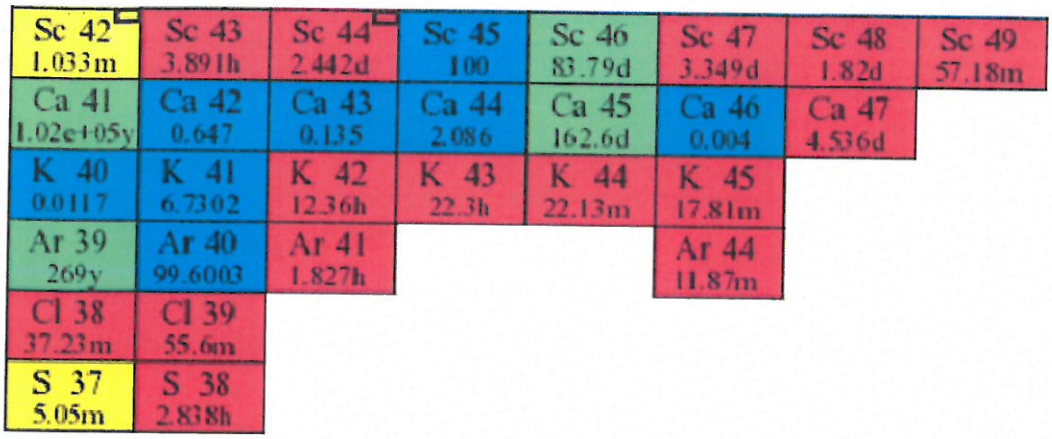
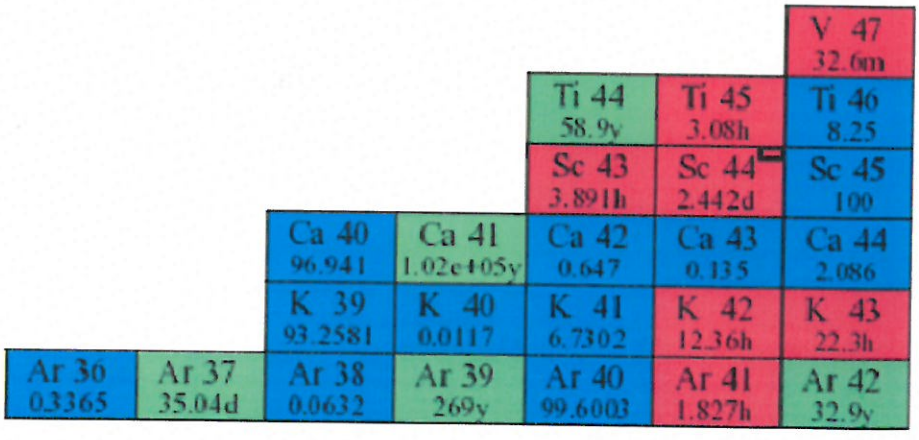
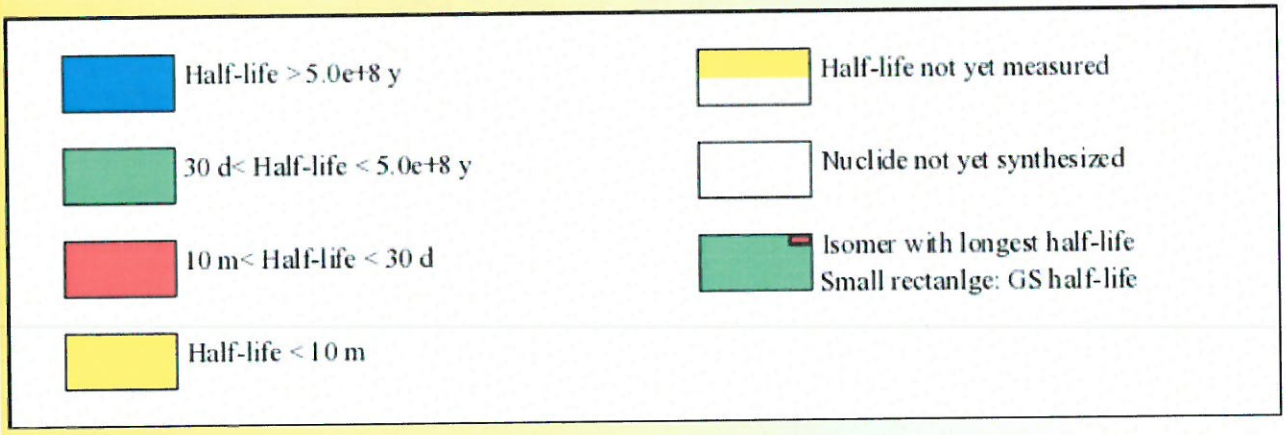


Chart of the Nuclides

2010

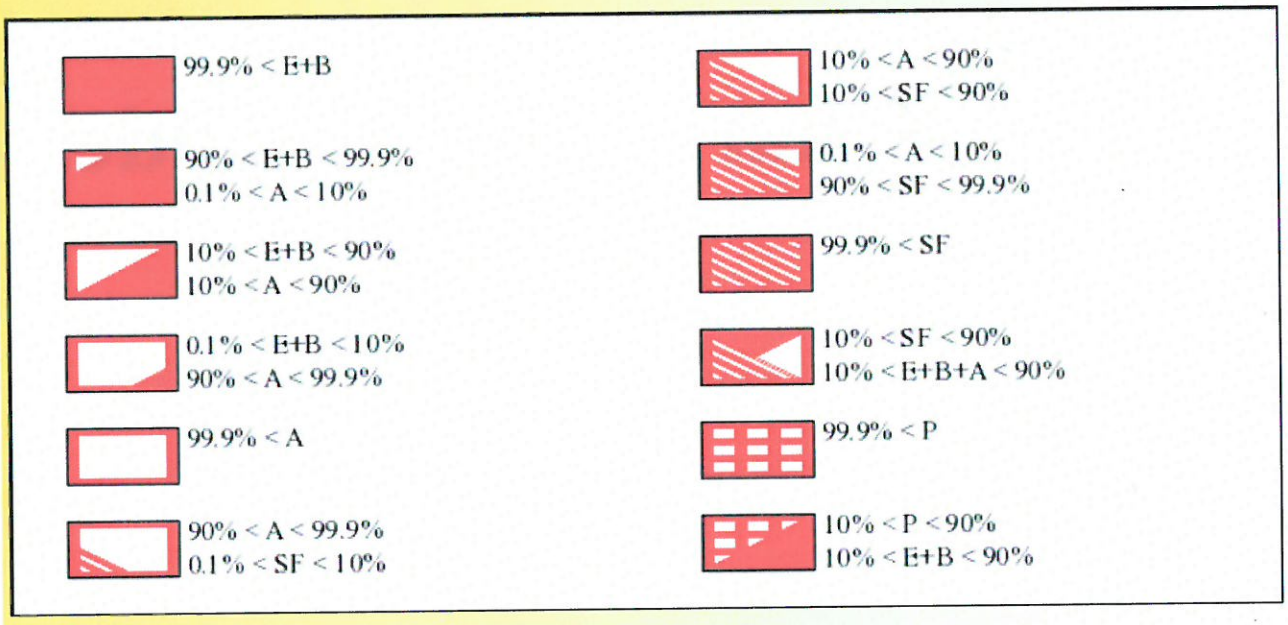


Half-life



Note: For the nuclides which have not yet measured or not yet synthesized, estimated half-lives are shown.

Decay Mode



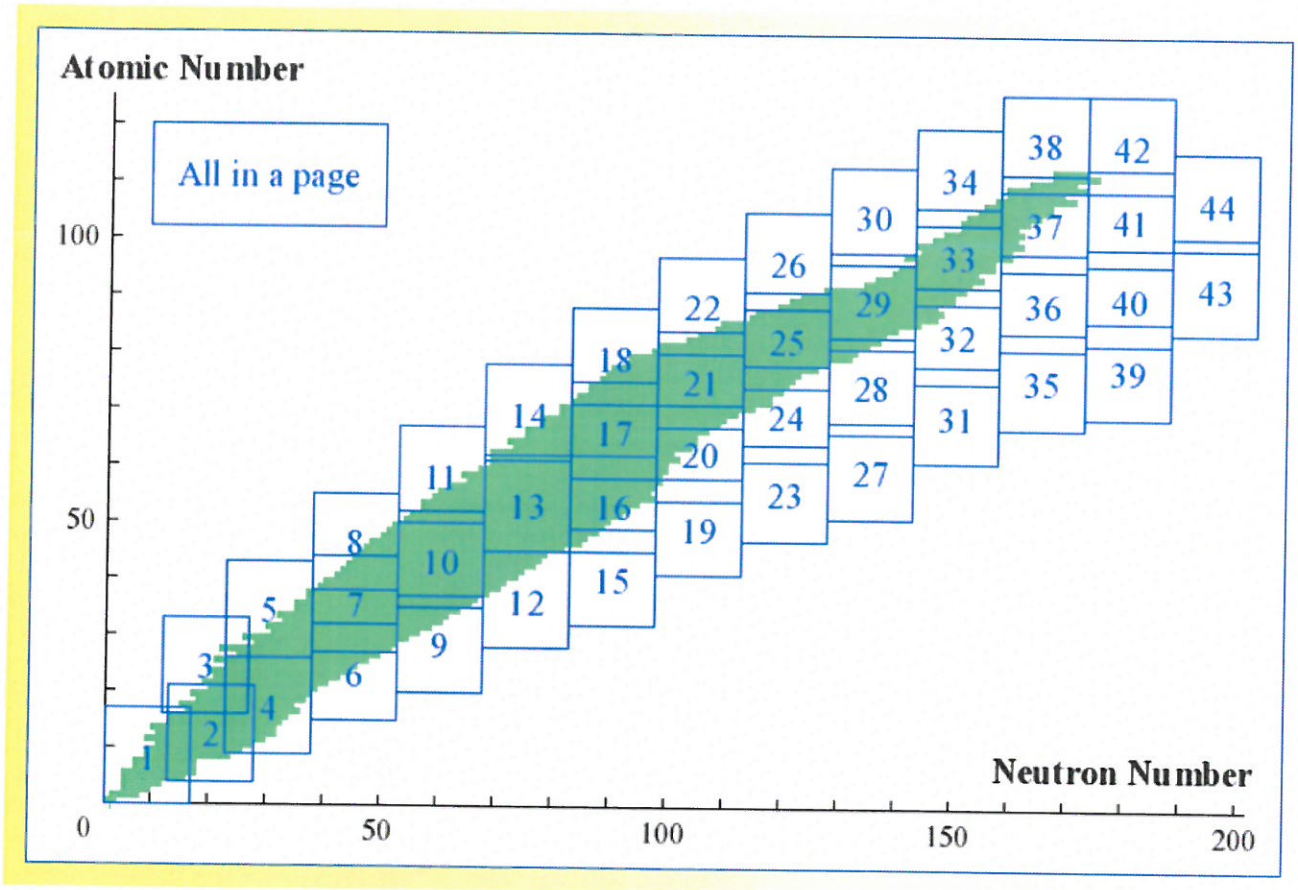

Atomic Number
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Chart of the Nuclides 2010 (No. 1)

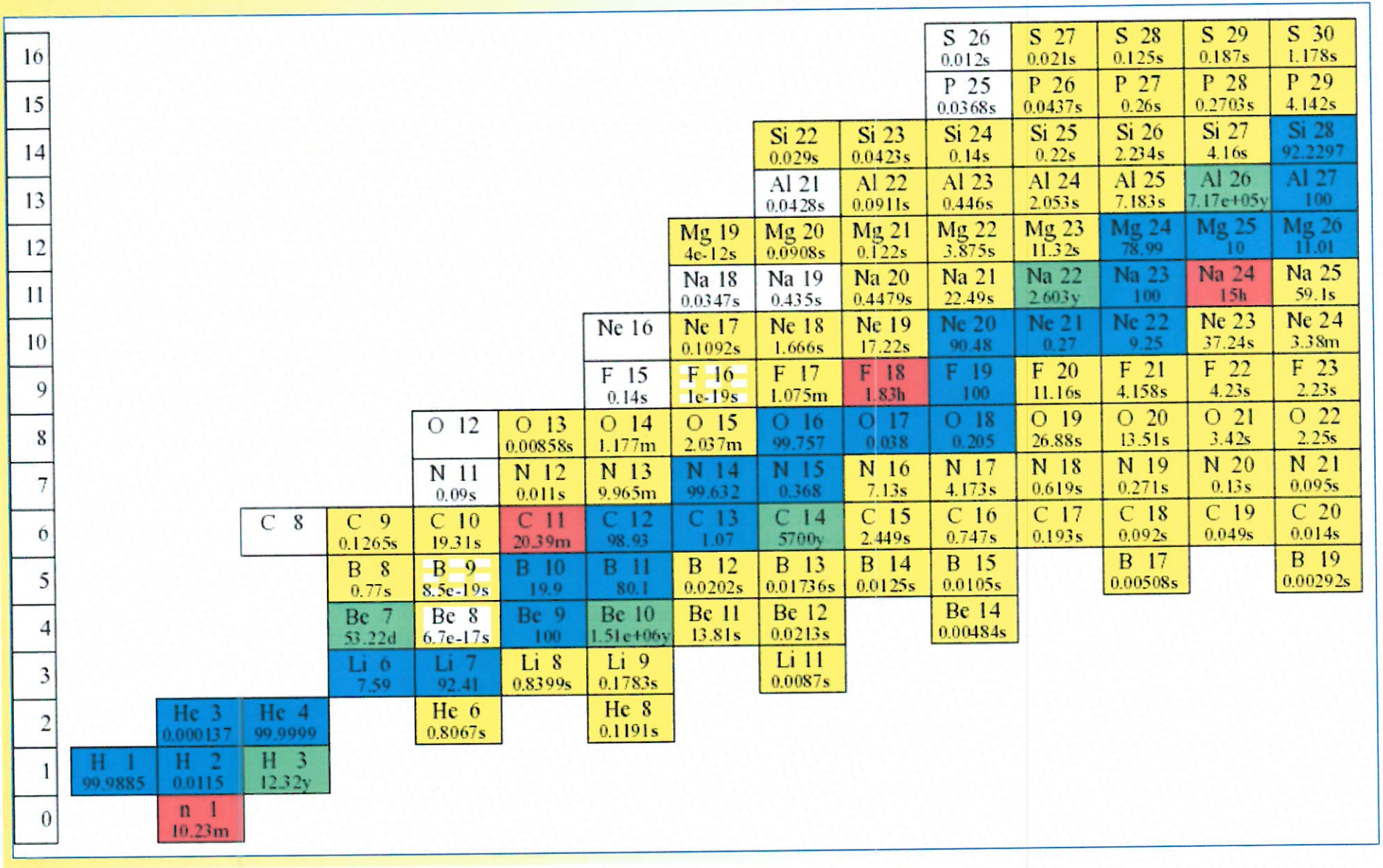

Chart of the Nuclides 2010 (No. 2)

20				Ca 34 0.0108s	Ca 35 0.05s	Ca 36 0.1s	Ca 37 0.175s	Ca 38 0.44s	Ca 39 0.8596s	Ca 40 96.941	Ca 41 1.02e+05y	Ca 42 0.647	Ca 43 0.135	Ca 44 2.086	Ca 45 162.6d
19				K 33 0.0386s	K 34 0.0702s	K 35 0.19s	K 36 0.342s	K 37 1.226s	K 38 7.636m	K 39 93.2581	K 40 0.0117	K 41 6.7302	K 42 12.36h	K 43 22.3h	K 44 22.13m
18		Ar 30 0.0104s	Ar 31 0.015s	Ar 32 0.098s	Ar 33 0.173s	Ar 34 0.8445s	Ar 35 1.775s	Ar 36 0.3365	Ar 37 35.04d	Ar 38 0.0632	Ar 39 269y	Ar 40 99.6003	Ar 41 1.827h	Ar 42 32.9y	Ar 43 5.37m
17		Cl 29 0.024s	Cl 30 0.0415s	Cl 31 0.15s	Cl 32 0.298s	Cl 33 2.511s	Cl 34 32m	Cl 35 75.78	Cl 36 3.01e+05y	Cl 37 24.22	Cl 38 37.23m	Cl 39 55.6m	Cl 40 1.35m	Cl 41 38.4s	Cl 42 6.9s
16	S 27 0.021s	S 28 0.125s	S 29 0.187s	S 30 1.178s	S 31 2.572s	S 32 94.93	S 33 0.76	S 34 4.29	S 35 87.51d	S 36 0.02	S 37 5.05m	S 38 2.838h	S 39 11.5s	S 40 8.8s	S 41 1.99s
15	P 26 0.0437s	P 27 0.26s	P 28 0.2703s	P 29 4.142s	P 30 2.498m	P 31 100	P 32 14.26d	P 33 25.34d	P 34 12.43s	P 35 47.3s	P 36 5.6s	P 37 2.31s	P 38 0.64s	P 39 0.28s	P 40 0.153s
14	Si 25 0.22s	Si 26 2.234s	Si 27 4.16s	Si 28 92.2297	Si 29 4.6832	Si 30 3.0872	Si 31 2.622h	Si 32 153y	Si 33 6.18s	Si 34 2.77s	Si 35 0.78s	Si 36 0.45s	Si 37 0.09s	Si 38 0.102s	Si 39 0.0475s
13	Al 24 2.053s	Al 25 7.183s	Al 26 7.17e+05y	Al 27 100	Al 28 2.241m	Al 29 6.56m	Al 30 3.6s	Al 31 0.644s	Al 32 0.033s	Al 33 0.0417s	Al 34 0.0563s	Al 35 0.15s	Al 36 0.09s	Al 37 0.0107s	Al 38 0.0076s
12	Mg 23 11.32s	Mg 24 78.99	Mg 25 10	Mg 26 11.01	Mg 27 9.458m	Mg 28 20.92h	Mg 29 1.3s	Mg 30 0.335s	Mg 31 0.23s	Mg 32 0.086s	Mg 33 0.0905s	Mg 34 0.02s	Mg 35 0.07s	Mg 36 0.0039s	Mg 37 0.00483s
11	Na 22 2.603y	Na 23 100	Na 24 15h	Na 25 59.1s	Na 26 1.077s	Na 27 0.301s	Na 28 0.0305s	Na 29 0.0449s	Na 30 0.048s	Na 31 0.017s	Na 32 0.0132s	Na 33 0.008s	Na 34 0.0055s	Na 35 0.0015s	
10	Ne 21 0.27	Ne 22 9.25	Ne 23 37.24s	Ne 24 3.38m	Ne 25 0.602s	Ne 26 0.197s	Ne 27 0.032s	Ne 28 0.019s	Ne 29 0.0148s	Ne 30 0.0073s	Ne 31 0.0034s	Ne 32 0.0035s		Ne 34 0.0017s	
9	F 20 11.16s	F 21 4.158s	F 22 4.23s	F 23 2.23s	F 24 0.39s	F 25 0.05s	F 26 0.0096s	F 27 0.0052s		F 29 0.0024s		F 31 0.00156s			
8	O 19 26.88s	O 20 13.51s	O 21 3.42s	O 22 2.25s	O 23 0.097s	O 24 0.061s		O 26 0.00535s							
7	N 18 0.619s	N 19 0.271s	N 20 0.13s	N 21 0.095s	N 22 0.024s	N 23 0.0141s									
6	C 17 0.193s	C 18 0.092s	C 19 0.049s	C 20 0.014s		C 22 0.0061s									
5		B 17 0.00508s		B 19 0.00292s											
4															

Chart of the Nuclides 2010 (No. 3)

32															
31															Ga 55 0.00647s
30															Zn 54 0.0032s
29												Cu 50 0.00491s	Cu 51 0.00823s	Cu 52 0.0106s	Cu 53 0.0175s
28										Ni 47 0.00296s	Ni 48 0.00778s	Ni 49 0.012s	Ni 50 0.0172s	Ni 51 0.0238s	Ni 52 0.038s
27										Co 46 0.00488s	Co 47 0.0126s	Co 48 0.0164s	Co 49 0.0291s	Co 50 0.03881s	Co 51 0.0688s
26									Fe 44 0.00542s	Fe 45 0.004s	Fe 46 0.013s	Fe 47 0.0218s	Fe 48 0.044s	Fe 49 0.07s	Fe 50 0.15s
25									Mn 43 0.00987s	Mn 44 0.0138s	Mn 45 0.0371s	Mn 46 0.0362s	Mn 47 0.1s	Mn 48 0.1581s	Mn 49 0.382s
24							Cr 40 0.00489s	Cr 41 0.00773s	Cr 42 0.0134s	Cr 43 0.0216s	Cr 44 0.053s	Cr 45 0.05s	Cr 46 0.26s	Cr 47 0.5s	Cr 48 21.56h
23							V 39 0.00898s	V 40 0.014s	V 41 0.0321s	V 42 0.0457s	V 43 0.0793s	V 44 0.15s	V 45 0.547s	V 46 0.4225s	V 47 32.6m
22						Ti 37 0.00699s	Ti 38 0.0165s	Ti 39 0.026s	Ti 40 0.0533s	Ti 41 0.0804s	Ti 42 0.199s	Ti 43 0.509s	Ti 44 58.9y	Ti 45 3.08h	Ti 46 8.25
21						Sc 36 0.0132s	Sc 37 0.0326s	Sc 38 0.0513s	Sc 39 0.121s	Sc 40 0.1823s	Sc 41 0.5963s	Sc 42 1.033m	Sc 43 3.891h	Sc 44 2.442d	Sc 45 100
20					Ca 34 0.0108s	Ca 35 0.05s	Ca 36 0.1s	Ca 37 0.175s	Ca 38 0.44s	Ca 39 0.8596s	Ca 40 96.941	Ca 41 1.02e+05y	Ca 42 0.647	Ca 43 0.135	Ca 44 2.086
19					K 33 0.0386s	K 34 0.0702s	K 35 0.19s	K 36 0.342s	K 37 1.226s	K 38 7.636m	K 39 93.2581	K 40 0.0117	K 41 6.7302	K 42 12.36h	K 43 22.3h
18			Ar 30 0.0104s	Ar 31 0.015s	Ar 32 0.098s	Ar 33 0.173s	Ar 34 0.8445s	Ar 35 1.775s	Ar 36 0.3365	Ar 37 35.04d	Ar 38 0.0632	Ar 39 269y	Ar 40 99.6003	Ar 41 1.827h	Ar 42 32.9y
17			Cl 29 0.024s	Cl 30 0.0415s	Cl 31 0.15s	Cl 32 0.298s	Cl 33 2.511s	Cl 34 32m	Cl 35 75.78	Cl 36 3.01e+05y	Cl 37 24.22	Cl 38 37.23m	Cl 39 55.6m	Cl 40 1.35m	Cl 41 38.4s
16	S 26 0.012s	S 27 0.021s	S 28 0.125s	S 29 0.187s	S 30 1.178s	S 31 2.572s	S 32 94.93	S 33 0.76	S 34 4.29	S 35 87.51d	S 36 0.02	S 37 5.05m	S 38 2.838h	S 39 11.5s	S 40 8.8s

Chart of the Nuclides 2010 (No. 4)

25	Mn 46 0.0362s	Mn 47 0.1s	Mn 48 0.1581s	Mn 49 0.382s	Mn 50 1.75m	Mn 51 46.2m	Mn 52 5.591d	Mn 53 3.7e+06y	Mn 54 312d	Mn 55 100	Mn 56 2.579h	Mn 57 1.423m	Mn 58 1.087m	Mn 59 4.59s	Mn 60 1.77s
24	Cr 45 0.05s	Cr 46 0.26s	Cr 47 0.5s	Cr 48 21.56h	Cr 49 42.3m	Cr 50 4.345	Cr 51 27.7d	Cr 52 83.789	Cr 53 9.501	Cr 54 2.365	Cr 55 3.497m	Cr 56 5.94m	Cr 57 -0s	Cr 58 7s	Cr 59 0.46s
23	V 44 0.15s	V 45 0.547s	V 46 0.4225s	V 47 32.6m	V 48 15.97d	V 49 330d	V 50 0.25	V 51 99.75	V 52 3.743m	V 53 1.61m	V 54 49.8s	V 55 6.54s	V 56 0.216s	V 57 0.35s	V 58 0.185s
22	Ti 43 0.509s	Ti 44 58.9y	Ti 45 3.08h	Ti 46 8.25	Ti 47 7.44	Ti 48 73.72	Ti 49 5.41	Ti 50 5.18	Ti 51 5.76m	Ti 52 1.7m	Ti 53 32.7s	Ti 54 1.5s	Ti 55 1.3s	Ti 56 0.2s	Ti 57 0.098s
21	Sc 42 1.033m	Sc 43 3.891h	Sc 44 2.442d	Sc 45 100	Sc 46 83.79d	Sc 47 3.349d	Sc 48 1.82d	Sc 49 57.18m	Sc 50 1.708m	Sc 51 12.4s	Sc 52 8.2s	Sc 53 3s	Sc 54 0.292s	Sc 55 0.105s	Sc 56 0.0809s
20	Ca 41 1.02e+05y	Ca 42 0.647	Ca 43 0.135	Ca 44 2.086	Ca 45 162.6d	Ca 46 0.004	Ca 47 4.536d	Ca 48 0.187	Ca 49 8.718m	Ca 50 13.9s	Ca 51 10s	Ca 52 4.6s	Ca 53 0.09s	Ca 54 0.086s	Ca 55 0.022s
19	K 40 0.0117	K 41 6.7302	K 42 12.36h	K 43 22.3h	K 44 22.13m	K 45 17.81m	K 46 1.75m	K 47 17.5s	K 48 6.8s	K 49 1.26s	K 50 0.472s	K 51 0.365s	K 52 0.105s	K 53 0.03s	K 54 0.01s
18	Ar 39 269y	Ar 40 99.6003	Ar 41 1.827h	Ar 42 32.9y	Ar 43 5.37m	Ar 44 11.87m	Ar 45 21.48s	Ar 46 8.4s	Ar 47 1.23s	Ar 48 0.475s	Ar 49 0.17s	Ar 50 0.085s	Ar 51 0.0141s	Ar 52 0.00872s	Ar 53 0.00709s
17	Cl 38 37.23m	Cl 39 55.6m	Cl 40 1.35m	Cl 41 38.4s	Cl 42 6.9s	Cl 43 3.07s	Cl 44 0.56s	Cl 45 0.4s	Cl 46 0.223s	Cl 47 0.101s	Cl 48 0.0175s	Cl 49 0.0103s	Cl 50 0.00644s	Cl 51 0.004s	Cl 52 0.00331s
16	S 37 5.05m	S 38 2.838h	S 39 11.5s	S 40 8.8s	S 41 1.99s	S 42 1.013s	S 43 0.22s	S 44 0.1s	S 45 0.068s	S 46 0.05s	S 47 0.0109s	S 48 0.00632s		S 50 0.00268s	
15	P 36 5.6s	P 37 2.31s	P 38 0.64s	P 39 0.28s	P 40 0.153s	P 41 0.15s	P 42 0.11s	P 43 0.033s	P 44 0.0185s	P 45 0.0061s	P 46 0.00472s	P 47 0.00305s		P 49 0.00152s	
14	Si 35 0.78s	Si 36 0.45s	Si 37 0.09s	Si 38 0.102s	Si 39 0.0475s	Si 40 0.033s	Si 41 0.02s	Si 42 0.0125s	Si 43 0.00565s	Si 44 0.00352s		Si 46 0.00195s			
13	Al 34 0.0563s	Al 35 0.15s	Al 36 0.09s	Al 37 0.0107s	Al 38 0.0076s	Al 39 0.0076s	Al 40 0.00374s	Al 41 0.0022s	Al 42 0.00146s	Al 43 0.000989s					
12	Mg 33 0.0905s	Mg 34 0.02s	Mg 35 0.07s	Mg 36 0.0039s	Mg 37 0.00483s	Mg 38 0.00259s	Mg 39 0.00197s	Mg 40 0.00122s							
11	Na 32 0.0132s	Na 33 0.008s	Na 34 0.0055s	Na 35 0.0015s		Na 37 0.00132s									
10	Ne 31 0.0034s	Ne 32 0.0035s		Ne 34 0.0017s											
9		F 31 0.00156s													

Chart of the Nuclides 2010 (No. 5)

42																	
41																Nb 75 0.00444s	Nb 76 0.00533s
40																Zr 74 0.00657s	Zr 75 0.00769s
39														Y 71 0.00506s	Y 72 0.00616s	Y 73 0.00882s	Y 74 0.0101s
38												Sr 69 0.00498s	Sr 70 0.00757s	Sr 71 0.0093s	Sr 72 0.0134s	Sr 73 0.0159s
37											Rb 67 0.00594s	Rb 68 0.00703s	Rb 69 0.0108s	Rb 70 0.013s	Rb 71 0.0191s	Rb 72 0.0188s
36											Kr 66 0.00903s	Kr 67 0.0111s	Kr 68 0.0172s	Kr 69 0.032s	Kr 70 0.052s	Kr 71 0.064s
35									Br 63 0.00671s	Br 64 0.00824s	Br 65 0.0133s	Br 66 0.016s	Br 67 0.0251s	Br 68 0.0248s	Br 69 0.192s	Br 70 2.2s
34									Se 62 0.0104s	Se 63 0.0134s	Se 64 0.0225s	Se 65 0.0272s	Se 66 0.033s	Se 67 0.136s	Se 68 35.5s	Se 69 27.4s
33							As 59 0.00516s	As 60 0.00629s	As 61 0.0157s	As 62 0.0205s	As 63 0.0342s	As 64 0.018s	As 65 0.128s	As 66 0.09577s	As 67 42.5s	As 68 2.527m
32							Ge 58 0.00851s	Ge 59 0.0109s	Ge 60 0.0304s	Ge 61 0.04s	Ge 62 0.129s	Ge 63 0.142s	Ge 64 1.062m	Ge 65 30.9s	Ge 66 2.26h	Ge 67 18.9m
31				Ga 55 0.00647s	Ga 56 0.00811s	Ga 57 0.0133s	Ga 58 0.0167s	Ga 59 0.046s	Ga 60 0.07s	Ga 61 0.1162s	Ga 62 0.1161s	Ga 63 32.4s	Ga 64 2.627m	Ga 65 15.2m	Ga 66 9.49h	
30				Zn 54 0.0032s	Zn 55 0.0198s	Zn 56 0.03s	Zn 57 0.04s	Zn 58 0.084s	Zn 59 0.182s	Zn 60 2.38m	Zn 61 1.485m	Zn 62 9.26h	Zn 63 38.47m	Zn 64 48.63	Zn 65 244.1d		
29	Cu 50 0.00491s	Cu 51 0.00823s	Cu 52 0.0106s	Cu 53 0.0175s	Cu 54 0.0215s	Cu 55 0.027s	Cu 56 0.093s	Cu 57 0.1963s	Cu 58 3.204s	Cu 59 1.358m	Cu 60 23.7m	Cu 61 3.333h	Cu 62 9.673m	Cu 63 69.17	Cu 64 12.7h		
28	Ni 49 0.012s	Ni 50 0.0172s	Ni 51 0.0238s	Ni 52 0.038s	Ni 53 0.045s	Ni 54 0.104s	Ni 55 0.2047s	Ni 56 6.075d	Ni 57 1.483d	Ni 58 68.0769	Ni 59 7.6e+04y	Ni 60 26.2231	Ni 61 1.1399	Ni 62 3.6345	Ni 63 100.1y		
27	Co 48 0.0164s	Co 49 0.0291s	Co 50 0.03881s	Co 51 0.0688s	Co 52 0.115s	Co 53 0.247s	Co 54 1.48m	Co 55 17.53h	Co 56 77.23d	Co 57 271.7d	Co 58 70.86d	Co 59 100	Co 60 5.271y	Co 61 1.65h	Co 62 13.91m		
26	Fe 47 0.0218s	Fe 48 0.044s	Fe 49 0.07s	Fe 50 0.15s	Fe 51 0.305s	Fe 52 8.275h	Fe 53 8.51m	Fe 54 5.845	Fe 55 2.744y	Fe 56 91.754	Fe 57 2.119	Fe 58 0.282	Fe 59 44.49d	Fe 60 1.5e+06y	Fe 61 5.98m		

Chart of the Nuclides 2010 (No. 6)

31	Ga 67 3.262d	Ga 68 1.128h	Ga 69 60.108	Ga 70 21.14m	Ga 71 39.892	Ga 72 14.1h	Ga 73 4.86h	Ga 74 8.12m	Ga 75 2.1m	Ga 76 32.6s	Ga 77 13.2s	Ga 78 5.09s	Ga 79 2.847s	Ga 80 1.697s	Ga 81 1.217s
30	Zn 66 27.9	Zn 67 4.1	Zn 68 18.75	Zn 69 13.76h	Zn 70 0.62	Zn 71 3.96h	Zn 72 1.938d	Zn 73 23.5s	Zn 74 1.593m	Zn 75 10.2s	Zn 76 5.7s	Zn 77 2.08s	Zn 78 1.47s	Zn 79 0.995s	Zn 80 0.545s
29	Cu 65 30.83	Cu 66 5.12m	Cu 67 2.576d	Cu 68 3.75m	Cu 69 2.85m	Cu 70 44.5s	Cu 71 19.5s	Cu 72 6.63s	Cu 73 4.2s	Cu 74 1.63s	Cu 75 1.224s	Cu 76 1.27s	Cu 77 0.469s	Cu 78 0.342s	Cu 79 0.188s
28	Ni 64 0.9256	Ni 65 2.517h	Ni 66 2.275d	Ni 67 21s	Ni 68 29s	Ni 69 11.4s	Ni 70 6s	Ni 71 2.56s	Ni 72 1.57s	Ni 73 0.84s	Ni 74 0.68s	Ni 75 0.344s	Ni 76 0.238s	Ni 77 0.128s	Ni 78 0.11s
27	Co 63 27.4s	Co 64 0.3s	Co 65 1.2s	Co 66 0.233s	Co 67 0.425s	Co 68 1.6s	Co 69 0.216s	Co 70 0.5s	Co 71 0.079s	Co 72 0.09s	Co 73 0.041s	Co 74 0.0367s	Co 75 0.0247s	Co 76 0.0175s	Co 77 0.0114s
26	Fe 62 1.133m	Fe 63 6.1s	Fe 64 2s	Fe 65 1.32s	Fe 66 0.44s	Fe 67 0.47s	Fe 68 0.132s	Fe 69 0.17s	Fe 70 0.094s	Fe 71 0.0586s	Fe 72 0.038s	Fe 73 0.0258s	Fe 74 0.014s	Fe 75 0.0104s	Fe 76 0.00743s
25	Mn 61 0.67s	Mn 62 0.88s	Mn 63 0.275s	Mn 64 0.09s	Mn 65 0.092s	Mn 66 0.066s	Mn 67 0.042s	Mn 68 0.028s	Mn 69 0.014s	Mn 70 0.0242s	Mn 71 0.0132s	Mn 72 0.00904s	Mn 73 0.00594s	Mn 74 0.00539s	Mn 75 0.004s
24	Cr 60 0.49s	Cr 61 0.251s	Cr 62 0.209s	Cr 63 0.113s	Cr 64 0.043s	Cr 65 0.027s	Cr 66 0.01s	Cr 67 0.0311s	Cr 68 0.0172s	Cr 69 0.0116s	Cr 70 0.00714s	Cr 71 0.00607s	Cr 72 0.00412s	Cr 73 0.0038s	Cr 74 0.0028s
23	V 59 0.097s	V 60 0.122s	V 61 0.041s	V 62 0.0335s	V 63 0.017s	V 64 0.0242s	V 65 0.0143s	V 66 0.00999s	V 67 0.00667s	V 68 0.00551s	V 69 0.0038s	V 70 0.00324s	V 71 0.0023s	V 72 0.00214s	V 73 0.00162s
22	Ti 58 0.059s	Ti 59 0.03s	Ti 60 0.022s	Ti 61 0.0291s	Ti 62 0.0172s	Ti 63 0.0125s	Ti 64 0.00769s	Ti 65 0.00639s	Ti 66 0.00449s	Ti 67 0.00372s	Ti 68 0.00253s	Ti 69 0.0022s	Ti 70 0.00162s	Ti 71 0.0015s	Ti 72 0.00113s
21	Sc 57 0.013s	Sc 58 0.012s	Sc 59 0.018s	Sc 60 0.0134s	Sc 61 0.00883s	Sc 62 0.00641s	Sc 63 0.00429s	Sc 64 0.00349s	Sc 65 0.00237s	Sc 66 0.002s	Sc 67 0.00143s	Sc 68 0.0013s	Sc 69 0.00101s		Sc 71 0.00073s
20	Ca 56 0.011s	Ca 57 0.0193s	Ca 58 0.0123s	Ca 59 0.01s	Ca 60 0.00674s		Ca 62 0.003s		Ca 64 0.00174s		Ca 66 0.00117s		Ca 68 0.000876s		Ca 70 0.000671s
19	K 55 0.00758s	K 56 0.00602s	K 57 0.00399s	K 58 0.00318s	K 59 0.00221s		K 61 0.00127s		K 63 0.000913s		K 65 0.000654s				
18	Ar 54 0.00469s		Ar 56 0.00244s		Ar 58 0.00141s		Ar 60 0.000896s								
17	Cl 53 0.00222s		Cl 55 0.0013s												
16	S 52 0.00148s														
15															

Chart of the Nuclides 2010 (No. 7)

43		Tc 80 0.00465s	Tc 81 0.0063s	Tc 82 0.00715s	Tc 83 0.0106s	Tc 84 0.0108s	Tc 85 0.0731s	Tc 86 0.054s	Tc 87 2.18s	Tc 88 6.4s	Tc 89 12.9s	Tc 90 49.2s	Tc 91 3.3m	Tc 92 4.25m	Tc 93 2.75h
42	Mo 78 0.00571s	Mo 79 0.00656s	Mo 80 0.00916s	Mo 81 0.0106s	Mo 82 0.0229s	Mo 83 0.023s	Mo 84 0.0038s	Mo 85 3.2s	Mo 86 19.6s	Mo 87 13.4s	Mo 88 8m	Mo 89 2.11m	Mo 90 5.67h	Mo 91 15.49m	Mo 92 14.84
41	Nb 77 0.00754s	Nb 78 0.00854s	Nb 79 0.0126s	Nb 80 0.0124s	Nb 81 0.0932s	Nb 82 0.05s	Nb 83 4.1s	Nb 84 9.5s	Nb 85 20.9s	Nb 86 1.467m	Nb 87 3.75m	Nb 88 14.55m	Nb 89 2.03h	Nb 90 14.6h	Nb 91 680y
40	Zr 76 0.011s	Zr 77 0.013s	Zr 78 0.0272s	Zr 79 0.056s	Zr 80 4.6s	Zr 81 5.5s	Zr 82 32s	Zr 83 41.6s	Zr 84 25.9m	Zr 85 7.86m	Zr 86 16.5h	Zr 87 1.68h	Zr 88 83.4d	Zr 89 3.267d	Zr 90 51.45
39	Y 75 0.0153s	Y 76 0.016s	Y 77 0.063s	Y 78 5.7s	Y 79 14.8s	Y 80 30.1s	Y 81 1.173m	Y 82 8.3s	Y 83 7.08m	Y 84 40m	Y 85 4.86h	Y 86 14.74h	Y 87 3.325d	Y 88 106.6d	Y 89 100
38	Sr 74 0.0355s	Sr 75 0.088s	Sr 76 8.9s	Sr 77 9s	Sr 78 2.5m	Sr 79 2.25m	Sr 80 1.772h	Sr 81 22.3m	Sr 82 25.55d	Sr 83 1.35d	Sr 84 0.56	Sr 85 64.84d	Sr 86 9.86	Sr 87 7	Sr 88 82.58
37	Rb 73 0.15s	Rb 74 0.06478s	Rb 75 19s	Rb 76 36.5s	Rb 77 3.77m	Rb 78 17.66m	Rb 79 22.9m	Rb 80 34s	Rb 81 4.572h	Rb 82 6.472h	Rb 83 86.2d	Rb 84 32.77d	Rb 85 72.17	Rb 86 18.63d	Rb 87 27.83
36	Kr 72 17.2s	Kr 73 27.3s	Kr 74 11.5m	Kr 75 4.29m	Kr 76 14.8h	Kr 77 1.24h	Kr 78 0.35	Kr 79 1.46d	Kr 80 2.28	Kr 81 2.29e+05y	Kr 82 11.58	Kr 83 11.49	Kr 84 57	Kr 85 10.76y	Kr 86 17.3
35	Br 71 21.4s	Br 72 1.31m	Br 73 3.4m	Br 74 46m	Br 75 1.612h	Br 76 16.2h	Br 77 2.376d	Br 78 6.46m	Br 79 50.69	Br 80 4.42h	Br 81 49.31	Br 82 1.47d	Br 83 2.4h	Br 84 31.8m	Br 85 2.9m
34	Se 70 41.1m	Se 71 4.74m	Se 72 8.4d	Se 73 7.15h	Se 74 0.89	Se 75 119.8d	Se 76 9.37	Se 77 7.63	Se 78 23.77	Se 79 2.95e+05y	Se 80 49.61	Se 81 57.28m	Se 82 8.73	Se 83 22.3m	Se 84 3.1m
33	As 69 15.23m	As 70 52.6m	As 71 2.72d	As 72 1.083d	As 73 80.3d	As 74 17.77d	As 75 100	As 76 1.093d	As 77 1.618d	As 78 1.512h	As 79 9.01m	As 80 15.2s	As 81 33.3s	As 82 19.1s	As 83 13.4s
32	Ge 68 271d	Ge 69 1.627d	Ge 70 20.84	Ge 71 11.43d	Ge 72 27.54	Ge 73 7.73	Ge 74 36.28	Ge 75 1.38h	Ge 76 7.61	Ge 77 11.3h	Ge 78 1.467h	Ge 79 39s	Ge 80 29.5s	Ge 81 7.6s	Ge 82 4.55s
31	Ga 67 3.262d	Ga 68 1.128h	Ga 69 60.108	Ga 70 21.14m	Ga 71 39.892	Ga 72 14.1h	Ga 73 4.86h	Ga 74 8.12m	Ga 75 2.1m	Ga 76 32.6s	Ga 77 13.2s	Ga 78 5.09s	Ga 79 2.847s	Ga 80 1.697s	Ga 81 1.217s
30	Zn 66 27.9	Zn 67 4.1	Zn 68 18.75	Zn 69 13.76h	Zn 70 0.62	Zn 71 3.96h	Zn 72 1.938d	Zn 73 23.5s	Zn 74 1.593m	Zn 75 10.2s	Zn 76 5.7s	Zn 77 2.08s	Zn 78 1.47s	Zn 79 0.995s	Zn 80 0.545s
29	Cu 65 30.83	Cu 66 5.12m	Cu 67 2.576d	Cu 68 3.75m	Cu 69 2.85m	Cu 70 44.5s	Cu 71 19.5s	Cu 72 6.63s	Cu 73 4.2s	Cu 74 1.63s	Cu 75 1.224s	Cu 76 1.27s	Cu 77 0.469s	Cu 78 0.342s	Cu 79 0.188s
28	Ni 64 0.9256	Ni 65 2.517h	Ni 66 2.275d	Ni 67 21s	Ni 68 29s	Ni 69 11.4s	Ni 70 6s	Ni 71 2.56s	Ni 72 1.57s	Ni 73 0.84s	Ni 74 0.68s	Ni 75 0.344s	Ni 76 0.238s	Ni 77 0.128s	Ni 78 0.11s
27	Co 63 27.4s	Co 64 0.3s	Co 65 1.2s	Co 66 0.233s	Co 67 0.425s	Co 68 1.6s	Co 69 0.216s	Co 70 0.5s	Co 71 0.079s	Co 72 0.09s	Co 73 0.041s	Co 74 0.0367s	Co 75 0.0247s	Co 76 0.0175s	Co 77 0.0114s

Chart of the Nuclides 2010 (No. 8)

54																
53																I 103 0.00685s
52																Te102 0.0137s
51												Sb 97 0.00273s	Sb 98 0.00287s	Sb 99 0.00351s	Sb100 0.00276s	Sb101 0.0315s
50										Sn 95 0.00444s	Sn 96 0.00617s	Sn 97 0.00736s	Sn 98 0.0145s	Sn 99 0.0309s	Sn100 1s
49									In 93 0.00474s	In 94 0.00551s	In 95 0.00757s	In 96 0.00718s	In 97 0.0366s	In 98 1.7s	In 99 3.1s
48								Cd 91 0.0047s	Cd 92 0.00638s	Cd 93 0.00712s	Cd 94 0.0124s	Cd 95 0.039s	Cd 96 1.03s	Cd 97 3s	Cd 98 9.2s
47						Ag 88 0.00385s	Ag 89 0.0052s	Ag 90 0.00587s	Ag 91 0.00801s	Ag 92 0.00748s	Ag 93 0.0458s	Ag 94 0.55s	Ag 95 1.74s	Ag 96 6.9s	Ag 97 25.3s
46					Pd 86 0.00461s	Pd 87 0.00524s	Pd 88 0.00732s	Pd 89 0.00834s	Pd 90 0.0154s	Pd 91 0.0481s	Pd 92 1.1s	Pd 93 0.79s	Pd 94 9s	Pd 95 13.3s	Pd 96 2.033m
45				Rh 84 0.00428s	Rh 85 0.00601s	Rh 86 0.00701s	Rh 87 0.00986s	Rh 88 0.00938s	Rh 89 0.0561s	Rh 90 1.1s	Rh 91 1.47s	Rh 92 4.66s	Rh 93 11.9s	Rh 94 1.177m	Rh 95 5.02m
44			Ru 82 0.00489s	Ru 83 0.00553s	Ru 84 0.00795s	Ru 85 0.00914s	Ru 86 0.0181s	Ru 87 0.0595s	Ru 88 1.3s	Ru 89 1.2s	Ru 90 11s	Ru 91 9s	Ru 92 3.65m	Ru 93 59.7s	Ru 94 51.8m
43		Tc 80 0.00465s	Tc 81 0.0063s	Tc 82 0.00715s	Tc 83 0.0106s	Tc 84 0.0108s	Tc 85 0.0731s	Tc 86 0.054s	Tc 87 2.18s	Tc 88 6.4s	Tc 89 12.9s	Tc 90 49.2s	Tc 91 3.3m	Tc 92 4.25m	Tc 93 2.75h
42	Mo 78 0.00571s	Mo 79 0.00656s	Mo 80 0.00916s	Mo 81 0.0106s	Mo 82 0.0229s	Mo 83 0.023s	Mo 84 0.0038s	Mo 85 3.2s	Mo 86 19.6s	Mo 87 13.4s	Mo 88 8m	Mo 89 2.11m	Mo 90 5.67h	Mo 91 15.49m	Mo 92 14.84
41	Nb 77 0.00754s	Nb 78 0.00854s	Nb 79 0.0126s	Nb 80 0.0124s	Nb 81 0.0932s	Nb 82 0.05s	Nb 83 4.1s	Nb 84 9.5s	Nb 85 20.9s	Nb 86 1.467m	Nb 87 3.75m	Nb 88 14.55m	Nb 89 2.03h	Nb 90 14.6h	Nb 91 680y
40	Zr 76 0.011s	Zr 77 0.013s	Zr 78 0.0272s	Zr 79 0.056s	Zr 80 4.6s	Zr 81 5.5s	Zr 82 32s	Zr 83 41.6s	Zr 84 25.9m	Zr 85 7.86m	Zr 86 16.5h	Zr 87 1.68h	Zr 88 83.4d	Zr 89 3.267d	Zr 90 51.45
39	Y 75 0.0153s	Y 76 0.016s	Y 77 0.063s	Y 78 5.7s	Y 79 14.8s	Y 80 30.1s	Y 81 1.173m	Y 82 8.3s	Y 83 7.08m	Y 84 40m	Y 85 4.86h	Y 86 14.74h	Y 87 3.325d	Y 88 106.6d	Y 89 100
38	Sr 74 0.0355s	Sr 75 0.088s	Sr 76 8.9s	Sr 77 9s	Sr 78 2.5m	Sr 79 2.25m	Sr 80 1.772h	Sr 81 22.3m	Sr 82 25.55d	Sr 83 1.35d	Sr 84 0.56	Sr 85 64.84d	Sr 86 9.86	Sr 87 7	Sr 88 82.58

Chart of the Nuclides 2010 (No. 9)

36	Kr 87 1.272h	Kr 88 2.84h	Kr 89 3.15m	Kr 90 32.32s	Kr 91 8.57s	Kr 92 1.84s	Kr 93 1.286s	Kr 94 0.2s	Kr 95 0.78s	Kr 96 0.08s	Kr 97 0.063s	Kr 98 0.046s	Kr 99 0.04s	Kr100 0.0316s	Kr101 0.0243s
35	Br 86 55s	Br 87 55.6s	Br 88 16.5s	Br 89 4.4s	Br 90 1.92s	Br 91 0.541s	Br 92 0.343s	Br 93 0.102s	Br 94 0.07s	Br 95 0.0635s	Br 96 0.0492s	Br 97 0.0323s	Br 98 0.0236s	Br 99 0.0151s	Br100 0.0115s
34	Se 85 31.7s	Se 86 15.3s	Se 87 5.29s	Se 88 1.53s	Se 89 0.41s	Se 90 0.16s	Se 91 0.27s	Se 92 0.0748s	Se 93 0.0581s	Se 94 0.0411s	Se 95 0.0317s	Se 96 0.0194s	Se 97 0.0141s	Se 98 0.00961s	Se 99 0.00793s
33	As 84 4.5s	As 85 2.028s	As 86 0.945s	As 87 0.48s	As 88 0.0921s	As 89 0.066s	As 90 0.0477s	As 91 0.0343s	As 92 0.0265s	As 93 0.0186s	As 94 0.013s	As 95 0.00881s	As 96 0.00707s	As 97 0.00534s	As 98 0.00464s
32	Ge 83 1.85s	Ge 84 0.947s	Ge 85 0.535s	Ge 86 0.0878s	Ge 87 0.0623s	Ge 88 0.043s	Ge 89 0.0327s	Ge 90 0.0214s	Ge 91 0.016s	Ge 92 0.0104s	Ge 93 0.00847s	Ge 94 0.00611s	Ge 95 0.00526s	Ge 96 0.00391s	Ge 97 0.00345s
31	Ga 82 0.599s	Ga 83 0.31s	Ga 84 0.085s	Ga 85 0.0388s	Ga 86 0.0281s	Ga 87 0.0194s	Ga 88 0.0142s	Ga 89 0.00952s	Ga 90 0.0077s	Ga 91 0.00562s	Ga 92 0.00483s	Ga 93 0.00354s	Ga 94 0.00308s	Ga 95 0.00231s	Ga 96 0.00208s
30	Zn 81 0.29s	Zn 82 0.0576s	Zn 83 0.0436s	Zn 84 0.0253s	Zn 85 0.0194s	Zn 86 0.0133s	Zn 87 0.0106s	Zn 88 0.00704s	Zn 89 0.00594s	Zn 90 0.00424s	Zn 91 0.00358s	Zn 92 0.00255s		Zn 94 0.0017s	
29	Cu 80 0.0392s	Cu 81 0.0258s	Cu 82 0.0188s	Cu 83 0.0122s	Cu 84 0.0101s	Cu 85 0.00752s	Cu 86 0.0063s	Cu 87 0.0044s		Cu 89 0.00252s		Cu 91 0.0015s		Cu 93 0.00108s	
28	Ni 79 0.0249s	Ni 80 0.0158s	Ni 81 0.0123s	Ni 82 0.00874s	Ni 83 0.00757s	Ni 84 0.00556s	Ni 85 0.00474s	Ni 86 0.00344s							
27	Co 78 0.00484s	Co 79 0.0037s	Co 80 0.00328s	Co 81 0.00255s	Co 82 0.00224s	Co 83 0.00171s	Co 84 0.00151s	Co 85 0.00117s							
26	Fe 77 0.00366s	Fe 78 0.00278s	Fe 79 0.00255s	Fe 80 0.002s		Fe 82 0.00133s		Fe 84 0.000972s							
25	Mn 76 0.00219s	Mn 77 0.00171s	Mn 78 0.00156s	Mn 79 0.0012s		Mn 81 0.000812s									
24		Cr 76 0.00132s		Cr 78 0.000931s											
23		V 75 0.000871s													
22		Ti 74 0.000697s													
21		Sc 73 0.000536s													
20															

Chart of the Nuclides 2010 (No. 10)

51	Sb 102 0.0878s	Sb 103 0.235s	Sb 104 0.44s	Sb 105 1.3s	Sb 106 0.6s	Sb 107 4s	Sb 108 7.4s	Sb 109 17s	Sb 110 23s	Sb 111 1.25m	Sb 112 51.4s	Sb 113 6.67m	Sb 114 3.49m	Sb 115 32.1m	Sb 116 1.005h
50	Sn101 1.7s	Sn102 4.5s	Sn103 7s	Sn104 20.8s	Sn105 34s	Sn106 1.917m	Sn107 2.9m	Sn108 10.3m	Sn109 18m	Sn110 4.173h	Sn111 35.3m	Sn112 0.97	Sn113 115.1d	Sn114 0.66	Sn115 0.34
49	In100 6.1s	In101 16s	In102 22s	In103 1m	In104 1.8m	In105 5.07m	In106 6.2m	In107 32.4m	In108 58m	In109 4.167h	In110 4.9h	In111 2.805d	In112 20.56m	In113 4.29	In114 49.51d
48	Cd 99 16s	Cd100 49.1s	Cd101 1.36m	Cd102 5.5m	Cd103 7.3m	Cd104 57.7m	Cd105 55.5m	Cd106 1.25	Cd107 6.5h	Cd108 0.89	Cd109 1.263y	Cd110 12.49	Cd111 12.8	Cd112 24.13	Cd113 12.22
47	Ag 98 46.7s	Ag 99 2.067m	Ag100 2.24m	Ag101 11.1m	Ag102 12.9m	Ag103 1.095h	Ag104 1.153h	Ag105 41.29d	Ag106 8.28d	Ag107 51.839	Ag108 438y	Ag109 48.161	Ag110 249.8d	Ag111 7.45d	Ag112 3.13h
46	Pd 97 3.1m	Pd 98 17.7m	Pd 99 21.4m	Pd100 3.63d	Pd101 8.47h	Pd102 1.02	Pd103 16.99d	Pd104 11.14	Pd105 22.33	Pd106 27.33	Pd107 6.5e+06y	Pd108 26.46	Pd109 13.7h	Pd110 11.72	Pd111 5.5h
45	Rh 96 9.9m	Rh 97 46.2m	Rh 98 8.72m	Rh 99 16.1d	Rh100 20.8h	Rh101 3.3y	Rh102 3.742y	Rh103 100	Rh104 4.34m	Rh105 1.473d	Rh106 2.183h	Rh107 21.7m	Rh108 6m	Rh109 1.333m	Rh110 28.5s
44	Ru 95 1.643h	Ru 96 5.54	Ru 97 2.9d	Ru 98 1.87	Ru 99 12.76	Ru100 12.6	Ru101 17.06	Ru102 31.55	Ru103 39.26d	Ru104 18.62	Ru105 4.44h	Ru106 1.018y	Ru107 3.75m	Ru108 4.55m	Ru109 34.5s
43	Tc 94 4.883h	Tc 95 61d	Tc 96 4.28d	Tc 97 2.6e+06y	Tc 98 4.2e+06y	Tc 99 2.11e+05y	Tc100 15.46s	Tc101 14.2m	Tc102 4.35m	Tc103 54.2s	Tc104 18.3m	Tc105 7.6m	Tc106 35.6s	Tc107 21.2s	Tc108 5.17s
42	Mo 93 4000y	Mo 94 9.25	Mo 95 15.92	Mo 96 16.68	Mo 97 9.55	Mo 98 24.13	Mo 99 2.747d	Mo100 9.63	Mo101 14.61m	Mo102 11.3m	Mo103 1.125m	Mo104 1m	Mo105 35.6s	Mo106 8.73s	Mo107 3.5s
41	Nb 92 3.47e+07y	Nb 93 100	Nb 94 2.03e+04y	Nb 95 34.99d	Nb 96 23.35h	Nb 97 1.202h	Nb 98 51.3m	Nb 99 2.6m	Nb100 2.99s	Nb101 7.1s	Nb102 4.3s	Nb103 1.5s	Nb104 4.8s	Nb105 2.95s	Nb106 0.93s
40	Zr 91 11.22	Zr 92 17.15	Zr 93 1.53e+06y	Zr 94 17.38	Zr 95 64.03d	Zr 96 2.8	Zr 97 16.74h	Zr 98 30.7s	Zr 99 2.1s	Zr100 7.1s	Zr101 2.3s	Zr102 2.9s	Zr103 1.3s	Zr104 1.2s	Zr105 0.6s
39	Y 90 2.667d	Y 91 58.51d	Y 92 3.54h	Y 93 10.18h	Y 94 18.7m	Y 95 10.3m	Y 96 9.6s	Y 97 3.75s	Y 98 2s	Y 99 1.478s	Y 100 0.94s	Y 101 0.45s	Y 102 0.36s	Y 103 0.23s	Y 104 0.18s
38	Sr 89 50.53d	Sr 90 28.79y	Sr 91 9.63h	Sr 92 2.71h	Sr 93 7.423m	Sr 94 1.255m	Sr 95 23.9s	Sr 96 1.07s	Sr 97 0.426s	Sr 98 0.653s	Sr 99 0.269s	Sr100 0.202s	Sr101 0.118s	Sr102 0.069s	Sr103 0.0845s
37	Rb 88 17.77m	Rb 89 15.15m	Rb 90 4.3m	Rb 91 58.4s	Rb 92 4.492s	Rb 93 5.84s	Rb 94 2.702s	Rb 95 0.3775s	Rb 96 0.2013s	Rb 97 0.1699s	Rb 98 0.114s	Rb 99 0.0503s	Rb100 0.051s	Rb101 0.032s	Rb102 0.037s
36	Kr 87 1.272h	Kr 88 2.84h	Kr 89 3.15m	Kr 90 32.32s	Kr 91 8.57s	Kr 92 1.84s	Kr 93 1.286s	Kr 94 0.2s	Kr 95 0.78s	Kr 96 0.08s	Kr 97 0.063s	Kr 98 0.046s	Kr 99 0.04s	Kr100 0.0316s	Kr101 0.0243s
35	Br 86 55s	Br 87 55.6s	Br 88 16.5s	Br 89 4.4s	Br 90 1.92s	Br 91 0.541s	Br 92 0.343s	Br 93 0.102s	Br 94 0.07s	Br 95 0.0635s	Br 96 0.0492s	Br 97 0.0323s	Br 98 0.0236s	Br 99 0.0151s	Br100 0.0115s

Chart of the Nuclides 2010 (No. 11)

66															
65															Tb130 0.0273s
64														Gd128 0.0392s	Gd129 0.069s
63												Eu125 0.0134s	Eu126 0.0319s	Eu127 0.0718s	Eu128 0.124s
62										Sm123 0.0129s	Sm124 0.049s	Sm125 0.0798s	Sm126 0.153s	Sm127 0.26s	
61								Pm120 0.00336s	Pm121 0.0148s	Pm122 0.0393s	Pm123 0.0922s	Pm124 0.143s	Pm125 0.286s	Pm126 0.438s	
60							Nd118 0.006s	Nd119 0.0142s	Nd120 0.0619s	Nd121 0.0996s	Nd122 0.193s	Nd123 0.315s	Nd124 0.61s	Nd125 0.65s	
59						Pr116 0.00368s	Pr117 0.0166s	Pr118 0.0479s	Pr119 0.113s	Pr120 0.179s	Pr121 0.01s	Pr122 0.534s	Pr123 1.13s	Pr124 1.2s	
58					Ce114 0.00635s	Ce115 0.0153s	Ce116 0.0793s	Ce117 0.124s	Ce118 0.257s	Ce119 0.413s	Ce120 0.816s	Ce121 1.1s	Ce122 2.84s	Ce123 3.8s	
57				La111 0.000332s	La112 0.00416s	La113 0.0182s	La114 0.0613s	La115 0.162s	La116 0.233s	La117 0.024s	La118 0.712s	La119 1.58s	La120 2.8s	La121 5.3s	La122 8.6s
56				Ba110 7.23e-05s	Ba111 0.0186s	Ba112 0.0949s	Ba113 0.172s	Ba114 0.43s	Ba115 0.4s	Ba116 1.3s	Ba117 1.75s	Ba118 5.2s	Ba119 5.4s	Ba120 24s	Ba121 29.7s
55		Cs107 1.02e-06s	Cs108 5.53e-05s	Cs109 0.000439s	Cs110 0.0659s	Cs111 0.183s	Cs112 0.0005s	Cs113 1.67e-05s	Cs114 0.57s	Cs115 1.4s	Cs116 3.85s	Cs117 8.4s	Cs118 17s	Cs119 43s	Cs120 1.067m
54		Xe106 4.97e-07s	Xe107 2.86e-05s	Xe108 5.96e-05s	Xe109 0.013s	Xe110 0.105s	Xe111 0.74s	Xe112 2.7s	Xe113 2.74s	Xe114 10s	Xe115 18s	Xe116 59s	Xe117 1.017m	Xe118 3.8m	Xe119 5.8m
53	I 104 0.00599s	I 105 4.82e-06s	I 106 0.000252s	I 107 0.000418s	I 108 0.036s	I 109 0.0001s	I 110 0.65s	I 111 2.5s	I 112 3.42s	I 113 6.6s	I 114 6.2s	I 115 1.3m	I 116 2.91s	I 117 2.22m	I 118 13.7m
52	Te103 0.0271s	Te104 1.68e-06s	Te105 7e-07s	Te106 6e-05s	Te107 0.0031s	Te108 2.1s	Te109 4.6s	Te110 18.6s	Te111 19.3s	Te112 2m	Te113 1.7m	Te114 15.2m	Te115 6.7m	Te116 2.49h	Te117 1.033h
51	Sb102 0.0878s	Sb103 0.235s	Sb104 0.44s	Sb105 1.3s	Sb106 0.6s	Sb107 4s	Sb108 7.4s	Sb109 17s	Sb110 23s	Sb111 1.25m	Sb112 51.4s	Sb113 6.67m	Sb114 3.49m	Sb115 32.1m	Sb116 1.005h
50	Sn101 1.7s	Sn102 4.5s	Sn103 7s	Sn104 20.8s	Sn105 34s	Sn106 1.917m	Sn107 2.9m	Sn108 10.3m	Sn109 18m	Sn110 4.173h	Sn111 35.3m	Sn112 0.97	Sn113 115.1d	Sn114 0.66	Sn115 0.34

Chart of the Nuclides 2010 (No. 12)

44	Ru110 11.6s	Ru111 2.12s	Ru112 1.75s	Ru113 0.9s	Ru114 0.53s	Ru115 0.74s	Ru116 0.694s	Ru117 0.326s	Ru118 0.13s	Ru119 0.0813s	Ru120 0.0623s	Ru121 0.0501s	Ru122 0.0372s	Ru123 0.0337s	Ru124 0.0251s
43	Tc109 0.86s	Tc110 0.92s	Tc111 0.29s	Tc112 0.28s	Tc113 0.17s	Tc114 0.15s	Tc115 0.136s	Tc116 0.0727s	Tc117 0.0485s	Tc118 0.0404s	Tc119 0.0325s	Tc120 0.027s	Tc121 0.0205s	Tc122 0.0192s	Tc123 0.0143s
42	Mo108 1.09s	Mo109 0.53s	Mo110 0.3s	Mo111 0.449s	Mo112 0.186s	Mo113 0.0969s	Mo114 0.0572s	Mo115 0.047s	Mo116 0.0345s	Mo117 0.03s	Mo118 0.0229s	Mo119 0.0202s	Mo120 0.015s	Mo121 0.0145s	Mo122 0.0107s
41	Nb107 0.3s	Nb108 0.193s	Nb109 0.19s	Nb110 0.17s	Nb111 0.0546s	Nb112 0.0403s	Nb113 0.0302s	Nb114 0.0249s	Nb115 0.0192s	Nb116 0.0167s	Nb117 0.0127s	Nb118 0.0117s	Nb119 0.00895s	Nb120 0.00859s	Nb121 0.0066s
40	Zr106 0.262s	Zr107 0.164s	Zr108 0.0798s	Zr109 0.056s	Zr110 0.0358s	Zr111 0.0286s	Zr112 0.0214s	Zr113 0.0183s	Zr114 0.0139s	Zr115 0.0126s	Zr116 0.00954s	Zr117 0.00902s	Zr118 0.00681s	Zr119 0.00662s	Zr120 0.00518s
39	Y 105 0.0888s	Y 106 0.0578s	Y 107 0.036s	Y 108 0.0271s	Y 109 0.0189s	Y 110 0.016s	Y 111 0.012s	Y 112 0.0104s	Y 113 0.00794s	Y 114 0.00745s	Y 115 0.00583s	Y 116 0.0055s	Y 117 0.00429s	Y 118 0.00414s	Y 119 0.00334s
38	Sr104 0.0498s	Sr105 0.0378s	Sr106 0.0245s	Sr107 0.0194s	Sr108 0.0133s	Sr109 0.012s	Sr110 0.00878s	Sr111 0.00782s	Sr112 0.00597s	Sr113 0.00573s	Sr114 0.00444s	Sr115 0.0042s	Sr116 0.00328s	Sr117 0.00314s	Sr118 0.00248s
37	Rb103 0.0237s	Rb104 0.0186s	Rb105 0.0125s	Rb106 0.0105s	Rb107 0.0077s	Rb108 0.0069s	Rb109 0.00526s	Rb110 0.00472s	Rb111 0.00372s	Rb112 0.00346s	Rb113 0.00274s	Rb114 0.00254s	Rb115 0.00201s	Rb116 0.0019s	Rb117 0.00151s
36	Kr102 0.015s	Kr103 0.0122s	Kr104 0.00859s	Kr105 0.0076s	Kr106 0.00564s	Kr107 0.00514s	Kr108 0.00395s	Kr109 0.00356s	Kr110 0.0028s	Kr111 0.00262s	Kr112 0.00209s	Kr113 0.00193s	Kr114 0.00151s	Kr115 0.00141s	Kr116 0.00111s
35	Br101 0.00817s	Br102 0.00698s	Br103 0.00532s	Br104 0.00477s	Br105 0.00367s	Br106 0.00331s	Br107 0.00256s	Br108 0.00234s	Br109 0.00187s	Br110 0.00177s	Br111 0.00142s	Br112 0.00134s	Br113 0.00106s	Br114 0.00102s	Br115 0.00085s
34	Se100 0.00588s	Se101 0.00521s	Se102 0.00402s	Se103 0.00357s	Se104 0.00273s	Se105 0.00248s	Se106 0.00193s	Se107 0.0018s	Se108 0.00143s		Se110 0.00108s		Se112 0.000826s		Se114 0.000718s
33	As 99 0.00352s	As100 0.00316s	As101 0.00244s	As102 0.00218s	As103 0.0017s	As104 0.00156s	As105 0.00122s	As106 0.00114s	As107 0.000928s		As109 0.000728s		As111 0.000588s		As113 0.000478s
32	Ge 98 0.00259s	Ge 99 0.00236s	Ge100 0.00183s		Ge102 0.0013s		Ge104 0.000934s		Ge106 0.000732s		Ge108 0.00059s		Ge110 0.000475s		
31	Ga 97 0.00161s	Ga 98 0.00147s	Ga 99 0.00115s		Ga101 0.000841s		Ga103 0.000633s		Ga105 0.000505s						
30	Zn 96 0.00122s		Zn 98 0.000881s		Zn100 0.000665s										
29	Cu 95 0.000791s		Cu 97 0.000595s												
28															

Chart of the Nuclides 2010 (No. 13)

61	Pm127 0.893s	Pm128 1s	Pm129 2.4s	Pm130 2.6s	Pm131 6.3s	Pm132 6.2s	Pm133 15s	Pm134 22s	Pm135 49s	Pm136 1.783m	Pm137 2.4m	Pm138 3.24m	Pm139 4.15m	Pm140 5.95m	Pm141 20.9m
60	Nd126 2.06s	Nd127 1.8s	Nd128 6.37s	Nd129 4.9s	Nd130 13s	Nd131 27s	Nd132 1.567m	Nd133 1.167m	Nd134 8.5m	Nd135 12.4m	Nd136 50.65m	Nd137 38.5m	Nd138 5.04h	Nd139 5.5h	Nd140 3.37d
59	Pr125 3.3s	Pr126 3.14s	Pr127 4.2s	Pr128 2.85s	Pr129 30s	Pr130 40s	Pr131 1.51m	Pr132 1.6m	Pr133 6.5m	Pr134 17m	Pr135 24m	Pr136 13.1m	Pr137 1.28h	Pr138 2.12h	Pr139 4.41h
58	Ce124 6s	Ce125 10.2s	Ce126 51s	Ce127 34s	Ce128 3.93m	Ce129 3.5m	Ce130 22.9m	Ce131 10.3m	Ce132 3.51h	Ce133 4.9h	Ce134 3.16d	Ce135 17.7h	Ce136 0.185	Ce137 1.433d	Ce138 0.251
57	La123 17s	La124 29.21s	La125 1.08m	La126 54s	La127 5.1m	La128 5.23m	La129 11.6m	La130 8.7m	La131 59m	La132 4.8h	La133 3.912h	La134 6.45m	La135 19.5h	La136 9.87m	La137 6e+04y
56	Ba122 1.95m	Ba123 2.7m	Ba124 11m	Ba125 3.5m	Ba126 1.667h	Ba127 12.7m	Ba128 2.43d	Ba129 2.23h	Ba130 0.106	Ba131 11.5d	Ba132 0.101	Ba133 10.52y	Ba134 2.417	Ba135 6.592	Ba136 7.854
55	Cs121 2.583m	Cs122 3.7m	Cs123 5.88m	Cs124 30.8s	Cs125 46.7m	Cs126 1.64m	Cs127 6.25h	Cs128 3.62m	Cs129 1.336d	Cs130 29.21m	Cs131 9.689d	Cs132 6.48d	Cs133 100	Cs134 2.065y	Cs135 2.3e+06y
54	Xe120 46m	Xe121 40.1m	Xe122 20.1h	Xe123 2.08h	Xe124 0.09	Xe125 16.9h	Xe126 0.09	Xe127 36.4d	Xe128 1.92	Xe129 26.44	Xe130 4.08	Xe131 21.18	Xe132 26.89	Xe133 5.243d	Xe134 10.44
53	I 119 19.1m	I 120 1.36h	I 121 2.12h	I 122 3.63m	I 123 13.22h	I 124 4.176d	I 125 59.4d	I 126 12.93d	I 127 100	I 128 24.99m	I 129 1.57e+07y	I 130 12.36h	I 131 8.025d	I 132 2.295h	I 133 20.8h
52	Te118 6d	Te119 4.7d	Te120 0.09	Te121 154d	Te122 2.55	Te123 0.89	Te124 4.74	Te125 7.07	Te126 18.84	Te127 109d	Te128 31.74	Te129 33.6d	Te130 34.08	Te131 1.385d	Te132 3.204d
51	Sb117 2.8h	Sb118 5h	Sb119 1.591d	Sb120 5.76d	Sb121 57.21	Sb122 2.724d	Sb123 42.79	Sb124 60.2d	Sb125 2.759y	Sb126 12.35d	Sb127 3.85d	Sb128 9.01h	Sb129 4.4h	Sb130 39.5m	Sb131 23.03m
50	Sn116 14.54	Sn117 7.68	Sn118 24.22	Sn119 8.59	Sn120 32.58	Sn121 43.9y	Sn122 4.63	Sn123 129.2d	Sn124 5.79	Sn125 9.64d	Sn126 2.3e+05y	Sn127 2.1h	Sn128 59.07m	Sn129 6.9m	Sn130 3.72m
49	In115 95.71	In116 54.41m	In117 1.937h	In118 4.45m	In119 18m	In120 47.3s	In121 3.88m	In122 10.8s	In123 47.4s	In124 3.7s	In125 12.2s	In126 1.64s	In127 3.67s	In128 0.84s	In129 1.23s
48	Cd114 28.73	Cd115 44.56d	Cd116 7.49	Cd117 3.36h	Cd118 50.3m	Cd119 2.69m	Cd120 50.8s	Cd121 13.5s	Cd122 5.24s	Cd123 2.1s	Cd124 1.25s	Cd125 0.65s	Cd126 0.515s	Cd127 0.43s	Cd128 0.34s
47	Ag113 5.37h	Ag114 4.6s	Ag115 20m	Ag116 2.68m	Ag117 1.213m	Ag118 3.76s	Ag119 6s	Ag120 1.23s	Ag121 0.78s	Ag122 0.529s	Ag123 0.296s	Ag124 0.172s	Ag125 0.166s	Ag126 0.107s	Ag127 0.109s
46	Pd112 21.03h	Pd113 1.55m	Pd114 2.42m	Pd115 50s	Pd116 11.8s	Pd117 4.3s	Pd118 1.9s	Pd119 0.92s	Pd120 0.5s	Pd121 1.44s	Pd122 0.519s	Pd123 0.23s	Pd124 0.0993s	Pd125 0.0861s	Pd126 0.0646s
45	Rh111 11s	Rh112 6.8s	Rh113 2.8s	Rh114 1.85s	Rh115 0.99s	Rh116 0.68s	Rh117 0.44s	Rh118 0.266s	Rh119 0.467s	Rh120 0.202s	Rh121 0.101s	Rh122 0.0678s	Rh123 0.0517s	Rh124 0.0451s	Rh125 0.035s

Chart of the Nuclides 2010 (No. 14)

77																
76																Os156 0.041s
75															Re154 0.0558s	Re155 0.0593s
74													W 151 0.0597s	W 152 0.0769s	W 153 0.0829s	W 154 0.0874s
73											Ta149 0.0677s	Ta150 0.0848s	Ta151 0.113s	Ta152 0.117s	Ta153 0.13s
72									Hf146 0.0533s	Hf147 0.0716s	Hf148 0.102s	Hf149 0.13s	Hf150 0.174s	Hf151 0.183s	Hf152 0.21s
71								Lu144 0.0565s	Lu145 0.0866s	Lu146 0.11s	Lu147 0.15s	Lu148 0.184s	Lu149 0.256s	Lu150 0.046s	Lu151 0.0806s
70						Yb141 0.0417s	Yb142 0.0653s	Yb143 0.0933s	Yb144 0.14s	Yb145 0.202s	Yb146 0.229s	Yb147 0.312s	Yb148 0.43s	Yb149 0.7s	Yb150 0.592s
69					Tm139 0.0467s	Tm140 0.0675s	Tm141 0.106s	Tm142 0.15s	Tm143 0.246s	Tm144 0.337s	Tm145 3.1e-06s	Tm146 0.198s	Tm147 0.56s	Tm148 0.7s	Tm149 0.9s
68				Er137 0.0482s	Er138 0.0809s	Er139 0.121s	Er140 0.196s	Er141 0.294s	Er142 0.462s	Er143 0.667s	Er144 0.688s	Er145 0.9s	Er146 1.7s	Er147 2.5s	Er148 4.6s
67		Ho134 0.0233s	Ho135 0.0541s	Ho136 0.0781s	Ho137 0.143s	Ho138 0.207s	Ho139 0.352s	Ho140 0.006s	Ho141 0.0041s	Ho142 0.4s	Ho143 1.1s	Ho144 0.7s	Ho145 2.4s	Ho146 3.9s	Ho147 5.8s
66	Dy132 0.0338s	Dy133 0.058s	Dy134 0.101s	Dy135 0.158s	Dy136 0.281s	Dy137 0.426s	Dy138 0.7s	Dy139 0.6s	Dy140 7e-06s	Dy141 0.9s	Dy142 2.3s	Dy143 5.6s	Dy144 9.1s	Dy145 14.1s	Dy146 29s
65	Tb131 0.0676s	Tb132 0.104s	Tb133 0.188s	Tb134 0.268s	Tb135 0.00094s	Tb136 0.713s	Tb137 1.3s	Tb138 1.47s	Tb139 1.6s	Tb140 2.4s	Tb141 7.9s	Tb142 0.597s	Tb143 21s	Tb144 4.25s	Tb145 30.9s
64	Gd130 0.134s	Gd131 0.21s	Gd132 0.368s	Gd133 0.58s	Gd134 1.1s	Gd135 1.1s	Gd136 2.17s	Gd137 2.2s	Gd138 4.7s	Gd139 5.8s	Gd140 15.8s	Gd141 24.5s	Gd142 1.17m	Gd143 1.833m	Gd144 4.47m
63	Eu129 0.242s	Eu130 0.0009s	Eu131 0.0178s	Eu132 1.01s	Eu133 2.09s	Eu134 0.5s	Eu135 1.5s	Eu136 3.3s	Eu137 11s	Eu138 12.1s	Eu139 17.9s	Eu140 1.51s	Eu141 40.7s	Eu142 1.223m	Eu143 2.59m
62	Sm128 0.49s	Sm129 0.55s	Sm130 1.56s	Sm131 1.2s	Sm132 4s	Sm133 2.9s	Sm134 9.5s	Sm135 10.3s	Sm136 47s	Sm137 45s	Sm138 3.1m	Sm139 2.57m	Sm140 14.82m	Sm141 22.6m	Sm142 1.208h
61	Pm127 0.893s	Pm128 1s	Pm129 2.4s	Pm130 2.6s	Pm131 6.3s	Pm132 6.2s	Pm133 15s	Pm134 22s	Pm135 49s	Pm136 1.783m	Pm137 2.4m	Pm138 3.24m	Pm139 4.15m	Pm140 5.95m	Pm141 20.9m

Chart of the Nuclides 2010 (No. 15)

48	Cd129 0.27s	Cd130 0.162s	Cd131 0.068s	Cd132 0.097s	Cd133 0.0184s	Cd134 0.0143s	Cd135 0.0128s	Cd136 0.00925s	Cd137 0.00811s	Cd138 0.00617s	Cd139 0.00592s	Cd140 0.00472s	Cd141 0.00456s	Cd142 0.00363s	Cd143 0.00349s
47	Ag128 0.058s	Ag129 0.044s	Ag130 0.05s	Ag131 0.0125s	Ag132 0.0114s	Ag133 0.00865s	Ag134 0.0076s	Ag135 0.00578s	Ag136 0.00553s	Ag137 0.00443s	Ag138 0.00442s	Ag139 0.00351s	Ag140 0.00337s	Ag141 0.00272s	Ag142 0.00275s
46	Pd127 0.0625s	Pd128 0.0449s	Pd129 0.0127s	Pd130 0.00956s	Pd131 0.0089s	Pd132 0.00663s	Pd133 0.00617s	Pd134 0.00472s	Pd135 0.00476s	Pd136 0.00363s	Pd137 0.00367s	Pd138 0.00284s	Pd139 0.00283s	Pd140 0.00234s	Pd141 0.00239s
45	Rh126 0.0328s	Rh127 0.0245s	Rh128 0.00783s	Rh129 0.00613s	Rh130 0.00581s	Rh131 0.00445s	Rh132 0.00424s	Rh133 0.00331s	Rh134 0.00327s	Rh135 0.00247s	Rh136 0.00256s	Rh137 0.002s	Rh138 0.00206s	Rh139 0.0016s	Rh140 0.00166s
44	Ru125 0.024s	Ru126 0.0177s	Ru127 0.0062s	Ru128 0.00486s	Ru129 0.00473s	Ru130 0.00362s	Ru131 0.00351s	Ru132 0.00265s	Ru133 0.00262s	Ru134 0.00207s	Ru135 0.0021s	Ru136 0.00165s		Ru138 0.00131s	
43	Tc124 0.0137s	Tc125 0.0104s	Tc126 0.00407s	Tc127 0.00329s	Tc128 0.00326s	Tc129 0.00256s	Tc130 0.00251s	Tc131 0.00191s	Tc132 0.00186s	Tc133 0.00148s		Tc135 0.00116s		Tc137 0.000979s	
42	Mo123 0.0104s	Mo124 0.00788s	Mo125 0.00334s	Mo126 0.00269s	Mo127 0.00264s	Mo128 0.00206s		Mo130 0.00147s		Mo132 0.00118s		Mo134 0.000947s		Mo136 0.000775s	
41	Nb122 0.00646s	Nb123 0.00501s	Nb124 0.00235s	Nb125 0.0019s	Nb126 0.00183s	Nb127 0.00145s		Nb129 0.00106s		Nb131 0.000831s		Nb133 0.000677s		Nb135 0.000559s	
40	Zr121 0.00507s	Zr122 0.00393s		Zr124 0.00156s		Zr126 0.00117s		Zr128 0.000866s							
39	Y 120 0.00319s	Y 121 0.00251s		Y 123 0.00111s											
38	Sr119 0.00238s	Sr120 0.00188s		Sr122 0.000875s											
37	Rb118 0.00142s	Rb119 0.00109s	Rb120 0.000854s	Rb121 0.000579s											
36	Kr117 0.00106s	Kr118 0.000845s	Kr119 0.000803s	Kr120 0.000482s											
35	Br116 0.000845s	Br117 0.000697s	Br118 0.000682s												
34		Se116 0.000574s													
33		As115 0.000368s													
32															

Chart of the Nuclides 2010 (No. 16)

61	Pm142 40.5s	Pm143 265d	Pm144 363d	Pm145 17.7y	Pm146 5.53y	Pm147 2.623y	Pm148 41.29d	Pm149 2.212d	Pm150 2.68h	Pm151 1.183d	Pm152 13.8m	Pm153 5.25m	Pm154 2.68m	Pm155 41.5s	Pm156 26.7s
60	Nd141 2.49h	Nd142 27.2	Nd143 12.2	Nd144 23.8	Nd145 8.3	Nd146 17.2	Nd147 10.98d	Nd148 5.7	Nd149 1.728h	Nd150 5.6	Nd151 12.44m	Nd152 11.4m	Nd153 31.6s	Nd154 25.9s	Nd155 8.9s
59	Pr140 3.39m	Pr141 100	Pr142 19.12h	Pr143 13.57d	Pr144 17.28m	Pr145 5.984h	Pr146 24.15m	Pr147 13.4m	Pr148 2.29m	Pr149 2.26m	Pr150 6.19s	Pr151 18.9s	Pr152 3.63s	Pr153 4.28s	Pr154 2.3s
58	Ce139 137.6d	Ce140 88.45	Ce141 32.51d	Ce142 11.114	Ce143 1.377d	Ce144 284.9d	Ce145 3.01m	Ce146 13.52m	Ce147 56.4s	Ce148 56s	Ce149 5.3s	Ce150 4s	Ce151 1.76s	Ce152 1.4s	Ce153 2.36s
57	La138 0.09	La139 99.91	La140 1.679d	La141 3.92h	La142 1.518h	La143 14.2m	La144 40.8s	La145 24.8s	La146 10s	La147 4.015s	La148 1.26s	La149 1.05s	La150 0.51s	La151 0.982s	La152 0.39s
56	Ba137 11.232	Ba138 71.698	Ba139 1.384h	Ba140 12.75d	Ba141 18.27m	Ba142 10.6m	Ba143 14.5s	Ba144 11.5s	Ba145 4.31s	Ba146 2.22s	Ba147 0.893s	Ba148 0.612s	Ba149 0.344s	Ba150 0.3s	Ba151 0.179s
55	Cs136 13.16d	Cs137 30.08y	Cs138 33.41m	Cs139 9.27m	Cs140 1.062m	Cs141 24.84s	Cs142 1.684s	Cs143 1.791s	Cs144 0.994s	Cs145 0.587s	Cs146 0.321s	Cs147 0.235s	Cs148 0.146s	Cs149 0.0942s	Cs150 0.085s
54	Xe135 9.14h	Xe136 8.87	Xe137 3.818m	Xe138 14.08m	Xe139 39.68s	Xe140 13.6s	Xe141 1.73s	Xe142 1.22s	Xe143 0.3s	Xe144 0.388s	Xe145 0.188s	Xe146 0.146s	Xe147 0.1s	Xe148 0.0588s	Xe149 0.0573s
53	I 134 52.5m	I 135 6.58h	I 136 1.39m	I 137 24.5s	I 138 6.41s	I 139 2.28s	I 140 0.86s	I 141 0.43s	I 142 0.2s	I 143 0.107s	I 144 0.084s	I 145 0.0564s	I 146 0.0464s	I 147 0.0313s	I 148 0.0297s
52	Te133 55.4m	Te134 41.8m	Te135 19s	Te136 17.63s	Te137 2.49s	Te138 1.4s	Te139 0.311s	Te140 0.149s	Te141 0.115s	Te142 0.075s	Te143 0.0638s	Te144 0.0436s	Te145 0.0379s	Te146 0.0261s	Te147 0.0217s
51	Sb132 4.1m	Sb133 2.5m	Sb134 10.07s	Sb135 1.68s	Sb136 0.923s	Sb137 0.169s	Sb138 0.126s	Sb139 0.0887s	Sb140 0.0702s	Sb141 0.0478s	Sb142 0.0399s	Sb143 0.0274s	Sb144 0.0217s	Sb145 0.0148s	Sb146 0.013s
50	Sn131 58.4s	Sn132 39.7s	Sn133 1.45s	Sn134 1.05s	Sn135 0.53s	Sn136 0.25s	Sn137 0.19s	Sn138 0.0669s	Sn139 0.0584s	Sn140 0.0416s	Sn141 0.0329s	Sn142 0.0208s	Sn143 0.0177s	Sn144 0.013s	Sn145 0.0122s
49	In130 0.542s	In131 0.35s	In132 0.207s	In133 0.165s	In134 0.14s	In135 0.092s	In136 0.0162s	In137 0.0122s	In138 0.0104s	In139 0.00739s	In140 0.00638s	In141 0.00517s	In142 0.00502s	In143 0.00412s	In144 0.00396s
48	Cd129 0.27s	Cd130 0.162s	Cd131 0.068s	Cd132 0.097s	Cd133 0.0184s	Cd134 0.0143s	Cd135 0.0128s	Cd136 0.00925s	Cd137 0.00811s	Cd138 0.00617s	Cd139 0.00592s	Cd140 0.00472s	Cd141 0.00456s	Cd142 0.00363s	Cd143 0.00349s
47	Ag128 0.058s	Ag129 0.044s	Ag130 0.05s	Ag131 0.0125s	Ag132 0.0114s	Ag133 0.00865s	Ag134 0.0076s	Ag135 0.00578s	Ag136 0.00553s	Ag137 0.00443s	Ag138 0.00442s	Ag139 0.00351s	Ag140 0.00337s	Ag141 0.00272s	Ag142 0.00275s
46	Pd127 0.0625s	Pd128 0.0449s	Pd129 0.0127s	Pd130 0.00956s	Pd131 0.0089s	Pd132 0.00663s	Pd133 0.00617s	Pd134 0.00472s	Pd135 0.00476s	Pd136 0.00363s	Pd137 0.00367s	Pd138 0.00284s	Pd139 0.00283s	Pd140 0.00234s	Pd141 0.00239s
45	Rh126 0.0328s	Rh127 0.0245s	Rh128 0.00783s	Rh129 0.00613s	Rh130 0.00581s	Rh131 0.00445s	Rh132 0.00424s	Rh133 0.00331s	Rh134 0.00327s	Rh135 0.00247s	Rh136 0.00256s	Rh137 0.002s	Rh138 0.00206s	Rh139 0.0016s	Rh140 0.00166s

Chart of the Nuclides 2010 (No. 17)

74	W 155 0.0961s	W 156 0.707s	W 157 0.868s	W 158 0.00125s	W 159 0.0082s	W 160 0.091s	W 161 0.41s	W 162 1.36s	W 163 2.8s	W 164 6s	W 165 5.1s	W 166 19.2s	W 167 19.9s	W 168 53s	W 169 1.233m
73	Ta154 0.142s	Ta155 1.2e-05s	Ta156 0.36s	Ta157 0.0101s	Ta158 0.055s	Ta159 0.83s	Ta160 1.7s	Ta161 2.89s	Ta162 3.57s	Ta163 10.6s	Ta164 14.2s	Ta165 31s	Ta166 34.4s	Ta167 1.333m	Ta168 2m
72	Hf153 0.246s	Hf154 2s	Hf155 0.89s	Hf156 0.023s	Hf157 0.11s	Hf158 2.85s	Hf159 5.2s	Hf160 13.6s	Hf161 18.2s	Hf162 39.4s	Hf163 40s	Hf164 1.85m	Hf165 1.267m	Hf166 6.77m	Hf167 2.05m
71	Lu152 0.7s	Lu153 0.9s	Lu154 1.12s	Lu155 0.138s	Lu156 0.494s	Lu157 6.8s	Lu158 10.4s	Lu159 12.1s	Lu160 40s	Lu161 1.283m	Lu162 1.9m	Lu163 3.97m	Lu164 3.14m	Lu165 12m	Lu166 2.65m
70	Yb151 1.6s	Yb152 3.04s	Yb153 4.2s	Yb154 0.409s	Yb155 1.793s	Yb156 26s	Yb157 38.6s	Yb158 1.49m	Yb159 1.67m	Yb160 4.8m	Yb161 4.2m	Yb162 18.87m	Yb163 11.05m	Yb164 1.263h	Yb165 9.9m
69	Tm150 2.2s	Tm151 6.6s	Tm152 8s	Tm153 2.5s	Tm154 8.1s	Tm155 45s	Tm156 1.397m	Tm157 3.63m	Tm158 3.98m	Tm159 9.13m	Tm160 9.4m	Tm161 30.2m	Tm162 21.7m	Tm163 1.81h	Tm164 5.1m
68	Er149 8.9s	Er150 18.5s	Er151 23.5s	Er152 10.3s	Er153 37.1s	Er154 3.7m	Er155 5.3m	Er156 19.5m	Er157 18.65m	Er158 2.29h	Er159 36m	Er160 1.191d	Er161 3.21h	Er162 0.14	Er163 1.25h
67	Ho148 9.59s	Ho149 56s	Ho150 1.2m	Ho151 47.2s	Ho152 2.697m	Ho153 9.3m	Ho154 11.76m	Ho155 48m	Ho156 56m	Ho157 12.6m	Ho158 28m	Ho159 33.05m	Ho160 5.02h	Ho161 2.48h	Ho162 1.117h
66	Dy147 55s	Dy148 3.3m	Dy149 4.2m	Dy150 7.17m	Dy151 17.9m	Dy152 2.38h	Dy153 6.4h	Dy154 3e+06y	Dy155 9.9h	Dy156 0.06	Dy157 8.14h	Dy158 0.1	Dy159 144.4d	Dy160 2.34	Dy161 18.91
65	Tb146 23s	Tb147 1.7h	Tb148 1h	Tb149 4.118h	Tb150 3.48h	Tb151 17.61h	Tb152 17.5h	Tb153 2.34d	Tb154 22.7h	Tb155 5.32d	Tb156 5.35d	Tb157 71y	Tb158 180y	Tb159 100	Tb160 72.3d
64	Gd145 23m	Gd146 48.27d	Gd147 1.587d	Gd148 74.6y	Gd149 9.28d	Gd150 1.79e+06y	Gd151 124d	Gd152 0.2	Gd153 240.4d	Gd154 2.18	Gd155 14.8	Gd156 20.47	Gd157 15.65	Gd158 24.84	Gd159 18.48h
63	Eu144 10.2s	Eu145 5.93d	Eu146 4.59d	Eu147 24.1d	Eu148 54.5d	Eu149 93.1d	Eu150 36.9y	Eu151 47.81	Eu152 13.54y	Eu153 52.19	Eu154 8.593y	Eu155 4.753y	Eu156 15.19d	Eu157 15.18h	Eu158 45.9m
62	Sm143 8.75m	Sm144 3.07	Sm145 340d	Sm146 1.03e+08y	Sm147 14.99	Sm148 11.24	Sm149 13.82	Sm150 7.38	Sm151 90y	Sm152 26.75	Sm153 1.928d	Sm154 22.75	Sm155 22.3m	Sm156 9.4h	Sm157 8.033m
61	Pm142 40.5s	Pm143 265d	Pm144 363d	Pm145 17.7y	Pm146 5.53y	Pm147 2.623y	Pm148 41.29d	Pm149 2.212d	Pm150 2.68h	Pm151 1.183d	Pm152 13.8m	Pm153 5.25m	Pm154 2.68m	Pm155 41.5s	Pm156 26.7s
60	Nd141 2.49h	Nd142 27.2	Nd143 12.2	Nd144 23.8	Nd145 8.3	Nd146 17.2	Nd147 10.98d	Nd148 5.7	Nd149 1.728h	Nd150 5.6	Nd151 12.44m	Nd152 11.4m	Nd153 31.6s	Nd154 25.9s	Nd155 8.9s
59	Pr140 3.39m	Pr141 100	Pr142 19.12h	Pr143 13.57d	Pr144 17.28m	Pr145 5.984h	Pr146 24.15m	Pr147 13.4m	Pr148 2.29m	Pr149 2.26m	Pr150 6.19s	Pr151 18.9s	Pr152 3.63s	Pr153 4.28s	Pr154 2.3s
58	Ce139 137.6d	Ce140 88.45	Ce141 32.51d	Ce142 11.114	Ce143 1.377d	Ce144 284.9d	Ce145 3.01m	Ce146 13.52m	Ce147 56.4s	Ce148 56s	Ce149 5.3s	Ce150 4s	Ce151 1.76s	Ce152 1.4s	Ce153 2.36s

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87																	
86																	Rn181 4.19e-07s
85																At179 0.0729s	At180 2.99e-08s
84														Po176 0.0614s	Po177 0.0643s	Po178 0.094s	Po179 0.0989s
83											Bi173 3.01e-09s	Bi174 3.06e-08s	Bi175 1.78e-08s	Bi176 2.11e-07s	Bi177 1.5e-07s	Bi178 2.6e-06s
82									Pb171 5.81e-05s	Pb172 4.13e-05s	Pb173 0.000536s	Pb174 0.000485s	Pb175 0.00979s	Pb176 0.0105s	Pb177 0.246s	
81							Tl168 0.000105s	Tl169 2.9e-05s	Tl170 0.000311s	Tl171 0.000135s	Tl172 0.00125s	Tl173 0.0011s	Tl174 0.0135s	Tl175 0.0152s	Tl176 0.0052s	
80						Hg166 2.79e-05s	Hg167 0.00012s	Hg168 6.35e-05s	Hg169 0.000148s	Hg170 6.4e-05s	Hg171 5.9e-05s	Hg172 0.00032s	Hg173 0.0007s	Hg174 0.0019s	Hg175 0.0108s	
79				Au163 0.000121s	Au164 0.00176s	Au165 0.000891s	Au166 0.00411s	Au167 0.00075s	Au168 0.0144s	Au169 0.00129s	Au170 0.00062s	Au171 0.00102s	Au172 0.004s	Au173 0.025s	Au174 0.12s	
78			Pt161 0.136s	Pt162 5.78e-05s	Pt163 0.00214s	Pt164 0.000569s	Pt165 0.00635s	Pt166 0.0003s	Pt167 0.0007s	Pt168 0.002s	Pt169 0.007s	Pt170 0.01393s	Pt171 0.034s	Pt172 0.096s	Pt173 0.382s	
77		Ir159 0.178s	Ir160 0.201s	Ir161 0.000532s	Ir162 0.0238s	Ir163 0.0241s	Ir164 9.4e-05s	Ir165 0.0003s	Ir166 0.0151s	Ir167 0.0352s	Ir168 0.161s	Ir169 0.353s	Ir170 0.87s	Ir171 1.46s	Ir172 4.4s	
76	Os157 0.0441s	Os158 0.275s	Os159 0.32s	Os160 0.000212s	Os161 0.017s	Os162 0.00205s	Os163 0.0055s	Os164 0.021s	Os165 0.071s	Os166 0.215s	Os167 0.84s	Os168 2.1s	Os169 3.4s	Os170 7.37s	Os171 8.3s	
75	Re156 0.0632s	Re157 0.419s	Re158 0.475s	Re159 2.1e-05s	Re160 0.00082s	Re161 0.0156s	Re162 0.107s	Re163 0.39s	Re164 0.53s	Re165 2.61s	Re166 2.24s	Re167 6.2s	Re168 6.6s	Re169 15.1s	Re170 9.2s	
74	W 155 0.0961s	W 156 0.707s	W 157 0.868s	W 158 0.00125s	W 159 0.0082s	W 160 0.091s	W 161 0.41s	W 162 1.36s	W 163 2.8s	W 164 6s	W 165 5.1s	W 166 19.2s	W 167 19.9s	W 168 53s	W 169 1.233m	
73	Ta154 0.142s	Ta155 1.2e-05s	Ta156 0.36s	Ta157 0.0101s	Ta158 0.055s	Ta159 0.83s	Ta160 1.7s	Ta161 2.89s	Ta162 3.57s	Ta163 10.6s	Ta164 14.2s	Ta165 31s	Ta166 34.4s	Ta167 1.333m	Ta168 2m	
72	Hf153 0.246s	Hf154 2s	Hf155 0.89s	Hf156 0.023s	Hf157 0.11s	Hf158 2.85s	Hf159 5.2s	Hf160 13.6s	Hf161 18.2s	Hf162 39.4s	Hf163 40s	Hf164 1.85m	Hf165 1.267m	Hf166 6.77m	Hf167 2.05m	
71	Lu152 0.7s	Lu153 0.9s	Lu154 1.12s	Lu155 0.138s	Lu156 0.494s	Lu157 6.8s	Lu158 10.4s	Lu159 12.1s	Lu160 40s	Lu161 1.283m	Lu162 1.9m	Lu163 3.97m	Lu164 3.14m	Lu165 12m	Lu166 2.65m	

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57	La153 0.206s	La154 0.137s	La155 0.104s	La156 0.0769s	La157 0.0592s	La158 0.0482s	La159 0.0355s	La160 0.0306s	La161 0.0217s	La162 0.0173s	La163 0.0146s	La164 0.0119s	La165 0.0101s	La166 0.0086s	La167 0.00758s
56	Ba152 0.123s	Ba153 0.097s	Ba154 0.0676s	Ba155 0.0547s	Ba156 0.0403s	Ba157 0.0347s	Ba158 0.0253s	Ba159 0.0227s	Ba160 0.0165s	Ba161 0.0151s	Ba162 0.0126s	Ba163 0.0105s	Ba164 0.00873s	Ba165 0.00756s	Ba166 0.00649s
55	Cs151 0.0562s	Cs152 0.0506s	Cs153 0.0344s	Cs154 0.0307s	Cs155 0.0228s	Cs156 0.0205s	Cs157 0.015s	Cs158 0.0139s	Cs159 0.0105s	Cs160 0.00978s	Cs161 0.00729s	Cs162 0.00613s	Cs163 0.00529s	Cs164 0.00456s	Cs165 0.00393s
54	Xe150 0.0367s	Xe151 0.0353s	Xe152 0.0236s	Xe153 0.0223s	Xe154 0.0159s	Xe155 0.0147s	Xe156 0.011s	Xe157 0.0105s	Xe158 0.00787s	Xe159 0.00742s	Xe160 0.00568s	Xe161 0.00526s	Xe162 0.00454s	Xe163 0.00385s	Xe164 0.0033s
53	I 149 0.0208s	I 150 0.0197s	I 151 0.0141s	I 152 0.0132s	I 153 0.00992s	I 154 0.00961s	I 155 0.00729s	I 156 0.00669s	I 157 0.00505s	I 158 0.00484s	I 159 0.00378s	I 160 0.00357s	I 161 0.00279s	I 162 0.00241s	I 163 0.00213s
52	Te148 0.0152s	Te149 0.0145s	Te150 0.0106s	Te151 0.00988s	Te152 0.00746s	Te153 0.00727s	Te154 0.0054s	Te155 0.00523s	Te156 0.00402s	Te157 0.00386s	Te158 0.00299s	Te159 0.00286s	Te160 0.00229s	Te161 0.00217s	Te162 0.00189s
51	Sb147 0.0097s	Sb148 0.00927s	Sb149 0.00701s	Sb150 0.00659s	Sb151 0.0051s	Sb152 0.0051s	Sb153 0.0038s	Sb154 0.00366s	Sb155 0.00288s	Sb156 0.00272s	Sb157 0.0022s	Sb158 0.0021s	Sb159 0.00168s	Sb160 0.00163s	Sb161 0.00129s
50	Sn146 0.00934s	Sn147 0.00897s	Sn148 0.006s	Sn149 0.00513s	Sn150 0.00389s	Sn151 0.00406s	Sn152 0.00302s	Sn153 0.00291s	Sn154 0.0023s	Sn155 0.00222s	Sn156 0.00176s	Sn157 0.00171s	Sn158 0.00135s		Sn160 0.00103s
49	In145 0.00309s	In146 0.00328s	In147 0.00296s	In148 0.00323s	In149 0.00284s	In150 0.00282s	In151 0.00212s	In152 0.00202s	In153 0.00163s	In154 0.00158s	In155 0.00123s	In156 0.00123s	In157 0.000956s		In159 0.000726s
48	Cd144 0.00315s	Cd145 0.00364s	Cd146 0.00296s	Cd147 0.00284s	Cd148 0.00224s	Cd149 0.00219s	Cd150 0.00173s	Cd151 0.00161s	Cd152 0.0013s		Cd154 0.000987s		Cd156 0.000764s		Cd158 0.00061s
47	Ag143 0.00255s	Ag144 0.00253s	Ag145 0.00202s	Ag146 0.00195s	Ag147 0.00156s	Ag148 0.00152s	Ag149 0.0012s		Ag151 0.000939s		Ag153 0.000702s		Ag155 0.000578s		
46	Pd142 0.0021s	Pd143 0.00203s	Pd144 0.00163s	Pd145 0.00157s	Pd146 0.00126s		Pd148 0.000957s		Pd150 0.00076s		Pd152 0.000587s				
45	Rh141 0.00144s	Rh142 0.00139s	Rh143 0.00112s		Rh145 0.000875s		Rh147 0.000681s		Rh149 0.000534s						
44	Ru140 0.00115s		Ru142 0.00089s		Ru144 0.00071s		Ru146 0.000565s								
43	Tc139 0.000797s		Tc141 0.00064s		Tc143 0.000522s										
42	Mo138 0.000639s		Mo140 0.000523s												
41															

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70	Yb166 2.362d	Yb167 17.5m	Yb168 0.13	Yb169 32.02d	Yb170 3.04	Yb171 14.28	Yb172 21.83	Yb173 16.13	Yb174 31.83	Yb175 4.185d	Yb176 12.76	Yb177 1.911h	Yb178 1.233h	Yb179 8m	Yb180 2.4m
69	Tm165 1.253d	Tm166 7.7h	Tm167 9.25d	Tm168 93.1d	Tm169 100	Tm170 128.6d	Tm171 1.92y	Tm172 2.65d	Tm173 8.24h	Tm174 5.4m	Tm175 15.2m	Tm176 1.9m	Tm177 1.5m	Tm178 6.95s	Tm179 6.31s
68	Er164 1.61	Er165 10.36h	Er166 33.61	Er167 22.93	Er168 26.78	Er169 9.392d	Er170 14.93	Er171 7.516h	Er172 2.054d	Er173 1.4m	Er174 3.2m	Er175 1.2m	Er176 20.4s	Er177 6.8s	Er178 4.42s
67	Ho163 4570y	Ho164 37.5m	Ho165 100	Ho166 1200y	Ho167 3.1h	Ho168 2.99m	Ho169 4.72m	Ho170 2.76m	Ho171 53s	Ho172 25s	Ho173 11.1s	Ho174 3.42s	Ho175 3.04s	Ho176 1.25s	Ho177 1.08s
66	Dy162 25.51	Dy163 24.9	Dy164 28.18	Dy165 2.334h	Dy166 3.4d	Dy167 6.2m	Dy168 8.7m	Dy169 39s	Dy170 41.2s	Dy171 12.4s	Dy172 8.11s	Dy173 3.23s	Dy174 2s	Dy175 1.02s	Dy176 0.705s
65	Tb161 6.906d	Tb162 7.6m	Tb163 19.5m	Tb164 3m	Tb165 2.11m	Tb166 25.1s	Tb167 19.4s	Tb168 8.2s	Tb169 4.43s	Tb170 2s	Tb171 1.53s	Tb172 0.69s	Tb173 0.531s	Tb174 0.301s	Tb175 0.233s
64	Gd160 21.86	Gd161 3.66m	Gd162 8.4m	Gd163 1.133m	Gd164 45s	Gd165 10.3s	Gd166 4.8s	Gd167 4.58s	Gd168 3.46s	Gd169 1.54s	Gd170 0.966s	Gd171 0.512s	Gd172 0.35s	Gd173 0.235s	Gd174 0.177s
63	Eu159 18.1m	Eu160 38s	Eu161 26s	Eu162 10.6s	Eu163 10.8s	Eu164 3.03s	Eu165 2.76s	Eu166 1.02s	Eu167 0.773s	Eu168 0.365s	Eu169 0.264s	Eu170 0.163s	Eu171 0.135s	Eu172 0.0964s	Eu173 0.0774s
62	Sm158 5.3m	Sm159 11.37s	Sm160 9.6s	Sm161 4.8s	Sm162 2.4s	Sm163 3.07s	Sm164 1.64s	Sm165 0.66s	Sm166 0.456s	Sm167 0.269s	Sm168 0.196s	Sm169 0.134s	Sm170 0.106s	Sm171 0.0797s	Sm172 0.0646s
61	Pm157 10.56s	Pm158 4.8s	Pm159 1.47s	Pm160 2.55s	Pm161 1.33s	Pm162 0.567s	Pm163 0.32s	Pm164 0.192s	Pm165 0.152s	Pm166 0.0986s	Pm167 0.0815s	Pm168 0.0605s	Pm169 0.0489s	Pm170 0.0385s	Pm171 0.0339s
60	Nd156 5.49s	Nd157 5.43s	Nd158 2.72s	Nd159 1.42s	Nd160 0.503s	Nd161 0.306s	Nd162 0.204s	Nd163 0.147s	Nd164 0.108s	Nd165 0.084s	Nd166 0.0655s	Nd167 0.0513s	Nd168 0.0409s	Nd169 0.0331s	Nd170 0.0286s
59	Pr155 2.59s	Pr156 1.22s	Pr157 0.554s	Pr158 0.292s	Pr159 0.175s	Pr160 0.142s	Pr161 0.0879s	Pr162 0.0642s	Pr163 0.0531s	Pr164 0.0404s	Pr165 0.0328s	Pr166 0.0256s	Pr167 0.0218s	Pr168 0.0178s	Pr169 0.0161s
58	Ce154 0.974s	Ce155 0.445s	Ce156 0.226s	Ce157 0.175s	Ce158 0.112s	Ce159 0.0923s	Ce160 0.064s	Ce161 0.0531s	Ce162 0.0439s	Ce163 0.0333s	Ce164 0.0278s	Ce165 0.0221s	Ce166 0.0185s	Ce167 0.0153s	Ce168 0.0136s
57	La153 0.206s	La154 0.137s	La155 0.104s	La156 0.0769s	La157 0.0592s	La158 0.0482s	La159 0.0355s	La160 0.0306s	La161 0.0217s	La162 0.0173s	La163 0.0146s	La164 0.0119s	La165 0.0101s	La166 0.0086s	La167 0.00758s
56	Ba152 0.123s	Ba153 0.097s	Ba154 0.0676s	Ba155 0.0547s	Ba156 0.0403s	Ba157 0.0347s	Ba158 0.0253s	Ba159 0.0227s	Ba160 0.0165s	Ba161 0.0151s	Ba162 0.0126s	Ba163 0.0105s	Ba164 0.00873s	Ba165 0.00756s	Ba166 0.00649s
55	Cs151 0.0562s	Cs152 0.0506s	Cs153 0.0344s	Cs154 0.0307s	Cs155 0.0228s	Cs156 0.0205s	Cs157 0.015s	Cs158 0.0139s	Cs159 0.0105s	Cs160 0.00978s	Cs161 0.00729s	Cs162 0.00613s	Cs163 0.00529s	Cs164 0.00456s	Cs165 0.00393s
54	Xe150 0.0367s	Xe151 0.0353s	Xe152 0.0236s	Xe153 0.0223s	Xe154 0.0159s	Xe155 0.0147s	Xe156 0.011s	Xe157 0.0105s	Xe158 0.00787s	Xe159 0.00742s	Xe160 0.00568s	Xe161 0.00526s	Xe162 0.00454s	Xe163 0.00385s	Xe164 0.0033s

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83	Bi179 2.51e-06s	Bi180 4.18e-05s	Bi181 3.71e-05s	Bi182 0.000539s	Bi183 0.000352s	Bi184 0.013s	Bi185 5.8e-05s	Bi186 0.0148s	Bi187 0.032s	Bi188 0.265s	Bi189 0.674s	Bi190 6.3s	Bi191 12.3s	Bi192 39.6s	Bi193 1.117m
82	Pb178 0.00023s	Pb179 1.12s	Pb180 0.0044s	Pb181 0.045s	Pb182 0.055s	Pb183 0.535s	Pb184 0.49s	Pb185 6.3s	Pb186 4.83s	Pb187 18.3s	Pb188 25.1s	Pb189 51s	Pb190 1.183m	Pb191 2.18m	Pb192 3.5m
81	Tl177 0.018s	Tl178 0.254s	Tl179 0.23s	Tl180 1.5s	Tl181 3.2s	Tl182 3.1s	Tl183 6.9s	Tl184 11s	Tl185 19.5s	Tl186 27.5s	Tl187 51s	Tl188 1.183m	Tl189 2.3m	Tl190 3.7m	Tl191 5.22m
80	Hg176 0.018s	Hg177 0.1273s	Hg178 0.266s	Hg179 1.05s	Hg180 2.58s	Hg181 3.6s	Hg182 10.83s	Hg183 10.7s	Hg184 30.75s	Hg185 49.1s	Hg186 1.38m	Hg187 2.4m	Hg188 3.25m	Hg189 8.6m	Hg190 20m
79	Au175 0.16s	Au176 1.08s	Au177 1.462s	Au178 2.6s	Au179 7.1s	Au180 8.1s	Au181 13.7s	Au182 15.6s	Au183 42s	Au184 53s	Au185 6.8m	Au186 10.7m	Au187 8.4m	Au188 8.84m	Au189 28.7m
78	Pt174 0.876s	Pt175 2.54s	Pt176 6.3s	Pt177 11s	Pt178 21.1s	Pt179 21.1s	Pt180 56s	Pt181 52s	Pt182 2.6m	Pt183 6.5m	Pt184 17.3m	Pt185 1.182h	Pt186 2.08h	Pt187 2.35h	Pt188 10.2d
77	Ir173 9s	Ir174 7.9s	Ir175 9s	Ir176 8.3s	Ir177 30s	Ir178 12s	Ir179 1.317m	Ir180 1.5m	Ir181 4.9m	Ir182 15m	Ir183 58m	Ir184 3.09h	Ir185 14.4h	Ir186 16.64h	Ir187 10.5h
76	Os172 19.2s	Os173 22.4s	Os174 44s	Os175 1.4m	Os176 3.6m	Os177 3m	Os178 5m	Os179 6.5m	Os180 21.5m	Os181 1.75h	Os182 22.1h	Os183 13h	Os184 0.02	Os185 93.6d	Os186 1.59
75	Re171 15.2s	Re172 55s	Re173 1.98m	Re174 2.4m	Re175 5.89m	Re176 5.3m	Re177 14m	Re178 13.2m	Re179 19.7m	Re180 2.44m	Re181 19.9h	Re182 2.667d	Re183 70d	Re184 169d	Re185 37.4
74	W 170 2.42m	W 171 2.38m	W 172 6.6m	W 173 7.5m	W 174 33.2m	W 175 35.2m	W 176 2.5h	W 177 2.2h	W 178 21.6d	W 179 37.05m	W 180 0.12	W 181 121.2d	W 182 26.5	W 183 14.31	W 184 30.64
73	Ta169 4.9m	Ta170 6.76m	Ta171 23.3m	Ta172 36.8m	Ta173 3.14h	Ta174 1.14h	Ta175 10.5h	Ta176 8.09h	Ta177 2.357d	Ta178 2.36h	Ta179 1.82y	Ta180 0.012	Ta181 99.988	Ta182 114.4d	Ta183 5.1d
72	Hf168 25.95m	Hf169 3.24m	Hf170 16.01h	Hf171 12.1h	Hf172 1.87y	Hf173 23.6h	Hf174 0.16	Hf175 70d	Hf176 5.26	Hf177 18.6	Hf178 27.28	Hf179 13.62	Hf180 35.08	Hf181 42.39d	Hf182 8.9e+06y
71	Lu167 51.5m	Lu168 6.7m	Lu169 1.419d	Lu170 2.012d	Lu171 8.24d	Lu172 6.7d	Lu173 1.37y	Lu174 3.31y	Lu175 97.41	Lu176 2.59	Lu177 160.4d	Lu178 28.4m	Lu179 4.59h	Lu180 5.7m	Lu181 3.5m
70	Yb166 2.362d	Yb167 17.5m	Yb168 0.13	Yb169 32.02d	Yb170 3.04	Yb171 14.28	Yb172 21.83	Yb173 16.13	Yb174 31.83	Yb175 4.185d	Yb176 12.76	Yb177 1.911h	Yb178 1.233h	Yb179 8m	Yb180 2.4m
69	Tm165 1.253d	Tm166 7.7h	Tm167 9.25d	Tm168 93.1d	Tm169 100	Tm170 128.6d	Tm171 1.92y	Tm172 2.65d	Tm173 8.24h	Tm174 5.4m	Tm175 15.2m	Tm176 1.9m	Tm177 1.5m	Tm178 6.95s	Tm179 6.31s
68	Er164 1.61	Er165 10.36h	Er166 33.61	Er167 22.93	Er168 26.78	Er169 9.392d	Er170 14.93	Er171 7.516h	Er172 2.054d	Er173 1.4m	Er174 3.2m	Er175 1.2m	Er176 20.4s	Er177 6.8s	Er178 4.42s
67	Ho163 4570y	Ho164 37.5m	Ho165 100	Ho166 1200y	Ho167 3.1h	Ho168 2.99m	Ho169 4.72m	Ho170 2.76m	Ho171 53s	Ho172 25s	Ho173 11.1s	Ho174 3.42s	Ho175 3.04s	Ho176 1.25s	Ho177 1.08s

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96																
95																Am205 5.89e-14s
94														Pu202 1.07e-16s	Pu203 9.73e-14s	Pu204 5.55e-18s
93												Np199 1.02e-11s	Np200 7.24e-12s	Np201 1.95e-13s	Np202 1.04e-13s	Np203 1.31e-14s
92										U 197 4.47e-06s	U 198 3.3e-15s	U 199 7.74e-13s	U 200 6.41e-17s	U 201 2.34e-14s	U 202 3.57e-18s	
91								Pa194 3.62e-05s	Pa195 9.55e-06s	Pa196 4.73e-05s	Pa197 5.97e-12s	Pa198 3.34e-12s	Pa199 7.35e-14s	Pa200 6.12e-14s	Pa201 3.61e-15s	
90						Th192 5.12e-06s	Th193 2.69e-05s	Th194 5.53e-06s	Th195 2.96e-05s	Th196 9.4e-06s	Th197 4.12e-05s	Th198 5.74e-06s	Th199 3.64e-05s	Th200 1.05e-05s		
89				Ac189 3.4e-05s	Ac190 0.000144s	Ac191 4.75e-05s	Ac192 0.000281s	Ac193 7.64e-05s	Ac194 0.000325s	Ac195 6.44e-05s	Ac196 0.000229s	Ac197 8.13e-05s	Ac198 0.000426s	Ac199 0.000137s		
88			Ra186 9.08e-06s	Ra187 6.52e-05s	Ra188 1.8e-05s	Ra189 0.000133s	Ra190 3.32e-05s	Ra191 0.000176s	Ra192 3.66e-05s	Ra193 0.000175s	Ra194 6.9e-05s	Ra195 0.000267s	Ra196 0.000138s	Ra197 0.000643s	Ra198 0.000165s	
87		Fr184 0.000239s	Fr185 0.000106s	Fr186 0.000824s	Fr187 0.000288s	Fr188 0.00178s	Fr189 0.000556s	Fr190 0.00223s	Fr191 0.00138s	Fr192 0.00508s	Fr193 0.00108s	Fr194 0.0078s	Fr195 0.0047s	Fr196 0.0156s	Fr197 0.00535s	
86	Rn182 9.42e-07s	Rn183 4.18e-05s	Rn184 7.94e-05s	Rn185 0.000458s	Rn186 0.000314s	Rn187 0.00129s	Rn188 0.000435s	Rn189 0.00321s	Rn190 0.00128s	Rn191 0.00873s	Rn192 0.00139s	Rn193 0.00115s	Rn194 0.00078s	Rn195 0.006s	Rn196 0.003s	
85	At181 5.82e-08s	At182 1.79e-06s	At183 2.37e-06s	At184 4.85e-05s	At185 4.33e-05s	At186 0.000736s	At187 0.000334s	At188 0.00439s	At189 0.00557s	At190 0.0689s	At191 0.0021s	At192 0.088s	At193 0.028s	At194 0.25s	At195 0.328s	
84	Po180 0.146s	Po181 2.08e-09s	Po182 1.83e-09s	Po183 4.02e-08s	Po184 2.9e-08s	Po185 2.42e-07s	Po186 1.14e-07s	Po187 0.0014s	Po188 0.0003s	Po189 0.0035s	Po190 0.00245s	Po191 0.098s	Po192 0.0332s	Po193 0.42s	Po194 0.392s	
83	Bi179 2.51e-06s	Bi180 4.18e-05s	Bi181 3.71e-05s	Bi182 0.000539s	Bi183 0.000352s	Bi184 0.013s	Bi185 5.8e-05s	Bi186 0.0148s	Bi187 0.032s	Bi188 0.265s	Bi189 0.674s	Bi190 6.3s	Bi191 12.3s	Bi192 39.6s	Bi193 1.117m	
82	Pb178 0.00023s	Pb179 1.12s	Pb180 0.0044s	Pb181 0.045s	Pb182 0.055s	Pb183 0.535s	Pb184 0.49s	Pb185 6.3s	Pb186 4.83s	Pb187 18.3s	Pb188 25.1s	Pb189 51s	Pb190 1.183m	Pb191 2.18m	Pb192 3.5m	
81	Tl177 0.018s	Tl178 0.254s	Tl179 0.23s	Tl180 1.5s	Tl181 3.2s	Tl182 3.1s	Tl183 6.9s	Tl184 11s	Tl185 19.5s	Tl186 27.5s	Tl187 51s	Tl188 1.183m	Tl189 2.3m	Tl190 3.7m	Tl191 5.22m	
80	Hg176 0.018s	Hg177 0.1273s	Hg178 0.266s	Hg179 1.05s	Hg180 2.58s	Hg181 3.6s	Hg182 10.83s	Hg183 10.7s	Hg184 30.75s	Hg185 49.1s	Hg186 1.38m	Hg187 2.4m	Hg188 3.25m	Hg189 8.6m	Hg190 20m	

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63	Eu174 0.0607s	Eu175 0.0531s	Eu176 0.0433s	Eu177 0.0373s	Eu178 0.0292s	Eu179 0.0287s	Eu180 0.0236s	Eu181 0.0213s	Eu182 0.019s	Eu183 0.0166s	Eu184 0.0145s	Eu185 0.0118s	Eu186 0.01s	Eu187 0.00828s	Eu188 0.00714s
62	Sm173 0.0542s	Sm174 0.0466s	Sm175 0.0379s	Sm176 0.0328s	Sm177 0.0264s	Sm178 0.0244s	Sm179 0.0209s	Sm180 0.0191s	Sm181 0.0176s	Sm182 0.0148s	Sm183 0.0128s	Sm184 0.0104s	Sm185 0.0088s	Sm186 0.00714s	Sm187 0.00616s
61	Pm172 0.028s	Pm173 0.0247s	Pm174 0.0198s	Pm175 0.0178s	Pm176 0.0149s	Pm177 0.0135s	Pm178 0.0119s	Pm179 0.0114s	Pm180 0.0103s	Pm181 0.00871s	Pm182 0.00744s	Pm183 0.00626s	Pm184 0.0053s	Pm185 0.00445s	Pm186 0.00394s
60	Nd171 0.024s	Nd172 0.0209s	Nd173 0.0175s	Nd174 0.016s	Nd175 0.0136s	Nd176 0.0119s	Nd177 0.0107s	Nd178 0.0107s	Nd179 0.00921s	Nd180 0.00776s	Nd181 0.0067s	Nd182 0.00559s	Nd183 0.00475s	Nd184 0.00403s	Nd185 0.00361s
59	Pr170 0.0134s	Pr171 0.012s	Pr172 0.0102s	Pr173 0.00919s	Pr174 0.00801s	Pr175 0.0071s	Pr176 0.00691s	Pr177 0.00704s	Pr178 0.00574s	Pr179 0.00498s	Pr180 0.00416s	Pr181 0.00347s	Pr182 0.00303s	Pr183 0.00264s	Pr184 0.00241s
58	Ce169 0.0115s	Ce170 0.0102s	Ce171 0.00895s	Ce172 0.00808s	Ce173 0.00698s	Ce174 0.00614s	Ce175 0.00666s	Ce176 0.00639s	Ce177 0.0051s	Ce178 0.00424s	Ce179 0.00357s	Ce180 0.00304s	Ce181 0.0027s	Ce182 0.00236s	Ce183 0.00216s
57	La168 0.00644s	La169 0.00584s	La170 0.00527s	La171 0.00459s	La172 0.00406s	La173 0.00363s	La174 0.00356s	La175 0.00299s	La176 0.00244s	La177 0.0021s	La178 0.00187s	La179 0.00163s	La180 0.00143s	La181 0.00121s	La182 0.00103s
56	Ba167 0.00566s	Ba168 0.00526s	Ba169 0.00456s	Ba170 0.00406s	Ba171 0.00375s	Ba172 0.00335s	Ba173 0.00306s	Ba174 0.0026s	Ba175 0.00222s	Ba176 0.00185s	Ba177 0.0016s	Ba178 0.00136s	Ba179 0.00121s	Ba180 0.00103s	Ba181 0.000915s
55	Cs166 0.00354s	Cs167 0.00327s	Cs168 0.00298s	Cs169 0.00274s	Cs170 0.0024s	Cs171 0.00208s	Cs172 0.00182s	Cs173 0.00166s	Cs174 0.00148s	Cs175 0.00121s	Cs176 0.00106s	Cs177 0.000948s	Cs178 0.00087s	Cs179 0.000749s	Cs180 0.000683s
54	Xe165 0.003s	Xe166 0.0028s	Xe167 0.00251s	Xe168 0.00213s	Xe169 0.00192s	Xe170 0.00168s	Xe171 0.00154s	Xe172 0.0014s	Xe173 0.00121s	Xe174 0.00101s	Xe175 0.000932s	Xe176 0.000858s		Xe178 0.00068s	
53	I 164 0.00189s	I 165 0.00169s	I 166 0.0015s	I 167 0.00134s	I 168 0.00124s	I 169 0.0011s	I 170 0.00103s	I 171 0.000908s	I 172 0.000822s	I 173 0.000747s	I 174 0.000704s	I 175 0.000626s		I 177 0.000514s	
52	Te163 0.00169s	Te164 0.00151s	Te165 0.00135s	Te166 0.00116s	Te167 0.00108s	Te168 0.000966s	Te169 0.000902s	Te170 0.000812s	Te171 0.000775s	Te172 0.000716s	Te173 0.000715s	Te174 0.000618s		Te176 0.000515s	
51	Sb162 0.00117s	Sb163 0.00103s		Sb165 0.000887s	Sb166 0.000867s	Sb167 0.000788s	Sb168 0.000737s	Sb169 0.000689s	Sb170 0.000646s	Sb171 0.000596s	Sb172 0.000577s	Sb173 0.000462s		Sb175 0.000385s	
50		Sn162 0.000876s		Sn164 0.000901s		Sn166 0.000757s		Sn168 0.000643s		Sn170 0.000554s		Sn172 0.000418s			
49		In161 0.000597s		In163 0.000446s		In165 0.000374s		In167 0.000319s		In169 0.000262s					
48		Cd160 0.000509s				Cd164 0.000422s									
47															

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77	Ir188 1.729d	Ir189 13.2d	Ir190 11.78d	Ir191 37.3	Ir192 241y	Ir193 62.7	Ir194 171d	Ir195 3.8h	Ir196 1.4h	Ir197 8.9m	Ir198 8s	Ir199 3.62m	Ir200 24.7s	Ir201 45s	Ir202 9.92s
76	Os187 1.96	Os188 13.24	Os189 16.15	Os190 26.26	Os191 15.4d	Os192 40.78	Os193 1.255d	Os194 6y	Os195 6.5m	Os196 34.9m	Os197 1.27m	Os198 2.8m	Os199 35.1s	Os200 38s	Os201 10.6s
75	Re186 2e+05y	Re187 62.6	Re188 17h	Re189 1.013d	Re190 3.2h	Re191 9.8m	Re192 16s	Re193 1.57m	Re194 14.8s	Re195 19.5s	Re196 5.47s	Re197 11.4s	Re198 3.79s	Re199 3.73s	Re200 1.42s
74	W 185 75.1d	W 186 28.43	W 187 23.72h	W 188 69.78d	W 189 10.7m	W 190 30m	W 191 1.55m	W 192 1.02m	W 193 16.1s	W 194 13.4s	W 195 5.86s	W 196 7.98s	W 197 3.55s	W 198 2.26s	W 199 1.3s
73	Ta184 8.7h	Ta185 49.4m	Ta186 10.5m	Ta187 2.64m	Ta188 15.6s	Ta189 24.6s	Ta190 6.04s	Ta191 6.12s	Ta192 2.36s	Ta193 2.55s	Ta194 1.21s	Ta195 1.51s	Ta196 0.758s	Ta197 0.597s	Ta198 0.401s
72	Hf183 1.018h	Hf184 4.12h	Hf185 3.5m	Hf186 2.6m	Hf187 17.7s	Hf188 16.5s	Hf189 6.42s	Hf190 4.98s	Hf191 2.19s	Hf192 1.76s	Hf193 1.01s	Hf194 1.05s	Hf195 0.657s	Hf196 0.471s	Hf197 0.351s
71	Lu182 2m	Lu183 58s	Lu184 20s	Lu185 5.56s	Lu186 2.39s	Lu187 2.76s	Lu188 1.18s	Lu189 1.16s	Lu190 0.524s	Lu191 0.467s	Lu192 0.338s	Lu193 0.358s	Lu194 0.235s	Lu195 0.186s	Lu196 0.14s
70	Yb181 19.6s	Yb182 10.9s	Yb183 4.32s	Yb184 3.88s	Yb185 2.19s	Yb186 1.88s	Yb187 0.876s	Yb188 0.803s	Yb189 0.425s	Yb190 0.384s	Yb191 0.338s	Yb192 0.288s	Yb193 0.208s	Yb194 0.151s	Yb195 0.121s
69	Tm180 2.36s	Tm181 1.98s	Tm182 0.992s	Tm183 0.933s	Tm184 0.522s	Tm185 0.489s	Tm186 0.279s	Tm187 0.261s	Tm188 0.166s	Tm189 0.175s	Tm190 0.148s	Tm191 0.123s	Tm192 0.0909s	Tm193 0.0704s	Tm194 0.0571s
68	Er179 2.2s	Er180 1.56s	Er181 0.869s	Er182 0.625s	Er183 0.432s	Er184 0.375s	Er185 0.263s	Er186 0.242s	Er187 0.183s	Er188 0.161s	Er189 0.131s	Er190 0.102s	Er191 0.0797s	Er192 0.0596s	Er193 0.0502s
67	Ho178 0.548s	Ho179 0.44s	Ho180 0.271s	Ho181 0.227s	Ho182 0.169s	Ho183 0.156s	Ho184 0.12s	Ho185 0.11s	Ho186 0.0806s	Ho187 0.0743s	Ho188 0.0618s	Ho189 0.05s	Ho190 0.0399s	Ho191 0.0318s	Ho192 0.0265s
66	Dy177 0.414s	Dy178 0.321s	Dy179 0.232s	Dy180 0.187s	Dy181 0.147s	Dy182 0.131s	Dy183 0.105s	Dy184 0.0942s	Dy185 0.0721s	Dy186 0.063s	Dy187 0.0553s	Dy188 0.043s	Dy189 0.0352s	Dy190 0.0273s	Dy191 0.0233s
65	Tb176 0.156s	Tb177 0.132s	Tb178 0.101s	Tb179 0.0863s	Tb180 0.0641s	Tb181 0.0623s	Tb182 0.0508s	Tb183 0.0463s	Tb184 0.0369s	Tb185 0.033s	Tb186 0.0288s	Tb187 0.0231s	Tb188 0.0192s	Tb189 0.0156s	Tb190 0.0136s
64	Gd175 0.134s	Gd176 0.111s	Gd177 0.0905s	Gd178 0.0727s	Gd179 0.0559s	Gd180 0.0548s	Gd181 0.0448s	Gd182 0.0398s	Gd183 0.0338s	Gd184 0.0289s	Gd185 0.0257s	Gd186 0.0203s	Gd187 0.0172s	Gd188 0.0137s	Gd189 0.0121s
63	Eu174 0.0607s	Eu175 0.0531s	Eu176 0.0433s	Eu177 0.0373s	Eu178 0.0292s	Eu179 0.0287s	Eu180 0.0236s	Eu181 0.0213s	Eu182 0.019s	Eu183 0.0166s	Eu184 0.0145s	Eu185 0.0118s	Eu186 0.01s	Eu187 0.00828s	Eu188 0.00714s
62	Sm173 0.0542s	Sm174 0.0466s	Sm175 0.0379s	Sm176 0.0328s	Sm177 0.0264s	Sm178 0.0244s	Sm179 0.0209s	Sm180 0.0191s	Sm181 0.0176s	Sm182 0.0148s	Sm183 0.0128s	Sm184 0.0104s	Sm185 0.0088s	Sm186 0.00714s	Sm187 0.00616s
61	Pm172 0.028s	Pm173 0.0247s	Pm174 0.0198s	Pm175 0.0178s	Pm176 0.0149s	Pm177 0.0135s	Pm178 0.0119s	Pm179 0.0114s	Pm180 0.0103s	Pm181 0.00871s	Pm182 0.00744s	Pm183 0.00626s	Pm184 0.0053s	Pm185 0.00445s	Pm186 0.00394s

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90	Th201 0.000586s	Th202 0.00364s	Th203 0.0221s	Th204 0.00561s	Th205 0.0369s	Th206 0.0117s	Th207 0.0472s	Th208 0.00927s	Th209 0.0038s	Th210 0.009s	Th211 0.037s	Th212 0.03s	Th213 0.14s	Th214 0.1s	Th215 1.2s
89	Ac200 0.0123s	Ac201 0.0481s	Ac202 0.322s	Ac203 0.101s	Ac204 0.778s	Ac205 0.455s	Ac206 0.033s	Ac207 0.027s	Ac208 0.095s	Ac209 0.098s	Ac210 0.35s	Ac211 0.25s	Ac212 0.93s	Ac213 0.8s	Ac214 8.2s
88	Ra199 0.00973s	Ra200 0.0211s	Ra201 0.0016s	Ra202 0.0007s	Ra203 0.031s	Ra204 0.057s	Ra205 0.21s	Ra206 0.24s	Ra207 1.2s	Ra208 1.3s	Ra209 4.7s	Ra210 3.7s	Ra211 13s	Ra212 13s	Ra213 2.74m
87	Fr198 0.655s	Fr199 0.012s	Fr200 0.57s	Fr201 0.067s	Fr202 0.3s	Fr203 0.549s	Fr204 1.7s	Fr205 3.92s	Fr206 16s	Fr207 14.8s	Fr208 59.1s	Fr209 50s	Fr210 3.18m	Fr211 3.1m	Fr212 20m
86	Rn197 0.066s	Rn198 0.065s	Rn199 0.59s	Rn200 0.96s	Rn201 7.1s	Rn202 10s	Rn203 44s	Rn204 1.23m	Rn205 2.833m	Rn206 5.67m	Rn207 9.25m	Rn208 24.35m	Rn209 28.8m	Rn210 2.4h	Rn211 14.6h
85	At196 0.253s	At197 2s	At198 4.1s	At199 7.03s	At200 47s	At201 1.383m	At202 3.067m	At203 7.4m	At204 9.22m	At205 26.9m	At206 30.6m	At207 1.8h	At208 1.63h	At209 5.41h	At210 8.1h
84	Po195 4.64s	Po196 5.73s	Po197 53.6s	Po198 1.77m	Po199 5.47m	Po200 11.5m	Po201 15.3m	Po202 44.7m	Po203 36.7m	Po204 3.53h	Po205 1.74h	Po206 8.8d	Po207 5.8h	Po208 2.898y	Po209 102y
83	Bi194 2.083m	Bi195 3.05m	Bi196 5.13m	Bi197 9.33m	Bi198 11.6m	Bi199 27m	Bi200 36.4m	Bi201 1.717h	Bi202 1.71h	Bi203 11.76h	Bi204 11.22h	Bi205 15.31d	Bi206 6.243d	Bi207 32.9y	Bi208 3.68e+05y
82	Pb193 5.8m	Pb194 12m	Pb195 15m	Pb196 37m	Pb197 43m	Pb198 2.4h	Pb199 1.5h	Pb200 21.5h	Pb201 9.33h	Pb202 5.25e+04y	Pb203 2.163d	Pb204 1.4	Pb205 1.73e+07y	Pb206 24.1	Pb207 22.1
81	Tl192 10.8m	Tl193 21.6m	Tl194 33m	Tl195 1.16h	Tl196 1.84h	Tl197 2.84h	Tl198 5.3h	Tl199 7.42h	Tl200 1.087d	Tl201 3.042d	Tl202 12.31d	Tl203 29.524	Tl204 3.78y	Tl205 70.476	Tl206 4.202m
80	Hg191 50.8m	Hg192 4.85h	Hg193 11.8h	Hg194 444y	Hg195 1.733d	Hg196 0.15	Hg197 2.672d	Hg198 9.97	Hg199 16.87	Hg200 23.1	Hg201 13.18	Hg202 29.86	Hg203 46.59d	Hg204 6.87	Hg205 5.14m
79	Au190 42.8m	Au191 3.18h	Au192 4.94h	Au193 17.65h	Au194 1.584d	Au195 186.1d	Au196 6.167d	Au197 100	Au198 2.695d	Au199 3.139d	Au200 18.7h	Au201 26m	Au202 28.4s	Au203 1m	Au204 39.8s
78	Pt189 10.87h	Pt190 0.014	Pt191 2.802d	Pt192 0.782	Pt193 50y	Pt194 32.967	Pt195 33.832	Pt196 25.242	Pt197 19.89h	Pt198 7.163	Pt199 30.8m	Pt200 12.6h	Pt201 2.5m	Pt202 1.833d	Pt203 2.96m
77	Ir188 1.729d	Ir189 13.2d	Ir190 11.78d	Ir191 37.3	Ir192 241y	Ir193 62.7	Ir194 171d	Ir195 3.8h	Ir196 1.4h	Ir197 8.9m	Ir198 8s	Ir199 3.62m	Ir200 24.7s	Ir201 45s	Ir202 9.92s
76	Os187 1.96	Os188 13.24	Os189 16.15	Os190 26.26	Os191 15.4d	Os192 40.78	Os193 1.255d	Os194 6y	Os195 6.5m	Os196 34.9m	Os197 1.27m	Os198 2.8m	Os199 35.1s	Os200 38s	Os201 10.6s
75	Re186 2e+05y	Re187 62.6	Re188 17h	Re189 1.013d	Re190 3.2h	Re191 9.8m	Re192 16s	Re193 1.57m	Re194 14.8s	Re195 19.5s	Re196 5.47s	Re197 11.4s	Re198 3.79s	Re199 3.73s	Re200 1.42s
74	W 185 75.1d	W 186 28.43	W 187 23.72h	W 188 69.78d	W 189 10.7m	W 190 30m	W 191 1.55m	W 192 1.02m	W 193 16.1s	W 194 13.4s	W 195 5.86s	W 196 7.98s	W 197 3.55s	W 198 2.26s	W 199 1.3s

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104																
103															Lr227 1.43e-07s	Lr228 0.000805s
102													No224 6.17e-13s	No225 1.69e-10s	No226 1.01e-10s	No227 0.000347s
101											Md221 4.79e-08s	Md222 1.12e-07s	Md223 3.06e-09s	Md224 1.61e-09s	Md225 6.55e-07s	Md226 0.00287s
100									Fm219 4.71e-16s	Fm220 8.71e-19s	Fm221 9.44e-09s	Fm222 6.79e-13s	Fm223 2.02e-09s	Fm224 1.38e-07s	Fm225 0.00146s
99							Es216 1.18e-15s	Es217 1.05e-15s	Es218 9.46e-15s	Es219 2.63e-14s	Es220 2.13e-08s	Es221 5.11e-11s	Es222 1.28e-07s	Es223 0.000455s	Es224 0.0141s
98					Cf213 8.87e-17s	Cf214 3.1e-20s	Cf215 8.22e-16s	Cf216 1.58e-18s	Cf217 2.55e-14s	Cf218 7.11e-17s	Cf219 3.04e-12s	Cf220 2.21e-13s	Cf221 3.15e-05s	Cf222 0.000204s	Cf223 0.00679s
97			Bk210 6.17e-15s	Bk211 4.81e-16s	Bk212 2.32e-16s	Bk213 5.51e-16s	Bk214 8.89e-15s	Bk215 2.84e-14s	Bk216 1.84e-12s	Bk217 3.59e-12s	Bk218 1.71e-10s	Bk219 6.56e-07s	Bk220 0.00119s	Bk221 0.00201s	Bk222 0.0569s
96		Cm208 1.56e-18s	Cm209 1.28e-15s	Cm210 8.34e-20s	Cm211 6.92e-16s	Cm212 9.02e-19s	Cm213 1.53e-14s	Cm214 1.73e-17s	Cm215 9.1e-12s	Cm216 1.41e-13s	Cm217 1.19e-07s	Cm218 7.05e-07s	Cm219 0.00078s	Cm220 0.00155s	Cm221 0.0462s
95	Am206 4.07e-14s	Am207 2.2e-15s	Am208 2.81e-15s	Am209 1.77e-16s	Am210 5.61e-15s	Am211 1.13e-14s	Am212 1.31e-12s	Am213 3.74e-12s	Am214 3.43e-08s	Am215 4.59e-06s	Am216 0.00022s	Am217 0.000194s	Am218 0.00817s	Am219 0.0191s	Am220 0.678s
94	Pu205 4.69e-15s	Pu206 3.91e-19s	Pu207 4.12e-16s	Pu208 4.53e-20s	Pu209 1.59e-13s	Pu210 7.06e-17s	Pu211 1.14e-10s	Pu212 7.71e-12s	Pu213 1.14e-05s	Pu214 4.2e-06s	Pu215 0.000196s	Pu216 0.000128s	Pu217 0.00434s	Pu218 0.0159s	Pu219 0.776s
93	Np204 1.64e-14s	Np205 1.19e-15s	Np206 8.89e-16s	Np207 5.12e-13s	Np208 2.88e-11s	Np209 1.06e-09s	Np210 4.55e-07s	Np211 0.000102s	Np212 0.00271s	Np213 0.00154s	Np214 0.00405s	Np215 0.00208s	Np216 0.0582s	Np217 0.351s	Np218 1.53s
92	U 203 1.57e-15s	U 204 7.4e-17s	U 205 2.51e-11s	U 206 1.74e-13s	U 207 4.13e-09s	U 208 5.64e-10s	U 209 0.000199s	U 210 5.32e-05s	U 211 0.00236s	U 212 0.0013s	U 213 0.00577s	U 214 0.00277s	U 215 0.0525s	U 216 0.444s	U 217 0.016s
91	Pa202 4.25e-15s	Pa203 8.57e-11s	Pa204 1.03e-07s	Pa205 3.93e-07s	Pa206 0.000149s	Pa207 0.00358s	Pa208 0.0171s	Pa209 0.00366s	Pa210 0.052s	Pa211 0.0306s	Pa212 0.0051s	Pa213 0.0053s	Pa214 0.017s	Pa215 0.014s	Pa216 0.167s
90	Th201 0.000586s	Th202 0.00364s	Th203 0.0221s	Th204 0.00561s	Th205 0.0369s	Th206 0.0117s	Th207 0.0472s	Th208 0.00927s	Th209 0.0038s	Th210 0.009s	Th211 0.037s	Th212 0.03s	Th213 0.14s	Th214 0.1s	Th215 1.2s
89	Ac200 0.0123s	Ac201 0.0481s	Ac202 0.322s	Ac203 0.101s	Ac204 0.778s	Ac205 0.455s	Ac206 0.033s	Ac207 0.027s	Ac208 0.095s	Ac209 0.098s	Ac210 0.35s	Ac211 0.25s	Ac212 0.93s	Ac213 0.8s	Ac214 8.2s
88	Ra199 0.00973s	Ra200 0.0211s	Ra201 0.0016s	Ra202 0.0007s	Ra203 0.031s	Ra204 0.057s	Ra205 0.21s	Ra206 0.24s	Ra207 1.2s	Ra208 1.3s	Ra209 4.7s	Ra210 3.7s	Ra211 13s	Ra212 13s	Ra213 2.74m

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67	Ho193 0.0214s	Ho194 0.007s	Ho195 0.00654s	Ho196 0.00628s	Ho197 0.00544s	Ho198 0.00478s	Ho199 0.00511s	Ho200 0.00447s	Ho201 0.00382s	Ho202 0.00365s	Ho203 0.00319s	Ho204 0.00299s	Ho205 0.00268s	Ho206 0.00246s	Ho207 0.00223s
66	Dy192 0.0191s	Dy193 0.00657s	Dy194 0.00596s	Dy195 0.00577s	Dy196 0.00497s	Dy197 0.00484s	Dy198 0.0046s	Dy199 0.004s	Dy200 0.00352s	Dy201 0.00327s	Dy202 0.00291s	Dy203 0.00271s	Dy204 0.00248s	Dy205 0.00226s	Dy206 0.00203s
65	Tb191 0.0114s	Tb192 0.0043s	Tb193 0.00394s	Tb194 0.00369s	Tb195 0.00322s	Tb196 0.0031s	Tb197 0.00278s	Tb198 0.00267s	Tb199 0.0024s	Tb200 0.00221s	Tb201 0.00206s	Tb202 0.00187s	Tb203 0.00171s	Tb204 0.00157s	Tb205 0.00138s
64	Gd190 0.0103s	Gd191 0.00417s	Gd192 0.00367s		Gd194 0.00298s	Gd195 0.00286s	Gd196 0.00257s	Gd197 0.00246s	Gd198 0.00223s	Gd199 0.00206s	Gd200 0.00189s	Gd201 0.00172s	Gd202 0.00155s		Gd204 0.00113s
63	Eu189 0.00611s	Eu190 0.00267s	Eu191 0.00228s		Eu193 0.00199s	Eu194 0.00192s	Eu195 0.00175s	Eu196 0.00169s	Eu197 0.00155s	Eu198 0.00143s	Eu199 0.00133s	Eu200 0.00119s	Eu201 0.000976s		Eu203 0.000731s
62	Sm188 0.00538s		Sm190 0.0021s		Sm192 0.00184s		Sm194 0.00163s		Sm196 0.0014s		Sm198 0.00108s		Sm200 0.000789s		Sm202 0.000653s
61	Pm187 0.0035s		Pm189 0.00148s		Pm191 0.00129s		Pm193 0.00116s		Pm195 0.00091s		Pm197 0.0007s		Pm199 0.000568s		Pm201 0.000483s
60	Nd186 0.0032s		Nd188 0.00137s								Nd196 0.000634s				
59	Pr185 0.00215s														
58	Ce184 0.00188s														
57	La183 0.000835s	La184 0.000664s													
56	Ba182 0.000786s														
55	Cs181 0.000607s														
54	Xe180 0.00057s														
53	I 179 0.000444s														
52	Te178 0.000416s														
51															

Chart of the Nuclides 2010 (No. 28)

82	Pb208 52.4	Pb209 3.253h	Pb210 22.2y	Pb211 36.1m	Pb212 10.64h	Pb213 10.2m	Pb214 26.8m	Pb215 36s	Pb216 1.27m	Pb217 24s	Pb218 16.7s	Pb219 5.1s	Pb220 2.68s	Pb221 1.24s	Pb222 1.11s
81	Tl207 4.77m	Tl208 3.053m	Tl209 2.2m	Tl210 1.3m	Tl211 5.38s	Tl212 2.38s	Tl213 2.33s	Tl214 1.21s	Tl215 1.15s	Tl216 0.689s	Tl217 0.629s	Tl218 0.406s	Tl219 0.407s	Tl220 0.351s	Tl221 0.361s
80	Hg206 8.32m	Hg207 2.9m	Hg208 41m	Hg209 35s	Hg210 3.47s	Hg211 2.16s	Hg212 1.8s	Hg213 1.28s	Hg214 1.02s	Hg215 0.728s	Hg216 0.58s	Hg217 0.403s	Hg218 0.389s	Hg219 0.332s	Hg220 0.277s
79	Au205 31s	Au206 1.45s	Au207 1.6s	Au208 0.92s	Au209 0.886s	Au210 0.623s	Au211 0.602s	Au212 0.376s	Au213 0.33s	Au214 0.244s	Au215 0.208s	Au216 0.16s	Au217 0.161s	Au218 0.133s	Au219 0.116s
78	Pt204 1.54m	Pt205 1.39s	Pt206 1.23s	Pt207 0.841s	Pt208 0.706s	Pt209 0.51s	Pt210 0.383s	Pt211 0.286s	Pt212 0.249s	Pt213 0.19s	Pt214 0.162s	Pt215 0.135s	Pt216 0.122s	Pt217 0.112s	Pt218 0.0921s
77	Ir203 8.7s	Ir204 0.435s	Ir205 0.399s	Ir206 0.266s	Ir207 0.234s	Ir208 0.162s	Ir209 0.15s	Ir210 0.119s	Ir211 0.104s	Ir212 0.087s	Ir213 0.0762s	Ir214 0.061s	Ir215 0.0579s	Ir216 0.0525s	Ir217 0.0444s
76	Os202 6.28s	Os203 0.333s	Os204 0.273s	Os205 0.208s	Os206 0.181s	Os207 0.142s	Os208 0.124s	Os209 0.101s	Os210 0.0863s	Os211 0.0675s	Os212 0.0545s	Os213 0.0494s	Os214 0.0476s	Os215 0.043s	Os216 0.0362s
75	Re201 1.09s	Re202 0.116s	Re203 0.111s	Re204 0.091s	Re205 0.0821s	Re206 0.0658s	Re207 0.0583s	Re208 0.0477s	Re209 0.0422s	Re210 0.0345s	Re211 0.0319s	Re212 0.0281s	Re213 0.0256s	Re214 0.0218s	Re215 0.0188s
74	W 200 0.801s	W 201 0.105s	W 202 0.0919s	W 203 0.0795s	W 204 0.0676s	W 205 0.0577s	W 206 0.0489s	W 207 0.0418s	W 208 0.0364s	W 209 0.0307s	W 210 0.0268s	W 211 0.0231s	W 212 0.0207s	W 213 0.018s	W 214 0.016s
73	Ta199 0.295s	Ta200 0.0504s	Ta201 0.0458s	Ta202 0.0396s	Ta203 0.0353s	Ta204 0.0305s	Ta205 0.0265s	Ta206 0.023s	Ta207 0.0201s	Ta208 0.017s	Ta209 0.0154s	Ta210 0.0137s	Ta211 0.0125s	Ta212 0.0115s	Ta213 0.0107s
72	Hf198 0.239s	Hf199 0.0443s	Hf200 0.0399s	Hf201 0.035s	Hf202 0.0307s	Hf203 0.0262s	Hf204 0.0232s	Hf205 0.0205s	Hf206 0.0178s	Hf207 0.0159s	Hf208 0.0142s	Hf209 0.0127s	Hf210 0.0114s	Hf211 0.011s	Hf212 0.00988s
71	Lu197 0.105s	Lu198 0.0238s	Lu199 0.0219s	Lu200 0.0197s	Lu201 0.0167s	Lu202 0.0147s	Lu203 0.0141s	Lu204 0.0122s	Lu205 0.0104s	Lu206 0.00968s	Lu207 0.00856s	Lu208 0.00803s	Lu209 0.00744s	Lu210 0.00694s	Lu211 0.00604s
70	Yb196 0.0891s	Yb197 0.0214s	Yb198 0.0196s	Yb199 0.0183s	Yb200 0.0156s	Yb201 0.0142s	Yb202 0.0135s	Yb203 0.0119s	Yb204 0.01s	Yb205 0.00969s	Yb206 0.00842s	Yb207 0.00807s	Yb208 0.00718s	Yb209 0.00649s	Yb210 0.00562s
69	Tm195 0.0449s	Tm196 0.0125s	Tm197 0.0116s	Tm198 0.0108s	Tm199 0.00949s	Tm200 0.00833s	Tm201 0.00844s	Tm202 0.00747s	Tm203 0.00646s	Tm204 0.00631s	Tm205 0.00544s	Tm206 0.0051s	Tm207 0.00452s	Tm208 0.00407s	Tm209 0.00363s
68	Er194 0.0393s	Er195 0.0114s	Er196 0.0104s	Er197 0.00988s	Er198 0.00865s	Er199 0.0075s	Er200 0.00782s	Er201 0.00705s	Er202 0.00596s	Er203 0.00566s	Er204 0.00478s	Er205 0.0046s	Er206 0.00404s	Er207 0.00367s	Er208 0.0033s
67	Ho193 0.0214s	Ho194 0.007s	Ho195 0.00654s	Ho196 0.00628s	Ho197 0.00544s	Ho198 0.00478s	Ho199 0.00511s	Ho200 0.00447s	Ho201 0.00382s	Ho202 0.00365s	Ho203 0.00319s	Ho204 0.00299s	Ho205 0.00268s	Ho206 0.00246s	Ho207 0.00223s
66	Dy192 0.0191s	Dy193 0.00657s	Dy194 0.00596s	Dy195 0.00577s	Dy196 0.00497s	Dy197 0.00484s	Dy198 0.0046s	Dy199 0.004s	Dy200 0.00352s	Dy201 0.00327s	Dy202 0.00291s	Dy203 0.00271s	Dy204 0.00248s	Dy205 0.00226s	Dy206 0.00203s

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97	Bk223 0.0229s	Bk224 3.97e-06s	Bk225 1.99e-09s	Bk226 1.49s	Bk227 1.83s	Bk228 5.88e-08s	Bk229 2.08e-08s	Bk230 1.76e-08s	Bk231 4.48e-07s	Bk232 0.000137s	Bk233 0.000873s	Bk234 0.0807s	Bk235 0.479s	Bk236 15.5s	Bk237 32.4s
96	Cm222 0.0103s	Cm223 1.46e-06s	Cm224 3.02s	Cm225 2.86e-08s	Cm226 4.05s	Cm227 7.21e-06s	Cm228 4.62e-08s	Cm229 2.31e-05s	Cm230 6.34e-08s	Cm231 0.00368s	Cm232 2.55e-05s	Cm233 3.04s	Cm234 51s	Cm235 1.13m	Cm236 56.6s
95	Am221 0.109s	Am222 1.03e-05s	Am223 3.9e-09s	Am224 1.91e-07s	Am225 1.01e-06s	Am226 7.23e-05s	Am227 0.000286s	Am228 0.0149s	Am229 0.0741s	Am230 2.03s	Am231 3.24s	Am232 1.32m	Am233 3.2m	Am234 2.32m	Am235 9.9m
94	Pu220 0.0685s	Pu221 5.94e-06s	Pu222 1.37e-09s	Pu223 1.27e-07s	Pu224 5.33e-07s	Pu225 3.59e-05s	Pu226 0.000134s	Pu227 0.0117s	Pu228 1.1s	Pu229 2m	Pu230 1.7m	Pu231 8.6m	Pu232 34.1m	Pu233 20.9m	Pu234 8.8h
93	Np219 4.38s	Np220 0.000123s	Np221 1.81e-08s	Np222 9.57e-07s	Np223 3.78e-06s	Np224 0.000333s	Np225 0.000817s	Np226 0.035s	Np227 0.51s	Np228 1.023m	Np229 4m	Np230 4.6m	Np231 48.8m	Np232 14.7m	Np233 36.2m
92	U 218 0.00051s	U 219 8e-05s	U 220 8.75e-09s	U 221 4.63e-07s	U 222 1e-06s	U 223 1.8e-05s	U 224 0.0007s	U 225 0.061s	U 226 0.35s	U 227 1.1m	U 228 9.1m	U 229 58m	U 230 20.8d	U 231 4.2d	U 232 68.9y
91	Pa217 0.0036s	Pa218 0.000113s	Pa219 5.3e-08s	Pa220 7.8e-07s	Pa221 5.9e-06s	Pa222 0.0029s	Pa223 0.0051s	Pa224 0.79s	Pa225 1.7s	Pa226 1.8m	Pa227 38.3m	Pa228 22h	Pa229 1.5d	Pa230 17.4d	Pa231 3.28e+04y
90	Th216 0.026s	Th217 0.000251s	Th218 1.17e-07s	Th219 1.05e-06s	Th220 9.7e-06s	Th221 0.00173s	Th222 0.002237s	Th223 0.6s	Th224 1.05s	Th225 8.72m	Th226 30.57m	Th227 18.68d	Th228 1.912y	Th229 7340y	Th230 7.54e+04y
89	Ac215 0.17s	Ac216 0.000441s	Ac217 6.9e-08s	Ac218 1.08e-06s	Ac219 1.18e-05s	Ac220 0.0264s	Ac221 0.052s	Ac222 1.05m	Ac223 2.1m	Ac224 2.78h	Ac225 10d	Ac226 1.224d	Ac227 21.77y	Ac228 6.15h	Ac229 1.045h
88	Ra214 2.46s	Ra215 0.00155s	Ra216 1.82e-07s	Ra217 1.6e-06s	Ra218 2.52e-05s	Ra219 0.01s	Ra220 0.018s	Ra221 28s	Ra222 36.17s	Ra223 11.44d	Ra224 3.66d	Ra225 14.9d	Ra226 1600y	Ra227 42.2m	Ra228 5.75y
87	Fr213 34.6s	Fr214 0.005s	Fr215 8.6e-08s	Fr216 7e-07s	Fr217 1.9e-05s	Fr218 0.022s	Fr219 0.02s	Fr220 27.4s	Fr221 4.9m	Fr222 14.2m	Fr223 22m	Fr224 3.33m	Fr225 4m	Fr226 49s	Fr227 2.47m
86	Rn212 23.9m	Rn213 0.025s	Rn214 2.7e-07s	Rn215 2.3e-06s	Rn216 4.5e-05s	Rn217 0.00054s	Rn218 0.035s	Rn219 3.96s	Rn220 55.6s	Rn221 25.7m	Rn222 3.824d	Rn223 24.3m	Rn224 1.783h	Rn225 4.66m	Rn226 7.4m
85	At211 7.214h	At212 0.314s	At213 1.25e-07s	At214 5.58e-07s	At215 0.0001s	At216 0.0003s	At217 0.0323s	At218 1.5s	At219 56s	At220 3.71m	At221 2.3m	At222 54s	At223 50s	At224 8.58s	At225 11.7s
84	Po210 138.4d	Po211 25.2s	Po212 45.1s	Po213 4.2e-06s	Po214 0.0001643s	Po215 0.001781s	Po216 0.145s	Po217 1.46s	Po218 3.098m	Po219 1.89m	Po220 1.51m	Po221 26.2s	Po222 28.6s	Po223 9.62s	Po224 8.23s
83	Bi209 100	Bi210 3.04e+06y	Bi211 2.14m	Bi212 1.009h	Bi213 45.59m	Bi214 19.9m	Bi215 7.7m	Bi216 2.25m	Bi217 1.55m	Bi218 33s	Bi219 7.49s	Bi220 3.12s	Bi221 3.75s	Bi222 1.49s	Bi223 1.53s
82	Pb208 52.4	Pb209 3.253h	Pb210 22.2y	Pb211 36.1m	Pb212 10.64h	Pb213 10.2m	Pb214 26.8m	Pb215 36s	Pb216 1.27m	Pb217 24s	Pb218 16.7s	Pb219 5.1s	Pb220 2.68s	Pb221 1.24s	Pb222 1.11s
81	Tl207 4.77m	Tl208 3.053m	Tl209 2.2m	Tl210 1.3m	Tl211 5.38s	Tl212 2.38s	Tl213 2.33s	Tl214 1.21s	Tl215 1.15s	Tl216 0.689s	Tl217 0.629s	Tl218 0.406s	Tl219 0.407s	Tl220 0.351s	Tl221 0.361s

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112															
111														Rg250 7.33e-17s	Rg251 2.97e-17s
110												Ds247 9.57e-17s	Ds248 1.28e-20s	Ds249 4.26e-17s	Ds250 2.69e-20s
109										Mt244 1.73e-15s	Mt245 1.28e-16s	Mt246 8.26e-17s	Mt247 4.13e-17s	Mt248 3.23e-16s	Mt249 3.11e-16s
108								Hs241 8.47e-15s	Hs242 1.71e-19s	Hs243 1.27e-16s	Hs244 6.81e-21s	Hs245 3.78e-17s	Hs246 2.59e-20s	Hs247 2.46e-16s	Hs248 4.58e-19s
107							Bh239 4.85e-15s	Bh240 6.22e-15s	Bh241 3.01e-16s	Bh242 7.64e-17s	Bh243 3.98e-17s	Bh244 2.69e-16s	Bh245 2.38e-16s	Bh246 6.89e-15s	Bh247 7.11e-15s
106					Sg236 2.04e-16s	Sg237 1.51e-14s	Sg238 4.49e-19s	Sg239 6.95e-16s	Sg240 4.46e-20s	Sg241 3.42e-17s	Sg242 1.78e-20s	Sg243 1.98e-16s	Sg244 4.62e-19s	Sg245 1.38e-14s	Sg246 3.96e-17s
105			Db233 8.26e-08s	Db234 5.38e-10s	Db235 1.24e-13s	Db236 2.47e-14s	Db237 7.89e-16s	Db238 7.24e-17s	Db239 2.83e-17s	Db240 1.98e-16s	Db241 1.44e-16s	Db242 3.74e-15s	Db243 1.91e-14s	Db244 7.67e-13s	Db245 3.21e-12s
104	Rf230 5.18e-05s	Rf231 0.113s	Rf232 7.31e-12s	Rf233 3.16e-11s	Rf234 1.18e-17s	Rf235 2.03e-17s	Rf236 6.78e-21s	Rf237 3.14e-17s	Rf238 1.46e-20s	Rf239 1.15e-16s	Rf240 3.59e-19s	Rf241 2.54e-14s	Rf242 9.23e-17s	Rf243 4.91e-12s	Rf244 2.45e-14s
103	Lr229 0.000343s	Lr230 2.3e-07s	Lr231 2.13e-08s	Lr232 7.6e-11s	Lr233 2.6e-17s	Lr234 1.03e-16s	Lr235 4.26e-17s	Lr236 1.95e-16s	Lr237 1.15e-16s	Lr238 2.1e-15s	Lr239 2.14e-14s	Lr240 1.02e-12s	Lr241 4.07e-12s	Lr242 3.38e-10s	Lr243 1.95e-09s
102	No228 8.97e-05s	No229 0.203s	No230 2.1e-12s	No231 3.17e-11s	No232 1.09e-20s	No233 4.57e-17s	No234 1.74e-20s	No235 1.22e-16s	No236 1.01e-19s	No237 1.44e-14s	No238 1.37e-16s	No239 7.06e-12s	No240 2.31e-14s	No241 3.62e-09s	No242 1.75e-11s
101	Md227 0.000676s	Md228 4.8e-07s	Md229 1.24e-08s	Md230 4.37e-11s	Md231 5.45e-17s	Md232 2.18e-16s	Md233 8.61e-17s	Md234 6.93e-16s	Md235 1.01e-14s	Md236 1.44e-12s	Md237 1.27e-11s	Md238 9.04e-10s	Md239 5.52e-09s	Md240 6.53e-07s	Md241 1.84e-06s
100	Fm226 0.000625s	Fm227 2.17e-07s	Fm228 6.17e-10s	Fm229 4.6e-11s	Fm230 1.69e-20s	Fm231 7.91e-17s	Fm232 7.06e-20s	Fm233 5.98e-15s	Fm234 1.1e-16s	Fm235 8.09e-12s	Fm236 1.08e-13s	Fm237 4.54e-09s	Fm238 1.01e-10s	Fm239 7.01e-06s	Fm240 5.38e-08s
99	Es225 0.00611s	Es226 1.88e-06s	Es227 0.713s	Es228 2.85e-09s	Es229 4.8e-13s	Es230 7.82e-16s	Es231 4.28e-15s	Es232 7.64e-13s	Es233 1.62e-11s	Es234 1.96e-09s	Es235 1.42e-08s	Es236 2.22e-06s	Es237 4.33e-05s	Es238 0.00296s	Es239 0.105s
98	Cf224 0.00284s	Cf225 6.24e-07s	Cf226 7.71e-06s	Cf227 1.18s	Cf228 7.26e-14s	Cf229 2.45e-12s	Cf230 7.98e-17s	Cf231 1.31e-11s	Cf232 1.5e-13s	Cf233 2.96e-08s	Cf234 9.06e-10s	Cf235 0.000184s	Cf236 1.3e-06s	Cf237 2.1s	Cf238 0.021s
97	Bk223 0.0229s	Bk224 3.97e-06s	Bk225 1.99e-09s	Bk226 1.49s	Bk227 1.83s	Bk228 5.88e-08s	Bk229 2.08e-08s	Bk230 1.76e-08s	Bk231 4.48e-07s	Bk232 0.000137s	Bk233 0.000873s	Bk234 0.0807s	Bk235 0.479s	Bk236 15.5s	Bk237 32.4s
96	Cm222 0.0103s	Cm223 1.46e-06s	Cm224 3.02s	Cm225 2.86e-08s	Cm226 4.05s	Cm227 7.21e-06s	Cm228 4.62e-08s	Cm229 2.31e-05s	Cm230 6.34e-08s	Cm231 0.00368s	Cm232 2.55e-05s	Cm233 3.04s	Cm234 51s	Cm235 1.13m	Cm236 56.6s

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77	Ir218 0.0374s	Ir219 0.0319s	Ir220 0.027s	Ir221 0.0232s	Ir222 0.0197s	Ir223 0.0167s	Ir224 0.014s	Ir225 0.0123s	Ir226 0.0107s	Ir227 0.00904s	Ir228 0.00783s	Ir229 0.00667s	Ir230 0.00539s	Ir231 0.00515s	Ir232 0.0042s
76	Os217 0.0311s	Os218 0.0266s	Os219 0.023s	Os220 0.0192s	Os221 0.017s	Os222 0.0142s	Os223 0.0126s	Os224 0.0107s	Os225 0.00928s	Os226 0.00772s	Os227 0.00696s	Os228 0.00588s	Os229 0.0053s	Os230 0.00482s	Os231 0.00403s
75	Re216 0.0165s	Re217 0.0146s	Re218 0.0128s	Re219 0.0111s	Re220 0.00987s	Re221 0.0084s	Re222 0.0074s	Re223 0.00636s	Re224 0.00566s	Re225 0.00487s	Re226 0.00437s	Re227 0.00373s	Re228 0.00336s	Re229 0.00291s	Re230 0.0025s
74	W 215 0.0146s	W 216 0.0127s	W 217 0.0111s	W 218 0.00954s	W 219 0.0085s	W 220 0.00731s	W 221 0.00648s	W 222 0.00561s	W 223 0.00493s	W 224 0.00428s	W 225 0.0038s	W 226 0.00329s	W 227 0.00301s	W 228 0.00261s	W 229 0.0024s
73	Ta214 0.00968s	Ta215 0.00849s	Ta216 0.00747s	Ta217 0.00661s	Ta218 0.00583s	Ta219 0.00508s	Ta220 0.00454s	Ta221 0.00395s	Ta222 0.0035s	Ta223 0.00307s	Ta224 0.00275s	Ta225 0.0024s	Ta226 0.00219s	Ta227 0.0019s	Ta228 0.00175s
72	Hf213 0.00882s	Hf214 0.00763s	Hf215 0.00674s	Hf216 0.00589s	Hf217 0.00533s	Hf218 0.0046s	Hf219 0.00415s	Hf220 0.00359s	Hf221 0.0032s	Hf222 0.0028s	Hf223 0.00252s	Hf224 0.00218s	Hf225 0.00201s	Hf226 0.0017s	Hf227 0.00153s
71	Lu212 0.00541s	Lu213 0.00479s	Lu214 0.0043s	Lu215 0.00383s	Lu216 0.00345s	Lu217 0.00304s	Lu218 0.00275s	Lu219 0.00241s	Lu220 0.00218s	Lu221 0.00189s	Lu222 0.00173s	Lu223 0.00148s	Lu224 0.00133s	Lu225 0.00112s	Lu226 0.00102s
70	Yb211 0.00518s	Yb212 0.00453s	Yb213 0.00406s	Yb214 0.00357s	Yb215 0.00329s	Yb216 0.00287s	Yb217 0.00261s	Yb218 0.00224s	Yb219 0.00202s	Yb220 0.00174s	Yb221 0.00157s	Yb222 0.00131s		Yb224 0.00101s	
69	Tm210 0.00332s	Tm211 0.00295s	Tm212 0.00272s	Tm213 0.00242s	Tm214 0.00219s	Tm215 0.00192s	Tm216 0.00173s	Tm217 0.00147s	Tm218 0.00134s	Tm219 0.00112s	Tm220 0.000997s	Tm221 0.000854s		Tm223 0.000679s	
68	Er209 0.00303s	Er210 0.00271s	Er211 0.00246s	Er212 0.00213s	Er213 0.00192s	Er214 0.00164s	Er215 0.00145s	Er216 0.00123s		Er218 0.00093s		Er220 0.000741s		Er222 0.000599s	
67	Ho208 0.00205s	Ho209 0.00181s	Ho210 0.00162s	Ho211 0.0014s	Ho212 0.00123s	Ho213 0.00105s	Ho214 0.000944s	Ho215 0.00081s		Ho217 0.000647s		Ho219 0.00053s		Ho221 0.000431s	
66	Dy207 0.00183s	Dy208 0.00158s	Dy209 0.00138s	Dy210 0.00116s		Dy212 0.000906s		Dy214 0.00072s		Dy216 0.000582s		Dy218 0.000479s			
65	Tb206 0.0012s	Tb207 0.00102s	Tb208 0.0009s	Tb209 0.000774s		Tb211 0.000638s		Tb213 0.000518s		Tb215 0.000427s					
64		Gd206 0.000858s		Gd208 0.000696s		Gd210 0.000577s		Gd212 0.000476s							
63		Eu205 0.000607s		Eu207 0.000509s		Eu209 0.000423s									
62		Sm204 0.000555s		Sm206 0.000471s											
61															

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91	Pa232 1.32d	Pa233 26.98d	Pa234 6.7h	Pa235 24.1m	Pa236 9.1m	Pa237 8.7m	Pa238 2.3m	Pa239 1.8h	Pa240 20.1s	Pa241 32.3s	Pa242 6.77s	Pa243 7.18s	Pa244 2.59s	Pa245 2.77s	Pa246 1.18s
90	Th231 1.063d	Th232 100	Th233 22.3m	Th234 24.1d	Th235 7.1m	Th236 37.3m	Th237 4.7m	Th238 9.4m	Th239 35.4s	Th240 33s	Th241 7.08s	Th242 5.76s	Th243 2.81s	Th244 2.49s	Th245 1.3s
89	Ac230 2.033m	Ac231 7.5m	Ac232 1.983m	Ac233 2.417m	Ac234 44s	Ac235 49s	Ac236 7.51s	Ac237 10.5s	Ac238 2.87s	Ac239 3.05s	Ac240 1.13s	Ac241 1.34s	Ac242 0.684s	Ac243 0.704s	Ac244 0.396s
88	Ra229 4m	Ra230 1.55h	Ra231 1.717m	Ra232 4.167m	Ra233 30s	Ra234 30s	Ra235 9.25s	Ra236 8.63s	Ra237 3.09s	Ra238 2.93s	Ra239 1.28s	Ra240 1.34s	Ra241 0.742s	Ra242 0.695s	Ra243 0.413s
87	Fr228 38s	Fr229 50.2s	Fr230 19.1s	Fr231 17.6s	Fr232 5.5s	Fr233 3.54s	Fr234 1.35s	Fr235 1.48s	Fr236 0.701s	Fr237 0.699s	Fr238 0.355s	Fr239 0.406s	Fr240 0.223s	Fr241 0.238s	Fr242 0.147s
86	Rn227 20.8s	Rn228 1.083m	Rn229 13.2s	Rn230 8.57s	Rn231 3.52s	Rn232 2.84s	Rn233 1.52s	Rn234 1.28s	Rn235 0.732s	Rn236 0.628s	Rn237 0.374s	Rn238 0.394s	Rn239 0.23s	Rn240 0.231s	Rn241 0.147s
85	At226 4.17s	At227 3.83s	At228 1.82s	At229 1.44s	At230 0.715s	At231 0.642s	At232 0.397s	At233 0.362s	At234 0.228s	At235 0.206s	At236 0.138s	At237 0.14s	At238 0.089s	At239 0.0902s	At240 0.0613s
84	Po225 3.63s	Po226 2.61s	Po227 1.6s	Po228 1.14s	Po229 0.812s	Po230 0.643s	Po231 0.411s	Po232 0.341s	Po233 0.225s	Po234 0.195s	Po235 0.139s	Po236 0.129s	Po237 0.0882s	Po238 0.0853s	Po239 0.0603s
83	Bi224 0.767s	Bi225 0.743s	Bi226 0.461s	Bi227 0.411s	Bi228 0.28s	Bi229 0.235s	Bi230 0.142s	Bi231 0.134s	Bi232 0.0885s	Bi233 0.0848s	Bi234 0.0617s	Bi235 0.0588s	Bi236 0.0428s	Bi237 0.0415s	Bi238 0.0305s
82	Pb223 0.663s	Pb224 0.588s	Pb225 0.398s	Pb226 0.33s	Pb227 0.232s	Pb228 0.195s	Pb229 0.142s	Pb230 0.131s	Pb231 0.0894s	Pb232 0.087s	Pb233 0.0627s	Pb234 0.0582s	Pb235 0.0421s	Pb236 0.0401s	Pb237 0.0304s
81	Tl222 0.238s	Tl223 0.221s	Tl224 0.151s	Tl225 0.137s	Tl226 0.1s	Tl227 0.0894s	Tl228 0.0649s	Tl229 0.0589s	Tl230 0.0398s	Tl231 0.0389s	Tl232 0.029s	Tl233 0.0276s	Tl234 0.0209s	Tl235 0.0198s	Tl236 0.0148s
80	Hg221 0.204s	Hg222 0.174s	Hg223 0.132s	Hg224 0.112s	Hg225 0.0858s	Hg226 0.0717s	Hg227 0.0579s	Hg228 0.0478s	Hg229 0.04s	Hg230 0.0364s	Hg231 0.027s	Hg232 0.0249s	Hg233 0.0184s	Hg234 0.0172s	Hg235 0.0133s
79	Au220 0.0899s	Au221 0.0785s	Au222 0.0616s	Au223 0.0528s	Au224 0.0421s	Au225 0.0365s	Au226 0.0301s	Au227 0.0249s	Au228 0.0214s	Au229 0.0181s	Au230 0.0135s	Au231 0.0128s	Au232 0.00969s	Au233 0.00927s	Au234 0.00729s
78	Pt219 0.0766s	Pt220 0.0629s	Pt221 0.0521s	Pt222 0.0433s	Pt223 0.0364s	Pt224 0.0305s	Pt225 0.0252s	Pt226 0.0208s	Pt227 0.0181s	Pt228 0.0155s	Pt229 0.013s	Pt230 0.0119s	Pt231 0.00922s	Pt232 0.00881s	Pt233 0.00713s
77	Ir218 0.0374s	Ir219 0.0319s	Ir220 0.027s	Ir221 0.0232s	Ir222 0.0197s	Ir223 0.0167s	Ir224 0.014s	Ir225 0.0123s	Ir226 0.0107s	Ir227 0.00904s	Ir228 0.00783s	Ir229 0.00667s	Ir230 0.00539s	Ir231 0.00515s	Ir232 0.0042s
76	Os217 0.0311s	Os218 0.0266s	Os219 0.023s	Os220 0.0192s	Os221 0.017s	Os222 0.0142s	Os223 0.0126s	Os224 0.0107s	Os225 0.00928s	Os226 0.00772s	Os227 0.00696s	Os228 0.00588s	Os229 0.0053s	Os230 0.00482s	Os231 0.00403s
75	Re216 0.0165s	Re217 0.0146s	Re218 0.0128s	Re219 0.0111s	Re220 0.00987s	Re221 0.0084s	Re222 0.0074s	Re223 0.00636s	Re224 0.00566s	Re225 0.00487s	Re226 0.00437s	Re227 0.00373s	Re228 0.00336s	Re229 0.00291s	Re230 0.0025s

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105	Db246 7.5e-11s	Db247 1.86e-10s	Db248 4.73e-09s	Db249 1.03e-08s	Db250 1.17e-07s	Db251 8.65e-07s	Db252 3.77e-05s	Db253 0.000179s	Db254 0.0135s	Db255 1.6s	Db256 1.6s	Db257 1.5s	Db258 20s	Db259 0.51s	Db260 1.52s
104	Rf245 1.41e-09s	Rf246 1.18e-12s	Rf247 2.14e-08s	Rf248 1.61e-10s	Rf249 1.62e-05s	Rf250 9.73e-09s	Rf251 0.000442s	Rf252 2.14e-05s	Rf253 0.013s	Rf254 2.3e-05s	Rf255 1.68s	Rf256 0.0064s	Rf257 4.7s	Rf258 0.012s	Rf259 3.2s
103	Lr244 4.72e-08s	Lr245 3.3e-07s	Lr246 1.78e-05s	Lr247 3.15e-05s	Lr248 0.0492s	Lr249 0.0244s	Lr250 0.191s	Lr251 0.101s	Lr252 0.36s	Lr253 1.49s	Lr254 13s	Lr255 22s	Lr256 27s	Lr257 0.646s	Lr258 4.1s
102	No243 2.97e-06s	No244 1.01e-08s	No245 0.00288s	No246 1.16e-05s	No247 0.0857s	No248 0.0172s	No249 5.4e-05s	No250 5.6e-06s	No251 0.93s	No252 2.27s	No253 1.62m	No254 51s	No255 3.1m	No256 2.91s	No257 24.5s
101	Md242 0.00163s	Md243 0.00738s	Md244 0.724s	Md245 0.35s	Md246 1s	Md247 1.12s	Md248 7s	Md249 24s	Md250 52s	Md251 4m	Md252 4.8m	Md253 12m	Md254 28m	Md255 27m	Md256 1.283h
100	Fm241 0.00073s	Fm242 0.0008s	Fm243 0.18s	Fm244 0.0033s	Fm245 4.2s	Fm246 1.1s	Fm247 29s	Fm248 36s	Fm249 1.6m	Fm250 33m	Fm251 5.3h	Fm252 1.058d	Fm253 3d	Fm254 3.24h	Fm255 20.07h
99	Es240 8.19s	Es241 8s	Es242 13.5s	Es243 21s	Es244 37s	Es245 1.1m	Es246 7.7m	Es247 4.55m	Es248 27m	Es249 1.703h	Es250 8.6h	Es251 1.375d	Es252 1.291y	Es253 20.47d	Es254 275.7d
98	Cf239 39s	Cf240 57.6s	Cf241 3.78m	Cf242 3.49m	Cf243 10.7m	Cf244 19.4m	Cf245 45m	Cf246 1.487d	Cf247 3.11h	Cf248 333.5d	Cf249 351y	Cf250 13.08y	Cf251 898y	Cf252 2.645y	Cf253 17.81d
97	Bk238 2.4m	Bk239 1.51m	Bk240 4.8m	Bk241 4.6m	Bk242 7m	Bk243 4.5h	Bk244 4.35h	Bk245 4.94d	Bk246 1.8d	Bk247 1380y	Bk248 9y	Bk249 320d	Bk250 3.212h	Bk251 55.6m	Bk252 1.8m
96	Cm237 3.97m	Cm238 2.4h	Cm239 2.9h	Cm240 27d	Cm241 32.8d	Cm242 162.9d	Cm243 29.1y	Cm244 18.11y	Cm245 8500y	Cm246 4760y	Cm247 1.56e+07y	Cm248 3.48e+05y	Cm249 1.069h	Cm250 9700y	Cm251 16.8m
95	Am236 3.6m	Am237 1.227h	Am238 1.633h	Am239 11.9h	Am240 2.117d	Am241 432.6y	Am242 141y	Am243 7370y	Am244 10.1h	Am245 2.05h	Am246 39m	Am247 23m	Am248 3.13m	Am249 44.1m	Am250 43.9s
94	Pu235 25.3m	Pu236 2.858y	Pu237 45.2d	Pu238 87.7y	Pu239 2.41e+04y	Pu240 6561y	Pu241 14.29y	Pu242 3.74e+05y	Pu243 4.956h	Pu244 8.11e+07y	Pu245 10.5h	Pu246 10.84d	Pu247 2.27d	Pu248 48.3m	Pu249 1.58m
93	Np234 4.4d	Np235 1.085y	Np236 1.54e+05y	Np237 2.14e+06y	Np238 2.117d	Np239 2.356d	Np240 1.032h	Np241 13.9m	Np242 5.5m	Np243 1.85m	Np244 2.29m	Np245 2.29m	Np246 14.5s	Np247 27.7s	Np248 6.11s
92	U 233 1.59e+05y	U 234 0.0055	U 235 0.72	U 236 2.34e+07y	U 237 6.75d	U 238 99.2745	U 239 23.45m	U 240 14.1h	U 241 45.6m	U 242 16.8m	U 243 3.04m	U 244 2.66m	U 245 29.2s	U 246 22.6s	U 247 7.54s
91	Pa232 1.32d	Pa233 26.98d	Pa234 6.7h	Pa235 24.1m	Pa236 9.1m	Pa237 8.7m	Pa238 2.3m	Pa239 1.8h	Pa240 20.1s	Pa241 32.3s	Pa242 6.77s	Pa243 7.18s	Pa244 2.59s	Pa245 2.77s	Pa246 1.18s
90	Th231 1.063d	Th232 100	Th233 22.3m	Th234 24.1d	Th235 7.1m	Th236 37.3m	Th237 4.7m	Th238 9.4m	Th239 35.4s	Th240 33s	Th241 7.08s	Th242 5.76s	Th243 2.81s	Th244 2.49s	Th245 1.3s
89	Ac230 2.033m	Ac231 7.5m	Ac232 1.983m	Ac233 2.417m	Ac234 44s	Ac235 49s	Ac236 7.51s	Ac237 10.5s	Ac238 2.87s	Ac239 3.05s	Ac240 1.13s	Ac241 1.34s	Ac242 0.684s	Ac243 0.704s	Ac244 0.396s

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119																
118																273 1.65e-15s
117													269 2.22e-16s	270 6.93e-15s	271 2.48e-15s	272 1.2e-14s
116										266 3.51e-20s	267 6.95e-16s	268 4.65e-19s	269 4.13e-15s	270 5.97e-18s	271 3.64e-14s
115								263 2.52e-17s	264 3.18e-16s	265 3.65e-16s	266 7.28e-15s	267 5.65e-15s	268 3.47e-14s	269 4.89e-14s	270 2.51e-13s
114							261 4.39e-17s	262 2.65e-20s	263 4.83e-16s	264 5.61e-19s	265 1.16e-14s	266 1.07e-17s	267 5.89e-14s	268 4.16e-17s	269 3e-13s
113				257 2.77e-17s	258 1.73e-16s	259 9.55e-17s	260 9.1e-16s	261 5.18e-16s	262 1.2e-14s	263 1.95e-14s	264 2.76e-13s	265 2.96e-13s	266 2.88e-12s	267 2.97e-12s	268 5.46e-11s
112		Cn254 8.34e-21s	Cn255 4.14e-17s	Cn256 3.11e-20s	Cn257 2.47e-16s	Cn258 2.79e-19s	Cn259 2.2e-15s	Cn260 2.41e-18s	Cn261 4.18e-14s	Cn262 1.24e-16s	Cn263 8.05e-13s	Cn264 3.39e-15s	Cn265 9.44e-11s	Cn266 3.95e-14s	Cn267 6.71e-10s
111	Rg252 2.44e-16s	Rg253 1.12e-16s	Rg254 1.27e-15s	Rg255 1.3e-15s	Rg256 1.08e-14s	Rg257 1.28e-14s	Rg258 1.87e-13s	Rg259 2.07e-13s	Rg260 6.59e-12s	Rg261 1.19e-11s	Rg262 1.07e-10s	Rg263 5.61e-10s	Rg264 4.57e-09s	Rg265 4.19e-09s	Rg266 5.07e-08s
110	Ds251 2.39e-16s	Ds252 1.38e-19s	Ds253 2.64e-15s	Ds254 3.73e-18s	Ds255 2.14e-14s	Ds256 5.93e-17s	Ds257 1.31e-12s	Ds258 2.25e-15s	Ds259 3.9e-11s	Ds260 5e-14s	Ds261 4.5e-10s	Ds262 3.4e-12s	Ds263 2.24e-08s	Ds264 2.51e-11s	Ds265 4.44e-07s
109	Mt250 2.21e-15s	Mt251 2.88e-15s	Mt252 5.48e-14s	Mt253 9.53e-14s	Mt254 2.08e-12s	Mt255 5.77e-12s	Mt256 8.59e-11s	Mt257 7.13e-11s	Mt258 1.15e-09s	Mt259 3.26e-09s	Mt260 6.97e-07s	Mt261 2.43e-07s	Mt262 2.47e-06s	Mt263 5.47e-06s	Mt264 5.71e-05s
108	Hs249 3.55e-15s	Hs250 1.24e-17s	Hs251 8.77e-14s	Hs252 3.39e-16s	Hs253 6e-12s	Hs254 1.04e-14s	Hs255 3.74e-10s	Hs256 7.18e-13s	Hs257 1.62e-08s	Hs258 4.58e-11s	Hs259 2.97e-06s	Hs260 3.72e-09s	Hs261 4.22e-05s	Hs262 4.69e-08s	Hs263 0.000398s
107	Bh248 1.43e-13s	Bh249 3.47e-13s	Bh250 7.66e-12s	Bh251 1.23e-11s	Bh252 5.62e-10s	Bh253 7.6e-10s	Bh254 3.92e-08s	Bh255 1.06e-07s	Bh256 8.75e-06s	Bh257 3.34e-05s	Bh258 8.67e-05s	Bh259 0.000284s	Bh260 0.035s	Bh261 0.012s	Bh262 0.102s
106	Sg247 7.23e-13s	Sg248 1.53e-15s	Sg249 2.99e-11s	Sg250 7.62e-14s	Sg251 1.76e-09s	Sg252 4.99e-12s	Sg253 7.91e-07s	Sg254 1e-09s	Sg255 4.01e-05s	Sg256 1e-07s	Sg257 0.00125s	Sg258 0.0029s	Sg259 0.48s	Sg260 0.0036s	Sg261 0.23s
105	Db246 7.5e-11s	Db247 1.86e-10s	Db248 4.73e-09s	Db249 1.03e-08s	Db250 1.17e-07s	Db251 8.65e-07s	Db252 3.77e-05s	Db253 0.000179s	Db254 0.0135s	Db255 1.6s	Db256 1.6s	Db257 1.5s	Db258 20s	Db259 0.51s	Db260 1.52s
104	Rf245 1.41e-09s	Rf246 1.18e-12s	Rf247 2.14e-08s	Rf248 1.61e-10s	Rf249 1.62e-05s	Rf250 9.73e-09s	Rf251 0.000442s	Rf252 2.14e-05s	Rf253 0.013s	Rf254 2.3e-05s	Rf255 1.68s	Rf256 0.0064s	Rf257 4.7s	Rf258 0.012s	Rf259 3.2s
103	Lr244 4.72e-08s	Lr245 3.3e-07s	Lr246 1.78e-05s	Lr247 3.15e-05s	Lr248 0.0492s	Lr249 0.0244s	Lr250 0.191s	Lr251 0.101s	Lr252 0.36s	Lr253 1.49s	Lr254 13s	Lr255 22s	Lr256 27s	Lr257 0.646s	Lr258 4.1s

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83	Bi239 0.0291s	Bi240 0.0222s	Bi241 0.0242s	Bi242 0.022s	Bi243 0.0226s	Bi244 0.018s	Bi245 0.0178s	Bi246 0.0143s	Bi247 0.0142s	Bi248 0.00913s	Bi249 0.00874s	Bi250 0.00681s	Bi251 0.00611s	Bi252 0.00502s	Bi253 0.0049s
82	Pb238 0.0281s	Pb239 0.022s	Pb240 0.0266s	Pb241 0.0241s	Pb242 0.023s	Pb243 0.0183s	Pb244 0.0172s	Pb245 0.0145s	Pb246 0.0141s	Pb247 0.0088s	Pb248 0.00788s	Pb249 0.00624s	Pb250 0.00602s	Pb251 0.00518s	Pb252 0.00503s
81	Tl237 0.0135s	Tl238 0.0104s	Tl239 0.00956s	Tl240 0.00783s	Tl241 0.00747s	Tl242 0.00619s	Tl243 0.00583s	Tl244 0.0047s	Tl245 0.00433s	Tl246 0.00298s	Tl247 0.00291s	Tl248 0.00257s	Tl249 0.00248s	Tl250 0.00214s	Tl251 0.00201s
80	Hg236 0.0123s	Hg237 0.00976s	Hg238 0.00906s	Hg239 0.00885s	Hg240 0.00786s	Hg241 0.00562s	Hg242 0.00495s	Hg243 0.00412s	Hg244 0.00402s	Hg245 0.00285s	Hg246 0.00269s	Hg247 0.00234s	Hg248 0.00221s	Hg249 0.00192s	Hg250 0.00185s
79	Au235 0.00686s	Au236 0.00558s	Au237 0.00527s	Au238 0.00482s	Au239 0.00417s	Au240 0.00322s	Au241 0.00302s	Au242 0.0024s	Au243 0.00227s	Au244 0.00169s	Au245 0.00165s	Au246 0.00147s	Au247 0.00139s	Au248 0.00118s	Au249 0.0011s
78	Pt234 0.00662s	Pt235 0.00547s	Pt236 0.00513s	Pt237 0.00426s	Pt238 0.0039s	Pt239 0.00323s	Pt240 0.00299s	Pt241 0.00251s	Pt242 0.0023s	Pt243 0.00166s	Pt244 0.00157s	Pt245 0.00137s	Pt246 0.00129s	Pt247 0.00113s	Pt248 0.00106s
77	Ir233 0.00394s	Ir234 0.00332s	Ir235 0.00314s	Ir236 0.00264s	Ir237 0.00251s	Ir238 0.00204s	Ir239 0.00202s	Ir240 0.0017s	Ir241 0.00149s	Ir242 0.00117s	Ir243 0.00108s	Ir244 0.000919s	Ir245 0.000868s	Ir246 0.000761s	Ir247 0.000718s
76	Os232 0.0038s	Os233 0.00323s	Os234 0.00303s	Os235 0.00257s	Os236 0.00243s	Os237 0.00205s	Os238 0.00183s	Os239 0.00143s	Os240 0.00128s	Os241 0.00112s	Os242 0.00105s		Os244 0.000823s	Os245 0.000745s	Os246 0.000719s
75	Re231 0.00234s	Re232 0.002s	Re233 0.00186s	Re234 0.0016s	Re235 0.00147s	Re236 0.00129s	Re237 0.00119s	Re238 0.00099s	Re239 0.000913s		Re241 0.000693s		Re243 0.00058s	Re244 0.000527s	Re245 0.00051s
74	W 230 0.00221s	W 231 0.00189s	W 232 0.00175s	W 233 0.00151s	W 234 0.00138s		W 236 0.00105s		W 238 0.000895s		W 240 0.000718s		W 242 0.00057s		W 244 0.00049s
73	Ta229 0.00149s	Ta230 0.00128s	Ta231 0.00116s	Ta232 0.001s	Ta233 0.000914s	Ta234 0.000799s	Ta235 0.000746s		Ta237 0.000616s		Ta239 0.000495s				Ta243 0.000361s
72	Hf228 0.0013s		Hf230 0.00109s		Hf232 0.000883s		Hf234 0.0007s		Hf236 0.00057s						Hf242 0.000367s
71	Lu227 0.000894s		Lu229 0.000722s		Lu231 0.000592s		Lu233 0.000464s								
70	Yb226 0.000805s		Yb228 0.000655s		Yb230 0.000555s										
69	Tm225 0.000564s		Tm227 0.000448s												
68	Er224 0.000487s														
67															

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97	Bk253 1.6d	Bk254 3.69m	Bk255 23.4m	Bk256 39.7s	Bk257 1.63m	Bk258 12.8s	Bk259 20s	Bk260 5.16s	Bk261 7.13s	Bk262 2.63s	Bk263 4.53s	Bk264 2.11s	Bk265 5.37s	Bk266 2.71s	Bk267 3.4s
96	Cm252 32.3y	Cm253 23.5m	Cm254 42.9m	Cm255 1.66m	Cm256 1.94m	Cm257 20.8s	Cm258 21.9s	Cm259 7.43s	Cm260 7.4s	Cm261 3.69s	Cm262 8.01s	Cm263 6.2s	Cm264 10.1s	Cm265 3.51s	Cm266 3.51s
95	Am251 1.44m	Am252 12.6s	Am253 21.1s	Am254 5.43s	Am255 7.01s	Am256 2.51s	Am257 3.01s	Am258 1.2s	Am259 2.19s	Am260 1.68s	Am261 3.45s	Am262 1.49s	Am263 1.69s	Am264 0.759s	Am265 0.696s
94	Pu250 1.8m	Pu251 25.3s	Pu252 25.5s	Pu253 7.82s	Pu254 6.95s	Pu255 3.09s	Pu256 2.8s	Pu257 1.43s	Pu258 7.38s	Pu259 3.78s	Pu260 3.64s	Pu261 1.76s	Pu262 1.47s	Pu263 0.637s	Pu264 0.48s
93	Np249 7.24s	Np250 2.66s	Np251 3.01s	Np252 1.17s	Np253 1.35s	Np254 0.683s	Np255 0.676s	Np256 0.879s	Np257 4.08s	Np258 0.811s	Np259 0.828s	Np260 0.399s	Np261 0.345s	Np262 0.192s	Np263 0.186s
92	U 248 7.27s	U 249 2.79s	U 250 2.79s	U 251 1.4s	U 252 1.35s	U 253 0.695s	U 254 1.2s	U 255 2.83s	U 256 4.38s	U 257 0.812s	U 258 0.658s	U 259 0.362s	U 260 0.347s	U 261 0.237s	U 262 0.236s
91	Pa247 1.2s	Pa248 0.615s	Pa249 0.705s	Pa250 0.386s	Pa251 0.381s	Pa252 0.233s	Pa253 0.575s	Pa254 0.454s	Pa255 0.403s	Pa256 0.129s	Pa257 0.13s	Pa258 0.0926s	Pa259 0.0921s	Pa260 0.06s	Pa261 0.0524s
90	Th246 1.37s	Th247 0.752s	Th248 0.737s	Th249 0.426s	Th250 0.386s	Th251 0.361s	Th252 0.629s	Th253 0.347s	Th254 0.354s	Th255 0.135s	Th256 0.131s	Th257 0.0921s	Th258 0.0808s	Th259 0.054s	Th260 0.0489s
89	Ac245 0.406s	Ac246 0.236s	Ac247 0.239s	Ac248 0.148s	Ac249 0.18s	Ac250 0.169s	Ac251 0.171s	Ac252 0.128s	Ac253 0.132s	Ac254 0.0589s	Ac255 0.0571s	Ac256 0.041s	Ac257 0.0362s	Ac258 0.027s	Ac259 0.0254s
88	Ra244 0.388s	Ra245 0.243s	Ra246 0.232s	Ra247 0.159s	Ra248 0.206s	Ra249 0.161s	Ra250 0.153s	Ra251 0.126s	Ra252 0.127s	Ra253 0.0598s	Ra254 0.0563s	Ra255 0.0418s	Ra256 0.0363s	Ra257 0.0278s	Ra258 0.0257s
87	Fr243 0.146s	Fr244 0.0944s	Fr245 0.0942s	Fr246 0.0753s	Fr247 0.0907s	Fr248 0.0662s	Fr249 0.0651s	Fr250 0.0539s	Fr251 0.0559s	Fr252 0.0293s	Fr253 0.0281s	Fr254 0.0215s	Fr255 0.0191s	Fr256 0.015s	Fr257 0.0141s
86	Rn242 0.141s	Rn243 0.095s	Rn244 0.0912s	Rn245 0.0779s	Rn246 0.0848s	Rn247 0.0689s	Rn248 0.0673s	Rn249 0.0551s	Rn250 0.0548s	Rn251 0.0296s	Rn252 0.0281s	Rn253 0.0218s	Rn254 0.0192s	Rn255 0.0151s	Rn256 0.014s
85	At241 0.0593s	At242 0.0423s	At243 0.0408s	At244 0.0404s	At245 0.0437s	At246 0.0344s	At247 0.0332s	At248 0.0267s	At249 0.0268s	At250 0.0158s	At251 0.0152s	At252 0.0121s	At253 0.0109s	At254 0.00867s	At255 0.00803s
84	Po240 0.0566s	Po241 0.0418s	Po242 0.0451s	Po243 0.0442s	Po244 0.0445s	Po245 0.0346s	Po246 0.0336s	Po247 0.0267s	Po248 0.0264s	Po249 0.016s	Po250 0.0151s	Po251 0.0124s	Po252 0.011s	Po253 0.0086s	Po254 0.00791s
83	Bi239 0.0291s	Bi240 0.0222s	Bi241 0.0242s	Bi242 0.022s	Bi243 0.0226s	Bi244 0.018s	Bi245 0.0178s	Bi246 0.0143s	Bi247 0.0142s	Bi248 0.00913s	Bi249 0.00874s	Bi250 0.00681s	Bi251 0.00611s	Bi252 0.00502s	Bi253 0.0049s
82	Pb238 0.0281s	Pb239 0.022s	Pb240 0.0266s	Pb241 0.0241s	Pb242 0.023s	Pb243 0.0183s	Pb244 0.0172s	Pb245 0.0145s	Pb246 0.0141s	Pb247 0.0088s	Pb248 0.00788s	Pb249 0.00624s	Pb250 0.00602s	Pb251 0.00518s	Pb252 0.00503s
81	Tl237 0.0135s	Tl238 0.0104s	Tl239 0.00956s	Tl240 0.00783s	Tl241 0.00747s	Tl242 0.00619s	Tl243 0.00583s	Tl244 0.0047s	Tl245 0.00433s	Tl246 0.00298s	Tl247 0.00291s	Tl248 0.00257s	Tl249 0.00248s	Tl250 0.00214s	Tl251 0.00201s

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111	Rg267 8.34e-08s	Rg268 1.15e-06s	Rg269 1.82e-06s	Rg270 1.85e-05s	Rg271 3.13e-05s	Rg272 0.0038s	Rg273 0.000312s	Rg274 0.006s	Rg275 0.000179s	Rg276 0.00057s	Rg277 0.00012s	Rg278 0.0042s	Rg279 0.17s	Rg280 3.6s	Rg281 1.42s
110	Ds266 7.3e-10s	Ds267 3e-06s	Ds268 1.15e-08s	Ds269 0.00017s	Ds270 0.006s	Ds271 0.069s	Ds272 0.0086s	Ds273 0.12s	Ds274 3.59e-07s	Ds275 0.00107s	Ds276 5.79e-08s	Ds277 3.08e-05s	Ds278 6.15e-09s	Ds279 0.18s	Ds280 11s
109	Mt265 8.43e-05s	Mt266 0.006s	Mt267 0.000418s	Mt268 0.07s	Mt269 0.00328s	Mt270 0.005s	Mt271 0.0162s	Mt272 0.0304s	Mt273 0.005s	Mt274 0.45s	Mt275 0.01s	Mt276 0.72s	Mt277 6.24e-05s	Mt278 7.14s	Mt279 45.5s
108	Hs264 0.0008s	Hs265 0.002s	Hs266 0.0023s	Hs267 0.8s	Hs268 2.05e-05s	Hs269 13s	Hs270 3.6s	Hs271 0.0378s	Hs272 1.36e-05s	Hs273 0.009s	Hs274 2.09e-06s	Hs275 0.15s	Hs276 1.75e-08s	Hs277 11.4m	Hs278 5.24s
107	Bh263 0.00783s	Bh264 0.44s	Bh265 0.94s	Bh266 10s	Bh267 17s	Bh268 1.07s	Bh269 0.692s	Bh270 1m	Bh271 0.525s	Bh272 10s	Bh273 0.0213s	Bh274 0.00455s	Bh275 0.000538s	Bh276 0.000977s	Bh277 35.3m
106	Sg262 0.0069s	Sg263 0.82s	Sg264 0.027s	Sg265 8s	Sg266 21s	Sg267 0.019s	Sg268 0.000494s	Sg269 22s	Sg270 0.000675s	Sg271 2.4m	Sg272 1.32e-05s	Sg273 0.00317s	Sg274 5.37e-07s	Sg275 0.000637s	Sg276 3.26e-07s
105	Db261 1.8s	Db262 35s	Db263 27s	Db264 14.9s	Db265 7.38s	Db266 1.41m	Db267 1.21h	Db268 16h	Db269 5.13s	Db270 1.91s	Db271 0.374s	Db272 0.0277s	Db273 0.0244s	Db274 0.029s	Db275 0.0097s
104	Rf260 0.0201s	Rf261 1.3m	Rf262 2.1s	Rf263 15m	Rf264 5.94s	Rf265 13h	Rf266 0.257s	Rf267 2.92m	Rf268 0.0305s	Rf269 8.61s	Rf270 0.00109s	Rf271 0.468s	Rf272 0.000144s	Rf273 0.0243s	Rf274 2.98e-07s
103	Lr259 6.2s	Lr260 3m	Lr261 39m	Lr262 3.6h	Lr263 24.8m	Lr264 1.53h	Lr265 2.53h	Lr266 1.12h	Lr267 3.71h	Lr268 17m	Lr269 1.28m	Lr270 27.2s	Lr271 0.373s	Lr272 0.28s	Lr273 0.000837s
102	No258 0.0012s	No259 58m	No260 0.106s	No261 1.8h	No262 0.005s	No263 21h	No264 18.1m	No265 3.67d	No266 47.5s	No267 1.81h	No268 0.0561s	No269 11.6s	No270 0.000457s	No271 0.605s	No272 0.000202s
101	Md257 5.52h	Md258 51.5d	Md259 1.6h	Md260 27.8d	Md261 7.84d	Md262 20.5m	Md263 3.45h	Md264 43.2m	Md265 2.29d	Md266 2.22m	Md267 1.51m	Md268 34.8s	Md269 5.49s	Md270 6.47s	Md271 1.17m
100	Fm256 2.627h	Fm257 100.5d	Fm258 0.00037s	Fm259 1.5s	Fm260 0.004s	Fm261 2.74h	Fm262 29.5m	Fm263 22h	Fm264 40.3s	Fm265 9.83m	Fm266 0.0462s	Fm267 33s	Fm268 0.0288s	Fm269 48.4s	Fm270 4.31m
99	Es255 39.8d	Es256 7.6h	Es257 7.7d	Es258 40.1m	Es259 6.78d	Es260 3.38m	Es261 15.3m	Es262 32.7s	Es263 1.44m	Es264 10.6s	Es265 25.9s	Es266 7.02s	Es267 14.9s	Es268 4.86s	Es269 18.5s
98	Cf254 60.5d	Cf255 1.417h	Cf256 12.3m	Cf257 2.39d	Cf258 5.76d	Cf259 14.8m	Cf260 35m	Cf261 1.56m	Cf262 1.82m	Cf263 19.8s	Cf264 24.8s	Cf265 12.1s	Cf266 20.9s	Cf267 14s	Cf268 29.8s
97	Bk253 1.6d	Bk254 3.69m	Bk255 23.4m	Bk256 39.7s	Bk257 1.63m	Bk258 12.8s	Bk259 20s	Bk260 5.16s	Bk261 7.13s	Bk262 2.63s	Bk263 4.53s	Bk264 2.11s	Bk265 5.37s	Bk266 2.71s	Bk267 3.4s
96	Cm252 32.3y	Cm253 23.5m	Cm254 42.9m	Cm255 1.66m	Cm256 1.94m	Cm257 20.8s	Cm258 21.9s	Cm259 7.43s	Cm260 7.4s	Cm261 3.69s	Cm262 8.01s	Cm263 6.2s	Cm264 10.1s	Cm265 3.51s	Cm266 3.51s
95	Am251 1.44m	Am252 12.6s	Am253 21.1s	Am254 5.43s	Am255 7.01s	Am256 2.51s	Am257 3.01s	Am258 1.2s	Am259 2.19s	Am260 1.68s	Am261 3.45s	Am262 1.49s	Am263 1.69s	Am264 0.759s	Am265 0.696s

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125																
124															293 7.11e-08s	294 0.0449s
123												289 7.78e-08s	290 5.14e-07s	291 2.34e-07s	292 1.65e-06s	293 6.25e-07s
122									286 2.11e-06s	287 1.34e-06s	288 0.0611s	289 4.71e-07s	290 2.1e-07s	291 1.46e-06s	292 5.61e-07s	
121							283 3.39e-08s	284 1.4e-05s	285 2.62e-05s	286 2.35e-05s	287 1e-06s	288 7.8e-06s	289 3.78e-06s	290 2.47e-05s	291 1.23e-05s	
120				279 1.3e-15s	280 7.52e-19s	281 1.58e-11s	282 7.43e-13s	283 2.3e-06s	284 8.93e-06s	285 2.75e-05s	286 7.64e-07s	287 6.19e-06s	288 3.08e-06s	289 2.5e-05s	290 9.84e-06s	
119		276 4.09e-15s	277 3.96e-15s	278 4.28e-14s	279 2.2e-14s	280 9.51e-14s	281 8.85e-10s	282 4.93e-06s	283 2.83e-05s	284 0.000247s	285 8.45e-06s	286 7.76e-05s	287 4.42e-05s	288 0.000362s	289 0.00013s	
118	274 1.24e-18s	275 3.57e-15s	276 1.42e-17s	277 7.19e-14s	278 2.94e-17s	279 1.25e-13s	280 4.53e-17s	281 2.13e-08s	282 3.56e-08s	283 2.24e-05s	284 3.15e-07s	285 5.26e-05s	286 3.21e-05s	287 0.000295s	288 0.000252s	
117	273 1.43e-14s	274 8.18e-14s	275 3.74e-13s	276 1.67e-12s	277 1.09e-12s	278 2.89e-12s	279 1.27e-12s	280 5.19e-12s	281 4.31e-06s	282 4.58e-05s	283 3.32e-05s	284 0.00059s	285 0.000673s	286 0.0114s	287 0.00585s	
116	272 1.4e-17s	273 9.73e-14s	274 8.73e-16s	275 4.73e-12s	276 1.93e-15s	277 5.79e-12s	278 2.23e-15s	279 1.57e-11s	280 6.25e-09s	281 7.13e-06s	282 8.75e-09s	283 0.000131s	284 0.000111s	285 0.0048s	286 0.00309s	
115	271 1.99e-13s	272 9.21e-13s	273 6.9e-12s	274 2.13e-10s	275 1.26e-10s	276 3.22e-10s	277 1.03e-10s	278 9.89e-10s	279 1.03e-09s	280 2.67e-05s	281 1.69e-05s	282 0.000183s	283 0.000315s	284 0.0177s	285 0.109s	
114	270 2.31e-16s	271 3.67e-12s	272 2.2e-14s	273 2.42e-10s	274 4.7e-12s	275 1.47e-08s	276 2.31e-11s	277 3.16e-07s	278 9.95e-11s	279 1.09e-06s	280 6.12e-10s	281 9.42e-05s	282 2.98e-05s	283 0.011s	284 0.0668s	
113	269 5.07e-11s	270 5.14e-10s	271 1.52e-09s	272 2.49e-08s	273 4.05e-08s	274 9.42e-07s	275 1.72e-06s	276 2.64e-05s	277 1.06e-05s	278 0.0002s	279 1.91e-05s	280 5.19e-06s	281 5.92e-07s	282 0.073s	283 0.1s	
112	Cn268 6.81e-13s	Cn269 7.38e-09s	Cn270 3.42e-11s	Cn271 2.47e-07s	Cn272 3.96e-10s	Cn273 7.31e-06s	Cn274 1.55e-08s	Cn275 0.000197s	Cn276 1.94e-08s	Cn277 0.00069s	Cn278 1.46e-08s	Cn279 5.45e-06s	Cn280 5.38e-10s	Cn281 0.0124s	Cn282 0.001s	
111	Rg267 8.34e-08s	Rg268 1.15e-06s	Rg269 1.82e-06s	Rg270 1.85e-05s	Rg271 3.13e-05s	Rg272 0.0038s	Rg273 0.000312s	Rg274 0.006s	Rg275 0.000179s	Rg276 0.00057s	Rg277 0.00012s	Rg278 0.0042s	Rg279 0.17s	Rg280 3.6s	Rg281 1.42s	
110	Ds266 7.3e-10s	Ds267 3e-06s	Ds268 1.15e-08s	Ds269 0.00017s	Ds270 0.006s	Ds271 0.069s	Ds272 0.0086s	Ds273 0.12s	Ds274 3.59e-07s	Ds275 0.00107s	Ds276 5.79e-08s	Ds277 3.08e-05s	Ds278 6.15e-09s	Ds279 0.18s	Ds280 11s	
109	Mt265 8.43e-05s	Mt266 0.006s	Mt267 0.000418s	Mt268 0.07s	Mt269 0.00328s	Mt270 0.005s	Mt271 0.0162s	Mt272 0.0304s	Mt273 0.005s	Mt274 0.45s	Mt275 0.01s	Mt276 0.72s	Mt277 6.24e-05s	Mt278 7.14s	Mt279 45.5s	

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85	At256 0.00634s	At257 0.00555s	At258 0.00446s	At259 0.00434s	At260 0.00357s	At261 0.00335s	At262 0.00284s	At263 0.00251s	At264 0.00214s	At265 0.00201s	At266 0.00172s	At267 0.00164s	At268 0.00146s	At269 0.00134s
84	Po255 0.00661s	Po256 0.00603s	Po257 0.00492s	Po258 0.00453s	Po259 0.00371s	Po260 0.00336s	Po261 0.00272s	Po262 0.00246s	Po263 0.00212s	Po264 0.00195s	Po265 0.00167s	Po266 0.00156s	Po267 0.00132s	Po268 0.00115s
83	Bi254 0.00425s	Bi255 0.00389s	Bi256 0.00322s	Bi257 0.00298s	Bi258 0.00242s	Bi259 0.00217s	Bi260 0.00181s	Bi261 0.00168s	Bi262 0.00144s	Bi263 0.00132s	Bi264 0.00111s	Bi265 0.001s		Bi267 0.000785s
82	Pb253 0.00428s	Pb254 0.00399s	Pb255 0.00318s	Pb256 0.00289s	Pb257 0.00242s	Pb258 0.00227s	Pb259 0.00186s	Pb260 0.00164s		Pb262 0.00127s		Pb264 0.00109s		Pb266 0.000906s
81	Tl252 0.00172s	Tl253 0.00163s	Tl254 0.00129s	Tl255 0.0012s	Tl256 0.00104s	Tl257 0.000953s	Tl258 0.000816s	Tl259 0.000782s		Tl261 0.000694s		Tl263 0.000575s		Tl265 0.000504s
80	Hg251 0.00163s	Hg252 0.00152s	Hg253 0.00115s	Hg254 0.00106s		Hg256 0.000881s		Hg258 0.00075s		Hg260 0.000626s		Hg262 0.000553s		Hg264 0.000464s
79	Au250 0.000935s	Au251 0.000852s	Au252 0.000727s	Au253 0.000708s	Au254 0.000649s	Au255 0.000613s		Au257 0.00049s		Au259 0.000439s		Au261 0.00038s		
78	Pt249 0.000928s	Pt250 0.000869s	Pt251 0.000796s	Pt252 0.00071s		Pt254 0.000591s		Pt256 0.000497s		Pt258 0.00043s				
77	Ir248 0.000645s	Ir249 0.000635s	Ir250 0.000604s	Ir251 0.000512s		Ir253 0.000426s		Ir255 0.000361s						
76	Os247 0.000653s	Os248 0.00065s	Os249 0.00062s	Os250 0.000498s		Os252 0.000418s								
75	Re246 0.000467s	Re247 0.000454s	Re248 0.00043s	Re249 0.000343s										
74		W 246 0.000448s		W 248 0.000343s										
73		Ta245 0.000361s		Ta247 0.000258s										
72		Hf244 0.000365s												
71		Lu243 0.000272s												
70		Yb242 0.000273s												
69														

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98	Cf269 6.82s	Cf270 6.75s	Cf271 2.57s	Cf272 2s	Cf273 1.08s	Cf274 0.831s	Cf275 0.447s	Cf276 0.396s	Cf277 0.252s	Cf278 0.227s	Cf279 0.164s	Cf280 0.146s	Cf281 0.096s	Cf282 0.0877s	Cf283 0.0296s
97	Bk268 1.22s	Bk269 1.38s	Bk270 0.607s	Bk271 0.505s	Bk272 0.28s	Bk273 0.237s	Bk274 0.158s	Bk275 0.149s	Bk276 0.101s	Bk277 0.0935s	Bk278 0.0692s	Bk279 0.0643s	Bk280 0.0449s	Bk281 0.042s	Bk282 0.016s
96	Cm267 1.42s	Cm268 1.13s	Cm269 0.5s	Cm270 0.403s	Cm271 0.269s	Cm272 0.244s	Cm273 0.167s	Cm274 0.151s	Cm275 0.106s	Cm276 0.0938s	Cm277 0.0708s	Cm278 0.0654s	Cm279 0.0468s	Cm280 0.0429s	Cm281 0.0166s
95	Am266 0.304s	Am267 0.259s	Am268 0.158s	Am269 0.155s	Am270 0.109s	Am271 0.103s	Am272 0.0698s	Am273 0.0621s	Am274 0.047s	Am275 0.0448s	Am276 0.0348s	Am277 0.0326s	Am278 0.0243s	Am279 0.0227s	Am280 0.00959s
94	Pu265 0.275s	Pu266 0.258s	Pu267 0.176s	Pu268 0.163s	Pu269 0.108s	Pu270 0.0941s	Pu271 0.0668s	Pu272 0.0632s	Pu273 0.05s	Pu274 0.0464s	Pu275 0.0366s	Pu276 0.0334s	Pu277 0.0253s	Pu278 0.0233s	Pu279 0.00987s
93	Np264 0.121s	Np265 0.115s	Np266 0.0743s	Np267 0.064s	Np268 0.0446s	Np269 0.0427s	Np270 0.033s	Np271 0.0324s	Np272 0.0256s	Np273 0.0248s	Np274 0.0196s	Np275 0.0182s	Np276 0.014s	Np277 0.0132s	Np278 0.00603s
92	U 263 0.135s	U 264 0.109s	U 265 0.0697s	U 266 0.0635s	U 267 0.0485s	U 268 0.0457s	U 269 0.0357s	U 270 0.0345s	U 271 0.0277s	U 272 0.0266s	U 273 0.02s	U 274 0.0179s	U 275 0.0142s	U 276 0.0138s	U 277 0.00584s
91	Pa262 0.0336s	Pa263 0.0329s	Pa264 0.0259s	Pa265 0.0253s	Pa266 0.0199s	Pa267 0.0192s	Pa268 0.0152s	Pa269 0.014s	Pa270 0.0106s	Pa271 0.00931s	Pa272 0.00726s	Pa273 0.00699s	Pa274 0.0057s	Pa275 0.00518s	Pa276 0.00249s
90	Th261 0.0356s	Th262 0.0343s	Th263 0.0271s	Th264 0.0264s	Th265 0.0213s	Th266 0.0199s	Th267 0.0154s	Th268 0.0141s	Th269 0.0113s	Th270 0.0103s	Th271 0.00776s	Th272 0.00688s	Th273 0.00549s	Th274 0.00512s	
89	Ac260 0.0201s	Ac261 0.0191s	Ac262 0.0156s	Ac263 0.0148s	Ac264 0.0115s	Ac265 0.0108s	Ac266 0.00889s	Ac267 0.00811s	Ac268 0.00625s	Ac269 0.00538s	Ac270 0.00422s	Ac271 0.0041s	Ac272 0.00351s	Ac273 0.0033s	
88	Ra259 0.0205s	Ra260 0.0189s	Ra261 0.0158s	Ra262 0.0144s	Ra263 0.0119s	Ra264 0.011s	Ra265 0.00828s	Ra266 0.00702s	Ra267 0.00562s	Ra268 0.00513s	Ra269 0.00432s	Ra270 0.00413s	Ra271 0.00357s	Ra272 0.00337s	
87	Fr258 0.0116s	Fr259 0.0108s	Fr260 0.00904s	Fr261 0.00807s	Fr262 0.00646s	Fr263 0.00555s	Fr264 0.00446s	Fr265 0.00418s	Fr266 0.00354s	Fr267 0.00329s	Fr268 0.0028s	Fr269 0.00265s	Fr270 0.00236s	Fr271 0.00224s	
86	Rn257 0.0117s	Rn258 0.0105s	Rn259 0.00795s	Rn260 0.00716s	Rn261 0.0058s	Rn262 0.00521s	Rn263 0.00454s	Rn264 0.00421s	Rn265 0.00351s	Rn266 0.00326s	Rn267 0.00278s	Rn268 0.00263s	Rn269 0.00234s	Rn270 0.00222s	
85	At256 0.00634s	At257 0.00555s	At258 0.00446s	At259 0.00434s	At260 0.00357s	At261 0.00335s	At262 0.00284s	At263 0.00251s	At264 0.00214s	At265 0.00201s	At266 0.00172s	At267 0.00164s	At268 0.00146s	At269 0.00134s	
84	Po255 0.00661s	Po256 0.00603s	Po257 0.00492s	Po258 0.00453s	Po259 0.00371s	Po260 0.00336s	Po261 0.00272s	Po262 0.00246s	Po263 0.00212s	Po264 0.00195s	Po265 0.00167s	Po266 0.00156s	Po267 0.00132s	Po268 0.00115s	
83	Bi254 0.00425s	Bi255 0.00389s	Bi256 0.00322s	Bi257 0.00298s	Bi258 0.00242s	Bi259 0.00217s	Bi260 0.00181s	Bi261 0.00168s	Bi262 0.00144s	Bi263 0.00132s	Bi264 0.00111s	Bi265 0.001s		Bi267 0.000785s	
82	Pb253 0.00428s	Pb254 0.00399s	Pb255 0.00318s	Pb256 0.00289s	Pb257 0.00242s	Pb258 0.00227s	Pb259 0.00186s	Pb260 0.00164s		Pb262 0.00127s		Pb264 0.00109s		Pb266 0.000906s	

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112	Cn283 4s	Cn284 0.098s	Cn285 34s	Cn286 22m	Cn287 3.08h	Cn288 2.62h	Cn289 42.9m	Cn290 2.14d	Cn291 5.85d	Cn292 27.4d	Cn293 2.97y	Cn294 314d	Cn295 4.14y	Cn296 2.42y	Cn297 1.06h
111	Rg282 13.9s	Rg283 7.91m	Rg284 3.62m	Rg285 2.74h	Rg286 12.6m	Rg287 35.5m	Rg288 32.8m	Rg289 6.18d	Rg290 40.1m	Rg291 2.07y	Rg292 15m	Rg293 2.13h	Rg294 3.83m	Rg295 8.38m	Rg296 18.8s
110	Ds281 9.6s	Ds282 0.00424s	Ds283 33.8m	Ds284 3.17m	Ds285 7.62h	Ds286 1.05d	Ds287 93.4d	Ds288 11.8d	Ds289 1.22y	Ds290 4.04y	Ds291 4.09h	Ds292 120y	Ds293 37.7y	Ds294 344y	Ds295 54.5s
109	Mt280 10.5m	Mt281 7.38s	Mt282 26.1m	Mt283 5.09h	Mt284 1.22h	Mt285 2.28y	Mt286 23.6m	Mt287 7.71h	Mt288 5.13m	Mt289 20.6m	Mt290 6.04m	Mt291 1.56h	Mt292 55.6s	Mt293 5.16m	Mt294 3.52s
108	Hs279 2.37h	Hs280 26.9m	Hs281 10.2m	Hs282 21.3s	Hs283 4.59d	Hs284 55.6m	Hs285 14.1h	Hs286 4.24h	Hs287 13.4m	Hs288 5.94h	Hs289 3.71h	Hs290 17.8h	Hs291 5.82m	Hs292 15.1m	Hs293 5.04s
107	Bh278 1.16h	Bh279 1.01s	Bh280 25.7m	Bh281 3.19h	Bh282 9.8m	Bh283 23m	Bh284 8.6m	Bh285 2.6h	Bh286 1.14m	Bh287 12.5m	Bh288 29.5s	Bh289 1.19m	Bh290 8.55s	Bh291 14.3s	Bh292 0.922s
106	Sg277 0.0213s	Sg278 9.23e-05s	Sg279 4.81m	Sg280 1.35s	Sg281 54m	Sg282 1.82s	Sg283 4.4h	Sg284 18.8s	Sg285 7.95m	Sg286 1.25h	Sg287 1.72m	Sg288 1.69m	Sg289 15.8s	Sg290 16.8s	Sg291 1.08s
105	Db276 0.0164s	Db277 0.386s	Db278 2.72m	Db279 49.5s	Db280 2.67m	Db281 15.8m	Db282 33.6s	Db283 1.64m	Db284 10.1s	Db285 23.2s	Db286 5.04s	Db287 6.2s	Db288 1.93s	Db289 2.2s	Db290 0.305s
104	Rf275 0.0482s	Rf276 0.00202s	Rf277 17.9s	Rf278 0.0207s	Rf279 12.1m	Rf280 1.34s	Rf281 2.05m	Rf282 2.38m	Rf283 19.8s	Rf284 25.9s	Rf285 7.85s	Rf286 6.8s	Rf287 2.4s	Rf288 2.25s	Rf289 0.329s
103	Lr274 5.12s	Lr275 24.8m	Lr276 57.3s	Lr277 3.62m	Lr278 20.4s	Lr279 29.2s	Lr280 5.73s	Lr281 7.47s	Lr282 2.23s	Lr283 2.83s	Lr284 1.25s	Lr285 1.23s	Lr286 0.568s	Lr287 0.572s	Lr288 0.123s
102	No273 13.3m	No274 1.48d	No275 4.22m	No276 6.96m	No277 50s	No278 35s	No279 8.97s	No280 8s	No281 2.84s	No282 2.8s	No283 1.49s	No284 1.27s	No285 0.637s	No286 0.582s	No287 0.127s
101	Md272 19.5s	Md273 1.34m	Md274 8.72s	Md275 12.4s	Md276 3.39s	Md277 3.72s	Md278 1.38s	Md279 1.41s	Md280 0.637s	Md281 0.662s	Md282 0.408s	Md283 0.376s	Md284 0.212s	Md285 0.202s	Md286 0.0565s
100	Fm271 1.23m	Fm272 1.76m	Fm273 14.7s	Fm274 13.9s	Fm275 4.5s	Fm276 4.16s	Fm277 1.64s	Fm278 1.37s	Fm279 0.712s	Fm280 0.665s	Fm281 0.442s	Fm282 0.376s	Fm283 0.227s	Fm284 0.209s	Fm285 0.059s
99	Es270 4.74s	Es271 6.45s	Es272 1.98s	Es273 2.06s	Es274 0.894s	Es275 0.885s	Es276 0.428s	Es277 0.397s	Es278 0.237s	Es279 0.224s	Es280 0.157s	Es281 0.145s	Es282 0.0925s	Es283 0.0869s	Es284 0.0289s
98	Cf269 6.82s	Cf270 6.75s	Cf271 2.57s	Cf272 2s	Cf273 1.08s	Cf274 0.831s	Cf275 0.447s	Cf276 0.396s	Cf277 0.252s	Cf278 0.227s	Cf279 0.164s	Cf280 0.146s	Cf281 0.096s	Cf282 0.0877s	Cf283 0.0296s
97	Bk268 1.22s	Bk269 1.38s	Bk270 0.607s	Bk271 0.505s	Bk272 0.28s	Bk273 0.237s	Bk274 0.158s	Bk275 0.149s	Bk276 0.101s	Bk277 0.0935s	Bk278 0.0692s	Bk279 0.0643s	Bk280 0.0449s	Bk281 0.042s	Bk282 0.016s
96	Cm267 1.42s	Cm268 1.13s	Cm269 0.5s	Cm270 0.403s	Cm271 0.269s	Cm272 0.244s	Cm273 0.167s	Cm274 0.151s	Cm275 0.106s	Cm276 0.0938s	Cm277 0.0708s	Cm278 0.0654s	Cm279 0.0468s	Cm280 0.0429s	Cm281 0.0166s

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125		297 5.7e-08s	298 4.32e-07s	299 1.69e-07s	300 1.17e-06s										
124	295 1.87e-07s	296 6.65e-08s	297 3.64e-07s	298 1.55e-07s	299 1.48e-06s	300 6.82e-07s									
123	294 3.68e-06s	295 1.05e-06s	296 9.75e-06s	297 3.12e-06s	298 1.96e-05s	299 9.33e-06s	300 0.000115s								
122	293 3.89e-06s	294 1.23e-06s	295 8.22e-06s	296 2.43e-06s	297 1.51e-05s	298 8.32e-06s	299 0.000106s	300 7.57e-05s							
121	292 5.67e-05s	293 1.81e-05s	294 9.75e-05s	295 4.84e-05s	296 0.000303s	297 0.000128s	298 0.00155s	299 0.00136s	300 0.00386s						
120	291 4.48e-05s	292 1.63e-05s	293 0.00013s	294 4.45e-05s	295 0.000337s	296 0.000152s	297 0.00219s	298 0.00338s	299 0.0103s	300 0.000776s					
119	290 0.00104s	291 0.000508s	292 0.0029s	293 0.00114s	294 0.00995s	295 0.00477s	296 0.0553s	297 0.043s	298 0.133s	299 0.0143s	300 0.0849s				
118	289 0.0019s	290 0.000895s	291 0.00479s	292 0.00219s	293 0.0248s	294 0.0018s	295 0.0618s	296 0.0356s	297 0.0951s	298 0.0125s	299 0.0815s	300 0.019s			
117	288 0.0564s	289 0.0275s	290 0.196s	291 0.112s	292 0.738s	293 0.301s	294 1.51s	295 0.625s	296 1.41s	297 0.161s	298 0.946s	299 0.326s	300 1.65s		
116	287 0.0347s	288 0.0206s	289 0.182s	290 0.015s	291 0.006s	292 0.018s	293 0.053s	294 1.06s	295 1.29s	296 0.113s	297 1.08s	298 0.446s	299 2.63s	300 0.964s	
115	286 2.02s	287 0.03s	288 0.09s	289 6.41s	290 6.06s	291 11.7s	292 9.71s	293 45.3s	294 43.2s	295 3.4m	296 1.93m	297 7.89m	298 4.16m	299 24.4m	300 20.5s
114	285 4.13s	286 0.16s	287 0.51s	288 0.8s	289 2.7s	290 8.93m	291 11m	292 1.52d	293 6.25d	294 12h	295 1.2h	296 1.08d	297 11.1d	298 11.9d	299 49.8m
113	284 0.48s	285 22s	286 21.3s	287 1.12m	288 1.1m	289 18.9m	290 3.97m	291 7.42d	292 12.4m	293 1.46h	294 48m	295 111d	296 36.9m	297 1.11y	298 2.79m
112	Cn283 4s	Cn284 0.098s	Cn285 34s	Cn286 22m	Cn287 3.08h	Cn288 2.62h	Cn289 42.9m	Cn290 2.14d	Cn291 5.85d	Cn292 27.4d	Cn293 2.97y	Cn294 314d	Cn295 4.14y	Cn296 2.42y	Cn297 1.06h
111	Rg282 13.9s	Rg283 7.91m	Rg284 3.62m	Rg285 2.74h	Rg286 12.6m	Rg287 35.5m	Rg288 32.8m	Rg289 6.18d	Rg290 40.1m	Rg291 2.07y	Rg292 15m	Rg293 2.13h	Rg294 3.83m	Rg295 8.38m	Rg296 18.8s
110	Ds281 9.6s	Ds282 0.00424s	Ds283 33.8m	Ds284 3.17m	Ds285 7.62h	Ds286 1.05d	Ds287 93.4d	Ds288 11.8d	Ds289 1.22y	Ds290 4.04y	Ds291 4.09h	Ds292 120y	Ds293 37.7y	Ds294 344y	Ds295 54.5s
109	Mt280 10.5m	Mt281 7.38s	Mt282 26.1m	Mt283 5.09h	Mt284 1.22h	Mt285 2.28y	Mt286 23.6m	Mt287 7.71h	Mt288 5.13m	Mt289 20.6m	Mt290 6.04m	Mt291 1.56h	Mt292 55.6s	Mt293 5.16m	Mt294 3.52s

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100	Fm286 0.0613s	Fm287 0.0796s	Fm288 0.0773s	Fm289 0.0562s	Fm290 0.0508s	Fm291 0.0383s	Fm292 0.0357s	Fm293 0.0275s	Fm294 0.0244s	Fm295 0.0195s	Fm296 0.0186s	Fm297 0.0142s	Fm298 0.0133s	Fm299 0.0108s	Fm300 0.00981s
99	Es285 0.0302s	Es286 0.0334s	Es287 0.0357s	Es288 0.0267s	Es289 0.0254s	Es290 0.0198s	Es291 0.0187s	Es292 0.0147s	Es293 0.0136s	Es294 0.0111s	Es295 0.00998s	Es296 0.00819s	Es297 0.00756s	Es298 0.00612s	Es299 0.00541s
98	Cf284 0.0305s	Cf285 0.0294s	Cf286 0.035s	Cf287 0.0264s	Cf288 0.0245s	Cf289 0.0194s	Cf290 0.0182s	Cf291 0.0142s	Cf292 0.013s	Cf293 0.0105s	Cf294 0.00977s	Cf295 0.00785s	Cf296 0.00686s	Cf297 0.0056s	Cf298 0.00515s
97	Bk283 0.0166s	Bk284 0.0154s	Bk285 0.0181s	Bk286 0.0142s	Bk287 0.0131s	Bk288 0.0108s	Bk289 0.00986s	Bk290 0.00815s	Bk291 0.00747s	Bk292 0.0061s	Bk293 0.00539s	Bk294 0.00437s	Bk295 0.00403s	Bk296 0.00342s	Bk297 0.00326s
96	Cm282 0.0172s	Cm283 0.016s	Cm284 0.0154s	Cm285 0.0141s	Cm286 0.0128s	Cm287 0.0109s	Cm288 0.00971s	Cm289 0.00781s	Cm290 0.00678s	Cm291 0.00548s	Cm292 0.00503s	Cm293 0.00427s	Cm294 0.00402s	Cm295 0.00345s	Cm296 0.00322s
95	Am281 0.00992s	Am282 0.00927s	Am283 0.00898s	Am284 0.00836s	Am285 0.00738s	Am286 0.00597s	Am287 0.00519s	Am288 0.00428s	Am289 0.00391s	Am290 0.00336s	Am291 0.00317s	Am292 0.00273s	Am293 0.00256s	Am294 0.00218s	Am295 0.00203s
94	Pu280 0.0102s	Pu281 0.00953s	Pu282 0.00865s	Pu283 0.00739s	Pu284 0.00654s	Pu285 0.00543s	Pu286 0.00505s	Pu287 0.00427s	Pu288 0.00396s	Pu289 0.00341s	Pu290 0.00313s	Pu291 0.00265s	Pu292 0.00247s	Pu293 0.00211s	Pu294 0.00197s
93	Np279 0.00618s	Np280 0.00493s	Np281 0.00421s	Np282 0.00362s	Np283 0.00338s	Np284 0.00337s	Np285 0.00318s	Np286 0.00271s	Np287 0.00251s	Np288 0.00212s	Np289 0.00198s	Np290 0.00171s	Np291 0.0016s	Np292 0.00141s	Np293 0.00134s
92	U 278 0.00522s	U 279 0.00399s	U 280 0.00367s	U 281 0.00341s	U 282 0.00328s	U 283 0.00337s	U 284 0.00312s	U 285 0.00262s	U 286 0.00241s	U 287 0.00207s	U 288 0.00196s	U 289 0.00171s	U 290 0.0016s	U 291 0.00143s	U 292 0.00136s
91	Pa277 0.00246s	Pa278 0.00223s	Pa279 0.0022s	Pa280 0.00216s	Pa281 0.00214s	Pa282 0.0021s	Pa283 0.00195s	Pa284 0.00168s	Pa285 0.0016s	Pa286 0.00141s	Pa287 0.00135s	Pa288 0.00119s	Pa289 0.00113s	Pa290 0.00103s	Pa291 0.000957s
90	Th276 0.00251s		Th278 0.00225s		Th280 0.00221s	Th281 0.00204s	Th282 0.00198s	Th283 0.00174s	Th284 0.00165s	Th285 0.00145s	Th286 0.00138s	Th287 0.00122s	Th288 0.00115s		Th290 0.00093s
89	Ac275 0.00171s		Ac277 0.00153s		Ac279 0.0015s	Ac280 0.00137s	Ac281 0.00135s	Ac282 0.00123s	Ac283 0.00116s	Ac284 0.00103s	Ac285 0.000961s		Ac287 0.000789s		Ac289 0.000656s
88	Ra274 0.00172s		Ra276 0.00156s		Ra278 0.00152s		Ra280 0.00136s		Ra282 0.00117s		Ra284 0.000951s		Ra286 0.000765s		Ra288 0.000628s
87	Fr273 0.00118s		Fr275 0.00107s		Fr277 0.00106s		Fr279 0.000967s		Fr281 0.000824s		Fr283 0.000656s		Fr285 0.000516s		Fr287 0.000442s
86			Rn274 0.00111s		Rn276 0.00107s		Rn278 0.000964s		Rn280 0.000767s		Rn282 0.000583s				
85			At273 0.000749s		At275 0.000733s		At277 0.000584s								
84															

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115																
114	300 1.28s															
113	299 1.21m	300 1.16m														
112	Cn298 2.33m	Cn299 8.95m	Cn300 0.49s													
111	Rg297 1.17m	Rg298 10.7s	Rg299 32.3s	Rg300 0.173s												
110	Ds296 2.04m	Ds297 25.7s	Ds298 0.0002s	Ds299 0.000402s	Ds300 5.44e-12s											
109	Mt295 6.41s	Mt296 2.52s	Mt297 0.0155s	Mt298 2.81e-05s	Mt299 4.6e-07s	Mt300 7.52e-05s										
108	Hs294 6.83s	Hs295 3.69s	Hs296 8.77e-07s	Hs297 9.18e-06s	Hs298 1.43e-07s	Hs299 0.00759s	Hs300 4.94e-05s									
107	Bh293 1.23s	Bh294 0.796s	Bh295 0.000171s	Bh296 0.0265s	Bh297 0.116s	Bh298 1.08s	Bh299 1s	Bh300 0.502s								
106	Sg292 1.25s	Sg293 0.938s	Sg294 6.58e-06s	Sg295 0.304s	Sg296 0.00323s	Sg297 0.957s	Sg298 0.797s	Sg299 0.471s	Sg300 0.405s							
105	Db291 0.356s	Db292 0.354s	Db293 0.736s	Db294 0.468s	Db295 0.437s	Db296 0.248s	Db297 0.23s	Db298 0.147s	Db299 0.138s	Db300 0.0942s						
104	Rf290 0.36s	Rf291 0.495s	Rf292 0.0365s	Rf293 0.422s	Rf294 0.387s	Rf295 0.232s	Rf296 0.214s	Rf297 0.142s	Rf298 0.129s	Rf299 0.0916s	Rf300 0.0818s					
103	Lr289 0.134s	Lr290 0.189s	Lr291 0.215s	Lr292 0.139s	Lr293 0.132s	Lr294 0.0866s	Lr295 0.0822s	Lr296 0.0566s	Lr297 0.0549s	Lr298 0.0406s	Lr299 0.0368s	Lr300 0.028s				
102	No288 0.135s	No289 0.207s	No290 0.199s	No291 0.135s	No292 0.122s	No293 0.0858s	No294 0.0799s	No295 0.0552s	No296 0.0537s	No297 0.0387s	No298 0.0355s	No299 0.0267s	No300 0.0246s			
101	Md287 0.0606s	Md288 0.0828s	Md289 0.0787s	Md290 0.0567s	Md291 0.0525s	Md292 0.0381s	Md293 0.036s	Md294 0.0271s	Md295 0.0265s	Md296 0.0194s	Md297 0.0185s	Md298 0.0141s	Md299 0.0135s	Md300 0.0107s		
100	Fm286 0.0613s	Fm287 0.0796s	Fm288 0.0773s	Fm289 0.0562s	Fm290 0.0508s	Fm291 0.0383s	Fm292 0.0357s	Fm293 0.0275s	Fm294 0.0244s	Fm295 0.0195s	Fm296 0.0186s	Fm297 0.0142s	Fm298 0.0133s	Fm299 0.0108s	Fm300 0.00981s	
99	Es285 0.0302s	Es286 0.0334s	Es287 0.0357s	Es288 0.0267s	Es289 0.0254s	Es290 0.0198s	Es291 0.0187s	Es292 0.0147s	Es293 0.0136s	Es294 0.0111s	Es295 0.00998s	Es296 0.00819s	Es297 0.00756s	Es298 0.00612s	Es299 0.00541s	