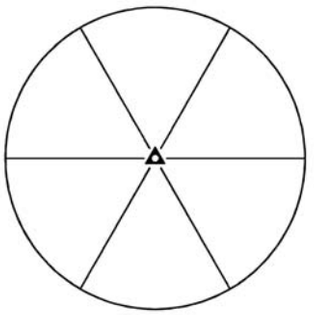
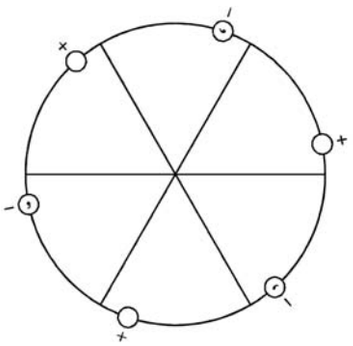
# $p\bar{3}$ $\bar{3}$ Trigonal

## No. 45 $p\bar{3}$ Patterson symmetry $p\bar{3}$





**Origin** at centre ($\bar{3}$)

**Asymmetric unit** $0 \le x; \quad 0 \le y; \quad 0 \le z \le \frac{1}{2}$

**Symmetry operations**

(1) 1
$(1|0,0,0)$

(2) $3^+$ $0,0,z$
$(3_z|0,0,0)$

(3) $3^-$ $0,0,z$
$(3_z^{-1}|0,0,0)$

(4) $\bar{1}$ $0,0,0$
$(\bar{1}|0,0,0)$

(5) $\bar{3}^+$ $0,0,z$; $0,0,0$
$(\bar{3}_z|0,0,0)$

(6) $\bar{3}^-$ $0,0,z$; $0,0,0$
$(\bar{3}_z^{-1}|0,0,0)$

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

**Positions**

| Multiplicity, Wyckoff letter, Site symmetry | | | Coordinates | | | Reflection conditions |
|---|---|---|---|---|---|---|
| | | | | | | General: |
| 6 | $d$ | 1 | (1) $x,y,z$ | (2) $\bar{y},x-y,z$ | (3) $\bar{x}+y,\bar{x},z$ | no conditions |
| | | | (4) $\bar{x},\bar{y},\bar{z}$ | (5) $y,\bar{x}+y,\bar{z}$ | (6) $x-y,x,\bar{z}$ | |
| | | | | | | Special: no extra conditions |
| 2 | $c$ | 3 . . | $0,0,z$ | $0,0,\bar{z}$ | | |
| 1 | $b$ | $\bar{3}$ . . | $0,0,\frac{1}{2}$ | | | |
| 1 | $a$ | $\bar{3}$ . . | $0,0,0$ | | | |

**Symmetry of special projections**

Along [001] 6
Origin at $0,0,z$

Along [100] $\not{p}2\,1\,1$
$\mathbf{a}' = \mathbf{c}$
Origin at $x,0,0$

Along [210] $\not{p}2\,1\,1$
$\mathbf{a}' = \mathbf{c}$
Origin at $x,\frac{1}{2}x,0$

**Maximal non-isotypic non-enantiomorphic subgroups**

**I** [2] $\not{p}3$ (42) 1; 2; 3
[3] $\not{p}\bar{1}$ (2) 1; 4

**IIa** none

**IIb** none

**Maximal isotypic subgroups and enantiomorphic subgroups of lowest index**

**IIc** [2] $\not{p}\bar{3}$ ($\mathbf{c}' = 2\mathbf{c}$) (45)

**Minimal non-isotypic non-enantiomorphic supergroups**

**I** [2] $\not{p}\bar{3}\,1\,m$ (51); [2] $\not{p}\bar{3}\,1\,c$ (52); [2] $\not{p}6/m$ (60); [2] $\not{p}6_3/m$ (61)

**II** none