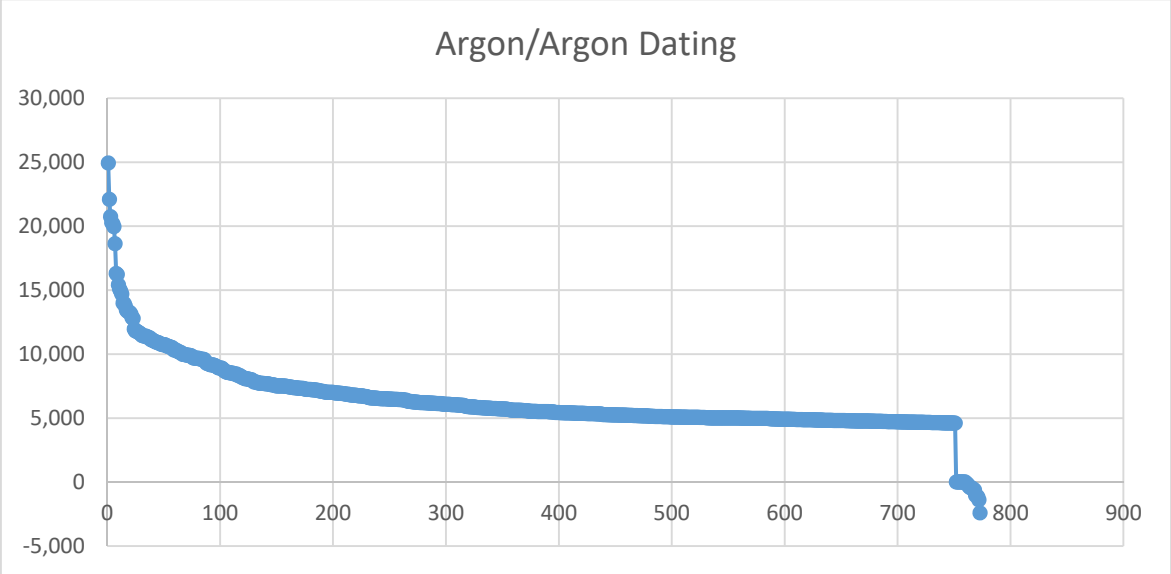
Radiometric Dating Methods

Russell Humphreys proposes that energy produced from accelerated decay leaked into hyperspace. **[Star Wars?]** "In a technical paper, I presented Biblical and scientific evidence that (a) space is a physical material that we do not perceive, (b) this fabric of space, and objects within it, are thin in a 4th spatial direction we do not ordinarily perceive, and (c) the fabric is surrounded by a hyperspace of four spatial dimensions. End note 27 of the paper explained that light emitted by objects within the fabric ordinarily would be constrained to travel entirely within the fabric. The end note also proposed that under certain extraordinary conditions the Bible calls the opening of the heavens, some of the emitted light could leak directly into hyperspace. **[Star Wars?]** Here I point out that such leakage would include other types of electromagnetic radiation, particularly black-body (thermal) radiation. This would allow the interiors of hot objects to cool rapidly, proportionally to the 4th power of their absolute temperature, according to the Stefan-Boltzmann law. Cooler objects would lose their heat much less rapidly. This mechanism appears to be a good way to get rid of the excess heat generated by accelerated nuclear decay during several episodes in the Earth's history, and it explains the evidence that this accelerated cooling did occur. It also would be a good way to get rid of other heat generated in creationist geologic models, such as heat in batholiths and new ocean floors. Last, I will briefly discuss the possibility that the opening of the heavens also caused accelerated nuclear decay. (http://www.creationicc.org/icc18_abstracts.php)

John Woodmorappe, (Mythology of Modern dating Methods, 1999, ICR Publishers, pages 24-26) admits that rocks have been dated to well over 4.5 billion years old. What he does not realize is that this is forbidden by accelerated decay which gets to only 4.5 billion and goes no further. Negative or future ages also wipe out accelerated decay because they go in the wrong direction.

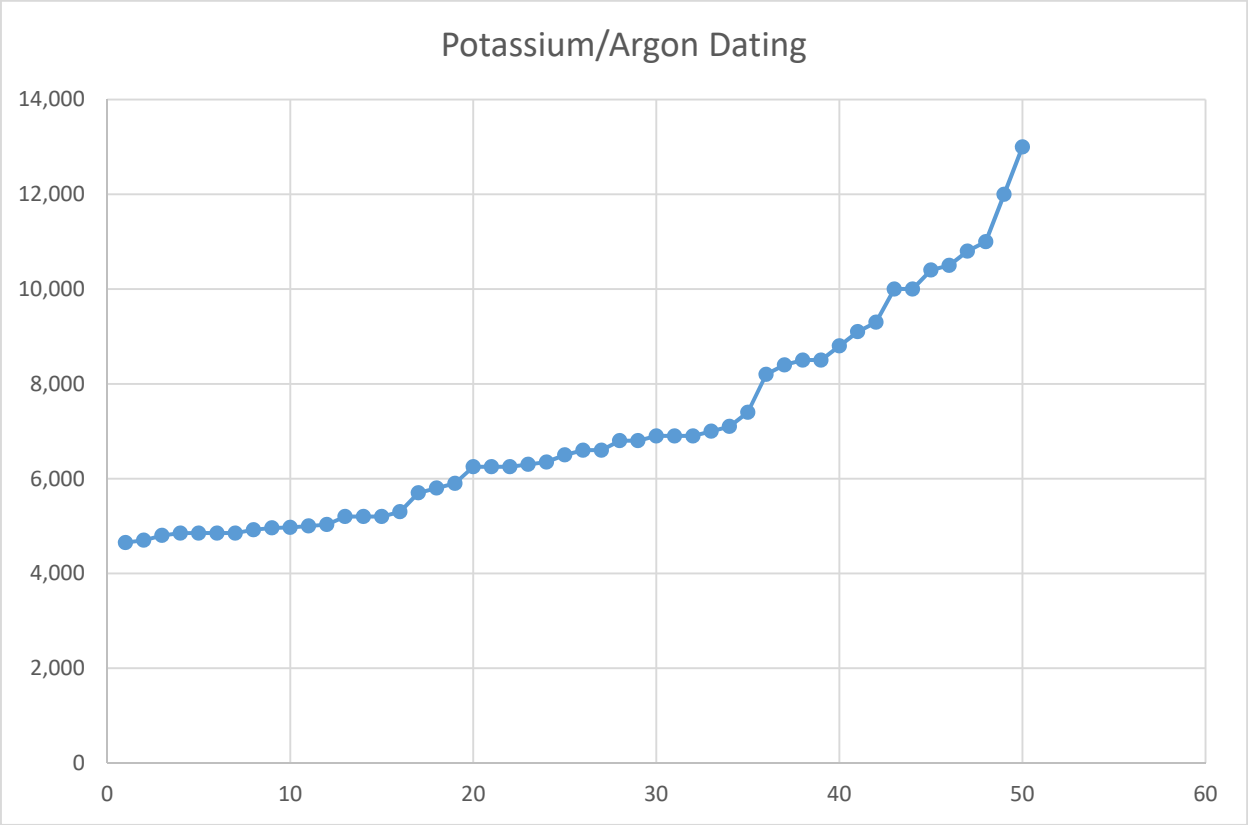
In the graphs below the left vertical column is ages [million years] and the horizontal are the number of dates.

Argon/Argon Dating



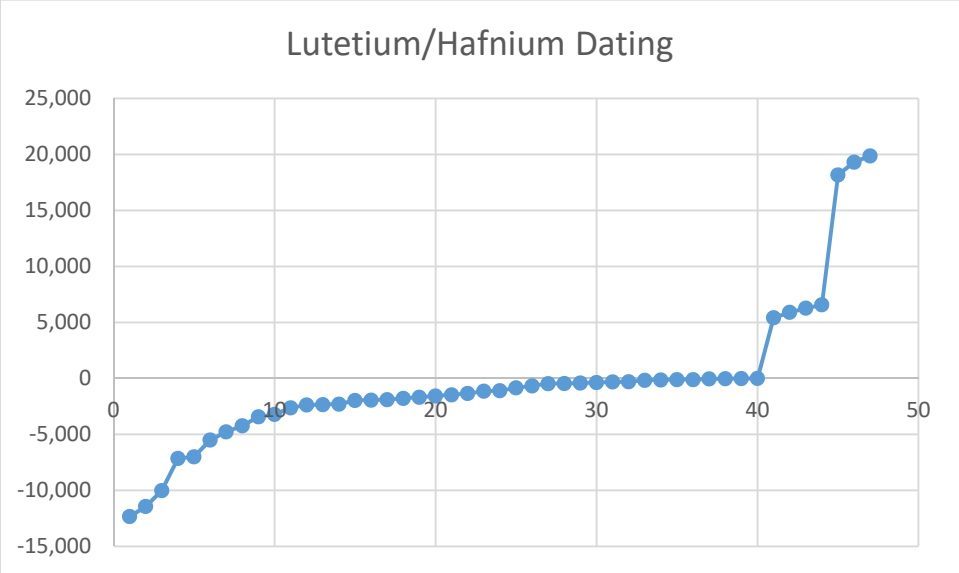
(References: 2, 3, 5, 15, 16, 17, 18, 19, 22, 24, 25, 27, 28, 30, 31, 33, 34, 36, 38, 42, 44, 94, 109, 111, 112, 113, 114, 115, 117, 118, 119, 120, 121, 122, 125, 127, 130, 143, 386, 387, 393)

Potassium/Argon Dating



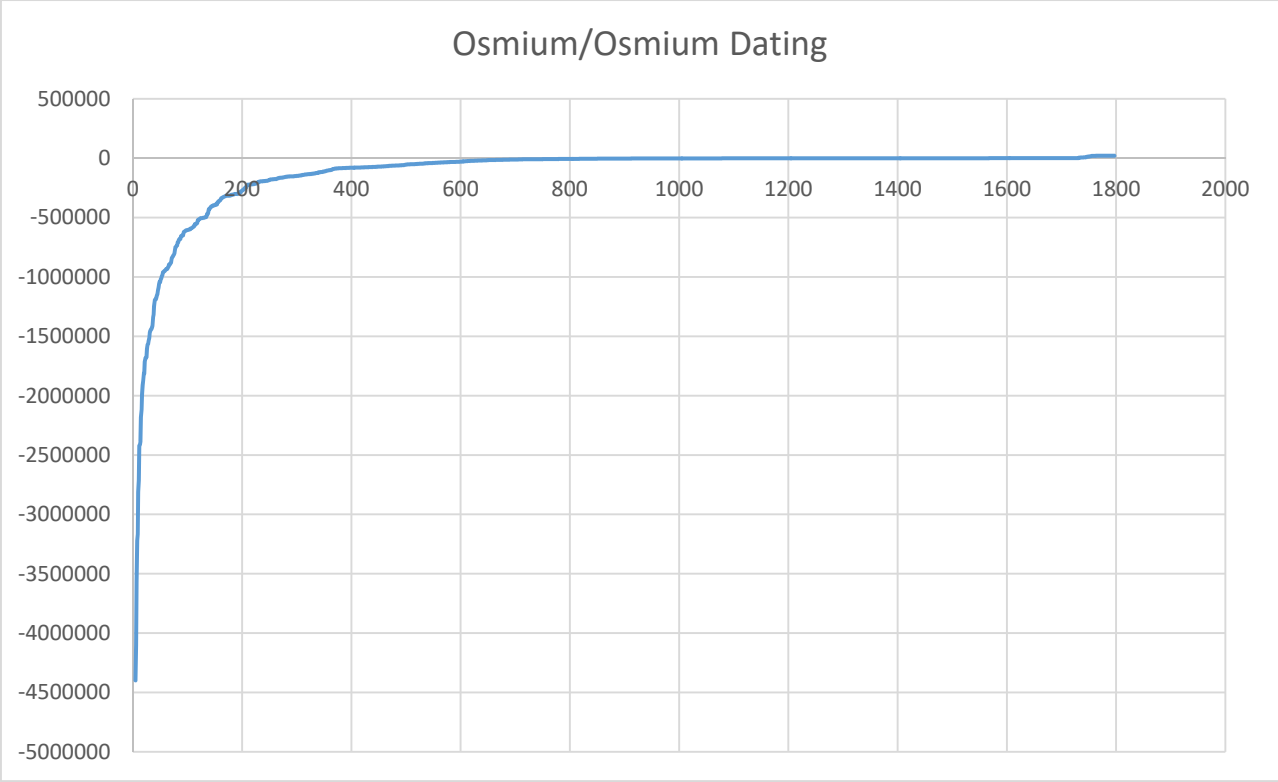
(References: 7, 26, 45, 47, 124)

Lutetium/Hafnium Dating



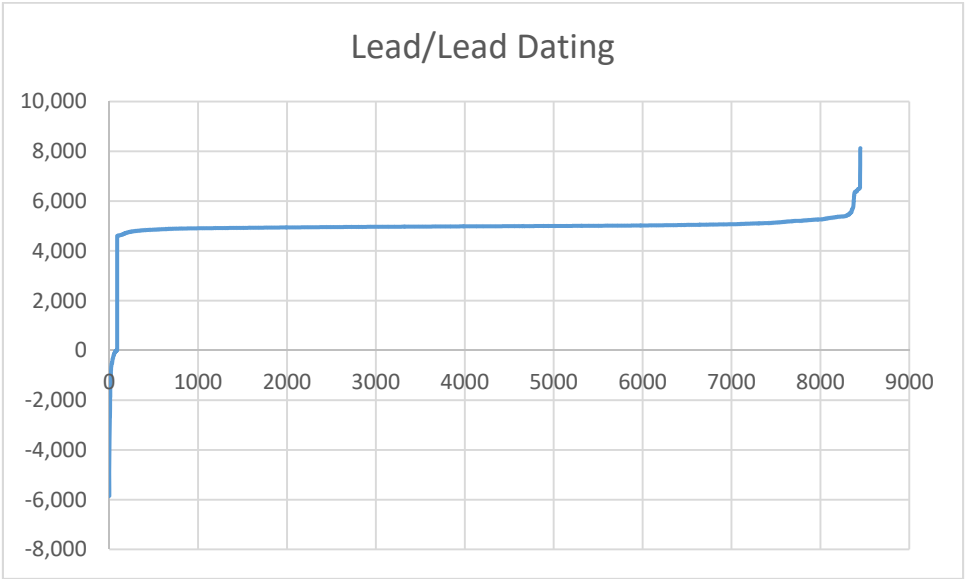
(References: 52, 56, 85, 87, 96)

Osmium/Osmium Dating



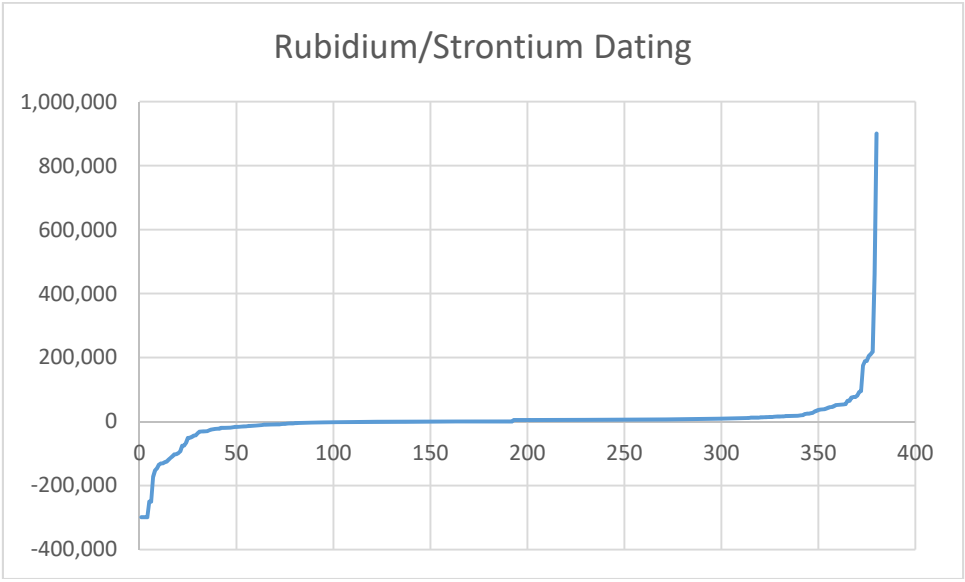
(**References:** 14, 37, 39, 53, 54, 60, 62, 63, 64, 66, 78, 79, 80, 81, 83, 88, 89, 90, 96, 97, 123, 126, 128, 242, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 268, 269, 270, 272, 294, 295, 296, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 357)

Lead/Lead Dating



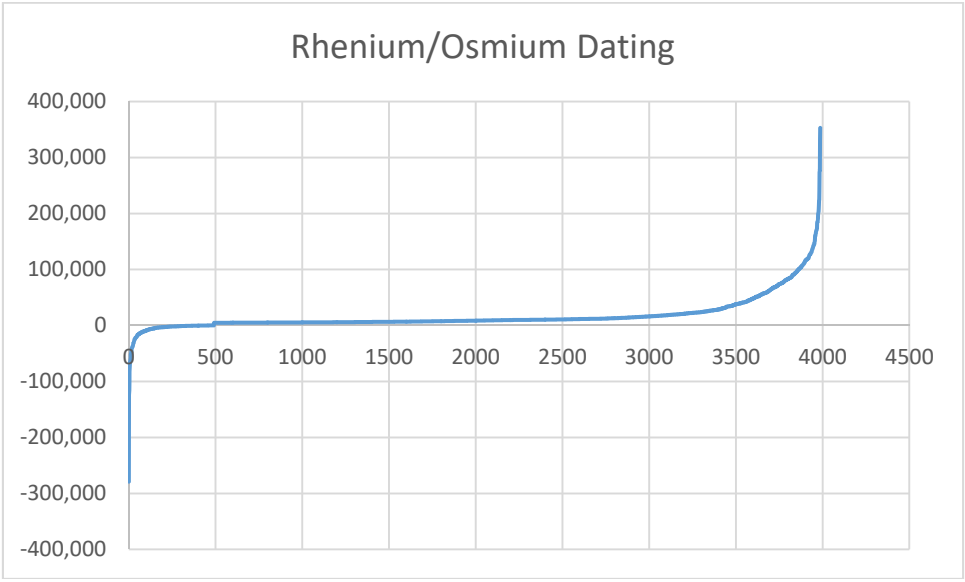
(References: 4, 6, 11, 13, 23, 37, 49, 50, 57, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 89, 92, 93, 95, 96, 98, 99, 100, 101, 102, 105, 106, 107, 108, 116, 129, 131, 132, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 148, 150, 151, 152, 153, 154, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 193, 194, 195, 196, 197, 198, 199, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 233, 235, 236, 237, 238, 239, 240, 241, 243, 244, 245, 257, 266, 267, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 285, 288, 289, 290, 291, 292, 300, 301, 302, 303, 304, 305, 320, 334, 338, 341, 343, 344, 347, 349, 350, 351, 352, 354, 355, 358, 359, 361, 362, 363, 364, 365, 367, 368, 369, 370, 371, 372, 373, 374, 375, 377, 379, 381, 382, 383, 386, 389, 391, 392, 395, 396, 398, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414)

Rubidium/Strontium Dating



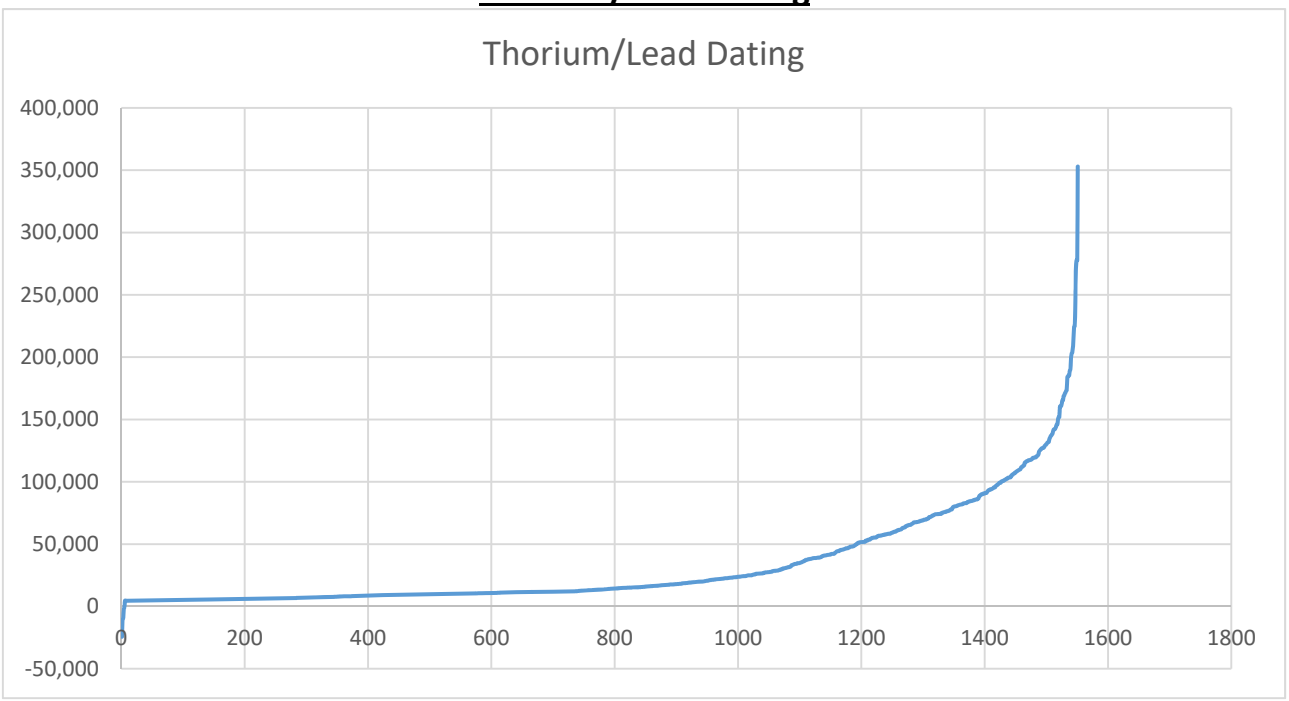
(References: 1, 14, 20, 35, 37, 39, 46, 48, 51, 52, 57, 82, 91, 234, 235, 237, 238, 244, 333, 334, 335, 336, 337, 338, 339, 340, 342, 344, 345, 346, 348, 352, 353, 354, 356, 359, 360, 366, 370, 372, 373, 378, 380, 381)

Rhenium/Osmium Dating



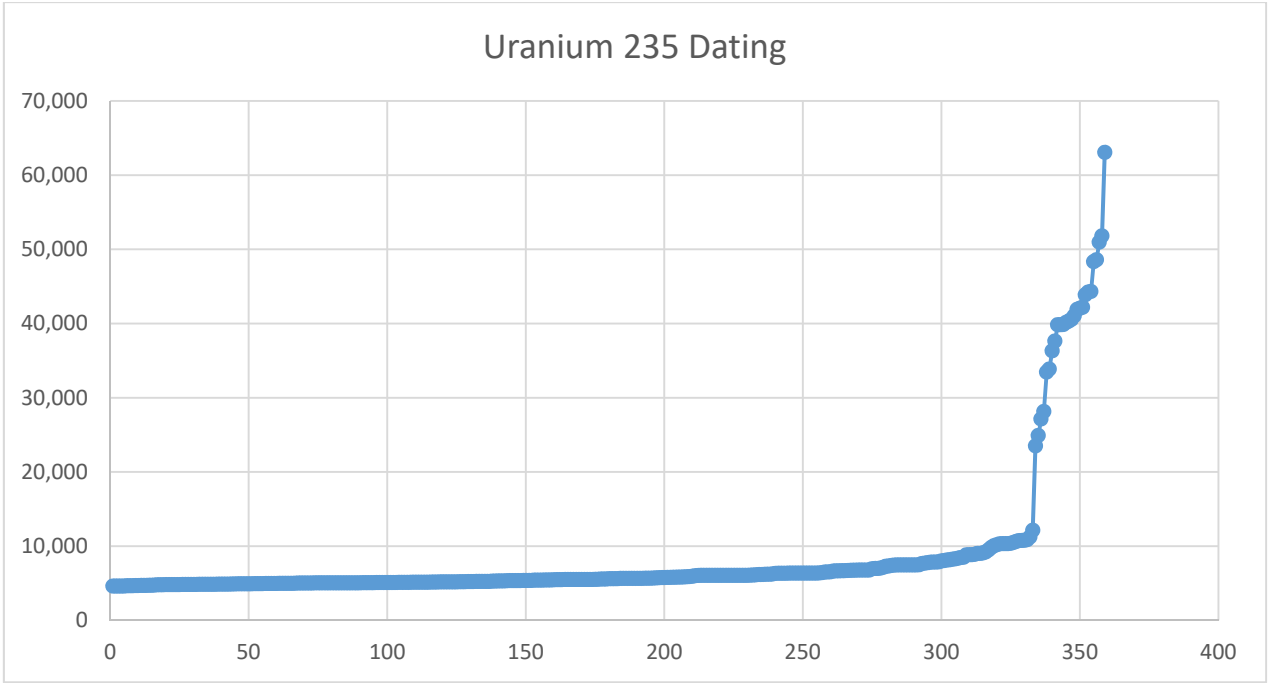
(**References:** 4, 6, 8, 9, 10, 11, 12, 21, 29, 32, 37, 40, 41, 43, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 61, 63, 64, 65, 66, 69, 70, 73, 77, 78, 80, 81, 82, 83, 84, 85, 86, 87, 88, 90, 95, 96, 97, 98, 99, 100, 102, 103, 104, 105, 106, 107, 108, 110, 116, 123, 126, 128, 129, 131, 132, 133, 134, 135, 139, 140, 144, 147, 148, 149, 153, 155, 175, 187, 203, 205, 206, 207, 212, 213, 220, 229, 230, 232, 233, 235, 236, 237, 239, 258, 263, 266, 267, 268, 271, 273, 274, 280, 281, 282, 284, 286, 287, 289, 290, 293, 297, 298, 299, 301, 303, 304, 305, 309, 320, 338, 343, 352, 354, 355, 357, 358, 361, 362, 363, 364, 365, 366, 367, 368, 371, 372, 373, 379, 386, 389, 392, 397, 399, 401, 406, 408, 413)

Thorium/Lead Dating



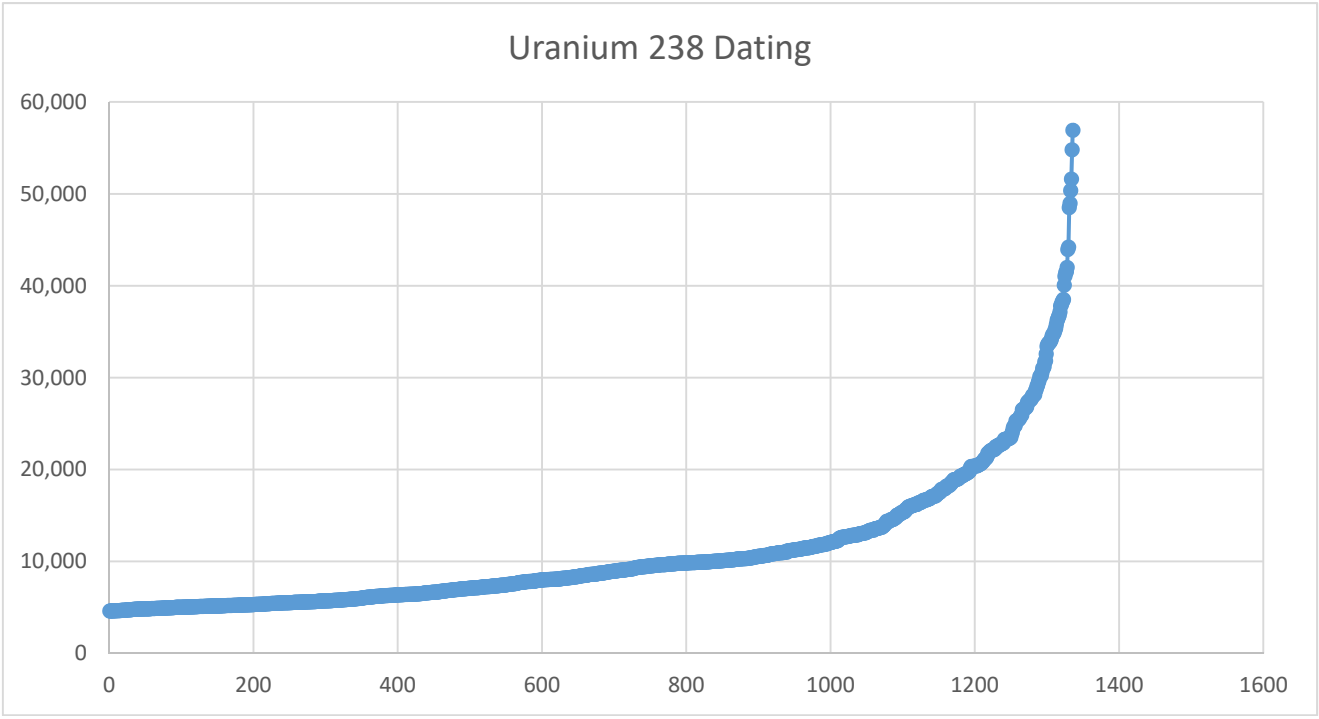
(**References:** 37, 52, 55, 56, 58, 85, 87, 95, 96, 116, 207, 271, 303, 366)

Uranium 235 Dating



(**References:** 4, 8, 10, 21, 48, 49, 50, 98, 100, 110, 129, 135, 213, 237, 273, 281, 282, 287, 338, 361, 362, 371, 397, 399, 413)

Uranium 238 Dating



(References: 6, 8, 9, 10, 11, 12, 21, 48, 49, 50, 57, 69, 70, 73, 95, 98, 99, 100, 105, 106, 107, 108, 116, 129, 131, 132, 133, 134, 135, 139, 140, 148, 153, 175, 187, 203, 205, 206, 212, 213, 220, 230, 232, 233, 235, 236, 237, 239, 266, 273, 274, 280, 281, 282, 287, 290, 293, 301, 304, 305, 320, 338, 343, 352, 354, 355, 361, 362, 363, 364, 365, 367, 368, 371, 372, 373, 379, 386, 389, 392, 397, 401, 406, 413)

John Woodmorappe's Isochron

Woodmorappe proposes (Radio Isotopes and the Age of the Earth, ICR Press, 2000, page 342) that radiometric dates show a trend that agrees with fossil ages (http://www.icr.org/i/pdf/research/rate-all.pdf, PDF file page 354). The dates below are in millions of years. As we can see below, calculated dates in the article and dates that I calculated from isotope tables in the same articles give ranges that vary by trillions of years.

Model Age	Citation	Period	Max Age	Min Age	Range
1.772	11	Quaternary	5,571	-804	6,375
1	68	Quaternary	5,017	3	5,014
0.1	92	Quaternary	5,135	0	5,135
0.5	94	Quaternary	3	-1	4
0.55	151	Quaternary	5,035	4,972	63
0.045	155	Quaternary	41,460	11,390	30,070
2	167	Quaternary	4,990	4,985	5
0.0025	189	Quaternary	4,976	4,959	17
3	212	Quaternary	92,495	1,939	90,556
3	219	Quaternary	6,214	4,924	1,290
1	222	Quaternary	5,002	4,852	150
0.4	235	Quaternary	17,171	-3,593	20,764
0.01	245	Quaternary	5,390	4,630	760
1	253	Quaternary	-197	-3,564,450	3,564,253
0.01	269	Quaternary	-13,394	-154,625	141,231
1.5	288	Quaternary	5,538	4,883	655
0.5	302	Quaternary	5,006	4,918	88
0.361	365	Quaternary	352,962	2	352,960
1	369	Quaternary	5,239	4,960	279
0.25	370	Quaternary	4,954	-16	4,970

Model Age	Citation	Period	Max Age	Min Age	Range
24	4	Neogene	10,478	-5,850	16,328
10	12	Neogene	82,030	3	82,027
10	13	Neogene	11	-3,879	3,890
4	23	Neogene	281	-133	414
25	56	Neogene	2,478	-3,297	5,775
12	57	Neogene	11,660	-15	11,674
20	106	Neogene	14,557	1,437	13,120
25	135	Neogene	88,294	238	88,056
25	137	Neogene	5,010	4,968	42
20	145	Neogene	5,014	4,962	52
7	154	Neogene	4,977	4,966	11
20	158	Neogene	5,021	4,945	76
16	159	Neogene	4,987	15	4,972
11	161	Neogene	4,986	4,911	75
10	163	Neogene	5,090	5,018	72
25	165	Neogene	4,895	20	4,875
7	168	Neogene	4,987	4,905	83
16	177	Neogene	4,964	4,909	55
25	183	Neogene	5,009	6	5,003
28	186	Neogene	4,998	28	4,970
6	193	Neogene	4,968	4,920	48
8	198	Neogene	4,986	49	4,937
11	215	Neogene	6,194	970	5,224
10	221	Neogene	4,975	4,933	42
5.35	257	Neogene	4,959	-19,613	24,572
8.2	266	Neogene	48,962	4,659	44,303
23	267	Neogene	23,850	4,129	19,721
27	270	Neogene	-72,290	-318,311	246,021
10	285	Neogene	4,856	8	4,848
5	300	Neogene	5,239	4,960	279
20	303	Neogene	20,158	4,905	15,253
6	325	Neogene	1,500	-552,680	554,180
4	339	Neogene	2,260	-108	2,368
17	364	Neogene	99,275	16	99,259

Model Age	Citation	Period	Max Age	Min Age	Range
35	6	Paleogene	11,780	-1,240	13,020
44	36	Paleogene	7,000	6,000	1,000
65	67	Paleogene	5,134	59	5,075
71	117	Paleogene	8,300	5,000	3,300
0	152	Paleogene	5,150	4,849	301
56	160	Paleogene	5,316	5,010	306
50	162	Paleogene	5,016	4,976	41
60	164	Paleogene	5,174	4,987	187
31	173	Paleogene	6,489	4,956	1,533
33	181	Paleogene	5,057	4,838	219
70	190	Paleogene	5,061	5,004	57
60	194	Paleogene	5,019	4,807	212
68	195	Paleogene	5,010	67	4,943
30	206	Paleogene	29,040	270	28,770
60	217	Paleogene	5,049	4,743	306
66	230	Paleogene	13,287	3,010	10,277
42	239	Paleogene	13,430	4,845	8,585
63	254	Paleogene	-3,821	-139,458	135,637
45	276	Paleogene	5,014	4,968	46
50	304	Paleogene	28,677	4,641	24,036
65	319	Paleogene	-31,888	-87,699	55,811
66	341	Paleogene	5,080	52	5,028
65	342	Paleogene	5,157	-266	5,423
38	350	Paleogene	5,023	4,976	47
72	354	Paleogene	10,084	-75	10,159
30	361	Paleogene	44,378	24	44,354
55	362	Paleogene	10,518	40	10,478
72	381	Paleogene	5,044	-34	5,078

Model Age	Citation	Period	Max Age	Min Age	Range
103	52	Cretaceous	19,870	-22,420	42,290
128	55	Cretaceous	1,400	-1	1,401
125	69	Cretaceous	23,318	114	23,204
110	71	Cretaceous	5,001	114	4,887
75	76	Cretaceous	6,571	4,835	1,736
113	101	Cretaceous	1,100	-535	1,635
135	104	Cretaceous	20,583	0	20,583
150	124	Cretaceous	9,100	150	8,950
125	134	Cretaceous	82,561	758	81,803
90	138	Cretaceous	5,065	4,996	69
100	144	Cretaceous	277,727	6,643	271,084
100	148	Cretaceous	55,110	4,799	50,311
84	157	Cretaceous	5,053	4,984	69
100	171	Cretaceous	5,076	4,533	543
131	197	Cretaceous	5,039	4,987	52
100	216	Cretaceous	5,145	4,947	198
89	262	Cretaceous	-183	-64,458	64,275
85	271	Cretaceous	-5	-4,198	4,193
81	273	Cretaceous	40,568	653	39,915
150	278	Cretaceous	5,063	5,000	63
88	279	Cretaceous	4,973	4,895	78
117	281	Cretaceous	61,342	261	61,081
136	284	Cretaceous	12,721	7,176	5,545

112	318	Cretaceous	-196,866	-1,010,787	813,921
115	340	Cretaceous	-1,258	-135,140	133,882
73	351	Cretaceous	5,214	68	5,146
98	358	Cretaceous	10,716	15	10,701
103	371	Cretaceous	36,764	101	36,663
102	377	Cretaceous	4,943	-635	5,578
144	382	Cretaceous	5,107	143	4,964

Model Age	Citation	Period	Max Age	Min Age	Range
180	73	Jurassic	30,279	179	30,100
180	102	Jurassic	165,469	161	165,308
200	150	Jurassic	5,046	4,950	96
200	199	Jurassic	6,454	4,995	1,459
178	238	Jurassic	51,967	-299,346	351,313
162	246	Jurassic	-24	-637	613
163	275	Jurassic	5,012	4,831	181
166	329	Jurassic	2,758	-100,773	103,531
154	330	Jurassic	-125,179	-958,086	832,907
166	372	Jurassic	6,574	218	6,356

Model Age	Citation	Period	Max Age	Min Age	Range
225	139	Triassic	11,174	4,900	6,274
248	188	Triassic	5,061	4,930	131
253	209	Triassic	5,066	4,987	79
211	213	Triassic	8,167	4,024	4,143
254	320	Triassic	38,898	-209,141	248,039

Model Age	Citation	Period	Max Age	Min Age	Range
286	244	Permian	24,661	4,845	19,816
280	286	Permian	10,856	9,130	1,726

Model Age	Citation	Period	Max Age	Min Age	Range
320	61	Carboniferous	9,100	-4,300	13,400
348	178	Carboniferous	5,016	668	4,348
331	277	Carboniferous	5,237	4,924	313
350	290	Carboniferous	86,040	5,066	80,974
360	301	Carboniferous	21,165	4,858	16,307
350	363	Carboniferous	58,796	3	58,793

Model Age	Citation	Period	Max Age	Min Age	Range
400	70	Devonian	8,176	250	7,926
407	289	Devonian	10,619	4,833	5,786
400	295	Devonian	18,849	-175,916	194,765
373	305	Devonian	13,590	4,798	8,792
421	343	Devonian	10,870	50	10,820
376	356	Devonian	210,993	299	210,694
430	349	Silurian	5,199	11	5,188

Model Age	Citation	Period	Max Age	Min Age	Range
450	31	Ordovician	7,100	190	6,910
481	153	Ordovician	80,532	4,805	75,727
448	258	Ordovician	34,000	-58,000	92,000
483	282	Ordovician	24,397	5,007	19,390
480	336	Ordovician	7,834	-296	8,130
455	367	Ordovician	11,602	445	11,157

Model Age	Citation	Period	Max Age	Min Age	Range
520	100	Cambrian	199,319	4,818	194,501
500	299	Cambrian	15,410	4,520	10,890
540	328	Cambrian	1,519	-40,546	42,065
515	355	Cambrian	21,761	495	21,266
500	368	Cambrian	9,644	89	9,555

Model Age	Citation	Period	Max Age	Min Age	Range
605	2	Ediacaran	18,620	287	18,333
625	25	Ediacaran	11,251	164	11,087
646	38	Ediacaran	8,569	633	7,936
600	58	Ediacaran	2,013	-2,192	4,205
600	60	Ediacaran	1,550	-1,348	2,898
650	74	Ediacaran	5,071	260	4,811
555	107	Ediacaran	54,790	4	54,787
680	169	Ediacaran	5,046	530	4,516
581	210	Ediacaran	5,026	3,831	1,195
640	248	Ediacaran	322	-489	810
600	251	Ediacaran	-7	-12	5
552	255	Ediacaran	-146,254	-1,872,420	1,726,166
554	256	Ediacaran	1,091	-709,965	711,056
730	317	Ediacaran	-140	-1,110	970
750	322	Ediacaran	27	-4,398,715	4,398,742
625	346	Ediacaran	218,042	-15,716	233,758

Model Age	Citation	Period	Max Age	Min Age	Range
885	27	Cryogenian	14,917	94	14,823
865	233	Cryogenian	38,746	4,662	34,084
850	375	Cryogenian	5,050	262	4,788

Model Age	Citation	Period	Max Age	Min Age	Range
1100	77	Tonian	6,900	30	6,870
1120	84	Tonian	966	-1	967
1030	115	Tonian	9,969	985	8,984
1000	191	Tonian	5,163	5,014	149
1060	296	Tonian	14,650	-9,270	23,920
1000	309	Tonian	331,800	-1,683,299	2,015,099

Model Age	Citation	Period	Max Age	Min Age	Range
1200	1	Stenian	23,312	79	23,233
1230	3	Stenian	4,746	54	4,692
1230	22	Stenian	5,066	615	4,451
1200	35	Stenian	7,330	550	6,780
1210	62	Stenian	4,500	-1,983	6,483
1200	95	Stenian	9,489	-3,209	12,698
1250	156	Stenian	5,017	4,939	78
1300	187	Stenian	99,275	2,646	96,628
1300	242	Stenian	-124,882	-361,842	236,960
1200	280	Stenian	23,132	4,854	18,278
1200	347	Stenian	4,978	4,927	51
1341	359	Stenian	5,126	-66,499	71,625

Model Age	Citation	Period	Max Age	Min Age	Range
1595	42	Ectasian	9,969	1,115	8,854
1500	75	Ectasian	5,001	1,500	3,501
1400	81	Ectasian	77,160	-1,425,342	1,502,502
1550	85	Ectasian	9,730	-3,220	12,950
1550	109	Ectasian	24,930	280	24,650
1500	111	Ectasian	9,588	3,089	6,499
1426	123	Ectasian	7,973	-750,391	758,364
1530	131	Ectasian	23,837	1,842	21,996
1500	170	Ectasian	5,237	5,065	172
1575	223	Ectasian	5,112	4,710	402
1450	240	Ectasian	5,218	4,931	287
1430	259	Ectasian	-9,302	-12,876,555	12,867,253
1500	272	Ectasian	5,007	-52,445	57,452
1550	306	Ectasian	1,336	-754	2,090
1400	312	Ectasian	-50,710	-405,052	354,342
1400	324	Ectasian	20,476	-53,129	73,605

Model Age	Citation	Period	Max Age	Min Age	Range
1600	7	Calymmian	5,030	1,890	3,140
1744	46	Calymmian	900,000	1,400	898,600
1650	51	Calymmian	76,523	-31,071	107,594
1600	79	Calymmian	8,380	2,780	5,600
1700	88	Calymmian	34,000	-32,000	66,000
1600	91	Calymmian	20,000	267	19,733
1650	103	Calymmian	11,964	1	11,963
1740	136	Calymmian	5,049	1,848	3,201
1700	184	Calymmian	5,239	4,840	399
1600	232	Calymmian	11,444	7,252	4,192
1600	243	Calymmian	4,991	4,933	58
1670	268	Calymmian	45,050	-76,300	121,350
1647	274	Calymmian	31,891	5,005	26,886
1746	291	Calymmian	5,185	4,803	382

Model Age	Citation	Period	Max Age	Min Age	Range
1800	54	Statherian	39,229	-87,817	127,046
1800	59	Statherian	7,330	600	6,730
2000	72	Statherian	5,018	4,944	74
1900	99	Statherian	10,539	1,739	8,800
2000	114	Statherian	5,804	322	5,482
2000	140	Statherian	40,059	1,608	38,451
2000	180	Statherian	5,127	4,845	282
2000	182	Statherian	4,898	2,614	2,284
2030	204	Statherian	7,797	4,846	2,951
2040	214	Statherian	5,265	5,055	210
1800	218	Statherian	5,075	5,069	6
1940	224	Statherian	5,005	4,959	46
2020	225	Statherian	5,250	4,007	1,243
2000	229	Statherian	5,235	170	5,065
2000	247	Statherian	-726	-143,516	142,790
2000	249	Statherian	-630	-8,068	7,439
1850	252	Statherian	-128,289	-2,385,435	2,257,146
2001	260	Statherian	2,662	-50,956	53,618
1800	261	Statherian	1,922	-11,068,187	11,070,109
2000	263	Statherian	105	-21,326	21,432
1872	373	Statherian	124,106	1,515	122,591

Model Age	Citation	Period	Max Age	Min Age	Range
2050	30	Orosirian	22,090	1,000	21,090
2200	83	Orosirian	8,620	-24,710	33,330
2250	110	Orosirian	44,242	878	43,364
2100	175	Orosirian	17,743	506	17,237
2250	250	Orosirian	-393	-2,963	2,571
2100	297	Orosirian	8,400	-3,100	11,500
2200	298	Orosirian	10,430	-210	10,640
2200	345	Orosirian	175,289	-30,734	206,023
2100	378	Orosirian	7,015	3,537	3,478

Model Age	Citation	Period	Max Age	Min Age	Range
2400	39	Rhyacian	12,600	-3,309	15,909
2346	231	Rhyacian	5,086	3,959	1,127

Model Age	Citation	Period	Max Age	Min Age	Range
2700	37	Siderian	15,500	-39,504	55,004
2700	40	Siderian	6,800	6,370	430
2690	41	Siderian	6,300	5,930	370
2600	63	Siderian	9,700	-10,800	20,500
2760	65	Siderian	6,959	6,959	0
2700	82	Siderian	11,000	100	10,900
2700	86	Siderian	7,850	1,980	5,870
2600	90	Siderian	143,830	-117,980	261,810
2610	96	Siderian	49,630	-1,187,221	1,236,851
2700	128	Siderian	5,800	-4,103,949	4,109,749
2700	176	Siderian	5,289	3,719	1,570
2700	185	Siderian	5,333	5,018	315
2540	201	Siderian	5,347	4,862	485
0	205	Siderian	22,201	58	22,143
2700	226	Siderian	5,319	4,873	446
2520	227	Siderian	5,339	4,300	1,039
2795	264	Siderian	2,215	-19,486	21,701
2721	265	Siderian	2,372	-456,934	459,306
2550	292	Siderian	5,012	4,871	141
2710	294	Siderian	20,469	-44,982	65,451
2700	315	Siderian	-23,132	-2,409,985	2,386,853
2700	316	Siderian	1,582	-82,331	83,913
2700	326	Siderian	2,646	-74,385	77,030
2500	334	Siderian	91,957	3,257	88,700
2500	357	Siderian	20,710	-11,060	31,770
2700	374	Siderian	5,333	5,018	315

Model Age	Citation	Period	Max Age	Min Age	Range
2800	5	Neoarchean	9,840	580	9,260
2800	53	Neoarchean	4,000	-21,037	25,037
2800	64	Neoarchean	19,831	-14,258	34,089
2900	66	Neoarchean	7,690	-7,120	14,810
3000	78	Neoarchean	78,960	-279,000	357,960
2800	87	Neoarchean	96,661	-67,490	164,151
3000	93	Neoarchean	6,451	543	5,908
3000	97	Neoarchean	20,469	-7,120	27,589
2800	121	Neoarchean	6,190	2,265	3,925
3100	126	Neoarchean	18,500	-223,004	241,504
2850	149	Neoarchean	8,728	2,792	5,936
3000	166	Neoarchean	5,038	3,000	2,038
2800	220	Neoarchean	14,794	3,279	11,515
2900	236	Neoarchean	94,396	4,676	89,720
3100	344	Neoarchean	205,093	4,698	200,395
3050	379	Neoarchean	64,610	3,001	61,609
2931	380	Neoarchean	13,933	2,903	11,030

Model Age	Citation	Period	Max Age	Min Age	Range
3450	15	Mesoarchean	13,960	1,550	12,410
3500	43	Mesoarchean	15,600	100	15,500
3400	98	Mesoarchean	100,601	5,222	95,379
3220	119	Mesoarchean	6,930	510	6,420
3300	130	Mesoarchean	7,810	-45,000,000,000	45,000,007,810
3500	147	Mesoarchean	11,517	-24,295	35,812
3500	174	Mesoarchean	5,493	4,835	658
3320	234	Mesoarchean	-993	-25,121	24,128
3300	307	Mesoarchean	2,498	-745,481	747,979
3300	337	Mesoarchean	27,211	-3,808	31,019

Model Age	Citation	Period	Max Age	Min Age	Range
3800	80	Paleoarchean	10,300	-1,247,778	1,258,078
3600	89	Paleoarchean	13,552	-3,309	16,861
3750	120	Paleoarchean	9,905	855	9,050
3900	127	Paleoarchean	9,153	726	8,427
3678	203	Paleoarchean	22,146	2,268	19,877
3691	207	Paleoarchean	22,730	-15,530	38,260
3708	211	Paleoarchean	5,860	4,397	1,463
3811	228	Paleoarchean	5,123	4,028	1,095
3781	237	Paleoarchean	65,286	4,608	60,678
3900	333	Paleoarchean	4,925	-108,362	113,287
3781	348	Paleoarchean	17,387	-4,633	22,020
3633	352	Paleoarchean	18,213	3,476	14,737
3740	366	Paleoarchean	19,652	4,804	14,848

Model Age	Citation	Period	Max Age	Min Age	Range
4000	28	Eoarchean	13,348	65	13,283
4090	105	Eoarchean	173,633	4,929	168,704
4000	118	Eoarchean	9,680	2,185	7,495
4000	125	Eoarchean	8,180	360	7,820
4018	133	Eoarchean	6,434	2,895	3,539

Model Age	Citation	Period	Max Age	Min Age	Range
4290	16	Early Imbrian	9,710	120	9,590
4240	50	Early Imbrian	28,140	4,010	24,130
4210	331	Early Imbrian	-55	-2,625	2,570

Model Age	Citation	Period	Max Age	Min Age	Range
4490	17	Nectarian	5,164	1,465	3,699
4480	18	Nectarian	9,669	162	9,507
4400	20	Nectarian	9,300	3,700	5,600
4420	116	Nectarian	8,375	3,608	4,767
4400	335	Nectarian	4,871	-16,277	21,148
4484	383	Nectarian	5,135	4,801	334

Model Age	Citation	Period	Max Age	Min Age	Range
4562	8	Basin Groups	6,473	4,249	2,224
4566	9	Basin Groups	10,066	1,799	8,267
4557	10	Basin Groups	6,625	2,834	3,792
4533	19	Basin Groups	8,058	1,102	6,956
4565	21	Basin Groups	5,104	3,271	1,833
4530	24	Basin Groups	7,460	1,871	5,589
4540	34	Basin Groups	9,588	-2,416	12,005
4514	44	Basin Groups	11,421	3,481	7,940
4500	47	Basin Groups	13,000	5,300	7,700
4553	48	Basin Groups	16,490	699	15,791
4563	108	Basin Groups	90,595	4,963	85,632
4560	112	Basin Groups	8,880	2,990	5,890
4500	113	Basin Groups	11,010	1,460	9,550
4500	122	Basin Groups	5,845	615	5,230
4500	129	Basin Groups	7,830	2,510	5,320
4527	132	Basin Groups	6,481	2	6,479
4565	141	Basin Groups	5,206	4,577	629
4500	143	Basin Groups	8,900	4,410	4,490
4500	196	Basin Groups	5,362	4,717	645
4500	202	Basin Groups	5,381	4,964	417
4557	241	Basin Groups	5,110	4,558	552
4556	287	Basin Groups	8,949	4,805	4,144
4566	293	Basin Groups	5,224	4,875	349
4558	308	Basin Groups	624	-2,052	2,676
4558	311	Basin Groups	878	-50,818	51,696
4530	313	Basin Groups	296	-10,233	10,529
4556	314	Basin Groups	-78	-467	389
4560	321	Basin Groups	1,272	-821	2,093
4558	327	Basin Groups	13,939	-12,248	26,187
4525	353	Basin Groups	4,642	-118,922	123,564
4513	360	Basin Groups	-2,142	-20,004	17,862

Model Age	Citation	Period	Max Age	Min Age	Range
4584	29	Cryptic	4,909	1,452	3,457
4584	32	Cryptic	4,909	1,272	3,637
4568	142	Cryptic	5,379	4,713	666
4580	179	Cryptic	5,300	4,374	926
4580	208	Cryptic	5,135	4,371	764
4579	323	Cryptic	695	-302	997
4580	338	Cryptic	14,800	-10,700	25,500

Model Age	Citation	Period	Max Age	Min Age	Range
4624	14	Solar System	13,700	-9,394	23,094
4700	26	Solar System	7,400	3,650	3,750
4610	33	Solar System	5,700	5,700	0
4700	45	Solar System	10,400	4,700	5,700
4635	49	Solar System	8,615	4,126	4,489
4610	310	Solar System	-1,119	-6,602	5,483
4680	332	Solar System	1,014	-5,256	6,270

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