

**** K X-RAYS ****

Element Energy(keV)

Z Sym Ka Kb

11	Na	1.041	
12	Mg	1.254	
13	Al	1.497	1.560
14	Si	1.740	1.839
15	P	2.010	2.135
16	S	2.308	2.464
17	Cl	2.622	2.816
18	Ar	2.954	3.187
19	K	3.314	3.590

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extracted from the GUPIX database by J.A.Maxwell

**** LX-RAYS ****

Energy (keV)

La Ln L beta range L gamma range

20	Ca	3.692	4.013						
21	Sc	4.091	4.481						
22	Ti	4.511	4.934						
23	V	4.952	5.430						
24	Cr	5.415	5.949						
25	Mn	5.899	6.493						
26	Fe	6.405	7.061						
27	Co	6.930	7.651						
28	Ni	7.478	8.263	0.743	0.851	0.760	0.868	0.938	0.000
29	Cu	8.048	8.906	0.811	0.930	0.831	0.949	1.023	0.000
30	Zn	8.639	9.573	0.884	1.012	0.907	1.035	1.108	0.000
31	Ga	9.252	10.264	0.957	1.100	0.984	1.122	1.195	0.000
32	Ge	9.886	10.982	1.037	1.188	1.068	1.219	1.294	0.000
33	As	10.544	11.726	1.120	1.282	1.155	1.317	1.386	0.000
34	Se	11.222	12.496	1.204	1.379	1.245	1.419	1.492	0.000
35	Br	11.924	13.292	1.293	1.481	1.339	1.526	1.600	0.000
36	Kr	12.651	14.111	1.383	1.581	1.435	1.632	1.707	0.000
37	Rb	13.395	14.961	1.482	1.694	1.542	1.752	1.827	0.000
38	Sr	14.165	15.835	1.582	1.806	1.649	1.872	1.947	0.000
39	Y	14.958	16.738	1.686	1.923	1.762	1.996	2.072	0.000
40	Zr	15.775	17.667	1.792	2.042	1.876	2.124	2.201	0.000
41	Nb	16.615	18.623	1.902	2.166	1.996	2.257	2.335	0.000
42	Mo	17.479	19.607	2.016	2.293	2.121	2.395	2.473	0.000
43	Tc	18.367	20.619	2.133	2.424	2.249	2.537	2.618	0.000
44	Ru	19.279	21.657	2.253	2.558	2.382	2.683	2.763	0.000
45	Rh	20.216	22.724	2.377	2.697	2.519	2.834	2.916	0.000
46	Pd	21.177	23.819	2.503	2.839	2.660	2.990	3.073	0.000
47	Ag	22.163	24.943	2.634	2.984	2.806	3.151	3.234	0.000
48	Cd	23.174	26.095	2.767	3.134	2.957	3.316	3.402	0.000
49	In	24.210	27.276	2.905	3.287	3.112	3.487	3.573	0.000
50	Sn	25.271	28.486	3.045	3.444	3.272	3.663	3.750	0.000
51	Sb	26.359	29.726	3.189	3.605	3.437	3.843	3.933	0.000
52	Te	27.472	30.995	3.335	3.769	3.606	4.030	4.121	0.000
53	I	28.612	32.295	3.485	3.938	3.780	4.221	4.313	0.000
54	Xe	29.779	33.624	3.634	4.108	3.955	4.413	4.516	0.000
55	Cs	30.973	34.987	3.795	4.286	4.142	4.620	4.717	0.000
56	Ba	32.194	36.378	3.954	4.466	4.331	4.827	4.927	0.000
57	La	33.442	37.801	4.121	4.651	4.529	5.042	5.143	0.000
58	Ce	34.720	39.258	4.289	4.840	4.730	5.263	5.363	0.000
59	Pr	36.026	40.748	4.453	5.033	4.929	5.489	5.593	0.000
60	Nd	37.361	42.271	4.633	5.230	5.146	5.722	5.829	0.000
61	Pm			4.811	5.432	5.364	5.961	6.071	0.000
62	Sm			4.993	5.636	5.589	6.206	6.317	0.000
63	Eu			5.177	5.846	5.817	6.457	6.571	0.000
64	Gd			5.362	6.058	6.049	6.713	6.832	0.000
65	Tb			5.547	6.273	6.284	6.977	7.097	0.000
66	Dy			5.743	6.495	6.534	7.248	7.370	0.000
67	Ho			5.943	6.720	6.790	7.526	7.653	0.000
68	Er			6.141	6.949	7.048	7.811	7.939	0.000
69	Tm			6.341	7.180	7.310	8.102	8.231	0.000
70	Yb			6.545	7.416	7.580	8.402	8.537	0.000
71	Lu			6.753	7.656	7.857	8.709	8.847	0.000
72	Hf			6.960	7.899	8.139	9.023	9.163	0.000
73	Ta			7.173	8.146	8.428	9.343	9.488	0.000
74	W			7.387	8.398	8.724	9.672	9.819	0.000
75	Re			7.604	8.652	9.027	10.010	10.159	0.000
76	Os			7.822	8.910	9.337	10.354	10.511	0.000
77	Ir			8.042	9.175	9.650	10.708	10.868	0.000
78	Pt			8.266	9.442	9.975	11.071	11.234	0.000
79	Au			8.494	9.713	10.309	11.442	11.610	0.000
80	Hg			8.722	9.989	10.647	11.824	11.992	0.000
81	Tl			8.953	10.268	10.994	12.213	12.390	0.000
82	Pb			9.184	10.551	11.349	12.614	12.794	0.000
83	Bi			9.420	10.839	11.712	13.023	13.211	0.000
84	Po			9.657	11.131	12.085	13.444	13.635	0.000
85	At			9.898	11.427	12.466	13.875	14.071	0.000
86	Rn			10.137	11.727	12.855	14.317	14.518	0.000
87	Fr			10.380	12.031	13.255	14.771	14.977	0.000
88	Ra			10.622	12.340	13.662	15.238	15.450	0.000
89	Ac			10.871	12.652	14.082	15.713	15.929	0.000
90	Th			11.118	12.968	14.511	16.202	16.426	0.000
91	Pa			11.362	13.290	14.947	16.707	16.938	0.000
92	U			11.618	13.615	15.400	17.220	17.454	0.000

**** M X-RAYS ****

Energy (keV)

Meta Malpha Mbeta Lgamma range

70	Yb	173.040	6.98	3
71	Lu	174.970	9.84	3
72	Hf	178.490	13.10	4
73	Ta	180.948	16.60	5
74	W	183.850	19.30	6
75	Re	186.200	21.00	7
76	Os	190.200	22.40	4
77	Ir	192.200	22.50	4
78	Pt	195.090	21.40	4
79	Au	196.970	19.30	3
80	Hg	200.590	13.53	2
81	Tl	204.370	11.85	1
82	Pb	207.190	11.40	2
83	Bi	208.980	9.80	3
84	Po	209.000	9.40	4
85	At	210.000	9.00	-1
86	Rn	222.000	0.01	0
87	Fr	223.000	2.00	1
88	Ra	226.000	5.00	2
89	Ac	227.000	10.07	3
90	Th	232.038	11.70	4
91	Pa	231.000	15.40	5
92	U	238.030	18.90	6

Z Sym At. Wgt. Density Val

11 Na	22.990	0.97	1
12 Mg	24.312	1.74	2
13 Al	26.981	2.70	3
14 Si	28.086	2.33	4
15 P	30.974	1.82	5
16 S	32.064	2.07	6
17 Cl	35.453	0.00	-1
18 Ar	39.948	0.00317	0
19 K	39.102	0.86	1
20 Ca	40.080	1.55	2
21 Sc	44.956	3.00	3
22 Ti	47.900	4.50	4
23 V	50.941	5.80	3
24 Cr	51.992	7.19	3
25 Mn	54.938	7.43	2
26 Fe	55.847	7.86	3
27 Co	58.933	8.90	2
28 Ni	58.710	8.90	2
29 Cu	63.540	8.96	1
30 Zn	65.370	7.14	2
31 Ga	69.720	5.91	3
32 Ge	72.590	5.32	4
33 As	74.922	5.72	5
34 Se	78.960	4.80	4
35 Br	79.909	3.12	-1
36 Kr	83.800	0.00	0
37 Rb	85.470	1.53	1
38 Sr	87.620	2.60	2
39 Y	88.905	4.50	3
40 Zr	91.220	6.49	4
41 Nb	92.906	8.55	5
42 Mo	95.940	10.20	6
43 Tc	97.000	11.50	7
44 Ru	101.070	12.20	4
45 Rh	102.905	12.40	3
46 Pd	106.400	12.00	2
47 Ag	107.870	10.50	1
48 Cd	112.400	8.65	2
49 In	114.820	7.31	3
50 Sn	118.690	7.30	4
51 Sb	121.750	6.68	5
52 Te	127.600	6.24	4
53 I	126.904	4.92	-1
54 Xe	131.300	0.01	0
55 Cs	132.905	1.87	1
56 Ba	137.340	3.50	2
57 La	138.910	6.70	3
58 Ce	140.120	6.78	3
59 Pr	140.907	6.77	3
60 Nd	144.240	7.00	3
61 Pm	145.000	6.48	3
62 Sm	150.3500	7.54	3
63 Eu	151.9600	5.26	3
64 Gd	157.2500	7.89	3
65 Tb	158.9240	8.27	3
66 Dy	162.5000	8.54	3
67 Ho	164.9300	8.90	3
68 Er	167.260	9.05	3
69 Tm	168.934	9.33	3
70 Yb	173.040	6.98	3
71 Lu	174.970	9.84	3
72 Hf	178.490	13.10	4
73 Ta	180.948	16.60	5
74 W	183.850	19.30	6
75 Re	186.200	21.00	7
76 Os	190.200	22.40	4
77 Ir	192.200	22.50	4
78 Pt	195.090	21.40	4
79 Au	196.970	19.30	3
80 Hg	200.590	13.53	2
81 Tl	204.370	11.85	1
82 Pb	207.190	11.40	2
83 Bi	208.980	9.80	3
84 Po	209.000	9.40	4
85 At	210.000	9.00	-1
86 Rn	222.000	0.01	0
87 Fr	223.000	2.00	1
88 Ra	226.000	5.00	2
89 Ac	227.000	10.07	3
90 Th	232.038	11.70	4
91 Pa	231.000	15.40	5
92 U	238.030	18.90	6