

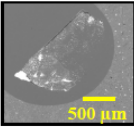
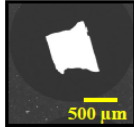
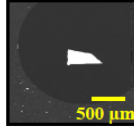
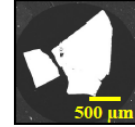
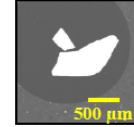
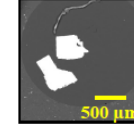
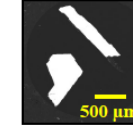
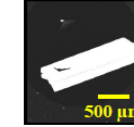
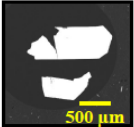

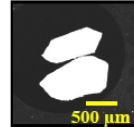
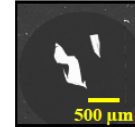
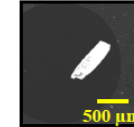

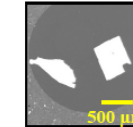
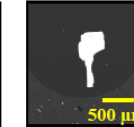
Block 1-41 minerals (SP Sample)																																					
No.	Name	Formula	SiO2	TiO2	Al2O3	FeO	MgO	MnO	CaO	Na2O	K2O	Sum	Si	Al	Fe	Mg	Mn	Ca	Na	K	O	Si	Al	Fe	Mg	Mn	Ca	Na	K	O	Weight						
1	Albite	NaAlSi3O8	65.76		19.81																																
2	Almandine	Fe3Al2Si5O14	59.40		12.20																																
3	Andalusite	SiO2																																			
4	Apatite	Ca5(PO4)3F	53.04																																		
5	Baite	BaSO4																																			
6	Bastnaesite	BaF2SiO6	42.34		19.10																																
7	Baite	K2Mg2Fe2(AlSi4)O16	48.13		1.97																																
8	Bastnaesite	CaF2	49.74		17.11																																
9	Bastnaesite	CaMoO4	48.44																																		
10	Calcite	CaCO3																																			
11	Calcite	CaCO3																																			
12	Calcite	CaCO3																																			
13	Chalcite	SnO2																																			
14	Chalcite	Mn2SiO4·OH·H2O	52.19		14.9																																
15	Cr Dioxide	(Mg,Cr)Cr2O4	54.02		0.96																																
16	Crucite	FeCO3	0.99																																		
17	Dipsate	Mg2SiO4	55.54		0.82																																
18	Dolomite	MgCO3																																			
19	Hematite	Fe2O3																																			
20	Magnetite	Fe3O4																																			
21	Jadite	NaAlSi3O8	69.48		25.00																																
22	Kaersite	Ca2Si(Mg,Fe)2Si2O10·7H2O	59.04		7.71																																
23	Muscovite	(K,H3O)Al3(Si3,Al)O10(OH,F)2	372																																		
24	Orthopyroxene	Mg2SiO6	68.29		0.99																																
25	Orthopyroxene	Mg2SiO6	68.29		0.99																																
26	Plagioclase An	(Ca,Na,Al)Si3O8	51.12		29.4																																
27	Pyroxene	Mg,Al2SiO6	41.43		0.99																																
28	Rhodolite	MgSiO3	46.78																																		
29	Orthopyroxene	Ca,MgSiO3	69.80																																		
30	Spinel	MgAl2O4	64.21																																		
31	Titanite	CaTiSiO5	51.42		10.9																																
32	Willemite	Zn,Mn2SiO4	28.50																																		
33	Calcite	CaCO3																																			
34	Yttrium Al Silicate	Y3Al5Si7O22																																			
35	Barium Titanate	BaTiO3	52.76																																		
36	Chalcite	SnO2																																			
37	Chalcite	SnO2																																			
38	Chalcite	SnO2																																			
39	Chalcite	SnO2																																			
40	Chalcite	SnO2																																			
41	Chalcite	SnO2																																			
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57	Chalcite	SnO2																																			
58	Chalcite	SnO2																																			
59	Chalcite	SnO2																																			

Block 1: 44 Metals (SPI Supply)												
No.	Name	Symbol	Z	%	type							
1	Beryllium	Be	Z=4	99.5000%	foil							
2	Boron Nitride	BN			pyrolitic	<b>B</b>	43.56	<b>N</b>	56.44			SUM 100.0
3	Carbon	C	Z=6	99.9900%	plate							
4	Magnesium	Mg	Z=12	99.9000%	rod							
5	Aluminium	Al	Z=13	99.9990%	wire							
6	Silicon	Si	Z=14	99.9995%	lump							
7	Scandium	Sc	Z=21	99.9900%	chip							
8	Titanium	Ti	Z=22	99.9900%	wire							
9	Vanadium	V	Z=23	99.8000%	wire							
10	Chromium	Cr	Z=24	99.9970%	chip	NOTE: may contain small inclusions of Cr2O3						
11	Manganese	Mn	Z=25	99.9900%	lump							
12	Iron	Fe	Z=26	99.9900%	wire							
13	Cobalt	Co	Z=27	99.9950%	wire							
14	Nikel	Ni	Z=28	99.9700%	wire							
15	Cooper	Cu	Z=29	99.9990%	wire							
16	Zinc	Zn	Z=30	99.9900%	wire							
17	Germanium	Ge	Z=32	99.9999%	chip							
18	Gallium Arsenide (Syntetic)	GaAs		99.9990%	synthetic	<b>Ga</b>	48.50	<b>As</b>	51.80			SUM 100.0
19	Selenium	Se	Z=34	99.9990%	pieces							
20	Zirconium	Zr	Z=40	99.7000%	wire							
21	Niobium	Nb	Z=41	99.9600%	wire							
22	Molybdenum	Mo	Z=42	99.9700%	wire							
23	Ruthenium	Ru	Z=44	99.9000%	wire							
24	Rhodium	Rh	Z=45	99.8000%	sheet							
25	Palladium	Pd	Z=46	99.9900%	wire							
26	Silver	Ag	Z=47	99.9985%	wire							
27	Cadmium	Cd	Z=48	99.9990%	wire							
28	Indium Phosphide	InP		99.9990%		<b>P</b>	21.24	<b>In</b>	78.76			SUM 100.0
29	Tin (Sn)	Sn	Z=50	99.9985%	wire							
30	Antimony (Sb)	Sb	Z=51	99.9999%	shot							
31	Tellurium	Te	Z=52	99.9998%	chip							
32	Hafnium (wire)	Hf	Z=72		wire	<b>Hf</b>	96.87	<b>Zr</b>	3.10			SUM 99.97
33	Tantalum	Ta	Z=73	99.9960%	wire							
34	Tungsten	W	Z=74	99.9500%	wire							
35	Rhenium	Re	Z=75	99.9700%	wire							
36	Osmium	Os	Z=76	99.9900%	vacuum fused							
37	Iridium	Ir	Z=77	99.8000%	wire							
38	Platinum	Pt	Z=78	99.9500%	wire							
39	Gold	Au	Z=79	99.9500%	wire							
40	Thallium Bromide Iodide	TlBr0.42I0.58		99.9900%		<b>Br</b>	10.77	<b>I</b>	23.63	<b>Tl</b>	65.60	SUM 100.0
41	Lead	Pb	Z=82	99.9985%	wire							
42	Bismuth	Bi	Z=83	99.9990%								
43	Thorium	Th	Z=90	99.5000%	wire							
44	Uranium	U	Z=92	99.7000%	chip							





**Block 5: REE (Smithsonian Institute)**

No.	Standard Name	Code	Link	CePO <sub>4</sub> NMNH 168484	DyPO <sub>4</sub> NMNH 168485	ErPO <sub>4</sub> NMNH 168486	EuPO <sub>4</sub> NMNH 168487	GdPO <sub>4</sub> NMNH 168488	HoPO <sub>4</sub> NMNH 168489	LaPO <sub>4</sub> NMNH 168490	LuPO <sub>4</sub> NMNH 168491																																																		
1	CePO <sub>4</sub>	NMNH 168484	<a href="#">All data here</a>																																																										
5	GdPO <sub>4</sub>	NMNH 168488	<a href="#">All data here</a>																																																										
6	HoPO <sub>4</sub>	NMNH 168489	<a href="#">All data here</a>																																																										
7	LaPO <sub>4</sub>	NMNH 168490	<a href="#">All data here</a>																																																										
8	LuPO <sub>4</sub>	NMNH 168491	<a href="#">All data here</a>																																																										
9	NdPO <sub>4</sub>	NMNH 168492	<a href="#">All data here</a>																																																										
10	PrPO <sub>4</sub>	NMNH 168493	<a href="#">All data here</a>																																																										
11	SmPO <sub>4</sub>	NMNH 168494	<a href="#">All data here</a>																																																										
12	ScPO <sub>4</sub>	NMNH 168495	<a href="#">All data here</a>																																																										
15	YbPO <sub>4</sub>	NMNH 168498	<a href="#">All data here</a>																																																										
16	YPO <sub>4</sub>	NMNH 168499	<a href="#">All data here</a>																																																										
																																																													
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25	Omphacite_NMNH-	55.42	0.37	8.89		1.35	3.41	0.1			11.57	13.75			5	0.15	0.02			100.03
26	Osumilite_NMNH-	60.2	0.18	22.6			6.38				5.83	<0.03			0.39	4	0.02			99.6

	Element	REP <sub>5</sub> O <sub>14</sub>	RE <sub>2</sub> O <sub>3</sub>	P <sub>2</sub> O <sub>5</sub>	RE	P	O
1	Lanthanum	<a href="#">LaP5O14</a>	31.46	68.54	26.83	29.91	43.26
2	Cerium	<a href="#">CeP5O14</a>	31.62	68.38	27	29.84	43.16
3	Praseodymium	<a href="#">PrP5O14</a>	31.73	68.27	27.11	29.8	43.09
4	Neodymium	<a href="#">NdP5O14</a>	32.16	67.84	27.57	29.61	42.82
5	Samarium	<a href="#">SmP5O14</a>	32.95	67.05	28.41	29.26	42.32
6	Europium	<a href="#">EuP5O14</a>	33.15	66.85	28.63	29.18	42.2
7	Gadolinium	<a href="#">GdP5O14</a>	33.81	66.19	29.33	28.89	41.78
8	Terbium	<a href="#">TbP5O14</a>	34.01	65.99	29.55	28.8	41.65
9	Dysprosium	<a href="#">DyP5O14</a>	34.45	65.55	30.02	28.61	41.38
10	Holmium	<a href="#">HoP5O14</a>	34.74	65.26	30.33	28.48	41.19
11	Erbium	<a href="#">ErP5O14</a>	35.02	64.98	30.63	28.36	41.02
12	Thulium	<a href="#">TmP5O14</a>	35.22	64.78	30.84	28.27	40.89
13	Ytterbium	<a href="#">YbP5O14</a>	35.7	64.3	31.35	28.06	40.59
14	Lutetium	<a href="#">LuP5O14</a>	35.93	64.07	31.59	27.96	40.44
15	Yttrium	<a href="#">YP5O14</a>	24.14	75.86	19.01	33.11	47.89

