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Additional evolutionary stellar models with core overshooting and mass loss: apsidal motion constants

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Abstract. — In order to extend the range of available chemical compositions and masses of our previously published grid of stellar evolutionary models used to analyse apsidal motion observations (Claret & Giménez 1991b), we have carried out new model calculations taking into account core overshooting and mass loss. Four additional chemical compositions were in fact adopted apart from the standard solar composition $(X, Z) = (0.70, 0.02)$. On the other hand, we have also extended the calculations for our standard model (Claret & Giménez, 1989), as well as the non-standard one with solar composition (Claret & Giménez 1991b), up to values of $\log M = 1.6$. The main reason to do this is to allow a straight comparison between observational data and theoretical models of massive binaries showing apsidal motion variations and also to permit the study of the effect of adopting different initial chemical compositions. Recent opacity tables from Los Alamos (Huebner *et al.* 1977) as well as revised rates of nuclear burning have been used (Fowler *et al.*, 1975; Harris *et al.* 1983) and the internal stellar structure constants were computed for all the models presented.

Key words: evolutionary stellar models — core overshooting — mass loss - apsidal motion.

1. Introduction.

We have recently published a grid of standard evolutionary stellar models (Claret & Giménez 1989) covering the mass range from 0.6 up to 25 $M_{\odot}$ for the standard solar chemical composition, $(X, Z) = (0.70, 0.02)$, and from 5 up to 25 $M_{\odot}$ for four additional compositions. This limitation in mass range for the later grids was due to the lack of available opacities for low temperatures. We used for these computations the opacity tables from Los Alamos (Huebner *et al.* 1977) and the rates of energy generation given by Fowler *et al.* (1975) and Harris *et al.* (1983).

A careful comparison of these grids with observational data of double-lines eclipsing binaries showing apsidal motions indicated that, despite a good interagreement between theoretical predictions and observations in terms of log g and log $T_{\rm eff}$, a systematic effect in the difference between log $k_{2\rm obs}$ and log $k_{2\rm theo}$ could not be removed. However, it should be stressed that these discrepancies in the internal structure constants diminished in about 0.05 (in log k_2) with respect to older standard stellar models (Hejlesen 1987).

Among the possible solutions to explore in the way of understanding the problem of the discrepancy between theoretical and observed values of k_2, core overshooting and mass loss were found to be most attractive. Nevertheless, in a previous paper, we have analysed the effect of these important contributions to the stellar structure on the theoretical apsidal motion constants. As a result, we found that a clear improvement in the comparison between observational apsidal motion rates with theoretical predictions is given by non-standard models to a level of the same order of that introduced by the use of an updated physics and/or new opacities (Claret & Giménez 1991a). From an observational point of view, it was found that the correction introduced in theoretical internal structure constants should be a function of the degree of evolution of the component stars. For the less evolved systems in the studied sample, a reasonable agreement with theoretical predictions was found. In order to make a detailed comparison with observations, however, a complete grid taking into account non-standard physical mechanisms was found necessary and therefore computed (Claret & Giménez 1991b).

The previously published non-standard grid (Claret & Giménez 1991b) was nevertheless computed only for the solar chemical composition and for the mass range from 1.12 up to 25 $M_{\odot}$. Consequently, in order to compare observational data derived from the more massive binaries (Harmanec 1988, Cunha 1991) with theoretical predictions and to allow the study of differences in the adopted initial chemical composition on these predictions, we have computed new models as complement of the mentioned grids. For this purpose, we have considered four additional chemical

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compositions around the standard solar value and the mass range was extended up to 40 $M_{\odot}$ for standard models as well as for those including core overshooting and mass loss. Results of these computations are presented in the present paper.

2. The tables.

As in our previous works, we have adopted as representative of moderate overshooting $\alpha_{ov} = 0.25$, as indicated by Maeder & Meynet (1989a, 1989b) and Maeder (1990). The rates of mass loss were taken from Reimers (1975) and De Jager *et al.* (1986).

The format of the tables is consistent with that presented by Claret & Giménez (1991b). Tables 1 to 10 refer to standard models with log $M = 1.5$ and 1.6 for five different chemical compositions. These models were computed in order to increase the upper limit in mass for the standard grid.

Tables 11 to 46 contain basic information, including the first three harmonics of the stellar internal structure, for the non-standard models, i.e. those taking into account core overshooting and mass loss, with the following initial chemical compositions: $X = 0.66$, $Z = 0.02$; $X = 0.74$, $Z = 0.02$; $X = 0.71$, $Z = 0.01$ and $X = 0.69$, $Z = 0.03$. The adopted range in mass for this case was from log $M = 0.8$ up to 1.6. As mentioned before in the case of the standard models, this lower limit in mass is due to the lack of calculated opacities for low temperatures. Finally, in Tables 47 and 48 we show the properties of non-standard models with log $M = 1.5$ and 1.6 for the solar chemical composition ($X = 0.70$, $Z = 0.02$). The previous grid for solar composition (Claret & Giménez 1991b) is, thus extended in its mass range.

Figure 1 shows the effect of adopting different chemical compositions on theoretical stellar internal structure constant for a non-standard model of 32 $M_{\odot}$. Differences between them increase with evolution and can reach about 0.15 in log k_2 though, within the main sequence, these differences are tipically of the order of 0.05.

It was clearly shown that models including core overshooting and mass loss do reproduce better the observed apsidal motion rates in eccentric double-lined eclipsing binaries than classical models (Claret & Giménez 1991a). Discrepancies nevertheless still remain and should be explained, most probably, on the basis of the effect of stellar rotation in the internal density concentration (from the point of view of the theoretical models), errors in the adopted initial chemical composition of the component stars or uncertainties in their absolute dimensions (from an observational point of view).

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TABLE 1.

Log M = 1.5000 X = 0.70 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.1250	4.2396	4.6200	31.620	-1.684	-2.327	-2.787
1.26175D+06	5.1865	4.1585	4.6151	31.620	-1.796	-2.438	-2.899
1.66076D+06	5.2070	4.1262	4.6122	31.620	-1.837	-2.479	-2.939
2.60772D+06	5.2606	4.0264	4.6007	31.620	-1.956	-2.593	-3.053
3.09147D+06	5.2918	3.9571	4.5911	31.620	-2.032	-2.665	-3.125
3.65294D+06	5.3301	3.8525	4.5745	31.620	-2.137	-2.764	-3.225
4.19349D+06	5.3694	3.7164	4.5504	31.620	-2.256	-2.879	-3.341
4.63199D+06	5.4035	3.5650	4.5210	31.620	-2.373	-2.994	-3.458
4.69627D+06	5.4086	3.5404	4.5161	31.620	-2.392	-3.013	-3.478
4.91298D+06	5.4269	3.4649	4.5018	31.620	-2.456	-3.077	-3.544
4.97119D+06	5.4323	3.4582	4.5015	31.620	-2.472	-3.092	-3.560
4.98394D+06	5.4337	3.4599	4.5023	31.620	-2.475	-3.095	-3.563
5.01013D+06	5.4371	3.4730	4.5064	31.620	-2.480	-3.100	-3.568
5.02056D+06	5.4390	3.4857	4.5101	31.620	-2.482	-3.102	-3.570
5.03418D+06	5.4435	3.5225	4.5204	31.620	-2.483	-3.101	-3.569
5.03870D+06	5.4475	3.5501	4.5283	31.620	-2.486	-3.104	-3.571
5.04035D+06	5.4505	3.5670	4.5333	31.620	-2.490	-3.107	-3.574
5.04175D+06	5.4582	3.5941	4.5420	31.620	-2.503	-3.119	-3.586
5.04191D+06	5.4609	3.6023	4.5447	31.620	-2.508	-3.124	-3.591
5.04351D+06	5.4695	3.6220	4.5518	31.620	-2.527	-3.141	-3.607
5.04779D+06	5.5038	3.3591	4.4946	31.620	-2.691	-3.313	-3.789
5.05422D+06	5.5338	2.6843	4.3334	31.620	-3.009	-3.668	-4.177
5.05507D+06	5.5380	2.6094	4.3157	31.620	-3.054	-3.719	-4.231
5.07305D+06	5.5550	2.4762	4.2867	31.620	-3.171	-3.848	-4.366
5.33332D+06	5.5693	2.2644	4.2373	31.620	-3.325	-4.014	-4.533

TABLE 2.

Log M = 1.6000 X = 0.70 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.3486	4.2315	4.6489	39.810	-1.666	-2.305	-2.764
1.10143D+06	5.4098	4.1464	4.6429	39.810	-1.791	-2.432	-2.893
1.73133D+06	5.4472	4.0787	4.6354	39.810	-1.882	-2.521	-2.981
2.63662D+06	5.5091	3.9375	4.6155	39.810	-2.053	-2.686	-3.148
2.96891D+06	5.5335	3.8637	4.6032	39.810	-2.131	-2.761	-3.224
3.36254D+06	5.5658	3.7512	4.5832	39.810	-2.242	-2.869	-3.333
3.57066D+06	5.5823	3.6804	4.5696	39.810	-2.306	-2.932	-3.398
3.88528D+06	5.6081	3.5465	4.5425	39.810	-2.416	-3.040	-3.510
4.05231D+06	5.6220	3.4663	4.5259	39.810	-2.480	-3.105	-3.578
4.26519D+06	5.6418	3.3948	4.5130	39.810	-2.562	-3.189	-3.665
4.27945D+06	5.6438	3.4023	4.5154	39.810	-2.567	-3.193	-3.668
4.30180D+06	5.6495	3.4486	4.5284	39.810	-2.571	-3.196	-3.671
4.30859D+06	5.6580	3.5079	4.5454	39.810	-2.582	-3.204	-3.678
4.30985D+06	5.6723	3.5711	4.5647	39.810	-2.611	-3.231	-3.704
4.31206D+06	5.6905	3.5112	4.5543	39.810	-2.687	-3.312	-3.788
4.31428D+06	5.7063	3.2909	4.5032	39.810	-2.813	-3.446	-3.932
4.31649D+06	5.7194	2.9973	4.4331	39.810	-2.964	-3.614	-4.116
4.31723D+06	5.7226	2.8843	4.4056	39.810	-3.020	-3.677	-4.186
4.31870D+06	5.7289	2.6401	4.3461	39.810	-3.149	-3.824	-4.347
4.32018D+06	5.7364	2.4237	4.2939	39.810	-3.284	-3.976	-4.506
4.32091D+06	5.7403	2.3442	4.2750	39.810	-3.343	-4.041	-4.572
4.32313D+06	5.7479	2.2300	4.2484	39.810	-3.440	-4.146	-4.676
4.33050D+06	5.7524	2.2168	4.2462	39.810	-3.469	-4.177	-4.707
4.34820D+06	5.7532	2.2123	4.2453	39.810	-3.476	-4.184	-4.714
4.41901D+06	5.7570	2.1594	4.2330	39.810	-3.524	-4.234	-4.761

TABLE 3.

Log M = 1.5000 X = 0.66 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.1694	4.2381	4.6308	31.620	-1.683	-2.325	-2.786
7.00000D+05	5.2063	4.1920	4.6285	31.620	-1.749	-2.393	-2.855
1.47737D+06	5.2499	4.1268	4.6231	31.620	-1.837	-2.480	-2.942
2.33966D+06	5.3030	4.0266	4.6113	31.620	-1.960	-2.598	-3.060
2.96671D+06	5.3474	3.9225	4.5964	31.620	-2.076	-2.709	-3.170
3.42942D+06	5.3835	3.8171	4.5790	31.620	-2.181	-2.810	-3.274
3.77708D+06	5.4114	3.7153	4.5606	31.620	-2.272	-2.898	-3.363
4.03656D+06	5.4343	3.6279	4.5444	31.620	-2.350	-2.975	-3.442
4.22838D+06	5.4499	3.5553	4.5302	31.620	-2.410	-3.034	-3.503
4.38990D+06	5.4635	3.5019	4.5202	31.620	-2.460	-3.084	-3.554
4.44957D+06	5.4696	3.4943	4.5198	31.620	-2.478	-3.101	-3.572
4.49533D+06	5.4755	3.5144	4.5264	31.620	-2.489	-3.112	-3.582
4.50767D+06	5.4783	3.5356	4.5324	31.620	-2.490	-3.113	-3.583
4.52127D+06	5.4897	3.6092	4.5536	31.620	-2.501	-3.122	-3.591
4.52224D+06	5.4941	3.6271	4.5592	31.620	-2.509	-3.129	-3.599
4.52248D+06	5.4991	3.6414	4.5640	31.620	-2.518	-3.138	-3.607
4.52630D+06	5.5309	3.5482	4.5487	31.620	-2.636	-3.257	-3.731
4.53018D+06	5.5597	3.1371	4.4531	31.620	-2.851	-3.489	-3.981
4.53212D+06	5.5686	2.8912	4.3939	31.620	-2.969	-3.622	-4.128
4.53503D+06	5.5825	2.5425	4.3102	31.620	-3.162	-3.841	-4.362
4.53794D+06	5.5929	2.4148	4.2808	31.620	-3.264	-3.953	-4.478
4.54376D+06	5.5978	2.4084	4.2804	31.620	-3.286	-3.977	-4.503
4.60581D+06	5.6021	2.3898	4.2769	31.620	-3.313	-4.006	-4.532
4.72993D+06	5.6088	2.2923	4.2542	31.620	-3.391	-4.090	-4.616
4.82301D+06	5.6137	2.1124	4.2104	31.620	-3.507	-4.209	-4.726

TABLE 4.

Log M = 1.6000 X = 0.66 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.3890	4.2303	4.6587	39.810	-1.666	-2.304	-2.764
6.76891D+05	5.4298	4.1760	4.6553	39.810	-1.749	-2.391	-2.852
1.81007D+06	5.5041	4.0418	4.6403	39.810	-1.934	-2.574	-3.036
2.82047D+06	5.5888	3.8183	4.6057	39.810	-2.199	-2.833	-3.299
3.04725D+06	5.6078	3.7442	4.5919	39.810	-2.273	-2.904	-3.372
3.38989D+06	5.6373	3.6046	4.5644	39.810	-2.400	-3.030	-3.501
3.61987D+06	5.6575	3.4915	4.5411	39.810	-2.496	-3.127	-3.602
3.75915D+06	5.6699	3.4292	4.5287	39.810	-2.556	-3.187	-3.666
3.82278D+06	5.6764	3.4161	4.5270	39.810	-2.582	-3.213	-3.693
3.86755D+06	5.6842	3.4645	4.5411	39.810	-2.594	-3.223	-3.702
3.87474D+06	5.6898	3.5127	4.5545	39.810	-2.598	-3.225	-3.702
3.87802D+06	5.7109	3.6215	4.5870	39.810	-2.641	-3.264	-3.739
3.88069D+06	5.7369	3.4207	4.5433	39.810	-2.797	-3.432	-3.918
3.88269D+06	5.7551	3.1533	4.4810	39.810	-2.963	-3.613	-4.114
3.88535D+06	5.7710	2.7086	4.3738	39.810	-3.219	-3.903	-4.433
3.88668D+06	5.7772	2.4864	4.3198	39.810	-3.359	-4.060	-4.598
3.88735D+06	5.7802	2.3865	4.2955	39.810	-3.427	-4.136	-4.674
3.88801D+06	5.7831	2.3035	4.2755	39.810	-3.488	-4.203	-4.740
3.88868D+06	5.7858	2.2394	4.2602	39.810	-3.539	-4.257	-4.792
3.89001D+06	5.7895	2.1738	4.2447	39.810	-3.598	-4.318	-4.850
3.89134D+06	5.7916	2.1459	4.2383	39.810	-3.626	-4.347	-4.877
3.89401D+06	5.7933	2.1413	4.2375	39.810	-3.638	-4.360	-4.889
3.89667D+06	5.7939	2.1462	4.2389	39.810	-3.638	-4.360	-4.889
3.90200D+06	5.7943	2.1515	4.2403	39.810	-3.637	-4.359	-4.889
3.97661D+06	5.7984	2.0809	4.2237	39.810	-3.703	-4.425	-4.949

TABLE 5.

Log M = 1.5000 X = 0.74 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.0810	4.2407	4.6093	31.620	-1.687	-2.329	-2.789
1.23034D+06	5.1347	4.1716	4.6055	31.620	-1.780	-2.422	-2.882
2.11248D+06	5.1769	4.1058	4.5996	31.620	-1.862	-2.501	-2.960
3.35118D+06	5.2433	3.9716	4.5826	31.620	-2.012	-2.643	-3.101
3.80085D+06	5.2717	3.9020	4.5723	31.620	-2.082	-2.709	-3.168
4.47739D+06	5.3156	3.7625	4.5484	31.620	-2.203	-2.825	-3.284
4.73228D+06	5.3335	3.6924	4.5354	31.620	-2.259	-2.879	-3.339
4.94250D+06	5.3488	3.6260	4.5226	31.620	-2.308	-2.926	-3.387
5.11592D+06	5.3616	3.5645	4.5104	31.620	-2.352	-2.969	-3.431
5.25585D+06	5.3720	3.5118	4.4998	31.620	-2.388	-3.005	-3.468
5.36883D+06	5.3804	3.4694	4.4913	31.620	-2.419	-3.036	-3.500
5.50842D+06	5.3914	3.4275	4.4836	31.620	-2.455	-3.072	-3.538
5.54496D+06	5.3954	3.4237	4.4837	31.620	-2.466	-3.083	-3.548
5.58595D+06	5.4053	3.4600	4.4952	31.620	-2.478	-3.095	-3.561
5.61673D+06	5.4107	3.5111	4.5093	31.620	-2.479	-3.096	-3.561
5.62428D+06	5.4192	3.5614	4.5241	31.620	-2.487	-3.102	-3.566
5.62587D+06	5.4305	3.6007	4.5367	31.620	-2.506	-3.119	-3.583
5.62689D+06	5.4377	3.6220	4.5438	31.620	-2.519	-3.132	-3.595
5.62825D+06	5.4367	3.5800	4.5331	31.620	-2.529	-3.141	-3.605
5.62962D+06	5.4510	3.5120	4.5196	31.620	-2.580	-3.195	-3.661
5.63098D+06	5.4619	3.4147	4.4980	31.620	-2.635	-3.253	-3.723
5.63303D+06	5.4733	3.2340	4.4557	31.620	-2.716	-3.339	-3.816
5.63780D+06	5.4927	2.7515	4.3399	31.620	-2.927	-3.575	-4.075
5.88237D+06	5.5297	2.3975	4.2607	31.620	-3.192	-3.868	-4.383
5.94275D+06	5.5328	2.3183	4.2417	31.620	-3.240	-3.920	-4.435

TABLE 6.

Log M = 1.6000 X = 0.74 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.3087	4.2327	4.6392	39.810	-1.667	-2.305	-2.764
1.12751D+06	5.3665	4.1542	4.6341	39.810	-1.781	-2.420	-2.880
2.38542D+06	5.4381	4.0194	4.6183	39.810	-1.952	-2.586	-3.045
2.84365D+06	5.4680	3.9467	4.6076	39.810	-2.035	-2.666	-3.125
3.52296D+06	5.5178	3.7974	4.5827	39.810	-2.187	-2.813	-3.274
3.78021D+06	5.5369	3.7214	4.5685	39.810	-2.255	-2.878	-3.340
3.99100D+06	5.5529	3.6475	4.5540	39.810	-2.316	-2.937	-3.401
4.16636D+06	5.5670	3.5754	4.5395	39.810	-2.373	-2.994	-3.459
4.31211D+06	5.5786	3.5086	4.5257	39.810	-2.422	-3.043	-3.510
4.43082D+06	5.5881	3.4505	4.5135	39.810	-2.466	-3.087	-3.557
4.52698D+06	5.5958	3.4041	4.5038	39.810	-2.500	-3.122	-3.593
4.59778D+06	5.6015	3.3725	4.4974	39.810	-2.525	-3.148	-3.620
4.64506D+06	5.6057	3.3553	4.4941	39.810	-2.543	-3.166	-3.639
4.67645D+06	5.6088	3.3493	4.4934	39.810	-2.554	-3.177	-3.651
4.72575D+06	5.6157	3.3749	4.5015	39.810	-2.567	-3.189	-3.662
4.73491D+06	5.6189	3.4016	4.5090	39.810	-2.570	-3.192	-3.665
4.74078D+06	5.6249	3.4439	4.5211	39.810	-2.576	-3.196	-3.668
4.74188D+06	5.6283	3.4619	4.5264	39.810	-2.582	-3.202	-3.673
4.74228D+06	5.6335	3.4809	4.5325	39.810	-2.593	-3.212	-3.684
4.74270D+06	5.6395	3.5049	4.5400	39.810	-2.604	-3.223	-3.694
4.74318D+06	5.6428	3.5219	4.5451	39.810	-2.611	-3.229	-3.700
4.74511D+06	5.6604	3.4596	4.5339	39.810	-2.682	-3.305	-3.780
4.74607D+06	5.6708	3.3997	4.5215	39.810	-2.735	-3.360	-3.838
4.78655D+06	5.7238	2.2648	4.2510	39.810	-3.393	-4.092	-4.620
4.87907D+06	5.7281	2.2024	4.2365	39.810	-3.446	-4.149	-4.675

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TABLE 7.

Log M = 1.5000 X = 0.71 Z = 0.01

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.1296	4.2931	4.6346	31.620	-1.646	-2.278	-2.731
1.15916D+06	5.1841	4.2209	4.6301	31.620	-1.744	-2.375	-2.827
2.54572D+06	5.2591	4.0922	4.6167	31.620	-1.899	-2.524	-2.975
3.44235D+06	5.3154	3.9595	4.5976	31.620	-2.036	-2.653	-3.104
4.05659D+06	5.3643	3.8222	4.5755	31.620	-2.166	-2.778	-3.231
4.28690D+06	5.3822	3.7597	4.5644	31.620	-2.219	-2.829	-3.283
4.47595D+06	5.3966	3.6993	4.5529	31.620	-2.264	-2.874	-3.329
4.63327D+06	5.4086	3.6459	4.5425	31.620	-2.304	-2.913	-3.369
4.76145D+06	5.4186	3.6002	4.5336	31.620	-2.338	-2.946	-3.403
4.86390D+06	5.4266	3.5658	4.5270	31.620	-2.365	-2.973	-3.432
4.93529D+06	5.4324	3.5455	4.5234	31.620	-2.384	-2.992	-3.451
5.06501D+06	5.4474	3.5833	4.5366	31.620	-2.414	-3.019	-3.477
5.07422D+06	5.4533	3.6254	4.5486	31.620	-2.419	-3.023	-3.481
5.07752D+06	5.4616	3.6642	4.5603	31.620	-2.432	-3.035	-3.492
5.07800D+06	5.4696	3.6882	4.5683	31.620	-2.447	-3.048	-3.504
5.07828D+06	5.4730	3.6996	4.5720	31.620	-2.454	-3.056	-3.512
5.08106D+06	5.4877	3.6481	4.5629	31.620	-2.505	-3.107	-3.565
5.08329D+06	5.5044	3.4896	4.5274	31.620	-2.586	-3.192	-3.654
5.08551D+06	5.5184	3.2831	4.4793	31.620	-2.678	-3.292	-3.763
5.08774D+06	5.5299	3.0568	4.4256	31.620	-2.772	-3.397	-3.878
5.08941D+06	5.5386	2.8951	4.3873	31.620	-2.848	-3.482	-3.972
5.24295D+06	5.5682	2.6748	4.3396	31.620	-3.024	-3.677	-4.183
5.31416D+06	5.5718	2.6182	4.3264	31.620	-3.058	-3.715	-4.223
5.42098D+06	5.5783	2.4352	4.2823	31.620	-3.157	-3.827	-4.343
5.43878D+06	5.5793	2.3758	4.2677	31.620	-3.188	-3.863	-4.380

TABLE 8.

Log M = 1.6000 X = 0.71 Z = 0.01

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.3514	4.2839	4.6627	39.810	-1.630	-2.257	-2.707
1.07523D+06	5.4102	4.2033	4.6573	39.810	-1.747	-2.376	-2.828
2.21887D+06	5.4799	4.0705	4.6415	39.810	-1.917	-2.540	-2.991
3.48349D+06	5.5747	3.7851	4.5938	39.810	-2.206	-2.817	-3.271
3.83473D+06	5.6036	3.6502	4.5673	39.810	-2.316	-2.925	-3.383
3.96560D+06	5.6152	3.5938	4.5561	39.810	-2.361	-2.970	-3.429
4.15866D+06	5.6315	3.5074	4.5386	39.810	-2.429	-3.039	-3.501
4.21725D+06	5.6366	3.4852	4.5343	39.810	-2.450	-3.060	-3.523
4.25657D+06	5.6402	3.4751	4.5327	39.810	-2.464	-3.074	-3.537
4.28298D+06	5.6430	3.4742	4.5332	39.810	-2.472	-3.082	-3.546
4.30093D+06	5.6451	3.4797	4.5351	39.810	-2.478	-3.087	-3.551
4.31293D+06	5.6469	3.4893	4.5379	39.810	-2.481	-3.090	-3.553
4.32109D+06	5.6484	3.5015	4.5414	39.810	-2.483	-3.091	-3.555
4.33737D+06	5.6597	3.5864	4.5654	39.810	-2.498	-3.104	-3.565
4.33852D+06	5.6715	3.6395	4.5816	39.810	-2.523	-3.126	-3.586
4.33910D+06	5.6752	3.6571	4.5870	39.810	-2.533	-3.135	-3.595
4.34026D+06	5.6788	3.6203	4.5787	39.810	-2.554	-3.155	-3.616
4.34141D+06	5.6964	3.5578	4.5674	39.810	-2.623	-3.231	-3.696
4.34257D+06	5.7080	3.4571	4.5452	39.810	-2.687	-3.299	-3.768
4.34431D+06	5.7204	3.2652	4.5003	39.810	-2.786	-3.407	-3.886
4.34547D+06	5.7272	3.1207	4.4658	39.810	-2.854	-3.483	-3.969
4.34662D+06	5.7330	2.9655	4.4285	39.810	-2.928	-3.567	-4.063
4.36978D+06	5.7603	2.5472	4.3307	39.810	-3.207	-3.882	-4.405
4.57359D+06	5.7714	2.3289	4.2790	39.810	-3.363	-4.057	-4.587
4.61065D+06	5.7737	2.2231	4.2531	39.810	-3.431	-4.132	-4.661

TABLE 9.

Log M = 1.5000 X = 0.69 Z = 0.03

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.1235	4.2042	4.6108	31.620	-1.714	-2.363	-2.830
1.15733D+06	5.1803	4.1287	4.6061	31.620	-1.818	-2.468	-2.934
1.91867D+06	5.2204	4.0622	4.5995	31.620	-1.903	-2.551	-3.017
2.51881D+06	5.2551	3.9942	4.5912	31.620	-1.984	-2.628	-3.093
3.00736D+06	5.2879	3.9228	4.5816	31.620	-2.065	-2.706	-3.172
3.40373D+06	5.3138	3.8521	4.5704	31.620	-2.137	-2.775	-3.240
3.73038D+06	5.3366	3.7811	4.5583	31.620	-2.204	-2.839	-3.305
4.00061D+06	5.3557	3.7121	4.5458	31.620	-2.265	-2.897	-3.364
4.22474D+06	5.3727	3.6442	4.5331	31.620	-2.323	-2.954	-3.422
4.40888D+06	5.3874	3.5792	4.5206	31.620	-2.374	-3.004	-3.474
4.55995D+06	5.3992	3.5215	4.5090	31.620	-2.420	-3.049	-3.520
4.68249D+06	5.4088	3.4738	4.4995	31.620	-2.456	-3.086	-3.557
4.77890D+06	5.4162	3.4391	4.4927	31.620	-2.485	-3.115	-3.588
4.84303D+06	5.4243	3.4188	4.4897	31.620	-2.511	-3.141	-3.615
4.94338D+06	5.4340	3.4460	4.4989	31.620	-2.527	-3.157	-3.631
4.97083D+06	5.4397	3.4894	4.5111	31.620	-2.529	-3.159	-3.632
4.97933D+06	5.4456	3.5353	4.5241	31.620	-2.531	-3.159	-3.632
4.98197D+06	5.4518	3.5684	4.5340	31.620	-2.538	-3.165	-3.638
4.98337D+06	5.4693	3.6204	4.5513	31.620	-2.569	-3.195	-3.668
4.98424D+06	5.4693	3.6179	4.5507	31.620	-2.571	-3.196	-3.669
4.98685D+06	5.4889	3.4358	4.5101	31.620	-2.680	-3.309	-3.787
4.99032D+06	5.5155	3.0715	4.4257	31.620	-2.877	-3.521	-4.015
5.08396D+06	5.5544	2.2903	4.2401	31.620	-3.343	-4.037	-4.557
5.19248D+06	5.5604	2.2040	4.2200	31.620	-3.411	-4.107	-4.625
5.24847D+06	5.5628	2.1261	4.2011	31.620	-3.462	-4.160	-4.674

TABLE 10.

Log M = 1.6000 X = 0.69 Z = 0.03

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.3482	4.1969	4.6402	39.810	-1.695	-2.342	-2.807
7.00000D+05	5.3871	4.1452	4.6369	39.810	-1.773	-2.422	-2.889
1.40256D+06	5.4289	4.0773	4.6305	39.810	-1.870	-2.519	-2.986
2.19732D+06	5.4812	3.9695	4.6166	39.810	-2.009	-2.655	-3.123
2.77230D+06	5.5246	3.8566	4.5992	39.810	-2.142	-2.785	-3.254
3.52704D+06	5.5853	3.6270	4.5570	39.810	-2.371	-3.008	-3.482
3.61628D+06	5.5927	3.5905	4.5497	39.810	-2.402	-3.039	-3.514
3.77142D+06	5.6055	3.5196	4.5351	39.810	-2.462	-3.098	-3.575
3.89774D+06	5.6161	3.4563	4.5220	39.810	-2.514	-3.151	-3.629
4.04435D+06	5.6282	3.3809	4.5062	39.810	-2.576	-3.214	-3.696
4.11150D+06	5.6338	3.3495	4.4997	39.810	-2.604	-3.241	-3.724
4.13603D+06	5.6360	3.3400	4.4979	39.810	-2.614	-3.252	-3.735
4.17292D+06	5.6399	3.3297	4.4963	39.810	-2.630	-3.269	-3.753
4.18669D+06	5.6414	3.3279	4.4962	39.810	-2.636	-3.274	-3.759
4.25024D+06	5.6674	3.4704	4.5383	39.810	-2.675	-3.310	-3.793
4.25042D+06	5.6703	3.4838	4.5424	39.810	-2.680	-3.315	-3.798
4.25211D+06	5.6803	3.4946	4.5476	39.810	-2.713	-3.346	-3.830
4.25308D+06	5.6946	3.4392	4.5373	39.810	-2.778	-3.417	-3.904
4.25453D+06	5.7088	3.2906	4.5037	39.810	-2.883	-3.529	-4.023
4.25549D+06	5.7154	3.1594	4.4726	39.810	-2.957	-3.610	-4.111
4.25743D+06	5.7260	2.8500	4.3979	39.810	-3.127	-3.799	-4.319
4.25839D+06	5.7305	2.6710	4.3543	39.810	-3.228	-3.914	-4.443
4.25984D+06	5.7357	2.3847	4.2840	39.810	-3.396	-4.102	-4.638
4.26033D+06	5.7374	2.2933	4.2616	39.810	-3.455	-4.165	-4.698
4.26129D+06	5.7418	2.1316	4.2222	39.810	-3.568	-4.283	-4.808

TABLE 11.

Log M = 0.7993 X = 0.66 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	3.1391	4.3130	4.3171	6.300	-1.949	-2.616	-3.084
1.50000D+06	3.1462	4.3049	4.3168	6.300	-1.957	-2.623	-3.090
2.40975D+07	3.2856	4.1324	4.3085	6.300	-2.113	-2.760	-3.218
3.44554D+07	3.3711	3.9907	4.2945	6.300	-2.218	-2.850	-3.304
3.80566D+07	3.4053	3.9203	4.2855	6.300	-2.263	-2.890	-3.342
4.31399D+07	3.4641	3.7867	4.2667	6.300	-2.341	-2.959	-3.410
4.49004D+07	3.4864	3.7261	4.2572	6.300	-2.373	-2.987	-3.438
4.74256D+07	3.5207	3.6293	4.2415	6.300	-2.421	-3.032	-3.483
4.82863D+07	3.5337	3.5974	4.2368	6.300	-2.439	-3.048	-3.499
4.88567D+07	3.5433	3.5822	4.2354	6.300	-2.450	-3.058	-3.510
4.92253D+07	3.5516	3.5768	4.2362	6.300	-2.458	-3.066	-3.517
4.93567D+07	3.5549	3.5784	4.2374	6.300	-2.460	-3.068	-3.519
4.94635D+07	3.5580	3.5818	4.2390	6.300	-2.462	-3.070	-3.521
4.95503D+07	3.5608	3.5863	4.2408	6.300	-2.463	-3.071	-3.522
4.97256D+07	3.5693	3.6051	4.2476	6.300	-2.466	-3.074	-3.525
4.98381D+07	3.5808	3.6373	4.2586	6.300	-2.468	-3.076	-3.527
4.98672D+07	3.5872	3.6525	4.2640	6.300	-2.470	-3.078	-3.529
4.98996D+07	3.6007	3.6802	4.2743	6.300	-2.475	-3.083	-3.534
4.99226D+07	3.6363	3.7124	4.2912	6.300	-2.498	-3.105	-3.555
4.99257D+07	3.6316	3.7126	4.2901	6.300	-2.495	-3.101	-3.551
4.99318D+07	3.6147	3.6890	4.2800	6.300	-2.487	-3.093	-3.543
4.99442D+07	3.6179	3.5855	4.2549	6.300	-2.512	-3.116	-3.567
4.99503D+07	3.6252	3.5253	4.2417	6.300	-2.531	-3.134	-3.585
4.99627D+07	3.6453	3.4009	4.2156	6.300	-2.573	-3.176	-3.629
4.99750D+07	3.6597	3.2779	4.1884	6.300	-2.610	-3.214	-3.670

TABLE 12.

Log M = 0.8998 X = 0.66 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	3.4824	4.2996	4.3744	7.940	-1.897	-2.561	-3.029
7.00000D+05	3.4879	4.2936	4.3743	7.940	-1.903	-2.567	-3.034
6.30000D+06	3.5397	4.2383	4.3734	7.940	-1.960	-2.618	-3.083
1.43613D+07	3.6262	4.1295	4.3679	7.940	-2.061	-2.709	-3.168
1.96545D+07	3.6947	4.0232	4.3584	7.940	-2.148	-2.785	-3.241
2.33732D+07	3.7540	3.9151	4.3462	7.940	-2.227	-2.855	-3.309
2.51807D+07	3.7840	3.8471	4.3367	7.940	-2.271	-2.893	-3.346
2.59316D+07	3.7997	3.8137	4.3323	7.940	-2.292	-2.913	-3.365
2.72299D+07	3.8270	3.7468	4.3224	7.939	-2.332	-2.949	-3.401
2.82584D+07	3.8479	3.6885	4.3130	7.939	-2.364	-2.978	-3.430
2.90775D+07	3.8665	3.6363	4.3046	7.939	-2.393	-3.005	-3.456
2.97200D+07	3.8826	3.5927	4.2978	7.939	-2.417	-3.027	-3.479
3.01919D+07	3.8949	3.5656	4.2941	7.939	-2.433	-3.042	-3.495
3.04934D+07	3.9041	3.5505	4.2926	7.938	-2.446	-3.054	-3.506
3.06028D+07	3.9076	3.5488	4.2930	7.938	-2.449	-3.058	-3.510
3.07629D+07	3.9140	3.5507	4.2951	7.938	-2.455	-3.063	-3.515
3.09844D+07	3.9286	3.5887	4.3082	7.938	-2.461	-3.069	-3.521
3.10652D+07	3.9590	3.6627	4.3344	7.938	-2.472	-3.081	-3.532
3.10724D+07	3.9819	3.6814	4.3447	7.938	-2.490	-3.097	-3.548
3.10737D+07	3.9848	3.6836	4.3460	7.938	-2.493	-3.099	-3.550
3.10764D+07	3.9772	3.6786	4.3429	7.938	-2.487	-3.093	-3.544
3.10818D+07	3.9654	3.6264	4.3269	7.938	-2.489	-3.094	-3.546
3.10871D+07	3.9685	3.5449	4.3073	7.938	-2.510	-3.114	-3.566
3.10978D+07	3.9957	3.3492	4.2652	7.938	-2.577	-3.181	-3.637
3.11085D+07	4.0145	3.1369	4.2168	7.938	-2.641	-3.248	-3.708

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TABLE 13.

Log M = 1.0000 X = 0.66 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	3.8096	4.2865	4.4279	10.000	-1.848	-2.511	-2.978
1.50000D+06	3.8291	4.2660	4.4276	10.000	-1.871	-2.531	-2.998
1.31274D+07	4.0306	3.9932	4.4098	9.998	-2.128	-2.764	-3.220
1.59818D+07	4.1031	3.8505	4.3923	9.997	-2.235	-2.859	-3.313
1.84363D+07	4.1785	3.6571	4.3628	9.994	-2.357	-2.971	-3.423
1.89480D+07	4.1956	3.6071	4.3545	9.992	-2.387	-3.000	-3.453
1.93515D+07	4.2106	3.5654	4.3479	9.991	-2.411	-3.022	-3.476
1.96442D+07	4.2221	3.5385	4.3440	9.990	-2.429	-3.039	-3.493
1.98310D+07	4.2300	3.5279	4.3433	9.989	-2.440	-3.050	-3.503
1.99549D+07	4.2360	3.5273	4.3447	9.989	-2.447	-3.056	-3.510
2.00793D+07	4.2449	3.5384	4.3497	9.988	-2.457	-3.066	-3.519
2.01383D+07	4.2516	3.5580	4.3563	9.988	-2.459	-3.067	-3.521
2.01880D+07	4.2675	3.6119	4.3737	9.988	-2.463	-3.071	-3.524
2.01964D+07	4.2771	3.6337	4.3816	9.988	-2.469	-3.078	-3.531
2.02009D+07	4.2931	3.6529	4.3904	9.988	-2.482	-3.090	-3.542
2.02025D+07	4.3051	3.6624	4.3958	9.988	-2.495	-3.103	-3.556
2.02035D+07	4.3060	3.6652	4.3967	9.988	-2.496	-3.103	-3.556
2.02056D+07	4.2975	3.6563	4.3923	9.988	-2.489	-3.096	-3.549
2.02097D+07	4.2883	3.5832	4.3718	9.988	-2.496	-3.102	-3.555
2.02118D+07	4.2875	3.5336	4.3592	9.988	-2.506	-3.111	-3.565
2.02159D+07	4.2992	3.4045	4.3298	9.988	-2.547	-3.152	-3.608
2.02180D+07	4.3076	3.3340	4.3143	9.988	-2.571	-3.177	-3.634
2.02221D+07	4.3204	3.1791	4.2788	9.988	-2.622	-3.230	-3.691
2.02242D+07	4.3249	3.0971	4.2594	9.988	-2.645	-3.254	-3.718
2.02283D+07	4.3323	2.9127	4.2151	9.988	-2.699	-3.314	-3.782

TABLE 14.

Log M = 1.0997 X = 0.66 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.1159	4.2756	4.4768	12.580	-1.803	-2.462	-2.928
1.50000D+06	4.1442	4.2455	4.4764	12.579	-1.838	-2.494	-2.960
4.38796D+06	4.2102	4.1722	4.4746	12.577	-1.922	-2.573	-3.036
8.17229D+06	4.3101	4.0293	4.4638	12.572	-2.064	-2.703	-3.161
9.50664D+06	4.3530	3.9551	4.4560	12.568	-2.129	-2.762	-3.218
1.13593D+07	4.4221	3.8089	4.4367	12.559	-2.245	-2.868	-3.322
1.29800D+07	4.4934	3.6099	4.4048	12.541	-2.381	-2.995	-3.450
1.33224D+07	4.5109	3.5551	4.3955	12.535	-2.415	-3.027	-3.482
1.35950D+07	4.5239	3.5164	4.3890	12.530	-2.440	-3.052	-3.508
1.37832D+07	4.5342	3.4896	4.3849	12.526	-2.460	-3.071	-3.527
1.39051D+07	4.5419	3.4759	4.3834	12.523	-2.473	-3.084	-3.541
1.39853D+07	4.5473	3.4751	4.3845	12.521	-2.481	-3.091	-3.548
1.40391D+07	4.5516	3.4808	4.3871	12.519	-2.485	-3.095	-3.552
1.41308D+07	4.5678	3.5335	4.4043	12.517	-2.496	-3.106	-3.562
1.41441D+07	4.5805	3.5712	4.4169	12.516	-2.504	-3.113	-3.570
1.41496D+07	4.6101	3.6118	4.4344	12.516	-2.535	-3.143	-3.599
1.41508D+07	4.6120	3.6158	4.4359	12.516	-2.537	-3.145	-3.601
1.41533D+07	4.6030	3.5805	4.4249	12.516	-2.534	-3.142	-3.598
1.41558D+07	4.5995	3.5004	4.4039	12.516	-2.547	-3.154	-3.611
1.41570D+07	4.6019	3.4503	4.3920	12.516	-2.562	-3.169	-3.627
1.41595D+07	4.6123	3.3220	4.3626	12.516	-2.606	-3.214	-3.674
1.41620D+07	4.6236	3.1728	4.3281	12.516	-2.657	-3.269	-3.734
1.41645D+07	4.6323	3.0032	4.2878	12.516	-2.712	-3.328	-3.799
1.41670D+07	4.6373	2.8073	4.2401	12.516	-2.772	-3.396	-3.872
1.41694D+07	4.6364	2.5684	4.1802	12.515	-2.841	-3.474	-3.954

TABLE 15.

Log M = 1.1998 X = 0.66 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.4035	4.2668	4.5215	15.840	-1.761	-2.416	-2.882
2.87481D+06	4.4907	4.1719	4.5196	15.828	-1.879	-2.530	-2.993
5.71502D+06	4.5903	4.0282	4.5086	15.803	-2.035	-2.675	-3.135
8.58112D+06	4.7252	3.7311	4.4680	15.730	-2.295	-2.916	-3.372
9.31666D+06	4.7686	3.5915	4.4440	15.688	-2.395	-3.011	-3.469
9.58334D+06	4.7851	3.5315	4.4331	15.668	-2.436	-3.051	-3.510
9.94648D+06	4.8076	3.4548	4.4195	15.635	-2.493	-3.107	-3.567
1.00482D+07	4.8147	3.4362	4.4167	15.624	-2.511	-3.124	-3.585
1.00859D+07	4.8183	3.4289	4.4157	15.620	-2.519	-3.132	-3.593
1.01408D+07	4.8229	3.4301	4.4172	15.614	-2.523	-3.138	-3.600
1.01895D+07	4.8291	3.4335	4.4196	15.609	-2.535	-3.148	-3.610
1.02166D+07	4.8336	3.4514	4.4252	15.606	-2.538	-3.151	-3.612
1.02350D+07	4.8394	3.4800	4.4338	15.603	-2.540	-3.153	-3.613
1.02448D+07	4.8475	3.5130	4.4441	15.602	-2.545	-3.157	-3.618
1.02494D+07	4.8605	3.5428	4.4548	15.602	-2.560	-3.171	-3.631
1.02510D+07	4.8807	3.5690	4.4664	15.602	-2.587	-3.198	-3.658
1.02524D+07	4.8804	3.5656	4.4654	15.601	-2.588	-3.198	-3.658
1.02552D+07	4.8773	3.4583	4.4378	15.601	-2.610	-3.220	-3.681
1.02566D+07	4.8873	3.3883	4.4228	15.601	-2.644	-3.255	-3.719
1.02594D+07	4.9026	3.1920	4.3776	15.600	-2.719	-3.336	-3.806
1.02608D+07	4.9079	3.0782	4.3505	15.600	-2.759	-3.379	-3.853
1.02622D+07	4.9121	2.9482	4.3190	15.600	-2.802	-3.427	-3.906
1.02636D+07	4.9148	2.7990	4.2824	15.599	-2.853	-3.484	-3.969
1.02650D+07	4.9158	2.6246	4.2390	15.599	-2.910	-3.550	-4.038
1.02664D+07	4.9137	2.4125	4.1855	15.599	-2.980	-3.627	-4.117

TABLE 16.

Log M = 1.2999 X = 0.66 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.6766	4.2569	4.5623	19.950	-1.729	-2.379	-2.844
2.21162D+06	4.7602	4.1627	4.5596	19.903	-1.855	-2.503	-2.966
3.41945D+06	4.8143	4.0881	4.5545	19.861	-1.948	-2.592	-3.053
4.35313D+06	4.8586	4.0134	4.5469	19.814	-2.033	-2.673	-3.133
5.09671D+06	4.8966	3.9382	4.5376	19.763	-2.113	-2.747	-3.206
6.81531D+06	5.0026	3.6395	4.4894	19.544	-2.381	-3.001	-3.462
7.20301D+06	5.0289	3.5330	4.4694	19.456	-2.484	-3.098	-3.558
7.35853D+06	5.0413	3.4783	4.4588	19.413	-2.504	-3.121	-3.586
7.73266D+06	5.0683	3.3631	4.4367	19.292	-2.596	-3.214	-3.681
7.78858D+06	5.0739	3.3466	4.4340	19.272	-2.613	-3.231	-3.699
7.85193D+06	5.0808	3.3499	4.4366	19.247	-2.628	-3.246	-3.715
7.88157D+06	5.0859	3.3697	4.4428	19.236	-2.635	-3.253	-3.721
7.88984D+06	5.0883	3.3827	4.4467	19.232	-2.637	-3.254	-3.723
7.90431D+06	5.0990	3.4355	4.4625	19.227	-2.646	-3.262	-3.729
7.90715D+06	5.1172	3.4752	4.4770	19.226	-2.672	-3.287	-3.754
7.90822D+06	5.1291	3.4976	4.4856	19.225	-2.691	-3.306	-3.774
7.90964D+06	5.1291	3.4821	4.4817	19.225	-2.696	-3.310	-3.777
7.91105D+06	5.1266	3.4092	4.4628	19.224	-2.711	-3.327	-3.796
7.91247D+06	5.1441	3.3111	4.4427	19.224	-2.774	-3.394	-3.867
7.91389D+06	5.1552	3.1790	4.4124	19.223	-2.836	-3.461	-3.939
7.91531D+06	5.1630	3.0183	4.3742	19.222	-2.902	-3.534	-4.020
7.91673D+06	5.1688	2.8256	4.3275	19.221	-2.979	-3.621	-4.115
7.91815D+06	5.1728	2.5883	4.2692	19.220	-3.075	-3.729	-4.230
7.91886D+06	5.1733	2.4522	4.2353	19.219	-3.130	-3.790	-4.292
7.91957D+06	5.1727	2.2952	4.1959	19.219	-3.193	-3.859	-4.358

TABLE 17.

Log M = 1.3998 X = 0.66 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.9314	4.2476	4.5987	25.110	-1.702	-2.349	-2.812
1.32365D+06	4.9896	4.1787	4.5960	25.011	-1.803	-2.450	-2.913
3.60527D+06	5.1075	3.9807	4.5760	24.701	-2.058	-2.696	-3.156
4.15334D+06	5.1427	3.8985	4.5642	24.574	-2.151	-2.784	-3.245
5.18257D+06	5.2120	3.6705	4.5245	24.211	-2.375	-2.998	-3.461
5.82161D+06	5.2609	3.4306	4.4768	23.830	-2.576	-3.198	-3.667
6.13022D+06	5.2867	3.2816	4.4460	23.571	-2.702	-3.328	-3.805
6.15552D+06	5.2902	3.2602	4.4415	23.546	-2.719	-3.346	-3.824
6.19238D+06	5.2943	3.2481	4.4395	23.510	-2.736	-3.363	-3.842
6.27087D+06	5.3145	3.3228	4.4633	23.430	-2.774	-3.399	-3.876
6.27276D+06	5.3251	3.3497	4.4726	23.428	-2.792	-3.416	-3.894
6.27292D+06	5.3281	3.3572	4.4752	23.428	-2.797	-3.422	-3.899
6.27308D+06	5.3309	3.3646	4.4778	23.428	-2.802	-3.427	-3.904
6.27341D+06	5.3360	3.3784	4.4825	23.428	-2.812	-3.436	-3.914
6.27405D+06	5.3427	3.3986	4.4892	23.427	-2.825	-3.449	-3.926
6.27535D+06	5.3454	3.3870	4.4870	23.426	-2.836	-3.460	-3.938
6.27793D+06	5.3614	3.1936	4.4427	23.423	-2.940	-3.573	-4.059
6.27858D+06	5.3676	3.1198	4.4258	23.422	-2.980	-3.616	-4.107
6.27987D+06	5.3756	2.9323	4.3809	23.420	-3.070	-3.718	-4.219
6.28052D+06	5.3802	2.8319	4.3569	23.419	-3.120	-3.775	-4.280
6.28116D+06	5.3847	2.7260	4.3316	23.418	-3.178	-3.840	-4.351
6.28181D+06	5.3875	2.6099	4.3033	23.417	-3.235	-3.904	-4.417
6.28246D+06	5.3893	2.4794	4.2711	23.416	-3.299	-3.976	-4.491
6.28310D+06	5.3907	2.3312	4.2344	23.414	-3.373	-4.056	-4.568
6.28375D+06	5.3925	2.1629	4.1928	23.413	-3.461	-4.146	-4.651

TABLE 18.

Log M = 1.5000 X = 0.66 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.1671	4.2401	4.6307	31.620	-1.679	-2.321	-2.782
7.00000D+05	5.2015	4.1978	4.6287	31.474	-1.747	-2.392	-2.854
1.59693D+06	5.2486	4.1297	4.6235	31.243	-1.852	-2.497	-2.960
2.59872D+06	5.3088	4.0168	4.6103	30.887	-2.013	-2.655	-3.117
3.86063D+06	5.3937	3.7660	4.5688	30.130	-2.314	-2.945	-3.410
4.00953D+06	5.4046	3.7213	4.5603	30.000	-2.362	-2.991	-3.457
4.37219D+06	5.4337	3.5772	4.5316	29.619	-2.504	-3.131	-3.601
4.56408D+06	5.4488	3.4868	4.5128	29.369	-2.587	-3.216	-3.691
4.64436D+06	5.4543	3.4459	4.5039	29.253	-2.623	-3.252	-3.728
4.78553D+06	5.4678	3.3459	4.4823	29.027	-2.712	-3.343	-3.822
4.84613D+06	5.4730	3.3031	4.4729	28.920	-2.749	-3.381	-3.863
4.94587D+06	5.4805	3.2386	4.4587	28.731	-2.808	-3.443	-3.929
4.98362D+06	5.4835	3.2141	4.4533	28.655	-2.831	-3.468	-3.956
5.04107D+06	5.4887	3.1727	4.4442	28.535	-2.894	-3.532	-4.022
5.05183D+06	5.4908	3.1470	4.4383	28.512	-2.928	-3.572	-4.066
5.15763D+06	5.5125	3.1450	4.4433	28.268	-2.983	-3.626	-4.122
5.16024D+06	5.5168	3.1686	4.4503	28.262	-2.989	-3.632	-4.127
5.16096D+06	5.5198	3.1800	4.4538	28.260	-2.995	-3.637	-4.133
5.16126D+06	5.5266	3.1963	4.4596	28.259	-3.013	-3.655	-4.150
5.16141D+06	5.5291	3.2058	4.4626	28.259	-3.019	-3.661	-4.156
5.16232D+06	5.5396	3.2483	4.4759	28.257	-3.041	-3.682	-4.177
5.16353D+06	5.5434	3.2322	4.4728	28.254	-3.060	-3.702	-4.198
5.16534D+06	5.5425	3.0723	4.4326	28.249	-3.116	-3.767	-4.271
5.16716D+06	5.5605	2.6456	4.3304	28.244	-3.364	-4.047	-4.572
5.16837D+06	5.5676	2.2232	4.2266	28.240	-3.611	-4.313	-4.829

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TABLE 19.

Log M = 1.6000 X = 0.66 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.3869	4.2322	4.6587	39.810	-1.662	-2.300	-2.760
1.70632D+06	5.4832	4.0773	4.6440	38.845	-1.969	-2.612	-3.072
2.22041D+06	5.5171	3.9990	4.6329	38.415	-2.040	-2.685	-3.150
3.28257D+06	5.5924	3.7302	4.5845	37.097	-2.392	-3.028	-3.498
3.87762D+06	5.6426	3.3980	4.5140	35.775	-2.748	-3.387	-3.871
4.07248D+06	5.6595	3.2208	4.4740	35.147	-2.920	-3.566	-4.062
4.27274D+06	5.6780	2.9904	4.4210	34.336	-3.148	-3.813	-4.327
4.29507D+06	5.6801	2.9634	4.4148	34.232	-3.177	-3.845	-4.362
4.34234D+06	5.6850	2.9062	4.4017	34.003	-3.245	-3.919	-4.440
4.36239D+06	5.6875	2.8855	4.3971	33.903	-3.274	-3.950	-4.474
4.37004D+06	5.6887	2.8828	4.3967	33.864	-3.284	-3.961	-4.485
4.38181D+06	5.6907	2.8824	4.3971	33.804	-3.298	-3.977	-4.502
4.38630D+06	5.6919	2.8790	4.3966	33.781	-3.307	-3.987	-4.512
4.39311D+06	5.6939	2.8574	4.3917	33.745	-3.331	-4.012	-4.539
4.39571D+06	5.6949	2.8593	4.3924	33.731	-3.336	-4.017	-4.544
4.40449D+06	5.6994	2.8791	4.3985	33.685	-3.354	-4.034	-4.562
4.40861D+06	5.7129	2.9362	4.4161	33.663	-3.395	-4.076	-4.605
4.40932D+06	5.7218	2.9764	4.4284	33.659	-3.421	-4.101	-4.628
4.41027D+06	5.7277	2.9688	4.4280	33.654	-3.456	-4.137	-4.667
4.41122D+06	5.7291	2.8945	4.4098	33.649	-3.498	-4.187	-4.722
4.41217D+06	5.7289	2.7450	4.3724	33.644	-3.573	-4.273	-4.813
4.41265D+06	5.7286	2.6441	4.3471	33.641	-3.623	-4.330	-4.871
4.41312D+06	5.7281	2.5080	4.3129	33.638	-3.697	-4.412	-4.952
4.41360D+06	5.7277	2.3237	4.2667	33.635	-3.803	-4.524	-5.054
4.41407D+06	5.7277	2.0648	4.2020	33.631	-3.959	-4.672	-5.175

TABLE 20.

Log M = 0.7993 X = 0.74 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	2.9945	4.3204	4.2827	6.300	-1.970	-2.636	-3.103
3.00000D+05	2.9948	4.3195	4.2826	6.300	-1.971	-2.637	-3.103
6.30000D+06	3.0164	4.2961	4.2822	6.300	-1.994	-2.657	-3.121
3.21832D+07	3.1235	4.1589	4.2746	6.300	-2.112	-2.759	-3.217
4.83513D+07	3.2117	4.0146	4.2606	6.300	-2.217	-2.849	-3.302
5.84509D+07	3.2795	3.8704	4.2415	6.300	-2.304	-2.924	-3.374
6.47201D+07	3.3300	3.7330	4.2198	6.300	-2.373	-2.985	-3.434
6.86391D+07	3.3647	3.6129	4.1984	6.300	-2.426	-3.033	-3.482
7.11377D+07	3.3900	3.5292	4.1838	6.300	-2.462	-3.067	-3.517
7.18833D+07	3.3993	3.5089	4.1811	6.300	-2.473	-3.078	-3.528
7.25378D+07	3.4102	3.5023	4.1822	6.300	-2.483	-3.087	-3.537
7.26748D+07	3.4134	3.5047	4.1836	6.300	-2.485	-3.089	-3.539
7.28766D+07	3.4194	3.5145	4.1875	6.300	-2.487	-3.091	-3.541
7.30208D+07	3.4259	3.5285	4.1927	6.300	-2.490	-3.094	-3.544
7.31034D+07	3.4313	3.5428	4.1976	6.300	-2.491	-3.094	-3.544
7.31584D+07	3.4379	3.5591	4.2033	6.300	-2.493	-3.096	-3.546
7.31950D+07	3.4462	3.5760	4.2096	6.300	-2.495	-3.099	-3.549
7.32187D+07	3.4526	3.5899	4.2147	6.300	-2.497	-3.101	-3.550
7.32341D+07	3.4594	3.5999	4.2189	6.300	-2.501	-3.103	-3.552
7.32445D+07	3.4675	3.6095	4.2233	6.300	-2.505	-3.108	-3.557
7.32557D+07	3.4808	3.6216	4.2296	6.300	-2.513	-3.116	-3.565
7.32572D+07	3.4834	3.6236	4.2308	6.300	-2.515	-3.118	-3.566
7.32623D+07	3.4940	3.6296	4.2349	6.300	-2.522	-3.124	-3.573
7.32744D+07	3.4619	3.6087	4.2217	6.300	-2.502	-3.104	-3.553
7.32824D+07	3.4478	3.5646	4.2071	6.300	-2.501	-3.103	-3.552

TABLE 21.

Log M = 0.8998 X = 0.74 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	3.3425	4.3067	4.3412	7.940	-1.916	-2.579	-3.045
6.30000D+06	3.3807	4.2649	4.3403	7.940	-1.956	-2.616	-3.080
2.11099D+07	3.4902	4.1233	4.3323	7.940	-2.082	-2.727	-3.185
3.01552D+07	3.5772	3.9788	4.3179	7.940	-2.192	-2.822	-3.275
3.58163D+07	3.6444	3.8349	4.2988	7.940	-2.281	-2.901	-3.351
3.77762D+07	3.6716	3.7654	4.2882	7.940	-2.320	-2.935	-3.385
3.93383D+07	3.6952	3.6973	4.2770	7.940	-2.355	-2.967	-3.416
4.05791D+07	3.7139	3.6371	4.2667	7.939	-2.383	-2.993	-3.442
4.15531D+07	3.7300	3.5823	4.2570	7.939	-2.409	-3.017	-3.466
4.23455D+07	3.7439	3.5363	4.2490	7.939	-2.431	-3.037	-3.487
4.29454D+07	3.7552	3.5034	4.2436	7.939	-2.446	-3.052	-3.502
4.33347D+07	3.7634	3.4889	4.2420	7.939	-2.456	-3.061	-3.512
4.34761D+07	3.7668	3.4862	4.2422	7.939	-2.460	-3.065	-3.515
4.35909D+07	3.7701	3.4849	4.2427	7.939	-2.463	-3.068	-3.518
4.36830D+07	3.7728	3.4863	4.2437	7.939	-2.464	-3.069	-3.520
4.37546D+07	3.7753	3.4886	4.2449	7.939	-2.466	-3.071	-3.522
4.39761D+07	3.7899	3.5218	4.2569	7.939	-2.473	-3.077	-3.528
4.40580D+07	3.8093	3.5753	4.2751	7.939	-2.478	-3.083	-3.532
4.40776D+07	3.8285	3.6032	4.2868	7.939	-2.490	-3.094	-3.543
4.40810D+07	3.8430	3.6099	4.2922	7.939	-2.501	-3.105	-3.554
4.40826D+07	3.8451	3.6119	4.2932	7.939	-2.503	-3.106	-3.555
4.40858D+07	3.8361	3.6095	4.2903	7.939	-2.496	-3.099	-3.548
4.40921D+07	3.8147	3.5683	4.2747	7.939	-2.487	-3.089	-3.538
4.40984D+07	3.8081	3.4969	4.2552	7.939	-2.496	-3.097	-3.548
4.41111D+07	3.8252	3.3116	4.2131	7.939	-2.548	-3.150	-3.604

TABLE 22.

Log M = 1.0000 X = 0.74 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	3.6742	4.2945	4.3961	10.000	-1.863	-2.524	-2.990
1.50000D+06	3.6885	4.2804	4.3961	10.000	-1.878	-2.538	-3.004
1.12821D+07	3.7989	4.1538	4.3921	10.000	-2.006	-2.654	-3.113
1.79988D+07	3.8951	4.0084	4.3798	9.999	-2.130	-2.764	-3.218
2.21152D+07	3.9701	3.8620	4.3619	9.998	-2.234	-2.857	-3.308
2.47581D+07	4.0289	3.7161	4.3401	9.997	-2.323	-2.937	-3.388
2.56938D+07	4.0515	3.6482	4.3288	9.996	-2.359	-2.969	-3.419
2.64326D+07	4.0713	3.5840	4.3177	9.995	-2.393	-3.002	-3.452
2.70268D+07	4.0869	3.5304	4.3082	9.994	-2.420	-3.027	-3.478
2.74989D+07	4.1007	3.4853	4.3004	9.993	-2.443	-3.049	-3.501
2.78474D+07	4.1113	3.4544	4.2953	9.993	-2.460	-3.066	-3.518
2.79719D+07	4.1153	3.4464	4.2943	9.992	-2.466	-3.072	-3.524
2.81554D+07	4.1219	3.4389	4.2941	9.992	-2.473	-3.079	-3.531
2.82205D+07	4.1252	3.4359	4.2941	9.992	-2.479	-3.084	-3.536
2.83302D+07	4.1305	3.4391	4.2963	9.991	-2.483	-3.088	-3.540
2.83910D+07	4.1354	3.4488	4.2999	9.991	-2.486	-3.091	-3.543
2.84684D+07	4.1458	3.4855	4.3117	9.991	-2.488	-3.092	-3.543
2.85045D+07	4.1657	3.5384	4.3299	9.991	-2.496	-3.100	-3.551
2.85126D+07	4.1933	3.5629	4.3429	9.991	-2.521	-3.123	-3.574
2.85146D+07	4.1901	3.5628	4.3421	9.991	-2.517	-3.120	-3.571
2.85185D+07	4.1722	3.5272	4.3287	9.991	-2.507	-3.109	-3.560
2.85264D+07	4.1705	3.3555	4.2854	9.991	-2.542	-3.144	-3.598
2.85303D+07	4.1743	3.2486	4.2596	9.991	-2.569	-3.172	-3.628
2.85343D+07	4.1796	3.1260	4.2303	9.991	-2.601	-3.206	-3.665
2.85382D+07	4.1842	2.9887	4.1971	9.991	-2.637	-3.245	-3.707

TABLE 23.

Log M = 1.0997 X = 0.74 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	3.9915	4.2814	4.4472	12.580	-1.818	-2.476	-2.941
1.50000D+06	4.0125	4.2591	4.4469	12.580	-1.842	-2.499	-2.963
7.94698D+06	4.1221	4.1268	4.4412	12.578	-1.980	-2.625	-3.084
1.21952D+07	4.2144	3.9818	4.4280	12.573	-2.109	-2.742	-3.197
1.66229D+07	4.3435	3.6847	4.3860	12.560	-2.317	-2.931	-3.382
1.72369D+07	4.3659	3.6139	4.3739	12.555	-2.358	-2.968	-3.419
1.81247D+07	4.4002	3.4923	4.3521	12.547	-2.424	-3.031	-3.484
1.84378D+07	4.4126	3.4486	4.3443	12.543	-2.449	-3.057	-3.510
1.86585D+07	4.4223	3.4157	4.3385	12.540	-2.469	-3.075	-3.529
1.87588D+07	4.4264	3.4064	4.3371	12.538	-2.475	-3.081	-3.535
1.88727D+07	4.4325	3.3997	4.3370	12.536	-2.483	-3.089	-3.544
1.89146D+07	4.4351	3.4001	4.3377	12.536	-2.487	-3.093	-3.548
1.89769D+07	4.4396	3.4057	4.3403	12.535	-2.491	-3.097	-3.551
1.89998D+07	4.4415	3.4102	4.3419	12.534	-2.492	-3.098	-3.552
1.90468D+07	4.4472	3.4285	4.3479	12.533	-2.494	-3.100	-3.554
1.90863D+07	4.4588	3.4676	4.3606	12.533	-2.501	-3.106	-3.559
1.90984D+07	4.4716	3.5013	4.3722	12.533	-2.508	-3.112	-3.566
1.91030D+07	4.4965	3.5266	4.3847	12.532	-2.534	-3.138	-3.591
1.91044D+07	4.4970	3.5288	4.3854	12.532	-2.534	-3.137	-3.590
1.91073D+07	4.4829	3.4958	4.3736	12.532	-2.524	-3.127	-3.581
1.91130D+07	4.4790	3.2994	4.3236	12.532	-2.563	-3.167	-3.623
1.91159D+07	4.4826	3.1696	4.2920	12.532	-2.597	-3.203	-3.663
1.91187D+07	4.4864	3.0127	4.2537	12.532	-2.638	-3.248	-3.712
1.91216D+07	4.4865	2.8249	4.2068	12.532	-2.684	-3.300	-3.770
1.91230D+07	4.4863	2.7221	4.1810	12.532	-2.710	-3.330	-3.801

TABLE 24.

Log M = 1.1998 X = 0.74 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.2901	4.2703	4.4941	15.840	-1.776	-2.431	-2.895
1.50000D+06	4.3236	4.2364	4.4940	15.837	-1.817	-2.471	-2.934
7.34082D+06	4.4721	4.0398	4.4819	15.815	-2.027	-2.665	-3.121
9.72506D+06	4.5541	3.8859	4.4639	15.791	-2.165	-2.790	-3.244
1.26088D+07	4.6813	3.5084	4.4014	15.708	-2.424	-3.034	-3.488
1.30222D+07	4.7023	3.4220	4.3850	15.684	-2.474	-3.083	-3.539
1.32255D+07	4.7131	3.3775	4.3766	15.670	-2.500	-3.109	-3.566
1.33011D+07	4.7172	3.3644	4.3744	15.665	-2.507	-3.116	-3.575
1.34211D+07	4.7252	3.3380	4.3697	15.655	-2.528	-3.137	-3.595
1.35174D+07	4.7324	3.3320	4.3701	15.648	-2.540	-3.149	-3.607
1.35564D+07	4.7360	3.3370	4.3722	15.644	-2.545	-3.153	-3.612
1.35827D+07	4.7392	3.3466	4.3754	15.642	-2.547	-3.155	-3.614
1.36126D+07	4.7455	3.3718	4.3833	15.639	-2.552	-3.159	-3.618
1.36208D+07	4.7484	3.3863	4.3876	15.639	-2.552	-3.160	-3.618
1.36327D+07	4.7574	3.4201	4.3983	15.638	-2.558	-3.165	-3.622
1.36369D+07	4.7797	3.4465	4.4105	15.637	-2.585	-3.192	-3.650
1.36374D+07	4.7846	3.4520	4.4131	15.637	-2.592	-3.199	-3.656
1.36382D+07	4.7899	3.4592	4.4162	15.637	-2.598	-3.205	-3.662
1.36400D+07	4.7849	3.4490	4.4124	15.637	-2.594	-3.200	-3.657
1.36418D+07	4.7742	3.4060	4.3990	15.637	-2.588	-3.193	-3.651
1.36453D+07	4.7769	3.2110	4.3509	15.637	-2.637	-3.245	-3.708
1.36470D+07	4.7790	3.0850	4.3199	15.636	-2.672	-3.283	-3.750
1.36488D+07	4.7814	2.9325	4.2824	15.636	-2.714	-3.331	-3.802
1.36505D+07	4.7825	2.7492	4.2369	15.636	-2.766	-3.389	-3.866
1.36523D+07	4.7811	2.5237	4.1802	15.636	-2.830	-3.463	-3.945

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TABLE 25.

Log M = 1.2999 X = 0.74 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.5712	4.2599	4.5367	19.950	-1.740	-2.390	-2.853
4.37446D+06	4.7079	4.0904	4.5285	19.881	-1.945	-2.587	-3.045
6.49707D+06	4.7945	3.9370	4.5118	19.804	-2.104	-2.734	-3.190
7.88421D+06	4.8580	3.7803	4.4885	19.709	-2.240	-2.860	-3.315
9.10630D+06	4.9282	3.5316	4.4438	19.559	-2.421	-3.034	-3.490
9.37041D+06	4.9441	3.4582	4.4295	19.511	-2.469	-3.081	-3.540
9.58641D+06	4.9565	3.3958	4.4170	19.466	-2.509	-3.121	-3.581
9.76110D+06	4.9686	3.3320	4.4040	19.425	-2.548	-3.160	-3.622
9.88119D+06	4.9763	3.2969	4.3972	19.394	-2.573	-3.185	-3.648
9.92557D+06	4.9793	3.2853	4.3950	19.382	-2.582	-3.195	-3.658
9.99209D+06	4.9843	3.2696	4.3924	19.363	-2.596	-3.209	-3.674
1.00671D+07	4.9914	3.2689	4.3940	19.341	-2.611	-3.224	-3.689
1.01191D+07	5.0031	3.3069	4.4064	19.326	-2.626	-3.242	-3.709
1.01288D+07	5.0129	3.3428	4.4178	19.323	-2.633	-3.245	-3.708
1.01313D+07	5.0272	3.3688	4.4279	19.322	-2.653	-3.263	-3.726
1.01320D+07	5.0361	3.3827	4.4336	19.322	-2.666	-3.276	-3.739
1.01327D+07	5.0407	3.3919	4.4370	19.322	-2.672	-3.283	-3.746
1.01343D+07	5.0366	3.3760	4.4321	19.321	-2.669	-3.279	-3.742
1.01358D+07	5.0287	3.3129	4.4143	19.321	-2.672	-3.282	-3.747
1.01374D+07	5.0327	3.2048	4.3883	19.320	-2.707	-3.320	-3.788
1.01389D+07	5.0414	3.0689	4.3565	19.320	-2.759	-3.377	-3.850
1.01404D+07	5.0475	2.9033	4.3166	19.319	-2.817	-3.441	-3.920
1.01420D+07	5.0496	2.6991	4.2661	19.319	-2.883	-3.518	-4.004
1.01428D+07	5.0492	2.5830	4.2369	19.318	-2.921	-3.560	-4.050
1.01435D+07	5.0478	2.4495	4.2032	19.318	-2.964	-3.610	-4.101

TABLE 26.

Log M = 1.3998 X = 0.74 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.8348	4.2503	4.5752	25.110	-1.710	-2.356	-2.818
1.48918D+06	4.8871	4.1896	4.5731	25.036	-1.794	-2.439	-2.900
3.81737D+06	4.9830	4.0457	4.5611	24.849	-1.975	-2.613	-3.072
5.29340D+06	5.0547	3.8911	4.5404	24.631	-2.143	-2.771	-3.228
6.95322D+06	5.1545	3.5386	4.4772	24.141	-2.446	-3.061	-3.521
7.40228D+06	5.1848	3.3688	4.4423	23.906	-2.565	-3.181	-3.647
7.68669D+06	5.2065	3.2184	4.4102	23.716	-2.669	-3.288	-3.759
7.82985D+06	5.2175	3.1519	4.3963	23.605	-2.721	-3.341	-3.816
7.89627D+06	5.2241	3.1387	4.3946	23.549	-2.743	-3.365	-3.841
7.92191D+06	5.2277	3.1434	4.3967	23.528	-2.752	-3.374	-3.849
7.93257D+06	5.2299	3.1505	4.3990	23.518	-2.756	-3.378	-3.853
7.94851D+06	5.2362	3.1816	4.4084	23.505	-2.763	-3.383	-3.858
7.95182D+06	5.2401	3.1955	4.4128	23.502	-2.768	-3.389	-3.864
7.95508D+06	5.2509	3.2223	4.4222	23.499	-2.786	-3.406	-3.880
7.95643D+06	5.2684	3.2544	4.4346	23.498	-2.819	-3.438	-3.912
7.95770D+06	5.2690	3.2433	4.4320	23.497	-2.823	-3.443	-3.917
7.95897D+06	5.2643	3.1864	4.4166	23.496	-2.829	-3.450	-3.927
7.96024D+06	5.2620	3.0650	4.3857	23.494	-2.860	-3.485	-3.967
7.96088D+06	5.2691	2.9957	4.3701	23.494	-2.898	-3.527	-4.011
7.96151D+06	5.2761	2.9136	4.3513	23.493	-2.941	-3.574	-4.063
7.96215D+06	5.2805	2.8239	4.3300	23.492	-2.982	-3.621	-4.114
7.96278D+06	5.2831	2.7261	4.3062	23.492	-3.023	-3.668	-4.164
7.96342D+06	5.2839	2.6175	4.2793	23.491	-3.065	-3.716	-4.216
7.96405D+06	5.2834	2.4923	4.2478	23.490	-3.111	-3.769	-4.271
7.96469D+06	5.2821	2.3431	4.2102	23.489	-3.169	-3.833	-4.335

TABLE 27.

Log M = 1.5000 X = 0.74 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.0785	4.2427	4.6092	31.620	-1.683	-2.325	-2.785
3.00000D+05	5.0899	4.2302	4.6089	31.576	-1.702	-2.345	-2.805
2.31433D+06	5.1797	4.1047	4.6000	31.194	-1.887	-2.529	-2.989
3.76167D+06	5.2531	3.9530	4.5804	30.735	-2.082	-2.716	-3.175
4.73137D+06	5.3102	3.7805	4.5516	30.240	-2.272	-2.897	-3.357
5.38146D+06	5.3543	3.5857	4.5139	29.737	-2.454	-3.074	-3.537
5.82939D+06	5.3874	3.3736	4.4691	29.245	-2.626	-3.247	-3.717
5.99439D+06	5.3996	3.2768	4.4480	29.017	-2.701	-3.324	-3.799
6.23008D+06	5.4198	3.0859	4.4053	28.633	-2.844	-3.474	-3.958
6.25223D+06	5.4224	3.0598	4.3994	28.593	-2.862	-3.495	-3.981
6.30913D+06	5.4274	3.0110	4.3885	28.485	-2.901	-3.537	-4.026
6.35071D+06	5.4313	2.9828	4.3824	28.402	-2.928	-3.566	-4.058
6.37944D+06	5.4343	2.9656	4.3789	28.344	-2.948	-3.587	-4.080
6.39935D+06	5.4370	2.9492	4.3754	28.303	-2.965	-3.605	-4.099
6.41286D+06	5.4396	2.9462	4.3754	28.275	-2.976	-3.617	-4.111
6.42222D+06	5.4416	2.9495	4.3767	28.255	-2.983	-3.624	-4.119
6.43321D+06	5.4453	2.9629	4.3810	28.231	-2.992	-3.633	-4.127
6.43851D+06	5.4489	2.9807	4.3863	28.220	-2.998	-3.638	-4.132
6.44002D+06	5.4509	2.9893	4.3889	28.217	-3.001	-3.640	-4.134
6.44180D+06	5.4547	3.0042	4.3936	28.213	-3.008	-3.647	-4.141
6.44207D+06	5.4557	3.0074	4.3947	28.212	-3.010	-3.650	-4.143
6.44247D+06	5.4579	3.0138	4.3968	28.211	-3.014	-3.654	-4.148
6.44443D+06	5.4773	3.0641	4.4142	28.207	-3.059	-3.698	-4.192
6.44802D+06	5.4720	2.6955	4.3208	28.199	-3.179	-3.839	-4.349
6.44937D+06	5.4764	2.3236	4.2289	28.195	-3.359	-4.040	-4.553

TABLE 28.

Log M = 1.6000 X = 0.74 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.3063	4.2348	4.6391	39.810	-1.663	-2.301	-2.760
1.18346D+06	5.3601	4.1605	4.6340	39.328	-1.787	-2.429	-2.889
2.64055D+06	5.4344	4.0170	4.6167	38.478	-2.005	-2.645	-3.105
3.60884D+06	5.4954	3.8374	4.5871	37.596	-2.238	-2.869	-3.331
4.19560D+06	5.5354	3.6583	4.5523	36.802	-2.437	-3.063	-3.529
4.66840D+06	5.5705	3.4240	4.5025	35.886	-2.664	-3.290	-3.765
4.99742D+06	5.5961	3.1698	4.4454	35.000	-2.888	-3.524	-4.013
5.21786D+06	5.6146	2.9140	4.3860	34.225	-3.106	-3.761	-4.267
5.33538D+06	5.6242	2.7597	4.3499	33.738	-3.251	-3.918	-4.435
5.41876D+06	5.6394	2.6000	4.3137	33.351	-3.419	-4.104	-4.628
5.42326D+06	5.6413	2.5981	4.3137	33.329	-3.430	-4.116	-4.641
5.42640D+06	5.6430	2.6017	4.3151	33.313	-3.437	-4.123	-4.648
5.42859D+06	5.6445	2.6062	4.3166	33.302	-3.443	-4.129	-4.654
5.43013D+06	5.6461	2.6109	4.3181	33.294	-3.450	-4.136	-4.662
5.43121D+06	5.6476	2.6158	4.3197	33.289	-3.454	-4.141	-4.667
5.43162D+06	5.6483	2.6184	4.3206	33.287	-3.457	-4.143	-4.669
5.43224D+06	5.6498	2.6234	4.3222	33.284	-3.461	-4.148	-4.674
5.43267D+06	5.6513	2.6281	4.3237	33.282	-3.466	-4.153	-4.679
5.43292D+06	5.6541	2.6355	4.3263	33.280	-3.475	-4.162	-4.689
5.43314D+06	5.6573	2.6453	4.3295	33.279	-3.485	-4.172	-4.699
5.43378D+06	5.6650	2.6693	4.3375	33.276	-3.510	-4.197	-4.725
5.43548D+06	5.6714	2.6208	4.3269	33.267	-3.566	-4.258	-4.788
5.43633D+06	5.6697	2.5261	4.3028	33.263	-3.606	-4.304	-4.834
5.43675D+06	5.6682	2.4631	4.2867	33.260	-3.632	-4.333	-4.862
5.43760D+06	5.6654	2.2527	4.2334	33.255	-3.731	-4.437	-4.958

TABLE 29.

Log M = 0.7993 X = 0.71 Z = 0.01

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	3.1143	4.3898	4.3301	6.300	-1.902	-2.568	-3.036
1.50000D+06	3.1208	4.3826	4.3299	6.300	-1.909	-2.574	-3.042
1.78447D+07	3.2019	4.2868	4.3262	6.300	-1.998	-2.653	-3.116
3.33392D+07	3.3034	4.1444	4.3160	6.300	-2.116	-2.756	-3.214
4.27175D+07	3.3804	4.0045	4.3003	6.300	-2.214	-2.843	-3.297
4.85451D+07	3.4416	3.8667	4.2811	6.300	-2.296	-2.916	-3.369
5.06094D+07	3.4651	3.8018	4.2708	6.300	-2.330	-2.946	-3.398
5.35376D+07	3.5025	3.6944	4.2533	6.300	-2.384	-2.996	-3.449
5.45494D+07	3.5165	3.6545	4.2468	6.300	-2.404	-3.015	-3.467
5.53073D+07	3.5278	3.6275	4.2429	6.300	-2.419	-3.029	-3.482
5.57901D+07	3.5359	3.6169	4.2422	6.300	-2.428	-3.037	-3.490
5.61082D+07	3.5428	3.6150	4.2435	6.300	-2.434	-3.043	-3.496
5.62209D+07	3.5457	3.6176	4.2449	6.300	-2.435	-3.044	-3.497
5.65656D+07	3.5606	3.6549	4.2579	6.300	-2.440	-3.048	-3.500
5.66654D+07	3.5771	3.7019	4.2738	6.300	-2.443	-3.052	-3.504
5.67002D+07	3.6119	3.7382	4.2916	6.300	-2.465	-3.072	-3.523
5.67011D+07	3.6144	3.7405	4.2928	6.300	-2.467	-3.074	-3.525
5.67020D+07	3.6167	3.7423	4.2938	6.300	-2.468	-3.075	-3.526
5.67037D+07	3.6184	3.7451	4.2949	6.300	-2.469	-3.076	-3.527
5.67073D+07	3.6131	3.7453	4.2936	6.300	-2.465	-3.072	-3.523
5.67144D+07	3.5936	3.7190	4.2822	6.300	-2.456	-3.061	-3.513
5.67215D+07	3.5884	3.6690	4.2684	6.300	-2.462	-3.067	-3.519
5.67357D+07	3.6061	3.5378	4.2400	6.300	-2.505	-3.109	-3.562
5.67428D+07	3.6171	3.4691	4.2256	6.300	-2.528	-3.132	-3.586
5.67570D+07	3.6354	3.3330	4.1962	6.300	-2.571	-3.176	-3.633

TABLE 30.

Log M = 0.8998 X = 0.71 Z = 0.01

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	3.4492	4.3731	4.3845	7.940	-1.850	-2.511	-2.977
1.50000D+06	3.4599	4.3616	4.3843	7.940	-1.862	-2.521	-2.987
1.30141D+07	3.5564	4.2499	4.3805	7.940	-1.971	-2.620	-3.082
2.19441D+07	3.6543	4.1084	4.3696	7.940	-2.091	-2.727	-3.183
2.73765D+07	3.7298	3.9681	4.3534	7.940	-2.192	-2.817	-3.270
3.08037D+07	3.7891	3.8315	4.3341	7.940	-2.276	-2.893	-3.345
3.19970D+07	3.8114	3.7704	4.3244	7.939	-2.309	-2.922	-3.374
3.29583D+07	3.8317	3.7142	4.3154	7.939	-2.339	-2.951	-3.403
3.37250D+07	3.8484	3.6663	4.3076	7.939	-2.364	-2.975	-3.427
3.43250D+07	3.8627	3.6268	4.3013	7.939	-2.385	-2.994	-3.447
3.47520D+07	3.8725	3.6054	4.2984	7.939	-2.400	-3.008	-3.461
3.50309D+07	3.8804	3.5965	4.2981	7.939	-2.408	-3.016	-3.469
3.52252D+07	3.8874	3.5953	4.2996	7.939	-2.416	-3.024	-3.476
3.53371D+07	3.8922	3.6033	4.3028	7.939	-2.418	-3.025	-3.477
3.55063D+07	3.9069	3.6550	4.3194	7.939	-2.422	-3.029	-3.480
3.55495D+07	3.9273	3.7019	4.3362	7.939	-2.431	-3.037	-3.488
3.55573D+07	3.9498	3.7203	4.3465	7.939	-2.448	-3.053	-3.504
3.55607D+07	3.9524	3.7265	4.3487	7.939	-2.450	-3.054	-3.505
3.55641D+07	3.9385	3.7143	4.3421	7.939	-2.440	-3.044	-3.494
3.55709D+07	3.9299	3.6389	4.3211	7.939	-2.449	-3.052	-3.503
3.55743D+07	3.9316	3.5904	4.3094	7.939	-2.462	-3.064	-3.516
3.55811D+07	3.9464	3.4756	4.2844	7.939	-2.498	-3.100	-3.554
3.55879D+07	3.9638	3.3541	4.2584	7.939	-2.539	-3.143	-3.599
3.55947D+07	3.9761	3.2275	4.2298	7.939	-2.578	-3.183	-3.642
3.56015D+07	3.9845	3.0927	4.1982	7.939	-2.615	-3.224	-3.686

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TABLE 31.

Log M = 1.0000 X = 0.71 Z = 0.01

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	3.7674	4.3579	4.4352	10.000	-1.801	-2.457	-2.922
1.50000D+06	3.7867	4.3385	4.4352	10.000	-1.823	-2.477	-2.941
9.47187D+06	3.8941	4.2122	4.4305	10.000	-1.950	-2.594	-3.052
1.48549D+07	3.9878	4.0715	4.4187	9.999	-2.073	-2.705	-3.160
2.03680D+07	4.1201	3.7902	4.3814	9.996	-2.268	-2.882	-3.333
2.11136D+07	4.1426	3.7284	4.3716	9.995	-2.304	-2.916	-3.367
2.21851D+07	4.1771	3.6234	4.3540	9.993	-2.362	-2.970	-3.422
2.25633D+07	4.1907	3.5863	4.3481	9.992	-2.386	-2.993	-3.445
2.28232D+07	4.2002	3.5650	4.3452	9.992	-2.400	-3.007	-3.459
2.29848D+07	4.2070	3.5582	4.3452	9.991	-2.408	-3.015	-3.467
2.30920D+07	4.2121	3.5605	4.3470	9.991	-2.414	-3.020	-3.472
2.32112D+07	4.2198	3.5803	4.3539	9.990	-2.417	-3.023	-3.475
2.32842D+07	4.2333	3.6326	4.3704	9.990	-2.421	-3.026	-3.478
2.33016D+07	4.2500	3.6671	4.3831	9.990	-2.432	-3.037	-3.488
2.33054D+07	4.2660	3.6835	4.3912	9.990	-2.446	-3.049	-3.500
2.33059D+07	4.2693	3.6862	4.3928	9.990	-2.450	-3.052	-3.503
2.33069D+07	4.2730	3.6900	4.3946	9.990	-2.453	-3.055	-3.506
2.33089D+07	4.2696	3.6886	4.3934	9.990	-2.450	-3.052	-3.502
2.33128D+07	4.2567	3.6440	4.3791	9.990	-2.447	-3.048	-3.500
2.33168D+07	4.2542	3.5631	4.3582	9.990	-2.461	-3.063	-3.515
2.33207D+07	4.2615	3.4562	4.3333	9.990	-2.491	-3.092	-3.546
2.33247D+07	4.2746	3.3331	4.3058	9.990	-2.530	-3.133	-3.590
2.33286D+07	4.2860	3.1976	4.2748	9.990	-2.573	-3.178	-3.638
2.33326D+07	4.2958	3.0487	4.2400	9.990	-2.616	-3.226	-3.690
2.33365D+07	4.3012	2.8796	4.1991	9.990	-2.663	-3.278	-3.746

TABLE 32.

Log M = 1.0997 X = 0.71 Z = 0.01

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.0734	4.3419	4.4828	12.580	-1.760	-2.411	-2.873
1.50000D+06	4.0969	4.3161	4.4822	12.580	-1.789	-2.439	-2.901
7.22394D+06	4.2153	4.1769	4.4770	12.577	-1.940	-2.579	-3.036
1.07117D+07	4.3062	4.0338	4.4640	12.572	-2.070	-2.697	-3.150
1.36788D+07	4.4055	3.8184	4.4349	12.560	-2.231	-2.845	-3.296
1.52138D+07	4.4716	3.6237	4.4028	12.545	-2.353	-2.961	-3.413
1.55372D+07	4.4857	3.5777	4.3948	12.541	-2.380	-2.986	-3.438
1.57884D+07	4.4981	3.5370	4.3877	12.536	-2.405	-3.010	-3.463
1.59542D+07	4.5067	3.5195	4.3855	12.533	-2.420	-3.026	-3.479
1.60631D+07	4.5135	3.5099	4.3848	12.531	-2.430	-3.036	-3.490
1.61347D+07	4.5178	3.5110	4.3862	12.529	-2.435	-3.040	-3.494
1.61827D+07	4.5214	3.5179	4.3888	12.528	-2.439	-3.043	-3.497
1.62005D+07	4.5232	3.5234	4.3906	12.528	-2.440	-3.044	-3.498
1.62566D+07	4.5335	3.5646	4.4035	12.527	-2.446	-3.050	-3.502
1.62750D+07	4.5450	3.6020	4.4157	12.526	-2.453	-3.056	-3.508
1.62800D+07	4.5572	3.6251	4.4245	12.526	-2.464	-3.066	-3.518
1.62816D+07	4.5734	3.6408	4.4325	12.526	-2.481	-3.082	-3.534
1.62829D+07	4.5752	3.6441	4.4338	12.526	-2.484	-3.085	-3.537
1.62855D+07	4.5659	3.6134	4.4238	12.526	-2.479	-3.080	-3.532
1.62908D+07	4.5699	3.4336	4.3798	12.526	-2.522	-3.123	-3.578
1.62934D+07	4.5785	3.3152	4.3524	12.526	-2.558	-3.161	-3.619
1.62961D+07	4.5872	3.1747	4.3194	12.526	-2.600	-3.206	-3.668
1.62987D+07	4.5951	3.0127	4.2809	12.526	-2.648	-3.260	-3.726
1.63013D+07	4.6002	2.8230	4.2348	12.526	-2.703	-3.321	-3.794
1.63026D+07	4.6014	2.7183	4.2089	12.526	-2.733	-3.356	-3.831

TABLE 33.

Log M = 1.1998 X = 0.71 Z = 0.01

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.3624	4.3285	4.5267	15.840	-1.728	-2.374	-2.833
7.50000D+05	4.3765	4.3118	4.5260	15.838	-1.742	-2.388	-2.848
4.62915D+06	4.4862	4.1828	4.5212	15.825	-1.892	-2.530	-2.986
7.29326D+06	4.5762	4.0401	4.5080	15.803	-2.033	-2.660	-3.113
9.00984D+06	4.6473	3.8917	4.4887	15.773	-2.161	-2.777	-3.228
1.01240D+07	4.7026	3.7431	4.4654	15.738	-2.270	-2.880	-3.332
1.05278D+07	4.7252	3.6693	4.4526	15.720	-2.320	-2.929	-3.381
1.08480D+07	4.7430	3.6061	4.4412	15.702	-2.361	-2.968	-3.421
1.11081D+07	4.7578	3.5505	4.4310	15.685	-2.396	-3.002	-3.456
1.13165D+07	4.7698	3.5046	4.4225	15.670	-2.424	-3.029	-3.483
1.14604D+07	4.7792	3.4756	4.4176	15.658	-2.446	-3.051	-3.507
1.15545D+07	4.7854	3.4627	4.4160	15.649	-2.458	-3.064	-3.520
1.16403D+07	4.7920	3.4612	4.4172	15.641	-2.467	-3.074	-3.530
1.17431D+07	4.8164	3.5449	4.4443	15.631	-2.489	-3.092	-3.546
1.17466D+07	4.8292	3.5696	4.4536	15.631	-2.504	-3.106	-3.560
1.17475D+07	4.8399	3.5828	4.4596	15.631	-2.520	-3.121	-3.576
1.17483D+07	4.8457	3.5911	4.4631	15.631	-2.526	-3.127	-3.581
1.17500D+07	4.8438	3.5827	4.4606	15.631	-2.527	-3.128	-3.582
1.17517D+07	4.8372	3.5415	4.4486	15.631	-2.524	-3.124	-3.579
1.17550D+07	4.8485	3.3693	4.4084	15.630	-2.580	-3.182	-3.641
1.17567D+07	4.8552	3.2598	4.3827	15.630	-2.615	-3.221	-3.682
1.17583D+07	4.8613	3.1312	4.3521	15.630	-2.655	-3.264	-3.731
1.17592D+07	4.8641	3.0613	4.3353	15.630	-2.676	-3.287	-3.756
1.17608D+07	4.8696	2.8994	4.2962	15.629	-2.727	-3.345	-3.820
1.17625D+07	4.8721	2.7047	4.2481	15.629	-2.786	-3.413	-3.893

TABLE 34.

Log M = 1.2999 X = 0.71 Z = 0.01

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.6324	4.3169	4.5662	19.950	-1.689	-2.331	-2.788
3.76126D+06	4.7659	4.1544	4.5590	19.881	-1.892	-2.526	-2.981
5.68132D+06	4.8525	4.0043	4.5431	19.800	-2.052	-2.675	-3.127
7.71369D+06	4.9652	3.6929	4.4934	19.602	-2.314	-2.922	-3.373
8.01282D+06	4.9848	3.6203	4.4802	19.550	-2.364	-2.971	-3.425
8.45128D+06	5.0134	3.4940	4.4558	19.453	-2.450	-3.056	-3.513
8.60973D+06	5.0242	3.4463	4.4465	19.411	-2.481	-3.088	-3.547
8.71398D+06	5.0329	3.4080	4.4391	19.381	-2.511	-3.117	-3.577
8.82871D+06	5.0435	3.3812	4.4351	19.345	-2.539	-3.146	-3.606
8.85969D+06	5.0466	3.3836	4.4364	19.334	-2.545	-3.152	-3.612
8.91157D+06	5.0559	3.4255	4.4493	19.317	-2.557	-3.162	-3.622
8.91785D+06	5.0598	3.4452	4.4551	19.315	-2.560	-3.165	-3.624
8.92343D+06	5.0677	3.4764	4.4649	19.313	-2.567	-3.171	-3.630
8.92513D+06	5.0799	3.5007	4.4740	19.313	-2.586	-3.189	-3.647
8.92595D+06	5.0896	3.5187	4.4810	19.313	-2.601	-3.203	-3.661
8.92705D+06	5.0932	3.5244	4.4833	19.312	-2.607	-3.209	-3.666
8.92925D+06	5.0894	3.4548	4.4649	19.311	-2.616	-3.219	-3.679
8.93145D+06	5.0966	3.2970	4.4273	19.311	-2.667	-3.274	-3.739
8.93255D+06	5.1114	3.2191	4.4115	19.310	-2.715	-3.326	-3.793
8.93365D+06	5.1203	3.1307	4.3917	19.310	-2.755	-3.368	-3.840
8.93475D+06	5.1252	3.0314	4.3680	19.309	-2.792	-3.409	-3.885
8.93585D+06	5.1284	2.9184	4.3406	19.308	-2.831	-3.455	-3.936
8.93695D+06	5.1304	2.7866	4.3082	19.308	-2.875	-3.506	-3.992
8.93805D+06	5.1317	2.6293	4.2691	19.307	-2.929	-3.568	-4.060
8.93915D+06	5.1336	2.4414	4.2226	19.306	-3.000	-3.649	-4.144

TABLE 35.

Log M = 1.3998 X = 0.71 Z = 0.01

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.8883	4.3051	4.6023	25.110	-1.664	-2.300	-2.756
3.44681D+06	5.0383	4.1009	4.5887	24.846	-1.935	-2.565	-3.018
5.65065D+06	5.1654	3.7838	4.5412	24.388	-2.260	-2.872	-3.325
6.45372D+06	5.2229	3.5352	4.4935	24.027	-2.454	-3.063	-3.522
6.76772D+06	5.2479	3.3866	4.4626	23.819	-2.564	-3.172	-3.635
6.99114D+06	5.2658	3.2945	4.4440	23.639	-2.641	-3.253	-3.720
7.02398D+06	5.2691	3.2892	4.4435	23.610	-2.653	-3.265	-3.732
7.04657D+06	5.2717	3.2905	4.4445	23.589	-2.660	-3.272	-3.740
7.06213D+06	5.2739	3.2961	4.4464	23.575	-2.665	-3.277	-3.745
7.06800D+06	5.2749	3.3002	4.4477	23.570	-2.667	-3.279	-3.746
7.08005D+06	5.2787	3.3095	4.4510	23.559	-2.673	-3.285	-3.753
7.08691D+06	5.2815	3.3182	4.4539	23.553	-2.681	-3.291	-3.758
7.09300D+06	5.2854	3.3527	4.4634	23.548	-2.682	-3.291	-3.758
7.09785D+06	5.3145	3.4262	4.4891	23.543	-2.735	-3.342	-3.807
7.09973D+06	5.3134	3.3583	4.4718	23.541	-2.749	-3.359	-3.827
7.10254D+06	5.3424	3.0769	4.4088	23.539	-2.899	-3.523	-4.004
7.10347D+06	5.3563	2.9798	4.3879	23.537	-2.967	-3.597	-4.084
7.10394D+06	5.3610	2.9301	4.3767	23.537	-2.995	-3.628	-4.118
7.10488D+06	5.3641	2.8207	4.3501	23.535	-3.040	-3.680	-4.175
7.10582D+06	5.3655	2.6881	4.3173	23.534	-3.092	-3.741	-4.242
7.10675D+06	5.3680	2.5317	4.2788	23.532	-3.161	-3.819	-4.325
7.10722D+06	5.3697	2.4467	4.2580	23.531	-3.201	-3.864	-4.372
7.10769D+06	5.3718	2.3570	4.2361	23.530	-3.245	-3.914	-4.422
7.10816D+06	5.3736	2.2644	4.2134	23.529	-3.291	-3.964	-4.471
7.10863D+06	5.3762	2.1711	4.1907	23.528	-3.342	-4.017	-4.522

TABLE 36.

Log M = 1.5000 X = 0.71 Z = 0.01

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.1283	4.2941	4.6345	31.620	-1.644	-2.276	-2.729
1.24459D+06	5.1833	4.2244	4.6308	31.406	-1.751	-2.384	-2.837
2.85998D+06	5.2676	4.0833	4.6166	30.986	-1.948	-2.576	-3.028
4.61712D+06	5.3814	3.7450	4.5605	30.061	-2.320	-2.932	-3.387
5.09478D+06	5.4181	3.5554	4.5223	29.591	-2.486	-3.096	-3.556
5.42267D+06	5.4425	3.3854	4.4859	29.149	-2.620	-3.234	-3.702
5.53790D+06	5.4541	3.2894	4.4648	28.961	-2.696	-3.312	-3.784
5.68247D+06	5.4659	3.1937	4.4438	28.693	-2.776	-3.396	-3.873
5.72270D+06	5.4698	3.1674	4.4382	28.613	-2.802	-3.423	-3.902
5.75023D+06	5.4729	3.1576	4.4365	28.556	-2.817	-3.440	-3.920
5.77650D+06	5.4762	3.1563	4.4370	28.501	-2.832	-3.456	-3.936
5.78749D+06	5.4781	3.1600	4.4384	28.478	-2.839	-3.462	-3.942
5.79512D+06	5.4798	3.1655	4.4402	28.462	-2.844	-3.467	-3.947
5.81157D+06	5.4949	3.2433	4.4634	28.427	-2.871	-3.491	-3.969
5.81247D+06	5.5074	3.2816	4.4761	28.425	-2.901	-3.521	-3.999
5.81336D+06	5.5119	3.2935	4.4803	28.423	-2.912	-3.531	-4.009
5.81515D+06	5.5111	3.2254	4.4630	28.419	-2.928	-3.550	-4.031
5.81605D+06	5.5105	3.1275	4.4384	28.417	-2.957	-3.583	-4.068
5.81649D+06	5.5164	3.0570	4.4222	28.416	-2.998	-3.629	-4.119
5.81716D+06	5.5260	2.9219	4.3909	28.415	-3.075	-3.716	-4.213
5.81761D+06	5.5310	2.8245	4.3678	28.413	-3.129	-3.778	-4.282
5.81850D+06	5.5376	2.6059	4.3148	28.410	-3.239	-3.905	-4.418
5.81895D+06	5.5401	2.4796	4.2838	28.409	-3.302	-3.976	-4.492
5.81940D+06	5.5424	2.3380	4.2490	28.407	-3.377	-4.059	-4.576
5.81985D+06	5.5443	2.1786	4.2096	28.406	-3.463	-4.151	-4.665

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TABLE 37.

Log M = 1.6000 X = 0.71 Z = 0.01

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.3500	4.2851	4.6627	39.810	-1.627	-2.254	-2.705
1.12294D+06	5.4045	4.2108	4.6577	39.344	-1.752	-2.384	-2.837
2.43719D+06	5.4805	4.0650	4.6402	38.562	-1.974	-2.603	-3.056
2.94666D+06	5.5149	3.9753	4.6265	38.123	-2.095	-2.721	-3.175
3.47430D+06	5.5500	3.8516	4.6043	37.533	-2.246	-2.866	-3.321
4.01904D+06	5.5943	3.6354	4.5613	36.684	-2.475	-3.090	-3.550
4.32768D+06	5.6178	3.4658	4.5248	35.997	-2.628	-3.239	-3.704
4.33786D+06	5.6196	3.4476	4.5207	35.971	-2.652	-3.268	-3.736
4.46937D+06	5.6315	3.3449	4.4980	35.602	-2.743	-3.364	-3.839
4.59192D+06	5.6423	3.2295	4.4718	35.210	-2.843	-3.469	-3.952
4.69282D+06	5.6504	3.1321	4.4495	34.846	-2.929	-3.561	-4.049
4.73269D+06	5.6535	3.0920	4.4403	34.691	-2.966	-3.601	-4.092
4.79100D+06	5.6600	3.0134	4.4222	34.450	-3.043	-3.687	-4.185
4.80312D+06	5.6626	2.9732	4.4128	34.397	-3.087	-3.737	-4.240
4.83298D+06	5.6664	2.9404	4.4056	34.262	-3.112	-3.763	-4.268
4.83904D+06	5.6669	2.9272	4.4024	34.234	-3.116	-3.766	-4.270
4.87265D+06	5.6723	2.8910	4.3947	34.075	-3.163	-3.817	-4.326
4.87879D+06	5.6733	2.8912	4.3950	34.045	-3.169	-3.824	-4.333
4.89179D+06	5.6758	2.8914	4.3957	33.982	-3.185	-3.841	-4.350
4.90259D+06	5.6793	2.8961	4.3977	33.929	-3.204	-3.860	-4.370
4.90641D+06	5.6821	2.9089	4.4016	33.910	-3.215	-3.870	-4.380
4.90917D+06	5.6875	2.9368	4.4100	33.896	-3.228	-3.882	-4.391
4.90941D+06	5.6915	2.9514	4.4146	33.895	-3.238	-3.892	-4.400
4.91024D+06	5.7009	2.9950	4.4279	33.891	-3.266	-3.919	-4.428
4.91546D+06	5.7065	2.1768	4.2247	33.863	-3.685	-4.390	-4.910

TABLE 38.

Log M = 0.7993 X = 0.69 Z = 0.03

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	3.0321	4.2705	4.2797	6.300	-1.994	-2.659	-3.123
1.50000D+06	3.0378	4.2639	4.2795	6.300	-2.000	-2.664	-3.128
1.88265D+07	3.1138	4.1723	4.2756	6.300	-2.082	-2.736	-3.195
3.62993D+07	3.2100	4.0298	4.2640	6.300	-2.194	-2.831	-3.285
4.69916D+07	3.2844	3.8873	4.2470	6.300	-2.286	-2.910	-3.360
5.37213D+07	3.3409	3.7491	4.2265	6.300	-2.361	-2.976	-3.424
5.79603D+07	3.3799	3.6286	4.2062	6.300	-2.416	-3.025	-3.474
5.93930D+07	3.3956	3.5781	4.1975	6.300	-2.440	-3.046	-3.494
6.05532D+07	3.4085	3.5383	4.1908	6.300	-2.458	-3.063	-3.512
6.13904D+07	3.4185	3.5156	4.1876	6.300	-2.470	-3.075	-3.524
6.16931D+07	3.4232	3.5082	4.1869	6.300	-2.475	-3.080	-3.529
6.19308D+07	3.4276	3.5038	4.1869	6.300	-2.480	-3.084	-3.533
6.21235D+07	3.4312	3.5033	4.1877	6.300	-2.482	-3.086	-3.536
6.22748D+07	3.4347	3.5049	4.1890	6.300	-2.485	-3.089	-3.538
6.27409D+07	3.4539	3.5421	4.2030	6.300	-2.492	-3.095	-3.544
6.27763D+07	3.4570	3.5504	4.2059	6.300	-2.492	-3.096	-3.545
6.29174D+07	3.5108	3.6291	4.2390	6.300	-2.518	-3.122	-3.570
6.29181D+07	3.5135	3.6300	4.2399	6.300	-2.520	-3.124	-3.572
6.29187D+07	3.5161	3.6308	4.2408	6.300	-2.522	-3.125	-3.573
6.29194D+07	3.5184	3.6315	4.2415	6.300	-2.524	-3.127	-3.575
6.29207D+07	3.5215	3.6329	4.2426	6.300	-2.526	-3.129	-3.577
6.29233D+07	3.5211	3.6348	4.2430	6.300	-2.525	-3.129	-3.576
6.29285D+07	3.5056	3.6297	4.2379	6.300	-2.515	-3.118	-3.566
6.29389D+07	3.4857	3.5778	4.2199	6.300	-2.511	-3.113	-3.561
6.29493D+07	3.4870	3.5008	4.2010	6.300	-2.528	-3.129	-3.578

TABLE 39.

Log M = 0.8998 X = 0.69 Z = 0.03

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	3.3870	4.2586	4.3403	7.940	-1.940	-2.605	-3.070
1.50000D+06	3.3968	4.2475	4.3400	7.940	-1.951	-2.614	-3.079
2.31441D+07	3.5859	3.9931	4.3237	7.940	-2.173	-2.809	-3.263
3.42051D+07	3.7398	3.6451	4.2752	7.939	-2.386	-2.997	-3.447
3.52521D+07	3.7572	3.5893	4.2656	7.939	-2.412	-3.022	-3.471
3.60868D+07	3.7728	3.5411	4.2574	7.939	-2.436	-3.044	-3.494
3.67364D+07	3.7862	3.5022	4.2510	7.939	-2.456	-3.063	-3.513
3.71792D+07	3.7956	3.4826	4.2485	7.939	-2.468	-3.074	-3.525
3.73398D+07	3.7998	3.4768	4.2481	7.939	-2.473	-3.079	-3.530
3.75724D+07	3.8070	3.4724	4.2488	7.939	-2.482	-3.087	-3.537
3.76573D+07	3.8103	3.4742	4.2501	7.939	-2.483	-3.088	-3.539
3.77229D+07	3.8135	3.4776	4.2517	7.939	-2.485	-3.090	-3.541
3.77762D+07	3.8162	3.4826	4.2536	7.939	-2.486	-3.092	-3.542
3.78196D+07	3.8188	3.4886	4.2558	7.939	-2.487	-3.092	-3.542
3.78549D+07	3.8216	3.4957	4.2583	7.939	-2.488	-3.093	-3.543
3.78836D+07	3.8243	3.5034	4.2608	7.939	-2.489	-3.094	-3.545
3.79963D+07	3.8586	3.5791	4.2883	7.939	-2.502	-3.107	-3.557
3.80070D+07	3.8857	3.6023	4.3009	7.939	-2.522	-3.127	-3.577
3.80086D+07	3.8876	3.6048	4.3020	7.939	-2.524	-3.128	-3.578
3.80116D+07	3.8773	3.6013	4.2986	7.939	-2.516	-3.120	-3.570
3.80177D+07	3.8581	3.5520	4.2814	7.939	-2.511	-3.114	-3.564
3.80239D+07	3.8552	3.4710	4.2605	7.939	-2.526	-3.128	-3.578
3.80300D+07	3.8632	3.3730	4.2380	7.939	-2.553	-3.155	-3.607
3.80361D+07	3.8732	3.2674	4.2141	7.939	-2.584	-3.185	-3.640
3.80422D+07	3.8805	3.1572	4.1883	7.939	-2.613	-3.216	-3.672

TABLE 40.

Log M = 1.0000 X = 0.69 Z = 0.03

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	3.7218	4.2483	4.3964	10.000	-1.888	-2.552	-3.019
1.50000D+06	3.7393	4.2314	4.3965	10.000	-1.906	-2.569	-3.036
9.92421D+06	3.8488	4.1016	4.3915	10.000	-2.037	-2.687	-3.147
1.56359D+07	3.9439	3.9554	4.3787	9.999	-2.162	-2.797	-3.252
1.91359D+07	4.0179	3.8076	4.3602	9.998	-2.269	-2.892	-3.344
2.03695D+07	4.0478	3.7359	4.3498	9.997	-2.315	-2.934	-3.386
2.21506D+07	4.0952	3.6009	4.3279	9.995	-2.393	-3.005	-3.456
2.27797D+07	4.1134	3.5418	4.3177	9.994	-2.425	-3.035	-3.486
2.32828D+07	4.1286	3.4943	4.3096	9.993	-2.449	-3.058	-3.510
2.36655D+07	4.1410	3.4586	4.3038	9.992	-2.471	-3.079	-3.532
2.39219D+07	4.1500	3.4405	4.3015	9.991	-2.483	-3.091	-3.544
2.40127D+07	4.1540	3.4340	4.3009	9.991	-2.489	-3.097	-3.550
2.41467D+07	4.1602	3.4330	4.3022	9.990	-2.496	-3.103	-3.557
2.41958D+07	4.1629	3.4354	4.3035	9.990	-2.498	-3.105	-3.558
2.42677D+07	4.1683	3.4416	4.3064	9.990	-2.502	-3.109	-3.562
2.43816D+07	4.1865	3.5004	4.3256	9.990	-2.509	-3.116	-3.569
2.44081D+07	4.2279	3.5584	4.3505	9.989	-2.539	-3.146	-3.598
2.44089D+07	4.2324	3.5617	4.3524	9.989	-2.543	-3.150	-3.602
2.44107D+07	4.2305	3.5626	4.3522	9.989	-2.542	-3.148	-3.600
2.44141D+07	4.2144	3.5306	4.3401	9.989	-2.532	-3.138	-3.590
2.44211D+07	4.2133	3.3704	4.2998	9.989	-2.568	-3.171	-3.626
2.44246D+07	4.2167	3.2704	4.2757	9.989	-2.593	-3.197	-3.654
2.44280D+07	4.2222	3.1555	4.2483	9.989	-2.624	-3.229	-3.689
2.44315D+07	4.2267	3.0277	4.2175	9.989	-2.658	-3.267	-3.729
2.44350D+07	4.2285	2.8856	4.1824	9.989	-2.693	-3.306	-3.771

TABLE 41.

Log M = 1.0997 X = 0.69 Z = 0.03

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.0396	4.2379	4.4483	12.580	-1.842	-2.505	-2.972
1.50000D+06	4.0647	4.2110	4.4479	12.580	-1.873	-2.532	-2.998
6.61769D+06	4.1657	4.0898	4.4428	12.577	-2.002	-2.652	-3.113
8.77589D+06	4.2165	4.0157	4.4370	12.575	-2.074	-2.717	-3.175
1.17634D+07	4.2984	3.8683	4.4206	12.568	-2.198	-2.829	-3.285
1.36385D+07	4.3615	3.7198	4.3993	12.560	-2.306	-2.927	-3.381
1.48589D+07	4.4090	3.5792	4.3760	12.550	-2.410	-3.020	-3.471
1.51920D+07	4.4227	3.5319	4.3676	12.546	-2.423	-3.036	-3.490
1.55619D+07	4.4382	3.4791	4.3583	12.541	-2.453	-3.065	-3.520
1.58556D+07	4.4508	3.4381	4.3512	12.536	-2.477	-3.088	-3.544
1.60594D+07	4.4609	3.4091	4.3465	12.533	-2.497	-3.107	-3.564
1.61891D+07	4.4679	3.3980	4.3454	12.530	-2.508	-3.118	-3.575
1.62757D+07	4.4732	3.3969	4.3465	12.529	-2.515	-3.125	-3.582
1.64147D+07	4.4900	3.4370	4.3607	12.526	-2.527	-3.137	-3.593
1.64211D+07	4.4919	3.4446	4.3631	12.526	-2.528	-3.137	-3.594
1.64394D+07	4.5024	3.4804	4.3747	12.525	-2.533	-3.143	-3.599
1.64498D+07	4.5379	3.5310	4.3962	12.525	-2.566	-3.175	-3.632
1.64511D+07	4.5386	3.5340	4.3971	12.525	-2.567	-3.176	-3.632
1.64538D+07	4.5257	3.4999	4.3854	12.525	-2.559	-3.167	-3.622
1.64564D+07	4.5171	3.4221	4.3638	12.525	-2.567	-3.174	-3.631
1.64577D+07	4.5175	3.3723	4.3514	12.525	-2.580	-3.187	-3.645
1.64603D+07	4.5243	3.2439	4.3210	12.525	-2.617	-3.226	-3.686
1.64629D+07	4.5318	3.0940	4.2854	12.525	-2.663	-3.274	-3.738
1.64655D+07	4.5364	2.9229	4.2438	12.525	-2.711	-3.327	-3.797
1.64681D+07	4.5352	2.7225	4.1934	12.525	-2.763	-3.385	-3.860

TABLE 42.

Log M = 1.1998 X = 0.69 Z = 0.03

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.3391	4.2281	4.4958	15.840	-1.802	-2.462	-2.930
1.50000D+06	4.3745	4.1903	4.4951	15.836	-1.848	-2.506	-2.972
7.93470D+06	4.5784	3.8899	4.4710	15.789	-2.163	-2.798	-3.256
9.45735D+06	4.6450	3.7331	4.4485	15.755	-2.292	-2.916	-3.373
1.04483D+07	4.6937	3.5813	4.4227	15.716	-2.399	-3.017	-3.475
1.11004D+07	4.7284	3.4493	4.3984	15.677	-2.484	-3.100	-3.559
1.13335D+07	4.7416	3.3968	4.3885	15.660	-2.519	-3.134	-3.594
1.15073D+07	4.7518	3.3585	4.3815	15.645	-2.544	-3.158	-3.619
1.15926D+07	4.7585	3.3355	4.3774	15.637	-2.561	-3.175	-3.638
1.16368D+07	4.7615	3.3289	4.3766	15.633	-2.567	-3.182	-3.645
1.16731D+07	4.7642	3.3254	4.3763	15.630	-2.573	-3.187	-3.650
1.17272D+07	4.7688	3.3246	4.3773	15.624	-2.580	-3.195	-3.658
1.17472D+07	4.7707	3.3265	4.3782	15.622	-2.583	-3.198	-3.660
1.17637D+07	4.7725	3.3297	4.3795	15.621	-2.586	-3.200	-3.663
1.18051D+07	4.7791	3.3521	4.3867	15.617	-2.590	-3.204	-3.666
1.18331D+07	4.7923	3.4070	4.4038	15.614	-2.597	-3.211	-3.673
1.18397D+07	4.8234	3.4499	4.4223	15.613	-2.635	-3.248	-3.710
1.18405D+07	4.8294	3.4581	4.4258	15.613	-2.643	-3.255	-3.717
1.18420D+07	4.8261	3.4513	4.4233	15.613	-2.640	-3.252	-3.714
1.18436D+07	4.8172	3.4128	4.4114	15.613	-2.636	-3.248	-3.710
1.18467D+07	4.8197	3.2288	4.3661	15.612	-2.687	-3.301	-3.768
1.18482D+07	4.8254	3.1133	4.3386	15.612	-2.726	-3.343	-3.813
1.18498D+07	4.8299	2.9775	4.3058	15.612	-2.770	-3.391	-3.866
1.18513D+07	4.8319	2.8197	4.2668	15.612	-2.819	-3.446	-3.926
1.18529D+07	4.8309	2.6337	4.2201	15.611	-2.874	-3.509	-3.993

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TABLE 43.

Log M = 1.2999 X = 0.69 Z = 0.03

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.6180	4.2217	4.5388	19.950	-1.763	-2.420	-2.888
1.50000D+06	4.6676	4.1665	4.5374	19.927	-1.836	-2.491	-2.958
4.23680D+06	4.7711	4.0214	4.5270	19.853	-2.011	-2.657	-3.119
7.07497D+06	4.9110	3.7038	4.4826	19.651	-2.316	-2.942	-3.402
7.80419D+06	4.9557	3.5405	4.4529	19.539	-2.442	-3.063	-3.524
8.36598D+06	4.9929	3.3669	4.4188	19.413	-2.563	-3.183	-3.649
8.51920D+06	5.0029	3.3147	4.4083	19.371	-2.599	-3.219	-3.686
8.62276D+06	5.0102	3.2853	4.4028	19.339	-2.623	-3.243	-3.712
8.69214D+06	5.0162	3.2647	4.3991	19.317	-2.642	-3.263	-3.733
8.71767D+06	5.0184	3.2613	4.3988	19.309	-2.648	-3.269	-3.739
8.73871D+06	5.0204	3.2602	4.3990	19.302	-2.652	-3.273	-3.744
8.75608D+06	5.0222	3.2602	4.3995	19.296	-2.656	-3.277	-3.748
8.78227D+06	5.0253	3.2638	4.4012	19.288	-2.661	-3.282	-3.753
8.81697D+06	5.0317	3.2889	4.4091	19.276	-2.669	-3.289	-3.758
8.82077D+06	5.0330	3.2920	4.4101	19.274	-2.671	-3.291	-3.760
8.83676D+06	5.0539	3.3530	4.4306	19.269	-2.693	-3.313	-3.782
8.83800D+06	5.0731	3.3807	4.4423	19.269	-2.724	-3.344	-3.814
8.83890D+06	5.0780	3.3910	4.4462	19.268	-2.732	-3.351	-3.821
8.84072D+06	5.0730	3.3474	4.4340	19.268	-2.735	-3.354	-3.825
8.84254D+06	5.0705	3.2236	4.4024	19.267	-2.764	-3.385	-3.859
8.84435D+06	5.0903	3.0778	4.3709	19.266	-2.848	-3.475	-3.955
8.84617D+06	5.0963	2.8908	4.3257	19.265	-2.918	-3.553	-4.041
8.84707D+06	5.0965	2.7767	4.2972	19.265	-2.956	-3.597	-4.089
8.84798D+06	5.0958	2.6445	4.2640	19.264	-3.001	-3.648	-4.143
8.84889D+06	5.0941	2.4888	4.2246	19.263	-3.055	-3.708	-4.205

TABLE 44.

Log M = 1.3998 X = 0.69 Z = 0.03

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	4.8780	4.2136	4.5768	25.110	-1.734	-2.387	-2.854
8.00000D+05	4.9119	4.1769	4.5761	25.060	-1.788	-2.442	-2.909
3.07234D+06	5.0121	4.0327	4.5651	24.852	-1.982	-2.631	-3.095
5.01538D+06	5.1174	3.7919	4.5313	24.481	-2.252	-2.886	-3.350
5.44201D+06	5.1453	3.7012	4.5155	24.346	-2.337	-2.968	-3.433
6.33745D+06	5.2070	3.4138	4.4591	23.922	-2.579	-3.204	-3.674
6.66121D+06	5.2303	3.2649	4.4277	23.696	-2.692	-3.319	-3.795
6.86625D+06	5.2482	3.1559	4.4049	23.524	-2.782	-3.413	-3.895
6.87203D+06	5.2483	3.1522	4.4041	23.519	-2.786	-3.416	-3.897
6.90616D+06	5.2539	3.1366	4.4015	23.488	-2.813	-3.450	-3.935
6.91613D+06	5.2553	3.1265	4.3994	23.478	-2.813	-3.446	-3.929
6.92684D+06	5.2568	3.1260	4.3996	23.468	-2.818	-3.450	-3.934
6.94914D+06	5.2606	3.1337	4.4025	23.447	-2.826	-3.459	-3.943
6.96471D+06	5.2652	3.1533	4.4085	23.431	-2.832	-3.464	-3.947
6.96710D+06	5.2663	3.1590	4.4102	23.429	-2.834	-3.466	-3.949
6.97322D+06	5.2710	3.1820	4.4172	23.423	-2.839	-3.470	-3.953
6.97494D+06	5.2735	3.1923	4.4204	23.421	-2.842	-3.474	-3.957
6.97559D+06	5.2747	3.1972	4.4219	23.421	-2.843	-3.475	-3.958
6.97835D+06	5.2954	3.2444	4.4389	23.418	-2.881	-3.512	-3.995
6.97976D+06	5.3056	3.2694	4.4477	23.417	-2.900	-3.531	-4.014
6.98070D+06	5.3030	3.2508	4.4424	23.416	-2.899	-3.530	-4.013
6.98352D+06	5.3180	2.9694	4.3758	23.413	-3.034	-3.678	-4.175
6.98399D+06	5.3248	2.9090	4.3624	23.412	-3.074	-3.723	-4.223
6.98634D+06	5.3349	2.5412	4.2729	23.409	-3.252	-3.922	-4.432
6.98728D+06	5.3354	2.3410	4.2230	23.407	-3.343	-4.021	-4.530

TABLE 45.

Log M = 1.5000 X = 0.69 Z = 0.03

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.1223	4.2052	4.6108	31.620	-1.712	-2.361	-2.828
7.00000D+05	5.1512	4.1686	4.6088	31.487	-1.769	-2.420	-2.887
2.14240D+06	5.2219	4.0627	4.6000	31.130	-1.929	-2.580	-3.047
3.41224D+06	5.2958	3.9025	4.5785	30.629	-2.143	-2.787	-3.254
4.26328D+06	5.3517	3.7196	4.5467	30.095	-2.351	-2.987	-3.455
4.71465D+06	5.3825	3.5762	4.5186	29.689	-2.493	-3.126	-3.598
5.21894D+06	5.4218	3.3108	4.4620	29.051	-2.730	-3.364	-3.844
5.32993D+06	5.4323	3.2266	4.4436	28.874	-2.799	-3.437	-3.923
5.39222D+06	5.4369	3.1828	4.4338	28.765	-2.835	-3.474	-3.962
5.53815D+06	5.4475	3.0759	4.4097	28.489	-2.926	-3.571	-4.066
5.59932D+06	5.4528	3.0249	4.3983	28.364	-2.972	-3.621	-4.120
5.62229D+06	5.4548	3.0078	4.3945	28.315	-2.988	-3.638	-4.138
5.65718D+06	5.4586	2.9790	4.3883	28.239	-3.018	-3.670	-4.172
5.69040D+06	5.4628	2.9676	4.3865	28.165	-3.041	-3.695	-4.199
5.69801D+06	5.4639	2.9673	4.3867	28.148	-3.047	-3.701	-4.205
5.73112D+06	5.4747	3.0024	4.3982	28.072	-3.077	-3.730	-4.234
5.73537D+06	5.4893	3.0347	4.4099	28.062	-3.113	-3.767	-4.271
5.73627D+06	5.5029	3.0696	4.4220	28.060	-3.147	-3.801	-4.306
5.73731D+06	5.5066	3.0643	4.4216	28.057	-3.163	-3.818	-4.324
5.73939D+06	5.5019	2.8901	4.3769	28.052	-3.217	-3.881	-4.394
5.73990D+06	5.5004	2.8034	4.3548	28.051	-3.249	-3.918	-4.435
5.74042D+06	5.5054	2.6808	4.3254	28.049	-3.321	-3.998	-4.519
5.74068D+06	5.5076	2.6076	4.3077	28.049	-3.363	-4.046	-4.568
5.74120D+06	5.5126	2.4362	4.2661	28.047	-3.466	-4.158	-4.680
5.74172D+06	5.5160	2.2404	4.2180	28.045	-3.582	-4.279	-4.792

TABLE 46.

Log M = 1.6000 X = 0.69 Z = 0.03

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.3472	4.1979	4.6401	39.810	-1.693	-2.340	-2.805
1.84282D+06	5.4410	4.0474	4.6260	38.807	-1.946	-2.599	-3.068
2.67062D+06	5.4905	3.9277	4.6084	38.117	-2.125	-2.776	-3.246
3.92689D+06	5.5825	3.5309	4.5322	36.326	-2.607	-3.249	-3.728
4.03411D+06	5.5901	3.4751	4.5202	36.087	-2.666	-3.308	-3.790
4.17911D+06	5.6010	3.3860	4.5006	35.726	-2.757	-3.401	-3.887
4.41588D+06	5.6203	3.1908	4.4566	35.029	-2.946	-3.598	-4.096
4.48174D+06	5.6266	3.1164	4.4396	34.804	-3.016	-3.672	-4.177
4.59406D+06	5.6349	2.9985	4.4122	34.381	-3.129	-3.795	-4.308
4.64276D+06	5.6388	2.9380	4.3981	34.183	-3.169	-3.834	-4.349
4.67171D+06	5.6431	2.8749	4.3834	34.057	-3.245	-3.921	-4.442
4.72205D+06	5.6493	2.7732	4.3595	33.827	-3.339	-4.025	-4.553
4.76345D+06	5.6533	2.7042	4.3433	33.628	-3.409	-4.101	-4.633
4.80332D+06	5.6579	2.6428	4.3291	33.428	-3.481	-4.179	-4.713
4.82654D+06	5.6620	2.5974	4.3187	33.307	-3.535	-4.238	-4.773
4.83183D+06	5.6631	2.5913	4.3175	33.279	-3.546	-4.250	-4.785
4.84306D+06	5.6659	2.5905	4.3180	33.219	-3.566	-4.272	-4.808
4.85511D+06	5.6725	2.5997	4.3219	33.154	-3.601	-4.308	-4.845
4.85782D+06	5.6779	2.6174	4.3277	33.139	-3.621	-4.328	-4.866
4.85816D+06	5.6823	2.6277	4.3314	33.137	-3.638	-4.346	-4.884
4.85834D+06	5.6860	2.6343	4.3339	33.136	-3.653	-4.362	-4.901
4.85859D+06	5.6894	2.6484	4.3383	33.135	-3.663	-4.372	-4.912
4.86004D+06	5.6997	2.6395	4.3387	33.127	-3.724	-4.437	-4.979
4.86101D+06	5.6996	2.5340	4.3123	33.121	-3.784	-4.502	-5.041
4.86247D+06	5.6966	2.1728	4.2212	33.112	-3.983	-4.700	-5.210

TABLE 47.

Log M = 1.5000 X = 0.70 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.1238	4.2406	4.6200	31.620	-1.682	-2.325	-2.785
2.59934D+06	5.2480	4.0526	4.6040	31.019	-1.958	-2.599	-3.060
3.22082D+06	5.2826	3.9766	4.5937	30.780	-2.056	-2.693	-3.154
4.49182D+06	5.3664	3.7082	4.5475	30.023	-2.354	-2.979	-3.443
4.94848D+06	5.4000	3.5368	4.5131	29.576	-2.513	-3.136	-3.604
5.55276D+06	5.4474	3.1685	4.4328	28.692	-2.815	-3.447	-3.931
5.67605D+06	5.4580	3.0736	4.4118	28.448	-2.898	-3.536	-4.027
5.71035D+06	5.4614	3.0514	4.4071	28.376	-2.922	-3.562	-4.055
5.75066D+06	5.4665	3.0426	4.4062	28.288	-2.948	-3.589	-4.083
5.76215D+06	5.4685	3.0444	4.4071	28.263	-2.956	-3.597	-4.092
5.77317D+06	5.4712	3.0518	4.4097	28.239	-2.964	-3.605	-4.099
5.77570D+06	5.4721	3.0556	4.4108	28.233	-2.966	-3.607	-4.101
5.77958D+06	5.4739	3.0647	4.4135	28.224	-2.970	-3.610	-4.104
5.78597D+06	5.4803	3.0979	4.4234	28.210	-2.980	-3.619	-4.112
5.78639D+06	5.4811	3.1017	4.4246	28.209	-2.981	-3.620	-4.113
5.78809D+06	5.4959	3.1466	4.4395	28.205	-3.015	-3.654	-4.147
5.78958D+06	5.5057	3.1692	4.4476	28.202	-3.040	-3.679	-4.172
5.79058D+06	5.5045	3.1288	4.4372	28.200	-3.049	-3.690	-4.184
5.79157D+06	5.5024	3.0356	4.4134	28.197	-3.076	-3.721	-4.220
5.79207D+06	5.5018	2.9656	4.3957	28.196	-3.100	-3.749	-4.252
5.79306D+06	5.5139	2.7502	4.3449	28.194	-3.226	-3.891	-4.404
5.79356D+06	5.5189	2.6201	4.3136	28.192	-3.301	-3.976	-4.494
5.79406D+06	5.5228	2.4744	4.2782	28.191	-3.383	-4.066	-4.585
5.79455D+06	5.5253	2.3087	4.2374	28.189	-3.475	-4.165	-4.682
5.79505D+06	5.5271	2.1136	4.1891	28.187	-3.587	-4.282	-4.791

TABLE 48.

Log M = 1.6000 X = 0.70 Z = 0.02

AGE	LOG L	LOG G	LOGTEFF	M	LOGK2	LOGK3	LOGK4
0.00000D+00	5.3473	4.2326	4.6489	39.810	-1.664	-2.302	-2.762
1.42336D+06	5.4178	4.1292	4.6406	39.132	-1.838	-2.482	-2.944
2.08636D+06	5.4553	4.0560	4.6317	38.706	-1.952	-2.595	-3.058
3.06088D+06	5.5173	3.8890	4.6055	37.836	-2.185	-2.823	-3.286
4.30040D+06	5.6101	3.3780	4.5009	35.716	-2.734	-3.367	-3.847
4.62926D+06	5.6362	3.0875	4.4348	34.660	-3.017	-3.668	-4.169
4.68156D+06	5.6431	3.0019	4.4151	34.451	-3.080	-3.735	-4.242
4.68453D+06	5.6438	2.9951	4.4136	34.438	-3.086	-3.742	-4.250
4.69343D+06	5.6451	2.9710	4.4079	34.401	-3.104	-3.761	-4.269
4.72904D+06	5.6488	2.9195	4.3960	34.248	-3.152	-3.814	-4.327
4.77336D+06	5.6529	2.8623	4.3827	34.049	-3.211	-3.879	-4.396
4.80423D+06	5.6561	2.8233	4.3737	33.906	-3.254	-3.925	-4.445
4.82562D+06	5.6593	2.7861	4.3653	33.803	-3.292	-3.967	-4.489
4.84042D+06	5.6615	2.7720	4.3623	33.730	-3.315	-3.992	-4.515
4.85076D+06	5.6635	2.7709	4.3625	33.679	-3.328	-4.006	-4.530
4.86074D+06	5.6660	2.7726	4.3635	33.629	-3.343	-4.022	-4.547
4.87381D+06	5.6774	2.8130	4.3765	33.563	-3.384	-4.064	-4.589
4.87415D+06	5.6822	2.8292	4.3817	33.561	-3.398	-4.077	-4.602
4.87458D+06	5.6881	2.8537	4.3893	33.559	-3.416	-4.096	-4.622
4.87514D+06	5.6939	2.8731	4.3956	33.556	-3.435	-4.114	-4.641
4.87627D+06	5.6978	2.8375	4.3877	33.550	-3.471	-4.154	-4.682
4.87739D+06	5.6975	2.7149	4.3570	33.544	-3.530	-4.222	-4.755
4.87796D+06	5.6964	2.6260	4.3345	33.541	-3.570	-4.268	-4.802
4.87852D+06	5.6952	2.5016	4.3031	33.538	-3.629	-4.334	-4.867
4.87908D+06	5.6941	2.3273	4.2592	33.534	-3.719	-4.429	-4.956

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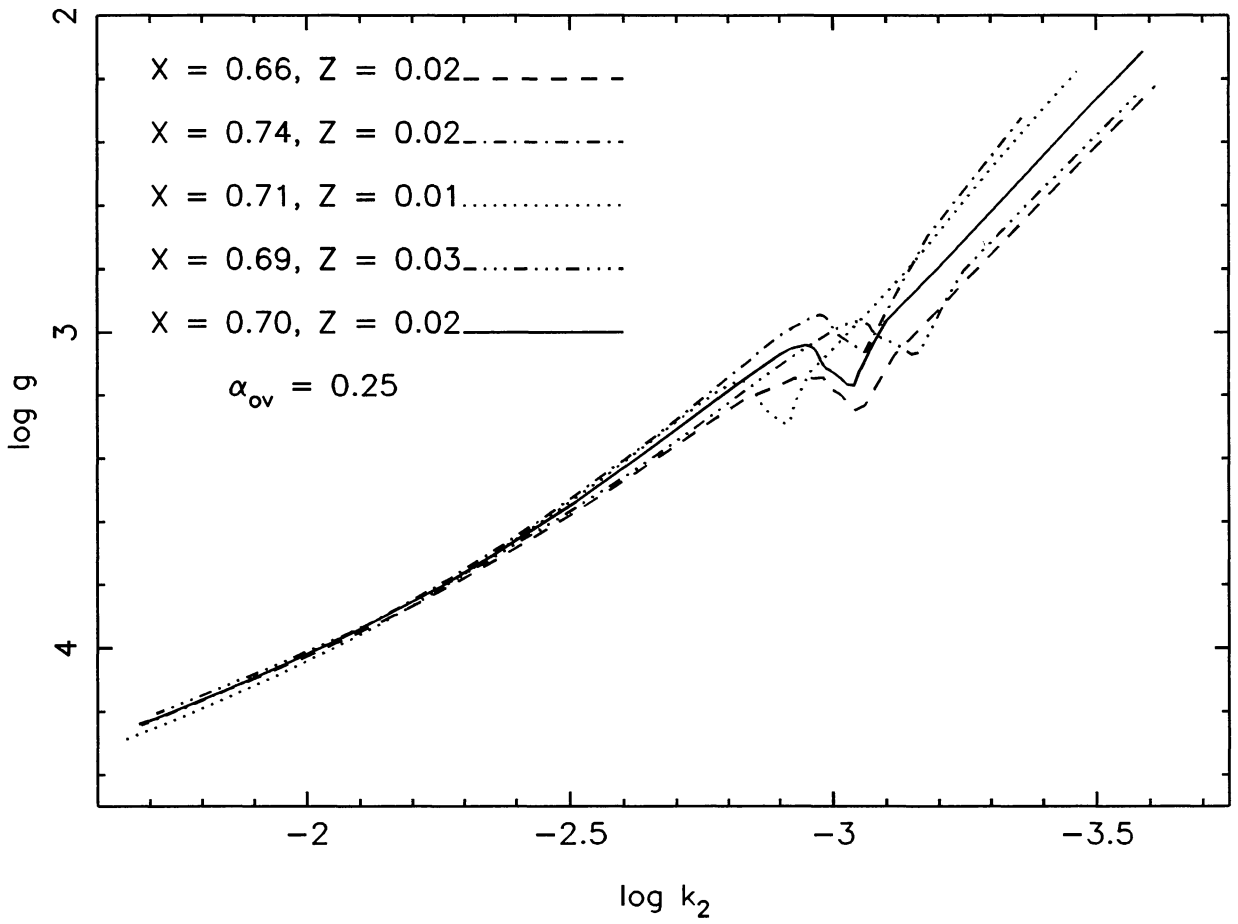

FIGURE 1. Effect of chemical composition on the stellar internal structure constant for a model of 32 $M_\odot$ with core overshooting and mass loss. The effect is more conspicuous for more evolved models.

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