

Appendix

TABLE A-1

Earth Model PREM and its Functionals Evaluated at a Reference Period of 1 s.
Above 220 km the Mantle is Transversely Isotropic (see Table A-2);
the Parameters Given are "Equivalent" Isotropic Moduli and Velocities.

Level	Radius (km)	Depth (km)	Density (g/cm ³)	V _p (km/s)	V _s (km/s)	Q _μ	Q _K	Q _P	Φ (km ² /s ²)	K _s (kbar)	μ (kbar)	σ	Pressure (kbar)	dK/dP	B.P.	Gravity (cm/s ²)
1	0.	6371.0	13.08	11.26	3.66	85	1328	431	108.90	14253	1761	0.440	3638.5	2.33	0.99	0.
2	100.0	6271.0	13.08	11.26	3.66	85	1328	431	108.88	14248	1759	0.440	3636.1	2.33	0.99	36.5
3	200.0	6171.0	13.07	11.25	3.66	85	1328	431	108.80	14231	1755	0.440	3628.9	2.33	0.99	73.1
4	300.0	6071.0	13.06	11.24	3.65	85	1328	432	108.68	14203	1749	0.440	3617.0	2.33	0.99	109.6
5	400.0	5971.0	13.05	11.23	3.65	85	1328	432	108.51	14164	1739	0.441	3600.3	2.33	0.99	146.0
6	500.0	5871.0	13.03	11.22	3.64	85	1328	433	108.29	14114	1727	0.441	3578.8	2.33	0.99	182.3
7	600.0	5771.0	13.01	11.20	3.62	85	1328	434	108.02	14053	1713	0.441	3552.7	2.33	0.99	218.6
8	700.0	5671.0	12.98	11.18	3.61	85	1328	436	107.70	13981	1696	0.441	3522.0	2.34	0.99	254.7
9	800.0	5571.0	12.94	11.16	3.59	85	1328	437	107.33	13898	1676	0.442	3486.6	2.34	0.99	290.6
10	900.0	5471.0	12.91	11.13	3.57	85	1328	439	106.91	13805	1654	0.442	3446.7	2.34	0.99	326.4
11	1000.0	5371.0	12.87	11.10	3.55	85	1328	440	106.45	13701	1630	0.442	3402.3	2.34	0.99	362.0
12	1100.0	5271.0	12.82	11.07	3.53	85	1328	443	105.94	13586	1603	0.443	3353.5	2.34	1.00	397.3
13	1200.0	5171.0	12.77	11.03	3.51	85	1328	445	105.38	13462	1574	0.443	3300.4	2.34	1.00	432.5
14	1221.5	5149.5	12.76	11.02	3.50	85	1328	445	105.25	13434	1567	0.443	3288.5	2.34	1.00	440.0
15	1221.5	5149.5	12.16	10.35	0.	0	57822	57822	107.24	13047	0	0.500	3288.5	3.75	1.03	440.0
16	1300.0	5071.0	12.12	10.30	0.	0	57822	57822	106.29	12888	0	0.500	3245.4	3.65	1.02	463.6
17	1400.0	4971.0	12.06	10.24	0.	0	57822	57822	105.05	12679	0	0.500	3187.4	3.54	1.01	494.1
18	1500.0	4871.0	12.00	10.18	0.	0	57822	57822	103.78	12464	0	0.500	3126.1	3.46	1.01	524.7
19	1600.0	4771.0	11.94	10.12	0.	0	57822	57822	102.47	12242	0	0.500	3061.4	3.40	1.00	555.4
20	1700.0	4671.0	11.87	10.05	0.	0	57822	57822	101.12	12013	0	0.500	2993.4	3.35	1.00	586.1
21	1800.0	4571.0	11.80	9.98	0.	0	57822	57822	99.71	11775	0	0.500	2922.2	3.32	1.00	616.6
22	1900.0	4471.0	11.73	9.91	0.	0	57822	57822	98.25	11529	0	0.500	2847.8	3.30	1.00	647.0
23	2000.0	4371.0	11.65	9.83	0.	0	57822	57822	96.73	11273	0	0.500	2770.4	3.29	1.00	677.1
24	2100.0	4271.0	11.57	9.75	0.	0	57822	57822	95.14	11009	0	0.500	2690.0	3.29	1.00	706.9
25	2200.0	4171.0	11.48	9.66	0.	0	57822	57822	93.48	10735	0	0.500	2606.8	3.29	1.00	736.4
26	2300.0	4071.0	11.39	9.57	0.	0	57822	57822	91.75	10451	0	0.500	2520.9	3.30	1.00	765.5
27	2400.0	3971.0	11.29	9.48	0.	0	57822	57822	89.95	10158	0	0.500	2432.4	3.32	1.00	794.2
28	2500.0	3871.0	11.19	9.38	0.	0	57822	57822	88.06	9855	0	0.500	2341.6	3.34	1.00	822.4
29	2600.0	3771.0	11.08	9.27	0.	0	57822	57822	86.10	9542	0	0.500	2248.4	3.36	1.00	850.2
30	2700.0	3671.0	10.97	9.16	0.	0	57822	57822	84.04	9220	0	0.500	2153.1	3.39	1.00	877.4

TABLE A-1 (continued)

Level	Radius (km)	Depth (km)	Density (g/cm ³)	V _p (km/s)	V _s (km/s)	Q _μ	Q _K	Q _P	Φ (km ² /s ²)	K _s (kbar)	μ (kbar)	σ	Pressure (kbar)	dK/dP	B.P.	Gravity (cm/s ²)
31	2800.0	3571.0	10.85	9.05	0.	0	57822	57822	81.91	8889	0	0.500	2055.9	3.41	1.00	904.1
32	2900.0	3471.0	10.73	8.92	0.	0	57822	57822	79.68	8550	0	0.500	1956.9	3.44	1.00	930.2
33	3000.0	3371.0	10.60	8.79	0.	0	57822	57822	77.36	8202	0	0.500	1856.4	3.47	1.00	955.7
34	3100.0	3271.0	10.46	8.65	0.	0	57822	57822	74.96	7846	0	0.500	1754.4	3.49	1.00	980.5
35	3200.0	3171.0	10.32	8.51	0.	0	57822	57822	72.47	7484	0	0.500	1651.2	3.52	1.00	1004.6
36	3300.0	3071.0	10.18	8.36	0.	0	57822	57822	69.89	7116	0	0.500	1546.9	3.54	0.99	1028.0
37	3400.0	2971.0	10.02	8.19	0.	0	57822	57822	67.23	6743	0	0.500	1441.9	3.56	0.99	1050.6
38	3480.0	2891.0	9.90	8.06	0.	0	57822	57822	65.04	6441	0	0.500	1357.5	3.57	0.98	1068.2
39	3480.0	2891.0	5.56	13.71	7.26	312	57822	826	117.78	6556	2938	0.305	1357.5	1.64	0.99	1068.2
40	3500.0	2871.0	5.55	13.71	7.26	312	57822	826	117.64	6537	2933	0.304	1345.6	1.64	1.00	1065.3
41	3600.0	2771.0	5.50	13.68	7.26	312	57822	823	116.96	6440	2907	0.303	1287.0	1.64	1.01	1052.0
42	3630.0	2741.0	5.49	13.68	7.26	312	57822	822	116.76	6412	2899	0.303	1269.7	1.64	1.01	1048.4
43	3630.0	2741.0	5.49	13.68	7.26	312	57822	822	116.76	6412	2899	0.303	1269.7	3.33	1.01	1048.4
44	3700.0	2671.0	5.45	13.59	7.23	312	57822	819	115.08	6279	2855	0.302	1229.7	3.29	1.01	1040.6
45	3800.0	2571.0	5.40	13.47	7.18	312	57822	815	112.73	6095	2794	0.301	1173.4	3.24	1.01	1030.9
46	3900.0	2471.0	5.35	13.36	7.14	312	57822	811	110.46	5917	2734	0.299	1118.2	3.20	1.00	1022.7
47	4000.0	2371.0	5.30	13.24	7.09	312	57822	807	108.23	5744	2675	0.298	1063.8	3.17	1.00	1015.8
48	4100.0	2271.0	5.25	13.13	7.05	312	57822	803	106.04	5575	2617	0.297	1010.3	3.15	1.00	1010.0
49	4200.0	2171.0	5.20	13.01	7.01	312	57822	799	103.88	5409	2559	0.295	957.6	3.13	1.00	1005.3
50	4300.0	2071.0	5.15	12.90	6.96	312	57822	795	101.73	5246	2502	0.294	905.6	3.13	1.00	1001.5
51	4400.0	1971.0	5.10	12.78	6.91	312	57822	792	99.59	5085	2445	0.292	854.3	3.14	1.00	998.5
52	4500.0	1871.0	5.05	12.66	6.87	312	57822	788	97.43	4925	2388	0.291	803.6	3.16	1.00	996.3
53	4600.0	1771.0	5.00	12.54	6.82	312	57822	784	95.26	4766	2331	0.289	753.5	3.19	0.99	994.7
54	4700.0	1671.0	4.95	12.42	6.77	312	57822	779	93.06	4607	2273	0.288	704.1	3.23	0.99	993.6
55	4800.0	1571.0	4.89	12.29	6.72	312	57822	775	90.81	4448	2215	0.286	655.2	3.27	0.99	993.1
56	4900.0	1471.0	4.84	12.16	6.67	312	57822	770	88.52	4288	2157	0.284	606.8	3.32	0.99	993.0
57	5000.0	1371.0	4.78	12.02	6.61	312	57822	766	86.17	4128	2098	0.282	558.9	3.38	0.99	993.2
58	5100.0	1271.0	4.73	11.88	6.56	312	57822	761	83.76	3966	2039	0.280	511.6	3.45	0.99	993.8
59	5200.0	1171.0	4.67	11.73	6.50	312	57822	755	81.28	3803	1979	0.278	464.8	3.52	0.99	994.6
60	5300.0	1071.0	4.62	11.57	6.44	312	57822	750	78.72	3638	1918	0.275	418.6	3.59	0.99	995.7

TABLE A-1 (continued)

Level	Radius (km)	Depth (km)	Density (g/cm ³)	V_p (km/s)	V_s (km/s)	Q_μ	Q_K	Q_p	Φ (km ² /s ²)	K_s (kbar)	μ (kbar)	σ	Pressure (kbar)	dK/dP	B.P.	Gravity (cm/s ²)
61	5400.0	971.0	4.56	11.41	6.37	312	57822	743	76.08	3471	1856	0.273	372.8	3.67	0.98	996.9
62	5500.0	871.0	4.50	11.24	6.31	312	57822	737	73.34	3303	1794	0.270	327.6	3.75	0.98	998.3
63	5600.0	771.0	4.44	11.06	6.24	312	57822	730	70.52	3133	1730	0.266	282.9	3.84	0.97	999.8
64	5600.0	771.0	4.44	11.06	6.24	312	57822	730	70.52	3133	1730	0.266	282.9	2.98	0.97	999.8
65	5650.0	721.0	4.41	10.91	6.09	312	57822	744	69.51	3067	1639	0.273	260.7	3.00	0.97	1000.6
66	5701.0	670.0	4.38	10.75	5.94	312	57822	759	68.47	2999	1548	0.279	238.3	3.03	0.98	1001.4
67	5701.0	670.0	3.99	10.26	5.57	143	57822	362	64.03	2556	1239	0.291	238.3	2.40	0.37	1001.4
68	5736.0	635.0	3.98	10.21	5.54	143	57822	362	63.32	2523	1224	0.291	224.3	2.38	0.37	1000.8
69	5771.0	600.0	3.97	10.15	5.51	143	57822	362	62.61	2489	1210	0.290	210.4	2.37	0.37	1000.3
70	5771.0	600.0	3.97	10.15	5.51	143	57822	362	62.61	2489	1210	0.290	210.4	8.09	1.98	1000.3
71	5821.0	550.0	3.91	9.90	5.37	143	57822	363	59.60	2332	1128	0.291	190.7	7.88	1.92	999.6
72	5871.0	500.0	3.84	9.64	5.22	143	57822	364	56.65	2181	1051	0.292	171.3	7.67	1.86	998.8
73	5921.0	450.0	3.78	9.38	5.07	143	57822	365	53.78	2037	977	0.293	152.2	7.46	1.79	997.9
74	5971.0	400.0	3.72	9.13	4.93	143	57822	366	50.99	1899	906	0.294	133.5	7.26	1.73	996.8
75	5971.0	400.0	3.54	8.90	4.76	143	57822	372	48.97	1735	806	0.298	133.5	3.37	0.83	996.8
76	6016.0	355.0	3.51	8.81	4.73	143	57822	370	47.83	1682	790	0.297	117.7	3.33	0.82	995.2
77	6061.0	310.0	3.48	8.73	4.70	143	57822	367	46.71	1630	773	0.295	102.0	3.30	0.80	993.6
78	6106.0	265.0	3.46	8.64	4.67	143	57822	365	45.60	1579	757	0.293	86.4	3.26	0.79	992.0
79	6151.0	220.0	3.43	8.55	4.64	143	57822	362	44.50	1529	741	0.291	71.1	3.23	0.78	990.4
80	6151.0	220.0	3.35	7.98	4.41	80	57822	195	37.80	1270	656	0.279	71.1	-0.73	-0.12	990.4
81	6186.0	185.0	3.36	8.01	4.43	80	57822	195	38.01	1278	660	0.279	59.4	-0.72	-0.12	989.1
82	6221.0	150.0	3.36	8.03	4.44	80	57822	195	38.21	1287	665	0.279	47.8	-0.70	-0.12	987.8
83	6256.0	115.0	3.37	8.05	4.45	80	57822	195	38.41	1295	669	0.279	36.1	-0.68	-0.13	986.6
84	6291.0	80.0	3.37	8.07	4.46	80	57822	195	38.60	1303	674	0.279	24.5	-0.67	-0.13	985.5
85	6291.0	80.0	3.37	8.07	4.46	600	57822	1447	38.60	1303	674	0.279	24.5	-0.67	-0.13	985.5
86	6311.0	60.0	3.37	8.08	4.47	600	57822	1447	38.71	1307	677	0.279	17.8	-0.66	-0.13	984.9
87	6331.0	40.0	3.37	8.10	4.48	600	57822	1446	38.81	1311	680	0.279	11.2	-0.65	-0.13	984.3
88	6346.6	24.4	3.38	8.11	4.49	600	57822	1446	38.89	1315	682	0.278	6.0	-0.64	-0.13	983.9
89	6346.6	24.4	2.90	6.80	3.90	600	57822	1350	25.96	753	441	0.254	6.0	-0.00	-0.00	983.9
90	6356.0	15.0	2.90	6.80	3.90	600	57822	1350	25.96	753	441	0.254	3.3	0.00	0.00	983.3
91	6356.0	15.0	2.60	5.80	3.20	600	57822	1456	19.99	520	266	0.281	3.3	0.00	0.00	983.3
92	6368.0	3.0	2.60	5.80	3.20	600	57822	1456	19.99	520	266	0.281	0.3	-0.00	-0.00	982.2
93	6368.0	3.0	1.02	1.45	0.	0	57822	57822	2.10	21	0	0.500	0.2	-0.00	-0.00	982.2
94	6371.0	0.	1.02	1.45	0.	0	57822	57822	2.10	21	0	0.500	0.0	0.00	0.00	981.5

Dziewonski, A. M. and D. L. Anderson (1981) Preliminary Reference Earth Model, *Phys. Earth Planet. Inter.*, 25, 297–356