

$C2/m$

$C_{2h}^3$

$2/m$

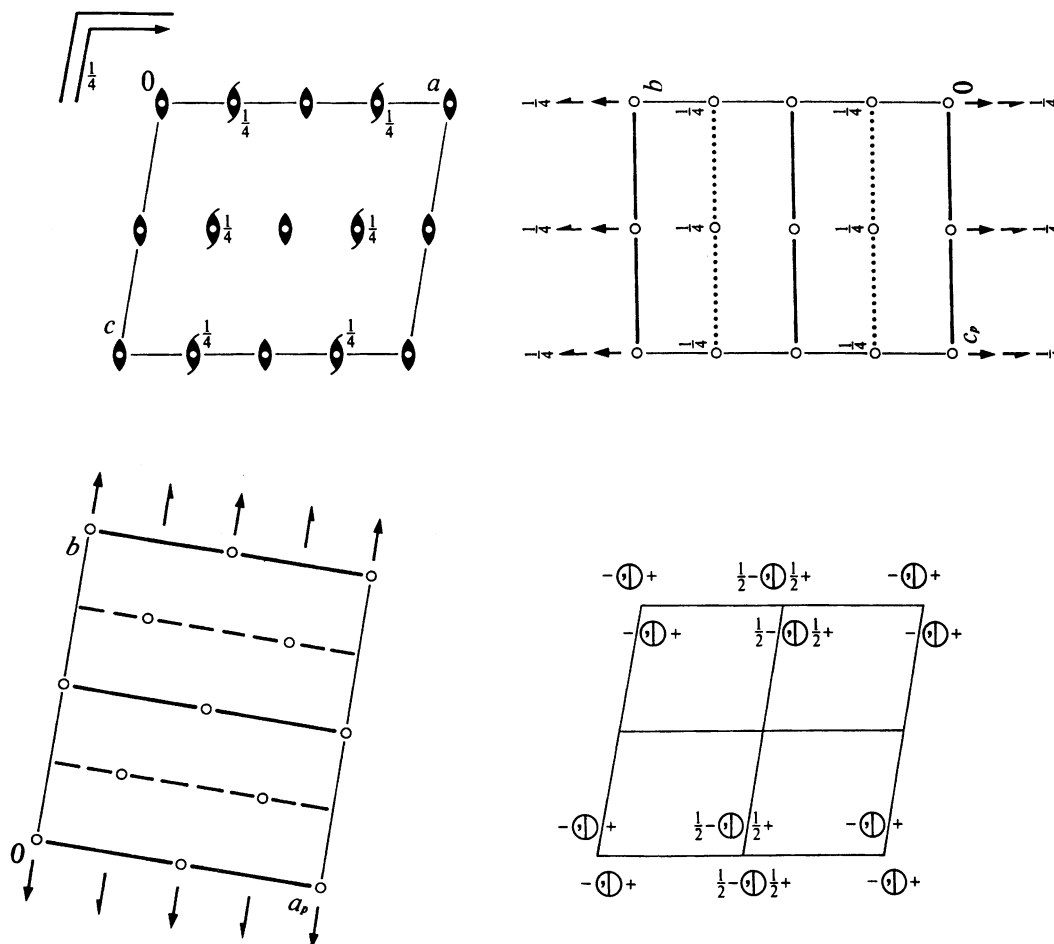
Monoclinic

No. 12

$C12/m1$

Patterson symmetry  $C12/m1$

UNIQUE AXIS  $b$ , CELL CHOICE 1



Origin at centre ( $2/m$ )

Asymmetric unit  $0 \leq x \leq \frac{1}{2}; 0 \leq y \leq \frac{1}{4}; 0 \leq z \leq 1$

Symmetry operations

For  $(0,0,0)+$  set

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

For  $(\frac{1}{2}, \frac{1}{2}, 0)+$  set

- |                                      |  |   |                             |
|--------------------------------------|--|---|-----------------------------|
| (1) $t(\frac{1}{2}, \frac{1}{2}, 0)$ | (2) $2(0, \frac{1}{2}, 0) \ \frac{1}{4}, y, 0$ | (3) $\bar{1} \ \frac{1}{4}, \frac{1}{4}, 0$ | (4) $a \ x, \frac{1}{4}, z$ |
|--------------------------------------|--|---|-----------------------------|

**Generators selected** (1);  $t(1,0,0)$ ;  $t(0,1,0)$ ;  $t(0,0,1)$ ;  $t(\frac{1}{2},\frac{1}{2},0)$ ; (2); (3)

**Positions**

Multiplicity, Wyckoff letter, Site symmetry	Coordinates				Reflection conditions
	(0,0,0)+ $(\frac{1}{2},\frac{1}{2},0)$ +				General:
8 <i>j</i> 1	(1) $x,y,z$	(2) $\bar{x},y,\bar{z}$	(3) $\bar{x},\bar{y},\bar{z}$	(4) $x,\bar{y},z$	$hkl : h+k=2n$ $h0l : h=2n$ $0kl : k=2n$ $hk0 : h+k=2n$ $0k0 : k=2n$ $h00 : h=2n$
4 <i>i</i> <i>m</i>	$x,0,z$	$\bar{x},0,\bar{z}$			Special: as above, plus no extra conditions
4 <i>h</i> 2	$0,y,\frac{1}{2}$	$0,\bar{y},\frac{1}{2}$			no extra conditions
4 <i>g</i> 2	$0,y,0$	$0,\bar{y},0$			no extra conditions
4 <i>f</i> $\bar{1}$	$\frac{1}{4},\frac{1}{4},\frac{1}{2}$	$\frac{3}{4},\frac{1}{4},\frac{1}{2}$			$hkl : h=2n$
4 <i>e</i> $\bar{1}$	$\frac{1}{4},\frac{1}{4},0$	$\frac{3}{4},\frac{1}{4},0$			$hkl : h=2n$
2 <i>d</i> 2/m	$0,\frac{1}{2},\frac{1}{2}$				no extra conditions
2 <i>c</i> 2/m	$0,0,\frac{1}{2}$				no extra conditions
2 <i>b</i> 2/m	$0,\frac{1}{2},0$				no extra conditions
2 <i>a</i> 2/m	$0,0,0$				no extra conditions

**Symmetry of special projections**

Along [001]  $c2mm$   
 $\mathbf{a}' = \mathbf{a}_p$   $\mathbf{b}' = \mathbf{b}$   
 Origin at 0,0,z

Along [100]  $p2mm$   
 $\mathbf{a}' = \frac{1}{2}\mathbf{b}$   $\mathbf{b}' = \mathbf{c}_p$   
 Origin at  $x,0,0$

Along [010]  $p2$   
 $\mathbf{a}' = \mathbf{c}$   $\mathbf{b}' = \frac{1}{2}\mathbf{a}$   
 Origin at 0,y,0

**Maximal non-isomorphic subgroups**

- I** [2]  $C1m1$  ( $Cm$ , 8) (1; 4)+  
 [2]  $C121$  ( $C2$ , 5) (1; 2)+  
 [2]  $C\bar{1}$  ( $P\bar{1}$ , 2) (1; 3)+
- IIa** [2]  $P12_1/a1$  ( $P2_1/c$ , 14) 1; 3; (2; 4) +  $(\frac{1}{2},\frac{1}{2},0)$   
 [2]  $P12/a1$  ( $P2/c$ , 13) 1; 2; (3; 4) +  $(\frac{1}{2},\frac{1}{2},0)$   
 [2]  $P12_1/m1$  ( $P2_1/m$ , 11) 1; 4; (2; 3) +  $(\frac{1}{2},\frac{1}{2},0)$   
 [2]  $P12/m1$  ( $P2/m$ , 10) 1; 2; 3; 4
- IIb** [2]  $C12/c1$  ( $\mathbf{c}' = 2\mathbf{c}$ ) ( $C2/c$ , 15); [2]  $I12/c1$  ( $\mathbf{c}' = 2\mathbf{c}$ ) ( $C2/c$ , 15)

**Maximal isomorphic subgroups of lowest index**

- IIc** [2]  $C12/m1$  ( $\mathbf{c}' = 2\mathbf{c}$  or  $\mathbf{a}' = \mathbf{a} + 2\mathbf{c}, \mathbf{c}' = 2\mathbf{c}$ ) ( $C2/m$ , 12); [3]  $C12/m1$  ( $\mathbf{b}' = 3\mathbf{b}$ ) ( $C2/m$ , 12)

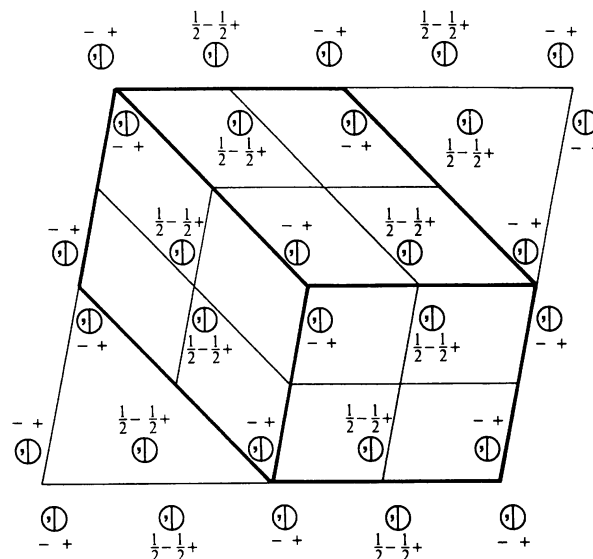
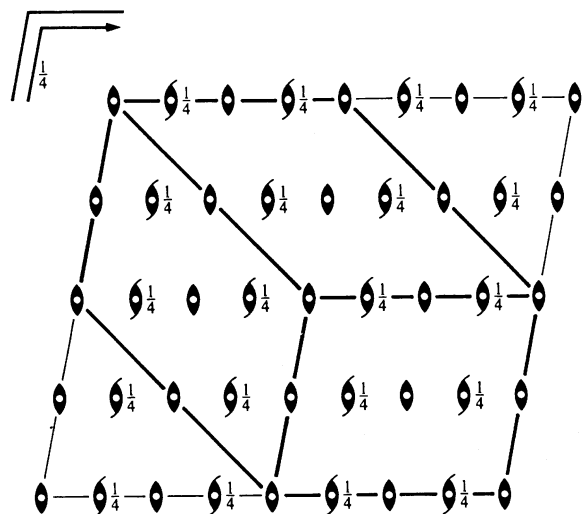
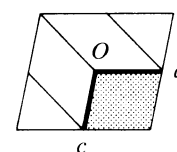
**Minimal non-isomorphic supergroups**

- I** [2]  $Cmcm$  (63); [2]  $Cmce$  (64); [2]  $Cmmm$  (65); [2]  $Cmme$  (67); [2]  $Fmmm$  (69); [2]  $Immm$  (71); [2]  $Ibam$  (72); [2]  $Imma$  (74);  
 [2]  $I4/m$  (87); [3]  $P\bar{3}1m$  (162); [3]  $P\bar{3}m1$  (164); [3]  $R\bar{3}m$  (166)
- II** [2]  $P12/m1$  ( $\mathbf{a}' = \frac{1}{2}\mathbf{a}, \mathbf{b}' = \frac{1}{2}\mathbf{b}$ ) ( $P2/m$ , 10)

$C2/m$  $C_{2h}^3$  $2/m$ 

Monoclinic

No. 12

UNIQUE AXIS  $b$ , DIFFERENT CELL CHOICES $C12/m1$ UNIQUE AXIS  $b$ , CELL CHOICE 1Origin at centre ( $2/m$ )Asymmetric unit  $0 \leq x \leq \frac{1}{2}$ ;  $0 \leq y \leq \frac{1}{4}$ ;  $0 \leq z \leq 1$ Generators selected (1);  $t(1,0,0)$ ;  $t(0,1,0)$ ;  $t(0,0,1)$ ;  $t(\frac{1}{2}, \frac{1}{2}, 0)$ ; (2); (3)**Positions**Multiplicity,  
Wyckoff letter,  
Site symmetry

Coordinates

 $(0,0,0)+$   $(\frac{1}{2}, \frac{1}{2}, 0)+$ 

Reflection conditions

General:

8  $j$  1 (1)  $x, y, z$  (2)  $\bar{x}, y, \bar{z}$  (3)  $\bar{x}, \bar{y}, \bar{z}$  (4)  $x, \bar{y}, z$ 
 $hkl : h + k = 2n$        $hk0 : h + k = 2n$   
 $h0l : h = 2n$        $0k0 : k = 2n$   
 $0kl : k = 2n$        $h00 : h = 2n$ 

Special: as above, plus

4  $i$   $m$   $x, 0, z$   $\bar{x}, 0, \bar{z}$ 

no extra conditions

4  $h$  2  $0, y, \frac{1}{2}$   $0, \bar{y}, \frac{1}{2}$  4  $g$  2  $0, y, 0$   $0, \bar{y}, 0$ 

no extra conditions

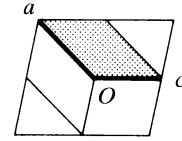
4  $f$   $\bar{1}$   $\frac{1}{4}, \frac{1}{4}, \frac{1}{2}$   $\frac{3}{4}, \frac{1}{4}, \frac{1}{2}$  4  $e$   $\bar{1}$   $\frac{1}{4}, \frac{1}{4}, 0$   $\frac{3}{4}, \frac{1}{4}, 0$  $hkl : h = 2n$ 2  $d$   $2/m$   $0, \frac{1}{2}, \frac{1}{2}$  2  $c$   $2/m$   $0, 0, \frac{1}{2}$ 

no extra conditions

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

no extra conditions

## A 12/m 1

UNIQUE AXIS  $b$ , CELL CHOICE 2Origin at centre ( $2/m$ )Asymmetric unit  $0 \leq x \leq \frac{1}{2}$ ;  $0 \leq y \leq \frac{1}{4}$ ;  $0 \leq z \leq 1$ Generators selected (1);  $t(1,0,0)$ ;  $t(0,1,0)$ ;  $t(0,0,1)$ ;  $t(0, \frac{1}{2}, \frac{1}{2})$ ; (2); (3)

## Positions

Multiplicity,  
Wyckoff letter,  
Site symmetry

Coordinates

Reflection conditions

General:

8  $j$  1 (1)  $x, y, z$  (2)  $\bar{x}, y, \bar{z}$  (3)  $\bar{x}, \bar{y}, \bar{z}$  (4)  $x, \bar{y}, z$ 
 $hkl : k + l = 2n$        $hk0 : k = 2n$   
 $h0l : l = 2n$        $0k0 : k = 2n$   
 $0kl : k + l = 2n$        $00l : l = 2n$ 

Special: as above, plus

4  $i$   $m$   $x, 0, z$   $\bar{x}, 0, \bar{z}$ 

no extra conditions

4  $h$  2  $\frac{1}{2}, y, \frac{1}{2}$   $\frac{1}{2}, \bar{y}, \frac{1}{2}$  4  $g$  2  $0, y, 0$   $0, \bar{y}, 0$ 

no extra conditions

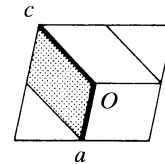
4  $f$   $\bar{1}$   $\frac{1}{2}, \frac{1}{4}, \frac{3}{4}$   $\frac{1}{2}, \frac{1}{4}, \frac{1}{4}$  4  $e$   $\bar{1}$   $0, \frac{1}{4}, \frac{1}{4}$   $0, \frac{1}{4}, \frac{3}{4}$  $hkl : k = 2n$ 2  $d$   $2/m$   $\frac{1}{2}, \frac{1}{2}, \frac{1}{2}$  2  $c$   $2/m$   $\frac{1}{2}, 0, \frac{1}{2}$ 

no extra conditions

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

no extra conditions

## I 12/m 1

UNIQUE AXIS  $b$ , CELL CHOICE 3Origin at centre ( $2/m$ )Asymmetric unit  $0 \leq x \leq \frac{1}{2}$ ;  $0 \leq y \leq \frac{1}{4}$ ;  $0 \leq z \leq 1$ Generators selected (1);  $t(1,0,0)$ ;  $t(0,1,0)$ ;  $t(0,0,1)$ ;  $t(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$ ; (2); (3)

## Positions

Multiplicity,  
Wyckoff letter,  
Site symmetry

Coordinates

Reflection conditions

General:

8  $j$  1 (1)  $x, y, z$  (2)  $\bar{x}, y, \bar{z}$  (3)  $\bar{x}, \bar{y}, \bar{z}$  (4)  $x, \bar{y}, z$ 
 $hkl : h + k + l = 2n$        $0k0 : k = 2n$   
 $h0l : h + l = 2n$        $h00 : h = 2n$   
 $0kl : k + l = 2n$        $00l : l = 2n$   
 $hk0 : h + k = 2n$ 

Special: as above, plus

4  $i$   $m$   $x, 0, z$   $\bar{x}, 0, \bar{z}$ 

no extra conditions

4  $h$  2  $\frac{1}{2}, y, 0$   $\frac{1}{2}, \bar{y}, 0$  4  $g$  2  $0, y, 0$   $0, \bar{y}, 0$ 

no extra conditions

4  $f$   $\bar{1}$   $\frac{1}{4}, \frac{1}{4}, \frac{3}{4}$   $\frac{3}{4}, \frac{1}{4}, \frac{1}{4}$  4  $e$   $\bar{1}$   $\frac{3}{4}, \frac{1}{4}, \frac{3}{4}$   $\frac{1}{4}, \frac{1}{4}, \frac{1}{4}$  $hkl : k = 2n$ 2  $d$   $2/m$   $\frac{1}{2}, \frac{1}{2}, 0$  2  $c$   $2/m$   $\frac{1}{2}, 0, 0$ 

no extra conditions

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

no extra conditions

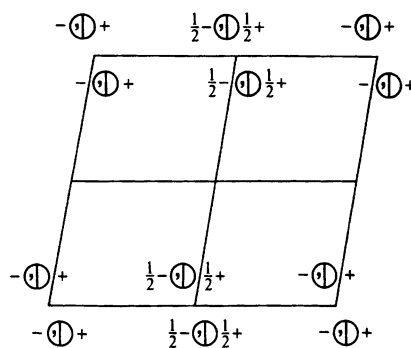
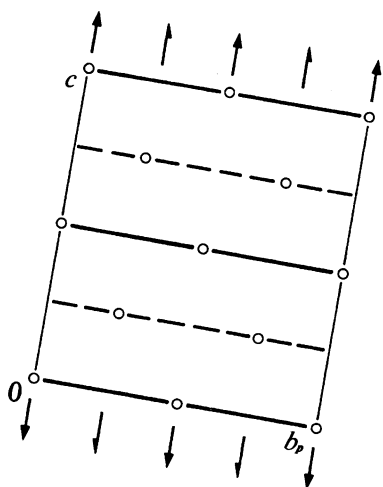
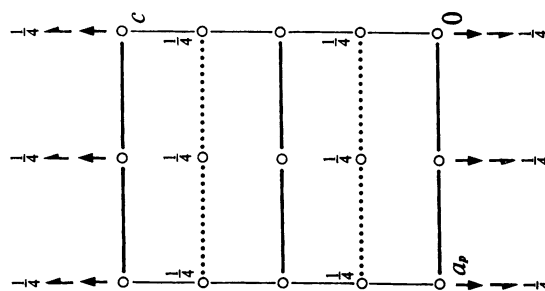
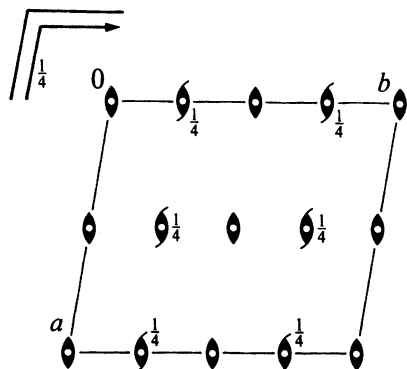
$C2/m$  $C_{2h}^3$  $2/m$ 

Monoclinic

No. 12

A112/m

Patterson symmetry A112/m

UNIQUE AXIS  $c$ , CELL CHOICE 1**Origin** at centre ( $2/m$ )**Asymmetric unit**  $0 \leq x \leq 1; 0 \leq y \leq \frac{1}{2}; 0 \leq z \leq \frac{1}{4}$ **Symmetry operations**For  $(0,0,0)+$  set

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

For  $(0, \frac{1}{2}, \frac{1}{2})+$  set

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

**Generators selected** (1);  $t(1,0,0)$ ;  $t(0,1,0)$ ;  $t(0,0,1)$ ;  $t(0, \frac{1}{2}, \frac{1}{2})$ ; (2); (3)

**Positions**

Multiplicity, Wyckoff letter, Site symmetry	Coordinates				Reflection conditions
	(0,0,0)+	(0, $\frac{1}{2}$ , $\frac{1}{2}$ )+			General:
8 <i>j</i> 1	(1) $x, y, z$	(2) $\bar{x}, \bar{y}, z$	(3) $\bar{x}, \bar{y}, \bar{z}$	(4) $x, y, \bar{z}$	$hkl : k + l = 2n$ $hk0 : k = 2n$ $0kl : k + l = 2n$ $h0l : l = 2n$ $00l : l = 2n$ $0k0 : k = 2n$
4 <i>i</i> <i>m</i>	$x, y, 0$	$\bar{x}, \bar{y}, 0$			Special: as above, plus no extra conditions
4 <i>h</i> 2	$\frac{1}{2}, 0, z$	$\frac{1}{2}, 0, \bar{z}$			no extra conditions
4 <i>g</i> 2	$0, 0, z$	$0, 0, \bar{z}$			no extra conditions
4 <i>f</i> $\bar{1}$	$\frac{1}{2}, \frac{1}{4}, \frac{1}{4}$	$\frac{1}{2}, \frac{3}{4}, \frac{1}{4}$			$hkl : k = 2n$
4 <i>e</i> $\bar{1}$	$0, \frac{1}{4}, \frac{1}{4}$	$0, \frac{3}{4}, \frac{1}{4}$			$hkl : k = 2n$
2 <i>d</i> 2/m	$\frac{1}{2}, 0, \frac{1}{2}$				no extra conditions
2 <i>c</i> 2/m	$\frac{1}{2}, 0, 0$				no extra conditions
2 <i>b</i> 2/m	$0, 0, \frac{1}{2}$				no extra conditions
2 <i>a</i> 2/m	$0, 0, 0$				no extra conditions

**Symmetry of special projections**

Along [001]  $p2$   
 $\mathbf{a}' = \mathbf{a}$   $\mathbf{b}' = \frac{1}{2}\mathbf{b}$   
 Origin at 0, 0, z

Along [100]  $c2mm$   
 $\mathbf{a}' = \mathbf{b}_p$   $\mathbf{b}' = \mathbf{c}$   
 Origin at x, 0, 0

Along [010]  $p2mm$   
 $\mathbf{a}' = \frac{1}{2}\mathbf{c}$   $\mathbf{b}' = \mathbf{a}_p$   
 Origin at 0, y, 0

**Maximal non-isomorphic subgroups**

- I** [2]A11*m* (*Cm*, 8) (1; 4)+  
 [2]A112 (*C2*, 5) (1; 2)+  
 [2]A $\bar{1}$  ( $P\bar{1}$ , 2) (1; 3)+
- IIa** [2]P112<sub>1</sub>/*b* ( $P2_1/c$ , 14) 1; 3; (2; 4) + (0,  $\frac{1}{2}$ ,  $\frac{1}{2}$ )  
 [2]P112<sub>2</sub>/*b* ( $P2/c$ , 13) 1; 2; (3; 4) + (0,  $\frac{1}{2}$ ,  $\frac{1}{2}$ )  
 [2]P112<sub>1</sub>/*m* ( $P2_1/m$ , 11) 1; 4; (2; 3) + (0,  $\frac{1}{2}$ ,  $\frac{1}{2}$ )  
 [2]P112<sub>2</sub>/*m* ( $P2/m$ , 10) 1; 2; 3; 4
- IIb** [2]A112/*a* ( $\mathbf{a}' = 2\mathbf{a}$ ) (*C2/c*, 15); [2]I112/*a* ( $\mathbf{a}' = 2\mathbf{a}$ ) (*C2/c*, 15)

**Maximal isomorphic subgroups of lowest index**

- IIc** [2]A112/*m* ( $\mathbf{a}' = 2\mathbf{a}$  or  $\mathbf{a}' = 2\mathbf{a}, \mathbf{b}' = 2\mathbf{a} + \mathbf{b}$ ) (*C2/m*, 12); [3]A112/*m* ( $\mathbf{c}' = 3\mathbf{c}$ ) (*C2/m*, 12)

**Minimal non-isomorphic supergroups**

- I** [2]C*mcm* (63); [2]C*mce* (64); [2]C*mmm* (65); [2]C*mme* (67); [2]F*mmm* (69); [2]I*mmm* (71); [2]I*bam* (72); [2]I*mma* (74);  
 [2]I4/*m* (87); [3]P $\bar{3}$ 1*m* (162); [3]P $\bar{3}$ 1 (164); [3]R $\bar{3}$ *m* (166)
- II** [2]P112/*m* ( $\mathbf{b}' = \frac{1}{2}\mathbf{b}, \mathbf{c}' = \frac{1}{2}\mathbf{c}$ ) ( $P2/m$ , 10)

$C2/m$

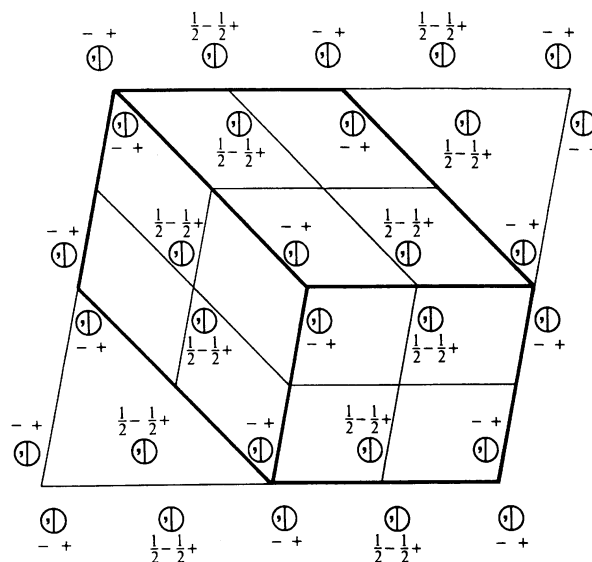
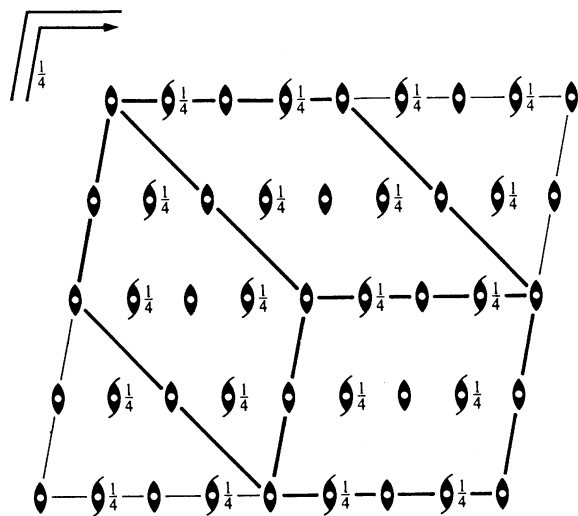
$C_{2h}^3$

$2/m$

Monoclinic

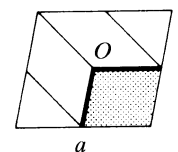
No. 12

UNIQUE AXIS  $c$ , DIFFERENT CELL CHOICES



$A112/m$

UNIQUE AXIS  $c$ , CELL CHOICE 1



Origin at centre ( $2/m$ )

Asymmetric unit  $0 \leq x \leq 1$ ;  $0 \leq y \leq \frac{1}{2}$ ;  $0 \leq z \leq \frac{1}{4}$

Generators selected (1);  $t(1,0,0)$ ;  $t(0,1,0)$ ;  $t(0,0,1)$ ;  $t(0, \frac{1}{2}, \frac{1}{2})$ ; (2); (3)

Positions

Multiplicity,  
Wyckoff letter,  
Site symmetry

Coordinates

$(0,0,0)+$   $(0, \frac{1}{2}, \frac{1}{2})+$

Reflection conditions

General:

8  $j$  1 (1)  $x, y, z$  (2)  $\bar{x}, \bar{y}, z$  (3)  $\bar{x}, \bar{y}, \bar{z}$  (4)  $x, y, \bar{z}$

$hkl$  :  $k+l=2n$   $h0l$  :  $l=2n$   
 $hk0$  :  $k=2n$   $00l$  :  $l=2n$   
 $0kl$  :  $k+l=2n$   $0k0$  :  $k=2n$

Special: as above, plus

4  $i$   $m$   $x, y, 0$   $\bar{x}, \bar{y}, 0$

no extra conditions

4  $h$  2  $\frac{1}{2}, 0, z$   $\frac{1}{2}, 0, \bar{z}$  4  $g$  2  $0, 0, z$   $0, 0, \bar{z}$

no extra conditions

4  $f$   $\bar{1}$   $\frac{1}{2}, \frac{1}{4}, \frac{1}{4}$   $\frac{1}{2}, \frac{3}{4}, \frac{1}{4}$  4  $e$   $\bar{1}$   $0, \frac{1}{4}, \frac{1}{4}$   $0, \frac{3}{4}, \frac{1}{4}$

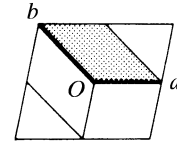
$hkl$  :  $k=2n$

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

no extra conditions

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

no extra conditions

$B112/m$ UNIQUE AXIS  $c$ , CELL CHOICE 2Origin at centre ( $2/m$ )Asymmetric unit  $0 \leq x \leq 1$ ;  $0 \leq y \leq \frac{1}{2}$ ;  $0 \leq z \leq \frac{1}{4}$ Generators selected (1);  $t(1,0,0)$ ;  $t(0,1,0)$ ;  $t(0,0,1)$ ;  $t(\frac{1}{2},0,\frac{1}{2})$ ; (2); (3)

## Positions

Multiplicity,  
Wyckoff letter,  
Site symmetry

Coordinates

 $(0,0,0)+ (\frac{1}{2},0,\frac{1}{2})+$ 

8	$j$	1	(1) $x,y,z$	(2) $\bar{x},\bar{y},z$	(3) $\bar{x},\bar{y},\bar{z}$	(4) $x,y,\bar{z}$
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4	$i$	$m$	$x,y,0$	$\bar{x},\bar{y},0$
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4	$h$	2	$\frac{1}{2},\frac{1}{2},z$	$\frac{1}{2},\frac{1}{2},\bar{z}$	4	$g$	2	$0,0,z$	$0,0,\bar{z}$
---	-----	---	-----------------------------	-----------------------------------	---	-----	---	---------	---------------

4	$f$	$\bar{1}$	$\frac{3}{4},\frac{1}{2},\frac{1}{4}$	$\frac{1}{4},\frac{1}{2},\frac{1}{4}$	4	$e$	$\bar{1}$	$\frac{1}{4},0,\frac{1}{4}$	$\frac{3}{4},0,\frac{1}{4}$
---	-----	-----------	---------------------------------------	---------------------------------------	---	-----	-----------	-----------------------------	-----------------------------

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

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

Reflection conditions

General:

$hkl$ : $h+l=2n$	$h0l$ : $h+l=2n$
$hk0$ : $h=2n$	$00l$ : $l=2n$
$0kl$ : $l=2n$	$h00$ : $h=2n$

Special: as above, plus

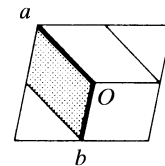
no extra conditions

no extra conditions

 $hkl$  :  $h=2n$ 

no extra conditions

no extra conditions

 $I112/m$ UNIQUE AXIS  $c$ , CELL CHOICE 3Origin at centre ( $2/m$ )Asymmetric unit  $0 \leq x \leq 1$ ;  $0 \leq y \leq \frac{1}{2}$ ;  $0 \leq z \leq \frac{1}{4}$ Generators selected (1);  $t(1,0,0)$ ;  $t(0,1,0)$ ;  $t(0,0,1)$ ;  $t(\frac{1}{2},\frac{1}{2},\frac{1}{2})$ ; (2); (3)

## Positions

Multiplicity,  
Wyckoff letter,  
Site symmetry

Coordinates

 $(0,0,0)+ (\frac{1}{2},\frac{1}{2},\frac{1}{2})+$ 

8	$j$	1	(1) $x,y,z$	(2) $\bar{x},\bar{y},z$	(3) $\bar{x},\bar{y},\bar{z}$	(4) $x,y,\bar{z}$
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4	$i$	$m$	$x,y,0$	$\bar{x},\bar{y},0$
---	-----	-----	---------	---------------------

4	$h$	2	$0,\frac{1}{2},z$	$0,\frac{1}{2},\bar{z}$	4	$g$	2	$0,0,z$	$0,0,\bar{z}$
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4	$f$	$\bar{1}$	$\frac{3}{4},\frac{1}{4},\frac{1}{4}$	$\frac{1}{4},\frac{3}{4},\frac{1}{4}$	4	$e$	$\bar{1}$	$\frac{3}{4},\frac{3}{4},\frac{1}{4}$	$\frac{1}{4},\frac{1}{4},\frac{1}{4}$
---	-----	-----------	---------------------------------------	---------------------------------------	---	-----	-----------	---------------------------------------	---------------------------------------

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

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

Reflection conditions

General:

$hkl$ : $h+k+l=2n$	$00l$ : $l=2n$
$hk0$ : $h+k=2n$	$h00$ : $h=2n$
$0kl$ : $k+l=2n$	$0k0$ : $k=2n$
$h0l$ : $h+l=2n$	

Special: as above, plus

no extra conditions

no extra conditions

 $hkl$  :  $l=2n$ 

no extra conditions

no extra conditions