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Supporting information for article:

A polarization-switch effect of silicon crystals under multiple-beam diffraction geometry

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S1. The quantitative relationship between the shifts of these lines and the applied strains

S1.1. x-axis strain

As shown in Fig.S1, when the crystal has an x-axis strain $\Delta d_x/d$, the coordinate of the reciprocal lattice points G_2, G_3 become G_2' ($[6(d+\Delta d_x)]^{-1}$, $-(6d)^{-1}$, $-(2d)^{-1}$), G_3'($[6(d+\Delta d_x)]^{-1}$, $(6d)^{-1}$,$-(2d)^{-1}$), and G_4, G_5 become $G_4'(-7/[6(d+\Delta d_x)], -(2d)^{-1}, -(2d)^{-1})$, G_5'($-7/[6(d+\Delta d_x)]$, $(2d)^{-1}$,$-(2d)^{-1}$) respectively. To satisfy the Bragg condition again, the incident vector must rotate $\Delta\theta$ along the normal of the primary diffraction plane, namely the new center of the Ewald sphere become $C'(-\cos(\theta+\Delta\theta_{\parallel})/\lambda,\ 0,\ -\sin(\theta+\Delta\theta_{\parallel})/\lambda)$, such that the conditions $|C'G_2'| = 1/\lambda$ or $|C'G_3'| = 1/\lambda$ or $|C'G_4'| = 1/\lambda$ or $|C'G_5'| = 1/\lambda$ will be fulfilled.

First of all, with $|C'G_2'| = 1/\lambda$ or $|C'G_3'| = 1/\lambda$, one can get an equation below:

$$\frac{1}{36d^2(1+\Delta d_x/d)^2} + \frac{1}{36d^2} + \frac{1}{4d^2} + \frac{\cos(\theta+\Delta\theta_{\parallel})}{3\lambda d(1+\Delta d_x/d)} - \frac{\sin(\theta+\Delta\theta_{\parallel})}{\lambda d} = 0 \quad \text{(S-1)}$$

Because the $\Delta\theta_{\parallel}$ and $\Delta d_x/d$ are both small quantities, one can use $1/(1+\Delta d_x/d)^2 = 1-2\,\Delta d_x/d$, $1/(1+\Delta d_x/d) = 1-\Delta d_x/d$, $\cos\Delta\theta_{\parallel} = 1$ and $\sin\Delta\theta_{\parallel} = \Delta\theta_{\parallel}$ to simplify the equation (S-1) as below:

$$-\frac{\Delta d_x/d}{18d^2} + \frac{11}{36d^2} + \frac{(\cos\theta-\Delta\theta_{\parallel}\sin\theta)}{3\lambda d} - \frac{(\cos\theta-\Delta\theta_{\parallel}\sin\theta)\Delta d_x/d}{3\lambda d} - \frac{\sin\theta+\Delta\theta_{\parallel}\cos\theta}{\lambda d} = 0 \quad \text{(S-2)}$$

Then, by taking the Bragg equation of 006 plane $\lambda = 2d\sin\theta$ and the geometry relationship $tan\,\theta = h/[l-(h^2+k^2+l^2)/6] = 6/7$ into account and omitting the high order item with a product of $\Delta\theta_{\parallel}$ with Δd_x, the relationship between the shifts of the two inclined lines and the applied x-axis strain $\Delta d_x/d$ can be written as:

$$\Delta d_x/d = -3\Delta\theta_{\parallel} \quad \text{(S-3)}$$

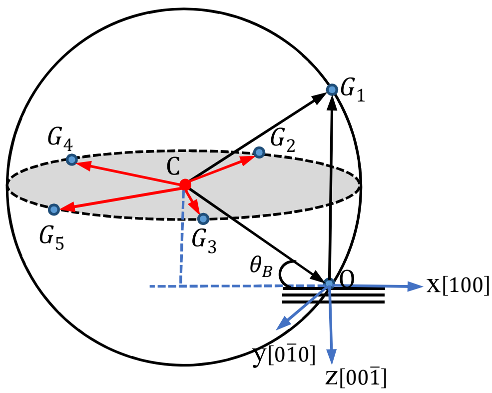

Figure S1 Si (000)/(006)/(113)/(1$\bar{1}$3)/($\bar{7}$33)/($\bar{7}\bar{3}$3)/($\bar{8}$02)/($\bar{8}$04) eight-beam diffraction geometry in reciprocal space. O is the origin of the reciprocal space and C is the center of the Ewald sphere. G_2, G_3, G_4, and G_5 are the reciprocal lattice points of the planes (113), (1$\bar{1}$3), ($\bar{7}$33), and ($\bar{7}\bar{3}$3) respectively.

Similarly, with $|C'G_4'| = 1/\lambda$ or $|C'G_5'| = 1/\lambda$, we can get the relationship between the shifts of another two inclined lines and the applied x-axis strain $\Delta d_x/d$ as follows:

$$\Delta d_x/d = \frac{3}{7}\Delta\theta_{\parallel} \quad \text{(S-4)}$$

S1.2. y-axis strain

Similarly, when the crystal has a y-axis strain $\Delta d_y/d$, the coordinate of the reciprocal lattice points G_2, G_3 become $G_2''((6d)^{-1}, -[6(d+\Delta d_y)]^{-1}, -(2d)^{-1})$, $G_3''((6d)^{-1}, [6(d+\Delta d_y)]^{-1}, -(2d)^{-1})$, and G_4, G_5 become $G_4''(-7/(6d), -[2(d+\Delta d_y)]^{-1}, -(2d)^{-1})$, $G_5''(-7/(6d), [2(d+\Delta d_y)]^{-1}, -(2d)^{-1})$ respectively. To satisfy the Bragg condition again, the incident vector must rotate $\Delta\theta$ along the normal of the primary diffraction plane, namely the new center of the Ewald sphere become $C'(-\cos(\theta+\Delta\theta_{\parallel})/\lambda, 0, -\sin(\theta+\Delta\theta_{\parallel})/\lambda)$, such that the conditions $|C'G_2''| = 1/\lambda$ or $|C'G_3''| = 1/\lambda$ or $|C'G_4''| = 1/\lambda$ or $|C'G_5''| = 1/\lambda$ will be fulfilled. With the conditions $|C'G_2''| = 1/\lambda$ or $|C'G_3''| = 1/\lambda$, we can get the relationship between the shifts of the two inclined lines and the applied y-axis strain $\Delta d_y/d$ as follows:

$$\Delta d_y/d = -\frac{27}{2}\Delta\theta_{\parallel} \quad \text{(S-5)}$$

Similarly, with the conditions $|C'G_4''| = 1/\lambda$ or $|C'G_5''| = 1/\lambda$, we can also get the relationship between the shifts of another two inclined lines and the applied y-axis strain $\Delta d_y/d$ as follows:

$$\Delta d_y/d = \frac{7}{6}\Delta\theta_{\parallel} \quad \text{(S-6)}$$

S1.3. z-axis strain

For the condition that the z-axis strains have been added, we can get the relationship between the shift of the vertical line and the applied z-axis strain $\Delta d_z/d$ as follows:

$$\Delta d_z/d = -\frac{7}{6}\Delta\theta_{\perp} \quad \text{(S-7)}$$

Here, equation (S-7) is the differential form of the out-of-plane Bragg equation.

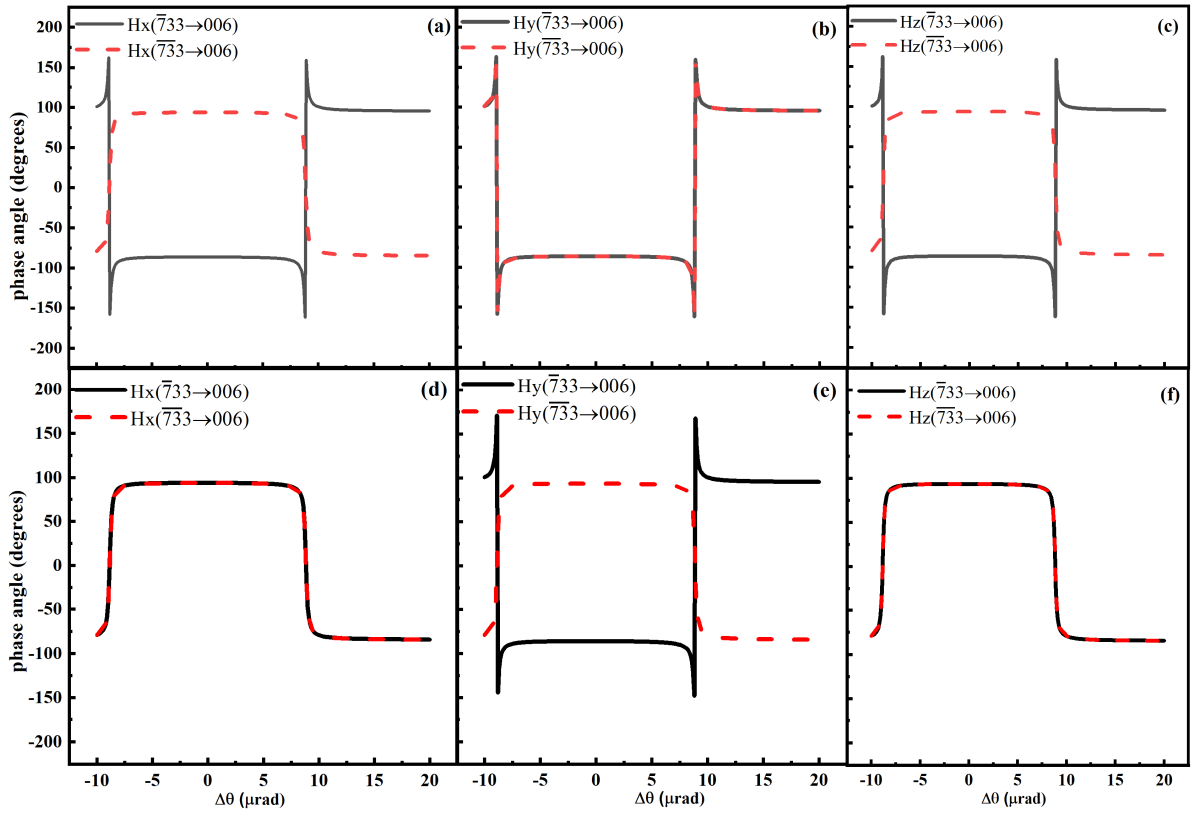

Figure S2 The phase angle of the x, y, z-axis components of the magnetic field for the two detoured diffraction beams 000 → $\bar{7}33$ → 006 and 000 → $\bar{7}\bar{3}3$ → 006. (a)-(c) for σ polarized incidence; (d)-(f) for pi polarized incidence. The x, z components represent the σ polarized components and the y component stands for the π polarized components of the 006 diffraction wave.

Table S1 The energy and index list of all the multiple-beam diffraction geometry for the 006 beam at the energy range of 2-15 keV.

Energy (keV)	Indexes of multiple-beam diffraction geometry	Number of beams
6.84867	(000)(006)($\bar{2}\bar{2}2$)($\bar{2}\bar{2}4$)($\bar{2}22$)($\bar{2}24$)	6
6.85923	(000)(006)($\bar{3}\bar{1}3$)($\bar{3}13$)	4
6.94314	(000)(006)($\bar{1}\bar{3}3$)($\bar{1}33$)	4
7.10799	(000)(006)($\bar{3}\bar{1}1$)($\bar{3}\bar{1}5$)($\bar{3}11$)($\bar{3}15$)	6
7.21913	(000)(006)($\bar{4}02$)($\bar{4}04$)($\bar{2}00$)($\bar{2}06$)(202)(204)	8
7.65705	(000)(006)($\bar{4}\bar{2}2$)($\bar{4}\bar{2}4$)($\bar{4}22$)($\bar{4}24$)($\bar{3}\bar{3}3$)($\bar{3}33$)($1\bar{1}1$)($1\bar{1}5$)(111)(115)	12
7.87183	(000)(006)($\bar{5}\bar{1}3$)($\bar{5}13$)	4
8.23108	(000)(006)($\bar{4}06$)($\bar{2}\bar{2}6$)($\bar{2}26$)($\bar{4}00$)($\bar{2}\bar{2}0$)($\bar{2}20$)	8
8.35987	(000)(006)($\bar{5}\bar{1}1$)($\bar{5}\bar{1}5$)($\bar{5}11$)($\bar{5}15$)	6
8.44807	(000)(006)($\bar{3}\bar{3}1$)($\bar{3}\bar{3}5$)($\bar{3}31$)($\bar{3}35$)	6

8.67632	$(000)(006)(\bar{6}02)(\bar{6}04)$	4
8.91497	$(000)(006)(\bar{1}\bar{3}1)(\bar{1}\bar{3}5)(\bar{1}31)(\bar{1}35)(\bar{5}\bar{3}3)(\bar{5}33)(\bar{4}\bar{2}0)(\bar{4}20)(\bar{4}\bar{2}6)(\bar{4}26)$	12
9.16321	$(000)(006)(\bar{6}\bar{2}2)(\bar{6}\bar{2}4)(\bar{6}22)(\bar{6}24)$	6
9.42028	$(000)(006)(\bar{3}\bar{1}\bar{1})(\bar{3}1\bar{1})(\bar{3}\bar{1}7)(\bar{3}17)$	6
9.52543	$(000)(006)(\bar{5}\bar{3}1)(\bar{5}31)(\bar{5}\bar{3}5)(\bar{5}35)$	6
9.57087	$(000)(006)(\bar{7}\bar{1}3)(\bar{7}13)$	4
9.68548	$(000)(006)(\bar{6}00)(\bar{6}06)(\bar{4}\bar{4}2)(\bar{4}\bar{4}4)(\bar{4}42)(\bar{4}44)(\bar{2}\bar{4}2)(\bar{2}\bar{4}4)(\bar{2}42)(\bar{2}44)$	12
10.03736	$(000)(006)(\bar{7}\bar{1}1)(\bar{7}\bar{1}5)(\bar{7}11)(\bar{7}15)$	6
10.18128	$(000)(006)(\bar{5}\bar{1}\bar{1})(\bar{5}\bar{1}7)(\bar{5}1\bar{1})(\bar{5}17)$	6
10.23772	$(000)(006)(\bar{6}\bar{2}6)(\bar{6}26)(\bar{6}\bar{2}0)(\bar{6}20)$	6
10.5236	$(000)(006)(\bar{8}02)(\bar{8}04)(\bar{7}\bar{3}3)(\bar{7}33)(1\bar{1}3)(113)$	8
10.81532	$(000)(006)(\bar{6}\bar{4}2)(\bar{6}\bar{4}4)(\bar{6}42)(\bar{6}44)$	6
10.96322	$(000)(006)(\bar{8}\bar{2}2)(\bar{8}\bar{2}4)(\bar{8}22)(\bar{8}24)$	6
11.02701	$(000)(006)(\bar{7}\bar{3}1)(\bar{7}\bar{3}5)(\bar{7}31)(\bar{7}35)$	6
11.41445	$(000)(006)(\bar{8}00)(\bar{4}\bar{4}0)(\bar{4}40)(\bar{8}06)(\bar{4}\bar{4}6)(\bar{4}0\bar{2})(\bar{4}08)(\bar{4}46)$	10
11.51617	$(000)(006)(\bar{9}\bar{1}3)(\bar{9}13)$	4
11.54532	$(000)(006)(\bar{7}\bar{1}\bar{1})(\bar{7}\bar{1}7)(\bar{7}1\bar{1})(\bar{7}17)$	6
11.59789	$(000)(006)(\bar{5}\bar{5}3)(\bar{5}\bar{3}1)(\bar{5}\bar{3}7)(\bar{5}3\bar{1})(\bar{5}37)(\bar{5}53)$	8
11.72106	$(000)(006)(\bar{3}\bar{3}\bar{1})(\bar{3}\bar{3}7)(\bar{3}3\bar{1})(\bar{3}37)(\bar{3}\bar{5}3)(\bar{3}53)$	8
11.87597	$(000)(006)(\bar{8}\bar{2}6)(\bar{8}26)(\bar{8}\bar{2}0)(\bar{8}20)$	6
11.92783	$(000)(006)(\bar{9}\bar{1}1)(\bar{9}\bar{1}5)(\bar{9}11)(\bar{9}15)$	6
12.03189	$(000)(006)(\bar{6}\bar{4}0)(\bar{6}\bar{4}6)(\bar{6}40)(\bar{6}46)(\bar{6}0\bar{2})(\bar{6}08)$	8
12.34662	$(000)(006)(\bar{9}\bar{3}3)(\bar{9}33)(\bar{8}\bar{4}2)(\bar{8}\bar{4}4)(\bar{8}42)(\bar{8}44)(\bar{5}\bar{5}1)(\bar{5}\bar{5}5)(\bar{5}51)(\bar{5}55)$	20
	$(\bar{4}\bar{2}\bar{2})(\bar{4}\bar{2}8)(\bar{4}2\bar{2})(\bar{4}28)(\bar{1}\bar{1}\bar{1})(\bar{1}\bar{1}7)(\bar{1}1\bar{1})(\bar{1}17)$	
12.53721	$(000)(006)(\bar{10}02)(\bar{10}04)$	4
12.61927	$(000)(006)(\bar{7}\bar{3}7)(\bar{7}37)(\bar{7}53)(\bar{7}\bar{3}\bar{1})(\bar{7}3\bar{1})(\bar{7}53)$	8
12.66496	$(000)(006)(\bar{6}\bar{2}\bar{2})(\bar{6}\bar{2}8)(\bar{6}2\bar{2})(\bar{6}28)$	6
12.77182	$(000)(006)(\bar{9}\bar{3}1)(\bar{9}\bar{3}5)(\bar{9}31)(\bar{9}35)$	6
12.92205	$(000)(006)(\bar{10}\bar{2}2)(\bar{10}\bar{2}4)(\bar{10}22)(\bar{10}24)$	6
12.98664	$(000)(006)(\bar{3}\bar{5}1)(\bar{3}51)(\bar{3}\bar{5}5)(\bar{3}55)$	6
13.17187	$(000)(006)(\bar{7}\bar{5}1)(\bar{7}\bar{5}5)(\bar{7}51)(\bar{7}55)$	6
13.20283	$(000)(006)(\bar{9}\bar{1}\bar{1})(\bar{9}\bar{1}7)(\bar{9}1\bar{1})(\bar{9}17)$	6
13.31142	$(000)(006)(\bar{10}00)(\bar{10}06)(\bar{8}\bar{4}0)(\bar{8}\bar{4}6)(\bar{8}0\bar{2})(\bar{8}08)(\bar{8}40)(\bar{8}46)$	16
	$(\bar{2}\bar{4}0)(\bar{2}0\bar{2})(\bar{2}40)(\bar{2}\bar{4}6)(\bar{2}08)(\bar{2}46)$	
13.70495	$(000)(006)(\bar{10}\bar{2}0)(\bar{10}\bar{2}6)(\bar{10}20)(\bar{10}26)$	6
13.80394	$(000)(006)(\bar{8}\bar{2}\bar{2})(\bar{8}\bar{2}8)(\bar{8}2\bar{2})(\bar{8}28)$	6
13.90316	$(000)(006)(\bar{5}\bar{1}\bar{3})(\bar{5}\bar{1}9)(\bar{5}1\bar{3})(\bar{5}19)$	6
13.96943	$(000)(006)(\bar{6}\bar{6}2)(\bar{6}\bar{6}4)(\bar{6}62)(\bar{6}64)$	6

14.08011	$(000)(006)(\bar{9}\bar{3}\bar{1})(\bar{9}3\bar{1})(\bar{9}\bar{5}3)(\bar{9}\bar{3}7)(\bar{9}37)(\bar{9}53)$	8
14.10228	$(000)(006)(\overline{10}\bar{4}2)(\overline{10}\bar{4}4)(\overline{10}42)(\overline{10}44)$	6
14.30227	$(000)(006)(\bar{7}\bar{1}9)(\bar{7}19)(\bar{7}\bar{1}\bar{3})(\bar{7}1\bar{3})(\bar{4}\bar{6}2)(\bar{4}\bar{6}4)(\bar{4}62)(\bar{4}64)$	10
14.52546	$(000)(006)(\bar{9}\bar{5}1)(\bar{9}\bar{5}5)(\bar{9}51)(\bar{9}55)$	6
14.63742	$(000)(006)(\bar{6}\bar{4}\bar{2})(\bar{6}\bar{4}8)(\bar{6}4\bar{2})(\bar{6}48)$	6
14.70472	$(000)(006)(\bar{5}\bar{5}\bar{1})(\bar{5}\bar{5}7)(\bar{5}5\bar{1})(\bar{5}57)$	6
14.80582	$(000)(006)(\bar{8}\bar{6}2)(\bar{8}\bar{6}4)(\bar{8}62)(\bar{8}64)$	6
14.87816	$(000)(006)(\bar{7}\bar{5}\bar{1})(\bar{7}\bar{5}7)(\bar{7}5\bar{1})(\bar{7}57)$	6
14.90712	$(000)(006)(\overline{10}\bar{4}0)(\overline{10}\bar{4}6)(\bar{1}00\bar{2})(\overline{10}08)(\overline{10}40)(\overline{10}46)$	8

Table S2 The energy and index list of all the multiple-beam diffraction geometry for the 002 beam at the energy range of 2-15 keV.

Energy (keV)	Indexes of multiple-beam diffraction geometry	Number of beams
2.55235	$(000)(002)(\bar{1}\bar{1}1)(\bar{1}11)$	4
3.22849	$(000)(002)(\bar{2}00)(\bar{2}02)$	4
4.11554	$(000)(002)(\bar{3}\bar{1}1)(\bar{3}11)$	4
5.1047	$(000)(002)(\bar{4}00)(\bar{4}02)(\bar{2}\bar{2}0)(\bar{2}\bar{2}2)(\bar{2}20)(\bar{2}22)$	8
5.44767	$(000)(002)(\bar{3}\bar{1}\bar{1})(\bar{3}\bar{1}3)(\bar{3}1\bar{1})(\bar{3}13)$	6
6.14687	$(000)(002)(\bar{5}\bar{1}1)(\bar{5}11)(\bar{4}\bar{2}0)(\bar{4}\bar{2}2)(\bar{4}20)(\bar{4}22)(\bar{1}\bar{1}\bar{1})(\bar{1}\bar{1}3)(\bar{1}1\bar{1})(\bar{1}13)$	12
6.85923	$(000)(002)(\bar{3}\bar{3}1)(\bar{3}31)$	4
7.00293	$(000)(002)(\bar{5}\bar{1}\bar{1})(\bar{5}\bar{1}3)(\bar{5}1\bar{1})(\bar{5}13)$	6
7.21913	$(000)(002)(\bar{6}00)(\bar{6}02)(\bar{4}0\bar{2})(\bar{4}04)(\bar{2}0\bar{2})(\bar{2}04)$	8
7.87183	$(000)(002)(\bar{5}\bar{3}1)(\bar{5}31)$	4
7.94469	$(000)(002)(\bar{6}\bar{2}0)(\bar{6}\bar{2}2)(\bar{6}20)(\bar{6}22)$	6
8.30985	$(000)(002)(\bar{7}\bar{1}1)(\bar{7}11)(\bar{4}\bar{2}\bar{2})(\bar{4}\bar{2}4)(\bar{4}2\bar{2})(\bar{4}24)(\bar{3}\bar{3}\bar{1})(\bar{3}\bar{3}3)(\bar{3}3\bar{1})(\bar{3}33)$	12
8.67632	$(000)(002)(\bar{6}0\bar{2})(\bar{6}04)$	4
8.74976	$(000)(002)(\bar{5}\bar{3}\bar{1})(\bar{5}\bar{3}3)(\bar{5}3\bar{1})(\bar{5}33)$	6
8.9388	$(000)(002)(\bar{7}\bar{1}\bar{1})(\bar{7}\bar{1}3)(\bar{7}1\bar{1})(\bar{7}13)$	6
9.4126	$(000)(002)(\bar{8}00)(\bar{8}02)(\bar{6}\bar{2}\bar{2})(\bar{6}\bar{2}4)(\bar{6}2\bar{2})(\bar{6}24)(\bar{4}\bar{4}0)(\bar{4}\bar{4}2)$	16
	$(-\bar{4}40)(\bar{4}42)(\bar{2}\bar{2}\bar{2})(\bar{2}\bar{2}4)(\bar{2}2\bar{2})(\bar{2}24)$	
9.57087	$(000)(002)(\bar{7}\bar{3}1)(\bar{7}31)$	4
9.63423	$(000)(002)(\bar{5}\bar{1}\bar{3})(\bar{5}\bar{1}5)(\bar{5}1\bar{3})(\bar{5}15)$	6
9.78215	$(000)(002)(\bar{3}\bar{1}\bar{3})(\bar{3}\bar{1}5)(\bar{3}1\bar{3})(\bar{3}15)$	6
9.96724	$(000)(002)(\bar{8}\bar{2}0)(\bar{8}\bar{2}2)(\bar{8}20)(\bar{8}22)$	6
10.15252	$(000)(002)(\bar{6}\bar{4}0)(\bar{6}\bar{4}2)(\bar{6}40)(\bar{6}42)$	6
10.20549	$(000)(002)(\bar{7}\bar{3}\bar{1})(\bar{7}\bar{3}3)(\bar{7}3\bar{1})(\bar{7}33)$	6
10.5236	$(000)(002)(\bar{9}\bar{1}1)(\bar{9}11)(\bar{8}0\bar{2})(\bar{8}04)(\bar{1}\bar{3}1)(\bar{1}31)$	8

10.8422	$(000)(002)(\bar{7}\bar{1}\bar{3})(\bar{7}\bar{1}5)(\bar{7}1\bar{3})(\bar{7}15)$	6
11.01938	$(000)(002)(\bar{9}\bar{1}\bar{1})(\bar{9}\bar{1}3)(\bar{9}1\bar{1})(\bar{9}13)$	6
11.08143	$(000)(002)(\bar{8}\bar{2}\bar{2})(\bar{8}\bar{2}4)(\bar{8}2\bar{2})(\bar{8}24)$	6
11.41673	$(000)(002)(\bar{5}\bar{5}1)(\bar{5}\bar{3}\bar{3})(\bar{5}\bar{3}5)(\bar{5}3\bar{3})(\bar{5}35)(\bar{5}51)$	8
11.51617	$(000)(002)(\bar{9}\bar{3}1)(\bar{9}31)$	4
11.6405	$(000)(002)(\overline{10}00)(\overline{10}02)(\bar{8}\bar{4}0)(\bar{8}\bar{4}2)(\bar{8}40)(\bar{8}42)$	24
	$(\bar{6}\bar{4}\bar{2})(\bar{6}\bar{4}4)(\bar{6}0\bar{4})(\bar{6}06)(\bar{6}4\bar{2})(\bar{6}44)(\bar{4}\bar{4}\bar{2})(\bar{4}\bar{4}4)$	
	$(\bar{4}0\bar{4})(\bar{4}06)(\bar{4}4\bar{2})(\bar{4}44)(\bar{2}\bar{4}0)(\bar{2}\bar{4}2)(\bar{2}40)(\bar{2}42)$	
12.01383	$(000)(002)(\bar{9}\bar{3}\bar{1})(\bar{9}\bar{3}3)(\bar{9}3\bar{1})(\bar{9}33)$	6
12.08855	$(000)(002)(\overline{10}\bar{2}0)(\overline{10}\bar{2}2)(\overline{10}20)(\overline{10}22)$	6
12.12057	$(000)(002)(\bar{7}\bar{5}1)(\bar{7}\bar{3}3)(\bar{7}\bar{3}5)(\bar{7}3\bar{3})(\bar{7}35)(\bar{7}51)$	8
12.3128	$(000)(002)(\bar{5}\bar{5}\bar{1})(\bar{5}\bar{5}3)(\bar{5}5\bar{1})(\bar{5}53)$	6
12.38759	$(000)(002)(\bar{6}\bar{2}\bar{4})(\bar{6}\bar{2}6)(\bar{6}2\bar{4})(\bar{6}26)$	6
12.51226	$(000)(002)(\bar{9}\bar{1}\bar{3})(\bar{9}\bar{1}5)(\bar{9}1\bar{3})(\bar{9}15)$	6
12.53721	$(000)(002)(\overline{10}0\bar{2})(\overline{10}04)$	4
12.76174	$(000)(002)(\bar{8}\bar{4}\bar{2})(\bar{8}\bar{4}4)(\bar{8}0\bar{4})(\bar{8}06)(\bar{8}4\bar{2})(\bar{8}44)$	22
	$(\bar{7}\bar{5}\bar{1})(\bar{7}\bar{5}3)(\bar{7}5\bar{1})(\bar{7}53)(\bar{4}\bar{2}\bar{4})(\bar{4}\bar{2}6)(\bar{4}2\bar{4})(\bar{4}26)$	
	$(\bar{3}\bar{5}1)(\bar{3}\bar{3}\bar{3})(\bar{3}\bar{3}5)(\bar{3}3\bar{3})(\bar{3}35)(\bar{3}51)$	
12.98642	$(000)(002)(\overline{10}\bar{2}\bar{2})(\overline{10}\bar{2}4)(\overline{10}2\bar{2})(\overline{10}24)$	6
13.32365	$(000)(002)(\bar{8}\bar{2}\bar{4})(\bar{8}\bar{2}6)(\bar{8}2\bar{4})(\bar{8}26)$	6
13.43612	$(000)(002)(\overline{10}\bar{4}0)(\overline{10}\bar{4}2)(\overline{10}40)(\overline{10}42)$	6
13.51112	$(000)(002)(\bar{9}\bar{5}1)(\bar{9}\bar{3}\bar{3})(\bar{9}\bar{3}5)(\bar{9}3\bar{3})(\bar{9}35)(\bar{9}51)$	8
13.88628	$(000)(002)(\bar{6}\bar{6}0)(\bar{6}\bar{6}2)(\bar{6}60)(\bar{6}62)$	6
14.0114	$(000)(002)(\bar{9}\bar{5}\bar{1})(\bar{9}\bar{5}3)(\bar{9}5\bar{1})(\bar{9}53)$	6
14.04715	$(000)(002)(\bar{7}\bar{1}\bar{5})(\bar{7}\bar{1}7)(\bar{7}1\bar{5})(\bar{7}17)$	6
14.11151	$(000)(002)(\bar{5}\bar{1}\bar{5})(\bar{5}\bar{1}7)(\bar{5}1\bar{5})(\bar{5}17)$	6
14.26172	$(000)(002)(\bar{3}\bar{5}\bar{1})(\bar{3}\bar{5}3)(\bar{3}5\bar{1})(\bar{3}53)$	6
14.33684	$(000)(002)(\overline{10}\bar{4}\bar{2})(\overline{10}\bar{4}4)(\overline{10}0\bar{4})(\overline{10}06)(\overline{10}4\bar{2})(\overline{10}44)$	8
14.44954	$(000)(002)(\bar{8}\bar{6}0)(\bar{8}\bar{6}2)(\bar{8}60)(\bar{8}62)$	6
14.63742	$(000)(002)(\bar{6}\bar{4}\bar{4})(\bar{6}\bar{4}6)(\bar{6}4\bar{4})(\bar{6}46)$	6
14.69112	$(000)(002)(\bar{7}\bar{5}\bar{3})(\bar{7}\bar{5}5)(\bar{7}5\bar{3})(\bar{7}55)$	6
14.78777	$(000)(002)(\overline{10}\bar{2}\bar{4})(\overline{10}\bar{2}6)(\overline{10}2\bar{4})(\overline{10}26)$	6