

Effect of Humidity on the Composition of Isoprene Photooxidation Secondary Organic Aerosol

Tran B. Nguyen¹, Patrick J. Roach^{2*}, Julia Laskin², Alexander Laskin³ and Sergey A. Nizkorodov¹

[1] Department of Chemistry, University of California, Irvine
Irvine, California, USA 92697

[2] Chemical and Materials Sciences Division, Pacific Northwest National Laboratory, Richland,
Washington, USA 99352

[3] Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory,
Richland, Washington, USA 99352

[*] now at: Roach & Associates LLC, Seymour, WI, USA 54165

Correspondence to: S.A. Nizkorodov (nizkorod@uci.edu)

This supporting information section contains the following information. Figure S1 presents mass spectra of SOA samples obtained at different mass loadings in the chamber. Table S1 contains a more complete list of oligomers of the type $C_xH_yO_z + (C_4H_6O_3)_k$ formed from the homologous esterification of 2MGA than the one presented in Table 1 of the manuscript. Table S2 contains a more complete list of oligomers of the type $C_xH_yO_z + (C_2H_4O_2)_k$ formed from the homologous addition of glycolaldehyde than the one presented in Table 1. Tables S3 and S4 list the accurate masses, abundances, and molecular formula assignments of neutral SOA products formed observed under dry and humid conditions, respectively. Data in tables S3 and S4 can be used to reconstruct the mass spectra presented in Figure 3 in the manuscript.

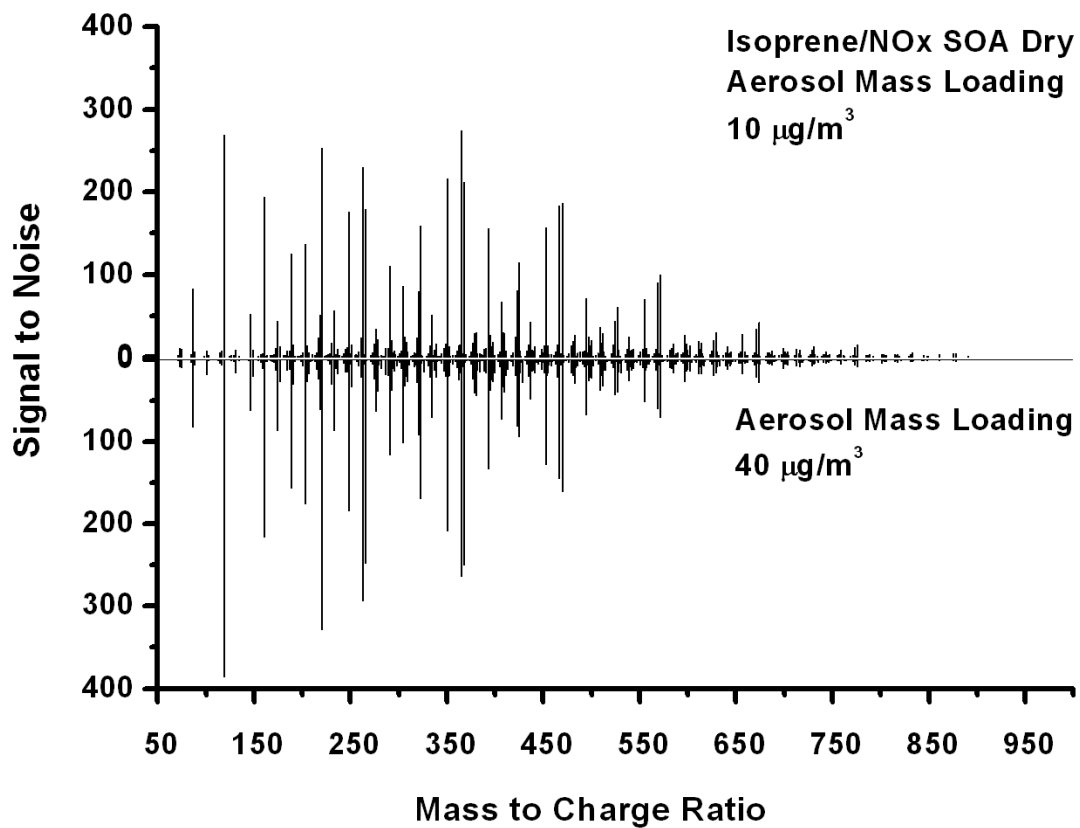


Figure S1: Different SOA mass loading on sample filters do not significantly change the peak intensity distribution of SOA compounds in the electrospray experiments.

Table S1: Oligomers of the type $C_xH_yO_z + (C_4H_6O_3)_k$ formed from the homologous esterification of 2MGA ($C_4H_8O_4$) under high- NO_x conditions are affected by humidity. The total oligomer signals ($k \geq 1$) of the members of several $C_xH_yO_z$ families are reported here for the dry vs. humid data. The length of the oligomer is reduced by approximately 3 monomer units in the humid, as compared to dry, conditions. The sums of the total oligomer signal, used to indicate the change in the extent of oligomerization, were also reported in Table 1 in the text as normalized values.

$C_2H_4O_3 + (C_4H_6O_3)_k$

k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	76.016	10	12	2	4	3	0
1	178.048	12	5	6	10	6	0
2	280.079	19	12	10	16	9	0
3	382.111	26	7	14	22	12	0
4	586.175	23	7	22	34	18	0
5	688.206	19	4	26	40	21	0
6	790.238	12	0	30	46	24	0
7	892.27	4	0	34	52	27	0
Total Oligomer Signal		114	34				

$C_3H_4O_3 + (C_4H_6O_3)_k$

k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	88.016	83	17	3	4	3	0
1	190.048	86	24	7	10	6	0
2	292.079	104	35	11	16	9	0
3	394.111	127	26	15	22	12	0
4	496.143	73	11	19	28	15	0
5	598.175	34	7	23	34	18	0
6	700.206	19	2	27	40	21	0
7	802.238	8	0	31	46	24	0
8	904.27	4	0	35	52	27	0
Total Oligomer Signal		455	106				

$C_3H_6O_2 + (C_4H_6O_3)_k$

k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	74.037	10	8	3	6	2	0
1	176.068	26	19	7	12	5	0
2	278.1	36	22	11	18	8	0
3	380.132	37	18	15	24	11	0
4	482.164	36	27	19	30	14	0
5	584.195	32	15	23	36	17	0
6	686.227	28	6	27	42	20	0

7	788.259	19	0	31	48	23	0
8	890.29	10	0	35	54	26	0
9	992.322	2	0	39	60	29	0
Total Oligomer Signal		225	107				

C₃H₆O₃ + (C₄H₆O₃)_k

k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	90.032	6	8	3	6	3	0
1	192.063	9	7	7	12	6	0
2	294.095	22	9	11	18	9	0
3	396.127	29	6	15	24	12	0
4	498.158	28	6	19	30	15	0
5	600.19	24	5	23	36	18	0
6	702.222	16	1	27	42	21	0
7	804.254	10	0	31	48	24	0
8	906.285	3	0	35	54	27	0
Total Oligomer Signal		140	35				

C₄H₆O₃ + (C₄H₆O₃)_k

k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	102.032	7	5	4	6	3	0
1	204.063	98	61	8	12	6	0
2	306.095	92	28	12	18	9	0
3	408.127	99	26	16	24	12	0
4	510.158	69	14	20	30	15	0
5	612.19	43	7	24	36	18	0
6	714.222	27	2	28	42	21	0
7	816.254	10	0	32	48	24	0
8	918.285	8	0	32	48	24	0
Total Oligomer Signal		445	137				

C₄H₈O₃ + (C₄H₆O₃)_k

k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	104.047	1	1	4	8	3	0
1	206.079	10	7	8	14	6	0
2	308.111	8	6	12	20	9	0
3	410.142	11	5	16	26	12	0
4	512.174	11	5	20	32	15	0
5	614.206	15	5	24	38	18	0
6	716.238	26	0	28	44	21	0
7	818.269	17	0	32	50	24	0
8	920.301	3	0	36	56	27	0

Total Oligomer Signal **100** **28**

$C_4H_8O_4 + (C_4H_6O_3)_k$

k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	120.042	269	285	4	8	4	0
1	222.074	191	218	8	14	7	0
2	324.106	153	117	12	20	10	0
3	426.137	102	60	16	26	13	0
4	528.169	59	47	20	32	16	0
5	630.201	43	20	24	38	19	0
6	732.232	31	5	28	44	22	0
7	834.264	14	0	32	50	25	0
8	936.296	4	0	36	56	28	0
Total Oligomer Signal		598	467				

$C_4H_7O_6N + (C_4H_6O_3)_k$

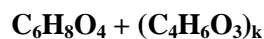
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	165.027	2	2	4	7	6	1
1	267.059	179	39	8	13	9	1
2	369.091	212	44	12	19	12	1
3	471.122	186	26	16	25	15	1
4	573.154	99	11	20	31	18	1
5	675.186	42	5	24	37	21	1
6	777.218	14	2	28	43	24	1
7	879.249	4	0	32	49	27	1
Total Oligomer Signal		736	126				

$C_5H_8O_4 + (C_4H_6O_3)_k$

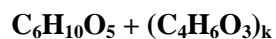
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	132.042	9	10	5	8	4	0
1	234.074	49	26	9	14	7	0
2	336.106	67	50	13	20	10	0
3	438.137	66	29	17	26	13	0
4	540.169	46	13	21	32	16	0
5	642.201	32	6	25	38	19	0
6	744.232	21	0	29	44	22	0
7	846.264	7	0	33	50	25	0
8	948.296	3	0	37	56	28	0
Total Oligomer Signal		291	124				

$C_5H_8O_5 + (C_4H_6O_3)_k$

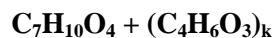
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	148.037	52	23	5	8	5	0
1	250.069	118	72	9	14	8	8
2	352.101	155	59	13	20	11	11
3	454.132	109	23	17	26	14	14
4	556.164	56	9	21	32	17	17
5	658.196	30	3	25	38	20	20
6	760.227	16	0	29	44	23	23
7	862.259	6	0	33	50	26	26
Total Oligomer Signal		491	167				



k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	144.042	25	3	6	8	4	0
1	246.074	22	64	10	14	7	0
2	348.106	64	14	14	20	10	0
3	450.137	28	7	18	26	13	0
4	552.169	22	3	22	32	16	0
5	654.201	17	0	26	38	19	0
6	756.232	8	0	30	44	22	0
7	858.264	4	0	34	50	25	0
Total Oligomer Signal		165	88				



k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	162.053	98	113	6	10	5	0
1	264.085	251	146	10	16	8	0
2	366.116	378	208	14	22	11	0
3	468.148	226	70	18	28	14	0
4	570.18	107	20	22	34	17	0
5	672.211	53	6	26	40	20	0
6	774.243	26	1	30	46	23	0
7	876.275	9	0	34	52	26	0
8	978.306	3	0	38	58	29	0
Total Oligomer Signal		1151	564				



k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	158.058	4	4	7	10	4	0
1	260.09	28	10	11	16	7	0
2	362.121	41	46	15	22	10	0

3	464.153	38	15	19	28	13	0
4	566.185	26	5	23	34	16	0
5	668.216	19	1	27	40	19	0
6	770.248	8	0	31	46	22	0
7	872.28	6	0	35	52	25	0
Total Oligomer Signal		166	77				

Table S2: Oligomers of the type $C_xH_yO_z + (C_2H_4O_2)_k$ formed from the homologous addition of glycolaldehyde ($C_2H_4O_2$) under high-NO_x conditions may also be affected by humidity; however, there is a large uncertainty in the data. The length of the oligomer is largely unchanged in the dry vs. humid conditions. The sums of the total oligomer signal, used to indicate the change in the extent of oligomerization, were also reported in Table 1 in the text.

$C_3H_4O_2 + (C_2H_4O_2)_k$							
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	72.021	2	3	3	4	2	0
1	132.042	9	10	5	8	4	0
2	192.063	9	7	7	12	6	0
3	252.085	15	5	9	16	8	0
Total Oligomer Signal		32	21				

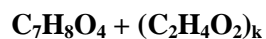
$C_5H_6O_2 + (C_2H_4O_2)_k$							
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	98.037	8	1	5	6	2	0
1	158.058	4	4	7	10	4	0
2	218.079	89	41	9	14	6	0
3	278.1	36	22	11	18	8	0
4	338.121	2	2	13	22	10	0
Total Oligomer Signal		131	69				

$C_5H_6O_4 + (C_2H_4O_2)_k$							
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	130.027	2	3	5	6	4	0
1	190.048	86	24	7	10	6	0
2	250.069	118	72	9	14	8	0
3	310.09	6	4	11	18	10	0
4	370.111	1	0	13	22	12	0
Total Oligomer Signal		212	101				

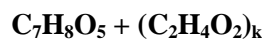
$C_6H_8O_3 + (C_2H_4O_2)_k$							
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	128.047	2	3	6	8	3	0
1	188.068	19	11	8	12	5	0
2	248.09	22	23	10	16	7	0
3	308.111	8	6	12	20	9	0
Total Oligomer Signal		49	40				

$C_6H_8O_4 + (C_2H_4O_2)_k$

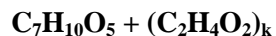
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	144.042	25	3	6	8	4	0
1	204.063	98	61	8	12	6	0
2	264.085	251	146	10	16	8	0
3	324.106	153	117	12	20	10	0
Total Oligomer Signal		502	324				



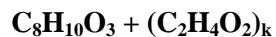
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	156.042	6	2	7	8	4	0
1	216.063	10	10	9	12	6	0
2	276.085	45	12	11	16	8	0
3	336.106	67	50	13	20	10	0
4	396.127	29	6	15	24	12	0
5	456.148	10	3	17	28	14	0
6	516.169	1	0	19	32	16	0
Total Oligomer Signal		161	81				



k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	172.037	3	2	7	8	5	0
1	232.058	14	8	9	12	7	0
2	292.079	104	35	11	16	9	0
3	352.101	155	59	13	20	11	0
4	412.122	7	4	15	24	13	0
5	472.143	2	2	17	28	15	0
Total Oligomer Signal		282	108				



k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	174.053	9	8	7	10	5	0
1	234.074	49	26	9	14	7	0
2	294.095	22	9	11	18	9	0
3	354.116	13	4	13	22	11	0
Total Oligomer Signal		83	39				



k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	154.063	26	2	8	10	3	0
1	214.084	5	14	10	14	5	0
2	274.105	26	8	12	18	7	0

3	334.126	31	29	14	22	9	0
4	394.148	10	9	16	26	11	0
5	454.169	1	2	18	30	13	0
Total Oligomer Signal		74	61				

C₈H₁₀O₅ + (C₂H₄O₂)_k							
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	186.053	11	4	8	10	5	0
1	246.074	22	64	10	14	7	0
2	306.095	92	28	12	18	9	0
3	366.116	378	208	14	22	11	0
4	426.137	102	60	16	26	13	0
5	486.158	4	28	18	30	15	0
6	546.18	2	0	20	34	17	0
Total Oligomer Signal		599	388				

C₈H₁₀O₆ + (C₂H₄O₂)_k							
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	202.048	15	9	8	10	6	0
1	262.069	19	8	10	14	8	0
2	322.09	111	102	12	18	10	0
3	382.111	26	7	14	22	12	0
4	442.132	9	5	16	26	14	0
Total Oligomer Signal		165	122				

C₉H₁₂O₄ + (C₂H₄O₂)_k							
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	184.074	17	4	9	12	4	0
1	244.095	19	7	11	16	6	0
2	304.116	7	85	13	20	8	0
3	364.137	14	46	15	24	10	0
4	424.158	8	2	17	28	12	0
5	484.179	4	2	19	32	14	0
Total Oligomer Signal		51	143				

C₉H₁₂O₅ + (C₂H₄O₂)_k							
k	Mass (Da)	Abundance (dry)	Abundance (humid)	C	H	O	N
0	200.068	4	58	9	12	4	0
1	260.09	28	10	11	16	6	0
2	320.111	125	111	13	20	8	0
3	380.132	37	18	15	24	10	0

4	440.153	4	8	17	28	12	0
5	500.174	0	1	19	32	14	0
Total Oligomer Signal		194	148				

Table S3: Accurate masses, signal-to-noise, and molecular formula assignments of neutral SOA products formed under dry conditions, analyzed by ESI and nano-DESI.

Mass (Da)	Signal-to-noise	# C	# H	# O	# N
72.021	2.02	3	4	2	0
74.037	10.30	3	6	2	0
76.016	9.73	2	4	3	0
86.037	2.81	4	6	2	0
88.016	82.94	3	4	3	0
88.052	2.88	4	8	2	0
90.032	6.36	3	6	3	0
98.037	7.50	5	6	2	0
100.052	2.76	5	8	2	0
102.032	7.10	4	6	3	0
102.068	1.50	5	10	2	0
104.011	1.85	3	4	4	0
104.047	1.08	4	8	3	0
112.052	7.72	6	8	2	0
116.047	3.60	5	8	3	0
118.027	6.95	4	6	4	0
120.042	269.12	4	8	4	0
124.089	2.94	8	12	1	0
126.068	1.67	7	10	2	0
126.104	36.84	8	14	1	0
128.047	2.21	6	8	3	0
128.120	6.48	8	16	1	0
130.027	1.87	5	6	4	0
132.042	8.96	5	8	4	0
136.037	1.15	4	8	5	0
136.089	2.07	9	12	1	0
138.032	10.99	7	6	3	0
138.068	3.85	8	10	2	0
140.047	11.85	7	8	3	0
140.084	3.81	8	12	2	0
142.099	5.35	8	14	2	0
144.042	25.34	6	8	4	0
148.037	52.08	5	8	5	0
150.053	8.65	5	10	5	0
150.068	11.56	9	10	2	0
152.047	3.57	8	8	3	0
152.084	6.78	9	12	2	0
154.063	25.58	8	10	3	0
154.099	22.12	9	14	2	0
156.042	5.77	7	8	4	0

156.079	19.03	8	12	3	0
158.058	3.52	7	10	4	0
160.037	4.77	6	8	5	0
160.110	1.28	8	16	3	0
162.053	98.22	6	10	5	0
164.032	1.07	5	8	6	0
164.084	24.73	10	12	2	0
165.027	1.63	4	7	6	1
166.063	6.34	9	10	3	0
166.099	3.49	10	14	2	0
168.079	29.50	9	12	3	0
168.115	1.34	10	16	2	0
170.058	2.74	8	10	4	0
170.094	14.92	9	14	3	0
172.037	2.96	7	8	5	0
172.074	17.95	8	12	4	0
172.110	2.05	9	16	3	0
174.053	9.26	7	10	5	0
174.089	2.84	8	14	4	0
174.126	1.58	9	18	3	0
176.032	8.00	6	8	6	0
176.068	25.65	7	12	5	0
178.048	12.22	6	10	6	0
178.063	7.44	10	10	3	0
182.094	73.37	10	14	3	0
184.074	16.54	9	12	4	0
184.110	3.67	10	16	3	0
186.053	11.46	8	10	5	0
186.089	27.30	9	14	4	0
187.121	1.35	9	17	3	1
188.068	18.91	8	12	5	0
190.048	86.42	7	10	6	0
190.084	7.07	8	14	5	0
192.027	1.67	6	8	7	0
192.063	8.91	7	12	6	0
194.043	1.42	6	10	7	0
196.074	2.85	10	12	4	0
196.146	1.07	12	20	2	0
198.089	17.88	10	14	4	0
200.068	3.65	9	12	5	0
200.105	86.94	10	16	4	0
200.141	1.18	11	20	3	0
202.048	14.54	8	10	6	0
202.084	18.56	9	14	5	0

204.063	97.87	8	12	6	0
204.100	6.81	9	16	5	0
206.043	11.30	7	10	7	0
206.079	9.87	8	14	6	0
208.058	4.10	7	12	7	0
212.105	2.82	11	16	4	0
212.141	1.14	12	20	3	0
212.178	3.99	13	24	2	0
214.048	1.25	9	10	6	0
214.084	5.41	10	14	5	0
214.121	1.49	11	18	4	0
214.157	1.07	12	22	3	0
216.063	9.87	9	12	6	0
216.100	15.48	10	16	5	0
216.136	1.45	11	20	4	0
218.043	3.83	8	10	7	0
218.079	89.48	9	14	6	0
218.115	7.38	10	18	5	0
220.058	67.97	8	12	7	0
220.095	4.65	9	16	6	0
222.074	191.35	8	14	7	0
224.068	1.14	11	12	5	0
226.084	11.52	11	14	5	0
226.157	3.39	13	22	3	0
228.063	3.80	10	12	6	0
228.079	15.82	14	12	3	0
228.100	12.24	11	16	5	0
228.136	3.07	12	20	4	0
229.168	1.70	12	23	3	1
230.079	17.37	10	14	6	0
230.115	2.49	11	18	5	0
230.152	1.48	12	22	4	0
232.058	14.21	9	12	7	0
232.095	22.28	10	16	6	0
232.131	1.37	11	20	5	0
234.074	49.06	9	14	7	0
234.110	2.81	10	18	6	0
236.053	3.29	8	12	8	0
236.090	2.17	9	16	7	0
236.178	2.72	15	24	2	0
238.069	9.84	8	14	8	0
238.121	2.96	13	18	4	0
240.100	3.40	12	16	5	0
240.136	1.80	13	20	4	0

242.079	22.46	11	14	6	0
242.115	14.96	12	18	5	0
242.152	1.36	13	22	4	0
242.188	1.27	14	26	3	0
244.095	18.56	11	16	6	0
244.131	1.61	12	20	5	0
246.074	22.12	10	14	7	0
246.110	11.52	11	18	6	0
246.147	22.95	12	22	5	0
248.053	6.16	9	12	8	0
248.090	22.37	10	16	7	0
248.126	1.23	11	20	6	0
250.069	117.85	9	14	8	0
250.105	1.25	10	18	7	0
250.157	2.24	15	22	3	0
251.064	3.84	8	13	8	1
252.085	14.61	9	16	8	0
252.173	2.81	15	24	3	0
256.095	19.97	12	16	6	0
256.131	3.18	13	20	5	0
256.167	3.31	14	24	4	0
257.163	2.75	13	23	4	1
258.074	12.70	11	14	7	0
258.110	8.37	12	18	6	0
258.147	1.71	13	22	5	0
258.183	1.85	14	26	4	0
259.178	1.84	13	25	4	1
260.090	28.25	11	16	7	0
260.126	4.44	12	20	6	0
262.069	19.24	10	14	8	0
262.105	23.14	11	18	7	0
262.142	1.62	12	22	6	0
264.048	1.25	9	12	9	0
264.085	250.91	10	16	8	0
266.064	2.62	9	14	9	0
267.059	178.79	8	13	9	1
270.110	46.17	13	18	6	0
272.090	3.06	12	16	7	0
272.126	2.78	13	20	6	0
272.162	1.02	14	24	5	0
274.069	9.59	11	14	8	0
274.105	26.19	12	18	7	0
274.142	3.39	13	22	6	0
276.085	44.96	11	16	8	0

276.121	4.92	12	20	7	0
278.064	9.94	10	14	9	0
278.100	36.00	11	18	8	0
278.152	16.00	16	22	4	0
279.059	1.66	9	13	9	1
280.079	18.56	10	16	9	0
281.075	1.19	9	15	9	1
283.054	1.59	8	13	10	1
284.126	7.32	14	20	6	0
284.199	1.34	16	28	4	0
286.105	7.67	13	18	7	0
286.142	1.39	14	22	6	0
288.085	3.86	12	16	8	0
288.121	52.46	13	20	7	0
288.230	1.01	16	32	4	0
290.064	1.39	11	14	9	0
290.100	32.25	12	18	8	0
290.137	3.80	13	22	7	0
292.079	103.56	11	16	9	0
292.116	11.40	12	20	8	0
292.131	2.78	16	20	5	0
292.152	1.07	13	24	7	0
294.059	3.09	10	14	10	0
294.095	21.50	11	18	9	0
294.147	3.28	16	22	5	0
295.054	5.51	9	13	10	1
296.074	3.46	10	16	10	0
296.162	3.48	16	24	5	0
297.070	6.88	9	15	10	1
298.178	3.38	16	26	5	0
300.121	1.19	14	20	7	0
300.157	8.01	15	24	6	0
302.027	1.40	11	10	10	0
302.100	3.56	13	18	8	0
302.137	11.30	14	22	7	0
302.173	1.10	15	26	6	0
302.209	1.23	16	30	5	0
304.079	5.11	12	16	9	0
304.116	7.07	13	20	8	0
304.152	2.13	14	24	7	0
306.095	91.58	12	18	9	0
306.131	11.30	13	22	8	0
308.074	24.89	11	16	10	0
308.111	7.97	12	20	9	0

308.126	1.38	16	20	6	0
309.070	17.36	10	15	10	1
310.090	6.37	11	18	10	0
310.142	1.69	16	22	6	0
314.173	1.39	16	26	6	0
314.246	7.21	18	34	4	0
316.116	7.22	14	20	8	0
316.152	1.48	15	24	7	0
318.095	12.07	13	18	9	0
318.131	4.42	14	22	8	0
318.168	1.16	15	26	7	0
320.074	4.23	12	16	10	0
320.111	125.11	13	20	9	0
320.141	19.98	21	20	3	0
320.147	8.89	14	24	8	0
322.090	110.93	12	18	10	0
322.126	5.89	13	22	9	0
322.142	1.05	17	22	6	0
323.085	1.95	11	17	10	1
323.122	1.52	12	21	9	1
324.106	152.93	12	20	10	0
325.065	2.22	10	15	11	1
326.100	1.30	15	18	8	0
330.131	6.72	15	22	8	0
330.168	1.40	16	26	7	0
332.111	15.98	14	20	9	0
332.147	2.16	15	24	8	0
332.184	1.15	16	28	7	0
334.090	21.00	13	18	10	0
334.126	31.26	14	22	9	0
336.069	1.41	12	16	11	0
336.106	66.50	13	20	10	0
336.142	4.14	14	24	9	0
336.230	1.26	20	32	4	0
337.065	1.59	11	15	11	1
338.085	5.46	12	18	11	0
338.121	2.28	13	22	10	0
339.080	3.14	11	17	11	1
340.101	15.40	12	20	11	0
342.168	1.08	17	26	7	0
344.147	1.04	16	24	8	0
346.126	3.71	15	22	9	0
346.163	1.88	16	26	8	0
348.106	64.10	14	20	10	0

349.101	1.04	13	19	10	1
350.085	13.62	13	18	11	0
350.121	39.52	14	22	10	0
350.158	1.25	15	26	9	0
351.080	1.51	12	17	11	1
351.117	1.32	13	21	10	1
352.101	155.42	13	20	11	0
352.137	1.52	14	24	10	0
353.096	9.04	12	19	11	1
354.116	12.83	13	22	11	0
354.241	2.11	20	34	5	0
355.075	1.43	11	17	12	1
357.091	1.61	11	19	12	1
360.106	1.61	15	20	10	0
360.142	2.13	16	24	9	0
360.178	1.07	17	28	8	0
362.085	1.04	14	18	11	0
362.121	40.51	15	22	10	0
362.158	4.96	16	26	9	0
362.194	1.22	17	30	8	0
364.101	29.79	14	20	11	0
364.137	14.11	15	24	10	0
364.173	1.62	16	28	9	0
365.096	1.60	13	19	11	1
365.132	1.17	14	23	10	1
366.080	2.24	13	18	12	0
366.116	378.16	14	22	11	0
367.075	2.28	12	17	12	1
367.111	2.15	13	21	11	1
368.095	4.24	13	20	12	0
369.091	211.85	12	19	12	1
370.111	1.46	13	22	12	0
370.236	4.54	20	34	6	0
372.142	10.73	17	24	9	0
374.121	1.92	16	22	10	0
374.158	1.27	17	26	9	0
376.101	2.16	15	20	11	0
376.137	5.92	16	24	10	0
376.173	3.30	17	28	9	0
378.116	53.78	15	22	11	0
378.153	5.25	16	26	10	0
379.111	1.08	14	21	11	1
380.095	17.99	14	20	12	0
380.132	36.78	15	24	11	0

381.091	4.67	13	19	12	1
381.127	1.45	14	23	11	1
382.111	25.78	14	22	12	0
383.106	2.67	13	21	12	1
385.086	3.87	12	19	13	1
385.122	1.03	13	23	12	1
386.142	7.34	14	26	12	0
388.137	1.93	17	24	10	0
388.173	1.17	18	28	9	0
390.116	6.35	16	22	11	0
390.153	52.87	17	26	10	0
392.074	5.36	18	16	10	0
392.095	2.33	15	20	12	0
392.132	10.30	16	24	11	0
392.168	3.20	17	28	10	0
394.111	127.14	15	22	12	0
394.148	9.99	16	26	11	0
395.106	1.47	14	21	12	1
396.090	5.66	14	20	13	0
396.127	29.24	15	24	12	0
397.086	12.68	13	19	13	1
398.106	3.44	14	22	13	0
399.101	18.07	13	21	13	1
401.117	1.85	13	23	13	1
404.132	8.78	17	24	11	0
404.168	22.29	18	28	10	0
404.256	6.06	24	36	5	0
406.111	7.73	16	22	12	0
406.148	6.83	17	26	11	0
406.184	1.92	18	30	10	0
408.090	2.03	15	20	13	0
408.127	98.95	16	24	12	0
408.163	11.38	17	28	11	0
409.122	1.76	15	23	12	1
410.106	27.92	15	22	13	0
410.142	10.69	16	26	12	0
411.101	28.42	14	21	13	1
412.122	6.80	15	24	13	0
413.081	1.04	13	19	14	1
416.168	5.16	19	28	10	0
418.148	13.17	18	26	11	0
418.184	1.00	19	30	10	0
420.127	15.29	17	24	12	0
420.163	22.91	18	28	11	0

422.106	5.73	16	22	13	0
422.142	104.95	17	26	12	0
422.179	13.99	18	30	11	0
424.122	99.76	16	24	13	0
424.158	7.66	17	28	12	0
425.117	3.04	15	23	13	1
425.153	1.06	16	27	12	1
426.101	2.01	15	22	14	0
426.137	101.70	16	26	13	0
427.096	7.19	14	21	14	1
428.132	1.41	19	24	11	0
432.163	1.40	19	28	11	0
434.142	3.91	18	26	12	0
434.173	3.40	26	26	6	0
434.179	11.85	19	30	11	0
436.122	21.77	17	24	13	0
436.158	11.78	18	28	12	0
436.194	1.51	19	32	11	0
438.101	2.78	16	22	14	0
438.137	66.47	17	26	13	0
438.174	3.58	18	30	12	0
439.096	2.90	15	21	14	1
440.117	6.15	16	24	14	0
440.153	4.13	17	28	13	0
441.112	7.77	15	23	14	1
442.132	9.10	16	26	14	0
444.200	2.95	21	32	10	0
446.179	18.62	20	30	11	0
448.158	2.34	19	28	12	0
448.194	8.76	20	32	11	0
450.137	27.90	18	26	13	0
450.174	5.54	19	30	12	0
450.210	1.94	20	34	11	0
451.133	1.19	17	25	13	1
452.117	11.91	17	24	14	0
452.153	46.02	18	28	13	0
452.189	1.68	19	32	12	0
453.112	2.96	16	23	14	1
453.148	2.43	17	27	13	1
454.132	109.22	17	26	14	0
454.169	1.21	18	30	13	0
455.091	1.35	15	21	15	1
456.148	9.79	17	28	14	0
457.107	3.38	15	23	15	1

458.215	2.39	22	34	10	0
459.122	3.11	15	25	15	1
462.137	1.14	19	26	13	0
462.174	1.64	20	30	12	0
462.210	1.15	21	34	11	0
464.117	1.34	18	24	14	0
464.153	37.89	19	28	13	0
464.189	3.42	20	32	12	0
466.132	29.84	18	26	14	0
466.169	9.30	19	30	13	0
467.128	2.08	17	25	14	1
468.112	2.85	17	24	15	0
468.148	225.78	18	28	14	0
469.107	3.70	16	23	15	1
470.127	3.37	17	26	15	0
470.164	5.52	18	30	14	0
471.122	186.26	16	25	15	1
472.143	2.40	17	28	15	0
476.153	3.46	20	28	13	0
476.189	11.85	21	32	12	0
476.299	9.99	24	44	9	0
478.132	2.56	19	26	14	0
478.169	3.82	20	30	13	0
478.205	2.12	21	34	12	0
480.148	41.17	19	28	14	0
480.184	5.07	20	32	13	0
482.127	15.28	18	26	15	0
482.164	35.86	19	30	14	0
483.122	5.70	17	25	15	1
484.143	23.55	18	28	15	0
484.179	4.06	19	32	14	0
485.102	1.22	16	23	16	1
486.158	3.56	18	30	15	0
487.117	4.77	16	25	16	1
487.154	1.08	17	29	15	1
489.039	6.41	17	15	16	1
490.169	7.58	21	30	13	0
490.205	14.60	22	34	12	0
492.148	5.91	20	28	14	0
492.184	40.73	21	32	13	0
492.221	1.15	22	36	12	0
494.106	5.67	22	22	13	0
494.127	2.38	19	26	15	0
494.164	38.80	20	30	14	0

494.200	5.97	21	34	13	0
496.143	72.60	19	28	15	0
496.179	7.29	20	32	14	0
496.194	8.17	24	32	11	0
498.122	5.15	18	26	16	0
498.158	28.06	19	30	15	0
499.117	13.48	17	25	16	1
500.138	3.61	18	28	16	0
501.133	19.78	17	27	16	1
503.149	1.38	17	29	16	1
506.164	1.35	21	30	14	0
506.200	17.71	22	34	13	0
506.236	3.16	23	38	12	0
508.143	7.32	20	28	15	0
508.179	4.62	21	32	14	0
508.216	4.05	22	36	13	0
510.122	1.84	19	26	16	0
510.158	69.01	20	30	15	0
510.195	20.13	21	34	14	0
512.138	15.77	19	28	16	0
512.174	10.92	20	32	15	0
512.211	2.05	21	36	14	0
513.133	28.21	18	27	16	1
514.153	9.34	19	30	16	0
515.112	1.49	17	25	17	1
516.169	1.05	19	32	16	0
518.200	6.99	23	34	13	0
522.158	13.10	21	30	15	0
522.195	3.27	22	34	14	0
524.138	4.51	20	28	16	0
524.174	58.88	21	32	15	0
524.211	10.94	22	36	14	0
526.153	53.51	20	30	16	0
526.190	2.71	21	34	15	0
527.185	1.08	20	33	15	1
528.133	1.63	19	28	17	0
528.169	59.49	20	32	16	0
529.128	8.81	18	27	17	1
531.144	1.30	18	29	17	1
532.216	4.89	24	36	13	0
534.195	14.30	23	34	14	0
534.231	6.59	24	38	13	0
536.174	18.11	22	32	15	0
536.211	1.13	23	36	14	0

538.153	17.00	21	30	16	0
538.190	7.17	22	34	15	0
538.226	1.10	23	38	14	0
540.133	2.40	20	28	17	0
540.169	46.25	21	32	16	0
540.205	3.09	22	36	15	0
541.128	3.31	19	27	17	1
542.148	6.39	20	30	17	0
542.185	6.66	21	34	16	0
542.200	14.45	25	34	13	0
543.144	8.58	19	29	17	1
544.164	8.53	20	32	17	0
546.180	2.14	20	34	17	0
546.231	2.67	25	38	13	0
548.247	4.96	25	40	13	0
550.190	2.03	23	34	15	0
552.169	21.58	22	32	16	0
552.205	4.08	23	36	15	0
552.242	1.22	24	40	14	0
554.148	7.96	21	30	17	0
554.185	36.71	22	34	16	0
554.221	2.69	23	38	15	0
555.144	3.01	20	29	17	1
556.164	55.96	21	32	17	0
556.200	5.99	22	36	16	0
557.123	1.78	19	27	18	1
558.180	9.89	21	34	17	0
559.138	3.01	19	29	18	1
561.154	3.10	19	31	18	1
562.226	7.77	25	38	14	0
564.205	1.07	24	36	15	0
566.148	1.17	22	30	17	0
566.185	26.40	23	34	16	0
566.221	2.68	24	38	15	0
568.164	21.82	22	32	17	0
568.200	5.50	23	36	16	0
569.196	1.57	22	35	16	1
570.143	2.34	21	30	18	0
570.180	106.73	22	34	17	0
571.138	4.15	20	29	18	1
572.159	5.25	21	32	18	0
572.195	4.56	22	36	17	0
573.154	99.22	20	31	18	1
574.175	2.79	21	34	18	0

576.242	4.24	26	40	14	0
578.257	2.83	26	42	14	0
580.164	1.86	23	32	17	0
580.200	2.44	24	36	16	0
580.237	1.99	25	40	15	0
582.180	28.50	23	34	17	0
582.216	3.14	24	38	16	0
584.159	10.18	22	32	18	0
584.195	32.08	23	36	17	0
584.232	2.98	24	40	16	0
585.154	4.86	21	31	18	1
586.175	22.84	22	34	18	0
587.133	1.55	20	29	19	1
588.190	10.88	22	36	18	0
589.149	4.13	20	31	19	1
591.071	5.04	21	21	19	1
594.180	2.81	24	34	17	0
594.216	2.82	25	38	16	0
594.252	3.17	26	42	15	0
596.159	2.10	23	32	18	0
596.195	30.05	24	36	17	0
596.232	1.84	25	40	16	0
598.175	34.12	23	34	18	0
598.211	4.36	24	38	17	0
600.154	2.91	22	32	19	0
600.190	23.56	23	36	18	0
600.387	2.34	32	56	10	0
601.149	8.10	21	31	19	1
602.169	2.34	22	34	19	0
603.165	13.43	21	33	19	1
608.195	7.62	25	36	17	0
608.232	1.31	26	40	16	0
610.175	4.42	24	34	18	0
610.211	3.13	25	38	17	0
610.247	1.15	26	42	16	0
612.154	1.26	23	32	19	0
612.190	42.58	24	36	18	0
612.227	17.19	25	40	17	0
612.242	2.96	29	40	14	0
614.169	10.15	23	34	19	0
614.206	14.50	24	38	18	0
615.165	16.98	22	33	19	1
616.185	11.48	23	36	19	0
617.144	1.17	21	31	20	1

622.211	13.09	26	38	17	0
622.247	5.73	27	42	16	0
624.190	7.75	25	36	18	0
624.227	2.53	26	40	17	0
626.169	3.24	24	34	19	0
626.206	35.00	25	38	18	0
626.242	3.90	26	42	17	0
628.185	32.22	24	36	19	0
628.221	1.52	25	40	18	0
630.164	1.37	23	34	20	0
630.201	43.34	24	38	19	0
631.160	5.87	22	33	20	1
633.175	1.71	22	35	20	1
634.247	2.31	28	42	16	0
638.206	10.34	26	38	18	0
638.242	1.12	27	42	17	0
640.185	11.34	25	36	19	0
640.221	28.92	26	40	18	0
642.164	1.21	24	34	20	0
642.201	31.60	25	38	19	0
642.237	1.81	26	42	18	0
643.160	2.30	23	33	20	1
644.180	6.70	24	36	20	0
644.216	10.50	25	40	19	0
645.175	4.90	23	35	20	1
646.196	9.35	24	38	20	0
648.211	2.56	24	40	20	0
652.082	4.64	16	28	27	0
654.201	16.66	26	38	19	0
654.237	2.50	27	42	18	0
656.180	4.54	25	36	20	0
656.216	29.87	26	40	19	0
657.175	2.24	24	35	20	1
657.212	1.27	25	39	19	1
658.196	30.35	25	38	20	0
658.232	10.25	26	42	19	0
660.211	7.99	25	40	20	0
661.170	2.34	23	35	21	1
663.186	1.77	23	37	21	1
668.216	18.67	27	40	19	0
668.253	2.38	28	44	18	0
670.196	13.85	26	38	20	0
670.232	3.43	27	42	19	0
672.211	53.02	26	40	20	0

673.170	2.52	24	35	21	1
674.191	5.78	25	38	21	0
674.227	5.40	26	42	20	0
675.186	41.78	24	37	21	1
676.206	3.08	25	40	21	0
682.196	1.81	27	38	20	0
682.232	15.75	28	42	19	0
682.268	1.29	29	46	18	0
684.211	18.97	27	40	20	0
684.248	2.27	28	44	19	0
686.191	5.83	26	38	21	0
686.227	27.66	27	42	20	0
687.186	2.70	25	37	21	1
688.206	19.13	26	40	21	0
689.165	1.15	24	35	22	1
690.222	23.57	26	42	21	0
691.181	2.09	24	37	22	1
696.211	6.44	28	40	20	0
696.248	1.55	29	44	19	0
698.191	1.01	27	38	21	0
698.227	20.59	28	42	20	0
700.206	19.08	27	40	21	0
700.243	15.19	28	44	20	0
702.185	1.53	26	38	22	0
702.222	16.34	27	42	21	0
703.181	4.49	25	37	22	1
704.186	1.05	22	40	25	0
704.201	2.34	26	40	22	0
705.196	6.58	25	39	22	1
706.202	1.53	22	42	25	0
710.227	6.07	29	42	20	0
712.206	2.74	28	40	21	0
712.243	2.16	29	44	20	0
714.222	27.28	28	42	21	0
714.258	2.92	29	46	20	0
716.201	6.52	27	40	22	0
716.238	26.44	28	44	21	0
717.196	8.87	26	39	22	1
718.217	11.87	27	42	22	0
724.279	3.44	31	48	19	0
726.222	7.37	29	42	21	0
726.258	1.37	30	46	20	0
728.201	2.65	28	40	22	0
728.238	23.30	29	44	21	0

728.274	3.02	30	48	20	0
730.217	16.83	28	42	22	0
732.232	31.24	28	44	22	0
733.191	2.89	26	39	23	1
735.207	1.01	26	41	23	1
736.212	2.44	23	44	26	0
740.238	6.84	30	44	21	0
742.217	6.20	29	42	22	0
742.253	16.96	30	46	21	0
744.232	20.56	29	44	22	0
744.269	8.18	30	48	21	0
744.466	30.51	39	68	13	0
745.191	1.30	27	39	23	1
746.212	5.32	28	42	23	0
746.248	14.72	29	46	22	0
747.207	2.42	27	41	23	1
748.227	4.94	28	44	23	0
752.274	3.27	32	48	20	0
756.232	8.12	30	44	22	0
756.269	1.50	31	48	21	0
758.212	2.78	29	42	23	0
758.248	20.77	30	46	22	0
760.227	16.34	29	44	23	0
760.264	5.08	30	48	22	0
762.243	4.08	29	46	23	0
763.202	1.17	27	41	24	1
770.248	8.24	31	46	22	0
772.227	6.63	30	44	23	0
772.264	1.66	31	48	22	0
774.243	26.37	30	46	23	0
775.202	1.32	28	41	24	1
776.222	5.31	29	44	24	0
777.218	14.10	28	43	24	1
778.238	3.38	29	46	24	0
780.269	2.01	33	48	21	0
782.451	8.70	34	70	19	0
786.243	8.59	31	46	23	0
788.222	2.24	30	44	24	0
788.259	18.74	31	48	23	0
789.218	1.74	29	43	24	1
790.238	11.69	30	46	24	0
792.254	11.57	30	48	24	0
793.212	1.05	28	43	25	1
798.243	2.11	32	46	23	0

802.238	7.63	31	46	24	0
804.254	9.80	31	48	24	0
805.212	1.60	29	43	25	1
807.228	2.30	29	45	25	1
814.238	2.66	32	46	24	0
816.254	10.03	32	48	24	0
816.290	8.24	33	52	23	0
818.233	2.92	31	46	25	0
818.269	16.89	32	50	24	0
819.228	3.56	30	45	25	1
820.248	5.18	31	48	25	0
826.274	3.62	34	50	23	0
830.269	10.25	33	50	24	0
832.248	6.49	32	48	25	0
834.264	14.16	32	50	25	0
844.285	15.76	34	52	24	0
846.264	7.35	33	50	25	0
846.301	3.30	34	54	24	0
848.280	2.93	33	52	25	0
849.239	1.21	31	47	26	1
850.259	1.18	32	50	26	0
858.264	4.09	34	50	25	0
862.259	5.96	33	50	26	0
864.275	2.12	33	52	26	0
870.228	3.13	34	46	26	0
872.280	5.53	35	52	25	0
872.316	3.45	36	56	24	0
874.259	3.25	34	50	26	0
876.275	8.92	34	52	26	0
878.254	2.06	33	50	27	0
879.249	4.20	32	49	27	1
888.311	6.64	36	56	25	0
890.290	10.28	35	54	26	0
892.270	3.58	34	52	27	0
902.290	5.91	36	54	26	0
904.270	4.42	35	52	27	0
904.306	5.57	36	56	26	0
906.285	2.97	35	54	27	0
914.327	2.43	38	58	25	0
916.306	6.19	37	56	26	0
918.285	7.97	36	54	27	0
918.322	3.54	37	58	26	0
920.301	3.18	36	56	27	0
930.322	4.83	38	58	26	0

932.301	6.82	37	56	27	0
934.317	5.03	37	58	27	0
936.296	3.97	36	56	28	0
946.317	2.24	38	58	27	0
948.296	3.38	37	56	28	0
962.311	2.94	38	58	28	0
978.306	3.10	38	58	29	0
992.322	2.42	39	60	29	0

Table S4: Accurate masses, signal-to-noise, and molecular formula assignments of neutral SOA products formed under humid conditions, analyzed by ESI and nano-DESI.

Mass (Da)	Signal-to-noise	# C	# H	# O	# N
72.021	2.76	3	4	2	0
74.037	7.55	3	6	2	0
76.016	11.76	2	4	3	0
84.058	1.25	5	8	1	0
86.037	2.10	4	6	2	0
88.016	17.48	3	4	3	0
88.052	2.85	4	8	2	0
90.032	7.83	3	6	3	0
98.037	1.25	5	6	2	0
100.052	1.31	5	8	2	0
102.032	4.63	4	6	3	0
104.011	1.77	3	4	4	0
104.047	1.22	4	8	3	0
114.032	1.66	5	6	3	0
116.047	8.27	5	8	3	0
118.027	14.80	4	6	4	0
120.042	285.25	4	8	4	0
126.032	1.28	6	6	3	0
126.068	2.49	7	10	2	0
126.104	3.03	8	14	1	0
128.047	2.60	6	8	3	0
128.084	2.07	7	12	2	0
130.027	2.59	5	6	4	0
132.042	10.04	5	8	4	0
136.037	1.16	4	8	5	0
140.084	1.19	8	12	2	0
140.120	1.06	9	16	1	0
142.063	2.40	7	10	3	0
144.042	3.12	6	8	4	0
144.079	1.85	7	12	3	0
148.037	22.53	5	8	5	0
150.053	4.00	5	10	5	0
150.068	1.46	9	10	2	0
154.063	1.96	8	10	3	0
154.099	1.02	9	14	2	0
156.042	2.00	7	8	4	0
156.079	1.78	8	12	3	0
156.115	1.47	9	16	2	0
158.022	1.25	6	6	5	0
158.058	3.83	7	10	4	0

160.037	5.10	6	8	5	0
160.110	2.30	8	16	3	0
162.053	112.58	6	10	5	0
164.032	1.29	5	8	6	0
165.027	1.51	4	7	6	1
166.099	1.36	10	14	2	0
168.042	1.36	8	8	4	0
168.079	4.52	9	12	3	0
168.115	2.60	10	16	2	0
170.058	5.15	8	10	4	0
170.094	2.13	9	14	3	0
172.037	2.44	7	8	5	0
172.074	4.80	8	12	4	0
174.016	1.25	6	6	6	0
174.053	8.31	7	10	5	0
174.126	2.81	9	18	3	0
176.032	7.91	6	8	6	0
176.068	18.82	7	12	5	0
176.105	1.04	8	16	4	0
178.048	4.78	6	10	6	0
182.094	3.27	10	14	3	0
184.074	4.11	9	12	4	0
184.110	3.05	10	16	3	0
184.146	1.36	11	20	2	0
186.053	4.19	8	10	5	0
186.089	8.55	9	14	4	0
187.121	1.45	9	17	3	1
188.032	1.48	7	8	6	0
188.068	10.72	8	12	5	0
188.141	1.13	10	20	3	0
190.048	24.24	7	10	6	0
190.084	4.96	8	14	5	0
190.121	2.08	9	18	4	0
192.027	5.81	6	8	7	0
192.063	6.60	7	12	6	0
194.094	1.61	11	14	3	0
196.146	2.63	12	20	2	0
198.053	1.06	9	10	5	0
198.089	3.43	10	14	4	0
198.126	1.65	11	18	3	0
198.162	1.57	12	22	2	0
200.068	57.73	9	12	5	0
200.105	6.36	10	16	4	0
200.141	2.39	11	20	3	0

202.048	9.11	8	10	6	0
202.084	9.06	9	14	5	0
204.063	60.85	8	12	6	0
204.100	4.32	9	16	5	0
206.043	13.83	7	10	7	0
206.079	6.76	8	14	6	0
208.058	3.57	7	12	7	0
208.146	1.54	13	20	2	0
210.089	1.27	11	14	4	0
210.162	1.31	13	22	2	0
212.068	1.14	10	12	5	0
212.105	8.25	11	16	4	0
212.141	1.94	12	20	3	0
214.084	13.77	10	14	5	0
214.121	2.96	11	18	4	0
214.157	2.64	12	22	3	0
215.152	1.12	11	21	3	1
216.063	10.10	9	12	6	0
216.100	6.96	10	16	5	0
216.136	3.09	11	20	4	0
216.173	1.53	12	24	3	0
218.043	2.84	8	10	7	0
218.079	40.88	9	14	6	0
218.115	6.45	10	18	5	0
220.058	78.87	8	12	7	0
220.095	5.64	9	16	6	0
222.074	218.40	8	14	7	0
222.162	1.14	14	22	2	0
224.068	3.66	11	12	5	0
224.105	1.37	12	16	4	0
224.141	1.23	13	20	3	0
224.178	1.23	14	24	2	0
226.084	1.43	11	14	5	0
226.121	1.57	12	18	4	0
226.157	1.89	13	22	3	0
227.079	1.04	10	13	5	1
228.063	1.42	10	12	6	0
228.100	8.97	11	16	5	0
228.136	3.99	12	20	4	0
228.173	1.19	13	24	3	0
229.168	2.16	12	23	3	1
230.079	12.43	10	14	6	0
230.115	5.83	11	18	5	0
230.152	3.34	12	22	4	0

232.058	8.31	9	12	7	0
232.095	15.84	10	16	6	0
232.131	2.47	11	20	5	0
232.167	1.12	12	24	4	0
234.074	26.33	9	14	7	0
234.110	3.35	10	18	6	0
236.053	2.42	8	12	8	0
236.090	3.74	9	16	7	0
236.178	7.88	15	24	2	0
238.069	6.65	8	14	8	0
238.084	1.45	12	14	5	0
238.099	2.26	16	14	2	0
238.105	2.52	9	18	7	0
238.121	1.02	13	18	4	0
238.157	1.31	14	22	3	0
240.136	3.93	13	20	4	0
240.173	1.18	14	24	3	0
242.115	3.86	12	18	5	0
242.152	3.22	13	22	4	0
242.188	3.56	14	26	3	0
244.058	1.43	10	12	7	0
244.095	7.12	11	16	6	0
244.131	4.04	12	20	5	0
244.167	2.31	13	24	4	0
244.204	2.06	14	28	3	0
246.074	63.86	10	14	7	0
246.110	17.33	11	18	6	0
246.147	2.95	12	22	5	0
248.053	2.83	9	12	8	0
248.090	22.93	10	16	7	0
248.126	1.23	11	20	6	0
250.069	72.26	9	14	8	0
250.105	1.45	10	18	7	0
251.064	1.54	8	13	8	1
252.085	4.73	9	16	8	0
252.136	1.23	14	20	4	0
252.173	5.31	15	24	3	0
254.094	1.08	16	14	3	0
254.115	1.32	13	18	5	0
254.152	2.24	14	22	4	0
256.131	2.04	13	20	5	0
257.163	3.31	13	23	4	1
258.074	3.40	11	14	7	0
258.110	28.22	12	18	6	0

258.147	2.69	13	22	5	0
258.183	3.34	14	26	4	0
259.178	2.11	13	25	4	1
260.053	1.10	10	12	8	0
260.090	9.50	11	16	7	0
260.126	5.30	12	20	6	0
260.199	1.41	14	28	4	0
262.069	8.13	10	14	8	0
262.105	57.46	11	18	7	0
262.142	2.49	12	22	6	0
264.048	1.93	9	12	9	0
264.085	146.02	10	16	8	0
266.064	1.87	9	14	9	0
267.059	38.74	8	13	9	1
268.131	1.11	14	20	5	0
268.167	2.56	15	24	4	0
270.110	2.99	13	18	6	0
270.147	2.31	14	22	5	0
270.183	1.72	15	26	4	0
272.090	3.98	12	16	7	0
272.126	2.37	13	20	6	0
272.162	2.92	14	24	5	0
272.199	1.85	15	28	4	0
274.069	2.29	11	14	8	0
274.105	7.90	12	18	7	0
274.142	6.75	13	22	6	0
274.178	1.33	14	26	5	0
276.085	11.57	11	16	8	0
276.121	7.92	12	20	7	0
276.157	1.29	13	24	6	0
278.064	9.23	10	14	9	0
278.100	21.85	11	18	8	0
278.137	5.90	12	22	7	0
279.059	1.64	9	13	9	1
280.079	11.82	10	16	9	0
280.110	1.54	18	16	3	0
280.167	1.67	16	24	4	0
281.075	1.09	9	15	9	1
282.147	1.45	15	22	5	0
282.183	1.18	16	26	4	0
283.054	1.04	8	13	10	1
283.090	1.67	9	17	9	1
284.126	1.66	14	20	6	0
284.162	2.06	15	24	5	0

284.199	4.12	16	28	4	0
286.069	2.90	12	14	8	0
286.105	2.14	13	18	7	0
286.142	3.09	14	22	6	0
288.085	3.17	12	16	8	0
288.115	1.08	20	16	2	0
288.121	9.36	13	20	7	0
288.194	1.05	15	28	5	0
288.230	2.95	16	32	4	0
290.064	1.74	11	14	9	0
290.100	20.06	12	18	8	0
290.137	6.13	13	22	7	0
290.173	1.44	14	26	6	0
292.079	34.91	11	16	9	0
292.116	9.48	12	20	8	0
292.131	2.53	16	20	5	0
292.152	1.81	13	24	7	0
294.059	3.60	10	14	10	0
294.095	9.27	11	18	9	0
294.147	2.82	16	22	5	0
294.183	2.16	17	26	4	0
295.054	2.57	9	13	10	1
296.074	2.09	10	16	10	0
296.162	6.86	16	24	5	0
297.070	1.83	9	15	10	1
298.142	1.10	15	22	6	0
298.178	13.74	16	26	5	0
300.085	1.00	13	16	8	0
300.121	2.71	14	20	7	0
300.157	1.98	15	24	6	0
300.230	1.16	17	32	4	0
302.027	1.95	11	10	10	0
302.100	13.76	13	18	8	0
302.137	8.15	14	22	7	0
302.173	2.50	15	26	6	0
302.209	3.10	16	30	5	0
304.079	5.44	12	16	9	0
304.116	84.94	13	20	8	0
304.152	4.41	14	24	7	0
306.095	28.09	12	18	9	0
306.131	8.97	13	22	8	0
306.168	1.01	14	26	7	0
308.074	18.77	11	16	10	0
308.111	6.47	12	20	9	0

308.126	1.49	16	20	6	0
309.070	7.01	10	15	10	1
310.090	4.39	11	18	10	0
310.142	1.44	16	22	6	0
310.178	3.66	17	26	5	0
310.214	1.30	18	30	4	0
314.100	1.19	14	18	8	0
314.137	3.16	15	22	7	0
314.173	7.40	16	26	6	0
316.116	4.03	14	20	8	0
316.152	3.37	15	24	7	0
318.095	5.59	13	18	9	0
318.131	11.02	14	22	8	0
318.168	2.40	15	26	7	0
318.204	1.63	16	30	6	0
320.074	3.32	12	16	10	0
320.111	111.39	13	20	9	0
320.147	7.72	14	24	8	0
320.235	1.51	20	32	3	0
322.090	102.39	12	18	10	0
322.126	3.98	13	22	9	0
323.085	1.35	11	17	10	1
324.069	1.04	11	16	11	0
324.106	117.07	12	20	10	0
324.157	1.04	17	24	6	0
324.194	1.27	18	28	5	0
325.065	1.01	10	15	11	1
326.100	4.04	15	18	8	0
326.173	1.70	17	26	6	0
326.209	1.14	18	30	5	0
328.116	1.04	15	20	8	0
328.152	3.78	16	24	7	0
328.189	1.49	17	28	6	0
328.225	1.53	18	32	5	0
330.095	1.23	14	18	9	0
330.131	5.37	15	22	8	0
330.168	4.34	16	26	7	0
330.204	1.54	17	30	6	0
330.241	1.41	18	34	5	0
332.053	5.70	16	12	8	0
332.111	6.80	14	20	9	0
332.147	8.62	15	24	8	0
332.184	2.85	16	28	7	0
334.090	5.90	13	18	10	0

334.126	28.67	14	22	9	0
334.214	1.27	20	30	4	0
336.069	1.86	12	16	11	0
336.106	50.07	13	20	10	0
336.142	3.14	14	24	9	0
336.194	1.04	19	28	5	0
336.230	1.77	20	32	4	0
337.101	1.35	12	19	10	1
338.085	5.32	12	18	11	0
338.121	2.17	13	22	10	0
338.209	1.29	19	30	5	0
339.080	1.30	11	17	11	1
340.101	8.96	12	20	11	0
340.189	1.44	18	28	6	0
342.126	9.93	23	18	3	0
342.168	2.91	17	26	7	0
342.204	1.70	18	30	6	0
344.147	5.01	16	24	8	0
344.184	2.46	17	28	7	0
346.126	11.60	15	22	9	0
346.163	6.16	16	26	8	0
346.199	1.61	17	30	7	0
348.106	14.35	14	20	10	0
348.136	1.43	22	20	4	0
348.142	16.55	15	24	9	0
349.101	1.19	13	19	10	1
350.085	4.64	13	18	11	0
350.121	31.37	14	22	10	0
350.158	1.56	15	26	9	0
350.209	1.26	20	30	5	0
351.080	1.28	12	17	11	1
351.117	1.41	13	21	10	1
352.101	59.49	13	20	11	0
352.137	1.28	14	24	10	0
352.189	1.28	19	28	6	0
352.225	1.93	20	32	5	0
353.096	3.81	12	19	11	1
354.116	3.89	13	22	11	0
354.168	1.03	18	26	7	0
354.204	1.11	19	30	6	0
356.184	2.74	18	28	7	0
358.126	1.22	16	22	9	0
358.163	4.26	17	26	8	0
358.199	2.33	18	30	7	0

360.054	6.53	10	16	14	0
360.106	2.56	15	20	10	0
360.142	65.24	16	24	9	0
360.178	5.92	17	28	8	0
362.085	1.05	14	18	11	0
362.121	45.87	15	22	10	0
362.158	8.12	16	26	9	0
362.194	1.45	17	30	8	0
363.117	1.31	14	21	10	1
364.101	10.84	14	20	11	0
364.137	46.17	15	24	10	0
364.173	2.13	16	28	9	0
365.096	2.28	13	19	11	1
365.132	1.18	14	23	10	1
366.080	2.14	13	18	12	0
366.116	207.50	14	22	11	0
367.075	2.49	12	17	12	1
367.111	2.03	13	21	11	1
368.095	2.02	13	20	12	0
368.126	1.09	21	20	6	0
368.220	1.52	20	32	6	0
369.091	44.15	12	19	12	1
370.163	1.17	18	26	8	0
372.142	1.09	17	24	9	0
372.178	1.93	18	28	8	0
372.215	1.93	19	32	7	0
374.070	1.16	11	18	14	0
374.121	1.88	16	22	10	0
374.158	14.68	17	26	9	0
374.194	3.10	18	30	8	0
376.101	2.10	15	20	11	0
376.137	24.38	16	24	10	0
376.173	6.62	17	28	9	0
376.210	1.96	18	32	8	0
378.080	1.22	14	18	12	0
378.116	14.40	15	22	11	0
378.153	7.42	16	26	10	0
379.111	1.39	14	21	11	1
380.095	9.45	14	20	12	0
380.132	18.02	15	24	11	0
380.168	1.10	16	28	10	0
380.184	1.05	20	28	7	0
381.091	3.20	13	19	12	1
381.127	2.28	14	23	11	1

382.111	7.07	14	22	12	0
382.199	1.23	20	30	7	0
383.106	1.77	13	21	12	1
384.215	1.23	20	32	7	0
385.086	1.88	12	19	13	1
385.122	1.71	13	23	12	1
386.152	4.47	25	22	4	0
386.194	2.44	19	30	8	0
386.230	1.47	20	34	7	0
388.079	5.10	19	16	9	0
388.137	3.26	17	24	10	0
388.173	8.38	18	28	9	0
388.210	1.70	19	32	8	0
390.059	2.58	18	14	10	0
390.116	2.32	16	22	11	0
390.153	21.23	17	26	10	0
392.074	1.37	18	16	10	0
392.095	2.22	15	20	12	0
392.132	18.53	16	24	11	0
392.168	5.04	17	28	10	0
392.205	1.03	18	32	9	0
394.111	26.44	15	22	12	0
394.148	8.74	16	26	11	0
394.184	1.27	17	30	10	0
395.106	1.82	14	21	12	1
396.090	4.51	14	20	13	0
396.127	5.80	15	24	12	0
397.086	6.00	13	19	13	1
398.106	1.95	14	22	13	0
399.101	2.21	13	21	13	1
400.079	1.52	20	16	9	0
400.173	1.02	19	28	9	0
400.210	1.23	20	32	8	0
401.081	1.79	12	19	14	1
401.117	1.48	13	23	13	1
402.147	1.11	25	22	5	0
402.153	3.73	18	26	10	0
402.189	3.48	19	30	9	0
404.132	4.13	17	24	11	0
404.168	9.85	18	28	10	0
404.205	1.61	19	32	9	0
406.111	3.31	16	22	12	0
406.148	57.67	17	26	11	0
406.184	2.36	18	30	10	0

408.090	1.24	15	20	13	0
408.127	25.66	16	24	12	0
408.163	8.21	17	28	11	0
409.122	1.34	15	23	12	1
409.158	1.25	16	27	11	1
410.106	11.21	15	22	13	0
410.142	4.92	16	26	12	0
411.101	14.84	14	21	13	1
412.122	3.51	15	24	13	0
412.204	3.16	28	28	3	0
414.189	1.34	20	30	9	0
416.168	2.52	19	28	10	0
416.205	4.33	20	32	9	0
418.148	5.45	18	26	11	0
418.184	4.77	19	30	10	0
418.220	2.01	20	34	9	0
420.127	4.15	17	24	12	0
420.163	9.59	18	28	11	0
420.200	2.28	19	32	10	0
422.106	4.44	16	22	13	0
422.142	39.99	17	26	12	0
422.179	5.06	18	30	11	0
424.122	48.68	16	24	13	0
424.158	2.30	17	28	12	0
426.137	60.29	16	26	13	0
427.096	3.55	14	21	14	1
428.132	2.81	19	24	11	0
428.205	1.03	21	32	9	0
430.184	3.15	20	30	10	0
432.163	4.08	19	28	11	0
432.200	2.63	20	32	10	0
434.085	6.73	20	18	11	0
434.142	7.55	18	26	12	0
434.179	5.71	19	30	11	0
434.215	1.79	20	34	10	0
436.122	4.14	17	24	13	0
436.158	20.74	18	28	12	0
436.194	1.92	19	32	11	0
437.117	1.01	16	23	13	1
438.101	2.74	16	22	14	0
438.137	28.74	17	26	13	0
438.174	2.96	18	30	12	0
439.096	1.62	15	21	14	1
440.059	2.37	18	16	13	0

440.117	3.03	16	24	14	0
440.153	7.65	17	28	13	0
441.112	3.89	15	23	14	1
442.132	4.89	16	26	14	0
444.054	6.73	17	16	14	0
444.148	3.90	16	28	14	0
444.200	1.53	21	32	10	0
446.142	1.17	19	26	12	0
446.179	4.27	20	30	11	0
446.215	1.97	21	34	10	0
448.158	8.65	19	28	12	0
448.194	5.27	20	32	11	0
448.231	1.11	21	36	10	0
450.137	6.96	18	26	13	0
450.174	10.27	19	30	12	0
450.210	2.83	20	34	11	0
451.133	1.15	17	25	13	1
452.117	6.16	17	24	14	0
452.153	20.73	18	28	13	0
452.189	1.16	19	32	12	0
453.112	1.85	16	23	14	1
454.132	22.59	17	26	14	0
454.169	1.85	18	30	13	0
455.128	4.09	16	25	14	1
456.054	1.02	18	16	14	0
456.148	3.12	17	28	14	0
458.215	2.50	22	34	10	0
460.194	4.22	21	32	11	0
460.231	1.09	22	36	10	0
462.137	1.34	19	26	13	0
462.174	14.45	20	30	12	0
462.210	3.12	21	34	11	0
462.246	1.05	22	38	10	0
464.117	1.17	18	24	14	0
464.153	14.86	19	28	13	0
464.189	6.78	20	32	12	0
464.226	1.27	21	36	11	0
466.132	5.95	18	26	14	0
466.169	14.10	19	30	13	0
466.205	1.19	20	34	12	0
467.128	2.66	17	25	14	1
468.112	2.16	17	24	15	0
468.133	1.16	14	28	17	0
468.148	69.91	18	28	14	0

469.107	3.91	16	23	15	1
470.127	2.09	17	26	15	0
471.122	25.65	16	25	15	1
472.143	1.52	17	28	15	0
474.116	1.38	23	22	11	0
474.174	1.24	21	30	12	0
474.210	1.86	22	34	11	0
476.153	1.67	20	28	13	0
476.189	6.38	21	32	12	0
476.226	1.39	22	36	11	0
478.132	1.71	19	26	14	0
478.169	10.83	20	30	13	0
478.205	4.03	21	34	12	0
478.241	1.29	22	38	11	0
480.148	7.21	19	28	14	0
480.184	7.07	20	32	13	0
480.221	1.04	21	36	12	0
482.127	8.16	18	26	15	0
482.164	27.34	19	30	14	0
483.122	4.25	17	25	15	1
484.143	10.72	18	28	15	0
484.179	2.13	19	32	14	0
485.138	1.18	17	27	15	1
486.065	6.67	19	18	15	0
486.158	27.80	18	30	15	0
486.319	2.66	26	46	8	0
487.117	1.75	16	25	16	1
488.189	1.08	22	32	12	0
488.226	1.18	23	36	11	0
490.169	1.77	21	30	13	0
490.205	4.21	22	34	12	0
492.148	1.33	20	28	14	0
492.184	9.13	21	32	13	0
492.221	2.28	22	36	12	0
494.127	1.79	19	26	15	0
494.164	9.06	20	30	14	0
494.200	3.08	21	34	13	0
494.236	1.10	22	38	12	0
496.143	10.92	19	28	15	0
496.179	9.78	20	32	14	0
498.122	2.89	18	26	16	0
498.158	6.14	19	30	15	0
499.117	5.41	17	25	16	1
500.138	1.01	18	28	16	0

500.174	1.28	19	32	15	0
501.133	1.90	17	27	16	1
502.241	1.63	24	38	11	0
504.184	1.95	22	32	13	0
504.221	2.38	23	36	12	0
506.164	1.61	21	30	14	0
506.200	5.04	22	34	13	0
506.236	1.50	23	38	12	0
508.143	2.08	20	28	15	0
508.179	12.33	21	32	14	0
508.216	1.99	22	36	13	0
510.122	1.49	19	26	16	0
510.158	13.86	20	30	15	0
510.195	7.26	21	34	14	0
512.138	7.44	19	28	16	0
512.174	5.10	20	32	15	0
513.133	10.66	18	27	16	1
514.153	5.14	19	30	16	0
518.200	1.11	23	34	13	0
518.236	1.08	24	38	12	0
520.179	2.00	22	32	14	0
520.216	2.21	23	36	13	0
522.158	2.90	21	30	15	0
522.195	6.50	22	34	14	0
522.231	1.44	23	38	13	0
524.138	2.71	20	28	16	0
524.174	15.23	21	32	15	0
524.211	3.32	22	36	14	0
526.153	17.29	20	30	16	0
526.190	6.98	21	34	15	0
528.169	46.91	20	32	16	0
529.128	3.10	18	27	17	1
532.216	1.44	24	36	13	0
532.252	1.04	25	40	12	0
534.092	1.07	13	26	22	0
534.195	1.88	23	34	14	0
534.231	1.80	24	38	13	0
536.174	2.59	22	32	15	0
536.211	3.71	23	36	14	0
536.247	1.26	24	40	13	0
538.153	3.53	21	30	16	0
538.190	10.50	22	34	15	0
538.226	1.65	23	38	14	0
540.133	1.59	20	28	17	0

540.169	13.11	21	32	16	0
540.205	2.18	22	36	15	0
541.128	1.57	19	27	17	1
542.148	2.67	20	30	17	0
542.185	6.54	21	34	16	0
543.144	2.53	19	29	17	1
544.164	4.00	20	32	17	0
546.231	1.44	25	38	13	0
548.211	1.73	24	36	14	0
548.247	1.23	25	40	13	0
550.190	2.99	23	34	15	0
550.226	2.17	24	38	14	0
552.169	2.73	22	32	16	0
552.205	6.00	23	36	15	0
552.242	1.43	24	40	14	0
554.127	1.04	24	26	15	0
554.148	3.09	21	30	17	0
554.185	10.65	22	34	16	0
555.144	1.69	20	29	17	1
556.164	9.45	21	32	17	0
556.200	4.25	22	36	16	0
558.180	2.44	21	34	17	0
562.226	1.60	25	38	14	0
564.205	4.21	24	36	15	0
564.242	1.99	25	40	14	0
566.185	5.03	23	34	16	0
566.221	3.53	24	38	15	0
568.164	2.85	22	32	17	0
568.200	12.08	23	36	16	0
568.237	1.18	24	40	15	0
569.159	1.75	21	31	17	1
570.180	20.05	22	34	17	0
571.138	2.26	20	29	18	1
572.159	2.13	21	32	18	0
572.195	3.65	22	36	17	0
573.154	11.26	20	31	18	1
576.242	1.01	26	40	14	0
578.221	5.68	25	38	15	0
580.164	1.12	23	32	17	0
580.200	5.79	24	36	16	0
580.237	2.10	25	40	15	0
582.180	3.32	23	34	17	0
582.216	6.01	24	38	16	0
583.175	1.10	22	33	17	1

584.159	3.50	22	32	18	0
584.195	15.31	23	36	17	0
585.154	2.53	21	31	18	1
586.175	6.66	22	34	18	0
586.211	1.78	23	38	17	0
588.190	13.87	22	36	18	0
589.149	1.02	20	31	19	1
590.221	1.06	26	38	15	0
592.237	2.84	26	40	15	0
594.216	4.62	25	38	16	0
594.252	1.47	26	42	15	0
596.138	3.00	26	28	16	0
596.195	4.35	24	36	17	0
596.232	1.66	25	40	16	0
598.175	6.91	23	34	18	0
598.211	5.84	24	38	17	0
599.170	1.41	22	33	18	1
600.154	1.14	22	32	19	0
600.190	5.49	23	36	18	0
601.149	2.13	21	31	19	1
608.195	1.00	25	36	17	0
608.232	2.56	26	40	16	0
610.175	1.37	24	34	18	0
610.211	5.29	25	38	17	0
610.247	1.46	26	42	16	0
612.190	6.58	24	36	18	0
612.227	4.33	25	40	17	0
614.169	2.05	23	34	19	0
614.206	4.83	24	38	18	0
615.165	4.83	22	33	19	1
616.185	2.63	23	36	19	0
620.159	1.87	25	32	18	0
622.211	1.05	26	38	17	0
622.247	1.74	27	42	16	0
624.190	1.63	25	36	18	0
624.227	6.04	26	40	17	0
624.263	1.30	27	44	16	0
626.169	1.61	24	34	19	0
626.206	8.30	25	38	18	0
626.242	2.13	26	42	17	0
628.185	5.47	24	36	19	0
628.221	8.72	25	40	18	0
630.185	1.83	20	38	22	0
630.201	19.54	24	38	19	0

631.160	1.09	22	33	20	1
636.227	1.07	27	40	17	0
638.206	1.26	26	38	18	0
638.242	1.35	27	42	17	0
640.185	1.67	25	36	19	0
640.221	4.22	26	40	18	0
642.201	5.60	25	38	19	0
642.237	1.14	26	42	18	0
644.180	1.33	24	36	20	0
644.216	4.47	25	40	19	0
646.196	1.19	24	38	20	0
650.242	1.33	28	42	17	0
652.164	2.92	29	32	17	0
652.185	2.86	26	36	19	0
652.221	1.61	27	40	18	0
652.258	1.33	28	44	17	0
654.237	2.58	27	42	18	0
656.180	1.51	25	36	20	0
656.216	5.36	26	40	19	0
658.196	3.12	25	38	20	0
666.237	1.56	28	42	18	0
668.180	1.47	26	36	20	0
668.216	1.38	27	40	19	0
668.253	1.72	28	44	18	0
670.232	5.54	27	42	19	0
672.211	6.36	26	40	20	0
672.248	1.03	27	44	19	0
673.170	1.32	24	35	21	1
674.154	2.83	24	34	22	0
675.186	4.56	24	37	21	1
676.191	1.24	21	40	24	0
680.216	1.86	28	40	19	0
680.253	2.48	29	44	18	0
682.232	2.83	28	42	19	0
684.211	1.51	27	40	20	0
684.248	1.72	28	44	19	0
686.191	1.12	26	38	21	0
686.227	5.85	27	42	20	0
688.206	3.97	26	40	21	0
690.222	1.45	26	42	21	0
696.144	2.62	19	36	27	0
696.248	1.38	29	44	19	0
698.227	1.82	28	42	20	0
698.263	1.44	29	46	19	0

700.139	1.65	18	36	28	0
700.206	2.18	27	40	21	0
700.243	2.23	28	44	20	0
702.222	1.42	27	42	21	0
712.243	2.41	29	44	20	0
714.222	2.44	28	42	21	0
714.258	1.70	29	46	20	0
717.196	1.57	26	39	22	1
726.258	3.99	30	46	20	0
728.238	2.01	29	44	21	0
730.217	2.34	28	42	22	0
730.253	2.40	29	46	21	0
732.232	4.99	28	44	22	0
738.222	1.15	30	42	21	0
742.253	1.19	30	46	21	0
758.248	1.31	30	46	22	0
772.264	2.37	31	48	22	0
774.243	1.27	30	46	23	0
777.218	1.79	28	43	24	1
782.015	1.42	22	22	31	0