

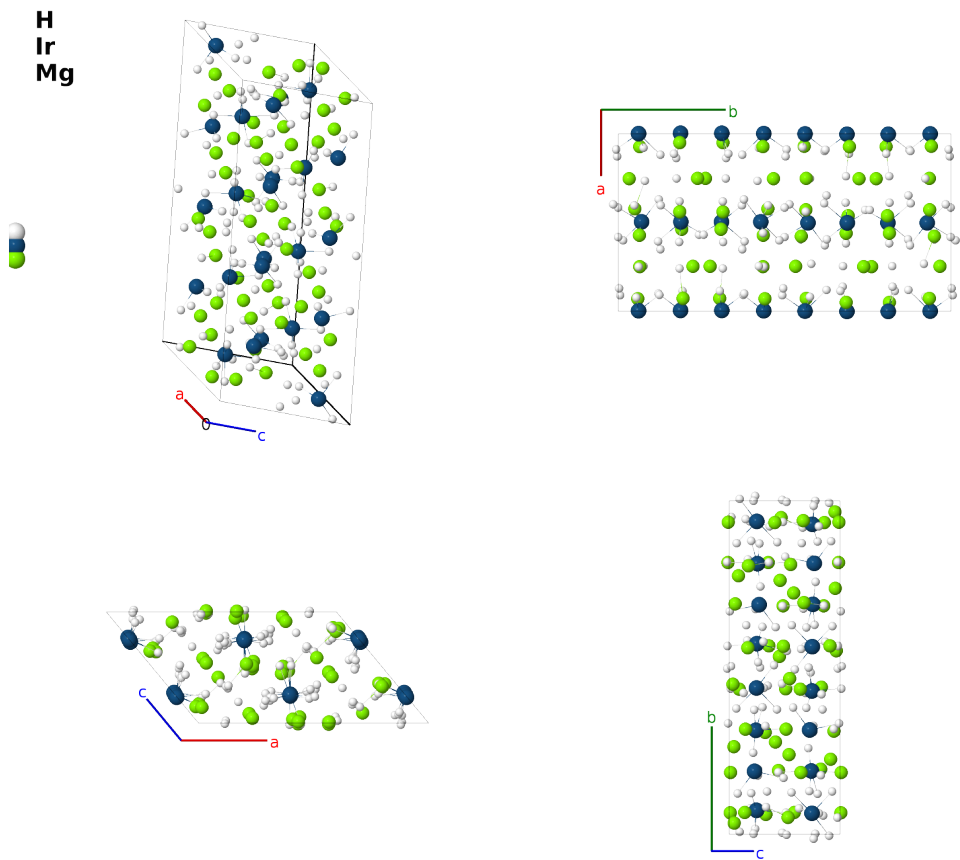
Mg₆Ir₂H₁₁: A13B2C6_mP168_14_26e_4e_12e-001

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- D. Hicks, M. J. Mehl, M. Esters, C. Osos, O. Levy, G. L. W. Hart, C. Toher, and S. Curtarolo, *The AFLOW Library of Crystallographic Prototypes: Part 3*, Comput. Mater. Sci. **199**, 110450 (2021), doi: 10.1016/j.commatsci.2021.110450.

<https://aflow.org/prototype-encyclopedia/SLDG>

https://aflow.org/prototype-encyclopedia/A13B2C6_mP168_14_26e_4e_12e-001



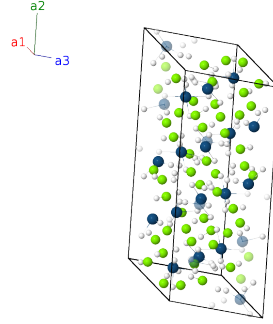
Prototype	H ₁₁ Ir ₂ Mg ₆
AFLOW prototype label	A13B2C6_mP168_14_26e_4e_12e-001
ICSD	95122
CCDC	1654532
Pearson symbol	mP168
Space group number	14
Space group symbol	$P2_1/c$

AFLOW prototype command `aflow --proto=A13B2C6_mP168_14_26e_4e_12e-001`
 `--params=a, b/a, c/a,  $\beta$ ,  $x_1, y_1, z_1, x_2, y_2, z_2, x_3, y_3, z_3, x_4, y_4, z_4, x_5, y_5, z_5, x_6, y_6, z_6, x_7,$`
 `$y_7, z_7, x_8, y_8, z_8, x_9, y_9, z_9, x_{10}, y_{10}, z_{10}, x_{11}, y_{11}, z_{11}, x_{12}, y_{12}, z_{12}, x_{13}, y_{13}, z_{13}, x_{14}, y_{14}, z_{14}, x_{15},$`
 `$y_{15}, z_{15}, x_{16}, y_{16}, z_{16}, x_{17}, y_{17}, z_{17}, x_{18}, y_{18}, z_{18}, x_{19}, y_{19}, z_{19}, x_{20}, y_{20}, z_{20}, x_{21}, y_{21}, z_{21}, x_{22}, y_{22},$`
 `$z_{22}, x_{23}, y_{23}, z_{23}, x_{24}, y_{24}, z_{24}, x_{25}, y_{25}, z_{25}, x_{26}, y_{26}, z_{26}, x_{27}, y_{27}, z_{27}, x_{28}, y_{28}, z_{28}, x_{29}, y_{29}, z_{29},$`
 `$x_{30}, y_{30}, z_{30}, x_{31}, y_{31}, z_{31}, x_{32}, y_{32}, z_{32}, x_{33}, y_{33}, z_{33}, x_{34}, y_{34}, z_{34}, x_{35}, y_{35}, z_{35}, x_{36}, y_{36}, z_{36}, x_{37},$`
 `$y_{37}, z_{37}, x_{38}, y_{38}, z_{38}, x_{39}, y_{39}, z_{39}, x_{40}, y_{40}, z_{40}, x_{41}, y_{41}, z_{41}, x_{42}, y_{42}, z_{42}$`

- The experimental measurements were made using deuterium isotopes.
- The first twelve hydrogen sites are approximately 2/3 occupied, giving the observed stoichiometry.

Simple Monoclinic primitive vectors

$$\begin{aligned} \mathbf{a}_1 &= a \hat{\mathbf{x}} \\ \mathbf{a}_2 &= b \hat{\mathbf{y}} \\ \mathbf{a}_3 &= c \cos \beta \hat{\mathbf{x}} + c \sin \beta \hat{\mathbf{z}} \end{aligned}$$



Basis vectors

	Lattice coordinates		Cartesian coordinates	Wyckoff position	Atom type
$\mathbf{B}_1$	$= x_1 \mathbf{a}_1 + y_1 \mathbf{a}_2 + z_1 \mathbf{a}_3$	$=$	$(ax_1 + cz_1 \cos \beta) \hat{\mathbf{x}} + by_1 \hat{\mathbf{y}} + cz_1 \sin \beta \hat{\mathbf{z}}$	(4e)	H I
$\mathbf{B}_2$	$= -x_1 \mathbf{a}_1 + (y_1 + \frac{1}{2}) \mathbf{a}_2 - (z_1 - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_1 + c(z_1 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_1 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_1 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H I
$\mathbf{B}_3$	$= -x_1 \mathbf{a}_1 - y_1 \mathbf{a}_2 - z_1 \mathbf{a}_3$	$=$	$-(ax_1 + cz_1 \cos \beta) \hat{\mathbf{x}} - by_1 \hat{\mathbf{y}} - cz_1 \sin \beta \hat{\mathbf{z}}$	(4e)	H I
$\mathbf{B}_4$	$= x_1 \mathbf{a}_1 - (y_1 - \frac{1}{2}) \mathbf{a}_2 + (z_1 + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_1 + c(z_1 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_1 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_1 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H I
$\mathbf{B}_5$	$= x_2 \mathbf{a}_1 + y_2 \mathbf{a}_2 + z_2 \mathbf{a}_3$	$=$	$(ax_2 + cz_2 \cos \beta) \hat{\mathbf{x}} + by_2 \hat{\mathbf{y}} + cz_2 \sin \beta \hat{\mathbf{z}}$	(4e)	H II
$\mathbf{B}_6$	$= -x_2 \mathbf{a}_1 + (y_2 + \frac{1}{2}) \mathbf{a}_2 - (z_2 - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_2 + c(z_2 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_2 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_2 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H II
$\mathbf{B}_7$	$= -x_2 \mathbf{a}_1 - y_2 \mathbf{a}_2 - z_2 \mathbf{a}_3$	$=$	$-(ax_2 + cz_2 \cos \beta) \hat{\mathbf{x}} - by_2 \hat{\mathbf{y}} - cz_2 \sin \beta \hat{\mathbf{z}}$	(4e)	H II
$\mathbf{B}_8$	$= x_2 \mathbf{a}_1 - (y_2 - \frac{1}{2}) \mathbf{a}_2 + (z_2 + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_2 + c(z_2 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_2 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_2 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H II
$\mathbf{B}_9$	$= x_3 \mathbf{a}_1 + y_3 \mathbf{a}_2 + z_3 \mathbf{a}_3$	$=$	$(ax_3 + cz_3 \cos \beta) \hat{\mathbf{x}} + by_3 \hat{\mathbf{y}} + cz_3 \sin \beta \hat{\mathbf{z}}$	(4e)	H III
$\mathbf{B}_{10}$	$= -x_3 \mathbf{a}_1 + (y_3 + \frac{1}{2}) \mathbf{a}_2 - (z_3 - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_3 + c(z_3 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_3 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_3 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H III
$\mathbf{B}_{11}$	$= -x_3 \mathbf{a}_1 - y_3 \mathbf{a}_2 - z_3 \mathbf{a}_3$	$=$	$-(ax_3 + cz_3 \cos \beta) \hat{\mathbf{x}} - by_3 \hat{\mathbf{y}} - cz_3 \sin \beta \hat{\mathbf{z}}$	(4e)	H III
$\mathbf{B}_{12}$	$= x_3 \mathbf{a}_1 - (y_3 - \frac{1}{2}) \mathbf{a}_2 + (z_3 + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_3 + c(z_3 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_3 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_3 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H III
$\mathbf{B}_{13}$	$= x_4 \mathbf{a}_1 + y_4 \mathbf{a}_2 + z_4 \mathbf{a}_3$	$=$	$(ax_4 + cz_4 \cos \beta) \hat{\mathbf{x}} + by_4 \hat{\mathbf{y}} + cz_4 \sin \beta \hat{\mathbf{z}}$	(4e)	H IV

$\mathbf{B}_{14} =$	$-x_4 \mathbf{a}_1 + \left(y_4 + \frac{1}{2}\right) \mathbf{a}_2 -$	$=$	$-(ax_4 + c(z_4 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} +$	$(4e)$	H IV
	$\left(z_4 - \frac{1}{2}\right) \mathbf{a}_3$		$b(y_4 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_4 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$		
$\mathbf{B}_{15} =$	$-x_4 \mathbf{a}_1 - y_4 \mathbf{a}_2 - z_4 \mathbf{a}_3$	$=$	$-(ax_4 + cz_4 \cos \beta) \hat{\mathbf{x}} - by_4 \hat{\mathbf{y}} - cz_4 \sin \beta \hat{\mathbf{z}}$	$(4e)$	H IV
$\mathbf{B}_{16} =$	$x_4 \mathbf{a}_1 - \left(y_4 - \frac{1}{2}\right) \mathbf{a}_2 + \left(z_4 + \frac{1}{2}\right) \mathbf{a}_3$	$=$	$(ax_4 + c(z_4 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} -$	$(4e)$	H IV
			$b(y_4 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_4 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$		
$\mathbf{B}_{17} =$	$x_5 \mathbf{a}_1 + y_5 \mathbf{a}_2 + z_5 \mathbf{a}_3$	$=$	$(ax_5 + cz_5 \cos \beta) \hat{\mathbf{x}} + by_5 \hat{\mathbf{y}} + cz_5 \sin \beta \hat{\mathbf{z}}$	$(4e)$	H V
$\mathbf{B}_{18} =$	$-x_5 \mathbf{a}_1 + \left(y_5 + \frac{1}{2}\right) \mathbf{a}_2 -$	$=$	$-(ax_5 + c(z_5 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} +$	$(4e)$	H V
	$\left(z_5 - \frac{1}{2}\right) \mathbf{a}_3$		$b(y_5 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_5 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$		
$\mathbf{B}_{19} =$	$-x_5 \mathbf{a}_1 - y_5 \mathbf{a}_2 - z_5 \mathbf{a}_3$	$=$	$-(ax_5 + cz_5 \cos \beta) \hat{\mathbf{x}} - by_5 \hat{\mathbf{y}} - cz_5 \sin \beta \hat{\mathbf{z}}$	$(4e)$	H V
$\mathbf{B}_{20} =$	$x_5 \mathbf{a}_1 - \left(y_5 - \frac{1}{2}\right) \mathbf{a}_2 + \left(z_5 + \frac{1}{2}\right) \mathbf{a}_3$	$=$	$(ax_5 + c(z_5 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} -$	$(4e)$	H V
			$b(y_5 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_5 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$		
$\mathbf{B}_{21} =$	$x_6 \mathbf{a}_1 + y_6 \mathbf{a}_2 + z_6 \mathbf{a}_3$	$=$	$(ax_6 + cz_6 \cos \beta) \hat{\mathbf{x}} + by_6 \hat{\mathbf{y}} + cz_6 \sin \beta \hat{\mathbf{z}}$	$(4e)$	H VI
$\mathbf{B}_{22} =$	$-x_6 \mathbf{a}_1 + \left(y_6 + \frac{1}{2}\right) \mathbf{a}_2 -$	$=$	$-(ax_6 + c(z_6 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} +$	$(4e)$	H VI
	$\left(z_6 - \frac{1}{2}\right) \mathbf{a}_3$		$b(y_6 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_6 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$		
$\mathbf{B}_{23} =$	$-x_6 \mathbf{a}_1 - y_6 \mathbf{a}_2 - z_6 \mathbf{a}_3$	$=$	$-(ax_6 + cz_6 \cos \beta) \hat{\mathbf{x}} - by_6 \hat{\mathbf{y}} - cz_6 \sin \beta \hat{\mathbf{z}}$	$(4e)$	H VI
$\mathbf{B}_{24} =$	$x_6 \mathbf{a}_1 - \left(y_6 - \frac{1}{2}\right) \mathbf{a}_2 + \left(z_6 + \frac{1}{2}\right) \mathbf{a}_3$	$=$	$(ax_6 + c(z_6 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} -$	$(4e)$	H VI
			$b(y_6 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_6 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$		
$\mathbf{B}_{25} =$	$x_7 \mathbf{a}_1 + y_7 \mathbf{a}_2 + z_7 \mathbf{a}_3$	$=$	$(ax_7 + cz_7 \cos \beta) \hat{\mathbf{x}} + by_7 \hat{\mathbf{y}} + cz_7 \sin \beta \hat{\mathbf{z}}$	$(4e)$	H VII
$\mathbf{B}_{26} =$	$-x_7 \mathbf{a}_1 + \left(y_7 + \frac{1}{2}\right) \mathbf{a}_2 -$	$=$	$-(ax_7 + c(z_7 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} +$	$(4e)$	H VII
	$\left(z_7 - \frac{1}{2}\right) \mathbf{a}_3$		$b(y_7 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_7 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$		
$\mathbf{B}_{27} =$	$-x_7 \mathbf{a}_1 - y_7 \mathbf{a}_2 - z_7 \mathbf{a}_3$	$=$	$-(ax_7 + cz_7 \cos \beta) \hat{\mathbf{x}} - by_7 \hat{\mathbf{y}} - cz_7 \sin \beta \hat{\mathbf{z}}$	$(4e)$	H VII
$\mathbf{B}_{28} =$	$x_7 \mathbf{a}_1 - \left(y_7 - \frac{1}{2}\right) \mathbf{a}_2 + \left(z_7 + \frac{1}{2}\right) \mathbf{a}_3$	$=$	$(ax_7 + c(z_7 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} -$	$(4e)$	H VII
			$b(y_7 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_7 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$		
$\mathbf{B}_{29} =$	$x_8 \mathbf{a}_1 + y_8 \mathbf{a}_2 + z_8 \mathbf{a}_3$	$=$	$(ax_8 + cz_8 \cos \beta) \hat{\mathbf{x}} + by_8 \hat{\mathbf{y}} + cz_8 \sin \beta \hat{\mathbf{z}}$	$(4e)$	H VIII
$\mathbf{B}_{30} =$	$-x_8 \mathbf{a}_1 + \left(y_8 + \frac{1}{2}\right) \mathbf{a}_2 -$	$=$	$-(ax_8 + c(z_8 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} +$	$(4e)$	H VIII
	$\left(z_8 - \frac{1}{2}\right) \mathbf{a}_3$		$b(y_8 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_8 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$		
$\mathbf{B}_{31} =$	$-x_8 \mathbf{a}_1 - y_8 \mathbf{a}_2 - z_8 \mathbf{a}_3$	$=$	$-(ax_8 + cz_8 \cos \beta) \hat{\mathbf{x}} - by_8 \hat{\mathbf{y}} - cz_8 \sin \beta \hat{\mathbf{z}}$	$(4e)$	H VIII
$\mathbf{B}_{32} =$	$x_8 \mathbf{a}_1 - \left(y_8 - \frac{1}{2}\right) \mathbf{a}_2 + \left(z_8 + \frac{1}{2}\right) \mathbf{a}_3$	$=$	$(ax_8 + c(z_8 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} -$	$(4e)$	H VIII
			$b(y_8 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_8 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$		
$\mathbf{B}_{33} =$	$x_9 \mathbf{a}_1 + y_9 \mathbf{a}_2 + z_9 \mathbf{a}_3$	$=$	$(ax_9 + cz_9 \cos \beta) \hat{\mathbf{x}} + by_9 \hat{\mathbf{y}} + cz_9 \sin \beta \hat{\mathbf{z}}$	$(4e)$	H IX
$\mathbf{B}_{34} =$	$-x_9 \mathbf{a}_1 + \left(y_9 + \frac{1}{2}\right) \mathbf{a}_2 -$	$=$	$-(ax_9 + c(z_9 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} +$	$(4e)$	H IX
	$\left(z_9 - \frac{1}{2}\right) \mathbf{a}_3$		$b(y_9 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_9 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$		
$\mathbf{B}_{35} =$	$-x_9 \mathbf{a}_1 - y_9 \mathbf{a}_2 - z_9 \mathbf{a}_3$	<			

$\mathbf{B}_{69} =$	$x_{18} \mathbf{a}_1 + y_{18} \mathbf{a}_2 + z_{18} \mathbf{a}_3$	$=$	$(ax_{18} + cz_{18} \cos \beta) \hat{\mathbf{x}} + by_{18} \hat{\mathbf{y}} + cz_{18} \sin \beta \hat{\mathbf{z}}$	(4e)	H XVIII
$\mathbf{B}_{70} =$	$-x_{18} \mathbf{a}_1 + (y_{18} + \frac{1}{2}) \mathbf{a}_2 - (z_{18} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{18} + c(z_{18} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{18} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{18} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XVIII
$\mathbf{B}_{71} =$	$-x_{18} \mathbf{a}_1 - y_{18} \mathbf{a}_2 - z_{18} \mathbf{a}_3$	$=$	$-(ax_{18} + cz_{18} \cos \beta) \hat{\mathbf{x}} - by_{18} \hat{\mathbf{y}} - cz_{18} \sin \beta \hat{\mathbf{z}}$	(4e)	H XVIII
$\mathbf{B}_{72} =$	$x_{18} \mathbf{a}_1 - (y_{18} - \frac{1}{2}) \mathbf{a}_2 + (z_{18} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{18} + c(z_{18} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{18} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{18} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XVIII
$\mathbf{B}_{73} =$	$x_{19} \mathbf{a}_1 + y_{19} \mathbf{a}_2 + z_{19} \mathbf{a}_3$	$=$	$(ax_{19} + cz_{19} \cos \beta) \hat{\mathbf{x}} + by_{19} \hat{\mathbf{y}} + cz_{19} \sin \beta \hat{\mathbf{z}}$	(4e)	H XIX
$\mathbf{B}_{74} =$	$-x_{19} \mathbf{a}_1 + (y_{19} + \frac{1}{2}) \mathbf{a}_2 - (z_{19} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{19} + c(z_{19} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{19} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{19} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XIX
$\mathbf{B}_{75} =$	$-x_{19} \mathbf{a}_1 - y_{19} \mathbf{a}_2 - z_{19} \mathbf{a}_3$	$=$	$-(ax_{19} + cz_{19} \cos \beta) \hat{\mathbf{x}} - by_{19} \hat{\mathbf{y}} - cz_{19} \sin \beta \hat{\mathbf{z}}$	(4e)	H XIX
$\mathbf{B}_{76} =$	$x_{19} \mathbf{a}_1 - (y_{19} - \frac{1}{2}) \mathbf{a}_2 + (z_{19} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{19} + c(z_{19} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{19} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{19} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XIX
$\mathbf{B}_{77} =$	$x_{20} \mathbf{a}_1 + y_{20} \mathbf{a}_2 + z_{20} \mathbf{a}_3$	$=$	$(ax_{20} + cz_{20} \cos \beta) \hat{\mathbf{x}} + by_{20} \hat{\mathbf{y}} + cz_{20} \sin \beta \hat{\mathbf{z}}$	(4e)	H XX
$\mathbf{B}_{78} =$	$-x_{20} \mathbf{a}_1 + (y_{20} + \frac{1}{2}) \mathbf{a}_2 - (z_{20} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{20} + c(z_{20} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{20} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{20} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XX
$\mathbf{B}_{79} =$	$-x_{20} \mathbf{a}_1 - y_{20} \mathbf{a}_2 - z_{20} \mathbf{a}_3$	$=$	$-(ax_{20} + cz_{20} \cos \beta) \hat{\mathbf{x}} - by_{20} \hat{\mathbf{y}} - cz_{20} \sin \beta \hat{\mathbf{z}}$	(4e)	H XX
$\mathbf{B}_{80} =$	$x_{20} \mathbf{a}_1 - (y_{20} - \frac{1}{2}) \mathbf{a}_2 + (z_{20} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{20} + c(z_{20} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{20} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{20} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XX
$\mathbf{B}_{81} =$	$x_{21} \mathbf{a}_1 + y_{21} \mathbf{a}_2 + z_{21} \mathbf{a}_3$	$=$	$(ax_{21} + cz_{21} \cos \beta) \hat{\mathbf{x}} + by_{21} \hat{\mathbf{y}} + cz_{21} \sin \beta \hat{\mathbf{z}}$	(4e)	H XXI
$\mathbf{B}_{82} =$	$-x_{21} \mathbf{a}_1 + (y_{21} + \frac{1}{2}) \mathbf{a}_2 - (z_{21} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{21} + c(z_{21} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{21} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{21} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XXI
$\mathbf{B}_{83} =$	$-x_{21} \mathbf{a}_1 - y_{21} \mathbf{a}_2 - z_{21} \mathbf{a}_3$	$=$	$-(ax_{21} + cz_{21} \cos \beta) \hat{\mathbf{x}} - by_{21} \hat{\mathbf{y}} - cz_{21} \sin \beta \hat{\mathbf{z}}$	(4e)	H XXI
$\mathbf{B}_{84} =$	$x_{21} \mathbf{a}_1 - (y_{21} - \frac{1}{2}) \mathbf{a}_2 + (z_{21} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{21} + c(z_{21} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{21} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{21} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XXI
$\mathbf{B}_{85} =$	$x_{22} \mathbf{a}_1 + y_{22} \mathbf{a}_2 + z_{22} \mathbf{a}_3$	$=$	$(ax_{22} + cz_{22} \cos \beta) \hat{\mathbf{x}} + by_{22} \hat{\mathbf{y}} + cz_{22} \sin \beta \hat{\mathbf{z}}$	(4e)	H XXII
$\mathbf{B}_{86} =$	$-x_{22} \mathbf{a}_1 + (y_{22} + \frac{1}{2}) \mathbf{a}_2 - (z_{22} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{22} + c(z_{22} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{22} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{22} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XXII
$\mathbf{B}_{87} =$	$-x_{22} \mathbf{a}_1 - y_{22} \mathbf{a}_2 - z_{22} \mathbf{a}_3$	$=$	$-(ax_{22} + cz_{22} \cos \beta) \hat{\mathbf{x}} - by_{22} \hat{\mathbf{y}} - cz_{22} \sin \beta \hat{\mathbf{z}}$	(4e)	H XXII
$\mathbf{B}_{88} =$	$x_{22} \mathbf{a}_1 - (y_{22} - \frac{1}{2}) \mathbf{a}_2 + (z_{22} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{22} + c(z_{22} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{22} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{22} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XXII
$\mathbf{B}_{89} =$	$x_{23} \mathbf{a}_1 + y_{23} \mathbf{a}_2 + z_{23} \mathbf{a}_3$	$=$	$(ax_{23} + cz_{23} \cos \beta) \hat{\mathbf{x}} + by_{23} \hat{\mathbf{y}} + cz_{23} \sin \beta \hat{\mathbf{z}}$	(4e)	H XXIII
$\mathbf{B}_{90} =$	$-x_{23} \mathbf{a}_1 + (y_{23} + \frac{1}{2}) \mathbf{a}_2 - (z_{23} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{23} + c(z_{23} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{23} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{23} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XXIII
$\mathbf{B}_{91} =$	$-x_{23} \mathbf{a}_1 - y_{23} \mathbf{a}_2 - z_{23} \mathbf{a}_3$	$=$	$-(ax_{23} + cz_{23} \cos \beta) \hat{\mathbf{x}} - by_{23} \hat{\mathbf{y}} - cz_{23} \sin \beta \hat{\mathbf{z}}$	(4e)	H XXIII
$\mathbf{B}_{92} =$	$x_{23} \mathbf{a}_1 - (y_{23} - \frac{1}{2}) \mathbf{a}_2 + (z_{23} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{23} + c(z_{23} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{23} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{23} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XXIII
$\mathbf{B}_{93} =$	$x_{24} \mathbf{a}_1 + y_{24} \mathbf{a}_2 + z_{24} \mathbf{a}_3$	$=$	$(ax_{24} + cz_{24} \cos \beta) \hat{\mathbf{x}} + by_{24} \hat{\mathbf{y}} + cz_{24} \sin \beta \hat{\mathbf{z}}$	(4e)	H XXIV
$\mathbf{B}_{94} =$	$-x_{24} \mathbf{a}_1 + (y_{24} + \frac{1}{2}) \mathbf{a}_2 - (z_{24} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{24} + c(z_{24} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{24} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{24} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XXIV

$\mathbf{B}_{95} =$	$-x_{24} \mathbf{a}_1 - y_{24} \mathbf{a}_2 - z_{24} \mathbf{a}_3$	$=$	$-(ax_{24} + cz_{24} \cos \beta) \hat{\mathbf{x}} - by_{24} \hat{\mathbf{y}} - cz_{24} \sin \beta \hat{\mathbf{z}}$	(4e)	H XXIV
$\mathbf{B}_{96} =$	$x_{24} \mathbf{a}_1 - (y_{24} - \frac{1}{2}) \mathbf{a}_2 + (z_{24} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{24} + c(z_{24} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{24} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{24} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XXIV
$\mathbf{B}_{97} =$	$x_{25} \mathbf{a}_1 + y_{25} \mathbf{a}_2 + z_{25} \mathbf{a}_3$	$=$	$(ax_{25} + cz_{25} \cos \beta) \hat{\mathbf{x}} + by_{25} \hat{\mathbf{y}} + cz_{25} \sin \beta \hat{\mathbf{z}}$	(4e)	H XXV
$\mathbf{B}_{98} =$	$-x_{25} \mathbf{a}_1 + (y_{25} + \frac{1}{2}) \mathbf{a}_2 - (z_{25} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{25} + c(z_{25} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{25} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{25} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XXV
$\mathbf{B}_{99} =$	$-x_{25} \mathbf{a}_1 - y_{25} \mathbf{a}_2 - z_{25} \mathbf{a}_3$	$=$	$-(ax_{25} + cz_{25} \cos \beta) \hat{\mathbf{x}} - by_{25} \hat{\mathbf{y}} - cz_{25} \sin \beta \hat{\mathbf{z}}$	(4e)	H XXV
$\mathbf{B}_{100} =$	$x_{25} \mathbf{a}_1 - (y_{25} - \frac{1}{2}) \mathbf{a}_2 + (z_{25} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{25} + c(z_{25} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{25} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{25} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XXV
$\mathbf{B}_{101} =$	$x_{26} \mathbf{a}_1 + y_{26} \mathbf{a}_2 + z_{26} \mathbf{a}_3$	$=$	$(ax_{26} + cz_{26} \cos \beta) \hat{\mathbf{x}} + by_{26} \hat{\mathbf{y}} + cz_{26} \sin \beta \hat{\mathbf{z}}$	(4e)	H XXVI
$\mathbf{B}_{102} =$	$-x_{26} \mathbf{a}_1 + (y_{26} + \frac{1}{2}) \mathbf{a}_2 - (z_{26} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{26} + c(z_{26} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{26} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{26} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XXVI
$\mathbf{B}_{103} =$	$-x_{26} \mathbf{a}_1 - y_{26} \mathbf{a}_2 - z_{26} \mathbf{a}_3$	$=$	$-(ax_{26} + cz_{26} \cos \beta) \hat{\mathbf{x}} - by_{26} \hat{\mathbf{y}} - cz_{26} \sin \beta \hat{\mathbf{z}}$	(4e)	H XXVI
$\mathbf{B}_{104} =$	$x_{26} \mathbf{a}_1 - (y_{26} - \frac{1}{2}) \mathbf{a}_2 + (z_{26} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{26} + c(z_{26} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{26} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{26} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	H XXVI
$\mathbf{B}_{105} =$	$x_{27} \mathbf{a}_1 + y_{27} \mathbf{a}_2 + z_{27} \mathbf{a}_3$	$=$	$(ax_{27} + cz_{27} \cos \beta) \hat{\mathbf{x}} + by_{27} \hat{\mathbf{y}} + cz_{27} \sin \beta \hat{\mathbf{z}}$	(4e)	Ir I
$\mathbf{B}_{106} =$	$-x_{27} \mathbf{a}_1 + (y_{27} + \frac{1}{2}) \mathbf{a}_2 - (z_{27} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{27} + c(z_{27} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{27} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{27} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Ir I
$\mathbf{B}_{107} =$	$-x_{27} \mathbf{a}_1 - y_{27} \mathbf{a}_2 - z_{27} \mathbf{a}_3$	$=$	$-(ax_{27} + cz_{27} \cos \beta) \hat{\mathbf{x}} - by_{27} \hat{\mathbf{y}} - cz_{27} \sin \beta \hat{\mathbf{z}}$	(4e)	Ir I
$\mathbf{B}_{108} =$	$x_{27} \mathbf{a}_1 - (y_{27} - \frac{1}{2}) \mathbf{a}_2 + (z_{27} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{27} + c(z_{27} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{27} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{27} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Ir I
$\mathbf{B}_{109} =$	$x_{28} \mathbf{a}_1 + y_{28} \mathbf{a}_2 + z_{28} \mathbf{a}_3$	$=$	$(ax_{28} + cz_{28} \cos \beta) \hat{\mathbf{x}} + by_{28} \hat{\mathbf{y}} + cz_{28} \sin \beta \hat{\mathbf{z}}$	(4e)	Ir II
$\mathbf{B}_{110} =$	$-x_{28} \mathbf{a}_1 + (y_{28} + \frac{1}{2}) \mathbf{a}_2 - (z_{28} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{28} + c(z_{28} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{28} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{28} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Ir II
$\mathbf{B}_{111} =$	$-x_{28} \mathbf{a}_1 - y_{28} \mathbf{a}_2 - z_{28} \mathbf{a}_3$	$=$	$-(ax_{28} + cz_{28} \cos \beta) \hat{\mathbf{x}} - by_{28} \hat{\mathbf{y}} - cz_{28} \sin \beta \hat{\mathbf{z}}$	(4e)	Ir II
$\mathbf{B}_{112} =$	$x_{28} \mathbf{a}_1 - (y_{28} - \frac{1}{2}) \mathbf{a}_2 + (z_{28} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{28} + c(z_{28} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{28} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{28} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Ir II
$\mathbf{B}_{113} =$	$x_{29} \mathbf{a}_1 + y_{29} \mathbf{a}_2 + z_{29} \mathbf{a}_3$	$=$	$(ax_{29} + cz_{29} \cos \beta) \hat{\mathbf{x}} + by_{29} \hat{\mathbf{y}} + cz_{29} \sin \beta \hat{\mathbf{z}}$	(4e)	Ir III
$\mathbf{B}_{114} =$	$-x_{29} \mathbf{a}_1 + (y_{29} + \frac{1}{2}) \mathbf{a}_2 - (z_{29} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{29} + c(z_{29} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{29} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{29} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Ir III
$\mathbf{B}_{115} =$	$-x_{29} \mathbf{a}_1 - y_{29} \mathbf{a}_2 - z_{29} \mathbf{a}_3$	$=$	$-(ax_{29} + cz_{29} \cos \beta) \hat{\mathbf{x}} - by_{29} \hat{\mathbf{y}} - cz_{29} \sin \beta \hat{\mathbf{z}}$	(4e)	Ir III
$\mathbf{B}_{116} =$	$x_{29} \mathbf{a}_1 - (y_{29} - \frac{1}{2}) \mathbf{a}_2 + (z_{29} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{29} + c(z_{29} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{29} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{29} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Ir III
$\mathbf{B}_{117} =$	$x_{30} \mathbf{a}_1 + y_{30} \mathbf{a}_2 + z_{30} \mathbf{a}_3$	$=$	$(ax_{30} + cz_{30} \cos \beta) \hat{\mathbf{x}} + by_{30} \hat{\mathbf{y}} + cz_{30} \sin \beta \hat{\mathbf{z}}$	(4e)	Ir IV
$\mathbf{B}_{118} =$	$-x_{30} \mathbf{a}_1 + (y_{30} + \frac{1}{2}) \mathbf{a}_2 - (z_{30} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{30} + c(z_{30} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{30} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{30} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Ir IV
$\mathbf{B}_{119} =$	$-x_{30} \mathbf{a}_1 - y_{30} \mathbf{a}_2 - z_{30} \mathbf{a}_3$	$=$	$-(ax_{30} + cz_{30} \cos \beta) \hat{\mathbf{x}} - by_{30} \hat{\mathbf{y}} - cz_{30} \sin \beta \hat{\mathbf{z}}$	(4e)	Ir IV
$\mathbf{B}_{120} =$	$x_{30} \mathbf{a}_1 - (y_{30} - \frac{1}{2}) \mathbf{a}_2 + (z_{30} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{30} + c(z_{30} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{30} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{30} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Ir IV

$\mathbf{B}_{147} =$	$-x_{37} \mathbf{a}_1 - y_{37} \mathbf{a}_2 - z_{37} \mathbf{a}_3$	$=$	$-(ax_{37} + cz_{37} \cos \beta) \hat{\mathbf{x}} - by_{37} \hat{\mathbf{y}} - cz_{37} \sin \beta \hat{\mathbf{z}}$	(4e)	Mg VII
$\mathbf{B}_{148} =$	$x_{37} \mathbf{a}_1 - (y_{37} - \frac{1}{2}) \mathbf{a}_2 + (z_{37} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{37} + c(z_{37} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{37} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{37} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Mg VII
$\mathbf{B}_{149} =$	$x_{38} \mathbf{a}_1 + y_{38} \mathbf{a}_2 + z_{38} \mathbf{a}_3$	$=$	$(ax_{38} + cz_{38} \cos \beta) \hat{\mathbf{x}} + by_{38} \hat{\mathbf{y}} + cz_{38} \sin \beta \hat{\mathbf{z}}$	(4e)	Mg VIII
$\mathbf{B}_{150} =$	$-x_{38} \mathbf{a}_1 + (y_{38} + \frac{1}{2}) \mathbf{a}_2 - (z_{38} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{38} + c(z_{38} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{38} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{38} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Mg VIII
$\mathbf{B}_{151} =$	$-x_{38} \mathbf{a}_1 - y_{38} \mathbf{a}_2 - z_{38} \mathbf{a}_3$	$=$	$-(ax_{38} + cz_{38} \cos \beta) \hat{\mathbf{x}} - by_{38} \hat{\mathbf{y}} - cz_{38} \sin \beta \hat{\mathbf{z}}$	(4e)	Mg VIII
$\mathbf{B}_{152} =$	$x_{38} \mathbf{a}_1 - (y_{38} - \frac{1}{2}) \mathbf{a}_2 + (z_{38} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{38} + c(z_{38} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{38} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{38} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Mg VIII
$\mathbf{B}_{153} =$	$x_{39} \mathbf{a}_1 + y_{39} \mathbf{a}_2 + z_{39} \mathbf{a}_3$	$=$	$(ax_{39} + cz_{39} \cos \beta) \hat{\mathbf{x}} + by_{39} \hat{\mathbf{y}} + cz_{39} \sin \beta \hat{\mathbf{z}}$	(4e)	Mg IX
$\mathbf{B}_{154} =$	$-x_{39} \mathbf{a}_1 + (y_{39} + \frac{1}{2}) \mathbf{a}_2 - (z_{39} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{39} + c(z_{39} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{39} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{39} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Mg IX
$\mathbf{B}_{155} =$	$-x_{39} \mathbf{a}_1 - y_{39} \mathbf{a}_2 - z_{39} \mathbf{a}_3$	$=$	$-(ax_{39} + cz_{39} \cos \beta) \hat{\mathbf{x}} - by_{39} \hat{\mathbf{y}} - cz_{39} \sin \beta \hat{\mathbf{z}}$	(4e)	Mg IX
$\mathbf{B}_{156} =$	$x_{39} \mathbf{a}_1 - (y_{39} - \frac{1}{2}) \mathbf{a}_2 + (z_{39} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{39} + c(z_{39} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{39} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{39} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Mg IX
$\mathbf{B}_{157} =$	$x_{40} \mathbf{a}_1 + y_{40} \mathbf{a}_2 + z_{40} \mathbf{a}_3$	$=$	$(ax_{40} + cz_{40} \cos \beta) \hat{\mathbf{x}} + by_{40} \hat{\mathbf{y}} + cz_{40} \sin \beta \hat{\mathbf{z}}$	(4e)	Mg X
$\mathbf{B}_{158} =$	$-x_{40} \mathbf{a}_1 + (y_{40} + \frac{1}{2}) \mathbf{a}_2 - (z_{40} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{40} + c(z_{40} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{40} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{40} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Mg X
$\mathbf{B}_{159} =$	$-x_{40} \mathbf{a}_1 - y_{40} \mathbf{a}_2 - z_{40} \mathbf{a}_3$	$=$	$-(ax_{40} + cz_{40} \cos \beta) \hat{\mathbf{x}} - by_{40} \hat{\mathbf{y}} - cz_{40} \sin \beta \hat{\mathbf{z}}$	(4e)	Mg X
$\mathbf{B}_{160} =$	$x_{40} \mathbf{a}_1 - (y_{40} - \frac{1}{2}) \mathbf{a}_2 + (z_{40} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{40} + c(z_{40} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{40} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{40} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Mg X
$\mathbf{B}_{161} =$	$x_{41} \mathbf{a}_1 + y_{41} \mathbf{a}_2 + z_{41} \mathbf{a}_3$	$=$	$(ax_{41} + cz_{41} \cos \beta) \hat{\mathbf{x}} + by_{41} \hat{\mathbf{y}} + cz_{41} \sin \beta \hat{\mathbf{z}}$	(4e)	Mg XI
$\mathbf{B}_{162} =$	$-x_{41} \mathbf{a}_1 + (y_{41} + \frac{1}{2}) \mathbf{a}_2 - (z_{41} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{41} + c(z_{41} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{41} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{41} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Mg XI
$\mathbf{B}_{163} =$	$-x_{41} \mathbf{a}_1 - y_{41} \mathbf{a}_2 - z_{41} \mathbf{a}_3$	$=$	$-(ax_{41} + cz_{41} \cos \beta) \hat{\mathbf{x}} - by_{41} \hat{\mathbf{y}} - cz_{41} \sin \beta \hat{\mathbf{z}}$	(4e)	Mg XI
$\mathbf{B}_{164} =$	$x_{41} \mathbf{a}_1 - (y_{41} - \frac{1}{2}) \mathbf{a}_2 + (z_{41} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{41} + c(z_{41} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{41} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{41} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Mg XI
$\mathbf{B}_{165} =$	$x_{42} \mathbf{a}_1 + y_{42} \mathbf{a}_2 + z_{42} \mathbf{a}_3$	$=$	$(ax_{42} + cz_{42} \cos \beta) \hat{\mathbf{x}} + by_{42} \hat{\mathbf{y}} + cz_{42} \sin \beta \hat{\mathbf{z}}$	(4e)	Mg XII
$\mathbf{B}_{166} =$	$-x_{42} \mathbf{a}_1 + (y_{42} + \frac{1}{2}) \mathbf{a}_2 - (z_{42} - \frac{1}{2}) \mathbf{a}_3$	$=$	$-(ax_{42} + c(z_{42} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_{42} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{42} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Mg XII
$\mathbf{B}_{167} =$	$-x_{42} \mathbf{a}_1 - y_{42} \mathbf{a}_2 - z_{42} \mathbf{a}_3$	$=$	$-(ax_{42} + cz_{42} \cos \beta) \hat{\mathbf{x}} - by_{42} \hat{\mathbf{y}} - cz_{42} \sin \beta \hat{\mathbf{z}}$	(4e)	Mg XII
$\mathbf{B}_{168} =$	$x_{42} \mathbf{a}_1 - (y_{42} - \frac{1}{2}) \mathbf{a}_2 + (z_{42} + \frac{1}{2}) \mathbf{a}_3$	$=$	$(ax_{42} + c(z_{42} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_{42} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{42} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Mg XII

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