APPENDIX 5
CRYSTAL STRUCTURES OF SOME ELEMENTS

Most of the following data are from Pearson [G.16, Vol. 2], who should be consulted for data on certain high-temperature or high-pressure crystal forms not given below. The data on carbon and iodine, and the distance of closest approach in samarium, are from Barrett and Massalski [G.25]. Lattice parameters in both of these sources are given in Å units; they have been multiplied by 1.002056/1.00202, and rounded off to the same number of significant figures, in order to convert them to Å* units. See note on wavelength tables in Appendix 7.

Element	Type of Structure	Temp. (°C)	Lattice parameters (Å*)			Distance of closest approach (Å*)
			a	*b*	*c* or axial angle	
Ac Actinium	FCC, A1		5.311			3.755
Al Aluminum	FCC, A1	25	4.0497			2.8636
Am Americium, α*	Hex., La type	20	3.4681		11.240	3.4505
Sb Antimony	Rhomb., A7	25	4.5069		$\alpha = 57° 6'27''$	2.906
As Arsenic	Rhomb., A7	22.5	4.1319		$\alpha = 54° 8'$	2.507
Ba Barium	BCC, A2	25	5.013			4.341
Be Beryllium, α*	HCP, A3	R.T.	2.286		3.584	2.2257
Bi Bismuth	Rhomb., A7	25	4.736		$\alpha = 57° 14'$	3.071
B Boron*	Tetrag.	R.T.	8.80		5.05	
Cd Cadmium	HCP, A3	21	2.9789		5.6169	2.9789
Ca Calcium, α*	FCC, A1	26	5.5886			3.9517
C Carbon, diamond	Cubic, A4	20	3 5671			1.544
Carbon, graphite*	Hex., A9	20	2.4613		6.7080	1.421
Ce Cerium*	FCC, A1	23	5.1603			3.6488
Cs Cesium	BCC, A2	173°K	6.0797			5.265
Cr Chromium	BCC, A2	20	2.8847			2.498
Co Cobalt, α*	HCP, A3	R.T.	2.507		4.070	2.497
Cobalt, β	FCC, A1	R.T.	3.544			2.506
Cu Copper	FCC, A1	20	3.6148			2.5561
Dy Dysprosium, α*	HCP, A3	R.T.	3.5904		5.6477	3.5030
Er Erbium, α*	HCP, A3	R.T.	3.5589		5.5876	3.4681
Eu Europium	BCC, A2	25	4.5822			3.9682
Gd Gadolinium, α*	HCP, A3	20	3.6361		5.7828	3.5731
Ga Gallium	Orthorh.	R.T.	4.523	7.661	4.524	2.484
Ge Germanium	Cubic, A4	25	5.6577			2.4498
Au Gold	FCC, A1	25	4.0786			2.8840
Hf Hafnium, α*	HCP, A3	24	3.1947		5.0513	3.1274
Ho Holmium, α*	HCP, A3	R.T.	3.5774		5.6160	3.4858
In Indium	Tetrag., A6	R.T.	4.5981		4.9469	3.2513
I Iodine	Orthorh.	26	4.79	7.25	9.78	3.54
Ir Iridium	FCC, A1	R.T.	3.8390			2.7146
Fe Iron, α*	BCC, A2	20	2.8665			2.4824
Iron, γ	FCC, A1	916	3.6469			2.5787
Iron, δ	BCC, A2	1394	2.9323			2.5394
La Lanthanum, α*	Hex.	R.T.	3.770		12.159	3.739
Pb Lead	FCC, A1	25	4.9504			3.5004

Element	Type of Structure	Temp. (°C)	Lattice parameters (Å*)			Distance of closest approach (Å*)
			a	*b*	*c* or axial angle	
Li Lithium*	BCC, A2	25	3.5101			3.0398
Lu Lutetium*	HCP, A3	R.T.	3.5032		5.5511	3.4345
Mg Magnesium	HCP, A3	25	3.2095		5.2107	3.1971
Mn Manganese, α*	Cubic, A12	R.T.	8.9142			
Hg Mercury	Rhomb., A10	227°K	3.005		$\alpha = 70° 32'$	3.005
Mo Molybdenum	BCC, A2	20	3.1469			2.7253
Nd Neodynium, α*	Hex., La type	R.T.	3.6580		11.7996	3.6280
Np Neptunium, α*	Orthorh.	20	6.663	4.723	4.887	2.60
Ni Nickel	FCC, A1		3.5239			2.4920
Nb Niobium	BCC, A2	25	3.3067			2.8637
Os Osmium	HCP, A3	20	2.7354		4.3193	2.6755
Pd Palladium	FCC, A1	22	3.8908			2.7511
P Phosphorous, black*	Orthorh.	22	3.3137	10.478	4.3765	2.224
Pt Platinum	FCC, A1	20	3.9240			2.7747
Pu Plutonium, α*	Monocl.	21	6.183	4.822	10.963 $\beta = 101.79°$	2.57
Po Polonium, α*	Cubic	~10	3.345			3.345
K Potassium	BCC, A2	78°K	5.247			4.524
Pr Praseodymium, α*	Hex., La type	R.T.	3.6726		11.8358	3.6402
Pa Protactinium	Tetrag.		3 925		3.238	3.212
Re Rhenium	HCP, A3	R.T.	2.760		4.458	2.741
Rh Rhodium	FCC, A1	20	3.8045			2.6902
Rb Rubidium	BCC, A2	20	5.70			4.94
Ru Ruthenium	HCP, A3	25	2.7059		4.2818	2.6503
Sm Samarium	Rhomb.		8.996		$\alpha = 23° 13'$	3.588
Sc Scandium, α*	HCP, A3	R.T.	3.3091		5.2735	3.2561
Se Selenium*	Hex., A8	25	4.3658		4.9592	2.321
Si Silicon	Cubic, A4	25	5.4309			2.3517
Ag Silver	FCC, A1	25	4.0863			2.8895
Na Sodium	BCC, A2	20	4.2908			3.7159
Sr Strontium, α*	FCC, A1	25	6.0851			4.3029
S Sulphur*	Orthorh.	24.8	10.4650	12.8665	24.4869	2.037 (mean)
Ta Tantalum	BCC, A2	R.T.	3.298			2.856
Tc Technetium	HCP, A3	R.T.	2.735		4.388	2.703
Te Tellurium	Hex., A8	25	4.4568		5.9270	2.864
Tb Terbium, α*	HCP, A3	R.T.	3.6011		5.6938	3.5253
Tl Thallium, α*	HCP, A3	18	3.4567		5.5250	3.4077
Th Thorium, α*	FCC, A1	R.T.	5.0847			3.5951
Tm Thulium, α*	HCP, A3	R.T.	3.5376		5.5548	3.4474
Sn Tin (white), β*	Tetrag., A5	25	5.8317		3.1815	3.022
Tin (grey), α	Cubic, A4	20	6.4894			2.8100
Ti Titanium, α*	HCP, A3	25	2.9512		4.6845	2.8964
Titanium, β	BCC, A2	900	3.3066			2.8636
W Tungsten	BCC, A2	25	3.1653			2.7412
U Uranium, α*	Orthorh., A20	25	2.8538	5.8697	4.9550	2.7540
Uranium, β	Tetrag.	720	10.759		5.656	
Uranium, γ	BCC, A2	805	3.524			3.052
V Vanadium	BCC, A2	R.T.	3.0232			2.6182
Yb Ytterbium*	FCC, A1	R.T.	5.4864			3.8794
Y Yttrium*	HCP, A3	R.T.	3.6475		5.7308	3.5509
Zn Zinc	HCP, A3	25	2.6650		4.9470	2.6650
Zr Zirconium, α*	HCP, A3	25	3.2313		5.1479	3.1790
Zirconium, β	BCC, A2	862	3.6091			3.1256

* Ordinary form of an element that exists, or is thought to exist, in more than one form.