

Major - not all!

Table 4. Line Positions from Al X-rays, in Numerical Order

17 Hf4f <sub>7</sub> (2)	110 Rb3d <sub>5</sub> (1)	229 Ta4d <sub>5</sub> (12)	385 Tl4d <sub>5</sub> (21)	677 Th4d <sub>5</sub> (37)	1072 Na 1s
23 O 2s	113 Be 1s	230 Mo3d <sub>5</sub> (3)	396 Mo3p <sub>3</sub> (17)	686 F 1s	1072 Ti (A)
25 Ta4f <sub>7</sub> (2)	114 Pr 4d	238 Rb3p <sub>3</sub> (9)	402 N 1s	710 Fe2p <sub>3</sub> (13)	1079 In (A)
30 F 2s	118 Tl4f <sub>7</sub> (4)	241 Ar2p <sub>3</sub> (2)	402 Sc2p <sub>3</sub> (5)	715 Sn3p <sub>3</sub> (42)	1083 Sm3d <sub>5</sub> (27)
34 W4f <sub>7</sub> (2)	119 Al 2s	245 W4d <sub>5</sub> (12)	405 Cd3d <sub>5</sub> (7)	716 Co (A)	1105 Cd (A)
40 V 3p	120 Nd 4d	263 Re4d <sub>5</sub> (14)	413 Pb4d <sub>5</sub> (22)	724 Cs3d <sub>5</sub> (14)	1108 N (A)
41 Ne 2s	124 Ge3p <sub>3</sub> (4)	265 Tb (A)	422 Ga (A)	739 U4d <sub>5</sub> (42)	1117 Ga2p <sub>3</sub> (27)
43 Re4f <sub>7</sub> (2)	132 Sm 4d	266 As (A)	439 Ca 2s	752 Nd (A)	1130 Ag (A)
44 As3d <sub>5</sub> (1)	133 P2p <sub>3</sub> (1)	269 Sr3p <sub>3</sub> (11)	443 Bi4d <sub>5</sub> (24)	768 Sb3p <sub>3</sub> (46)	1136 Eu3d <sub>5</sub> (30)
45 Cr3p <sub>3</sub> (1)	133 Sr3d <sub>5</sub> (2)	270 Cl 2s	445 In3d <sub>5</sub> (8)	780 Ba3d <sub>5</sub> (15)	1153 Sc (A)
48 Mn3p <sub>3</sub> (1)	136 Eu 4d	279 Os4d <sub>5</sub> (15)	458 Ti2p <sub>3</sub> (6)	781 Co2p <sub>3</sub> (15)	1161 Pd (A)
50 I4d <sub>5</sub> (2)	138 Pb4f <sub>7</sub> (5)	282 Ru3d <sub>5</sub> (4)	463 Ru3p <sub>3</sub> (22)	786 Fe (A)	1186 Gd3d <sub>5</sub> (33)
52 Os4f <sub>7</sub> (3)	141 Gd 4d	287 C 1s	486 Sn3d <sub>5</sub> (8)	788 Pr (A)	1187 Rh (A)
55 Fe3p <sub>3</sub> (1)	142 Ho (A)	293 K2p <sub>3</sub> (3)	497 Na (A)	822 Te3p <sub>3</sub> (51)	1194 Ca (A)
56 Li 1s	150 Tb 4d	297 Ir4d <sub>5</sub> (16)	498 Zn (A)	827 Ce (A)	1205 U (A)
57 Se3d <sub>5</sub> (1)	153 Si 2s	301 Y3p <sub>3</sub> (12)	498 Rh3p <sub>3</sub> (24)	832 F (A)	1214 Ru (A)
61 Co3p <sub>3</sub> (2)	154 Dy 4d	305 Mg (A)	501 Sc 2s	834 La3d <sub>5</sub> (17)	1219 Ge2p <sub>3</sub> (31)
62 Ir4f <sub>7</sub> (3)	158 Y3d <sub>5</sub> (2)	306 Ho4p <sub>3</sub> (39)	515 V2p <sub>3</sub> (8)	855 Ni2p <sub>3</sub> (18)	1226 C (A)
63 Xe4d <sub>5</sub> (2)	159 Bi4f <sub>7</sub> (5)	309 Rh3d <sub>5</sub> (5)	530 Sb3d <sub>5</sub> (9)	863 Ne 1s	1230 Th (A)
64 Na 2s	161 Ho 4d	316 Pt4d <sub>5</sub> (17)	531 O 1s	865 La (A)	1236 K (A)
67 Ni3p <sub>3</sub> (2)	163 Se3p <sub>3</sub> (6)	319 Ar 2s	534 Pd3p <sub>3</sub> (27)	882 Ce3d <sub>5</sub> (18)	1244 Tb3d <sub>5</sub> (35)
69 Br3d <sub>5</sub> (1)	165 S2p <sub>3</sub> (1)	320 Er 4p <sub>3</sub> (42)	565 Ti 2s	890 Ba (A)	1268 Ar (A)
73 Pt4f <sub>7</sub> (3)	169 Er 4d	331 Zr3p <sub>3</sub> (14)	570 Cu (A)	903 Mn (A)	1295 Dy3d <sub>5</sub> (39)
74 Al 2p	180 Tm 4d	333 Tm 4p <sub>3</sub> (45)	573 Ag3p <sub>3</sub> (31)	917 Cs (A)	1301 Mo (A)
75 Cs4d <sub>5</sub> (2)	181 Zr3d <sub>5</sub> (2)	335 Th4f <sub>7</sub> (9)	575 Te3d <sub>5</sub> (10)	930 Pr3d <sub>5</sub> (20)	1304 Cl (A)
77 Cu3p <sub>3</sub> (2)	182 Br3p <sub>3</sub> (7)	336 Au4d <sub>5</sub> (18)	577 Cr2p <sub>3</sub> (9)	934 Cu2p <sub>3</sub> (20)	1305 Mg 1s
85 Au4f <sub>7</sub> (4)	184 Se (A)	337 Pd3d <sub>5</sub> (5)	595 Gd (A)	944 Xe (A)	1315 B (A)
87 Zn3p <sub>3</sub> (3)	185 Yb4d <sub>5</sub> (9)	342 Yb 4p <sub>3</sub> (50)	618 Cd3p <sub>3</sub> (34)	962 Cr (A)	1321 Nb (A)
88 Kr3d <sub>5</sub> (1)	191 B 1s	346 Ge (A)	619 I3d <sub>5</sub> (11)	970 I (A)	1326 As 2p <sub>3</sub>
90 Ba4d <sub>5</sub> (2)	191 P 2s	347 Ca2p <sub>3</sub> (3)	635 Eu (A)	976 O (A)	1336 S (A)
90 Mg 2s	195 Dy (A)	359 Lu 4p <sub>3</sub> (53)	641 Mn2p <sub>3</sub> (11)	980 Nd3d <sub>5</sub> (21)	1388 Bi (A)
99 Er (A)	197 Lu 4d <sub>5</sub> (10)	359 Hg4d <sub>5</sub> (20)	643 Ni (A)	998 Te (A)	1395 Pb (A)
100 Hg4f <sub>7</sub> (4)	199 Cl 2p <sub>3</sub> (2)	364 Nb3p <sub>3</sub> (15)	666 In3p <sub>3</sub> (38)	1017 V (A)	1402 Tl (A)
101 La4d <sub>5</sub> (3)	206 Nb3d <sub>5</sub> (3)	368 Ag3d <sub>5</sub> (6)	668 Ne (A)	1022 Zn2p <sub>3</sub> (23)	1409 Hg (A)
102 Si 2p <sub>3</sub> (1)	208 Kr3p <sub>3</sub> (8)	378 K 2s	672 Xe3d <sub>5</sub> (13)	1027 Sb (A)	1417 Au (A)
105 Ga3p <sub>3</sub> (3)	213 Hf4d <sub>5</sub> (9)	380 U4f <sub>7</sub> (11)	673 Sm (A)	1052 Sn (A)	1425 Pt (A)
108 Ce4d <sub>5</sub> (4)	229 S 2s				

An A in parentheses denotes Auger line. Numbers in parentheses are spin doublet separations in electron volts. The sharpest Auger line and the two most intense photoelectron lines per element are included in the table. For brevity, 2p<sub>3</sub> equals 2p<sub>3/2</sub>, 3d<sub>5</sub> equals 3d<sub>5/2</sub>, etc.