

Ru₃Be₁₇ Structure:

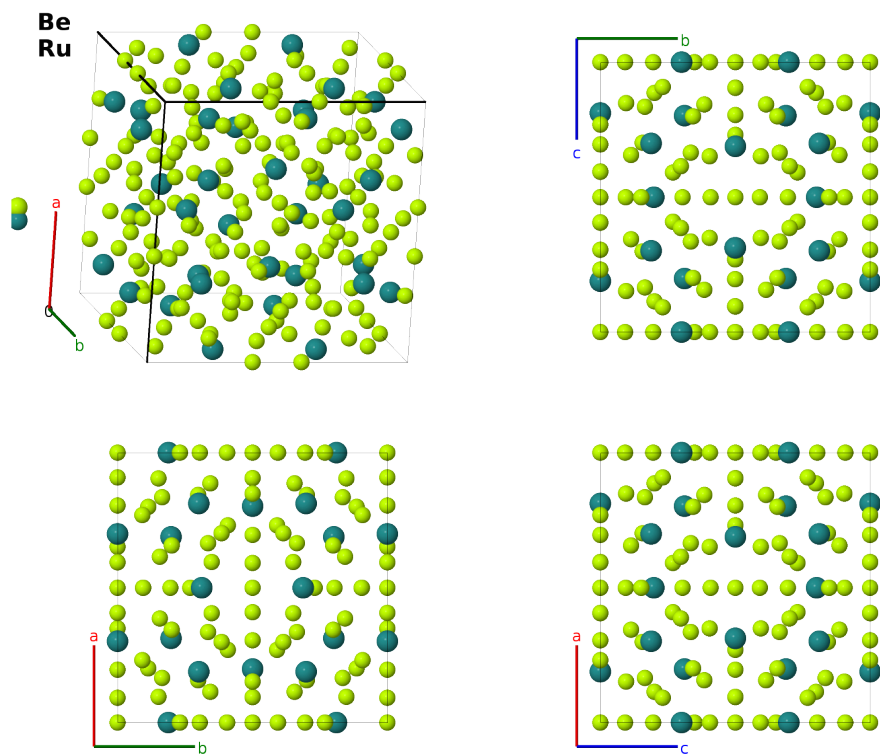
A17B3_cI160_204_def2gh_g-001

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- D. Hicks, M. J. Mehl, M. Esters, C. Oses, 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/92TS>

https://aflow.org/prototype-encyclopedia/A17B3_cI160_204_def2gh_g-001



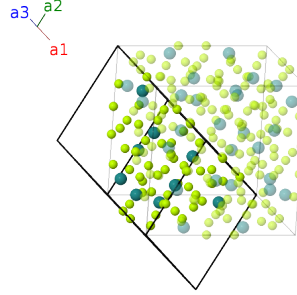
Prototype	Be ₁₇ Ru ₃
AFLOW prototype label	A17B3_cI160_204_def2gh_g-001
ICSD	58735
CCDC	1622738
Pearson symbol	cI160
Space group number	204
Space group symbol	$Im\bar{3}$
AFLOW prototype command	<pre>aflow --proto=A17B3_cI160_204_def2gh_g-001 --params=a, x₁, x₂, x₃, y₄, z₄, y₅, z₅, y₆, z₆, x₇, y₇, z₇</pre>

Other compounds with this structure

Os₃Be₁₇

Body-centered Cubic primitive vectors

$$\begin{aligned} \mathbf{a}_1 &= -\frac{1}{2}a \hat{\mathbf{x}} + \frac{1}{2}a \hat{\mathbf{y}} + \frac{1}{2}a \hat{\mathbf{z}} \\ \mathbf{a}_2 &= \frac{1}{2}a \hat{\mathbf{x}} - \frac{1}{2}a \hat{\mathbf{y}} + \frac{1}{2}a \hat{\mathbf{z}} \\ \mathbf{a}_3 &= \frac{1}{2}a \hat{\mathbf{x}} + \frac{1}{2}a \hat{\mathbf{y}} - \frac{1}{2}a \hat{\mathbf{z}} \end{aligned}$$



Basis vectors

	Lattice coordinates		Cartesian coordinates	Wyckoff position	Atom type
$\mathbf{B}_1$	$= x_1 \mathbf{a}_2 + x_1 \mathbf{a}_3$	$=$	$ax_1 \hat{\mathbf{x}}$	(12d)	Be I
$\mathbf{B}_2$	$= -x_1 \mathbf{a}_2 - x_1 \mathbf{a}_3$	$=$	$-ax_1 \hat{\mathbf{x}}$	(12d)	Be I
$\mathbf{B}_3$	$= x_1 \mathbf{a}_1 + x_1 \mathbf{a}_3$	$=$	$ax_1 \hat{\mathbf{y}}$	(12d)	Be I
$\mathbf{B}_4$	$= -x_1 \mathbf{a}_1 - x_1 \mathbf{a}_3$	$=$	$-ax_1 \hat{\mathbf{y}}$	(12d)	Be I
$\mathbf{B}_5$	$= x_1 \mathbf{a}_1 + x_1 \mathbf{a}_2$	$=$	$ax_1 \hat{\mathbf{z}}$	(12d)	Be I
$\mathbf{B}_6$	$= -x_1 \mathbf{a}_1 - x_1 \mathbf{a}_2$	$=$	$-ax_1 \hat{\mathbf{z}}$	(12d)	Be I
$\mathbf{B}_7$	$= \frac{1}{2} \mathbf{a}_1 + (x_2 + \frac{1}{2}) \mathbf{a}_2 + x_2 \mathbf{a}_3$	$=$	$ax_2 \hat{\mathbf{x}} + \frac{1}{2}a \hat{\mathbf{z}}$	(12e)	Be II
$\mathbf{B}_8$	$= \frac{1}{2} \mathbf{a}_1 - (x_2 - \frac{1}{2}) \mathbf{a}_2 - x_2 \mathbf{a}_3$	$=$	$-ax_2 \hat{\mathbf{x}} + \frac{1}{2}a \hat{\mathbf{z}}$	(12e)	Be II
$\mathbf{B}_9$	$= x_2 \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_2 + (x_2 + \frac{1}{2}) \mathbf{a}_3$	$=$	$\frac{1}{2}a \hat{\mathbf{x}} + ax_2 \hat{\mathbf{y}}$	(12e)	Be II
$\mathbf{B}_{10}$	$= -x_2 \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_2 - (x_2 - \frac{1}{2}) \mathbf{a}_3$	$=$	$\frac{1}{2}a \hat{\mathbf{x}} - ax_2 \hat{\mathbf{y}}$	(12e)	Be II
$\mathbf{B}_{11}$	$= (x_2 + \frac{1}{2}) \mathbf{a}_1 + x_2 \mathbf{a}_2 + \frac{1}{2} \mathbf{a}_3$	$=$	$\frac{1}{2}a \hat{\mathbf{y}} + ax_2 \hat{\mathbf{z}}$	(12e)	Be II
$\mathbf{B}_{12}$	$= -(x_2 - \frac{1}{2}) \mathbf{a}_1 - x_2 \mathbf{a}_2 + \frac{1}{2} \mathbf{a}_3$	$=$	$\frac{1}{2}a \hat{\mathbf{y}} - ax_2 \hat{\mathbf{z}}$	(12e)	Be II
$\mathbf{B}_{13}$	$= 2x_3 \mathbf{a}_1 + 2x_3 \mathbf{a}_2 + 2x_3 \mathbf{a}_3$	$=$	$ax_3 \hat{\mathbf{x}} + ax_3 \hat{\mathbf{y}} + ax_3 \hat{\mathbf{z}}$	(16f)	Be III
$\mathbf{B}_{14}$	$= -2x_3 \mathbf{a}_3$	$=$	$-ax_3 \hat{\mathbf{x}} - ax_3 \hat{\mathbf{y}} + ax_3 \hat{\mathbf{z}}$	(16f)	Be III
$\mathbf{B}_{15}$	$= -2x_3 \mathbf{a}_2$	$=$	$-ax_3 \hat{\mathbf{x}} + ax_3 \hat{\mathbf{y}} - ax_3 \hat{\mathbf{z}}$	(16f)	Be III
$\mathbf{B}_{16}$	$= -2x_3 \mathbf{a}_1$	$=$	$ax_3 \hat{\mathbf{x}} - ax_3 \hat{\mathbf{y}} - ax_3 \hat{\mathbf{z}}$	(16f)	Be III
$\mathbf{B}_{17}$	$= -2x_3 \mathbf{a}_1 - 2x_3 \mathbf{a}_2 - 2x_3 \mathbf{a}_3$	$=$	$-ax_3 \hat{\mathbf{x}} - ax_3 \hat{\mathbf{y}} - ax_3 \hat{\mathbf{z}}$	(16f)	Be III
$\mathbf{B}_{18}$	$= 2x_3 \mathbf{a}_3$	$=$	$ax_3 \hat{\mathbf{x}} + ax_3 \hat{\mathbf{y}} - ax_3 \hat{\mathbf{z}}$	(16f)	Be III
$\mathbf{B}_{19}$	$= 2x_3 \mathbf{a}_2$	$=$	$ax_3 \hat{\mathbf{x}} - ax_3 \hat{\mathbf{y}} + ax_3 \hat{\mathbf{z}}$	(16f)	Be III
$\mathbf{B}_{20}$	$= 2x_3 \mathbf{a}_1$	$=$	$-ax_3 \hat{\mathbf{x}} + ax_3 \hat{\mathbf{y}} + ax_3 \hat{\mathbf{z}}$	(16f)	Be III
$\mathbf{B}_{21}$	$= (y_4 + z_4) \mathbf{a}_1 + z_4 \mathbf{a}_2 + y_4 \mathbf{a}_3$	$=$	$ay_4 \hat{\mathbf{y}} + az_4 \hat{\mathbf{z}}$	(24g)	Be IV
$\mathbf{B}_{22}$	$= -(y_4 - z_4) \mathbf{a}_1 + z_4 \mathbf{a}_2 - y_4 \mathbf{a}_3$	$=$	$-ay_4 \hat{\mathbf{y}} + az_4 \hat{\mathbf{z}}$	(24g)	Be IV
$\mathbf{B}_{23}$	$= (y_4 - z_4) \mathbf{a}_1 - z_4 \mathbf{a}_2 + y_4 \mathbf{a}_3$	$=$	$ay_4 \hat{\mathbf{y}} - az_4 \hat{\mathbf{z}}$	(24g)	Be IV
$\mathbf{B}_{24}$	$= -(y_4 + z_4) \mathbf{a}_1 - z_4 \mathbf{a}_2 - y_4 \mathbf{a}_3$	$=$	$-ay_4 \hat{\mathbf{y}} - az_4 \hat{\mathbf{z}}$	(24g)	Be IV
$\mathbf{B}_{25}$	$= y_4 \mathbf{a}_1 + (y_4 + z_4) \mathbf{a}_2 + z_4 \mathbf{a}_3$	$=$	$az_4 \hat{\mathbf{x}} + ay_4 \hat{\mathbf{z}}$	(24g)	Be IV
$\mathbf{B}_{26}$	$= -y_4 \mathbf{a}_1 - (y_4 - z_4) \mathbf{a}_2 + z_4 \mathbf{a}_3$	$=$	$az_4 \hat{\mathbf{x}} - ay_4 \hat{\mathbf{z}}$	(24g)	Be IV

$\mathbf{B}_{27} =$	$y_4 \mathbf{a}_1 + (y_4 - z_4) \mathbf{a}_2 - z_4 \mathbf{a}_3$	$=$	$-az_4 \hat{\mathbf{x}} + ay_4 \hat{\mathbf{z}}$	$(24g)$	Be IV
$\mathbf{B}_{28} =$	$-y_4 \mathbf{a}_1 - (y_4 + z_4) \mathbf{a}_2 - z_4 \mathbf{a}_3$	$=$	$-az_4 \hat{\mathbf{x}} - ay_4 \hat{\mathbf{z}}$	$(24g)$	Be IV
$\mathbf{B}_{29} =$	$z_4 \mathbf{a}_1 + y_4 \mathbf{a}_2 + (y_4 + z_4) \mathbf{a}_3$	$=$	$ay_4 \hat{\mathbf{x}} + az_4 \hat{\mathbf{y}}$	$(24g)$	Be IV
$\mathbf{B}_{30} =$	$z_4 \mathbf{a}_1 - y_4 \mathbf{a}_2 - (y_4 - z_4) \mathbf{a}_3$	$=$	$-ay_4 \hat{\mathbf{x}} + az_4 \hat{\mathbf{y}}$	$(24g)$	Be IV
$\mathbf{B}_{31} =$	$-z_4 \mathbf{a}_1 + y_4 \mathbf{a}_2 + (y_4 - z_4) \mathbf{a}_3$	$=$	$ay_4 \hat{\mathbf{x}} - az_4 \hat{\mathbf{y}}$	$(24g)$	Be IV
$\mathbf{B}_{32} =$	$-z_4 \mathbf{a}_1 - y_4 \mathbf{a}_2 - (y_4 + z_4) \mathbf{a}_3$	$=$	$-ay_4 \hat{\mathbf{x}} - az_4 \hat{\mathbf{y}}$	$(24g)$	Be IV
$\mathbf{B}_{33} =$	$(y_5 + z_5) \mathbf{a}_1 + z_5 \mathbf{a}_2 + y_5 \mathbf{a}_3$	$=$	$ay_5 \hat{\mathbf{y}} + az_5 \hat{\mathbf{z}}$	$(24g)$	Be V
$\mathbf{B}_{34} =$	$-(y_5 - z_5) \mathbf{a}_1 + z_5 \mathbf{a}_2 - y_5 \mathbf{a}_3$	$=$	$-ay_5 \hat{\mathbf{y}} + az_5 \hat{\mathbf{z}}$	$(24g)$	Be V
$\mathbf{B}_{35} =$	$(y_5 - z_5) \mathbf{a}_1 - z_5 \mathbf{a}_2 + y_5 \mathbf{a}_3$	$=$	$ay_5 \hat{\mathbf{y}} - az_5 \hat{\mathbf{z}}$	$(24g)$	Be V
$\mathbf{B}_{36} =$	$-(y_5 + z_5) \mathbf{a}_1 - z_5 \mathbf{a}_2 - y_5 \mathbf{a}_3$	$=$	$-ay_5 \hat{\mathbf{y}} - az_5 \hat{\mathbf{z}}$	$(24g)$	Be V
$\mathbf{B}_{37} =$	$y_5 \mathbf{a}_1 + (y_5 + z_5) \mathbf{a}_2 + z_5 \mathbf{a}_3$	$=$	$az_5 \hat{\mathbf{x}} + ay_5 \hat{\mathbf{z}}$	$(24g)$	Be V
$\mathbf{B}_{38} =$	$-y_5 \mathbf{a}_1 - (y_5 - z_5) \mathbf{a}_2 + z_5 \mathbf{a}_3$	$=$	$az_5 \hat{\mathbf{x}} - ay_5 \hat{\mathbf{z}}$	$(24g)$	Be V
$\mathbf{B}_{39} =$	$y_5 \mathbf{a}_1 + (y_5 - z_5) \mathbf{a}_2 - z_5 \mathbf{a}_3$	$=$	$-az_5 \hat{\mathbf{x}} + ay_5 \hat{\mathbf{z}}$	$(24g)$	Be V
$\mathbf{B}_{40} =$	$-y_5 \mathbf{a}_1 - (y_5 + z_5) \mathbf{a}_2 - z_5 \mathbf{a}_3$	$=$	$-az_5 \hat{\mathbf{x}} - ay_5 \hat{\mathbf{z}}$	$(24g)$	Be V
$\mathbf{B}_{41} =$	$z_5 \mathbf{a}_1 + y_5 \mathbf{a}_2 + (y_5 + z_5) \mathbf{a}_3$	$=$	$ay_5 \hat{\mathbf{x}} + az_5 \hat{\mathbf{y}}$	$(24g)$	Be V
$\mathbf{B}_{42} =$	$z_5 \mathbf{a}_1 - y_5 \mathbf{a}_2 - (y_5 - z_5) \mathbf{a}_3$	$=$	$-ay_5 \hat{\mathbf{x}} + az_5 \hat{\mathbf{y}}$	$(24g)$	Be V
$\mathbf{B}_{43} =$	$-z_5 \mathbf{a}_1 + y_5 \mathbf{a}_2 + (y_5 - z_5) \mathbf{a}_3$	$=$	$ay_5 \hat{\mathbf{x}} - az_5 \hat{\mathbf{y}}$	$(24g)$	Be V
$\mathbf{B}_{44} =$	$-z_5 \mathbf{a}_1 - y_5 \mathbf{a}_2 - (y_5 + z_5) \mathbf{a}_3$	$=$	$-ay_5 \hat{\mathbf{x}} - az_5 \hat{\mathbf{y}}$	$(24g)$	Be V
$\mathbf{B}_{45} =$	$(y_6 + z_6) \mathbf{a}_1 + z_6 \mathbf{a}_2 + y_6 \mathbf{a}_3$	$=$	$ay_6 \hat{\mathbf{y}} + az_6 \hat{\mathbf{z}}$	$(24g)$	Ru I
$\mathbf{B}_{46} =$	$-(y_6 - z_6) \mathbf{a}_1 + z_6 \mathbf{a}_2 - y_6 \mathbf{a}_3$	$=$	$-ay_6 \hat{\mathbf{y}} + az_6 \hat{\mathbf{z}}$	$(24g)$	Ru I
$\mathbf{B}_{47} =$	$(y_6 - z_6) \mathbf{a}_1 - z_6 \mathbf{a}_2 + y_6 \mathbf{a}_3$	$=$	$ay_6 \hat{\mathbf{y}} - az_6 \hat{\mathbf{z}}$	$(24g)$	Ru I
$\mathbf{B}_{48} =$	$-(y_6 + z_6) \mathbf{a}_1 - z_6 \mathbf{a}_2 - y_6 \mathbf{a}_3$	$=$	$-ay_6 \hat{\mathbf{y}} - az_6 \hat{\mathbf{z}}$	$(24g)$	Ru I
$\mathbf{B}_{49} =$	$y_6 \mathbf{a}_1 + (y_6 + z_6) \mathbf{a}_2 + z_6 \mathbf{a}_3$	$=$	$az_6 \hat{\mathbf{x}} + ay_6 \hat{\mathbf{z}}$	$(24g)$	Ru I
$\mathbf{B}_{50} =$	$-y_6 \mathbf{a}_1 - (y_6 - z_6) \mathbf{a}_2 + z_6 \mathbf{a}_3$	$=$	$az_6 \hat{\mathbf{x}} - ay_6 \hat{\mathbf{z}}$	$(24g)$	Ru I
$\mathbf{B}_{51} =$	$y_6 \mathbf{a}_1 + (y_6 - z_6) \mathbf{a}_2 - z_6 \mathbf{a}_3$	$=$	$-az_6 \hat{\mathbf{x}} + ay_6 \hat{\mathbf{z}}$	$(24g)$	Ru I
$\mathbf{B}_{52} =$	$-y_6 \mathbf{a}_1 - (y_6 + z_6) \mathbf{a}_2 - z_6 \mathbf{a}_3$	$=$	$-az_6 \hat{\mathbf{x}} - ay_6 \hat{\mathbf{z}}$	$(24g)$	Ru I
$\mathbf{B}_{53} =$	$z_6 \mathbf{a}_1 + y_6 \mathbf{a}_2 + (y_6 + z_6) \mathbf{a}_3$	$=$	$ay_6 \hat{\mathbf{x}} + az_6 \hat{\mathbf{y}}$	$(24g)$	Ru I
$\mathbf{B}_{54} =$	$z_6 \mathbf{a}_1 - y_6 \mathbf{a}_2 - (y_6 - z_6) \mathbf{a}_3$	$=$	$-ay_6 \hat{\mathbf{x}} + az_6 \hat{\mathbf{y}}$	$(24g)$	Ru I
$\mathbf{B}_{55} =$	$-z_6 \mathbf{a}_1 + y_6 \mathbf{a}_2 + (y_6 - z_6) \mathbf{a}_3$	$=$	$ay_6 \hat{\mathbf{x}} - az_6 \hat{\mathbf{y}}$	$(24g)$	Ru I
$\mathbf{B}_{56} =$	$-z_6 \mathbf{a}_1 - y_6 \mathbf{a}_2 - (y_6 + z_6) \mathbf{a}_3$	$=$	$-ay_6 \hat{\mathbf{x}} - az_6 \hat{\mathbf{y}}$	$(24g)$	Ru I
$\mathbf{B}_{57} =$	$(y_7 + z_7) \mathbf{a}_1 + (x_7 + z_7) \mathbf{a}_2 +$ $(x_7 + y_7) \mathbf{a}_3$	$=$	$ax_7 \hat{\mathbf{x}} + ay_7 \hat{\mathbf{y}} + az_7 \hat{\mathbf{z}}$	$(48h)$	Be VI
$\mathbf{B}_{58} =$	$-(y_7 - z_7) \mathbf{a}_1 - (x_7 - z_7) \mathbf{a}_2 -$ $(x_7 + y_7) \mathbf{a}_3$	$=$	$-ax_7 \hat{\mathbf{x}} - ay_7 \hat{\mathbf{y}} + az_7 \hat{\mathbf{z}}$	$(48h)$	Be VI
$\mathbf{B}_{59} =$	$(y_7 - z_7) \mathbf{a}_1 - (x_7 + z_7) \mathbf{a}_2 -$ $(x_7 - y_7) \mathbf{a}_3$	$=$	$-ax_7 \hat{\mathbf{x}} + ay_7 \hat{\mathbf{y}} - az_7 \hat{\mathbf{z}}$	$(48h)$	Be VI
$\mathbf{B}_{60} =$	$-(y_7 + z_7) \mathbf{a}_1 + (x_7 - z_7) \mathbf{a}_2 +$ $(x_7 - y_7) \mathbf{a}_3$	$=$	$ax_7 \hat{\mathbf{x}} - ay_7 \hat{\mathbf{y}} - az_7 \hat{\mathbf{z}}$	$(48h)$	Be VI
$\mathbf{B}_{61} =$	$(x_7 + y_7) \mathbf{a}_1 + (y_7 + z_7) \mathbf{a}_2 +$ $(x_7 + z_7) \mathbf{a}_3$	$=$	$az_7 \hat{\mathbf{x}} + ax_7 \hat{\mathbf{y}} + ay_7 \hat{\mathbf{z}}$	$(48h)$	Be VI
$\mathbf{B}_{62} =$	$-(x_7 + y_7) \mathbf{a}_1 - (y_7 - z_7) \mathbf{a}_2 -$ $(x_7 - z_7) \mathbf{a}_3$	$=$	$az_7 \hat{\mathbf{x}} - ax_7 \hat{\mathbf{y}} - ay_7 \hat{\mathbf{z}}$	$(48h)$	Be VI

$$\begin{aligned}
\mathbf{B}_{63} &= \begin{matrix} -(x_7 - y_7) \mathbf{a}_1 + (y_7 - z_7) \mathbf{a}_2 - \\ (x_7 + z_7) \mathbf{a}_3 \end{matrix} = -az_7 \hat{\mathbf{x}} - ax_7 \hat{\mathbf{y}} + ay_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{64} &= \begin{matrix} (x_7 - y_7) \mathbf{a}_1 - (y_7 + z_7) \mathbf{a}_2 + \\ (x_7 - z_7) \mathbf{a}_3 \end{matrix} = -az_7 \hat{\mathbf{x}} + ax_7 \hat{\mathbf{y}} - ay_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{65} &= \begin{matrix} (x_7 + z_7) \mathbf{a}_1 + (x_7 + y_7) \mathbf{a}_2 + \\ (y_7 + z_7) \mathbf{a}_3 \end{matrix} = ay_7 \hat{\mathbf{x}} + az_7 \hat{\mathbf{y}} + ax_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{66} &= \begin{matrix} -(x_7 - z_7) \mathbf{a}_1 - (x_7 + y_7) \mathbf{a}_2 - \\ (y_7 - z_7) \mathbf{a}_3 \end{matrix} = -ay_7 \hat{\mathbf{x}} + az_7 \hat{\mathbf{y}} - ax_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{67} &= \begin{matrix} -(x_7 + z_7) \mathbf{a}_1 - (x_7 - y_7) \mathbf{a}_2 + \\ (y_7 - z_7) \mathbf{a}_3 \end{matrix} = ay_7 \hat{\mathbf{x}} - az_7 \hat{\mathbf{y}} - ax_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{68} &= \begin{matrix} (x_7 - z_7) \mathbf{a}_1 + (x_7 - y_7) \mathbf{a}_2 - \\ (y_7 + z_7) \mathbf{a}_3 \end{matrix} = -ay_7 \hat{\mathbf{x}} - az_7 \hat{\mathbf{y}} + ax_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{69} &= \begin{matrix} -(y_7 + z_7) \mathbf{a}_1 - (x_7 + z_7) \mathbf{a}_2 - \\ (x_7 + y_7) \mathbf{a}_3 \end{matrix} = -ax_7 \hat{\mathbf{x}} - ay_7 \hat{\mathbf{y}} - az_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{70} &= \begin{matrix} (y_7 - z_7) \mathbf{a}_1 + (x_7 - z_7) \mathbf{a}_2 + \\ (x_7 + y_7) \mathbf{a}_3 \end{matrix} = ax_7 \hat{\mathbf{x}} + ay_7 \hat{\mathbf{y}} - az_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{71} &= \begin{matrix} -(y_7 - z_7) \mathbf{a}_1 + (x_7 + z_7) \mathbf{a}_2 + \\ (x_7 - y_7) \mathbf{a}_3 \end{matrix} = ax_7 \hat{\mathbf{x}} - ay_7 \hat{\mathbf{y}} + az_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{72} &= \begin{matrix} (y_7 + z_7) \mathbf{a}_1 - (x_7 - z_7) \mathbf{a}_2 - \\ (x_7 - y_7) \mathbf{a}_3 \end{matrix} = -ax_7 \hat{\mathbf{x}} + ay_7 \hat{\mathbf{y}} + az_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{73} &= \begin{matrix} -(x_7 + y_7) \mathbf{a}_1 - (y_7 + z_7) \mathbf{a}_2 - \\ (x_7 + z_7) \mathbf{a}_3 \end{matrix} = -az_7 \hat{\mathbf{x}} - ax_7 \hat{\mathbf{y}} - ay_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{74} &= \begin{matrix} (x_7 + y_7) \mathbf{a}_1 + (y_7 - z_7) \mathbf{a}_2 + \\ (x_7 - z_7) \mathbf{a}_3 \end{matrix} = -az_7 \hat{\mathbf{x}} + ax_7 \hat{\mathbf{y}} + ay_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{75} &= \begin{matrix} (x_7 - y_7) \mathbf{a}_1 - (y_7 - z_7) \mathbf{a}_2 + \\ (x_7 + z_7) \mathbf{a}_3 \end{matrix} = az_7 \hat{\mathbf{x}} + ax_7 \hat{\mathbf{y}} - ay_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{76} &= \begin{matrix} -(x_7 - y_7) \mathbf{a}_1 + (y_7 + z_7) \mathbf{a}_2 - \\ (x_7 - z_7) \mathbf{a}_3 \end{matrix} = az_7 \hat{\mathbf{x}} - ax_7 \hat{\mathbf{y}} + ay_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{77} &= \begin{matrix} -(x_7 + z_7) \mathbf{a}_1 - (x_7 + y_7) \mathbf{a}_2 - \\ (y_7 + z_7) \mathbf{a}_3 \end{matrix} = -ay_7 \hat{\mathbf{x}} - az_7 \hat{\mathbf{y}} - ax_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{78} &= \begin{matrix} (x_7 - z_7) \mathbf{a}_1 + (x_7 + y_7) \mathbf{a}_2 + \\ (y_7 - z_7) \mathbf{a}_3 \end{matrix} = ay_7 \hat{\mathbf{x}} - az_7 \hat{\mathbf{y}} + ax_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{79} &= \begin{matrix} (x_7 + z_7) \mathbf{a}_1 + (x_7 - y_7) \mathbf{a}_2 - \\ (y_7 - z_7) \mathbf{a}_3 \end{matrix} = -ay_7 \hat{\mathbf{x}} + az_7 \hat{\mathbf{y}} + ax_7 \hat{\mathbf{z}} & (48h) & \text{Be VI} \\
\mathbf{B}_{80} &= \begin{matrix} -(x_7 - z_7) \mathbf{a}_1 - (x_7 - y_7) \mathbf{a}_2 + \\ (y_7 + z_7) \mathbf{a}_3 \end{matrix} = ay_7 \hat{\mathbf{x}} + az_7 \hat{\mathbf{y}} - ax_7 \hat{\mathbf{z}} & (48h) & \text{Be VI}
\end{aligned}$$

References

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Found in

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