D_6^5 No. 181 $P6_422$

	Axes	Coordinates	Wyckoff positions					
			$3a$	$3b$ $6g$	$3c$ $6h$	$3d$ $6i$	$6e$ $6j$	$6f$ $12k$
I Maximal *translationengleiche* subgroups								
[2] $P6_4$ (172)			$3a$	$3a$ $6c$	$3b$ $6c$	$3b$ $6c$	$2\times3a$ $6c$	$2\times3b$ $2\times6c$
[2] $P3_121$ (152)		$x,y,z+\frac{1}{3}$	$3a$	$3b$ $2\times3a$	$3a$ $2\times3b$	$3b$ $6c$	$6c$ $6c$	$6c$ $2\times6c$
[2] $P3_112$ (151)		$x,y,z-\frac{1}{3}$	$3a$	$3b$ $6c$	$3a$ $6c$	$3b$ $2\times3a$	$6c$ $2\times3b$	$6c$ $2\times6c$
[3] $C222$ (21)	**a**, **a**+2**b**, **c**	$x-\frac{1}{2}y,\frac{1}{2}y,z$	$2a;4i$	$2d;4i$ $4e;8l$	$2b;4k$ $4f;8l$	$2c;4k$ $4g;8l$	$3\times4i$ $4h;8l$	$4j;2\times4k$ $3\times8l$
conjugate: **b**, −2**a**−**b**, **c**		$-\frac{1}{2}x+y,-\frac{1}{2}x,z-\frac{1}{3}$						
conjugate: −**a**−**b**, **a**−**b**, **c**		$-\frac{1}{2}(x+y),\frac{1}{2}(x-y),z+\frac{1}{3}$						
II Maximal *klassengleiche* subgroups								
Enlarged unit cell, non-isomorphic								
[2] $P6_522$ (179)	**a**,**b**,2**c**	$x,y,\frac{1}{2}z;\ +(0,0,\frac{1}{2})$	$6a$	$6b$ $2\times6a$	$6a$ $12c$	$6b$ $12c$	$12c$ $2\times6b$	$12c$ $2\times12c$
[2] $P6_522$ (179)	**a**,**b**,2**c**	$x,y,\frac{1}{2}z+\frac{1}{4};+(0,0,\frac{1}{2})$	$6b$	$6a$ $12c$	$6b$ $2\times6a$	$6a$ $2\times6b$	$12c$ $12c$	$12c$ $2\times12c$
Enlarged unit cell, isomorphic								
[2] $P6_222$ (180)	**a**, **b**, 2**c**	$x,y,\frac{1}{2}z;\ +(0,0,\frac{1}{2})$	$3a;3b$	$6e$ $6g;6h$	$3c;3d$ $12k$	$6f$ $6i;6j$	$2\times6e$ $12k$	$2\times6f$ $2\times12k$
[2] $P6_222$ (180)	**a**, **b**, 2**c**	$x,y,\frac{1}{2}z+\frac{1}{4};+(0,0,\frac{1}{2})$	$6e$	$3a;3b$ $12k$	$6f$ $6g;6h$	$3c;3d$ $12k$	$2\times6e$ $6i;6j$	$2\times6f$ $2\times12k$
[5] $P6_222$ (180)	**a**, **b**, 5**c**	$x,y,\frac{1}{5}z;\ \pm(0,0,\frac{1}{5});$ $\pm(0,0,\frac{2}{5})$	$3a;2\times6e$	$3b;2\times6e$ $6g;2\times12k$	$3c;2\times6f$ $6h;2\times12k$	$3d;2\times6f$ $6i;2\times12k$	$5\times6e$ $6j;2\times12k$	$5\times6f$ $5\times12k$
[p] $P6_222$ (180)	**a**, **b**, p**c** $p=\text{prime}=6n-1;\ u=1,\ldots,p-1$	$x,y,\frac{1}{p}z;\ +(0,0,\frac{u}{p})$	$3a;\frac{p-1}{2}\times6e$	$3b;\frac{p-1}{2}\times6e$ $6g;\frac{p-1}{2}\times12k$	$3c;\frac{p-1}{2}\times6f$ $6h;\frac{p-1}{2}\times12k$	$3d;\frac{p-1}{2}\times6f$ $6i;\frac{p-1}{2}\times12k$	$p\times6e$ $6j;\frac{p-1}{2}\times12k$	$p\times6f$ $p\times12k$
[7] $P6_422$	**a**, **b**, 7**c**	$x,y,\frac{1}{7}z;\ \pm(0,0,\frac{1}{7})$ $\pm(0,0,\frac{2}{7});\ \pm(0,0,\frac{3}{7})$	$3a;3\times6e$	$3b;3\times6e$ $6g;3\times12k$	$3c;3\times6f$ $6h;3\times12k$	$3d;3\times6f$ $6i;3\times12k$	$7\times6e$ $6j;3\times12k$	$7\times6f$ $7\times12k$
[p] $P6_422$ $p=\text{prime}=6n+1;\ u=1,\ldots,p-1$	**a**, **b**, p**c**	$x,y,\frac{1}{p}z;\ +(0,0,\frac{u}{p})$	$3a;\frac{p-1}{2}\times6e$	$3b;\frac{p-1}{2}\times6e$ $6g;\frac{p-1}{2}\times12k$	$3c;\frac{p-1}{2}\times6f$ $6h;\frac{p-1}{2}\times12k$	$3d;\frac{p-1}{2}\times6f$ $6i;\frac{p-1}{2}\times12k$	$p\times6e$ $6j;\frac{p-1}{2}\times12k$	$p\times6f$ $p\times12k$
[3] $P6_422$	2**a**+**b**, −**a**+**b**, **c**	$\frac{1}{3}(x+y),\frac{1}{3}(-x+2y),$ $z-\frac{1}{3};\ \pm(\frac{1}{3},\frac{2}{3},0)$	$3a;6i$	$3b;6j$ $3\times6i$	$3c;6i$ $3\times6j$	$3d;6j$ $6g;12k$	$6e;12k$ $6h;12k$	$6f;12k$ $3\times12k$
[4] $P6_422$	2**a**, 2**b**, **c**	$\frac{1}{2}x,\frac{1}{2}y,z;\ +(\frac{1}{2},0,0);$ $+(0,\frac{1}{2},0);\ +(\frac{1}{2},\frac{1}{2},0)$	$3a;3c;6f$	$3b;3d;6f$ $2\times6g;12k$	$6g;6i$ $2\times6h;12k$	$6h;6j$ $2\times6i;12k$	$6e;3\times6f$ $2\times6j;12k$	$2\times12k$ $4\times12k$
[p^2]$P6_422$ $p=\text{prime}>4;$	p**a**, p**b**, **c**	$\frac{1}{p}x,\frac{1}{p}y,z;\ +(\frac{u}{p},\frac{v}{p},0)$ $u,v=1,\ldots,p-1$	$3a;\frac{p-1}{2}\times6g;$ $\frac{p-1}{2}\times6i;$ $\frac{(p-1)^2}{4}\times12k$	$3b;\frac{p-1}{2}\times6h;$ $\frac{p-1}{2}\times6j;$ $\frac{(p-1)^2}{4}\times12k$ $p\times6g;$ $\frac{p(p-1)}{2}\times12k$	$3c;\frac{p-1}{2}\times6g;$ $\frac{p-1}{2}\times6i;$ $\frac{(p-1)^2}{4}\times12k$ $p\times6h;$ $\frac{p(p-1)}{2}\times12k$	$3d;\frac{p-1}{2}\times6h;$ $\frac{p-1}{2}\times6j;$ $\frac{(p-1)^2}{4}\times12k$ $p\times6i;$ $\frac{p(p-1)}{2}\times12k$	$6e;\frac{p^2-1}{2}\times12k$ $p\times6j;$ $\frac{p(p-1)}{2}\times12k$	$6f;\frac{p^2-1}{2}\times12k$ $p^2\times12k$