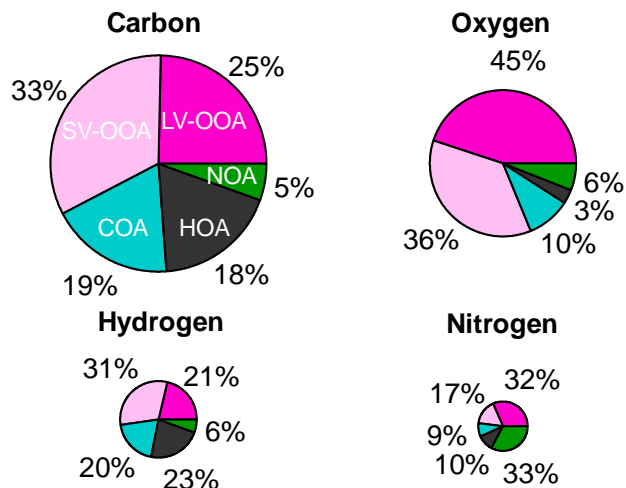
38 Fig. S3. High resolution mass spectra and time series of OA components of (a,b) 3-factor
 39 solution and (c,d) 6-factor solution.



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 41 Fig. S4 Correlations between AMS organics and Sunset OC colored by the mass fraction of (a)
 42 small mode organics (30-150 nm) to total organics, and (b) HOA to total OA.

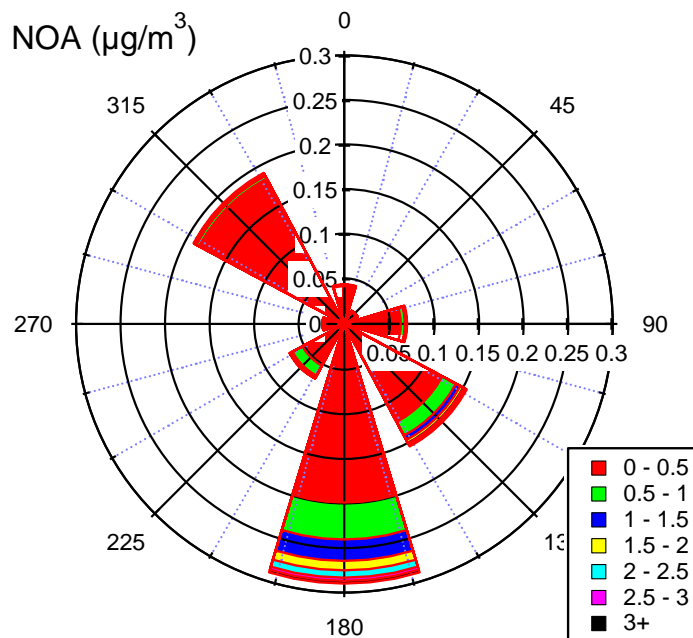


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 44 Fig. S5. Diurnal cycles of the elements (C, O, H, and N)



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46 Fig. S6. Average contribution of OA components to each element for the entire study. The area
 47 of each pie is proportional to the mass concentration of the corresponding element. The area of
 48 nitrogen pie is increased by a factor of 4 for clarification.



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50 Fig. S7. Wind rose plot for NOA