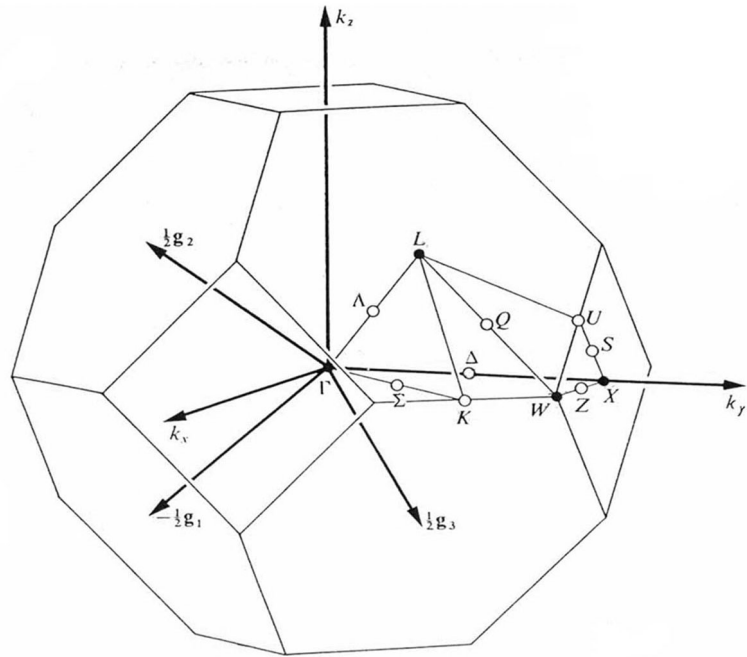
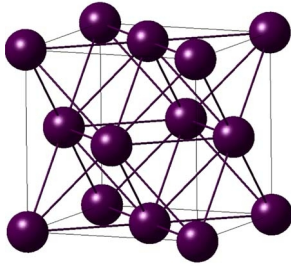


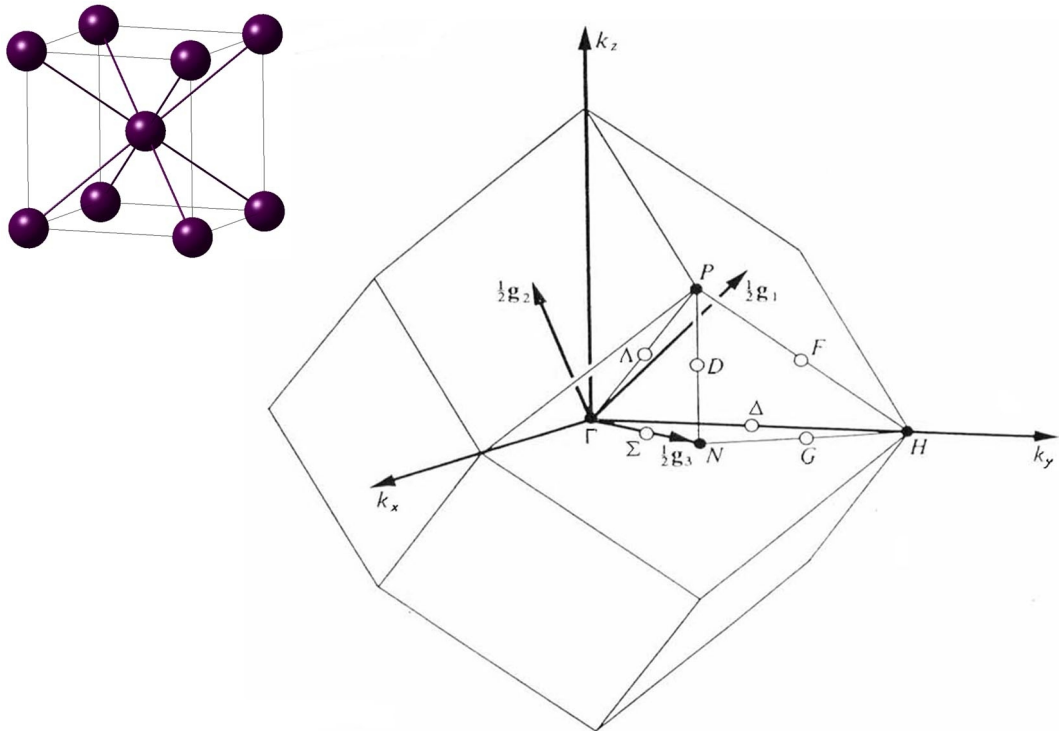
Brillouin Zones

Face-centered cubic



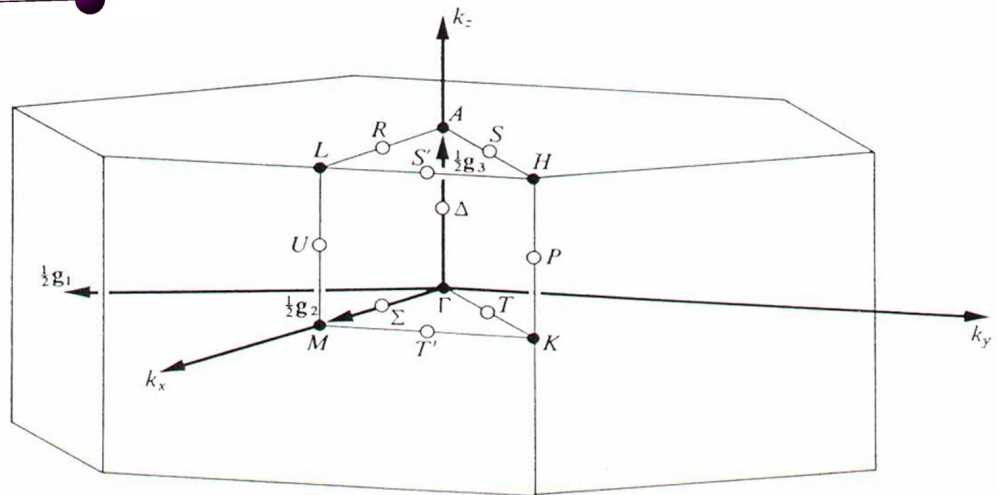
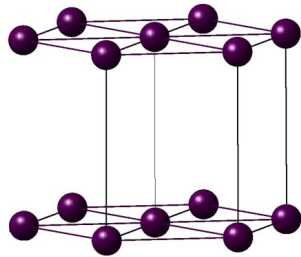
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
L	$\frac{1}{2} \frac{1}{2} \frac{1}{2}$
X	$\frac{1}{2} 0 \frac{1}{2}$
W	$\frac{1}{2} \frac{1}{4} \frac{3}{4}$
K	$\frac{3}{8} \frac{3}{8} \frac{3}{4}$

Body-centered cubic



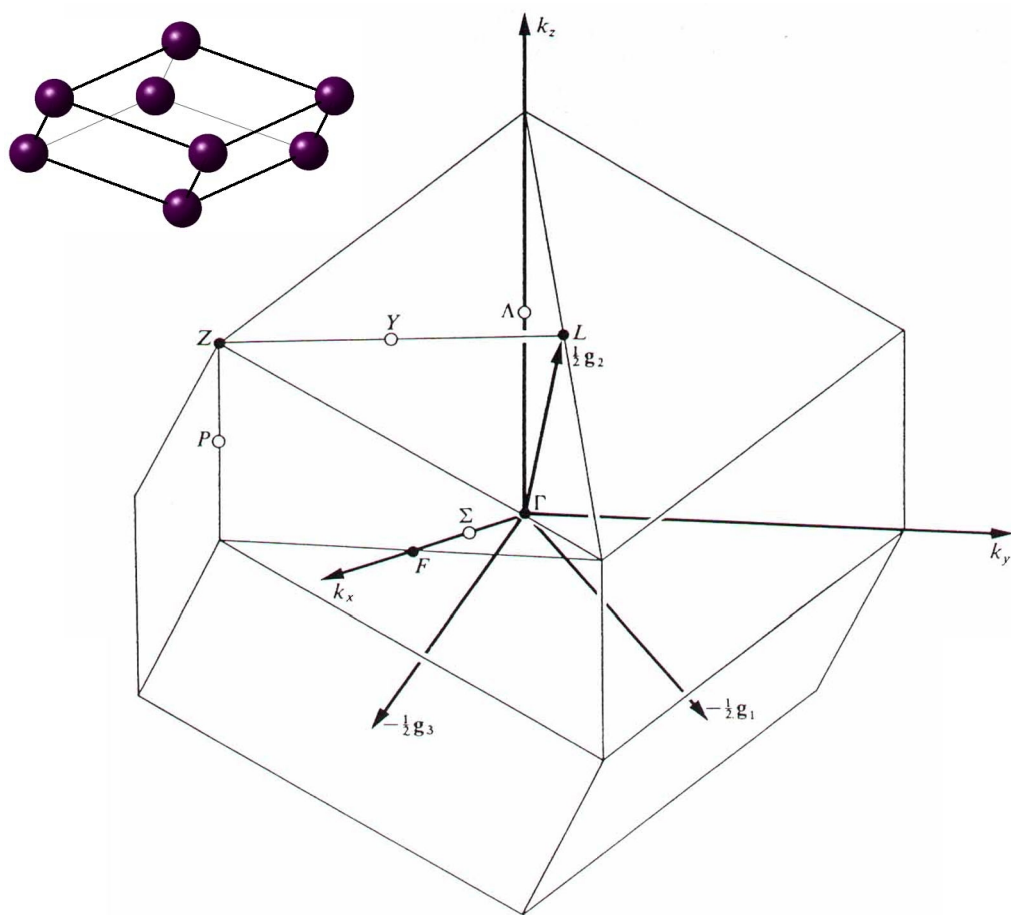
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
H	$\frac{1}{2} -\frac{1}{2} \frac{1}{2}$
P	$\frac{1}{4} \frac{1}{4} \frac{1}{4}$
N	$0 0 \frac{1}{2}$

Hexagonal



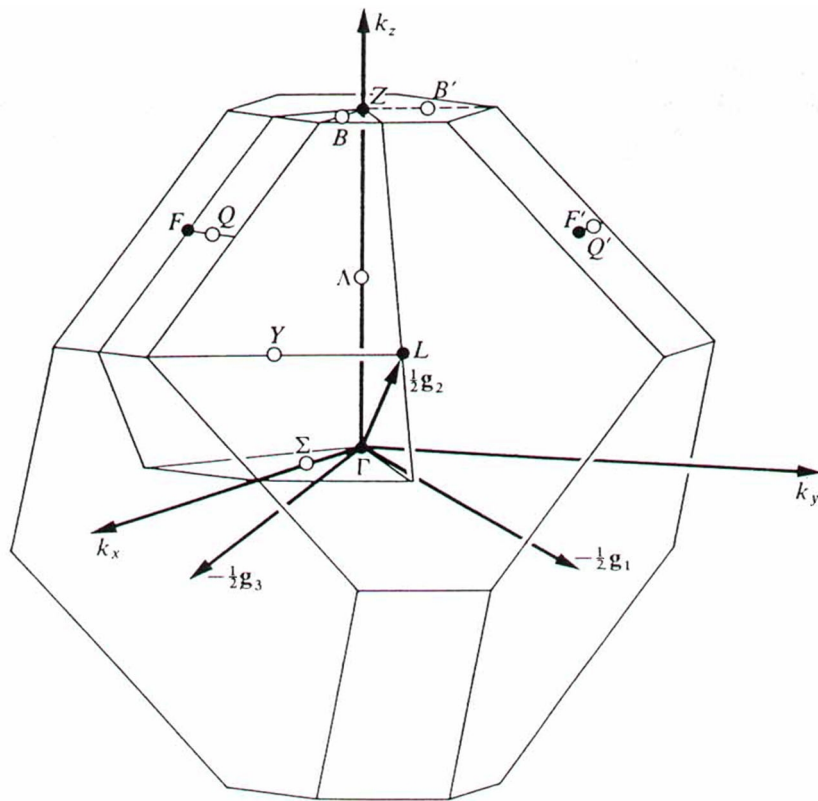
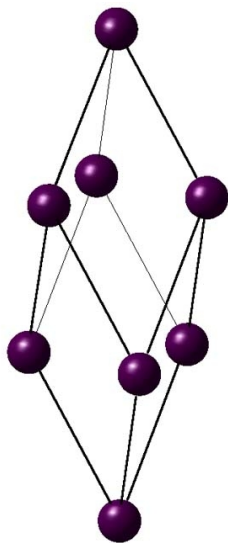
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
A	0 0 $\frac{1}{2}$
M	0 $\frac{1}{2}$ 0
L	0 $\frac{1}{2}$ $\frac{1}{2}$
K	$-\frac{1}{3}$ $\frac{2}{3}$ 0
H	$-\frac{1}{3}$ $\frac{2}{3}$ $\frac{1}{2}$

Rhombohedral for $\sqrt{2}c < a$



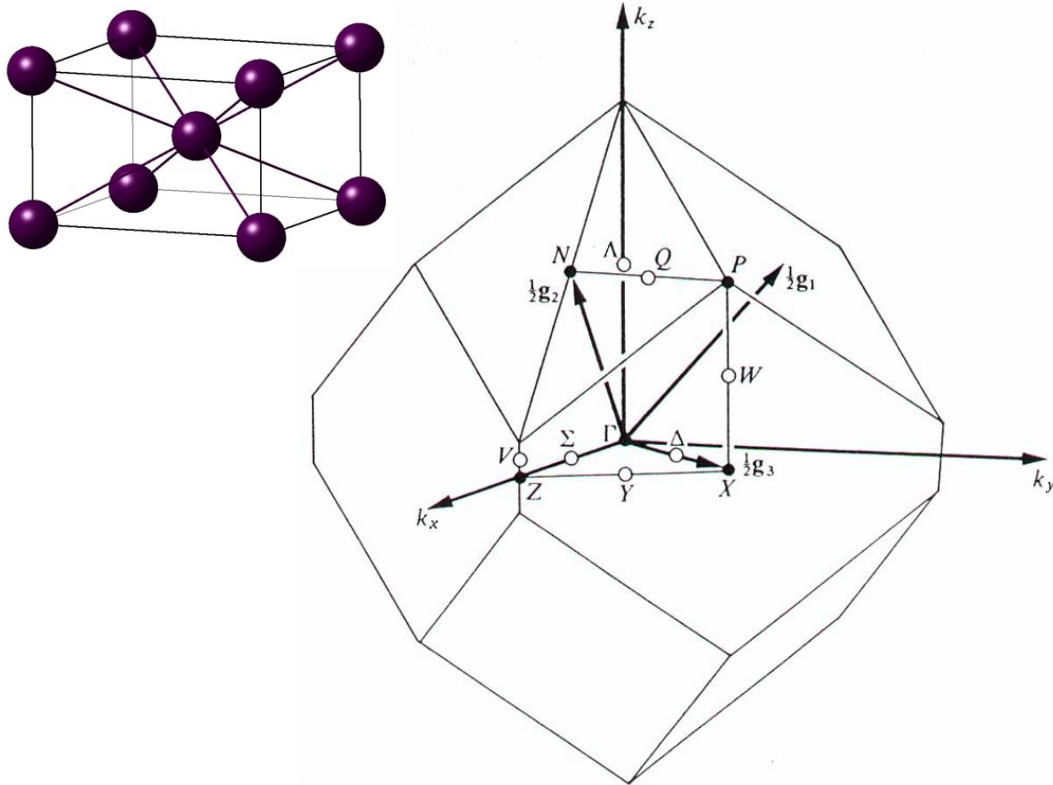
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
Z	$\frac{1}{2} \frac{1}{2} \frac{1}{2}$
L	$0 \frac{1}{2} 0$
F	$0 \frac{1}{2} \frac{1}{2}$

Rhombohedral for $\sqrt{2} c > a$



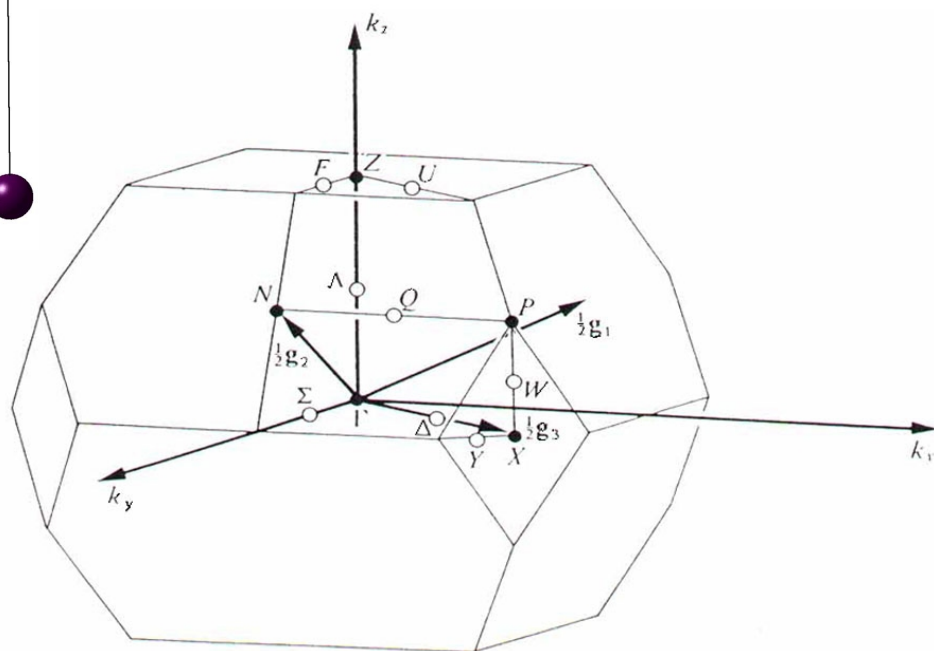
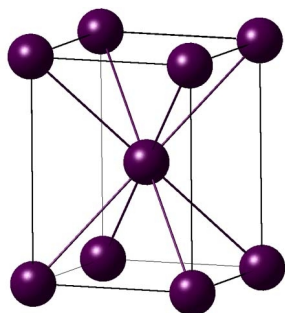
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
Z	$\frac{1}{2} \frac{1}{2} \frac{1}{2}$
L	$0 \frac{1}{2} 0$
F	$\frac{1}{2} \frac{1}{2} 0$

Body centered tetragonal $c < a$



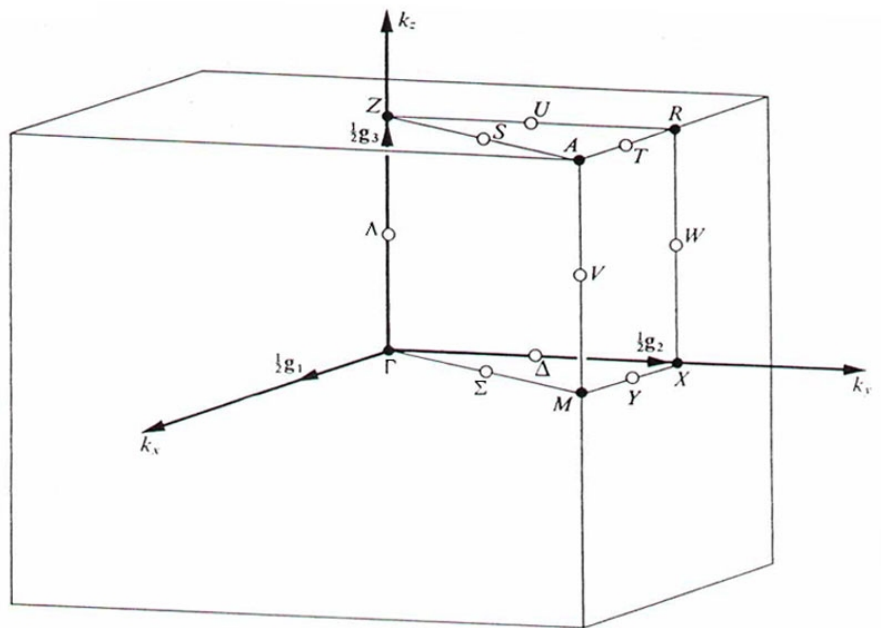
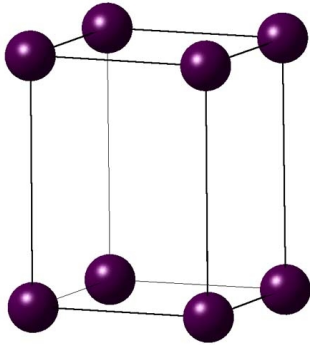
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
N	$0 \frac{1}{2} 0$
X	$0 0 \frac{1}{2}$
Z	$-\frac{1}{2} \frac{1}{2} \frac{1}{2}$
P	$\frac{1}{4} \frac{1}{4} \frac{1}{4}$

Body centered tetragonal $c > a$



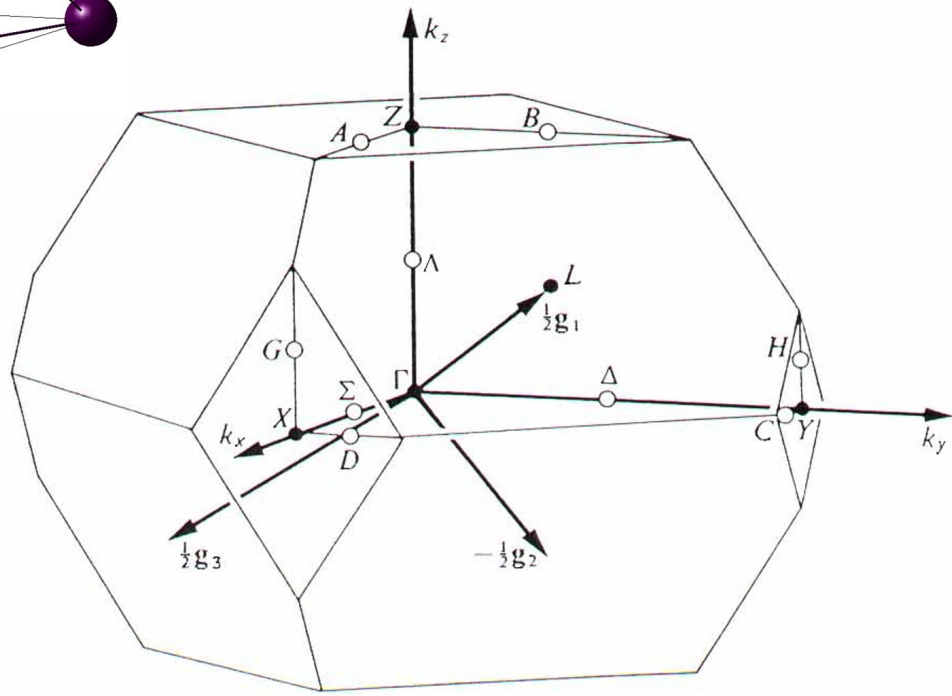
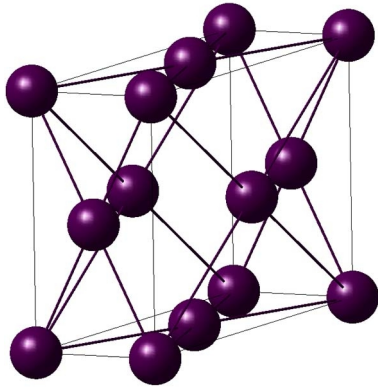
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
N	$0 \frac{1}{2} 0$
X	$0 0 \frac{1}{2}$
Z	$\frac{1}{2} \frac{1}{2} -\frac{1}{2}$
P	$\frac{1}{4} \frac{1}{4} \frac{1}{4}$

Simple tetragonal



Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
M	$\frac{1}{2} \frac{1}{2} 0$
Z	$0 0 \frac{1}{2}$
A	$\frac{1}{2} \frac{1}{2} \frac{1}{2}$
R	$0 \frac{1}{2} \frac{1}{2}$
X	$0 \frac{1}{2} 0$

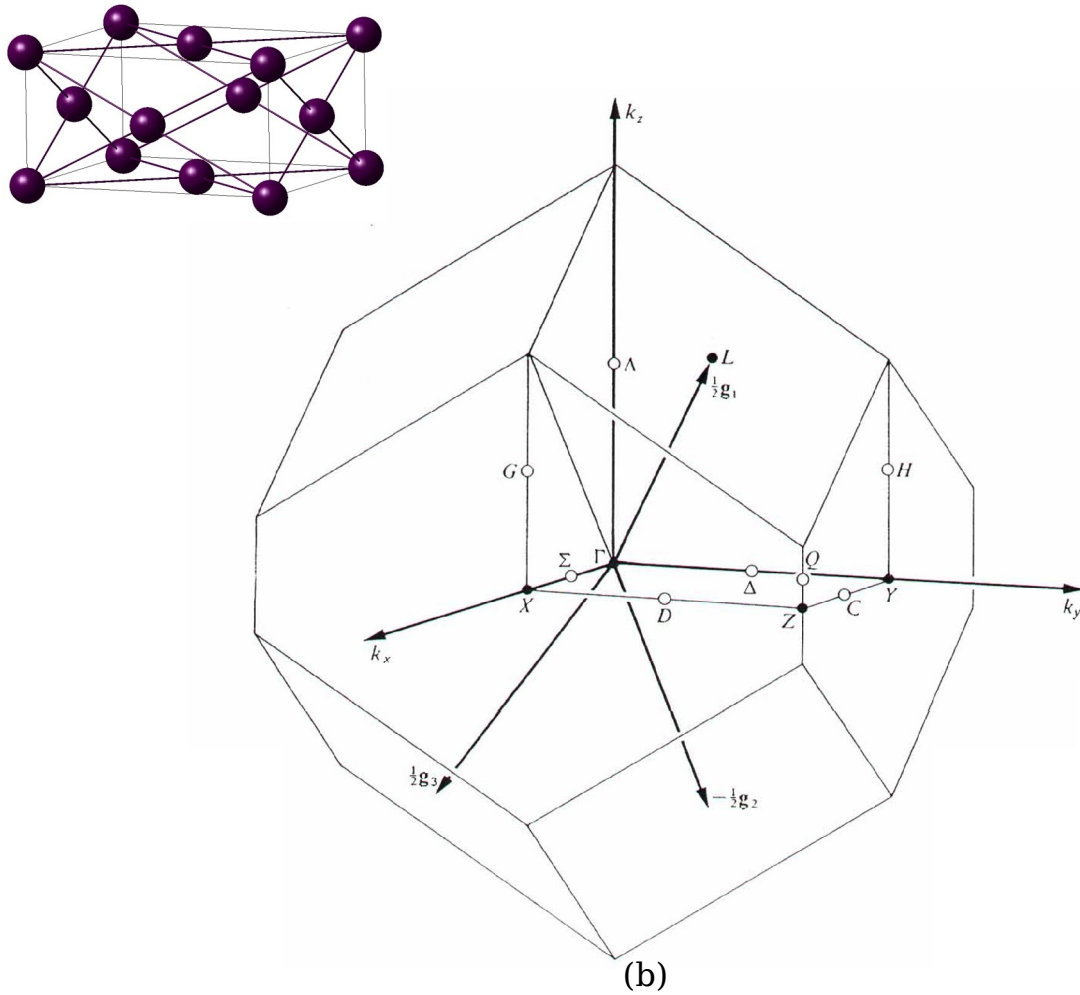
Face-centered orthorhombic $\frac{1}{a^2} < \frac{1}{b^2} + \frac{1}{c^2}$, $\frac{1}{b^2} < \frac{1}{c^2} + \frac{1}{a^2}$, and $\frac{1}{c^2} < \frac{1}{a^2} + \frac{1}{b^2}$



(a)

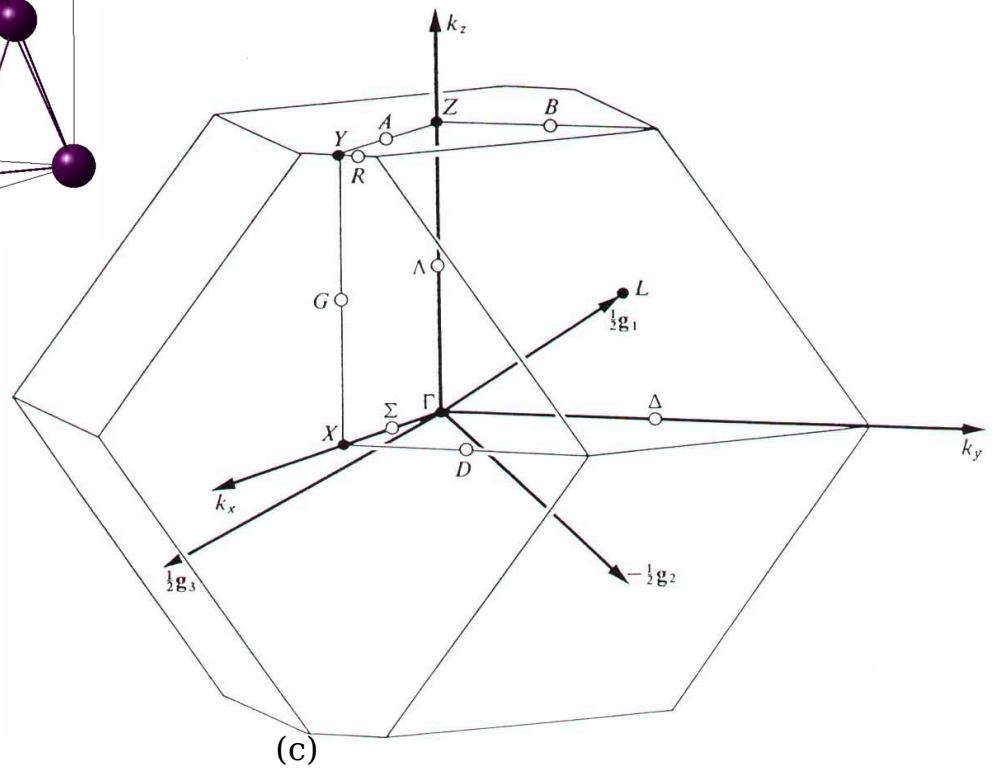
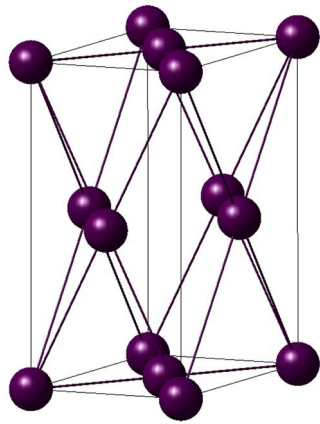
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
Y	$0 -\frac{1}{2} -\frac{1}{2}$
X	$\frac{1}{2} 0 \frac{1}{2}$
Z	$\frac{1}{2} \frac{1}{2} 0$
L	$\frac{1}{2} 0 0$

Face-centered orthorhombic with $\frac{1}{c^2} > \frac{1}{a^2} + \frac{1}{b^2}$



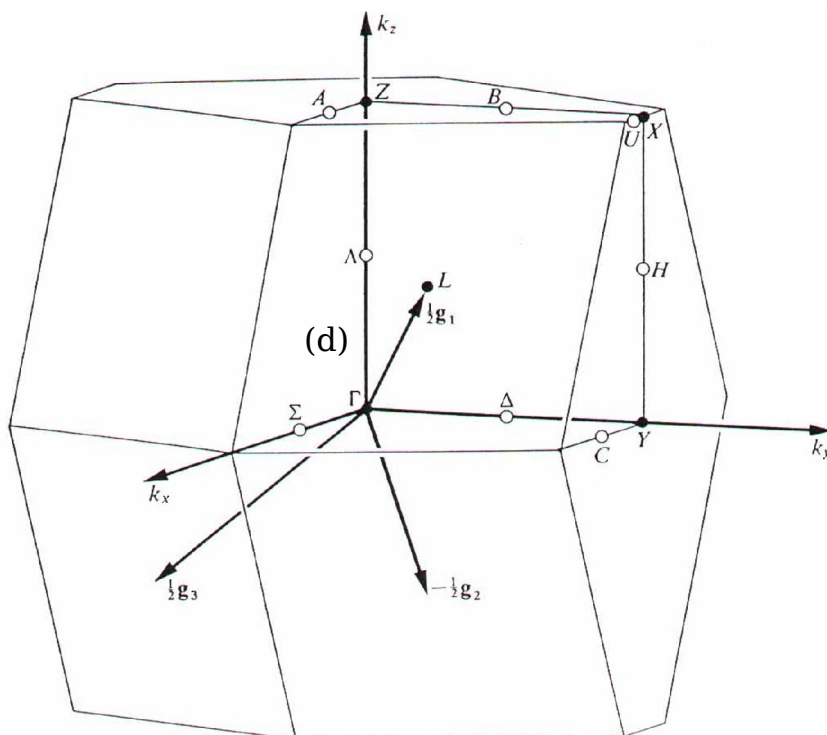
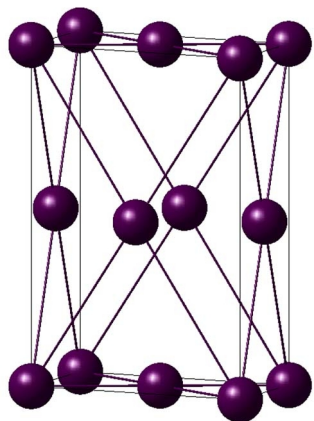
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
Y	$0 \frac{1}{2} \frac{1}{2}$
X	$\frac{1}{2} 0 \frac{1}{2}$
Z	$\frac{1}{2} -\frac{1}{2} 0$
L	$\frac{1}{2} 0 0$

Face-centered orthorhombic with $\frac{1}{b^2} > \frac{1}{a^2} + \frac{1}{c^2}$



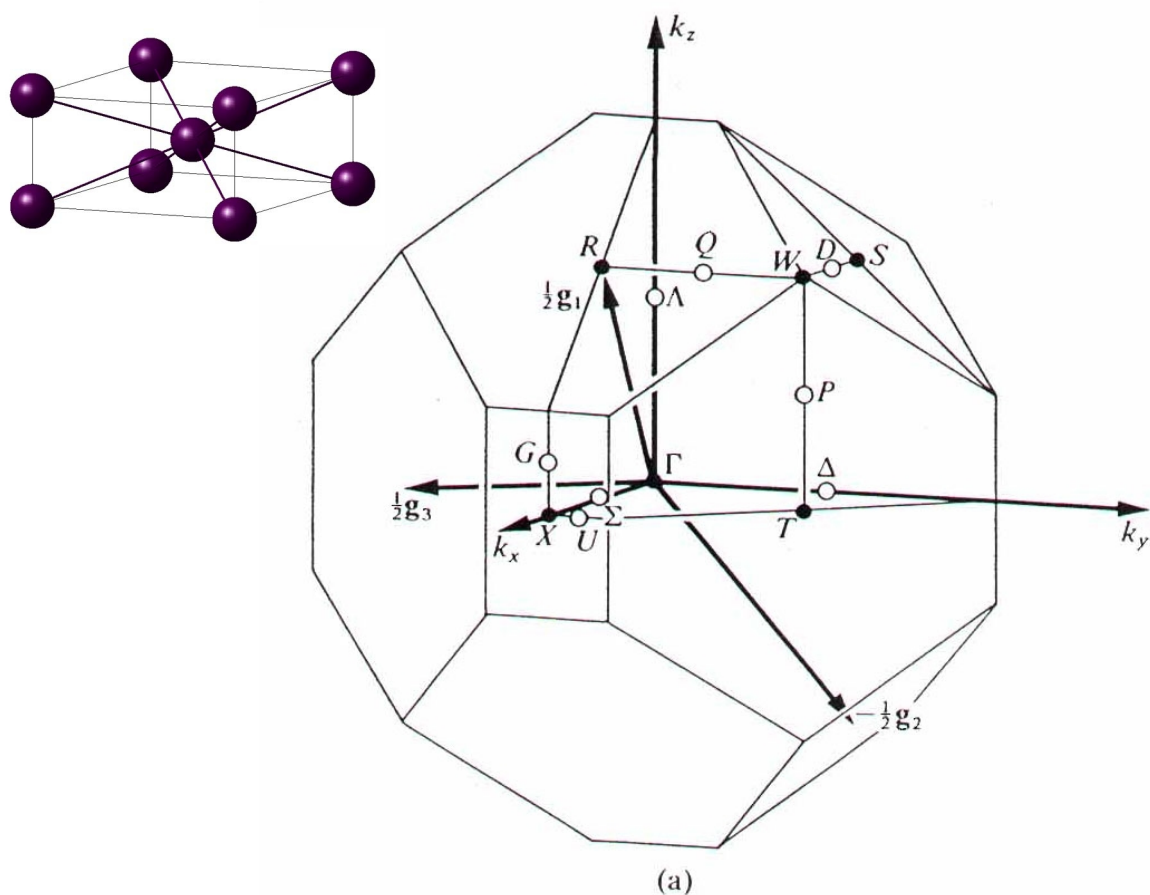
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
Y	$1 \frac{1}{2} \frac{1}{2}$
X	$\frac{1}{2} 0 \frac{1}{2}$
Z	$\frac{1}{2} \frac{1}{2} 0$
L	$\frac{1}{2} 0 0$

Face-centered orthorhombic with $\frac{1}{a^2} > \frac{1}{b^2} + \frac{1}{c^2}$



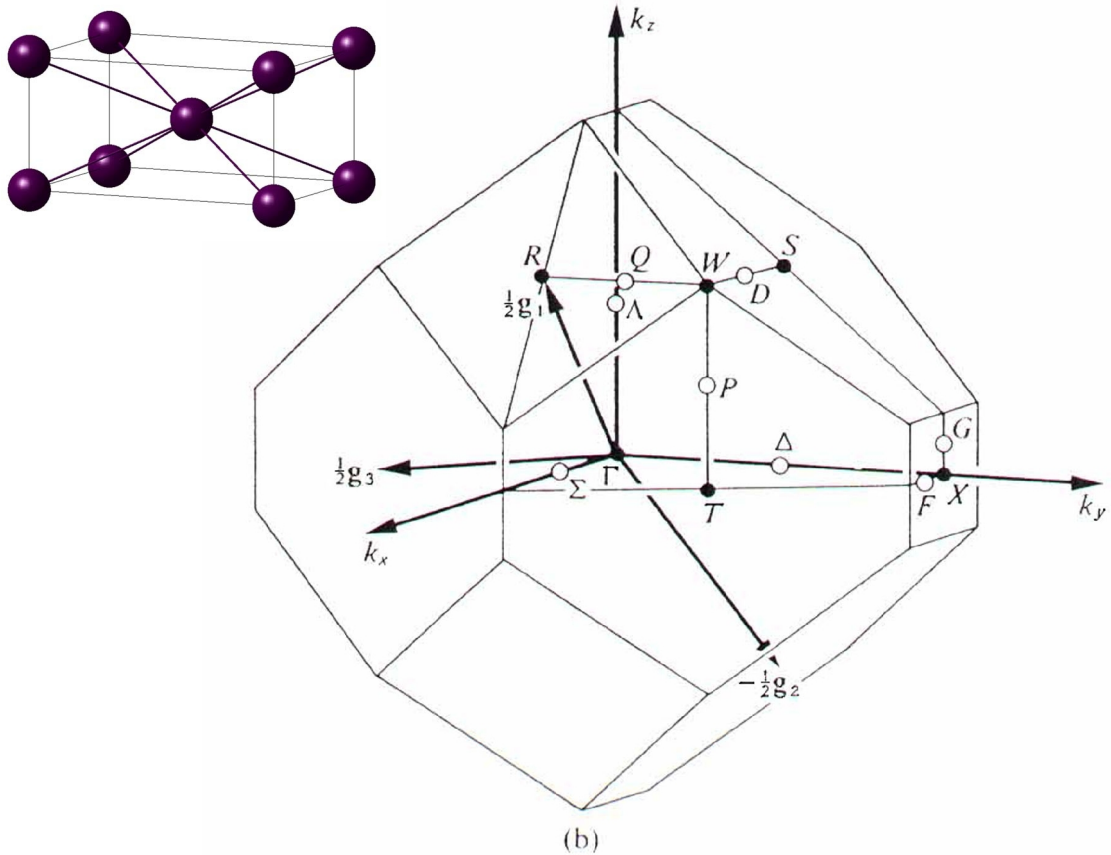
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
Y	$0 -\frac{1}{2} -\frac{1}{2}$
X	$\frac{1}{2} 0 -\frac{1}{2}$
Z	$\frac{1}{2} \frac{1}{2} 0$
L	$\frac{1}{2} 0 0$

Body-centered orthorhombic for $a > b > c$ or $a > c > b$

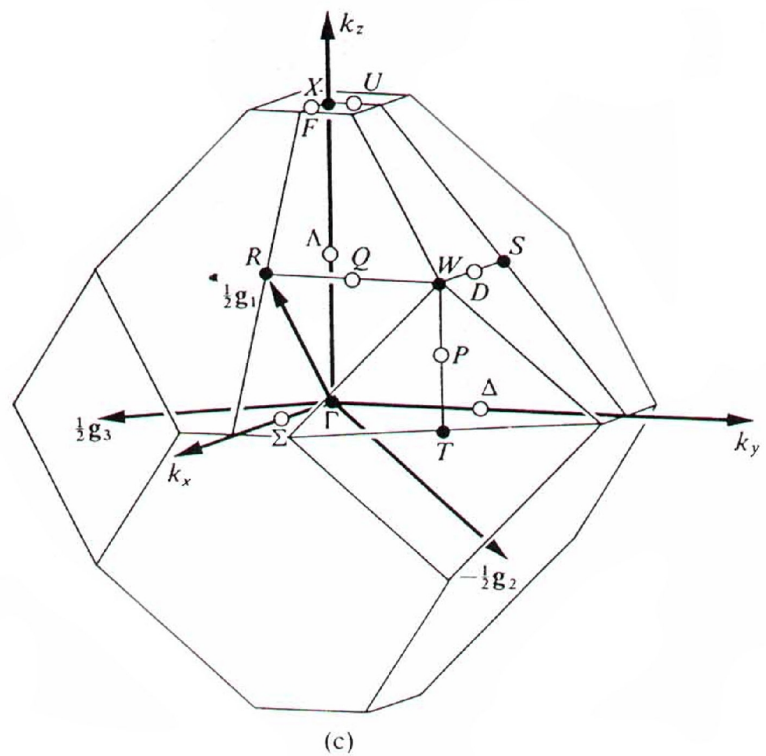
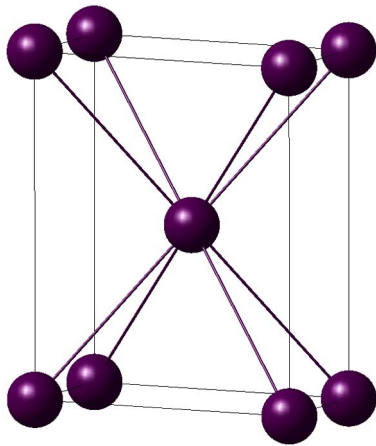


Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
X	$\frac{1}{2} -\frac{1}{2} \frac{1}{2}$
R	$\frac{1}{2} 0 0$
S	$\frac{1}{2} 0 -\frac{1}{2}$
T	$\frac{1}{2} -\frac{1}{2} 0$
W	$\frac{3}{4} -\frac{1}{4} -\frac{1}{4}$

Body-centered orthorhombic for $b > a > c$ or $b > c > a$

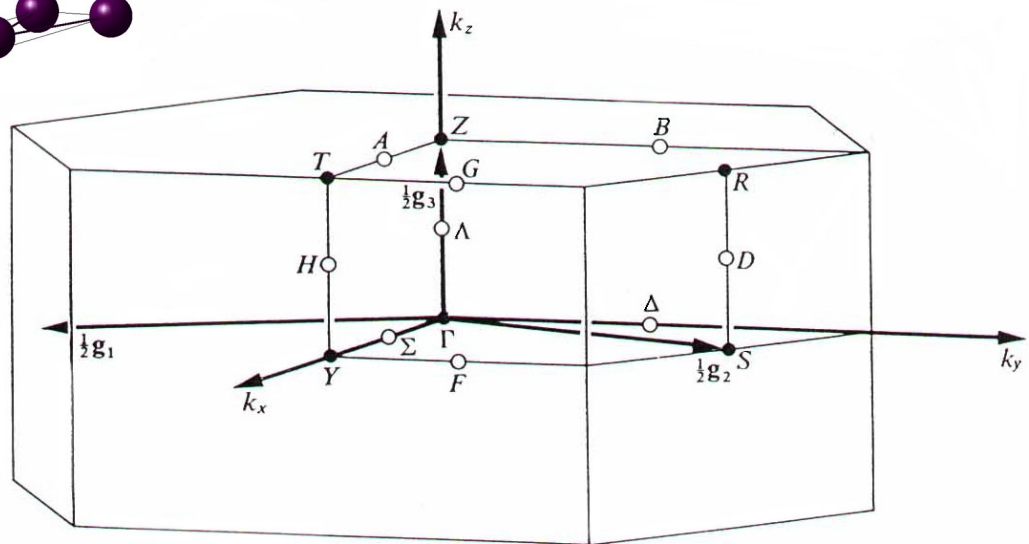
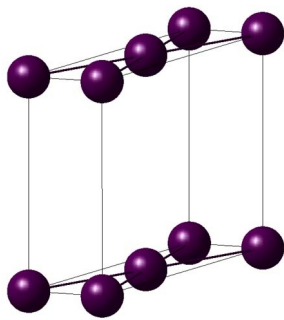


Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
X	$\frac{1}{2} -\frac{1}{2} -\frac{1}{2}$
R	$\frac{1}{2} 0 0$
S	$\frac{1}{2} 0 -\frac{1}{2}$
T	$\frac{1}{2} -\frac{1}{2} 0$
W	$\frac{3}{4} -\frac{1}{4} -\frac{1}{4}$

Body-centered orthorhombic for $c > b > a$ or $c > a > b$


Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
X	$\frac{1}{2} \frac{1}{2} -\frac{1}{2}$
R	$\frac{1}{2} 0 0$
S	$\frac{1}{2} 0 -\frac{1}{2}$
T	$\frac{1}{2} -\frac{1}{2} 0$
W	$\frac{3}{4} -\frac{1}{4} -\frac{1}{4}$

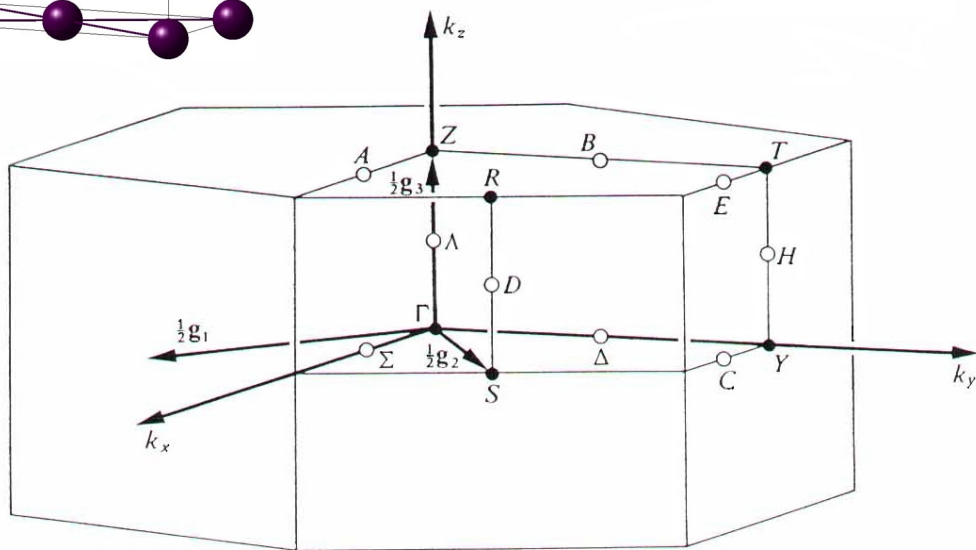
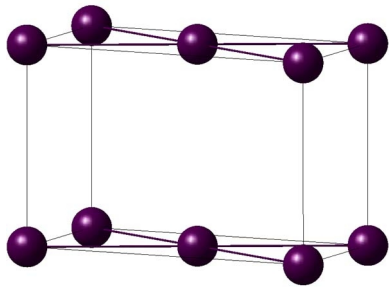
Base centered orthorhombic $a > b$



(a)

Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
Y	$\frac{1}{2} \frac{1}{2} 0$
Z	0 0 $\frac{1}{2}$
T	$\frac{1}{2} \frac{1}{2} \frac{1}{2}$
S	0 $\frac{1}{2}$ 0
R	0 $\frac{1}{2} \frac{1}{2}$

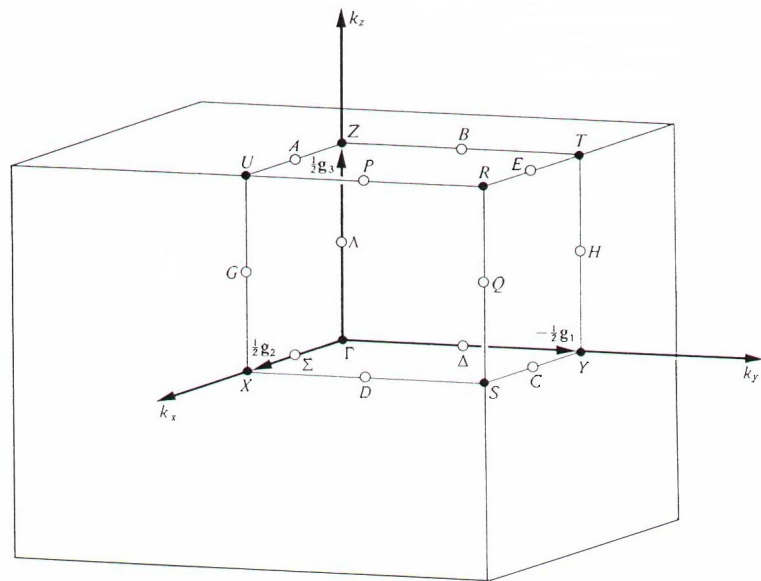
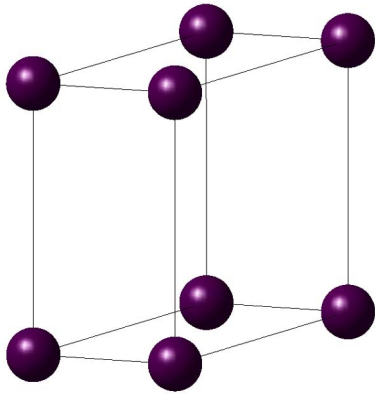
Base-centered orthorhombic $b > a$



(b)

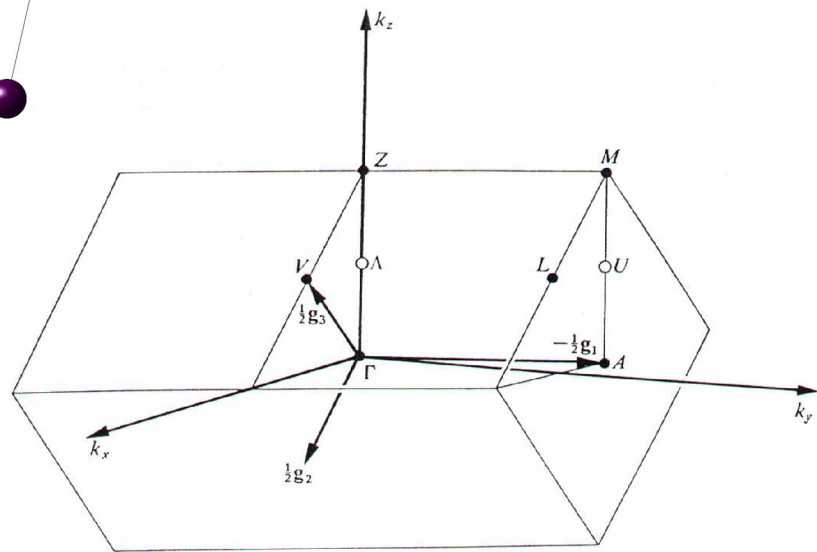
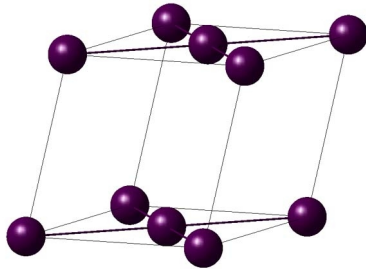
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
Y	$-\frac{1}{2} \frac{1}{2} 0$
Z	$0 0 \frac{1}{2}$
T	$\frac{1}{2} \frac{1}{2} \frac{1}{2}$
S	$0 \frac{1}{2} 0$
R	$0 \frac{1}{2} \frac{1}{2}$

Simple orthorhombic



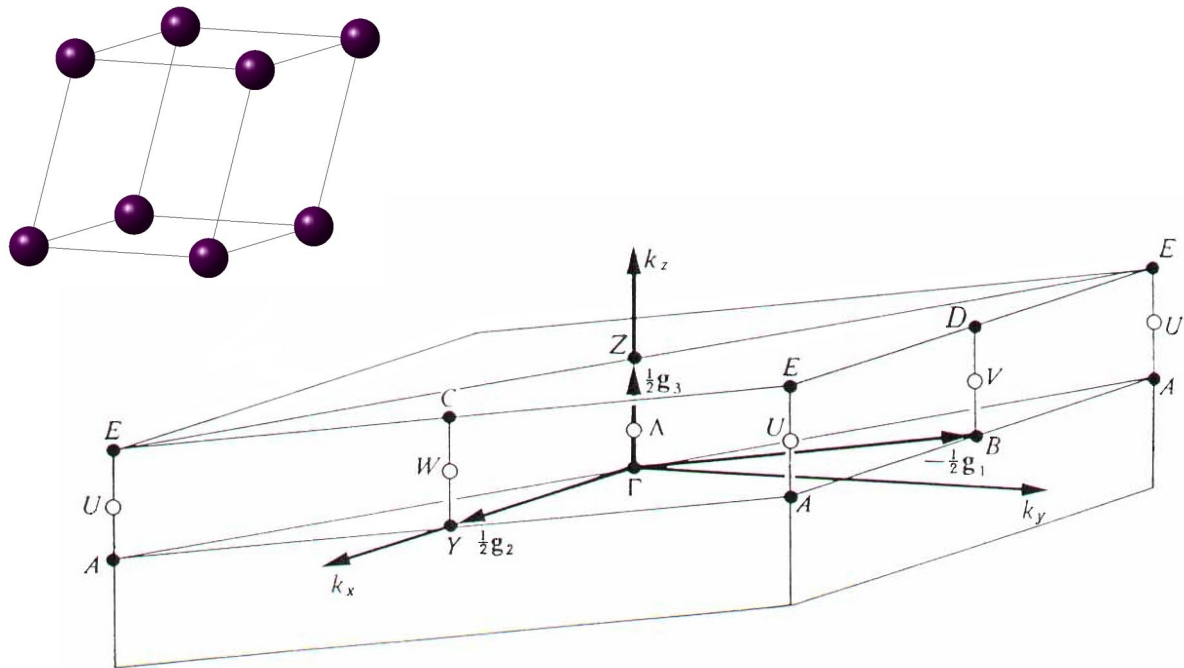
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
Y	$-\frac{1}{2}$ 0 0
X	0 $\frac{1}{2}$ 0
Z	0 0 $\frac{1}{2}$
U	0 $\frac{1}{2}$ $\frac{1}{2}$
T	$-\frac{1}{2}$ 0 $\frac{1}{2}$
S	$-\frac{1}{2}$ $\frac{1}{2}$ 0
R	$-\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$

Base centered monoclinic



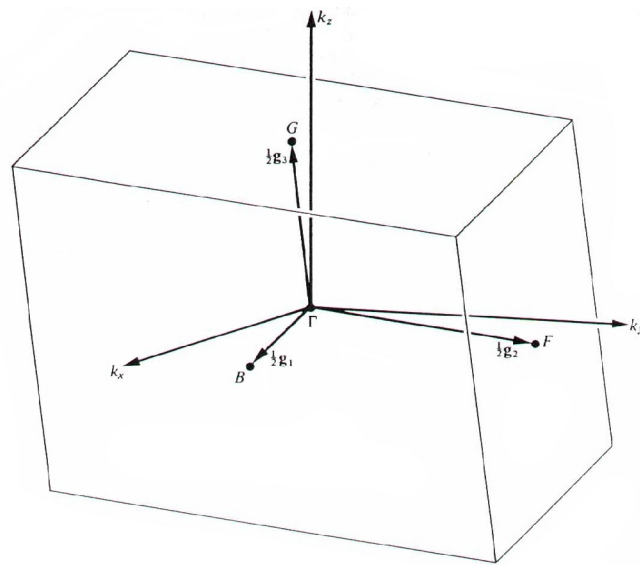
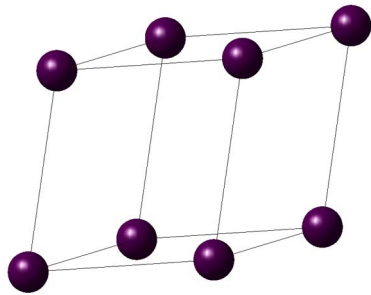
Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
A	$-\frac{1}{2}$ 0 0
Z	0 $-\frac{1}{2}$ $\frac{1}{2}$
M	$-\frac{1}{2}$ $-\frac{1}{2}$ $\frac{1}{2}$
L	$-\frac{1}{2}$ 0 $\frac{1}{2}$
V	0 0 $\frac{1}{2}$

Simple monoclinic



Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
B	$-\frac{1}{2}$ 0 0
Y	0 $\frac{1}{2}$ 0
Z	0 0 $\frac{1}{2}$
C	0 $\frac{1}{2}$ $\frac{1}{2}$
D	$-\frac{1}{2}$ 0 $\frac{1}{2}$
A	$-\frac{1}{2}$ $\frac{1}{2}$ 0, $-\frac{1}{2}$ $-\frac{1}{2}$ 0, or $\frac{1}{2}$ $\frac{1}{2}$ 0
E	$-\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$, $-\frac{1}{2}$ $-\frac{1}{2}$ $\frac{1}{2}$, or $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$

Triclinic



Label	Coordinates ($\mathbf{g}_1, \mathbf{g}_2, \mathbf{g}_3$)
Γ	0 0 0
B	$\frac{1}{2}$ 0 0
F	0 $\frac{1}{2}$ 0
G	0 0 $\frac{1}{2}$