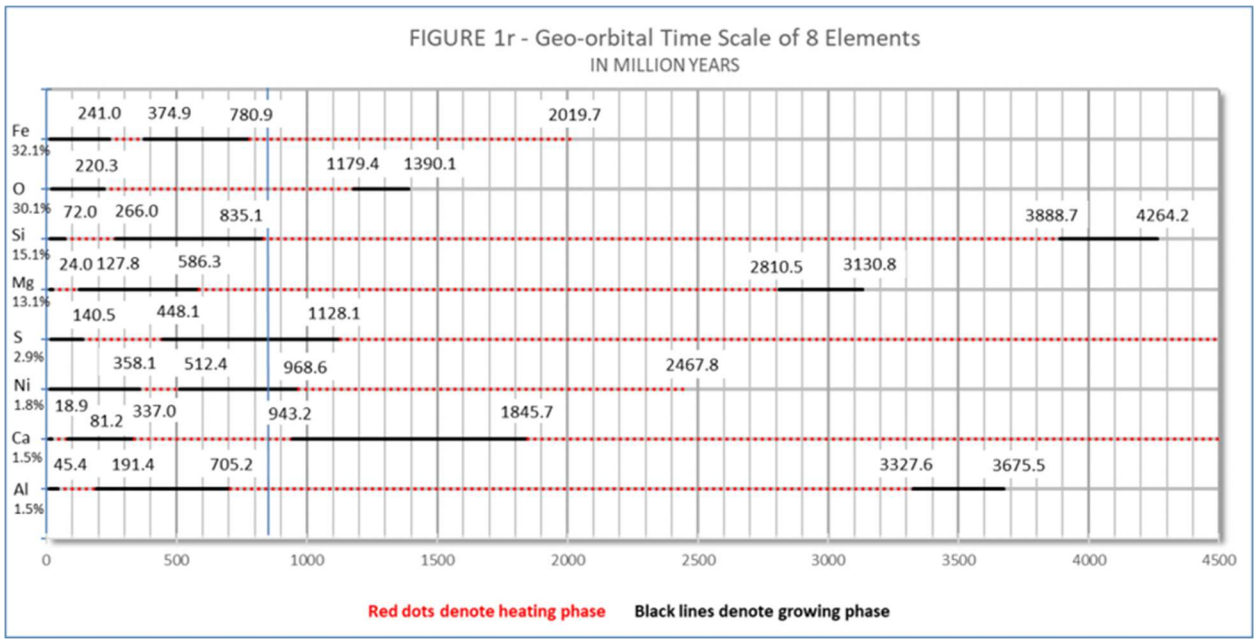
Quantifying the Heat from Earth's 8 Abundance Elements

By Eugene A. Ellis (March 2023)(updated July 2023)

The problem encountered in measuring the heat produced is that we don't know how many atoms of an element equals the elements mass. Here, one atom is used as the absolute minimum to be multiplied in the future when or if that number becomes known.

Table 6a uses Slide 8 (from https://www.academia.edu/93713917/The_Ionic_Growing_Sun_Earth_and_Moon) to simply count the number of red lines (heating) at the various phase changing points starting at 4500 Ma. Table 6a produces a total heat output from the 8 abundance elements on earth of 19,331.6 eV *per atom* or 224,333,552.2 Kelvin *per atom.*

This method assumes all the elements are heating alike. However, they are not heating at the same rate. All the elements at a place decay (age) at the same rate, but do not grow or heat at the same rate. The heating and growing rates change each time an element changes phase from growing to heating or from heating to growing.



Slide 8

Note: The numbers on the chart are the effective Ionization Potential (I.P.) phase changing times (in million years) indicating the planet was predominantly heating until ~850 Ma. The I.P. Limit of oxygen (871.387 eV) indicates water initially formed ~1400 Ma.

For basic information about Ionization Potentials see:
https://nvlpubs.nist.gov/nistpubs/Legacy/NSRDS/nbsnsrds34.pdf

Table 6a – Elemental Heating Time

eV / MYA		eV / MYA		# of elements heating		Heat eV (per MY)
0.000			x		=	0.0
18.900	-	0.000	x	0	=	0.0
24.000	-	18.900	x	1	=	5.1
45.400	-	24.000	x	2	=	42.8
72.000	-	45.400	x	3	=	79.8
81.200	-	72.000	x	4	=	36.8
127.800	-	81.200	x	3	=	139.8
140.500	-	127.800	x	2	=	25.4
191.400	-	140.500	x	3	=	152.7
220.300	-	191.400	x	2	=	57.8
241.000	-	220.300	x	3	=	62.1
266.000	-	241.000	x	4	=	100.0
337.000	-	266.000	x	3	=	213.0
358.100	-	337.000	x	4	=	84.4
374.900	-	358.100	x	5	=	84.0
448.100	-	374.900	x	4	=	292.8
512.400	-	448.100	x	3	=	192.9
586.300	-	512.400	x	2	=	147.8
705.200	-	586.300	x	3	=	356.7
780.900	-	705.200	x	4	=	302.8
835.100	-	780.900	x	5	=	271.0
943.200	-	835.100	x	6	=	648.6
968.600	-	943.200	x	5	=	127.0
1128.100	-	968.600	x	6	=	957.0
1179.400	-	1128.100	x	7	=	359.1
1390.100	-	1179.400	x	6	=	1264.2
1845.700	-	1390.100	x	6	=	2733.6
2019.700	-	1845.700	x	7	=	1218.0
2467.800	-	2019.700	x	6	=	2688.6
2810.500	-	2467.800	x	5	=	1713.5
3130.800	-	2810.500	x	4	=	1281.2
3327.600	-	3130.800	x	4	=	787.2
3675.500	-	3327.600	x	3	=	1043.7
3888.700	-	3675.500	x	3	=	639.6
4264.200	-	3888.700	x	2	=	751.0
4500.000	-	4264.200	x	2	=	471.6

	19331.6	eV
x	11604.5	
	224,333,552.2	Kelvin

Table 6b uses the elements of Charlotte Moore's IP Chart (NBS-34; Table 1) with the percentages for growing and heating but does not consider the abundance of each element . This table indicates totals of 14,836.21 eV *per atom* for heating and 4,751.91 eV *per atom* for growing. Here, ~76% of the abundance element's energy converts to heat while ~24% converts to additional mass.

A previously mentioned concept states that Charlotte Moore's IP Chart (NBS-34; Table 1) is universal and applies to all the places in the universe. This proposition is

demonstrated in Slides 12 and 13 for the earth, sun, and moon where the horizontal x-axis (Universal Time in million years) is the same at the 3 different places (slides are also shown below on last 2 pages). More importantly, one should note that the rate of decay (ageing rate) of the ionization potentials listed on Charlotte's Chart equates energy with time; one electron-volt per million years (1 eV / MY).

This means the quantity of energy (in eV) and the IP time of occurrence (in MY) are the same. For example, carbon at 489.981 eV initially ionized 489.981 Ma and was heating for 317.525 MY between 392.077 eV and 64.492 eV on the universal clock. On earth, with an ageing rate of 1 eV per 1.5952 MY, carbon at 781.615 eV initially ionized 781.615 Ma and was heating for 522.563 MY between 625.441 eV and 102.878 eV. When ignoring the ageing process, the elements are following Charlotte's schedule.

Hydrogen, the most abundant element in the universe, initially ionized 13.598 Ma on the universal clock. On earth, this event occurred 21.6915 Ma (13.598 eV x earth's ageing rate of 1.5952 MY/eV). On the moon, this same event occurred 27.699 Ma (13.598 x 2.0348 MY/eV) and on the sun, 112.72 Ma (13.598 eV x 8.29 MY/eV). The different times at the different places with different ageing rates assures that the schedule shown on Charlotte's universal chart remains intact. The elements at different places and times, simply follows Charlotte's schedule by adopting local time and by including the quantity of each abundance element.

Table 6b - Universal Heating and Growing Time

Z	Element	Total Amount (eV)	% Heating	% Growing	Amount Heating	Amount Growing
26	Fe	1266.100	67.97	32.03	860.57	405.53
8	O	871.387	68.99	31.01	601.17	270.22
14	Si	2673.110	76.16	23.84	2035.84	637.27
12	Mg	1962.610	74.36	25.64	1459.40	503.21
16	S	3494.100	77.52	22.48	2708.63	785.47
13	Al	2304.080	75.32	24.68	1735.43	568.65
28	Ni	1547.000	67.49	32.51	1044.07	502.93
20	Ca	5469.740	80.28	19.72	4391.11	1078.63
					14836.21	4751.91
					total	**19588.13**
			Universal Time =		75.74%	24.26%

NBS-34 Table 1, pages 2 and 3 -Ionization Potentials and Limits (in eV) (First 30 Elements only)

Z	Element	Spectrum																				Z	%Heating	%Growing
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI			
1	H	13.598																					1	0.00%	100.00%
2	He	24.587	54.416																				2	45.18%	54.82%
3	Li	5.392	75.638	122.451																			3	57.37%	42.63%
4	Be	9.322	18.211	153.893	217.713																		4	62.32%	37.68%
5	B	8.298	25.154	37.93	259.368	340.217																	5	65.09%	34.91%
6	C	11.26	24.383	47.887	64.492	392.077	489.981																6	66.86%	33.14%
7	N	14.534	29.601	47.448	77.472	97.888	522.057	667.029															7	63.59%	36.41%
8	O	13.618	35.116	54.934	77.412	113.896	138.116	739.315	871.387														8	68.99%	31.01%
9	F	17.422	34.97	62.707	87.138	114.24	157.161	185.182	953.886	1103.09													9	69.69%	30.31%
10	Ne	21.564	40.962	63.45	97.11	126.21	157.93	207.27	239.09	1195.8	1362.16												10	71.82%	28.18%
11	Na	5.139	47.286	71.64	98.91	138.39	172.15	208.47	264.18	299.87	1465.09	1648.66											11	73.23%	26.77%
12	Mg	7.646	15.035	80.143	109.24	141.26	186.5	224.94	265.9	327.95	367.53	1761.8	1962.61										12	74.36%	25.64%
13	Al	5.986	18.828	28.447	119.99	153.71	190.47	241.43	284.59	330.21	398.57	442.07	2085.98	2304.08									13	75.32%	24.68%
14	Si	8.151	16.345	33.492	45.141	166.77	205.05	246.52	303.17	351.1	401.43	476.06	523.5	2437.68	2673.11								14	76.16%	23.84%
15	P	10.486	19.725	30.18	51.37	65.023	220.43	263.22	309.41	371.73	424.5	479.57	560.41	611.85	2816.94	3069.76							15	76.90%	23.10%
16	S	13.36	23.33	34.83	47.3	72.68	89.049	280.93	328.23	379.1	447.09	504.78	564.65	651.63	707.14	3223.84	3494.1						16	77.52%	22.48%
17	Cl	12.967	23.81	39.61	53.46	67.8	97.03	114.193	348.28	400.05	455.62	529.26	591.97	656.69	749.74	809.39	3658.43	3946.19					17	78.13%	21.87%
18	Ar	15.759	27.629	40.74	59.81	75.02	91.007	124.319	143.456	422.44	478.68	538.95	618.24	686.09	755.73	854.75	918	4120.78	4426.11				18	79.02%	20.98%
19	K	4.341	31.625	45.72	60.91	82.66	100	117.56	154.86	175.814	503.44	564.13	292.09	714.02	787.13	861.77	968	1034	4610.96	4933.93			19	79.69%	20.31%
20	Ca	6.113	11.871	50.908	67.1	84.41	108.78	127.7	147.24	188.54	211.27	591.25	656.39	726.03	816.61	895.12	947	1087	1157	5129.05	5469.74		20	80.28%	19.72%
21	Se	6.54	12.8	24.76	73.47	91.66	111.1	138	158.7	180.02	225.32	249.832	685.89	755.47	829.79	926							21	52.35%	47.65%
22	Ti	6.82	13.58	27.491	43.266	99.22	119.36	140.8	168.5	193.2	215.91	265.23	291.497	787.33	861.33	940.36							22	58.68%	41.32%
23	V	6.74	14.65	29.31	46.707	65.23	128.12	150.17	173.7	205.8	230.5	255.04	308.25	336.267	895.58	974.02							23	63.88%	36.12%
24	Cr	6.766	16.5	30.96	49.1	69.3	90.56	161.1	184.7	209.3	244.4	270.8	298	355	384.3	1010.64							24	68.95%	31.05%
25	Mn	7.435	15.64	33.667	51.2	72.4	95	119.27	196.46	221.8	243.3	286	314.4	343.6	404	435.3	1136.2						25	68.48%	31.52%
26	Fe	7.87	16.18	30.651	54.8	75	99	125	151.06	235.04	262.1	290.4	330.8	361	392.2	457	489.5	1266.1					26	67.97%	32.03%
27	Co	7.86	17.06	33.5	51.3	79.5	102	129	157	186.13	276	305	336	379	411	444	512	546.8	1403				27	67.43%	32.57%
28	Ni	7.635	18.168	34.17	54.9	75.5	108	133	162	193	224.5	321.2	352	384	430	464	499	571	607.2	1547			28	67.49%	32.51%
29	Cu	7.726	20.292	36.83	55.2	49.9	103	139	166	199	232	266	368.8	401	435	484	520	557	633	671	1698		29	67.28%	32.72%
30	Zn	9.394	17.964	39.722	59.4	82.6	108	134	174	203	238	274	310.8	491.7	454	490	542	579	619	698	738	1856	30	71.16%	28.84%

Slide 4

Table 6c uses the last 2 columns of Slide 5, the heating and growing amounts of each abundance element on earth from the starting time of the oldest earth element (Calcium @ 8,725 Ma). It includes the changing growth rates and incorporates the abundance percentages for the 8-elements comprising 98.8% of earth's matter. This table indicates totals of 1,823.80 eV *per atom* for heating and 836.34 eV *per atom* for growing. In other words, ~69% of the abundance element's intrinsic energy converts to heat while ~31% converts to additional mass. These numbers, like the numbers in Table 6b, are remarkably close to the Standard Model amounts attributed to dark energy and dark matter, neither of which have been found. It appears that the Standard Model percentages connects better with Charlotte's universal chart where the ageing rates are not evaluated or used.

The Ionic Growing Earth appropriately defines dark matter as occurring before an element initially ionizes (at the NBS-34 Ionization Limit) and after the element's intrinsic energy is depleted (zero eV) when no frequency and wavelength pulsation signals are detectable. The IGE also defines matter as energetic elemental atoms where energy decreases by converting to equivalent mass or heat. The increasing mass and heat are balanced by a decrease in energy. Technically, matter is unchanging as its internal energy converts to mass (conservation of mass and energy). Presently, all the elements are pulsating frequency and wavelength signals indicating there is no dark matter, mass-wise or energy-wise, emanating from earth's elements.

QUANTIFYING THE HEAT FROM EARTH'S 8 ABUNDANCE ELEMENTS

(added 7/2023)

Table 6c - Earth Heating and Growing Time						
Z	Element	Abundance %	Amount Heating (eV)	Amount Growing (eV)	Amount Heating	Amount Growing
26	Fe	32.10	1372.80	646.89	440.67	207.65
8	O	30.10	959.03	431.00	288.67	129.73
14	Si	15.10	3247.57	2016.63	490.38	304.51
12	Mg	13.90	2328.00	802.76	323.59	111.58
16	S	2.90	4320.72	1253.06	125.30	36.34
13	Al	1.40	2768.40	907.07	38.76	12.70
28	Ni	1.80	1665.60	802.17	29.98	14.44
20	Ca	1.50	7004.67	1720.70	105.07	25.81
					1842.42	842.76
		98.80			**total**	**2685.19**
			Total Earth Time =		68.61%	31.39%

TIME TABLE 1R - Earth's abundance elements

TIME (in MY) of the Ionization Potentials (energy levels) listed in Table 1R

Z	Element	Spectrum																				Z	Heating	Growing
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI			
1	H	21.6915																					1	0.00	21.69
2	He	39.2212	86.8044																				2	39.22	47.58
3	Li	8.60132	120.658	195.334																			3	112.06	83.28
4	Be	14.8705	29.0502	245.49	347.296																		4	216.44	130.86
5	B	13.237	40.1257	60.5059	413.744	542.714																	5	353.24	189.48
6	C	17.962	38.8958	76.3893	102.878	625.441	781.618																6	522.56	259.05
7	N	23.1846	47.2195	75.689	123.583	156.151	832.785	1064.04															7	676.63	387.41
8	O	21.7234	56.017	87.6307	123.488	181.687	220.323	1179.36	1390.04														8	959.03	431.00
9	F	27.7916	55.7841	100.03	139.003	182.236	250.703	295.402	1521.64	1759.65													9	1226.24	533.41
10	Ne	34.3989	65.3426	101.215	154.91	201.33	251.93	330.637	381.396	1907.54	2172.92												10	1560.54	612.39
11	Na	8.19773	75.4306	114.28	157.781	220.76	274.614	332.551	421.42	478.353	2337.11	2629.94											11	1925.99	703.95
12	Mg	12.1969	23.9838	127.844	174.26	225.338	297.505	358.824	424.164	523.146	586.284	2810.43	3130.76										12	2328.00	802.76
13	Al	9.54887	30.0344	45.3787	191.408	245.198	303.838	385.129	453.978	526.751	635.799	705.19	3327.56	3675.47									13	2768.40	907.07
14	Si	13.0025	26.0735	53.4264	72.0089	266.032	327.096	393.249	483.617	560.075	640.361	759.411	835.087	3888.58	4264.14								14	3247.52	1016.63
15	P	16.7273	31.4653	48.1431	81.9454	103.725	351.63	419.889	493.571	592.984	677.162	765.01	893.966	976.023	4493.59	4896.88							15	3765.47	1131.41
16	S	21.3119	37.216	55.5608	75.453	115.939	142.051	448.14	523.592	604.74	713.198	805.225	900.73	1039.48	1128.03	5142.66	5573.79						16	4320.72	1253.06
17	Cl	20.685	37.9817	63.1859	85.2794	108.155	154.782	182.161	555.576	638.16	726.805	844.276	944.311	1047.55	1195.99	1291.14	5835.92	6294.97					17	4918.20	1376.77
18	Ar	25.1388	44.0738	64.9884	95.4089	119.672	145.174	198.314	228.841	673.876	763.59	859.733	986.216	1094.45	1205.54	1363.5	1464.39	6573.47	7060.54				18	5579.25	1481.29
19	K	6.92476	50.4482	72.9325	97.1636	131.859	159.52	187.532	247.033	280.458	803.087	899.9	465.942	1139	1255.63	1374.7	1544.15	1649.44	7355.4	7870.61			19	6272.11	1598.50
20	Ca	9.75146	18.9366	81.2084	107.038	134.651	173.526	203.707	234.877	300.759	337.018	943.162	1047.07	1158.16	1302.66	1427.9	1510.65	1733.98	1845.65	8181.85	8725.33		20	7004.62	1720.70
21	Se	10.4326	20.4186	39.4972	117.199	146.216	177.227	220.138	253.158	287.168	359.43	398.532	1094.13	1205.13	1323.68	1477.16							21	773.30	703.85
22	Ti	10.8793	21.6628	43.8536	69.0179	158.276	190.403	224.604	268.791	308.193	344.42	423.095	464.996	1255.95	1373.99	1500.06							22	880.21	619.85
23	V	10.7516	23.3697	46.7553	74.507	104.055	204.377	239.551	277.086	328.292	367.694	406.84	491.72	536.413	1428.63	1553.76							23	992.54	561.22
24	Cr	10.7931	26.3208	49.3874	78.3243	110.547	144.461	256.987	294.633	333.875	389.867	431.98	475.37	566.296	613.035	1612.17							24	1111.66	500.51
25	Mn	11.8603	24.9489	53.7056	81.6742	115.492	151.544	190.26	313.393	353.815	388.112	456.227	501.531	548.111	644.461	694.391	1812.47						25	1241.21	571.26
26	Fe	12.5542	25.8103	48.8945	87.417	119.64	157.925	199.4	240.971	374.936	418.102	463.246	527.692	575.867	625.637	729.006	780.85	2019.68					26	1372.80	646.89
27	Co	12.5383	27.2141	53.4392	81.8338	126.818	162.71	205.781	250.446	296.915	440.275	486.536	535.987	604.581	655.627	708.269	816.742	872.255	2238.07				27	1509.17	728.89
28	Ni	12.1794	28.9816	54.508	87.5765	120.438	172.282	212.162	258.422	307.874	358.122	512.378	561.51	612.557	685.936	740.173	796.005	910.859	968.605	2467.77			28	1665.60	802.17
29	Cu	12.3245	32.3698	58.7512	88.055	79.6005	164.306	221.733	264.803	317.445	370.086	424.323	588.31	639.675	693.912	772.077	829.504	888.526	1009.76	1070.38	2708.65		29	1822.30	886.35
30	Zn	14.9853	28.6562	63.3645	94.7549	131.764	172.282	213.757	277.565	323.826	379.658	437.085	495.788	784.36	724.221	781.648	864.598	923.621	987.429	1113.45	1177.26	2960.69	30	2106.71	853.98

The energy decay rate (1ev/1.5952MY) is calculated from the Atomic Mass and the amounts of the 8 elements that comprise 98.8% of Earth's mass. Within each element, the decaying energy is converting to additional mass or to heat (increasing entropy) when in the shaded areas of the chart.

Slide 5

QUANTIFYING THE HEAT FROM MOON'S 6 ABUNDANCE ELEMENTS

(added 7/2023)

Table 6c - Moon Heating and Growing Time						
Z	Element	Abundance %	Amount Heating (eV)	Amount Growing (eV)	Amount Heating	Amount Growing
26	Fe	2.30	1751.11	825.15	40.28	18.98
8	O	60.90	1223.32	549.78	745.00	334.82
14	Si	16.40	4142.46	1296.78	679.36	212.67
12	Mg	4.20	2969.55	1023.98	124.72	43.01
13	Al	9.40	3531.31	1157.04	331.94	108.76
20	Ca	5.80	8934.93	2194.89	518.23	127.30
					2439.53	845.54
		99.00			**total**	**3285.07**
			Total Moon Time =		74.26%	25.74%

TABLE 1R - Moon's abundance elements

NBS-34 Table 1, pages 2 and 3 -Ionization Potentials and Limits (in eV) (First 30 Elements only)

Z	Element	Spectrum I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Z	Heating	Growing
1	H	27.6692																					1	0.00	27.66921
2	He	50.0296	110.726																				2	50.03	60.69605
3	Li	10.9716	153.908	249.163																			3	142.94	106.2267
4	Be	18.9684	37.0557	313.141	443.002																		4	276.09	166.9167
5	B	16.8848	51.1834	77.18	527.762	692.274																	5	450.58	241.6915
6	C	22.9118	49.6145	97.4405	131.228	797.798	997.013																6	666.57	330.4434
7	N	29.5738	60.2321	96.5472	157.64	199.183	1062.28	1357.27															7	863.10	494.1715
8	O	27.7099	71.454	111.78	157.518	231.756	281.038	1504.36	1773.1														8	1223.32	549.7785
9	F	35.4503	71.157	127.596	177.308	232.456	319.791	376.808	1940.97	2244.57													9	1564.16	680.4066
10	Ne	43.8784	83.3495	129.108	197.599	256.812	321.356	421.753	486.5	2433.21	2771.73												10	1990.59	781.1455
11	Na	10.4568	96.2176	145.773	201.262	281.596	350.291	424.195	537.553	610.175	2981.17	3354.69											11	2456.75	897.9389
12	Mg	15.5581	30.5932	163.075	222.282	287.436	379.49	457.708	541.053	667.313	747.85	3584.91	3993.52										12	2969.55	1023.979
13	Al	12.1803	38.3112	57.884	244.156	312.769	387.568	491.262	579.084	671.911	811.01	899.524	4244.56	4688.34									13	3531.31	1157.036
14	Si	16.5857	33.2588	68.1495	91.8529	339.344	417.236	501.619	616.89	714.418	816.83	968.687	1065.22	4960.18	5439.24								14	4142.46	1296.784
15	P	21.3369	40.1364	61.4103	104.528	132.309	448.531	535.6	629.587	756.396	863.773	975.829	1140.32	1244.99	5731.92	6246.35							15	4803.15	1443.206
16	S	27.1849	47.4719	70.8721	96.246	147.889	181.197	571.636	667.882	771.393	909.739	1027.13	1148.95	1325.94	1438.89	6559.86	7109.79						16	5511.41	1598.38
17	Cl	26.3853	48.4486	80.5984	108.78	137.959	197.437	232.36	708.68	814.022	927.096	1076.94	1204.54	1336.23	1525.57	1646.95	7444.16	8029.71					17	6273.54	1756.177
18	Ar	32.0664	56.2195	82.8978	121.701	152.651	185.181	252.964	291.904	859.581	974.018	1096.66	1257.99	1396.06	1537.76	1739.25	1867.95	8384.96	9006.26				18	7116.76	1889.501
19	K	8.83307	64.3506	93.0311	123.94	168.197	203.48	239.211	315.109	357.746	1024.4	1147.89	594.345	1452.89	1601.65	1753.53	1969.69	2103.98	9382.37	10039.6			19	8000.56	2039.004
20	Ca	12.4387	24.1551	103.588	136.535	171.757	221.346	259.844	299.604	383.641	429.892	1203.08	1335.62	1477.33	1661.64	1821.39	1926.96	2211.83	2354.26	10436.6	11129.8		20	8934.93	2194.89
21	Se	13.3076	26.0454	50.3816	149.497	186.51	226.066	280.802	322.923	366.305	458.481	508.358	1395.65	1537.23	1688.46	1884.22							21	986.41	897.8189
22	Ti	13.8773	27.6326	55.9387	88.0377	201.893	242.874	286.5	342.864	393.123	439.334	539.69	593.138	1602.06	1752.63	1913.44							22	1122.78	790.6683
23	V	13.7146	29.8098	59.64	95.0394	132.73	260.699	305.566	353.445	418.762	469.021	518.955	627.227	684.236	1822.33	1981.94							23	1266.06	715.8772
24	Cr	13.7675	33.5742	62.9974	99.9087	141.012	184.271	327.806	375.828	425.884	497.305	551.024	606.37	722.354	781.974	2056.45							24	1418.01	638.4388
25	Mn	15.1287	31.8243	68.5056	104.182	147.32	193.306	242.691	399.757	451.319	495.067	581.953	639.741	699.157	822.059	885.748	2311.94						25	1583.26	728.6822
26	Fe	16.0139	32.9231	62.3687	111.507	152.61	201.445	254.35	307.377	478.259	533.321	590.906	673.112	734.563	798.049	929.904	996.035	2576.26					26	1751.11	825.1521
27	Co	15.9935	34.7137	68.1658	104.385	161.767	207.55	262.489	319.464	378.737	561.605	620.614	683.693	771.189	836.303	903.451	1041.82	1112.63	2854.82				27	1925.06	929.7612
28	Ni	15.5357	36.9682	69.5291	111.711	153.627	219.758	270.628	329.638	392.716	456.813	653.578	716.25	781.363	874.964	944.147	1015.37	1161.87	1235.53	3147.84			28	2124.61	1023.23
29	Cu	15.7209	41.2902	74.9417	112.321	101.537	209.584	282.837	337.777	404.925	472.074	541.257	750.434	815.955	885.138	984.843	1058.1	1133.38	1288.03	1365.35	3455.09		29	2324.49	1130.604
30	Zn	19.1149	36.5531	80.8263	120.867	168.074	219.758	272.663	354.055	413.064	484.282	557.535	632.416	1000.51	923.799	997.052	1102.86	1178.15	1259.54	1420.29	1501.68	3776.59	30	2687.27	1089.314

The energy decay rate (1ev/2.0348) is calculated from the Atomic Mass and the amounts of the 6 elements that comprise 99% of Moon's mass. Within each element, the decaying energy is converting to additional mass or to heat (increasing entropy) when in the shaded areas of the chart.

QUANTIFYING THE HEAT FROM SUN'S 5 ABUNDANCE ELEMENTS

(added 7/2023)

Table 6c - Sun Heating and Growing Time						
Z	Element	Abundance %	Amount Heating (eV)	Amount Growing (eV)	Amount Heating	Amount Growing
1	H	71.00	0.00	112.73	0.00	80.04
8	O	0.97	4983.94	2239.86	48.34	21.73
14	Si	0.10	16876.82	5283.24	16.88	5.28
2	He	27.10	203.83	247.28	55.24	67.01
6	C	0.40	2715.68	1346.26	10.86	5.39
					131.32	179.44
		99.57			**total**	**310.77**
			Total Sun Time =		42.26%	57.74%

TABLE 1R - Sun's abundance elements

NBS-34 Table 1, pages 2 and 3 -Ionization Potentials and Limits (in eV) (First 30 Elements only)

Z	Element	Spectrum																				Z	Heating	Growing
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI			
1	H	112.727																					1	0.00	112.73
2	He	203.826	451.109																				2	203.83	247.28
3	Li	44.6997	627.039	1015.12																			3	582.34	432.78
4	Be	77.2794	150.969	1275.77	1804.84																		4	1124.80	680.04
5	B	68.7904	208.527	314.44	2150.16	2820.4																	5	1835.72	984.68
6	C	93.3454	202.135	396.983	534.639	3250.32	4061.94																6	2715.68	1346.26
7	N	120.487	245.392	393.344	642.243	811.492	4327.85	5529.67															7	3516.36	2013.31
8	O	112.893	291.112	455.403	641.745	944.198	1144.98	6128.92	7223.8														8	4983.94	2239.86
9	F	144.428	289.901	519.841	722.374	947.05	1302.86	1535.16	7907.71	9144.61													9	6372.56	2772.05
10	Ne	178.766	339.575	526.001	805.042	1046.28	1309.24	1718.27	1982.06	9913.16	11292.3												10	8109.87	3182.47
11	Na	42.6023	392.001	593.896	819.964	1147.25	1427.12	1728.22	2190.05	2485.92	12145.6	13667.4											11	10009.08	3658.30
12	Mg	63.3853	124.64	664.385	905.6	1171.05	1546.09	1864.75	2204.31	2718.71	3046.82	14605.3	16270.1										12	12098.26	4171.80
13	Al	49.6239	156.084	235.826	994.717	1274.26	1579	2001.45	2359.25	2737.44	3304.15	3664.76	17292.8	19100.8									13	14386.93	4713.89
14	Si	67.5718	135.5	277.649	374.219	1382.52	1699.86	2043.65	2513.28	2910.62	3327.85	3946.54	4339.82	20208.3	22160.1								14	16876.82	5283.24
15	P	86.9289	163.52	250.192	425.857	539.041	1827.36	2182.09	2565.01	3081.64	3519.11	3975.64	4645.8	5072.24	23352.5	25448.3							15	19568.55	5879.78
16	S	110.754	193.406	288.741	392.117	602.517	738.216	2328.91	2721.03	3142.74	3706.38	4184.63	4680.95	5402.01	5862.19	26725.6	28966.1						16	22454.10	6511.98
17	Cl	107.496	197.385	328.367	443.183	562.062	804.379	946.66	2887.24	3316.41	3777.09	4387.57	4907.43	5443.96	6215.34	6709.84	30328.3	32713.9					17	25559.08	7154.86
18	Ar	130.642	229.044	337.735	495.825	621.916	754.448	1030.6	1189.25	3502.03	3968.26	4467.9	5125.21	5687.69	6265	7085.88	7610.22	34161.2	36692.5				18	28994.45	7698.04
19	K	35.9869	262.171	379.019	504.944	685.251	829	974.572	1283.79	1457.5	4173.52	4676.64	2421.43	5919.23	6525.31	7144.07	8024.72	8571.86	38224.8	40902.3			19	32595.16	8307.13
20	Ca	50.6768	98.4106	422.027	556.259	699.759	901.786	1058.63	1220.62	1563	1751.43	4901.46	5441.47	6018.79	6769.7	7420.54	7850.63	9011.23	9591.53	42519.8	45344.1		20	36401.90	8942.22
21	Se	54.2166	106.112	205.26	609.066	759.861	921.019	1144.02	1315.62	1492.37	1867.9	2071.11	5686.03	6262.85	6878.96	7676.54							21	4018.73	3657.81
22	Ti	56.5378	112.578	227.9	358.675	822.534	989.494	1167.23	1396.87	1601.63	1789.89	2198.76	2416.51	6526.97	7140.43	7795.58							22	4574.31	3221.27
23	V	55.8746	121.449	242.98	387.201	540.757	1062.11	1244.91	1439.97	1706.08	1910.85	2114.28	2555.39	2787.65	7424.36	8074.63							23	5158.06	2916.56
24	Cr	56.0901	136.785	256.658	407.039	574.497	750.742	1335.52	1531.16	1735.1	2026.08	2244.93	2470.42	2942.95	3185.85	8378.21							24	5777.14	2601.07
25	Mn	61.6362	129.656	279.099	424.448	600.196	787.55	988.748	1628.65	1838.72	2016.96	2370.94	2606.38	2848.44	3349.16	3608.64	9419.1						25	6450.37	2968.73
26	Fe	65.2423	134.132	254.097	454.292	621.75	820.71	1036.25	1252.29	1948.48	2172.81	2407.42	2742.33	2992.69	3251.34	3788.53	4057.96	10496					26	7134.21	3361.76
27	Co	65.1594	141.427	277.715	425.277	659.055	845.58	1069.41	1301.53	1543.02	2288.04	2528.45	2785.44	3141.91	3407.19	3680.76	4244.48	4532.97	11630.9				27	7842.92	3787.95
28	Ni	63.2942	150.613	283.269	455.121	625.895	895.32	1102.57	1342.98	1599.97	1861.11	2662.75	2918.08	3183.36	3564.7	3846.56	4136.71	4733.59	5033.69	12824.6			28	8655.88	4168.75
29	Cu	64.0485	168.221	305.321	457.608	413.671	853.87	1152.31	1376.14	1649.71	1923.28	2205.14	3057.35	3324.29	3606.15	4012.36	4310.8	4617.53	5247.57	5562.59	14076.4		29	9470.21	4606.21
30	Zn	77.8763	148.922	329.295	492.426	684.754	895.32	1110.86	1442.46	1682.87	1973.02	2271.46	2576.53	4076.19	3763.66	4062.1	4493.18	4799.91	5131.51	5786.42	6118.02	15386.2	30	10948.25	4437.99

The energy decay rate (1ev/8.29MY) is calculated from the Atomic Mass and the amounts of the 5 elements that comprise 99.57% of Sun's mass. Within each element, the decaying energy is converting to additional mass or to heat (increasing entropy) when in the shaded areas of the chart.

The resulting quantities above are solely from the decay or ageing of elemental atoms and do not include additions or deductions of any kind.

In an Ionic Growing Universe, the basic elements that comprise each place are growing at certain times and heating at other times. Heat always flows from warmer to cooler. Heat can be derived or transformed from elemental energy, but heat is non-reversible and can never revert back to energy.

Waste heat is not free energy (https://www.youtube.com/watch?v=9vRtA7STvH4. Once becoming heat, it remains as heat as it's temperature is locally diluted and more so as the heat eventually moves into colder outer space. Presently, the baseline outer space temperature is around 2.7 Kelvin.

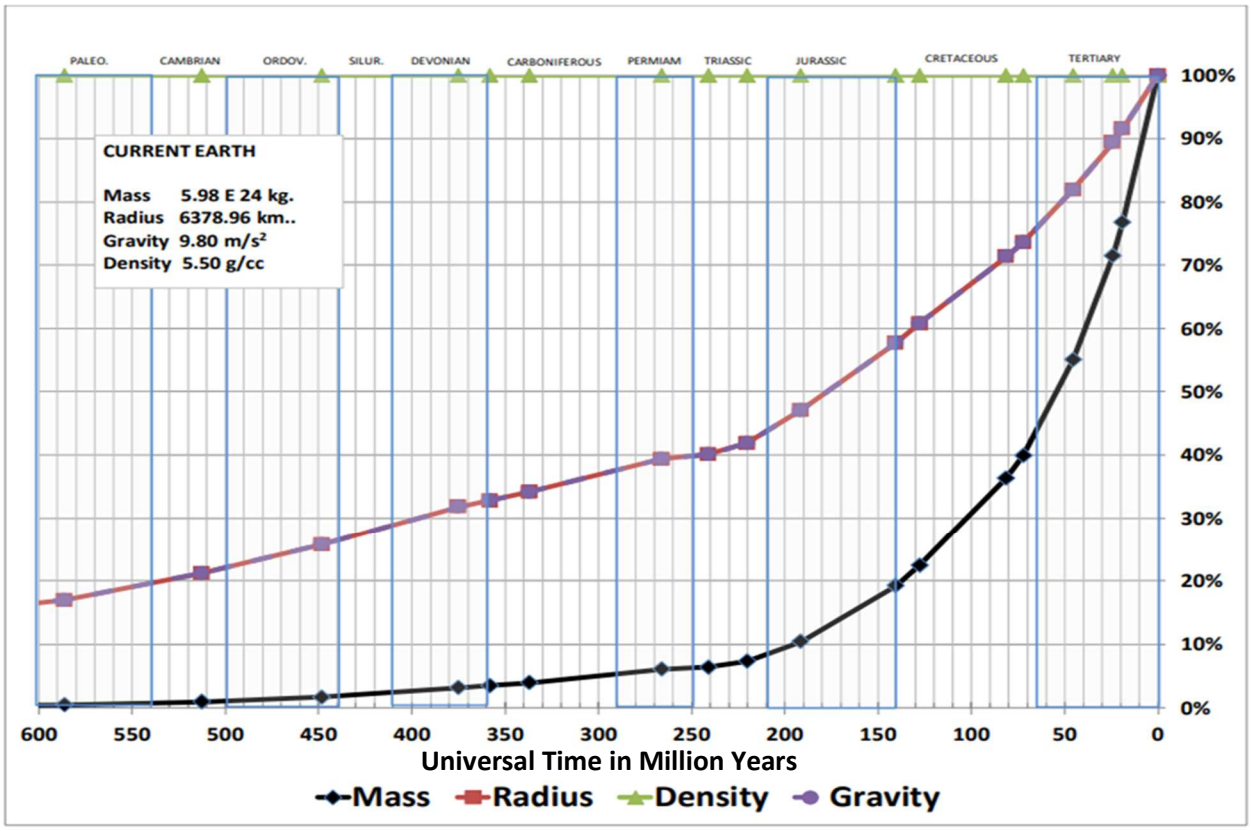
Growing in a confined space induces the pressures that cause volcanoes, earthquakes, eruptions, and ocean rifts that expand the earth and other places. Work can be extracted from the original heating. The heating may cause elemental atoms to change state (gas, liquid, solid, plasma) and perform differently. For instance, diamonds are a crystalline form of carbon created by the high temperatures and pressures found within the earth. Likewise for other gemstones and other places. Additionally, we don't know enough about heat and its effects on the size of elemental atoms and presume that all size changes in this Ionization Process are from the growing mass.

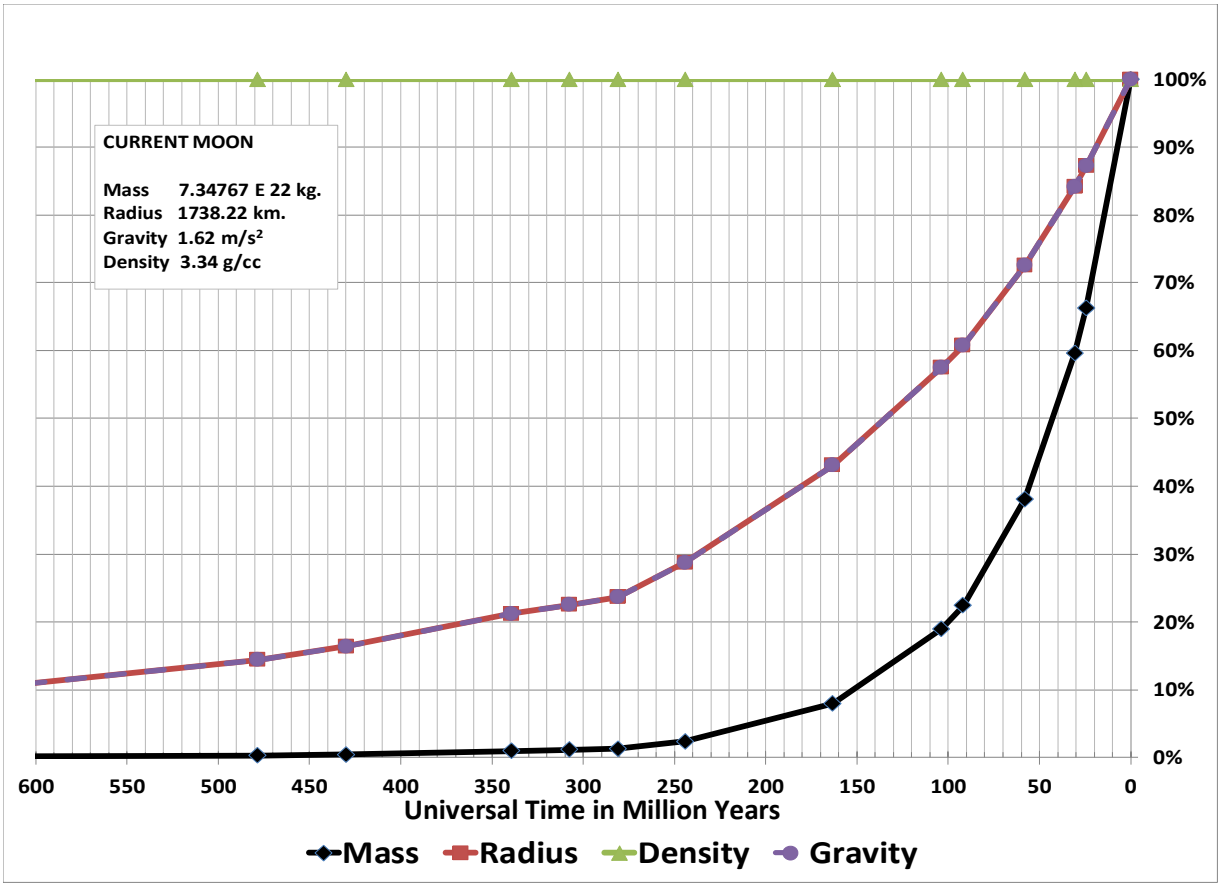
Radioactive heating (radiation from sunlight) is from a different process, not ionization.

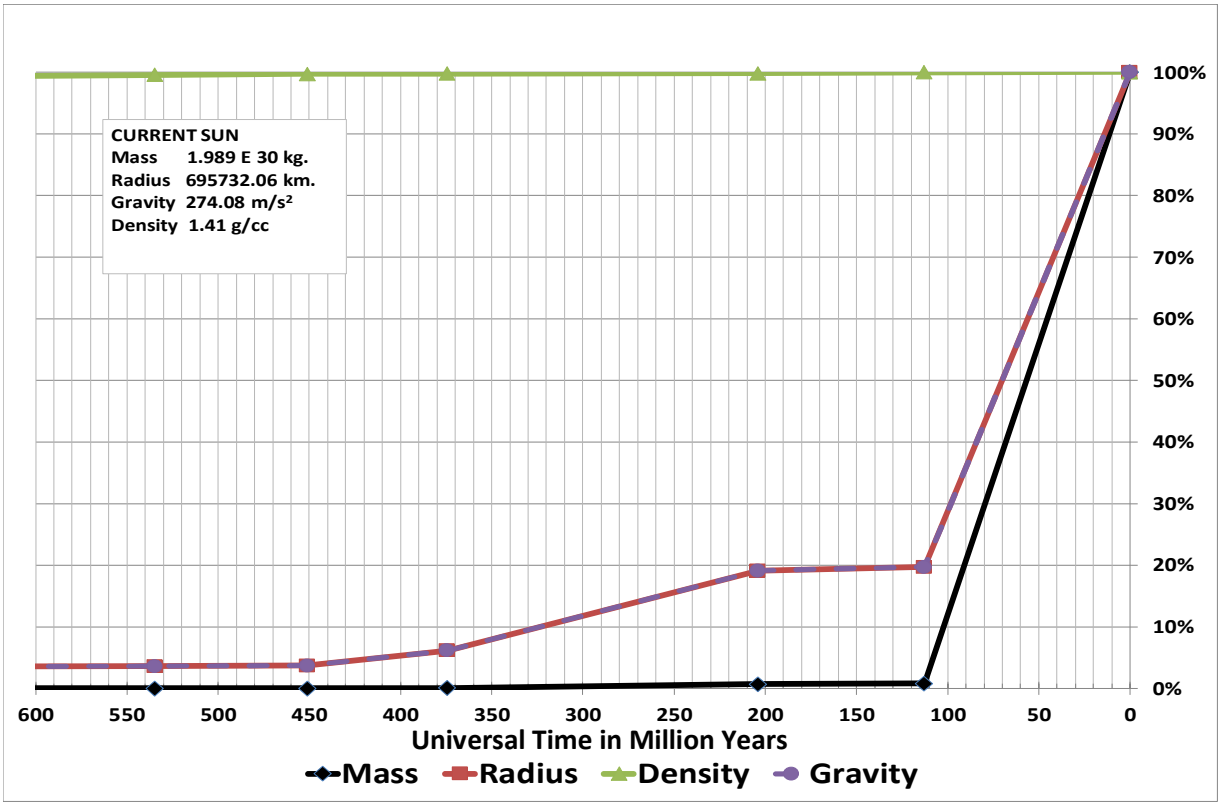
EINSTEIN IS RIGHT..."Time passes differently in different places depending on how those places are moving with respect to one another." How places move is regulated by changing growth rates which act in unison with the speed of time. Time flows faster when places grow faster. Earth is at top speed with all 8-elements growing. The moon is also at top speed with all 6-elements growing although moon is growing faster than earth. The sun is at record speed with only 4 of the 5-elements growing; helium (27.1%) is heating. Presently, the earth's mass doubles in 49.52 million earth years. The moon's mass doubles in 40.78 million earth years. The sun's mass doubles in 16.02 million earth years. Three doublings of the mass would double the radius (and g, the acceleration due to gravity) once.

In conclusion, all the original elemental energy is conserved in equal amounts of transformed energy, some to growing larger and the rest to heating. Heating, which is an entity unto itself, has not been well explained. Science refers to it as heat energy as if energy is derived from heat. Heat is heat; energy is energy. The combined words present different meanings based upon one's perspective.

EARTH FIGURE 4R – GRAPH of TABLE 5R




CURRENT MOON
Mass 7.34767 E 22 kg.
Radius 1738.22 km.
Gravity 1.62 m/s²
Density 3.34 g/cc
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
600 550 500 450 400 350 300 250 200 150 100 50 0
Universal Time in Million Years
Mass Radius Density Gravity


CURRENT SUN
Mass 1.989 E 30 kg.
Radius 695732.06 km.
Gravity 274.08 m/s²
Density 1.41 g/cc
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
600 550 500 450 400 350 300 250 200 150 100 50 0
Universal Time in Million Years
Mass Radius Density Gravity