

$P2/m$

C_{2h}^1

$2/m$

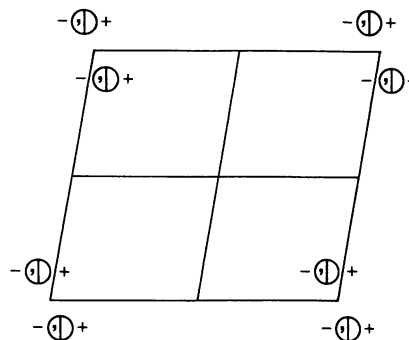
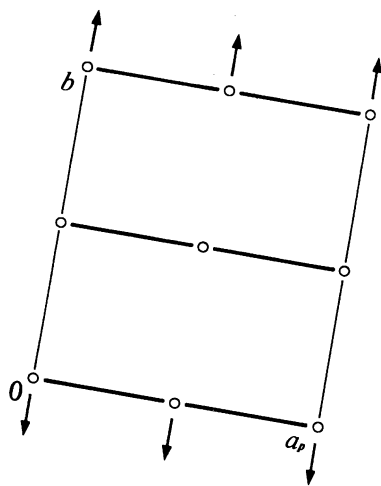
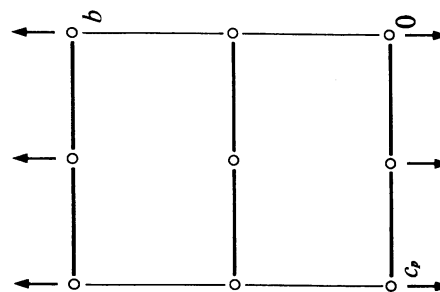
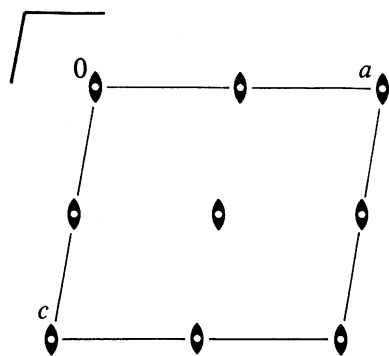
Monoclinic

No. 10

$P12/m1$

Patterson symmetry $P12/m1$

UNIQUE AXIS b



Origin at centre ($2/m$)

Asymmetric unit $0 \leq x \leq \frac{1}{2}; 0 \leq y \leq \frac{1}{2}; 0 \leq z \leq 1$

Symmetry operations

- (1) 1 (2) $2 \ 0,y,0$ (3) $\bar{1} \ 0,0,0$ (4) $m \ x,0,z$

Generators selected (1); $t(1,0,0)$; $t(0,1,0)$; $t(0,0,1)$; (2); (3)

Positions

Multiplicity, Wyckoff letter, Site symmetry			Coordinates				Reflection conditions
							General:
4	<i>o</i>	1	(1) x, y, z	(2) \bar{x}, y, \bar{z}	(3) $\bar{x}, \bar{y}, \bar{z}$	(4) x, \bar{y}, z	no conditions Special: no extra conditions
2	<i>n</i>	<i>m</i>	$x, \frac{1}{2}, z$	$\bar{x}, \frac{1}{2}, \bar{z}$			
2	<i>m</i>	<i>m</i>	$x, 0, z$	$\bar{x}, 0, \bar{z}$			
2	<i>l</i>	2	$\frac{1}{2}, y, \frac{1}{2}$	$\frac{1}{2}, \bar{y}, \frac{1}{2}$			
2	<i>k</i>	2	$0, y, \frac{1}{2}$	$0, \bar{y}, \frac{1}{2}$			
2	<i>j</i>	2	$\frac{1}{2}, y, 0$	$\frac{1}{2}, \bar{y}, 0$			
2	<i>i</i>	2	$0, y, 0$	$0, \bar{y}, 0$			
1	<i>h</i>	$2/m$	$\frac{1}{2}, \frac{1}{2}, \frac{1}{2}$				
1	<i>g</i>	$2/m$	$\frac{1}{2}, 0, \frac{1}{2}$				
1	<i>f</i>	$2/m$	$0, \frac{1}{2}, \frac{1}{2}$				
1	<i>e</i>	$2/m$	$\frac{1}{2}, \frac{1}{2}, 0$				
1	<i>d</i>	$2/m$	$\frac{1}{2}, 0, 0$				
1	<i>c</i>	$2/m$	$0, 0, \frac{1}{2}$				
1	<i>b</i>	$2/m$	$0, \frac{1}{2}, 0$				
1	<i>a</i>	$2/m$	$0, 0, 0$				

Symmetry of special projections

Along $[001]$ $p2mm$
 $\mathbf{a}' = \mathbf{a}_p$ $\mathbf{b}' = \mathbf{b}$
 Origin at $0, 0, z$

Along $[100]$ $p2mm$
 $\mathbf{a}' = \mathbf{b}$ $\mathbf{b}' = \mathbf{c}_p$
 Origin at $x, 0, 0$

Along $[010]$ $p2$
 $\mathbf{a}' = \mathbf{c}$ $\mathbf{b}' = \mathbf{a}$
 Origin at $0, y, 0$

$P2/m$

C_{2h}^1

$2/m$

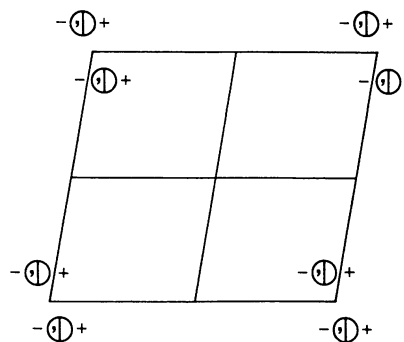
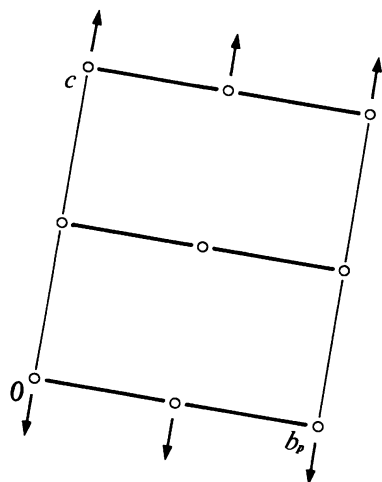
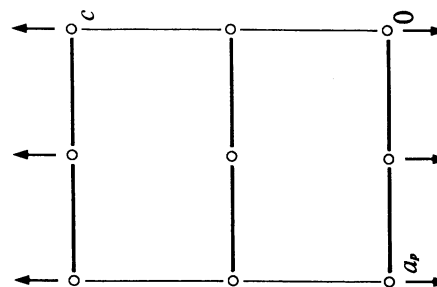
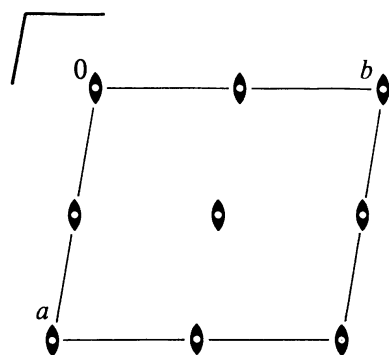
Monoclinic

No. 10

$P112/m$

Patterson symmetry $P112/m$

UNIQUE AXIS c



Origin at centre ($2/m$)

Asymmetric unit $0 \leq x \leq 1; 0 \leq y \leq \frac{1}{2}; 0 \leq z \leq \frac{1}{2}$

Symmetry operations

- (1) 1
- (2) $2 \ 0,0,z$
- (3) $\bar{1} \ 0,0,0$
- (4) $m \ x,y,0$

Generators selected (1); $t(1,0,0)$; $t(0,1,0)$; $t(0,0,1)$; (2); (3)

Positions

Multiplicity,
Wyckoff letter,
Site symmetry

Coordinates

Reflection conditions

4 *o* 1 (1) x, y, z (2) \bar{x}, \bar{y}, z (3) $\bar{x}, \bar{y}, \bar{z}$ (4) x, y, \bar{z}

General:

no conditions

Special: no extra conditions

2 *n* *m* $x, y, \frac{1}{2}$ $\bar{x}, \bar{y}, \frac{1}{2}$

2 *m* *m* $x, y, 0$ $\bar{x}, \bar{y}, 0$

2 *l* 2 $\frac{1}{2}, \frac{1}{2}, z$ $\frac{1}{2}, \frac{1}{2}, \bar{z}$

2 *k* 2 $\frac{1}{2}, 0, z$ $\frac{1}{2}, 0, \bar{z}$

2 *j* 2 $0, \frac{1}{2}, z$ $0, \frac{1}{2}, \bar{z}$

2 *i* 2 $0, 0, z$ $0, 0, \bar{z}$

1 *h* $2/m$ $\frac{1}{2}, \frac{1}{2}, \frac{1}{2}$

1 *g* $2/m$ $\frac{1}{2}, \frac{1}{2}, 0$

1 *f* $2/m$ $\frac{1}{2}, 0, \frac{1}{2}$

1 *e* $2/m$ $0, \frac{1}{2}, \frac{1}{2}$

1 *d* $2/m$ $0, \frac{1}{2}, 0$

1 *c* $2/m$ $\frac{1}{2}, 0, 0$

1 *b* $2/m$ $0, 0, \frac{1}{2}$

1 *a* $2/m$ $0, 0, 0$

Symmetry of special projections

Along [001] $p2$

$\mathbf{a}' = \mathbf{a}$ $\mathbf{b}' = \mathbf{b}$

Origin at $0, 0, z$

Along [100] $p2mm$

$\mathbf{a}' = \mathbf{b}'_p$ $\mathbf{b}' = \mathbf{c}$

Origin at $x, 0, 0$

Along [010] $p2mm$

$\mathbf{a}' = \mathbf{c}$ $\mathbf{b}' = \mathbf{a}'_p$

Origin at $0, y, 0$