Manganese-leonite 185K [$K_2Mn(SO_4)_2{\cdot}4H_2O$] Structure: A8B2CD12E2_mC200_15_8f_2f_ae_2e11f_2f-001

This structure originally had the label `A8B2CD12E2_mC200_15_8f_2f_ce_2e11f_2f`. Calls to that address will be redirected here.

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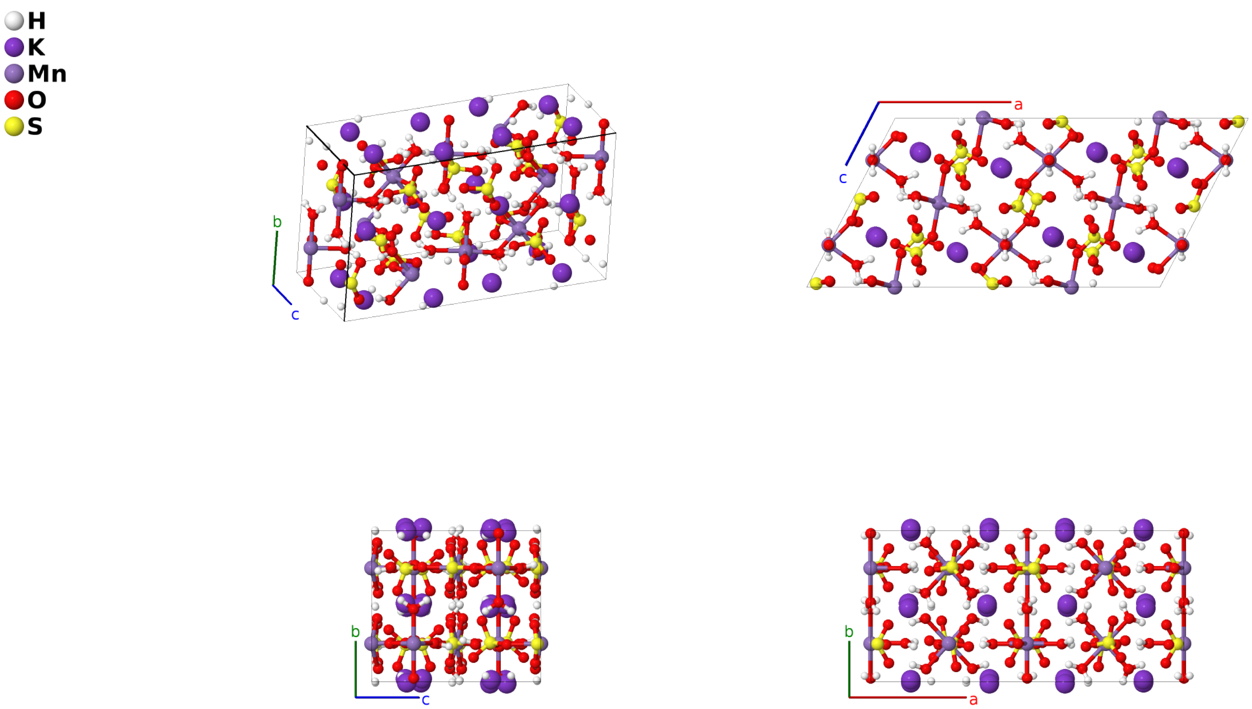
https://aflow.org/p/5SVW

https://aflow.org/p/A8B2CD12E2_mC200_15_8f_2f_ae_2e11f_2f-001



Prototype $H_8K4_2MnO_{12}S_2$

AFLOW prototype label A8B2CD12E2_mC200_15_8f_2f_ae_2e11f_2f-001

Mineral name manganese-leonite

ICSD 92701

Pearson symbol mC200

Space group number 15

Space group symbol $C2/c$

AFLOW prototype command `aflow --proto=A8B2CD12E2_mC200_15_8f_2f_ae_2e11f_2f-001`
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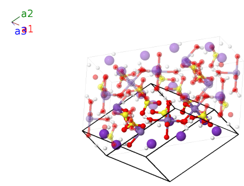
Other compounds with this structure

$K_2Mg(SO_4)_2 \cdot 4H_2O$ (leonite), $K_2Fe(SO_4)_2 \cdot 4H_2O$ (mereiterite)

- Manganese-leonite is found in three forms:
  - A low-temperature structure, stable below 168K.
  - This intermediate-temperature structure, stable in between 168 and 205K.
  - The room temperature structure, *Strukturbericht* $H4_{23}$, stable above 205K.
- The current structure orders all of the SO_4 radicals. The data was taken from a sample held at 185K.
- (Hertweck, 2001) give crystallographic information of the 185K phase in the $I2/a$ setting of space group #15, with the origin supposedly shifted by $(\frac{1}{4}, \frac{1}{4}, \frac{1}{2})$ from the -1 point on the a-glide plane (the symmetry operations for this setting may be found here). We were unable to use their data to construct a realistic crystal structure. Instead, we used the interpretation of their results by (Villars, 2016) to put the structure in the standard $C2/c$ setting of space group #15. Unfortunately this does not agree with the ICSD entry. We are investigating further and will update this page when we have more information.

Base-centered Monoclinic primitive vectors

$$\mathbf{a_1} = \frac{1}{2}a\,\hat{\mathbf{x}} - \frac{1}{2}b\,\hat{\mathbf{y}}$$
$$\mathbf{a_2} = \frac{1}{2}a\,\hat{\mathbf{x}} + \frac{1}{2}b\,\hat{\mathbf{y}}$$
$$\mathbf{a_3} = c\cos\beta\,\hat{\mathbf{x}} + c\sin\beta\,\hat{\mathbf{z}}$$



Basis vectors

		Lattice coordinates		Cartesian coordinates	Wyckoff position	Atom type
$\mathbf{B_1}$	=	0	=	0	(4a)	Mn I
$\mathbf{B_2}$	=	$\frac{1}{2}\,\mathbf{a}_3$	=	$\frac{1}{2}c\cos\beta\,\hat{\mathbf{x}} + \frac{1}{2}c\sin\beta\,\hat{\mathbf{z}}$	(4a)	Mn I
$\mathbf{B_3}$	=	$-y_2\,\mathbf{a}_1 + y_2\,\mathbf{a}_2 + \frac{1}{4}\,\mathbf{a}_3$	=	$\frac{1}{4}c\cos\beta\,\hat{\mathbf{x}} + by_2\,\hat{\mathbf{y}} + \frac{1}{4}c\sin\beta\,\hat{\mathbf{z}}$	(4e)	Mn II
$\mathbf{B_4}$	=	$y_2\,\mathbf{a}_1 - y_2\,\mathbf{a}_2 + \frac{3}{4}\,\mathbf{a}_3$	=	$\frac{3}{4}c\cos\beta\,\hat{\mathbf{x}} - by_2\,\hat{\mathbf{y}} + \frac{3}{4}c\sin\beta\,\hat{\mathbf{z}}$	(4e)	Mn II
$\mathbf{B_5}$	=	$-y_3\,\mathbf{a}_1 + y_3\,\mathbf{a}_2 + \frac{1}{4}\,\mathbf{a}_3$	=	$\frac{1}{4}c\cos\beta\,\hat{\mathbf{x}} + by_3\,\hat{\mathbf{y}} + \frac{1}{4}c\sin\beta\,\hat{\mathbf{z}}$	(4e)	O I
$\mathbf{B_6}$	=	$y_3\,\mathbf{a}_1 - y_3\,\mathbf{a}_2 + \frac{3}{4}\,\mathbf{a}_3$	=	$\frac{3}{4}c\cos\beta\,\hat{\mathbf{x}} - by_3\,\hat{\mathbf{y}} + \frac{3}{4}c\sin\beta\,\hat{\mathbf{z}}$	(4e)	O I
$\mathbf{B_7}$	=	$-y_4\,\mathbf{a}_1 + y_4\,\mathbf{a}_2 + \frac{1}{4}\,\mathbf{a}_3$	=	$\frac{1}{4}c\cos\beta\,\hat{\mathbf{x}} + by_4\,\hat{\mathbf{y}} + \frac{1}{4}c\sin\beta\,\hat{\mathbf{z}}$	(4e)	O II
$\mathbf{B_8}$	=	$y_4\,\mathbf{a}_1 - y_4\,\mathbf{a}_2 + \frac{3}{4}\,\mathbf{a}_3$	=	$\frac{3}{4}c\cos\beta\,\hat{\mathbf{x}} - by_4\,\hat{\mathbf{y}} + \frac{3}{4}c\sin\beta\,\hat{\mathbf{z}}$	(4e)	O II
$\mathbf{B_9}$	=	$(x_5 - y_5)\,\mathbf{a}_1 + (x_5 + y_5)\,\mathbf{a}_2 + z_5\,\mathbf{a}_3$	=	$(ax_5 + cz_5\cos\beta)\,\hat{\mathbf{x}} + by_5\,\hat{\mathbf{y}} + cz_5\sin\beta\,\hat{\mathbf{z}}$	(8f)	H I
$\mathbf{B_{10}}$	=	$-(x_5 + y_5)\,\mathbf{a}_1 - (x_5 - y_5)\,\mathbf{a}_2 - \left(z_5 - \frac{1}{2}\right)\,\mathbf{a}_3$	=	$-\left(ax_5 + c\left(z_5 - \frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} + by_5\,\hat{\mathbf{y}} - c\left(z_5 - \frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	H I
$\mathbf{B_{11}}$	=	$-(x_5 - y_5)\,\mathbf{a}_1 - (x_5 + y_5)\,\mathbf{a}_2 - z_5\,\mathbf{a}_3$	=	$-(ax_5 + cz_5\cos\beta)\,\hat{\mathbf{x}} - by_5\,\hat{\mathbf{y}} - cz_5\sin\beta\,\hat{\mathbf{z}}$	(8f)	H I
$\mathbf{B_{12}}$	=	$(x_5 + y_5)\,\mathbf{a}_1 + (x_5 - y_5)\,\mathbf{a}_2 + \left(z_5 + \frac{1}{2}\right)\,\mathbf{a}_3$	=	$\left(ax_5 + c\left(z_5 + \frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} - by_5\,\hat{\mathbf{y}} + c\left(z_5 + \frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	H I
$\mathbf{B_{13}}$	=	$(x_6 - y_6)\,\mathbf{a}_1 + (x_6 + y_6)\,\mathbf{a}_2 + z_6\,\mathbf{a}_3$	=	$(ax_6 + cz_6\cos\beta)\,\hat{\mathbf{x}} + by_6\,\hat{\mathbf{y}} + cz_6\sin\beta\,\hat{\mathbf{z}}$	(8f)	H II
$\mathbf{B_{14}}$	=	$-(x_6 + y_6)\,\mathbf{a}_1 - (x_6 - y_6)\,\mathbf{a}_2 - \left(z_6 - \frac{1}{2}\right)\,\mathbf{a}_3$	=	$-\left(ax_6 + c\left(z_6 - \frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} + by_6\,\hat{\mathbf{y}} - c\left(z_6 - \frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	H II

$\mathbf{B_{15}}$	=	$-\left(x_{6}-y_{6}\right)\,\mathbf{a}_{1}-\left(x_{6}+y_{6}\right)\,\mathbf{a}_{2}-z_{6}\,\mathbf{a}_{3}$	=	$-\left(ax_{6}+cz_{6}\cos\beta\right)\,\mathbf{\hat{x}}-by_{6}\,\mathbf{\hat{y}}-cz_{6}\sin\beta\,\mathbf{\hat{z}}$	(8f)	H II
$\mathbf{B_{16}}$	=	$\left(x_{6}+y_{6}\right)\,\mathbf{a}_{1}+\left(x_{6}-y_{6}\right)\,\mathbf{a}_{2}+\left(z_{6}+\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$\left(ax_{6}+c\left(z_{6}+\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}-by_{6}\,\mathbf{\hat{y}}+c\left(z_{6}+\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	H II
$\mathbf{B_{17}}$	=	$\left(x_{7}-y_{7}\right)\,\mathbf{a}_{1}+\left(x_{7}+y_{7}\right)\,\mathbf{a}_{2}+z_{7}\,\mathbf{a}_{3}$	=	$\left(ax_{7}+cz_{7}\cos\beta\right)\,\mathbf{\hat{x}}+by_{7}\,\mathbf{\hat{y}}+cz_{7}\sin\beta\,\mathbf{\hat{z}}$	(8f)	H III
$\mathbf{B_{18}}$	=	$-\left(x_{7}+y_{7}\right)\,\mathbf{a}_{1}-\left(x_{7}-y_{7}\right)\,\mathbf{a}_{2}-\left(z_{7}-\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$-\left(ax_{7}+c\left(z_{7}-\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}+by_{7}\,\mathbf{\hat{y}}-c\left(z_{7}-\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	H III
$\mathbf{B_{19}}$	=	$-\left(x_{7}-y_{7}\right)\,\mathbf{a}_{1}-\left(x_{7}+y_{7}\right)\,\mathbf{a}_{2}-z_{7}\,\mathbf{a}_{3}$	=	$-\left(ax_{7}+cz_{7}\cos\beta\right)\,\mathbf{\hat{x}}-by_{7}\,\mathbf{\hat{y}}-cz_{7}\sin\beta\,\mathbf{\hat{z}}$	(8f)	H III
$\mathbf{B_{20}}$	=	$\left(x_{7}+y_{7}\right)\,\mathbf{a}_{1}+\left(x_{7}-y_{7}\right)\,\mathbf{a}_{2}+\left(z_{7}+\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$\left(ax_{7}+c\left(z_{7}+\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}-by_{7}\,\mathbf{\hat{y}}+c\left(z_{7}+\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	H III
$\mathbf{B_{21}}$	=	$\left(x_{8}-y_{8}\right)\,\mathbf{a}_{1}+\left(x_{8}+y_{8}\right)\,\mathbf{a}_{2}+z_{8}\,\mathbf{a}_{3}$	=	$\left(ax_{8}+cz_{8}\cos\beta\right)\,\mathbf{\hat{x}}+by_{8}\,\mathbf{\hat{y}}+cz_{8}\sin\beta\,\mathbf{\hat{z}}$	(8f)	H IV
$\mathbf{B_{22}}$	=	$-\left(x_{8}+y_{8}\right)\,\mathbf{a}_{1}-\left(x_{8}-y_{8}\right)\,\mathbf{a}_{2}-\left(z_{8}-\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$-\left(ax_{8}+c\left(z_{8}-\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}+by_{8}\,\mathbf{\hat{y}}-c\left(z_{8}-\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	H IV
$\mathbf{B_{23}}$	=	$-\left(x_{8}-y_{8}\right)\,\mathbf{a}_{1}-\left(x_{8}+y_{8}\right)\,\mathbf{a}_{2}-z_{8}\,\mathbf{a}_{3}$	=	$-\left(ax_{8}+cz_{8}\cos\beta\right)\,\mathbf{\hat{x}}-by_{8}\,\mathbf{\hat{y}}-cz_{8}\sin\beta\,\mathbf{\hat{z}}$	(8f)	H IV
$\mathbf{B_{24}}$	=	$\left(x_{8}+y_{8}\right)\,\mathbf{a}_{1}+\left(x_{8}-y_{8}\right)\,\mathbf{a}_{2}+\left(z_{8}+\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$\left(ax_{8}+c\left(z_{8}+\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}-by_{8}\,\mathbf{\hat{y}}+c\left(z_{8}+\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	H IV
$\mathbf{B_{25}}$	=	$\left(x_{9}-y_{9}\right)\,\mathbf{a}_{1}+\left(x_{9}+y_{9}\right)\,\mathbf{a}_{2}+z_{9}\,\mathbf{a}_{3}$	=	$\left(ax_{9}+cz_{9}\cos\beta\right)\,\mathbf{\hat{x}}+by_{9}\,\mathbf{\hat{y}}+cz_{9}\sin\beta\,\mathbf{\hat{z}}$	(8f)	H V
$\mathbf{B_{26}}$	=	$-\left(x_{9}+y_{9}\right)\,\mathbf{a}_{1}-\left(x_{9}-y_{9}\right)\,\mathbf{a}_{2}-\left(z_{9}-\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$-\left(ax_{9}+c\left(z_{9}-\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}+by_{9}\,\mathbf{\hat{y}}-c\left(z_{9}-\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	H V
$\mathbf{B_{27}}$	=	$-\left(x_{9}-y_{9}\right)\,\mathbf{a}_{1}-\left(x_{9}+y_{9}\right)\,\mathbf{a}_{2}-z_{9}\,\mathbf{a}_{3}$	=	$-\left(ax_{9}+cz_{9}\cos\beta\right)\,\mathbf{\hat{x}}-by_{9}\,\mathbf{\hat{y}}-cz_{9}\sin\beta\,\mathbf{\hat{z}}$	(8f)	H V
$\mathbf{B_{28}}$	=	$\left(x_{9}+y_{9}\right)\,\mathbf{a}_{1}+\left(x_{9}-y_{9}\right)\,\mathbf{a}_{2}+\left(z_{9}+\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$\left(ax_{9}+c\left(z_{9}+\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}-by_{9}\,\mathbf{\hat{y}}+c\left(z_{9}+\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	H V
$\mathbf{B_{29}}$	=	$\left(x_{10}-y_{10}\right)\,\mathbf{a}_{1}+\left(x_{10}+y_{10}\right)\,\mathbf{a}_{2}+z_{10}\,\mathbf{a}_{3}$	=	$\left(ax_{10}+cz_{10}\cos\beta\right)\,\mathbf{\hat{x}}+by_{10}\,\mathbf{\hat{y}}+cz_{10}\sin\beta\,\mathbf{\hat{z}}$	(8f)	H VI
$\mathbf{B_{30}}$	=	$-\left(x_{10}+y_{10}\right)\,\mathbf{a}_{1}-\left(x_{10}-y_{10}\right)\,\mathbf{a}_{2}-\left(z_{10}-\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$-\left(ax_{10}+c\left(z_{10}-\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}+by_{10}\,\mathbf{\hat{y}}-c\left(z_{10}-\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	H VI
$\mathbf{B_{31}}$	=	$-\left(x_{10}-y_{10}\right)\,\mathbf{a}_{1}-\left(x_{10}+y_{10}\right)\,\mathbf{a}_{2}-z_{10}\,\mathbf{a}_{3}$	=	$-\left(ax_{10}+cz_{10}\cos\beta\right)\,\mathbf{\hat{x}}-by_{10}\,\mathbf{\hat{y}}-cz_{10}\sin\beta\,\mathbf{\hat{z}}$	(8f)	H VI
$\mathbf{B_{32}}$	=	$\left(x_{10}+y_{10}\right)\,\mathbf{a}_{1}+\left(x_{10}-y_{10}\right)\,\mathbf{a}_{2}+\left(z_{10}+\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$\left(ax_{10}+c\left(z_{10}+\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}-by_{10}\,\mathbf{\hat{y}}+c\left(z_{10}+\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	H VI
$\mathbf{B_{33}}$	=	$\left(x_{11}-y_{11}\right)\,\mathbf{a}_{1}+\left(x_{11}+y_{11}\right)\,\mathbf{a}_{2}+z_{11}\,\mathbf{a}_{3}$	=	$\left(ax_{11}+cz_{11}\cos\beta\right)\,\mathbf{\hat{x}}+by_{11}\,\mathbf{\hat{y}}+cz_{11}\sin\beta\,\mathbf{\hat{z}}$	(8f)	H VII
$\mathbf{B_{34}}$	=	$-\left(x_{11}+y_{11}\right)\,\mathbf{a}_{1}-\left(x_{11}-y_{11}\right)\,\mathbf{a}_{2}-\left(z_{11}-\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$-\left(ax_{11}+c\left(z_{11}-\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}+by_{11}\,\mathbf{\hat{y}}-c\left(z_{11}-\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	H VII
$\mathbf{B_{35}}$	=	$-\left(x_{11}-y_{11}\right)\,\mathbf{a}_{1}-\left(x_{11}+y_{11}\right)\,\mathbf{a}_{2}-z_{11}\,\mathbf{a}_{3}$	=	$-\left(ax_{11}+cz_{11}\cos\beta\right)\,\mathbf{\hat{x}}-by_{11}\,\mathbf{\hat{y}}-cz_{11}\sin\beta\,\mathbf{\hat{z}}$	(8f)	H VII
$\mathbf{B_{36}}$	=	$\left(x_{11}+y_{11}\right)\,\mathbf{a}_{1}+\left(x_{11}-y_{11}\right)\,\mathbf{a}_{2}+\left(z_{11}+\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$\left(ax_{11}+c\left(z_{11}+\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}-by_{11}\,\mathbf{\hat{y}}+c\left(z_{11}+\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	H VII
$\mathbf{B_{37}}$	=	$\left(x_{12}-y_{12}\right)\,\mathbf{a}_{1}+\left(x_{12}+y_{12}\right)\,\mathbf{a}_{2}+z_{12}\,\mathbf{a}_{3}$	=	$\left(ax_{12}+cz_{12}\cos\beta\right)\,\mathbf{\hat{x}}+by_{12}\,\mathbf{\hat{y}}+cz_{12}\sin\beta\,\mathbf{\hat{z}}$	(8f)	H VIII

$\mathbf{B_{38}}$	$= -\left(x_{12}+y_{12}\right)\,\mathbf{a}_1 - \left(x_{12}-y_{12}\right)\,\mathbf{a}_2 - \left(z_{12}-\frac{1}{2}\right)\,\mathbf{a}_3$	$= -\left(ax_{12}+c\left(z_{12}-\frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} + by_{12}\,\hat{\mathbf{y}} - c\left(z_{12}-\frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	H VIII
$\mathbf{B_{39}}$	$= -\left(x_{12}-y_{12}\right)\,\mathbf{a}_1 - \left(x_{12}+y_{12}\right)\,\mathbf{a}_2 - z_{12}\,\mathbf{a}_3$	$= -\left(ax_{12}+cz_{12}\cos\beta\right)\,\hat{\mathbf{x}} - by_{12}\,\hat{\mathbf{y}} - cz_{12}\sin\beta\,\hat{\mathbf{z}}$	(8f)	H VIII
$\mathbf{B_{40}}$	$= \left(x_{12}+y_{12}\right)\,\mathbf{a}_1 + \left(x_{12}-y_{12}\right)\,\mathbf{a}_2 + \left(z_{12}+\frac{1}{2}\right)\,\mathbf{a}_3$	$= \left(ax_{12}+c\left(z_{12}+\frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} - by_{12}\,\hat{\mathbf{y}} + c\left(z_{12}+\frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	H VIII
$\mathbf{B_{41}}$	$= \left(x_{13}-y_{13}\right)\,\mathbf{a}_1 + \left(x_{13}+y_{13}\right)\,\mathbf{a}_2 + z_{13}\,\mathbf{a}_3$	$= \left(ax_{13}+cz_{13}\cos\beta\right)\,\hat{\mathbf{x}} + by_{13}\,\hat{\mathbf{y}} + cz_{13}\sin\beta\,\hat{\mathbf{z}}$	(8f)	K I
$\mathbf{B_{42}}$	$= -\left(x_{13}+y_{13}\right)\,\mathbf{a}_1 - \left(x_{13}-y_{13}\right)\,\mathbf{a}_2 - \left(z_{13}-\frac{1}{2}\right)\,\mathbf{a}_3$	$= -\left(ax_{13}+c\left(z_{13}-\frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} + by_{13}\,\hat{\mathbf{y}} - c\left(z_{13}-\frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	K I
$\mathbf{B_{43}}$	$= -\left(x_{13}-y_{13}\right)\,\mathbf{a}_1 - \left(x_{13}+y_{13}\right)\,\mathbf{a}_2 - z_{13}\,\mathbf{a}_3$	$= -\left(ax_{13}+cz_{13}\cos\beta\right)\,\hat{\mathbf{x}} - by_{13}\,\hat{\mathbf{y}} - cz_{13}\sin\beta\,\hat{\mathbf{z}}$	(8f)	K I
$\mathbf{B_{44}}$	$= \left(x_{13}+y_{13}\right)\,\mathbf{a}_1 + \left(x_{13}-y_{13}\right)\,\mathbf{a}_2 + \left(z_{13}+\frac{1}{2}\right)\,\mathbf{a}_3$	$= \left(ax_{13}+c\left(z_{13}+\frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} - by_{13}\,\hat{\mathbf{y}} + c\left(z_{13}+\frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	K I
$\mathbf{B_{45}}$	$= \left(x_{14}-y_{14}\right)\,\mathbf{a}_1 + \left(x_{14}+y_{14}\right)\,\mathbf{a}_2 + z_{14}\,\mathbf{a}_3$	$= \left(ax_{14}+cz_{14}\cos\beta\right)\,\hat{\mathbf{x}} + by_{14}\,\hat{\mathbf{y}} + cz_{14}\sin\beta\,\hat{\mathbf{z}}$	(8f)	K II
$\mathbf{B_{46}}$	$= -\left(x_{14}+y_{14}\right)\,\mathbf{a}_1 - \left(x_{14}-y_{14}\right)\,\mathbf{a}_2 - \left(z_{14}-\frac{1}{2}\right)\,\mathbf{a}_3$	$= -\left(ax_{14}+c\left(z_{14}-\frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} + by_{14}\,\hat{\mathbf{y}} - c\left(z_{14}-\frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	K II
$\mathbf{B_{47}}$	$= -\left(x_{14}-y_{14}\right)\,\mathbf{a}_1 - \left(x_{14}+y_{14}\right)\,\mathbf{a}_2 - z_{14}\,\mathbf{a}_3$	$= -\left(ax_{14}+cz_{14}\cos\beta\right)\,\hat{\mathbf{x}} - by_{14}\,\hat{\mathbf{y}} - cz_{14}\sin\beta\,\hat{\mathbf{z}}$	(8f)	K II
$\mathbf{B_{48}}$	$= \left(x_{14}+y_{14}\right)\,\mathbf{a}_1 + \left(x_{14}-y_{14}\right)\,\mathbf{a}_2 + \left(z_{14}+\frac{1}{2}\right)\,\mathbf{a}_3$	$= \left(ax_{14}+c\left(z_{14}+\frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} - by_{14}\,\hat{\mathbf{y}} + c\left(z_{14}+\frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	K II
$\mathbf{B_{49}}$	$= \left(x_{15}-y_{15}\right)\,\mathbf{a}_1 + \left(x_{15}+y_{15}\right)\,\mathbf{a}_2 + z_{15}\,\mathbf{a}_3$	$= \left(ax_{15}+cz_{15}\cos\beta\right)\,\hat{\mathbf{x}} + by_{15}\,\hat{\mathbf{y}} + cz_{15}\sin\beta\,\hat{\mathbf{z}}$	(8f)	O III
$\mathbf{B_{50}}$	$= -\left(x_{15}+y_{15}\right)\,\mathbf{a}_1 - \left(x_{15}-y_{15}\right)\,\mathbf{a}_2 - \left(z_{15}-\frac{1}{2}\right)\,\mathbf{a}_3$	$= -\left(ax_{15}+c\left(z_{15}-\frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} + by_{15}\,\hat{\mathbf{y}} - c\left(z_{15}-\frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	O III
$\mathbf{B_{51}}$	$= -\left(x_{15}-y_{15}\right)\,\mathbf{a}_1 - \left(x_{15}+y_{15}\right)\,\mathbf{a}_2 - z_{15}\,\mathbf{a}_3$	$= -\left(ax_{15}+cz_{15}\cos\beta\right)\,\hat{\mathbf{x}} - by_{15}\,\hat{\mathbf{y}} - cz_{15}\sin\beta\,\hat{\mathbf{z}}$	(8f)	O III
$\mathbf{B_{52}}$	$= \left(x_{15}+y_{15}\right)\,\mathbf{a}_1 + \left(x_{15}-y_{15}\right)\,\mathbf{a}_2 + \left(z_{15}+\frac{1}{2}\right)\,\mathbf{a}_3$	$= \left(ax_{15}+c\left(z_{15}+\frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} - by_{15}\,\hat{\mathbf{y}} + c\left(z_{15}+\frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	O III
$\mathbf{B_{53}}$	$= \left(x_{16}-y_{16}\right)\,\mathbf{a}_1 + \left(x_{16}+y_{16}\right)\,\mathbf{a}_2 + z_{16}\,\mathbf{a}_3$	$= \left(ax_{16}+cz_{16}\cos\beta\right)\,\hat{\mathbf{x}} + by_{16}\,\hat{\mathbf{y}} + cz_{16}\sin\beta\,\hat{\mathbf{z}}$	(8f)	O IV
$\mathbf{B_{54}}$	$= -\left(x_{16}+y_{16}\right)\,\mathbf{a}_1 - \left(x_{16}-y_{16}\right)\,\mathbf{a}_2 - \left(z_{16}-\frac{1}{2}\right)\,\mathbf{a}_3$	$= -\left(ax_{16}+c\left(z_{16}-\frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} + by_{16}\,\hat{\mathbf{y}} - c\left(z_{16}-\frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	O IV
$\mathbf{B_{55}}$	$= -\left(x_{16}-y_{16}\right)\,\mathbf{a}_1 - \left(x_{16}+y_{16}\right)\,\mathbf{a}_2 - z_{16}\,\mathbf{a}_3$	$= -\left(ax_{16}+cz_{16}\cos\beta\right)\,\hat{\mathbf{x}} - by_{16}\,\hat{\mathbf{y}} - cz_{16}\sin\beta\,\hat{\mathbf{z}}$	(8f)	O IV
$\mathbf{B_{56}}$	$= \left(x_{16}+y_{16}\right)\,\mathbf{a}_1 + \left(x_{16}-y_{16}\right)\,\mathbf{a}_2 + \left(z_{16}+\frac{1}{2}\right)\,\mathbf{a}_3$	$= \left(ax_{16}+c\left(z_{16}+\frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} - by_{16}\,\hat{\mathbf{y}} + c\left(z_{16}+\frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	O IV
$\mathbf{B_{57}}$	$= \left(x_{17}-y_{17}\right)\,\mathbf{a}_1 + \left(x_{17}+y_{17}\right)\,\mathbf{a}_2 + z_{17}\,\mathbf{a}_3$	$= \left(ax_{17}+cz_{17}\cos\beta\right)\,\hat{\mathbf{x}} + by_{17}\,\hat{\mathbf{y}} + cz_{17}\sin\beta\,\hat{\mathbf{z}}$	(8f)	O V
$\mathbf{B_{58}}$	$= -\left(x_{17}+y_{17}\right)\,\mathbf{a}_1 - \left(x_{17}-y_{17}\right)\,\mathbf{a}_2 - \left(z_{17}-\frac{1}{2}\right)\,\mathbf{a}_3$	$= -\left(ax_{17}+c\left(z_{17}-\frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} + by_{17}\,\hat{\mathbf{y}} - c\left(z_{17}-\frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	O V
$\mathbf{B_{59}}$	$= -\left(x_{17}-y_{17}\right)\,\mathbf{a}_1 - \left(x_{17}+y_{17}\right)\,\mathbf{a}_2 - z_{17}\,\mathbf{a}_3$	$= -\left(ax_{17}+cz_{17}\cos\beta\right)\,\hat{\mathbf{x}} - by_{17}\,\hat{\mathbf{y}} - cz_{17}\sin\beta\,\hat{\mathbf{z}}$	(8f)	O V
$\mathbf{B_{60}}$	$= \left(x_{17}+y_{17}\right)\,\mathbf{a}_1 + \left(x_{17}-y_{17}\right)\,\mathbf{a}_2 + \left(z_{17}+\frac{1}{2}\right)\,\mathbf{a}_3$	$= \left(ax_{17}+c\left(z_{17}+\frac{1}{2}\right)\cos\beta\right)\,\hat{\mathbf{x}} - by_{17}\,\hat{\mathbf{y}} + c\left(z_{17}+\frac{1}{2}\right)\sin\beta\,\hat{\mathbf{z}}$	(8f)	O V

$\mathbf{B_{61}}$	=	$\left(x_{18} - y_{18}\right) \mathbf{a}_1 + \left(x_{18} + y_{18}\right) \mathbf{a}_2 + z_{18} \mathbf{a}_3$	=	$\left(ax_{18} + cz_{18} \cos\beta\right) \hat{\mathbf{x}} + by_{18} \hat{\mathbf{y}} + cz_{18} \sin\beta \hat{\mathbf{z}}$	(8f)	O VI
$\mathbf{B_{62}}$	=	$-\left(x_{18} + y_{18}\right) \mathbf{a}_1 - \left(x_{18} - y_{18}\right) \mathbf{a}_2 - \left(z_{18} - \frac{1}{2}\right) \mathbf{a}_3$	=	$-\left(ax_{18} + c\left(z_{18} - \frac{1}{2}\right) \cos\beta\right) \hat{\mathbf{x}} + by_{18} \hat{\mathbf{y}} - c\left(z_{18} - \frac{1}{2}\right) \sin\beta \hat{\mathbf{z}}$	(8f)	O VI
$\mathbf{B_{63}}$	=	$-\left(x_{18} - y_{18}\right) \mathbf{a}_1 - \left(x_{18} + y_{18}\right) \mathbf{a}_2 - z_{18} \mathbf{a}_3$	=	$-\left(ax_{18} + cz_{18} \cos\beta\right) \hat{\mathbf{x}} - by_{18} \hat{\mathbf{y}} - cz_{18} \sin\beta \hat{\mathbf{z}}$	(8f)	O VI
$\mathbf{B_{64}}$	=	$\left(x_{18} + y_{18}\right) \mathbf{a}_1 + \left(x_{18} - y_{18}\right) \mathbf{a}_2 + \left(z_{18} + \frac{1}{2}\right) \mathbf{a}_3$	=	$\left(ax_{18} + c\left(z_{18} + \frac{1}{2}\right) \cos\beta\right) \hat{\mathbf{x}} - by_{18} \hat{\mathbf{y}} + c\left(z_{18} + \frac{1}{2}\right) \sin\beta \hat{\mathbf{z}}$	(8f)	O VI
$\mathbf{B_{65}}$	=	$\left(x_{19} - y_{19}\right) \mathbf{a}_1 + \left(x_{19} + y_{19}\right) \mathbf{a}_2 + z_{19} \mathbf{a}_3$	=	$\left(ax_{19} + cz_{19} \cos\beta\right) \hat{\mathbf{x}} + by_{19} \hat{\mathbf{y}} + cz_{19} \sin\beta \hat{\mathbf{z}}$	(8f)	O VII
$\mathbf{B_{66}}$	=	$-\left(x_{19} + y_{19}\right) \mathbf{a}_1 - \left(x_{19} - y_{19}\right) \mathbf{a}_2 - \left(z_{19} - \frac{1}{2}\right) \mathbf{a}_3$	=	$-\left(ax_{19} + c\left(z_{19} - \frac{1}{2}\right) \cos\beta\right) \hat{\mathbf{x}} + by_{19} \hat{\mathbf{y}} - c\left(z_{19} - \frac{1}{2}\right) \sin\beta \hat{\mathbf{z}}$	(8f)	O VII
$\mathbf{B_{67}}$	=	$-\left(x_{19} - y_{19}\right) \mathbf{a}_1 - \left(x_{19} + y_{19}\right) \mathbf{a}_2 - z_{19} \mathbf{a}_3$	=	$-\left(ax_{19} + cz_{19} \cos\beta\right) \hat{\mathbf{x}} - by_{19} \hat{\mathbf{y}} - cz_{19} \sin\beta \hat{\mathbf{z}}$	(8f)	O VII
$\mathbf{B_{68}}$	=	$\left(x_{19} + y_{19}\right) \mathbf{a}_1 + \left(x_{19} - y_{19}\right) \mathbf{a}_2 + \left(z_{19} + \frac{1}{2}\right) \mathbf{a}_3$	=	$\left(ax_{19} + c\left(z_{19} + \frac{1}{2}\right) \cos\beta\right) \hat{\mathbf{x}} - by_{19} \hat{\mathbf{y}} + c\left(z_{19} + \frac{1}{2}\right) \sin\beta \hat{\mathbf{z}}$	(8f)	O VII
$\mathbf{B_{69}}$	=	$\left(x_{20} - y_{20}\right) \mathbf{a}_1 + \left(x_{20} + y_{20}\right) \mathbf{a}_2 + z_{20} \mathbf{a}_3$	=	$\left(ax_{20} + cz_{20} \cos\beta\right) \hat{\mathbf{x}} + by_{20} \hat{\mathbf{y}} + cz_{20} \sin\beta \hat{\mathbf{z}}$	(8f)	O VIII
$\mathbf{B_{70}}$	=	$-\left(x_{20} + y_{20}\right) \mathbf{a}_1 - \left(x_{20} - y_{20}\right) \mathbf{a}_2 - \left(z_{20} - \frac{1}{2}\right) \mathbf{a}_3$	=	$-\left(ax_{20} + c\left(z_{20} - \frac{1}{2}\right) \cos\beta\right) \hat{\mathbf{x}} + by_{20} \hat{\mathbf{y}} - c\left(z_{20} - \frac{1}{2}\right) \sin\beta \hat{\mathbf{z}}$	(8f)	O VIII
$\mathbf{B_{71}}$	=	$-\left(x_{20} - y_{20}\right) \mathbf{a}_1 - \left(x_{20} + y_{20}\right) \mathbf{a}_2 - z_{20} \mathbf{a}_3$	=	$-\left(ax_{20} + cz_{20} \cos\beta\right) \hat{\mathbf{x}} - by_{20} \hat{\mathbf{y}} - cz_{20} \sin\beta \hat{\mathbf{z}}$	(8f)	O VIII
$\mathbf{B_{72}}$	=	$\left(x_{20} + y_{20}\right) \mathbf{a}_1 + \left(x_{20} - y_{20}\right) \mathbf{a}_2 + \left(z_{20} + \frac{1}{2}\right) \mathbf{a}_3$	=	$\left(ax_{20} + c\left(z_{20} + \frac{1}{2}\right) \cos\beta\right) \hat{\mathbf{x}} - by_{20} \hat{\mathbf{y}} + c\left(z_{20} + \frac{1}{2}\right) \sin\beta \hat{\mathbf{z}}$	(8f)	O VIII
$\mathbf{B_{73}}$	=	$\left(x_{21} - y_{21}\right) \mathbf{a}_1 + \left(x_{21} + y_{21}\right) \mathbf{a}_2 + z_{21} \mathbf{a}_3$	=	$\left(ax_{21} + cz_{21} \cos\beta\right) \hat{\mathbf{x}} + by_{21} \hat{\mathbf{y}} + cz_{21} \sin\beta \hat{\mathbf{z}}$	(8f)	O IX
$\mathbf{B_{74}}$	=	$-\left(x_{21} + y_{21}\right) \mathbf{a}_1 - \left(x_{21} - y_{21}\right) \mathbf{a}_2 - \left(z_{21} - \frac{1}{2}\right) \mathbf{a}_3$	=	$-\left(ax_{21} + c\left(z_{21} - \frac{1}{2}\right) \cos\beta\right) \hat{\mathbf{x}} + by_{21} \hat{\mathbf{y}} - c\left(z_{21} - \frac{1}{2}\right) \sin\beta \hat{\mathbf{z}}$	(8f)	O IX
$\mathbf{B_{75}}$	=	$-\left(x_{21} - y_{21}\right) \mathbf{a}_1 - \left(x_{21} + y_{21}\right) \mathbf{a}_2 - z_{21} \mathbf{a}_3$	=	$-\left(ax_{21} + cz_{21} \cos\beta\right) \hat{\mathbf{x}} - by_{21} \hat{\mathbf{y}} - cz_{21} \sin\beta \hat{\mathbf{z}}$	(8f)	O IX
$\mathbf{B_{76}}$	=	$\left(x_{21} + y_{21}\right) \mathbf{a}_1 + \left(x_{21} - y_{21}\right) \mathbf{a}_2 + \left(z_{21} + \frac{1}{2}\right) \mathbf{a}_3$	=	$\left(ax_{21} + c\left(z_{21} + \frac{1}{2}\right) \cos\beta\right) \hat{\mathbf{x}} - by_{21} \hat{\mathbf{y}} + c\left(z_{21} + \frac{1}{2}\right) \sin\beta \hat{\mathbf{z}}$	(8f)	O IX
$\mathbf{B_{77}}$	=	$\left(x_{22} - y_{22}\right) \mathbf{a}_1 + \left(x_{22} + y_{22}\right) \mathbf{a}_2 + z_{22} \mathbf{a}_3$	=	$\left(ax_{22} + cz_{22} \cos\beta\right) \hat{\mathbf{x}} + by_{22} \hat{\mathbf{y}} + cz_{22} \sin\beta \hat{\mathbf{z}}$	(8f)	O X
$\mathbf{B_{78}}$	=	$-\left(x_{22} + y_{22}\right) \mathbf{a}_1 - \left(x_{22} - y_{22}\right) \mathbf{a}_2 - \left(z_{22} - \frac{1}{2}\right) \mathbf{a}_3$	=	$-\left(ax_{22} + c\left(z_{22} - \frac{1}{2}\right) \cos\beta\right) \hat{\mathbf{x}} + by_{22} \hat{\mathbf{y}} - c\left(z_{22} - \frac{1}{2}\right) \sin\beta \hat{\mathbf{z}}$	(8f)	O X
$\mathbf{B_{79}}$	=	$-\left(x_{22} - y_{22}\right) \mathbf{a}_1 - \left(x_{22} + y_{22}\right) \mathbf{a}_2 - z_{22} \mathbf{a}_3$	=	$-\left(ax_{22} + cz_{22} \cos\beta\right) \hat{\mathbf{x}} - by_{22} \hat{\mathbf{y}} - cz_{22} \sin\beta \hat{\mathbf{z}}$	(8f)	O X
$\mathbf{B_{80}}$	=	$\left(x_{22} + y_{22}\right) \mathbf{a}_1 + \left(x_{22} - y_{22}\right) \mathbf{a}_2 + \left(z_{22} + \frac{1}{2}\right) \mathbf{a}_3$	=	$\left(ax_{22} + c\left(z_{22} + \frac{1}{2}\right) \cos\beta\right) \hat{\mathbf{x}} - by_{22} \hat{\mathbf{y}} + c\left(z_{22} + \frac{1}{2}\right) \sin\beta \hat{\mathbf{z}}$	(8f)	O X
$\mathbf{B_{81}}$	=	$\left(x_{23} - y_{23}\right) \mathbf{a}_1 + \left(x_{23} + y_{23}\right) \mathbf{a}_2 + z_{23} \mathbf{a}_3$	=	$\left(ax_{23} + cz_{23} \cos\beta\right) \hat{\mathbf{x}} + by_{23} \hat{\mathbf{y}} + cz_{23} \sin\beta \hat{\mathbf{z}}$	(8f)	O XI
$\mathbf{B_{82}}$	=	$-\left(x_{23} + y_{23}\right) \mathbf{a}_1 - \left(x_{23} - y_{23}\right) \mathbf{a}_2 - \left(z_{23} - \frac{1}{2}\right) \mathbf{a}_3$	=	$-\left(ax_{23} + c\left(z_{23} - \frac{1}{2}\right) \cos\beta\right) \hat{\mathbf{x}} + by_{23} \hat{\mathbf{y}} - c\left(z_{23} - \frac{1}{2}\right) \sin\beta \hat{\mathbf{z}}$	(8f)	O XI
$\mathbf{B_{83}}$	=	$-\left(x_{23} - y_{23}\right) \mathbf{a}_1 - \left(x_{23} + y_{23}\right) \mathbf{a}_2 - z_{23} \mathbf{a}_3$	=	$-\left(ax_{23} + cz_{23} \cos\beta\right) \hat{\mathbf{x}} - by_{23} \hat{\mathbf{y}} - cz_{23} \sin\beta \hat{\mathbf{z}}$	(8f)	O XI

$\mathbf{B_{84}}$	=	$\left(x_{23}+y_{23}\right)\,\mathbf{a}_{1}+\left(x_{23}-y_{23}\right)\,\mathbf{a}_{2}+\left(z_{23}+\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$\left(ax_{23}+c\left(z_{23}+\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}-by_{23}\,\mathbf{\hat{y}}+c\left(z_{23}+\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	O XI
$\mathbf{B_{85}}$	=	$\left(x_{24}-y_{24}\right)\,\mathbf{a}_{1}+\left(x_{24}+y_{24}\right)\,\mathbf{a}_{2}+z_{24}\,\mathbf{a}_{3}$	=	$\left(ax_{24}+cz_{24}\cos\beta\right)\,\mathbf{\hat{x}}+by_{24}\,\mathbf{\hat{y}}+cz_{24}\sin\beta\,\mathbf{\hat{z}}$	(8f)	O XII
$\mathbf{B_{86}}$	=	$-\left(x_{24}+y_{24}\right)\,\mathbf{a}_{1}-\left(x_{24}-y_{24}\right)\,\mathbf{a}_{2}-\left(z_{24}-\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$-\left(ax_{24}+c\left(z_{24}-\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}+by_{24}\,\mathbf{\hat{y}}-c\left(z_{24}-\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	O XII
$\mathbf{B_{87}}$	=	$-\left(x_{24}-y_{24}\right)\,\mathbf{a}_{1}-\left(x_{24}+y_{24}\right)\,\mathbf{a}_{2}-z_{24}\,\mathbf{a}_{3}$	=	$-\left(ax_{24}+cz_{24}\cos\beta\right)\,\mathbf{\hat{x}}-by_{24}\,\mathbf{\hat{y}}-cz_{24}\sin\beta\,\mathbf{\hat{z}}$	(8f)	O XII
$\mathbf{B_{88}}$	=	$\left(x_{24}+y_{24}\right)\,\mathbf{a}_{1}+\left(x_{24}-y_{24}\right)\,\mathbf{a}_{2}+\left(z_{24}+\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$\left(ax_{24}+c\left(z_{24}+\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}-by_{24}\,\mathbf{\hat{y}}+c\left(z_{24}+\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	O XII
$\mathbf{B_{89}}$	=	$\left(x_{25}-y_{25}\right)\,\mathbf{a}_{1}+\left(x_{25}+y_{25}\right)\,\mathbf{a}_{2}+z_{25}\,\mathbf{a}_{3}$	=	$\left(ax_{25}+cz_{25}\cos\beta\right)\,\mathbf{\hat{x}}+by_{25}\,\mathbf{\hat{y}}+cz_{25}\sin\beta\,\mathbf{\hat{z}}$	(8f)	O XIII
$\mathbf{B_{90}}$	=	$-\left(x_{25}+y_{25}\right)\,\mathbf{a}_{1}-\left(x_{25}-y_{25}\right)\,\mathbf{a}_{2}-\left(z_{25}-\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$-\left(ax_{25}+c\left(z_{25}-\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}+by_{25}\,\mathbf{\hat{y}}-c\left(z_{25}-\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	O XIII
$\mathbf{B_{91}}$	=	$-\left(x_{25}-y_{25}\right)\,\mathbf{a}_{1}-\left(x_{25}+y_{25}\right)\,\mathbf{a}_{2}-z_{25}\,\mathbf{a}_{3}$	=	$-\left(ax_{25}+cz_{25}\cos\beta\right)\,\mathbf{\hat{x}}-by_{25}\,\mathbf{\hat{y}}-cz_{25}\sin\beta\,\mathbf{\hat{z}}$	(8f)	O XIII
$\mathbf{B_{92}}$	=	$\left(x_{25}+y_{25}\right)\,\mathbf{a}_{1}+\left(x_{25}-y_{25}\right)\,\mathbf{a}_{2}+\left(z_{25}+\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$\left(ax_{25}+c\left(z_{25}+\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}-by_{25}\,\mathbf{\hat{y}}+c\left(z_{25}+\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	O XIII
$\mathbf{B_{93}}$	=	$\left(x_{26}-y_{26}\right)\,\mathbf{a}_{1}+\left(x_{26}+y_{26}\right)\,\mathbf{a}_{2}+z_{26}\,\mathbf{a}_{3}$	=	$\left(ax_{26}+cz_{26}\cos\beta\right)\,\mathbf{\hat{x}}+by_{26}\,\mathbf{\hat{y}}+cz_{26}\sin\beta\,\mathbf{\hat{z}}$	(8f)	S I
$\mathbf{B_{94}}$	=	$-\left(x_{26}+y_{26}\right)\,\mathbf{a}_{1}-\left(x_{26}-y_{26}\right)\,\mathbf{a}_{2}-\left(z_{26}-\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$-\left(ax_{26}+c\left(z_{26}-\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}+by_{26}\,\mathbf{\hat{y}}-c\left(z_{26}-\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	S I
$\mathbf{B_{95}}$	=	$-\left(x_{26}-y_{26}\right)\,\mathbf{a}_{1}-\left(x_{26}+y_{26}\right)\,\mathbf{a}_{2}-z_{26}\,\mathbf{a}_{3}$	=	$-\left(ax_{26}+cz_{26}\cos\beta\right)\,\mathbf{\hat{x}}-by_{26}\,\mathbf{\hat{y}}-cz_{26}\sin\beta\,\mathbf{\hat{z}}$	(8f)	S I
$\mathbf{B_{96}}$	=	$\left(x_{26}+y_{26}\right)\,\mathbf{a}_{1}+\left(x_{26}-y_{26}\right)\,\mathbf{a}_{2}+\left(z_{26}+\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$\left(ax_{26}+c\left(z_{26}+\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}-by_{26}\,\mathbf{\hat{y}}+c\left(z_{26}+\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	S I
$\mathbf{B_{97}}$	=	$\left(x_{27}-y_{27}\right)\,\mathbf{a}_{1}+\left(x_{27}+y_{27}\right)\,\mathbf{a}_{2}+z_{27}\,\mathbf{a}_{3}$	=	$\left(ax_{27}+cz_{27}\cos\beta\right)\,\mathbf{\hat{x}}+by_{27}\,\mathbf{\hat{y}}+cz_{27}\sin\beta\,\mathbf{\hat{z}}$	(8f)	S II
$\mathbf{B_{98}}$	=	$-\left(x_{27}+y_{27}\right)\,\mathbf{a}_{1}-\left(x_{27}-y_{27}\right)\,\mathbf{a}_{2}-\left(z_{27}-\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$-\left(ax_{27}+c\left(z_{27}-\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}+by_{27}\,\mathbf{\hat{y}}-c\left(z_{27}-\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	S II
$\mathbf{B_{99}}$	=	$-\left(x_{27}-y_{27}\right)\,\mathbf{a}_{1}-\left(x_{27}+y_{27}\right)\,\mathbf{a}_{2}-z_{27}\,\mathbf{a}_{3}$	=	$-\left(ax_{27}+cz_{27}\cos\beta\right)\,\mathbf{\hat{x}}-by_{27}\,\mathbf{\hat{y}}-cz_{27}\sin\beta\,\mathbf{\hat{z}}$	(8f)	S II
$\mathbf{B_{100}}$	=	$\left(x_{27}+y_{27}\right)\,\mathbf{a}_{1}+\left(x_{27}-y_{27}\right)\,\mathbf{a}_{2}+\left(z_{27}+\frac{1}{2}\right)\,\mathbf{a}_{3}$	=	$\left(ax_{27}+c\left(z_{27}+\frac{1}{2}\right)\cos\beta\right)\,\mathbf{\hat{x}}-by_{27}\,\mathbf{\hat{y}}+c\left(z_{27}+\frac{1}{2}\right)\sin\beta\,\mathbf{\hat{z}}$	(8f)	S II

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