

Trigonal

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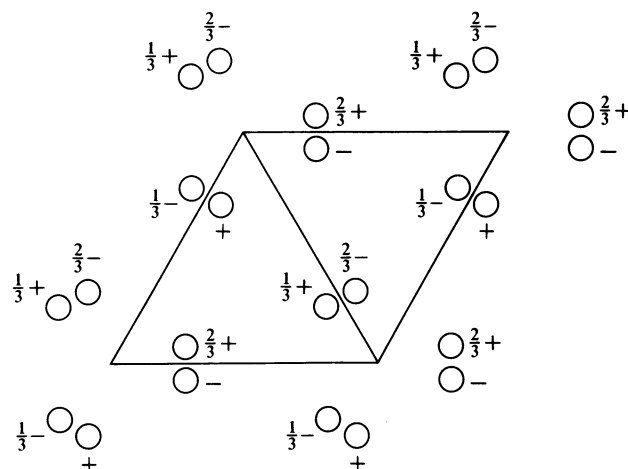
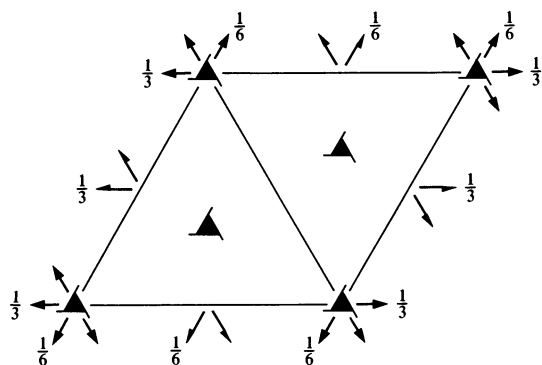
$D_3^6$

$P3_221$

Patterson symmetry  $P\bar{3}m1$

$P3_221$

No. 154



Origin on  $2[110]$  at  $3_2(1,1,2)1$

**Asymmetric unit**  $0 \leq x \leq 1; 0 \leq y \leq 1; 0 \leq z \leq \frac{1}{6}$   
 Vertices  $0,0,0$   $1,0,0$   $1,1,0$   $0,1,0$   
 $0,0,\frac{1}{6}$   $1,0,\frac{1}{6}$   $1,1,\frac{1}{6}$   $0,1,\frac{1}{6}$

**Symmetry operations**

- (1) 1
- (2)  $3^+(0,0,\frac{2}{3})$   $0,0,z$
- (3)  $3^-(0,0,\frac{1}{3})$   $0,0,z$
- (4)  $2$   $x,x,0$
- (5)  $2$   $x,0,\frac{1}{6}$
- (6)  $2$   $0,y,\frac{1}{3}$

**Generators selected** (1);  $t(1,0,0)$ ;  $t(0,1,0)$ ;  $t(0,0,1)$ ; (2); (4)

**Positions**

Multiplicity, Wyckoff letter, Site symmetry	Coordinates	Reflection conditions
6 <i>c</i> 1	(1) $x,y,z$ (2) $\bar{y},x-y,z+\frac{2}{3}$ (3) $\bar{x}+y,\bar{x},z+\frac{1}{3}$ (4) $y,x,\bar{z}$ (5) $x-y,\bar{y},\bar{z}+\frac{1}{3}$ (6) $\bar{x},\bar{x}+y,\bar{z}+\frac{2}{3}$	General: $000l: l = 3n$  Special: no extra conditions
3 <i>b</i> .2.	$x,0,\frac{1}{6}$ $0,x,\frac{5}{6}$ $\bar{x},\bar{x},\frac{1}{2}$	
3 <i>a</i> .2.	$x,0,\frac{2}{3}$ $0,x,\frac{1}{3}$ $\bar{x},\bar{x},0$	

**Symmetry of special projections**

Along  $[001]$   $p31m$   $\mathbf{a}' = \mathbf{a}$   $\mathbf{b}' = \mathbf{b}$  Origin at  $0,0,z$   
 Along  $[100]$   $p2$   $\mathbf{a}' = \frac{1}{2}(\mathbf{a} + 2\mathbf{b})$   $\mathbf{b}' = \mathbf{c}$  Origin at  $x,0,\frac{1}{6}$   
 Along  $[210]$   $p11m$   $\mathbf{a}' = \frac{1}{2}\mathbf{b}$   $\mathbf{b}' = \mathbf{c}$  Origin at  $x,\frac{1}{2}x,\frac{1}{3}$