Supporting Information for "Radial Structure of the Earth: (II) Model Features and Interpretations"

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Introduction

Sensitivity kernels of various normal modes to radial (degree-0) structure are provided below. The absolute and derivative physical properties of the new radial reference Earth model (REM1D) are compared against other radial models. Past studies include PREM (Dziewoński & Anderson, 1981), AK135 (Kennett et al., 1995), AK135F (Montagner & Kennett, 1996), EPOC (Irving et al., 2018), KHOMC (Kaneshima & Helffrich, 2013), EK137 (Kennett, 2020), CCREM (Ma & Tkalčić, 2021), and STW105 (Kustowski et al., 2008). A description of the data used during construction and limitations of these radial models is provided in Section 2.4 of Paper II. REM1D affords significantly better fits to the new astronomic-geodetic (Table S1), body-wave, surface-wave and normal-mode observations than all classical and widely used radial models that are available from the literature while also accounting for geographic bias and lateral heterogeneity. The reference dataset, predictions from the REM1D model (Tables S2–S6), and codes to evaluate physical parameters at arbitrary locations (e.g. Table S7) are available from the project webpage (http://rem3d.org) and are permanently archived on Zenodo (https://doi.org/10.5281/zenodo.8407693).

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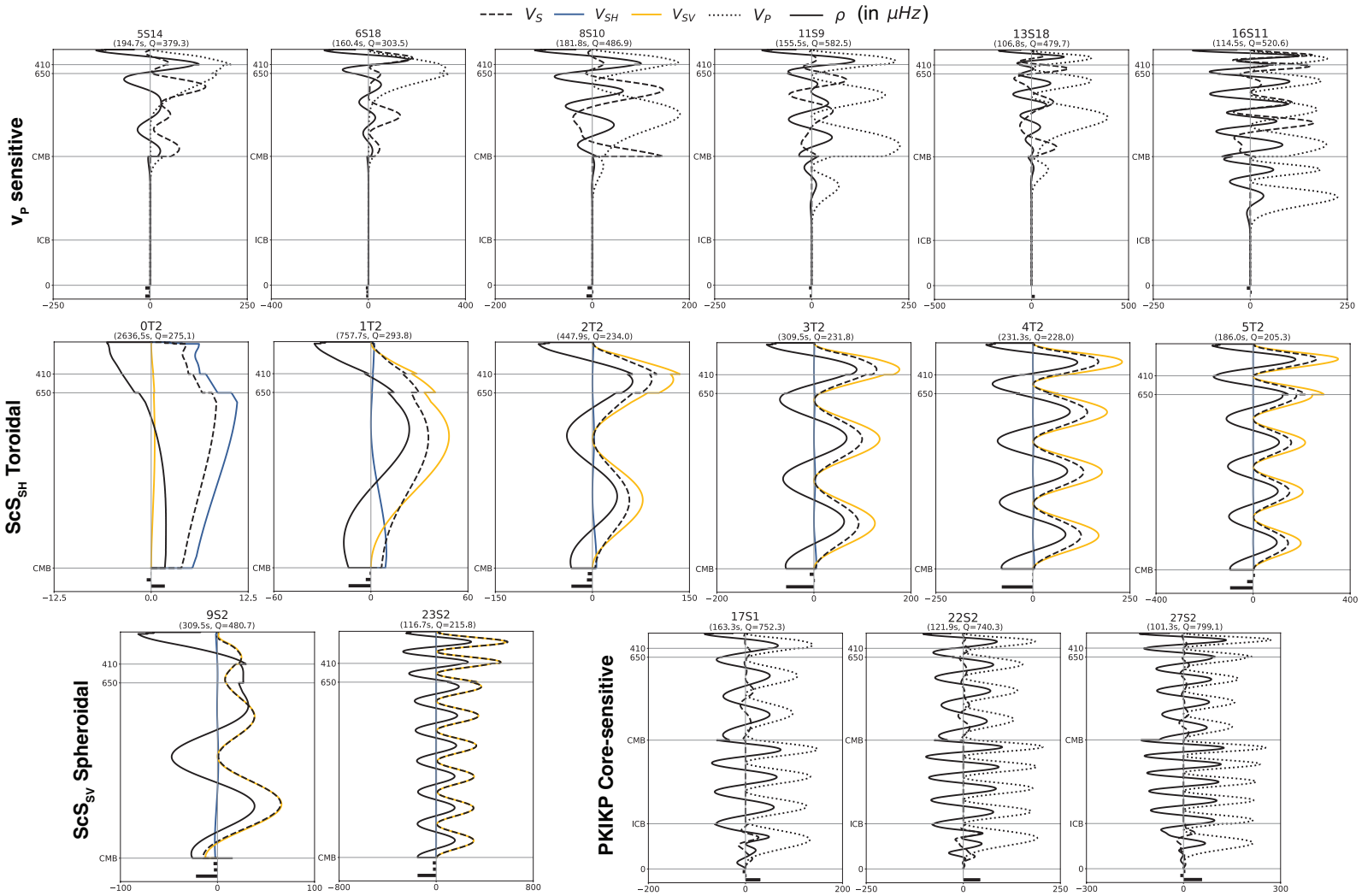

Figure S1: Sensitivity kernels of several normal modes to the radial (degree 0) variations in density (ρ), anisotropic shear velocities (v_{SH}, v_{SV}), and Voigt-averaged isotropic velocity (v_S). Depth of the 410-km and 650-km discontinuities and the CMB are indicated by grey horizontal lines. Horizontal bars beneath the kernels show from top to bottom, the mode's sensitivity to topographic perturbations of the 410 and 650-km discontinuities and the CMB (K^0_{410}, K^0_{650} & K^0_{CMB}). Note that the kernels are calculated using REM1D, are in units of μHz and correspond to variations in physical parameters ($\delta m_i/m_i$) or topography ($\delta h/a$) of 1%, where a=6371 km and that each graph is scaled independently. Several spheroidal overtones are sensitive to v_P variations while others are equivalent to the PKIKP phase that traverses the core. Also shown are toroidal modes of angular order 2 ($_nT_2$) that are equivalent to the $\mathrm{ScS_{SH}}$ phase and various spheroidal modes equivalent to the $\mathrm{ScS_{SV}}$ phase. Normal modes are able to constrain both stratification (i.e. gradient) and magnitude of physical properties due to their oscillatory sensitivity kernels, which lead to different effects on eigenfrequencies depending on the depth of perturbation. Anisotropic kernels are plotted only for the ScS-equivalent spheroidal and toroidal modes. Sensitivity kernels for other types of modes are provided as Supplementary Figures S1–S2 in Paper I.

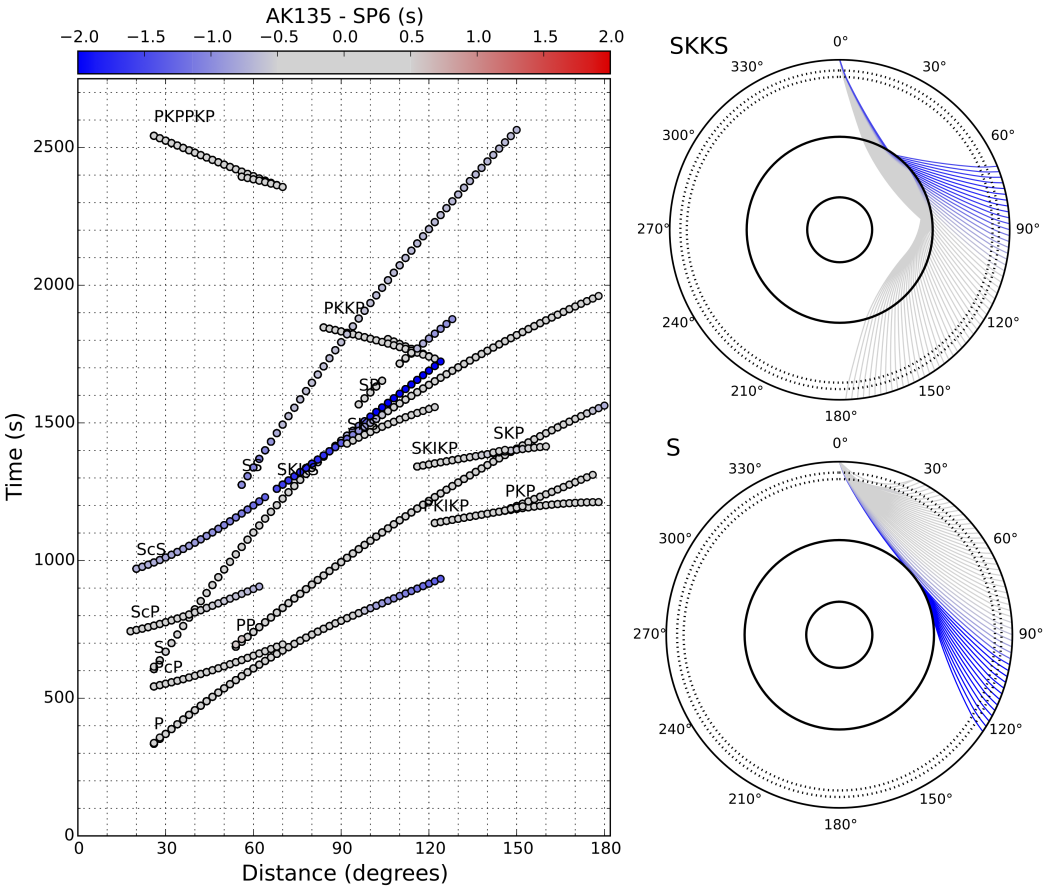

Figure S2: Comparison of arrival times from AK135 (Kennett et al., 1995) and SP6 (Morelli & Dziewonski, 1993). Arrival times of various phases are calculated for AK135 at every 2° distance and colored according to values relative to SP6. Red colors denote slower velocities (greater arrival times) and blue colors denote faster velocities (smaller arrival times) than SP6. Differences between arrival times predicted by AK135 and SP6 are uniformly low ($\ll$0.5 s, grey circles) except for a few phases where geographic bias to structure in the shallowest mantle and D″ region is an important consideration (e.g. S, P, ScS and SKKS).

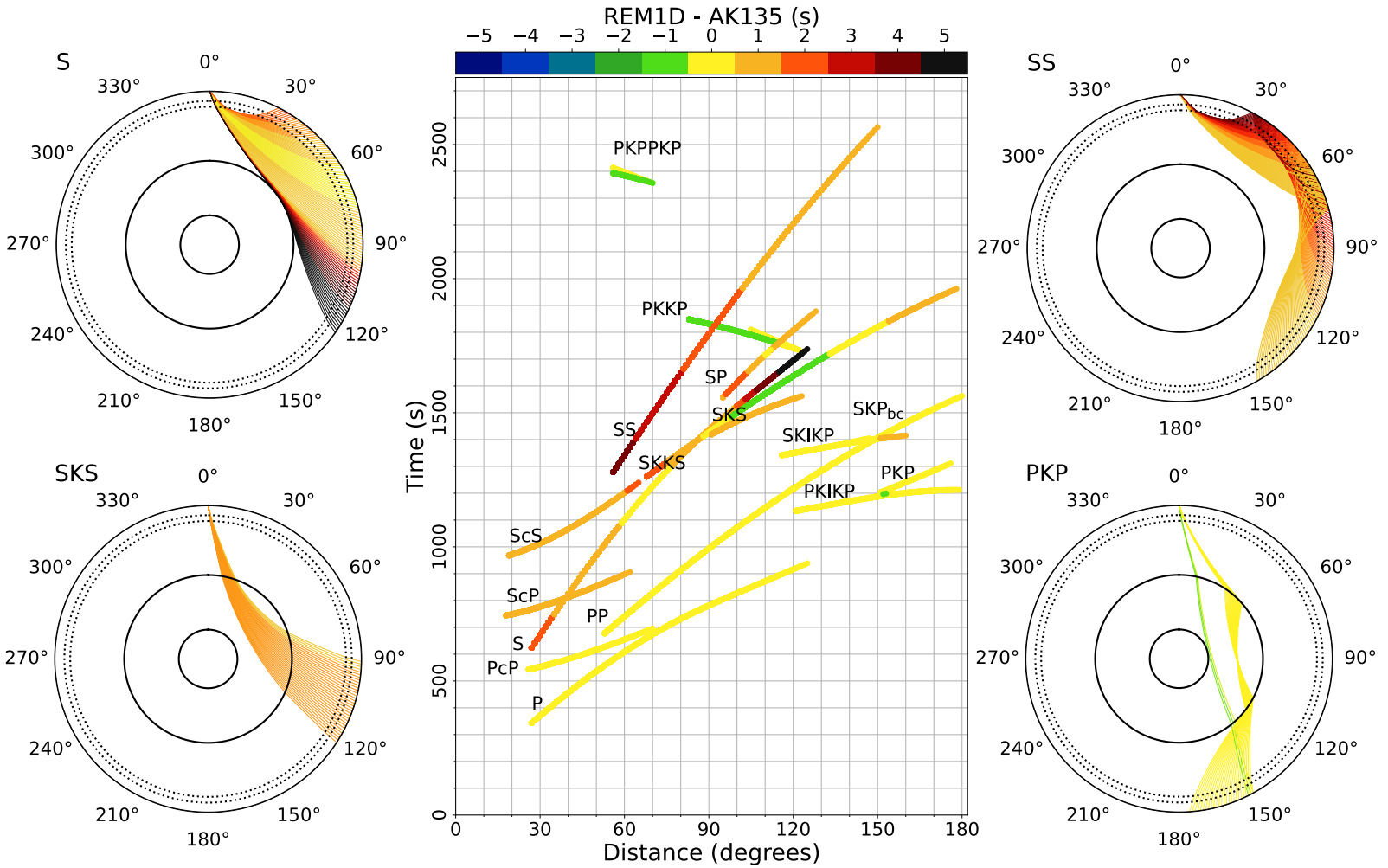

Figure S3: Record sections containing time-distance comparison curves with the corresponding ray paths for selected phases. Arrival times of various phases are calculated at every 1° distance for anisotropic REM1D (this study) and isotropic models AK135 (Kennett et al., 1995). Red colors denote slower velocities (greater arrival times) and blue colors denote faster velocities (smaller arrival times) in REM1D than AK135. Source is a surface-focus earthquake located at the equator (0°, 0°) and no ellipticity correction is applied. Ray tracing is done in an anisotropic medium (Woodhouse, 1981), assuming that the phases S, SS and ScS are recorded on transverse and others are on the vertical component (Table 2 in Paper I). Note that the major discrepancies (> 1 s) are only for phases (S, SS, ScS, SKKS) with sensitivity to the uppermost mantle where there is substantial radial anisotropy and the D″ region where a low-velocity zone is needed to account for the geographic bias in arrival times.

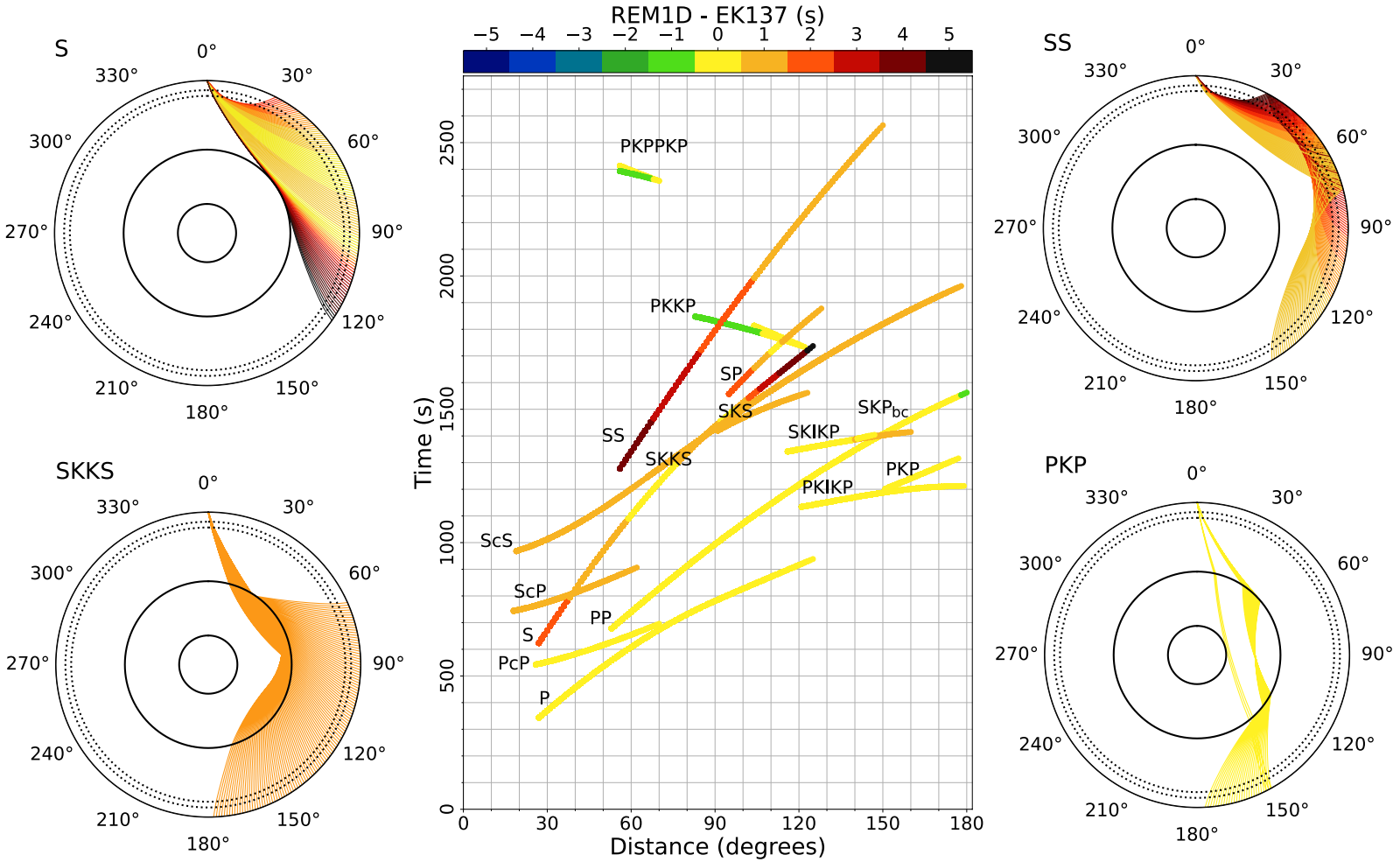

Figure S4: Record sections containing time-distance comparison curves between anisotropic REM1D (this study) and isotropic EK137 (Kennett, 2020) with the corresponding ray paths for selected phases. Note the full description in the caption for AK135 comparisons in Figure S3. Values are similar to those predicted with AK135 and major discrepancies (> 1 s) are found only for phases (S, SS, SKKS) with sensitivity to the uppermost mantle where there is substantial radial anisotropy in REM1D and the D″ region where a low-velocity zone is needed to account for the geographic bias in arrival times.

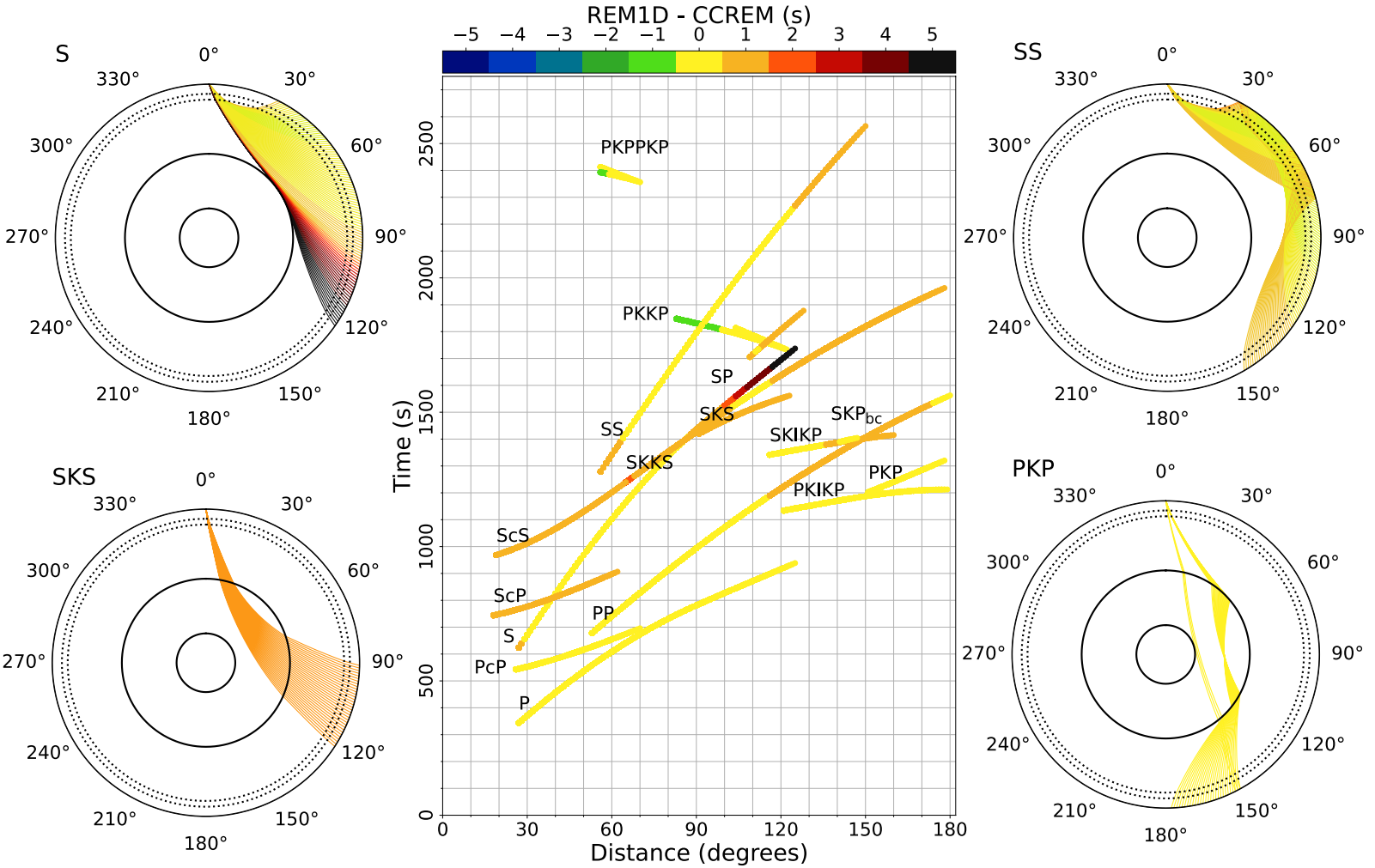

Figure S5: Record sections containing time-distance comparison curves between anisotropic REM1D (this study) and isotropic CCREM (Ma & Tkalčić, 2021) with the corresponding ray paths for selected phases. Note the full description in the caption for AK135 comparisons in Figure S3. Note that the major discrepancies (> 1 s) are only for the diffracted S phase with sensitivity to the D″ region where a low-velocity zone is needed in REM1D to account for the geographic bias in arrival times.

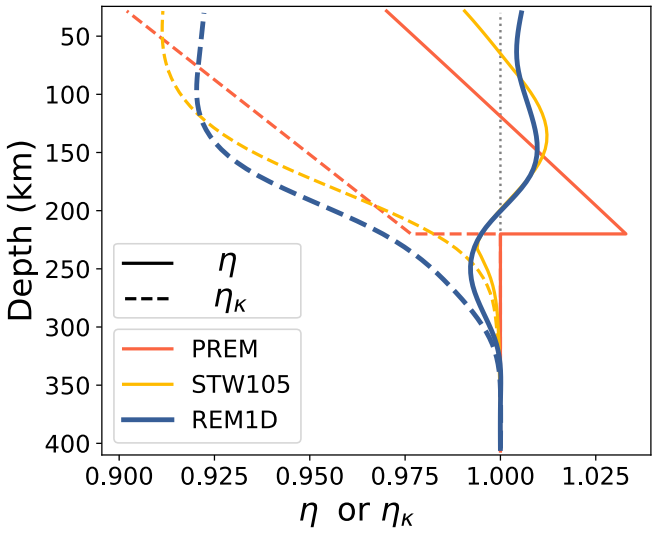

Figure S6: The fifth elastic parameter η (dashed) and an alternative formulation η_κ (solid curves) from Kawakatsu (2016). Variations are shown for the upper mantle in REM1D (this study) and earlier models PREM (Dziewoński & Anderson, 1981) and STW105 (Kustowski et al., 2008). Note that η_κ values in REM1D exceed unity (1–1.01) in the mantle lithosphere and asthenosphere with a peak at ∼150 km, consistent with intrinsic anisotropy as the dominant mechanism (Section 4.1 of Paper II). Our η_κ variations are found to be consistent with radial anisotropy in this region even though we neither parameterize in terms of η_κ nor damp its values towards unity. Sensitivities of fundamental-mode Rayleigh waves deteriorate below ∼250 km so η_κ variations at these greater depths should be interpreted with caution.

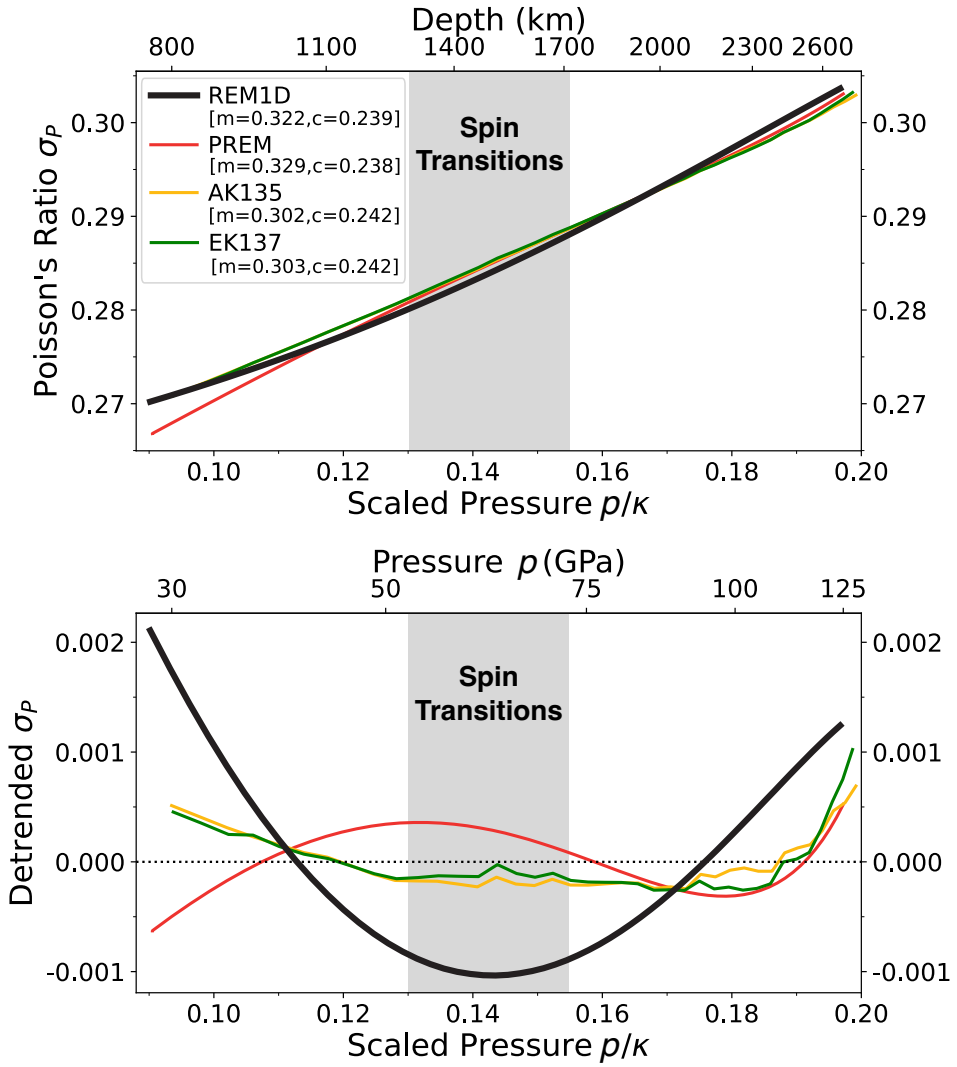

Figure S7: Comparisons of gradients in the Poisson's ratio (σ_P) within the lower mantle. Pressure (p) is scaled by the bulk modulus (κ) calculated using REM1D, PREM and the body-wave models AK135 and EK137. Trends between the two parameters are fitted with a polynomial of the form $\sigma_P = c + m \cdot p/\kappa$; the polynomial terms for each radial model are provided in the legend. Between the scaled pressure range p/κ = 0.13–0.155 highlighted by a grey box, REM1D detects a change in the gradient of σ_P and modulus ratio (μ/κ, Figure 15 in Paper II). The change in gradient occurs over a broad region in the depth range of ∼1300–1700 km and at pressures between 52–73 GPa. This signature in REM1D is constrained using all reference datasets (Paper I) and is more prominent than in several models constructed with body waves in isolation (e.g. AK135, EK137). Values from REM1D at the reference period of 1 s are listed in Table S7.

Table S1: Comparison of fits to the reference astronomic-geodetic data. Measures of fit are provided within square brackets $[\cdot]$ and defined as $\chi = (obs\text{-}pred)/\sigma$ where *obs*, σ and *pred* represent observations, uncertainty and predictions from the radial model, respectively. Procedures for deriving the reference values and uncertainties are discussed in Paper I. Note that REM1D (this study) is the only radial model that fits all reference data to within their 1-σ bounds of uncertainty.

Data	**Units**	**Value ± Uncertainty**	**Predictions and Fits [χ] from Radial Models**								
			REM1D	PREM	AK135	AK135F	EK137	CCREM	KHOMC	EPOC	STW105
Solid Earth mass	10^{24} kg	5.97236 ± 0.00028	5.972506 [-0.52]	5.974 [-5.86]	5.970 [8.43]	5.975 [-9.43]	5.973537 [-4.2]	5.972826 [-1.66]	5.975553 [-11.4]	5.994353 [-78.55]	5.973992 [-5.83]
Inertia	10^{37} m^2 kg	8.017 ± 0.001	8.016828 [0.17]	8.021 [-4.0]	8.023 [-6.0]	8.031 [-14.0]	8.02293 [-5.93]	8.02269 [-5.69]	8.026708 [-9.71]	8.030343 [-13.34]	8.021396 [-4.4]
Inertia coefficient	—	0.330714 ± 0.000024	0.3306974 [0.69]	0.3308 [-3.58]	0.33109 [-15.67]	0.33113 [-17.33]	0.330892 [-7.42]	0.3309215 [-8.65]	0.3309361 [-9.25]	0.3300476 [27.77]	0.3308035 [-3.73]
Average density	kg m^{-3}	5513.59 ± 0.26	5513.73 [-0.52]	5514.34 [-2.87]	5511.16 [9.36]	5516.03 [-9.37]	5514.68 [-4.18]	5514.02 [-1.66]	5516.54 [-11.34]	5533.89 [-78.09]	5515.10 [-5.8]

Table S2: Fits to the reference dataset of radial modes. The predictions of eigenfrequencies (f_{pred}) and quality factors (q_{pred}) are calculated from REM1D while adopting the reference astronomic-geodetic constants (Paper I). Quality factors (Q) are listed as $q = 1000/Q$, eigenfrequencies are in units of mHz, and σ are the uncertainty bounds. The misfit measure $\chi = (obs\text{ - }pred)/\sigma$ is provided for each mode and type of measurement. This table can be downloaded in the ASCII format from Zenodo (https://doi.org/10.5281/zenodo.8407693).

Mode			**Eigenfrequencies (mHz)**				**Quality Factors**			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
0	S	0	0.81419	0.81381	0.00019	2.00	0.18250	0.20687	0.00949	-2.57
1	S	0	1.63152	1.63194	0.00008	-5.25	0.51935	0.50754	0.02263	0.52
2	S	0	2.50891	2.50855	0.00053	0.68	0.73700	0.63601	0.07848	1.29
3	S	0	3.27256	3.27191	0.00003	21.66	0.79905	0.74491	0.02311	2.34
4	S	0	4.10648	4.10529	0.00004	29.75	0.80710	0.92509	0.01500	-7.87
5	S	0	4.88746	4.88211	0.00098	5.46	0.88147	1.04259	0.02232	-7.22
6	S	0	5.74222	5.73637	0.00012	48.75	0.94334	1.07484	0.03469	-3.79
7	S	0	6.58490	6.57348	0.00049	23.31	1.12000	1.13065	0.13000	-0.08
8	S	0	7.42925	7.42019	0.00025	36.24	1.04600	1.12485	0.06600	-1.19
9	S	0	8.26896	8.25963	0.00050	18.66	0.89543	1.15222	0.09996	-2.57
10	S	0	9.05900	9.05763	0.00200	0.69	—	—	—	—
11	S	0	9.89200	9.89141	0.00500	0.12	—	—	—	—
12	S	0	10.69657	10.70415	0.00280	-2.71	—	—	—	—
13	S	0	11.52853	11.54708	0.00334	-5.55	—	—	—	—
14	S	0	12.36287	12.37778	0.00541	-2.76	—	—	—	—
19	S	0	16.49807	16.50072	0.00487	-0.54	—	—	—	—

Table S3: Fits to the reference dataset of spheroidal fundamental modes (${}_0S_l$). At shorter periods (T < 150 s), estimates of average surface wave dispersion are converted to eigenfrequencies of Rayleigh waves ($l > 58$). The predictions of eigenfrequencies (f_{pred}) from REM1D include the non-linear contribution from the crust (f_{crust}) following equation 13 and 17 in Paper I. All calculations are made using the reference astronomic-geodetic constants (Paper I). Quality factors (Q) are listed as $q = 1000/Q$, eigenfrequencies are in units of mHz, and σ are the uncertainty bounds. The misfit measure $\chi = (obs\ -\ pred)/\sigma$ is provided for each mode and type of measurement. This table can be downloaded in the ASCII format from Zenodo (https://doi.org/10.5281/zenodo.8407693).

Mode			**Eigenfrequencies (mHz)**					**Quality Factors**			
n	Type	l	f_{obs}	f_{pred}	f_{crust}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
0	S	2	0.30945	0.30921	—	0.00011	2.18	2.19822	1.83324	0.23801	1.53
0	S	3	0.46848	0.46834	—	0.00004	3.50	2.55489	2.29034	0.06958	3.80
0	S	4	0.64679	0.64673	—	0.00003	2.00	2.65887	2.57639	0.04581	1.80
0	S	5	0.84001	0.83996	—	0.00003	1.67	2.77091	2.71661	0.03630	1.50
0	S	6	1.03758	1.03764	—	0.00004	-1.50	2.88791	2.80427	0.04038	2.07
0	S	7	1.23105	1.23111	—	0.00014	-0.43	2.88102	2.88569	0.06576	-0.07
0	S	8	1.41272	1.41275	—	0.00012	-0.25	2.95233	2.97462	0.02269	-0.98
0	S	9	1.57758	1.57746	—	0.00002	6.00	2.97172	3.06116	0.04394	-2.04
0	S	10	1.72545	1.72559	—	0.00020	-0.70	3.00333	3.13294	0.15301	-0.85
0	S	11	1.86159	1.86149	—	0.00031	0.32	3.17068	3.19253	0.23068	-0.09
0	S	12	1.98920	1.98942	—	0.00030	-0.73	3.05994	3.24882	0.16797	-1.12
0	S	13	2.11173	2.11198	—	0.00015	-1.67	3.11712	3.30842	0.16209	-1.18
0	S	14	2.23005	2.23050	—	0.00025	-1.80	3.19045	3.37500	0.11193	-1.65
0	S	15	2.34505	2.34557	—	0.00015	-3.47	3.20626	3.45047	0.16759	-1.46
0	S	16	2.45698	2.45753	—	0.00019	-2.89	3.32655	3.53558	0.16883	-1.24
0	S	17	2.56578	2.56659	—	0.00035	-2.31	3.54840	3.63030	0.26840	-0.31
0	S	18	2.67246	2.67294	—	0.00012	-4.00	3.46305	3.73402	0.08305	-3.26
0	S	19	2.77626	2.77678	—	0.00032	-1.62	3.71812	3.84573	0.18813	-0.68
0	S	20	2.87740	2.87832	—	0.00064	-1.44	3.77389	3.96421	0.21397	-0.89
0	S	21	2.97713	2.97779	—	0.00033	-2.00	3.83137	4.08818	0.17827	-1.44
0	S	22	3.07460	3.07543	—	0.00023	-3.61	4.12798	4.21638	0.25798	-0.34
0	S	23	3.17062	3.17145	—	0.00011	-7.54	4.24481	4.34767	0.38481	-0.27
0	S	24	3.26538	3.26608	—	0.00012	-5.83	4.40500	4.48104	0.43500	-0.17
0	S	25	3.35894	3.35952	—	0.00016	-3.63	4.98000	4.61567	0.42500	0.86
0	S	26	3.45141	3.45196	—	0.00011	-5.00	5.07000	4.75087	0.39000	0.82
0	S	27	3.54310	3.54356	—	0.00009	-5.11	5.20000	4.88610	0.28213	1.11
0	S	28	3.63400	3.63448	—	0.00020	-2.40	5.23000	5.02096	0.31000	0.67
0	S	29	3.72453	3.72484	—	0.00011	-2.82	5.34000	5.15512	0.28024	0.66
0	S	30	3.81489	3.81477	—	0.00015	0.80	5.42000	5.28837	0.33500	0.39
0	S	31	3.90489	3.90436	—	0.00022	2.41	5.49500	5.42053	0.18169	0.41
0	S	32	3.99403	3.99370	—	0.00027	1.22	5.35500	5.55149	0.17362	-1.13
0	S	33	4.08316	4.08286	—	0.00032	0.94	5.69000	5.68115	0.22500	0.04
0	S	34	4.17237	4.17190	—	0.00021	2.24	5.78000	5.80946	0.36000	-0.08
0	S	35	4.26168	4.26088	—	0.00020	4.00	5.89500	5.93636	0.18889	-0.22
0	S	36	4.35085	4.34983	—	0.00022	4.64	5.96000	6.06184	0.26500	-0.38
0	S	37	4.44015	4.43879	—	0.00025	5.44	6.05000	6.18586	0.34000	-0.40
0	S	38	4.52954	4.52779	—	0.00025	7.00	6.14000	6.30839	0.29000	-0.58
0	S	39	4.61875	4.61997	0.00312	0.00030	-4.06	6.33500	6.42941	0.25641	-0.37
0	S	40	4.70825	4.70942	0.00342	0.00040	-2.94	6.33000	6.54890	0.33500	-0.65
0	S	41	4.79818	4.79899	0.00375	0.00030	-2.69	6.41000	6.66684	0.26500	-0.97
0	S	42	4.88775	4.88867	0.00408	0.00043	-2.14	6.50000	6.78319	0.37500	-0.76
0	S	43	4.97768	4.97848	0.00443	0.00044	-1.82	6.56667	6.89794	0.17844	-1.86
0	S	44	5.06761	5.06843	0.00479	0.00059	-1.40	6.68000	7.01104	0.32500	-1.02
0	S	45	5.15703	5.15853	0.00517	0.00013	-11.55	6.77000	7.12247	0.38000	-0.93
0	S	46	5.24792	5.24876	0.00556	0.00054	-1.56	6.85000	7.23220	0.36500	-1.05
0	S	47	5.33789	5.33915	0.00597	0.00083	-1.52	6.94000	7.34018	0.42000	-0.95
0	S	48	5.42884	5.42969	0.00639	0.00047	-1.81	7.14500	7.44640	0.22502	-1.34
0	S	49	5.51896	5.52036	0.00682	0.00077	-1.82	7.13000	7.55080	0.26000	-1.62
0	S	50	5.60955	5.61119	0.00727	0.00087	-1.89	7.22000	7.65337	0.22500	-1.93
0	S	51	5.70040	5.70217	0.00774	0.00087	-2.03	7.32000	7.75406	0.16500	-2.63
0	S	52	5.79130	5.79328	0.00821	0.00103	-1.92	7.42000	7.85285	0.28500	-1.52
0	S	53	5.88303	5.88454	0.00870	0.00062	-2.44	7.61000	7.94969	0.26514	-1.28
0	S	54	5.97409	5.97593	0.00920	0.00076	-2.42	7.50500	8.04457	0.13860	-3.89
0	S	55	6.06567	6.06746	0.00972	0.00074	-2.42	7.75000	8.13745	0.36000	-1.08
0	S	56	6.15722	6.15913	0.01025	0.00086	-2.22	7.88000	8.22830	0.37500	-0.93
0	S	57	6.24872	6.25092	0.01079	0.00101	-2.17	8.02000	8.31712	0.40667	-0.73
0	S	58	6.34058	6.34284	0.01134	0.00106	-2.13	8.18000	8.40386	0.48500	-0.46

Table S3: Continued.

Mode			Eigenfrequencies (mHz)					Quality Factors			
n	Type	l	f_{obs}	f_{pred}	f_{crust}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
0	S	59	—	—	—	—	—	8.40000	8.48851	0.42000	-0.21
0	S	61	—	—	—	—	—	8.22000	8.65150	0.41100	-1.05
0	S	65	—	—	—	—	—	8.15000	8.95183	0.40750	-1.97
0	S	66	7.08307	7.08246	0.01615	0.00354	0.17	—	—	—	—
0	S	67	—	—	—	—	—	8.54000	9.08910	0.42700	-1.29
0	S	74	—	—	—	—	—	8.82000	9.50221	0.44100	-1.55
0	S	76	—	—	—	—	—	8.85000	9.60138	0.44250	-1.70
0	S	77	8.11149	8.11015	0.02378	0.00406	0.33	—	—	—	—
0	S	79	—	—	—	—	—	8.95000	9.73495	0.44750	-1.75
0	S	86	—	—	—	—	—	9.00000	9.97913	0.45000	-2.18
0	S	87	9.05610	9.05347	0.03162	0.00453	0.58	—	—	—	—
0	S	88	—	—	—	—	—	9.18000	10.03255	0.45900	-1.86
0	S	97	—	—	—	—	—	9.28500	10.19232	0.46425	-1.95
0	S	98	10.10135	10.09953	0.04097	0.00505	0.36	—	—	—	—
0	S	109	11.15247	11.15309	0.05075	0.00558	-0.11	—	—	—	—
0	S	119	12.11320	12.11638	0.05977	0.00606	-0.52	—	—	—	—
0	S	130	13.17372	13.18099	0.06957	0.00659	-1.10	—	—	—	—
0	S	140	14.14168	14.15241	0.07812	0.00707	-1.52	—	—	—	—
0	S	151	15.20827	15.22388	0.08690	0.00760	-2.05	—	—	—	—
0	S	161	16.17958	16.19971	0.09412	0.00809	-2.49	—	—	—	—
0	S	171	17.15140	17.17640	0.10043	0.00858	-2.91	—	—	—	—
0	S	182	18.22053	18.25091	0.10615	0.00911	-3.33	—	—	—	—
0	S	192	19.19311	19.22715	0.11009	0.00960	-3.55	—	—	—	—
0	S	203	20.26311	20.29963	0.11289	0.01013	-3.61	—	—	—	—
0	S	213	21.23597	21.27277	0.11393	0.01062	-3.47	—	—	—	—
0	S	223	22.20765	22.24362	0.11344	0.01110	-3.24	—	—	—	—
0	S	234	23.27373	23.30844	0.11108	0.01164	-2.98	—	—	—	—
0	S	244	24.23944	24.27317	0.10720	0.01212	-2.78	—	—	—	—
0	S	255	25.29729	25.33038	0.10101	0.01265	-2.62	—	—	—	—
0	S	265	26.25455	26.28749	0.09361	0.01313	-2.51	—	—	—	—
0	S	276	27.30377	27.33567	0.08358	0.01365	-2.34	—	—	—	—
0	S	286	28.25342	28.28412	0.07281	0.01413	-2.17	—	—	—	—
0	S	297	29.29511	29.32236	0.05925	0.01465	-1.86	—	—	—	—
0	S	307	30.23790	30.26149	0.04550	0.01512	-1.56	—	—	—	—
0	S	318	31.27136	31.28925	0.02900	0.01564	-1.14	—	—	—	—
0	S	329	32.29972	32.31144	0.01128	0.01615	-0.73	—	—	—	—
0	S	340	33.32228	33.32806	-0.00735	0.01666	-0.35	—	—	—	—
0	S	350	34.24535	34.24747	-0.02482	0.01712	-0.12	—	—	—	—
0	S	361	35.25610	35.25359	-0.04431	0.01763	0.14	—	—	—	—
0	S	372	36.26096	36.25434	-0.06374	0.01813	0.37	—	—	—	—
0	S	383	37.26019	37.24981	-0.08274	0.01863	0.56	—	—	—	—
0	S	394	38.25391	38.24014	-0.10091	0.01913	0.72	—	—	—	—
0	S	405	39.24121	39.22543	-0.11787	0.01962	0.80	—	—	—	—
0	S	416	40.22078	40.20587	-0.13318	0.02011	0.74	—	—	—	—

Table S4: Fits to the reference dataset of toroidal fundamental modes (${}_0T_l$). At shorter periods (T < 150 s), estimates of average surface wave dispersion are converted to eigenfrequencies of Love waves ($l > 60$). The predictions of eigenfrequencies (f_{pred}) from REM1D include the non-linear contribution from the crust (f_{crust}) following equation 13 and 17 in Paper I. All calculations are made using the reference astronomic-geodetic con-stants (Paper I). Quality factors (Q) are listed as $q = 1000/Q$, eigenfrequencies are in units of mHz, and σ are the uncertainty bounds. The misfit measure $\chi = (obs\text{ - }pred)/\sigma$ is provided for each mode and type of measurement. This table can be downloaded in the ASCII format from Zenodo (https://doi.org/10.5281/zenodo.8407693).

Mode			**Eigenfrequencies (mHz)**					**Quality Factors**			
n	Type	l	f_{obs}	f_{pred}	f_{crust}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
0	T	2	0.37800	0.37929	—	0.00050	-2.58	3.53000	3.63507	0.65000	-0.16
0	T	3	0.58652	0.58643	—	0.00050	0.18	4.45000	3.80715	0.50000	1.29
0	T	4	0.76594	0.76605	—	0.00015	-0.73	3.93000	4.02432	0.21239	-0.44
0	T	5	0.92851	0.92878	—	0.00019	-1.42	3.91000	4.27090	0.14514	-2.49
0	T	6	1.07911	1.07951	—	0.00022	-1.82	4.11800	4.53145	0.12750	-3.24
0	T	7	1.22120	1.22152	—	0.00024	-1.33	4.84500	4.79519	0.15667	0.32
0	T	8	1.35671	1.35706	—	0.00027	-1.30	5.12750	5.05563	0.14819	0.48
0	T	9	1.48713	1.48768	—	0.00030	-1.83	5.21250	5.30900	0.17591	-0.55
0	T	10	1.61387	1.61446	—	0.00032	-1.84	5.55667	5.55288	0.14272	0.03
0	T	11	1.73742	1.73815	—	0.00035	-2.09	5.85000	5.78570	0.34000	0.19
0	T	12	1.85882	1.85935	—	0.00037	-1.43	5.95000	6.00644	0.35000	-0.16
0	T	13	1.97788	1.97849	—	0.00040	-1.52	6.17000	6.21458	0.38000	-0.12
0	T	14	2.09543	2.09595	—	0.00042	-1.24	6.33000	6.40996	0.40000	-0.20
0	T	15	2.21189	2.21202	—	0.00044	-0.30	6.45000	6.59277	0.42000	-0.34
0	T	16	2.32688	2.32693	—	0.00047	-0.11	6.76000	6.76339	0.46000	-0.01
0	T	17	2.44078	2.44090	—	0.00049	-0.25	6.80000	6.92236	0.46000	-0.27
0	T	18	2.55388	2.55408	—	0.00051	-0.39	6.99000	7.07034	0.49000	-0.16
0	T	19	2.66576	2.66662	—	0.00053	-1.62	7.04000	7.20803	0.50000	-0.34
0	T	20	2.77759	2.77863	—	0.00056	-1.86	7.19000	7.33612	0.52000	-0.28
0	T	21	2.88861	2.89020	—	0.00058	-2.74	7.52000	7.45532	0.57000	0.11
0	T	22	3.00082	3.00142	—	0.00060	-1.00	7.69000	7.56630	0.59000	0.21
0	T	23	3.11128	3.11234	—	0.00062	-1.71	—	—	—	—
0	T	24	3.22250	3.22302	—	0.00064	-0.81	7.89000	7.76612	0.35000	0.35
0	T	25	3.33291	3.33351	—	0.00067	-0.90	7.92000	7.85611	0.34000	0.19
0	T	26	3.44295	3.44385	—	0.00069	-1.30	8.02000	7.94019	0.33000	0.24
0	T	27	3.55318	3.55405	—	0.00071	-1.23	8.02000	8.01882	0.31000	0.00
0	T	28	3.66334	3.66416	—	0.00073	-1.12	8.05000	8.09243	0.30000	-0.14
0	T	29	3.77286	3.77419	—	0.00075	-1.77	8.08000	8.16141	0.29000	-0.28
0	T	30	3.88243	3.88416	—	0.00078	-2.22	8.12000	8.22611	0.28000	-0.38
0	T	31	3.99264	3.99407	—	0.00080	-1.79	8.27000	8.28686	0.29000	-0.06
0	T	32	4.10342	4.10396	—	0.00082	-0.66	8.30000	8.34395	0.29000	-0.15
0	T	33	4.21320	4.21382	—	0.00084	-0.74	8.33000	8.39764	0.29000	-0.23
0	T	34	4.32293	4.32366	—	0.00086	-0.85	8.36000	8.44817	0.29000	-0.30
0	T	35	4.43267	4.43348	—	0.00089	-0.91	8.40000	8.49577	0.29000	-0.33
0	T	36	4.54252	4.54331	—	0.00091	-0.87	8.43000	8.54063	0.29000	-0.38
0	T	37	4.65225	4.65313	—	0.00093	-0.95	8.46000	8.58294	0.29000	-0.42
0	T	38	4.76210	4.76295	—	0.00095	-0.89	8.49000	8.62285	0.29000	-0.46
0	T	39	4.87199	4.87278	—	0.00097	-0.81	8.51000	8.66052	0.29000	-0.52
0	T	40	4.98176	4.98261	—	0.00100	-0.85	8.53000	8.69608	0.29000	-0.57
0	T	41	5.09158	5.09245	—	0.00102	-0.85	8.55000	8.72966	0.29000	-0.62
0	T	42	5.20144	5.20230	—	0.00104	-0.83	8.58000	8.76138	0.30000	-0.60
0	T	43	5.31116	5.31215	—	0.00106	-0.93	8.59000	8.79134	0.29000	-0.69
0	T	44	5.42101	5.42202	—	0.00108	-0.94	8.61000	8.81962	0.30000	-0.70
0	T	45	5.53089	5.53190	—	0.00111	-0.91	8.61000	8.84634	0.29000	-0.81
0	T	46	5.64065	5.64179	—	0.00113	-1.01	8.63000	8.87155	0.29000	-0.83
0	T	47	5.75031	5.75168	—	0.00115	-1.19	8.65000	8.89535	0.30000	-0.82
0	T	48	5.86027	5.86159	—	0.00117	-1.13	8.67000	8.91779	0.30000	-0.83
0	T	49	5.97008	5.97151	—	0.00119	-1.20	8.70000	8.93894	0.30000	-0.80
0	T	50	6.07982	6.08143	—	0.00122	-1.32	8.74000	8.95887	0.31000	-0.71
0	T	51	6.18976	6.19137	—	0.00124	-1.30	8.78000	8.97762	0.31000	-0.64
0	T	52	6.29983	6.30131	—	0.00126	-1.17	8.83000	8.99524	0.32000	-0.52
0	T	53	6.40984	6.41125	—	0.00128	-1.10	8.91000	9.01179	0.34000	-0.30
0	T	54	6.52014	6.52121	—	0.00130	-0.82	—	—	—	—
0	T	55	6.63017	6.63117	—	0.00133	-0.75	—	—	—	—
0	T	56	6.74053	6.74113	—	0.00135	-0.44	—	—	—	—
0	T	57	6.85079	6.85110	—	0.00137	-0.23	—	—	—	—

Table S4: Continued.

Mode			Eigenfrequencies (mHz)					Quality Factors			
n	Type	l	f_{obs}	f_{pred}	f_{crust}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
0	T	58	6.96118	6.96107	—	0.00139	0.08	8.50000	9.07981	0.25000	-2.32
0	T	59	7.07143	7.07104	—	0.00141	0.28	—	—	—	—
0	T	60	7.18117	7.18102	—	0.00144	0.10	—	—	—	—
0	T	67	—	—	—	—	—	8.46000	9.15052	0.20000	-3.45
0	T	68	8.06625	8.06081	—	0.00161	3.38	—	—	—	—
0	T	77	9.05951	9.06270	0.01248	0.00181	-1.76	8.41000	9.16821	0.20000	-3.79
0	T	86	10.05112	10.05347	0.01466	0.00201	-1.17	8.32000	9.14118	0.20000	-4.11
0	T	95	11.04013	11.04298	0.01679	0.00221	-1.29	8.09000	9.08103	0.20000	-4.96
0	T	104	12.02686	12.03087	0.01887	0.00241	-1.67	7.93000	8.99299	0.20000	-5.31
0	T	114	13.12144	13.12620	0.02112	0.00262	-1.82	—	—	—	—
0	T	123	14.10451	14.10957	0.02310	0.00282	-1.80	—	—	—	—
0	T	132	15.08529	15.09035	0.02509	0.00302	-1.68	—	—	—	—
0	T	141	16.06324	16.06828	0.02717	0.00321	-1.57	—	—	—	—
0	T	150	17.03803	17.04320	0.02943	0.00341	-1.52	—	—	—	—
0	T	160	18.11766	18.12268	0.03230	0.00362	-1.39	—	—	—	—
0	T	169	19.08548	19.09060	0.03538	0.00382	-1.34	—	—	—	—
0	T	178	20.04990	20.05496	0.03909	0.00401	-1.26	—	—	—	—
0	T	188	21.11773	21.12219	0.04420	0.00422	-1.06	—	—	—	—
0	T	197	22.07482	22.07874	0.04991	0.00441	-0.89	—	—	—	—
0	T	206	23.02842	23.03152	0.05691	0.00461	-0.67	—	—	—	—
0	T	216	24.08362	24.08565	0.06645	0.00482	-0.42	—	—	—	—
0	T	225	25.02942	25.03028	0.07685	0.00501	-0.17	—	—	—	—
0	T	235	26.07533	26.07531	0.09067	0.00522	0.00	—	—	—	—
0	T	245	27.11608	27.11552	0.10708	0.00542	0.10	—	—	—	—
0	T	254	28.04913	28.04753	0.12421	0.00561	0.29	—	—	—	—
0	T	264	29.08003	29.07849	0.14603	0.00582	0.26	—	—	—	—
0	T	274	30.10564	30.10460	0.17093	0.00602	0.17	—	—	—	—
0	T	284	31.12586	31.12585	0.19898	0.00623	0.00	—	—	—	—
0	T	294	32.14081	32.14227	0.23024	0.00643	-0.23	—	—	—	—
0	T	304	33.15058	33.15385	0.26473	0.00663	-0.49	—	—	—	—
0	T	315	34.25278	34.26101	0.30634	0.00685	-1.20	—	—	—	—
0	T	325	35.25159	35.26242	0.34745	0.00705	-1.54	—	—	—	—
0	T	335	36.24527	36.25904	0.39162	0.00725	-1.90	—	—	—	—
0	T	346	37.32885	37.34985	0.44367	0.00747	-2.81	—	—	—	—
0	T	356	38.31138	38.33657	0.49403	0.00766	-3.29	—	—	—	—
0	T	367	39.38413	39.41661	0.55264	0.00788	-4.12	—	—	—	—
0	T	378	40.45501	40.49110	0.61441	0.00809	-4.46	—	—	—	—

Table S5: Fits to the reference dataset of spheroidal overtones (${}_nS_l$). The predictions of eigenfrequencies (f_{pred}) and quality factors (q_{pred}) are calculated from REM1D while adopting the reference astronomic-geodetic constants (Paper I). Quality factors (Q) are listed as $q = 1000/Q$, eigenfrequencies are in units of mHz, and σ are the uncertainty bounds. The misfit measure $\chi = (obs\ -\ pred)/\sigma$ is provided for each mode and type of measurement. This table can be downloaded in the ASCII format from Zenodo (https://doi.org/10.5281/zenodo.8407693).

Mode			**Eigenfrequencies (mHz)**				**Quality Factors**			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
1	S	2	0.68013	0.67989	0.00006	4.00	2.93562	2.97475	0.10365	-0.38
1	S	3	0.93997	0.94001	0.00004	-1.00	3.06290	3.24314	0.07126	-2.53
1	S	4	1.17278	1.17319	0.00005	-8.20	3.43796	3.33607	0.04603	2.21
1	S	5	1.37004	1.37054	0.00011	-4.55	3.05159	3.02376	0.03317	0.84
1	S	6	1.52146	1.52185	0.00012	-3.25	2.46714	2.54908	0.03853	-2.13
1	S	7	1.65466	1.65488	0.00010	-2.20	2.42626	2.40447	0.03625	0.60
1	S	8	1.79805	1.79829	0.00017	-1.41	2.40995	2.36330	0.05666	0.82
1	S	9	1.96232	1.96236	0.00023	-0.17	2.48683	2.34262	0.04737	3.04
1	S	10	2.14656	2.14668	0.00024	-0.50	2.48290	2.34109	0.05675	2.50
1	S	11	2.34617	2.34549	0.00019	3.58	—	—	—	—
1	S	14	2.97388	2.97382	0.00060	0.10	3.47821	3.00131	0.10561	4.52
1	S	15	3.17219	3.17049	0.00093	1.83	—	—	—	—
1	S	16	3.34084	3.33992	0.00102	0.90	—	—	—	—
1	S	17	3.49339	3.49541	0.00084	-2.40	—	—	—	—
1	S	18	3.64375	3.64630	0.00061	-4.18	—	—	—	—
1	S	19	3.79223	3.79501	0.00091	-3.06	—	—	—	—
1	S	20	3.93997	3.94239	0.00076	-3.18	—	—	—	—
1	S	21	4.08564	4.08883	0.00061	-5.23	—	—	—	—
1	S	22	4.23147	4.23453	0.00080	-3.82	—	—	—	—
1	S	23	4.37625	4.37959	0.00116	-2.88	—	—	—	—
1	S	24	4.52103	4.52407	0.00116	-2.62	—	—	—	—
1	S	25	4.66265	4.66797	0.00110	-4.84	—	—	—	—
1	S	26	4.80911	4.81128	0.00138	-1.57	—	—	—	—
1	S	27	4.95277	4.95397	0.00159	-0.75	—	—	—	—
1	S	28	5.08865	5.09601	0.00156	-4.72	—	—	—	—
1	S	29	5.23302	5.23733	0.00153	-2.82	—	—	—	—
1	S	30	5.37306	5.37790	0.00178	-2.72	—	—	—	—
1	S	31	5.51354	5.51766	0.00208	-1.98	—	—	—	—
1	S	32	5.65236	5.65655	0.00167	-2.51	—	—	—	—
1	S	33	5.78881	5.79454	0.00206	-2.78	—	—	—	—
1	S	34	5.92920	5.93157	0.00290	-0.82	—	—	—	—
1	S	35	6.06183	6.06761	0.00237	-2.44	—	—	—	—
1	S	36	6.19296	6.20262	0.00300	-3.22	—	—	—	—
1	S	37	6.33198	6.33658	0.00330	-1.39	—	—	—	—
1	S	38	6.46534	6.46945	0.00265	-1.55	—	—	—	—
1	S	39	6.59433	6.60123	0.00340	-2.03	—	—	—	—
1	S	40	6.72829	6.73190	0.00385	-0.94	—	—	—	—
2	S	1	0.40417	0.40379	0.00004	9.50	2.41546	2.32560	0.40841	0.22
2	S	3	1.24305	1.24123	0.00008	22.75	2.38704	2.29022	0.06403	1.51
2	S	4	1.37970	1.37816	0.00007	22.00	2.61955	2.59074	0.03426	0.84
2	S	5	1.51563	1.51412	0.00010	15.10	3.13581	3.33146	0.11615	-1.68
2	S	6	1.68142	1.68054	0.00012	7.33	4.16247	4.17493	0.02643	-0.47
2	S	7	1.86543	1.86503	0.00025	1.60	4.39649	4.62864	0.11028	-2.11
2	S	8	2.05002	2.04951	0.00018	2.83	4.98842	4.92444	0.06924	0.92
2	S	9	2.22929	2.22924	0.00029	0.17	5.08659	5.16316	0.23632	-0.32
2	S	10	2.40372	2.40356	0.00037	0.43	5.46545	5.36317	0.11840	0.86
2	S	11	2.57231	2.57291	0.00013	-4.62	5.55399	5.52299	0.06399	0.48
2	S	12	2.73735	2.73810	0.00012	-6.25	5.48810	5.62784	0.47272	-0.30
2	S	13	2.89844	2.90055	0.00084	-2.51	5.88714	5.62544	0.17286	1.51
2	S	14	3.06440	3.06353	0.00141	0.62	—	—	—	—
2	S	26	5.57900	5.58451	0.00300	-1.84	—	—	—	—
2	S	27	5.74613	5.74766	0.00085	-1.80	—	—	—	—

Table S5: Continued.

Mode			Eigenfrequencies (mHz)				Quality Factors			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
2	S	28	5.90381	5.90883	0.00110	-4.56	—	—	—	—
2	S	29	6.06814	6.06916	0.00128	-0.80	—	—	—	—
2	S	30	6.22856	6.22871	0.00117	-0.13	—	—	—	—
2	S	31	6.38516	6.38747	0.00113	-2.04	—	—	—	—
2	S	32	6.54109	6.54541	0.00149	-2.90	—	—	—	—
2	S	33	6.69719	6.70251	0.00134	-3.97	—	—	—	—
2	S	34	6.85239	6.85873	0.00144	-4.40	—	—	—	—
2	S	35	7.01191	7.01406	0.00231	-0.93	—	—	—	—
2	S	36	7.16441	7.16847	0.00245	-1.66	—	—	—	—
2	S	37	7.31855	7.32197	0.00207	-1.65	—	—	—	—
2	S	38	7.47300	7.47452	0.00181	-0.84	—	—	—	—
2	S	39	7.62339	7.62615	0.00266	-1.04	—	—	—	—
2	S	40	7.77494	7.77685	0.00250	-0.76	—	—	—	—
2	S	41	7.92124	7.92663	0.00389	-1.39	—	—	—	—
2	S	42	8.07222	8.07549	0.00479	-0.68	—	—	—	—
2	S	43	8.21954	8.22346	0.00406	-0.97	—	—	—	—
2	S	44	8.36054	8.37054	0.00424	-2.36	—	—	—	—
2	S	45	8.50896	8.51676	0.00444	-1.76	—	—	—	—
2	S	46	8.65620	8.66212	0.00483	-1.23	—	—	—	—
2	S	47	8.80727	8.80665	0.00510	0.12	—	—	—	—
3	S	1	0.94435	0.94303	0.00003	44.00	1.17736	1.14341	0.02852	1.19
3	S	2	1.10615	1.10516	0.00013	7.62	3.25806	2.58960	0.06563	10.19
3	S	6	2.54886	2.54775	0.00008	13.88	3.31419	3.37582	0.08800	-0.70
3	S	7	2.68682	2.68462	0.00061	3.61	3.52839	3.49552	0.07801	0.42
3	S	8	2.82011	2.81819	0.00046	4.17	3.65606	3.61314	0.09467	0.45
3	S	9	2.95117	2.95042	0.00022	3.41	3.81808	3.72483	0.05650	1.65
3	S	10	3.08212	3.08391	0.00032	-5.59	—	—	—	—
3	S	11	3.21952	3.22066	0.00053	-2.15	—	—	—	—
3	S	12	3.36136	3.36171	0.00041	-0.85	—	—	—	—
3	S	13	3.50755	3.50733	0.00055	0.40	—	—	—	—
3	S	14	3.65620	3.65723	0.00053	-1.94	—	—	—	—
3	S	15	3.81098	3.81083	0.00059	0.25	—	—	—	—
3	S	16	3.96685	3.96744	0.00065	-0.91	—	—	—	—
3	S	17	4.12401	4.12635	0.00060	-3.90	—	—	—	—
3	S	18	4.28380	4.28696	0.00067	-4.72	—	—	—	—
3	S	19	4.44613	4.44872	0.00067	-3.87	—	—	—	—
3	S	20	4.60898	4.61123	0.00088	-2.56	—	—	—	—
3	S	21	4.77158	4.77416	0.00075	-3.44	—	—	—	—
3	S	22	4.93287	4.93725	0.00085	-5.15	—	—	—	—
3	S	23	5.09842	5.10033	0.00076	-2.51	—	—	—	—
3	S	24	5.26294	5.26334	0.00081	-0.49	—	—	—	—
3	S	25	5.42450	5.42683	0.00250	-0.93	—	—	—	—
3	S	41	8.82312	8.82830	0.00257	-2.02	—	—	—	—
3	S	42	8.97689	8.98581	0.00241	-3.70	—	—	—	—
3	S	43	9.13826	9.14257	0.00230	-1.87	—	—	—	—
3	S	44	9.29013	9.29861	0.00243	-3.49	—	—	—	—
3	S	45	9.44141	9.45396	0.00294	-4.27	—	—	—	—
3	S	46	9.60301	9.60865	0.00274	-2.06	—	—	—	—
3	S	47	9.75064	9.76271	0.00246	-4.91	—	—	—	—
3	S	48	9.90812	9.91613	0.00387	-2.07	—	—	—	—
3	S	49	10.05290	10.06895	0.00348	-4.61	—	—	—	—
3	S	50	10.20665	10.22117	0.00349	-4.16	—	—	—	—
4	S	1	1.41169	1.41223	0.00006	-9.00	2.63432	2.45078	0.06007	3.06
4	S	2	1.72160	1.72155	0.00005	1.00	2.03698	2.01787	0.03237	0.59
4	S	3	2.04830	2.04805	0.00004	6.25	1.89473	1.82840	0.04390	1.51
4	S	4	2.27881	2.27787	0.00020	4.70	3.39411	3.12701	0.06191	4.31
4	S	5	2.41154	2.40950	0.00037	5.51	3.47608	3.25848	0.05560	3.91
4	S	9	3.70750	3.70875	0.00150	-0.83	—	—	—	—
4	S	10	3.86407	3.86418	0.00063	-0.17	—	—	—	—
4	S	11	4.00703	4.01000	0.00071	-4.18	—	—	—	—
4	S	12	4.15364	4.15250	0.00071	1.61	—	—	—	—
4	S	13	4.29205	4.29471	0.00104	-2.56	—	—	—	—
4	S	14	4.43530	4.43846	0.00081	-3.90	—	—	—	—
4	S	15	4.58508	4.58491	0.00108	0.16	—	—	—	—
4	S	16	4.72985	4.73467	0.00104	-4.63	—	—	—	—

Table S5: Continued.

Mode			Eigenfrequencies (mHz)				Quality Factors			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
4	S	17	4.88532	4.88795	0.00114	-2.31	—	—	—	—
4	S	18	5.04366	5.04462	0.00105	-0.91	—	—	—	—
4	S	19	5.20063	5.20436	0.00153	-2.44	—	—	—	—
4	S	20	5.36219	5.36674	0.00126	-3.61	—	—	—	—
4	S	21	5.52607	5.53125	0.00129	-4.02	—	—	—	—
4	S	22	5.69597	5.69740	0.00138	-1.04	—	—	—	—
4	S	23	5.86148	5.86472	0.00134	-2.42	—	—	—	—
4	S	24	6.02867	6.03279	0.00149	-2.77	—	—	—	—
4	S	25	6.19723	6.20128	0.00158	-2.56	—	—	—	—
4	S	26	6.36549	6.36989	0.00124	-3.55	—	—	—	—
4	S	27	6.53554	6.53837	0.00173	-1.64	—	—	—	—
4	S	28	6.70265	6.70656	0.00186	-2.10	—	—	—	—
4	S	29	6.87295	6.87429	0.00130	-1.03	—	—	—	—
4	S	30	7.03811	7.04145	0.00130	-2.57	—	—	—	—
4	S	31	7.20441	7.20796	0.00212	-1.67	—	—	—	—
4	S	32	7.36939	7.37373	0.00158	-2.75	—	—	—	—
4	S	33	7.53651	7.53873	0.00187	-1.19	—	—	—	—
4	S	34	7.70008	7.70290	0.00183	-1.54	—	—	—	—
4	S	35	7.85958	7.86624	0.00178	-3.74	—	—	—	—
4	S	36	8.01995	8.02871	0.00148	-5.92	—	—	—	—
4	S	37	8.18438	8.19031	0.00148	-4.01	—	—	—	—
4	S	38	8.34215	8.35106	0.00215	-4.14	—	—	—	—
4	S	39	8.49951	8.51097	0.00234	-4.90	—	—	—	—
4	S	40	8.66348	8.67005	0.00281	-2.34	—	—	—	—
5	S	2	2.09063	2.09084	0.00006	-3.50	3.00066	2.82104	0.08143	2.21
5	S	3	2.16895	2.16860	0.00012	2.92	3.18226	3.10000	0.05558	1.48
5	S	4	2.37917	2.37882	0.00010	3.50	1.85475	1.83960	0.02966	0.51
5	S	5	2.70355	2.70292	0.00008	7.88	1.79579	1.80001	0.03145	-0.13
5	S	6	3.01151	3.01084	0.00010	6.70	1.73259	1.80823	0.03658	-2.07
5	S	7	3.29205	3.29158	0.00025	1.88	1.85452	1.88586	0.02993	-1.05
5	S	8	3.52597	3.52644	0.00029	-1.62	2.29830	2.26044	0.06259	0.60
5	S	11	4.45742	4.45605	0.00058	2.36	2.50627	2.58608	0.03769	-2.12
5	S	12	4.69707	4.69551	0.00101	1.54	2.32867	2.53490	0.07133	-2.89
5	S	13	4.92546	4.92355	0.00102	1.87	—	—	—	—
5	S	14	5.13566	5.13518	0.00074	0.65	2.48139	2.63674	0.01847	-8.41
5	S	15	5.32705	5.32754	0.00021	-2.33	2.73973	2.81944	0.01501	-5.31
5	S	16	5.50419	5.50365	0.00176	0.31	3.08642	3.02064	0.01905	3.45
5	S	17	5.66930	5.66998	0.00055	-1.24	3.17460	3.18378	0.03023	-0.30
5	S	18	5.82920	5.83177	0.00196	-1.31	—	—	—	—
5	S	19	5.98849	5.99211	0.00217	-1.67	—	—	—	—
5	S	20	6.15222	6.15257	0.00188	-0.19	—	—	—	—
5	S	21	6.31038	6.31388	0.00218	-1.61	—	—	—	—
5	S	22	6.47356	6.47628	0.00185	-1.47	—	—	—	—
5	S	23	6.63543	6.63971	0.00179	-2.39	—	—	—	—
5	S	24	6.80078	6.80394	0.00232	-1.36	—	—	—	—
5	S	25	6.96594	6.96865	0.00192	-1.41	—	—	—	—
5	S	26	7.13266	7.13348	0.00179	-0.46	—	—	—	—
5	S	27	7.29193	7.29809	0.00222	-2.77	—	—	—	—
5	S	28	7.45536	7.46219	0.00208	-3.28	—	—	—	—
5	S	29	7.61688	7.62555	0.00241	-3.60	—	—	—	—
5	S	30	7.77852	7.78801	0.00260	-3.65	—	—	—	—
5	S	31	7.94178	7.94952	0.00235	-3.29	—	—	—	—
5	S	32	8.09906	8.11008	0.00206	-5.35	—	—	—	—
5	S	33	8.25359	8.26977	0.00254	-6.37	—	—	—	—
5	S	34	8.40777	8.42872	0.00384	-5.46	—	—	—	—
5	S	35	8.57059	8.58706	0.00282	-5.84	—	—	—	—
5	S	36	8.72695	8.74498	0.00344	-5.24	—	—	—	—
5	S	37	8.88450	8.90263	0.00289	-6.27	—	—	—	—
5	S	38	9.04370	9.06019	0.00310	-5.32	—	—	—	—
5	S	39	9.20063	9.21777	0.00312	-5.49	—	—	—	—
5	S	40	9.36049	9.37551	0.00377	-3.98	—	—	—	—
5	S	41	9.51131	9.53349	0.00340	-6.52	—	—	—	—
5	S	42	9.67932	9.69178	0.00310	-4.02	—	—	—	—
5	S	43	9.83577	9.85040	0.00464	-3.15	—	—	—	—

Table S5: Continued.

Mode			Eigenfrequencies (mHz)				Quality Factors			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
5	S	44	9.98946	10.00938	0.00355	-5.61	—	—	—	—
5	S	45	10.15142	10.16872	0.00294	-5.88	—	—	—	—
5	S	46	10.30700	10.32838	0.00331	-6.46	—	—	—	—
5	S	47	10.47661	10.48834	0.00361	-3.25	—	—	—	—
5	S	48	10.63830	10.64855	0.00384	-2.67	—	—	—	—
5	S	49	10.79693	10.80897	0.00345	-3.49	—	—	—	—
5	S	50	10.96240	10.96953	0.00325	-2.19	—	—	—	—
5	S	51	11.11599	11.13018	0.00332	-4.27	—	—	—	—
5	S	52	11.28207	11.29086	0.00265	-3.32	—	—	—	—
6	S	1	1.98325	1.98066	0.00022	11.77	2.47500	1.41692	0.41772	2.53
6	S	3	2.82184	2.82142	0.00005	8.40	2.16838	2.12474	0.04300	1.01
6	S	8	3.73750	3.73418	0.00200	1.66	—	—	—	—
6	S	9	3.96475	3.96339	0.00024	5.67	3.12500	2.94879	0.02930	6.01
6	S	10	4.21114	4.20981	0.00004	33.26	2.70986	2.70156	0.04517	0.18
6	S	13	5.23350	5.22906	0.00250	1.78	—	—	—	—
6	S	14	5.41204	5.40595	0.00108	5.64	—	—	—	—
6	S	15	5.60072	5.59916	0.00051	3.06	3.46021	3.64804	0.03592	-5.23
6	S	16	5.80674	5.80561	0.00133	0.85	—	—	—	—
6	S	17	6.02071	6.01874	0.00113	1.74	—	—	—	—
6	S	18	6.23688	6.23304	0.00122	3.15	3.05810	3.29457	0.01870	-12.65
6	S	19	6.44615	6.44492	0.00176	0.70	—	—	—	—
6	S	20	6.65389	6.65205	0.00131	1.40	—	—	—	—
6	S	21	6.85520	6.85289	0.00180	1.28	—	—	—	—
6	S	22	7.05031	7.04657	0.00164	2.28	—	—	—	—
6	S	23	7.23475	7.23307	0.00148	1.14	—	—	—	—
6	S	24	7.41249	7.41315	0.00208	-0.32	—	—	—	—
6	S	25	7.58813	7.58812	0.00201	0.00	—	—	—	—
6	S	26	7.75613	7.75943	0.00210	-1.57	—	—	—	—
6	S	27	7.92194	7.92837	0.00163	-3.94	—	—	—	—
6	S	28	8.08818	8.09590	0.00204	-3.78	—	—	—	—
6	S	29	8.25578	8.26271	0.00203	-3.41	—	—	—	—
6	S	30	8.41721	8.42925	0.00207	-5.82	—	—	—	—
6	S	31	8.58830	8.59579	0.00265	-2.83	—	—	—	—
6	S	32	8.75931	8.76248	0.00313	-1.01	—	—	—	—
6	S	33	8.92692	8.92938	0.00262	-0.94	—	—	—	—
6	S	34	9.09208	9.09647	0.00292	-1.50	—	—	—	—
6	S	35	9.25799	9.26373	0.00361	-1.59	—	—	—	—
6	S	36	9.42384	9.43107	0.00310	-2.33	—	—	—	—
6	S	37	9.59931	9.59842	0.00231	0.39	—	—	—	—
6	S	38	9.76055	9.76568	0.00299	-1.72	—	—	—	—
6	S	39	9.92885	9.93273	0.00227	-1.71	—	—	—	—
6	S	40	10.08884	10.09948	0.00357	-2.98	—	—	—	—
7	S	2	2.52065	2.51846	0.00082	2.67	3.38667	2.73341	0.16333	4.00
7	S	4	3.41116	3.41085	0.00025	1.24	3.61000	2.82245	0.42000	1.88
7	S	5	3.65772	3.65726	0.00011	4.18	2.01511	1.98219	0.02065	1.59
7	S	6	3.95598	3.95589	0.00022	0.41	1.77907	1.88349	0.07170	-1.46
7	S	7	4.23417	4.23457	0.00008	-5.00	2.20072	2.29774	0.02372	-4.09
7	S	8	4.44871	4.44859	0.00071	0.17	2.62467	2.97900	0.03444	-10.29
7	S	9	4.61322	4.61328	0.00122	-0.05	3.00300	3.40386	0.03607	-11.11
7	S	10	4.76350	4.76266	0.00450	0.19	—	—	—	—
7	S	11	4.91550	4.91167	0.00300	1.28	—	—	—	—
7	S	12	5.06925	5.06582	0.00153	2.24	—	—	—	—
7	S	17	6.61015	6.61100	0.00377	-0.23	—	—	—	—
7	S	18	6.76270	6.76380	0.00600	-0.18	—	—	—	—
7	S	19	6.91981	6.92005	0.00448	-0.05	—	—	—	—
7	S	20	7.07702	7.08070	0.00361	-1.02	—	—	—	—
7	S	21	7.24837	7.24664	0.00282	0.61	—	—	—	—
7	S	22	7.41873	7.41842	0.00196	0.16	—	—	—	—
7	S	23	7.59392	7.59592	0.00168	-1.19	—	—	—	—
7	S	24	7.77887	7.77830	0.00224	0.25	—	—	—	—
7	S	25	7.96431	7.96421	0.00273	0.04	—	—	—	—
7	S	26	8.15433	8.15218	0.00226	0.95	—	—	—	—
7	S	27	8.34230	8.34098	0.00170	0.78	—	—	—	—
7	S	28	8.52263	8.52966	0.00199	-3.53	—	—	—	—
7	S	29	8.71229	8.71762	0.00208	-2.56	—	—	—	—
7	S	30	8.90252	8.90452	0.00235	-0.85	—	—	—	—

Table S5: Continued.

Mode			Eigenfrequencies (mHz)				Quality Factors			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
7	S	31	9.08929	9.09017	0.00274	-0.32	—	—	—	—
7	S	32	9.27915	9.27452	0.00230	2.01	—	—	—	—
7	S	33	9.45746	9.45758	0.00207	-0.06	—	—	—	—
7	S	34	9.63683	9.63936	0.00267	-0.95	—	—	—	—
7	S	35	9.82029	9.81990	0.00270	0.14	—	—	—	—
7	S	36	9.99850	9.99923	0.00337	-0.22	—	—	—	—
7	S	37	10.17404	10.17735	0.00368	-0.90	—	—	—	—
7	S	38	10.34765	10.35429	0.00328	-2.02	—	—	—	—
7	S	39	10.52843	10.53006	0.00493	-0.33	—	—	—	—
7	S	40	10.71029	10.70469	0.00415	1.35	—	—	—	—
8	S	1	2.87260	2.87223	0.00005	7.40	0.97400	0.98548	0.02182	-0.53
8	S	5	4.16529	4.16612	0.00008	-10.38	1.48950	1.59670	0.06215	-1.72
8	S	6	4.43029	4.43114	0.00003	-28.32	2.48756	2.31789	0.01856	9.14
8	S	7	4.64558	4.64472	0.00043	2.00	2.84102	2.84805	0.17102	-0.04
8	S	8	4.90234	4.90220	0.00200	0.07	—	—	—	—
8	S	9	5.20700	5.20576	0.00200	0.62	—	—	—	—
8	S	10	5.50490	5.50188	0.00189	1.60	2.04499	2.05389	0.01255	-0.71
8	S	11	5.70954	5.71110	0.00199	-0.78	—	—	—	—
8	S	12	5.86904	5.87020	0.00250	-0.46	—	—	—	—
8	S	13	6.01893	6.01893	0.00350	0.00	—	—	—	—
8	S	14	6.16507	6.16555	0.00460	-0.10	—	—	—	—
8	S	15	6.31411	6.31252	0.00650	0.24	—	—	—	—
8	S	16	6.46800	6.46080	0.00650	1.11	—	—	—	—
8	S	20	7.84685	7.83927	0.00650	1.17	—	—	—	—
8	S	21	7.97633	7.98575	0.00301	-3.13	—	—	—	—
8	S	22	8.12786	8.13375	0.00311	-1.89	—	—	—	—
8	S	23	8.28221	8.28387	0.00800	-0.21	—	—	—	—
8	S	24	8.43449	8.43662	0.00700	-0.30	—	—	—	—
8	S	25	8.59061	8.59241	0.00750	-0.24	—	—	—	—
8	S	26	8.75356	8.75153	0.00700	0.29	—	—	—	—
8	S	27	8.91200	8.91415	0.00750	-0.29	—	—	—	—
8	S	28	9.07400	9.08032	0.00700	-0.90	—	—	—	—
8	S	29	9.24265	9.24992	0.00800	-0.91	—	—	—	—
8	S	30	9.42174	9.42272	0.00800	-0.12	—	—	—	—
8	S	31	9.59374	9.59841	0.00800	-0.58	—	—	—	—
8	S	32	9.76723	9.77659	0.00700	-1.34	—	—	—	—
9	S	2	3.23065	3.23086	0.00018	-1.17	2.26948	2.08013	0.13674	1.38
9	S	3	3.55652	3.55631	0.00019	1.11	1.45628	1.25260	0.04684	4.35
9	S	4	3.87818	3.87923	0.00056	-1.87	1.83735	1.94940	0.07581	-1.48
9	S	6	4.61888	4.61865	0.00017	1.35	2.86533	2.86571	0.05747	-0.01
9	S	8	5.13848	5.13959	0.00006	-18.49	2.02429	2.04363	0.01639	-1.18
9	S	9	5.38155	5.38375	0.00300	-0.73	—	—	—	—
9	S	10	5.60581	5.60607	0.00028	-0.93	3.09598	3.05288	0.04793	0.90
9	S	11	5.88159	5.88029	0.00077	1.69	2.55754	2.48987	0.01962	3.45
9	S	12	6.18437	6.18095	0.00071	4.82	2.23214	2.25929	0.01993	-1.36
9	S	13	6.48019	6.47658	0.00049	7.37	1.98807	2.17828	0.01186	-16.04
9	S	14	6.76656	6.76080	0.00173	3.33	2.06700	2.16146	0.06300	-1.50
9	S	15	7.02609	7.02185	0.00040	10.60	2.29358	2.35699	0.02630	-2.41
9	S	16	7.23273	7.23193	0.00251	0.32	—	—	—	—
9	S	17	7.39833	7.39700	0.00300	0.44	—	—	—	—
9	S	18	7.54147	7.54718	0.00386	-1.48	—	—	—	—
9	S	19	7.68969	7.69352	0.00450	-0.85	—	—	—	—
9	S	24	9.19000	9.19624	0.00500	-1.25	—	—	—	—
9	S	25	9.34300	9.34918	0.00600	-1.03	—	—	—	—
9	S	26	9.50300	9.50180	0.00500	0.24	—	—	—	—
9	S	27	9.65700	9.65547	0.00700	0.22	—	—	—	—
9	S	28	9.81428	9.81085	0.00850	0.40	—	—	—	—
10	S	2	4.04069	4.03614	0.00016	28.44	1.17000	2.94331	0.15000	-11.82
10	S	8	5.73500	5.73714	0.00700	-0.31	—	—	—	—
10	S	9	5.93900	5.94000	0.00450	-0.22	—	—	—	—
10	S	10	6.18579	6.18672	0.00068	-1.37	2.94118	2.62353	0.06055	5.25
10	S	11	6.44666	6.44866	0.00206	-0.97	—	—	—	—
10	S	12	6.68790	6.68099	0.00206	3.35	—	—	—	—
10	S	13	6.86379	6.86865	0.00285	-1.71	—	—	—	—
10	S	14	7.03100	7.03362	0.00400	-0.65	—	—	—	—
10	S	15	7.19504	7.20516	0.00254	-3.98	—	—	—	—
10	S	16	7.42012	7.41926	0.00152	0.57	—	—	—	—

Table S5: Continued.

Mode			Eigenfrequencies (mHz)				Quality Factors			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
10	S	17	7.67307	7.67299	0.00042	0.19	2.62467	2.72532	0.03444	-2.92
10	S	18	7.93642	7.93678	0.00011	-3.27	2.40964	2.55814	0.03484	-4.26
10	S	19	8.19613	8.19823	0.00061	-3.44	2.42131	2.50854	0.01173	-7.44
10	S	20	8.44542	8.44957	0.00063	-6.59	2.57069	2.57138	0.01983	-0.03
10	S	21	8.67362	8.67845	0.00229	-2.11	3.00300	2.85477	0.01804	8.22
10	S	22	8.86467	8.87247	0.00244	-3.20	—	—	—	—
10	S	23	9.02500	9.05606	0.01000	-3.11	—	—	—	—
10	S	26	10.03677	10.04471	0.00213	-3.73	—	—	—	—
10	S	27	10.25454	10.26240	0.00260	-3.02	—	—	—	—
10	S	28	10.45985	10.46347	0.00305	-1.19	—	—	—	—
10	S	29	10.64934	10.64860	0.00320	0.23	—	—	—	—
11	S	1	3.68769	3.68596	0.00059	2.93	1.72117	1.41074	0.05925	5.24
11	S	4	4.76592	4.76518	0.00010	7.40	1.35113	1.42916	0.02928	-2.66
11	S	5	5.07272	5.07198	0.00016	4.63	1.50961	1.50384	0.02767	0.21
11	S	6	5.34844	5.34991	0.00016	-9.19	2.42157	2.08968	0.06534	5.08
11	S	9	6.43369	6.43038	0.00182	1.82	1.62866	1.71681	0.02387	-3.69
11	S	10	6.70580	6.70369	0.00022	9.59	2.32019	2.38161	0.02692	-2.28
11	S	11	6.91500	6.91334	0.00900	0.18	—	—	—	—
11	S	12	7.14349	7.13993	0.00051	6.98	2.68817	2.64125	0.05781	0.81
11	S	13	7.41150	7.40689	0.00400	1.15	—	—	—	—
11	S	14	7.67928	7.67610	0.00051	6.24	2.77008	2.39834	0.09975	3.73
11	S	16	8.10100	8.09792	0.00500	0.62	—	—	—	—
11	S	17	8.26500	8.25914	0.00800	0.73	—	—	—	—
11	S	18	8.42049	8.40923	0.00900	1.25	—	—	—	—
11	S	20	8.72419	8.71476	0.00478	1.97	—	—	—	—
11	S	21	8.89696	8.89153	0.00335	1.62	—	—	—	—
11	S	22	9.10306	9.10095	0.00235	0.90	—	—	—	—
11	S	23	9.33004	9.33428	0.00281	-1.51	3.12500	2.91187	0.03906	5.46
11	S	24	9.57167	9.57508	0.00120	-2.84	2.77778	2.79044	0.02315	-0.55
11	S	25	9.80976	9.81388	0.00125	-3.30	—	—	—	—
11	S	28	10.79557	10.78831	0.00436	1.67	—	—	—	—
11	S	29	10.99878	10.99597	0.00340	0.83	—	—	—	—
11	S	30	11.22057	11.21185	0.00226	3.86	—	—	—	—
11	S	31	11.42186	11.43005	0.00376	-2.18	—	—	—	—
11	S	32	11.64302	11.64572	0.00302	-0.89	—	—	—	—
11	S	33	11.86182	11.85514	0.00333	2.01	—	—	—	—
11	S	34	12.05286	12.05580	0.00318	-0.92	—	—	—	—
12	S	6	5.64385	5.64719	0.00015	-22.27	3.81679	3.77501	0.08741	0.48
12	S	7	5.85244	5.85293	0.00010	-4.90	2.44499	2.48099	0.02391	-1.51
12	S	8	6.13283	6.13221	0.00029	2.14	1.80223	1.93270	0.02292	-5.69
12	S	10	6.86000	6.85871	0.00500	0.26	—	—	—	—
12	S	11	7.13455	7.13504	0.00111	-0.44	1.96850	2.05627	0.02325	-3.78
12	S	12	7.44969	7.45053	0.00061	-1.38	1.99267	1.87131	0.19733	0.62
12	S	13	7.76888	7.77238	0.00096	-3.65	1.81159	1.88074	0.00985	-7.02
12	S	14	8.08929	8.09342	0.00099	-4.17	1.94175	1.93339	0.03393	0.25
12	S	15	8.40376	8.40999	0.00076	-8.20	1.89394	1.92406	0.01794	-1.68
12	S	16	8.68804	8.68975	0.00134	-1.28	2.35294	2.20465	0.03875	3.83
12	S	17	8.92941	8.92963	0.00119	-0.19	2.70270	2.50128	0.07305	2.76
12	S	18	9.13854	9.14108	0.00500	-0.51	—	—	—	—
12	S	19	9.32002	9.32316	0.00700	-0.45	—	—	—	—
12	S	20	9.48718	9.48573	0.00700	0.21	—	—	—	—
12	S	21	9.64281	9.63863	0.00800	0.52	—	—	—	—
13	S	1	4.49456	4.49375	0.00007	11.57	1.49166	1.26601	0.06075	3.71
13	S	2	4.84468	4.84272	0.00018	10.89	1.04626	1.12779	0.02112	-3.86
13	S	3	5.19386	5.19209	0.00006	29.50	1.08096	1.13157	0.02131	-2.37
13	S	6	6.15811	6.15848	0.00011	-3.36	1.75439	1.57248	0.02770	6.57
13	S	7	6.39300	6.39477	0.00350	-0.51	—	—	—	—
13	S	8	6.55200	6.54940	0.00350	0.74	—	—	—	—
13	S	12	7.95000	7.94725	0.00550	0.50	—	—	—	—
13	S	13	8.08446	8.08369	0.00900	0.09	—	—	—	—
13	S	14	8.25484	8.25005	0.00650	0.74	—	—	—	—
13	S	15	8.47104	8.46206	0.00162	5.54	2.96736	2.85242	0.28177	0.41
13	S	16	8.74311	8.74035	0.00174	1.59	2.57732	2.28886	0.01993	14.47
13	S	17	9.05382	9.05409	0.00156	-0.17	—	—	—	—
13	S	18	9.36439	9.36429	0.00067	0.15	2.04082	2.08443	0.01249	-3.49

Table S5: Continued.

Mode			Eigenfrequencies (mHz)				Quality Factors			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
13	S	19	9.66401	9.66560	0.00046	-3.46	1.99601	2.09871	0.01594	-6.44
13	S	20	9.95405	9.95557	0.00042	-3.62	2.09205	2.14890	0.01751	-3.25
13	S	21	10.22624	10.22960	0.00170	-1.98	—	—	—	—
13	S	22	10.47661	10.47610	0.00203	0.25	—	—	—	—
14	S	4	5.54311	5.54077	0.00034	6.88	1.49575	1.43462	0.12489	0.49
14	S	7	6.77118	6.77149	0.00181	-0.17	3.08642	2.98942	0.03810	2.55
14	S	8	7.04077	7.04449	0.00177	-2.10	2.40385	2.10555	0.03467	8.60
14	S	9	7.34494	7.34830	0.00022	-15.27	2.03162	1.93957	0.09838	0.94
14	S	10	7.62400	7.62747	0.00400	-0.87	—	—	—	—
14	S	11	7.81316	7.81501	0.00700	-0.26	—	—	—	—
14	S	13	8.73042	8.73462	0.00059	-7.12	2.10970	1.99399	0.02225	5.20
14	S	14	8.98175	8.98608	0.00025	-17.32	2.71739	2.86692	0.04431	-3.37
14	S	15	9.16300	9.16661	0.00400	-0.90	—	—	—	—
14	S	16	9.33400	9.33145	0.00400	0.64	—	—	—	—
14	S	17	9.51400	9.51690	0.00450	-0.64	—	—	—	—
14	S	18	9.74170	9.73555	0.00550	1.12	—	—	—	—
14	S	19	9.97963	9.97903	0.00500	0.12	—	—	—	—
15	S	3	6.03106	6.03138	0.00020	-1.60	1.25473	1.23247	0.04121	0.54
15	S	4	6.32332	6.32827	0.00030	-16.50	2.63478	2.45569	0.08425	2.13
15	S	9	7.76800	7.76751	0.00350	0.14	—	—	—	—
15	S	10	7.89600	7.89499	0.00600	0.17	—	—	—	—
15	S	11	8.12242	8.12876	0.00109	-5.82	—	—	—	—
15	S	12	8.42724	8.43071	0.00050	-6.94	1.80832	1.72805	0.02943	2.73
15	S	15	9.59384	9.58882	0.00169	2.97	2.14133	2.03349	0.05961	1.81
15	S	16	9.92118	9.92022	0.00016	6.00	1.94175	1.89655	0.01885	2.40
16	S	4	—	—	—	—	3.99000	3.38169	0.14000	4.35
16	S	5	6.83025	6.83190	0.00016	-10.31	1.83830	1.80468	0.04617	0.73
16	S	6	7.14924	7.14889	0.00008	4.37	1.71123	1.45499	0.05068	5.06
16	S	7	7.47122	7.47025	0.00042	2.31	1.48243	1.36535	0.04821	2.43
16	S	9	8.11600	8.11455	0.00200	0.73	—	—	—	—
16	S	10	8.43318	8.43387	0.00018	-3.84	1.43472	1.38899	0.02470	1.85
16	S	11	8.72956	8.73008	0.00057	-0.91	2.25225	1.92087	0.05580	5.94
16	S	13	9.08837	9.08632	0.00550	0.37	—	—	—	—
16	S	14	9.29932	9.29595	0.00095	3.55	—	—	—	—
16	S	18	10.62613	10.63019	0.00138	-2.94	—	—	—	—
16	S	19	10.95829	10.96128	0.00168	-1.78	—	—	—	—
16	S	20	11.27891	11.28092	0.00156	-1.29	—	—	—	—
16	S	21	11.57849	11.57380	0.00301	1.56	—	—	—	—
17	S	1	6.12418	6.12485	0.00166	-0.40	1.90698	1.32934	0.23705	2.44
17	S	8	7.80259	7.80122	0.00039	3.51	2.34192	1.98446	0.07130	5.01
17	S	12	9.14635	9.15419	0.00071	-11.04	2.36207	2.10845	0.05793	4.38
17	S	13	9.42890	9.43566	0.00041	-16.49	1.84309	1.78194	0.03309	1.85
17	S	14	9.70177	9.70590	0.00323	-1.28	2.11864	2.10777	0.02244	0.48
17	S	15	9.93267	9.93180	0.00052	1.67	2.98507	2.71420	0.02673	10.13
17	S	22	11.97057	11.97802	0.00351	-2.12	—	—	—	—
17	S	23	12.25732	12.25854	0.00172	-0.71	—	—	—	—
17	S	24	12.54761	12.54384	0.00130	2.90	—	—	—	—
17	S	25	12.83344	12.82150	0.00205	5.82	—	—	—	—
18	S	2	6.53661	6.54078	0.00089	-4.69	1.94333	1.87643	0.15333	0.44
18	S	3	6.88665	6.88597	0.00056	1.21	1.28055	1.20346	0.04961	1.55
18	S	4	7.23833	7.23664	0.00009	18.78	1.01622	1.12749	0.03682	-3.02
18	S	6	7.95681	7.95626	0.00026	2.11	2.53807	2.15765	0.09019	4.22
18	S	9	8.73500	8.74692	0.00700	-1.70	—	—	—	—
19	S	8	8.79295	8.80497	0.00800	-1.50	—	—	—	—
19	S	9	9.04400	9.05066	0.00800	-0.83	—	—	—	—
19	S	10	9.35223	9.35883	0.00056	-11.79	1.86113	1.51070	0.11887	2.95
19	S	11	9.64439	9.65364	0.00039	-23.72	1.70068	1.85936	0.03182	-4.99
19	S	13	10.41969	10.42358	0.00212	-1.83	—	—	—	—
19	S	14	10.71043	10.70997	0.00206	0.22	—	—	—	—
19	S	15	10.99157	10.98485	0.00190	3.54	—	—	—	—
20	S	1	6.95477	6.94889	0.00064	9.19	1.45008	1.13463	0.07478	4.22
20	S	2	7.36014	7.35485	0.00228	2.32	1.73000	1.98187	0.20343	-1.24

Table S5: Continued.

Mode			**Eigenfrequencies (mHz)**				**Quality Factors**			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
20	S	4	8.11805	8.11266	0.00033	16.33	1.32667	1.25259	0.06353	1.17
20	S	5	8.46550	8.46660	0.00015	-7.34	1.74805	1.58196	0.06192	2.68
20	S	9	9.81000	9.79710	0.01000	1.29	—	—	—	—
20	S	19	12.32364	12.32495	0.00189	-0.69	—	—	—	—
21	S	6	8.84924	8.85143	0.00023	-9.52	1.64955	1.45392	0.04633	4.22
21	S	7	9.17072	9.17460	0.00047	-8.25	1.54651	1.33696	0.01955	10.72
21	S	8	9.49100	9.49972	0.00157	-5.55	1.52667	1.62094	0.11348	-0.83
22	S	1	7.82270	7.81499	0.00034	22.68	1.01311	1.22723	0.03267	-6.55
22	S	2	8.20263	8.20362	0.00275	-0.36	1.65500	1.35074	0.05618	5.42
23	S	4	8.93689	8.94039	0.00016	-21.87	1.31369	1.24678	0.05217	1.28
23	S	5	9.28992	9.29050	0.00012	-4.83	1.12650	1.15082	0.02641	-0.92
25	S	1	8.65794	8.65193	0.00071	8.46	1.33022	1.18821	0.03034	4.68
25	S	2	9.02546	9.02319	0.00051	4.45	1.25245	1.27105	0.03006	-0.62
27	S	1	9.49399	9.48922	0.00084	5.68	1.26333	1.59844	0.10236	-3.27
27	S	2	9.87185	9.86795	0.00043	9.07	1.14850	1.25146	0.06409	-1.61
27	S	4	10.58299	10.59500	0.00042	-28.60	2.38000	1.76822	0.06000	10.20
28	S	5	10.96021	10.96851	0.00511	-1.62	2.08500	1.48697	0.11500	5.20
28	S	6	11.30206	11.30451	0.00106	-2.31	1.20500	1.40974	0.08500	-2.41
30	S	3	11.05555	11.05419	0.00023	5.91	1.19000	1.42004	0.03000	-7.67
32	S	4	12.26010	12.28318	0.00041	-56.29	1.81000	1.36616	0.06000	7.40

Table S6: Fits to the reference dataset of toroidal overtones (${}_nT_l$). The predictions of eigenfrequencies (f_{pred}) and quality factors (q_{pred}) are calculated from REM1D while adopting the reference astronomic-geodetic constants (Paper I). Quality factors (Q) are listed as $q = 1000/Q$, eigenfrequencies are in units of mHz, and σ are the uncertainty bounds. The misfit measure $\chi = (obs\ -\ pred)/\sigma$ is provided for each mode and type of measurement. This table can be downloaded in the ASCII format from Zenodo (https://doi.org/10.5281/zenodo.8407693).

Mode			**Eigenfrequencies (mHz)**				**Quality Factors**			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
1	T	1	1.23537	1.23595	0.00028	-2.07	3.87000	3.33996	0.20696	2.56
1	T	2	1.31921	1.31984	0.00010	-6.30	3.34625	3.40327	0.13537	-0.42
1	T	3	1.43842	1.43873	0.00007	-4.43	3.69490	3.46879	0.09715	2.33
1	T	4	1.58535	1.58506	0.00018	1.61	3.57000	3.52986	0.17049	0.24
1	T	5	1.75015	1.75015	0.00008	0.00	3.55508	3.59325	0.08502	-0.45
1	T	6	1.92550	1.92550	0.00023	0.00	3.77003	3.66881	0.07712	1.31
1	T	7	2.10329	2.10407	0.00014	-5.57	3.55340	3.76031	0.06561	-3.15
1	T	8	2.28036	2.28097	0.00037	-1.65	3.79500	3.86291	0.21345	-0.32
1	T	9	2.45220	2.45368	0.00022	-6.73	3.97000	3.96669	0.20000	0.02
1	T	10	2.61990	2.62157	0.00051	-3.27	3.93000	4.06273	0.35000	-0.38
1	T	11	2.78300	2.78511	0.00100	-2.11	—	—	—	—
1	T	14	3.25500	3.25748	0.00150	-1.65	—	—	—	—
1	T	15	3.40700	3.41073	0.00150	-2.49	—	—	—	—
1	T	16	3.56050	3.56236	0.00100	-1.86	—	—	—	—
1	T	17	3.71000	3.71247	0.00100	-2.47	—	—	—	—
1	T	19	4.00600	4.00829	0.00200	-1.14	—	—	—	—
1	T	20	4.15200	4.15400	0.00250	-0.80	—	—	—	—
1	T	21	4.29500	4.29824	0.00100	-3.24	—	—	—	—
1	T	22	4.44000	4.44099	0.00200	-0.49	—	—	—	—
1	T	23	4.58000	4.58223	0.00200	-1.12	—	—	—	—
1	T	24	4.72100	4.72197	0.00200	-0.48	—	—	—	—
1	T	25	4.85950	4.86020	0.00200	-0.35	—	—	—	—
1	T	27	5.12900	5.13219	0.00200	-1.60	—	—	—	—
1	T	28	5.26450	5.26599	0.00200	-0.74	—	—	—	—
1	T	29	5.39950	5.39837	0.00250	0.45	—	—	—	—
1	T	30	5.52750	5.52937	0.00150	-1.25	—	—	—	—
1	T	31	5.65600	5.65904	0.00300	-1.01	—	—	—	—
1	T	32	5.78650	5.78743	0.00300	-0.31	—	—	—	—
1	T	33	5.91500	5.91460	0.00350	0.11	—	—	—	—
1	T	34	6.03950	6.04060	0.00350	-0.31	—	—	—	—
1	T	35	6.16600	6.16551	0.00350	0.14	—	—	—	—
1	T	36	6.28750	6.28937	0.00300	-0.62	—	—	—	—
1	T	37	6.41250	6.41226	0.00250	0.10	—	—	—	—
1	T	38	6.53380	6.53423	0.00400	-0.11	—	—	—	—
1	T	39	6.65500	6.65536	0.00400	-0.09	—	—	—	—
1	T	40	6.77350	6.77568	0.00400	-0.55	—	—	—	—
1	T	41	6.89300	6.89527	0.00500	-0.45	—	—	—	—
1	T	42	7.01350	7.01418	0.00350	-0.19	—	—	—	—
1	T	43	7.13100	7.13246	0.00500	-0.29	—	—	—	—
1	T	44	7.24850	7.25015	0.00300	-0.55	—	—	—	—
1	T	45	7.36250	7.36731	0.00450	-1.07	—	—	—	—
1	T	46	7.48350	7.48397	0.00400	-0.12	—	—	—	—
1	T	47	7.59700	7.60017	0.00500	-0.63	—	—	—	—
1	T	48	7.71550	7.71596	0.00550	-0.08	—	—	—	—
1	T	49	7.83000	7.83136	0.00600	-0.23	—	—	—	—
1	T	50	7.94850	7.94641	0.00350	0.60	—	—	—	—
1	T	51	8.05800	8.06113	0.00600	-0.52	—	—	—	—
1	T	52	8.17100	8.17556	0.00700	-0.65	—	—	—	—
1	T	53	8.29000	8.28971	0.00700	0.04	—	—	—	—
1	T	54	8.40200	8.40361	0.00600	-0.27	—	—	—	—
1	T	55	8.51440	8.51728	0.00700	-0.41	—	—	—	—
1	T	56	8.63100	8.63073	0.00800	0.03	—	—	—	—

Table S6: Continued.

Mode			Eigenfrequencies (mHz)				Quality Factors			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
1	T	57	8.74800	8.74399	0.01000	0.40	—	—	—	—
1	T	58	8.85700	8.85707	0.00900	-0.01	—	—	—	—
1	T	59	8.97000	8.96999	0.00800	0.00	—	—	—	—
1	T	60	9.08700	9.08275	0.00900	0.47	—	—	—	—
1	T	61	9.19600	9.19537	0.00800	0.08	—	—	—	—
1	T	62	9.30600	9.30785	0.00700	-0.26	—	—	—	—
1	T	63	9.42200	9.42022	0.00700	0.25	—	—	—	—
1	T	64	9.53300	9.53248	0.00800	0.06	—	—	—	—
1	T	65	9.64700	9.64462	0.00700	0.34	—	—	—	—
1	T	66	9.75370	9.75668	0.00900	-0.33	—	—	—	—
1	T	67	9.86920	9.86864	0.00700	0.08	—	—	—	—
2	T	1	2.18707	2.18954	0.00030	-8.23	4.27000	4.27812	0.40000	-0.02
2	T	2	2.23207	2.23239	0.00041	-0.78	4.04000	4.27264	0.32549	-0.71
2	T	3	2.29503	2.29628	0.00022	-5.68	4.00364	4.25918	0.23364	-1.09
2	T	4	2.37958	2.38082	0.00031	-4.00	4.11500	4.23290	0.25455	-0.46
2	T	5	2.48489	2.48557	0.00015	-4.53	4.03082	4.18963	0.08155	-1.95
2	T	6	2.60965	2.60996	0.00120	-0.26	4.16000	4.12811	0.50000	0.06
2	T	7	2.75200	2.75291	0.00050	-1.82	3.90929	4.05244	0.17651	-0.81
2	T	8	2.91275	2.91244	0.00013	2.38	3.66266	3.97295	0.08266	-3.75
2	T	10	3.26750	3.26759	0.00350	-0.03	—	—	—	—
2	T	11	3.45600	3.45479	0.00250	0.48	—	—	—	—
2	T	12	3.64050	3.64318	0.00250	-1.07	—	—	—	—
2	T	13	3.83050	3.83001	0.00350	0.14	—	—	—	—
2	T	14	4.01100	4.01373	0.00450	-0.61	—	—	—	—
2	T	15	4.19000	4.19376	0.00200	-1.88	—	—	—	—
2	T	16	4.36700	4.37016	0.00350	-0.90	—	—	—	—
2	T	17	4.54300	4.54330	0.00200	-0.15	—	—	—	—
2	T	18	4.71000	4.71362	0.00250	-1.45	—	—	—	—
2	T	19	4.87400	4.88151	0.00300	-2.50	—	—	—	—
2	T	20	5.04450	5.04729	0.00400	-0.70	—	—	—	—
2	T	21	5.20200	5.21118	0.00250	-3.67	—	—	—	—
2	T	22	5.36600	5.37337	0.00250	-2.95	—	—	—	—
2	T	23	5.52550	5.53399	0.00250	-3.40	—	—	—	—
2	T	24	5.68450	5.69315	0.00400	-2.16	—	—	—	—
2	T	25	5.84300	5.85095	0.00350	-2.27	—	—	—	—
2	T	26	6.00100	6.00749	0.00450	-1.44	—	—	—	—
2	T	27	6.15100	6.16284	0.00600	-1.97	—	—	—	—
2	T	28	6.30650	6.31708	0.00550	-1.92	—	—	—	—
2	T	29	6.45950	6.47028	0.00500	-2.16	—	—	—	—
2	T	30	6.60900	6.62250	0.00350	-3.86	—	—	—	—
2	T	31	6.76400	6.77379	0.00450	-2.18	—	—	—	—
2	T	32	6.91100	6.92421	0.00450	-2.94	—	—	—	—
2	T	33	7.06400	7.07377	0.00400	-2.44	—	—	—	—
2	T	34	7.21300	7.22250	0.00400	-2.38	—	—	—	—
2	T	35	7.36200	7.37042	0.00400	-2.10	—	—	—	—
2	T	36	7.50500	7.51752	0.00500	-2.50	—	—	—	—
2	T	37	7.65300	7.66382	0.00300	-3.61	—	—	—	—
2	T	38	7.79800	7.80928	0.00400	-2.82	—	—	—	—
2	T	39	7.94350	7.95390	0.00300	-3.47	—	—	—	—
2	T	40	8.08900	8.09765	0.00500	-1.73	—	—	—	—
2	T	41	8.23000	8.24052	0.00800	-1.31	—	—	—	—
2	T	42	8.37000	8.38247	0.00800	-1.56	—	—	—	—
2	T	43	8.50700	8.52347	0.00800	-2.06	—	—	—	—
2	T	44	8.65400	8.66350	0.00800	-1.19	—	—	—	—
2	T	45	8.78500	8.80254	0.00600	-2.92	—	—	—	—
2	T	46	8.93200	8.94057	0.00700	-1.22	—	—	—	—
2	T	47	9.07100	9.07756	0.00800	-0.82	—	—	—	—
2	T	48	9.20500	9.21350	0.00800	-1.06	—	—	—	—
2	T	49	9.33800	9.34838	0.00800	-1.30	—	—	—	—
2	T	50	9.47900	9.48219	0.01000	-0.32	—	—	—	—

Table S6: Continued.

Mode			Eigenfrequencies (mHz)				Quality Factors			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
2	T	51	9.61000	9.61495	0.01000	-0.50	—	—	—	—
2	T	52	9.74000	9.74665	0.01000	-0.66	—	—	—	—
2	T	53	9.87000	9.87730	0.01200	-0.61	—	—	—	—
3	T	9	3.84300	3.84857	0.00500	-1.11	—	—	—	—
3	T	10	3.99000	3.99101	0.00500	-0.20	—	—	—	—
3	T	12	4.31700	4.31215	0.00600	0.81	—	—	—	—
3	T	13	4.48200	4.48821	0.00700	-0.89	—	—	—	—
3	T	16	5.04000	5.04964	0.00450	-2.14	—	—	—	—
3	T	17	5.23400	5.23849	0.00800	-0.56	—	—	—	—
3	T	18	5.41400	5.42453	0.00700	-1.50	—	—	—	—
3	T	19	5.60700	5.60676	0.00450	0.05	—	—	—	—
3	T	20	5.78500	5.78499	0.00800	0.00	—	—	—	—
3	T	21	5.95500	5.95954	0.00600	-0.76	—	—	—	—
3	T	22	6.12500	6.13099	0.00600	-1.00	—	—	—	—
3	T	23	6.29900	6.29995	0.00600	-0.16	—	—	—	—
3	T	24	6.46100	6.46697	0.00700	-0.85	—	—	—	—
3	T	25	6.62250	6.63248	0.00350	-2.85	—	—	—	—
3	T	26	6.79200	6.79682	0.00500	-0.96	—	—	—	—
3	T	27	6.94950	6.96022	0.00500	-2.14	—	—	—	—
3	T	28	7.11000	7.12283	0.00500	-2.57	—	—	—	—
3	T	29	7.27100	7.28477	0.00450	-3.06	—	—	—	—
3	T	30	7.43900	7.44609	0.00450	-1.58	—	—	—	—
3	T	31	7.60000	7.60683	0.00500	-1.37	—	—	—	—
3	T	32	7.75750	7.76699	0.00450	-2.11	—	—	—	—
3	T	33	7.91450	7.92657	0.00450	-2.68	—	—	—	—
3	T	34	8.08000	8.08555	0.00500	-1.11	—	—	—	—
3	T	35	8.23400	8.24392	0.01000	-0.99	—	—	—	—
3	T	36	8.39500	8.40165	0.01000	-0.66	—	—	—	—
3	T	37	8.54800	8.55871	0.00500	-2.14	—	—	—	—
3	T	38	8.70200	8.71509	0.00800	-1.64	—	—	—	—
3	T	39	8.85800	8.87076	0.00800	-1.60	—	—	—	—
3	T	40	9.02000	9.02571	0.01000	-0.57	—	—	—	—
3	T	41	9.16600	9.17994	0.00800	-1.74	—	—	—	—
3	T	42	9.32300	9.33344	0.00800	-1.30	—	—	—	—
3	T	43	9.47200	9.48623	0.00700	-2.03	—	—	—	—
3	T	44	9.61500	9.63831	0.00700	-3.33	—	—	—	—
3	T	45	9.77600	9.78970	0.00900	-1.52	—	—	—	—
3	T	46	9.92600	9.94043	0.00700	-2.06	—	—	—	—
4	T	10	4.88500	4.88071	0.00500	0.86	—	—	—	—
4	T	11	4.99350	4.99453	0.00450	-0.23	—	—	—	—
4	T	12	5.11600	5.11765	0.00600	-0.27	—	—	—	—
4	T	13	5.24300	5.25009	0.00700	-1.01	—	—	—	—
4	T	14	5.38450	5.39191	0.00450	-1.65	—	—	—	—
4	T	15	5.53800	5.54314	0.00700	-0.73	—	—	—	—
4	T	16	5.70900	5.70362	0.00700	0.77	—	—	—	—
4	T	17	5.87000	5.87276	0.00900	-0.31	—	—	—	—
4	T	20	6.41040	6.41770	0.00500	-1.46	—	—	—	—
4	T	21	6.60000	6.60494	0.00600	-0.82	—	—	—	—
4	T	22	6.78700	6.79165	0.00500	-0.93	—	—	—	—
4	T	23	6.97800	6.97658	0.00700	0.20	—	—	—	—
4	T	24	7.15600	7.15911	0.00800	-0.39	—	—	—	—

Table S6: Continued.

Mode			Eigenfrequencies (mHz)				Quality Factors			
n	Type	l	f_{obs}	f_{pred}	σ_f	χ_f	q_{obs}	q_{pred}	σ_q	χ_q
4	T	25	7.33600	7.33913	0.00900	-0.35	—	—	—	—
4	T	26	7.51200	7.51682	0.00500	-0.96	—	—	—	—
4	T	27	7.69400	7.69248	0.00700	0.22	—	—	—	—
4	T	28	7.86300	7.86642	0.00800	-0.43	—	—	—	—
4	T	30	8.19600	8.20999	0.01000	-1.40	—	—	—	—
4	T	32	8.54800	8.54870	0.00700	-0.10	—	—	—	—
4	T	33	8.71100	8.71638	0.00800	-0.67	—	—	—	—
4	T	34	8.87300	8.88296	0.00600	-1.66	—	—	—	—
4	T	35	9.05000	9.04846	0.00700	0.22	—	—	—	—
4	T	36	9.20800	9.21289	0.00800	-0.61	—	—	—	—
4	T	37	9.39000	9.37627	0.00700	1.96	—	—	—	—
4	T	38	9.52300	9.53862	0.00700	-2.23	—	—	—	—
4	T	39	9.67900	9.69999	0.00900	-2.33	—	—	—	—
4	T	40	9.84420	9.86042	0.00800	-2.03	—	—	—	—
5	T	16	6.47000	6.46908	0.00500	0.18	—	—	—	—
5	T	17	6.59600	6.60694	0.00700	-1.56	—	—	—	—
5	T	18	6.75900	6.75336	0.00500	1.13	—	—	—	—
5	T	19	6.90100	6.90848	0.00500	-1.50	—	—	—	—
5	T	20	7.07400	7.07230	0.00500	0.34	—	—	—	—
5	T	31	9.09600	9.09992	0.00700	-0.56	—	—	—	—
5	T	33	9.44000	9.44673	0.00700	-0.96	—	—	—	—
5	T	36	9.94300	9.95333	0.00700	-1.48	—	—	—	—

Table S7: Physical and derivative properties from REM1D evaluated in 750 concentric layers/shells inside the Earth. v_S and v_P are Voigt-averaged isotropic shear- and compressional-wave velocities derived from 'equivalent' moduli of a radially anisotropic medium (shear modulus μ, bulk modulus κ). σ_P is the Poisson's ratio while **A**, **C**, **L**, **N** and **F** are elastic Love parameters. η_B represents the Bullen stratification parameter, g is gravity and κ' is the gradient of bulk modulus with pressure ($d\kappa/dp$). All elastic properties below are valid at the reference period of 1 s. This table can be downloaded in the ASCII format from Zenodo (https://doi.org/10.5281/zenodo.8407693). See Paper II for further discussions.

Layer	Radius km	Depth km	ρ g/cc	v_{PH} km/s	v_{PV} km/s	v_P km/s	v_{SH} km/s	v_{SV} km/s	v_S km/s	η	**A** kbar	**C** kbar	**N** kbar	**L** kbar	**F** kbar	Q_μ	Q_κ	μ kbar	κ kbar	σ_P	p GPa	κ'	η_B	g m/s^2
1	0.000	6371.000	13.09162	11.24981	11.24981	11.24981	3.65706	3.65706	3.65706	1.00000	16569	16569	1751	1751	13067	89.54	88888.89	1751	14234	0.4409	364.1343	2.3421	1.0000	0.000000
2	6.788	6364.212	13.09161	11.24980	11.24980	11.24980	3.65705	3.65705	3.65705	1.00000	16568	16568	1751	1751	13067	89.54	88888.89	1751	14234	0.4409	364.1332	2.3501	0.9866	0.024843
3	13.575	6357.425	13.09158	11.24978	11.24978	11.24978	3.65704	3.65704	3.65704	1.00000	16568	16568	1751	1751	13067	89.54	88888.89	1751	14234	0.4409	364.1299	2.3517	0.9821	0.049685
4	20.363	6350.637	13.09153	11.24974	11.24974	11.24974	3.65701	3.65701	3.65701	1.00000	16568	16568	1751	1751	13067	89.54	88888.89	1751	14234	0.4409	364.1243	2.3523	0.9925	0.074527
5	27.151	6343.849	13.09146	11.24969	11.24969	11.24969	3.65698	3.65698	3.65698	1.00000	16568	16568	1751	1751	13066	89.54	88888.89	1751	14234	0.4409	364.1166	2.3527	0.9639	0.099370
6	33.939	6337.061	13.09137	11.24963	11.24963	11.24963	3.65693	3.65693	3.65693	1.00000	16568	16568	1751	1751	13066	89.54	88888.89	1751	14233	0.4409	364.1067	2.3529	1.0478	0.124211
7	40.726	6330.274	13.09125	11.24955	11.24955	11.24955	3.65687	3.65687	3.65687	1.00000	16567	16567	1751	1751	13066	89.54	88888.89	1751	14233	0.4409	364.0945	2.3530	1.0362	0.149053
8	47.514	6323.486	13.09112	11.24945	11.24945	11.24945	3.65681	3.65681	3.65681	1.00000	16567	16567	1751	1751	13066	89.54	88888.89	1751	14233	0.4409	364.0802	2.3531	0.9761	0.173894
9	54.302	6316.698	13.09097	11.24934	11.24934	11.24934	3.65673	3.65673	3.65673	1.00000	16566	16566	1750	1750	13065	89.54	88888.89	1750	14232	0.4409	364.0636	2.3532	0.9777	0.198735
10	61.089	6309.911	13.09080	11.24922	11.24922	11.24922	3.65664	3.65664	3.65664	1.00000	16566	16566	1750	1750	13065	89.54	88888.89	1750	14232	0.4409	364.0449	2.3532	1.0184	0.223575
11	67.877	6303.123	13.09060	11.24908	11.24908	11.24908	3.65654	3.65654	3.65654	1.00000	16565	16565	1750	1750	13065	89.54	88888.89	1750	14231	0.4409	364.0239	2.3533	1.0188	0.248414
12	74.665	6296.335	13.09039	11.24892	11.24892	11.24892	3.65643	3.65643	3.65643	1.00000	16564	16564	1750	1750	13064	89.54	88888.89	1750	14231	0.4409	364.0007	2.3533	0.9691	0.273253
13	81.453	6289.547	13.09016	11.24876	11.24876	11.24876	3.65631	3.65631	3.65631	1.00000	16564	16564	1750	1750	13064	89.54	88888.89	1750	14230	0.4409	363.9753	2.3533	1.0150	0.298091
14	88.240	6282.760	13.08990	11.24857	11.24857	11.24857	3.65618	3.65618	3.65618	1.00000	16563	16563	1750	1750	13063	89.54	88888.89	1750	14230	0.4409	363.9478	2.3533	1.0017	0.322928
15	95.028	6275.972	13.08963	11.24838	11.24838	11.24838	3.65604	3.65604	3.65604	1.00000	16562	16562	1750	1750	13062	89.54	88888.89	1750	14229	0.4409	363.9180	2.3533	1.0031	0.347764
16	101.816	6269.184	13.08933	11.24816	11.24816	11.24816	3.65589	3.65589	3.65589	1.00000	16561	16561	1749	1749	13062	89.54	88888.89	1749	14228	0.4409	363.8860	2.3533	1.0014	0.372600
17	108.603	6262.397	13.08902	11.24794	11.24794	11.24794	3.65573	3.65573	3.65573	1.00000	16560	16560	1749	1749	13061	89.54	88888.89	1749	14227	0.4409	363.8517	2.3533	1.0005	0.397434
18	115.391	6255.609	13.08868	11.24769	11.24769	11.24769	3.65556	3.65556	3.65556	1.00000	16559	16559	1749	1749	13060	89.54	88888.89	1749	14227	0.4409	363.8153	2.3533	0.9996	0.422267
19	122.179	6248.821	13.08833	11.24744	11.24744	11.24744	3.65538	3.65538	3.65538	1.00000	16557	16557	1749	1749	13060	89.54	88888.89	1749	14226	0.4410	363.7767	2.3533	0.9984	0.447099
20	128.966	6242.034	13.08795	11.24717	11.24717	11.24717	3.65518	3.65518	3.65518	1.00000	16556	16556	1749	1749	13059	89.54	88888.89	1749	14225	0.4410	363.7359	2.3533	0.9997	0.471930
21	135.754	6235.246	13.08756	11.24688	11.24688	11.24688	3.65498	3.65498	3.65498	1.00000	16555	16555	1748	1748	13058	89.54	88888.89	1748	14224	0.4410	363.6929	2.3533	0.9917	0.496759
22	142.542	6228.458	13.08714	11.24658	11.24658	11.24658	3.65477	3.65477	3.65477	1.00000	16553	16553	1748	1748	13057	89.54	88888.89	1748	14223	0.4410	363.6476	2.3533	1.0168	0.521587
23	149.330	6221.670	13.08670	11.24627	11.24627	11.24627	3.65455	3.65455	3.65455	1.00000	16552	16552	1748	1748	13056	89.54	88888.89	1748	14221	0.4410	363.6002	2.3533	0.9922	0.546414
24	156.117	6214.883	13.08625	11.24594	11.24594	11.24594	3.65431	3.65431	3.65431	1.00000	16550	16550	1748	1748	13055	89.54	88888.89	1748	14220	0.4410	363.5506	2.3532	0.9936	0.571239
25	162.905	6208.095	13.08577	11.24559	11.24559	11.24559	3.65407	3.65407	3.65407	1.00000	16549	16549	1747	1747	13054	89.54	88888.89	1747	14219	0.4410	363.4987	2.3532	1.0081	0.596062
26	169.693	6201.307	13.08527	11.24524	11.24524	11.24524	3.65381	3.65381	3.65381	1.00000	16547	16547	1747	1747	13053	89.54	88888.89	1747	14218	0.4410	363.4447	2.3532	1.0074	0.620884
27	176.480	6194.520	13.08475	11.24486	11.24486	11.24486	3.65355	3.65355	3.65355	1.00000	16545	16545	1747	1747	13052	89.54	88888.89	1747	14216	0.4410	363.3884	2.3532	0.9924	0.645704
28	183.268	6187.732	13.08422	11.24447	11.24447	11.24447	3.65327	3.65327	3.65327	1.00000	16543	16543	1746	1746	13051	89.54	88888.89	1746	14215	0.4410	363.3300	2.3532	0.9917	0.670522
29	190.056	6180.944	13.08366	11.24407	11.24407	11.24407	3.65299	3.65299	3.65299	1.00000	16542	16542	1746	1746	13050	89.54	88888.89	1746	14214	0.4410	363.2693	2.3532	1.0057	0.695338
30	196.844	6174.156	13.08308	11.24365	11.24365	11.24365	3.65269	3.65269	3.65269	1.00000	16540	16540	1746	1746	13048	89.54	88888.89	1746	14212	0.4410	363.2065	2.3532	1.0014	0.720153
31	203.631	6167.369	13.08248	11.24322	11.24322	11.24322	3.65238	3.65238	3.65238	1.00000	16538	16538	1745	1745	13047	89.54	88888.89	1745	14211	0.4410	363.1414	2.3532	1.0019	0.744965
32	210.419	6160.581	13.08186	11.24278	11.24278	11.24278	3.65207	3.65207	3.65207	1.00000	16535	16535	1745	1745	13046	89.54	88888.89	1745	14209	0.4410	363.0742	2.3532	1.0010	0.769775
33	217.207	6153.793	13.08122	11.24231	11.24231	11.24231	3.65174	3.65174	3.65174	1.00000	16533	16533	1744	1744	13044	89.54	88888.89	1744	14207	0.4410	363.0047	2.3532	1.0007	0.794584
34	223.994	6147.006	13.08056	11.24184	11.24184	11.24184	3.65140	3.65140	3.65140	1.00000	16531	16531	1744	1744	13043	89.54	88888.89	1744	14206	0.4410	362.9331	2.3532	1.0002	0.819390
35	230.782	6140.218	13.07988	11.24135	11.24135	11.24135	3.65105	3.65105	3.65105	1.00000	16529	16529	1744	1744	13042	89.54	88888.89	1744	14204	0.4410	362.8592	2.3531	0.9997	0.844193
36	237.570	6133.430	13.07918	11.24084	11.24084	11.24084	3.65070	3.65070	3.65070	1.00000	16526	16526	1743	1743	13040	89.54	88888.89	1743	14202	0.4410	362.7832	2.3531	0.9991	0.868994
37	244.358	6126.642	13.07846	11.24032	11.24032	11.24032	3.65033	3.65033	3.65033	1.00000	16524	16524	1743	1743	13039	89.54	88888.89	1743	14200	0.4411	362.7049	2.3531	0.9996	0.893793
38	251.145	6119.855	13.07772	11.23979	11.23979	11.23979	3.64995	3.64995	3.64995	1.00000	16521	16521	1742	1742	13037	89.54	88888.89	1742	14198	0.4411	362.6245	2.3531	0.9964	0.918590
39	257.933	6113.067	13.07696	11.23924	11.23924	11.23924	3.64956	3.64956	3.64956	1.00000	16519	16519	1742	1742	13035	89.54	88888.89	1742	14197	0.4411	362.5418	2.3531	1.0064	0.943384
40	264.721	6106.279	13.07617	11.23868	11.23868	11.23868	3.64916	3.64916	3.64916	1.00000	16516	16516	1741	1741	13034	89.54	88888.89	1741	14195	0.4411	362.4570	2.3531	1.0061	0.968175
41	271.508	6099.492	13.07537	11.23810	11.23810	11.23810	3.64875	3.64875	3.64875	1.00000	16514	16514	1741	1741	13032	89.54	88888.89	1741	14192	0.4411	362.3700	2.3531	0.9955	0.992963
42	278.296	6092.704	13.07455	11.23750	11.23750	11.23750	3.64833	3.64833	3.64833	1.00000	16511	16511	1740	1740	13030	89.54	88888.89	1740	14190	0.4411	362.2807	2.3531	0.9984	1.017749
43	285.084	6085.916	13.07371	11.23690	11.23690	11.23690	3.64790	3.64790	3.64790	1.00000	16508	16508	1740	1740	13028	89.54	88888.89	1740	14188	0.4411	362.1893	2.3531	0.9949	1.042532
44	291.872	6079.128	13.07285	11.23627	11.23627	11.23627	3.64745	3.64745	3.64745	1.00000	16505	16505	1739	1739	13027	89.54	88888.89	1739	14186	0.4411	362.0957	2.3531	1.0040	1.067312
45	298.659	6072.341	13.07196	11.23564	11.23564	11.23564	3.64700	3.64700	3.64700	1.00000	16502	16502	1739	1739	13025	89.54	88888.89	1739	14184	0.4411	361.9999	2.3531	1.0043	1.092089
46	305.447	6065.553	13.07106	11.23499	11.23499	11.23499	3.64654	3.64654	3.64654	1.00000	16499	16499	1738	1738	13023	89.54	88888.89	1738	14181	0.4411	361.9019	2.3531	0.9924	1.116862
47	312.235	6058.765	13.07014	11.23432	11.23432	11.23432	3.64607	3.64607	3.64607	1.00000	16496	16496	1738	1738	13021	89.54	88888.89	1738	14179	0.4411	361.8017	2.3531	1.0040	1.141633
48	319.022	6051.978	13.06919	11.23364	11.23364	11.23364	3.64558	3.64558	3.64558	1.00000	16493	16493	1737	1737	13019	89.54	88888.89	1737	14177	0.4411	361.6994	2.3531	1.0008	1.166401
49	325.810	6045.190	13.06823	11.23294	11.23294	11.23294	3.64509	3.64509	3.64509	1.00000	16489	16489	1736	1736	13017	89.54	88888.89	1736	14174	0.4412	361.5948	2.3531	1.0003	1.191165
50	332.598	6038.402	13.06724	11.23223	11.23223	11.23223	3.64459	3.64459	3.64459	1.00000	16486	16486	1736	1736	13015	89.54	88888.89	1736	14172	0.4412	361.4880	2.3531	1.0029	1.215926
51	339.385	6031.615	13.06624	11.23151	11.23151	11.23151	3.64407	3.64407	3.64407	1.00000	16483	16483	1735	1735	13012	89.54	88888.89	1735	14169	0.4412	361.3791	2.3531	0.9919	1.240684
52	346.173	6024.827	13.06522	11.23077	11.23077	11.23077	3.64355	3.64355	3.64355	1.00000	16479	16479	1734	1734	13010	89.54	88888.89	1734	14167	0.4412	361.2680	2.3531	1.0020	1.265438
53	352.961	6018.039	13.06417	11.23002	11.23002	11.23002	3.64301	3.64301	3.64301	1.00000	16476	16476	1734	1734	13008	89.54	88888.89	1734	14164	0.4412	361.1547	2.3531	0.9997	1.290189
54	359.749	6011.251	13.06311	11.22925	11.22925	11.22925	3.64247	3.64247	3.64247	1.00000	16472	16472	1733	1733	13006	89.54	88888.89	1733	14161	0.4412	361.0391	2.3531	0.9976	1.314936
55	366.536	6004.464	13.06202	11.22846	11.22846	11.22846	3.64191	3.64191	3.64191	1.00000	16468	16468	1732	1732	13003	89.54	88888.89	1732	14158	0.4412	360.9215	2.3531	1.0072	1.339679
56	373.324	5997.676	13.06091	11.22767	11.22767	11.22767	3.64135	3.64135	3.64135	1.00000	16465	16465	1732	1732	13001	89.54	88888.89	1732	14156	0.4412	360.8016	2.3531	0.9969	1.364419
57	380.112	5990.888	13.05979	11.22685	11.22685	11.22685	3.64077	3.64077	3.64077	1.00000	16461	16461	1731	1731	12999	89.54	88888.89	1731	14153	0.4412	360.6795	2.3532	0.9993	1.389154
58	386.899	5984.101	13.05864	11.22603	11.22603	11.22603	3.64018	3.64018	3.64018	1.00000	16457	16457	1730	1730	12996	89.54	88888.89	1730	14150	0.4412	360.5553	2.3532	0.9989	1.413886
59	393.687	5977.313	13.05748	11.22518	11.22518	11.22518	3.63958	3.63958	3.63958	1.00000	16453	16453	1730	1730	12994	89.54	88888.89	1730	14147	0.4413	360.4289	2.3532	0.9969	1.438614
60	400.475	5970.525	13.05629	11.22433	11.22433	11.22433	3.63898	3.63898	3.63898	1.00000	16449	16449	1729	1729	12991	89.54	88888.89	1729	14144	0.4413	360.3003	2.3532	1.0035	1.463338

Table S7: Continued.

Layer	Radius km	Depth km	ρ g/cc	v_{PH} km/s	v_{PV} km/s	v_P km/s	v_{SH} km/s	v_{SV} km/s	v_S km/s	η	**A** kbar	**C** kbar	**N** kbar	**L** kbar	**F** kbar	Q_μ	Q_κ	μ kbar	κ kbar	σ_P	p GPa	κ'	η_B	g m/s^2
61	407.263	5963.737	13.05508	11.22346	11.22346	11.22346	3.63836	3.63836	3.63836	1.00000	16445	16445	1728	1728	12989	89.54	88888.89	1728	14141	0.4413	360.1695	2.3532	1.0032	1.488058
62	414.050	5956.950	13.05385	11.22257	11.22257	11.22257	3.63773	3.63773	3.63773	1.00000	16441	16441	1727	1727	12986	89.54	88888.89	1727	14138	0.4413	360.0366	2.3532	0.9969	1.512774
63	420.838	5950.162	13.05261	11.22167	11.22167	11.22167	3.63709	3.63709	3.63709	1.00000	16437	16437	1727	1727	12983	89.54	88888.89	1727	14134	0.4413	359.9014	2.3532	0.9966	1.537485
64	427.626	5943.374	13.05134	11.22076	11.22076	11.22076	3.63644	3.63644	3.63644	1.00000	16432	16432	1726	1726	12981	89.54	88888.89	1726	14131	0.4413	359.7641	2.3532	1.0025	1.562192
65	434.413	5936.587	13.05005	11.21983	11.21983	11.21983	3.63578	3.63578	3.63578	1.00000	16428	16428	1725	1725	12978	89.54	88888.89	1725	14128	0.4413	359.6247	2.3532	1.0022	1.586895
66	441.201	5929.799	13.04874	11.21888	11.21888	11.21888	3.63511	3.63511	3.63511	1.00000	16424	16424	1724	1724	12975	89.54	88888.89	1724	14125	0.4413	359.4830	2.3533	0.9962	1.611594
67	447.989	5923.011	13.04742	11.21792	11.21792	11.21792	3.63443	3.63443	3.63443	1.00000	16419	16419	1723	1723	12972	89.54	88888.89	1723	14121	0.4414	359.3392	2.3533	0.9960	1.636288
68	454.777	5916.223	13.04607	11.21695	11.21695	11.21695	3.63374	3.63374	3.63374	1.00000	16415	16415	1723	1723	12969	89.54	88888.89	1723	14118	0.4414	359.1932	2.3533	1.0019	1.660977
69	461.564	5909.436	13.04470	11.21596	11.21596	11.21596	3.63304	3.63304	3.63304	1.00000	16410	16410	1722	1722	12966	89.54	88888.89	1722	14114	0.4414	359.0450	2.3533	1.0001	1.685662
70	468.352	5902.648	13.04331	11.21496	11.21496	11.21496	3.63233	3.63233	3.63233	1.00000	16405	16405	1721	1721	12963	89.54	88888.89	1721	14111	0.4414	358.8947	2.3533	1.0002	1.710342
71	475.140	5895.860	13.04190	11.21394	11.21394	11.21394	3.63161	3.63161	3.63161	1.00000	16401	16401	1720	1720	12960	89.54	88888.89	1720	14107	0.4414	358.7422	2.3533	1.0001	1.735017
72	481.927	5889.073	13.04047	11.21291	11.21291	11.21291	3.63087	3.63087	3.63087	1.00000	16396	16396	1719	1719	12957	89.54	88888.89	1719	14103	0.4414	358.5875	2.3534	0.9999	1.759687
73	488.715	5882.285	13.03902	11.21186	11.21186	11.21186	3.63013	3.63013	3.63013	1.00000	16391	16391	1718	1718	12954	89.54	88888.89	1718	14100	0.4414	358.4306	2.3534	0.9996	1.784353
74	495.503	5875.497	13.03755	11.21080	11.21080	11.21080	3.62938	3.62938	3.62938	1.00000	16386	16386	1717	1717	12951	89.54	88888.89	1717	14096	0.4415	358.2716	2.3534	0.9995	1.809013
75	502.291	5868.709	13.03606	11.20972	11.20972	11.20972	3.62861	3.62861	3.62861	1.00000	16381	16381	1716	1716	12948	89.54	88888.89	1716	14092	0.4415	358.1105	2.3534	0.9994	1.833668
76	509.078	5861.922	13.03455	11.20863	11.20863	11.20863	3.62784	3.62784	3.62784	1.00000	16376	16376	1716	1716	12945	89.54	88888.89	1716	14088	0.4415	357.9471	2.3534	0.9993	1.858319
77	515.866	5855.134	13.03302	11.20753	11.20753	11.20753	3.62706	3.62706	3.62706	1.00000	16371	16371	1715	1715	12941	89.54	88888.89	1715	14085	0.4415	357.7816	2.3535	0.9990	1.882964
78	522.654	5848.346	13.03147	11.20641	11.20641	11.20641	3.62626	3.62626	3.62626	1.00000	16365	16365	1714	1714	12938	89.54	88888.89	1714	14081	0.4415	357.6140	2.3535	0.9989	1.907604
79	529.441	5841.559	13.02990	11.20527	11.20527	11.20527	3.62546	3.62546	3.62546	1.00000	16360	16360	1713	1713	12935	89.54	88888.89	1713	14077	0.4415	357.4442	2.3535	0.9992	1.932238
80	536.229	5834.771	13.02831	11.20412	11.20412	11.20412	3.62464	3.62464	3.62464	1.00000	16355	16355	1712	1712	12931	89.54	88888.89	1712	14073	0.4416	357.2722	2.3535	0.9975	1.956867
81	543.017	5827.983	13.02670	11.20296	11.20296	11.20296	3.62381	3.62381	3.62381	1.00000	16349	16349	1711	1711	12928	89.54	88888.89	1711	14068	0.4416	357.0981	2.3536	1.0025	1.981491
82	549.804	5821.196	13.02506	11.20178	11.20178	11.20178	3.62298	3.62298	3.62298	1.00000	16344	16344	1710	1710	12925	89.54	88888.89	1710	14064	0.4416	356.9218	2.3536	1.0024	2.006109
83	556.592	5814.408	13.02341	11.20059	11.20059	11.20059	3.62213	3.62213	3.62213	1.00000	16338	16338	1709	1709	12921	89.54	88888.89	1709	14060	0.4416	356.7434	2.3536	0.9972	2.030721
84	563.380	5807.620	13.02174	11.19938	11.19938	11.19938	3.62127	3.62127	3.62127	1.00000	16333	16333	1708	1708	12917	89.54	88888.89	1708	14056	0.4416	356.5628	2.3536	0.9987	2.055328
85	570.168	5800.832	13.02005	11.19816	11.19816	11.19816	3.62041	3.62041	3.62041	1.00000	16327	16327	1707	1707	12914	89.54	88888.89	1707	14052	0.4416	356.3800	2.3537	0.9971	2.079929
86	576.955	5794.045	13.01834	11.19692	11.19692	11.19692	3.61953	3.61953	3.61953	1.00000	16321	16321	1706	1706	12910	89.54	88888.89	1706	14047	0.4417	356.1951	2.3537	1.0018	2.104524
87	583.743	5787.257	13.01660	11.19567	11.19567	11.19567	3.61864	3.61864	3.61864	1.00000	16315	16315	1704	1704	12906	89.54	88888.89	1704	14043	0.4417	356.0081	2.3537	1.0014	2.129114
88	590.531	5780.469	13.01485	11.19440	11.19440	11.19440	3.61774	3.61774	3.61774	1.00000	16310	16310	1703	1703	12903	89.54	88888.89	1703	14038	0.4417	355.8189	2.3538	0.9972	2.153697
89	597.318	5773.682	13.01308	11.19312	11.19312	11.19312	3.61683	3.61683	3.61683	1.00000	16304	16304	1702	1702	12899	89.54	88888.89	1702	14034	0.4417	355.6276	2.3538	0.9970	2.178275
90	604.106	5766.894	13.01129	11.19182	11.19182	11.19182	3.61591	3.61591	3.61591	1.00000	16298	16298	1701	1701	12895	89.54	88888.89	1701	14029	0.4417	355.4341	2.3538	1.0012	2.202846
91	610.894	5760.106	13.00947	11.19051	11.19051	11.19051	3.61498	3.61498	3.61498	1.00000	16291	16291	1700	1700	12891	89.54	88888.89	1700	14025	0.4417	355.2385	2.3539	1.0000	2.227411
92	617.682	5753.318	13.00764	11.18919	11.18919	11.18919	3.61404	3.61404	3.61404	1.00000	16285	16285	1699	1699	12887	89.54	88888.89	1699	14020	0.4418	355.0407	2.3539	0.9999	2.251970
93	624.469	5746.531	13.00578	11.18785	11.18785	11.18785	3.61309	3.61309	3.61309	1.00000	16279	16279	1698	1698	12883	89.54	88888.89	1698	14015	0.4418	354.8408	2.3539	1.0013	2.276523
94	631.257	5739.743	13.00391	11.18649	11.18649	11.18649	3.61213	3.61213	3.61213	1.00000	16273	16273	1697	1697	12879	89.54	88888.89	1697	14011	0.4418	354.6388	2.3540	0.9952	2.301069
95	638.045	5732.955	13.00202	11.18513	11.18513	11.18513	3.61116	3.61116	3.61116	1.00000	16266	16266	1696	1696	12875	89.54	88888.89	1696	14006	0.4418	354.4346	2.3540	1.0011	2.325609
96	644.832	5726.168	13.00010	11.18374	11.18374	11.18374	3.61018	3.61018	3.61018	1.00000	16260	16260	1694	1694	12871	89.54	88888.89	1694	14001	0.4418	354.2283	2.3540	0.9994	2.350142
97	651.620	5719.380	12.99817	11.18234	11.18234	11.18234	3.60919	3.60919	3.60919	1.00000	16254	16254	1693	1693	12867	89.54	88888.89	1693	13996	0.4419	354.0198	2.3541	0.9996	2.374669
98	658.408	5712.592	12.99621	11.18093	11.18093	11.18093	3.60818	3.60818	3.60818	1.00000	16247	16247	1692	1692	12863	89.54	88888.89	1692	13991	0.4419	353.8093	2.3541	0.9994	2.399189
99	665.196	5705.804	12.99424	11.17950	11.17950	11.17950	3.60717	3.60717	3.60717	1.00000	16240	16240	1691	1691	12859	89.54	88888.89	1691	13986	0.4419	353.5966	2.3542	0.9995	2.423702
100	671.983	5699.017	12.99224	11.17806	11.17806	11.17806	3.60615	3.60615	3.60615	1.00000	16234	16234	1690	1690	12855	89.54	88888.89	1690	13981	0.4419	353.3817	2.3542	0.9994	2.448209
101	678.771	5692.229	12.99023	11.17660	11.17660	11.17660	3.60511	3.60511	3.60511	1.00000	16227	16227	1688	1688	12850	89.54	88888.89	1688	13976	0.4419	353.1648	2.3542	0.9991	2.472709
102	685.559	5685.441	12.98819	11.17513	11.17513	11.17513	3.60407	3.60407	3.60407	1.00000	16220	16220	1687	1687	12846	89.54	88888.89	1687	13971	0.4420	352.9457	2.3543	0.9992	2.497202
103	692.346	5678.654	12.98614	11.17365	11.17365	11.17365	3.60301	3.60301	3.60301	1.00000	16213	16213	1686	1686	12842	89.54	88888.89	1686	13965	0.4420	352.7244	2.3543	0.9991	2.521688
104	699.134	5671.866	12.98406	11.17215	11.17215	11.17215	3.60195	3.60195	3.60195	1.00000	16206	16206	1685	1685	12837	89.54	88888.89	1685	13960	0.4420	352.5011	2.3544	0.9992	2.546167
105	705.922	5665.078	12.98197	11.17063	11.17063	11.17063	3.60087	3.60087	3.60087	1.00000	16199	16199	1683	1683	12833	89.54	88888.89	1683	13955	0.4420	352.2756	2.3544	0.9979	2.570638
106	712.709	5658.291	12.97985	11.16910	11.16910	11.16910	3.59979	3.59979	3.59979	1.00000	16192	16192	1682	1682	12828	89.54	88888.89	1682	13950	0.4420	352.0481	2.3545	1.0029	2.595103
107	719.497	5651.503	12.97771	11.16756	11.16756	11.16756	3.59869	3.59869	3.59869	1.00000	16185	16185	1681	1681	12824	89.54	88888.89	1681	13944	0.4421	351.8184	2.3545	0.9979	2.619560
108	726.285	5644.715	12.97556	11.16600	11.16600	11.16600	3.59759	3.59759	3.59759	1.00000	16178	16178	1679	1679	12819	89.54	88888.89	1679	13939	0.4421	351.5866	2.3546	0.9979	2.644010
109	733.073	5637.927	12.97338	11.16442	11.16442	11.16442	3.59647	3.59647	3.59647	1.00000	16171	16171	1678	1678	12814	89.54	88888.89	1678	13933	0.4421	351.3526	2.3546	1.0025	2.668453
110	739.860	5631.140	12.97118	11.16283	11.16283	11.16283	3.59534	3.59534	3.59534	1.00000	16163	16163	1677	1677	12810	89.54	88888.89	1677	13928	0.4421	351.1166	2.3546	0.9979	2.692888
111	746.648	5624.352	12.96897	11.16123	11.16123	11.16123	3.59420	3.59420	3.59420	1.00000	16156	16156	1675	1675	12805	89.54	88888.89	1675	13922	0.4422	350.8784	2.3547	0.9977	2.717315
112	753.436	5617.564	12.96673	11.15961	11.15961	11.15961	3.59306	3.59306	3.59306	1.00000	16148	16148	1674	1674	12800	89.54	88888.89	1674	13916	0.4422	350.6382	2.3547	1.0022	2.741735
113	760.223	5610.777	12.96447	11.15798	11.15798	11.15798	3.59190	3.59190	3.59190	1.00000	16141	16141	1673	1673	12796	89.54	88888.89	1673	13911	0.4422	350.3958	2.3548	0.9977	2.766147
114	767.011	5603.989	12.96220	11.15633	11.15633	11.15633	3.59073	3.59073	3.59073	1.00000	16133	16133	1671	1671	12791	89.54	88888.89	1671	13905	0.4422	350.1514	2.3549	0.9978	2.790552
115	773.799	5597.201	12.95990	11.15467	11.15467	11.15467	3.58955	3.58955	3.58955	1.00000	16126	16126	1670	1670	12786	89.54	88888.89	1670	13899	0.4422	349.9048	2.3549	1.0009	2.814949
116	780.587	5590.413	12.95758	11.15300	11.15300	11.15300	3.58836	3.58836	3.58836	1.00000	16118	16118	1668	1668	12781	89.54	88888.89	1668	13893	0.4423	349.6561	2.3550	1.0010	2.839338
117	787.374	5583.626	12.95524	11.15130	11.15130	11.15130	3.58716	3.58716	3.58716	1.00000	16110	16110	1667	1667	12776	89.54	88888.89	1667	13887	0.4423	349.4053	2.3550	0.9977	2.863719
118	794.162	5576.838	12.95289	11.14960	11.14960	11.14960	3.58595	3.58595	3.58595	1.00000	16102	16102	1666	1666	12771	89.54	88888.89	1666	13881	0.4423	349.1525	2.3551	0.9975	2.888091
119	800.950	5570.050	12.95051	11.14788	11.14788	11.14788	3.58473	3.58473	3.58473	1.00000	16094	16094	1664	1664	12766	89.54	88888.89	1664	13875	0.4423	348.8975	2.3551	1.0010	2.912456
120	807.737	5563.263	12.94811	11.14614	11.14614	11.14614	3.58350	3.58350	3.58350	1.00000	16086	16086	1663	1663	12761	89.54	88888.89	1663	13869	0.4424	348.6404	2.3552	0.9998	2.936813
121	814.525	5556.475	12.94569	11.14439	11.14439	11.14439	3.58226	3.58226	3.58226	1.00000	16078	16078	1661	1661	12756	89.54	88888.89	1661	13863	0.4424	348.3813	2.3552	1.0008	2.961161
122	821.313	5549.687	12.94325	11.14263	11.14263	11.14263	3.58101	3.58101	3.58101	1.00000	16070	16070	1660	1660	12751	89.54	88888.89	1660	13857	0.4424	348.1200	2.3553	0.9974	2.985502
123	828.101	5542.899	12.94080	11.14085	11.14085	11.14085	3.57974	3.57974	3.57974	1.00000	16062	16062	1658	1658	12745	89.54	88888.89	1658	13851	0.4424	347.8567	2.3554	0.9975	3.009833
124	834.888	5536.112	12.93832	11.13906	11.13906	11.13906	3.57847	3.57847	3.57847	1.00000	16054	16054	1657	1657	12740	89.54	88888.89	1657	13845	0.4425	347.5913	2.3554	1.0007	3.034157
125	841.676	5529.324	12.93582	11.13725	11.13725	11.13725	3.57719	3.57719	3.57719	1.00000	16045	16045	1655	1655	12735	89.54	88888.89	1655	13838	0.4425	347.3238	2.3555	0.9996	3.058472
126	848.464	5522.536	12.93330	11.13543	11.13543	11.13543	3.57589	3.57589	3.57589	1.00000	16037	16037	1654	1654	12729	89.54	88888.89	1654	13832	0.4425	347.0542	2.3555	0.9999	3.082778
127	855.251	5515.749	12.93076	11.13359	11.13359	11.13359	3.57459	3.57459	3.57459	1.00000	16029	16029	1652	1652	12724	89.54	88888.89	1652	13826	0.4425	346.7825	2.3556	0.9998	3.107076
128	862.039	5508.961	12.92820	11.13174	11.13174	11.13174	3.57328	3.57328	3.57328	1.00000	16020	16020	1651	1651	12719	89.54	88888.89	1651	13819	0.4426	346.5087	2.3557	0.9997	3.131365
129	868.827	5502.173	12.92562	11.12987	11.12987	11.12987	3.57195	3.57195	3.57195	1.00000	16011	16011	1649	1649	12713	89.54	88888.89	1649	13813	0.4426	346.2329	2.3557	0.9996	3.155645
130	875.615	5495.385	12.92302	11.12799	11.12799	11.12799	3.57062	3.57062	3.57062	1.00000	16003	16003	1648	1648	12708	89.54	88888.89	1648	13806	0.4426	345.9550	2.3558	0.9997	3.179916

Table S7: Continued.

Layer	Radius km	Depth km	ρ g/cc	v_{PH} km/s	v_{PV} km/s	v_P km/s	v_{SH} km/s	v_{SV} km/s	v_S km/s	η	**A** kbar	**C** kbar	**N** kbar	**L** kbar	**F** kbar	Q_μ	Q_κ	μ kbar	κ kbar	σ_P	p GPa	κ'	η_B	g m/s^2
131	882.402	5488.598	12.92040	11.12609	11.12609	11.12609	3.56927	3.56927	3.56927	1.00000	15994	15994	1646	1646	12702	89.54	88888.89	1646	13799	0.4426	345.6751	2.3559	0.9997	3.204179
132	889.190	5481.810	12.91776	11.12418	11.12418	11.12418	3.56791	3.56791	3.56791	1.00000	15985	15985	1644	1644	12697	89.54	88888.89	1644	13793	0.4427	345.3930	2.3559	0.9995	3.228432
133	895.978	5475.022	12.91510	11.12226	11.12226	11.12226	3.56655	3.56655	3.56655	1.00000	15977	15977	1643	1643	12691	89.54	88888.89	1643	13786	0.4427	345.1089	2.3560	0.9996	3.252676
134	902.765	5468.235	12.91242	11.12032	11.12032	11.12032	3.56517	3.56517	3.56517	1.00000	15968	15968	1641	1641	12685	89.54	88888.89	1641	13779	0.4427	344.8227	2.3561	0.9995	3.276912
135	909.553	5461.447	12.90972	11.11836	11.11836	11.11836	3.56379	3.56379	3.56379	1.00000	15959	15959	1640	1640	12680	89.54	88888.89	1640	13773	0.4427	344.5345	2.3561	0.9994	3.301138
136	916.341	5454.659	12.90700	11.11639	11.11639	11.11639	3.56239	3.56239	3.56239	1.00000	15950	15950	1638	1638	12674	89.54	88888.89	1638	13766	0.4428	344.2442	2.3562	0.9995	3.325355
137	923.128	5447.872	12.90426	11.11441	11.11441	11.11441	3.56098	3.56098	3.56098	1.00000	15941	15941	1636	1636	12668	89.54	88888.89	1636	13759	0.4428	343.9518	2.3563	0.9994	3.349562
138	929.916	5441.084	12.90150	11.11241	11.11241	11.11241	3.55956	3.55956	3.55956	1.00000	15932	15932	1635	1635	12662	89.54	88888.89	1635	13752	0.4428	343.6574	2.3563	0.9993	3.373760
139	936.704	5434.296	12.89872	11.11040	11.11040	11.11040	3.55813	3.55813	3.55813	1.00000	15922	15922	1633	1633	12656	89.54	88888.89	1633	13745	0.4429	343.3609	2.3564	0.9993	3.397949
140	943.492	5427.508	12.89592	11.10837	11.10837	11.10837	3.55669	3.55669	3.55669	1.00000	15913	15913	1631	1631	12650	89.54	88888.89	1631	13738	0.4429	343.0624	2.3565	0.9994	3.422128
141	950.279	5420.721	12.89310	11.10633	11.10633	11.10633	3.55525	3.55525	3.55525	1.00000	15904	15904	1630	1630	12644	89.54	88888.89	1630	13731	0.4429	342.7618	2.3565	0.9993	3.446298
142	957.067	5413.933	12.89026	11.10427	11.10427	11.10427	3.55379	3.55379	3.55379	1.00000	15894	15894	1628	1628	12638	89.54	88888.89	1628	13724	0.4429	342.4592	2.3566	0.9993	3.470458
143	963.855	5407.145	12.88740	11.10220	11.10220	11.10220	3.55232	3.55232	3.55232	1.00000	15885	15885	1626	1626	12632	89.54	88888.89	1626	13717	0.4430	342.1545	2.3567	0.9987	3.494608
144	970.642	5400.358	12.88452	11.10011	11.10011	11.10011	3.55084	3.55084	3.55084	1.00000	15875	15875	1625	1625	12626	89.54	88888.89	1625	13709	0.4430	341.8478	2.3568	1.0015	3.518748
145	977.430	5393.570	12.88161	11.09801	11.09801	11.09801	3.54934	3.54934	3.54934	1.00000	15866	15866	1623	1623	12620	89.54	88888.89	1623	13702	0.4430	341.5391	2.3568	1.0013	3.542879
146	984.218	5386.782	12.87869	11.09589	11.09589	11.09589	3.54784	3.54784	3.54784	1.00000	15856	15856	1621	1621	12614	89.54	88888.89	1621	13695	0.4431	341.2283	2.3569	0.9985	3.567000
147	991.006	5379.994	12.87575	11.09376	11.09376	11.09376	3.54633	3.54633	3.54633	1.00000	15846	15846	1619	1619	12608	89.54	88888.89	1619	13687	0.4431	340.9154	2.3570	0.9994	3.591110
148	997.793	5373.207	12.87279	11.09162	11.09162	11.09162	3.54481	3.54481	3.54481	1.00000	15837	15837	1618	1618	12602	89.54	88888.89	1618	13680	0.4431	340.6006	2.3571	0.9991	3.615211
149	1004.581	5366.419	12.86981	11.08946	11.08946	11.08946	3.54328	3.54328	3.54328	1.00000	15827	15827	1616	1616	12595	89.54	88888.89	1616	13672	0.4432	340.2837	2.3572	0.9992	3.639301
150	1011.369	5359.631	12.86681	11.08729	11.08729	11.08729	3.54173	3.54173	3.54173	1.00000	15817	15817	1614	1614	12589	89.54	88888.89	1614	13665	0.4432	339.9647	2.3572	0.9986	3.663381
151	1018.156	5352.844	12.86379	11.08510	11.08510	11.08510	3.54018	3.54018	3.54018	1.00000	15807	15807	1612	1612	12583	89.54	88888.89	1612	13657	0.4432	339.6438	2.3573	1.0013	3.687451
152	1024.944	5346.056	12.86074	11.08289	11.08289	11.08289	3.53862	3.53862	3.53862	1.00000	15797	15797	1610	1610	12576	89.54	88888.89	1610	13650	0.4432	339.3208	2.3574	1.0011	3.711511
153	1031.732	5339.268	12.85768	11.08067	11.08067	11.08067	3.53704	3.53704	3.53704	1.00000	15787	15787	1609	1609	12570	89.54	88888.89	1609	13642	0.4433	338.9958	2.3575	0.9985	3.735560
154	1038.520	5332.480	12.85460	11.07844	11.07844	11.07844	3.53546	3.53546	3.53546	1.00000	15777	15777	1607	1607	12563	89.54	88888.89	1607	13634	0.4433	338.6688	2.3576	0.9994	3.759598
155	1045.307	5325.693	12.85150	11.07619	11.07619	11.07619	3.53386	3.53386	3.53386	1.00000	15766	15766	1605	1605	12557	89.54	88888.89	1605	13627	0.4433	338.3397	2.3576	0.9986	3.783626
156	1052.095	5318.905	12.84838	11.07393	11.07393	11.07393	3.53226	3.53226	3.53226	1.00000	15756	15756	1603	1603	12550	89.54	88888.89	1603	13619	0.4434	338.0086	2.3577	1.0010	3.807644
157	1058.883	5312.117	12.84523	11.07166	11.07166	11.07166	3.53064	3.53064	3.53064	1.00000	15746	15746	1601	1601	12543	89.54	88888.89	1601	13611	0.4434	337.6756	2.3578	1.0011	3.831651
158	1065.670	5305.330	12.84207	11.06936	11.06936	11.06936	3.52902	3.52902	3.52902	1.00000	15735	15735	1599	1599	12537	89.54	88888.89	1599	13603	0.4434	337.3405	2.3579	0.9987	3.855647
159	1072.458	5298.542	12.83889	11.06706	11.06706	11.06706	3.52738	3.52738	3.52738	1.00000	15725	15725	1597	1597	12530	89.54	88888.89	1597	13595	0.4435	337.0034	2.3580	0.9986	3.879632
160	1079.246	5291.754	12.83569	11.06474	11.06474	11.06474	3.52574	3.52574	3.52574	1.00000	15715	15715	1596	1596	12523	89.54	88888.89	1596	13587	0.4435	336.6643	2.3581	1.0009	3.903606
161	1086.034	5284.966	12.83246	11.06240	11.06240	11.06240	3.52408	3.52408	3.52408	1.00000	15704	15704	1594	1594	12517	89.54	88888.89	1594	13579	0.4435	336.3232	2.3582	1.0012	3.927569
162	1092.821	5278.179	12.82922	11.06005	11.06005	11.06005	3.52241	3.52241	3.52241	1.00000	15693	15693	1592	1592	12510	89.54	88888.89	1592	13571	0.4436	335.9801	2.3583	0.9981	3.951522
163	1099.609	5271.391	12.82596	11.05769	11.05769	11.05769	3.52073	3.52073	3.52073	1.00000	15683	15683	1590	1590	12503	89.54	88888.89	1590	13563	0.4436	335.6350	2.3584	1.0011	3.975463
164	1106.397	5264.603	12.82267	11.05531	11.05531	11.05531	3.51904	3.51904	3.51904	1.00000	15672	15672	1588	1588	12496	89.54	88888.89	1588	13555	0.4436	335.2879	2.3584	1.0010	3.999393
165	1113.184	5257.816	12.81937	11.05291	11.05291	11.05291	3.51735	3.51735	3.51735	1.00000	15661	15661	1586	1586	12489	89.54	88888.89	1586	13546	0.4437	334.9388	2.3585	0.9988	4.023311
166	1119.972	5251.028	12.81605	11.05051	11.05051	11.05051	3.51564	3.51564	3.51564	1.00000	15650	15650	1584	1584	12482	89.54	88888.89	1584	13538	0.4437	334.5877	2.3586	0.9987	4.047219
167	1126.760	5244.240	12.81271	11.04808	11.04808	11.04808	3.51392	3.51392	3.51392	1.00000	15639	15639	1582	1582	12475	89.54	88888.89	1582	13530	0.4437	334.2347	2.3587	1.0010	4.071115
168	1133.547	5237.453	12.80934	11.04565	11.04565	11.04565	3.51219	3.51219	3.51219	1.00000	15628	15628	1580	1580	12468	89.54	88888.89	1580	13521	0.4438	333.8796	2.3588	1.0012	4.095000
169	1140.335	5230.665	12.80596	11.04319	11.04319	11.04319	3.51045	3.51045	3.51045	1.00000	15617	15617	1578	1578	12461	89.54	88888.89	1578	13513	0.4438	333.5226	2.3589	0.9981	4.118873
170	1147.123	5223.877	12.80256	11.04073	11.04073	11.04073	3.50870	3.50870	3.50870	1.00000	15606	15606	1576	1576	12454	89.54	88888.89	1576	13505	0.4438	333.1635	2.3590	1.0010	4.142734
171	1153.911	5217.089	12.79913	11.03824	11.03824	11.03824	3.50694	3.50694	3.50694	1.00000	15595	15595	1574	1574	12447	89.54	88888.89	1574	13496	0.4439	332.8026	2.3591	1.0011	4.166584
172	1160.698	5210.302	12.79569	11.03575	11.03575	11.03575	3.50516	3.50516	3.50516	1.00000	15584	15584	1572	1572	12439	89.54	88888.89	1572	13487	0.4439	332.4396	2.3592	0.9983	4.190422
173	1167.486	5203.514	12.79223	11.03324	11.03324	11.03324	3.50338	3.50338	3.50338	1.00000	15572	15572	1570	1570	12432	89.54	88888.89	1570	13479	0.4439	332.0747	2.3593	1.0010	4.214249
174	1174.274	5196.726	12.78874	11.03071	11.03071	11.03071	3.50159	3.50159	3.50159	1.00000	15561	15561	1568	1568	12425	89.54	88888.89	1568	13470	0.4440	331.7077	2.3594	1.0012	4.238063
175	1181.061	5189.939	12.78524	11.02817	11.02817	11.02817	3.49979	3.49979	3.49979	1.00000	15549	15549	1566	1566	12417	89.54	88888.89	1566	13461	0.4440	331.3389	2.3595	0.9983	4.261866
176	1187.849	5183.151	12.78172	11.02562	11.02562	11.02562	3.49798	3.49798	3.49798	1.00000	15538	15538	1564	1564	12410	89.54	88888.89	1564	13453	0.4440	330.9680	2.3596	1.0012	4.285656
177	1194.637	5176.363	12.77817	11.02305	11.02305	11.02305	3.49615	3.49615	3.49615	1.00000	15526	15526	1562	1562	12403	89.54	88888.89	1562	13444	0.4441	330.5952	2.3597	1.0005	4.309435
178	1201.425	5169.575	12.77461	11.02046	11.02046	11.02046	3.49432	3.49432	3.49432	1.00000	15515	15515	1560	1560	12395	89.54	88888.89	1560	13435	0.4441	330.2205	2.3598	1.0006	4.333201
179	1208.212	5162.788	12.77102	11.01786	11.01786	11.01786	3.49247	3.49247	3.49247	1.00000	15503	15503	1558	1558	12388	89.54	88888.89	1558	13426	0.4441	329.8438	2.3599	1.0015	4.356956
180	1215.000	5156.000	12.76742	11.01525	11.01525	11.01525	3.49062	3.49062	3.49062	1.00000	15491	15491	1556	1556	12380	89.54	88888.89	1556	13417	0.4442	329.4651	2.3599	0.9978	4.380698
181	1215.000	5156.000	12.16715	10.35230	10.35230	10.35230	0.00000	0.00000	0.00000	1.00000	13040	13040	0	0	13040	0.00	88888.89	0	13040	0.5000	329.4651	3.2510	0.9937	4.380698
182	1227.797	5143.203	12.16079	10.34616	10.34616	10.34616	0.00000	0.00000	0.00000	1.00000	13017	13017	0	0	13017	0.00	88888.89	0	13017	0.5000	328.7802	3.2515	0.9957	4.419052
183	1240.593	5130.407	12.15436	10.33997	10.33997	10.33997	0.00000	0.00000	0.00000	1.00000	12995	12995	0	0	12995	0.00	88888.89	0	12995	0.5000	328.0898	3.2521	0.9962	4.457496
184	1253.390	5117.610	12.14787	10.33372	10.33372	10.33372	0.00000	0.00000	0.00000	1.00000	12972	12972	0	0	12972	0.00	88888.89	0	12972	0.5000	327.3936	3.2526	0.9969	4.496026
185	1266.186	5104.814	12.14131	10.32741	10.32741	10.32741	0.00000	0.00000	0.00000	1.00000	12949	12949	0	0	12949	0.00	88888.89	0	12949	0.5000	326.6919	3.2532	0.9979	4.534635
186	1278.983	5092.017	12.13469	10.32105	10.32105	10.32105	0.00000	0.00000	0.00000	1.00000	12926	12926	0	0	12926	0.00	88888.89	0	12926	0.5000	325.9846	3.2538	0.9972	4.573319
187	1291.780	5079.220	12.12801	10.31462	10.31462	10.31462	0.00000	0.00000	0.00000	1.00000	12903	12903	0	0	12903	0.00	88888.89	0	12903	0.5000	325.2716	3.2544	0.9979	4.612072
188	1304.576	5066.424	12.12126	10.30814	10.30814	10.30814	0.00000	0.00000	0.00000	1.00000	12880	12880	0	0	12880	0.00	88888.89	0	12880	0.5000	324.5530	3.2551	0.9996	4.650890
189	1317.373	5053.627	12.11444	10.30160	10.30160	10.30160	0.00000	0.00000	0.00000	1.00000	12856	12856	0	0	12856	0.00	88888.89	0	12856	0.5000	323.8288	3.2558	1.0001	4.689768
190	1330.169	5040.831	12.10756	10.29500	10.29500	10.29500	0.00000	0.00000	0.00000	1.00000	12832	12832	0	0	12832	0.00	88888.89	0	12832	0.5000	323.0990	3.2565	0.9995	4.728702
191	1342.966	5028.034	12.10062	10.28834	10.28834	10.28834	0.00000	0.00000	0.00000	1.00000	12808	12808	0	0	12808	0.00	88888.89	0	12808	0.5000	322.3635	3.2573	0.9998	4.767687
192	1355.763	5015.237	12.09361	10.28162	10.28162	10.28162	0.00000	0.00000	0.00000	1.00000	12784	12784	0	0	12784	0.00	88888.89	0	12784	0.5000	321.6224	3.2581	1.0014	4.806720
193	1368.559	5002.441	12.08653	10.27484	10.27484	10.27484	0.00000	0.00000	0.00000	1.00000	12760	12760	0	0	12760	0.00	88888.89	0	12760	0.5000	320.8758	3.2589	1.0017	4.845796
194	1381.356	4989.644	12.07939	10.26799	10.26799	10.26799	0.00000	0.00000	0.00000	1.00000	12736	12736	0	0	12736	0.00	88888.89	0	12736	0.5000	320.1235	3.2598	1.0009	4.884912
195	1394.153	4976.847	12.07219	10.26109	10.26109	10.26109	0.00000	0.00000	0.00000	1.00000	12711	12711	0	0	12711	0.00	88888.89	0	12711	0.5000	319.3656	3.2607	1.0013	4.924064
196	1406.949	4964.051	12.06492	10.25412	10.25412	10.25412	0.00000	0.00000	0.00000	1.00000	12686	12686	0	0	12686	0.00	88888.89	0	12686	0.5000	318.6021	3.2616	1.0026	4.963250
197	1419.746	4951.254	12.05758	10.24710	10.24710	10.24710	0.00000	0.00000	0.00000	1.00000	12661	12661	0	0	12661	0.00	88888.89	0	12661	0.5000	317.8330	3.2626	1.0028	5.002465
198	1432.542	4938.458	12.05018	10.24001	10.24001	10.24001	0.00000	0.00000	0.00000	1.00000	12636	12636	0	0	12636	0.00	88888.89	0	12636	0.5000	317.0584	3.2636	1.0020	5.041707
199	1445.339	4925.661	12.04272	10.23285	10.23285	10.23285	0.00000	0.00000	0.00000	1.00000	12610	12610	0	0	12610	0.00	88888.89	0	12610	0.5000	316.2782	3.2647	1.0021	5.080973
200	1458.136	4912.864	12.03519	10.22564	10.22564	10.22564	0.00000	0.00000	0.00000	1.00000	12584	12584	0	0	12584	0.00	88888.89	0	12584	0.5000	315.4924	3.2658	1.0034	5.120259

Table S7: Continued.

Layer	Radius km	Depth km	ρ g/cc	v_{PH} km/s	v_{PV} km/s	v_P km/s	v_{SH} km/s	v_{SV} km/s	v_S km/s	η	**A** kbar	**C** kbar	**N** kbar	**L** kbar	**F** kbar	Q_μ	Q_κ	μ kbar	κ kbar	σ_P	p GPa	κ'	η_B	g m/s^2
201	1470.932	4900.068	12.02759	10.21836	10.21836	10.21836	0.00000	0.00000	0.00000	1.00000	12559	12559	0	0	12559	0.00	88888.89	0	12559	0.5000	314.7010	3.2669	1.0032	5.159562
202	1483.729	4887.271	12.01993	10.21101	10.21101	10.21101	0.00000	0.00000	0.00000	1.00000	12533	12533	0	0	12533	0.00	88888.89	0	12533	0.5000	313.9041	3.2681	1.0033	5.198881
203	1496.525	4874.475	12.01220	10.20360	10.20360	10.20360	0.00000	0.00000	0.00000	1.00000	12506	12506	0	0	12506	0.00	88888.89	0	12506	0.5000	313.1017	3.2693	1.0034	5.238213
204	1509.322	4861.678	12.00441	10.19613	10.19613	10.19613	0.00000	0.00000	0.00000	1.00000	12480	12480	0	0	12480	0.00	88888.89	0	12480	0.5000	312.2938	3.2706	1.0034	5.277554
205	1522.119	4848.881	11.99655	10.18859	10.18859	10.18859	0.00000	0.00000	0.00000	1.00000	12453	12453	0	0	12453	0.00	88888.89	0	12453	0.5000	311.4803	3.2719	1.0035	5.316903
206	1534.915	4836.085	11.98863	10.18099	10.18099	10.18099	0.00000	0.00000	0.00000	1.00000	12427	12427	0	0	12427	0.00	88888.89	0	12427	0.5000	310.6613	3.2732	1.0034	5.356258
207	1547.712	4823.288	11.98064	10.17332	10.17332	10.17332	0.00000	0.00000	0.00000	1.00000	12400	12400	0	0	12400	0.00	88888.89	0	12400	0.5000	309.8368	3.2746	1.0035	5.395615
208	1560.508	4810.492	11.97259	10.16558	10.16558	10.16558	0.00000	0.00000	0.00000	1.00000	12372	12372	0	0	12372	0.00	88888.89	0	12372	0.5000	309.0069	3.2761	1.0032	5.434973
209	1573.305	4797.695	11.96447	10.15777	10.15777	10.15777	0.00000	0.00000	0.00000	1.00000	12345	12345	0	0	12345	0.00	88888.89	0	12345	0.5000	308.1715	3.2775	1.0041	5.474330
210	1586.102	4784.898	11.95628	10.14990	10.14990	10.14990	0.00000	0.00000	0.00000	1.00000	12317	12317	0	0	12317	0.00	88888.89	0	12317	0.5000	307.3306	3.2790	1.0038	5.513683
211	1598.898	4772.102	11.94803	10.14196	10.14196	10.14196	0.00000	0.00000	0.00000	1.00000	12290	12290	0	0	12290	0.00	88888.89	0	12290	0.5000	306.4843	3.2806	1.0037	5.553031
212	1611.695	4759.305	11.93971	10.13395	10.13395	10.13395	0.00000	0.00000	0.00000	1.00000	12262	12262	0	0	12262	0.00	88888.89	0	12262	0.5000	305.6326	3.2822	1.0036	5.592372
213	1624.492	4746.508	11.93133	10.12588	10.12588	10.12588	0.00000	0.00000	0.00000	1.00000	12234	12234	0	0	12234	0.00	88888.89	0	12234	0.5000	304.7754	3.2838	1.0033	5.631704
214	1637.288	4733.712	11.92288	10.11773	10.11773	10.11773	0.00000	0.00000	0.00000	1.00000	12205	12205	0	0	12205	0.00	88888.89	0	12205	0.5000	303.9129	3.2855	1.0041	5.671024
215	1650.085	4720.915	11.91436	10.10952	10.10952	10.10952	0.00000	0.00000	0.00000	1.00000	12177	12177	0	0	12177	0.00	88888.89	0	12177	0.5000	303.0449	3.2872	1.0037	5.710332
216	1662.881	4708.119	11.90578	10.10123	10.10123	10.10123	0.00000	0.00000	0.00000	1.00000	12148	12148	0	0	12148	0.00	88888.89	0	12148	0.5000	302.1716	3.2889	1.0033	5.749625
217	1675.678	4695.322	11.89713	10.09288	10.09288	10.09288	0.00000	0.00000	0.00000	1.00000	12119	12119	0	0	12119	0.00	88888.89	0	12119	0.5000	301.2930	3.2907	1.0040	5.788903
218	1688.475	4682.525	11.88841	10.08445	10.08445	10.08445	0.00000	0.00000	0.00000	1.00000	12090	12090	0	0	12090	0.00	88888.89	0	12090	0.5000	300.4090	3.2926	1.0034	5.828162
219	1701.271	4669.729	11.87963	10.07596	10.07596	10.07596	0.00000	0.00000	0.00000	1.00000	12061	12061	0	0	12061	0.00	88888.89	0	12061	0.5000	299.5197	3.2944	1.0041	5.867402
220	1714.068	4656.932	11.87077	10.06739	10.06739	10.06739	0.00000	0.00000	0.00000	1.00000	12031	12031	0	0	12031	0.00	88888.89	0	12031	0.5000	298.6251	3.2963	1.0036	5.906621
221	1726.864	4644.136	11.86186	10.05875	10.05875	10.05875	0.00000	0.00000	0.00000	1.00000	12002	12002	0	0	12002	0.00	88888.89	0	12002	0.5000	297.7252	3.2983	1.0032	5.945818
222	1739.661	4631.339	11.85287	10.05004	10.05004	10.05004	0.00000	0.00000	0.00000	1.00000	11972	11972	0	0	11972	0.00	88888.89	0	11972	0.5000	296.8200	3.3002	1.0038	5.984991
223	1752.458	4618.542	11.84382	10.04125	10.04125	10.04125	0.00000	0.00000	0.00000	1.00000	11942	11942	0	0	11942	0.00	88888.89	0	11942	0.5000	295.9096	3.3022	1.0030	6.024139
224	1765.254	4605.746	11.83470	10.03240	10.03240	10.03240	0.00000	0.00000	0.00000	1.00000	11912	11912	0	0	11912	0.00	88888.89	0	11912	0.5000	294.9940	3.3043	1.0037	6.063260
225	1778.051	4592.949	11.82551	10.02347	10.02347	10.02347	0.00000	0.00000	0.00000	1.00000	11881	11881	0	0	11881	0.00	88888.89	0	11881	0.5000	294.0732	3.3063	1.0029	6.102354
226	1790.847	4580.153	11.81626	10.01446	10.01446	10.01446	0.00000	0.00000	0.00000	1.00000	11850	11850	0	0	11850	0.00	88888.89	0	11850	0.5000	293.1471	3.3084	1.0033	6.141418
227	1803.644	4567.356	11.80693	10.00539	10.00539	10.00539	0.00000	0.00000	0.00000	1.00000	11820	11820	0	0	11820	0.00	88888.89	0	11820	0.5000	292.2159	3.3106	1.0035	6.180451
228	1816.441	4554.559	11.79754	9.99623	9.99623	9.99623	0.00000	0.00000	0.00000	1.00000	11789	11789	0	0	11789	0.00	88888.89	0	11789	0.5000	291.2795	3.3127	1.0030	6.219452
229	1829.237	4541.763	11.78808	9.98700	9.98700	9.98700	0.00000	0.00000	0.00000	1.00000	11757	11757	0	0	11757	0.00	88888.89	0	11757	0.5000	290.3380	3.3149	1.0026	6.258421
230	1842.034	4528.966	11.77856	9.97770	9.97770	9.97770	0.00000	0.00000	0.00000	1.00000	11726	11726	0	0	11726	0.00	88888.89	0	11726	0.5000	289.3914	3.3172	1.0025	6.297355
231	1854.831	4516.169	11.76896	9.96832	9.96832	9.96832	0.00000	0.00000	0.00000	1.00000	11695	11695	0	0	11695	0.00	88888.89	0	11695	0.5000	288.4397	3.3194	1.0036	6.336254
232	1867.627	4503.373	11.75929	9.95887	9.95887	9.95887	0.00000	0.00000	0.00000	1.00000	11663	11663	0	0	11663	0.00	88888.89	0	11663	0.5000	287.4829	3.3217	1.0028	6.375115
233	1880.424	4490.576	11.74956	9.94934	9.94934	9.94934	0.00000	0.00000	0.00000	1.00000	11631	11631	0	0	11631	0.00	88888.89	0	11631	0.5000	286.5210	3.3240	1.0021	6.413940
234	1893.220	4477.780	11.73976	9.93973	9.93973	9.93973	0.00000	0.00000	0.00000	1.00000	11599	11599	0	0	11599	0.00	88888.89	0	11599	0.5000	285.5542	3.3264	1.0031	6.452725
235	1906.017	4464.983	11.72988	9.93004	9.93004	9.93004	0.00000	0.00000	0.00000	1.00000	11566	11566	0	0	11566	0.00	88888.89	0	11566	0.5000	284.5823	3.3287	1.0029	6.491470
236	1918.814	4452.186	11.71994	9.92028	9.92028	9.92028	0.00000	0.00000	0.00000	1.00000	11534	11534	0	0	11534	0.00	88888.89	0	11534	0.5000	283.6054	3.3311	1.0022	6.530174
237	1931.610	4439.390	11.70993	9.91044	9.91044	9.91044	0.00000	0.00000	0.00000	1.00000	11501	11501	0	0	11501	0.00	88888.89	0	11501	0.5000	282.6236	3.3335	1.0023	6.568836
238	1944.407	4426.593	11.69985	9.90052	9.90052	9.90052	0.00000	0.00000	0.00000	1.00000	11468	11468	0	0	11468	0.00	88888.89	0	11468	0.5000	281.6368	3.3360	1.0023	6.607455
239	1957.203	4413.797	11.68970	9.89052	9.89052	9.89052	0.00000	0.00000	0.00000	1.00000	11435	11435	0	0	11435	0.00	88888.89	0	11435	0.5000	280.6450	3.3385	1.0020	6.646029
240	1970.000	4401.000	11.67948	9.88044	9.88044	9.88044	0.00000	0.00000	0.00000	1.00000	11402	11402	0	0	11402	0.00	88888.89	0	11402	0.5000	279.6484	3.3410	1.0026	6.684558
241	1982.797	4388.203	11.66918	9.87028	9.87028	9.87028	0.00000	0.00000	0.00000	1.00000	11368	11368	0	0	11368	0.00	88888.89	0	11368	0.5000	278.6469	3.3435	1.0026	6.723041
242	1995.593	4375.407	11.65882	9.86004	9.86004	9.86004	0.00000	0.00000	0.00000	1.00000	11335	11335	0	0	11335	0.00	88888.89	0	11335	0.5000	277.6406	3.3460	1.0017	6.761477
243	2008.390	4362.610	11.64839	9.84972	9.84972	9.84972	0.00000	0.00000	0.00000	1.00000	11301	11301	0	0	11301	0.00	88888.89	0	11301	0.5000	276.6294	3.3486	1.0016	6.799865
244	2021.186	4349.814	11.63789	9.83932	9.83932	9.83932	0.00000	0.00000	0.00000	1.00000	11267	11267	0	0	11267	0.00	88888.89	0	11267	0.5000	275.6134	3.3512	1.0020	6.838203
245	2033.983	4337.017	11.62731	9.82884	9.82884	9.82884	0.00000	0.00000	0.00000	1.00000	11233	11233	0	0	11233	0.00	88888.89	0	11233	0.5000	274.5927	3.3538	1.0023	6.876492
246	2046.780	4324.220	11.61666	9.81828	9.81828	9.81828	0.00000	0.00000	0.00000	1.00000	11198	11198	0	0	11198	0.00	88888.89	0	11198	0.5000	273.5671	3.3564	1.0021	6.914730
247	2059.576	4311.424	11.60594	9.80763	9.80763	9.80763	0.00000	0.00000	0.00000	1.00000	11164	11164	0	0	11164	0.00	88888.89	0	11164	0.5000	272.5369	3.3590	1.0018	6.952915
248	2072.373	4298.627	11.59515	9.79691	9.79691	9.79691	0.00000	0.00000	0.00000	1.00000	11129	11129	0	0	11129	0.00	88888.89	0	11129	0.5000	271.5019	3.3617	1.0016	6.991048
249	2085.169	4285.831	11.58429	9.78609	9.78609	9.78609	0.00000	0.00000	0.00000	1.00000	11094	11094	0	0	11094	0.00	88888.89	0	11094	0.5000	270.4622	3.3644	1.0012	7.029127
250	2097.966	4273.034	11.57336	9.77520	9.77520	9.77520	0.00000	0.00000	0.00000	1.00000	11059	11059	0	0	11059	0.00	88888.89	0	11059	0.5000	269.4179	3.3671	1.0015	7.067152
251	2110.763	4260.237	11.56235	9.76422	9.76422	9.76422	0.00000	0.00000	0.00000	1.00000	11024	11024	0	0	11024	0.00	88888.89	0	11024	0.5000	268.3689	3.3698	1.0019	7.105121
252	2123.559	4247.441	11.55127	9.75316	9.75316	9.75316	0.00000	0.00000	0.00000	1.00000	10988	10988	0	0	10988	0.00	88888.89	0	10988	0.5000	267.3154	3.3725	1.0012	7.143034
253	2136.356	4234.644	11.54012	9.74201	9.74201	9.74201	0.00000	0.00000	0.00000	1.00000	10952	10952	0	0	10952	0.00	88888.89	0	10952	0.5000	266.2572	3.3752	1.0014	7.180890
254	2149.153	4221.847	11.52889	9.73078	9.73078	9.73078	0.00000	0.00000	0.00000	1.00000	10916	10916	0	0	10916	0.00	88888.89	0	10916	0.5000	265.1945	3.3780	1.0018	7.218688
255	2161.949	4209.051	11.51759	9.71947	9.71947	9.71947	0.00000	0.00000	0.00000	1.00000	10880	10880	0	0	10880	0.00	88888.89	0	10880	0.5000	264.1273	3.3808	1.0011	7.256427
256	2174.746	4196.254	11.50622	9.70806	9.70806	9.70806	0.00000	0.00000	0.00000	1.00000	10844	10844	0	0	10844	0.00	88888.89	0	10844	0.5000	263.0555	3.3836	1.0013	7.294106
257	2187.542	4183.458	11.49477	9.69657	9.69657	9.69657	0.00000	0.00000	0.00000	1.00000	10808	10808	0	0	10808	0.00	88888.89	0	10808	0.5000	261.9793	3.3864	1.0013	7.331725
258	2200.339	4170.661	11.48325	9.68500	9.68500	9.68500	0.00000	0.00000	0.00000	1.00000	10771	10771	0	0	10771	0.00	88888.89	0	10771	0.5000	260.8986	3.3892	1.0013	7.369283
259	2213.136	4157.864	11.47165	9.67334	9.67334	9.67334	0.00000	0.00000	0.00000	1.00000	10734	10734	0	0	10734	0.00	88888.89	0	10734	0.5000	259.8135	3.3920	1.0013	7.406779
260	2225.932	4145.068	11.45998	9.66159	9.66159	9.66159	0.00000	0.00000	0.00000	1.00000	10697	10697	0	0	10697	0.00	88888.89	0	10697	0.5000	258.7240	3.3948	1.0013	7.444212
261	2238.729	4132.271	11.44823	9.64975	9.64975	9.64975	0.00000	0.00000	0.00000	1.00000	10660	10660	0	0	10660	0.00	88888.89	0	10660	0.5000	257.6302	3.3976	1.0012	7.481581
262	2251.525	4119.475	11.43641	9.63783	9.63783	9.63783	0.00000	0.00000	0.00000	1.00000	10623	10623	0	0	10623	0.00	88888.89	0	10623	0.5000	256.5320	3.4005	1.0012	7.518886
263	2264.322	4106.678	11.42451	9.62581	9.62581	9.62581	0.00000	0.00000	0.00000	1.00000	10586	10586	0	0	10586	0.00	88888.89	0	10586	0.5000	255.4294	3.4033	1.0010	7.556125
264	2277.119	4093.881	11.41254	9.61371	9.61371	9.61371	0.00000	0.00000	0.00000	1.00000	10548	10548	0	0	10548	0.00	88888.89	0	10548	0.5000	254.3226	3.4062	1.0010	7.593299
265	2289.915	4081.085	11.40049	9.60152	9.60152	9.60152	0.00000	0.00000	0.00000	1.00000	10510	10510	0	0	10510	0.00	88888.89	0	10510	0.5000	253.2116	3.4091	1.0007	7.630406
266	2302.712	4068.288	11.38837	9.58923	9.58923	9.58923	0.00000	0.00000	0.00000	1.00000	10472	10472	0	0	10472	0.00	88888.89	0	10472	0.5000	252.0963	3.4119	1.0010	7.667445
267	2315.508	4055.492	11.37616	9.57686	9.57686	9.57686	0.00000	0.00000	0.00000	1.00000	10434	10434	0	0	10434	0.00	88888.89	0	10434	0.5000	250.9768	3.4148	1.0016	7.704416
268	2328.305	4042.695	11.36388	9.56440	9.56440	9.56440	0.00000	0.00000	0.00000	1.00000	10395	10395	0	0	10395	0.00	88888.89	0	10395	0.5000	249.8531	3.4177	1.0004	7.741319
269	2341.102	4029.898	11.35153	9.55185	9.55185	9.55185	0.00000	0.00000	0.00000	1.00000	10357	10357	0	0	10357	0.00	88888.89	0	10357	0.5000	248.7253	3.4206	1.0010	7.778151
270	2353.898	4017.102	11.33909	9.53920	9.53920	9.53920	0.00000	0.00000	0.00000	1.00000	10318	10318	0	0	10318	0.00	88888.89	0	10318	0.5000	247.5934	3.4235	1.0012	7.814913

Table S7: Continued.

Layer	Radius km	Depth km	ρ g/cc	v_{PH} km/s	v_{PV} km/s	v_P km/s	v_{SH} km/s	v_{SV} km/s	v_S km/s	η	**A** kbar	**C** kbar	**N** kbar	**L** kbar	**F** kbar	Q_μ	Q_κ	μ kbar	κ kbar	σ_P	p GPa	κ'	η_B	g m/s^2
271	2366.695	4004.305	11.32658	9.52646	9.52646	9.52646	0.00000	0.00000	0.00000	1.00000	10279	10279	0	0	10279	0.00	88888.89	0	10279	0.5000	246.4574	3.4264	1.0006	7.851603
272	2379.492	3991.508	11.31399	9.51364	9.51364	9.51364	0.00000	0.00000	0.00000	1.00000	10240	10240	0	0	10240	0.00	88888.89	0	10240	0.5000	245.3174	3.4293	1.0010	7.888222
273	2392.288	3978.712	11.30132	9.50071	9.50071	9.50071	0.00000	0.00000	0.00000	1.00000	10201	10201	0	0	10201	0.00	88888.89	0	10201	0.5000	244.1733	3.4322	1.0010	7.924768
274	2405.085	3965.915	11.28857	9.48770	9.48770	9.48770	0.00000	0.00000	0.00000	1.00000	10162	10162	0	0	10162	0.00	88888.89	0	10162	0.5000	243.0253	3.4351	1.0011	7.961240
275	2417.881	3953.119	11.27574	9.47459	9.47459	9.47459	0.00000	0.00000	0.00000	1.00000	10122	10122	0	0	10122	0.00	88888.89	0	10122	0.5000	241.8732	3.4380	1.0013	7.997638
276	2430.678	3940.322	11.26283	9.46139	9.46139	9.46139	0.00000	0.00000	0.00000	1.00000	10082	10082	0	0	10082	0.00	88888.89	0	10082	0.5000	240.7173	3.4409	1.0006	8.033961
277	2443.475	3927.525	11.24985	9.44810	9.44810	9.44810	0.00000	0.00000	0.00000	1.00000	10042	10042	0	0	10042	0.00	88888.89	0	10042	0.5000	239.5574	3.4438	1.0007	8.070209
278	2456.271	3914.729	11.23678	9.43471	9.43471	9.43471	0.00000	0.00000	0.00000	1.00000	10002	10002	0	0	10002	0.00	88888.89	0	10002	0.5000	238.3937	3.4467	1.0013	8.106380
279	2469.068	3901.932	11.22363	9.42122	9.42122	9.42122	0.00000	0.00000	0.00000	1.00000	9962	9962	0	0	9962	0.00	88888.89	0	9962	0.5000	237.2262	3.4496	1.0011	8.142474
280	2481.864	3889.136	11.21040	9.40764	9.40764	9.40764	0.00000	0.00000	0.00000	1.00000	9922	9922	0	0	9922	0.00	88888.89	0	9922	0.5000	236.0548	3.4525	1.0010	8.178490
281	2494.661	3876.339	11.19709	9.39397	9.39397	9.39397	0.00000	0.00000	0.00000	1.00000	9881	9881	0	0	9881	0.00	88888.89	0	9881	0.5000	234.8797	3.4554	1.0009	8.214428
282	2507.458	3863.542	11.18370	9.38019	9.38019	9.38019	0.00000	0.00000	0.00000	1.00000	9840	9840	0	0	9840	0.00	88888.89	0	9840	0.5000	233.7008	3.4582	1.0007	8.250286
283	2520.254	3850.746	11.17023	9.36632	9.36632	9.36632	0.00000	0.00000	0.00000	1.00000	9799	9799	0	0	9799	0.00	88888.89	0	9799	0.5000	232.5182	3.4611	1.0010	8.286064
284	2533.051	3837.949	11.15667	9.35236	9.35236	9.35236	0.00000	0.00000	0.00000	1.00000	9758	9758	0	0	9758	0.00	88888.89	0	9758	0.5000	231.3320	3.4640	1.0013	8.321762
285	2545.847	3825.153	11.14303	9.33830	9.33830	9.33830	0.00000	0.00000	0.00000	1.00000	9717	9717	0	0	9717	0.00	88888.89	0	9717	0.5000	230.1421	3.4669	1.0011	8.357378
286	2558.644	3812.356	11.12931	9.32414	9.32414	9.32414	0.00000	0.00000	0.00000	1.00000	9676	9676	0	0	9676	0.00	88888.89	0	9676	0.5000	228.9486	3.4697	1.0007	8.392912
287	2571.441	3799.559	11.11551	9.30988	9.30988	9.30988	0.00000	0.00000	0.00000	1.00000	9634	9634	0	0	9634	0.00	88888.89	0	9634	0.5000	227.7515	3.4726	1.0010	8.428363
288	2584.237	3786.763	11.10162	9.29552	9.29552	9.29552	0.00000	0.00000	0.00000	1.00000	9593	9593	0	0	9593	0.00	88888.89	0	9593	0.5000	226.5509	3.4754	1.0011	8.463731
289	2597.034	3773.966	11.08765	9.28106	9.28106	9.28106	0.00000	0.00000	0.00000	1.00000	9551	9551	0	0	9551	0.00	88888.89	0	9551	0.5000	225.3468	3.4783	1.0011	8.499014
290	2609.831	3761.169	11.07359	9.26651	9.26651	9.26651	0.00000	0.00000	0.00000	1.00000	9509	9509	0	0	9509	0.00	88888.89	0	9509	0.5000	224.1392	3.4811	1.0012	8.534212
291	2622.627	3748.373	11.05945	9.25185	9.25185	9.25185	0.00000	0.00000	0.00000	1.00000	9467	9467	0	0	9467	0.00	88888.89	0	9467	0.5000	222.9281	3.4839	1.0012	8.569325
292	2635.424	3735.576	11.04522	9.23710	9.23710	9.23710	0.00000	0.00000	0.00000	1.00000	9424	9424	0	0	9424	0.00	88888.89	0	9424	0.5000	221.7136	3.4867	1.0012	8.604351
293	2648.220	3722.780	11.03091	9.22224	9.22224	9.22224	0.00000	0.00000	0.00000	1.00000	9382	9382	0	0	9382	0.00	88888.89	0	9382	0.5000	220.4958	3.4895	1.0012	8.639290
294	2661.017	3709.983	11.01651	9.20728	9.20728	9.20728	0.00000	0.00000	0.00000	1.00000	9339	9339	0	0	9339	0.00	88888.89	0	9339	0.5000	219.2746	3.4923	1.0009	8.674141
295	2673.814	3697.186	11.00203	9.19223	9.19223	9.19223	0.00000	0.00000	0.00000	1.00000	9296	9296	0	0	9296	0.00	88888.89	0	9296	0.5000	218.0502	3.4950	1.0015	8.708904
296	2686.610	3684.390	10.98745	9.17707	9.17707	9.17707	0.00000	0.00000	0.00000	1.00000	9253	9253	0	0	9253	0.00	88888.89	0	9253	0.5000	216.8224	3.4978	1.0012	8.743577
297	2699.407	3671.593	10.97280	9.16180	9.16180	9.16180	0.00000	0.00000	0.00000	1.00000	9210	9210	0	0	9210	0.00	88888.89	0	9210	0.5000	215.5914	3.5005	1.0010	8.778160
298	2712.203	3658.797	10.95805	9.14644	9.14644	9.14644	0.00000	0.00000	0.00000	1.00000	9167	9167	0	0	9167	0.00	88888.89	0	9167	0.5000	214.3573	3.5033	1.0013	8.812653
299	2725.000	3646.000	10.94322	9.13097	9.13097	9.13097	0.00000	0.00000	0.00000	1.00000	9124	9124	0	0	9124	0.00	88888.89	0	9124	0.5000	213.1199	3.5060	1.0013	8.847054
300	2737.797	3633.203	10.92829	9.11540	9.11540	9.11540	0.00000	0.00000	0.00000	1.00000	9080	9080	0	0	9080	0.00	88888.89	0	9080	0.5000	211.8795	3.5087	1.0016	8.881363
301	2750.593	3620.407	10.91328	9.09973	9.09973	9.09973	0.00000	0.00000	0.00000	1.00000	9037	9037	0	0	9037	0.00	88888.89	0	9037	0.5000	210.6359	3.5113	1.0011	8.915579
302	2763.390	3607.610	10.89818	9.08395	9.08395	9.08395	0.00000	0.00000	0.00000	1.00000	8993	8993	0	0	8993	0.00	88888.89	0	8993	0.5000	209.3893	3.5140	1.0013	8.949702
303	2776.186	3594.814	10.88299	9.06806	9.06806	9.06806	0.00000	0.00000	0.00000	1.00000	8949	8949	0	0	8949	0.00	88888.89	0	8949	0.5000	208.1397	3.5166	1.0013	8.983730
304	2788.983	3582.017	10.86771	9.05208	9.05208	9.05208	0.00000	0.00000	0.00000	1.00000	8905	8905	0	0	8905	0.00	88888.89	0	8905	0.5000	206.8871	3.5192	1.0013	9.017663
305	2801.780	3569.220	10.85234	9.03598	9.03598	9.03598	0.00000	0.00000	0.00000	1.00000	8861	8861	0	0	8861	0.00	88888.89	0	8861	0.5000	205.6315	3.5218	1.0013	9.051501
306	2814.576	3556.424	10.83688	9.01978	9.01978	9.01978	0.00000	0.00000	0.00000	1.00000	8817	8817	0	0	8817	0.00	88888.89	0	8817	0.5000	204.3731	3.5244	1.0011	9.085242
307	2827.373	3543.627	10.82133	9.00348	9.00348	9.00348	0.00000	0.00000	0.00000	1.00000	8772	8772	0	0	8772	0.00	88888.89	0	8772	0.5000	203.1117	3.5270	1.0015	9.118886
308	2840.169	3530.831	10.80568	8.98707	8.98707	8.98707	0.00000	0.00000	0.00000	1.00000	8727	8727	0	0	8727	0.00	88888.89	0	8727	0.5000	201.8476	3.5295	1.0018	9.152432
309	2852.966	3518.034	10.78994	8.97055	8.97055	8.97055	0.00000	0.00000	0.00000	1.00000	8683	8683	0	0	8683	0.00	88888.89	0	8683	0.5000	200.5806	3.5320	1.0014	9.185879
310	2865.763	3505.237	10.77411	8.95392	8.95392	8.95392	0.00000	0.00000	0.00000	1.00000	8638	8638	0	0	8638	0.00	88888.89	0	8638	0.5000	199.3109	3.5345	1.0014	9.219227
311	2878.559	3492.441	10.75819	8.93719	8.93719	8.93719	0.00000	0.00000	0.00000	1.00000	8593	8593	0	0	8593	0.00	88888.89	0	8593	0.5000	198.0385	3.5370	1.0011	9.252474
312	2891.356	3479.644	10.74218	8.92034	8.92034	8.92034	0.00000	0.00000	0.00000	1.00000	8548	8548	0	0	8548	0.00	88888.89	0	8548	0.5000	196.7634	3.5394	1.0010	9.285621
313	2904.153	3466.847	10.72607	8.90339	8.90339	8.90339	0.00000	0.00000	0.00000	1.00000	8503	8503	0	0	8503	0.00	88888.89	0	8503	0.5000	195.4856	3.5418	1.0016	9.318667
314	2916.949	3454.051	10.70986	8.88633	8.88633	8.88633	0.00000	0.00000	0.00000	1.00000	8457	8457	0	0	8457	0.00	88888.89	0	8457	0.5000	194.2053	3.5442	1.0016	9.351610
315	2929.746	3441.254	10.69356	8.86917	8.86917	8.86917	0.00000	0.00000	0.00000	1.00000	8412	8412	0	0	8412	0.00	88888.89	0	8412	0.5000	192.9224	3.5466	1.0011	9.384450
316	2942.542	3428.458	10.67717	8.85189	8.85189	8.85189	0.00000	0.00000	0.00000	1.00000	8366	8366	0	0	8366	0.00	88888.89	0	8366	0.5000	191.6369	3.5489	1.0011	9.417186
317	2955.339	3415.661	10.66068	8.83450	8.83450	8.83450	0.00000	0.00000	0.00000	1.00000	8320	8320	0	0	8320	0.00	88888.89	0	8320	0.5000	190.3490	3.5512	1.0013	9.449817
318	2968.136	3402.864	10.64409	8.81700	8.81700	8.81700	0.00000	0.00000	0.00000	1.00000	8275	8275	0	0	8275	0.00	88888.89	0	8275	0.5000	189.0587	3.5535	1.0017	9.482344
319	2980.932	3390.068	10.62740	8.79939	8.79939	8.79939	0.00000	0.00000	0.00000	1.00000	8229	8229	0	0	8229	0.00	88888.89	0	8229	0.5000	187.7659	3.5558	1.0014	9.514764
320	2993.729	3377.271	10.61062	8.78167	8.78167	8.78167	0.00000	0.00000	0.00000	1.00000	8183	8183	0	0	8183	0.00	88888.89	0	8183	0.5000	186.4708	3.5580	1.0013	9.547078
321	3006.525	3364.475	10.59374	8.76384	8.76384	8.76384	0.00000	0.00000	0.00000	1.00000	8137	8137	0	0	8137	0.00	88888.89	0	8137	0.5000	185.1733	3.5602	1.0010	9.579284
322	3019.322	3351.678	10.57677	8.74589	8.74589	8.74589	0.00000	0.00000	0.00000	1.00000	8090	8090	0	0	8090	0.00	88888.89	0	8090	0.5000	183.8736	3.5623	1.0010	9.611381
323	3032.119	3338.881	10.55969	8.72783	8.72783	8.72783	0.00000	0.00000	0.00000	1.00000	8044	8044	0	0	8044	0.00	88888.89	0	8044	0.5000	182.5716	3.5645	1.0011	9.643370
324	3044.915	3326.085	10.54252	8.70966	8.70966	8.70966	0.00000	0.00000	0.00000	1.00000	7997	7997	0	0	7997	0.00	88888.89	0	7997	0.5000	181.2674	3.5666	1.0011	9.675249
325	3057.712	3313.288	10.52524	8.69138	8.69138	8.69138	0.00000	0.00000	0.00000	1.00000	7951	7951	0	0	7951	0.00	88888.89	0	7951	0.5000	179.9610	3.5686	1.0010	9.707017
326	3070.508	3300.492	10.50787	8.67298	8.67298	8.67298	0.00000	0.00000	0.00000	1.00000	7904	7904	0	0	7904	0.00	88888.89	0	7904	0.5000	178.6526	3.5706	1.0008	9.738674
327	3083.305	3287.695	10.49039	8.65447	8.65447	8.65447	0.00000	0.00000	0.00000	1.00000	7857	7857	0	0	7857	0.00	88888.89	0	7857	0.5000	177.3420	3.5726	1.0011	9.770218
328	3096.102	3274.898	10.47281	8.63584	8.63584	8.63584	0.00000	0.00000	0.00000	1.00000	7810	7810	0	0	7810	0.00	88888.89	0	7810	0.5000	176.0294	3.5746	1.0009	9.801650
329	3108.898	3262.102	10.45513	8.61710	8.61710	8.61710	0.00000	0.00000	0.00000	1.00000	7763	7763	0	0	7763	0.00	88888.89	0	7763	0.5000	174.7149	3.5765	1.0008	9.832968
330	3121.695	3249.305	10.43735	8.59824	8.59824	8.59824	0.00000	0.00000	0.00000	1.00000	7716	7716	0	0	7716	0.00	88888.89	0	7716	0.5000	173.3984	3.5784	1.0004	9.864172
331	3134.492	3236.508	10.41947	8.57927	8.57927	8.57927	0.00000	0.00000	0.00000	1.00000	7669	7669	0	0	7669	0.00	88888.89	0	7669	0.5000	172.0799	3.5802	1.0006	9.895261
332	3147.288	3223.712	10.40148	8.56018	8.56018	8.56018	0.00000	0.00000	0.00000	1.00000	7622	7622	0	0	7622	0.00	88888.89	0	7622	0.5000	170.7596	3.5820	1.0005	9.926233
333	3160.085	3210.915	10.38339	8.54098	8.54098	8.54098	0.00000	0.00000	0.00000	1.00000	7575	7575	0	0	7575	0.00	88888.89	0	7575	0.5000	169.4375	3.5838	1.0004	9.957089
334	3172.881	3198.119	10.36519	8.52166	8.52166	8.52166	0.00000	0.00000	0.00000	1.00000	7527	7527	0	0	7527	0.00	88888.89	0	7527	0.5000	168.1136	3.5855	1.0005	9.987827
335	3185.678	3185.322	10.34689	8.50222	8.50222	8.50222	0.00000	0.00000	0.00000	1.00000	7480	7480	0	0	7480	0.00	88888.89	0	7480	0.5000	166.7880	3.5872	0.9997	10.018447
336	3198.475	3172.525	10.32849	8.48266	8.48266	8.48266	0.00000	0.00000	0.00000	1.00000	7432	7432	0	0	7432	0.00	88888.89	0	7432	0.5000	165.4606	3.5888	1.0002	10.048947
337	3211.271	3159.729	10.30997	8.46299	8.46299	8.46299	0.00000	0.00000	0.00000	1.00000	7384	7384	0	0	7384	0.00	88888.89	0	7384	0.5000	164.1316	3.5904	0.9999	10.079328
338	3224.068	3146.932	10.29136	8.44319	8.44319	8.44319	0.00000	0.00000	0.00000	1.00000	7336	7336	0	0	7336	0.00	88888.89	0	7336	0.5000	162.8010	3.5919	0.9996	10.109587
339	3236.864	3134.136	10.27263	8.42328	8.42328	8.42328	0.00000	0.00000	0.00000	1.00000	7289	7289	0	0	7289	0.00	88888.89	0	7289	0.5000	161.4689	3.5934	0.9998	10.139726
340	3249.661	3121.339	10.25380	8.40325	8.40325	8.40325	0.00000	0.00000	0.00000	1.00000	7241	7241	0	0	7241	0.00	88888.89	0	7241	0.5000	160.1352	3.5949	0.9991	10.169741

Table S7: Continued.

Layer	Radius km	Depth km	ρ g/cc	v_{PH} km/s	v_{PV} km/s	v_P km/s	v_{SH} km/s	v_{SV} km/s	v_S km/s	η	**A** kbar	**C** kbar	**N** kbar	**L** kbar	**F** kbar	Q_μ	Q_κ	μ kbar	κ kbar	σ_P	p GPa	κ'	η_B	g m/s^2
341	3262.458	3108.542	10.23486	8.38310	8.38310	8.38310	0.00000	0.00000	0.00000	1.00000	7193	7193	0	0	7193	0.00	88888.89	0	7193	0.5000	158.8001	3.5963	0.9998	10.199634
342	3275.254	3095.746	10.21580	8.36283	8.36283	8.36283	0.00000	0.00000	0.00000	1.00000	7145	7145	0	0	7145	0.00	88888.89	0	7145	0.5000	157.4635	3.5977	0.9992	10.229402
343	3288.051	3082.949	10.19665	8.34243	8.34243	8.34243	0.00000	0.00000	0.00000	1.00000	7096	7096	0	0	7096	0.00	88888.89	0	7096	0.5000	156.1256	3.5990	0.9986	10.259046
344	3300.847	3070.153	10.17738	8.32192	8.32192	8.32192	0.00000	0.00000	0.00000	1.00000	7048	7048	0	0	7048	0.00	88888.89	0	7048	0.5000	154.7863	3.6002	0.9989	10.288564
345	3313.644	3057.356	10.15800	8.30129	8.30129	8.30129	0.00000	0.00000	0.00000	1.00000	7000	7000	0	0	7000	0.00	88888.89	0	7000	0.5000	153.4457	3.6015	0.9988	10.317955
346	3326.441	3044.559	10.13850	8.28053	8.28053	8.28053	0.00000	0.00000	0.00000	1.00000	6952	6952	0	0	6952	0.00	88888.89	0	6952	0.5000	152.1039	3.6026	0.9987	10.347220
347	3339.237	3031.763	10.11890	8.25965	8.25965	8.25965	0.00000	0.00000	0.00000	1.00000	6903	6903	0	0	6903	0.00	88888.89	0	6903	0.5000	150.7609	3.6037	0.9978	10.376355
348	3352.034	3018.966	10.09919	8.23865	8.23865	8.23865	0.00000	0.00000	0.00000	1.00000	6855	6855	0	0	6855	0.00	88888.89	0	6855	0.5000	149.4167	3.6048	0.9979	10.405362
349	3364.831	3006.169	10.07936	8.21753	8.21753	8.21753	0.00000	0.00000	0.00000	1.00000	6806	6806	0	0	6806	0.00	88888.89	0	6806	0.5000	148.0714	3.6058	0.9977	10.434239
350	3377.627	2993.373	10.05942	8.19628	8.19628	8.19628	0.00000	0.00000	0.00000	1.00000	6758	6758	0	0	6758	0.00	88888.89	0	6758	0.5000	146.7250	3.6068	0.9977	10.462986
351	3390.424	2980.576	10.03936	8.17491	8.17491	8.17491	0.00000	0.00000	0.00000	1.00000	6709	6709	0	0	6709	0.00	88888.89	0	6709	0.5000	145.3777	3.6077	0.9970	10.491600
352	3403.220	2967.780	10.01920	8.15342	8.15342	8.15342	0.00000	0.00000	0.00000	1.00000	6661	6661	0	0	6661	0.00	88888.89	0	6661	0.5000	144.0294	3.6085	0.9968	10.520082
353	3416.017	2954.983	9.99891	8.13180	8.13180	8.13180	0.00000	0.00000	0.00000	1.00000	6612	6612	0	0	6612	0.00	88888.89	0	6612	0.5000	142.6801	3.6093	0.9968	10.548431
354	3428.814	2942.186	9.97851	8.11005	8.11005	8.11005	0.00000	0.00000	0.00000	1.00000	6563	6563	0	0	6563	0.00	88888.89	0	6563	0.5000	141.3300	3.6101	0.9964	10.576646
355	3441.610	2929.390	9.95799	8.08818	8.08818	8.08818	0.00000	0.00000	0.00000	1.00000	6514	6514	0	0	6514	0.00	88888.89	0	6514	0.5000	139.9790	3.6107	0.9961	10.604726
356	3454.407	2916.593	9.93736	8.06619	8.06619	8.06619	0.00000	0.00000	0.00000	1.00000	6466	6466	0	0	6466	0.00	88888.89	0	6466	0.5000	138.6273	3.6114	0.9955	10.632670
357	3467.203	2903.797	9.91661	8.04407	8.04407	8.04407	0.00000	0.00000	0.00000	1.00000	6417	6417	0	0	6417	0.00	88888.89	0	6417	0.5000	137.2748	3.6119	0.9954	10.660477
358	3480.000	2891.000	9.89574	8.02182	8.02182	8.02182	0.00000	0.00000	0.00000	1.00000	6368	6368	0	0	6368	0.00	88888.89	0	6368	0.5000	135.9217	3.6119	0.9950	10.688146
359	3480.000	2891.000	5.58518	13.63723	13.63723	13.63723	7.18664	7.18664	7.18664	1.00000	10387	10387	2885	2885	4618	348.83	28595.94	2885	6541	0.3078	135.9217	1.2443	0.9929	10.688146
360	3489.375	2881.625	5.58044	13.63924	13.63924	13.63924	7.19082	7.19082	7.19082	1.00000	10381	10381	2886	2886	4610	348.83	28595.94	2886	6534	0.3075	135.3627	1.2465	0.9925	10.674569
361	3498.750	2872.250	5.57571	13.64126	13.64126	13.64126	7.19501	7.19501	7.19501	1.00000	10375	10375	2886	2886	4603	348.83	28595.94	2886	6527	0.3073	134.8048	1.2487	0.9933	10.661182
362	3508.125	2862.875	5.57098	13.64327	13.64327	13.64327	7.19919	7.19919	7.19919	1.00000	10370	10370	2887	2887	4595	348.83	28595.94	2887	6520	0.3071	134.2481	1.2509	0.9955	10.647981
363	3517.500	2853.500	5.56625	13.64529	13.64529	13.64529	7.20337	7.20337	7.20337	1.00000	10364	10364	2888	2888	4588	348.83	28595.94	2888	6513	0.3068	133.6925	1.2532	0.9973	10.634966
364	3526.875	2844.125	5.56152	13.64730	13.64730	13.64730	7.20756	7.20756	7.20756	1.00000	10358	10358	2889	2889	4580	348.83	28595.94	2889	6506	0.3066	133.1381	1.2554	0.9990	10.622133
365	3536.250	2834.750	5.55679	13.64932	13.64932	13.64932	7.21174	7.21174	7.21174	1.00000	10353	10353	2890	2890	4572	348.83	28595.94	2890	6499	0.3064	132.5849	1.2576	1.0013	10.609481
366	3545.625	2825.375	5.55206	13.65133	13.65133	13.65133	7.21593	7.21593	7.21593	1.00000	10347	10347	2891	2891	4565	348.83	28595.94	2891	6492	0.3061	132.0327	1.2598	1.0013	10.597007
367	3555.000	2816.000	5.54734	13.65335	13.65335	13.65335	7.22012	7.22012	7.22012	1.00000	10341	10341	2892	2892	4557	348.83	28595.94	2892	6485	0.3059	131.4817	1.2620	1.0035	10.584710
368	3564.375	2806.625	5.54261	13.65536	13.65536	13.65536	7.22430	7.22430	7.22430	1.00000	10335	10335	2893	2893	4550	348.83	28595.94	2893	6478	0.3057	130.9318	1.2642	1.0056	10.572588
369	3573.750	2797.250	5.53789	13.65738	13.65738	13.65738	7.22849	7.22849	7.22849	1.00000	10329	10329	2894	2894	4542	348.83	28595.94	2894	6471	0.3054	130.3830	1.2664	1.0056	10.560638
370	3583.125	2787.875	5.53317	13.65939	13.65939	13.65939	7.23267	7.23267	7.23267	1.00000	10324	10324	2894	2894	4535	348.83	28595.94	2894	6464	0.3052	129.8352	1.2686	1.0079	10.548858
371	3592.500	2778.500	5.52845	13.66141	13.66141	13.66141	7.23686	7.23686	7.23686	1.00000	10318	10318	2895	2895	4527	348.83	28595.94	2895	6457	0.3050	129.2886	1.2708	1.0094	10.537247
372	3601.875	2769.125	5.52373	13.66342	13.66342	13.66342	7.24104	7.24104	7.24104	1.00000	10312	10312	2896	2896	4520	348.83	28595.94	2896	6451	0.3047	128.7429	1.2730	1.0116	10.525803
373	3611.250	2759.750	5.51901	13.66543	13.66543	13.66543	7.24522	7.24522	7.24522	1.00000	10306	10306	2897	2897	4512	348.83	28595.94	2897	6444	0.3045	128.1984	1.2752	1.0116	10.514523
374	3620.625	2750.375	5.51430	13.66745	13.66745	13.66745	7.24941	7.24941	7.24941	1.00000	10301	10301	2898	2898	4505	348.83	28595.94	2898	6437	0.3043	127.6549	1.2774	1.0131	10.503406
375	3630.000	2741.000	5.50958	13.66946	13.66946	13.66946	7.25359	7.25359	7.25359	1.00000	10295	10295	2899	2899	4497	348.83	28595.94	2899	6430	0.3040	127.1124	1.2774	1.0174	10.492450
376	3630.000	2741.000	5.50958	13.66946	13.66946	13.66946	7.25359	7.25359	7.25359	1.00000	10295	10295	2899	2899	4497	348.83	28595.94	2899	6430	0.3040	127.1124	1.3118	1.0423	10.492450
377	3639.471	2731.529	5.50469	13.65790	13.65790	13.65790	7.24891	7.24891	7.24891	1.00000	10268	10268	2893	2893	4483	348.83	28595.94	2893	6412	0.3039	126.5654	3.3088	1.0426	10.481542
378	3648.942	2722.058	5.49980	13.64636	13.64636	13.64636	7.24424	7.24424	7.24424	1.00000	10242	10242	2886	2886	4469	348.83	28595.94	2886	6394	0.3038	126.0195	3.3059	1.0410	10.470794
379	3658.413	2712.587	5.49492	13.63485	13.63485	13.63485	7.23960	7.23960	7.23960	1.00000	10216	10216	2880	2880	4456	348.83	28595.94	2880	6376	0.3037	125.4746	3.3030	1.0407	10.460204
380	3667.885	2703.115	5.49003	13.62336	13.62336	13.62336	7.23498	7.23498	7.23498	1.00000	10189	10189	2874	2874	4442	348.83	28595.94	2874	6358	0.3036	124.9307	3.3001	1.0429	10.449770
381	3677.356	2693.644	5.48514	13.61190	13.61190	13.61190	7.23038	7.23038	7.23038	1.00000	10163	10163	2868	2868	4428	348.83	28595.94	2868	6340	0.3035	124.3879	3.2973	1.0406	10.439489
382	3686.827	2684.173	5.48026	13.60046	13.60046	13.60046	7.22580	7.22580	7.22580	1.00000	10137	10137	2861	2861	4414	348.83	28595.94	2861	6322	0.3034	123.8460	3.2945	1.0410	10.429361
383	3696.298	2674.702	5.47537	13.58904	13.58904	13.58904	7.22124	7.22124	7.22124	1.00000	10111	10111	2855	2855	4401	348.83	28595.94	2855	6304	0.3032	123.3052	3.2917	1.0414	10.419383
384	3705.769	2665.231	5.47049	13.57765	13.57765	13.57765	7.21670	7.21670	7.21670	1.00000	10085	10085	2849	2849	4387	348.83	28595.94	2849	6286	0.3031	122.7654	3.2890	1.0390	10.409554
385	3715.240	2655.760	5.46561	13.56628	13.56628	13.56628	7.21217	7.21217	7.21217	1.00000	10059	10059	2843	2843	4373	348.83	28595.94	2843	6269	0.3030	122.2265	3.2864	1.0410	10.399872
386	3724.712	2646.288	5.46072	13.55494	13.55494	13.55494	7.20767	7.20767	7.20767	1.00000	10033	10033	2837	2837	4360	348.83	28595.94	2837	6251	0.3029	121.6887	3.2837	1.0409	10.390336
387	3734.183	2636.817	5.45584	13.54361	13.54361	13.54361	7.20318	7.20318	7.20318	1.00000	10008	10008	2831	2831	4346	348.83	28595.94	2831	6233	0.3028	121.1518	3.2812	1.0387	10.380943
388	3743.654	2627.346	5.45096	13.53231	13.53231	13.53231	7.19872	7.19872	7.19872	1.00000	9982	9982	2825	2825	4332	348.83	28595.94	2825	6216	0.3027	120.6158	3.2786	1.0407	10.371692
389	3753.125	2617.875	5.44607	13.52102	13.52102	13.52102	7.19427	7.19427	7.19427	1.00000	9956	9956	2819	2819	4319	348.83	28595.94	2819	6198	0.3025	120.0808	3.2762	1.0404	10.362582
390	3762.596	2608.404	5.44119	13.50976	13.50976	13.50976	7.18983	7.18983	7.18983	1.00000	9931	9931	2813	2813	4305	348.83	28595.94	2813	6181	0.3024	119.5468	3.2737	1.0386	10.353611
391	3772.067	2598.933	5.43631	13.49852	13.49852	13.49852	7.18541	7.18541	7.18541	1.00000	9905	9905	2807	2807	4292	348.83	28595.94	2807	6163	0.3023	119.0137	3.2713	1.0385	10.344776
392	3781.538	2589.462	5.43143	13.48729	13.48729	13.48729	7.18101	7.18101	7.18101	1.00000	9880	9880	2801	2801	4279	348.83	28595.94	2801	6146	0.3022	118.4815	3.2690	1.0397	10.336078
393	3791.010	2579.990	5.42654	13.47609	13.47609	13.47609	7.17663	7.17663	7.17663	1.00000	9855	9855	2795	2795	4265	348.83	28595.94	2795	6128	0.3021	117.9503	3.2667	1.0397	10.327513
394	3800.481	2570.519	5.42166	13.46490	13.46490	13.46490	7.17226	7.17226	7.17226	1.00000	9830	9830	2789	2789	4252	348.83	28595.94	2789	6111	0.3019	117.4200	3.2644	1.0374	10.319081
395	3809.952	2561.048	5.41678	13.45373	13.45373	13.45373	7.16791	7.16791	7.16791	1.00000	9805	9805	2783	2783	4238	348.83	28595.94	2783	6094	0.3018	116.8905	3.2622	1.0393	10.310781
396	3819.423	2551.577	5.41189	13.44257	13.44257	13.44257	7.16357	7.16357	7.16357	1.00000	9779	9779	2777	2777	4225	348.83	28595.94	2777	6077	0.3017	116.3620	3.2601	1.0390	10.302610
397	3828.894	2542.106	5.40701	13.43144	13.43144	13.43144	7.15924	7.15924	7.15924	1.00000	9754	9754	2771	2771	4212	348.83	28595.94	2771	6059	0.3016	115.8344	3.2580	1.0366	10.294567
398	3838.365	2532.635	5.40213	13.42032	13.42032	13.42032	7.15493	7.15493	7.15493	1.00000	9729	9729	2766	2766	4198	348.83	28595.94	2766	6042	0.3014	115.3076	3.2559	1.0386	10.286650
399	3847.837	2523.163	5.39724	13.40921	13.40921	13.40921	7.15064	7.15064	7.15064	1.00000	9705	9705	2760	2760	4185	348.83	28595.94	2760	6025	0.3013	114.7817	3.2539	1.0377	10.278859
400	3857.308	2513.692	5.39236	13.39812	13.39812	13.39812	7.14636	7.14636	7.14636	1.00000	9680	9680	2754	2754	4172	348.83	28595.94	2754	6008	0.3012	114.2567	3.2519	1.0376	10.271192
401	3866.779	2504.221	5.38747	13.38704	13.38704	13.38704	7.14209	7.14209	7.14209	1.00000	9655	9655	2748	2748	4159	348.83	28595.94	2748	5991	0.3011	113.7326	3.2500	1.0373	10.263647
402	3876.250	2494.750	5.38259	13.37598	13.37598	13.37598	7.13783	7.13783	7.13783	1.00000	9630	9630	2742	2742	4146	348.83	28595.94	2742	5974	0.3009	113.2093	3.2481	1.0369	10.256223
403	3885.721	2485.279	5.37770	13.36493	13.36493	13.36493	7.13359	7.13359	7.13359	1.00000	9606	9606	2737	2737	4133	348.83	28595.94	2737	5957	0.3008	112.6869	3.2463	1.0367	10.248918
404	3895.192	2475.808	5.37282	13.35390	13.35390	13.35390	7.12935	7.12935	7.12935	1.00000	9581	9581	2731	2731	4119	348.83	28595.94	2731	5940	0.3007	112.1653	3.2445	1.0359	10.241732
405	3904.663	2466.337	5.36793	13.34287	13.34287	13.34287	7.12513	7.12513	7.12513	1.00000	9557	9557	2725	2725	4106	348.83	28595.94	2725	5923	0.3005	111.6446	3.2428	1.0373	10.234663
406	3914.135	2456.865	5.36304	13.33186	13.33186	13.33186	7.12093	7.12093	7.12093	1.00000	9532	9532	2719	2719	4093	348.83	28595.94	2719	5906	0.3004	111.1246	3.2411	1.0365	10.227710
407	3923.606	2447.394	5.35815	13.32086	13.32086	13.32086	7.11673	7.11673	7.11673	1.00000	9508	9508	2714	2714	4080	348.83	28595.94	2714	5889	0.3003	110.6055	3.2395	1.0363	10.220871
408	3933.077	2437.923	5.35326	13.30987	13.30987	13.30987	7.11254	7.11254	7.11254	1.00000	9483	9483	2708	2708	4067	348.83	28595.94	2708	5873	0.3001	110.0873	3.2379	1.0360	10.214145
409	3942.548	2428.452	5.34837	13.29889	13.29889	13.29889	7.10836	7.10836	7.10836	1.00000	9459	9459	2702	2702	4054	348.83	28595.94	2702	5856	0.3000	109.5698	3.2364	1.0351	10.207530
410	3952.019	2418.981	5.34348	13.28792	13.28792	13.28792	7.10420	7.10420	7.10420	1.00000	9435	9435	2697	2697	4041	348.83	28595.94	2697	5839	0.2999	109.0531	3.2349	1.0365	10.201026
411	3961.490	2409.510	5.33858	13.27696	13.27696	13.27696	7.10004	7.10004	7.10004	1.00000	9411	9411	2691	2691	4028	348.83	28595.94	2691	5822	0.2997	108.5373	3.2335	1.0355	10.194632
412	3970.962	2400.038	5.33369	13.26601	13.26601	13.26601	7.09589	7.09589	7.09589	1.00000	9387	9387	2686	2686	4015	348.83	28595.94	2686	5806	0.2996	108.0222	3.2321	1.0352	10.188345

Table S7: Continued.

Layer	Radius km	Depth km	ρ g/cc	v_{PH} km/s	v_{PV} km/s	v_P km/s	v_{SH} km/s	v_{SV} km/s	v_S km/s	η	**A** kbar	**C** kbar	**N** kbar	**L** kbar	**F** kbar	Q_μ	Q_κ	μ kbar	κ kbar	σ_P	p GPa	κ'	η_B	g m/s^2
413	3980.433	2390.567	5.32879	13.25507	13.25507	13.25507	7.09175	7.09175	7.09175	1.00000	9363	9363	2680	2680	4003	348.83	28595.94	2680	5789	0.2995	107.5079	3.2308	1.0350	10.182165
414	3989.904	2381.096	5.32390	13.24413	13.24413	13.24413	7.08762	7.08762	7.08762	1.00000	9338	9338	2674	2674	3990	348.83	28595.94	2674	5773	0.2993	106.9944	3.2295	1.0340	10.176091
415	3999.375	2371.625	5.31900	13.23320	13.23320	13.23320	7.08350	7.08350	7.08350	1.00000	9315	9315	2669	2669	3977	348.83	28595.94	2669	5756	0.2992	106.4817	3.2283	1.0354	10.170121
416	4008.846	2362.154	5.31410	13.22228	13.22228	13.22228	7.07939	7.07939	7.07939	1.00000	9291	9291	2663	2663	3964	348.83	28595.94	2663	5739	0.2991	105.9697	3.2271	1.0345	10.164254
417	4018.317	2352.683	5.30920	13.21137	13.21137	13.21137	7.07528	7.07528	7.07528	1.00000	9267	9267	2658	2658	3951	348.83	28595.94	2658	5723	0.2989	105.4585	3.2260	1.0337	10.158489
418	4027.788	2343.212	5.30430	13.20046	13.20046	13.20046	7.07118	7.07118	7.07118	1.00000	9243	9243	2652	2652	3938	348.83	28595.94	2652	5707	0.2988	104.9481	3.2249	1.0349	10.152825
419	4037.260	2333.740	5.29939	13.18955	13.18955	13.18955	7.06709	7.06709	7.06709	1.00000	9219	9219	2647	2647	3926	348.83	28595.94	2647	5690	0.2986	104.4384	3.2239	1.0340	10.147261
420	4046.731	2324.269	5.29449	13.17865	13.17865	13.17865	7.06300	7.06300	7.06300	1.00000	9195	9195	2641	2641	3913	348.83	28595.94	2641	5674	0.2985	103.9295	3.2229	1.0333	10.141796
421	4056.202	2314.798	5.28958	13.16776	13.16776	13.16776	7.05892	7.05892	7.05892	1.00000	9172	9172	2636	2636	3900	348.83	28595.94	2636	5657	0.2984	103.4213	3.2220	1.0345	10.136428
422	4065.673	2305.327	5.28467	13.15686	13.15686	13.15686	7.05484	7.05484	7.05484	1.00000	9148	9148	2630	2630	3887	348.83	28595.94	2630	5641	0.2982	102.9138	3.2211	1.0336	10.131156
423	4075.144	2295.856	5.27976	13.14598	13.14598	13.14598	7.05077	7.05077	7.05077	1.00000	9124	9124	2625	2625	3875	348.83	28595.94	2625	5625	0.2981	102.4071	3.2203	1.0327	10.125980
424	4084.615	2286.385	5.27485	13.13509	13.13509	13.13509	7.04671	7.04671	7.04671	1.00000	9101	9101	2619	2619	3862	348.83	28595.94	2619	5608	0.2979	101.9011	3.2195	1.0338	10.120897
425	4094.087	2276.913	5.26993	13.12421	13.12421	13.12421	7.04265	7.04265	7.04265	1.00000	9077	9077	2614	2614	3850	348.83	28595.94	2614	5592	0.2978	101.3959	3.2188	1.0329	10.115908
426	4103.558	2267.442	5.26502	13.11332	13.11332	13.11332	7.03859	7.03859	7.03859	1.00000	9054	9054	2608	2608	3837	348.83	28595.94	2608	5576	0.2977	100.8913	3.2181	1.0320	10.111011
427	4113.029	2257.971	5.26010	13.10244	13.10244	13.10244	7.03454	7.03454	7.03454	1.00000	9030	9030	2603	2603	3824	348.83	28595.94	2603	5560	0.2975	100.3875	3.2175	1.0333	10.106206
428	4122.500	2248.500	5.25518	13.09156	13.09156	13.09156	7.03049	7.03049	7.03049	1.00000	9007	9007	2598	2598	3812	348.83	28595.94	2598	5543	0.2974	99.8843	3.2170	1.0318	10.101490
429	4131.971	2239.029	5.25026	13.08068	13.08068	13.08068	7.02645	7.02645	7.02645	1.00000	8983	8983	2592	2592	3799	348.83	28595.94	2592	5527	0.2972	99.3819	3.2164	1.0331	10.096863
430	4141.442	2229.558	5.24533	13.06980	13.06980	13.06980	7.02240	7.02240	7.02240	1.00000	8960	8960	2587	2587	3787	348.83	28595.94	2587	5511	0.2971	98.8802	3.2160	1.0321	10.092324
431	4150.913	2220.087	5.24041	13.05892	13.05892	13.05892	7.01836	7.01836	7.01836	1.00000	8937	8937	2581	2581	3774	348.83	28595.94	2581	5495	0.2969	98.3792	3.2156	1.0311	10.087872
432	4160.385	2210.615	5.23548	13.04803	13.04803	13.04803	7.01433	7.01433	7.01433	1.00000	8913	8913	2576	2576	3762	348.83	28595.94	2576	5479	0.2968	97.8788	3.2152	1.0318	10.083507
433	4169.856	2201.144	5.23055	13.03715	13.03715	13.03715	7.01029	7.01029	7.01029	1.00000	8890	8890	2571	2571	3749	348.83	28595.94	2571	5463	0.2966	97.3792	3.2149	1.0325	10.079226
434	4179.327	2191.673	5.22561	13.02626	13.02626	13.02626	7.00625	7.00625	7.00625	1.00000	8867	8867	2565	2565	3737	348.83	28595.94	2565	5447	0.2965	96.8802	3.2147	1.0316	10.075029
435	4188.798	2182.202	5.22068	13.01537	13.01537	13.01537	7.00222	7.00222	7.00222	1.00000	8844	8844	2560	2560	3724	348.83	28595.94	2560	5431	0.2963	96.3819	3.2145	1.0307	10.070916
436	4198.269	2172.731	5.21574	13.00447	13.00447	13.00447	6.99819	6.99819	6.99819	1.00000	8821	8821	2554	2554	3712	348.83	28595.94	2554	5415	0.2962	95.8842	3.2143	1.0313	10.066884
437	4207.740	2163.260	5.21080	12.99357	12.99357	12.99357	6.99415	6.99415	6.99415	1.00000	8798	8798	2549	2549	3699	348.83	28595.94	2549	5399	0.2960	95.3873	3.2142	1.0318	10.062934
438	4217.212	2153.788	5.20585	12.98267	12.98267	12.98267	6.99012	6.99012	6.99012	1.00000	8774	8774	2544	2544	3687	348.83	28595.94	2544	5383	0.2959	94.8910	3.2142	1.0310	10.059064
439	4226.683	2144.317	5.20091	12.97176	12.97176	12.97176	6.98609	6.98609	6.98609	1.00000	8751	8751	2538	2538	3675	348.83	28595.94	2538	5367	0.2957	94.3953	3.2142	1.0295	10.055274
440	4236.154	2134.846	5.19596	12.96085	12.96085	12.96085	6.98205	6.98205	6.98205	1.00000	8728	8728	2533	2533	3662	348.83	28595.94	2533	5351	0.2956	93.9004	3.2142	1.0323	10.051562
441	4245.625	2125.375	5.19100	12.94993	12.94993	12.94993	6.97802	6.97802	6.97802	1.00000	8705	8705	2528	2528	3650	348.83	28595.94	2528	5335	0.2954	93.4060	3.2143	1.0308	10.047927
442	4255.096	2115.904	5.18605	12.93900	12.93900	12.93900	6.97398	6.97398	6.97398	1.00000	8682	8682	2522	2522	3638	348.83	28595.94	2522	5319	0.2953	92.9124	3.2145	1.0298	10.044370
443	4264.567	2106.433	5.18109	12.92807	12.92807	12.92807	6.96994	6.96994	6.96994	1.00000	8659	8659	2517	2517	3625	348.83	28595.94	2517	5303	0.2951	92.4193	3.2147	1.0309	10.040888
444	4274.038	2096.962	5.17613	12.91713	12.91713	12.91713	6.96590	6.96590	6.96590	1.00000	8636	8636	2512	2512	3613	348.83	28595.94	2512	5288	0.2950	91.9269	3.2149	1.0293	10.037481
445	4283.510	2087.490	5.17117	12.90618	12.90618	12.90618	6.96186	6.96186	6.96186	1.00000	8614	8614	2506	2506	3601	348.83	28595.94	2506	5272	0.2948	91.4352	3.2152	1.0299	10.034148
446	4292.981	2078.019	5.16620	12.89522	12.89522	12.89522	6.95781	6.95781	6.95781	1.00000	8591	8591	2501	2501	3589	348.83	28595.94	2501	5256	0.2947	90.9440	3.2156	1.0306	10.030889
447	4302.452	2068.548	5.16123	12.88425	12.88425	12.88425	6.95376	6.95376	6.95376	1.00000	8568	8568	2496	2496	3576	348.83	28595.94	2496	5240	0.2945	90.4535	3.2160	1.0291	10.027701
448	4311.923	2059.077	5.15626	12.87327	12.87327	12.87327	6.94971	6.94971	6.94971	1.00000	8545	8545	2490	2490	3564	348.83	28595.94	2490	5224	0.2943	89.9637	3.2165	1.0297	10.024586
449	4321.394	2049.606	5.15128	12.86229	12.86229	12.86229	6.94565	6.94565	6.94565	1.00000	8522	8522	2485	2485	3552	348.83	28595.94	2485	5209	0.2942	89.4744	3.2170	1.0303	10.021541
450	4330.865	2040.135	5.14630	12.85129	12.85129	12.85129	6.94159	6.94159	6.94159	1.00000	8499	8499	2480	2480	3540	348.83	28595.94	2480	5193	0.2940	88.9858	3.2175	1.0287	10.018566
451	4340.337	2030.663	5.14132	12.84028	12.84028	12.84028	6.93753	6.93753	6.93753	1.00000	8477	8477	2474	2474	3528	348.83	28595.94	2474	5177	0.2939	88.4978	3.2181	1.0292	10.015660
452	4349.808	2021.192	5.13633	12.82926	12.82926	12.82926	6.93346	6.93346	6.93346	1.00000	8454	8454	2469	2469	3516	348.83	28595.94	2469	5162	0.2937	88.0104	3.2188	1.0299	10.012823
453	4359.279	2011.721	5.13134	12.81822	12.81822	12.81822	6.92938	6.92938	6.92938	1.00000	8431	8431	2464	2464	3503	348.83	28595.94	2464	5146	0.2936	87.5236	3.2195	1.0283	10.010053
454	4368.750	2002.250	5.12635	12.80718	12.80718	12.80718	6.92530	6.92530	6.92530	1.00000	8408	8408	2459	2459	3491	348.83	28595.94	2459	5130	0.2934	87.0374	3.2203	1.0288	10.007350
455	4378.221	1992.779	5.12135	12.79612	12.79612	12.79612	6.92121	6.92121	6.92121	1.00000	8386	8386	2453	2453	3479	348.83	28595.94	2453	5115	0.2932	86.5518	3.2211	1.0294	10.004712
456	4387.692	1983.308	5.11635	12.78505	12.78505	12.78505	6.91711	6.91711	6.91711	1.00000	8363	8363	2448	2448	3467	348.83	28595.94	2448	5099	0.2931	86.0669	3.2219	1.0278	10.002140
457	4397.163	1973.837	5.11135	12.77396	12.77396	12.77396	6.91301	6.91301	6.91301	1.00000	8340	8340	2443	2443	3455	348.83	28595.94	2443	5083	0.2929	85.5825	3.2228	1.0283	9.999633
458	4406.635	1964.365	5.10634	12.76286	12.76286	12.76286	6.90890	6.90890	6.90890	1.00000	8318	8318	2437	2437	3443	348.83	28595.94	2437	5068	0.2927	85.0987	3.2238	1.0284	9.997189
459	4416.106	1954.894	5.10133	12.75174	12.75174	12.75174	6.90479	6.90479	6.90479	1.00000	8295	8295	2432	2432	3431	348.83	28595.94	2432	5052	0.2926	84.6155	3.2248	1.0285	9.994808
460	4425.577	1945.423	5.09631	12.74060	12.74060	12.74060	6.90066	6.90066	6.90066	1.00000	8272	8272	2427	2427	3419	348.83	28595.94	2427	5037	0.2924	84.1329	3.2258	1.0290	9.992489
461	4435.048	1935.952	5.09129	12.72945	12.72945	12.72945	6.89653	6.89653	6.89653	1.00000	8250	8250	2422	2422	3407	348.83	28595.94	2422	5021	0.2923	83.6509	3.2269	1.0274	9.990232
462	4444.519	1926.481	5.08627	12.71829	12.71829	12.71829	6.89239	6.89239	6.89239	1.00000	8227	8227	2416	2416	3395	348.83	28595.94	2416	5006	0.2921	83.1694	3.2281	1.0280	9.988035
463	4453.990	1917.010	5.08124	12.70710	12.70710	12.70710	6.88824	6.88824	6.88824	1.00000	8205	8205	2411	2411	3383	348.83	28595.94	2411	4990	0.2919	82.6885	3.2293	1.0278	9.985899
464	4463.462	1907.538	5.07621	12.69590	12.69590	12.69590	6.88408	6.88408	6.88408	1.00000	8182	8182	2406	2406	3371	348.83	28595.94	2406	4975	0.2918	82.2083	3.2305	1.0279	9.983822
465	4472.933	1898.067	5.07117	12.68468	12.68468	12.68468	6.87991	6.87991	6.87991	1.00000	8160	8160	2400	2400	3359	348.83	28595.94	2400	4959	0.2916	81.7285	3.2318	1.0280	9.981803
466	4482.404	1888.596	5.06613	12.67344	12.67344	12.67344	6.87573	6.87573	6.87573	1.00000	8137	8137	2395	2395	3347	348.83	28595.94	2395	4944	0.2914	81.2494	3.2332	1.0284	9.979842
467	4491.875	1879.125	5.06108	12.66218	12.66218	12.66218	6.87154	6.87154	6.87154	1.00000	8114	8114	2390	2390	3335	348.83	28595.94	2390	4928	0.2913	80.7708	3.2345	1.0269	9.977939
468	4501.346	1869.654	5.05604	12.65090	12.65090	12.65090	6.86734	6.86734	6.86734	1.00000	8092	8092	2384	2384	3323	348.83	28595.94	2384	4913	0.2911	80.2928	3.2360	1.0268	9.976092
469	4510.817	1860.183	5.05098	12.63961	12.63961	12.63961	6.86313	6.86313	6.86313	1.00000	8069	8069	2379	2379	3311	348.83	28595.94	2379	4897	0.2909	79.8154	3.2375	1.0289	9.974301
470	4520.288	1850.712	5.04592	12.62828	12.62828	12.62828	6.85891	6.85891	6.85891	1.00000	8047	8047	2374	2374	3299	348.83	28595.94	2374	4882	0.2908	79.3385	3.2390	1.0267	9.972565
471	4529.760	1841.240	5.04086	12.61694	12.61694	12.61694	6.85467	6.85467	6.85467	1.00000	8024	8024	2369	2369	3287	348.83	28595.94	2369	4866	0.2906	78.8622	3.2406	1.0271	9.970883
472	4539.231	1831.769	5.03579	12.60558	12.60558	12.60558	6.85043	6.85043	6.85043	1.00000	8002	8002	2363	2363	3275	348.83	28595.94	2363	4851	0.2904	78.3864	3.2422	1.0275	9.969256
473	4548.702	1822.298	5.03072	12.59419	12.59419	12.59419	6.84617	6.84617	6.84617	1.00000	7979	7979	2358	2358	3264	348.83	28595.94	2358	4836	0.2903	77.9112	3.2438	1.0259	9.967682
474	4558.173	1812.827	5.02565	12.58278	12.58278	12.58278	6.84189	6.84189	6.84189	1.00000	7957	7957	2353	2353	3252	348.83	28595.94	2353	4820	0.2901	77.4366	3.2455	1.0258	9.966160
475	4567.644	1803.356	5.02057	12.57135	12.57135	12.57135	6.83761	6.83761	6.83761	1.00000	7934	7934	2347	2347	3240	348.83	28595.94	2347	4805	0.2899	76.9625	3.2473	1.0274	9.964690
476	4577.115	1793.885	5.01548	12.55989	12.55989	12.55989	6.83331	6.83331	6.83331	1.00000	7912	7912	2342	2342	3228	348.83	28595.94	2342	4789	0.2898	76.4889	3.2491	1.0269	9.963272
477	4586.587	1784.413	5.01039	12.54841	12.54841	12.54841	6.82900	6.82900	6.82900	1.00000	7889	7889	2337	2337	3216	348.83	28595.94	2337	4774	0.2896	76.0159	3.2510	1.0268	9.961904
478	4596.058	1774.942	5.00529	12.53691	12.53691	12.53691	6.82467	6.82467	6.82467	1.00000	7867	7867	2331	2331	3204	348.83	28595.94	2331	4759	0.2894	75.5435	3.2528	1.0272	9.960586
479	4605.529	1765.471	5.00019	12.52537	12.52537	12.52537	6.82033	6.82033	6.82033	1.00000	7845	7845	2326	2326	3193	348.83	28595.94	2326	4743	0.2893	75.0716	3.2548	1.0255	9.959318
480	4615.000	1756.000	4.99509	12.51382	12.51382	12.51382	6.81597	6.81597	6.81597	1.00000	7822	7822	2321	2321	3181	348.83	28595.94	2321	4728	0.2891	74.6002	3.2568	1.0254	9.958098
481	4624.471	1746.529	4.98998	12.50223	12.50223	12.50223	6.81160	6.81160	6.81160	1.00000	7800	7800	2315	2315	3169	348.83	28595.94	2315	4713	0.2889	74.1293	3.2588	1.0269	9.956927
482	4633.942	1737.058	4.98486	12.49062	12.49062	12.49062	6.80721	6.80721	6.80721	1.00000	7777	7777	2310	2310	3157	348.83	28595.94	2310	4697	0.2888	73.6590	3.2608	1.0264	9.955803

Table S7: Continued.

Layer	Radius km	Depth km	ρ g/cc	v_{PH} km/s	v_{PV} km/s	v_P km/s	v_{SH} km/s	v_{SV} km/s	v_S km/s	η	**A** kbar	**C** kbar	**N** kbar	**L** kbar	**F** kbar	Q_μ	Q_κ	μ kbar	κ kbar	σ_P	p GPa	κ'	η_B	g m/s^2
483	4643.413	1727.587	4.97974	12.47898	12.47898	12.47898	6.80280	6.80280	6.80280	1.00000	7755	7755	2305	2305	3146	348.83	28595.94	2305	4682	0.2886	73.1893	3.2630	1.0262	9.954726
484	4652.885	1718.115	4.97461	12.46731	12.46731	12.46731	6.79838	6.79838	6.79838	1.00000	7732	7732	2299	2299	3134	348.83	28595.94	2299	4667	0.2884	72.7200	3.2651	1.0266	9.953696
485	4662.356	1708.644	4.96948	12.45561	12.45561	12.45561	6.79395	6.79395	6.79395	1.00000	7710	7710	2294	2294	3122	348.83	28595.94	2294	4651	0.2882	72.2513	3.2673	1.0243	9.952712
486	4671.827	1699.173	4.96435	12.44389	12.44389	12.44389	6.78949	6.78949	6.78949	1.00000	7687	7687	2288	2288	3110	348.83	28595.94	2288	4636	0.2881	71.7831	3.2695	1.0263	9.951772
487	4681.298	1689.702	4.95920	12.43213	12.43213	12.43213	6.78502	6.78502	6.78502	1.00000	7665	7665	2283	2283	3099	348.83	28595.94	2283	4621	0.2879	71.3155	3.2718	1.0257	9.950878
488	4690.769	1680.231	4.95406	12.42035	12.42035	12.42035	6.78053	6.78053	6.78053	1.00000	7642	7642	2278	2278	3087	348.83	28595.94	2278	4606	0.2877	70.8484	3.2741	1.0251	9.950028
489	4700.240	1670.760	4.94890	12.40853	12.40853	12.40853	6.77602	6.77602	6.77602	1.00000	7620	7620	2272	2272	3075	348.83	28595.94	2272	4590	0.2875	70.3818	3.2765	1.0269	9.949221
490	4709.712	1661.288	4.94374	12.39668	12.39668	12.39668	6.77149	6.77149	6.77149	1.00000	7597	7597	2267	2267	3064	348.83	28595.94	2267	4575	0.2874	69.9157	3.2789	1.0247	9.948457
491	4719.183	1651.817	4.93858	12.38480	12.38480	12.38480	6.76695	6.76695	6.76695	1.00000	7575	7575	2261	2261	3052	348.83	28595.94	2261	4560	0.2872	69.4501	3.2813	1.0247	9.947736
492	4728.654	1642.346	4.93341	12.37289	12.37289	12.37289	6.76238	6.76238	6.76238	1.00000	7552	7552	2256	2256	3040	348.83	28595.94	2256	4544	0.2870	68.9851	3.2838	1.0260	9.947056
493	4738.125	1632.875	4.92823	12.36095	12.36095	12.36095	6.75780	6.75780	6.75780	1.00000	7530	7530	2251	2251	3029	348.83	28595.94	2251	4529	0.2868	68.5206	3.2864	1.0253	9.946418
494	4747.596	1623.404	4.92305	12.34897	12.34897	12.34897	6.75319	6.75319	6.75319	1.00000	7508	7508	2245	2245	3017	348.83	28595.94	2245	4514	0.2867	68.0566	3.2889	1.0252	9.945821
495	4757.067	1613.933	4.91786	12.33696	12.33696	12.33696	6.74856	6.74856	6.74856	1.00000	7485	7485	2240	2240	3006	348.83	28595.94	2240	4499	0.2865	67.5931	3.2915	1.0249	9.945264
496	4766.538	1604.462	4.91267	12.32491	12.32491	12.32491	6.74392	6.74392	6.74392	1.00000	7463	7463	2234	2234	2994	348.83	28595.94	2234	4483	0.2863	67.1301	3.2942	1.0247	9.944747
497	4776.010	1594.990	4.90747	12.31283	12.31283	12.31283	6.73925	6.73925	6.73925	1.00000	7440	7440	2229	2229	2982	348.83	28595.94	2229	4468	0.2861	66.6677	3.2968	1.0239	9.944269
498	4785.481	1585.519	4.90227	12.30072	12.30072	12.30072	6.73456	6.73456	6.73456	1.00000	7418	7418	2223	2223	2971	348.83	28595.94	2223	4453	0.2860	66.2057	3.2996	1.0254	9.943830
499	4794.952	1576.048	4.89705	12.28856	12.28856	12.28856	6.72985	6.72985	6.72985	1.00000	7395	7395	2218	2218	2959	348.83	28595.94	2218	4438	0.2858	65.7443	3.3023	1.0247	9.943429
500	4804.423	1566.577	4.89184	12.27638	12.27638	12.27638	6.72512	6.72512	6.72512	1.00000	7372	7372	2212	2212	2948	348.83	28595.94	2212	4423	0.2856	65.2833	3.3051	1.0241	9.943065
501	4813.894	1557.106	4.88661	12.26415	12.26415	12.26415	6.72036	6.72036	6.72036	1.00000	7350	7350	2207	2207	2936	348.83	28595.94	2207	4407	0.2854	64.8229	3.3080	1.0255	9.942739
502	4823.365	1547.635	4.88138	12.25189	12.25189	12.25189	6.71558	6.71558	6.71558	1.00000	7327	7327	2201	2201	2924	348.83	28595.94	2201	4392	0.2853	64.3630	3.3108	1.0246	9.942449
503	4832.837	1538.163	4.87614	12.23959	12.23959	12.23959	6.71078	6.71078	6.71078	1.00000	7305	7305	2196	2196	2913	348.83	28595.94	2196	4377	0.2851	63.9036	3.3137	1.0243	9.942196
504	4842.308	1528.692	4.87090	12.22725	12.22725	12.22725	6.70596	6.70596	6.70596	1.00000	7282	7282	2190	2190	2901	348.83	28595.94	2190	4362	0.2849	63.4447	3.3167	1.0241	9.941978
505	4851.779	1519.221	4.86565	12.21487	12.21487	12.21487	6.70111	6.70111	6.70111	1.00000	7260	7260	2185	2185	2890	348.83	28595.94	2185	4346	0.2847	62.9863	3.3196	1.0234	9.941796
506	4861.250	1509.750	4.86040	12.20245	12.20245	12.20245	6.69623	6.69623	6.69623	1.00000	7237	7237	2179	2179	2878	348.83	28595.94	2179	4331	0.2846	62.5284	3.3227	1.0241	9.941648
507	4870.721	1500.279	4.85513	12.19000	12.19000	12.19000	6.69134	6.69134	6.69134	1.00000	7215	7215	2174	2174	2867	348.83	28595.94	2174	4316	0.2844	62.0710	3.3257	1.0255	9.941534
508	4880.192	1490.808	4.84986	12.17750	12.17750	12.17750	6.68641	6.68641	6.68641	1.00000	7192	7192	2168	2168	2855	348.83	28595.94	2168	4301	0.2842	61.6141	3.3288	1.0228	9.941454
509	4889.663	1481.337	4.84459	12.16496	12.16496	12.16496	6.68146	6.68146	6.68146	1.00000	7169	7169	2163	2163	2844	348.83	28595.94	2163	4286	0.2840	61.1577	3.3319	1.0240	9.941408
510	4899.135	1471.865	4.83930	12.15238	12.15238	12.15238	6.67649	6.67649	6.67649	1.00000	7147	7147	2157	2157	2832	348.83	28595.94	2157	4271	0.2838	60.7018	3.3351	1.0250	9.941394
511	4908.606	1462.394	4.83401	12.13976	12.13976	12.13976	6.67149	6.67149	6.67149	1.00000	7124	7124	2152	2152	2821	348.83	28595.94	2152	4255	0.2837	60.2464	3.3383	1.0229	9.941412
512	4918.077	1452.923	4.82872	12.12709	12.12709	12.12709	6.66646	6.66646	6.66646	1.00000	7101	7101	2146	2146	2809	348.83	28595.94	2146	4240	0.2835	59.7915	3.3415	1.0221	9.941462
513	4927.548	1443.452	4.82342	12.11438	12.11438	12.11438	6.66141	6.66141	6.66141	1.00000	7079	7079	2140	2140	2798	348.83	28595.94	2140	4225	0.2833	59.3371	3.3447	1.0248	9.941544
514	4937.019	1433.981	4.81810	12.10163	12.10163	12.10163	6.65633	6.65633	6.65633	1.00000	7056	7056	2135	2135	2787	348.83	28595.94	2135	4210	0.2831	58.8832	3.3480	1.0236	9.941657
515	4946.490	1424.510	4.81279	12.08884	12.08884	12.08884	6.65122	6.65122	6.65122	1.00000	7033	7033	2129	2129	2775	348.83	28595.94	2129	4195	0.2829	58.4297	3.3513	1.0228	9.941800
516	4955.962	1415.038	4.80746	12.07600	12.07600	12.07600	6.64608	6.64608	6.64608	1.00000	7011	7011	2123	2123	2764	348.83	28595.94	2123	4179	0.2828	57.9768	3.3547	1.0239	9.941973
517	4965.433	1405.567	4.80213	12.06311	12.06311	12.06311	6.64092	6.64092	6.64092	1.00000	6988	6988	2118	2118	2752	348.83	28595.94	2118	4164	0.2826	57.5244	3.3580	1.0231	9.942175
518	4974.904	1396.096	4.79679	12.05018	12.05018	12.05018	6.63572	6.63572	6.63572	1.00000	6965	6965	2112	2112	2741	348.83	28595.94	2112	4149	0.2824	57.0724	3.3615	1.0224	9.942407
519	4984.375	1386.625	4.79145	12.03720	12.03720	12.03720	6.63050	6.63050	6.63050	1.00000	6943	6943	2106	2106	2730	348.83	28595.94	2106	4134	0.2822	56.6210	3.3649	1.0230	9.942668
520	4993.846	1377.154	4.78609	12.02418	12.02418	12.02418	6.62525	6.62525	6.62525	1.00000	6920	6920	2101	2101	2718	348.83	28595.94	2101	4119	0.2820	56.1700	3.3684	1.0237	9.942956
521	5003.317	1367.683	4.78073	12.01111	12.01111	12.01111	6.61997	6.61997	6.61997	1.00000	6897	6897	2095	2095	2707	348.83	28595.94	2095	4104	0.2818	55.7196	3.3719	1.0228	9.943273
522	5012.788	1358.212	4.77536	11.99799	11.99799	11.99799	6.61466	6.61466	6.61466	1.00000	6874	6874	2089	2089	2695	348.83	28595.94	2089	4088	0.2817	55.2696	3.3754	1.0223	9.943617
523	5022.260	1348.740	4.76999	11.98482	11.98482	11.98482	6.60932	6.60932	6.60932	1.00000	6851	6851	2084	2084	2684	348.83	28595.94	2084	4073	0.2815	54.8201	3.3789	1.0213	9.943988
524	5031.731	1339.269	4.76461	11.97161	11.97161	11.97161	6.60394	6.60394	6.60394	1.00000	6829	6829	2078	2078	2673	348.83	28595.94	2078	4058	0.2813	54.3711	3.3825	1.0222	9.944385
525	5041.202	1329.798	4.75922	11.95834	11.95834	11.95834	6.59854	6.59854	6.59854	1.00000	6806	6806	2072	2072	2661	348.83	28595.94	2072	4043	0.2811	53.9226	3.3861	1.0223	9.944809
526	5050.673	1320.327	4.75382	11.94503	11.94503	11.94503	6.59310	6.59310	6.59310	1.00000	6783	6783	2066	2066	2650	348.83	28595.94	2066	4028	0.2809	53.4746	3.3898	1.0230	9.945258
527	5060.144	1310.856	4.74841	11.93166	11.93166	11.93166	6.58764	6.58764	6.58764	1.00000	6760	6760	2061	2061	2639	348.83	28595.94	2061	4013	0.2808	53.0270	3.3934	1.0221	9.945733
528	5069.615	1301.385	4.74300	11.91825	11.91825	11.91825	6.58214	6.58214	6.58214	1.00000	6737	6737	2055	2055	2627	348.83	28595.94	2055	3997	0.2806	52.5800	3.3971	1.0211	9.946232
529	5079.087	1291.913	4.73758	11.90478	11.90478	11.90478	6.57661	6.57661	6.57661	1.00000	6714	6714	2049	2049	2616	348.83	28595.94	2049	3982	0.2804	52.1334	3.4008	1.0217	9.946756
530	5088.558	1282.442	4.73215	11.89126	11.89126	11.89126	6.57104	6.57104	6.57104	1.00000	6691	6691	2043	2043	2605	348.83	28595.94	2043	3967	0.2802	51.6874	3.4046	1.0219	9.947305
531	5098.029	1272.971	4.72671	11.87769	11.87769	11.87769	6.56544	6.56544	6.56544	1.00000	6668	6668	2037	2037	2594	348.83	28595.94	2037	3952	0.2800	51.2418	3.4084	1.0225	9.947876
532	5107.500	1263.500	4.72126	11.86407	11.86407	11.86407	6.55981	6.55981	6.55981	1.00000	6645	6645	2032	2032	2582	348.83	28595.94	2032	3937	0.2798	50.7967	3.4121	1.0215	9.948471
533	5116.971	1254.029	4.71581	11.85039	11.85039	11.85039	6.55415	6.55415	6.55415	1.00000	6622	6622	2026	2026	2571	348.83	28595.94	2026	3921	0.2797	50.3521	3.4160	1.0206	9.949089
534	5126.442	1244.558	4.71035	11.83666	11.83666	11.83666	6.54845	6.54845	6.54845	1.00000	6600	6600	2020	2020	2560	348.83	28595.94	2020	3906	0.2795	49.9079	3.4198	1.0211	9.949730
535	5135.913	1235.087	4.70488	11.82288	11.82288	11.82288	6.54271	6.54271	6.54271	1.00000	6576	6576	2014	2014	2548	348.83	28595.94	2014	3891	0.2793	49.4643	3.4237	1.0211	9.950392
536	5145.385	1225.615	4.69940	11.80904	11.80904	11.80904	6.53694	6.53694	6.53694	1.00000	6553	6553	2008	2008	2537	348.83	28595.94	2008	3876	0.2791	49.0211	3.4275	1.0216	9.951077
537	5154.856	1216.144	4.69391	11.79514	11.79514	11.79514	6.53114	6.53114	6.53114	1.00000	6530	6530	2002	2002	2526	348.83	28595.94	2002	3861	0.2789	48.5785	3.4314	1.0208	9.951782
538	5164.327	1206.673	4.68842	11.78119	11.78119	11.78119	6.52530	6.52530	6.52530	1.00000	6507	6507	1996	1996	2515	348.83	28595.94	1996	3846	0.2787	48.1363	3.4354	1.0193	9.952509
539	5173.798	1197.202	4.68292	11.76719	11.76719	11.76719	6.51942	6.51942	6.51942	1.00000	6484	6484	1990	1990	2504	348.83	28595.94	1990	3830	0.2785	47.6946	3.4393	1.0212	9.953256
540	5183.269	1187.731	4.67740	11.75312	11.75312	11.75312	6.51351	6.51351	6.51351	1.00000	6461	6461	1984	1984	2492	348.83	28595.94	1984	3815	0.2784	47.2534	3.4433	1.0216	9.954023
541	5192.740	1178.260	4.67188	11.73900	11.73900	11.73900	6.50756	6.50756	6.50756	1.00000	6438	6438	1978	1978	2481	348.83	28595.94	1978	3800	0.2782	46.8127	3.4473	1.0187	9.954810
542	5202.212	1168.788	4.66636	11.72482	11.72482	11.72482	6.50157	6.50157	6.50157	1.00000	6415	6415	1972	1972	2470	348.83	28595.94	1972	3785	0.2780	46.3724	3.4513	1.0191	9.955616
543	5211.683	1159.317	4.66082	11.71058	11.71058	11.71058	6.49555	6.49555	6.49555	1.00000	6392	6392	1966	1966	2459	348.83	28595.94	1966	3770	0.2778	45.9327	3.4553	1.0211	9.956442
544	5221.154	1149.846	4.65527	11.69628	11.69628	11.69628	6.48949	6.48949	6.48949	1.00000	6369	6369	1960	1960	2448	348.83	28595.94	1960	3755	0.2776	45.4934	3.4594	1.0192	9.957286
545	5230.625	1140.375	4.64972	11.68193	11.68193	11.68193	6.48338	6.48338	6.48338	1.00000	6345	6345	1954	1954	2436	348.83	28595.94	1954	3739	0.2774	45.0546	3.4634	1.0197	9.958149
546	5240.096	1130.904	4.64415	11.66751	11.66751	11.66751	6.47724	6.47724	6.47724	1.00000	6322	6322	1948	1948	2425	348.83	28595.94	1948	3724	0.2773	44.6163	3.4675	1.0200	9.959030
547	5249.567	1121.433	4.63858	11.65303	11.65303	11.65303	6.47107	6.47107	6.47107	1.00000	6299	6299	1942	1942	2414	348.83	28595.94	1942	3709	0.2771	44.1785	3.4716	1.0185	9.959928
548	5259.038	1111.962	4.63300	11.63850	11.63850	11.63850	6.46485	6.46485	6.46485	1.00000	6276	6276	1936	1936	2403	348.83	28595.94	1936	3694	0.2769	43.7412	3.4757	1.0188	9.960843
549	5268.510	1102.490	4.62741	11.62390	11.62390	11.62390	6.45859	6.45859	6.45859	1.00000	6252	6252	1930	1930	2392	348.83	28595.94	1930	3679	0.2767	43.3044	3.4798	1.0186	9.961776
550	5277.981	1093.019	4.62181	11.60924	11.60924	11.60924	6.45229	6.45229	6.45229	1.00000	6229	6229	1924	1924	2381	348.83	28595.94	1924	3663	0.2765	42.8680	3.4840	1.0191	9.962725

Table S7: Continued.

Layer	Radius km	Depth km	ρ g/cc	v_{PH} km/s	v_{PV} km/s	v_P km/s	v_{SH} km/s	v_{SV} km/s	v_S km/s	η	**A** kbar	**C** kbar	**N** kbar	**L** kbar	**F** kbar	Q_μ	Q_κ	μ kbar	κ kbar	σ_P	p GPa	κ'	η_B	g m/s^2
551	5287.452	1083.548	4.61620	11.59451	11.59451	11.59451	6.44596	6.44596	6.44596	1.00000	6206	6206	1918	1918	2370	348.83	28595.94	1918	3648	0.2763	42.4321	3.4881	1.0176	9.963690
552	5296.923	1074.077	4.61059	11.57972	11.57972	11.57972	6.43958	6.43958	6.43958	1.00000	6182	6182	1912	1912	2358	348.83	28595.94	1912	3633	0.2761	41.9968	3.4923	1.0174	9.964671
553	5306.394	1064.606	4.60496	11.56487	11.56487	11.56487	6.43316	6.43316	6.43316	1.00000	6159	6159	1906	1906	2347	348.83	28595.94	1906	3618	0.2760	41.5619	3.4965	1.0192	9.965668
554	5315.865	1055.135	4.59932	11.54996	11.54996	11.54996	6.42670	6.42670	6.42670	1.00000	6136	6136	1900	1900	2336	348.83	28595.94	1900	3603	0.2758	41.1275	3.5007	1.0171	9.966680
555	5325.337	1045.663	4.59368	11.53498	11.53498	11.53498	6.42019	6.42019	6.42019	1.00000	6112	6112	1893	1893	2325	348.83	28595.94	1893	3588	0.2756	40.6936	3.5049	1.0174	9.967706
556	5334.808	1036.192	4.58802	11.51994	11.51994	11.51994	6.41365	6.41365	6.41365	1.00000	6089	6089	1887	1887	2314	348.83	28595.94	1887	3572	0.2754	40.2601	3.5091	1.0178	9.968747
557	5344.279	1026.721	4.58236	11.50483	11.50483	11.50483	6.40706	6.40706	6.40706	1.00000	6065	6065	1881	1881	2303	348.83	28595.94	1881	3557	0.2752	39.8272	3.5133	1.0157	9.969803
558	5353.750	1017.250	4.57669	11.48965	11.48965	11.48965	6.40043	6.40043	6.40043	1.00000	6042	6042	1875	1875	2292	348.83	28595.94	1875	3542	0.2750	39.3948	3.5176	1.0174	9.970872
559	5363.221	1007.779	4.57100	11.47441	11.47441	11.47441	6.39376	6.39376	6.39376	1.00000	6018	6018	1869	1869	2281	348.83	28595.94	1869	3527	0.2748	38.9628	3.5218	1.0171	9.971954
560	5372.692	998.308	4.56531	11.45910	11.45910	11.45910	6.38704	6.38704	6.38704	1.00000	5995	5995	1862	1862	2270	348.83	28595.94	1862	3512	0.2747	38.5313	3.5261	1.0157	9.973050
561	5382.163	988.837	4.55961	11.44372	11.44372	11.44372	6.38028	6.38028	6.38028	1.00000	5971	5971	1856	1856	2259	348.83	28595.94	1856	3496	0.2745	38.1004	3.5304	1.0154	9.974159
562	5391.635	979.365	4.55390	11.42827	11.42827	11.42827	6.37347	6.37347	6.37347	1.00000	5948	5948	1850	1850	2248	348.83	28595.94	1850	3481	0.2743	37.6699	3.5346	1.0165	9.975280
563	5401.106	969.894	4.54817	11.41276	11.41276	11.41276	6.36662	6.36662	6.36662	1.00000	5924	5924	1844	1844	2237	348.83	28595.94	1844	3466	0.2741	37.2399	3.5389	1.0164	9.976413
564	5410.577	960.423	4.54244	11.39717	11.39717	11.39717	6.35973	6.35973	6.35973	1.00000	5900	5900	1837	1837	2226	348.83	28595.94	1837	3451	0.2739	36.8104	3.5432	1.0147	9.977559
565	5420.048	950.952	4.53670	11.38152	11.38152	11.38152	6.35279	6.35279	6.35279	1.00000	5877	5877	1831	1831	2215	348.83	28595.94	1831	3436	0.2737	36.3814	3.5475	1.0148	9.978715
566	5429.519	941.481	4.53095	11.36580	11.36580	11.36580	6.34580	6.34580	6.34580	1.00000	5853	5853	1825	1825	2204	348.83	28595.94	1825	3420	0.2735	35.9528	3.5518	1.0144	9.979883
567	5438.990	932.010	4.52519	11.35000	11.35000	11.35000	6.33877	6.33877	6.33877	1.00000	5829	5829	1818	1818	2193	348.83	28595.94	1818	3405	0.2734	35.5248	3.5561	1.0141	9.981062
568	5448.462	922.538	4.51942	11.33414	11.33414	11.33414	6.33169	6.33169	6.33169	1.00000	5806	5806	1812	1812	2182	348.83	28595.94	1812	3390	0.2732	35.0973	3.5605	1.0134	9.982252
569	5457.933	913.067	4.51364	11.31820	11.31820	11.31820	6.32456	6.32456	6.32456	1.00000	5782	5782	1805	1805	2171	348.83	28595.94	1805	3375	0.2730	34.6703	3.5648	1.0146	9.983452
570	5467.404	903.596	4.50784	11.30219	11.30219	11.30219	6.31739	6.31739	6.31739	1.00000	5758	5758	1799	1799	2160	348.83	28595.94	1799	3360	0.2728	34.2437	3.5691	1.0142	9.984661
571	5476.875	894.125	4.50204	11.28611	11.28611	11.28611	6.31017	6.31017	6.31017	1.00000	5735	5735	1793	1793	2149	348.83	28595.94	1793	3344	0.2726	33.8177	3.5734	1.0126	9.985881
572	5486.346	884.654	4.49623	11.26995	11.26995	11.26995	6.30290	6.30290	6.30290	1.00000	5711	5711	1786	1786	2138	348.83	28595.94	1786	3329	0.2724	33.3921	3.5778	1.0122	9.987110
573	5495.817	875.183	4.49041	11.25372	11.25372	11.25372	6.29558	6.29558	6.29558	1.00000	5687	5687	1780	1780	2127	348.83	28595.94	1780	3314	0.2722	32.9671	3.5821	1.0131	9.988347
574	5505.288	865.712	4.48457	11.23742	11.23742	11.23742	6.28822	6.28822	6.28822	1.00000	5663	5663	1773	1773	2117	348.83	28595.94	1773	3299	0.2721	32.5425	3.5864	1.0127	9.989594
575	5514.760	856.240	4.47873	11.22104	11.22104	11.22104	6.28080	6.28080	6.28080	1.00000	5639	5639	1767	1767	2106	348.83	28595.94	1767	3284	0.2719	32.1185	3.5908	1.0105	9.990849
576	5524.231	846.769	4.47288	11.20458	11.20458	11.20458	6.27334	6.27334	6.27334	1.00000	5615	5615	1760	1760	2095	348.83	28595.94	1760	3268	0.2717	31.6949	3.5951	1.0119	9.992112
577	5533.702	837.298	4.46701	11.18805	11.18805	11.18805	6.26582	6.26582	6.26582	1.00000	5591	5591	1754	1754	2084	348.83	28595.94	1754	3253	0.2715	31.2719	3.5994	1.0111	9.993384
578	5543.173	827.827	4.46114	11.17144	11.17144	11.17144	6.25826	6.25826	6.25826	1.00000	5568	5568	1747	1747	2073	348.83	28595.94	1747	3238	0.2713	30.8493	3.6038	1.0102	9.994662
579	5552.644	818.356	4.45525	11.15476	11.15476	11.15476	6.25065	6.25065	6.25065	1.00000	5544	5544	1741	1741	2062	348.83	28595.94	1741	3223	0.2711	30.4273	3.6081	1.0116	9.995948
580	5562.115	808.885	4.44935	11.13800	11.13800	11.13800	6.24298	6.24298	6.24298	1.00000	5520	5520	1734	1734	2051	348.83	28595.94	1734	3207	0.2710	30.0058	3.6124	1.0092	9.997241
581	5571.587	799.413	4.44345	11.12116	11.12116	11.12116	6.23527	6.23527	6.23527	1.00000	5496	5496	1728	1728	2041	348.83	28595.94	1728	3192	0.2708	29.5847	3.6167	1.0088	9.998541
582	5581.058	789.942	4.43753	11.10424	11.10424	11.10424	6.22750	6.22750	6.22750	1.00000	5472	5472	1721	1721	2030	348.83	28595.94	1721	3177	0.2706	29.1642	3.6211	1.0096	9.999847
583	5590.529	780.471	4.43160	11.08725	11.08725	11.08725	6.21968	6.21968	6.21968	1.00000	5448	5448	1714	1714	2019	348.83	28595.94	1714	3162	0.2704	28.7442	3.6254	1.0087	10.001159
584	5600.000	771.000	4.42566	11.07017	11.07017	11.07017	6.21181	6.21181	6.21181	1.00000	5424	5424	1708	1708	2008	348.83	28595.94	1708	3147	0.2702	28.3247	3.6254	1.0082	10.002476
585	5600.000	771.000	4.42566	11.07017	11.07017	11.07017	6.21181	6.21181	6.21181	1.00000	5424	5424	1708	1708	2008	348.83	28595.94	1708	3147	0.2702	28.3247	5.9273	2.0003	10.002476
586	5606.368	764.632	4.41773	11.04782	11.04782	11.04782	6.19706	6.19706	6.19706	1.00000	5392	5392	1697	1697	1999	348.83	28595.94	1697	3130	0.2705	28.0430	5.9169	1.9958	10.003355
587	5612.737	758.263	4.40980	11.02548	11.02548	11.02548	6.18232	6.18232	6.18232	1.00000	5361	5361	1685	1685	1990	348.83	28595.94	1685	3113	0.2707	27.7618	5.9065	1.9943	10.004215
588	5619.105	751.895	4.40186	11.00313	11.00313	11.00313	6.16757	6.16757	6.16757	1.00000	5329	5329	1674	1674	1980	348.83	28595.94	1674	3097	0.2709	27.4811	5.8961	1.9906	10.005057
589	5625.474	745.526	4.39393	10.98078	10.98078	10.98078	6.15282	6.15282	6.15282	1.00000	5298	5298	1663	1663	1971	348.83	28595.94	1663	3080	0.2712	27.2008	5.8857	1.9850	10.005880
590	5631.842	739.158	4.38600	10.95843	10.95843	10.95843	6.13807	6.13807	6.13807	1.00000	5267	5267	1652	1652	1962	348.83	28595.94	1652	3064	0.2714	26.9211	5.8753	1.9820	10.006685
591	5638.211	732.789	4.37807	10.93609	10.93609	10.93609	6.12333	6.12333	6.12333	1.00000	5236	5236	1642	1642	1953	348.83	28595.94	1642	3047	0.2717	26.6418	5.8649	1.9777	10.007471
592	5644.579	726.421	4.37014	10.91374	10.91374	10.91374	6.10858	6.10858	6.10858	1.00000	5205	5205	1631	1631	1944	348.83	28595.94	1631	3031	0.2719	26.3631	5.8545	1.9764	10.008238
593	5650.947	720.053	4.36220	10.89139	10.89139	10.89139	6.09383	6.09383	6.09383	1.00000	5175	5175	1620	1620	1935	348.83	28595.94	1620	3015	0.2721	26.0848	5.8442	1.9725	10.008987
594	5657.316	713.684	4.35427	10.86904	10.86904	10.86904	6.07908	6.07908	6.07908	1.00000	5144	5144	1609	1609	1926	348.83	28595.94	1609	2998	0.2724	25.8069	5.8338	1.9669	10.009717
595	5663.684	707.316	4.34634	10.84669	10.84669	10.84669	6.06434	6.06434	6.06434	1.00000	5113	5113	1598	1598	1917	348.83	28595.94	1598	2982	0.2726	25.5296	5.8234	1.9639	10.010429
596	5670.053	700.947	4.33841	10.82434	10.82434	10.82434	6.04959	6.04959	6.04959	1.00000	5083	5083	1588	1588	1908	348.83	28595.94	1588	2966	0.2729	25.2528	5.8130	1.9600	10.011122
597	5676.421	694.579	4.33048	10.80198	10.80198	10.80198	6.03484	6.03484	6.03484	1.00000	5053	5053	1577	1577	1899	348.83	28595.94	1577	2950	0.2731	24.9764	5.8027	1.9568	10.011796
598	5682.789	688.211	4.32255	10.77963	10.77963	10.77963	6.02009	6.02009	6.02009	1.00000	5023	5023	1567	1567	1890	348.83	28595.94	1567	2934	0.2734	24.7006	5.7923	1.9529	10.012452
599	5689.158	681.842	4.31462	10.75728	10.75728	10.75728	6.00535	6.00535	6.00535	1.00000	4993	4993	1556	1556	1881	348.83	28595.94	1556	2918	0.2736	24.4252	5.7819	1.9494	10.013089
600	5695.526	675.474	4.30669	10.73493	10.73493	10.73493	5.99060	5.99060	5.99060	1.00000	4963	4963	1546	1546	1872	348.83	28595.94	1546	2902	0.2739	24.1503	5.7716	1.9457	10.013707
601	5701.895	669.105	4.29876	10.71258	10.71258	10.71258	5.97585	5.97585	5.97585	1.00000	4933	4933	1535	1535	1863	348.83	28595.94	1535	2886	0.2741	23.8759	5.7612	1.9422	10.014307
602	5708.263	662.737	4.29083	10.69022	10.69022	10.69022	5.96110	5.96110	5.96110	1.00000	4904	4904	1525	1525	1854	348.83	28595.94	1525	2871	0.2744	23.6020	5.7509	1.9386	10.014888
603	5714.632	656.368	4.28290	10.66787	10.66787	10.66787	5.94636	5.94636	5.94636	1.00000	4874	4874	1514	1514	1845	348.83	28595.94	1514	2855	0.2746	23.3286	5.7405	1.9349	10.015450
604	5721.000	650.000	4.27497	10.64552	10.64552	10.64552	5.93161	5.93161	5.93161	1.00000	4845	4845	1504	1504	1836	348.83	28595.94	1504	2839	0.2749	23.0556	5.7405	1.9317	10.015994
605	5721.000	650.000	4.05516	10.38457	10.38457	10.38457	5.57002	5.57002	5.57002	1.00000	4373	4373	1258	1258	1857	192.86	28595.94	1258	2696	0.2981	23.0556	9.1187	2.1884	10.015994
606	5726.714	644.286	4.04752	10.35523	10.35523	10.35523	5.55575	5.55575	5.55575	1.00000	4340	4340	1249	1249	1842	192.86	28595.94	1249	2674	0.2979	22.8238	9.0896	2.1787	10.015418
607	5732.429	638.571	4.03988	10.32589	10.32589	10.32589	5.54149	5.54149	5.54149	1.00000	4307	4307	1241	1241	1826	192.86	28595.94	1241	2653	0.2977	22.5924	9.0606	2.1721	10.014820
608	5738.143	632.857	4.03223	10.29655	10.29655	10.29655	5.52722	5.52722	5.52722	1.00000	4275	4275	1232	1232	1811	192.86	28595.94	1232	2632	0.2976	22.3614	9.0317	2.1636	10.014208
609	5743.857	627.143	4.02459	10.26721	10.26721	10.26721	5.51295	5.51295	5.51295	1.00000	4243	4243	1223	1223	1796	192.86	28595.94	1223	2612	0.2974	22.1309	9.0027	2.1525	10.013579
610	5749.571	621.429	4.01695	10.23787	10.23787	10.23787	5.49869	5.49869	5.49869	1.00000	4210	4210	1215	1215	1781	192.86	28595.94	1215	2591	0.2973	21.9008	8.9737	2.1442	10.012935
611	5755.286	615.714	4.00931	10.20853	10.20853	10.20853	5.48442	5.48442	5.48442	1.00000	4178	4178	1206	1206	1766	192.86	28595.94	1206	2570	0.2971	21.6712	8.9448	2.1346	10.012276
612	5761.000	610.000	4.00167	10.17919	10.17919	10.17919	5.47015	5.47015	5.47015	1.00000	4146	4146	1197	1197	1752	192.86	28595.94	1197	2550	0.2970	21.4420	8.9159	2.1285	10.011601
613	5766.714	604.286	3.99402	10.14985	10.14985	10.14985	5.45588	5.45588	5.45588	1.00000	4115	4115	1189	1189	1737	192.86	28595.94	1189	2529	0.2968	21.2133	8.8869	2.1193	10.010910
614	5772.429	598.571	3.98638	10.12051	10.12051	10.12051	5.44162	5.44162	5.44162	1.00000	4083	4083	1180	1180	1722	192.86	28595.94	1180	2509	0.2967	20.9851	8.8580	2.1083	10.010204
615	5778.143	592.857	3.97874	10.09117	10.09117	10.09117	5.42735	5.42735	5.42735	1.00000	4052	4052	1172	1172	1708	192.86	28595.94	1172	2489	0.2965	20.7573	8.8292	2.1004	10.009482
616	5783.857	587.143	3.97110	10.06182	10.06182	10.06182	5.41308	5.41308	5.41308	1.00000	4020	4020	1164	1164	1693	192.86	28595.94	1164	2469	0.2963	20.5299	8.8003	2.0916	10.008745
617	5789.571	581.429	3.96346	10.03248	10.03248	10.03248	5.39882	5.39882	5.39882	1.00000	3989	3989	1155	1155	1679	192.86	28595.94	1155	2449	0.2962	20.3030	8.7714	2.0821	10.007992
618	5795.286	575.714	3.95582	10.00314	10.00314	10.00314	5.38455	5.38455	5.38455	1.00000	3958	3958	1147	1147	1664	192.86	28595.94	1147	2429	0.2960	20.0766	8.7426	2.0755	10.007223
619	5801.000	570.000	3.94817	9.97380	9.97380	9.97380	5.37028	5.37028	5.37028	1.00000	3928	3928	1139	1139	1650	192.86	28595.94	1139	2409	0.2959	19.8506	8.7138	2.0671	10.006439
620	5806.714	564.286	3.94053	9.94446	9.94446	9.94446	5.35602	5.35602	5.35602	1.00000	3897	3897	1130	1130	1636	192.86	28595.94	1130	2390	0.2957	19.6251	8.6850	2.0558	10.005639

Table S7: Continued.

Layer	Radius km	Depth km	ρ g/cc	v_{PH} km/s	v_{PV} km/s	v_P km/s	v_{SH} km/s	v_{SV} km/s	v_S km/s	η	**A** kbar	**C** kbar	**N** kbar	**L** kbar	**F** kbar	Q_μ	Q_κ	μ kbar	κ kbar	σ_P	p GPa	κ'	η_B	g m/s^2
621	5812.429	558.571	3.93289	9.91512	9.91512	9.91512	5.34175	5.34175	5.34175	1.00000	3866	3866	1122	1122	1622	192.86	28595.94	1122	2370	0.2955	19.4000	8.6562	2.0478	10.004824
622	5818.143	552.857	3.92525	9.88578	9.88578	9.88578	5.32748	5.32748	5.32748	1.00000	3836	3836	1114	1114	1608	192.86	28595.94	1114	2351	0.2954	19.1754	8.6274	2.0387	10.003993
623	5823.857	547.143	3.91761	9.85644	9.85644	9.85644	5.31322	5.31322	5.31322	1.00000	3806	3806	1106	1106	1594	192.86	28595.94	1106	2331	0.2952	18.9512	8.5986	2.0321	10.003146
624	5829.571	541.429	3.90996	9.82710	9.82710	9.82710	5.29895	5.29895	5.29895	1.00000	3776	3776	1098	1098	1580	192.86	28595.94	1098	2312	0.2950	18.7275	8.5699	2.0232	10.002283
625	5835.286	535.714	3.90232	9.79776	9.79776	9.79776	5.28468	5.28468	5.28468	1.00000	3746	3746	1090	1090	1566	192.86	28595.94	1090	2293	0.2949	18.5043	8.5411	2.0123	10.001405
626	5841.000	530.000	3.89468	9.76842	9.76842	9.76842	5.27041	5.27041	5.27041	1.00000	3716	3716	1082	1082	1553	192.86	28595.94	1082	2274	0.2947	18.2815	8.5124	2.0047	10.000511
627	5846.714	524.286	3.88704	9.73908	9.73908	9.73908	5.25615	5.25615	5.25615	1.00000	3687	3687	1074	1074	1539	192.86	28595.94	1074	2255	0.2945	18.0592	8.4837	1.9949	9.999601
628	5852.429	518.571	3.87940	9.70974	9.70974	9.70974	5.24188	5.24188	5.24188	1.00000	3657	3657	1066	1066	1526	192.86	28595.94	1066	2236	0.2943	17.8373	8.4550	1.9884	9.998676
629	5858.143	512.857	3.87175	9.68040	9.68040	9.68040	5.22761	5.22761	5.22761	1.00000	3628	3628	1058	1058	1512	192.86	28595.94	1058	2217	0.2942	17.6159	8.4263	1.9800	9.997735
630	5863.857	507.143	3.86411	9.65106	9.65106	9.65106	5.21335	5.21335	5.21335	1.00000	3599	3599	1050	1050	1499	192.86	28595.94	1050	2199	0.2940	17.3949	8.3976	1.9692	9.996778
631	5869.571	501.429	3.85647	9.62172	9.62172	9.62172	5.19908	5.19908	5.19908	1.00000	3570	3570	1042	1042	1485	192.86	28595.94	1042	2180	0.2938	17.1744	8.3690	1.9610	9.995805
632	5875.286	495.714	3.84883	9.59238	9.59238	9.59238	5.18481	5.18481	5.18481	1.00000	3541	3541	1035	1035	1472	192.86	28595.94	1035	2162	0.2936	16.9543	8.3403	1.9517	9.994817
633	5881.000	490.000	3.84119	9.56304	9.56304	9.56304	5.17055	5.17055	5.17055	1.00000	3513	3513	1027	1027	1459	192.86	28595.94	1027	2144	0.2935	16.7348	8.3117	1.9455	9.993812
634	5886.714	484.286	3.83354	9.53370	9.53370	9.53370	5.15628	5.15628	5.15628	1.00000	3484	3484	1019	1019	1446	192.86	28595.94	1019	2125	0.2933	16.5156	8.2831	1.9365	9.992793
635	5892.429	478.571	3.82590	9.50436	9.50436	9.50436	5.14201	5.14201	5.14201	1.00000	3456	3456	1012	1012	1433	192.86	28595.94	1012	2107	0.2931	16.2970	8.2545	1.9259	9.991757
636	5898.143	472.857	3.81826	9.47502	9.47502	9.47502	5.12775	5.12775	5.12775	1.00000	3428	3428	1004	1004	1420	192.86	28595.94	1004	2089	0.2929	16.0787	8.2259	1.9180	9.990705
637	5903.857	467.143	3.81062	9.44567	9.44567	9.44567	5.11348	5.11348	5.11348	1.00000	3400	3400	996	996	1407	192.86	28595.94	996	2071	0.2927	15.8610	8.1973	1.9094	9.989638
638	5909.571	461.429	3.80298	9.41633	9.41633	9.41633	5.09921	5.09921	5.09921	1.00000	3372	3372	989	989	1394	192.86	28595.94	989	2054	0.2925	15.6437	8.1687	1.9000	9.988555
639	5915.286	455.714	3.79534	9.38699	9.38699	9.38699	5.08495	5.08495	5.08495	1.00000	3344	3344	981	981	1382	192.86	28595.94	981	2036	0.2923	15.4269	8.1402	1.8934	9.987455
640	5921.000	450.000	3.78769	9.35765	9.35765	9.35765	5.07068	5.07068	5.07068	1.00000	3317	3317	974	974	1369	192.86	28595.94	974	2018	0.2922	15.2105	8.1117	1.8852	9.986341
641	5926.714	444.286	3.78005	9.32831	9.32831	9.32831	5.05641	5.05641	5.05641	1.00000	3289	3289	966	966	1356	192.86	28595.94	966	2001	0.2920	14.9946	8.0831	1.8742	9.985210
642	5932.429	438.571	3.77241	9.29897	9.29897	9.29897	5.04214	5.04214	5.04214	1.00000	3262	3262	959	959	1344	192.86	28595.94	959	1983	0.2918	14.7791	8.0546	1.8664	9.984063
643	5938.143	432.857	3.76477	9.26963	9.26963	9.26963	5.02788	5.02788	5.02788	1.00000	3235	3235	952	952	1331	192.86	28595.94	952	1966	0.2916	14.5641	8.0261	1.8574	9.982901
644	5943.857	427.143	3.75713	9.24029	9.24029	9.24029	5.01361	5.01361	5.01361	1.00000	3208	3208	944	944	1319	192.86	28595.94	944	1949	0.2914	14.3496	7.9976	1.8508	9.981722
645	5949.571	421.429	3.74948	9.21095	9.21095	9.21095	4.99934	4.99934	4.99934	1.00000	3181	3181	937	937	1307	192.86	28595.94	937	1932	0.2912	14.1355	7.9692	1.8420	9.980528
646	5955.286	415.714	3.74184	9.18161	9.18161	9.18161	4.98508	4.98508	4.98508	1.00000	3154	3154	930	930	1295	192.86	28595.94	930	1915	0.2910	13.9219	7.9407	1.8315	9.979318
647	5961.000	410.000	3.73420	9.15227	9.15227	9.15227	4.97081	4.97081	4.97081	1.00000	3128	3128	923	923	1283	192.86	28595.94	923	1898	0.2908	13.7088	7.9407	1.8238	9.978092
648	5961.000	410.000	3.55535	8.92938	8.92938	8.92938	4.80443	4.80443	4.80443	1.00000	2835	2835	821	821	1193	192.86	385.62	821	1741	0.2963	13.7088	3.3608	0.6977	9.978092
649	5966.588	404.412	3.55252	8.91671	8.91684	8.91674	4.79836	4.79842	4.79841	1.00002	2825	2825	818	818	1189	192.64	385.62	818	1734	0.2962	13.5106	3.3654	0.6987	9.976055
650	5972.177	398.823	3.54968	8.90401	8.90427	8.90408	4.79228	4.79240	4.79238	1.00003	2814	2814	815	815	1184	192.37	385.62	815	1727	0.2961	13.3127	3.3793	0.6993	9.974022
651	5977.765	393.235	3.54683	8.89124	8.89160	8.89134	4.78619	4.78635	4.78632	1.00005	2804	2804	812	813	1179	191.99	385.62	813	1721	0.2960	13.1149	3.4026	0.7023	9.971997
652	5983.354	387.646	3.54395	8.87839	8.87881	8.87850	4.78005	4.78026	4.78022	1.00006	2794	2794	810	810	1174	191.46	385.62	810	1714	0.2959	12.9173	3.4351	0.7105	9.969980
653	5988.942	382.058	3.54103	8.86540	8.86586	8.86553	4.77388	4.77410	4.77405	1.00006	2783	2783	807	807	1169	190.72	385.62	807	1707	0.2958	12.7200	3.4769	0.7173	9.967970
654	5994.530	376.470	3.53808	8.85227	8.85268	8.85238	4.76765	4.76786	4.76781	1.00006	2773	2773	804	804	1164	189.74	385.62	804	1700	0.2957	12.5228	3.5277	0.7246	9.965967
655	6000.119	370.881	3.53508	8.83894	8.83926	8.83903	4.76136	4.76153	4.76149	1.00006	2762	2762	801	801	1159	188.47	385.62	801	1693	0.2956	12.3259	3.5877	0.7373	9.963972
656	6005.707	365.293	3.53202	8.82540	8.82554	8.82545	4.75499	4.75510	4.75506	1.00005	2751	2751	799	799	1154	186.87	385.62	799	1686	0.2955	12.1292	3.6566	0.7499	9.961984
657	6011.296	359.704	3.52890	8.81161	8.81147	8.81159	4.74854	4.74854	4.74851	1.00003	2740	2740	796	796	1149	184.92	385.62	796	1679	0.2954	11.9326	3.7363	0.7644	9.960002
658	6016.884	354.116	3.52571	8.79753	8.79705	8.79743	4.74199	4.74185	4.74184	1.00000	2729	2728	793	793	1143	182.62	385.62	793	1672	0.2953	11.7363	3.8290	0.7777	9.958026
659	6022.472	348.528	3.52247	8.78313	8.78227	8.78292	4.73533	4.73505	4.73507	0.99993	2717	2717	790	790	1138	180.05	385.62	790	1664	0.2951	11.5402	3.9347	0.7867	9.956056
660	6028.061	342.939	3.51918	8.76837	8.76714	8.76803	4.72856	4.72813	4.72821	0.99981	2706	2705	787	787	1132	177.27	385.62	787	1656	0.2950	11.3443	4.0533	0.7979	9.954091
661	6033.649	337.351	3.51584	8.75321	8.75167	8.75273	4.72167	4.72112	4.72128	0.99963	2694	2693	784	784	1126	174.35	385.62	784	1649	0.2948	11.1487	4.1846	0.8038	9.952131
662	6039.238	331.762	3.51248	8.73762	8.73586	8.73696	4.71465	4.71402	4.71430	0.99937	2682	2681	781	781	1120	171.36	385.62	781	1640	0.2946	10.9533	4.3285	0.8065	9.950177
663	6044.826	326.174	3.50909	8.72155	8.71972	8.72070	4.70749	4.70684	4.70728	0.99900	2669	2668	778	777	1113	168.34	385.62	778	1632	0.2944	10.7581	4.4846	0.8119	9.948227
664	6050.414	320.586	3.50568	8.70497	8.70325	8.70391	4.70018	4.69959	4.70024	0.99852	2656	2655	774	774	1106	165.33	385.62	774	1623	0.2942	10.5631	4.6528	0.8092	9.946282
665	6056.003	314.997	3.50228	8.68784	8.68647	8.68655	4.69270	4.69228	4.69320	0.99790	2643	2643	771	771	1099	162.39	385.62	771	1614	0.2939	10.3684	4.8311	0.8057	9.944342
666	6061.591	309.409	3.49887	8.67012	8.66937	8.66859	4.68507	4.68493	4.68616	0.99713	2630	2630	768	768	1091	159.54	385.62	768	1605	0.2935	10.1738	5.0044	0.8054	9.942406
667	6067.180	303.820	3.49545	8.65184	8.65188	8.65003	4.67728	4.67749	4.67911	0.99622	2616	2617	765	765	1083	156.67	385.62	765	1595	0.2932	9.9795	5.1652	0.8065	9.940475
668	6072.768	298.232	3.49200	8.63303	8.63388	8.63089	4.66937	4.66994	4.67199	0.99516	2603	2603	761	762	1074	153.66	385.62	762	1585	0.2928	9.7855	5.3134	0.8118	9.938548
669	6078.357	292.643	3.48850	8.61376	8.61526	8.61120	4.66134	4.66224	4.66476	0.99399	2588	2589	758	758	1065	150.38	385.62	759	1575	0.2923	9.5916	5.4491	0.8255	9.936625
670	6083.945	287.055	3.48491	8.59406	8.59591	8.59097	4.65324	4.65434	4.65738	0.99271	2574	2575	755	755	1056	146.76	385.62	756	1564	0.2919	9.3980	5.5726	0.8422	9.934706
671	6089.533	281.467	3.48123	8.57397	8.57571	8.57023	4.64507	4.64620	4.64981	0.99133	2559	2560	751	751	1047	142.72	385.62	753	1553	0.2914	9.2047	5.6840	0.8652	9.932790
672	6095.122	275.878	3.47741	8.55355	8.55455	8.54899	4.63686	4.63778	4.64199	0.98986	2544	2545	748	748	1038	138.23	385.62	749	1542	0.2909	9.0116	5.7834	0.8923	9.930877
673	6100.710	270.290	3.47346	8.53284	8.53232	8.52727	4.62864	4.62905	4.63388	0.98832	2529	2529	744	744	1028	133.29	385.62	746	1531	0.2905	8.8187	5.8710	0.9226	9.928965
674	6106.299	264.701	3.46933	8.51189	8.50891	8.50510	4.62043	4.61996	4.62545	0.98671	2514	2512	741	740	1019	127.92	385.62	742	1520	0.2900	8.6261	5.9393	0.9612	9.927055
675	6111.887	259.113	3.46502	8.49078	8.48423	8.48252	4.61228	4.61047	4.61666	0.98505	2498	2494	737	737	1010	122.20	385.62	739	1509	0.2896	8.4338	5.9675	0.9957	9.925146
676	6117.475	253.525	3.46055	8.46967	8.45829	8.45966	4.60433	4.60055	4.60753	0.98330	2482	2476	734	732	1001	116.32	385.62	735	1497	0.2891	8.2417	5.9523	1.0225	9.923236
677	6123.064	247.936	3.45595	8.44877	8.43111	8.43667	4.59673	4.59017	4.59808	0.98143	2467	2457	730	728	992	110.44	385.62	731	1486	0.2887	8.0500	5.8945	1.0476	9.921324
678	6128.652	242.348	3.45122	8.42827	8.40270	8.41367	4.58965	4.57930	4.58834	0.97941	2452	2437	727	724	983	104.66	385.62	727	1474	0.2884	7.8585	5.7950	1.0664	9.919411
679	6134.241	236.759	3.44641	8.40834	8.37310	8.39082	4.58323	4.56790	4.57833	0.97720	2437	2416	724	719	976	99.10	385.62	722	1463	0.2880	7.6674	5.6546	1.0775	9.917495
680	6139.829	231.171	3.44153	8.38920	8.34231	8.36825	4.57764	4.55595	4.56809	0.97478	2422	2395	721	714	968	93.79	385.62	718	1452	0.2878	7.4765	5.4742	1.0853	9.915577
681	6145.417	225.583	3.43661	8.37102	8.31036	8.34610	4.57302	4.54340	4.55764	0.97210	2408	2373	719	709	962	88.78	385.62	714	1442	0.2875	7.2859	5.2549	1.0885	9.913656
682	6151.006	219.994	3.43166	8.35399	8.27726	8.32451	4.56952	4.53023	4.54701	0.96915	2395	2351	717	704	956	84.09	385.62	710	1432	0.2874	7.0957	5.0000	1.0866	9.911731
683	6156.594	214.406	3.42672	8.33831	8.24305	8.30362	4.56731	4.51641	4.53624	0.96588	2383	2328	715	699	951	79.73	385.62	705	1423	0.2873	6.9058	4.7613	1.0788	9.909803
684	6162.183	208.817	3.42180	8.32392	8.20795	8.28344	4.56634	4.50209	4.52544	0.96233	2371	2305	713	694	947	75.72	385.62	701	1414	0.2873	6.7162	4.5884	1.0690	9.907872
685	6167.771	203.229	3.41692	8.31057	8.17235	8.26389	4.56638	4.48759	4.51480	0.95857	2360	2282	712	688	943	72.13	385.62	696	1405	0.2873	6.5269	4.4816	1.0556	9.905937
686	6173.359	197.641	3.41209	8.29798	8.13668	8.24487	4.56720	4.47323	4.50449	0.95469	2349	2259	712	683	939	68.99	385.62	692	1396	0.2873	6.3379	4.4388	1.0410	9.904000
687	6178.948	192.052	3.40732	8.28589	8.10135	8.22630	4.56858	4.45934	4.49471	0.95077	2339	2236	711	678	936	66.30	385.62	688	1388	0.2872	6.1492	4.4577	1.0214	9.902060

Table S7: Continued.

Layer	Radius km	Depth km	ρ g/cc	v_{PH} km/s	v_{PV} km/s	v_P km/s	v_{SH} km/s	v_{SV} km/s	v_S km/s	η	**A** kbar	**C** kbar	**N** kbar	**L** kbar	**F** kbar	Q_μ	Q_κ	μ kbar	κ kbar	σ_P	p GPa	κ'	η_B	g m/s^2
688	6184.536	186.464	3.40264	8.27403	8.06678	8.20808	4.57027	4.44625	4.48563	0.94689	2329	2214	711	673	932	64.08	385.62	685	1380	0.2871	5.9608	4.5363	0.9981	9.900117
689	6190.125	180.875	3.39805	8.26211	8.03338	8.19013	4.57206	4.43427	4.47743	0.94313	2320	2193	710	668	927	62.31	385.62	681	1371	0.2869	5.7726	4.6729	0.9755	9.898172
690	6195.713	175.287	3.39356	8.24987	8.00156	8.17235	4.57371	4.42375	4.47026	0.93958	2310	2173	710	664	922	61.01	385.62	678	1362	0.2865	5.5848	4.8660	0.9472	9.896226
691	6201.301	169.699	3.38920	8.23705	7.97176	8.15468	4.57498	4.41500	4.46430	0.93632	2300	2154	709	661	916	60.19	385.62	675	1353	0.2860	5.3973	5.0982	0.9149	9.894278
692	6206.890	164.110	3.38497	8.22342	7.94432	8.13705	4.57569	4.40829	4.45968	0.93342	2289	2136	709	658	909	59.88	385.62	673	1344	0.2853	5.2100	5.2733	0.8833	9.892330
693	6212.478	158.522	3.38087	8.20921	7.91940	8.11967	4.57586	4.40363	4.45639	0.93089	2278	2120	708	656	900	60.04	385.62	671	1334	0.2845	5.0230	5.3583	0.8525	9.890383
694	6218.067	152.933	3.37689	8.19473	7.89703	8.10278	4.57562	4.40087	4.45437	0.92869	2268	2106	707	654	891	60.65	385.62	670	1324	0.2835	4.8363	5.3551	0.8242	9.888435
695	6223.655	147.345	3.37302	8.18035	7.87725	8.08667	4.57508	4.39992	4.45354	0.92681	2257	2093	706	653	882	61.72	385.62	669	1314	0.2823	4.6498	5.2655	0.7978	9.886489
696	6229.243	141.757	3.36925	8.16639	7.86011	8.07159	4.57436	4.40064	4.45386	0.92522	2247	2082	705	652	872	63.24	385.62	668	1304	0.2811	4.4636	5.0908	0.7753	9.884544
697	6234.832	136.168	3.36556	8.15319	7.84565	8.05781	4.57357	4.40292	4.45526	0.92390	2237	2072	704	652	861	65.24	385.62	668	1294	0.2798	4.2776	4.8320	0.7549	9.882601
698	6240.420	130.580	3.36195	8.14112	7.83392	8.04559	4.57283	4.40663	4.45769	0.92283	2228	2063	703	653	851	67.79	385.62	668	1286	0.2785	4.0918	4.4898	0.7369	9.880661
699	6246.009	124.991	3.35840	8.13049	7.82496	8.03520	4.57225	4.41166	4.46110	0.92198	2220	2056	702	654	842	70.93	385.62	668	1277	0.2772	3.9063	4.0648	0.7220	9.878723
700	6251.597	119.403	3.35491	8.12165	7.81881	8.02689	4.57196	4.41789	4.46542	0.92134	2213	2051	701	655	832	74.76	385.62	669	1270	0.2759	3.7210	3.5980	0.7075	9.876787
701	6257.186	113.814	3.35147	8.11477	7.81536	8.02075	4.57201	4.42515	4.47057	0.92087	2207	2047	701	656	824	79.40	385.62	670	1263	0.2747	3.5359	3.1683	0.6974	9.874855
702	6262.774	108.226	3.34806	8.10964	7.81422	8.01654	4.57233	4.43322	4.47635	0.92056	2202	2044	700	658	815	84.93	385.62	671	1257	0.2735	3.3511	2.7839	0.6904	9.872926
703	6268.362	102.638	3.34468	8.10602	7.81497	8.01396	4.57285	4.44186	4.48257	0.92038	2198	2043	699	660	808	91.45	385.62	672	1252	0.2723	3.1665	2.4438	0.6823	9.871000
704	6273.951	97.049	3.34133	8.10367	7.81717	8.01272	4.57350	4.45083	4.48905	0.92032	2194	2042	699	662	801	99.06	385.62	673	1247	0.2713	2.9821	2.1475	0.6769	9.869078
705	6279.539	91.461	3.33799	8.10235	7.82040	8.01254	4.57421	4.45988	4.49558	0.92035	2191	2041	698	664	795	107.82	385.62	675	1244	0.2703	2.7979	1.8942	0.6763	9.867159
706	6285.128	85.872	3.33465	8.10182	7.82423	8.01312	4.57489	4.46878	4.50197	0.92046	2189	2041	698	666	789	117.75	385.62	676	1240	0.2694	2.6140	1.6834	0.6741	9.865243
707	6290.716	80.284	3.33132	8.10185	7.82823	8.01419	4.57548	4.47728	4.50802	0.92061	2187	2041	697	668	784	128.73	385.62	677	1237	0.2686	2.4302	1.5146	0.6750	9.863331
708	6296.304	74.696	3.32797	8.10218	7.83197	8.01545	4.57589	4.48515	4.51354	0.92079	2185	2041	697	669	779	140.42	385.62	678	1234	0.2678	2.2467	1.3865	0.6786	9.861422
709	6301.893	69.107	3.32461	8.10260	7.83505	8.01663	4.57607	4.49216	4.51834	0.92097	2183	2041	696	671	774	152.19	385.62	679	1232	0.2672	2.0634	1.2829	0.6811	9.859516
710	6307.481	63.519	3.32123	8.10301	7.83736	8.01762	4.57599	4.49828	4.52240	0.92116	2181	2040	695	672	771	163.51	385.62	679	1229	0.2667	1.8804	1.1922	0.6861	9.857613
711	6313.070	57.930	3.31783	8.10340	7.83898	8.01845	4.57570	4.50362	4.52581	0.92134	2179	2039	695	673	767	174.06	385.62	680	1227	0.2662	1.6975	1.1144	0.6893	9.855713
712	6318.658	52.342	3.31442	8.10378	7.84001	8.01914	4.57521	4.50828	4.52865	0.92153	2177	2037	694	674	764	183.58	385.62	680	1225	0.2659	1.5149	1.0496	0.6916	9.853816
713	6324.246	46.754	3.31100	8.10415	7.84056	8.01971	4.57456	4.51239	4.53103	0.92171	2175	2035	693	674	762	191.95	385.62	680	1223	0.2656	1.3325	0.9978	0.6940	9.851922
714	6329.835	41.165	3.30757	8.10451	7.84071	8.02018	4.57379	4.51604	4.53304	0.92189	2173	2033	692	675	759	199.20	385.62	680	1221	0.2653	1.1503	0.9592	0.6969	9.850031
715	6335.423	35.577	3.30413	8.10487	7.84058	8.02059	4.57292	4.51937	4.53477	0.92207	2170	2031	691	675	757	205.47	385.62	679	1220	0.2651	0.9684	0.9337	0.6982	9.848142
716	6341.012	29.988	3.30069	8.10522	7.84024	8.02095	4.57199	4.52246	4.53631	0.92225	2168	2029	690	675	755	211.07	385.62	679	1218	0.2649	0.7866	0.9215	0.6996	9.846255
717	6346.600	24.400	3.29724	8.10557	7.83981	8.02128	4.57103	4.52545	4.53776	0.92243	2166	2027	689	675	752	216.41	385.62	679	1216	0.2647	0.6051	0.9215	0.7027	9.844372
718	6346.600	24.400	2.90000	6.80000	6.80000	6.80000	3.90000	3.90000	3.90000	1.00000	1341	1341	441	441	459	300.00	88888.89	441	753	0.2549	0.6051	0.0000	0.0000	9.844372
719	6347.540	23.460	2.90000	6.80000	6.80000	6.80000	3.90000	3.90000	3.90000	1.00000	1341	1341	441	441	459	300.00	88888.89	441	753	0.2549	0.5783	0.0000	0.0000	9.843749
720	6348.480	22.520	2.90000	6.80000	6.80000	6.80000	3.90000	3.90000	3.90000	1.00000	1341	1341	441	441	459	300.00	88888.89	441	753	0.2549	0.5514	-0.0000	0.0000	9.843120
721	6349.420	21.580	2.90000	6.80000	6.80000	6.80000	3.90000	3.90000	3.90000	1.00000	1341	1341	441	441	459	300.00	88888.89	441	753	0.2549	0.5246	0.0000	0.0000	9.842491
722	6350.360	20.640	2.90000	6.80000	6.80000	6.80000	3.90000	3.90000	3.90000	1.00000	1341	1341	441	441	459	300.00	88888.89	441	753	0.2549	0.4978	0.0000	0.0000	9.841864
723	6351.300	19.700	2.90000	6.80000	6.80000	6.80000	3.90000	3.90000	3.90000	1.00000	1341	1341	441	441	459	300.00	88888.89	441	753	0.2549	0.4710	-0.0000	0.0000	9.841237
724	6352.240	18.760	2.90000	6.80000	6.80000	6.80000	3.90000	3.90000	3.90000	1.00000	1341	1341	441	441	459	300.00	88888.89	441	753	0.2549	0.4441	0.0000	0.0000	9.840610
725	6353.180	17.820	2.90000	6.80000	6.80000	6.80000	3.90000	3.90000	3.90000	1.00000	1341	1341	441	441	459	300.00	88888.89	441	753	0.2549	0.4173	0.0000	0.0000	9.839984
726	6354.120	16.880	2.90000	6.80000	6.80000	6.80000	3.90000	3.90000	3.90000	1.00000	1341	1341	441	441	459	300.00	88888.89	441	753	0.2549	0.3905	-0.0000	0.0000	9.839359
727	6355.060	15.940	2.90000	6.80000	6.80000	6.80000	3.90000	3.90000	3.90000	1.00000	1341	1341	441	441	459	300.00	88888.89	441	753	0.2549	0.3637	0.0000	0.0000	9.838734
728	6356.000	15.000	2.90000	6.80000	6.80000	6.80000	3.90000	3.90000	3.90000	1.00000	1341	1341	441	441	459	300.00	88888.89	441	753	0.2549	0.3368	0.0000	0.0000	9.838110
729	6356.000	15.000	2.60000	5.80000	5.80000	5.80000	3.20000	3.20000	3.20000	1.00000	875	875	266	266	342	300.00	88888.89	266	520	0.2812	0.3368	0.0000	0.0000	9.838110
730	6357.200	13.800	2.60000	5.80000	5.80000	5.80000	3.20000	3.20000	3.20000	1.00000	875	875	266	266	342	300.00	88888.89	266	520	0.2812	0.3061	0.0000	-0.0000	9.837019
731	6358.400	12.600	2.60000	5.80000	5.80000	5.80000	3.20000	3.20000	3.20000	1.00000	875	875	266	266	342	300.00	88888.89	266	520	0.2812	0.2755	-0.0000	0.0000	9.835923
732	6359.600	11.400	2.60000	5.80000	5.80000	5.80000	3.20000	3.20000	3.20000	1.00000	875	875	266	266	342	300.00	88888.89	266	520	0.2812	0.2448	0.0000	-0.0000	9.834827
733	6360.800	10.200	2.60000	5.80000	5.80000	5.80000	3.20000	3.20000	3.20000	1.00000	875	875	266	266	342	300.00	88888.89	266	520	0.2812	0.2141	0.0000	0.0000	9.833733
734	6362.000	9.000	2.60000	5.80000	5.80000	5.80000	3.20000	3.20000	3.20000	1.00000	875	875	266	266	342	300.00	88888.89	266	520	0.2812	0.1834	0.0000	0.0000	9.832640
735	6363.200	7.800	2.60000	5.80000	5.80000	5.80000	3.20000	3.20000	3.20000	1.00000	875	875	266	266	342	300.00	88888.89	266	520	0.2812	0.1527	-0.0000	-0.0000	9.831548
736	6364.400	6.600	2.60000	5.80000	5.80000	5.80000	3.20000	3.20000	3.20000	1.00000	875	875	266	266	342	300.00	88888.89	266	520	0.2812	0.1221	0.0000	0.0000	9.830457
737	6365.600	5.400	2.60000	5.80000	5.80000	5.80000	3.20000	3.20000	3.20000	1.00000	875	875	266	266	342	300.00	88888.89	266	520	0.2812	0.0914	0.0000	-0.0000	9.829367
738	6366.800	4.200	2.60000	5.80000	5.80000	5.80000	3.20000	3.20000	3.20000	1.00000	875	875	266	266	342	300.00	88888.89	266	520	0.2812	0.0607	-0.0000	0.0000	9.828279
739	6368.000	3.000	2.60000	5.80000	5.80000	5.80000	3.20000	3.20000	3.20000	1.00000	875	875	266	266	342	300.00	88888.89	266	520	0.2812	0.0301	-0.0000	-0.0000	9.827191
740	6368.000	3.000	1.02000	1.45000	1.45000	1.45000	0.00000	0.00000	0.00000	1.00000	21	21	0	0	21	0.00	88888.89	0	21	0.5000	0.0301	0.0000	-0.0000	9.827191
741	6368.300	2.700	1.02000	1.45000	1.45000	1.45000	0.00000	0.00000	0.00000	1.00000	21	21	0	0	21	0.00	88888.89	0	21	0.5000	0.0271	0.0000	0.0000	9.826530
742	6368.600	2.400	1.02000	1.45000	1.45000	1.45000	0.00000	0.00000	0.00000	1.00000	21	21	0	0	21	0.00	88888.89	0	21	0.5000	0.0240	0.0000	-0.0000	9.825861
743	6368.900	2.100	1.02000	1.45000	1.45000	1.45000	0.00000	0.00000	0.00000	1.00000	21	21	0	0	21	0.00	88888.89	0	21	0.5000	0.0210	0.0000	0.0000	9.825192
744	6369.200	1.800	1.02000	1.45000	1.45000	1.45000	0.00000	0.00000	0.00000	1.00000	21	21	0	0	21	0.00	88888.89	0	21	0.5000	0.0180	0.0000	-0.0000	9.824523
745	6369.500	1.500	1.02000	1.45000	1.45000	1.45000	0.00000	0.00000	0.00000	1.00000	21	21	0	0	21	0.00	88888.89	0	21	0.5000	0.0150	0.0000	0.0000	9.823854
746	6369.800	1.200	1.02000	1.45000	1.45000	1.45000	0.00000	0.00000	0.00000	1.00000	21	21	0	0	21	0.00	88888.89	0	21	0.5000	0.0120	0.0000	-0.0000	9.823186
747	6370.100	0.900	1.02000	1.45000	1.45000	1.45000	0.00000	0.00000	0.00000	1.00000	21	21	0	0	21	0.00	88888.89	0	21	0.5000	0.0090	0.0000	0.0000	9.822517
748	6370.400	0.600	1.02000	1.45000	1.45000	1.45000	0.00000	0.00000	0.00000	1.00000	21	21	0	0	21	0.00	88888.89	0	21	0.5000	0.0060	-0.0000	-0.0000	9.821849
749	6370.700	0.300	1.02000	1.45000	1.45000	1.45000	0.00000	0.00000	0.00000	1.00000	21	21	0	0	21	0.00	88888.89	0	21	0.5000	0.0030	0.0000	0.0000	9.821180
750	6371.000	0.000	1.02000	1.45000	1.45000	1.45000	0.00000	0.00000	0.00000	1.00000	21	21	0	0	21	0.00	88888.89	0	21	0.5000	-0.0000	0.0000	-0.0000	9.820512

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