

LAGGING RADIUS and PALAEO DENSITY

By Eugene A. Ellis (updated Sept. 2020)

Finding a radius to match the mass on an exponentially expanding earth at past times is difficult because the volume (radius) increase always follows or lags behind the increasing mass due to the effects of density and gravity. Depending on the lag time, one can approximate past radii by starting with the equations that produced Table 5 and its Figure 4 graph. The exponential growth of the mass is derived from the 8-elements accumulating mass by converting energy of decay. The following tables and charts indicate the effects from incrementally lagging of the radius. The 10 slides below demonstrate as the lag time shortens, density tends toward unity while the radius and gravity curves merge together. Here, the percentage of present gravity is equal to the radius percentage at any particular past time. When earth's gravity was half of today's gravity, the radius was 50% of today's radius ($x\% g = x\% r$).

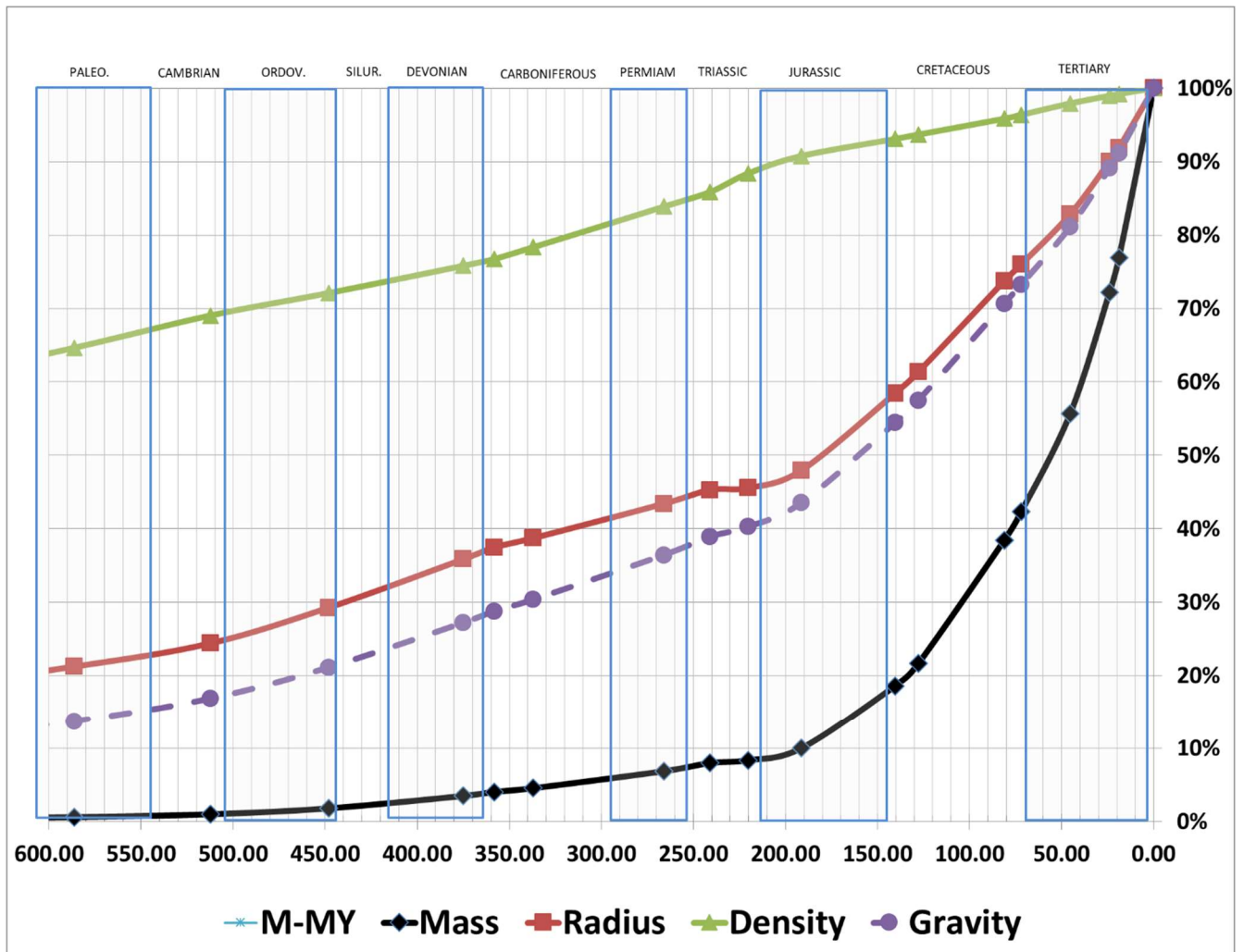
Not knowing the palaeodensity at certain past times is not knowing the palaeoradius and palaeogravity for that same time.

On an Ionic Growing Earth (IGE) the density of each of the 8-abundance elements comprising 98.8% of earth's matter is unchanging. Growing elements confined within and under the continental and oceanic crusts are temporarily compressed until the pressure is relieved by cracking, expanding, or stretching the shell (earthquakes, volcanos, traps, cracks, etc.).

The expansions changing the density of chemical compounds and minerals (the building blocks of rocks) formed naturally by successive stages of elemental ionization within the earth are likewise suppressed by the high temperatures and pressures encountered in the core and mantle. When the temperatures and pressures are relieved in the upper mantle or crust, these combined elements and minerals structurally expand revealing specific densities.

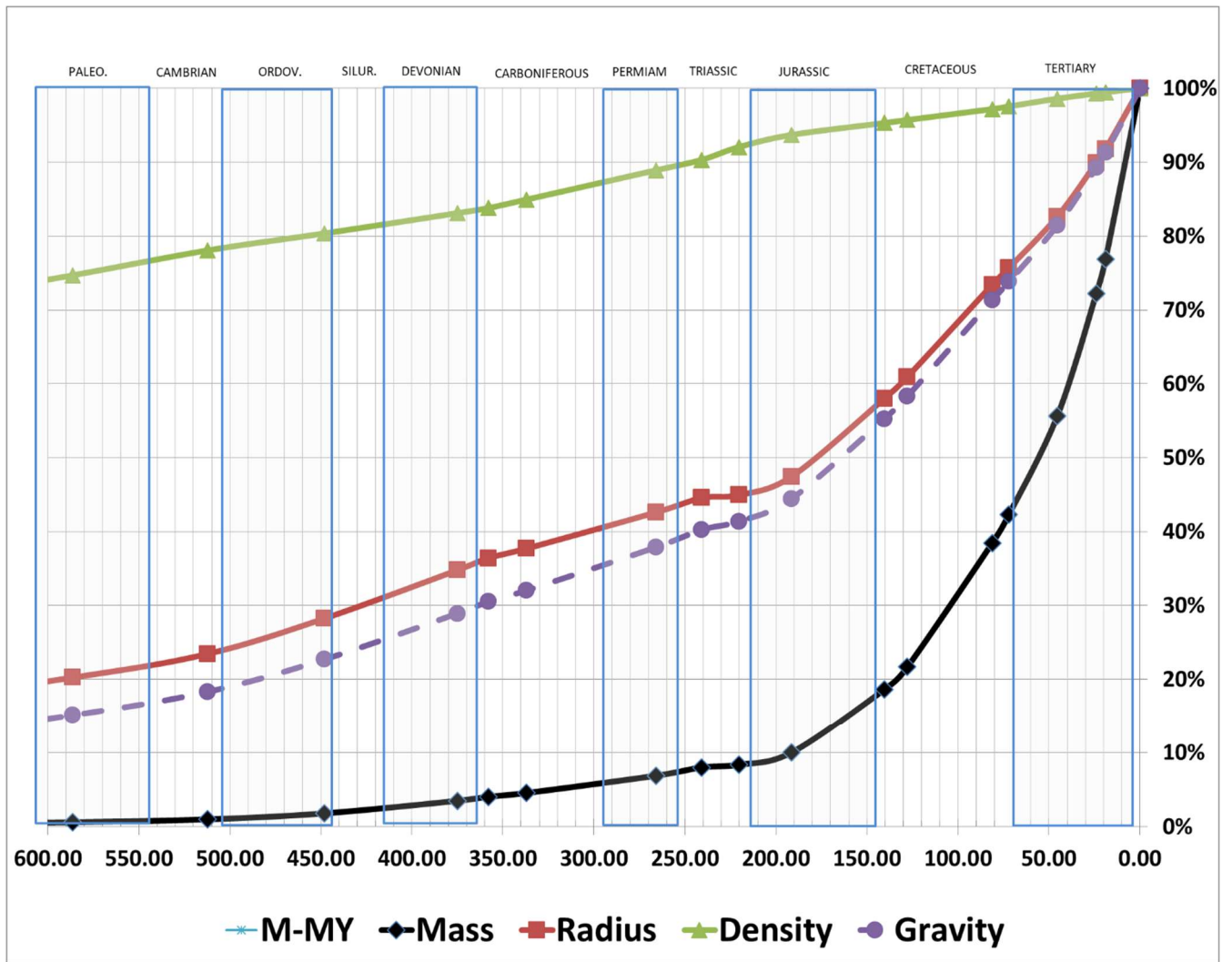
The colors on the Rainbow Map display the sequential placement of density layers where an ocean floor cracks and spreads apart. These shell layers also involve combinational joining of growing elements and minerals displaying molecular volume increases that changes density. A better geological chronology may be obtained when the origin of the heat and pressures within the planet (the cause) becomes known (<https://sciencewoke.org/age-of-the-ocean-floor-a-critical-analysis/>).

Except in the crust and upper-most mantle found in the outermost 1% of earth's radius (~64 km), the density of the planet is unchanging. Using the atomic mass of the abundance elements and knowing when each is growing and not growing (see Fig. 1r in the above link) as exemplified by their Ionization Potentials (I.P.), one can retrodict the radius and surface gravity based upon the growing mass for any geological time determined by radiometric dating or other means when ignoring density. In this manner, density would equal unity (1) and percent gravity equaling percent radius ($x\% g = x\% r$) would be at least 99% accurate. Additional accuracy could be obtained using (x) % gravity equaling (x-1) % radius for a slightly larger earth that includes mineral expansions; i.e. 50% g = 49% r. *Inflating the radius has zero effect on gravity.*



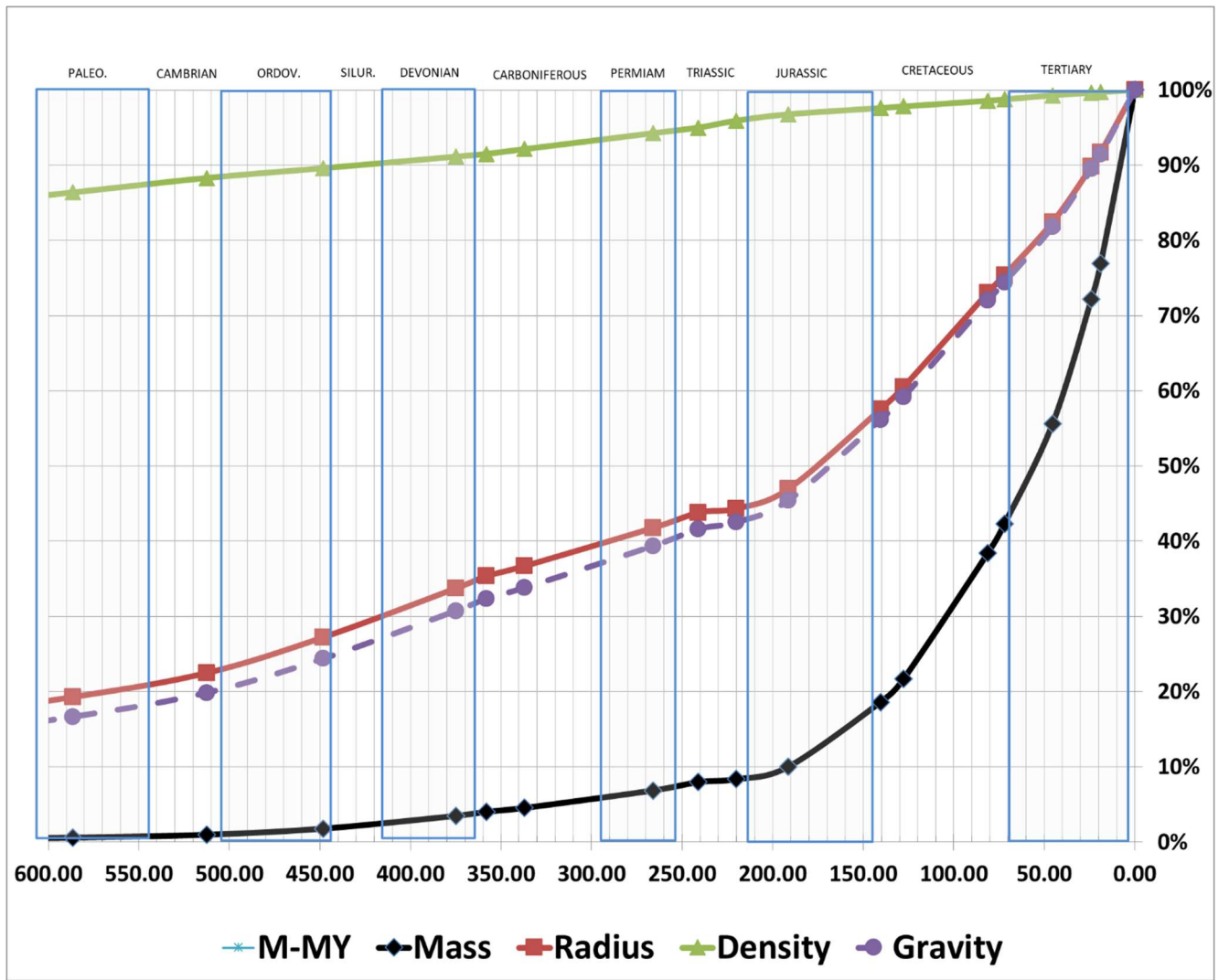
EARTH TABLE 5R -MASS FROM TABLE 4R WITH ~1.5 MILLION YEAR LAGGING RADIUS

MY	X	Element	Rate/eV	(49.5228 MY)			(51.0228 MY)			Density (g/cc)	Current Density	Gravity (m/sec ²)	Current Gravity
				Rate of Growth	Mass (kg)	Current Mass	Rate of Growth	Radius (km)	Current Radius				
0	1	0	0	4.05379	5.98E+24	100.00%	3.89037	6378.96	100.00%	5.5000	100.00%	9.80	100.00%
18.9	0.189	-Ca	-0.04018	4.01361	4.5987E+24	76.90%	3.85019	5859.55	91.86%	5.4570	99.22%	8.93	91.14%
24.0	0.051	-Mg	-0.57862	3.43499	4.3182E+24	72.21%	3.27157	5742.66	90.03%	5.4434	98.97%	8.73	89.10%
45.4	0.214	-Al	-0.05570	3.37929	3.3276E+24	55.65%	3.21587	5283.55	82.83%	5.3860	97.93%	7.95	81.11%
72.0	0.266	-Si	-0.57722	2.80207	2.5299E+24	42.31%	2.63865	4848.01	76.00%	5.3006	96.37%	7.18	73.24%
81.2	0.092	+Ca	0.04018	2.84225	2.2981E+24	38.43%	2.67883	4703.70	73.74%	5.2718	95.85%	6.93	70.68%
127.8	0.466	+Mg	0.57862	3.42087	1.2956E+24	21.66%	3.25745	3915.37	61.38%	5.1529	93.69%	5.64	57.51%
140.5	0.127	-S	-0.09710	3.32377	1.1123E+24	18.60%	3.16035	3729.21	58.46%	5.1200	93.09%	5.33	54.42%
191.4	0.509	+Al	0.05570	3.37947	5.9845E+23	10.01%	3.21605	3058.73	47.95%	4.9924	90.77%	4.27	43.53%
220.3	0.289	-O x 75%	-1.51476	1.86471	4.9983E+23	8.36%	1.70129	2906.09	45.56%	4.8618	88.40%	3.95	40.27%
241.0	0.207	-Fe	-0.61707	1.24764	4.7745E+23	7.98%	1.08422	2889.93	45.30%	4.7226	85.87%	3.81	38.90%
266.0	0.250	+Si	0.57722	1.82486	4.1079E+23	6.87%	1.66144	2770.21	43.43%	4.6131	83.87%	3.57	36.42%
337.0	0.710	-Ca	-0.04018	1.78468	2.7228E+23	4.55%	1.62126	2470.86	38.73%	4.3091	78.35%	2.97	30.35%
358.1	0.211	-Ni	-0.03350	1.75118	2.4192E+23	4.05%	1.58776	2391.81	37.50%	4.2209	76.74%	2.82	28.78%
374.9	0.168	+Fe	0.61707	2.36825	2.093E+23	3.50%	2.20483	2288.22	35.87%	4.1705	75.83%	2.67	27.20%
448.1	0.732	+S	0.09710	2.46535	1.0812E+23	1.81%	2.30193	1867.01	29.27%	3.9663	72.11%	2.07	21.11%
512.4	0.643	+Ni	0.03350	2.49885	6.0002E+22	1.00%	2.33543	1556.66	24.40%	3.7975	69.05%	1.65	16.85%
586.3	0.739	-Mg	-0.57862	1.92023	3.7048E+22	0.62%	1.75681	1354.91	21.24%	3.5559	64.65%	1.35	13.73%
705.2	1.189	-Al	-0.05570	1.86453	1.7663E+22	0.30%	1.70111	1097.65	17.21%	3.1885	57.97%	0.98	9.98%
780.9	0.757	-Fe	-0.61707	1.24746	1.4941E+22	0.25%	1.08404	1075.52	16.86%	2.8670	52.13%	0.86	8.79%
835.1	0.542	-Si	-0.57722	0.67024	1.8559E+22	0.31%	0.50682	1216.02	19.06%	2.4640	44.80%	0.84	8.54%



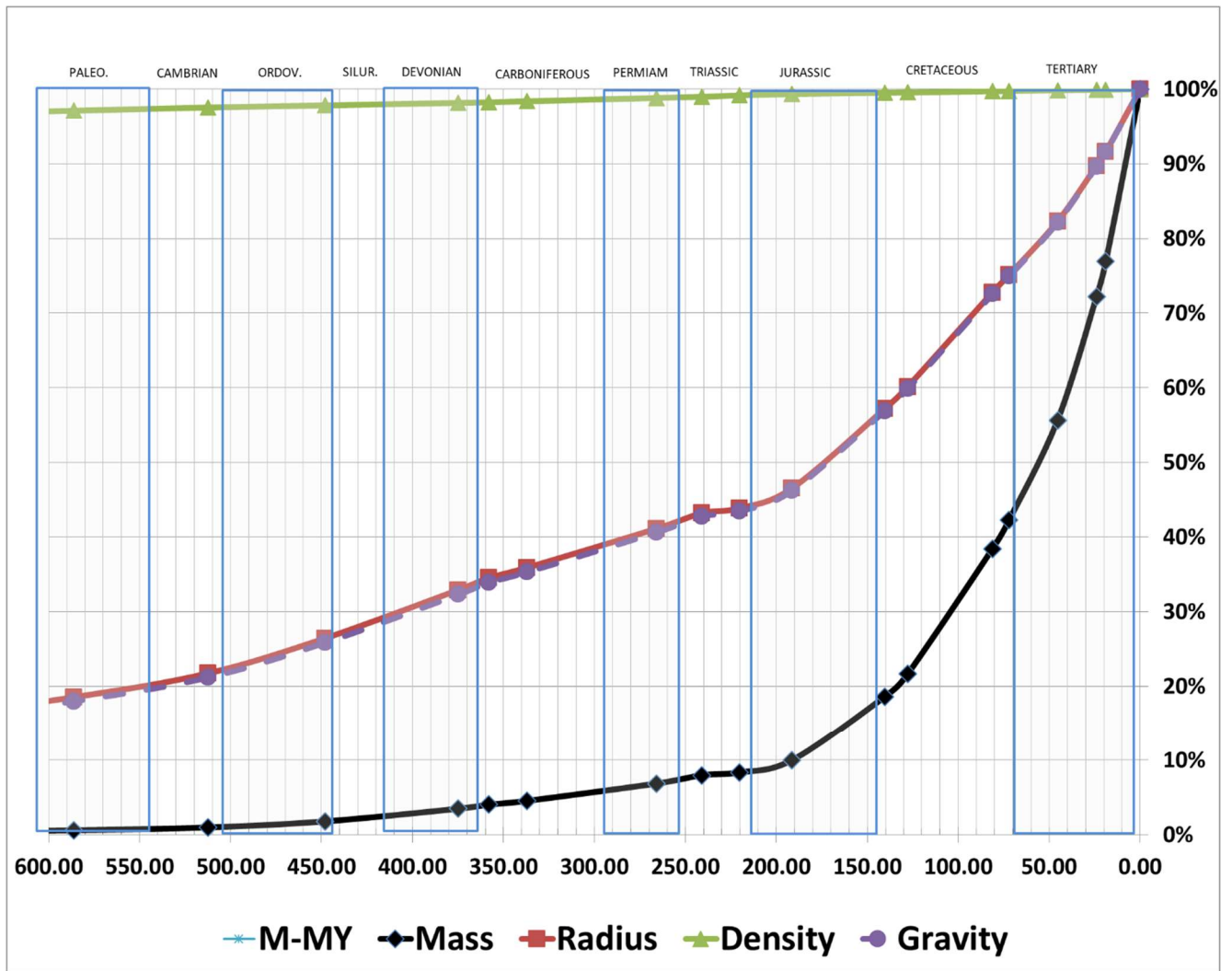
EARTH TABLE 5R -MASS FROM TABLE 4R WITH ~1 MILLION YEAR LAGGING RADIUS

MY	X	Element	Rate/eV	(49.5228 MY)			(50.5228 MY)			Density (g/cc)	Current Density	Gravity (m/sec ²)	Current Gravity
				Rate of Growth	Mass (kg)	Current Mass	Rate of Growth	Radius (km)	Current Radius				
0	1	0	0	4.05379	5.98E+24	100.00%	3.94303	6378.96	100.00%	5.5000	100.00%	9.80	100.00%
18.9	0.189	-Ca	-0.04018	4.01361	4.5987E+24	76.90%	3.90285	5854.54	91.78%	5.4710	99.47%	8.95	91.29%
24.0	0.051	-Mg	-0.57862	3.43499	4.3182E+24	72.21%	3.32423	5736.19	89.92%	5.4618	99.31%	8.75	89.30%
45.4	0.214	-Al	-0.05570	3.37929	3.3276E+24	55.65%	3.26853	5271.49	82.64%	5.4230	98.60%	7.99	81.48%
72.0	0.266	-Si	-0.57722	2.80207	2.5299E+24	42.31%	2.69131	4828.47	75.69%	5.3652	97.55%	7.24	73.84%
81.2	0.092	+Ca	0.04018	2.84225	2.2981E+24	38.43%	2.73149	4681.95	73.40%	5.3456	97.19%	6.99	71.34%
127.8	0.466	+Mg	0.57862	3.42087	1.2956E+24	21.66%	3.31011	3887.57	60.94%	5.2642	95.71%	5.72	58.33%
140.5	0.127	-S	-0.09710	3.32377	1.1123E+24	18.60%	3.21301	3700.15	58.01%	5.2416	95.30%	5.42	55.28%
191.4	0.509	+Al	0.05570	3.37947	5.9845E+23	10.01%	3.26871	3026.54	47.45%	5.1535	93.70%	4.36	44.46%
220.3	0.289	-O x 75%	-1.51476	1.86471	4.9983E+23	8.36%	1.75395	2867.08	44.95%	5.0631	92.06%	4.06	41.38%
241.0	0.207	-Fe	-0.61707	1.24764	4.7745E+23	7.98%	1.13688	2841.81	44.55%	4.9666	90.30%	3.94	40.23%
266.0	0.250	+Si	0.57722	1.82486	4.1079E+23	6.87%	1.71410	2717.02	42.59%	4.8894	88.90%	3.71	37.86%
337.0	0.710	-Ca	-0.04018	1.78468	2.7228E+23	4.55%	1.67392	2405.15	37.70%	4.6720	84.94%	3.14	32.03%
358.1	0.211	-Ni	-0.03350	1.75118	2.4192E+23	4.05%	1.64042	2322.86	36.41%	4.6080	83.78%	2.99	30.51%
374.9	0.168	+Fe	0.61707	2.36825	2.093E+23	3.50%	2.25749	2219.32	34.79%	4.5711	83.11%	2.83	28.92%
448.1	0.732	+S	0.09710	2.46535	1.0812E+23	1.81%	2.35459	1800.83	28.23%	4.4198	80.36%	2.22	22.69%
512.4	0.643	+Ni	0.03350	2.49885	6.0002E+22	1.00%	2.38809	1494.32	23.43%	4.2928	78.05%	1.79	18.28%
586.3	0.739	-Mg	-0.57862	1.92023	3.7048E+22	0.62%	1.80947	1291.22	20.24%	4.1084	74.70%	1.48	15.12%
705.2	1.189	-Al	-0.05570	1.86453	1.7663E+22	0.30%	1.75377	1033.49	16.20%	3.8199	69.45%	1.10	11.25%
780.9	0.757	-Fe	-0.61707	1.24746	1.4941E+22	0.25%	1.13670	1000.61	15.69%	3.5603	64.73%	1.00	10.15%
835.1	0.542	-Si	-0.57722	0.67024	1.8559E+22	0.31%	0.55948	1111.30	17.42%	3.2282	58.70%	1.00	10.23%



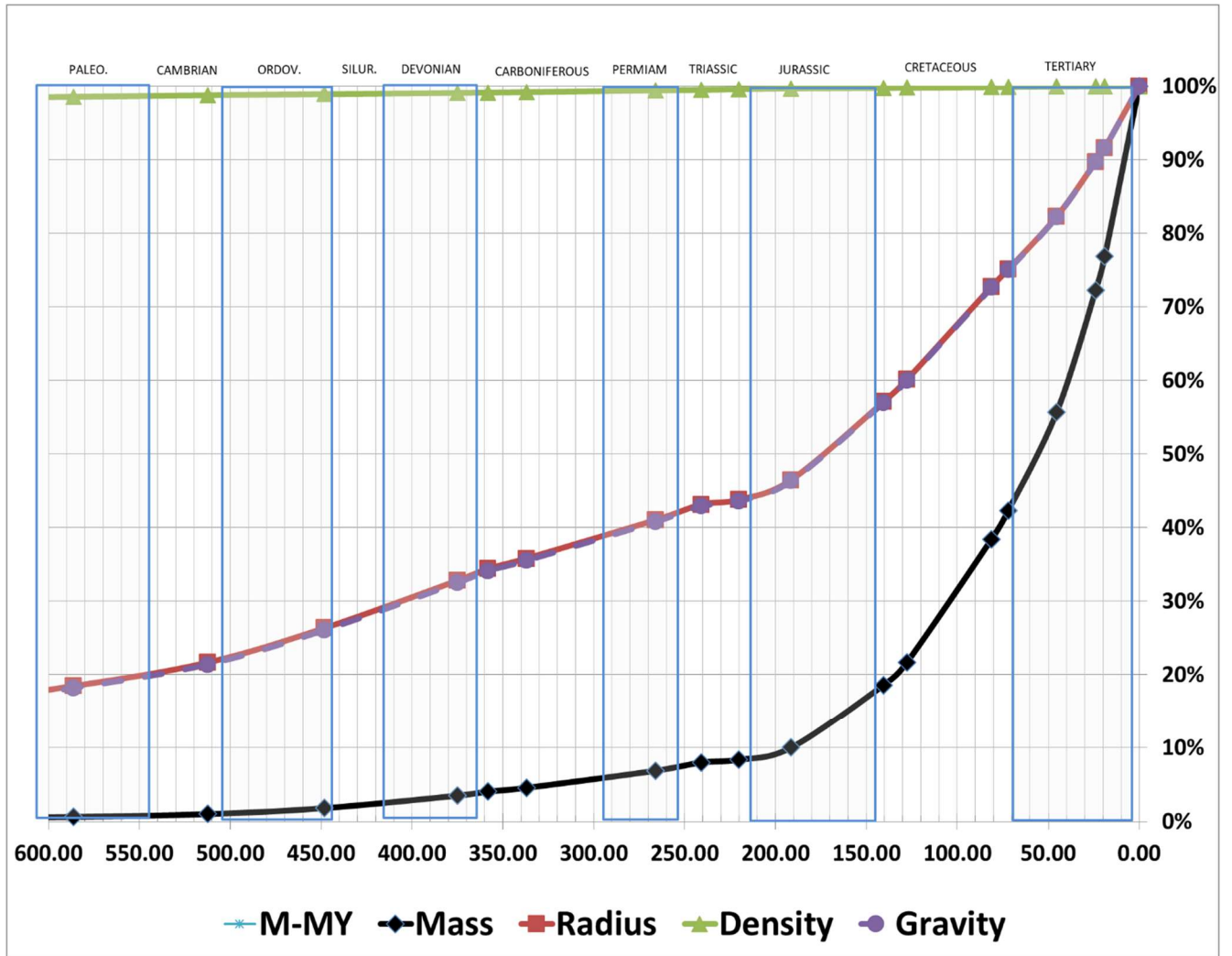
EARTH TABLE 5R -MASS FROM TABLE 4R WITH ~500,000 YEAR LAGGING RADIUS

MY	X	Element	Rate/eV	(49.5228 MY)			(50.0228 MY)			Density (g/cc)	Current Density	Gravity (m/sec ²)	Current Gravity
				Rate of Growth	Mass (kg)	Current Mass	Rate of Growth	Radius (km)	Current Radius				
0	1	0	0	4.05379	5.98E+24	100.00%	3.99747	6378.96	100.00%	5.5000	100.00%	9.80	100.00%
18.9	0.189	-Ca	-0.04018	4.01361	4.5987E+24	76.90%	3.95729	5849.43	91.70%	5.4853	99.73%	8.96	91.45%
24.0	0.051	-Mg	-0.57862	3.43499	4.3182E+24	72.21%	3.37867	5729.61	89.82%	5.4807	99.65%	8.77	89.51%
45.4	0.214	-Al	-0.05570	3.37929	3.3276E+24	55.65%	3.32297	5259.24	82.45%	5.4610	99.29%	8.02	81.86%
72.0	0.266	-Si	-0.57722	2.80207	2.5299E+24	42.31%	2.74575	4808.70	75.38%	5.4316	98.76%	7.30	74.45%
81.2	0.092	+Ca	0.04018	2.84225	2.2981E+24	38.43%	2.78593	4659.96	73.05%	5.4216	98.58%	7.06	72.01%
127.8	0.466	+Mg	0.57862	3.42087	1.2956E+24	21.66%	3.36456	3859.52	60.50%	5.3799	97.82%	5.80	59.18%
140.5	0.127	-S	-0.09710	3.32377	1.1123E+24	18.60%	3.26745	3670.83	57.55%	5.3682	97.60%	5.51	56.17%
191.4	0.509	+Al	0.05570	3.37947	5.9845E+23	10.01%	3.32315	2994.16	46.94%	5.3225	96.77%	4.45	45.42%
220.3	0.289	-O x 75%	-1.51476	1.86471	4.9983E+23	8.36%	1.80839	2828.06	44.33%	5.2755	95.92%	4.17	42.52%
241.0	0.207	-Fe	-0.61707	1.24764	4.7745E+23	7.98%	1.19132	2794.11	43.80%	5.2253	95.01%	4.08	41.61%
266.0	0.250	+Si	0.57722	1.82486	4.1079E+23	6.87%	1.76854	2664.46	41.77%	5.1845	94.26%	3.86	39.37%
337.0	0.710	-Ca	-0.04018	1.78468	2.7228E+23	4.55%	1.72836	2340.82	36.70%	5.0678	92.14%	3.31	33.81%
358.1	0.211	-Ni	-0.03350	1.75118	2.4192E+23	4.05%	1.69486	2255.55	35.36%	5.0330	91.51%	3.17	32.36%
374.9	0.168	+Fe	0.61707	2.36825	2.093E+23	3.50%	2.31193	2152.14	33.74%	5.0127	91.14%	3.01	30.75%
448.1	0.732	+S	0.09710	2.46535	1.0812E+23	1.81%	2.40903	1736.60	27.22%	4.9286	89.61%	2.39	24.40%
512.4	0.643	+Ni	0.03350	2.49885	6.0002E+22	1.00%	2.44253	1434.08	22.48%	4.8569	88.31%	1.95	19.85%
586.3	0.739	-Mg	-0.57862	1.92023	3.7048E+22	0.62%	1.86391	1230.15	19.28%	4.7512	86.39%	1.63	16.66%
705.2	1.189	-Al	-0.05570	1.86453	1.7663E+22	0.30%	1.80821	972.75	15.25%	4.5811	83.29%	1.25	12.70%
780.9	0.757	-Fe	-0.61707	1.24746	1.4941E+22	0.25%	1.19114	930.75	14.59%	4.4236	80.43%	1.15	11.74%
835.1	0.542	-Si	-0.57722	0.67024	1.8559E+22	0.31%	0.61392	1016.52	15.94%	4.2181	76.69%	1.20	12.22%



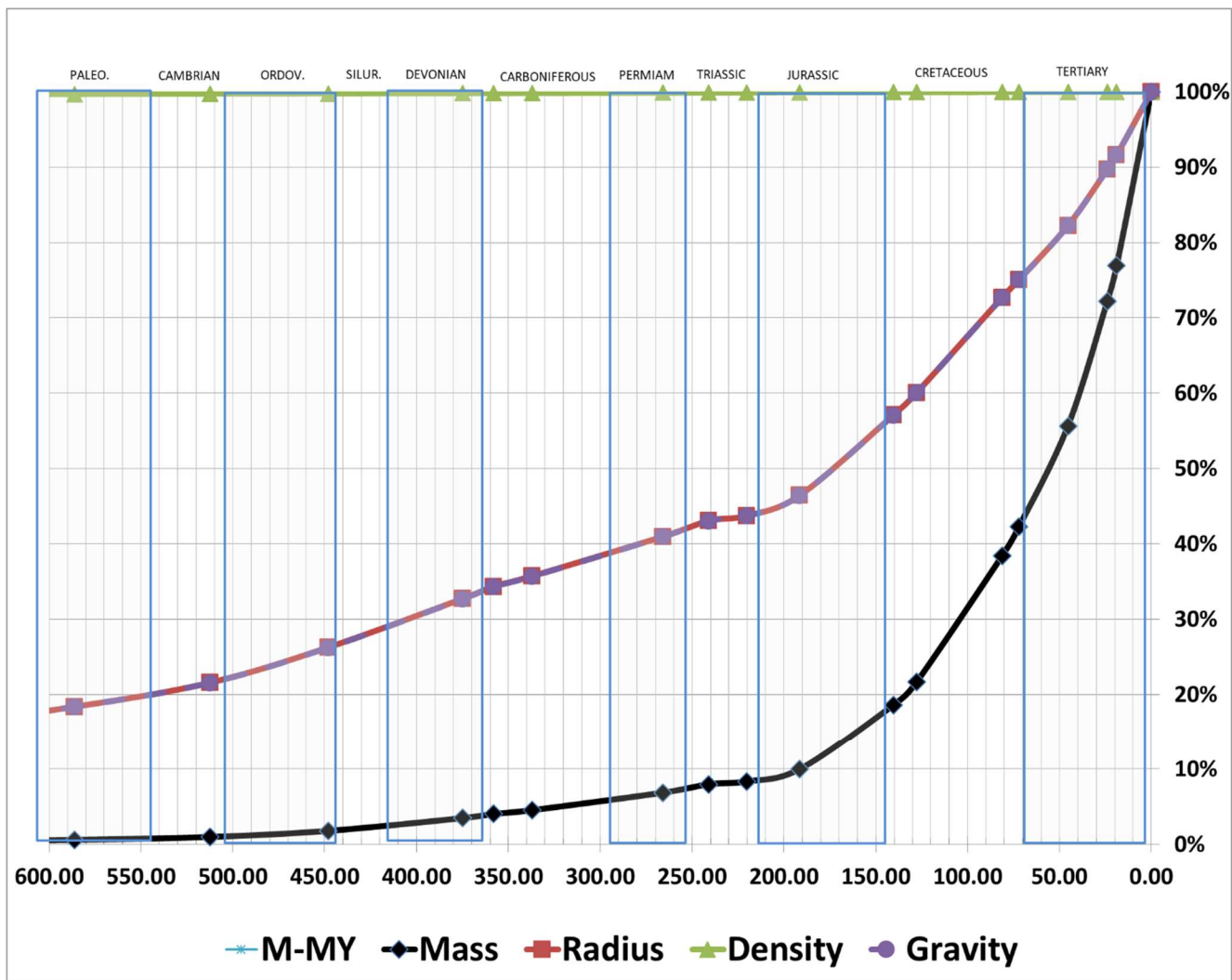
EARTH TABLE 5R -MASS FROM TABLE 4R WITH ~100,000 YEAR LAGGING RADIUS

MY	X	Element	Rate/eV	(49.5228 MY)			(49.6228 MY)			Density (g/cc)	Current Density	Gravity (m/sec ²)	Current Gravity
				Rate of Growth	Mass (kg)	Current Mass	Rate of Growth	Radius (km)	Current Radius				
0	1	0	0	4.05379	5.98E+24	100.00%	4.04237	6378.96	100.00%	5.5000	100.00%	9.80	100.00%
18.9	0.189	-Ca	-0.04018	4.01361	4.5987E+24	76.90%	4.00219	5845.27	91.63%	5.4970	99.95%	8.98	91.58%
24.0	0.051	-Mg	-0.57862	3.43499	4.3182E+24	72.21%	3.42357	5724.25	89.74%	5.4961	99.93%	8.79	89.67%
45.4	0.214	-Al	-0.05570	3.37929	3.3276E+24	55.65%	3.36787	5249.29	82.29%	5.4921	99.86%	8.05	82.17%
72.0	0.266	-Si	-0.57722	2.80207	2.5299E+24	42.31%	2.79065	4792.71	75.13%	5.4862	99.75%	7.35	74.94%
81.2	0.092	+Ca	0.04018	2.84225	2.2981E+24	38.43%	2.83083	4642.19	72.77%	5.4841	99.71%	7.11	72.56%
127.8	0.466	+Mg	0.57862	3.42087	1.2956E+24	21.66%	3.40946	3836.89	60.15%	5.4756	99.56%	5.87	59.88%
140.5	0.127	-S	-0.09710	3.32377	1.1123E+24	18.60%	3.31235	3647.20	57.18%	5.4732	99.51%	5.58	56.90%
191.4	0.509	+Al	0.05570	3.37947	5.9845E+23	10.01%	3.36805	2968.12	46.53%	5.4638	99.34%	4.53	46.22%
220.3	0.289	-O x 75%	-1.51476	1.86471	4.9983E+23	8.36%	1.85329	2796.85	43.84%	5.4541	99.17%	4.26	43.48%
241.0	0.207	-Fe	-0.61707	1.24764	4.7745E+23	7.98%	1.23622	2756.22	43.21%	5.4437	98.98%	4.19	42.77%
266.0	0.250	+Si	0.57722	1.82486	4.1079E+23	6.87%	1.81344	2622.84	41.12%	5.4352	98.82%	3.98	40.63%
337.0	0.710	-Ca	-0.04018	1.78468	2.7228E+23	4.55%	1.77326	2290.32	35.90%	5.4105	98.37%	3.46	35.32%
358.1	0.211	-Ni	-0.03350	1.75118	2.4192E+23	4.05%	1.73976	2202.84	34.53%	5.4030	98.24%	3.33	33.92%
374.9	0.168	+Fe	0.61707	2.36825	2.093E+23	3.50%	2.35683	2099.58	32.91%	5.3986	98.16%	3.17	32.31%
448.1	0.732	+S	0.09710	2.46535	1.0812E+23	1.81%	2.45393	1686.57	26.44%	5.3803	97.82%	2.54	25.86%
512.4	0.643	+Ni	0.03350	2.49885	6.0002E+22	1.00%	2.48743	1387.34	21.75%	5.3645	97.54%	2.08	21.21%
586.3	0.739	-Mg	-0.57862	1.92023	3.7048E+22	0.62%	1.90881	1183.10	18.55%	5.3409	97.11%	1.77	18.01%
705.2	1.189	-Al	-0.05570	1.86453	1.7663E+22	0.30%	1.85311	926.49	14.52%	5.3021	96.40%	1.37	14.00%
780.9	0.757	-Fe	-0.61707	1.24746	1.4941E+22	0.25%	1.23604	878.25	13.77%	5.2653	95.73%	1.29	13.18%
835.1	0.542	-Si	-0.57722	0.67024	1.8559E+22	0.31%	0.65882	947.03	14.85%	5.2165	94.85%	1.38	14.08%



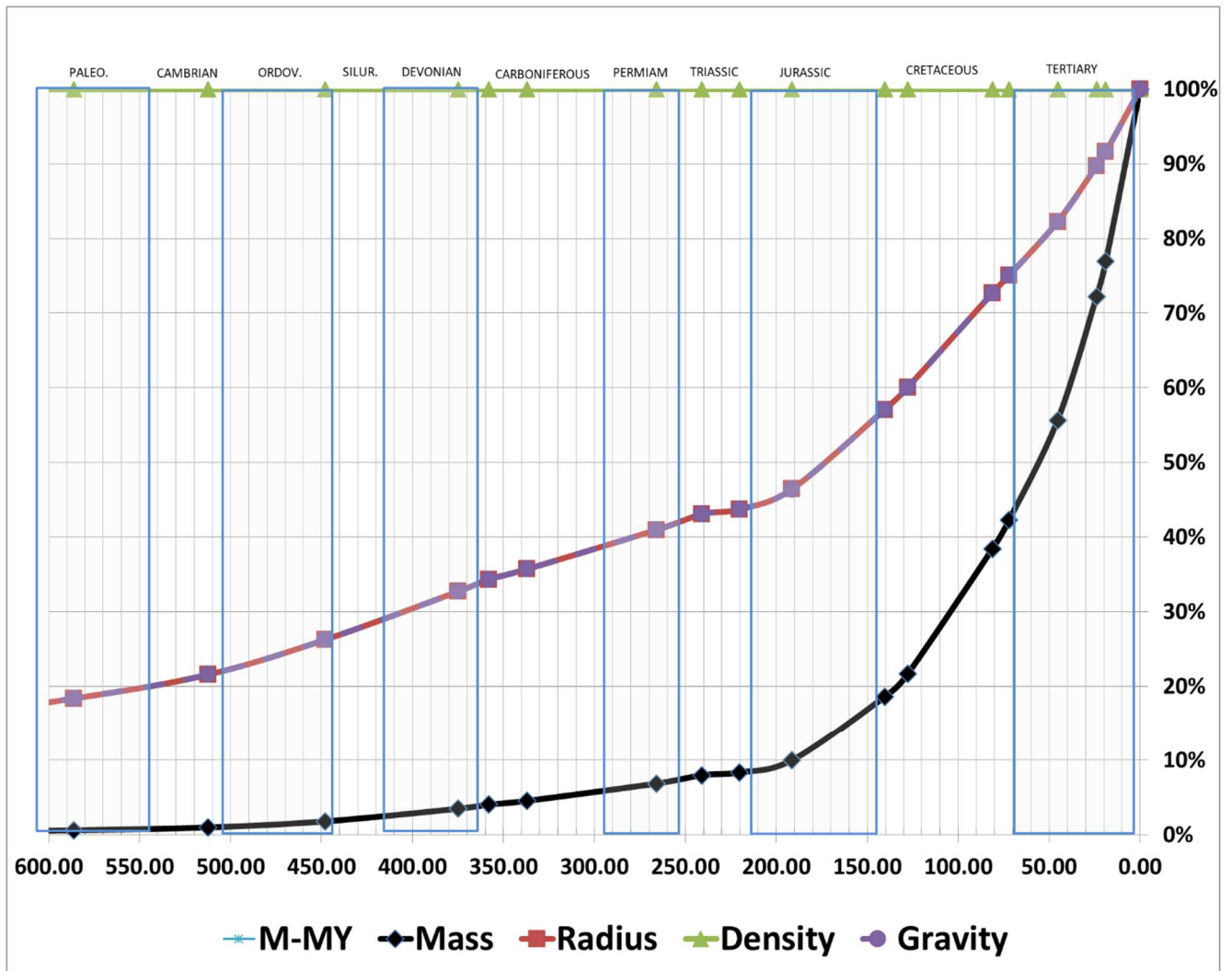
EARTH TABLE 5R -MASS FROM TABLE 4R WITH ~50,000 YEAR LAGGING RADIUS

MY	X	Element	Rate/eV	(49.5228 MY)			(49.5728 MY)			Density (g/cc)	Current Density	Gravity (m/sec ²)	Current Gravity
				Rate of Growth	Mass (kg)	Current Mass	Rate of Growth	Radius (km)	Current Radius				
0	1	0	0	4.05379	5.98E+24	100.00%	4.04807	6378.96	100.00%	5.5000	100.00%	9.80	100.00%
18.9	0.189	-Ca	-0.04018	4.01361	4.5987E+24	76.90%	4.00789	5844.75	91.63%	5.4985	99.97%	8.98	91.60%
24.0	0.051	-Mg	-0.57862	3.43499	4.3182E+24	72.21%	3.42927	5723.58	89.73%	5.4981	99.96%	8.79	89.69%
45.4	0.214	-Al	-0.05570	3.37929	3.3276E+24	55.65%	3.37357	5248.04	82.27%	5.4961	99.93%	8.06	82.21%
72.0	0.266	-Si	-0.57722	2.80207	2.5299E+24	42.31%	2.79635	4790.70	75.10%	5.4931	99.87%	7.35	75.01%
81.2	0.092	+Ca	0.04018	2.84225	2.2981E+24	38.43%	2.83653	4639.95	72.74%	5.4921	99.86%	7.12	72.63%
127.8	0.466	+Mg	0.57862	3.42087	1.2956E+24	21.66%	3.41516	3834.05	60.10%	5.4878	99.78%	5.88	59.97%
140.5	0.127	-S	-0.09710	3.32377	1.1123E+24	18.60%	3.31805	3644.24	57.13%	5.4866	99.76%	5.59	56.99%
191.4	0.509	+Al	0.05570	3.37947	5.9845E+23	10.01%	3.37375	2964.85	46.48%	5.4819	99.67%	4.54	46.33%
220.3	0.289	-O x 75%	-1.51476	1.86471	4.9983E+23	8.36%	1.85899	2792.95	43.78%	5.4770	99.58%	4.27	43.60%
241.0	0.207	-Fe	-0.61707	1.24764	4.7745E+23	7.98%	1.24192	2751.51	43.13%	5.4718	99.49%	4.21	42.91%
266.0	0.250	+Si	0.57722	1.82486	4.1079E+23	6.87%	1.81914	2617.67	41.04%	5.4675	99.41%	4.00	40.79%
337.0	0.710	-Ca	-0.04018	1.78468	2.7228E+23	4.55%	1.77896	2284.07	35.81%	5.4551	99.18%	3.48	35.51%
358.1	0.211	-Ni	-0.03350	1.75118	2.4192E+23	4.05%	1.74546	2196.32	34.43%	5.4513	99.11%	3.35	34.13%
374.9	0.168	+Fe	0.61707	2.36825	2.093E+23	3.50%	2.36253	2093.08	32.81%	5.4491	99.07%	3.19	32.51%
448.1	0.732	+S	0.09710	2.46535	1.0812E+23	1.81%	2.45963	1680.40	26.34%	5.4398	98.91%	2.55	26.05%
512.4	0.643	+Ni	0.03350	2.49885	6.0002E+22	1.00%	2.49313	1381.58	21.66%	5.4318	98.76%	2.10	21.39%
586.3	0.739	-Mg	-0.57862	1.92023	3.7048E+22	0.62%	1.91451	1177.33	18.46%	5.4199	98.54%	1.78	18.19%
705.2	1.189	-Al	-0.05570	1.86453	1.7663E+22	0.30%	1.85881	920.85	14.44%	5.4001	98.18%	1.39	14.17%
780.9	0.757	-Fe	-0.61707	1.24746	1.4941E+22	0.25%	1.24174	871.89	13.67%	5.3814	97.84%	1.31	13.37%
835.1	0.542	-Si	-0.57722	0.67024	1.8559E+22	0.31%	0.66452	938.71	14.72%	5.3564	97.39%	1.40	14.33%

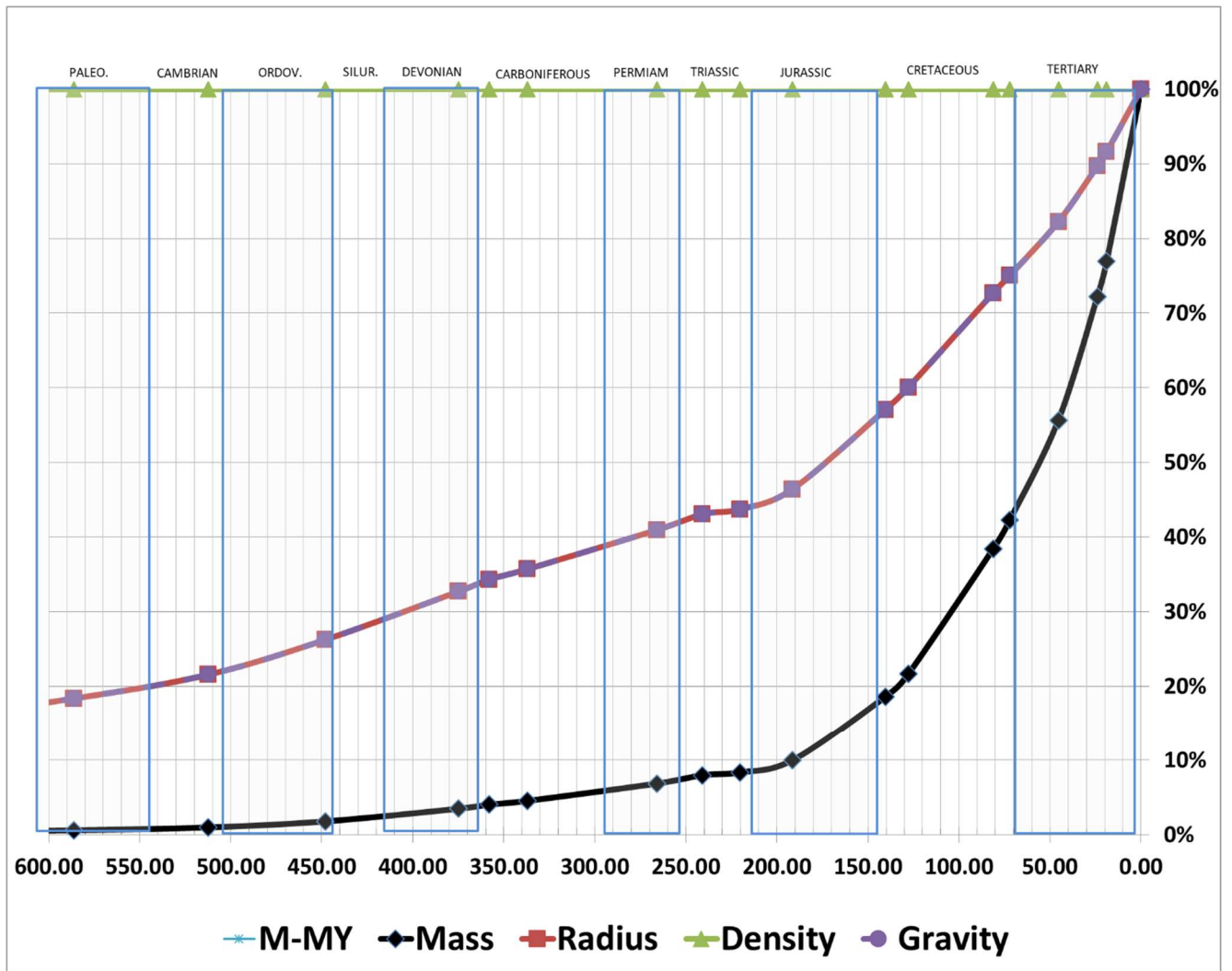


EARTH TABLE 5R -MASS FROM TABLE 4R WITH ~10,000 YEAR LAGGING RADIUS

MY	X	Element	Rate/eV	(49.5228 MY)			(49.5328 MY)			Density (g/cc)	Current Density	Gravity (m/sec ²)	Current Gravity
				Rate of Growth	Mass (kg)	Current Mass	Rate of Growth	Radius (km)	Current Radius				
0	1	0	0	4.05379	5.98E+24	100.00%	4.05265	6378.96	100.00%	5.5000	100.00%	9.80	100.00%
18.9	0.189	-Ca	-0.04018	4.01361	4.5987E+24	76.90%	4.01247	5844.33	91.62%	5.4997	99.99%	8.98	91.61%
24.0	0.051	-Mg	-0.57862	3.43499	4.3182E+24	72.21%	3.43384	5723.04	89.72%	5.4996	99.99%	8.79	89.71%
45.4	0.214	-Al	-0.05570	3.37929	3.3276E+24	55.65%	3.37814	5247.04	82.26%	5.4992	99.99%	8.06	82.24%
72.0	0.266	-Si	-0.57722	2.80207	2.5299E+24	42.31%	2.80093	4789.09	75.08%	5.4986	99.97%	7.36	75.06%
81.2	0.092	+Ca	0.04018	2.84225	2.2981E+24	38.43%	2.84111	4638.17	72.71%	5.4984	99.97%	7.13	72.69%
127.8	0.466	+Mg	0.57862	3.42087	1.2956E+24	21.66%	3.41973	3831.77	60.07%	5.4976	99.96%	5.89	60.04%
140.5	0.127	-S	-0.09710	3.32377	1.1123E+24	18.60%	3.32263	3641.86	57.09%	5.4973	99.95%	5.59	57.06%
191.4	0.509	+Al	0.05570	3.37947	5.9845E+23	10.01%	3.37833	2962.24	46.44%	5.4964	99.93%	4.55	46.41%
220.3	0.289	-O x 75%	-1.51476	1.86471	4.9983E+23	8.36%	1.86357	2789.83	43.73%	5.4954	99.92%	4.28	43.70%
241.0	0.207	-Fe	-0.61707	1.24764	4.7745E+23	7.98%	1.24649	2747.73	43.07%	5.4943	99.90%	4.22	43.03%
266.0	0.250	+Si	0.57722	1.82486	4.1079E+23	6.87%	1.82371	2613.54	40.97%	5.4935	99.88%	4.01	40.92%
337.0	0.710	-Ca	-0.04018	1.78468	2.7228E+23	4.55%	1.78353	2279.07	35.73%	5.4910	99.84%	3.50	35.67%
358.1	0.211	-Ni	-0.03350	1.75118	2.4192E+23	4.05%	1.75003	2191.11	34.35%	5.4902	99.82%	3.36	34.29%
374.9	0.168	+Fe	0.61707	2.36825	2.093E+23	3.50%	2.36710	2087.89	32.73%	5.4898	99.81%	3.20	32.67%
448.1	0.732	+S	0.09710	2.46535	1.0812E+23	1.81%	2.46421	1675.48	26.27%	5.4879	99.78%	2.57	26.21%
512.4	0.643	+Ni	0.03350	2.49885	6.0002E+22	1.00%	2.49771	1377.00	21.59%	5.4863	99.75%	2.11	21.53%
586.3	0.739	-Mg	-0.57862	1.92023	3.7048E+22	0.62%	1.91908	1172.73	18.38%	5.4839	99.71%	1.80	18.33%
705.2	1.189	-Al	-0.05570	1.86453	1.7663E+22	0.30%	1.86338	916.36	14.37%	5.4799	99.63%	1.40	14.31%
780.9	0.757	-Fe	-0.61707	1.24746	1.4941E+22	0.25%	1.24631	866.84	13.59%	5.4761	99.57%	1.33	13.53%
835.1	0.542	-Si	-0.57722	0.67024	1.8559E+22	0.31%	0.66910	932.11	14.61%	5.4710	99.47%	1.42	14.54%

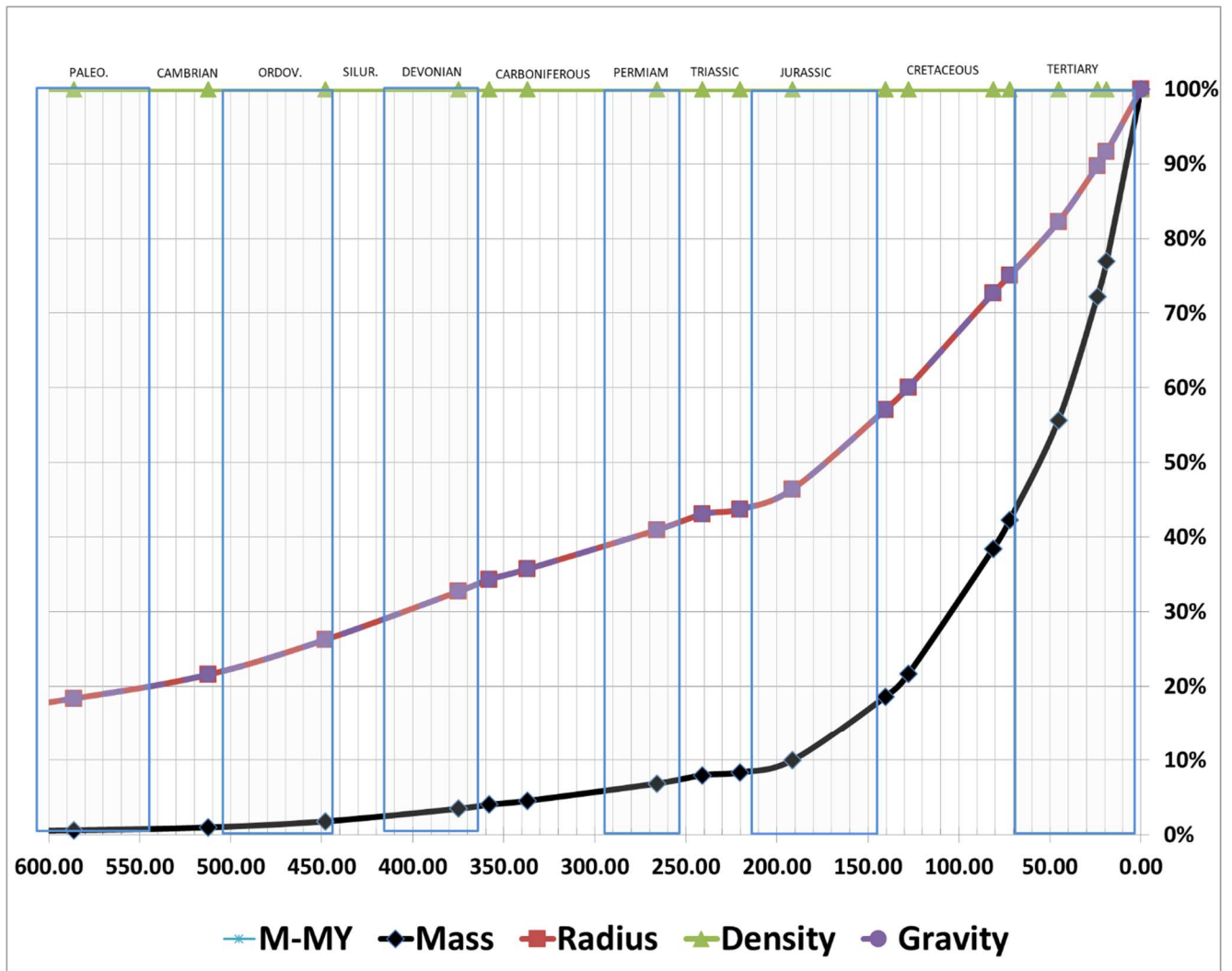


EARTH TABLE 5R -MASS FROM TABLE 4R WITH ~1,000 YEAR LAGGING RADIUS													
MY	X	Element	Rate/eV	(49.5228 MY)			(49.5238 MY)			Density (g/cc)	Current Density	Gravity (m/sec ²)	Current Gravity
				Rate of Growth	Mass (kg)	Current Mass	Rate of Growth	Radius (km)	Current Radius				
0	1	0	0	4.05379	5.98E+24	100.00%	4.05368	6378.96	100.00%	5.5000	100.00%	9.80	100.00%
18.9	0.189	-Ca	-0.04018	4.01361	4.5987E+24	76.90%	4.01350	5844.24	91.62%	5.5000	100.00%	8.98	91.62%
24.0	0.051	-Mg	-0.57862	3.43499	4.3182E+24	72.21%	3.43488	5722.91	89.72%	5.5000	100.00%	8.79	89.71%
45.4	0.214	-Al	-0.05570	3.37929	3.3276E+24	55.65%	3.37918	5246.81	82.25%	5.4999	100.00%	8.06	82.25%
72.0	0.266	-Si	-0.57722	2.80207	2.5299E+24	42.31%	2.80196	4788.73	75.07%	5.4999	100.00%	7.36	75.07%
81.2	0.092	+Ca	0.04018	2.84225	2.2981E+24	38.43%	2.84214	4637.76	72.70%	5.4998	100.00%	7.13	72.70%
127.8	0.466	+Mg	0.57862	3.42087	1.2956E+24	21.66%	3.42076	3831.26	60.06%	5.4998	100.00%	5.89	60.06%
140.5	0.127	-S	-0.09710	3.32377	1.1123E+24	18.60%	3.32366	3641.33	57.08%	5.4997	100.00%	5.60	57.08%
191.4	0.509	+Al	0.05570	3.37947	5.9845E+23	10.01%	3.37936	2961.65	46.43%	5.4996	99.99%	4.55	46.43%
220.3	0.289	-O x 75%	-1.51476	1.86471	4.9983E+23	8.36%	1.86460	2789.12	43.72%	5.4995	99.99%	4.29	43.72%
241.0	0.207	-Fe	-0.61707	1.24764	4.7745E+23	7.98%	1.24753	2746.88	43.06%	5.4994	99.99%	4.22	43.06%
266.0	0.250	+Si	0.57722	1.82486	4.1079E+23	6.87%	1.82474	2612.60	40.96%	5.4994	99.99%	4.01	40.95%
337.0	0.710	-Ca	-0.04018	1.78468	2.7228E+23	4.55%	1.78456	2277.95	35.71%	5.4991	99.98%	3.50	35.70%
358.1	0.211	-Ni	-0.03350	1.75118	2.4192E+23	4.05%	1.75106	2189.94	34.33%	5.4990	99.98%	3.36	34.32%
374.9	0.168	+Fe	0.61707	2.36825	2.093E+23	3.50%	2.36813	2086.73	32.71%	5.4990	99.98%	3.21	32.71%
448.1	0.732	+S	0.09710	2.46535	1.0812E+23	1.81%	2.46524	1674.37	26.25%	5.4988	99.98%	2.57	26.24%
512.4	0.643	+Ni	0.03350	2.49885	6.0002E+22	1.00%	2.49874	1375.96	21.57%	5.4987	99.98%	2.11	21.57%
586.3	0.739	-Mg	-0.57862	1.92023	3.7048E+22	0.62%	1.92012	1171.69	18.37%	5.4984	99.97%	1.80	18.36%
705.2	1.189	-Al	-0.05570	1.86453	1.7663E+22	0.30%	1.86442	915.35	14.35%	5.4980	99.96%	1.41	14.34%
780.9	0.757	-Fe	-0.61707	1.24746	1.4941E+22	0.25%	1.24735	865.70	13.57%	5.4977	99.96%	1.33	13.57%
835.1	0.542	-Si	-0.57722	0.67024	1.8559E+22	0.31%	0.67013	930.63	14.59%	5.4972	99.95%	1.43	14.58%

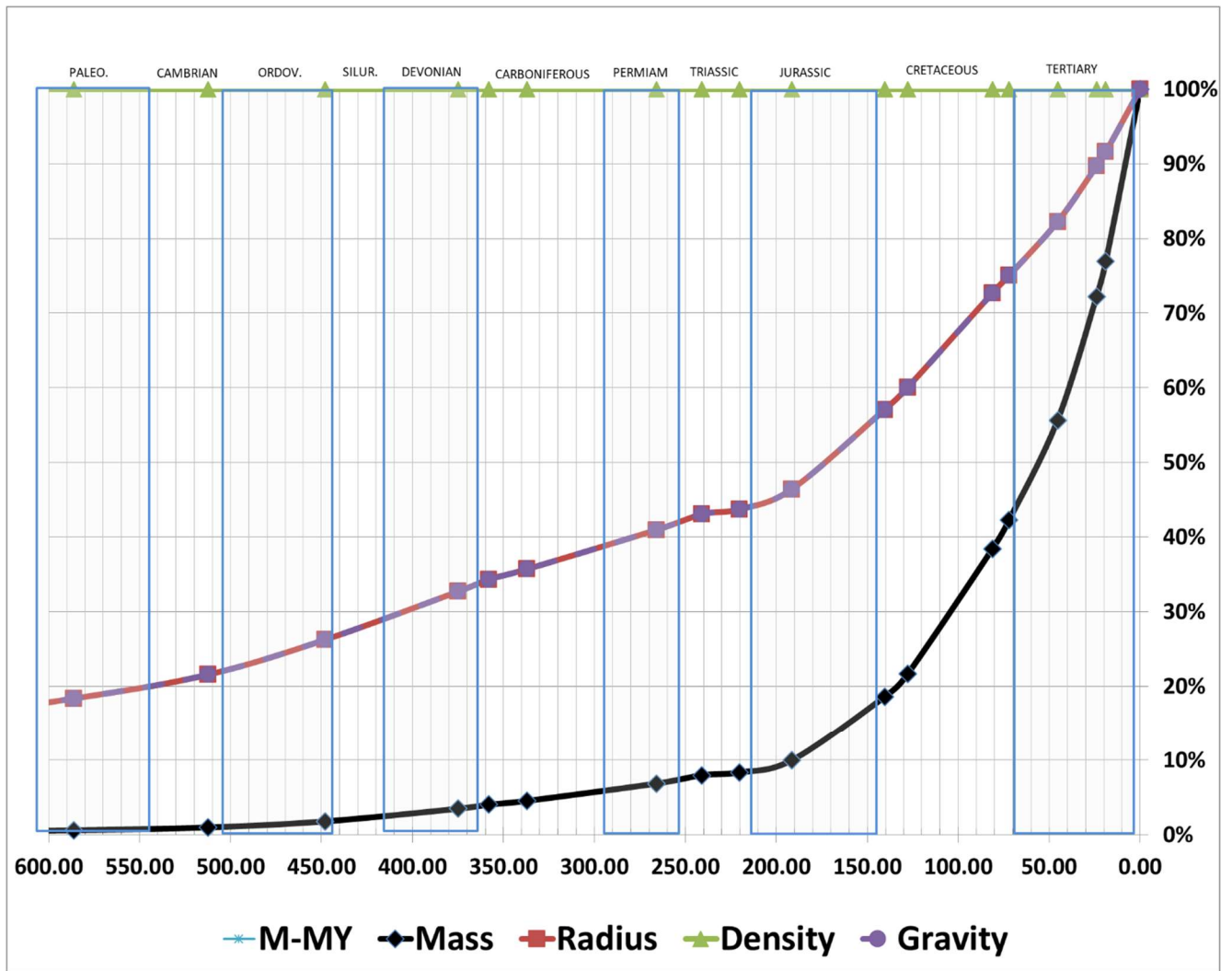


EARTH TABLE 5R -MASS FROM TABLE 4R WITH ~500 YEAR LAGGING RADIUS

MY	X	Element	Rate/eV	(49.5228 MY)			(49.5233 MY)			Density (g/cc)	Current Density	Gravity (m/sec ²)	Current Gravity
				Rate of Growth	Mass (kg)	Current Mass	Rate of Growth	Radius (km)	Current Radius				
0	1	0	0	4.05379	5.98E+24	100.00%	4.05373	6378.96	100.00%	5.5000	100.00%	9.80	100.00%
18.9	0.189	-Ca	-0.04018	4.01361	4.5987E+24	76.90%	4.01355	5844.23	91.62%	5.5000	100.00%	8.98	91.62%
24.0	0.051	-Mg	-0.57862	3.43499	4.3182E+24	72.21%	3.43493	5722.91	89.72%	5.5000	100.00%	8.79	89.72%
45.4	0.214	-Al	-0.05570	3.37929	3.3276E+24	55.65%	3.37923	5246.80	82.25%	5.5000	100.00%	8.06	82.25%
72.0	0.266	-Si	-0.57722	2.80207	2.5299E+24	42.31%	2.80201	4788.71	75.07%	5.4999	100.00%	7.36	75.07%
81.2	0.092	+Ca	0.04018	2.84225	2.2981E+24	38.43%	2.84219	4637.74	72.70%	5.4999	100.00%	7.13	72.70%
127.8	0.466	+Mg	0.57862	3.42087	1.2956E+24	21.66%	3.42081	3831.23	60.06%	5.4999	100.00%	5.89	60.06%
140.5	0.127	-S	-0.09710	3.32377	1.1123E+24	18.60%	3.32371	3641.30	57.08%	5.4999	100.00%	5.60	57.08%
191.4	0.509	+Al	0.05570	3.37947	5.9845E+23	10.01%	3.37941	2961.62	46.43%	5.4998	100.00%	4.55	46.43%
220.3	0.289	-O x 75%	-1.51476	1.86471	4.9983E+23	8.36%	1.86465	2789.09	43.72%	5.4998	100.00%	4.29	43.72%
241.0	0.207	-Fe	-0.61707	1.24764	4.7745E+23	7.98%	1.24758	2746.84	43.06%	5.4997	99.99%	4.22	43.06%
266.0	0.250	+Si	0.57722	1.82486	4.1079E+23	6.87%	1.82480	2612.56	40.96%	5.4997	99.99%	4.01	40.95%
337.0	0.710	-Ca	-0.04018	1.78468	2.7228E+23	4.55%	1.78462	2277.89	35.71%	5.4995	99.99%	3.50	35.71%
358.1	0.211	-Ni	-0.03350	1.75118	2.4192E+23	4.05%	1.75112	2189.88	34.33%	5.4995	99.99%	3.36	34.33%
374.9	0.168	+Fe	0.61707	2.36825	2.093E+23	3.50%	2.36819	2086.67	32.71%	5.4995	99.99%	3.21	32.71%
448.1	0.732	+S	0.09710	2.46535	1.0812E+23	1.81%	2.46529	1674.32	26.25%	5.4994	99.99%	2.57	26.24%
512.4	0.643	+Ni	0.03350	2.49885	6.0002E+22	1.00%	2.49879	1375.91	21.57%	5.4993	99.99%	2.11	21.57%
586.3	0.739	-Mg	-0.57862	1.92023	3.7048E+22	0.62%	1.92017	1171.64	18.37%	5.4992	99.98%	1.80	18.36%
705.2	1.189	-Al	-0.05570	1.86453	1.7663E+22	0.30%	1.86447	915.30	14.35%	5.4989	99.98%	1.41	14.35%
780.9	0.757	-Fe	-0.61707	1.24746	1.4941E+22	0.25%	1.24740	865.64	13.57%	5.4987	99.98%	1.33	13.57%
835.1	0.542	-Si	-0.57722	0.67024	1.8559E+22	0.31%	0.67018	930.55	14.59%	5.4985	99.97%	1.43	14.58%



EARTH TABLE 5R -MASS FROM TABLE 4R WITH ~100 YEAR LAGGING RADIUS													
MY	X	Element	Rate/eV	(49.5228 MY)			(49.5229 MY)			Density (g/cc)	Current Density	Gravity (m/sec ²)	Current Gravity
				Rate of Growth	Mass (kg)	Current Mass	Rate of Growth	Radius (km)	Current Radius				
0	1	0	0	4.05379	5.98E+24	100.00%	4.05378	6378.96	100.00%	5.5000	100.00%	9.80	100.00%
18.9	0.189	-Ca	-0.04018	4.01361	4.5987E+24	76.90%	4.01360	5844.23	91.62%	5.5000	100.00%	8.98	91.62%
24.0	0.051	-Mg	-0.57862	3.43499	4.3182E+24	72.21%	3.43498	5722.90	89.72%	5.5000	100.00%	8.79	89.72%
45.4	0.214	-Al	-0.05570	3.37929	3.3276E+24	55.65%	3.37928	5246.79	82.25%	5.5000	100.00%	8.06	82.25%
72.0	0.266	-Si	-0.57722	2.80207	2.5299E+24	42.31%	2.80206	4788.69	75.07%	5.5000	100.00%	7.36	75.07%
81.2	0.092	+Ca	0.04018	2.84225	2.2981E+24	38.43%	2.84224	4637.72	72.70%	5.5000	100.00%	7.13	72.70%
127.8	0.466	+Mg	0.57862	3.42087	1.2956E+24	21.66%	3.42086	3831.21	60.06%	5.5000	100.00%	5.89	60.06%
140.5	0.127	-S	-0.09710	3.32377	1.1123E+24	18.60%	3.32376	3641.28	57.08%	5.5000	100.00%	5.60	57.08%
191.4	0.509	+Al	0.05570	3.37947	5.9845E+23	10.01%	3.37946	2961.60	46.43%	5.5000	100.00%	4.55	46.43%
220.3	0.289	-O x 75%	-1.51476	1.86471	4.9983E+23	8.36%	1.86470	2789.06	43.72%	5.5000	100.00%	4.29	43.72%
241.0	0.207	-Fe	-0.61707	1.24764	4.7745E+23	7.98%	1.24763	2746.80	43.06%	5.5000	100.00%	4.22	43.06%
266.0	0.250	+Si	0.57722	1.82486	4.1079E+23	6.87%	1.82485	2612.51	40.96%	5.4999	100.00%	4.01	40.95%
337.0	0.710	-Ca	-0.04018	1.78468	2.7228E+23	4.55%	1.78467	2277.84	35.71%	5.4999	100.00%	3.50	35.71%
358.1	0.211	-Ni	-0.03350	1.75118	2.4192E+23	4.05%	1.75117	2189.82	34.33%	5.4999	100.00%	3.36	34.33%
374.9	0.168	+Fe	0.61707	2.36825	2.093E+23	3.50%	2.36824	2086.61	32.71%	5.4999	100.00%	3.21	32.71%
448.1	0.732	+S	0.09710	2.46535	1.0812E+23	1.81%	2.46534	1674.26	26.25%	5.4999	100.00%	2.57	26.25%
512.4	0.643	+Ni	0.03350	2.49885	6.0002E+22	1.00%	2.49884	1375.86	21.57%	5.4999	100.00%	2.11	21.57%
586.3	0.739	-Mg	-0.57862	1.92023	3.7048E+22	0.62%	1.92022	1171.59	18.37%	5.4999	100.00%	1.80	18.37%
705.2	1.189	-Al	-0.05570	1.86453	1.7663E+22	0.30%	1.86452	915.25	14.35%	5.4998	100.00%	1.41	14.35%
780.9	0.757	-Fe	-0.61707	1.24746	1.4941E+22	0.25%	1.24745	865.59	13.57%	5.4998	100.00%	1.33	13.57%
835.1	0.542	-Si	-0.57722	0.67024	1.8559E+22	0.31%	0.67023	930.48	14.59%	5.4997	100.00%	1.43	14.59%



EARTH TABLE 5R -MASS FROM TABLE 4R WITH ~100 YEAR LAGGING RADIUS													
MY	X	Element	Rate/eV	(49.5228 MY)			(49.52281 MY)			Density (g/cc)	Current Density	Gravity (m/sec ²)	Current Gravity
				Rate of Growth	Mass (kg)	Current Mass	Rate of Growth	Radius (km)	Current Radius				
0	1	0	0	4.05379	5.98E+24	100.00%	4.05379	6378.96	100.00%	5.5000	100.00%	9.80	100.00%
18.9	0.189	-Ca	-0.04018	4.01361	4.5987E+24	76.90%	4.01361	5844.22	91.62%	5.5000	100.00%	8.98	91.62%
24.0	0.051	-Mg	-0.57862	3.43499	4.3182E+24	72.21%	3.43499	5722.90	89.72%	5.5000	100.00%	8.79	89.72%
45.4	0.214	-Al	-0.05570	3.37929	3.3276E+24	55.65%	3.37929	5246.79	82.25%	5.5000	100.00%	8.06	82.25%
72.0	0.266	-Si	-0.57722	2.80207	2.5299E+24	42.31%	2.80207	4788.69	75.07%	5.5000	100.00%	7.36	75.07%
81.2	0.092	+Ca	0.04018	2.84225	2.2981E+24	38.43%	2.84225	4637.72	72.70%	5.5000	100.00%	7.13	72.70%
127.8	0.466	+Mg	0.57862	3.42087	1.2956E+24	21.66%	3.42087	3831.20	60.06%	5.5000	100.00%	5.89	60.06%
140.5	0.127	-S	-0.09710	3.32377	1.1123E+24	18.60%	3.32377	3641.27	57.08%	5.5000	100.00%	5.60	57.08%
191.4	0.509	+Al	0.05570	3.37947	5.9845E+23	10.01%	3.37947	2961.59	46.43%	5.5000	100.00%	4.55	46.43%
220.3	0.289	-O x 75%	-1.51476	1.86471	4.9983E+23	8.36%	1.86471	2789.05	43.72%	5.5000	100.00%	4.29	43.72%
241.0	0.207	-Fe	-0.61707	1.24764	4.7745E+23	7.98%	1.24764	2746.79	43.06%	5.5000	100.00%	4.22	43.06%
266.0	0.250	+Si	0.57722	1.82486	4.1079E+23	6.87%	1.82486	2612.50	40.96%	5.5000	100.00%	4.01	40.96%
337.0	0.710	-Ca	-0.04018	1.78468	2.7228E+23	4.55%	1.78468	2277.83	35.71%	5.5000	100.00%	3.50	35.71%
358.1	0.211	-Ni	-0.03350	1.75118	2.4192E+23	4.05%	1.75118	2189.81	34.33%	5.5000	100.00%	3.37	34.33%
374.9	0.168	+Fe	0.61707	2.36825	2.093E+23	3.50%	2.36825	2086.60	32.71%	5.5000	100.00%	3.21	32.71%
448.1	0.732	+S	0.09710	2.46535	1.0812E+23	1.81%	2.46535	1674.25	26.25%	5.5000	100.00%	2.57	26.25%
512.4	0.643	+Ni	0.03350	2.49885	6.0002E+22	1.00%	2.49885	1375.85	21.57%	5.5000	100.00%	2.11	21.57%
586.3	0.739	-Mg	-0.57862	1.92023	3.7048E+22	0.62%	1.92023	1171.58	18.37%	5.5000	100.00%	1.80	18.37%
705.2	1.189	-Al	-0.05570	1.86453	1.7663E+22	0.30%	1.86453	915.24	14.35%	5.5000	100.00%	1.41	14.35%
780.9	0.757	-Fe	-0.61707	1.24746	1.4941E+22	0.25%	1.24746	865.58	13.57%	5.5000	100.00%	1.33	13.57%
835.1	0.542	-Si	-0.57722	0.67024	1.8559E+22	0.31%	0.67024	930.47	14.59%	5.5000	100.00%	1.43	14.59%