

## THE TABLE OF $E-M$ IN KEPLER'S EQUATION

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### Introduction

To solve the Kepler's equation

$$E - e \cdot \sin E = M,$$

various methods have been developed. Among them, the most popular was the one using Åstrand's Table (*Hilfstafeln zur leichten und genauen Auflösung des Kepler'schen Problems, Leipzig, 1890*). To make up for the scarcity of available copies it was highly desired to prepare a new edition of the table. A computation of the three decimal place solution of the equation was carried out on the electronic computer TOSBAC-3400 at the International Latitude Observatory of Mizusawa.

The format of this table differs from Åstrand's Table in the following points: the arguments of abscissa are for every degree of mean anomaly  $M$ ; the arguments of ordinate are every hundredth of eccentricity  $e$ ; and the table values are the difference between the eccentric anomaly  $E$  and the mean anomaly  $M$  measured in degrees. For the mean anomaly from  $180^\circ$  to  $360^\circ$ , the negative sense should be given to the values of  $(E-M)$ .

For a precise solution by Newton's successive approximation method

$$E_{i+1} = M + 57.29578 \cdot e \cdot \sin E_i,$$
$$E_{i+2} = E_i + (E_{i+1} - E_i) \cdot (dE/dM),$$

derivatives  $(dE/dM) = 1/(1 - e \cdot \cos E)$  for the extreme values of mean anomalies on each page are also tabulated. In this procedure the first approximate values of  $E = M + (E - M)$  and  $(dE/dM)$  may be found from the table by the suitable interpolation.

An example of computation is given at the end of the table.



TABLE OF KEPLER'S EQUATION

e	M	0	1	2	3	4	5	E - M	6	7	8	9	10	M	H	e	M = 0	H = 10	DE/DM
0.50	0.000	1.000	1.997	2.989	3.974	4.950	5.914	6.865	7.800	8.719	9.619	10.500	11.361	12.200	13.000	13.761	14.481	15.150	15.769
0.51	0.000	1.040	2.078	3.110	4.135	5.149	6.150	7.137	8.100	9.038	9.950	10.838	11.700	12.530	13.320	14.070	14.770	15.420	16.020
0.52	0.000	1.083	2.163	3.237	4.302	5.356	6.395	7.419	8.424	9.409	10.371	11.310	12.210	13.070	13.890	14.660	15.380	16.050	16.670
0.53	0.000	1.127	2.251	3.368	4.476	5.571	6.650	7.712	8.753	9.772	10.770	11.740	12.680	13.580	14.440	15.260	16.030	16.750	17.410
0.54	0.000	1.173	2.343	3.505	4.657	5.791	6.905	8.012	9.095	10.149	11.177	12.170	13.130	14.050	14.920	15.740	16.510	17.230	17.890
0.55	0.000	1.222	2.439	3.648	4.846	6.028	7.191	8.333	9.458	10.549	11.601	12.610	13.580	14.500	15.370	16.190	16.960	17.680	18.340
0.56	0.000	1.272	2.539	3.798	5.043	6.214	7.479	8.662	9.818	10.945	12.041	13.100	14.120	15.090	16.010	16.880	17.700	18.470	19.190
0.57	0.000	1.325	2.644	3.954	5.249	6.525	7.778	8.962	10.201	11.395	12.540	13.640	14.690	15.690	16.640	17.540	18.390	19.190	19.940
0.58	0.000	1.380	2.754	4.118	5.444	6.790	8.090	9.364	10.701	11.895	13.040	14.140	15.190	16.190	17.140	18.040	18.890	19.690	20.440
0.59	0.000	1.438	2.870	4.289	5.690	7.070	8.416	9.720	11.101	12.295	13.390	14.440	15.440	16.390	17.290	18.140	18.940	19.690	20.390
0.60	0.000	1.499	2.991	4.468	5.926	7.357	8.756	10.120	11.461	12.655	13.750	14.800	15.800	16.750	17.650	18.500	19.300	20.050	20.750
0.61	0.000	1.563	3.116	4.657	6.173	7.660	9.112	10.523	11.904	13.099	14.194	15.194	16.144	17.044	17.894	18.694	19.444	20.144	20.794
0.62	0.000	1.630	3.235	4.857	6.432	8.032	9.485	10.945	12.328	13.523	14.523	15.423	16.273	17.073	17.823	18.573	19.273	19.923	20.523
0.63	0.000	1.699	3.352	5.063	6.705	8.310	9.812	11.284	12.584	13.679	14.679	15.579	16.379	17.129	17.829	18.479	19.079	19.629	20.129
0.64	0.000	1.770	3.476	5.282	7.026	8.666	10.279	11.844	13.024	14.019	14.919	15.719	16.419	17.019	17.619	18.169	18.669	19.119	19.519
0.65	0.000	1.845	3.607	5.513	7.293	9.026	10.705	12.324	13.274	14.169	15.019	15.819	16.569	17.269	17.919	18.519	19.069	19.569	20.019
0.66	0.000	1.925	3.745	5.757	7.611	9.412	11.152	12.825	13.775	14.620	15.420	16.170	16.870	17.520	18.120	18.670	19.170	19.620	20.020
0.67	0.000	2.009	3.890	6.016	7.946	9.817	11.621	13.397	14.347	15.192	16.042	16.792	17.492	18.142	18.742	19.292	19.792	20.242	20.642
0.68	0.000	2.097	4.038	6.289	8.300	10.244	12.112	14.028	14.978	15.823	16.573	17.273	17.923	18.523	19.073	19.573	20.023	20.423	20.823
0.69	0.000	2.189	4.187	6.578	8.674	10.694	12.628	14.470	15.420	16.265	17.015	17.715	18.365	18.965	19.515	20.015	20.465	20.865	21.265
0.70	0.000	2.285	4.329	6.886	9.070	11.168	13.170	15.069	16.011	16.856	17.606	18.306	18.956	19.556	20.106	20.606	21.056	21.456	21.856
0.71	0.000	2.384	4.467	7.213	9.489	11.668	13.739	15.696	16.638	17.483	18.233	18.933	19.583	20.183	20.733	21.233	21.683	22.083	22.483
0.72	0.000	2.486	4.607	7.561	9.934	12.186	14.337	16.351	17.293	18.038	18.788	19.488	20.138	20.738	21.288	21.788	22.238	22.638	23.038
0.73	0.000	2.591	4.751	7.932	10.406	12.734	14.966	17.036	18.072	18.817	19.567	20.267	20.917	21.517	22.067	22.567	23.017	23.417	23.817
0.74	0.000	2.699	4.900	8.329	10.908	13.313	15.626	17.752	18.788	19.533	20.233	20.883	21.483	22.033	22.533	23.033	23.483	23.883	24.283
0.75	0.000	2.810	5.054	8.753	11.441	13.937	16.319	18.500	19.636	20.381	21.081	21.731	22.331	22.881	23.381	23.881	24.331	24.731	25.131
0.76	0.000	2.924	5.214	9.208	12.010	14.605	17.048	19.279	20.415	21.160	21.860	22.510	23.110	23.660	24.160	24.660	25.110	25.510	25.910
0.77	0.000	3.041	5.380	9.686	12.615	15.322	17.812	20.092	21.229	22.074	22.774	23.424	24.024	24.574	25.074	25.574	26.024	26.424	26.824
0.78	0.000	3.161	5.552	10.187	13.260	16.098	18.613	20.939	22.066	22.911	23.611	24.261	24.861	25.411	25.911	26.411	26.911	27.361	27.761
0.79	0.000	3.284	5.729	10.767	13.949	16.956	19.453	21.819	22.956	23.801	24.501	25.151	25.751	26.301	26.801	27.301	27.751	28.151	28.551
0.80	0.000	3.410	5.911	11.357	14.683	17.877	20.331	22.733	23.870	24.715	25.415	26.065	26.665	27.215	27.715	28.215	28.715	29.165	29.565
0.81	0.000	3.538	6.098	12.054	15.465	18.862	21.249	23.681	24.818	25.663	26.363	27.013	27.613	28.163	28.663	29.163	29.663	30.113	30.513
0.82	0.000	3.669	6.291	12.764	16.300	19.934	22.206	24.660	25.807	26.650	27.350	28.000	28.550	29.050	29.550	30.050	30.550	31.000	31.400
0.83	0.000	3.803	6.489	13.532	17.188	21.088	23.201	25.671	26.818	27.661	28.361	29.011	29.561	30.061	30.561	31.061	31.511	31.911	32.311
0.84	0.000	3.940	6.692	14.362	18.132	22.398	24.235	26.713	27.862	28.705	29.405	30.055	30.605	31.105	31.605	32.105	32.555	32.955	33.355
0.85	0.000	4.080	6.900	15.258	19.134	23.840	25.305	27.927	29.010	29.853	30.553	31.203	31.753	32.253	32.753	33.203	33.653	34.053	34.453
0.86	0.000	4.223	7.114	16.225	20.194	25.458	26.409	28.877	29.950	30.793	31.493	32.143	32.693	33.193	33.693	34.143	34.593	35.043	35.443
0.87	0.000	4.369	7.333	17.266	21.312	26.689	27.546	29.936	30.880	31.723	32.423	33.073	33.573	34.073	34.573	35.023	35.473	35.873	36.273
0.88	0.000	4.518	7.566	18.384	22.488	28.051	28.712	31.136	31.836	32.536	33.186	33.686	34.186	34.686	35.136	35.586	36.036	36.436	36.836
0.89	0.000	4.670	7.813	19.580	23.718	29.291	29.904	32.394	33.094	33.794	34.394	34.894	35.394	35.894	36.344	36.794	37.194	37.594	37.994
0.90	0.000	4.825	8.074	20.954	25.000	30.627	31.118	33.467	34.267	34.967	35.567	36.067	36.567	37.017	37.467	37.867	38.267	38.667	39.067
0.91	0.000	4.983	8.349	22.419	26.326	32.027	32.352	34.652	35.452	36.152	36.752	37.252	37.752	38.202	38.652	39.052	39.452	39.852	40.252
0.92	0.000	5.144	8.637	23.989	27.699	33.095	33.600	35.845	36.645	37.345	37.945	38.445	38.945	39.395	39.795	40.195	40.595	40.995	41.395
0.93	0.000	5.308	8.938	25.668	29.122	34.232	34.859	37.045	37.845	38.545	39.145	39.645	40.145	40.595	40.995	41.395	41.795	42.195	42.595
0.94	0.000	5.475	9.252	27.457	30.605	35.433	36.126	38.248	39.048	39.748	40.348	40.848	41.348	41.798	42.198	42.598	42.998	43.398	43.798
0.95	0.000	5.645	9.580	29.369	32.144	36.680	37.396	39.450	40.250	40.950	41.550	42.050	42.550	43.000	43.400	43.800	44.200	44.600	45.000
0.96	0.000	5.818	9.923	31.418	33.743	38.000	38.667	40.651	41.451	42.151	42.751	43.251	43.751	44.201	44.601	45.001	45.401	45.801	46.201
0.97	0.000	6.094	10.291	33.619	35.418	39.454	39.935	41.847	42.647	43.347	43.947	44.447	44.947	45.397	45.797	46.197	46.597	47.047	47.447
0.98	0.000	6.374	10.694	35.988	37.273	41.068	40.935	42.936	43.736	44.436	45.036	45.536	46.036	46.486	46.886	47.286	47.686	48.086	48.486
0.99	0.000	6.658	11.133	38.539	39.312	42.880	41.977	43.926	44.726	45.426	46.026	46.526	47.026	47.476	47.876	48.276	48.676	49.076	49.476
1.00	0.000	6.947	11.607	41.280	41.635	44.980	42.980	44.8											

	E - M													DE/DM		
	10	11	12	13	14	15	16	17	18	19	20	H	M	10	M=20	
c	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	
	0.01	0.100	0.120	0.130	0.140	0.150	0.159	0.169	0.179	0.189	0.199	0.209	0.219	1.000	1.000	
	0.02	0.200	0.240	0.263	0.283	0.302	0.322	0.342	0.361	0.380	0.399	0.419	0.439	1.000	1.000	
	0.03	0.300	0.368	0.398	0.428	0.458	0.488	0.517	0.547	0.576	0.605	0.635	0.665	1.000	1.000	
	0.04	0.400	0.496	0.566	0.637	0.708	0.779	0.850	0.921	0.992	1.063	1.134	1.205	1.000	1.000	
	0.05	0.500	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	1.000	1.000	
	0.06	0.600	0.750	0.900	1.050	1.200	1.350	1.500	1.650	1.800	1.950	2.100	2.250	1.000	1.000	
	0.07	0.700	0.875	1.050	1.225	1.400	1.575	1.750	1.925	2.100	2.275	2.450	2.625	1.000	1.000	
	0.08	0.800	0.990	1.180	1.370	1.560	1.750	1.940	2.130	2.320	2.510	2.700	2.890	1.000	1.000	
	0.09	0.900	1.095	1.290	1.485	1.680	1.875	2.070	2.265	2.460	2.655	2.850	3.045	1.000	1.000	
	0.10	1.000	1.200	1.400	1.600	1.800	2.000	2.200	2.400	2.600	2.800	3.000	3.200	1.000	1.000	
	0.11	1.227	1.348	1.468	1.587	1.706	1.824	1.941	2.058	2.175	2.292	2.409	2.526	1.000	1.000	
	0.12	1.454	1.487	1.519	1.551	1.581	1.611	1.641	1.671	1.701	1.731	1.761	1.791	1.000	1.000	
	0.13	1.485	1.628	1.773	1.918	2.061	2.205	2.348	2.491	2.634	2.777	2.920	3.063	1.000	1.000	
	0.14	1.415	1.714	1.931	2.148	2.365	2.582	2.799	3.016	3.233	3.450	3.667	3.884	1.000	1.000	
	0.15	1.750	1.922	2.093	2.262	2.431	2.598	2.765	2.932	3.100	3.267	3.434	3.601	1.000	1.000	
	0.16	1.800	2.074	2.258	2.441	2.622	2.803	2.982	3.159	3.335	3.510	3.686	3.861	1.000	1.000	
	0.17	2.030	2.299	2.427	2.623	2.818	3.012	3.204	3.394	3.583	3.770	3.955	4.140	1.000	1.000	
	0.18	2.275	2.368	2.490	2.610	2.728	2.844	2.958	3.071	3.183	3.294	3.404	3.514	1.000	1.000	
	0.19	2.520	2.551	2.677	2.800	2.923	3.044	3.163	3.280	3.396	3.511	3.626	3.740	1.000	1.000	
	0.20	2.765	2.717	2.898	3.196	3.493	3.668	3.843	4.017	4.190	4.363	4.535	4.708	1.000	1.000	
	0.21	2.851	3.063	3.375	3.687	3.997	4.306	4.614	4.921	5.228	5.535	5.841	6.147	1.000	1.000	
	0.22	2.991	3.063	3.333	3.601	3.867	4.131	4.392	4.651	4.909	5.166	5.422	5.678	1.000	1.000	
	0.23	2.954	3.242	3.528	3.811	4.092	4.371	4.647	4.919	5.189	5.456	5.721	5.985	1.000	1.000	
	0.24	3.122	3.426	3.727	4.026	4.323	4.617	4.907	5.194	5.478	5.759	6.036	6.311	1.000	1.000	
	0.25	3.294	3.614	3.932	4.247	4.559	4.868	5.174	5.476	5.775	6.069	6.356	6.641	1.000	1.000	
	0.26	3.470	3.807	4.141	4.473	4.801	5.126	5.447	5.764	6.078	6.387	6.691	7.001	1.000	1.000	
	0.27	3.651	4.005	4.357	4.705	5.049	5.390	5.727	6.059	6.388	6.711	7.031	7.356	1.000	1.000	
	0.28	3.837	4.209	4.577	4.942	5.303	5.660	6.013	6.361	6.705	7.044	7.377	7.712	1.000	1.000	
	0.29	4.027	4.417	4.803	5.186	5.564	5.938	6.307	6.671	7.030	7.384	7.732	8.081	1.000	1.000	
	0.30	4.223	4.631	5.036	5.436	5.831	6.222	6.608	6.988	7.363	7.732	8.095	8.466	1.000	1.000	
	0.31	4.425	4.852	5.274	5.692	6.106	6.514	6.916	7.313	7.703	8.088	8.466	8.846	1.000	1.000	
	0.32	4.631	5.078	5.519	5.956	6.387	6.813	7.232	7.646	8.052	8.453	8.846	9.234	1.000	1.000	
	0.33	4.844	5.310	5.771	6.226	6.676	7.119	7.556	7.987	8.410	8.826	9.234	9.632	1.000	1.000	
	0.34	5.062	5.549	6.029	6.504	6.972	7.434	7.889	8.336	8.776	9.208	9.632	10.056	1.000	1.000	
	0.35	5.287	5.784	6.295	6.789	7.277	7.757	8.230	8.695	9.151	9.599	10.038	10.476	1.000	1.000	
	0.36	5.519	6.047	6.568	7.083	7.590	8.089	8.580	9.062	9.536	10.000	10.455	10.903	1.000	1.000	
	0.37	5.757	6.306	6.849	7.384	7.911	8.429	8.939	9.439	9.929	10.410	10.881	11.353	1.000	1.000	
	0.38	6.002	6.574	7.138	7.694	8.241	8.779	9.307	9.825	10.333	10.830	11.317	11.801	1.000	1.000	
	0.39	6.255	6.849	7.435	8.012	8.580	9.138	9.685	10.221	10.747	11.261	11.762	12.259	1.000	1.000	
	0.40	6.515	7.133	7.741	8.340	8.929	9.506	10.073	10.628	11.171	11.701	12.219	12.734	1.000	1.000	
	0.41	6.783	7.425	8.056	8.677	9.287	9.885	10.471	11.045	11.605	12.152	12.686	13.216	1.000	1.000	
	0.42	7.060	7.725	8.380	9.024	9.655	10.274	10.880	11.472	12.050	12.615	13.164	13.708	1.000	1.000	
	0.43	7.349	8.036	8.714	9.381	10.034	10.674	11.300	11.911	12.507	13.088	13.653	14.213	1.000	1.000	
	0.44	7.659	8.355	9.059	9.748	10.424	11.085	11.731	12.361	12.976	13.572	14.153	14.729	1.000	1.000	
	0.45	7.943	8.685	9.413	10.127	10.825	11.507	12.173	12.822	13.454	14.068	14.668	15.253	1.000	1.000	
	0.46	8.257	9.025	9.779	10.516	11.237	11.941	12.628	13.296	13.945	14.576	15.188	15.783	1.000	1.000	
	0.47	8.561	9.356	10.156	10.916	11.652	12.368	13.074	13.761	14.439	15.106	15.763	16.411	1.000	1.000	
	0.48	8.913	9.754	10.544	11.331	12.099	12.848	13.578	14.279	14.964	15.636	16.293	16.936	1.000	1.000	
	0.49	9.251	10.145	10.945	11.757	12.548	13.318	14.065	14.790	15.495	16.172	16.829	17.476	1.000	1.000	
	0.50	9.619	10.499	11.358	12.196	13.011	13.802	14.570	15.314	16.034	16.759	17.400	18.031	1.000	1.000	

M=340

M=350

M

340

342

343

344

345

346

347

348

349

M

350

M

340

M=340

TABLE OF KEPLER'S EQUATION

e	E = M																			M	DE/DM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	H	10	11	12	13	14	15	16	17	18	19	20	M	M	10	20	H=20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
0.50	9.619	10.459	11.358	12.196	13.011	13.802	14.570	15.314	16.034	16.729	17.400	18.050	1.859	1.890	1.920	1.951	1.982	2.014	2.047	2.079	2.113	2.146	2.179	2.211	2.244	2.276	2.308	2.340	2.371	2.402	2.433	2.464	2.495	2.526	2.557	2.588	2.619	2.650	2.681	2.712	2.743	2.774	2.805	2.836	2.867	2.898	2.929	2.960	2.991	3.022	3.053	3.084	3.115	3.146	3.177	3.208	3.239	3.270	3.301	3.332	3.363	3.394	3.425	3.456	3.487	3.518	3.549	3.580	3.611	3.642	3.673	3.704	3.735	3.766	3.797	3.828	3.859	3.890	3.921	3.952	3.983	4.014	4.045	4.076	4.107	4.138	4.169	4.200	4.231	4.262	4.293	4.324	4.355	4.386	4.417	4.448	4.479	4.510	4.541	4.572	4.603	4.634	4.665	4.696	4.727	4.758	4.789	4.820	4.851	4.882	4.913	4.944	4.975	5.006	5.037	5.068	5.099	5.130	5.161	5.192	5.223	5.254	5.285	5.316	5.347	5.378	5.409	5.440	5.471	5.502	5.533	5.564	5.595	5.626	5.657	5.688	5.719	5.750	5.781	5.812	5.843	5.874	5.905	5.936	5.967	5.998	6.029	6.060	6.091	6.122	6.153	6.184	6.215	6.246	6.277	6.308	6.339	6.370	6.401	6.432	6.463	6.494	6.525	6.556	6.587	6.618	6.649	6.680	6.711	6.742	6.773	6.804	6.835	6.866	6.897	6.928	6.959	6.990	7.021	7.052	7.083	7.114	7.145	7.176	7.207	7.238	7.269	7.300	7.331	7.362	7.393	7.424	7.455	7.486	7.517	7.548	7.579	7.610	7.641	7.672	7.703	7.734	7.765	7.796	7.827	7.858	7.889	7.920	7.951	7.982	8.013	8.044	8.075	8.106	8.137	8.168	8.199	8.230	8.261	8.292	8.323	8.354	8.385	8.416	8.447	8.478	8.509	8.540	8.571	8.602	8.633	8.664	8.695	8.726	8.757	8.788	8.819	8.850	8.881	8.912	8.943	8.974	9.005	9.036	9.067	9.098	9.129	9.160	9.191	9.222	9.253	9.284	9.315	9.346	9.377	9.408	9.439	9.470	9.501	9.532	9.563	9.594	9.625	9.656	9.687	9.718	9.749	9.780	9.811	9.842	9.873	9.904	9.935	9.966	9.997	10.028	10.059	10.090	10.121	10.152	10.183	10.214	10.245	10.276	10.307	10.338	10.369	10.400	10.431	10.462	10.493	10.524	10.555	10.586	10.617	10.648	10.679	10.710	10.741	10.772	10.803	10.834	10.865	10.896	10.927	10.958	10.989	11.020	11.051	11.082	11.113	11.144	11.175	11.206	11.237	11.268	11.299	11.330	11.361	11.392	11.423	11.454	11.485	11.516	11.547	11.578	11.609	11.640	11.671	11.702	11.733	11.764	11.795	11.826	11.857	11.888	11.919	11.950	11.981	12.012	12.043	12.074	12.105	12.136	12.167	12.198	12.229	12.260	12.291	12.322	12.353	12.384	12.415	12.446	12.477	12.508	12.539	12.570	12.601	12.632	12.663	12.694	12.725	12.756	12.787	12.818	12.849	12.880	12.911	12.942	12.973	13.004	13.035	13.066	13.097	13.128	13.159	13.190	13.221	13.252	13.283	13.314	13.345	13.376	13.407	13.438	13.469	13.500	13.531	13.562	13.593	13.624	13.655	13.686	13.717	13.748	13.779	13.810	13.841	13.872	13.903	13.934	13.965	13.996	14.027	14.058	14.089	14.120	14.151	14.182	14.213	14.244	14.275	14.306	14.337	14.368	14.399	14.430	14.461	14.492	14.523	14.554	14.585	14.616	14.647	14.678	14.709	14.740	14.771	14.802	14.833	14.864	14.895	14.926	14.957	14.988	15.019	15.050	15.081	15.112	15.143	15.174	15.205	15.236	15.267	15.298	15.329	15.360	15.391	15.422	15.453	15.484	15.515	15.546	15.577	15.608	15.639	15.670	15.701	15.732	15.763	15.794	15.825	15.856	15.887	15.918	15.949	15.980	16.011	16.042	16.073	16.104	16.135	16.166	16.197	16.228	16.259	16.290	16.321	16.352	16.383	16.414	16.445	16.476	16.507	16.538	16.569	16.600	16.631	16.662	16.693	16.724	16.755	16.786	16.817	16.848	16.879	16.910	16.941	16.972	17.003	17.034	17.065	17.096	17.127	17.158	17.189	17.220	17.251	17.282	17.313	17.344	17.375	17.406	17.437	17.468	17.499	17.530	17.561	17.592	17.623	17.654	17.685	17.716	17.747	17.778	17.809	17.840	17.871	17.902	17.933	17.964	17.995	18.026	18.057	18.088	18.119	18.150	18.181	18.212	18.243	18.274	18.305	18.336	18.367	18.398	18.429	18.460	18.491	18.522	18.553	18.584	18.615	18.646	18.677	18.708	18.739	18.770	18.801	18.832	18.863	18.894	18.925	18.956	18.987	19.018	19.049	19.080	19.111	19.142	19.173	19.204	19.235	19.266	19.297	19.328	19.359	19.390	19.421	19.452	19.483	19.514	19.545	19.576	19.607	19.638	19.669	19.700	19.731	19.762	19.793	19.824	19.855	19.886	19.917	19.948	19.979	20.010	20.041	20.072	20.103	20.134	20.165	20.196	20.227	20.258	20.289	20.320	20.351	20.382	20.413	20.444	20.475	20.506	20.537	20.568	20.599	20.630	20.661	20.692	20.723	20.754	20.785	20.816	20.847	20.878	20.909	20.940	20.971	21.002	21.033	21.064	21.095	21.126	21.157	21.188	21.219	21.250	21.281	21.312	21.343	21.374	21.405	21.436	21.467	21.498	21.529	21.560	21.591	21.622	21.653	21.684	21.715	21.746	21.777	21.808	21.839	21.870	21.901	21.932	21.963	21.994	22.025	22.056	22.087	22.118	22.149	22.180	22.211	22.242	22.273	22.304	22.335	22.366	22.397	22.428	22.459	22.490	22.521	22.552	22.583	22.614	22.645	22.676	22.707	22.738	22.769	22.800	22.831	22.862	22.893	22.924	22.955	22.986	23.017	23.048	23.079	23.110	23.141	23.172	23.203	23.234	23.265	23.296	23.327	23.358	23.389	23.420	23.451	23.482	23.513	23.544	23.575	23.606	23.637	23.668	23.699	23.730	23.761	23.792	23.823	23.854	23.885	23.916	23.947	23.978	24.009	24.040	24.071	24.102	24.133	24.164	24.195	24.226	24.257	24.288	24.319	24.350	24.381	24.412	24.443	24.474	24.505	24.536	24.567	24.598	24.629	24.660	24.691	24.722	24.753	24.784	24.815	24.846	24.877	24.908	24.939	24.970	25.001	25.032	25.063	25.094	25.125	25.156	25.187	25.218	25.249	25.280	25.311	25.342	25.373	25.404	25.435	25.466	25.497	25.528	25.559	25.590	25.621	25.652	25.683	25.714	25.745	25.776	25.807	25.838	25.869	25.900	25.931	25.962	25.993	26.024	26.055	26.086	26.117	26.148	26.179	26.210	26.241	26.272	26.303	26.334	26.365	26.396	26.427	26.458	26.489	26.520	26.551	26.582	26.613	26.644	26.675	26.706	26.737	26.768	26.799	26.830	26.861	26.892	26.923	26.954	26.985	27.016	27.047	27.078	27.109	27.140	27.171	27.202	27.233	27.264	27.295	27.326	27.357	27.388	27.419	27.450	27.481	27.512	27.543	27.574	27.605	27.636	27.667	27.698	27.729	27.760	27.791	27.822	27.853	27.884	27.915	27.946	27.977	28.008	28.039	28.070	28.101	28.132	28.163	28.194	28.225	28.256	28.287	28.318	28.349	28.380	28.411	28.442	28.473	28.504	28.535	28.566	28.597	28.628	28.659	28.690	28.721	28.752	28.783	28.814	28.845	28.876	28.907	28.938	28.969	29.000	29.031	29.062	29.093	29.124	29.155	29.186	29.217	29.248	29.279	29.310	29.341	29.372	29.403	29.434	29.465	29.496	29.527	29.558	29.589	29.620	29.651	29.682	29.713	29.744	29.775	29.806	29.837	29.868	29.899	29.930	29.961	29.992	30.023	30.054	30.085	30.116	30.147	30.178	30.209	30.240	30.271	30.302	30.333	30.364	30.395	30.426	30.457	30.488	30.519	30.550	30.581	30.612	30.643	30.674	30.705	30.736	30.767	30.798	30.829	30.860	30.891	30.922	30.953	30.984	31.015	31.046	31.077	31.108	31.139	31.170	31.201	31.232	31.263	31.294	31.325	31.356	31.387	31.418	31.449	31.480	31.511	31.542	31.573	31.604	31.635	31.666	31.697	31.728	31.759	31.790	31.821	31.852	31.883	31.914	31.945	31.976	32.007	32.038	32.069	32.100	32.131	32.162	32.193	32.224	32.255	32.286	32.317	32.348	32.379	32.410	32.441	32.472	32.503	32.534	32.565	32.596	32.627	32.658	32.689	32.720	32.751	32.782	32.813	32.844	32.875	32.906	32.937	32.968	33.000	33.031	33.062	33.093	33.124	33.155	33.186	33.217	33.248	33.279	33.310	33

e	M	20	21	22	23	24	25	26	27	28	29	30	M	e	M=20	DE/DM	M=30
0.00		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	1.000		1.000
0.01		0.298	0.207	0.217	0.226	0.235	0.244	0.253	0.262	0.271	0.280	0.289	0.01	0.00	1.009		1.009
0.02		0.599	0.418	0.437	0.456	0.475	0.493	0.512	0.530	0.548	0.565	0.583	0.02	0.01	1.018		1.018
0.03		0.895	0.634	0.662	0.691	0.719	0.747	0.774	0.802	0.829	0.856	0.882	0.03	0.02	1.029		1.029
0.04		1.184	0.853	0.891	0.930	0.967	1.005	1.042	1.079	1.115	1.151	1.187	0.04	0.03	1.039		1.039
0.05		1.466	1.077	1.125	1.173	1.221	1.268	1.315	1.361	1.407	1.452	1.497	0.05	0.04	1.049		1.049
0.06		1.741	1.296	1.354	1.421	1.477	1.543	1.609	1.674	1.738	1.802	1.865	0.06	0.05	1.059		1.059
0.07		2.009	1.517	1.585	1.672	1.747	1.829	1.916	1.999	2.086	2.170	2.251	0.07	0.06	1.069		1.069
0.08		2.270	1.729	1.806	1.913	1.998	2.097	2.199	2.314	2.426	2.537	2.646	0.08	0.07	1.079		1.079
0.09		2.523	1.942	2.029	2.156	2.262	2.371	2.485	2.602	2.721	2.837	2.951	0.09	0.08	1.088		1.088
0.10		2.768	2.150	2.247	2.404	2.540	2.669	2.801	2.934	3.069	3.204	3.337	0.10	0.09	1.097		1.097
0.11		2.995	2.340	2.447	2.634	2.801	2.959	3.119	3.279	3.439	3.598	3.755	0.11	0.10	1.106		1.106
0.12		3.204	2.510	2.627	2.844	3.041	3.229	3.418	3.607	3.795	3.982	4.168	0.12	0.11	1.115		1.115
0.13		3.395	2.662	2.789	3.036	3.263	3.480	3.697	3.914	4.131	4.347	4.562	0.13	0.12	1.124		1.124
0.14		3.568	2.791	2.928	3.196	3.443	3.690	3.937	4.184	4.431	4.678	4.924	0.14	0.13	1.133		1.133
0.15		3.723	2.900	3.047	3.336	3.603	3.870	4.137	4.404	4.671	4.938	5.204	0.15	0.14	1.142		1.142
0.16		3.860	3.000	3.157	3.466	3.753	4.040	4.327	4.614	4.901	5.188	5.474	0.16	0.15	1.150		1.150
0.17		3.979	3.091	3.258	3.588	3.905	4.212	4.529	4.846	5.163	5.480	5.796	0.17	0.16	1.158		1.158
0.18		4.080	3.174	3.351	3.701	4.037	4.373	4.709	5.045	5.381	5.716	6.051	0.18	0.17	1.166		1.166
0.19		4.172	3.250	3.437	3.807	4.163	4.519	4.875	5.231	5.586	5.941	6.295	0.19	0.18	1.174		1.174
0.20		4.255	3.318	3.515	3.905	4.291	4.677	5.063	5.449	5.834	6.219	6.603	0.20	0.19	1.182		1.182
0.21		4.329	3.379	3.586	3.996	4.391	4.797	5.192	5.587	5.981	6.375	6.768	0.21	0.20	1.190		1.190
0.22		4.394	3.433	3.650	4.071	4.471	4.887	5.291	5.695	6.098	6.491	6.883	0.22	0.21	1.197		1.197
0.23		4.450	3.480	3.707	4.151	4.545	4.961	5.364	5.767	6.169	6.561	6.952	0.23	0.22	1.205		1.205
0.24		4.497	3.520	3.754	4.231	4.635	5.051	5.453	5.855	6.256	6.647	7.037	0.24	0.23	1.212		1.212
0.25		4.536	3.554	3.798	4.301	4.699	5.115	5.516	5.917	6.317	6.707	7.096	0.25	0.24	1.219		1.219
0.26		4.567	3.583	3.827	4.351	4.747	5.165	5.565	5.965	6.364	6.753	7.144	0.26	0.25	1.225		1.225
0.27		4.590	3.608	3.851	4.391	4.771	5.190	5.589	5.988	6.387	6.775	7.168	0.27	0.26	1.231		1.231
0.28		4.605	3.629	3.871	4.421	4.791	5.210	5.609	6.008	6.406	6.794	7.189	0.28	0.27	1.237		1.237
0.29		4.612	3.646	3.888	4.441	4.801	5.229	5.628	6.026	6.424	6.811	7.208	0.29	0.28	1.242		1.242
0.30		4.618	3.659	3.901	4.461	4.811	5.248	5.647	6.045	6.445	6.831	7.227	0.30	0.29	1.247		1.247
0.31		4.623	3.669	3.911	4.471	4.821	5.267	5.666	6.066	6.466	6.851	7.246	0.31	0.30	1.252		1.252
0.32		4.628	3.677	3.920	4.481	4.831	5.286	5.686	6.086	6.486	6.871	7.265	0.32	0.31	1.257		1.257
0.33		4.632	3.683	3.929	4.491	4.841	5.305	5.705	6.105	6.505	6.890	7.283	0.33	0.32	1.261		1.261
0.34		4.636	3.688	3.938	4.501	4.851	5.324	5.724	6.124	6.524	6.909	7.301	0.34	0.33	1.265		1.265
0.35		4.640	3.692	3.947	4.511	4.861	5.343	5.743	6.143	6.543	6.928	7.319	0.35	0.34	1.269		1.269
0.36		4.643	3.695	3.956	4.521	4.871	5.362	5.762	6.162	6.562	6.947	7.337	0.36	0.35	1.273		1.273
0.37		4.646	3.698	3.965	4.531	4.881	5.381	5.781	6.181	6.581	6.966	7.355	0.37	0.36	1.277		1.277
0.38		4.649	3.701	3.974	4.541	4.891	5.400	5.800	6.200	6.600	6.985	7.373	0.38	0.37	1.281		1.281
0.39		4.651	3.704	3.983	4.551	4.901	5.419	5.819	6.219	6.619	7.004	7.391	0.39	0.38	1.285		1.285
0.40		4.654	3.707	3.992	4.561	4.911	5.438	5.838	6.238	6.638	7.022	7.408	0.40	0.39	1.289		1.289
0.41		4.656	3.710	4.001	4.571	4.921	5.457	5.857	6.257	6.657	7.043	7.426	0.41	0.40	1.293		1.293
0.42		4.658	3.713	4.010	4.581	4.931	5.476	5.876	6.276	6.676	7.065	7.444	0.42	0.41	1.297		1.297
0.43		4.660	3.716	4.019	4.591	4.941	5.495	5.895	6.295	6.695	7.084	7.462	0.43	0.42	1.301		1.301
0.44		4.662	3.719	4.028	4.601	4.951	5.514	5.914	6.314	6.714	7.103	7.480	0.44	0.43	1.305		1.305
0.45		4.664	3.722	4.037	4.611	4.961	5.533	5.933	6.333	6.733	7.121	7.498	0.45	0.44	1.309		1.309
0.46		4.666	3.725	4.046	4.621	4.971	5.552	5.952	6.352	6.752	7.139	7.516	0.46	0.45	1.313		1.313
0.47		4.668	3.728	4.055	4.631	4.981	5.571	5.971	6.371	6.771	7.157	7.534	0.47	0.46	1.317		1.317
0.48		4.670	3.731	4.064	4.641	4.991	5.590	5.990	6.390	6.790	7.175	7.552	0.48	0.47	1.321		1.321
0.49		4.672	3.734	4.073	4.651	5.001	5.609	6.009	6.409	6.809	7.193	7.569	0.49	0.48	1.325		1.325
0.50		4.674	3.737	4.082	4.661	5.011	5.628	6.028	6.428	6.828	7.211	7.587	0.50	0.49	1.329		1.329
0.51		4.676	3.740	4.091	4.671	5.021	5.647	6.047	6.447	6.847	7.229	7.604	0.51	0.50	1.333		1.333
0.52		4.678	3.743	4.100	4.681	5.031	5.666	6.066	6.466	6.866	7.247	7.622	0.52	0.51	1.337		1.337
0.53		4.680	3.746	4.109	4.691	5.041	5.685	6.085	6.485	6.885	7.265	7.640	0.53	0.52	1.341		1.341
0.54		4.682	3.749	4.118	4.701	5.051	5.704	6.104	6.504	6.904	7.283	7.658	0.54	0.53	1.345		1.345
0.55		4.684	3.752	4.127	4.711	5.061	5.723	6.123	6.523	6.923	7.301	7.676	0.55	0.54	1.349		1.349
0.56		4.686	3.755	4.136	4.721	5.071	5.742	6.142	6.542	6.942	7.319	7.694	0.56	0.55	1.353		1.353
0.57		4.688	3.758	4.145	4.731	5.081	5.761	6.161	6.561	6.961	7.337	7.712	0.57	0.56	1.357		1.357
0.58		4.690	3.761	4.154	4.741	5.091	5.780	6.180	6.580	6.980	7.355	7.730	0.58	0.57	1.361		1.361
0.59		4.692	3.764	4.163	4.751	5.101	5.800	6.200	6.600	7.000	7.373	7.748	0.59	0.58	1.365		1.365
0.60		4.694	3.767	4.172	4.761	5.111	5.819	6.219	6.619	7.019	7.391	7.766	0.60	0.59	1.369		1.369
0.61		4.696	3.770	4.181	4.771	5.121	5.838	6.238	6.638	7.038	7.408	7.784	0.61	0.60	1.373		1.373
0.62		4.698	3.773	4.190	4.781	5.131	5.857	6.257	6.657	7.057	7.426	7.802	0.62	0.61	1.377		1.377
0.63		4.700	3.776	4.199	4.791	5.141	5.876	6.276	6.676	7.076	7.444	7.820	0.63	0.62	1.381		1.381
0.64		4.702	3.779	4.208	4.801	5.151	5.895	6.295	6.695	7.095	7.462	7.838	0.64	0.63	1.385		1.385
0.65		4.704	3.782	4.217	4.811	5.161	5.914	6.314	6.714	7.114	7.480	7.856	0.65	0.64	1.389		1.389
0.66		4.706	3.785	4.226	4.821	5.171	5.933	6.333	6.733	7.133	7.501	7.874	0.66	0.65	1.393		1.393
0.67		4.708	3.788	4.235	4.831	5.181	5.952	6.352	6.752	7.152	7.519	7.892	0.67	0.66	1.397		1.397
0.68		4.710	3.791	4.244	4.841	5.191	5.971	6.371	6.771	7.171	7.537	7.910	0.68	0.67	1.401		1.401
0.69		4.712	3.794	4.253	4.851	5.201	5.990	6.390	6.790	7.190	7.555	7.928	0.69	0.68	1.405		1.405
0.70		4.714	3.797	4.262	4.861	5.211	6.009	6.409	6.809	7.209	7.573	7.946	0.70	0.69	1.409		1.409
0.71		4.716	3														

TABLE OF KEPLER'S EQUATION

e	M	E - M										M	30'	M	e	M = 20	H = 30
		20	21	22	23	24	25	26	27	28	29						
0.50	17.400	18.047	18.670	19.269	19.844	20.397	20.927	21.434	21.920	22.384	22.827	0.50	1.659	1.433			
0.51	17.984	18.643	19.277	19.886	20.470	21.031	21.567	22.080	22.570	23.038	23.485	0.51	1.672	1.436			
0.52	18.579	19.251	19.896	20.514	21.107	21.674	22.216	22.734	23.229	23.700	24.149	0.52	1.685	1.438			
0.53	19.188	19.871	20.525	21.153	21.753	22.326	22.874	23.397	23.895	24.369	24.820	0.53	1.697	1.440			
0.54	19.808	20.502	21.167	21.802	22.400	22.969	23.514	24.038	24.540	25.017	25.477	0.54	1.709	1.441			
0.55	20.441	21.145	21.819	22.462	23.075	23.660	24.216	24.746	25.249	25.727	26.181	0.55	1.720	1.441			
0.56	21.087	21.801	22.482	23.132	23.751	24.340	24.900	25.432	25.937	26.416	26.869	0.56	1.730	1.441			
0.57	21.744	22.467	23.156	23.812	24.435	25.028	25.591	26.125	26.631	27.110	27.563	0.57	1.740	1.440			
0.58	22.414	23.145	23.840	24.501	25.129	25.725	26.290	26.825	27.332	27.818	28.262	0.58	1.749	1.439			
0.59	23.096	23.834	24.535	25.201	25.832	26.430	26.996	27.533	28.038	28.515	28.966	0.59	1.757	1.437			
0.60	23.790	24.534	25.240	25.915	26.552	27.142	27.709	28.244	28.749	29.225	29.673	0.60	1.764	1.435			
0.61	24.495	25.245	25.955	26.627	27.262	27.862	28.428	28.966	29.466	29.939	30.385	0.61	1.770	1.432			
0.62	25.211	25.966	26.677	27.342	27.988	28.588	29.154	29.686	30.187	30.657	31.099	0.62	1.776	1.428			
0.63	25.939	26.696	27.412	28.086	28.722	29.321	29.884	30.414	30.912	31.379	31.817	0.63	1.780	1.424			
0.64	26.677	27.437	28.153	28.828	29.463	30.060	30.621	31.147	31.641	32.104	32.537	0.64	1.783	1.419			
0.65	27.425	28.186	28.903	29.577	30.209	30.804	31.361	31.884	32.373	32.831	33.259	0.65	1.785	1.413			
0.66	28.183	28.945	29.660	30.332	30.962	31.553	32.106	32.624	33.109	33.561	33.983	0.66	1.786	1.407			
0.67	28.950	29.711	30.425	31.093	31.720	32.306	32.855	33.368	33.846	34.293	34.709	0.67	1.786	1.401			
0.68	29.726	30.485	31.196	31.861	32.483	33.064	33.607	34.114	34.586	35.026	35.435	0.68	1.784	1.394			
0.69	30.510	31.266	31.973	32.633	33.250	33.825	34.362	34.862	35.332	35.769	36.161	0.69	1.782	1.387			
0.70	31.301	32.053	32.755	33.410	34.020	34.589	35.119	35.611	36.069	36.494	36.888	0.70	1.778	1.379			
0.71	32.100	32.845	33.534	34.191	34.794	35.355	35.877	36.352	36.812	37.229	37.614	0.71	1.774	1.371			
0.72	32.905	33.645	34.324	34.975	35.570	36.124	36.637	37.114	37.555	37.963	38.340	0.72	1.768	1.362			
0.73	33.715	34.449	35.120	35.752	36.349	36.894	37.398	37.866	38.298	38.697	39.065	0.73	1.761	1.353			
0.74	34.531	35.256	35.928	36.551	37.129	37.664	38.159	38.617	39.040	39.430	39.788	0.74	1.753	1.343			
0.75	35.351	36.066	36.729	37.342	37.910	38.435	38.920	39.368	39.781	40.161	40.509	0.75	1.743	1.334			
0.76	36.174	36.879	37.532	38.135	38.692	39.206	39.681	40.118	40.521	40.890	41.229	0.76	1.733	1.324			
0.77	37.000	37.695	38.336	38.927	39.473	39.977	40.440	40.867	41.258	41.617	41.945	0.77	1.722	1.313			
0.78	37.829	38.511	39.140	39.720	40.254	40.746	41.198	41.613	41.994	42.342	42.660	0.78	1.710	1.303			
0.79	38.659	39.329	39.945	40.512	41.034	41.514	41.954	42.358	42.727	43.064	43.371	0.79	1.698	1.292			
0.80	39.490	40.146	40.749	41.304	41.813	42.280	42.708	43.099	43.457	43.783	44.078	0.80	1.684	1.281			
0.81	40.321	40.963	41.552	42.093	42.569	43.043	43.459	43.838	44.184	44.498	44.782	0.81	1.670	1.270			
0.82	41.152	41.779	42.354	42.881	43.363	43.804	44.207	44.574	44.907	45.210	45.482	0.82	1.655	1.259			
0.83	41.982	42.594	43.154	43.666	44.134	44.562	44.951	45.306	45.627	45.917	46.177	0.83	1.639	1.247			
0.84	42.812	43.406	43.941	44.448	44.902	45.316	45.692	46.038	46.346	46.621	46.870	0.84	1.623	1.236			
0.85	43.636	44.216	44.745	45.227	45.667	46.066	46.429	46.758	47.054	47.320	47.558	0.85	1.606	1.224			
0.86	44.459	45.022	45.535	46.002	46.427	46.813	47.162	47.477	47.760	48.014	48.240	0.86	1.589	1.213			
0.87	45.279	45.825	46.325	46.773	47.183	47.554	47.890	48.192	48.462	48.704	48.918	0.87	1.572	1.201			
0.88	46.095	46.624	47.104	47.540	47.935	48.292	48.631	48.902	49.159	49.388	49.590	0.88	1.554	1.189			
0.89	46.907	47.418	47.862	48.302	48.681	49.024	49.331	49.606	49.851	50.068	50.258	0.89	1.536	1.177			
0.90	47.715	48.208	48.655	49.059	49.423	49.751	50.044	50.306	50.538	50.742	50.920	0.90	1.518	1.166			
0.91	48.517	48.992	49.422	49.810	50.159	50.472	50.751	51.000	51.219	51.411	51.577	0.91	1.500	1.154			
0.92	49.314	49.771	50.184	50.556	50.890	51.188	51.451	51.688	51.894	52.074	52.228	0.92	1.481	1.142			
0.93	50.105	50.545	50.941	51.296	51.614	51.898	52.149	52.371	52.564	52.731	52.873	0.93	1.463	1.130			
0.94	50.890	51.312	51.691	52.030	52.333	52.602	52.846	53.048	53.228	53.383	53.513	0.94	1.445	1.119			
0.95	51.669	52.073	52.435	52.758	53.046	53.300	53.524	53.718	53.886	54.029	54.147	0.95	1.426	1.107			
0.96	52.441	52.827	53.172	53.480	53.752	53.992	54.202	54.383	54.538	54.668	54.775	0.96	1.408	1.096			
0.97	53.207	53.575	53.903	54.193	54.452	54.677	54.873	55.042	55.184	55.302	55.399	0.97	1.389	1.084			
0.98	53.965	54.316	54.637	54.930	55.184	55.356	55.539	55.694	55.824	55.930	56.014	0.98	1.371	1.073			
0.99	54.717	55.050	55.345	55.605	55.832	56.029	56.198	56.340	56.458	56.552	56.624	0.99	1.353	1.062			
1.00	55.461	55.777	56.045	56.279	56.481	56.649	56.791	56.910	57.008	57.168	57.259	1.00	1.335	1.051			
M	340	339	338	337	336	335	334	333	332	331	330	M	H=340	H=330			

e	M	30	31	32	33	34	35	36	37	38	39	40	M	e	M=30	DE/DM	M=40
0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000
0.01	0.289	0.298	0.306	0.315	0.323	0.325	0.331	0.340	0.348	0.356	0.363	0.371	0.377	0.383	1.009	1.008	1.008
0.02	0.583	0.618	0.648	0.673	0.695	0.712	0.731	0.750	0.767	0.783	0.799	0.815	0.831	0.846	1.018	1.015	1.015
0.03	0.882	0.909	0.935	0.960	0.986	1.011	1.035	1.059	1.083	1.107	1.131	1.155	1.179	1.203	1.026	1.023	1.023
0.04	1.187	1.222	1.257	1.291	1.325	1.359	1.392	1.425	1.458	1.491	1.524	1.557	1.590	1.623	1.035	1.031	1.031
0.05	1.497	1.541	1.585	1.628	1.671	1.713	1.754	1.795	1.835	1.875	1.914	1.953	1.992	2.031	1.045	1.045	1.045
0.06	1.812	1.866	1.918	1.970	2.022	2.072	2.122	2.171	2.220	2.267	2.314	2.361	2.407	2.454	1.054	1.054	1.054
0.07	2.133	2.196	2.258	2.319	2.379	2.438	2.497	2.554	2.611	2.666	2.721	2.774	2.827	2.880	1.063	1.062	1.062
0.08	2.460	2.532	2.603	2.673	2.742	2.810	2.877	2.943	3.008	3.071	3.134	3.195	3.255	3.314	1.072	1.070	1.070
0.09	2.793	2.874	2.954	3.033	3.111	3.188	3.264	3.338	3.411	3.483	3.553	3.622	3.690	3.757	1.081	1.078	1.078
0.10	3.132	3.222	3.312	3.400	3.487	3.572	3.657	3.739	3.820	3.900	3.979	4.057	4.134	4.211	1.091	1.085	1.085
0.11	3.476	3.577	3.676	3.773	3.869	3.963	4.056	4.147	4.237	4.324	4.410	4.495	4.579	4.662	1.101	1.093	1.093
0.12	3.824	3.937	4.046	4.152	4.257	4.360	4.462	4.561	4.658	4.753	4.847	4.940	5.032	5.123	1.111	1.101	1.101
0.13	4.185	4.305	4.422	4.538	4.652	4.764	4.874	4.982	5.088	5.192	5.294	5.395	5.495	5.594	1.120	1.110	1.110
0.14	4.549	4.678	4.806	4.931	5.054	5.175	5.293	5.410	5.526	5.641	5.755	5.868	5.980	6.091	1.130	1.118	1.118
0.15	4.920	5.059	5.196	5.330	5.462	5.592	5.719	5.844	5.967	6.089	6.210	6.330	6.448	6.565	1.140	1.126	1.126
0.16	5.297	5.446	5.592	5.736	5.878	6.016	6.152	6.285	6.416	6.543	6.668	6.791	6.913	7.034	1.150	1.133	1.133
0.17	5.681	5.840	5.996	6.149	6.300	6.447	6.592	6.734	6.874	7.011	7.147	7.281	7.413	7.544	1.160	1.140	1.140
0.18	6.073	6.241	6.407	6.570	6.729	6.886	7.039	7.189	7.335	7.478	7.618	7.756	7.893	8.028	1.170	1.148	1.148
0.19	6.471	6.650	6.825	6.997	7.166	7.331	7.493	7.651	7.805	7.956	8.103	8.249	8.393	8.535	1.180	1.145	1.145
0.20	6.877	7.065	7.250	7.432	7.609	7.783	7.954	8.120	8.282	8.441	8.597	8.751	8.903	9.054	1.190	1.151	1.151
0.21	7.290	7.488	7.683	7.874	8.060	8.243	8.422	8.597	8.769	8.937	9.103	9.267	9.429	9.589	1.201	1.159	1.159
0.22	7.710	7.919	8.123	8.323	8.519	8.710	8.897	9.079	9.257	9.432	9.604	9.774	9.942	10.109	1.211	1.166	1.166
0.23	8.138	8.357	8.571	8.780	8.985	9.185	9.380	9.570	9.756	9.936	10.111	10.284	10.455	10.624	1.221	1.173	1.173
0.24	8.574	8.803	9.026	9.245	9.458	9.665	9.867	10.064	10.257	10.445	10.628	10.806	10.980	11.152	1.231	1.180	1.180
0.25	9.018	9.256	9.489	9.717	9.939	10.156	10.367	10.573	10.773	10.968	11.158	11.343	11.523	11.700	1.241	1.186	1.186
0.26	9.469	9.718	9.960	10.197	10.428	10.653	10.872	11.085	11.293	11.494	11.689	11.879	12.064	12.245	1.251	1.192	1.192
0.27	9.929	10.187	10.439	10.685	10.924	11.158	11.387	11.609	11.825	12.034	12.236	12.432	12.622	12.807	1.261	1.198	1.198
0.28	10.397	10.665	10.926	11.181	11.429	11.670	11.904	12.132	12.353	12.567	12.774	12.974	13.168	13.356	1.271	1.204	1.204
0.29	10.873	11.151	11.421	11.684	11.940	12.189	12.431	12.666	12.893	13.114	13.327	13.534	13.735	13.930	1.281	1.209	1.209
0.30	11.358	11.644	11.924	12.196	12.460	12.717	12.966	13.207	13.441	13.667	13.886	14.100	14.308	14.511	1.291	1.215	1.215
0.31	11.850	12.147	12.435	12.715	12.987	13.252	13.508	13.756	13.996	14.227	14.451	14.669	14.881	15.088	1.300	1.220	1.220
0.32	12.352	12.657	12.954	13.243	13.523	13.794	14.057	14.311	14.557	14.794	15.023	15.244	15.458	15.665	1.310	1.225	1.225
0.33	12.861	13.176	13.482	13.778	14.066	14.344	14.613	14.874	15.125	15.368	15.601	15.826	16.043	16.253	1.319	1.229	1.229
0.34	13.380	13.703	14.017	14.322	14.616	14.901	15.177	15.443	15.700	15.947	16.183	16.411	16.631	16.844	1.328	1.233	1.233
0.35	13.907	14.239	14.561	14.873	15.175	15.466	15.748	16.020	16.281	16.533	16.775	17.009	17.236	17.457	1.337	1.237	1.237
0.36	14.443	14.783	15.113	15.432	15.741	16.039	16.326	16.603	16.869	17.125	17.371	17.608	17.837	18.058	1.346	1.241	1.241
0.37	14.987	15.336	15.673	15.999	16.314	16.619	16.912	17.193	17.463	17.722	17.971	18.211	18.442	18.664	1.354	1.244	1.244
0.38	15.540	15.896	16.241	16.574	16.895	17.205	17.502	17.789	18.064	18.327	18.580	18.824	19.059	19.284	1.363	1.247	1.247
0.39	16.101	16.466	16.817	17.157	17.484	17.798	18.101	18.391	18.670	18.937	19.192	19.437	19.672	19.897	1.371	1.250	1.250
0.40	16.672	17.043	17.407	17.747	18.074	18.389	18.701	18.999	19.282	19.552	19.810	20.058	20.306	20.544	1.378	1.252	1.252
0.41	17.250	17.623	17.994	18.345	18.682	19.006	19.317	19.615	19.900	20.172	20.432	20.681	20.920	21.149	1.386	1.254	1.254
0.42	17.837	18.213	18.584	18.946	19.292	19.620	19.935	20.236	20.523	20.798	21.061	21.314	21.557	21.790	1.393	1.255	1.255
0.43	18.433	18.825	19.201	19.562	19.909	20.241	20.558	20.861	21.150	21.428	21.695	21.952	22.200	22.438	1.399	1.256	1.256
0.44	19.037	19.434	19.818	20.188	20.542	20.882	21.208	21.520	21.818	22.103	22.377	22.641	22.895	23.140	1.405	1.257	1.257
0.45	19.649	20.052	20.438	20.808	21.162	21.503	21.830	22.143	22.442	22.728	22.992	23.246	23.491	23.726	1.411	1.257	1.257
0.46	20.269	20.677	21.068	21.441	21.798	22.139	22.466	22.779	23.078	23.363	23.635	23.897	24.150	24.394	1.416	1.257	1.257
0.47	20.897	21.310	21.704	22.081	22.440	22.783	23.109	23.419	23.713	23.992	24.256	24.511	24.756	24.991	1.421	1.257	1.257
0.48	21.533	21.949	22.337	22.726	23.088	23.432	23.759	24.070	24.364	24.643	24.906	25.161	25.406	25.641	1.426	1.256	1.256
0.49	22.176	22.596	22.997	23.378	23.742	24.087	24.415	24.726	25.019	25.297	25.559	25.814	26.060	26.296	1.430	1.254	1.254
0.50	22.827	23.250	23.653	24.036	24.400	24.746	25.074	25.384	25.677	25.954	26.215	26.471	26.713	26.941	1.433	1.253	1.253



e	M	30	31	32	33	34	35	36	37	38	39	40	M	e	H = 30	DE/DM	H = 40
0.50	22.837	23.250	23.653	24.056	24.460	24.746	25.074	25.384	25.677	25.954	26.215	26.453	0.50	1.433	1.433	1.253	1.253
0.51	23.456	23.810	24.163	24.516	24.869	25.222	25.575	25.928	26.281	26.634	26.872	27.110	0.51	1.436	1.436	1.253	1.253
0.52	24.075	24.378	24.681	24.984	25.287	25.590	25.893	26.196	26.499	26.802	27.105	27.408	0.52	1.438	1.438	1.248	1.248
0.53	24.694	24.947	25.200	25.453	25.706	25.959	26.212	26.465	26.718	27.000	27.282	27.564	0.53	1.440	1.440	1.245	1.245
0.54	25.313	25.526	25.739	25.952	26.165	26.378	26.591	26.804	27.017	27.230	27.443	27.656	0.54	1.441	1.441	1.238	1.238
0.55	25.932	26.105	26.278	26.451	26.624	26.797	26.970	27.143	27.316	27.489	27.662	27.835	0.55	1.441	1.441	1.234	1.234
0.56	26.551	26.684	26.817	26.950	27.083	27.216	27.349	27.482	27.615	27.748	27.881	28.014	0.56	1.441	1.441	1.230	1.230
0.57	27.170	27.263	27.356	27.449	27.542	27.635	27.728	27.821	27.914	28.007	28.100	28.193	0.57	1.439	1.439	1.225	1.225
0.58	27.789	27.842	27.895	27.948	28.001	28.054	28.107	28.160	28.213	28.266	28.319	28.372	0.58	1.437	1.437	1.220	1.220
0.59	28.408	28.421	28.434	28.447	28.460	28.473	28.486	28.499	28.512	28.525	28.538	28.551	0.59	1.435	1.435	1.215	1.215
0.60	29.027	29.010	29.003	29.006	29.009	29.012	29.015	29.018	29.021	29.024	29.027	29.030	0.60	1.432	1.432	1.210	1.210
0.61	29.646	29.619	29.602	29.585	29.568	29.551	29.534	29.517	29.500	29.483	29.466	29.449	0.61	1.428	1.428	1.205	1.205
0.62	30.265	30.228	30.191	30.154	30.117	30.080	30.043	30.006	29.969	29.932	29.895	29.858	0.62	1.424	1.424	1.200	1.200
0.63	30.884	30.827	30.770	30.713	30.656	30.599	30.542	30.485	30.428	30.371	30.314	30.257	0.63	1.419	1.419	1.195	1.195
0.64	31.503	31.426	31.349	31.272	31.195	31.118	31.041	30.964	30.887	30.810	30.733	30.656	0.64	1.413	1.413	1.190	1.190
0.65	32.122	32.025	31.928	31.831	31.734	31.637	31.540	31.443	31.346	31.249	31.152	31.055	0.65	1.407	1.407	1.185	1.185
0.66	32.741	32.624	32.507	32.390	32.273	32.156	32.039	31.922	31.805	31.688	31.571	31.454	0.66	1.401	1.401	1.180	1.180
0.67	33.360	33.223	33.086	32.949	32.812	32.675	32.538	32.401	32.264	32.127	31.990	31.853	0.67	1.394	1.394	1.175	1.175
0.68	33.979	33.822	33.665	33.508	33.351	33.194	33.037	32.880	32.723	32.566	32.409	32.252	0.68	1.387	1.387	1.170	1.170
0.69	34.598	34.421	34.244	34.067	33.890	33.713	33.536	33.359	33.182	33.005	32.828	32.651	0.69	1.381	1.381	1.165	1.165
0.70	35.217	34.930	34.643	34.356	34.069	33.782	33.495	33.208	32.921	32.634	32.347	32.060	0.70	1.374	1.374	1.160	1.160
0.71	35.836	35.439	35.042	34.645	34.248	33.851	33.454	33.057	32.660	32.263	31.866	31.469	0.71	1.367	1.367	1.155	1.155
0.72	36.455	35.938	35.421	34.904	34.387	33.870	33.353	32.836	32.319	31.802	31.285	30.768	0.72	1.361	1.361	1.150	1.150
0.73	37.074	36.437	35.800	35.163	34.526	33.889	33.252	32.615	31.978	31.341	30.704	30.067	0.73	1.354	1.354	1.145	1.145
0.74	37.693	36.936	36.179	35.422	34.665	33.908	33.151	32.394	31.637	30.880	30.123	29.366	0.74	1.348	1.348	1.140	1.140
0.75	38.312	37.435	36.558	35.681	34.804	33.927	33.050	32.173	31.296	30.419	29.542	28.665	0.75	1.341	1.341	1.135	1.135
0.76	38.931	37.934	36.957	35.974	34.991	34.008	33.025	32.042	31.059	30.076	29.093	28.110	0.76	1.334	1.334	1.130	1.130
0.77	39.550	38.433	37.316	36.203	35.090	34.077	33.064	32.051	31.038	30.025	29.012	28.000	0.77	1.328	1.328	1.125	1.125
0.78	40.169	38.936	37.719	36.506	35.293	34.080	32.867	31.654	30.441	29.228	28.015	26.802	0.78	1.321	1.321	1.120	1.120
0.79	40.788	39.439	38.122	36.709	35.296	33.883	32.670	31.457	30.244	29.031	27.818	26.605	0.79	1.314	1.314	1.115	1.115
0.80	41.407	39.942	38.525	37.112	35.701	34.288	32.875	31.662	30.449	29.236	28.023	26.810	0.80	1.308	1.308	1.110	1.110
0.81	42.026	40.445	39.028	37.615	36.204	34.791	33.378	32.165	30.952	29.739	28.526	27.313	0.81	1.299	1.299	1.105	1.105
0.82	42.645	40.948	39.531	38.118	36.707	35.294	33.881	32.668	31.455	30.242	29.029	27.816	0.82	1.292	1.292	1.100	1.100
0.83	43.264	41.451	40.034	38.621	37.210	35.797	34.384	33.171	31.958	30.745	29.532	28.319	0.83	1.285	1.285	1.095	1.095
0.84	43.883	41.954	40.537	39.124	37.713	36.294	34.881	33.668	32.455	31.242	30.029	28.816	0.84	1.277	1.277	1.090	1.090
0.85	44.502	42.457	41.040	39.627	38.216	36.797	35.384	34.171	32.958	31.745	30.532	29.319	0.85	1.270	1.270	1.085	1.085
0.86	45.121	42.960	41.543	40.130	38.719	37.290	35.881	34.668	33.455	32.242	31.029	29.816	0.86	1.262	1.262	1.080	1.080
0.87	45.740	43.463	42.046	40.633	39.222	37.793	36.384	35.171	33.958	32.745	31.532	30.319	0.87	1.255	1.255	1.075	1.075
0.88	46.359	43.966	42.549	41.136	39.725	38.296	36.887	35.674	34.461	33.248	32.035	30.816	0.88	1.247	1.247	1.070	1.070
0.89	46.978	44.469	43.052	41.639	40.228	38.799	37.388	36.175	34.962	33.749	32.536	31.313	0.89	1.240	1.240	1.065	1.065
0.90	47.597	44.972	43.555	42.142	40.731	39.292	37.891	36.678	35.465	34.252	33.040	31.816	0.90	1.232	1.232	1.060	1.060
0.91	48.216	45.475	44.058	42.645	41.234	39.795	38.394	37.185	35.978	34.765	33.553	32.340	0.91	1.225	1.225	1.055	1.055
0.92	48.835	45.978	44.561	43.148	41.737	40.298	38.897	37.686	36.487	35.274	34.061	32.847	0.92	1.217	1.217	1.050	1.050
0.93	49.454	46.481	45.064	43.651	42.240	40.801	39.396	38.185	36.986	35.773	34.558	33.354	0.93	1.210	1.210	1.045	1.045
0.94	50.073	46.984	45.567	44.154	42.743	41.304	39.899	38.684	37.485	36.272	35.059	33.861	0.94	1.202	1.202	1.040	1.040
0.95	50.692	47.487	46.070	44.657	43.246	41.807	40.402	39.182	37.986	36.769	35.552	34.348	0.95	1.195	1.195	1.035	1.035
0.96	51.311	47.990	46.573	45.160	43.749	42.310	40.905	39.681	38.489	37.272	36.045	34.855	0.96	1.187	1.187	1.030	1.030
0.97	51.930	48.493	47.076	45.663	44.252	42.813	41.408	40.184	38.992	37.775	36.548	35.362	0.97	1.180	1.180	1.025	1.025
0.98	52.549	48.996	47.579	46.166	44.755	43.316	41.911	40.687	39.495	38.282	37.061	35.869	0.98	1.172	1.172	1.020	1.020
0.99	53.168	49.499	48.082	46.669	45.258	43.819	42.414	41.190	40.000	38.790	37.570	36.376	0.99	1.165	1.165	1.015	1.015
1.00	53.787	49.999	48.585	47.172	45.761	44.322	42.917	41.693	40.501	39.299	38.079	36.883	1.00	1.051	1.051	0.893	0.893
M	330	329	328	327	326	325	324	323	322	321	320	M	330	M	M	M	M

ε	E - M										DE/DM									
	M	40	41	42	43	44	45	M	46	47	48	49	50	M	ε	M=40	M=50			
0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000			
0.01	0.371	0.379	0.386	0.394	0.401	0.408	0.415	0.422	0.429	0.435	0.442	0.449	0.456	0.462	0.469	1.008	1.006			
0.02	0.748	0.763	0.778	0.793	0.808	0.822	0.836	0.850	0.865	0.879	0.893	0.907	0.921	0.935	0.949	1.015	1.015			
0.03	1.131	1.154	1.176	1.198	1.220	1.241	1.262	1.282	1.302	1.321	1.340	1.359	1.377	1.395	1.413	1.023	1.025			
0.04	1.519	1.550	1.580	1.609	1.639	1.667	1.695	1.722	1.749	1.775	1.801	1.826	1.850	1.874	1.898	1.031	1.032			
0.05	1.914	1.952	1.990	2.027	2.063	2.099	2.133	2.168	2.201	2.233	2.265	2.296	2.326	2.355	2.384	1.039	1.038			
0.06	2.314	2.360	2.406	2.450	2.493	2.536	2.578	2.619	2.659	2.698	2.737	2.775	2.812	2.848	2.884	1.046	1.038			
0.07	2.721	2.775	2.827	2.879	2.930	2.980	3.028	3.076	3.122	3.168	3.212	3.255	3.297	3.338	3.379	1.054	1.044			
0.08	3.134	3.195	3.256	3.315	3.373	3.429	3.485	3.539	3.592	3.643	3.693	3.742	3.789	3.835	3.880	1.062	1.050			
0.09	3.553	3.622	3.690	3.756	3.821	3.885	3.947	4.008	4.067	4.125	4.181	4.236	4.290	4.342	4.394	1.070	1.056			
0.10	3.979	4.055	4.131	4.204	4.276	4.347	4.416	4.483	4.549	4.612	4.675	4.737	4.798	4.858	4.917	1.078	1.061			
0.11	4.410	4.495	4.578	4.658	4.738	4.815	4.890	4.964	5.037	5.109	5.179	5.248	5.316	5.383	5.449	1.085	1.067			
0.12	4.849	4.941	5.031	5.119	5.205	5.289	5.371	5.451	5.529	5.605	5.679	5.751	5.822	5.892	5.961	1.093	1.073			
0.13	5.294	5.393	5.491	5.586	5.679	5.770	5.858	5.944	6.028	6.110	6.189	6.265	6.341	6.415	6.488	1.101	1.078			
0.14	5.745	5.852	5.957	6.059	6.159	6.256	6.351	6.443	6.533	6.620	6.705	6.788	6.870	6.950	7.028	1.108	1.083			
0.15	6.203	6.318	6.430	6.539	6.645	6.749	6.850	6.948	7.044	7.136	7.226	7.314	7.400	7.484	7.566	1.116	1.088			
0.16	6.668	6.790	6.909	7.025	7.138	7.248	7.355	7.459	7.561	7.658	7.753	7.846	7.937	8.028	8.118	1.123	1.093			
0.17	7.140	7.269	7.395	7.518	7.637	7.754	7.867	7.976	8.083	8.186	8.286	8.384	8.479	8.573	8.666	1.131	1.098			
0.18	7.618	7.754	7.887	8.017	8.143	8.265	8.384	8.500	8.615	8.728	8.838	8.946	9.052	9.157	9.261	1.138	1.103			
0.19	8.103	8.247	8.386	8.522	8.654	8.783	8.909	9.033	9.156	9.276	9.394	9.511	9.627	9.742	9.856	1.145	1.107			
0.20	8.595	8.745	8.892	9.034	9.172	9.307	9.440	9.571	9.701	9.829	9.956	10.082	10.207	10.331	10.454	1.152	1.111			
0.21	9.094	9.251	9.404	9.552	9.697	9.838	9.977	10.114	10.249	10.383	10.515	10.646	10.776	10.904	11.031	1.159	1.115			
0.22	9.599	9.763	9.922	10.077	10.227	10.372	10.513	10.650	10.785	10.918	11.050	11.181	11.311	11.440	11.568	1.166	1.119			
0.23	10.111	10.282	10.447	10.608	10.764	10.914	11.059	11.200	11.339	11.477	11.612	11.745	11.876	12.006	12.135	1.173	1.123			
0.24	10.630	10.807	10.979	11.145	11.306	11.462	11.612	11.757	11.896	12.030	12.159	12.285	12.409	12.531	12.653	1.180	1.126			
0.25	11.156	11.339	11.517	11.689	11.855	12.015	12.170	12.319	12.462	12.600	12.732	12.859	13.000	13.134	13.271	1.186	1.129			
0.26	11.689	11.878	12.061	12.238	12.409	12.574	12.733	12.886	13.033	13.174	13.310	13.441	13.569	13.694	13.817	1.192	1.132			
0.27	12.228	12.423	12.612	12.794	12.970	13.139	13.302	13.459	13.609	13.753	13.891	14.022	14.150	14.276	14.400	1.198	1.135			
0.28	12.774	12.975	13.169	13.356	13.536	13.709	13.876	14.036	14.190	14.337	14.477	14.611	14.740	14.866	14.990	1.204	1.137			
0.29	13.327	13.533	13.731	13.923	14.107	14.285	14.455	14.619	14.775	14.925	15.067	15.204	15.337	15.466	15.591	1.209	1.139			
0.30	13.886	14.097	14.300	14.496	14.685	14.866	15.039	15.206	15.365	15.516	15.661	15.801	15.937	16.069	16.197	1.215	1.141			
0.31	14.451	14.667	14.875	15.075	15.267	15.452	15.628	15.797	15.958	16.112	16.259	16.401	16.538	16.671	16.800	1.220	1.143			
0.32	15.023	15.244	15.456	15.659	15.855	16.042	16.222	16.393	16.556	16.712	16.860	17.002	17.139	17.271	17.399	1.225	1.144			
0.33	15.604	15.826	16.042	16.249	16.448	16.638	16.820	16.993	17.158	17.315	17.464	17.607	17.745	17.878	18.006	1.230	1.145			
0.34	16.185	16.414	16.634	16.844	17.044	17.238	17.422	17.597	17.764	17.922	18.071	18.214	18.351	18.484	18.612	1.235	1.145			
0.35	16.775	17.008	17.231	17.444	17.648	17.844	18.028	18.205	18.376	18.541	18.699	18.851	18.998	19.141	19.279	1.240	1.146			
0.36	17.371	17.607	17.831	18.044	18.250	18.448	18.639	18.823	18.999	19.168	19.330	19.486	19.637	19.783	19.924	1.244	1.146			
0.37	17.973	18.212	18.440	18.658	18.866	19.064	19.253	19.433	19.604	19.768	19.926	20.078	20.224	20.364	20.500	1.248	1.146			
0.38	18.580	18.821	19.052	19.272	19.482	19.681	19.870	20.048	20.218	20.381	20.538	20.690	20.837	20.979	21.116	1.251	1.144			
0.39	19.192	19.436	19.669	19.890	20.101	20.301	20.491	20.670	20.839	20.997	21.146	21.290	21.429	21.563	21.697	1.254	1.144			
0.40	19.810	20.056	20.290	20.513	20.724	20.925	21.114	21.293	21.462	21.620	21.768	21.906	22.039	22.167	22.291	1.257	1.143			
0.41	20.432	20.680	20.915	21.139	21.351	21.551	21.741	21.919	22.087	22.244	22.391	22.528	22.655	22.777	22.895	1.259	1.142			
0.42	21.059	21.308	21.544	21.768	21.980	22.181	22.370	22.549	22.717	22.874	23.021	23.158	23.285	23.403	23.511	1.261	1.140			
0.43	21.691	21.940	22.177	22.401	22.613	22.813	23.001	23.179	23.342	23.496	23.640	23.774	23.900	24.018	24.126	1.262	1.138			
0.44	22.326	22.576	22.813	23.037	23.249	23.447	23.634	23.809	23.973	24.125	24.265	24.395	24.515	24.626	24.727	1.263	1.135			
0.45	22.969	23.216	23.453	23.676	23.886	24.084	24.269	24.443	24.604	24.753	24.892	25.021	25.140	25.250	25.350	1.264	1.133			
0.46	23.609	23.859	24.095	24.318	24.527	24.724	24.906	25.077	25.236	25.385	25.524	25.653	25.772	25.881	25.980	1.265	1.130			
0.47	24.256	24.505	24.740	24.961	25.169	25.363	25.544	25.713	25.869	26.013	26.146	26.269	26.382	26.485	26.578	1.266	1.127			
0.48	24.906	25.154	25.388	25.607	25.812	26.004	26.183	26.349	26.502	26.643	26.772	26.891	27.000	27.100	27.191	1.267	1.123			
0.49	25.559	25.806	26.038	26.255	26.458	26.647	26.823	26.985	27.135	27.273	27.399	27.514	27.618	27.712	27.797	1.268	1.120			
0.50	26.215	26.459	26.689	26.904	27.104	27.290	27.463	27.622	27.769	27.903	28.024	28.134	28.234	28.324	28.404	1.269	1.116			
M	320	319	318	317	316	315	314	313	312	311	310	M	M=320	M=310						

TABLE OF KEPLER'S EQUATION

e	M	40	41	42	43	44	45	E = H	46	47	48	49	50	H	e	M = 40	DE/nH	M = 50
0.50	0.50	26.215	26.459	26.689	26.904	27.104	27.290	27.463	27.622	27.769	27.903	28.024	28.136	0.50	1.116	1.253	1.416	1.50
0.51	0.51	26.372	26.616	26.846	27.061	27.261	27.447	27.620	27.779	27.926	28.060	28.181	28.293	0.51	1.112	1.250	1.414	1.50
0.52	0.52	26.529	26.773	27.003	27.218	27.418	27.604	27.777	27.936	28.083	28.217	28.338	28.450	0.52	1.107	1.245	1.408	1.50
0.53	0.53	26.686	26.930	27.160	27.375	27.575	27.761	27.934	28.093	28.240	28.374	28.495	28.607	0.53	1.103	1.241	1.405	1.50
0.54	0.54	26.843	27.087	27.317	27.532	27.732	27.918	28.091	28.249	28.396	28.530	28.651	28.763	0.54	1.098	1.238	1.401	1.50
0.55	0.55	27.000	27.244	27.474	27.689	27.889	28.075	28.248	28.406	28.553	28.687	28.808	28.919	0.55	1.093	1.236	1.398	1.50
0.56	0.56	27.157	27.401	27.631	27.846	28.046	28.232	28.405	28.563	28.710	28.844	28.965	29.076	0.56	1.088	1.234	1.396	1.50
0.57	0.57	27.314	27.558	27.788	28.003	28.203	28.389	28.562	28.720	28.867	29.001	29.122	29.233	0.57	1.083	1.232	1.394	1.50
0.58	0.58	27.471	27.715	27.945	28.160	28.360	28.546	28.719	28.877	29.024	29.158	29.279	29.390	0.58	1.078	1.230	1.392	1.50
0.59	0.59	27.628	27.872	28.102	28.317	28.517	28.703	28.876	29.034	29.181	29.315	29.436	29.547	0.59	1.073	1.228	1.390	1.50
0.60	0.60	27.785	28.029	28.259	28.474	28.674	28.860	29.033	29.191	29.338	29.472	29.593	29.704	0.60	1.068	1.226	1.388	1.50
0.61	0.61	27.942	28.186	28.416	28.631	28.831	29.017	29.190	29.348	29.495	29.629	29.750	29.861	0.61	1.063	1.224	1.386	1.50
0.62	0.62	28.099	28.343	28.573	28.788	28.988	29.174	29.347	29.505	29.652	29.786	29.907	30.018	0.62	1.058	1.222	1.384	1.50
0.63	0.63	28.256	28.500	28.730	28.945	29.145	29.331	29.504	29.662	29.809	29.943	30.064	30.175	0.63	1.053	1.220	1.382	1.50
0.64	0.64	28.413	28.657	28.887	29.102	29.302	29.488	29.661	29.819	29.966	30.099	30.220	30.331	0.64	1.048	1.218	1.380	1.50
0.65	0.65	28.570	28.814	29.044	29.259	29.459	29.645	29.818	29.976	30.123	30.256	30.377	30.488	0.65	1.043	1.216	1.378	1.50
0.66	0.66	28.727	28.971	29.201	29.416	29.616	29.802	29.975	30.133	30.279	30.412	30.533	30.644	0.66	1.038	1.214	1.376	1.50
0.67	0.67	28.884	29.128	29.358	29.573	29.773	29.959	30.132	30.289	30.435	30.568	30.689	30.800	0.67	1.033	1.212	1.374	1.50
0.68	0.68	29.041	29.285	29.515	29.730	29.930	30.116	30.289	30.446	30.592	30.725	30.846	30.957	0.68	1.028	1.210	1.372	1.50
0.69	0.69	29.198	29.442	29.672	29.887	30.087	30.273	30.446	30.603	30.749	30.882	31.003	31.114	0.69	1.023	1.208	1.370	1.50
0.70	0.70	29.355	29.599	29.829	30.044	30.244	30.430	30.603	30.760	30.906	31.039	31.160	31.271	0.70	1.018	1.206	1.368	1.50
0.71	0.71	29.512	29.756	29.986	30.201	30.401	30.587	30.760	30.917	31.059	31.192	31.313	31.424	0.71	1.013	1.204	1.366	1.50
0.72	0.72	29.669	29.913	30.143	30.358	30.558	30.744	30.917	31.074	31.216	31.349	31.470	31.581	0.72	1.008	1.202	1.364	1.50
0.73	0.73	29.826	30.070	30.300	30.515	30.715	30.901	31.074	31.231	31.373	31.506	31.627	31.738	0.73	1.003	1.200	1.362	1.50
0.74	0.74	29.983	30.227	30.457	30.672	30.872	31.058	31.231	31.388	31.530	31.663	31.784	31.895	0.74	1.000	1.198	1.360	1.50
0.75	0.75	30.140	30.384	30.614	30.829	31.029	31.215	31.388	31.545	31.687	31.819	31.940	32.051	0.75	0.995	1.196	1.358	1.50
0.76	0.76	30.297	30.541	30.771	30.986	31.186	31.372	31.545	31.702	31.844	31.976	32.107	32.218	0.76	0.990	1.194	1.356	1.50
0.77	0.77	30.454	30.698	30.928	31.143	31.343	31.529	31.702	31.859	32.001	32.133	32.264	32.375	0.77	0.985	1.192	1.354	1.50
0.78	0.78	30.611	30.855	31.085	31.299	31.499	31.685	31.858	32.015	32.157	32.289	32.419	32.530	0.78	0.980	1.190	1.352	1.50
0.79	0.79	30.768	31.012	31.242	31.456	31.656	31.842	32.015	32.172	32.314	32.446	32.576	32.687	0.79	0.975	1.188	1.350	1.50
0.80	0.80	30.925	31.169	31.399	31.613	31.813	32.000	32.172	32.329	32.471	32.603	32.733	32.844	0.80	0.970	1.186	1.348	1.50
0.81	0.81	31.082	31.326	31.556	31.770	31.970	32.157	32.329	32.486	32.628	32.760	32.890	33.001	0.81	0.965	1.184	1.346	1.50
0.82	0.82	31.239	31.483	31.713	31.927	32.127	32.314	32.486	32.643	32.785	32.917	33.047	33.158	0.82	0.960	1.182	1.344	1.50
0.83	0.83	31.396	31.640	31.870	32.084	32.284	32.471	32.643	32.800	32.942	33.074	33.204	33.315	0.83	0.955	1.180	1.342	1.50
0.84	0.84	31.553	31.797	32.027	32.241	32.441	32.628	32.800	32.957	33.099	33.231	33.361	33.472	0.84	0.950	1.178	1.340	1.50
0.85	0.85	31.710	31.954	32.184	32.398	32.598	32.785	32.957	33.114	33.256	33.388	33.518	33.629	0.85	0.945	1.176	1.338	1.50
0.86	0.86	31.867	32.111	32.341	32.555	32.755	32.942	33.114	33.271	33.413	33.545	33.675	33.786	0.86	0.940	1.174	1.336	1.50
0.87	0.87	32.024	32.268	32.498	32.712	32.912	33.099	33.271	33.428	33.570	33.702	33.832	33.943	0.87	0.935	1.172	1.334	1.50
0.88	0.88	32.181	32.425	32.655	32.869	33.069	33.256	33.428	33.585	33.727	33.859	33.989	34.100	0.88	0.930	1.170	1.332	1.50
0.89	0.89	32.338	32.582	32.812	33.026	33.226	33.413	33.585	33.742	33.884	34.016	34.146	34.257	0.89	0.925	1.168	1.330	1.50
0.90	0.90	32.495	32.739	32.969	33.183	33.383	33.570	33.742	33.899	34.041	34.173	34.303	34.414	0.90	0.920	1.166	1.328	1.50
0.91	0.91	32.652	32.896	33.126	33.340	33.540	33.727	33.899	34.056	34.198	34.330	34.460	34.571	0.91	0.915	1.164	1.326	1.50
0.92	0.92	32.809	33.053	33.283	33.497	33.697	33.884	34.056	34.213	34.355	34.487	34.617	34.728	0.92	0.910	1.162	1.324	1.50
0.93	0.93	32.966	33.210	33.440	33.654	33.854	34.041	34.213	34.370	34.512	34.644	34.774	34.885	0.93	0.905	1.160	1.322	1.50
0.94	0.94	33.123	33.367	33.597	33.811	34.011	34.198	34.370	34.527	34.669	34.801	34.931	35.042	0.94	0.900	1.158	1.320	1.50
0.95	0.95	33.280	33.524	33.754	33.968	34.168	34.355	34.527	34.684	34.826	34.958	35.088	35.209	0.95	0.895	1.156	1.318	1.50
0.96	0.96	33.437	33.681	33.911	34.125	34.325	34.512	34.684	34.841	34.983	35.115	35.245	35.356	0.96	0.890	1.154	1.316	1.50
0.97	0.97	33.594	33.838	34.068	34.282	34.482	34.669	34.841	35.008	35.159	35.291	35.421	35.532	0.97	0.885	1.152	1.314	1.50
0.98	0.98	33.751	33.995	34.225	34.439	34.639	34.826	35.008	35.175	35.326	35.458	35.588	35.709	0.98	0.880	1.150	1.312	1.50
0.99	0.99	33.908	34.152	34.382	34.596	34.796	34.983	35.175	35.342	35.493	35.625	35.755	35.866	0.99	0.875	1.148	1.310	1.50
1.00	1.00	34.065	34.309	34.539	34.753	34.953	35.140	35.340	35.507	35.658	35.799	35.929	36.040	1.00	0.870	1.146	1.308	1.50

e	E - M										DE/DM				
	M	50	51	52	53	54	55	56	57	58	59	60	M	50	M = 60
0.00	0.3000	0.1500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000
0.01	0.442	0.246	0.454	0.460	0.460	0.468	0.472	0.478	0.483	0.488	0.494	0.499	0.503	1.006	1.006
0.02	0.859	0.902	0.914	0.926	0.936	0.946	0.949	0.957	0.961	0.962	0.964	0.965	0.966	1.007	1.007
0.04	1.342	1.361	1.380	1.398	1.415	1.432	1.449	1.465	1.481	1.488	1.496	1.502	1.506	1.013	1.013
0.06	1.801	1.826	1.851	1.874	1.898	1.920	1.942	1.964	1.984	1.984	1.984	1.984	1.984	1.019	1.019
0.08	2.256	2.297	2.327	2.357	2.386	2.414	2.441	2.468	2.493	2.493	2.493	2.493	2.493	1.025	1.025
0.10	2.736	2.773	2.809	2.845	2.876	2.913	2.945	2.976	3.007	3.007	3.007	3.007	3.007	1.032	1.032
0.12	3.212	3.252	3.297	3.338	3.378	3.417	3.454	3.490	3.526	3.526	3.526	3.526	3.526	1.044	1.044
0.14	3.694	3.743	3.791	3.837	3.882	3.926	3.968	4.009	4.049	4.049	4.049	4.049	4.049	1.056	1.056
0.16	4.181	4.236	4.290	4.341	4.392	4.440	4.488	4.533	4.577	4.577	4.577	4.577	4.577	1.067	1.067
0.18	4.675	4.735	4.794	4.851	4.906	4.960	5.012	5.062	5.110	5.110	5.110	5.110	5.110	1.078	1.078
0.20	5.174	5.240	5.306	5.366	5.426	5.485	5.541	5.595	5.648	5.648	5.648	5.648	5.648	1.088	1.088
0.22	5.678	5.750	5.819	5.886	5.951	6.014	6.075	6.133	6.190	6.190	6.190	6.190	6.190	1.098	1.098
0.24	6.189	6.266	6.340	6.412	6.482	6.549	6.614	6.676	6.736	6.736	6.736	6.736	6.736	1.107	1.107
0.26	6.706	6.787	6.866	6.943	7.017	7.088	7.157	7.223	7.287	7.287	7.287	7.287	7.287	1.115	1.115
0.28	7.228	7.313	7.387	7.479	7.557	7.632	7.705	7.775	7.842	7.842	7.842	7.842	7.842	1.123	1.123
0.30	7.753	7.845	7.934	8.019	8.102	8.181	8.258	8.331	8.401	8.401	8.401	8.401	8.401	1.131	1.131
0.32	8.286	8.382	8.475	8.565	8.652	8.735	8.814	8.891	8.964	8.964	8.964	8.964	8.964	1.139	1.139
0.34	8.824	8.925	9.022	9.116	9.206	9.292	9.375	9.455	9.530	9.530	9.530	9.530	9.530	1.147	1.147
0.36	9.367	9.472	9.574	9.671	9.765	9.855	9.940	10.022	10.101	10.101	10.101	10.101	10.101	1.155	1.155
0.38	9.915	10.025	10.130	10.231	10.328	10.421	10.509	10.594	10.675	10.675	10.675	10.675	10.675	1.163	1.163
0.40	10.469	10.582	10.691	10.795	10.896	10.991	11.082	11.169	11.252	11.252	11.252	11.252	11.252	1.171	1.171
0.42	11.028	11.145	11.257	11.364	11.467	11.565	11.659	11.748	11.832	11.832	11.832	11.832	11.832	1.179	1.179
0.44	11.591	11.711	11.827	11.937	12.043	12.143	12.239	12.330	12.416	12.416	12.416	12.416	12.416	1.187	1.187
0.46	12.159	12.283	12.401	12.514	12.622	12.725	12.825	12.919	13.008	13.008	13.008	13.008	13.008	1.195	1.195
0.48	12.732	12.859	12.980	13.095	13.205	13.310	13.409	13.503	13.591	13.591	13.591	13.591	13.591	1.203	1.203
0.50	13.310	13.439	13.562	13.680	13.792	13.898	13.998	14.091	14.178	14.178	14.178	14.178	14.178	1.211	1.211
0.52	13.891	14.023	14.149	14.268	14.382	14.489	14.591	14.686	14.776	14.776	14.776	14.776	14.776	1.219	1.219
0.54	14.477	14.611	14.739	14.860	14.975	15.083	15.186	15.282	15.372	15.372	15.372	15.372	15.372	1.227	1.227
0.56	15.064	15.203	15.332	15.455	15.571	15.680	15.783	15.879	15.970	15.970	15.970	15.970	15.970	1.235	1.235
0.58	15.654	15.799	15.926	16.053	16.169	16.279	16.383	16.479	16.569	16.569	16.569	16.569	16.569	1.243	1.243
0.60	16.250	16.397	16.529	16.653	16.771	16.881	16.984	17.080	17.170	17.170	17.170	17.170	17.170	1.251	1.251
0.62	16.850	17.000	17.132	17.257	17.374	17.485	17.588	17.683	17.772	17.772	17.772	17.772	17.772	1.259	1.259
0.64	17.454	17.605	17.738	17.863	17.980	18.090	18.193	18.288	18.376	18.376	18.376	18.376	18.376	1.267	1.267
0.66	18.061	18.214	18.346	18.471	18.588	18.697	18.799	18.893	18.980	18.980	18.980	18.980	18.980	1.275	1.275
0.68	18.671	18.825	18.956	19.081	19.197	19.306	19.407	19.499	19.585	19.585	19.585	19.585	19.585	1.283	1.283
0.70	19.284	19.439	19.568	19.693	19.810	19.918	20.019	20.106	20.186	20.186	20.186	20.186	20.186	1.291	1.291
0.72	19.900	20.057	20.187	20.306	20.421	20.527	20.624	20.714	20.795	20.795	20.795	20.795	20.795	1.299	1.299
0.74	20.519	20.677	20.799	20.921	21.034	21.138	21.234	21.324	21.401	21.401	21.401	21.401	21.401	1.307	1.307
0.76	21.141	21.299	21.416	21.536	21.646	21.745	21.844	21.933	22.006	22.006	22.006	22.006	22.006	1.315	1.315
0.78	21.765	21.924	22.043	22.163	22.263	22.363	22.455	22.537	22.611	22.611	22.611	22.611	22.611	1.323	1.323
0.80	22.391	22.550	22.669	22.789	22.898	22.997	23.086	23.166	23.236	23.236	23.236	23.236	23.236	1.331	1.331
0.82	23.019	23.178	23.297	23.416	23.525	23.624	23.713	23.792	23.861	23.861	23.861	23.861	23.861	1.339	1.339
0.84	23.649	23.808	23.927	24.046	24.155	24.254	24.343	24.422	24.491	24.491	24.491	24.491	24.491	1.347	1.347
0.86	24.281	24.440	24.559	24.678	24.787	24.886	24.975	25.054	25.123	25.123	25.123	25.123	25.123	1.355	1.355
0.88	24.914	25.073	25.192	25.311	25.420	25.519	25.608	25.687	25.756	25.756	25.756	25.756	25.756	1.363	1.363
0.90	25.548	25.707	25.826	25.945	26.054	26.153	26.242	26.321	26.390	26.390	26.390	26.390	26.390	1.371	1.371
0.92	26.183	26.342	26.461	26.580	26.689	26.788	26.877	26.956	27.025	27.025	27.025	27.025	27.025	1.379	1.379
0.94	26.819	27.078	27.197	27.316	27.425	27.524	27.613	27.692	27.761	27.761	27.761	27.761	27.761	1.387	1.387
0.96	27.456	27.715	27.834	27.953	28.062	28.161	28.250	28.329	28.398	28.398	28.398	28.398	28.398	1.395	1.395
0.98	28.094	28.353	28.472	28.591	28.700	28.799	28.888	28.967	29.036	29.036	29.036	29.036	29.036	1.403	1.403
1.00	28.733	29.092	29.211	29.330	29.449	29.548	29.637	29.716	29.785	29.785	29.785	29.785	29.785	1.411	1.411
M	310	309	308	307	306	305	304	303	302	301	300	M	M=310	M=310	M=310

TABLE OF KEPLER'S EQUATION

e	E - M										DE/DM		
	50	51	52	53	54	55	56	57	58	59	60	M	H
0.50	28.024	28.134	28.233	28.320	28.396	28.462	28.517	28.562	28.597	28.623	28.640	0.50	1.1116
0.51	28.649	28.755	28.849	28.932	29.003	29.064	29.115	29.155	29.186	29.210	29.218	0.51	1.1112
0.52	29.273	29.374	29.464	29.542	29.609	29.665	29.710	29.746	29.771	29.787	29.794	0.52	1.1107
0.53	30.016	30.117	30.207	30.285	30.352	30.408	30.453	30.489	30.516	30.534	30.543	0.53	1.1103
0.54	30.817	30.918	30.998	31.068	31.129	31.180	31.221	31.253	31.277	31.294	31.303	0.54	1.1098
0.55	31.136	31.237	31.317	31.387	31.448	31.500	31.541	31.573	31.597	31.614	31.623	0.55	1.1093
0.56	31.456	31.557	31.637	31.707	31.768	31.820	31.861	31.893	31.917	31.934	31.943	0.56	1.1087
0.57	32.009	32.110	32.190	32.260	32.321	32.373	32.414	32.446	32.470	32.487	32.496	0.57	1.1082
0.58	32.369	32.470	32.550	32.620	32.681	32.733	32.774	32.806	32.830	32.847	32.856	0.58	1.1076
0.59	32.933	33.034	33.114	33.184	33.245	33.297	33.338	33.369	33.393	33.410	33.419	0.59	1.1071
0.60	33.202	33.303	33.383	33.453	33.514	33.566	33.607	33.638	33.662	33.680	33.689	0.60	1.1065
0.61	33.687	33.788	33.868	33.938	34.000	34.052	34.093	34.124	34.148	34.165	34.174	0.61	1.1058
0.62	34.009	34.110	34.190	34.260	34.321	34.373	34.414	34.445	34.470	34.487	34.496	0.62	1.1052
0.63	34.409	34.510	34.590	34.660	34.721	34.773	34.814	34.845	34.870	34.887	34.896	0.63	1.1045
0.64	34.809	34.910	34.990	35.060	35.121	35.173	35.214	35.245	35.270	35.287	35.296	0.64	1.1039
0.65	35.198	35.299	35.379	35.449	35.510	35.562	35.603	35.634	35.659	35.676	35.685	0.65	1.1033
0.66	35.787	35.888	35.968	36.038	36.099	36.151	36.192	36.223	36.248	36.265	36.274	0.66	1.1026
0.67	36.377	36.478	36.558	36.628	36.689	36.741	36.782	36.813	36.838	36.855	36.864	0.67	1.1019
0.68	36.967	37.068	37.148	37.218	37.279	37.331	37.372	37.403	37.428	37.445	37.454	0.68	1.1013
0.69	37.357	37.458	37.538	37.608	37.669	37.721	37.762	37.793	37.818	37.835	37.844	0.69	1.1006
0.70	37.847	37.948	38.028	38.098	38.159	38.211	38.252	38.283	38.308	38.325	38.334	0.70	1.0999
0.72	40.177	40.278	40.358	40.428	40.489	40.541	40.582	40.613	40.638	40.655	40.664	0.72	1.0992
0.74	41.805	41.906	42.007	42.087	42.167	42.229	42.281	42.322	42.353	42.378	42.387	0.74	1.0985
0.75	42.934	43.035	43.136	43.216	43.277	43.329	43.370	43.401	43.426	43.443	43.452	0.75	1.0978
0.76	44.063	44.164	44.265	44.345	44.406	44.458	44.509	44.550	44.581	44.606	44.615	0.76	1.0971
0.77	44.880	45.081	45.282	45.362	45.423	45.475	45.516	45.547	45.572	45.589	45.600	0.77	1.0965
0.78	45.597	45.798	45.999	46.079	46.140	46.192	46.233	46.264	46.289	46.306	46.315	0.78	1.0958
0.79	46.014	46.215	46.416	46.496	46.557	46.609	46.650	46.681	46.706	46.723	46.732	0.79	1.0952
0.80	46.617	46.818	47.019	47.099	47.160	47.212	47.253	47.284	47.309	47.326	47.335	0.80	1.0945
0.81	47.143	47.344	47.545	47.625	47.686	47.738	47.779	47.810	47.835	47.852	47.861	0.81	1.0938
0.82	47.669	47.870	48.071	48.151	48.212	48.264	48.305	48.336	48.361	48.378	48.387	0.82	1.0932
0.83	47.162	47.363	47.564	47.644	47.705	47.757	47.798	47.829	47.854	47.871	47.880	0.83	1.0925
0.84	47.695	47.896	48.097	48.177	48.238	48.290	48.331	48.362	48.387	48.404	48.413	0.84	1.0918
0.85	48.200	48.401	48.602	48.682	48.743	48.795	48.836	48.867	48.892	48.909	48.918	0.85	1.0912
0.86	48.705	48.906	49.107	49.187	49.248	49.299	49.340	49.371	49.396	49.413	49.422	0.86	1.0905
0.87	49.210	49.411	49.612	49.692	49.753	49.804	49.845	49.876	49.899	49.916	49.925	0.87	1.0898
0.88	49.715	49.916	50.117	50.197	50.258	50.309	50.350	50.381	50.406	50.423	50.432	0.88	1.0892
0.89	50.189	50.390	50.591	50.671	50.732	50.783	50.824	50.855	50.880	50.897	50.906	0.89	1.0885
0.90	50.624	50.825	51.026	51.106	51.167	51.218	51.259	51.290	51.315	51.332	51.341	0.90	1.0878
0.91	51.154	51.355	51.556	51.636	51.697	51.748	51.789	51.820	51.845	51.862	51.871	0.91	1.0872
0.92	51.660	51.861	52.062	52.142	52.203	52.254	52.295	52.326	52.351	52.368	52.377	0.92	1.0865
0.93	52.161	52.362	52.563	52.643	52.704	52.755	52.796	52.827	52.852	52.869	52.878	0.93	1.0858
0.94	52.568	52.769	52.970	53.050	53.111	53.162	53.203	53.234	53.259	53.276	53.285	0.94	1.0852
0.95	53.030	53.231	53.432	53.512	53.573	53.624	53.665	53.706	53.737	53.762	53.771	0.95	1.0845
0.96	53.487	53.688	53.889	53.969	54.030	54.081	54.122	54.163	54.194	54.219	54.228	0.96	1.0838
0.97	53.940	54.141	54.342	54.422	54.483	54.534	54.575	54.616	54.647	54.672	54.681	0.97	1.0832
0.98	54.389	54.590	54.791	54.871	54.932	54.983	55.024	55.065	55.096	55.121	55.130	0.98	1.0825
0.99	54.833	55.034	55.235	55.315	55.376	55.427	55.468	55.509	55.540	55.565	55.574	0.99	1.0818
1.00	55.272	55.473	55.674	55.754	55.815	55.866	55.907	55.948	55.979	56.004	56.013	1.00	1.0812



TABLE OF KEPLER'S EQUATION

c	E - M										DE/DH				
	M	60	61	62	63	64	65	66	67	68	69	70	M	c	M = 60
0.50	29.640	28.647	28.646	28.636	28.618	28.592	28.557	28.515	28.466	28.409	28.345	0.50	1.012	0.932	
0.51	29.218	29.221	29.214	29.199	29.176	29.144	29.105	29.058	29.003	28.941	28.871	0.51	1.007	0.927	
0.52	29.794	29.791	29.779	29.759	29.731	29.694	29.649	29.597	29.536	29.466	29.394	0.52	1.002	0.922	
0.53	30.366	30.358	30.341	30.316	30.283	30.240	30.190	30.132	30.066	29.993	29.913	0.53	0.997	0.916	
0.54	30.936	30.922	30.900	30.869	30.830	30.782	30.727	30.663	30.592	30.514	30.429	0.54	0.991	0.911	
0.55	31.502	31.483	31.455	31.419	31.374	31.321	31.260	31.191	31.115	31.031	30.940	0.55	0.986	0.905	
0.56	32.062	32.040	32.007	31.965	31.915	31.856	31.790	31.715	31.633	31.544	31.447	0.56	0.980	0.900	
0.57	32.624	32.594	32.555	32.503	32.442	32.388	32.315	32.235	32.148	32.053	31.951	0.57	0.975	0.895	
0.58	33.180	33.145	33.100	33.047	32.985	32.915	32.837	32.751	32.658	32.558	32.450	0.58	0.969	0.889	
0.59	33.733	33.691	33.641	33.582	33.514	33.439	33.355	33.264	33.165	33.059	32.945	0.59	0.963	0.883	
0.60	34.282	34.234	34.178	34.113	34.040	33.958	33.869	33.772	33.667	33.555	33.436	0.60	0.957	0.877	
0.61	34.826	34.773	34.711	34.640	34.561	34.474	34.379	34.276	34.166	34.048	33.924	0.61	0.951	0.871	
0.62	35.368	35.308	35.240	35.163	35.078	34.985	34.884	34.776	34.660	34.537	34.406	0.62	0.945	0.865	
0.63	35.905	35.839	35.765	35.683	35.592	35.493	35.386	35.272	35.150	35.021	34.885	0.63	0.939	0.859	
0.64	36.438	36.367	36.286	36.199	36.101	35.996	35.883	35.763	35.636	35.501	35.360	0.64	0.933	0.853	
0.65	36.967	36.890	36.804	36.709	36.606	36.495	36.377	36.251	36.117	35.977	35.830	0.65	0.927	0.847	
0.66	37.492	37.409	37.316	37.216	37.107	36.990	36.866	36.734	36.595	36.449	36.296	0.66	0.921	0.841	
0.67	38.013	37.924	37.825	37.718	37.604	37.481	37.351	37.213	37.068	36.916	36.758	0.67	0.915	0.835	
0.68	38.530	38.434	38.330	38.217	38.096	37.968	37.831	37.688	37.537	37.380	37.216	0.68	0.908	0.828	
0.69	39.043	38.941	38.830	38.711	38.584	38.450	38.308	38.159	38.002	37.839	37.669	0.69	0.902	0.822	
0.70	39.551	39.443	39.326	39.201	39.068	38.928	38.780	38.625	38.463	38.294	38.118	0.70	0.896	0.816	
0.71	40.055	39.941	39.818	39.687	39.548	39.402	39.248	39.087	38.919	38.745	38.563	0.71	0.890	0.810	
0.72	40.555	40.435	40.305	40.168	40.023	39.871	39.712	39.545	39.371	39.191	39.004	0.72	0.883	0.803	
0.73	41.052	40.925	40.788	40.645	40.495	40.336	40.171	39.999	39.819	39.633	39.441	0.73	0.877	0.805	
0.74	41.542	41.408	41.267	41.118	40.962	40.797	40.626	40.448	40.263	40.072	39.874	0.74	0.871	0.799	
0.75	42.028	41.889	41.742	41.587	41.424	41.254	41.077	40.893	40.700	40.506	40.302	0.75	0.865	0.794	
0.76	42.511	42.365	42.212	42.051	41.882	41.707	41.524	41.334	41.138	40.935	40.727	0.76	0.859	0.788	
0.77	42.989	42.837	42.678	42.511	42.337	42.155	41.966	41.771	41.569	41.361	41.147	0.77	0.852	0.781	
0.78	43.463	43.305	43.140	42.967	42.786	42.599	42.405	42.204	41.996	41.783	41.563	0.78	0.846	0.775	
0.79	43.932	43.768	43.597	43.418	43.232	43.039	42.839	42.632	42.419	42.200	41.975	0.79	0.840	0.769	
0.80	44.397	44.227	44.050	43.865	43.673	43.474	43.269	43.057	42.838	42.614	42.383	0.80	0.834	0.763	
0.81	44.858	44.682	44.499	44.308	44.110	43.906	43.695	43.477	43.253	43.023	42.787	0.81	0.828	0.757	
0.82	45.314	45.132	44.943	44.747	44.543	44.333	44.116	43.893	43.664	43.429	43.187	0.82	0.822	0.751	
0.83	45.766	45.579	45.383	45.181	44.972	44.756	44.534	44.305	44.071	43.830	43.584	0.83	0.816	0.745	
0.84	46.214	46.020	45.820	45.612	45.397	45.175	44.948	44.714	44.472	44.227	43.976	0.84	0.810	0.740	
0.85	46.658	46.458	46.251	46.038	45.817	45.590	45.357	45.118	44.872	44.621	44.364	0.85	0.804	0.733	
0.86	47.097	46.891	46.679	46.460	46.234	46.001	45.763	45.518	45.267	45.011	44.749	0.86	0.798	0.727	
0.87	47.532	47.321	47.102	46.878	46.646	46.408	46.164	45.914	45.658	45.396	45.129	0.87	0.792	0.730	
0.88	47.963	47.746	47.522	47.291	47.054	46.811	46.562	46.306	46.045	45.778	45.506	0.88	0.787	0.725	
0.89	48.389	48.167	47.941	47.701	47.459	47.210	46.955	46.695	46.428	46.157	45.879	0.89	0.781	0.720	
0.90	48.812	48.583	48.348	48.107	47.859	47.605	47.345	47.079	46.808	46.531	46.249	0.90	0.775	0.715	
0.91	49.233	48.996	48.755	48.508	48.255	47.996	47.731	47.460	47.183	46.902	46.615	0.91	0.769	0.710	
0.92	49.644	49.405	49.159	48.906	48.648	48.383	48.113	47.837	47.555	47.269	46.977	0.92	0.764	0.706	
0.93	50.054	49.809	49.553	49.300	49.036	48.766	48.491	48.210	47.923	47.632	47.335	0.93	0.758	0.702	
0.94	50.460	50.210	49.953	49.690	49.421	49.146	48.865	48.579	48.288	47.991	47.690	0.94	0.753	0.699	
0.95	50.862	50.606	50.344	50.076	49.802	49.522	49.236	48.945	48.648	48.348	48.041	0.95	0.747	0.694	
0.96	51.260	50.999	50.732	50.458	50.179	49.894	49.603	49.306	48.999	48.700	48.388	0.96	0.742	0.689	
0.97	51.655	51.388	51.115	50.836	50.552	50.262	49.966	49.664	49.356	49.049	48.733	0.97	0.736	0.682	
0.98	52.045	51.773	51.495	51.211	50.922	50.627	50.326	50.020	49.710	49.395	49.074	0.98	0.731	0.677	
0.99	52.431	52.154	51.871	51.582	51.287	50.988	50.682	50.372	50.057	49.737	49.412	0.99	0.726	0.672	
1.00	52.814	52.531	52.243	51.949	51.650	51.345	51.035	50.720	50.400	50.075	49.746	1.00	0.721	0.668	

e	E → H										DE/DM					
	M	70	71	72	73	74	75	76	77	78	79	80	H	e	M=70	M=80
0.00	0.540	0.543	0.547	0.550	0.552	0.555	0.557	0.560	0.562	0.565	0.568	0.570	0.00	1.000	1.000	1.000
0.01	0.540	0.543	0.547	0.550	0.552	0.555	0.557	0.560	0.562	0.565	0.568	0.570	0.01	1.003	1.003	1.003
0.02	1.084	1.090	1.096	1.102	1.107	1.112	1.117	1.121	1.125	1.129	1.132	1.135	0.02	1.007	1.007	1.007
0.03	1.631	1.641	1.658	1.678	1.695	1.713	1.731	1.749	1.766	1.783	1.800	1.817	0.03	1.010	1.010	1.010
0.04	2.182	2.194	2.205	2.216	2.226	2.235	2.244	2.252	2.259	2.265	2.271	2.276	0.04	1.012	1.005	1.006
0.05	2.736	2.750	2.777	2.794	2.806	2.815	2.822	2.828	2.832	2.836	2.842	2.846	0.05	1.015	1.006	1.006
0.06	3.293	3.310	3.326	3.341	3.354	3.367	3.379	3.389	3.399	3.408	3.415	3.421	0.06	1.018	1.007	1.007
0.07	3.852	3.869	3.886	3.901	3.912	3.922	3.931	3.940	3.949	3.957	3.964	3.971	0.07	1.020	1.007	1.007
0.08	4.415	4.436	4.456	4.475	4.492	4.507	4.521	4.534	4.545	4.555	4.563	4.570	0.08	1.022	1.008	1.008
0.09	4.980	4.994	5.005	5.017	5.028	5.038	5.048	5.058	5.067	5.075	5.082	5.089	0.09	1.024	1.008	1.008
0.10	5.548	5.573	5.596	5.617	5.636	5.654	5.669	5.683	5.695	5.705	5.714	5.721	0.10	1.026	1.008	1.008
0.11	6.118	6.145	6.169	6.191	6.211	6.229	6.245	6.259	6.271	6.281	6.289	6.297	0.11	1.027	1.007	1.007
0.12	6.691	6.718	6.743	6.766	6.787	6.805	6.822	6.836	6.848	6.858	6.865	6.872	0.12	1.028	1.007	1.007
0.13	7.265	7.294	7.319	7.343	7.364	7.383	7.399	7.413	7.425	7.434	7.441	7.448	0.13	1.030	1.006	1.006
0.14	7.841	7.871	7.897	7.921	7.942	7.961	7.977	7.991	8.002	8.012	8.020	8.028	0.14	1.030	1.005	1.005
0.15	8.419	8.449	8.476	8.500	8.521	8.540	8.556	8.569	8.579	8.587	8.592	8.598	0.15	1.031	1.004	1.004
0.16	8.999	9.029	9.056	9.080	9.101	9.119	9.134	9.147	9.156	9.163	9.169	9.174	0.16	1.031	1.004	1.004
0.17	9.580	9.610	9.637	9.660	9.681	9.699	9.713	9.724	9.733	9.738	9.740	9.741	0.17	1.032	1.004	1.004
0.18	10.162	10.192	10.218	10.242	10.262	10.278	10.292	10.302	10.309	10.312	10.313	10.313	0.18	1.032	0.999	0.999
0.19	10.744	10.774	10.800	10.823	10.842	10.858	10.870	10.879	10.886	10.896	10.898	10.898	0.19	1.032	0.997	0.997
0.20	11.328	11.357	11.383	11.405	11.423	11.437	11.448	11.455	11.459	11.461	11.461	11.461	0.20	1.031	0.995	0.995
0.21	11.912	11.941	11.965	11.986	12.003	12.016	12.025	12.030	12.032	12.030	12.025	12.025	0.21	1.030	0.993	0.993
0.22	12.497	12.525	12.548	12.567	12.583	12.594	12.601	12.605	12.604	12.600	12.592	12.592	0.22	1.030	0.990	0.990
0.23	13.082	13.108	13.126	13.146	13.162	13.174	13.177	13.178	13.175	13.175	13.175	13.175	0.23	1.028	0.987	0.987
0.24	13.667	13.692	13.713	13.729	13.740	13.748	13.751	13.750	13.745	13.745	13.745	13.745	0.24	1.027	0.985	0.985
0.25	14.252	14.275	14.294	14.308	14.318	14.323	14.324	14.320	14.312	14.300	14.284	14.264	0.25	1.026	0.982	0.982
0.26	14.836	14.859	14.875	14.887	14.894	14.897	14.895	14.889	14.878	14.863	14.844	14.824	0.26	1.024	0.979	0.979
0.27	15.420	15.440	15.455	15.464	15.469	15.469	15.465	15.456	15.442	15.424	15.401	15.374	0.27	1.022	0.975	0.975
0.28	16.004	16.021	16.033	16.041	16.043	16.040	16.033	16.021	16.004	15.982	15.956	15.926	0.28	1.020	0.972	0.972
0.29	16.588	16.601	16.611	16.615	16.615	16.609	16.599	16.583	16.563	16.538	16.509	16.476	0.29	1.018	0.968	0.968
0.30	17.174	17.180	17.187	17.189	17.185	17.176	17.163	17.144	17.120	17.092	17.058	17.020	0.30	1.015	0.964	0.964
0.31	17.758	17.758	17.762	17.760	17.753	17.741	17.724	17.702	17.675	17.642	17.605	17.565	0.31	1.012	0.961	0.961
0.32	18.342	18.333	18.334	18.330	18.320	18.304	18.283	18.258	18.226	18.190	18.149	18.105	0.32	1.009	0.957	0.957
0.33	18.924	18.908	18.905	18.907	18.904	18.894	18.865	18.840	18.810	18.776	18.736	18.691	0.33	1.006	0.953	0.953
0.34	19.504	19.480	19.474	19.463	19.445	19.423	19.394	19.361	19.322	19.278	19.228	19.176	0.34	1.003	0.948	0.948
0.35	20.084	20.059	20.041	20.026	20.005	19.978	19.944	19.908	19.865	19.817	19.763	19.703	0.35	1.000	0.944	0.944
0.36	20.665	20.618	20.605	20.586	20.561	20.530	20.494	20.452	20.405	20.352	20.294	20.234	0.36	0.998	0.940	0.940
0.37	21.247	21.197	21.177	21.154	21.125	21.090	21.050	21.004	20.953	20.897	20.832	20.767	0.37	0.992	0.935	0.935
0.38	21.829	21.777	21.726	21.699	21.665	21.627	21.582	21.531	21.475	21.414	21.347	21.275	0.38	0.988	0.930	0.930
0.39	22.411	22.358	22.283	22.252	22.214	22.171	22.121	22.066	22.006	21.943	21.868	21.787	0.39	0.984	0.926	0.926
0.40	22.993	22.939	22.863	22.801	22.759	22.711	22.657	22.598	22.532	22.460	22.385	22.306	0.40	0.980	0.921	0.921
0.41	23.575	23.421	23.387	23.347	23.301	23.248	23.190	23.125	23.055	22.980	22.899	22.817	0.41	0.976	0.916	0.916
0.42	24.157	24.004	23.935	23.890	23.839	23.782	23.719	23.650	23.575	23.494	23.408	23.324	0.42	0.971	0.911	0.911
0.43	24.739	24.586	24.480	24.430	24.374	24.312	24.244	24.171	24.094	24.015	23.924	23.834	0.43	0.967	0.906	0.906
0.44	25.321	25.069	25.021	24.967	24.906	24.839	24.766	24.687	24.603	24.512	24.416	24.324	0.44	0.962	0.901	0.901
0.45	25.903	25.651	25.559	25.500	25.434	25.363	25.285	25.201	25.111	25.016	24.914	24.816	0.45	0.958	0.896	0.896
0.46	26.485	26.151	26.094	26.029	25.959	25.882	25.799	25.710	25.615	25.515	25.409	25.307	0.46	0.953	0.891	0.891
0.47	27.067	26.687	26.625	26.555	26.480	26.401	26.310	26.216	26.116	26.010	25.899	25.793	0.47	0.948	0.886	0.886
0.48	27.649	27.219	27.152	27.078	26.997	26.910	26.817	26.718	26.612	26.502	26.385	26.273	0.48	0.943	0.881	0.881
0.49	28.231	27.748	27.676	27.596	27.510	27.418	27.320	27.215	27.105	26.989	26.867	26.750	0.49	0.938	0.876	0.876
0.50	28.813	28.273	28.196	28.111	28.020	27.922	27.819	27.709	27.593	27.472	27.345	27.221	0.50	0.932	0.870	0.870



TABLE OF KEPLER'S EQUATION

e	E - M										M	e	M	DE/DH
	70	71	72	73	74	75	76	77	78	79				
0.50	28.345	28.273	28.166	28.111	28.020	27.922	27.819	27.709	27.593	27.472	27.345	0.932	0.870	
0.51	28.871	28.795	28.712	28.622	28.525	28.423	28.314	28.199	28.078	27.951	27.819	0.927	0.865	
0.52	29.394	29.313	29.224	29.129	29.027	28.919	28.805	28.684	28.558	28.426	28.289	0.922	0.860	
0.53	29.913	29.826	29.732	29.632	29.525	29.411	29.292	29.166	29.035	28.754	0.916	0.854		
0.54	30.429	30.336	30.237	30.131	30.018	29.899	29.775	29.644	29.507	29.364	0.911	0.849		
0.55	30.940	30.842	30.737	30.626	30.508	30.384	30.253	30.117	29.975	29.827	0.905	0.844		
0.56	31.447	31.344	31.234	31.117	30.993	30.864	30.728	30.586	30.438	30.285	0.900	0.838		
0.57	31.951	31.842	31.726	31.604	31.475	31.340	31.198	31.051	30.898	30.740	0.894	0.833		
0.58	32.454	32.346	32.224	32.096	31.962	31.821	31.674	31.521	31.361	31.200	0.889	0.828		
0.59	32.955	32.845	32.724	32.596	32.462	32.321	32.174	32.021	31.859	31.697	0.883	0.822		
0.60	33.454	33.341	33.217	33.089	32.955	32.814	32.667	32.514	32.352	32.189	0.878	0.817		
0.61	33.951	33.834	33.708	33.578	33.443	33.302	33.155	32.999	32.837	32.674	0.872	0.811		
0.62	34.446	34.325	34.196	34.064	33.928	33.787	33.640	33.487	33.329	33.165	0.866	0.807		
0.63	34.938	34.814	34.682	34.548	34.411	34.269	34.121	33.968	33.809	33.645	0.861	0.804		
0.64	35.428	35.299	35.163	35.026	34.886	34.742	34.594	34.441	34.282	34.118	0.855	0.796		
0.65	35.916	35.783	35.643	35.499	35.352	35.201	35.046	34.887	34.724	34.555	0.849	0.791		
0.66	36.399	36.262	36.118	35.971	35.820	35.665	35.506	35.343	35.176	34.999	0.844	0.786		
0.67	36.878	36.736	36.588	36.436	36.280	36.120	35.957	35.791	35.622	35.449	0.838	0.780		
0.68	37.353	37.206	37.054	36.898	36.738	36.574	36.407	36.237	36.063	35.886	0.832	0.775		
0.69	37.824	37.672	37.516	37.356	37.192	37.025	36.855	36.681	36.507	36.330	0.827	0.770		
0.70	38.291	38.134	37.973	37.808	37.639	37.466	37.290	37.111	36.929	36.744	0.821	0.765		
0.71	38.753	38.591	38.426	38.257	38.084	37.908	37.730	37.549	37.366	37.181	0.816	0.760		
0.72	39.211	39.044	38.872	38.696	38.516	38.332	38.148	37.962	37.774	37.583	0.810	0.755		
0.73	39.664	39.492	39.316	39.136	38.952	38.765	38.576	38.384	38.190	37.994	0.805	0.750		
0.74	40.113	39.936	39.755	39.570	39.381	39.188	38.992	38.794	38.593	38.390	0.800	0.745		
0.75	40.558	40.376	40.190	40.000	39.807	39.611	39.412	39.210	38.999	38.789	0.795	0.740		
0.76	41.000	40.812	40.619	40.422	40.221	40.017	39.810	39.600	39.387	39.172	0.789	0.735		
0.77	41.438	41.244	41.047	40.846	40.641	40.433	40.222	40.008	39.791	39.571	0.784	0.730		
0.78	41.873	41.674	41.471	41.266	41.058	40.847	40.633	40.416	40.196	39.973	0.778	0.725		
0.79	42.304	42.101	41.895	41.686	41.474	41.259	41.042	40.822	40.599	40.373	0.772	0.720		
0.80	42.731	42.524	42.314	42.101	41.886	41.669	41.449	41.226	40.999	40.769	0.766	0.716		
0.81	43.154	42.943	42.729	42.512	42.292	42.069	41.843	41.614	41.382	41.147	0.761	0.711		
0.82	43.573	43.358	43.140	42.919	42.695	42.468	42.238	42.004	41.767	41.527	0.756	0.706		
0.83	43.988	43.769	43.546	43.320	43.091	42.858	42.622	42.382	42.139	41.892	0.751	0.702		
0.84	44.399	44.176	43.949	43.718	43.483	43.244	43.001	42.754	42.504	42.251	0.746	0.697		
0.85	44.806	44.579	44.348	44.113	43.874	43.631	43.384	43.133	42.879	42.622	0.741	0.692		
0.86	45.209	44.978	44.743	44.504	44.261	44.014	43.763	43.508	43.250	42.989	0.735	0.688		
0.87	45.608	45.373	45.134	44.891	44.644	44.392	44.136	43.876	43.613	43.347	0.730	0.683		
0.88	46.003	45.764	45.521	45.274	45.023	44.768	44.509	44.246	43.980	43.712	0.725	0.679		
0.89	46.394	46.151	45.904	45.653	45.398	45.140	44.878	44.613	44.346	44.077	0.720	0.674		
0.90	46.781	46.534	46.282	46.026	45.766	45.503	45.237	44.968	44.696	44.421	0.715	0.669		
0.91	47.164	46.913	46.657	46.396	46.131	45.863	45.592	45.318	45.041	44.761	0.710	0.666		
0.92	47.543	47.288	47.028	46.763	46.494	46.221	45.945	45.666	45.384	45.099	0.706	0.661		
0.93	47.918	47.659	47.395	47.126	46.853	46.576	46.296	46.013	45.727	45.438	0.701	0.657		
0.94	48.289	48.026	47.759	47.487	47.211	46.931	46.647	46.360	46.070	45.777	0.696	0.653		
0.95	48.656	48.389	48.118	47.843	47.564	47.281	46.994	46.704	46.411	46.116	0.691	0.649		
0.96	49.019	48.748	48.472	48.192	47.908	47.620	47.328	47.033	46.735	46.434	0.687	0.645		
0.97	49.378	49.103	48.823	48.538	48.249	47.956	47.659	47.358	47.054	46.748	0.682	0.641		
0.98	49.733	49.454	49.169	48.880	48.586	48.288	47.986	47.680	47.370	47.057	0.677	0.637		
0.99	50.084	49.801	49.508	49.211	48.910	48.605	48.296	47.983	47.667	47.348	0.673	0.633		
1.00	49.746	49.442	49.134	48.823	48.509	48.192	47.871	47.546	47.217	46.884	0.668	0.629		

c	E - M										DF/DH									
	M	80	81	82	83	84	85	86	87	88	89	90	M	e	M=60	M=90				
0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000				
0.01	0.565	0.567	0.568	0.569	0.569	0.570	0.571	0.572	0.572	0.573	0.573	0.573	0.573	0.573	1.000	1.000				
0.02	1.132	1.135	1.136	1.140	1.142	1.142	1.143	1.144	1.145	1.146	1.146	1.146	1.146	1.146	1.000	1.000				
0.03	1.702	1.705	1.709	1.712	1.714	1.714	1.716	1.718	1.718	1.719	1.719	1.719	1.719	1.719	1.000	1.000				
0.04	2.271	2.276	2.280	2.284	2.287	2.289	2.291	2.292	2.292	2.292	2.291	2.290	2.290	2.290	1.000	1.000				
0.05	2.842	2.848	2.853	2.857	2.857	2.860	2.863	2.864	2.865	2.866	2.866	2.866	2.866	2.866	1.000	1.000				
0.06	3.415	3.421	3.425	3.431	3.431	3.434	3.438	3.438	3.438	3.437	3.437	3.437	3.437	3.437	1.000	1.000				
0.07	3.989	3.995	4.001	4.005	4.005	4.008	4.010	4.011	4.010	4.008	4.005	4.005	4.005	4.005	1.000	1.000				
0.08	4.563	4.570	4.575	4.580	4.580	4.582	4.584	4.583	4.582	4.579	4.575	4.569	4.569	4.569	1.000	1.000				
0.09	5.138	5.145	5.150	5.154	5.154	5.157	5.156	5.155	5.153	5.149	5.143	5.136	5.136	5.136	1.000	1.000				
0.10	5.714	5.720	5.725	5.728	5.728	5.730	5.729	5.727	5.723	5.718	5.710	5.701	5.701	5.701	1.000	1.000				
0.11	6.289	6.296	6.300	6.302	6.302	6.304	6.301	6.297	6.292	6.285	6.276	6.265	6.265	6.265	1.000	1.000				
0.12	6.865	6.871	6.874	6.875	6.875	6.875	6.872	6.867	6.860	6.851	6.840	6.827	6.827	6.827	1.000	1.000				
0.13	7.441	7.446	7.448	7.448	7.448	7.446	7.442	7.435	7.426	7.415	7.402	7.387	7.387	7.387	1.000	1.000				
0.14	8.017	8.020	8.021	8.020	8.020	8.016	8.010	8.002	7.991	7.978	7.962	7.944	7.944	7.944	1.000	1.000				
0.15	8.592	8.594	8.594	8.594	8.594	8.586	8.578	8.567	8.554	8.538	8.520	8.500	8.500	8.500	1.000	1.000				
0.16	9.166	9.167	9.165	9.165	9.165	9.153	9.143	9.131	9.115	9.097	9.076	9.053	9.053	9.053	1.000	1.000				
0.17	9.740	9.739	9.736	9.736	9.736	9.720	9.707	9.692	9.674	9.654	9.630	9.604	9.604	9.604	1.000	1.000				
0.18	10.313	10.311	10.305	10.296	10.296	10.284	10.270	10.252	10.231	10.206	10.181	10.152	10.152	10.152	1.000	1.000				
0.19	10.885	10.880	10.873	10.864	10.864	10.847	10.830	10.809	10.786	10.759	10.730	10.697	10.697	10.697	1.000	1.000				
0.20	11.455	11.449	11.439	11.425	11.425	11.408	11.388	11.365	11.338	11.308	11.275	11.239	11.239	11.239	1.000	1.000				
0.21	12.025	12.015	12.003	11.987	11.987	11.967	11.944	11.917	11.888	11.855	11.818	11.779	11.779	11.779	1.000	1.000				
0.22	12.592	12.580	12.565	12.546	12.546	12.523	12.497	12.468	12.435	12.398	12.358	12.315	12.315	12.315	1.000	1.000				
0.23	13.158	13.144	13.125	13.103	13.103	13.078	13.048	13.015	12.979	12.939	12.895	12.848	12.848	12.848	1.000	1.000				
0.24	13.722	13.705	13.683	13.658	13.658	13.629	13.597	13.560	13.520	13.476	13.429	13.378	13.378	13.378	1.000	1.000				
0.25	14.284	14.264	14.239	14.211	14.211	14.178	14.142	14.102	14.058	14.010	13.959	13.904	13.904	13.904	1.000	1.000				
0.26	14.844	14.820	14.792	14.760	14.760	14.725	14.685	14.641	14.593	14.541	14.486	14.427	14.427	14.427	1.000	1.000				
0.27	15.401	15.374	15.343	15.308	15.308	15.268	15.224	15.176	15.125	15.069	15.010	14.946	14.946	14.946	1.000	1.000				
0.28	15.956	15.926	15.891	15.852	15.852	15.808	15.761	15.709	15.653	15.593	15.530	15.462	15.462	15.462	1.000	1.000				
0.29	16.509	16.475	16.436	16.393	16.393	16.346	16.294	16.238	16.178	16.114	16.046	15.974	15.974	15.974	1.000	1.000				
0.30	17.058	17.021	16.978	16.931	16.931	16.880	16.824	16.764	16.700	16.631	16.559	16.482	16.482	16.482	1.000	1.000				
0.31	17.605	17.564	17.517	17.466	17.466	17.411	17.351	17.286	17.218	17.145	17.068	16.987	16.987	16.987	1.000	1.000				
0.32	18.149	18.104	18.053	17.998	17.998	17.938	17.871	17.805	17.732	17.655	17.578	17.487	17.487	17.487	1.000	1.000				
0.33	18.691	18.641	18.586	18.526	18.526	18.462	18.393	18.320	18.242	18.160	18.074	17.984	17.984	17.984	1.000	1.000				
0.34	19.228	19.174	19.115	19.051	19.051	18.986	18.909	18.828	18.742	18.653	18.562	18.470	18.470	18.470	1.000	1.000				
0.35	19.763	19.705	19.641	19.573	19.573	19.499	19.422	19.339	19.252	19.161	19.065	18.965	18.965	18.965	1.000	1.000				
0.36	20.294	20.231	20.163	20.090	20.090	20.013	19.930	19.843	19.751	19.655	19.554	19.449	19.449	19.449	1.000	1.000				
0.37	20.822	20.755	20.682	20.605	20.605	20.522	20.435	20.343	20.246	20.145	20.040	19.930	19.930	19.930	1.000	1.000				
0.38	21.347	21.275	21.197	21.115	21.115	21.028	20.936	20.839	20.737	20.631	20.521	20.406	20.406	20.406	1.000	1.000				
0.39	21.868	21.791	21.709	21.622	21.622	21.530	21.433	21.331	21.224	21.113	20.998	20.878	20.878	20.878	1.000	1.000				
0.40	22.385	22.303	22.216	22.124	22.124	22.027	21.926	21.819	21.707	21.592	21.471	21.346	21.346	21.346	1.000	1.000				
0.41	22.899	22.812	22.720	22.623	22.623	22.521	22.415	22.303	22.186	22.065	21.940	21.810	21.810	21.810	1.000	1.000				
0.42	23.408	23.317	23.220	23.118	23.118	23.011	22.899	22.783	22.661	22.535	22.404	22.269	22.269	22.269	1.000	1.000				
0.43	23.914	23.818	23.716	23.609	23.609	23.497	23.380	23.258	23.132	23.002	22.866	22.725	22.725	22.725	1.000	1.000				
0.44	24.416	24.315	24.208	24.096	24.096	23.979	23.857	23.730	23.598	23.462	23.321	23.176	23.176	23.176	1.000	1.000				
0.45	24.914	24.808	24.696	24.579	24.579	24.457	24.330	24.198	24.061	23.919	23.773	23.623	23.623	23.623	1.000	1.000				
0.46	25.409	25.297	25.180	25.058	25.058	24.931	24.798	24.661	24.510	24.372	24.221	24.065	24.065	24.065	1.000	1.000				
0.47	25.899	25.782	25.660	25.533	25.533	25.400	25.263	25.120	24.973	24.821	24.665	24.504	24.504	24.504	1.000	1.000				
0.48	26.385	26.263	26.136	26.003	26.003	25.865	25.723	25.575	25.423	25.266	25.104	24.938	24.938	24.938	1.000	1.000				
0.49	26.867	26.740	26.607	26.470	26.470	26.327	26.179	26.026	25.868	25.706	25.539	25.368	25.368	25.368	1.000	1.000				
0.50	27.345	27.213	27.075	26.932	26.932	26.784	26.631	26.472	26.310	26.142	25.970	25.794	25.794	25.794	1.000	1.000				

TABLE OF KEPLER'S EQUATION

DE/DM

E - M

M	80	81	82	83	84	85	86	87	88	89	90	M	M=80	M=90
0.50	27.345	27.213	27.075	26.932	26.784	26.631	26.472	26.310	26.142	25.970	25.794	0.50	0.870	0.821
0.51	27.319	27.187	27.048	26.905	26.757	26.604	26.445	26.282	26.114	25.942	25.766	0.51	0.865	0.816
0.52	28.289	28.146	27.997	27.844	27.685	27.522	27.353	27.179	27.002	26.825	26.648	0.52	0.860	0.811
0.53	28.754	28.606	28.453	28.294	28.130	27.961	27.787	27.609	27.426	27.238	27.046	0.53	0.854	0.806
0.54	29.216	29.062	28.903	28.739	28.570	28.396	28.217	28.033	27.845	27.652	27.455	0.54	0.849	0.801
0.55	29.673	29.514	29.350	29.181	29.006	28.827	28.643	28.454	28.260	28.062	27.861	0.55	0.844	0.796
0.56	30.126	29.962	29.793	29.618	29.438	29.254	29.064	28.870	28.672	28.468	28.261	0.56	0.838	0.790
0.57	30.575	30.406	30.231	30.051	29.866	29.676	29.482	29.284	29.082	28.876	28.668	0.57	0.833	0.785
0.58	31.020	30.845	30.665	30.480	30.290	30.095	29.895	29.691	29.484	29.272	29.051	0.58	0.828	0.780
0.59	31.461	31.281	31.095	30.905	30.709	30.509	30.304	30.095	29.881	29.662	29.440	0.59	0.822	0.775
0.60	31.897	31.712	31.521	31.325	31.125	30.919	30.709	30.495	30.276	30.052	29.824	0.60	0.817	0.770
0.61	32.330	32.139	31.943	31.742	31.536	31.326	31.110	30.891	30.666	30.438	30.205	0.61	0.812	0.765
0.62	32.758	32.562	32.361	32.155	31.944	31.728	31.507	31.283	31.053	30.820	30.582	0.62	0.807	0.760
0.63	33.182	32.981	32.774	32.563	32.347	32.126	31.901	31.671	31.436	31.198	30.955	0.63	0.801	0.755
0.64	33.602	33.395	33.186	32.967	32.746	32.520	32.290	32.055	31.815	31.572	31.324	0.64	0.796	0.750
0.65	34.018	33.809	33.599	33.379	33.141	32.910	32.675	32.435	32.191	31.942	31.690	0.65	0.791	0.745
0.66	34.430	34.213	33.991	33.764	33.533	33.297	33.056	32.811	32.562	32.309	32.051	0.66	0.786	0.740
0.67	34.837	34.613	34.388	34.156	33.920	33.679	33.433	33.183	32.929	32.671	32.409	0.67	0.780	0.734
0.68	35.241	35.014	34.782	34.545	34.303	34.057	33.807	33.552	33.293	33.030	32.763	0.68	0.775	0.729
0.69	35.641	35.409	35.171	34.929	34.683	34.432	34.176	33.917	33.653	33.385	33.113	0.69	0.770	0.724
0.70	36.037	35.799	35.557	35.310	35.059	34.803	34.542	34.278	34.009	33.737	33.460	0.70	0.765	0.722
0.71	36.429	36.186	35.939	35.687	35.430	35.170	34.904	34.635	34.362	34.084	33.803	0.71	0.760	0.717
0.72	36.816	36.569	36.317	36.060	35.798	35.533	35.263	34.989	34.711	34.429	34.143	0.72	0.755	0.712
0.73	37.200	36.948	36.691	36.429	36.163	35.892	35.618	35.339	35.056	34.769	34.479	0.73	0.750	0.708
0.74	37.581	37.323	37.061	36.794	36.523	36.248	35.969	35.685	35.398	35.106	34.811	0.74	0.745	0.703
0.75	37.957	37.695	37.428	37.156	36.880	36.600	36.316	36.028	35.736	35.440	35.140	0.75	0.740	0.698
0.76	38.330	38.062	37.790	37.514	37.233	36.949	36.660	36.367	36.070	35.770	35.466	0.76	0.735	0.694
0.77	38.698	38.426	38.149	37.868	37.583	37.294	37.000	36.703	36.401	36.096	35.788	0.77	0.730	0.690
0.78	39.063	38.786	38.505	38.219	37.929	37.635	37.337	37.035	36.729	36.420	36.107	0.78	0.725	0.685
0.79	39.425	39.143	38.857	38.566	38.272	37.973	37.670	37.364	37.054	36.740	36.422	0.79	0.720	0.681
0.80	39.782	39.496	39.205	38.910	38.611	38.307	38.000	37.689	37.375	37.056	36.734	0.80	0.716	0.676
0.81	40.136	39.843	39.550	39.250	38.946	38.638	38.327	38.011	37.692	37.369	37.043	0.81	0.711	0.672
0.82	40.487	40.191	39.891	39.587	39.278	38.966	38.650	38.330	38.007	37.679	37.349	0.82	0.706	0.668
0.83	40.834	40.533	40.229	39.920	39.607	39.290	38.970	38.645	38.316	37.986	37.652	0.83	0.702	0.664
0.84	41.177	40.872	40.563	40.249	39.932	39.611	39.286	38.958	38.626	38.290	37.951	0.84	0.697	0.659
0.85	41.517	41.207	40.894	40.576	40.254	39.929	39.599	39.267	38.933	38.591	38.247	0.85	0.692	0.655
0.86	41.854	41.539	41.221	40.899	40.573	40.243	39.910	39.572	39.232	38.888	38.541	0.86	0.688	0.651
0.87	42.187	41.868	41.545	41.219	40.888	40.554	40.216	39.875	39.530	39.182	38.831	0.87	0.683	0.646
0.88	42.516	42.193	41.866	41.535	41.200	40.862	40.520	40.175	39.826	39.474	39.118	0.88	0.679	0.643
0.89	42.843	42.515	42.184	41.848	41.509	41.167	40.821	40.471	40.118	39.762	39.403	0.89	0.674	0.639
0.90	43.166	42.834	42.498	42.159	41.815	41.469	41.118	40.765	40.408	40.048	39.684	0.90	0.670	0.635
0.91	43.485	43.149	42.809	42.466	42.118	41.767	41.413	41.055	40.694	40.330	39.963	0.91	0.666	0.631
0.92	43.802	43.461	43.117	42.769	42.419	42.063	41.705	41.343	40.978	40.610	40.238	0.92	0.661	0.627
0.93	44.115	43.771	43.422	43.070	42.715	42.356	41.993	41.627	41.259	40.887	40.513	0.93	0.657	0.623
0.94	44.425	44.077	43.724	43.368	43.008	42.645	42.279	41.909	41.536	41.164	40.782	0.94	0.653	0.620
0.95	44.733	44.379	44.023	43.663	43.299	42.932	42.562	42.188	41.811	41.432	41.049	0.95	0.649	0.616
0.96	45.036	44.679	44.319	43.954	43.587	43.216	42.842	42.464	42.084	41.700	41.314	0.96	0.645	0.612
0.97	45.337	44.976	44.611	44.243	43.872	43.497	43.119	42.738	42.353	41.966	41.576	0.97	0.641	0.608
0.98	45.635	45.270	44.901	44.529	44.154	43.775	43.393	43.008	42.620	42.229	41.835	0.98	0.637	0.605
0.99	45.930	45.561	45.188	44.812	44.433	44.050	43.665	43.276	42.884	42.490	42.092	0.99	0.633	0.601
1.00	46.222	45.849	45.473	45.093	44.709	44.323	43.934	43.541	43.146	42.748	42.346	1.00	0.629	0.598

M=80

M

89

88

87

86

85

84

83

82

81

80

M=280

M

270

M=270

		E - M										DE/DM				
		90	91	92	93	94	95	96	97	98	99	100	M	e	M= 90	M=100
0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	1.000	1.000
0.01	0.573	0.572	0.572	0.572	0.572	0.572	0.570	0.569	0.568	0.567	0.566	0.565	0.01	0.01	1.000	0.998
0.02	1.146	1.145	1.144	1.143	1.143	1.141	1.139	1.137	1.134	1.131	1.128	1.124	0.02	0.02	1.000	0.996
0.03	1.718	1.717	1.715	1.713	1.712	1.708	1.703	1.699	1.692	1.684	1.674	1.661	0.03	0.03	0.999	0.994
0.04	2.290	2.288	2.285	2.282	2.279	2.272	2.263	2.255	2.242	2.225	2.208	2.184	0.04	0.04	0.998	0.992
0.05	2.861	2.858	2.855	2.850	2.844	2.834	2.818	2.801	2.775	2.744	2.708	2.667	0.05	0.05	0.998	0.989
0.06	3.432	3.427	3.422	3.416	3.409	3.400	3.382	3.362	3.331	3.290	3.240	3.181	0.06	0.06	0.996	0.986
0.07	4.003	3.995	3.984	3.971	3.954	3.932	3.902	3.864	3.818	3.764	3.701	3.630	0.07	0.07	0.995	0.983
0.08	4.569	4.562	4.554	4.544	4.533	4.521	4.507	4.492	4.475	4.458	4.439	4.415	0.08	0.08	0.994	0.980
0.09	5.136	5.127	5.117	5.105	5.092	5.077	5.061	5.043	5.023	5.003	4.981	4.955	0.09	0.09	0.992	0.977
0.10	5.701	5.691	5.678	5.664	5.649	5.633	5.615	5.596	5.575	5.554	5.531	5.506	0.10	0.10	0.990	0.974
0.11	6.265	6.254	6.239	6.223	6.206	6.188	6.168	6.146	6.122	6.097	6.072	6.047	0.11	0.11	0.988	0.970
0.12	6.827	6.816	6.799	6.776	6.753	6.728	6.702	6.674	6.644	6.612	6.579	6.546	0.12	0.12	0.986	0.967
0.13	7.387	7.375	7.356	7.328	7.300	7.268	7.234	7.198	7.160	7.121	7.079	7.034	0.13	0.13	0.984	0.963
0.14	7.944	7.924	7.902	7.877	7.850	7.818	7.782	7.743	7.701	7.657	7.611	7.564	0.14	0.14	0.981	0.959
0.15	8.500	8.477	8.452	8.424	8.394	8.362	8.327	8.289	8.248	8.205	8.160	8.114	0.15	0.15	0.978	0.955
0.16	9.053	9.027	8.999	8.968	8.935	8.898	8.861	8.821	8.778	8.733	8.686	8.638	0.16	0.16	0.975	0.951
0.17	9.604	9.575	9.543	9.509	9.472	9.433	9.391	9.347	9.300	9.251	9.201	9.150	0.17	0.17	0.972	0.947
0.18	10.152	10.120	10.085	10.047	10.007	9.964	9.918	9.869	9.819	9.765	9.713	9.660	0.18	0.18	0.969	0.943
0.19	10.697	10.661	10.623	10.582	10.538	10.491	10.441	10.389	10.334	10.276	10.216	10.155	0.19	0.19	0.966	0.938
0.20	11.239	11.200	11.158	11.113	11.065	11.014	10.961	10.904	10.845	10.783	10.718	10.652	0.20	0.20	0.962	0.934
0.21	11.779	11.735	11.690	11.641	11.589	11.535	11.477	11.416	11.352	11.286	11.217	11.145	0.21	0.21	0.959	0.929
0.22	12.315	12.269	12.221	12.166	12.110	12.051	11.989	11.924	11.856	11.785	11.711	11.636	0.22	0.22	0.955	0.925
0.23	12.848	12.798	12.744	12.687	12.629	12.566	12.497	12.428	12.355	12.280	12.201	12.119	0.23	0.23	0.951	0.920
0.24	13.378	13.324	13.266	13.205	13.140	13.073	13.002	12.928	12.850	12.767	12.681	12.594	0.24	0.24	0.947	0.915
0.25	13.904	13.846	13.784	13.718	13.650	13.578	13.502	13.424	13.342	13.257	13.169	13.079	0.25	0.25	0.943	0.910
0.26	14.427	14.364	14.298	14.228	14.153	14.073	13.991	13.907	13.821	13.733	13.644	13.553	0.26	0.26	0.939	0.906
0.27	14.946	14.880	14.809	14.735	14.657	14.576	14.491	14.403	14.312	14.217	14.119	14.027	0.27	0.27	0.935	0.901
0.28	15.462	15.391	15.316	15.237	15.155	15.069	14.979	14.887	14.790	14.691	14.588	14.483	0.28	0.28	0.931	0.896
0.29	15.974	15.898	15.819	15.735	15.648	15.558	15.463	15.366	15.265	15.160	15.053	14.943	0.29	0.29	0.926	0.891
0.30	16.482	16.402	16.316	16.230	16.138	16.042	15.943	15.841	15.735	15.625	15.513	15.400	0.30	0.30	0.922	0.886
0.31	16.987	16.902	16.813	16.720	16.623	16.523	16.419	16.312	16.201	16.086	15.968	15.848	0.31	0.31	0.917	0.880
0.32	17.487	17.398	17.304	17.206	17.105	17.000	16.891	16.778	16.662	16.543	16.420	16.295	0.32	0.32	0.912	0.875
0.33	17.984	17.889	17.791	17.688	17.582	17.472	17.358	17.241	17.119	16.995	16.867	16.735	0.33	0.33	0.908	0.870
0.34	18.476	18.377	18.274	18.166	18.055	17.940	17.821	17.698	17.572	17.443	17.309	17.171	0.34	0.34	0.903	0.865
0.35	18.965	18.861	18.752	18.640	18.524	18.404	18.280	18.152	18.021	17.886	17.749	17.608	0.35	0.35	0.898	0.860
0.36	19.449	19.340	19.227	19.110	18.988	18.863	18.734	18.601	18.465	18.325	18.181	18.033	0.36	0.36	0.893	0.855
0.37	19.930	19.816	19.697	19.575	19.449	19.318	19.184	19.046	18.905	18.760	18.611	18.458	0.37	0.37	0.888	0.849
0.38	20.406	20.287	20.164	20.036	19.905	19.769	19.630	19.487	19.340	19.190	19.036	18.878	0.38	0.38	0.883	0.844
0.39	20.878	20.754	20.625	20.493	20.357	20.216	20.072	19.923	19.771	19.616	19.457	19.294	0.39	0.39	0.878	0.839
0.40	21.346	21.217	21.086	20.946	20.804	20.658	20.509	20.355	20.198	20.038	19.873	19.703	0.40	0.40	0.873	0.834
0.41	21.810	21.675	21.537	21.394	21.247	21.096	20.942	20.783	20.621	20.455	20.285	20.114	0.41	0.41	0.868	0.829
0.42	22.269	22.130	21.986	21.838	21.686	21.530	21.370	21.207	21.043	20.876	20.705	20.533	0.42	0.42	0.863	0.823
0.43	22.723	22.580	22.431	22.278	22.121	21.960	21.795	21.626	21.453	21.277	21.099	20.920	0.43	0.43	0.858	0.818
0.44	23.176	23.026	22.872	22.714	22.551	22.385	22.215	22.041	21.863	21.682	21.496	21.313	0.44	0.44	0.853	0.813
0.45	23.623	23.466	23.308	23.145	22.978	22.806	22.631	22.451	22.268	22.082	21.891	21.696	0.45	0.45	0.847	0.808
0.46	24.064	23.905	23.741	23.572	23.399	23.223	23.042	22.858	22.669	22.478	22.282	22.082	0.46	0.46	0.842	0.803
0.47	24.504	24.338	24.169	23.995	23.817	23.635	23.450	23.260	23.067	22.870	22.669	22.464	0.47	0.47	0.837	0.798
0.48	24.943	24.767	24.593	24.414	24.231	24.044	23.853	23.655	23.452	23.245	23.035	22.822	0.48	0.48	0.832	0.793
0.49	25.382	25.192	25.012	24.828	24.641	24.448	24.252	24.052	23.848	23.641	23.430	23.216	0.49	0.49	0.826	0.787
0.50	25.794	25.613	25.428	25.233	25.045	24.848	24.647	24.442	24.233	24.021	23.805	23.585	0.50	0.50	0.821	0.782

TABLE OF KEPLER'S EQUATION

M		E - M										DE/DH									
		90	91	92	93	94	95	96	97	98	99	100	M	e	M=90	M=100					
0.50	25.794	25.613	25.432	25.258	25.085	24.912	24.740	24.567	24.394	24.221	24.048	23.875	0.50	0.821	0.781	M=100					
0.51	26.214	26.029	25.845	25.661	25.477	25.293	25.109	24.925	24.741	24.557	24.373	24.189	0.51	0.816	0.776						
0.52	26.633	26.441	26.246	26.047	25.848	25.644	25.439	25.234	25.029	24.824	24.619	24.414	0.52	0.811	0.771						
0.53	27.046	26.850	26.649	26.444	26.236	26.027	25.817	25.607	25.396	25.185	24.974	24.763	0.53	0.806	0.766						
0.54	27.455	27.254	27.048	26.838	26.624	26.407	26.189	25.970	25.750	25.529	25.307	25.085	0.54	0.801	0.761						
0.55	27.860	27.653	27.443	27.228	27.009	26.786	26.560	26.333	26.105	25.876	25.646	25.414	0.55	0.796	0.756						
0.56	28.261	28.049	27.833	27.614	27.390	27.162	26.932	26.701	26.468	26.234	26.000	25.765	0.56	0.791	0.751						
0.57	28.658	28.441	28.220	28.000	27.775	27.548	27.319	27.088	26.855	26.621	26.386	26.150	0.57	0.785	0.745						
0.58	29.051	28.829	28.603	28.377	28.149	27.919	27.687	27.453	27.218	26.982	26.745	26.508	0.58	0.780	0.740						
0.59	29.440	29.213	28.982	28.747	28.508	28.265	28.021	27.776	27.529	27.281	27.032	26.783	0.59	0.775	0.735						
0.60	29.824	29.592	29.357	29.117	28.873	28.625	28.374	28.121	27.866	27.611	27.354	27.097	0.60	0.770	0.730						
0.61	30.205	29.968	29.727	29.483	29.234	28.982	28.728	28.472	28.215	27.956	27.697	27.438	0.61	0.765	0.725						
0.62	30.582	30.340	30.094	29.845	29.591	29.334	29.076	28.817	28.556	28.293	28.029	27.764	0.62	0.760	0.720						
0.63	30.955	30.708	30.458	30.203	29.945	29.683	29.419	29.154	28.888	28.621	28.353	28.085	0.63	0.755	0.715						
0.64	31.324	31.073	30.817	30.558	30.294	30.028	29.761	29.493	29.224	28.954	28.683	28.411	0.64	0.750	0.710						
0.65	31.689	31.433	31.173	30.908	30.640	30.369	30.097	29.824	29.550	29.275	29.000	28.724	0.65	0.745	0.705						
0.66	32.051	31.790	31.525	31.256	30.984	30.709	30.432	30.154	29.875	29.595	29.314	29.032	0.66	0.741	0.701						
0.67	32.409	32.148	31.875	31.599	31.322	31.041	30.758	30.474	30.189	29.902	29.614	29.325	0.67	0.736	0.700						
0.68	32.763	32.492	32.217	31.939	31.657	31.371	31.082	30.790	30.497	30.203	29.908	29.612	0.68	0.731	0.698						
0.69	33.113	32.838	32.558	32.275	31.988	31.698	31.405	31.108	30.814	30.519	30.224	29.928	0.69	0.726	0.692						
0.70	33.460	33.180	32.896	32.608	32.317	32.022	31.724	31.422	31.117	30.813	30.508	30.202	0.70	0.722	0.687						
0.71	33.803	33.518	33.229	32.937	32.641	32.342	32.039	31.733	31.424	31.112	30.799	30.486	0.71	0.717	0.683						
0.72	34.143	33.853	33.560	33.263	32.962	32.659	32.351	32.041	31.727	31.411	31.091	30.772	0.72	0.712	0.679						
0.73	34.479	34.194	33.887	33.585	33.280	32.972	32.660	32.346	32.028	31.707	31.383	31.058	0.73	0.708	0.674						
0.74	34.811	34.512	34.210	33.904	33.595	33.282	32.966	32.647	32.325	31.999	31.671	31.343	0.74	0.703	0.670						
0.75	35.140	34.837	34.530	34.220	33.906	33.589	33.268	32.945	32.618	32.289	31.956	31.624	0.75	0.698	0.666						
0.76	35.466	35.173	34.847	34.532	34.214	33.892	33.568	33.240	32.909	32.575	32.239	31.902	0.76	0.694	0.662						
0.77	35.788	35.476	35.150	34.841	34.519	34.192	33.864	33.532	33.197	32.859	32.518	32.174	0.77	0.690	0.658						
0.78	36.107	35.790	35.470	35.146	34.820	34.494	34.156	33.820	33.481	33.139	32.794	32.448	0.78	0.685	0.654						
0.79	36.422	36.101	35.777	35.449	35.118	34.784	34.444	34.106	33.763	33.416	33.067	32.719	0.79	0.681	0.650						
0.80	36.734	36.409	36.080	35.748	35.413	35.075	34.733	34.389	34.041	33.691	33.338	32.984	0.80	0.676	0.646						
0.81	37.043	36.714	36.381	36.044	35.705	35.362	35.017	34.668	34.317	33.963	33.605	33.246	0.81	0.672	0.642						
0.82	37.349	37.015	36.678	36.337	35.994	35.647	35.298	34.945	34.590	34.231	33.870	33.509	0.82	0.668	0.638						
0.83	37.652	37.313	36.972	36.628	36.280	35.929	35.575	35.219	34.859	34.497	34.132	33.765	0.83	0.664	0.634						
0.84	37.951	37.609	37.263	36.915	36.563	36.208	35.850	35.490	35.126	34.760	34.391	34.022	0.84	0.659	0.630						
0.85	38.247	37.901	37.551	37.199	36.843	36.484	36.122	35.758	35.391	35.021	34.648	34.280	0.85	0.655	0.626						
0.86	38.541	38.190	37.837	37.480	37.120	36.757	36.392	36.023	35.652	35.278	34.902	34.524	0.86	0.651	0.622						
0.87	38.831	38.476	38.119	37.758	37.394	37.028	36.658	36.286	35.911	35.533	35.156	34.777	0.87	0.647	0.618						
0.88	39.118	38.760	38.398	38.033	37.666	37.295	36.922	36.546	36.167	35.786	35.402	35.018	0.88	0.643	0.615						
0.89	39.403	39.040	38.675	38.306	37.934	37.560	37.183	36.803	36.421	36.035	35.648	35.261	0.89	0.639	0.611						
0.90	39.684	39.319	38.948	38.576	38.200	37.821	37.441	37.058	36.671	36.283	35.891	35.497	0.90	0.635	0.607						
0.91	39.963	39.592	39.219	38.843	38.463	38.082	37.697	37.310	36.920	36.527	36.132	35.735	0.91	0.631	0.604						
0.92	40.238	39.864	39.487	39.107	38.724	38.338	37.950	37.559	37.165	36.769	36.371	35.972	0.92	0.627	0.600						
0.93	40.511	40.133	39.752	39.366	38.982	38.592	38.200	37.806	37.409	37.009	36.607	36.202	0.93	0.623	0.597						
0.94	40.782	40.400	40.015	39.627	39.237	38.844	38.448	38.050	37.649	37.246	36.841	36.434	0.94	0.620	0.594						
0.95	41.051	40.663	40.275	39.884	39.490	39.093	38.688	38.292	37.894	37.481	37.072	36.663	0.95	0.616	0.590						
0.96	41.314	40.924	40.532	40.137	39.740	39.339	38.937	38.531	38.124	37.713	37.301	36.888	0.96	0.612	0.586						
0.97	41.576	41.183	40.787	40.388	39.987	39.583	39.177	38.768	38.357	37.943	37.528	37.111	0.97	0.608	0.583						
0.98	41.835	41.439	41.039	40.637	40.232	39.825	39.415	39.003	38.588	38.171	37.752	37.332	0.98	0.605	0.580						
0.99	42.092	41.692	41.289	40.883	40.475	40.064	39.651	39.235	38.817	38.397	37.974	37.549	0.99	0.601	0.576						
1.00	42.346	41.943	41.536	41.127	40.715	40.301	39.884	39.465	39.044	38.620	38.194	37.765	1.00	0.598	0.573	M=260					

M=270 M=260

c	F - M										DE/DM									
	M	109	101	102	103	104	105	106	107	108	109	110	M	c	M=100	M=110				
0.00	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000				
0.01	0.563	0.551	0.559	0.557	0.555	0.552	0.549	0.546	0.543	0.540	0.537	0.534	0.531	0.998	0.997	0.997				
0.02	1.124	1.120	1.116	1.111	1.106	1.101	1.095	1.089	1.083	1.076	1.070	1.064	1.058	0.996	0.993	0.993				
0.03	1.685	1.677	1.670	1.663	1.655	1.647	1.638	1.629	1.619	1.609	1.598	1.587	1.576	0.994	0.989	0.989				
0.04	2.246	2.231	2.222	2.212	2.201	2.189	2.177	2.165	2.152	2.138	2.123	2.108	2.093	0.992	0.985	0.985				
0.05	2.794	2.782	2.770	2.757	2.743	2.729	2.713	2.697	2.680	2.662	2.644	2.625	2.606	0.989	0.981	0.981				
0.06	3.345	3.331	3.316	3.300	3.283	3.265	3.246	3.226	3.203	3.178	3.153	3.128	3.103	0.986	0.977	0.977				
0.07	3.893	3.876	3.858	3.839	3.818	3.797	3.774	3.751	3.726	3.700	3.673	3.647	3.621	0.983	0.973	0.973				
0.08	4.439	4.419	4.397	4.375	4.351	4.325	4.299	4.271	4.243	4.213	4.181	4.149	4.117	0.980	0.968	0.968				
0.09	4.981	4.959	4.933	4.907	4.879	4.850	4.820	4.788	4.753	4.721	4.685	4.648	4.611	0.977	0.964	0.964				
0.10	5.521	5.494	5.465	5.436	5.404	5.371	5.337	5.301	5.264	5.225	5.185	5.144	5.102	0.974	0.959	0.959				
0.11	6.057	6.026	5.994	5.959	5.925	5.888	5.850	5.810	5.768	5.725	5.680	5.634	5.587	0.970	0.955	0.955				
0.12	6.589	6.555	6.519	6.482	6.442	6.401	6.359	6.314	6.268	6.220	6.171	6.123	6.075	0.967	0.950	0.950				
0.13	7.118	7.081	7.041	6.999	6.956	6.910	6.863	6.814	6.764	6.711	6.657	6.603	6.549	0.963	0.945	0.945				
0.14	7.644	7.602	7.559	7.513	7.465	7.415	7.364	7.310	7.255	7.204	7.138	7.079	7.025	0.959	0.940	0.940				
0.15	8.166	8.120	8.072	8.022	7.970	7.916	7.860	7.802	7.741	7.679	7.615	7.551	7.487	0.955	0.935	0.935				
0.16	8.684	8.634	8.582	8.528	8.471	8.413	8.352	8.289	8.224	8.157	8.088	8.016	7.943	0.951	0.930	0.930				
0.17	9.199	9.144	9.088	9.029	8.968	8.905	8.839	8.771	8.702	8.630	8.555	8.477	8.403	0.947	0.925	0.925				
0.18	9.709	9.651	9.590	9.526	9.461	9.393	9.322	9.250	9.175	9.100	9.019	8.933	8.847	0.943	0.920	0.920				
0.19	10.215	10.153	10.087	10.019	9.949	9.876	9.801	9.723	9.644	9.561	9.477	9.389	9.303	0.939	0.914	0.914				
0.20	10.718	10.651	10.581	10.508	10.433	10.355	10.275	10.193	10.108	10.020	9.931	9.839	9.747	0.934	0.909	0.909				
0.21	11.217	11.145	11.070	11.000	10.923	10.848	10.765	10.682	10.597	10.512	10.425	10.337	10.249	0.929	0.904	0.904				
0.22	11.711	11.634	11.554	11.475	11.388	11.300	11.210	11.117	11.022	10.925	10.824	10.722	10.620	0.925	0.899	0.899				
0.23	12.201	12.120	12.035	11.948	11.859	11.766	11.671	11.573	11.478	11.370	11.264	11.154	11.043	0.920	0.893	0.893				
0.24	12.687	12.601	12.512	12.420	12.325	12.227	12.127	12.024	11.918	11.810	11.700	11.587	11.473	0.915	0.888	0.888				
0.25	13.169	13.078	12.984	12.887	12.787	12.684	12.579	12.471	12.360	12.246	12.130	12.012	11.893	0.910	0.883	0.883				
0.26	13.646	13.550	13.451	13.349	13.244	13.136	13.026	12.912	12.796	12.678	12.556	12.433	12.309	0.906	0.877	0.877				
0.27	14.119	14.018	13.914	13.807	13.697	13.584	13.468	13.350	13.228	13.104	12.977	12.850	12.722	0.901	0.872	0.872				
0.28	14.588	14.482	14.373	14.261	14.146	14.028	13.907	13.783	13.656	13.526	13.394	13.260	13.125	0.896	0.866	0.866				
0.29	15.053	14.942	14.827	14.710	14.590	14.466	14.340	14.211	14.079	13.944	13.806	13.666	13.525	0.891	0.861	0.861				
0.30	15.513	15.397	15.277	15.155	15.029	14.901	14.769	14.634	14.497	14.357	14.214	14.069	13.923	0.886	0.856	0.856				
0.31	15.968	15.847	15.723	15.595	15.464	15.331	15.194	15.054	14.911	14.766	14.617	14.472	14.323	0.881	0.851	0.851				
0.32	16.420	16.293	16.164	16.031	15.895	15.754	15.614	15.469	15.321	15.170	15.016	14.860	14.703	0.875	0.845	0.845				
0.33	16.867	16.735	16.600	16.462	16.321	16.177	16.029	15.879	15.726	15.569	15.410	15.250	15.089	0.870	0.839	0.839				
0.34	17.309	17.173	17.033	16.889	16.743	16.593	16.441	16.285	16.129	15.964	15.798	15.632	15.465	0.865	0.834	0.834				
0.35	17.748	17.606	17.461	17.312	17.160	17.005	16.848	16.686	16.522	16.355	16.185	16.015	15.844	0.860	0.829	0.829				
0.36	18.181	18.034	17.884	17.730	17.573	17.413	17.250	17.084	16.914	16.742	16.568	16.394	16.219	0.855	0.823	0.823				
0.37	18.611	18.459	18.303	18.144	17.982	17.816	17.648	17.476	17.301	17.124	16.943	16.759	16.574	0.850	0.818	0.818				
0.38	19.036	18.878	18.718	18.553	18.386	18.215	18.041	17.864	17.684	17.502	17.316	17.129	16.941	0.844	0.811	0.811				
0.39	19.457	19.294	19.128	18.959	18.786	18.610	18.431	18.248	18.063	17.875	17.684	17.490	17.295	0.839	0.807	0.807				
0.40	19.874	19.705	19.534	19.359	19.181	19.000	18.816	18.628	18.438	18.244	18.048	17.850	17.651	0.834	0.802	0.802				
0.41	20.285	20.112	19.935	19.756	19.573	19.386	19.197	19.004	18.808	18.614	18.408	18.203	18.000	0.829	0.797	0.797				
0.42	20.695	20.515	20.333	20.148	19.960	19.767	19.573	19.375	19.174	18.970	18.764	18.559	18.354	0.823	0.792	0.792				
0.43	21.097	20.913	20.726	20.536	20.342	20.146	19.946	19.743	19.536	19.327	19.115	18.903	18.691	0.818	0.787	0.787				
0.44	21.496	21.307	21.115	20.920	20.721	20.519	20.314	20.106	19.894	19.680	19.463	19.245	19.027	0.813	0.782	0.782				
0.45	21.891	21.697	21.500	21.300	21.096	20.888	20.678	20.465	20.248	20.029	19.807	19.584	19.361	0.808	0.776	0.776				
0.46	22.282	22.083	21.881	21.676	21.466	21.254	21.039	20.820	20.598	20.374	20.147	19.915	19.683	0.803	0.771	0.771				
0.47	22.666	22.465	22.257	22.046	21.832	21.615	21.394	21.171	20.944	20.715	20.482	20.247	20.013	0.798	0.766	0.766				
0.48	23.052	22.842	22.630	22.414	22.195	21.972	21.747	21.519	21.286	21.052	20.814	20.574	20.333	0.793	0.761	0.761				
0.49	23.438	23.216	22.998	22.777	22.555	22.325	22.095	21.861	21.624	21.385	21.143	20.899	20.655	0.788	0.755	0.755				
0.50	23.825	23.595	23.363	23.136	22.907	22.675	22.439	22.201	21.959	21.714	21.467	21.219	20.970	0.782	0.750	0.750				

M

M=250

TABLE OF KEPLER'S EQUATION

e	E - M										DE/DM									
	M	100	101	102	103	104	105	106	107	108	109	110	M	M=100	M=110	e				
0.50	23.305	23.535	23.663	23.786	23.907	22.675	22.459	22.200	21.959	21.714	21.467	0.50	0.782	0.751						
0.51	24.175	24.951	25.723	26.492	27.258	28.020	22.779	22.536	22.289	22.040	21.788	0.51	0.777	0.746						
0.52	24.842	25.612	26.379	27.142	27.899	28.651	23.116	22.868	22.616	22.362	22.105	0.52	0.772	0.741						
0.53	25.504	26.270	27.032	27.789	28.541	29.288	23.449	23.196	22.939	22.680	22.418	0.53	0.767	0.737						
0.54	26.162	26.924	27.682	28.436	29.185	29.929	23.778	23.520	23.259	22.995	22.728	0.54	0.762	0.732						
0.55	26.817	27.575	28.328	29.078	29.825	30.567	24.103	23.840	23.574	23.306	23.034	0.55	0.757	0.727						
0.56	27.468	28.222	28.971	29.716	30.457	31.193	24.425	24.157	23.885	23.613	23.337	0.56	0.752	0.722						
0.57	28.115	28.865	29.611	30.353	31.093	31.828	24.743	24.471	24.195	23.917	23.636	0.57	0.748	0.718						
0.58	28.758	29.504	30.247	30.988	31.726	32.453	25.058	24.781	24.501	24.218	23.932	0.58	0.743	0.713						
0.59	29.398	30.140	30.880	31.618	32.352	33.069	25.368	25.087	24.802	24.515	24.225	0.59	0.738	0.708						
0.60	30.034	30.773	31.510	32.245	32.937	33.677	25.677	25.390	25.101	24.809	24.514	0.60	0.733	0.703						
0.61	30.666	31.402	32.142	32.879	33.516	34.277	25.981	25.691	25.396	25.099	24.800	0.61	0.728	0.699						
0.62	31.294	32.033	32.673	33.464	34.092	34.860	26.282	25.986	25.688	25.386	25.083	0.62	0.724	0.695						
0.63	31.918	32.653	33.293	34.092	34.653	35.429	26.579	26.279	25.976	25.670	25.362	0.63	0.719	0.690						
0.64	32.538	33.269	33.909	34.682	35.200	36.000	26.873	26.569	26.261	25.951	25.639	0.64	0.714	0.686						
0.65	33.154	33.881	34.519	35.271	35.829	36.544	27.164	26.855	26.543	26.229	25.912	0.65	0.710	0.682						
0.66	33.766	34.494	35.144	35.934	36.465	37.063	27.452	27.138	26.822	26.503	26.182	0.66	0.705	0.677						
0.67	34.374	35.103	35.764	36.583	37.165	37.577	27.736	27.419	27.098	26.775	26.449	0.67	0.701	0.673						
0.68	34.978	35.708	36.379	37.165	37.650	38.077	28.018	27.696	27.371	27.043	26.714	0.68	0.696	0.668						
0.69	35.578	36.309	36.986	37.730	38.114	38.563	28.296	27.970	27.641	27.309	26.975	0.69	0.692	0.664						
0.70	36.174	36.906	37.584	38.271	38.609	39.034	28.571	28.241	27.917	27.572	27.233	0.70	0.687	0.661						
0.71	36.766	37.499	38.172	38.802	39.157	39.491	28.844	28.509	28.171	27.831	27.489	0.71	0.683	0.656						
0.72	37.354	38.087	38.754	39.314	39.634	39.933	29.113	28.774	28.432	28.088	27.742	0.72	0.679	0.652						
0.73	37.938	38.670	39.333	39.812	40.132	40.361	29.379	29.036	28.690	28.342	27.992	0.73	0.674	0.648						
0.74	38.518	39.243	39.888	40.296	40.606	40.777	29.642	29.292	28.945	28.593	28.239	0.74	0.670	0.644						
0.75	39.094	39.814	40.458	40.766	40.952	41.140	29.903	29.542	29.198	28.842	28.483	0.75	0.666	0.640						
0.76	39.666	40.381	41.027	41.222	41.114	41.501	30.161	29.805	29.448	29.088	28.725	0.76	0.662	0.636						
0.77	40.234	40.942	41.592	41.685	41.402	41.889	30.416	30.056	29.695	29.331	28.964	0.77	0.658	0.632						
0.78	40.798	41.500	42.157	42.188	41.891	42.269	30.668	30.305	29.939	29.571	29.201	0.78	0.654	0.628						
0.79	41.358	42.054	42.718	42.645	42.332	42.644	30.917	30.551	30.181	29.809	29.435	0.79	0.650	0.624						
0.80	41.914	42.606	43.273	43.197	42.815	43.013	31.164	30.793	30.420	30.045	29.667	0.80	0.646	0.620						
0.81	42.466	43.155	43.824	43.744	43.356	43.381	31.408	31.034	30.657	30.277	29.896	0.81	0.642	0.616						
0.82	43.014	43.701	44.369	44.285	43.892	43.733	31.650	31.272	30.891	30.508	30.123	0.82	0.638	0.612						
0.83	43.558	44.244	44.912	44.824	44.430	44.084	31.889	31.507	31.122	30.736	30.347	0.83	0.634	0.608						
0.84	44.100	44.782	45.453	45.361	44.962	44.432	32.126	31.740	31.352	30.961	30.569	0.84	0.630	0.604						
0.85	44.639	45.321	45.992	45.896	45.499	44.881	32.360	31.970	31.578	31.184	30.788	0.85	0.626	0.600						
0.86	45.175	45.857	46.541	46.441	46.047	45.321	32.591	32.198	31.803	31.405	31.006	0.86	0.622	0.596						
0.87	45.708	46.387	47.080	46.976	46.585	45.744	32.820	32.424	32.025	31.624	31.221	0.87	0.618	0.592						
0.88	46.238	46.914	47.613	47.505	47.117	46.158	33.045	32.647	32.244	31.840	31.433	0.88	0.614	0.588						
0.89	46.764	47.438	48.142	48.031	47.647	46.563	33.272	32.868	32.462	32.054	31.644	0.89	0.611	0.585						
0.90	47.287	47.959	48.668	48.553	48.174	46.958	33.494	33.086	32.677	32.266	31.852	0.90	0.607	0.581						
0.91	47.807	48.478	49.177	49.058	48.683	47.344	33.714	33.303	32.890	32.475	32.058	0.91	0.604	0.578						
0.92	48.324	48.993	49.684	49.561	49.189	47.718	33.931	33.517	33.101	32.682	32.262	0.92	0.600	0.574						
0.93	48.838	49.503	50.171	50.044	49.676	48.087	34.147	33.729	33.309	32.888	32.464	0.93	0.597	0.570						
0.94	49.349	50.006	50.651	50.519	50.146	48.453	34.360	33.939	33.516	33.091	32.664	0.94	0.593	0.566						
0.95	49.857	50.509	51.142	50.999	50.621	48.814	34.571	34.146	33.720	33.292	32.862	0.95	0.590	0.563						
0.96	50.362	51.009	51.624	51.476	51.093	49.171	34.779	34.352	33.922	33.461	33.038	0.96	0.586	0.559						
0.97	50.864	51.506	52.093	51.941	51.558	49.524	34.986	34.555	34.123	33.688	33.252	0.97	0.583	0.556						
0.98	51.363	52.000	52.557	52.399	52.019	49.873	35.191	34.757	34.321	33.883	33.444	0.98	0.580	0.553						
0.99	51.859	52.493	53.042	52.879	52.492	50.219	35.393	34.956	34.517	34.076	33.634	0.99	0.576	0.549						
1.00	52.352	52.983	53.521	53.354	52.972	50.554	35.594	35.154	34.711	34.267	33.822	1.00	0.573	0.546						
M	260	259	258	257	256	255	254	253	252	251	250	M	M=260	M=250						

e	E - M										DE/DH									
	M	110	111	112	113	114	115	116	117	118	119	120	M	e	M=110	M=120				
0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000				
0.01	0.537	0.533	0.520	0.520	0.520	0.520	0.517	0.513	0.509	0.504	0.504	0.504	0.000	0.997	0.997	0.995				
0.02	1.069	1.062	1.054	1.046	1.038	1.032	1.024	1.012	1.002	0.992	0.982	0.972	0.000	0.993	0.982	0.990				
0.03	1.598	1.587	1.575	1.563	1.551	1.538	1.524	1.510	1.496	1.481	1.466	1.451	0.000	0.989	0.975	0.985				
0.04	2.123	2.108	2.092	2.076	2.059	2.041	2.023	2.004	1.985	1.965	1.945	1.925	0.000	0.985	0.968	0.979				
0.05	2.644	2.625	2.603	2.584	2.562	2.540	2.517	2.494	2.469	2.444	2.418	2.391	0.000	0.981	0.961	0.974				
0.06	3.161	3.137	3.113	3.088	3.064	3.034	3.007	2.978	2.948	2.918	2.887	2.854	0.000	0.977	0.954	0.968				
0.07	3.673	3.643	3.613	3.587	3.556	3.524	3.491	3.453	3.423	3.387	3.350	3.308	0.000	0.973	0.948	0.963				
0.08	4.181	4.149	4.115	4.081	4.045	4.009	3.971	3.932	3.892	3.851	3.809	3.762	0.000	0.968	0.940	0.957				
0.09	4.685	4.649	4.610	4.571	4.530	4.489	4.446	4.401	4.356	4.309	4.262	4.210	0.000	0.964	0.933	0.952				
0.10	5.185	5.143	5.101	5.056	5.011	4.964	4.916	4.866	4.815	4.763	4.710	4.652	0.000	0.959	0.925	0.946				
0.11	5.680	5.634	5.586	5.537	5.486	5.434	5.381	5.326	5.270	5.212	5.153	5.093	0.000	0.955	0.919	0.940				
0.12	6.171	6.120	6.067	6.013	5.957	5.900	5.841	5.781	5.719	5.656	5.591	5.522	0.000	0.950	0.912	0.935				
0.13	6.657	6.601	6.543	6.484	6.423	6.360	6.296	6.230	6.163	6.094	6.024	5.949	0.000	0.945	0.905	0.929				
0.14	7.139	7.077	7.015	6.954	6.894	6.831	6.767	6.703	6.636	6.568	6.495	6.419	0.000	0.940	0.898	0.923				
0.15	7.615	7.549	7.482	7.412	7.342	7.267	7.192	7.117	7.043	6.969	6.895	6.819	0.000	0.935	0.891	0.917				
0.16	8.088	8.017	7.944	7.869	7.792	7.713	7.633	7.550	7.466	7.381	7.293	7.206	0.000	0.930	0.884	0.912				
0.17	8.555	8.479	8.401	8.321	8.239	8.153	8.069	7.984	7.898	7.811	7.722	7.634	0.000	0.925	0.877	0.906				
0.18	9.016	8.937	8.854	8.768	8.681	8.591	8.499	8.406	8.311	8.215	8.118	8.021	0.000	0.920	0.871	0.900				
0.19	9.477	9.390	9.302	9.211	9.118	9.023	8.926	8.826	8.725	8.622	8.518	8.414	0.000	0.914	0.864	0.894				
0.20	9.931	9.839	9.745	9.649	9.550	9.450	9.347	9.242	9.135	9.027	8.916	8.802	0.000	0.909	0.858	0.888				
0.21	10.380	10.283	10.183	10.082	9.978	9.872	9.763	9.653	9.541	9.426	9.310	9.194	0.000	0.904	0.852	0.883				
0.22	10.824	10.722	10.617	10.510	10.401	10.289	10.175	10.059	9.944	9.821	9.699	9.577	0.000	0.899	0.846	0.877				
0.23	11.264	11.156	11.046	10.934	10.819	10.701	10.582	10.460	10.337	10.211	10.083	9.955	0.000	0.893	0.839	0.871				
0.24	11.700	11.586	11.471	11.353	11.232	11.109	10.984	10.857	10.728	10.596	10.462	10.327	0.000	0.888	0.833	0.865				
0.25	12.130	12.012	11.890	11.767	11.644	11.513	11.382	11.249	11.114	10.977	10.837	10.694	0.000	0.883	0.827	0.859				
0.26	12.556	12.432	12.305	12.176	12.045	11.911	11.775	11.636	11.496	11.353	11.207	11.062	0.000	0.877	0.820	0.854				
0.27	12.977	12.848	12.715	12.581	12.444	12.305	12.163	12.019	11.873	11.724	11.573	11.421	0.000	0.872	0.814	0.848				
0.28	13.384	13.259	13.122	12.982	12.839	12.694	12.547	12.397	12.245	12.091	11.934	11.777	0.000	0.866	0.807	0.842				
0.29	13.786	13.665	13.523	13.378	13.230	13.079	12.926	12.771	12.613	12.453	12.291	12.129	0.000	0.861	0.801	0.837				
0.30	14.184	14.068	13.920	13.769	13.616	13.460	13.301	13.140	12.977	12.811	12.644	12.477	0.000	0.856	0.795	0.833				
0.31	14.574	14.466	14.312	14.156	13.997	13.835	13.671	13.505	13.336	13.165	12.992	12.819	0.000	0.851	0.789	0.827				
0.32	14.959	14.859	14.700	14.538	14.374	14.207	14.037	13.866	13.691	13.515	13.336	13.155	0.000	0.845	0.783	0.822				
0.33	15.340	15.248	15.084	14.916	14.746	14.574	14.399	14.222	14.042	13.860	13.675	13.489	0.000	0.840	0.777	0.816				
0.34	15.716	15.633	15.463	15.289	15.113	14.937	14.756	14.572	14.388	14.201	14.011	13.819	0.000	0.834	0.771	0.810				
0.35	16.088	16.013	15.837	15.659	15.479	15.295	15.109	14.921	14.730	14.537	14.342	14.146	0.000	0.829	0.765	0.804				
0.36	16.456	16.388	16.208	16.024	15.838	15.649	15.458	15.265	15.068	14.870	14.669	14.466	0.000	0.823	0.758	0.798				
0.37	16.820	16.760	16.574	16.385	16.194	16.000	15.803	15.604	15.402	15.198	14.992	14.784	0.000	0.818	0.752	0.793				
0.38	17.181	17.127	16.936	16.742	16.545	16.345	16.144	15.939	15.732	15.523	15.311	15.097	0.000	0.813	0.746	0.787				
0.39	17.538	17.490	17.293	17.094	16.892	16.687	16.480	16.270	16.058	15.844	15.627	15.409	0.000	0.807	0.739	0.782				
0.40	17.894	17.849	17.647	17.442	17.235	17.025	16.812	16.598	16.380	16.160	15.938	15.715	0.000	0.802	0.732	0.777				
0.41	18.248	18.204	17.996	17.787	17.574	17.359	17.141	16.921	16.698	16.473	16.246	16.019	0.000	0.797	0.726	0.772				
0.42	18.600	18.554	18.342	18.127	17.909	17.688	17.466	17.242	17.016	16.782	16.550	16.317	0.000	0.792	0.720	0.766				
0.43	18.950	18.901	18.683	18.463	18.240	18.014	17.786	17.556	17.323	17.087	16.850	16.613	0.000	0.787	0.714	0.761				
0.44	19.300	19.243	19.020	18.795	18.567	18.334	18.103	17.867	17.629	17.389	17.146	16.903	0.000	0.781	0.707	0.756				
0.45	19.648	19.582	19.354	19.123	18.890	18.654	18.416	18.175	17.932	17.687	17.439	17.191	0.000	0.776	0.701	0.751				
0.46	20.000	19.916	19.683	19.448	19.210	18.969	18.726	18.480	18.232	17.981	17.728	17.475	0.000	0.771	0.695	0.746				
0.47	20.348	20.247	20.009	19.769	19.525	19.280	19.031	18.781	18.527	18.272	18.014	17.756	0.000	0.766	0.689	0.741				
0.48	20.694	20.574	20.331	20.086	19.837	19.587	19.333	19.078	18.820	18.560	18.296	18.031	0.000	0.761	0.683	0.736				
0.49	21.038	20.897	20.644	20.399	20.146	19.890	19.632	19.371	19.108	18.843	18.575	18.306	0.000	0.756	0.677	0.731				
0.50	21.467	21.217	20.964	20.709	20.450	20.190	19.927	19.661	19.393	19.123	18.851	18.578	0.000	0.751	0.671	0.726				





e	M	120	121	122	123	124	125	126	127	128	129	130	M	M=120	M=130	DE/DM
0.00	0.000	0.494	0.489	0.483	0.478	0.472	0.467	0.461	0.455	0.449	0.442	0.436	0.001	1.000	1.000	
0.01	0.494	0.972	0.962	0.951	0.941	0.930	0.922	0.916	0.910	0.904	0.897	0.891	0.001	0.995	0.994	
0.02	0.988	1.466	1.450	1.434	1.418	1.401	1.384	1.366	1.348	1.330	1.311	1.291	0.02	0.990	0.987	
0.03	1.466	1.945	1.924	1.902	1.880	1.857	1.834	1.811	1.786	1.762	1.737	1.711	0.03	0.985	0.981	
0.04	1.945	2.418	2.392	2.365	2.337	2.309	2.279	2.250	2.219	2.188	2.157	2.125	0.05	0.979	0.974	
0.05	2.418	2.887	2.855	2.822	2.789	2.754	2.719	2.684	2.647	2.610	2.572	2.533	0.06	0.974	0.968	
0.06	2.887	3.350	3.313	3.272	3.228	3.185	3.142	3.099	3.056	3.012	2.968	2.924	0.07	0.969	0.963	
0.07	3.350	3.809	3.763	3.721	3.678	3.636	3.593	3.551	3.508	3.466	3.423	3.380	0.08	0.964	0.958	
0.08	3.809	4.262	4.213	4.163	4.112	4.060	4.007	3.953	3.898	3.844	3.788	3.733	0.09	0.959	0.953	
0.09	4.262	4.710	4.655	4.600	4.544	4.485	4.426	4.366	4.304	4.242	4.178	4.114	0.10	0.952	0.944	
0.10	4.710	5.153	5.093	5.031	4.969	4.905	4.839	4.773	4.705	4.637	4.567	4.496	0.11	0.946	0.935	
0.11	5.153	5.591	5.525	5.458	5.391	5.324	5.248	5.171	5.101	5.026	4.950	4.873	0.12	0.940	0.928	
0.12	5.591	6.024	5.952	5.879	5.804	5.728	5.651	5.572	5.494	5.411	5.328	5.244	0.13	0.935	0.922	
0.13	6.024	6.452	6.374	6.295	6.213	6.133	6.049	5.964	5.878	5.790	5.701	5.611	0.14	0.929	0.915	
0.14	6.452	6.875	6.792	6.707	6.620	6.532	6.443	6.351	6.259	6.165	6.070	5.973	0.15	0.923	0.909	
0.15	6.875	7.293	7.204	7.113	7.020	6.926	6.831	6.734	6.635	6.535	6.433	6.330	0.16	0.917	0.903	
0.16	7.293	7.706	7.611	7.514	7.416	7.316	7.214	7.111	7.006	6.899	6.792	6.682	0.17	0.912	0.896	
0.17	7.706	8.114	8.013	7.911	7.806	7.700	7.592	7.483	7.372	7.259	7.145	7.030	0.18	0.906	0.890	
0.18	8.114	8.518	8.411	8.302	8.192	8.080	7.966	7.851	7.735	7.615	7.494	7.372	0.19	0.900	0.884	
0.19	8.518	8.916	8.803	8.689	8.573	8.455	8.335	8.213	8.090	7.965	7.839	7.711	0.20	0.894	0.877	
0.20	8.916	9.310	9.191	9.071	8.948	8.822	8.699	8.573	8.442	8.311	8.178	8.044	0.21	0.888	0.871	
0.21	9.310	9.699	9.574	9.448	9.320	9.192	9.058	8.923	8.788	8.652	8.514	8.373	0.22	0.882	0.865	
0.22	9.699	10.083	9.953	9.821	9.687	9.551	9.413	9.274	9.132	8.989	8.844	8.698	0.23	0.877	0.859	
0.23	10.083	10.462	10.326	10.189	10.049	9.907	9.763	9.618	9.471	9.322	9.171	9.018	0.24	0.871	0.853	
0.24	10.462	10.837	10.696	10.552	10.406	10.259	10.109	9.958	9.805	9.650	9.493	9.334	0.25	0.865	0.847	
0.25	10.837	11.207	11.060	10.911	10.759	10.606	10.451	10.293	10.134	9.973	9.810	9.646	0.26	0.859	0.841	
0.26	11.207	11.573	11.420	11.265	11.108	10.946	10.787	10.624	10.459	10.293	10.124	9.953	0.27	0.854	0.835	
0.27	11.573	11.934	11.776	11.615	11.452	11.287	11.120	10.951	10.780	10.608	10.433	10.257	0.28	0.848	0.829	
0.28	11.934	12.291	12.127	11.960	11.792	11.621	11.448	11.274	11.097	10.919	10.738	10.556	0.29	0.842	0.823	
0.29	12.291	12.644	12.474	12.302	12.127	11.951	11.773	11.592	11.410	11.226	11.040	10.852	0.30	0.837	0.817	
0.30	12.644	12.992	12.816	12.638	12.459	12.277	12.092	11.906	11.714	11.529	11.337	11.143	0.31	0.831	0.811	
0.31	12.992	13.336	13.154	12.971	12.786	12.598	12.408	12.217	12.023	11.828	11.632	11.431	0.32	0.825	0.806	
0.32	13.336	13.675	13.489	13.300	13.109	12.915	12.720	12.523	12.324	12.123	11.920	11.715	0.33	0.820	0.800	
0.33	13.675	14.011	13.818	13.624	13.427	13.229	13.028	12.825	12.620	12.414	12.205	11.995	0.34	0.814	0.794	
0.34	14.011	14.342	14.144	13.944	13.742	13.538	13.332	13.124	12.913	12.701	12.487	12.271	0.35	0.809	0.789	
0.35	14.342	14.669	14.466	14.261	14.055	13.848	13.632	13.418	13.203	12.985	12.765	12.544	0.36	0.803	0.783	
0.36	14.669	14.992	14.784	14.573	14.360	14.145	13.928	13.709	13.488	13.265	13.040	12.813	0.37	0.800	0.778	
0.37	14.992	15.311	15.098	14.882	14.668	14.445	14.221	13.996	13.770	13.541	13.311	13.079	0.38	0.795	0.772	
0.38	15.311	15.627	15.408	15.186	14.964	14.737	14.509	14.281	14.048	13.814	13.581	13.344	0.39	0.789	0.766	
0.39	15.627	15.938	15.714	15.487	15.258	15.027	14.794	14.559	14.322	14.084	13.843	13.600	0.40	0.782	0.756	
0.40	15.938	16.246	16.015	15.784	15.550	15.314	15.076	14.836	14.594	14.349	14.103	13.856	0.41	0.777	0.751	
0.41	16.246	16.550	16.315	16.078	15.839	15.597	15.354	15.109	14.861	14.612	14.361	14.108	0.42	0.772	0.746	
0.42	16.550	16.851	16.610	16.368	16.123	15.877	15.629	15.378	15.126	14.871	14.615	14.357	0.43	0.766	0.740	
0.43	16.851	17.146	16.901	16.654	16.405	16.153	15.900	15.644	15.387	15.127	14.866	14.603	0.44	0.761	0.736	
0.44	17.146	17.439	17.189	16.937	16.682	16.426	16.167	15.907	15.644	15.380	15.114	14.845	0.45	0.756	0.731	
0.45	17.439	17.728	17.473	17.216	16.957	16.695	16.432	16.166	15.899	15.629	15.358	15.085	0.46	0.751	0.726	
0.46	17.728	18.014	17.754	17.492	17.228	16.961	16.693	16.422	16.150	15.876	15.600	15.322	0.47	0.746	0.721	
0.47	18.014	18.294	18.032	17.764	17.495	17.224	16.951	16.675	16.402	16.126	15.848	15.565	0.48	0.741	0.716	
0.48	18.294	18.575	18.305	18.034	17.760	17.483	17.205	16.925	16.643	16.359	16.074	15.786	0.49	0.736	0.711	
0.49	18.575	18.851	18.576	18.300	18.021	17.740	17.457	17.172	16.885	16.597	16.306	16.014	0.50	0.731	0.707	
0.50	18.851												M	M=240	M=230	M=240

TABLE OF KEPLER'S EQUATION

e	E - M												M	DE/DM
	120	121	122	123	124	125	126	127	128	129	130	131		
0.50	18.851	18.576	18.300	18.021	17.740	17.457	17.172	16.885	16.597	16.306	16.014	0.726	M=120	M=130
0.51	19.123	18.844	18.562	18.279	17.993	17.705	17.416	17.124	16.831	16.536	16.239	0.702		
0.52	19.392	19.108	18.822	18.533	18.243	17.951	17.657	17.364	17.062	16.763	16.461	0.52		
0.53	19.658	19.369	19.078	18.785	18.490	18.193	17.894	17.594	17.291	16.987	16.681	0.53		
0.54	19.921	19.627	19.332	19.034	18.734	18.433	18.132	17.829	17.527	17.221	16.915	0.54		
0.55	20.180	19.882	19.582	19.280	18.976	18.669	18.361	18.052	17.740	17.427	17.112	0.55		
0.56	20.433	20.134	19.834	19.523	19.214	18.903	18.591	18.277	17.960	17.643	17.323	0.56		
0.57	20.690	20.383	20.074	19.762	19.449	19.134	18.817	18.499	18.178	17.856	17.532	0.57		
0.58	20.940	20.629	20.315	19.999	19.682	19.363	19.041	18.718	18.393	18.067	17.738	0.58		
0.59	21.188	20.872	20.554	20.234	19.912	19.588	19.262	18.935	18.606	18.275	17.942	0.59		
0.60	21.432	21.112	20.790	20.465	20.139	19.811	19.481	19.149	18.816	18.481	18.144	0.60		
0.61	21.674	21.349	21.023	20.694	20.364	20.031	19.697	19.361	19.023	18.684	18.343	0.61		
0.62	21.913	21.584	21.253	20.920	20.585	20.249	19.910	19.570	19.228	18.885	18.540	0.62		
0.63	22.149	21.816	21.481	21.144	20.805	20.464	20.121	19.777	19.431	19.084	18.734	0.63		
0.64	22.382	22.045	21.706	21.365	21.021	20.677	20.330	19.981	19.631	19.280	18.926	0.64		
0.65	22.613	22.272	21.928	21.583	21.236	20.887	20.536	20.183	19.829	19.474	19.116	0.65		
0.66	22.841	22.496	22.148	21.799	21.447	21.094	20.740	20.383	20.025	19.665	19.304	0.66		
0.67	23.067	22.717	22.365	22.012	21.657	21.300	20.941	20.580	20.218	19.855	19.493	0.67		
0.68	23.290	22.936	22.580	22.223	21.864	21.503	21.140	20.776	20.410	20.042	19.673	0.68		
0.69	23.510	23.152	22.793	22.433	22.068	21.703	21.337	20.969	20.599	20.227	19.854	0.69		
0.70	23.728	23.366	23.003	22.637	22.270	21.902	21.531	21.159	20.785	20.410	20.033	0.70		
0.71	23.944	23.578	23.211	22.841	22.470	22.098	21.723	21.347	20.973	20.591	20.210	0.71		
0.72	24.157	23.787	23.416	23.043	22.668	22.292	21.914	21.534	21.153	20.770	20.386	0.72		
0.73	24.367	23.994	23.619	23.242	22.864	22.483	22.101	21.718	21.333	20.947	20.559	0.73		
0.74	24.576	24.199	23.820	23.439	23.057	22.673	22.287	21.900	21.512	21.122	20.730	0.74		
0.75	24.782	24.401	24.018	23.634	23.248	22.860	22.471	22.080	21.688	21.294	20.899	0.75		
0.76	24.985	24.601	24.215	23.827	23.437	23.046	22.653	22.259	21.863	21.465	21.067	0.76		
0.77	25.187	24.799	24.409	24.017	23.624	23.229	22.833	22.435	22.035	21.634	21.232	0.77		
0.78	25.386	24.994	24.601	24.206	23.809	23.410	23.010	22.609	22.206	21.802	21.396	0.78		
0.79	25.583	25.188	24.791	24.392	23.992	23.590	23.186	22.781	22.375	21.967	21.558	0.79		
0.80	25.778	25.379	24.979	24.576	24.173	23.767	23.360	22.952	22.542	22.131	21.718	0.80		
0.81	25.971	25.569	25.165	24.759	24.351	23.943	23.532	23.120	22.707	22.292	21.876	0.81		
0.82	26.162	25.756	25.348	24.939	24.528	24.116	23.702	23.287	22.870	22.452	22.033	0.82		
0.83	26.351	25.941	25.530	25.118	24.704	24.288	23.871	23.452	23.030	22.611	22.188	0.83		
0.84	26.538	26.125	25.710	25.294	24.877	24.458	24.037	23.615	23.192	22.761	22.336	0.84		
0.85	26.722	26.306	25.888	25.469	25.048	24.626	24.202	23.777	23.350	22.922	22.493	0.85		
0.86	26.905	26.486	26.064	25.642	25.218	24.792	24.365	23.936	23.507	23.076	22.643	0.86		
0.87	27.086	26.663	26.239	25.813	25.385	24.956	24.526	24.095	23.662	23.227	22.792	0.87		
0.88	27.265	26.839	26.411	25.982	25.551	25.119	24.686	24.252	23.815	23.377	22.939	0.88		
0.89	27.442	27.013	26.582	26.149	25.716	25.280	24.844	24.406	23.966	23.526	23.084	0.89		
0.90	27.617	27.185	26.751	26.315	25.878	25.440	25.000	24.559	24.116	23.673	23.228	0.90		
0.91	27.791	27.355	26.918	26.479	26.039	25.597	25.155	24.710	24.265	23.818	23.370	0.91		
0.92	27.962	27.524	27.083	26.641	26.198	25.753	25.308	24.860	24.412	23.962	23.511	0.92		
0.93	28.132	27.690	27.247	26.802	26.356	25.908	25.459	25.009	24.557	24.104	23.650	0.93		
0.94	28.300	27.855	27.409	26.961	26.512	26.061	25.609	25.156	24.701	24.245	23.788	0.94		
0.95	28.467	28.019	27.569	27.118	26.666	26.212	25.757	25.301	24.844	24.385	23.925	0.95		
0.96	28.632	28.180	27.728	27.274	26.819	26.362	25.904	25.445	24.985	24.523	24.060	0.96		
0.97	28.795	28.341	27.895	27.428	26.970	26.510	26.049	25.587	25.124	24.660	24.194	0.97		
0.98	28.956	28.509	28.054	27.561	27.120	26.657	26.193	25.728	25.262	24.795	24.328	0.98		
0.99	29.113	28.655	28.194	27.732	27.268	26.802	26.336	25.868	25.399	24.929	24.458	0.99		
1.00	29.274	28.811	28.347	27.881	27.414	26.946	26.477	26.006	25.534	25.062	24.587	1.00	M=240	M=230

e	E → M										DE/DM				
	M	130	131	132	133	134	135	136	137	138	139	140	M	M=130	M=140
0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	1.000	1.000
0.01	0.466	0.430	0.423	0.416	0.409	0.402	0.395	0.388	0.381	0.373	0.365	0.358	0.01	0.994	0.992
0.02	0.867	0.854	0.840	0.827	0.813	0.799	0.785	0.770	0.755	0.741	0.725	0.710	0.02	0.987	0.985
0.03	1.251	1.272	1.252	1.232	1.211	1.190	1.169	1.147	1.125	1.103	1.080	1.057	0.03	0.981	0.977
0.04	1.711	1.685	1.658	1.631	1.603	1.575	1.547	1.518	1.489	1.459	1.429	1.399	0.04	0.974	0.970
0.05	2.125	2.092	2.059	2.025	1.990	1.955	1.920	1.884	1.847	1.810	1.773	1.735	0.05	0.968	0.962
0.06	2.583	2.494	2.434	2.413	2.372	2.330	2.287	2.244	2.201	2.156	2.111	2.066	0.06	0.961	0.955
0.07	2.936	2.890	2.844	2.796	2.748	2.699	2.650	2.599	2.549	2.497	2.445	2.394	0.07	0.954	0.947
0.08	3.334	3.282	3.228	3.174	3.119	3.063	3.007	2.949	2.891	2.833	2.773	2.713	0.08	0.948	0.940
0.09	3.667	3.667	3.607	3.547	3.485	3.422	3.359	3.294	3.229	3.163	3.096	3.029	0.09	0.941	0.933
0.10	4.048	4.048	3.981	3.914	3.845	3.776	3.705	3.634	3.562	3.489	3.415	3.340	0.10	0.935	0.926
0.11	4.495	4.424	4.350	4.276	4.201	4.124	4.047	3.969	3.890	3.810	3.729	3.647	0.11	0.928	0.919
0.12	4.873	4.794	4.714	4.633	4.551	4.468	4.384	4.299	4.213	4.126	4.038	3.949	0.12	0.922	0.911
0.13	5.244	5.159	5.073	4.985	4.895	4.807	4.716	4.624	4.531	4.437	4.342	4.246	0.13	0.915	0.904
0.14	5.611	5.520	5.427	5.333	5.237	5.141	5.043	4.945	4.845	4.744	4.642	4.540	0.14	0.909	0.898
0.15	5.978	5.875	5.776	5.675	5.573	5.470	5.366	5.260	5.154	5.046	4.938	4.829	0.15	0.903	0.891
0.16	6.380	6.226	6.120	6.013	5.905	5.795	5.684	5.572	5.458	5.344	5.228	5.114	0.16	0.896	0.884
0.17	6.682	6.571	6.459	6.346	6.231	6.115	5.997	5.878	5.758	5.637	5.515	5.394	0.17	0.890	0.877
0.18	7.000	6.913	6.794	6.674	6.553	6.430	6.306	6.181	6.054	5.926	5.797	5.670	0.18	0.884	0.870
0.19	7.372	7.249	7.124	6.998	6.870	6.741	6.610	6.479	6.346	6.211	6.076	5.941	0.19	0.877	0.864
0.20	7.711	7.581	7.450	7.317	7.183	7.047	6.911	6.772	6.633	6.492	6.350	6.208	0.20	0.871	0.857
0.21	8.044	7.908	7.771	7.632	7.492	7.350	7.206	7.062	6.916	6.769	6.620	6.471	0.21	0.865	0.851
0.22	8.373	8.231	8.088	7.942	7.796	7.648	7.498	7.347	7.195	7.041	6.886	6.731	0.22	0.859	0.844
0.23	8.698	8.550	8.408	8.249	8.096	7.941	7.786	7.628	7.470	7.310	7.149	6.987	0.23	0.853	0.838
0.24	9.018	8.864	8.708	8.551	8.392	8.231	8.069	7.906	7.741	7.575	7.409	7.242	0.24	0.847	0.832
0.25	9.334	9.174	9.012	8.849	8.683	8.514	8.349	8.179	8.008	7.836	7.662	7.489	0.25	0.841	0.826
0.26	9.646	9.480	9.312	9.142	8.971	8.799	8.624	8.449	8.272	8.093	7.913	7.735	0.26	0.835	0.819
0.27	9.953	9.781	9.607	9.432	9.255	9.076	8.896	8.714	8.531	8.347	8.161	7.976	0.27	0.829	0.813
0.28	10.257	10.079	9.899	9.718	9.535	9.350	9.164	8.976	8.787	8.597	8.405	8.213	0.28	0.823	0.807
0.29	10.556	10.372	10.187	10.000	9.811	9.620	9.428	9.235	9.040	8.843	8.645	8.448	0.29	0.817	0.802
0.30	10.852	10.662	10.471	10.278	10.088	9.887	9.689	9.490	9.289	9.087	8.883	8.679	0.30	0.811	0.796
0.31	11.153	10.948	10.751	10.552	10.352	10.149	9.946	9.741	9.534	9.326	9.117	8.911	0.31	0.806	0.790
0.32	11.451	11.230	11.027	10.823	10.617	10.409	10.200	9.989	9.776	9.563	9.348	9.134	0.32	0.800	0.784
0.33	11.715	11.508	11.300	11.090	10.878	10.665	10.450	10.233	10.015	9.796	9.575	9.354	0.33	0.794	0.778
0.34	11.995	11.783	11.569	11.353	11.136	10.917	10.696	10.474	10.251	10.026	9.799	9.573	0.34	0.789	0.773
0.35	12.271	12.054	11.834	11.613	11.390	11.166	10.940	10.712	10.483	10.252	10.021	9.789	0.35	0.783	0.767
0.36	12.544	12.321	12.096	11.869	11.641	11.411	11.180	10.947	10.712	10.476	10.239	9.999	0.36	0.778	0.762
0.37	12.813	12.585	12.354	12.122	11.889	11.653	11.416	11.178	10.938	10.697	10.454	10.209	0.37	0.772	0.756
0.38	13.079	12.845	12.609	12.372	12.133	11.892	11.650	11.406	11.161	10.914	10.666	10.419	0.38	0.767	0.751
0.39	13.341	13.102	12.861	12.618	12.374	12.128	11.881	11.631	11.381	11.129	10.876	10.621	0.39	0.762	0.746
0.40	13.600	13.356	13.110	12.862	12.612	12.361	12.108	11.854	11.598	11.341	11.082	10.825	0.40	0.756	0.741
0.41	13.856	13.606	13.355	13.102	12.847	12.591	12.333	12.073	11.812	11.550	11.286	11.021	0.41	0.751	0.736
0.42	14.108	13.853	13.597	13.338	13.079	12.817	12.554	12.290	12.024	11.756	11.487	11.218	0.42	0.746	0.730
0.43	14.357	14.097	13.836	13.572	13.307	13.041	12.773	12.503	12.232	11.960	11.686	11.412	0.43	0.741	0.725
0.44	14.603	14.336	14.071	13.803	13.536	13.262	12.989	12.714	12.438	12.160	11.881	11.603	0.44	0.736	0.720
0.45	14.845	14.575	14.304	14.031	13.756	13.479	13.201	12.922	12.641	12.359	12.075	11.791	0.45	0.731	0.716
0.46	15.085	14.810	14.534	14.256	13.976	13.695	13.412	13.127	12.841	12.554	12.265	11.976	0.46	0.726	0.711
0.47	15.322	15.042	14.761	14.478	14.193	13.907	13.619	13.330	13.039	12.747	12.454	12.159	0.47	0.721	0.706
0.48	15.555	15.271	14.985	14.697	14.408	14.117	13.824	13.533	13.238	12.943	12.644	12.346	0.48	0.716	0.701
0.49	15.786	15.497	15.206	14.913	14.619	14.324	14.026	13.728	13.427	13.122	12.823	12.521	0.49	0.712	0.696
0.50	16.014	15.720	15.424	15.127	14.828	14.528	14.226	13.923	13.618	13.312	13.004	12.697	0.50	0.707	0.692

M=220

M

M=230

M

M=240

M=250

M=260

M=270

M=280

TABLE OF KEPLER'S EQUATION

e	E - M										DE/dM														
	M=130	131	132	133	134	135	136	137	138	139	140	M	e	M=130	131	132	133	134	135	136	137	138	139	140	M
0.50	16.014	15.720	15.424	15.127	14.828	14.528	14.226	13.923	13.618	13.312	13.004	0.50	0.692	0.707	0.692	0.677	0.662	0.647	0.632	0.617	0.602	0.587	0.572	0.557	0.542
0.51	16.239	15.940	15.640	15.338	15.035	14.730	14.423	14.115	13.806	13.496	13.183	0.51	0.702	0.687	0.672	0.657	0.642	0.627	0.612	0.597	0.582	0.567	0.552	0.537	0.522
0.52	16.461	16.158	15.853	15.547	15.239	14.929	14.618	14.305	13.991	13.676	13.359	0.52	0.698	0.683	0.668	0.653	0.638	0.623	0.608	0.593	0.578	0.563	0.548	0.533	0.518
0.53	16.681	16.373	16.063	15.752	15.440	15.126	14.810	14.493	14.175	13.855	13.534	0.53	0.693	0.678	0.663	0.648	0.633	0.618	0.603	0.588	0.573	0.558	0.543	0.528	0.513
0.54	16.897	16.585	16.271	15.956	15.639	15.320	15.000	14.678	14.356	14.031	13.706	0.54	0.689	0.674	0.659	0.644	0.629	0.614	0.599	0.584	0.569	0.554	0.539	0.524	0.509
0.55	17.112	16.795	16.476	16.156	15.835	15.511	15.187	14.862	14.536	14.208	13.876	0.55	0.684	0.669	0.654	0.639	0.624	0.609	0.594	0.579	0.564	0.549	0.534	0.519	0.504
0.56	17.323	17.006	16.687	16.365	16.042	15.716	15.390	15.062	14.734	14.404	14.071	0.56	0.680	0.665	0.650	0.635	0.620	0.605	0.590	0.575	0.560	0.545	0.530	0.515	0.500
0.57	17.532	17.216	16.897	16.575	16.250	15.922	15.594	15.264	14.932	14.598	14.263	0.57	0.675	0.660	0.645	0.630	0.615	0.600	0.585	0.570	0.555	0.540	0.525	0.510	0.495
0.58	17.738	17.422	17.107	16.784	16.459	16.131	15.801	15.469	15.135	14.799	14.461	0.58	0.671	0.656	0.641	0.626	0.611	0.596	0.581	0.566	0.551	0.536	0.521	0.506	0.491
0.59	17.942	17.626	17.311	16.986	16.659	16.329	15.997	15.663	15.328	14.991	14.652	0.59	0.667	0.652	0.637	0.622	0.607	0.592	0.577	0.562	0.547	0.532	0.517	0.502	0.487
0.60	18.144	17.828	17.512	17.186	16.858	16.527	16.194	15.859	15.523	15.186	14.847	0.60	0.662	0.647	0.632	0.617	0.602	0.587	0.572	0.557	0.542	0.527	0.512	0.497	0.482
0.61	18.343	18.027	17.710	17.383	17.054	16.723	16.390	16.056	15.721	15.385	15.047	0.61	0.658	0.643	0.628	0.613	0.598	0.583	0.568	0.553	0.538	0.523	0.508	0.493	0.478
0.62	18.540	18.224	17.906	17.578	17.248	16.916	16.583	16.249	15.914	15.578	15.240	0.62	0.654	0.639	0.624	0.609	0.594	0.579	0.564	0.549	0.534	0.519	0.504	0.489	0.474
0.63	18.734	18.417	18.098	17.769	17.438	17.105	16.771	16.436	16.100	15.763	15.425	0.63	0.650	0.635	0.620	0.605	0.590	0.575	0.560	0.545	0.530	0.515	0.500	0.485	0.470
0.64	18.926	18.608	18.288	17.957	17.625	17.291	16.956	16.620	16.283	15.945	15.606	0.64	0.646	0.631	0.616	0.601	0.586	0.571	0.556	0.541	0.526	0.511	0.496	0.481	0.466
0.65	19.116	18.797	18.476	18.154	17.831	17.507	17.182	16.856	16.529	16.201	15.872	0.65	0.642	0.627	0.612	0.597	0.582	0.567	0.552	0.537	0.522	0.507	0.492	0.477	0.462
0.66	19.304	18.983	18.661	18.338	18.014	17.689	17.363	17.036	16.708	16.380	16.051	0.66	0.638	0.623	0.608	0.593	0.578	0.563	0.548	0.533	0.518	0.503	0.488	0.473	0.458
0.67	19.490	19.168	18.845	18.521	18.196	17.870	17.543	17.216	16.888	16.560	16.231	0.67	0.634	0.619	0.604	0.589	0.574	0.559	0.544	0.529	0.514	0.499	0.484	0.469	0.454
0.68	19.673	19.350	19.026	18.701	18.375	18.048	17.721	17.393	17.065	16.736	16.407	0.68	0.630	0.615	0.600	0.585	0.570	0.555	0.540	0.525	0.510	0.495	0.480	0.465	0.450
0.69	19.854	19.530	19.205	18.879	18.552	18.224	17.896	17.567	17.238	16.908	16.578	0.69	0.626	0.611	0.596	0.581	0.566	0.551	0.536	0.521	0.506	0.491	0.476	0.461	0.446
0.70	20.033	19.708	19.382	19.055	18.727	18.398	18.068	17.737	17.406	17.074	16.742	0.70	0.622	0.607	0.592	0.577	0.562	0.547	0.532	0.517	0.502	0.487	0.472	0.457	0.442
0.71	20.210	19.884	19.557	19.229	18.900	18.570	18.239	17.907	17.574	17.241	16.907	0.71	0.619	0.604	0.589	0.574	0.559	0.544	0.529	0.514	0.500	0.485	0.470	0.455	0.440
0.72	20.386	20.059	19.731	19.399	19.067	18.734	18.400	18.065	17.730	17.394	17.057	0.72	0.615	0.600	0.585	0.570	0.555	0.540	0.525	0.510	0.495	0.480	0.465	0.450	0.435
0.73	20.559	20.231	19.902	19.569	19.235	18.900	18.564	18.227	17.890	17.552	17.214	0.73	0.611	0.596	0.581	0.566	0.551	0.536	0.521	0.506	0.491	0.476	0.461	0.446	0.431
0.74	20.730	20.401	20.071	19.738	19.403	19.067	18.730	18.392	18.053	17.714	17.374	0.74	0.608	0.593	0.578	0.563	0.548	0.533	0.518	0.503	0.488	0.473	0.458	0.443	0.428
0.75	20.899	20.569	20.238	19.905	19.570	19.234	18.896	18.557	18.217	17.876	17.534	0.75	0.604	0.589	0.574	0.559	0.544	0.529	0.514	0.499	0.484	0.469	0.454	0.439	0.424
0.76	21.067	20.736	20.404	20.070	19.734	19.397	19.059	18.720	18.379	18.037	17.694	0.76	0.601	0.586	0.571	0.556	0.541	0.526	0.511	0.496	0.481	0.466	0.451	0.436	0.421
0.77	21.232	20.901	20.568	20.233	19.896	19.558	19.219	18.878	18.536	18.193	17.849	0.77	0.597	0.582	0.567	0.552	0.537	0.522	0.507	0.492	0.477	0.462	0.447	0.432	0.417
0.78	21.396	21.064	20.731	20.396	20.059	19.721	19.382	19.042	18.701	18.358	18.014	0.78	0.594	0.579	0.564	0.549	0.534	0.519	0.504	0.489	0.474	0.459	0.444	0.429	0.414
0.79	21.558	21.225	20.892	20.557	20.220	19.882	19.543	19.203	18.862	18.520	18.177	0.79	0.590	0.575	0.560	0.545	0.530	0.515	0.500	0.485	0.470	0.455	0.440	0.425	0.410
0.80	21.718	21.385	21.052	20.717	20.380	20.042	19.703	19.363	19.022	18.680	18.337	0.80	0.587	0.572	0.557	0.542	0.527	0.512	0.497	0.482	0.467	0.452	0.437	0.422	0.407
0.81	21.876	21.543	21.210	20.875	20.538	20.200	19.861	19.521	19.180	18.838	18.495	0.81	0.583	0.568	0.553	0.538	0.523	0.508	0.493	0.478	0.463	0.448	0.433	0.418	0.403
0.82	22.033	21.700	21.367	21.032	20.695	20.357	20.018	19.678	19.337	18.995	18.652	0.82	0.580	0.565	0.550	0.535	0.520	0.505	0.490	0.475	0.460	0.445	0.430	0.415	0.400
0.83	22.188	21.855	21.522	21.187	20.850	20.512	20.173	19.833	19.492	19.150	18.807	0.83	0.577	0.562	0.547	0.532	0.517	0.502	0.487	0.472	0.457	0.442	0.427	0.412	0.397
0.84	22.341	22.008	21.675	21.340	21.003	20.665	20.326	19.986	19.645	19.303	18.960	0.84	0.573	0.558	0.543	0.528	0.513	0.498	0.483	0.468	0.453	0.438	0.423	0.408	0.393
0.85	22.493	22.160	21.827	21.491	21.154	20.816	20.477	20.137	19.796	19.454	19.111	0.85	0.570	0.555	0.540	0.525	0.510	0.495	0.480	0.465	0.450	0.435	0.420	0.405	0.390
0.86	22.644	22.311	21.978	21.641	21.303	20.964	20.625	20.285	19.944	19.602	19.260	0.86	0.566	0.551	0.536	0.521	0.506	0.491	0.476	0.461	0.446	0.431	0.416	0.401	0.386
0.87	22.792	22.459	22.126	21.788	21.450	21.111	20.771	20.431	20.090	19.748	19.406	0.87	0.562	0.547	0.532	0.517	0.502	0.487	0.472	0.457	0.442	0.427	0.412	0.397	0.382
0.88	22.939	22.606	22.273	21.934	21.595	21.256	20.916	20.575	20.234	19.892	19.550	0.88	0.558	0.543	0.528	0.513	0.498	0.483	0.468	0.453	0.438	0.423	0.408	0.393	0.378
0.89	23.084	22.751	22.418	22.078	21.738	21.397	21.056	20.715	20.373	20.031	19.689	0.89	0.554	0.539	0.524	0.509	0.494	0.479	0.464	0.449	0.434	0.419	0.404	0.389	0.374
0.90	23.228	22.895	22.562	22.221	21.880	21.538	21.196	20.854	20.512	20.170	19.827	0.90	0.551	0.536	0.521	0.506	0.491	0.476	0.461	0.446	0.431	0.416	0.401	0.386	0.371
0.91	23.370	23.037	22.704	22.362	22.020	21.677	21.334	20.991	20.648	20.305	19.962	0.91	0.547	0.532	0.517	0.502	0.487	0.472	0.457	0.442	0.427	0.412	0.397	0.382	0.367
0.92	23.511	23.178	22.845	22.502	22.159	21.816	21.472	21.128	20.784	20.440	20.095	0.92	0.544	0.529	0.514	0.499	0.484	0.469	0.454	0.439	0.424	0.409	0.394	0.379	0.364
0.93	23.651	23.318	22.985																						



e	M	140	141	142	143	144	145	146	147	148	149	150	M	c	H	M=140	M=150	DF/DM
0.50	0.50	13.004	12.695	12.385	12.074	11.761	11.447	11.133	10.817	10.500	10.182	9.863	0.50	0.50	0.600	0.692	0.681	
0.51	0.51	13.183	12.869	12.555	12.239	11.922	11.603	11.284	10.964	10.642	10.320	9.996	0.51	0.51	0.606	0.697	0.687	
0.52	0.52	13.359	13.041	12.722	12.402	12.080	11.757	11.434	11.109	10.781	10.456	10.128	0.52	0.52	0.612	0.703	0.693	
0.53	0.53	13.534	13.211	12.888	12.563	12.237	11.909	11.581	11.252	10.921	10.590	10.258	0.53	0.53	0.618	0.709	0.700	
0.54	0.54	13.706	13.379	13.051	12.722	12.391	12.060	11.727	11.393	11.058	10.723	10.384	0.54	0.54	0.624	0.715	0.706	
0.55	0.55	13.874	13.544	13.212	12.878	12.544	12.208	11.871	11.533	11.194	10.854	10.513	0.55	0.55	0.630	0.721	0.712	
0.56	0.56	14.041	13.708	13.371	13.033	12.694	12.354	12.013	11.671	11.327	10.983	10.638	0.56	0.56	0.636	0.727	0.718	
0.57	0.57	14.209	13.869	13.529	13.186	12.843	12.499	12.153	11.807	11.459	11.111	10.761	0.57	0.57	0.642	0.733	0.724	
0.58	0.58	14.373	14.029	13.684	13.337	12.990	12.641	12.292	11.941	11.589	11.237	10.883	0.58	0.58	0.648	0.739	0.730	
0.59	0.59	14.535	14.187	13.837	13.487	13.135	12.782	12.429	12.074	11.718	11.361	11.004	0.59	0.59	0.654	0.745	0.736	
0.60	0.60	14.694	14.342	13.989	13.634	13.278	12.922	12.564	12.205	11.845	11.484	11.123	0.60	0.60	0.660	0.751	0.742	
0.61	0.61	14.852	14.496	14.138	13.784	13.420	13.059	12.697	12.334	11.971	11.606	11.240	0.61	0.61	0.666	0.757	0.748	
0.62	0.62	15.008	14.648	14.286	13.924	13.560	13.195	12.829	12.462	12.095	11.726	11.356	0.62	0.62	0.672	0.763	0.754	
0.63	0.63	15.162	14.798	14.432	14.066	13.698	13.329	12.960	12.589	12.217	11.844	11.471	0.63	0.63	0.678	0.769	0.760	
0.64	0.64	15.314	14.946	14.577	14.203	13.835	13.462	13.088	12.714	12.338	11.962	11.584	0.64	0.64	0.684	0.775	0.766	
0.65	0.65	15.465	15.093	14.719	14.343	13.970	13.593	13.216	12.837	12.458	12.077	11.696	0.65	0.65	0.690	0.781	0.772	
0.66	0.66	15.614	15.238	14.860	14.482	14.103	13.723	13.341	12.959	12.576	12.192	11.807	0.66	0.66	0.696	0.787	0.778	
0.67	0.67	15.760	15.381	15.000	14.618	14.235	13.851	13.465	13.079	12.693	12.305	11.916	0.67	0.67	0.702	0.793	0.784	
0.68	0.68	15.904	15.522	15.137	14.752	14.365	13.977	13.588	13.199	12.808	12.416	12.021	0.68	0.68	0.708	0.799	0.790	
0.69	0.69	16.049	15.662	15.273	14.884	14.493	14.102	13.710	13.316	12.922	12.527	12.131	0.69	0.69	0.714	0.805	0.796	
0.70	0.70	16.191	15.800	15.408	15.015	14.621	14.226	13.830	13.433	13.035	12.636	12.236	0.70	0.70	0.720	0.811	0.802	
0.71	0.71	16.331	15.936	15.541	15.144	14.746	14.348	13.948	13.547	13.146	12.744	12.341	0.71	0.71	0.726	0.817	0.808	
0.72	0.72	16.470	16.071	15.672	15.272	14.871	14.468	14.065	13.661	13.256	12.850	12.444	0.72	0.72	0.732	0.823	0.814	
0.73	0.73	16.607	16.205	15.802	15.398	14.993	14.598	14.181	13.773	13.365	12.956	12.546	0.73	0.73	0.738	0.829	0.820	
0.74	0.74	16.742	16.337	15.931	15.523	15.115	14.706	14.296	13.885	13.473	13.060	12.646	0.74	0.74	0.744	0.835	0.826	
0.75	0.75	16.876	16.467	16.058	15.647	15.235	14.822	14.409	13.992	13.579	13.163	12.746	0.75	0.75	0.750	0.841	0.832	
0.76	0.76	17.008	16.596	16.185	15.769	15.354	14.938	14.521	14.103	13.688	13.265	12.844	0.76	0.76	0.756	0.847	0.838	
0.77	0.77	17.139	16.724	16.307	15.890	15.471	15.052	14.631	14.210	13.788	13.365	12.942	0.77	0.77	0.762	0.853	0.844	
0.78	0.78	17.269	16.850	16.430	16.009	15.547	15.127	14.704	14.281	13.859	13.435	13.038	0.78	0.78	0.768	0.859	0.850	
0.79	0.79	17.397	16.975	16.551	16.127	15.702	15.276	14.849	14.421	13.993	13.563	13.133	0.79	0.79	0.774	0.865	0.856	
0.80	0.80	17.524	17.098	16.671	16.244	15.816	15.386	14.956	14.525	14.093	13.661	13.227	0.80	0.80	0.780	0.871	0.862	
0.81	0.81	17.649	17.220	16.790	16.360	15.928	15.495	15.062	14.628	14.193	13.757	13.320	0.81	0.81	0.786	0.877	0.868	
0.82	0.82	17.773	17.341	16.908	16.474	16.030	15.603	15.167	14.729	14.291	13.852	13.413	0.82	0.82	0.792	0.883	0.874	
0.83	0.83	17.895	17.460	17.024	16.587	16.149	15.717	15.279	14.830	14.388	13.946	13.504	0.83	0.83	0.798	0.889	0.880	
0.84	0.84	18.016	17.578	17.139	16.699	16.257	15.816	15.373	14.923	14.485	14.040	13.594	0.84	0.84	0.804	0.895	0.886	
0.85	0.85	18.135	17.695	17.255	16.809	16.365	15.920	15.474	15.027	14.580	14.132	13.683	0.85	0.85	0.810	0.901	0.892	
0.86	0.86	18.253	17.810	17.365	16.919	16.471	16.023	15.574	15.125	14.673	14.223	13.771	0.86	0.86	0.816	0.907	0.898	
0.87	0.87	18.372	17.925	17.476	17.027	16.577	16.125	15.674	15.221	14.767	14.313	13.858	0.87	0.87	0.822	0.913	0.904	
0.88	0.88	18.489	18.038	17.588	17.134	16.661	16.212	15.772	15.318	14.860	14.402	13.945	0.88	0.88	0.828	0.919	0.910	
0.89	0.89	18.603	18.150	17.695	17.240	16.744	16.292	15.849	15.393	14.931	14.473	14.030	0.89	0.89	0.834	0.925	0.916	
0.90	0.90	18.717	18.261	17.803	17.345	16.846	16.394	15.940	15.483	15.021	14.565	14.115	0.90	0.90	0.840	0.931	0.922	
0.91	0.91	18.830	18.370	17.910	17.449	16.946	16.492	16.036	15.575	15.110	14.650	14.198	0.91	0.91	0.846	0.937	0.928	
0.92	0.92	18.941	18.479	18.015	17.551	17.046	16.591	16.134	15.671	15.203	14.750	14.281	0.92	0.92	0.852	0.943	0.934	
0.93	0.93	19.051	18.586	18.120	17.653	17.143	16.687	16.224	15.757	15.286	14.835	14.363	0.93	0.93	0.858	0.949	0.940	
0.94	0.94	19.160	18.692	18.223	17.753	17.238	16.781	16.319	15.843	15.367	14.919	14.444	0.94	0.94	0.864	0.955	0.946	
0.95	0.95	19.268	18.797	18.326	17.853	17.330	16.874	16.411	15.935	15.457	15.002	14.524	0.95	0.95	0.870	0.961	0.952	
0.96	0.96	19.375	18.901	18.427	17.953	17.417	16.959	16.491	16.013	15.531	15.084	14.603	0.96	0.96	0.876	0.967	0.958	
0.97	0.97	19.481	19.004	18.527	18.049	17.510	17.051	16.581	16.101	15.618	15.165	14.682	0.97	0.97	0.882	0.973	0.964	
0.98	0.98	19.586	19.106	18.625	18.146	17.614	17.152	16.682	16.200	15.715	15.246	14.760	0.98	0.98	0.888	0.979	0.970	
0.99	0.99	19.690	19.207	18.725	18.241	17.757	17.292	16.786	16.300	15.813	15.325	14.837	0.99	0.99	0.894	0.985	0.976	
1.00	1.00	19.792	19.307	18.822	18.335	17.849	17.361	16.873	16.384	15.894	15.404	14.913	1.00	1.00	0.900	0.991	0.982	
M	M	220	219	218	217	216	215	214	213	212	211	210	M	M	220	M=220	M=210	

e	E = H										DE/DM						
	150	151	152	153	154	155	156	157	158	159	160	M	e	M=150	M=160	H	H=2
0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	1.000	1.000	0.00	1.000
0.01	0.284	0.275	0.267	0.258	0.249	0.240	0.231	0.222	0.213	0.203	0.193	0.18	0.17	0.991	0.991	0.01	0.991
0.02	0.563	0.546	0.529	0.511	0.493	0.475	0.458	0.440	0.423	0.405	0.388	0.37	0.35	0.983	0.983	0.02	0.983
0.03	0.838	0.812	0.786	0.760	0.734	0.707	0.680	0.654	0.628	0.602	0.576	0.56	0.54	0.974	0.974	0.03	0.974
0.04	1.107	1.078	1.039	1.005	0.970	0.935	0.899	0.864	0.828	0.792	0.757	0.74	0.72	0.966	0.966	0.04	0.966
0.05	1.373	1.330	1.288	1.245	1.202	1.158	1.114	1.070	1.025	0.981	0.936	0.92	0.90	0.958	0.958	0.05	0.958
0.06	1.633	1.583	1.532	1.481	1.429	1.378	1.325	1.273	1.220	1.166	1.113	1.09	1.07	0.950	0.950	0.06	0.950
0.07	1.890	1.831	1.772	1.713	1.653	1.593	1.533	1.472	1.410	1.349	1.287	1.26	1.24	0.942	0.942	0.07	0.942
0.08	2.142	2.076	2.009	1.941	1.874	1.805	1.737	1.667	1.598	1.528	1.458	1.43	1.41	0.934	0.934	0.08	0.934
0.09	2.390	2.316	2.241	2.166	2.090	2.014	1.937	1.860	1.782	1.704	1.626	1.60	1.58	0.926	0.926	0.09	0.926
0.10	2.634	2.552	2.469	2.386	2.303	2.219	2.134	2.049	1.963	1.877	1.790	1.76	1.74	0.918	0.918	0.10	0.918
0.11	2.874	2.784	2.694	2.603	2.512	2.420	2.328	2.235	2.141	2.047	1.953	1.91	1.89	0.911	0.911	0.11	0.911
0.12	3.110	3.013	2.915	2.817	2.718	2.618	2.518	2.417	2.316	2.214	2.112	2.07	2.05	0.903	0.903	0.12	0.903
0.13	3.342	3.237	3.132	3.026	2.920	2.813	2.705	2.598	2.488	2.378	2.268	2.22	2.20	0.896	0.896	0.13	0.896
0.14	3.570	3.459	3.346	3.233	3.119	3.004	2.889	2.773	2.654	2.534	2.422	2.37	2.35	0.889	0.889	0.14	0.889
0.15	3.795	3.676	3.556	3.436	3.315	3.193	3.070	2.947	2.823	2.699	2.574	2.52	2.50	0.881	0.881	0.15	0.881
0.16	4.016	3.890	3.763	3.636	3.507	3.378	3.248	3.118	2.987	2.855	2.723	2.67	2.65	0.874	0.874	0.16	0.874
0.17	4.234	4.101	3.967	3.832	3.697	3.560	3.423	3.286	3.147	3.009	2.869	2.81	2.80	0.867	0.867	0.17	0.867
0.18	4.448	4.308	4.167	4.025	3.883	3.740	3.596	3.451	3.306	3.160	3.013	2.95	2.94	0.860	0.860	0.18	0.860
0.19	4.659	4.512	4.364	4.216	4.066	3.916	3.765	3.614	3.461	3.308	3.155	3.09	3.08	0.853	0.853	0.19	0.853
0.20	4.867	4.713	4.559	4.403	4.247	4.090	3.932	3.774	3.614	3.455	3.294	3.23	3.22	0.847	0.847	0.20	0.847
0.21	5.071	4.911	4.750	4.588	4.425	4.261	4.096	3.931	3.765	3.598	3.431	3.37	3.36	0.840	0.840	0.21	0.840
0.22	5.273	5.106	4.938	4.769	4.599	4.429	4.258	4.086	3.913	3.740	3.566	3.50	3.49	0.833	0.833	0.22	0.833
0.23	5.471	5.297	5.123	4.948	4.772	4.595	4.417	4.238	4.059	3.879	3.699	3.63	3.62	0.827	0.827	0.23	0.827
0.24	5.666	5.486	5.305	5.124	4.941	4.758	4.574	4.389	4.203	4.017	3.830	3.76	3.75	0.821	0.821	0.24	0.821
0.25	5.858	5.672	5.485	5.297	5.108	4.918	4.728	4.536	4.344	4.152	3.958	3.89	3.88	0.814	0.814	0.25	0.814
0.26	6.048	5.855	5.662	5.468	5.272	5.076	4.880	4.682	4.484	4.285	4.085	4.02	4.01	0.808	0.808	0.26	0.808
0.27	6.234	6.036	5.836	5.636	5.434	5.232	5.029	4.825	4.621	4.416	4.210	4.14	4.13	0.802	0.802	0.27	0.802
0.28	6.418	6.213	6.008	5.801	5.594	5.385	5.176	4.966	4.756	4.544	4.332	4.26	4.25	0.796	0.796	0.28	0.796
0.29	6.599	6.388	6.177	5.964	5.751	5.534	5.321	5.105	4.889	4.671	4.453	4.38	4.37	0.790	0.790	0.29	0.790
0.30	6.778	6.561	6.343	6.125	5.906	5.685	5.464	5.242	5.020	4.797	4.573	4.50	4.49	0.784	0.784	0.30	0.784
0.31	6.953	6.731	6.508	6.283	6.058	5.832	5.605	5.377	5.149	4.920	4.690	4.62	4.61	0.778	0.778	0.31	0.778
0.32	7.127	6.898	6.669	6.439	6.208	5.976	5.744	5.510	5.276	5.041	4.805	4.73	4.72	0.772	0.772	0.32	0.772
0.33	7.297	7.063	6.829	6.593	6.356	6.119	5.880	5.641	5.401	5.161	4.919	4.84	4.83	0.767	0.767	0.33	0.767
0.34	7.466	7.226	6.986	6.744	6.502	6.259	6.015	5.770	5.525	5.278	5.032	4.95	4.94	0.761	0.761	0.34	0.761
0.35	7.632	7.387	7.141	6.894	6.646	6.397	6.148	5.897	5.645	5.395	5.142	5.06	5.05	0.755	0.755	0.35	0.755
0.36	7.795	7.545	7.293	7.041	6.788	6.533	6.279	6.023	5.766	5.509	5.251	5.17	5.16	0.750	0.750	0.36	0.750
0.37	7.956	7.701	7.444	7.186	6.927	6.668	6.407	6.146	5.884	5.622	5.359	5.28	5.27	0.745	0.745	0.37	0.745
0.38	8.115	7.854	7.592	7.329	7.065	6.800	6.535	6.270	6.001	5.733	5.464	5.38	5.37	0.739	0.739	0.38	0.739
0.39	8.272	8.006	7.738	7.470	7.201	6.931	6.660	6.388	6.116	5.843	5.569	5.49	5.48	0.734	0.734	0.39	0.734
0.40	8.427	8.155	7.883	7.609	7.335	7.060	6.783	6.507	6.229	5.951	5.672	5.60	5.59	0.728	0.728	0.40	0.728
0.41	8.579	8.303	8.025	7.746	7.467	7.186	6.905	6.623	6.341	6.057	5.773	5.70	5.69	0.722	0.722	0.41	0.722
0.42	8.730	8.448	8.165	7.882	7.597	7.312	7.025	6.737	6.449	6.162	5.873	5.80	5.79	0.716	0.716	0.42	0.716
0.43	8.878	8.591	8.304	8.015	7.725	7.435	7.144	6.852	6.561	6.268	5.976	5.90	5.89	0.711	0.711	0.43	0.711
0.44	9.024	8.733	8.440	8.147	7.852	7.557	7.261	6.964	6.672	6.378	6.086	6.01	6.00	0.705	0.705	0.44	0.705
0.45	9.169	8.872	8.575	8.276	7.977	7.677	7.376	7.075	6.772	6.479	6.185	6.11	6.10	0.700	0.700	0.45	0.700
0.46	9.311	9.010	8.708	8.405	8.101	7.795	7.490	7.184	6.878	6.574	6.269	6.19	6.18	0.694	0.694	0.46	0.694
0.47	9.452	9.146	8.839	8.531	8.222	7.915	7.602	7.291	6.979	6.667	6.355	6.28	6.27	0.688	0.688	0.47	0.688
0.48	9.591	9.280	8.968	8.656	8.342	8.028	7.713	7.397	7.081	6.765	6.446	6.37	6.36	0.682	0.682	0.48	0.682
0.49	9.728	9.412	9.096	8.779	8.461	8.142	7.822	7.502	7.181	6.859	6.537	6.46	6.45	0.677	0.677	0.49	0.677
0.50	9.863	9.543	9.222	8.900	8.578	8.254	7.930	7.605	7.280	6.953	6.626	6.55	6.54	0.671	0.671	0.50	0.671



TABLE OF KEPLER'S EQUATION

e	E - M										DE/DM									
	150	151	152	153	154	155	156	157	158	159	160	M	e	M=150	M=160	M=150	M=160			
0.50	9.863	9.543	9.222	8.900	8.578	8.254	7.930	7.605	7.280	6.953	6.626	0.50	0.681	0.673						
0.51	9.996	9.672	9.346	9.020	8.693	8.365	8.036	7.707	7.377	7.046	6.715	0.51	0.676	0.668						
0.52	10.128	9.802	9.469	9.138	8.807	8.475	8.142	7.808	7.473	7.138	6.802	0.52	0.672	0.664						
0.53	10.258	9.924	9.590	9.255	8.919	8.583	8.245	7.907	7.568	7.229	6.889	0.53	0.667	0.660						
0.54	10.386	10.048	9.710	9.370	9.030	8.689	8.348	8.005	7.662	7.318	6.974	0.54	0.663	0.655						
0.55	10.513	10.171	9.828	9.484	9.140	8.795	8.449	8.102	7.755	7.406	7.058	0.55	0.659	0.651						
0.56	10.638	10.292	9.945	9.597	9.248	8.899	8.548	8.198	7.846	7.494	7.141	0.56	0.654	0.647						
0.57	10.761	10.411	10.060	9.708	9.355	9.001	8.647	8.292	7.936	7.580	7.223	0.57	0.650	0.643						
0.58	10.883	10.529	10.173	9.817	9.460	9.103	8.744	8.386	8.025	7.665	7.304	0.58	0.646	0.639						
0.59	11.004	10.645	10.286	9.926	9.565	9.203	8.840	8.477	8.113	7.749	7.384	0.59	0.642	0.635						
0.61	11.240	10.874	10.506	10.132	9.767	9.392	9.016	8.641	8.265	7.889	7.513	0.61	0.638	0.631						
0.62	11.356	10.986	10.614	10.238	9.869	9.494	9.117	8.742	8.366	7.991	7.614	0.62	0.634	0.627						
0.63	11.471	11.097	10.721	10.345	9.976	9.591	9.213	8.834	8.454	8.074	7.694	0.63	0.630	0.623						
0.64	11.584	11.206	10.827	10.447	10.067	9.685	9.303	8.920	8.537	8.153	7.769	0.64	0.626	0.619						
0.65	11.696	11.314	10.931	10.548	10.163	9.778	9.392	9.006	8.619	8.231	7.843	0.65	0.622	0.615						
0.66	11.807	11.421	11.034	10.647	10.259	9.870	9.481	9.090	8.700	8.308	7.916	0.66	0.618	0.611						
0.67	11.916	11.527	11.136	10.745	10.353	9.961	9.568	9.174	8.779	8.384	7.989	0.67	0.614	0.607						
0.68	12.024	11.631	11.237	10.842	10.447	10.051	9.654	9.256	8.858	8.460	8.060	0.68	0.611	0.604						
0.69	12.131	11.734	11.336	10.938	10.539	10.139	9.739	9.338	8.936	8.534	8.131	0.69	0.607	0.600						
0.70	12.236	11.836	11.435	11.033	10.630	10.227	9.823	9.418	9.013	8.607	8.201	0.70	0.604	0.597						
0.71	12.341	11.937	11.532	11.127	10.720	10.314	9.906	9.498	9.089	8.680	8.270	0.71	0.601	0.593						
0.72	12.444	12.036	11.628	11.219	10.810	10.399	9.988	9.577	9.164	8.752	8.338	0.72	0.598	0.590						
0.73	12.546	12.135	11.723	11.311	10.898	10.484	10.069	9.654	9.239	8.823	8.409	0.73	0.595	0.588						
0.74	12.646	12.232	11.817	11.401	10.985	10.567	10.150	9.731	9.312	8.893	8.478	0.74	0.592	0.585						
0.75	12.746	12.326	11.910	11.491	11.071	10.650	10.229	9.807	9.385	8.962	8.559	0.75	0.589	0.582						
0.76	12.844	12.423	12.002	11.579	11.156	10.732	10.308	9.882	9.457	9.031	8.604	0.76	0.586	0.579						
0.77	12.942	12.517	12.092	11.666	11.240	10.813	10.385	9.957	9.528	9.098	8.668	0.77	0.579	0.573						
0.78	13.038	12.610	12.182	11.753	11.323	10.893	10.462	10.030	9.598	9.165	8.732	0.78	0.576	0.570						
0.79	13.133	12.702	12.271	11.838	11.405	10.972	10.538	10.103	9.668	9.232	8.795	0.79	0.573	0.567						
0.80	13.227	12.793	12.358	11.923	11.487	11.050	10.613	10.175	9.736	9.297	8.858	0.80	0.569	0.563						
0.81	13.320	12.883	12.445	12.007	11.567	11.127	10.687	10.246	9.804	9.362	8.919	0.81	0.566	0.560						
0.82	13.413	12.972	12.531	12.089	11.647	11.204	10.760	10.316	9.871	9.426	8.980	0.82	0.563	0.557						
0.83	13.504	13.060	12.616	12.171	11.726	11.280	10.835	10.386	9.938	9.490	9.041	0.83	0.560	0.554						
0.84	13.594	13.147	12.700	12.252	11.803	11.354	10.905	10.454	10.004	9.552	9.100	0.84	0.557	0.551						
0.85	13.683	13.233	12.783	12.332	11.880	11.428	10.976	10.522	10.069	9.614	9.160	0.85	0.554	0.548						
0.86	13.771	13.318	12.865	12.411	11.957	11.502	11.046	10.590	10.133	9.676	9.218	0.86	0.551	0.545						
0.87	13.858	13.403	12.946	12.490	12.032	11.574	11.115	10.659	10.197	9.736	9.278	0.87	0.548	0.542						
0.88	13.945	13.486	13.027	12.567	12.107	11.646	11.184	10.722	10.260	9.796	9.338	0.88	0.545	0.539						
0.89	14.030	13.569	13.106	12.644	12.180	11.717	11.252	10.782	10.322	9.856	9.399	0.89	0.542	0.536						
0.90	14.115	13.650	13.185	12.720	12.254	11.781	11.320	10.842	10.383	9.915	9.445	0.90	0.539	0.533						
0.91	14.198	13.731	13.263	12.795	12.325	11.856	11.386	10.916	10.444	9.973	9.501	0.91	0.536	0.531						
0.92	14.281	13.811	13.340	12.869	12.397	11.925	11.452	10.979	10.505	10.030	9.556	0.92	0.533	0.528						
0.93	14.364	13.890	13.417	12.943	12.468	11.993	11.517	11.041	10.565	10.087	9.610	0.93	0.530	0.525						
0.94	14.444	13.968	13.492	13.015	12.538	12.060	11.582	11.104	10.624	10.144	9.664	0.94	0.528	0.522						
0.95	14.524	14.046	13.567	13.087	12.607	12.127	11.646	11.164	10.682	10.200	9.717	0.95	0.525	0.520						
0.96	14.603	14.122	13.641	13.159	12.676	12.193	11.709	11.225	10.740	10.255	9.769	0.96	0.522	0.517						
0.97	14.682	14.198	13.714	13.229	12.744	12.258	11.772	11.285	10.797	10.310	9.821	0.97	0.519	0.514						
0.98	14.760	14.274	13.787	13.299	12.811	12.323	11.834	11.344	10.854	10.364	9.873	0.98	0.517	0.512						
0.99	14.837	14.348	13.858	13.368	12.875	12.387	11.895	11.403	10.910	10.417	9.924	0.99	0.514	0.509						
1.00	14.913	14.422	13.930	13.437	12.944	12.450	11.956	11.461	10.966	10.470	9.974	1.00	0.511	0.506						
M	210	209	208	207	206	205	204	203	202	201	200	M	M=210	M=200						

e	E - M										DE/DM				
	M	160	161	162	163	164	165	166	167	168	169	170	M	M=160	M=170
0.00	0.000	0.000	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	1.000	1.000
0.01	0.194	0.185	0.175	0.168	0.166	0.156	0.147	0.137	0.128	0.118	0.108	0.099	0.01	0.991	0.990
0.02	0.385	0.366	0.347	0.329	0.329	0.310	0.291	0.272	0.253	0.234	0.214	0.195	0.02	0.982	0.981
0.03	0.572	0.544	0.516	0.489	0.489	0.460	0.432	0.404	0.376	0.347	0.319	0.290	0.03	0.972	0.971
0.04	0.755	0.719	0.682	0.645	0.645	0.608	0.571	0.534	0.496	0.459	0.421	0.383	0.04	0.964	0.962
0.05	0.936	0.890	0.845	0.799	0.799	0.753	0.707	0.661	0.614	0.568	0.522	0.474	0.05	0.955	0.953
0.06	1.113	1.059	1.005	0.950	0.950	0.896	0.841	0.786	0.731	0.675	0.619	0.564	0.06	0.946	0.944
0.07	1.287	1.224	1.162	1.099	1.099	1.036	0.972	0.908	0.845	0.780	0.716	0.651	0.07	0.938	0.935
0.08	1.458	1.387	1.316	1.245	1.245	1.173	1.101	1.029	0.956	0.884	0.811	0.738	0.08	0.930	0.927
0.09	1.626	1.547	1.467	1.388	1.388	1.308	1.228	1.147	1.066	0.985	0.904	0.822	0.09	0.921	0.918
0.10	1.793	1.703	1.616	1.528	1.528	1.441	1.352	1.263	1.174	1.085	0.995	0.906	0.10	0.913	0.910
0.11	1.958	1.858	1.762	1.667	1.667	1.571	1.474	1.377	1.280	1.183	1.085	0.987	0.11	0.905	0.902
0.12	2.112	2.003	1.898	1.802	1.802	1.698	1.594	1.489	1.384	1.279	1.173	1.068	0.12	0.898	0.894
0.13	2.264	2.145	2.047	1.954	1.954	1.843	1.732	1.620	1.507	1.394	1.260	1.146	0.13	0.890	0.886
0.14	2.422	2.304	2.186	2.067	2.067	1.948	1.828	1.708	1.587	1.466	1.345	1.224	0.14	0.882	0.878
0.15	2.574	2.456	2.322	2.196	2.196	2.069	1.942	1.814	1.686	1.558	1.429	1.300	0.15	0.875	0.871
0.16	2.728	2.599	2.457	2.325	2.325	2.189	2.054	1.919	1.783	1.647	1.511	1.375	0.16	0.867	0.863
0.17	2.889	2.729	2.588	2.447	2.447	2.306	2.164	2.022	1.879	1.736	1.592	1.448	0.17	0.860	0.856
0.18	3.018	2.866	2.718	2.570	2.570	2.421	2.272	2.123	1.973	1.822	1.672	1.521	0.18	0.853	0.849
0.19	3.153	3.001	2.846	2.691	2.691	2.535	2.379	2.222	2.065	1.908	1.750	1.592	0.19	0.846	0.842
0.20	3.294	3.133	2.971	2.809	2.809	2.647	2.483	2.320	2.156	1.992	1.827	1.662	0.20	0.839	0.835
0.21	3.441	3.263	3.095	2.926	2.926	2.756	2.586	2.416	2.245	2.074	1.902	1.731	0.21	0.832	0.828
0.22	3.566	3.392	3.216	3.041	3.041	2.865	2.688	2.511	2.333	2.155	1.977	1.798	0.22	0.826	0.821
0.23	3.699	3.515	3.336	3.154	3.154	2.971	2.788	2.604	2.420	2.234	2.050	1.865	0.23	0.819	0.815
0.24	3.830	3.642	3.454	3.265	3.265	3.076	2.886	2.696	2.505	2.314	2.122	1.930	0.24	0.813	0.808
0.25	3.958	3.764	3.570	3.374	3.374	3.179	2.982	2.786	2.589	2.391	2.195	1.995	0.25	0.806	0.802
0.26	4.085	3.885	3.684	3.482	3.482	3.280	3.078	2.874	2.671	2.467	2.263	2.058	0.26	0.800	0.795
0.27	4.210	4.003	3.796	3.588	3.588	3.380	3.171	2.962	2.752	2.542	2.332	2.121	0.27	0.794	0.789
0.28	4.332	4.120	3.907	3.693	3.693	3.478	3.263	3.048	2.832	2.616	2.399	2.182	0.28	0.788	0.783
0.29	4.456	4.243	4.015	3.796	3.796	3.575	3.354	3.133	2.911	2.688	2.466	2.243	0.29	0.782	0.777
0.30	4.578	4.364	4.123	3.897	3.897	3.670	3.443	3.216	2.988	2.760	2.531	2.302	0.30	0.776	0.771
0.31	4.699	4.459	4.228	3.997	3.997	3.764	3.532	3.298	3.065	2.830	2.596	2.361	0.31	0.770	0.765
0.32	4.805	4.569	4.332	4.095	4.095	3.857	3.618	3.379	3.140	2.900	2.660	2.419	0.32	0.764	0.759
0.33	4.919	4.677	4.435	4.192	4.192	3.948	3.704	3.459	3.214	2.968	2.722	2.476	0.33	0.758	0.753
0.34	5.032	4.784	4.536	4.287	4.287	4.038	3.788	3.538	3.287	3.036	2.784	2.532	0.34	0.753	0.748
0.35	5.142	4.889	4.635	4.381	4.381	4.126	3.871	3.615	3.359	3.102	2.845	2.587	0.35	0.747	0.742
0.36	5.251	4.993	4.733	4.474	4.474	4.213	3.953	3.691	3.429	3.167	2.905	2.642	0.36	0.742	0.737
0.37	5.359	5.095	4.830	4.565	4.565	4.299	4.033	3.766	3.499	3.232	2.964	2.695	0.37	0.736	0.732
0.38	5.464	5.195	4.925	4.654	4.654	4.384	4.112	3.840	3.568	3.295	3.022	2.748	0.38	0.731	0.726
0.39	5.569	5.294	5.019	4.744	4.744	4.474	4.161	3.913	3.638	3.359	3.079	2.800	0.39	0.726	0.721
0.40	5.672	5.392	5.112	4.831	4.831	4.550	4.268	3.985	3.703	3.419	3.136	2.852	0.40	0.721	0.716
0.41	5.773	5.489	5.203	4.917	4.917	4.631	4.344	4.056	3.769	3.480	3.247	2.903	0.41	0.716	0.711
0.42	5.873	5.584	5.293	5.002	5.002	4.711	4.419	4.126	3.834	3.540	3.252	2.952	0.42	0.711	0.706
0.43	5.972	5.677	5.382	5.086	5.086	4.790	4.456	4.159	3.898	3.599	3.301	3.002	0.43	0.706	0.701
0.44	6.069	5.770	5.470	5.169	5.169	4.868	4.566	4.263	3.961	3.658	3.354	3.050	0.44	0.701	0.696
0.45	6.165	5.861	5.556	5.250	5.250	4.944	4.638	4.331	4.023	3.712	3.407	3.098	0.45	0.696	0.691
0.46	6.260	5.951	5.641	5.331	5.331	5.020	4.709	4.397	4.085	3.772	3.459	3.146	0.46	0.691	0.686
0.47	6.353	6.040	5.725	5.410	5.410	5.095	4.779	4.462	4.145	3.828	3.510	3.192	0.47	0.686	0.682
0.48	6.446	6.127	5.808	5.498	5.498	5.168	4.848	4.527	4.205	3.883	3.561	3.238	0.48	0.682	0.677
0.49	6.537	6.214	5.890	5.586	5.586	5.241	4.916	4.593	4.264	3.938	3.611	3.284	0.49	0.677	0.673
0.50	6.626	6.299	5.971	5.642	5.642	5.313	4.983	4.653	4.322	3.991	3.660	3.328	0.50	0.673	0.668
		M	200	199	198	197	196	195	193	192	191	190	N	M=200	M=190

TABLE OF KEPLER'S EQUATION

e	M	160	161	162	163	164	165	E - M	166	167	168	169	170	M	e	M=160	M=170	DE/PM	M=160	M=170	M=200
0.50	0.50	6.626	6.299	5.971	5.642	5.313	4.983	4.653	4.322	3.991	3.660	3.328	3.000	0.50	0.50	0.673	0.668		0.673	0.668	
0.51	0.51	6.715	6.383	6.051	5.717	5.383	5.049	4.715	4.380	4.044	3.709	3.372	3.036	0.51	0.51	0.668	0.664		0.668	0.664	
0.52	0.52	6.802	6.466	6.129	5.791	5.453	5.115	4.776	4.436	4.097	3.757	3.416	3.075	0.52	0.52	0.664	0.659		0.664	0.659	
0.53	0.53	6.889	6.548	6.207	5.865	5.522	5.179	4.836	4.492	4.148	3.804	3.459	3.114	0.53	0.53	0.660	0.655		0.660	0.655	
0.54	0.54	6.978	6.629	6.283	5.937	5.590	5.243	4.896	4.548	4.199	3.851	3.502	3.153	0.54	0.54	0.655	0.651		0.655	0.651	
0.55	0.55	7.070	6.709	6.359	6.008	5.658	5.308	4.954	4.602	4.250	3.897	3.544	3.191	0.55	0.55	0.651	0.647		0.651	0.647	
0.56	0.56	7.164	6.787	6.433	6.079	5.724	5.368	5.012	4.656	4.299	3.942	3.585	3.228	0.56	0.56	0.647	0.642		0.647	0.642	
0.57	0.57	7.263	6.865	6.507	6.149	5.789	5.428	5.070	4.712	4.354	3.997	3.640	3.282	0.57	0.57	0.643	0.638		0.643	0.638	
0.58	0.58	7.364	6.942	6.580	6.217	5.854	5.490	5.126	4.762	4.397	4.032	3.666	3.300	0.58	0.58	0.639	0.634		0.639	0.634	
0.59	0.59	7.466	7.019	6.682	6.315	5.981	5.615	5.250	4.884	4.518	4.152	3.786	3.420	0.59	0.59	0.635	0.630		0.635	0.630	
0.60	0.60	7.569	7.093	6.753	6.382	6.045	5.678	5.311	4.944	4.577	4.210	3.843	3.476	0.60	0.60	0.631	0.626		0.631	0.626	
0.61	0.61	7.674	7.167	6.817	6.448	6.105	5.738	5.371	4.999	4.628	4.256	3.884	3.512	0.61	0.61	0.627	0.623		0.627	0.623	
0.62	0.62	7.780	7.260	6.872	6.509	6.162	5.795	5.428	5.061	4.694	4.327	3.959	3.591	0.62	0.62	0.623	0.619		0.623	0.619	
0.63	0.63	7.887	7.359	6.924	6.565	6.215	5.848	5.481	5.114	4.747	4.380	4.012	3.644	0.63	0.63	0.619	0.615		0.619	0.615	
0.64	0.64	7.994	7.458	7.000	6.623	6.270	5.903	5.536	5.169	4.802	4.435	4.068	3.700	0.64	0.64	0.615	0.611		0.615	0.611	
0.65	0.65	8.102	7.557	7.093	6.700	6.345	5.980	5.615	5.250	4.884	4.518	4.152	3.786	0.65	0.65	0.611	0.607		0.611	0.607	
0.66	0.66	8.210	7.663	7.196	6.773	6.415	6.050	5.685	5.320	4.954	4.588	4.222	3.856	0.66	0.66	0.607	0.603		0.607	0.603	
0.67	0.67	8.318	7.769	7.300	6.840	6.480	6.115	5.750	5.385	5.020	4.654	4.288	3.922	0.67	0.67	0.603	0.600		0.603	0.600	
0.68	0.68	8.426	7.874	7.400	6.900	6.540	6.175	5.810	5.445	5.080	4.714	4.348	3.982	0.68	0.68	0.600	0.597		0.600	0.597	
0.69	0.69	8.534	7.979	7.500	7.000	6.640	6.275	5.910	5.545	5.180	4.814	4.448	4.082	0.69	0.69	0.597	0.593		0.597	0.593	
0.70	0.70	8.642	8.083	7.600	7.100	6.740	6.375	6.010	5.645	5.280	4.914	4.548	4.182	0.70	0.70	0.593	0.590		0.593	0.590	
0.71	0.71	8.750	8.189	7.700	7.200	6.840	6.475	6.110	5.745	5.380	5.014	4.648	4.282	0.71	0.71	0.590	0.586		0.590	0.586	
0.72	0.72	8.858	8.295	7.800	7.300	6.940	6.575	6.210	5.845	5.480	5.114	4.748	4.382	0.72	0.72	0.586	0.583		0.586	0.583	
0.73	0.73	8.966	8.400	7.900	7.400	7.040	6.675	6.310	5.945	5.580	5.214	4.848	4.482	0.73	0.73	0.583	0.580		0.583	0.580	
0.74	0.74	9.074	8.506	8.000	7.500	7.140	6.775	6.410	6.045	5.680	5.314	4.948	4.582	0.74	0.74	0.580	0.576		0.580	0.576	
0.75	0.75	9.182	8.609	8.100	7.600	7.240	6.875	6.510	6.145	5.780	5.414	5.048	4.682	0.75	0.75	0.576	0.573		0.576	0.573	
0.76	0.76	9.290	8.713	8.200	7.700	7.340	6.975	6.610	6.245	5.880	5.514	5.148	4.782	0.76	0.76	0.573	0.569		0.573	0.569	
0.77	0.77	9.398	8.817	8.300	7.800	7.440	7.075	6.710	6.345	5.980	5.614	5.248	4.882	0.77	0.77	0.569	0.566		0.569	0.566	
0.78	0.78	9.506	8.920	8.400	7.900	7.540	7.175	6.810	6.445	6.080	5.714	5.348	4.982	0.78	0.78	0.566	0.563		0.566	0.563	
0.79	0.79	9.614	9.023	8.500	8.000	7.640	7.275	6.910	6.545	6.180	5.814	5.448	5.082	0.79	0.79	0.563	0.560		0.563	0.560	
0.80	0.80	9.722	9.126	8.600	8.100	7.740	7.375	7.010	6.645	6.280	5.914	5.548	5.182	0.80	0.80	0.560	0.557		0.560	0.557	
0.81	0.81	9.830	9.229	8.700	8.200	7.840	7.475	7.110	6.745	6.380	6.014	5.648	5.282	0.81	0.81	0.557	0.554		0.557	0.554	
0.82	0.82	9.938	9.332	8.800	8.300	7.940	7.575	7.210	6.845	6.480	6.114	5.748	5.382	0.82	0.82	0.554	0.551		0.554	0.551	
0.83	0.83	10.046	9.435	8.900	8.400	8.040	7.675	7.310	6.945	6.580	6.214	5.848	5.482	0.83	0.83	0.551	0.548		0.551	0.548	
0.84	0.84	10.154	9.534	9.000	8.500	8.140	7.775	7.410	7.045	6.675	6.310	5.944	5.578	0.84	0.84	0.548	0.545		0.548	0.545	
0.85	0.85	10.262	9.633	9.100	8.600	8.240	7.875	7.510	7.145	6.785	6.420	6.054	5.682	0.85	0.85	0.545	0.542		0.545	0.542	
0.86	0.86	10.370	9.732	9.200	8.700	8.340	7.975	7.610	7.245	6.885	6.520	6.154	5.782	0.86	0.86	0.542	0.539		0.542	0.539	
0.87	0.87	10.478	9.831	9.300	8.800	8.440	8.075	7.710	7.345	6.985	6.620	6.254	5.882	0.87	0.87	0.539	0.536		0.539	0.536	
0.88	0.88	10.586	9.930	9.400	8.900	8.540	8.175	7.810	7.445	7.085	6.720	6.354	5.982	0.88	0.88	0.536	0.533		0.536	0.533	
0.89	0.89	10.694	10.029	9.500	9.000	8.640	8.275	7.910	7.545	7.185	6.820	6.454	6.082	0.89	0.89	0.533	0.530		0.533	0.530	
0.90	0.90	10.802	10.128	9.600	9.100	8.740	8.375	8.010	7.645	7.285	6.920	6.554	6.182	0.90	0.90	0.530	0.527		0.530	0.527	
0.91	0.91	10.910	10.227	9.700	9.200	8.840	8.475	8.110	7.745	7.385	7.020	6.644	6.282	0.91	0.91	0.527	0.524		0.527	0.524	
0.92	0.92	11.018	10.326	9.800	9.300	8.940	8.575	8.210	7.845	7.485	7.120	6.734	6.372	0.92	0.92	0.524	0.522		0.524	0.522	
0.93	0.93	11.126	10.425	9.900	9.400	9.040	8.675	8.310	7.945	7.585	7.220	6.824	6.462	0.93	0.93	0.522	0.519		0.522	0.519	
0.94	0.94	11.234	10.524	10.000	9.500	9.140	8.775	8.410	8.045	7.685	7.320	6.914	6.552	0.94	0.94	0.519	0.516		0.519	0.516	
0.95	0.95	11.342	10.623	10.100	9.600	9.240	8.875	8.510	8.145	7.785	7.420	7.004	6.642	0.95	0.95	0.516	0.514		0.516	0.514	
0.96	0.96	11.450	10.722	10.200	9.700	9.340	8.975	8.610	8.245	7.885	7.520	7.094	6.732	0.96	0.96	0.514	0.512		0.514	0.512	
0.97	0.97	11.558	10.821	10.300	9.800	9.440	9.075	8.710	8.345	7.985	7.620	7.184	6.822	0.97	0.97	0.512	0.509		0.512	0.509	
0.98	0.98	11.666	10.920	10.400	9.900	9.540	9.175	8.810	8.445	8.085	7.720	7.304	6.912	0.98	0.98	0.509	0.506		0.509	0.506	
0.99	0.99	11.774	11.019	10.500	10.000	9.640	9.275	8.910	8.545	8.185	7.820	7.404	7.002	0.99	0.99	0.506	0.503		0.506	0.503	
1.00	1.00	11.882	11.118	10.600	10.100	9.740	9.375	9.010	8.645	8.285	7.920	7.504	7.092	1.00	1.00	0.503	0.500		0.503	0.500	

e	E - M										DE/DH				
	M	170	171	172	173	174	175	176	177	178	179	180	N	M=170	M=180
0.00	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000
0.01	0.099	0.089	0.079	0.069	0.059	0.049	0.039	0.040	0.030	0.020	0.010	0.000	0.000	0.990	0.990
0.02	0.195	0.176	0.166	0.156	0.146	0.137	0.127	0.098	0.059	0.039	0.020	0.000	0.000	0.981	0.980
0.03	0.290	0.261	0.232	0.203	0.174	0.145	0.116	0.087	0.048	0.029	0.010	0.000	0.000	0.971	0.971
0.04	0.383	0.345	0.307	0.269	0.230	0.192	0.154	0.115	0.077	0.038	0.010	0.000	0.000	0.962	0.962
0.05	0.474	0.427	0.380	0.333	0.285	0.238	0.190	0.143	0.095	0.048	0.010	0.000	0.000	0.953	0.952
0.06	0.564	0.516	0.462	0.415	0.368	0.321	0.274	0.226	0.179	0.133	0.065	0.000	0.000	0.943	0.942
0.07	0.651	0.597	0.542	0.487	0.432	0.377	0.322	0.267	0.220	0.173	0.116	0.040	0.000	0.933	0.932
0.08	0.733	0.664	0.599	0.534	0.469	0.404	0.339	0.282	0.225	0.168	0.111	0.040	0.000	0.923	0.922
0.09	0.822	0.741	0.659	0.577	0.495	0.412	0.330	0.272	0.215	0.158	0.101	0.040	0.000	0.913	0.912
0.10	0.906	0.816	0.725	0.635	0.545	0.454	0.363	0.298	0.241	0.184	0.127	0.040	0.000	0.903	0.902
0.11	0.987	0.889	0.791	0.692	0.594	0.495	0.396	0.329	0.272	0.215	0.158	0.040	0.000	0.893	0.892
0.12	1.068	0.961	0.855	0.749	0.642	0.535	0.428	0.361	0.304	0.247	0.190	0.040	0.000	0.883	0.882
0.13	1.146	1.032	0.918	0.804	0.689	0.575	0.460	0.393	0.336	0.279	0.222	0.040	0.000	0.873	0.872
0.14	1.224	1.102	0.980	0.858	0.736	0.614	0.491	0.424	0.367	0.310	0.253	0.040	0.000	0.863	0.862
0.15	1.300	1.171	1.041	0.914	0.782	0.652	0.521	0.454	0.397	0.340	0.283	0.040	0.000	0.853	0.852
0.16	1.375	1.238	1.101	0.964	0.827	0.689	0.551	0.484	0.427	0.370	0.313	0.040	0.000	0.843	0.842
0.17	1.448	1.304	1.160	1.016	0.871	0.726	0.581	0.514	0.457	0.400	0.343	0.040	0.000	0.833	0.832
0.18	1.521	1.369	1.218	1.066	0.914	0.762	0.610	0.543	0.486	0.429	0.372	0.040	0.000	0.823	0.822
0.19	1.592	1.433	1.275	1.116	0.957	0.798	0.658	0.587	0.530	0.473	0.416	0.040	0.000	0.813	0.812
0.20	1.663	1.496	1.331	1.165	0.999	0.833	0.666	0.596	0.539	0.482	0.425	0.040	0.000	0.803	0.802
0.21	1.733	1.558	1.386	1.213	1.040	0.867	0.694	0.621	0.564	0.507	0.446	0.040	0.000	0.793	0.792
0.22	1.798	1.619	1.440	1.261	1.081	0.901	0.721	0.648	0.581	0.524	0.463	0.040	0.000	0.783	0.782
0.23	1.865	1.679	1.493	1.307	1.121	0.934	0.748	0.674	0.608	0.551	0.490	0.040	0.000	0.773	0.772
0.24	1.930	1.738	1.546	1.353	1.160	0.967	0.774	0.700	0.635	0.578	0.517	0.040	0.000	0.763	0.762
0.25	1.995	1.796	1.597	1.398	1.199	0.999	0.800	0.726	0.660	0.600	0.539	0.040	0.000	0.753	0.752
0.26	2.058	1.853	1.648	1.443	1.237	1.031	0.825	0.750	0.683	0.613	0.551	0.040	0.000	0.743	0.742
0.27	2.121	1.910	1.698	1.486	1.274	1.062	0.850	0.774	0.706	0.635	0.564	0.040	0.000	0.733	0.732
0.28	2.182	1.965	1.747	1.529	1.311	1.093	0.875	0.798	0.730	0.658	0.577	0.040	0.000	0.723	0.722
0.29	2.243	2.019	1.796	1.572	1.348	1.123	0.899	0.821	0.754	0.680	0.600	0.040	0.000	0.713	0.712
0.30	2.302	2.073	1.843	1.614	1.383	1.153	0.923	0.844	0.777	0.700	0.613	0.040	0.000	0.703	0.702
0.31	2.361	2.126	1.890	1.655	1.419	1.183	0.946	0.867	0.799	0.722	0.626	0.040	0.000	0.693	0.692
0.32	2.419	2.178	1.937	1.695	1.457	1.211	0.969	0.890	0.821	0.744	0.639	0.040	0.000	0.683	0.682
0.33	2.476	2.229	1.982	1.735	1.488	1.240	0.992	0.912	0.844	0.767	0.652	0.040	0.000	0.673	0.672
0.34	2.532	2.280	2.027	1.774	1.521	1.268	1.015	0.935	0.867	0.790	0.665	0.040	0.000	0.663	0.662
0.35	2.587	2.329	2.071	1.813	1.551	1.296	1.037	0.958	0.890	0.813	0.678	0.040	0.000	0.653	0.652
0.36	2.642	2.378	2.115	1.851	1.587	1.323	1.058	0.979	0.912	0.836	0.691	0.040	0.000	0.643	0.642
0.37	2.695	2.427	2.158	1.889	1.619	1.350	1.080	0.999	0.935	0.859	0.704	0.040	0.000	0.633	0.632
0.38	2.748	2.474	2.200	1.926	1.651	1.376	1.101	1.015	0.958	0.882	0.717	0.040	0.000	0.623	0.622
0.39	2.800	2.521	2.242	1.962	1.682	1.402	1.122	1.037	0.980	0.904	0.730	0.040	0.000	0.613	0.612
0.40	2.852	2.568	2.283	1.998	1.713	1.428	1.143	1.058	1.001	0.926	0.743	0.040	0.000	0.603	0.602
0.41	2.903	2.613	2.324	2.034	1.744	1.453	1.163	1.080	1.022	0.947	0.756	0.040	0.000	0.593	0.592
0.42	2.952	2.658	2.364	2.069	1.774	1.478	1.183	1.103	1.043	0.968	0.769	0.040	0.000	0.583	0.582
0.43	3.002	2.702	2.403	2.103	1.803	1.503	1.202	1.124	1.064	0.989	0.782	0.040	0.000	0.573	0.572
0.44	3.049	2.746	2.442	2.137	1.832	1.527	1.224	1.145	1.085	1.010	0.795	0.040	0.000	0.563	0.562
0.45	3.098	2.789	2.480	2.171	1.861	1.551	1.244	1.166	1.106	1.031	0.808	0.040	0.000	0.553	0.552
0.46	3.146	2.832	2.518	2.204	1.889	1.575	1.264	1.187	1.127	1.052	0.821	0.040	0.000	0.543	0.542
0.47	3.192	2.874	2.555	2.236	1.917	1.598	1.283	1.208	1.148	1.073	0.834	0.040	0.000	0.533	0.532
0.48	3.238	2.915	2.592	2.269	1.945	1.621	1.302	1.229	1.169	1.094	0.847	0.040	0.000	0.523	0.522
0.49	3.284	2.956	2.628	2.300	1.972	1.644	1.321	1.250	1.190	1.115	0.860	0.040	0.000	0.513	0.512
0.50	3.328	2.996	2.664	2.332	1.999	1.666	1.333	1.271	1.211	1.136	0.873	0.040	0.000	0.503	0.502

M		E • M														DE/DM	
		170	171	172	173	174	175	176	177	178	179	180	M	H	e	M=170	M=180
0.50	3.328	2.996	2.664	2.332	1.999	1.666	1.333	1.000	0.667	0.333	0.000	0.000	0.50	0.50	0.668	0.668	0.667
0.51	3.372	3.036	2.699	2.363	2.025	1.688	1.351	1.013	0.667	0.338	0.000	0.000	0.51	0.51	0.664	0.664	0.662
0.52	3.416	3.075	2.734	2.393	2.052	1.710	1.368	1.026	0.664	0.342	0.000	0.000	0.52	0.52	0.659	0.659	0.658
0.53	3.459	3.114	2.769	2.423	2.077	1.731	1.385	1.039	0.653	0.346	0.000	0.000	0.53	0.53	0.655	0.655	0.654
0.54	3.502	3.152	2.803	2.453	2.103	1.753	1.402	1.052	0.641	0.351	0.000	0.000	0.54	0.54	0.651	0.649	0.649
0.55	3.544	3.190	2.836	2.482	2.128	1.774	1.419	1.064	0.629	0.355	0.000	0.000	0.55	0.55	0.647	0.647	0.645
0.56	3.585	3.227	2.869	2.511	2.153	1.794	1.436	1.077	0.617	0.359	0.000	0.000	0.56	0.56	0.642	0.642	0.641
0.57	3.626	3.264	2.902	2.540	2.177	1.815	1.452	1.089	0.605	0.363	0.000	0.000	0.57	0.57	0.638	0.638	0.637
0.58	3.666	3.300	2.934	2.568	2.202	1.835	1.468	1.101	0.593	0.367	0.000	0.000	0.58	0.58	0.634	0.634	0.633
0.59	3.706	3.336	2.966	2.596	2.225	1.855	1.484	1.113	0.581	0.371	0.000	0.000	0.59	0.59	0.630	0.629	0.629
0.60	3.745	3.372	2.998	2.623	2.249	1.874	1.500	1.125	0.569	0.375	0.000	0.000	0.60	0.60	0.626	0.626	0.625
0.61	3.784	3.407	3.029	2.651	2.272	1.894	1.515	1.137	0.557	0.379	0.000	0.000	0.61	0.61	0.622	0.622	0.621
0.62	3.823	3.441	3.059	2.677	2.295	1.913	1.531	1.148	0.545	0.383	0.000	0.000	0.62	0.62	0.619	0.619	0.617
0.63	3.860	3.475	3.090	2.704	2.318	1.932	1.546	1.159	0.533	0.386	0.000	0.000	0.63	0.63	0.615	0.615	0.613
0.64	3.898	3.509	3.120	2.730	2.340	1.951	1.561	1.171	0.521	0.390	0.000	0.000	0.64	0.64	0.611	0.611	0.610
0.65	3.935	3.542	3.149	2.756	2.363	1.969	1.575	1.182	0.509	0.394	0.000	0.000	0.65	0.65	0.607	0.607	0.606
0.66	3.971	3.575	3.178	2.782	2.385	1.987	1.590	1.193	0.497	0.398	0.000	0.000	0.66	0.66	0.604	0.604	0.602
0.67	4.008	3.608	3.207	2.807	2.406	2.005	1.605	1.203	0.485	0.401	0.000	0.000	0.67	0.67	0.600	0.600	0.599
0.68	4.043	3.640	3.236	2.832	2.428	2.023	1.619	1.214	0.473	0.405	0.000	0.000	0.68	0.68	0.597	0.597	0.595
0.69	4.079	3.671	3.264	2.857	2.449	2.041	1.633	1.225	0.461	0.408	0.000	0.000	0.69	0.69	0.593	0.593	0.592
0.70	4.113	3.703	3.292	2.881	2.470	2.058	1.647	1.235	0.449	0.412	0.000	0.000	0.70	0.70	0.590	0.590	0.588
0.71	4.148	3.734	3.319	2.905	2.490	2.075	1.661	1.246	0.437	0.415	0.000	0.000	0.71	0.71	0.586	0.586	0.585
0.72	4.182	3.764	3.347	2.929	2.511	2.093	1.674	1.256	0.425	0.419	0.000	0.000	0.72	0.72	0.583	0.583	0.581
0.73	4.216	3.795	3.374	2.952	2.531	2.109	1.688	1.266	0.413	0.422	0.000	0.000	0.73	0.73	0.579	0.579	0.578
0.74	4.249	3.825	3.400	2.976	2.551	2.126	1.701	1.276	0.401	0.425	0.000	0.000	0.74	0.74	0.576	0.576	0.575
0.75	4.282	3.854	3.426	2.999	2.571	2.142	1.714	1.286	0.389	0.429	0.000	0.000	0.75	0.75	0.573	0.573	0.571
0.76	4.314	3.883	3.452	3.021	2.590	2.159	1.727	1.295	0.377	0.432	0.000	0.000	0.76	0.76	0.569	0.569	0.568
0.77	4.346	3.912	3.478	3.044	2.609	2.175	1.740	1.305	0.365	0.435	0.000	0.000	0.77	0.77	0.566	0.566	0.565
0.78	4.378	3.941	3.504	3.066	2.628	2.191	1.753	1.315	0.353	0.438	0.000	0.000	0.78	0.78	0.563	0.563	0.562
0.79	4.409	3.969	3.529	3.088	2.647	2.206	1.765	1.324	0.341	0.441	0.000	0.000	0.79	0.79	0.560	0.560	0.559
0.80	4.441	3.997	3.554	3.110	2.666	2.222	1.778	1.333	0.329	0.444	0.000	0.000	0.80	0.80	0.557	0.557	0.556
0.81	4.471	4.025	3.578	3.131	2.684	2.237	1.790	1.342	0.317	0.448	0.000	0.000	0.81	0.81	0.554	0.554	0.552
0.82	4.502	4.052	3.602	3.153	2.702	2.252	1.802	1.352	0.305	0.451	0.000	0.000	0.82	0.82	0.551	0.551	0.549
0.83	4.532	4.079	3.626	3.174	2.720	2.267	1.814	1.361	0.293	0.454	0.000	0.000	0.83	0.83	0.548	0.548	0.546
0.84	4.561	4.106	3.650	3.194	2.738	2.282	1.826	1.369	0.281	0.457	0.000	0.000	0.84	0.84	0.545	0.545	0.543
0.85	4.591	4.132	3.674	3.215	2.756	2.297	1.838	1.378	0.269	0.459	0.000	0.000	0.85	0.85	0.542	0.542	0.541
0.86	4.620	4.159	3.697	3.235	2.773	2.311	1.849	1.387	0.257	0.462	0.000	0.000	0.86	0.86	0.539	0.539	0.538
0.87	4.649	4.185	3.720	3.255	2.791	2.326	1.861	1.396	0.245	0.465	0.000	0.000	0.87	0.87	0.536	0.536	0.535
0.88	4.677	4.210	3.743	3.275	2.808	2.340	1.872	1.404	0.233	0.468	0.000	0.000	0.88	0.88	0.533	0.533	0.532
0.89	4.705	4.236	3.766	3.295	2.825	2.354	1.883	1.413	0.221	0.471	0.000	0.000	0.89	0.89	0.530	0.530	0.529
0.90	4.733	4.261	3.788	3.315	2.841	2.368	1.895	1.421	0.209	0.474	0.000	0.000	0.90	0.90	0.527	0.527	0.526
0.91	4.761	4.285	3.810	3.334	2.858	2.382	1.906	1.429	0.197	0.477	0.000	0.000	0.91	0.91	0.524	0.524	0.522
0.92	4.788	4.310	3.832	3.353	2.874	2.395	1.916	1.437	0.185	0.480	0.000	0.000	0.92	0.92	0.521	0.521	0.520
0.93	4.815	4.334	3.853	3.372	2.890	2.409	1.927	1.446	0.173	0.482	0.000	0.000	0.93	0.93	0.519	0.519	0.518
0.94	4.842	4.358	3.875	3.391	2.906	2.422	1.938	1.454	0.161	0.485	0.000	0.000	0.94	0.94	0.516	0.516	0.515
0.95	4.868	4.382	3.896	3.409	2.922	2.435	1.949	1.461	0.149	0.487	0.000	0.000	0.95	0.95	0.514	0.514	0.513
0.96	4.895	4.406	3.917	3.426	2.935	2.449	1.959	1.469	0.137	0.490	0.000	0.000	0.96	0.96	0.511	0.511	0.510
0.97	4.921	4.429	3.937	3.446	2.954	2.462	1.969	1.477	0.125	0.492	0.000	0.000	0.97	0.97	0.509	0.509	0.508
0.98	4.946	4.452	3.958	3.464	2.964	2.474	1.978	1.485	0.113	0.495	0.000	0.000	0.98	0.98	0.506	0.506	0.505
0.99	4.972	4.475	3.978	3.481	2.984	2.487	1.990	1.492	0.101	0.497	0.000	0.000	0.99	0.99	0.503	0.503	0.502
1.00	4.997	4.498	3.998	3.499	2.999	2.500	2.000	1.500	0.000	0.500	0.000	0.000	1.00	1.00	0.501	0.501	0.500

**An example of computation :**

Given  $e=0.627411$ ,  $M=296.^{\circ}31128$ ,  
 we find the values of  $(E-M)$  and  $(dE/dM)$  from the table applying the  
 linear interpolation :

$$E-M = -35.^{\circ}487, \quad dE/dM = 0.887.$$

The following is the scheme of computation :

$E_1 = 260.^{\circ}82428$	$E_3 = 260.^{\circ}82338$
$\sin E_1 = -0.987024$	$\sin E_3 = -0.987201$
$e^{\circ} \cdot \sin E_1 = -35.^{\circ}48801$	$e^{\circ} \cdot \sin E_3 = -35.^{\circ}48790$
$E_2 = 260.^{\circ}82327$	$E_4 = 260.^{\circ}82338$
$E_2 - E_1 = -0.^{\circ}00101$	$E_4 - E_3 = 0.^{\circ}00000$