

SUPPORTING INFORMATION

Table S1: 1-hr and 8-hr relative MIR-3D and MOIR-3D reactivity metrics for July 1995.

Species	MIR	MIR-3D		MOIR-3D		MIR-3D-8hr		MOIR-3D-8hr	
		mean	stdev	mean	stdev	mean	stdev	mean	stdev
2MBT	14.450	3.390	0.778	2.082	1.255	3.370	1.320	2.235	1.258
BUTD	13.580	3.524	0.287	3.556	0.598	3.546	0.520	3.625	0.730
PRPE	11.580	3.280	0.347	3.684	1.021	3.217	0.354	3.710	1.031
ISOP	10.690	3.141	0.301	2.916	0.366	3.262	0.632	2.948	0.491
XYLM	10.610	2.786	0.509	1.913	0.673	2.429	0.374	1.915	0.597
ETHE	9.080	3.288	0.294	4.140	1.203	3.256	0.185	4.293	0.962
HCHO	8.970	3.663	0.807	3.284	1.366	3.302	0.846	3.227	1.215
ACRO	7.610	1.951	0.547	1.798	1.183	1.729	0.570	1.762	1.114
124B	7.180	1.973	0.276	1.426	0.471	1.783	0.227	1.417	0.404
CCHO	6.840	2.230	0.391	2.606	0.804	2.049	0.557	2.550	0.898
APIN	4.290	1.148	0.134	0.747	0.471	1.136	0.239	0.737	0.412
XYLP	4.250	1.308	0.080	0.999	0.439	1.233	0.102	0.981	0.335
TOLU	3.970	1.250	0.083	0.898	0.551	1.171	0.153	0.892	0.375
MCPT	2.420	0.884	0.108	1.369	0.396	0.988	0.145	1.352	0.287
ETOH	1.690	1.018	0.112	1.731	0.572	1.154	0.156	1.725	0.396
IPNT	1.670	0.740	0.099	1.382	0.574	0.854	0.164	1.369	0.427
N_C5	1.540	0.758	0.111	1.357	0.534	0.875	0.186	1.349	0.414
MEK	1.480	0.564	0.067	0.799	0.246	0.610	0.069	0.822	0.187
224P	1.440	0.640	0.067	1.151	0.510	0.711	0.117	1.146	0.402
N_C4	1.330	0.599	0.094	1.144	0.490	0.700	0.153	1.128	0.349
C2H2	1.250	0.394	0.046	0.516	0.128	0.395	0.044	0.533	0.108
BACT	0.890	0.566	0.062	0.980	0.344	0.662	0.125	0.971	0.263
C6H6	0.820	0.335	0.048	0.414	0.066	0.361	0.054	0.423	0.054
MTBE	0.780	0.499	0.067	0.948	0.479	0.572	0.123	0.946	0.372
MEOH	0.710	0.642	0.069	1.131	0.536	0.687	0.094	1.124	0.393
IPOH	0.710	0.504	0.059	0.886	0.492	0.541	0.092	0.870	0.371
DODC	0.660	0.390	0.073	0.481	0.125	0.447	0.063	0.445	0.125
ACET	0.430	0.176	0.023	0.245	0.057	0.183	0.014	0.250	0.041
C2H6	0.310	0.140	0.028	0.293	0.140	0.170	0.046	0.293	0.099
CO	0.060	0.072	0.011	0.162	0.112	0.084	0.021	0.158	0.079
CH4	0.010	0.007	0.001	0.015	0.009	0.008	0.002	0.015	0.006
RCHO	N/A	2.380	0.544	2.462	0.951	2.158	0.534	2.456	0.846
ALK3	N/A	0.643	0.090	1.271	0.566	0.747	0.154	1.267	0.418
ALK4	N/A	0.721	0.091	1.327	0.528	0.830	0.150	1.307	0.382
ALK5	N/A	0.784	0.097	1.146	0.364	0.875	0.132	1.109	0.272
ARO1	N/A	1.135	0.053	0.873	0.418	1.087	0.112	0.870	0.286
ARO2	N/A	2.286	0.392	1.683	0.507	2.029	0.331	1.672	0.475
OLE1	N/A	2.676	0.235	3.091	0.545	2.657	0.266	3.083	0.495
OLE2	N/A	2.356	0.293	1.773	0.768	2.361	0.564	1.777	0.726
TRP1	N/A	1.063	0.107	0.776	0.369	1.196	0.444	0.761	0.339
BALD	-0.610	-0.467	0.373	-3.329	2.840	-0.770	0.700	-3.386	2.146

Table S2: 1-hr and 8-hr relative MIR-3D and MOIR-3D reactivity metrics for May 1995.

Species	MIR	MIR-3D		MOIR-3D		MIR-3D-8hr		MOIR-3D-8hr	
		mean	stdev	mean	stdev	mean	stdev	mean	stdev
2MBT	14.450	4.343	0.712	4.539	2.705	4.290	1.227	3.483	1.307
BUTD	13.580	3.794	0.584	3.406	0.676	3.815	0.646	3.223	0.416
PRPE	11.580	3.617	0.082	3.809	0.798	3.458	0.403	3.456	0.626
ISOP	10.690	3.347	0.573	2.766	0.623	3.387	0.602	2.630	0.407
XYLM	10.610	3.268	0.531	3.026	0.918	3.215	0.510	2.900	1.091
ETHE	9.080	3.251	0.276	5.103	1.730	3.273	0.234	5.062	0.961
HCHO	8.970	5.011	0.615	6.423	3.682	4.870	1.108	5.123	2.588
ACRO	7.610	2.276	0.199	0.370	1.499	2.058	0.259	0.750	0.903
124B	7.180	2.257	0.323	1.813	0.338	2.197	0.331	1.837	0.398
CCHO	6.840	2.666	0.197	1.125	1.128	2.393	0.318	1.415	0.889
APIN	4.290	1.428	0.240	0.844	0.369	1.348	0.304	0.799	0.193
XYLP	4.250	1.316	0.123	1.264	0.172	1.314	0.092	1.238	0.193
TOLU	3.970	1.244	0.071	1.306	0.280	1.295	0.113	1.328	0.173
MCPT	2.420	0.746	0.067	0.687	0.352	0.741	0.074	0.767	0.321
ETOH	1.690	0.868	0.119	0.997	0.394	0.919	0.219	1.063	0.403
IPNT	1.670	0.588	0.073	0.833	0.189	0.601	0.094	0.913	0.303
N_C5	1.540	0.559	0.082	0.748	0.242	0.579	0.114	0.805	0.281
MEK	1.480	0.578	0.011	0.502	0.154	0.586	0.089	0.510	0.116
224P	1.440	0.508	0.067	0.853	0.194	0.522	0.084	0.895	0.179
N_C4	1.330	0.450	0.072	0.611	0.206	0.464	0.099	0.666	0.260
C2H2	1.250	0.362	0.035	0.589	0.237	0.389	0.081	0.619	0.119
BACT	0.890	0.445	0.054	0.467	0.244	0.456	0.080	0.531	0.240
C6H6	0.820	0.272	0.041	0.349	0.086	0.284	0.063	0.379	0.068
MTBE	0.780	0.396	0.063	0.694	0.172	0.407	0.074	0.757	0.222
MEOH	0.710	0.520	0.118	1.026	0.312	0.547	0.144	1.121	0.323
IPOH	0.710	0.429	0.023	0.758	0.211	0.438	0.034	0.805	0.209
DODC	0.660	0.293	0.078	0.120	0.318	0.281	0.068	0.214	0.255
ACET	0.430	0.194	0.005	0.211	0.038	0.197	0.031	0.215	0.023
C2H6	0.310	0.098	0.022	0.136	0.056	0.101	0.026	0.154	0.073
CO	0.060	0.055	0.011	0.114	0.041	0.058	0.010	0.134	0.057
CH4	0.010	0.005	0.001	0.010	0.003	0.005	0.001	0.012	0.004
RCHO	N/A	3.170	0.541	1.197	1.195	2.941	0.662	1.373	0.756
ALK3	N/A	0.481	0.077	0.758	0.213	0.508	0.110	0.850	0.308
ALK4	N/A	0.571	0.078	0.740	0.229	0.587	0.103	0.805	0.283
ALK5	N/A	0.639	0.102	0.526	0.377	0.623	0.093	0.635	0.337
ARO1	N/A	1.129	0.052	1.203	0.269	1.162	0.072	1.211	0.178
ARO2	N/A	2.544	0.441	2.230	0.428	2.583	0.355	2.200	0.554
OLE1	N/A	2.897	0.191	2.606	0.535	2.795	0.324	2.446	0.238
OLE2	N/A	2.764	0.450	1.913	0.816	2.673	0.563	1.737	0.342
TRP1	N/A	1.193	0.222	0.765	0.236	1.185	0.236	0.764	0.159
BALD	-0.610	-0.345	0.122	-2.075	1.456	-0.413	0.120	-2.020	0.819

Table S3: 1-hr and 8-hr relative MIR-3D and MOIR-3D reactivity metrics for July 2010.

Species	MIR	MIR-3D		MOIR-3D		MIR-3D-8hr		MOIR-3D-8hr	
		mean	stdev	mean	stdev	mean	stdev	mean	stdev
2MBT	14.450	4.279	1.438	2.097	2.716	3.682	1.063	2.907	2.552
BUTD	13.580	3.959	0.793	3.734	2.729	3.833	0.563	4.890	1.630
PRPE	11.580	3.720	0.746	4.071	3.157	3.577	0.484	5.413	2.312
ISOP	10.690	3.321	0.671	2.876	1.962	3.464	0.604	3.737	1.193
XYLM	10.610	3.219	0.748	1.882	1.198	2.855	0.382	2.687	0.886
ETHE	9.080	3.264	0.388	4.551	3.600	3.640	0.451	6.284	2.479
HCHO	8.970	4.423	1.424	3.791	3.043	4.046	1.117	5.700	3.346
ACRO	7.610	1.949	0.865	1.427	1.991	1.683	0.551	1.189	3.036
124B	7.180	2.203	0.444	1.295	0.821	1.989	0.230	1.787	0.518
CCHO	6.840	2.181	0.445	2.644	2.414	2.115	0.463	2.787	2.720
APIN	4.290	1.181	0.260	0.356	0.774	1.102	0.192	0.350	0.857
XYLP	4.250	1.369	0.121	0.846	0.568	1.329	0.089	1.189	0.562
TOLU	3.970	1.263	0.154	0.682	0.529	1.278	0.114	1.006	0.399
MCPT	2.420	0.814	0.115	1.040	0.721	0.885	0.117	1.360	0.338
ETOH	1.690	0.960	0.234	1.525	1.268	1.077	0.189	1.996	0.890
IPNT	1.670	0.727	0.134	1.242	1.014	0.814	0.131	1.680	0.647
N_C5	1.540	0.694	0.146	1.147	0.925	0.779	0.141	1.527	0.508
MEK	1.480	0.540	0.089	0.640	0.524	0.566	0.086	0.920	0.507
224P	1.440	0.635	0.109	1.042	0.887	0.694	0.097	1.401	0.535
N_C4	1.330	0.566	0.125	0.963	0.783	0.630	0.125	1.296	0.494
C2H2	1.250	0.409	0.069	0.462	0.345	0.409	0.050	0.662	0.197
BACT	0.890	0.525	0.103	0.776	0.589	0.581	0.105	1.062	0.366
C6H6	0.820	0.310	0.058	0.351	0.232	0.335	0.043	0.457	0.090
MTBE	0.780	0.493	0.100	0.880	0.764	0.546	0.090	1.175	0.471
MEOH	0.710	0.640	0.132	1.080	0.853	0.709	0.095	1.394	0.497
IPOH	0.710	0.516	0.084	0.932	0.836	0.566	0.088	1.225	0.552
DODC	0.660	0.296	0.091	0.057	0.343	0.318	0.041	0.041	0.451
ACET	0.430	0.173	0.027	0.215	0.170	0.180	0.021	0.302	0.139
C2H6	0.310	0.133	0.036	0.244	0.208	0.148	0.039	0.332	0.151
CO	0.060	0.071	0.019	0.153	0.141	0.084	0.018	0.192	0.080
CH4	0.010	0.007	0.002	0.014	0.012	0.008	0.001	0.018	0.008
RCHO	N/A	2.475	0.733	2.197	2.152	2.215	0.492	2.568	2.540
ALK3	N/A	0.616	0.152	1.136	0.950	0.711	0.135	1.529	0.606
ALK4	N/A	0.682	0.151	1.175	0.973	0.785	0.132	1.573	0.583
ALK5	N/A	0.678	0.123	0.645	0.448	0.739	0.084	0.875	0.264
ARO1	N/A	1.162	0.074	0.702	0.489	1.143	0.081	1.004	0.380
ARO2	N/A	2.448	0.308	1.540	0.981	2.391	0.296	2.218	0.618
OLE1	N/A	2.713	0.354	2.902	2.139	2.867	0.318	3.931	1.280
OLE2	N/A	2.448	0.508	1.434	1.465	2.456	0.561	1.721	1.315
TRP1	N/A	1.142	0.271	0.420	0.601	1.084	0.293	0.365	0.691
BALD	-0.610	-0.872	0.610	-4.913	5.918	-1.110	0.688	-7.005	5.204

Table S4: 1-hr and 8-hr relative MIR-3D and MOIR-3D reactivity metrics for May 2010.

Species	MIR	MIR-3D		MOIR-3D		MIR-3D-8hr		MOIR-3D-8hr	
		mean	stdev	mean	stdev	mean	stdev	mean	stdev
2MBT	14.450	3.650	0.798	9.030	8.697	3.875	0.851	4.093	1.774
BUTD	13.580	3.834	0.334	0.837	7.646	3.900	0.433	3.103	0.813
PRPE	11.580	3.752	0.237	12.664	16.333	3.640	0.315	4.540	0.954
ISOP	10.690	3.249	0.550	-3.941	15.086	3.362	0.414	2.149	1.168
XYLM	10.610	3.318	0.635	10.262	15.508	3.378	0.542	3.772	1.734
ETHE	9.080	3.457	0.267	39.314	72.258	3.536	0.276	8.247	4.517
HCHO	8.970	4.773	0.194	49.642	90.786	5.037	1.264	9.386	6.892
ACRO	7.610	1.926	0.388	-27.239	57.536	1.816	0.338	-1.994	4.196
124B	7.180	2.207	0.347	1.106	1.705	2.265	0.318	1.828	0.656
CCHO	6.840	2.447	0.301	-19.484	44.282	2.043	0.372	-0.688	3.840
APIN	4.290	1.167	0.103	-6.373	15.224	1.164	0.168	0.192	0.874
XYLP	4.250	1.389	0.097	2.166	2.022	1.400	0.072	1.308	0.350
TOLU	3.970	1.338	0.069	3.705	5.403	1.348	0.076	1.580	0.386
MCPT	2.420	0.718	0.065	-2.151	6.314	0.706	0.083	0.543	0.642
ETOH	1.690	0.923	0.147	-0.272	3.084	0.890	0.153	1.040	0.841
IPNT	1.670	0.633	0.111	2.534	3.153	0.604	0.078	1.080	0.657
N_C5	1.540	0.565	0.071	1.414	1.214	0.564	0.085	0.868	0.542
MEK	1.480	0.552	0.050	-0.812	2.901	0.540	0.061	0.420	0.253
224P	1.440	0.543	0.074	4.881	8.371	0.542	0.066	1.242	0.672
N_C4	1.330	0.470	0.082	1.164	0.893	0.450	0.081	0.725	0.495
C2H2	1.250	0.412	0.046	4.217	7.808	0.408	0.051	0.912	0.514
BACT	0.890	0.472	0.089	-0.682	2.675	0.440	0.074	0.437	0.430
C6H6	0.820	0.298	0.054	1.237	1.963	0.284	0.046	0.422	0.120
MTBE	0.780	0.441	0.097	4.549	8.054	0.412	0.058	1.063	0.659
MEOH	0.710	0.584	0.128	7.362	13.437	0.561	0.091	1.726	1.171
IPOH	0.710	0.461	0.041	6.076	11.088	0.468	0.029	1.278	0.815
DODC	0.660	0.263	0.087	-4.437	9.541	0.266	0.083	-0.257	0.616
ACET	0.430	0.200	0.031	0.632	0.883	0.186	0.017	0.275	0.114
C2H6	0.310	0.102	0.023	0.251	0.182	0.092	0.020	0.165	0.131
CO	0.060	0.060	0.013	0.900	1.625	0.057	0.006	0.214	0.182
CH4	0.010	0.006	0.001	0.076	0.136	0.005	0.001	0.018	0.013
RCHO	N/A	2.503	0.539	-20.055	46.047	2.483	0.380	-0.644	3.277
ALK3	N/A	0.516	0.080	3.080	4.569	0.496	0.067	1.098	0.732
ALK4	N/A	0.617	0.137	1.412	1.119	0.573	0.075	0.911	0.584
ALK5	N/A	0.633	0.136	-3.126	7.819	0.595	0.102	0.262	0.608
ARO1	N/A	1.227	0.058	3.500	5.218	1.211	0.045	1.398	0.330
ARO2	N/A	2.785	0.420	4.465	4.438	2.642	0.400	2.724	0.810
OLE1	N/A	2.945	0.290	0.373	6.989	2.822	0.302	2.589	0.425
OLE2	N/A	2.525	0.270	-7.933	21.708	2.461	0.323	1.005	1.319
TRP1	N/A	1.000	0.153	-5.354	12.795	1.065	0.110	0.269	0.712
BALD	-0.610	-0.475	0.167	-32.949	62.553	-0.466	0.174	-5.245	4.784

Table S5: 1-hr and 8-hr relative LS-RR reactivity metrics for July 1995.

	1-hr			8-hr			
	MIR	LS-RR	Error	R ²	LS-RR	Error	R ²
2MBT	14.450	2.018	0.053	0.744	2.196	0.055	0.818
BUTD	13.580	2.794	0.036	0.930	2.932	0.038	0.953
PRPE	11.580	2.545	0.038	0.899	2.634	0.044	0.923
ISOP	10.690	2.594	0.037	0.920	2.760	0.040	0.951
XYLM	10.610	2.056	0.027	0.924	2.160	0.026	0.954
ETHE	9.080	2.920	0.045	0.905	2.950	0.046	0.931
HCHO	8.970	2.435	0.056	0.793	2.662	0.068	0.840
ACRO	7.610	1.675	0.042	0.795	1.609	0.043	0.843
124B	7.180	1.533	0.016	0.947	1.607	0.016	0.969
CCHO	6.840	1.904	0.050	0.784	1.881	0.052	0.849
APIN	4.290	0.898	0.014	0.907	0.951	0.014	0.951
XYLP	4.250	1.200	0.011	0.957	1.228	0.009	0.980
TOLU	3.970	1.275	0.011	0.962	1.285	0.010	0.980
MCPT	2.420	0.987	0.009	0.972	0.962	0.009	0.979
ETOH	1.690	1.183	0.016	0.936	1.124	0.014	0.960
IPNT	1.670	0.822	0.009	0.954	0.793	0.009	0.965
N_C5	1.540	0.890	0.010	0.954	0.858	0.011	0.963
MEK	1.480	0.632	0.009	0.924	0.605	0.009	0.948
224P	1.440	0.711	0.008	0.955	0.686	0.009	0.961
N_C4	1.330	0.708	0.009	0.946	0.678	0.009	0.959
C2H2	1.250	0.412	0.004	0.966	0.392	0.004	0.979
BACT	0.890	0.672	0.008	0.955	0.646	0.008	0.965
C6H6	0.820	0.423	0.004	0.975	0.409	0.004	0.975
MTBE	0.780	0.560	0.008	0.933	0.543	0.008	0.944
MEOH	0.710	0.720	0.010	0.924	0.692	0.010	0.939
IPOH	0.710	0.473	0.009	0.885	0.469	0.009	0.909
DODC	0.660	0.491	0.007	0.941	0.497	0.007	0.953
ACET	0.430	0.191	0.002	0.946	0.182	0.002	0.962
C2H6	0.310	0.176	0.003	0.908	0.165	0.003	0.928
CO	0.060	0.082	0.002	0.833	0.080	0.002	0.864
CH4	0.010	0.008	0.000	0.891	0.008	0.000	0.901
RCHO	N/A	1.860	0.040	0.831	1.829	0.039	0.894
ALK3	N/A	0.759	0.010	0.942	0.730	0.010	0.955
ALK4	N/A	0.830	0.009	0.955	0.808	0.009	0.967
ALK5	N/A	0.898	0.009	0.965	0.893	0.010	0.972
ARO1	N/A	1.155	0.010	0.967	1.148	0.009	0.983
ARO2	N/A	1.769	0.021	0.938	1.880	0.024	0.962
OLE1	N/A	2.249	0.028	0.937	2.336	0.031	0.959
OLE2	N/A	1.801	0.030	0.892	1.913	0.030	0.943
TRP1	N/A	0.881	0.010	0.938	0.934	0.011	0.969
BALD	-0.610	0.109	0.054	0.058	0.142	0.055	0.067

Table S6: 1-hr and 8-hr relative LS-RR reactivity metrics for May 1995.

	1-hr			8-hr			
	MIR	LS-RR	Error	R ²	LS-RR	Error	R ²
2MBT	14.450	3.393	0.056	0.892	3.814	0.061	0.901
BUTD	13.580	3.295	0.024	0.978	3.386	0.022	0.984
PRPE	11.580	3.249	0.024	0.975	3.260	0.024	0.980
ISOP	10.690	2.991	0.025	0.974	3.107	0.022	0.983
XYLM	10.610	2.908	0.022	0.975	2.931	0.020	0.983
ETHE	9.080	3.615	0.035	0.967	3.523	0.037	0.969
HCHO	8.970	4.535	0.072	0.899	4.575	0.071	0.916
ACRO	7.610	1.488	0.030	0.808	1.436	0.035	0.786
124B	7.180	1.923	0.012	0.983	1.941	0.010	0.989
CCHO	6.840	1.781	0.031	0.869	1.726	0.034	0.867
APIN	4.290	1.058	0.013	0.938	1.167	0.012	0.967
XYLP	4.250	1.308	0.006	0.991	1.294	0.006	0.994
TOLU	3.970	1.386	0.006	0.992	1.369	0.006	0.994
MCPT	2.420	0.723	0.007	0.951	0.714	0.006	0.968
ETOH	1.690	0.978	0.010	0.957	0.968	0.009	0.972
IPNT	1.670	0.650	0.007	0.952	0.644	0.006	0.971
N_C5	1.540	0.634	0.007	0.944	0.624	0.006	0.968
MEK	1.480	0.554	0.005	0.969	0.545	0.004	0.978
224P	1.440	0.613	0.007	0.947	0.603	0.007	0.966
N_C4	1.330	0.506	0.006	0.946	0.500	0.005	0.969
C2H2	1.250	0.463	0.005	0.946	0.460	0.006	0.956
BACT	0.890	0.472	0.005	0.941	0.465	0.004	0.963
C6H6	0.820	0.332	0.003	0.967	0.327	0.002	0.981
MTBE	0.780	0.471	0.006	0.929	0.463	0.006	0.951
MEOH	0.710	0.696	0.011	0.915	0.689	0.011	0.931
IPOH	0.710	0.468	0.007	0.924	0.467	0.007	0.939
DODC	0.660	0.294	0.006	0.806	0.289	0.006	0.817
ACET	0.430	0.199	0.002	0.970	0.194	0.002	0.973
C2H6	0.310	0.110	0.002	0.927	0.110	0.001	0.958
CO	0.060	0.064	0.002	0.814	0.065	0.001	0.870
CH4	0.010	0.006	0.000	0.864	0.006	0.000	0.905
RCHO	N/A	1.869	0.027	0.899	1.857	0.028	0.918
ALK3	N/A	0.578	0.007	0.949	0.572	0.006	0.970
ALK4	N/A	0.627	0.006	0.960	0.619	0.005	0.978
ALK5	N/A	0.636	0.007	0.930	0.627	0.006	0.951
ARO1	N/A	1.227	0.005	0.992	1.209	0.005	0.994
ARO2	N/A	2.318	0.016	0.981	2.341	0.013	0.989
OLE1	N/A	2.508	0.016	0.984	2.516	0.014	0.988
OLE2	N/A	2.163	0.023	0.952	2.324	0.021	0.974
TRP1	N/A	0.968	0.009	0.963	1.073	0.010	0.974
BALD	-0.610	-0.266	0.031	0.266	-0.289	0.038	0.315

Table S7: 1-hr and 8-hr relative LS-RR reactivity metrics for July 2010.

	1-hr			8-hr			
	MIR	LS-RR	Error	R ²	LS-RR	Error	R ²
2MBT	14.450	2.426	0.173	0.539	2.525	0.155	0.688
BUTD	13.580	3.043	0.084	0.746	3.217	0.084	0.915
PRPE	11.580	3.016	0.092	0.767	3.141	0.093	0.897
ISOP	10.690	2.663	0.081	0.713	2.901	0.082	0.902
XYLM	10.610	2.453	0.064	0.781	2.606	0.064	0.933
ETHE	9.080	3.431	0.183	0.653	3.408	0.139	0.833
HCHO	8.970	3.279	0.159	0.711	3.657	0.167	0.783
ACRO	7.610	1.424	0.126	0.520	1.270	0.162	0.465
124B	7.180	1.712	0.038	0.813	1.808	0.038	0.949
CCHO	6.840	1.738	0.120	0.581	1.597	0.149	0.577
APIN	4.290	0.845	0.035	0.680	0.926	0.035	0.835
XYLP	4.250	1.295	0.027	0.863	1.333	0.029	0.949
TOLU	3.970	1.324	0.023	0.914	1.333	0.024	0.964
MCPT	2.420	0.920	0.020	0.827	0.900	0.023	0.939
ETOH	1.690	1.092	0.041	0.742	1.037	0.045	0.845
IPNT	1.670	0.816	0.026	0.757	0.787	0.028	0.887
N_C5	1.540	0.820	0.025	0.772	0.794	0.027	0.901
MEK	1.480	0.563	0.024	0.748	0.534	0.028	0.791
224P	1.440	0.731	0.022	0.763	0.707	0.023	0.901
N_C4	1.330	0.647	0.021	0.749	0.615	0.024	0.871
C2H2	1.250	0.426	0.010	0.822	0.407	0.012	0.922
BACT	0.890	0.604	0.018	0.813	0.581	0.020	0.899
C6H6	0.820	0.377	0.008	0.926	0.368	0.008	0.959
MTBE	0.780	0.563	0.022	0.709	0.547	0.023	0.843
MEOH	0.710	0.726	0.029	0.696	0.688	0.030	0.826
IPOH	0.710	0.536	0.028	0.632	0.534	0.028	0.760
DODC	0.660	0.406	0.015	0.804	0.416	0.017	0.872
ACET	0.430	0.182	0.007	0.746	0.172	0.008	0.831
C2H6	0.310	0.150	0.007	0.690	0.140	0.008	0.789
CO	0.060	0.082	0.006	0.535	0.080	0.006	0.671
CH4	0.010	0.008	0.000	0.667	0.007	0.000	0.768
RCHO	N/A	1.713	0.102	0.607	1.659	0.126	0.636
ALK3	N/A	0.723	0.028	0.724	0.690	0.029	0.852
ALK4	N/A	0.794	0.026	0.754	0.770	0.026	0.895
ALK5	N/A	0.814	0.020	0.856	0.814	0.021	0.939
ARO1	N/A	1.202	0.022	0.914	1.208	0.021	0.966
ARO2	N/A	2.009	0.045	0.816	2.127	0.049	0.939
OLE1	N/A	2.421	0.065	0.757	2.535	0.063	0.923
OLE2	N/A	1.790	0.072	0.662	1.919	0.069	0.847
TRP1	N/A	0.831	0.029	0.725	0.917	0.030	0.881
BALD	-0.610	-0.318	0.178	0.140	-0.304	0.185	0.158

Table S8: 1-hr and 8-hr relative LS-RR reactivity metrics for May 2010.

	1-hr			8-hr			
	MIR	LS-RR	Error	R ²	LS-RR	Error	R ²
2MBT	14.450	3.390	0.142	0.853	3.817	0.155	0.859
BUTD	13.580	3.422	0.083	0.957	3.393	0.049	0.978
PRPE	11.580	3.341	0.071	0.959	3.250	0.045	0.978
ISOP	10.690	3.071	0.097	0.947	3.141	0.055	0.975
XYLM	10.610	3.097	0.056	0.970	3.045	0.045	0.983
ETHE	9.080	3.619	0.118	0.942	3.422	0.120	0.932
HCHO	8.970	4.926	0.202	0.889	4.712	0.167	0.903
ACRO	7.610	1.433	0.101	0.747	1.478	0.103	0.715
124B	7.180	1.996	0.032	0.970	1.983	0.027	0.983
CCHO	6.840	1.802	0.128	0.782	1.751	0.126	0.747
APIN	4.290	1.029	0.034	0.940	1.155	0.032	0.958
XYLP	4.250	1.344	0.018	0.981	1.304	0.014	0.989
TOLU	3.970	1.429	0.016	0.991	1.386	0.013	0.993
MCPT	2.420	0.684	0.018	0.954	0.686	0.014	0.970
ETOH	1.690	0.844	0.029	0.904	0.907	0.022	0.955
IPNT	1.670	0.607	0.016	0.937	0.618	0.014	0.963
N_C5	1.540	0.575	0.016	0.944	0.586	0.011	0.972
MEK	1.480	0.512	0.013	0.947	0.530	0.011	0.968
224P	1.440	0.597	0.019	0.926	0.596	0.019	0.939
N_C4	1.330	0.452	0.012	0.928	0.470	0.010	0.968
C2H2	1.250	0.446	0.017	0.886	0.457	0.016	0.918
BACT	0.890	0.422	0.012	0.935	0.432	0.009	0.965
C6H6	0.820	0.319	0.007	0.965	0.320	0.006	0.979
MTBE	0.780	0.447	0.017	0.898	0.445	0.017	0.917
MEOH	0.710	0.657	0.035	0.789	0.679	0.037	0.830
IPOH	0.710	0.451	0.020	0.869	0.449	0.020	0.881
DODC	0.660	0.249	0.014	0.752	0.263	0.013	0.839
ACET	0.430	0.194	0.005	0.927	0.196	0.005	0.956
C2H6	0.310	0.094	0.003	0.880	0.101	0.003	0.949
CO	0.060	0.057	0.005	0.642	0.064	0.005	0.716
CH4	0.010	0.006	0.000	0.729	0.006	0.000	0.792
RCHO	N/A	1.776	0.093	0.844	1.813	0.095	0.839
ALK3	N/A	0.531	0.018	0.900	0.549	0.017	0.944
ALK4	N/A	0.574	0.014	0.942	0.588	0.011	0.972
ALK5	N/A	0.584	0.017	0.944	0.584	0.015	0.959
ARO1	N/A	1.250	0.019	0.986	1.218	0.011	0.994
ARO2	N/A	2.456	0.045	0.976	2.416	0.034	0.987
OLE1	N/A	2.500	0.045	0.971	2.474	0.030	0.985
OLE2	N/A	2.087	0.064	0.936	2.285	0.052	0.959
TRP1	N/A	0.934	0.024	0.955	1.054	0.029	0.957
BALD	-0.610	-0.106	0.107	0.269	-0.119	0.093	0.351

Table S9: 1-hr and 8-hr relative LS-RR reactivity metrics for July 1995 (no-intercept).

	1-hr			8-hr			
	MIR	LS-RR	Error	R ²	LS-RR	Error	R ²
2MBT	14.450	2.136	0.059	0.682	2.273	0.063	0.743
BUTD	13.580	3.140	0.045	0.866	3.232	0.047	0.911
PRPE	11.580	3.030	0.052	0.748	3.085	0.057	0.799
ISOP	10.690	2.558	0.041	0.908	2.652	0.047	0.942
XYLM	10.610	1.949	0.029	0.918	2.008	0.030	0.943
ETHE	9.080	3.940	0.081	0.600	3.956	0.086	0.637
HCHO	8.970	2.716	0.068	0.631	2.841	0.080	0.726
ACRO	7.610	1.691	0.043	0.782	1.680	0.046	0.819
124B	7.180	1.440	0.018	0.937	1.482	0.020	0.955
CCHO	6.840	2.126	0.056	0.701	2.132	0.063	0.711
APIN	4.290	0.806	0.016	0.888	0.842	0.018	0.927
XYLP	4.250	1.069	0.015	0.920	1.074	0.015	0.934
TOLU	3.970	1.042	0.019	0.869	1.037	0.021	0.882
MCPT	2.420	1.233	0.019	0.859	1.236	0.023	0.827
ETOH	1.690	1.568	0.030	0.697	1.565	0.035	0.615
IPNT	1.670	1.181	0.026	0.614	1.183	0.031	0.529
N_C5	1.540	1.220	0.025	0.723	1.222	0.030	0.655
MEK	1.480	0.776	0.014	0.794	0.776	0.016	0.748
224P	1.440	0.976	0.020	0.707	0.972	0.024	0.654
N_C4	1.330	1.000	0.022	0.658	1.002	0.026	0.562
C2H2	1.250	0.507	0.007	0.800	0.501	0.009	0.775
BACT	0.890	0.899	0.017	0.754	0.901	0.021	0.688
C6H6	0.820	0.436	0.004	0.966	0.429	0.006	0.958
MTBE	0.780	0.823	0.019	0.576	0.823	0.023	0.514
MEOH	0.710	1.011	0.022	0.634	1.000	0.025	0.589
IPOH	0.710	0.736	0.019	0.344	0.739	0.022	0.326
DODC	0.660	0.505	0.007	0.930	0.509	0.007	0.946
ACET	0.430	0.235	0.004	0.805	0.232	0.004	0.742
C2H6	0.310	0.260	0.006	0.555	0.260	0.008	0.394
CO	0.060	0.138	0.004	0.265	0.137	0.005	0.179
CH4	0.010	0.013	0.000	0.420	0.012	0.000	0.272
RCHO	N/A	2.206	0.048	0.720	2.233	0.051	0.719
ALK3	N/A	1.087	0.024	0.626	1.089	0.028	0.537
ALK4	N/A	1.140	0.023	0.702	1.145	0.027	0.645
ALK5	N/A	1.070	0.015	0.899	1.077	0.018	0.894
ARO1	N/A	1.005	0.014	0.915	0.993	0.015	0.927
ARO2	N/A	1.660	0.024	0.929	1.723	0.029	0.949
OLE1	N/A	2.636	0.042	0.808	2.699	0.045	0.844
OLE2	N/A	1.699	0.034	0.878	1.774	0.038	0.925
TRP1	N/A	0.802	0.012	0.923	0.834	0.015	0.947
BALD	-0.610	-2.320	0.165	-7.317	-2.434	0.193	-10.500

Table S10: 1-hr and 8-hr relative LS-RR reactivity metrics for May 1995 (no-intercept).

	1-hr			8-hr			
	MIR	LS-RR	Error	R ²	LS-RR	Error	R ²
2MBT	14.450	3.317	0.057	0.889	3.673	0.064	0.897
BUTD	13.580	3.179	0.027	0.973	3.272	0.026	0.980
PRPE	11.580	3.383	0.026	0.971	3.446	0.029	0.973
ISOP	10.690	2.750	0.031	0.959	2.835	0.032	0.968
XYLM	10.610	2.973	0.026	0.968	3.031	0.024	0.977
ETHE	9.080	4.554	0.080	0.812	4.552	0.090	0.801
HCHO	8.970	5.109	0.087	0.867	5.282	0.091	0.876
ACRO	7.610	0.901	0.055	0.381	0.769	0.065	0.326
124B	7.180	1.852	0.013	0.979	1.886	0.012	0.987
CCHO	6.840	1.379	0.045	0.734	1.275	0.051	0.716
APIN	4.290	0.877	0.019	0.875	0.944	0.022	0.900
XYLP	4.250	1.286	0.007	0.989	1.285	0.006	0.992
TOLU	3.970	1.413	0.009	0.980	1.398	0.008	0.983
MCPT	2.420	0.708	0.010	0.894	0.710	0.009	0.911
ETOH	1.690	1.002	0.011	0.949	1.003	0.010	0.961
IPNT	1.670	0.757	0.011	0.892	0.767	0.012	0.902
N_C5	1.540	0.705	0.010	0.911	0.710	0.010	0.923
MEK	1.480	0.530	0.005	0.964	0.521	0.005	0.974
224P	1.440	0.766	0.014	0.800	0.767	0.015	0.823
N_C4	1.330	0.565	0.008	0.914	0.570	0.008	0.927
C2H2	1.250	0.570	0.010	0.774	0.564	0.010	0.805
BACT	0.890	0.482	0.007	0.899	0.483	0.006	0.915
C6H6	0.820	0.359	0.004	0.947	0.354	0.003	0.961
MTBE	0.780	0.611	0.012	0.725	0.614	0.013	0.749
MEOH	0.710	0.942	0.021	0.592	0.933	0.022	0.644
IPOH	0.710	0.643	0.015	0.595	0.657	0.017	0.623
DODC	0.660	0.211	0.009	0.062	0.201	0.009	0.022
ACET	0.430	0.217	0.002	0.933	0.211	0.002	0.941
C2H6	0.310	0.125	0.002	0.892	0.126	0.002	0.916
CO	0.060	0.099	0.003	0.166	0.101	0.003	0.312
CH4	0.010	0.009	0.000	0.426	0.009	0.000	0.519
RCHO	N/A	1.397	0.046	0.725	1.353	0.050	0.753
ALK3	N/A	0.703	0.012	0.848	0.709	0.012	0.863
ALK4	N/A	0.703	0.009	0.924	0.710	0.010	0.930
ALK5	N/A	0.591	0.011	0.806	0.589	0.009	0.830
ARO1	N/A	1.257	0.007	0.983	1.241	0.007	0.985
ARO2	N/A	2.310	0.017	0.977	2.358	0.015	0.986
OLE1	N/A	2.454	0.018	0.979	2.492	0.016	0.984
OLE2	N/A	1.859	0.033	0.910	1.961	0.037	0.928
TRP1	N/A	0.813	0.015	0.902	0.876	0.019	0.910
BALD	-0.610	-1.215	0.078	-5.001	-1.379	0.094	-5.402

Table S11: 1-hr and 8-hr relative LS-RR reactivity metrics for July 2010 (no-intercept).

	1-hr				8-hr		
	MIR	LS-RR	Error	R ²	LS-RR	Error	R ²
2MBT	14.450	2.636	0.183	0.590	2.946	0.185	0.564
BUTD	13.580	3.488	0.105	0.809	3.769	0.120	0.814
PRPE	11.580	3.771	0.138	0.719	4.068	0.161	0.678
ISOP	10.690	2.593	0.083	0.854	2.800	0.087	0.890
XYLM	10.610	2.485	0.065	0.896	2.664	0.066	0.926
ETHE	9.080	4.986	0.284	0.414	5.275	0.293	0.221
HCHO	8.970	3.899	0.184	0.661	4.454	0.217	0.621
ACRO	7.610	1.204	0.139	0.462	1.086	0.173	0.381
124B	7.180	1.675	0.041	0.918	1.775	0.040	0.944
CCHO	6.840	1.874	0.131	0.562	1.869	0.161	0.491
APIN	4.290	0.649	0.043	0.697	0.715	0.046	0.751
XYLP	4.250	1.218	0.032	0.924	1.225	0.035	0.927
TOLU	3.970	1.163	0.034	0.916	1.130	0.040	0.902
MCPT	2.420	1.147	0.037	0.791	1.176	0.044	0.745
ETOH	1.690	1.499	0.071	0.387	1.564	0.084	0.321
IPNT	1.670	1.226	0.061	0.284	1.289	0.074	0.026
N_C5	1.540	1.157	0.052	0.503	1.208	0.063	0.324
MEK	1.480	0.697	0.032	0.610	0.716	0.038	0.559
224P	1.440	1.053	0.049	0.449	1.092	0.058	0.243
N_C4	1.330	0.956	0.047	0.307	1.000	0.058	0.092
C2H2	1.250	0.559	0.022	0.610	0.577	0.027	0.412
BACT	0.890	0.821	0.034	0.569	0.855	0.042	0.439
C6H6	0.820	0.411	0.010	0.915	0.405	0.010	0.921
MTBE	0.780	0.873	0.048	0.204	0.924	0.057	-0.117
MEOH	0.710	1.094	0.059	0.144	1.145	0.070	-0.158
IPOH	0.710	0.885	0.055	0.010	0.957	0.064	-0.272
DODC	0.660	0.317	0.019	0.776	0.302	0.023	0.760
ACET	0.430	0.233	0.010	0.556	0.239	0.012	0.491
C2H6	0.310	0.236	0.014	-0.090	0.249	0.017	-0.222
CO	0.060	0.147	0.010	-0.276	0.159	0.012	-0.500
CH4	0.010	0.013	0.001	-0.449	0.014	0.001	-0.817
RCHO	N/A	1.935	0.115	0.587	2.022	0.143	0.496
ALK3	N/A	1.097	0.058	0.198	1.153	0.070	-0.029
ALK4	N/A	1.130	0.053	0.459	1.186	0.063	0.299
ALK5	N/A	0.911	0.025	0.893	0.929	0.027	0.891
ARO1	N/A	1.114	0.028	0.935	1.091	0.030	0.935
ARO2	N/A	1.987	0.046	0.921	2.123	0.050	0.934
OLE1	N/A	2.888	0.093	0.802	3.124	0.107	0.779
OLE2	N/A	1.580	0.079	0.768	1.713	0.077	0.824
TRP1	N/A	0.650	0.037	0.741	0.713	0.041	0.796
BALD	-0.610	-3.378	0.447	-6.683	-4.145	0.553	-6.044

Table S12: 1-hr and 8-hr relative LS-RR reactivity metrics for May 2010 (no-intercept).

	1-hr				8-hr		
	MIR	LS-RR	Error	R ²	LS-RR	Error	R ²
2MBT	14.450	3.307	0.146	0.846	4.073	0.162	0.849
BUTD	13.580	3.429	0.089	0.952	3.475	0.061	0.973
PRPE	11.580	3.912	0.132	0.902	4.004	0.134	0.876
ISOP	10.690	2.758	0.116	0.928	2.798	0.085	0.954
XYLM	10.610	3.192	0.070	0.962	3.314	0.075	0.969
ETHE	9.080	5.739	0.402	0.366	5.806	0.400	0.190
HCHO	8.970	6.249	0.348	0.763	6.646	0.379	0.654
ACRO	7.610	0.096	0.301	-1.366	-0.153	0.317	-1.618
124B	7.180	1.874	0.038	0.962	1.914	0.028	0.979
CCHO	6.840	0.949	0.239	0.333	0.732	0.236	0.201
APIN	4.290	0.682	0.082	0.679	0.781	0.075	0.785
XYLP	4.250	1.307	0.024	0.970	1.284	0.019	0.979
TOLU	3.970	1.433	0.025	0.979	1.403	0.025	0.977
MCPT	2.420	0.685	0.025	0.903	0.677	0.022	0.903
ETOH	1.690	1.003	0.036	0.823	1.058	0.032	0.893
IPNT	1.670	0.891	0.049	0.557	0.916	0.047	0.619
N_C5	1.540	0.766	0.036	0.722	0.779	0.031	0.797
MEK	1.480	0.462	0.019	0.914	0.471	0.016	0.943
224P	1.440	0.950	0.063	0.360	0.964	0.059	0.410
N_C4	1.330	0.617	0.030	0.682	0.639	0.027	0.763
C2H2	1.250	0.673	0.042	0.488	0.694	0.040	0.529
BACT	0.890	0.473	0.016	0.868	0.477	0.014	0.895
C6H6	0.820	0.375	0.014	0.884	0.362	0.010	0.932
MTBE	0.780	0.777	0.059	0.001	0.789	0.055	0.100
MEOH	0.710	1.234	0.098	-0.222	1.264	0.093	-0.060
IPOH	0.710	0.877	0.077	-0.546	0.908	0.074	-0.519
DODC	0.660	0.079	0.039	-1.268	0.046	0.042	-1.830
ACET	0.430	0.232	0.007	0.861	0.235	0.007	0.900
C2H6	0.310	0.136	0.007	0.544	0.143	0.007	0.680
CO	0.060	0.146	0.015	-1.450	0.153	0.014	-1.103
CH4	0.010	0.012	0.001	-0.570	0.013	0.001	-0.368
RCHO	N/A	0.840	0.232	0.099	0.764	0.224	0.187
ALK3	N/A	0.850	0.055	0.309	0.877	0.052	0.430
ALK4	N/A	0.786	0.037	0.688	0.810	0.035	0.747
ALK5	N/A	0.512	0.028	0.829	0.491	0.029	0.769
ARO1	N/A	1.285	0.030	0.971	1.252	0.022	0.980
ARO2	N/A	2.423	0.048	0.972	2.494	0.043	0.981
OLE1	N/A	2.628	0.052	0.961	2.667	0.046	0.964
OLE2	N/A	1.577	0.125	0.803	1.755	0.108	0.874
TRP1	N/A	0.660	0.065	0.743	0.735	0.066	0.806
BALD	-0.610	-2.477	0.419	-8.892	-2.920	0.448	-14.242