

Cubic

23

 $T^5$  $I2_13$ Patterson symmetry  $I m \bar{3}$  $I 2_1 3$ 

No. 199

**Origin** on 3 [1 1 1] at midpoint of three non-intersecting pairs of parallel 2 axes and of three non-intersecting pairs of parallel 2<sub>1</sub> axes

**Positions**

Multiplicity,  
Wyckoff letter,  
Site symmetry,  
Coordinates

**Patterson peaks (U, V, W (Multiplicity))**

24	c	1	x,y,z; 1/2-x,-y,1/2+z; etc. <b>0, 0, 0 (24)</b> 1/2, 1/2+2y, 2z (2) 1/2+x+z, x+y, 1/2-y+z (2)	1/2+2x, 2y, 1/2 (2) x-z, -x+y, -y+z (2) x+z, 1/2-x+y, 1/2+y+z (2)	2x, 1/2, 1/2+2z (2) 1/2+x-z, 1/2+x+y, y+z (2)
12	b	2 . .	x,0,1/4; 1/2-x,0,3/4; etc. <b>0, 0, 0 (12)</b>	1/2+2x, 0, 1/2 (2)	3/4+x, -x, 1/4 (2)
8	a	. 3 .	x,x,x; 1/2-x,-x,1/2+x; etc. <b>0, 0, 0 (8)</b>	1/2+2x, 2x, 1/2 (2)	

**Vectors between two sets of unique atoms**

Wyckoff letters

Wyckoff letters

c,	c	$x1-x2, y1-y2, z1-z2 (2)$ $1/2+x1+x2, y1+y2, 1/2+z1-z2 (2)$ $x1+x2, 1/2+y1-y2, 1/2+z1+z2 (2)$ $1/2+x1-x2, 1/2+y1+y2, z1+z2 (2)$ $x1-z2, y1-x2, z1-y2 (2)$ $1/2+x1-z2, 1/2+y1+x2, z1+y2 (2)$ $1/2+x1+z2, y1+x2, 1/2+z1-y2 (2)$ $x1+z2, 1/2+y1-x2, 1/2+z1+y2 (2)$ $x1-y2, y1-z2, z1-x2 (2)$ $x1+y2, 1/2+y1-z2, 1/2+z1+x2 (2)$ $1/2+x1-y2, 1/2+y1+z2, z1+x2 (2)$ $1/2+x1+y2, y1+z2, 1/2+z1-x2 (2)$	b,	b	$x1+x2, 1/2+y1-x2, 1/2+z1+x2 (2)$ $1/2+x1-x2, 1/2+y1+x2, z1+x2 (2)$ $x1-x2, 0, 0 (4)$ $1/2+x1+x2, 0, 1/2 (4)$ $3/4+x1, -x2, 1/4 (2)$ $x1, 3/4, 1/4-x2 (2)$ $3/4-x1, x2, 1/4 (2)$ $-x1, 3/4, 1/4+x2 (2)$
c,	b	$x1-x2, y1, 3/4+z1 (2)$ $1/2+x1+x2, y1, 1/4+z1 (2)$ $3/4+x1, y1-x2, z1 (2)$ $1/4+x1, 1/2+y1+x2, z1 (2)$ $x1, 3/4+y1, z1-x2 (2)$ $x1, 1/4+y1, 1/2+z1+x2 (2)$ $-x1+x2, -y1, 3/4-z1 (2)$ $1/2-x1-x2, -y1, 1/4-z1 (2)$ $3/4-x1, -y1+x2, -z1 (2)$ $1/4-x1, 1/2-y1-x2, -z1 (2)$ $-x1, 3/4-y1, -z1+x2 (2)$ $-x1, 1/4-y1, 1/2-z1-x2 (2)$	b,	a	$x1-x2, -x2, 1/4-x2 (2)$ $1/2+x1+x2, x2, 3/4-x2 (2)$ $-x1+x2, x2, 1/4+x2 (2)$ $1/2-x1-x2, -x2, 3/4+x2 (2)$
c,	a	$x1-x2, y1-x2, z1-x2 (2)$ $1/2+x1+x2, y1+x2, 1/2+z1-x2 (2)$	a,	a	$x1-x2, x1-x2, x1-x2 (2)$ $1/2+x1+x2, x1+x2, 1/2+x1-x2 (2)$