CHAPTER V

DISCUSSIONS

The colorless transparent crystal of Latifolin ($C_{17}H_{18}O_4$) is in a system of orthorhombic with unit cell dimensions as follows :

$$a = 7.38 \pm 0.01 \ A^{\circ}$$
$$b = 13.48 \pm 0.03 \ A^{\circ}$$
$$c = 15.42 \pm 0.15 \ A^{\circ}$$

The space group is P 2_1 2_1 2_1, the point group 2 2 2, there are four molecules per unit cell as obtained from the observed density of 1.234 g/cm^3 which is in agreement with the calculated density of 1.235 g/cm^3. The cell dimensions were obtained more precisely by the powder method which yielded results, using the least square refinement based on 47 reflections, as follows :

$$a = 7.3887 \pm 0.0006 \ A^{\circ}$$
$$b = 13.4581 \pm 0.0008 \ A^{\circ}$$
$$c = 15.6157 \pm 0.0010 \ A^{\circ}$$

The results obtained for a, b and c by measuring the reflection spots on the film contain some errors. First of all the reflection pattern appears to be an ellipse rather than a circle with even intensity. This could be because the wavelength used is the average of those CuK_{α_1} , and CuK_{α_2} , which cannot be resolved into separate wavelengths in order to deal with only

one of them. This double radiation makes reflection spots appear uneven. In measuring spots, a position that correspond to this average wavelength which is 1.5418 A^{o}, may be mislocated. Not only the error of the position but we may not also measure the distance between layer lines accurately. The length obtained between layer lines assumed to be correct within the accuracy of the apparatus used which is approximately $\pm$ 0.2 mm. From this estimate error of $\pm$ 0.2 mm. together with the length of the reciprocal lattice length of a, b, and c then standard deviation were found to be $\pm$ 0.01, $\pm$ 0.03 and $\pm$ 0.15 A^{o}, respectively.

On the other hand the standard deviation obtained by a computer from the powder photograph have more number of significant figures. This due to the more accuracy we can measure the diffracted lines on the powder photograph than measured the diffracted spots on the Weissenberg one. In refinement of the cell dimension, the values of the calculated $\sin^2 \theta$ and the observed $\sin^2 \theta$ must be looked for the lowest values of $\Sigma\left[\Delta \sin^2 \theta\right]^2$ with respect to other cycles of calculation and this labor can be easily overcome by an adequate computer program which yielded the results of standard deviations for a,b and c as $\pm$ 0.0006, $\pm$ 0.0008, and $\pm$ 0.0010 A^{o}, respectively.

By comparing the cell dimensions with their standard deviations obtained from rotation and Weissenberg photographs, the results is in a good agreement with the values obtained from the refinements by the powder photograph.

Furthermore, the number of molecules per unit cell (N) obtained from the observed density was 3.998. Comparing the values of N with the N of the space group $P2_1\ 2_1\ 2_1$ [11] which is 4. This implies that the obtained values of a, b, and c are presumable correct because in finding the density involves a volume of the unit cell. Not only the unit cell lengths but also the measured density are presumable good eventhough N = 3.998 is not a whole number but we all know that the number of molecules per unit cell must be a positive integer number. The difference between 4 and 3.998 may arrived from the uncorrected density due to the temperature difference.

In finding the space group of Latifolin from reflection spots only locations of spots are needed. Thus the intensities of the spots do not need to be corrected for systematic error factors. In future experimental work these factors like the polarization factor, the Lorentz factor, and so on, must be taken into account to find the intensities of the spots in order to determine the crystal structure of Latifolin.

APPENDIX

Table 4.4 (a)

Indicies of spots from plane (0 k l)

[100] Rotation axis, 0th layer with k = 0

φ(°) degree	ξ (r.l.u.)	h	k	l	φ(°) degree	ξ (r.l.u.)	h	k	l
0 (c*)	.20	0	0	2	15.5	.415	0	1	4
	.40	0	0	4		.83	0	2	8
	.60	0	0	6		1.24	0	3	12
	.80	0	0	8	17.5	1.47	0	4	14
	.995	0	0	10	18.5	1.05	0	3	10
	1.19	0	0	12	20.5	.315	0	1	3
4	1.495	0	1	15		.96	0	3	9
4.4	1.395	0	1	14		1.28	0	4	12
5	1.295	0	1	13	21.7	1.51	0	5	14
5.5	1.195	0	1	12	22.2	1.19	0	4	11
6.5	1.00	0	1	10	23	.87	0	3	8
7	.90	0	1	9	24	.55	0	2	5
7.8	.805	0	1	8		1.095	0	4	10
8.5	.71	0	1	7	25	1.32	0	5	12
10	.61	0	1	6	26	.775	0	3	7
	1.215	0	2	12	27	1.235	0	5	11
11	1.125	0	2	11	29.5	.23	0	1	2
12.3	.515	0	1	5		.46	0	2	4
	1.015	0	2	10		.69	0	3	6
13.7	.92	0	2	9		.92	0	4	8

φ (°)	$\mathcal{E}$ (r.l.u.)	h	k	l	φ (°)	$\mathcal{E}$ (r.l.u.)	h	k	l
	1.145	0	5	10	51.5	1.45	0	10	9
31.6	1.29	0	6	11	52	1.30	0	9	8
32	1.065	0	5	9	52.4	1.15	0	8	7
32.7	.835	0	4	7	53	1.00	0	7	6
35	.98	0	5	8	54.5	.695	0	5	11
36	1.36	0	7	11		1.395	0	10	8
37	.37	0	2	3	55.5	1.245	0	9	7
	.75	0	4	6	56.4	.54	0	4	3
	1.13	0	6	9	57.6	.945	0	7	5
39.5	1.425	0	8	11	59.5	.395	0	3	2
40.2	.53	0	3	4		.795	0	6	4
42	.67	0	4	5		1.195	0	9	6
42.8	1.50	0	9	11	62	.645	0	5	3
43.2	.825	0	5	6	63	.90	0	7	4
44	.975	0	6	7	64	1.145	0	9	5
44.6	1.13	0	7	8	64.2	1.39	0	11	6
46	1.58	0	10	11	66	.25	0	2	1
48.5	.30	0	2	2		.50	0	4	2
	.605	0	4	4		.75	0	6	3
	.755	0	5	5		1.25	0	10	5
	1.06	0	7	7	69.3	.855	0	7	3
	1.515	0	10	10	71.5	.965	0	8	3
49	.455	0	3	3	72	1.32	0	11	4

φ (°)	$\mathcal{E}$ (r.l.u.)	h	k	ℓ	φ (°)	$\mathcal{E}$ (r.l.u.)	h	k	ℓ
73.5	.715	0	6	2	95.5	1.04	0	9	$\bar{1}$
73.8	.36	0	3	1	97.3	.81	0	7	$\bar{1}$
75.5	.83	0	7	2	98.5	1.39	0	12	$\bar{2}$
76.5	1.29	0	11	3	99	.695	0	6	$\bar{1}$
77.2	.47	0	4	1	99.4	1.275	0	11	$\bar{2}$
	.94	0	8	2	100	.58	0	5	$\bar{1}$
77.4	1.40	0	12	3		1.17	0	10	$\bar{2}$
80	.58	0	5	1	102.6	1.40	0	12	$\bar{3}$
80.6	1.275	0	11	2	102.7	.47	0	4	$\bar{1}$
81	.695	0	6	1		.94	0	8	$\bar{2}$
81.5	1.39	0	12	2	103.8	1.29	0	11	$\bar{3}$
82.8	.81	0	7	1	104.5	.83	0	7	$\bar{2}$
84.4	1.04	0	9	1	106.2	.36	0	3	$\bar{1}$
84.8	1.15	0	10	1	106.5	.715	0	6	$\bar{2}$
85	1.26	0	11	1		1.435	0	12	$\bar{4}$
85.8	1.375	0	12	1	108	1.32	0	11	$\bar{4}$
90(b*)	.23	0	2	0	108.5	.965	0	8	$\bar{3}$
	.46	0	4	0	110.8	.855	0	7	$\bar{3}$
	.69	0	6	0	114	.25	0	2	$\bar{1}$
	.92	0	8	0		.50	0	4	$\bar{2}$
94.2	1.375	0	12	$\bar{1}$		.75	0	6	$\bar{3}$
95	1.26	0	11	$\bar{1}$	116	1.145	0	9	$\bar{5}$
95.2	1.15	0	10	$\bar{1}$	117	.90	0	7	$\bar{4}$

φ (°)	$\mathfrak{G}$ (r.l.u.)	h	k	l	φ (°)	$\mathfrak{G}$ (r.l.u.)	h	k	l
118	.645	0	5	$\bar{3}$		1.24	0	$\bar{3}$	12
120.5	.395	0	3	$\bar{2}$	-17.5	1.47	0	$\bar{4}$	14
	..795	0	6	$\bar{4}$	-18.5	1.05	0	$\bar{3}$	10
122.4	..945	0	7	5	-20.5	.315	0	$\bar{1}$	3
123.6	.54	0	4	3		.96	0	$\bar{3}$	9
131	.455	0	3	3		1.28	0	$\bar{4}$	12
131.5	.30	0	2	2	-21.7	1.51	0	$\bar{5}$	14
	.605	0	4	4	-22.2	1.19	0	$\bar{4}$	11
					-23	.87	0	$\bar{3}$	8
-4	1.495	0	$\bar{1}$	15	-24	.55	0	$\bar{2}$	5
-4.4	1.395	0	$\bar{1}$	14		1.095	0	$\bar{4}$	10
-5	1.295	0	$\bar{1}$	13	-25	1.32	0	$\bar{5}$	12
-5.6	1.195	0	$\bar{1}$	12	-26	.775	0	$\bar{3}$	7
-6.5	1.00	0	$\bar{1}$	10	-27	1.275	0	$\bar{5}$	12
-7	.90	0	$\bar{1}$	9	-29.4	.23	0	$\bar{1}$	2
-7.8	.805	0	$\bar{1}$	8		.46	0	$\bar{2}$	4
-8.5	.71	0	$\bar{1}$	7		.69	0	$\bar{3}$	6
-10	.61	0	$\bar{1}$	6		.92	0	$\bar{4}$	8
	1.215	0	$\bar{2}$	12		1.145	0	$\bar{5}$	10
-12.3	.515	0	$\bar{1}$	5	-31.6	1.29	0	$\bar{6}$	11
	1.015	0	$\bar{2}$	10	-32	1.065	0	$\bar{5}$	9
-13.7	.92	0	$\bar{2}$	9	32.7	.835	0	$\bar{4}$	7
-15.5	.415	0	$\bar{1}$	4	-35	.98	0	$\bar{5}$	8

φ (°)	$\mathcal{J}$ (r.u.)	h	k	ℓ	φ (°)	$\mathcal{J}$ (r.u.)	h	k	ℓ
-36	1.36	0	$\bar{7}$	11		1.395	0	$\bar{10}$	8
	.75	0	$\bar{4}$	6	-55.5	1.245	0	$\bar{9}$	7
	1.13	0	$\bar{6}$	9	-56.4	.54	0	$\bar{4}$	3
-39.5	1.425	0	$\bar{8}$	11	-57.6	.945	0	$\bar{7}$	5
-40.2	.53	0	$\bar{3}$	4	-59.5	.395	0	$\bar{3}$	2
-42	.67	0	$\bar{4}$	8		.795	0	$\bar{6}$	4
-42.8	1.50	0	$\bar{9}$	11		1.195	0	$\bar{9}$	6
-43.2	.825	0	$\bar{5}$	6	-62	.645	0	$\bar{5}$	3
-44	.975	0	$\bar{6}$	7	-63	.90	0	$\bar{7}$	4
-44.6	1.13	0	$\bar{7}$	8	-64	1.145	0	$\bar{9}$	5
-46	1.58	0	$\bar{10}$	11	-64.2	1.39	0	$\bar{11}$	6
-48.5	.30	0	$\bar{2}$	2	-66	.25	0	$\bar{2}$	1
	.605	0	$\bar{4}$	4		.75	0	$\bar{6}$	3
	.755	0	$\bar{5}$	5		1.25	0	$\bar{10}$	5
	1.06	0	$\bar{7}$	7	-69.3	.855	0	$\bar{7}$	3
	1.36	0	$\bar{9}$	9	-71.5	.965	0	$\bar{8}$	3
	1.515	0	$\bar{10}$	10	-72	1.32	0	$\bar{11}$	4
-49	.455	0	$\bar{3}$	3		1.435	0	$\bar{12}$	4
-51.5	1.45	0	$\bar{10}$	9	73.8	.36	0	$\bar{3}$	1
-52	1.30	0	$\bar{9}$	8	-75.5	.83	0	$\bar{7}$	2
-52.4	1.15	0	$\bar{8}$	7	-76.3	1.29	0	$\bar{11}$	3
-53	1.00	0	$\bar{7}$	6		.94	0	$\bar{8}$	2
-54.5	.695	0	$\bar{5}$	4	-77.4	1.40	0	$\bar{12}$	3

φ (°)	$\mathcal{S}$ (r.l.u.)	h	k	l	φ (°)	$\mathcal{S}$ (r.l.u)	h	k	l
-80	.58	0	$\bar{5}$	1		.94	0	$\bar{8}$	2
	1.17	0	$\bar{10}$	2	-103.8	1.29	0	$\bar{11}$	3
-80.6	1.275	0	$\bar{11}$	2	-106.2	.36	0	$\bar{3}$	1
-81	.695	0	$\bar{6}$	1	-106.5	.715	0	$\bar{6}$	2
-81.5	1.39	0	$\bar{12}$	2	-108.5	.965	0	$\bar{8}$	3
-82.8	.81	0	$\bar{7}$	1	-110.8	.855	0	$\bar{7}$	3
-84.4	1.04	0	$\bar{9}$	1	-114	.25	0	$\bar{4}$	1
-84.8	1.15	0	$\bar{10}$	1		.50	0	$\bar{4}$	2
-85	1.26	0	$\bar{11}$	1		.75	0	$\bar{6}$	3
-85.8	1.375	0	$\bar{12}$	1		1.25	0	$\bar{10}$	5
-90(-b*)	.23	0	$\bar{2}$	0	-115.8	1.39	0	$\bar{11}$	6
	.46	0	$\bar{4}$	0	-116	1.145	0	$\bar{9}$	5
	.69	0	$\bar{6}$	0	-117	.90	0	$\bar{7}$	4
	.92	0	$\bar{8}$	0	-118	.645	0	$\bar{5}$	3
-94.2	1.375	0	$\bar{12}$	1	-120.5	.395	0	$\bar{3}$	2
-95	1.26	0	$\bar{11}$	1		1.195	0	$\bar{9}$	6
-95.2	1.15	0	$\bar{10}$	1	-122.4	.945	0	$\bar{7}$	5
-95.5	1.04	0	$\bar{9}$	1	-123.6	.54	0	$\bar{4}$	3
-97.3	.81	0	$\bar{7}$	1	-124.5	1.245	0	$\bar{9}$	7
-99	.695	0	$\bar{6}$	1	-125.5	.695	0	$\bar{5}$	4
-100	.58	0	$\bar{5}$	1		1.395	0	$\bar{10}$	8
-102.6	1.40	0	$\bar{12}$	3	-127	1.00	0	$\bar{7}$	6
-102.7	.47	0	$\bar{4}$	1	-127.6	1.15	0	$\bar{8}$	7

φ (°)	ξ (r.l.u.)	h	k	l	φ (°)	ξ (r.l.u.)	h	k	l
-128	1.30	0	$\bar{9}$	$\bar{8}$	-150.5	.23	0	$\bar{1}$	$\bar{2}$
-128.5	1.45	0	$\bar{10}$	$\bar{9}$		.46	0	$\bar{2}$	$\bar{4}$
-131	.455	0	$\bar{3}$	$\bar{3}$		.69	0	$\bar{3}$	$\bar{6}$
	.605	0	$\bar{4}$	$\bar{4}$		.92	0	$\bar{4}$	$\bar{8}$
	.755	0	$\bar{5}$	$\bar{5}$	-153	1.235	0	$\bar{5}$	$\bar{11}$
	1.06	0	$\bar{7}$	$\bar{7}$	-154	.775	0	$\bar{3}$	$\bar{7}$
	1.36	0	$\bar{9}$	$\bar{9}$	-155	1.32	0	$\bar{5}$	$\bar{12}$
	1.515	0	$\bar{10}$	$\bar{10}$	-156	.55	0	$\bar{2}$	$\bar{5}$
-134	1.58	0	$\bar{10}$	$\bar{11}$		1.095	0	$\bar{4}$	$\bar{10}$
-135.4	1.13	0	$\bar{7}$	$\bar{8}$	-157.8	1.19	0	$\bar{4}$	$\bar{11}$
-136.7	.825	0	$\bar{5}$	$\bar{6}$	-158.3	1.51	0	$\bar{5}$	$\bar{14}$
-137.3	1.50	0	$\bar{9}$	$\bar{11}$	-159.5	.315	0	$\bar{1}$	$\bar{3}$
-138	.67	0	$\bar{4}$	$\bar{5}$		.96	0	$\bar{3}$	$\bar{9}$
-140.5	1.425	0	$\bar{8}$	$\bar{11}$		1.28	0	$\bar{4}$	$\bar{12}$
-143	.37	0	$\bar{2}$	$\bar{3}$	-162.5	1.47	0	$\bar{4}$	$\bar{14}$
	.75	0	$\bar{4}$	$\bar{6}$	-164.5	.415	0	$\bar{1}$	$\bar{4}$
	1.13	0	$\bar{6}$	$\bar{9}$		1.24	0	$\bar{3}$	$\bar{12}$
-144	1.36	0	$\bar{7}$	$\bar{11}$	-167.7	.515	0	$\bar{11}$	$\bar{5}$
-145	.98	0	$\bar{5}$	$\bar{8}$		1.015	0	$\bar{2}$	$\bar{10}$
-146	1.025	0	$\bar{5}$	$\bar{9}$	-170	.61	0	$\bar{1}$	$\bar{6}$
-147.3	.835	0	$\bar{4}$	$\bar{7}$		1.215	0	$\bar{2}$	$\bar{12}$
-148	1.065	0	$\bar{5}$	$\bar{9}$	-171.5	.71	0	$\bar{1}$	$\bar{7}$
-149.5	1.29	0	$\bar{6}$	$\bar{11}$	-172.2	.805	0	$\bar{1}$	$\bar{8}$

φ (°)	$\mathcal{S}$ (r. l. u.)	h	k	l	( ) h k
-173	.90	0	$\bar{1}$	$\bar{9}$	
-173.5	1.00	0	$\bar{1}$	$\bar{10}$	
-174.4	1.195	0	$\bar{1}$	$\bar{12}$	
-175	1.295	0	$\bar{1}$	$\bar{13}$	
-175.6	1.395	0	$\bar{1}$	$\bar{14}$	
-180(-c*)	.20	0	0	$\bar{2}$	
	.40	0	0	$\bar{4}$	
	.60	0	0	$\bar{6}$	
	.80	0	0	$\bar{8}$	
	.995	0	0	$\bar{10}$	
	1.19	0	0	$\bar{12}$	
-186.5	1.00	0	1	$\bar{10}$	
-187	.90	0	1	$\bar{9}$	
-187.8	.805	0	1	$\bar{8}$	
-190	.61	0	1	$\bar{6}$	
-192.3	.515	0	1	$\bar{5}$	
	1.015	0	2	$\bar{10}$	
-193.7	.92	0	2	$\bar{9}$	
-195.5	.415	0	1	$\bar{4}$	
-200	.96	0	3	$\bar{9}$	
-200.5	.315	0	1	$\bar{3}$	
-204	.55	0	2	$\bar{5}$	
-209	.23	0	1	$\bar{2}$	
	.46	0	2	$\bar{4}$	

Table 4.4 (b)

Indicies of spots from plane (1 k l)

[100] Rotation axis, 1st layer with h = 1

φ (°) degree	ξ (r.l.u.)	h	k	l	φ (°)	ξ (r.l.u.)	h	k	l
0 (c*)	.20	1	2	0	16.5	.42	1	1	4
	.40	1	4	0		.82	1	2	8
	.495	1	5	0	18	1.14	1	3	11
	.595	1	6	0	18.6	.735	1	2	7
	.695	1	7	0	20	1.36	1	4	12
	.795	1	8	0	21	.32	1	1	3
	1.08	1	11	0		.96	1	3	9
7	1.00	1	1	10	22	1.27	1	4	11
8	.905	1	1	9	23	1.49	1	5	14
8.5	.80	1	1	8	23.5	.87	1	3	8
10	..705	1	1	7		1.18	1	4	10
	1.385	1	2	14	24.5	.55	1	2	5
10.5	1.29	1	2	13		1.49	1	5	14
11.5	.61	1	1	6	26.4	.78	1	3	7
13.5	.51	1	1	5		1.31	1	5	11
	1.02	1	2	10	27.5	1.01	1	4	9
	1.50	1	3	15	28.5	1.23	1	5	10
14.5	.925	1	2	9	29.5	.47	1	2	4
	1.41	1	3	14		.695	1	3	6
15.3	1.32	1	3	13	30.2	.92	1	4	8

φ (°)	ξ (n.l.u.)	h	k	l	φ (°)	ξ (n.l.u.)	h	k	l
30.5	.24	1	1	2	49	.31	1	2	2
	1.365	1	6	11		.46	1	3	3
33	1.07	1	5	9		.615	1	4	4
34	.84	1	4	7	49	.765	1	5	5
34.8	.608	1	3	5		.915	1	6	6
	1.435	1	7	11		1.07	1	7	7
35	1.215	1	6	10		1.215	1	8	8
37	.38	1	2	3		1.375	1	9	9
37.8	.76	1	4	6	52.5	1.31	1	9	8
	1.13	1	6	9	53	1.01	1	7	6
39	1.28	1	7	10	54	.855	1	6	5
40	.91	1	5	7	55	.705	1	5	4
40.4	1.42	1	8	11	58	.95	1	7	5
41	.53	1	3	4	58.8	.40	1	3	2
	1.055	1	6	8		.80	1	6	4
42	1.21	1	7	9		1.20	1	9	6
42.5	1.35	1	8	10	61.5	1.045	1	8	5
43	.68	1	4	5	62	.65	1	5	3
44	.835	1	5	6		1.30	1	10	6
	1.50	1	9	11	63.5	.90	1	7	4
45	.98	1	6	7	64	1.15	1	9	5
45.5	1.135	1	7	8	65.5	.225	1	2	1
	1.28	1	8	9		.51	1	4	2
46	1.44	1	9	10		.755	1	6	3

φ (°)	$\frac{\sin\theta}{\lambda}$ (r.l.u.)	h	k	l	φ (°)	$\frac{\sin\theta}{\lambda}$ (r.l.u.)	h	k	l
	1.00	1	8	4	82.2	.815	1	7	1
	1.25	1	10	5	82.6	1.62	1	14	2
68.2	1.15	1	9	4	83.5	.92	1	8	1
69	.86	1	7	3	84	1.04	1	9	1
70	1.46	1	12	5	84.6	1.15	1	10	1
70.5	.61	1	5	2	85.3	1.265	1	11	1
	1.21	1	10	4	85.5	1.375	1	12	1
71.5	.965	1	8	3	86	1.50	1	13	1
72	1.325	1	11	4	90°(b*)	.23	1	2	0
73.5	.36	1	3	1		.345	1	3	0
	.72	1	6	2		.575	1	5	0
	1.08	1	9	3		.685	1	6	0
75	1.19	1	10	3		.80	1	7	0
75.5	.83	1	7	2		.91	1	8	0
76.5	1.30	1	11	3		1.03	1	9	0
77	.48	1	4	1		1.26	1	11	0
	.935	1	8	2		1.37	1	12	0
78	1.05	1	9	2	94	1.50	1	13	$\bar{1}$
79.5	.59	1	5	1	94.5	1.375	1	12	$\bar{1}$
	1.165	1	10	5	94.7	1.265	1	11	$\bar{1}$
80.5	1.28	1	11	2	95.4	1.15	1	10	$\bar{1}$
81	.70	1	6	1	96	1.04	1	9	$\bar{1}$
	1.38	1	12	2	96.5	.42	1	8	$\bar{1}$
82	1.51	1	13	2	97.8	.815	1	7	$\bar{1}$

$\varphi(^\circ)$	ϱ (r.l.u.)	h	k	l	$\varphi(^\circ)$	ϱ (r.l.u.)	h	k	l
98	1.51	1	13	$\bar{2}$		1.25	1	10	$\bar{5}$
99	.70	1	6	$\bar{1}$	116.5	.90	1	7	$\bar{4}$
	1.38	1	12	$\bar{2}$	118	.65	1	5	$\bar{3}$
97.5	1.28	1	11	$\bar{2}$		1.30	1	10	$\bar{6}$
100.5	.59	1	5	$\bar{1}$	118.5	1.045	1	8	$\bar{5}$
	1.165	1	10	$\bar{2}$	121.2	.40	1	3	$\bar{2}$
102	1.05	1	9	$\bar{2}$		.80	1	6	$\bar{4}$
103	.48	1	4	$\bar{1}$	122	.95	1	7	$\bar{5}$
	..935	1	8	$\bar{2}$	123.5	.56	1	4	$\bar{3}$
103.5	1.30	1	11	$\bar{3}$		1.10	1	8	$\bar{6}$
104.5	.83	1	7	$\bar{2}$	125	.705	1	5	$\bar{4}$
105	1.19	1	10	$\bar{3}$	126	.855	1	6	$\bar{5}$
106.5	.36	1	3	$\bar{1}$	127	1.01	1	7	$\bar{6}$
	.72	1	6	$\bar{2}$	131	.31	1	2	$\bar{2}$
	1.08	1	9	$\bar{3}$		.46	1	3	$\bar{3}$
108	1.325	1	11	$\bar{4}$		.615	1	4	$\bar{4}$
108.5	.965	1	8	$\bar{3}$		.765	1	5	$\bar{5}$
109.5	.61	1	5	$\bar{2}$	135	.98	1	6	$\bar{7}$
	1.21	1	10	$\bar{4}$	136	.835	1	5	$\bar{6}$
111	.86	1	7	$\bar{3}$	137	.68	1	4	$\bar{5}$
111.8	1.1	1	9	$\bar{4}$	139	.53	1	3	$\bar{4}$
114.5	..225	1	2	$\bar{1}$	143	.38	1	2	$\bar{3}$
	.51	1	4	$\bar{2}$					
	.755	1	6	$\bar{3}$					

φ (°)	ϱ (r. l. u)	h	k	l	φ (°)	ϱ (r. l. u.)	h	k	l
-7	1.00	1	$\bar{1}$	10	-26.4	.78	1	$\bar{3}$	7
-8	.905	1	$\bar{1}$	9		1.31	1	$\bar{5}$	12
-8.5	.80	1	$\bar{1}$	8	-27.5	1.01	1	$\bar{4}$	9
-10	.705	1	$\bar{1}$	7	-28.5	1.23	1	$\bar{5}$	11
-10.5	1.29	1	$\bar{2}$	13	-29.5	.47	1	$\bar{2}$	4
-11.5	.61	1	$\bar{1}$	6		.695	1	$\bar{3}$	6
-13.5	.51	1	$\bar{1}$	5	-30.2	.92	1	$\bar{4}$	8
	1.02	1	$\bar{2}$	10	-30.5	.24	1	$\bar{1}$	2
	1.50	1	$\bar{3}$	15		1.365	1	$\bar{6}$	12
-14.5	.925	1	$\bar{2}$	9	-33	1.07	1	$\bar{5}$	9
	1.41	1	$\bar{3}$	14	-34	.84	1	$\bar{4}$	7
-15.3	1.32	1	$\bar{3}$	13	-34.8	.608	1	$\bar{3}$	5
-16.5	.42	1	$\bar{1}$	4		1.435	1	$\bar{7}$	12
	.83	1	$\bar{2}$	8	-35	1.215	1	$\bar{6}$	10
-18	1.14	1	$\bar{3}$	11	-37	.38	1	$\bar{2}$	3
-18.6	.735	1	$\bar{2}$	7	-37.8	.76	1	$\bar{4}$	6
-20	1.36	1	$\bar{4}$	13		1.13	1	$\bar{6}$	9
-21	.32	1	$\bar{1}$	3	-39	1.28	1	$\bar{7}$	10
	.96	1	$\bar{3}$	9	-40	.91	1	$\bar{5}$	7
-22	1.27	1	$\bar{4}$	12	-41	.53	1	$\bar{3}$	4
-23.5	.87	1	$\bar{3}$	8		1.055	1	$\bar{6}$	8
	1.18	1	$\bar{4}$	11	-42	1.21	1	$\bar{7}$	9
-24.5	.55	1	$\bar{2}$	5	-42.5	1.35	1	$\bar{8}$	10
	1.49	1	$\bar{5}$	14	-43	.65	1	$\bar{4}$	5

$\varphi(^\circ)$	ξ (r.l.u.)	h	k	l	$\varphi(^\circ)$	ξ (r.l.u.)	h	k	l
-44	.835	1	$\bar{5}$	6		1.30	1	$\bar{11}$	4
-45	.98	1	$\bar{6}$	7	-63.5	.255	1	$\bar{3}$	1
-45.5	1.135	1	$\bar{7}$	8		.51	1	$\bar{4}$	2
	1.28	1	$\bar{8}$	9		.755	1	$\bar{6}$	3
-46	1.44	1	$\bar{9}$	10		1.00	1	$\bar{8}$	4
-49	.31	1	$\bar{2}$	2		1.25	1	$\bar{10}$	5
	.46	1	$\bar{3}$	3	-68.2	1.15	1	$\bar{9}$	4
	.615	1	$\bar{4}$	4	-69	.85	1	$\bar{7}$	3
	.765	1	$\bar{5}$	5	-70	1.46	1	$\bar{12}$	5
	.915	1	$\bar{6}$	6	-70.5	.61	1	$\bar{5}$	2
	1.07	1	$\bar{7}$	7		1.21	1	$\bar{10}$	4
	1.215	1	$\bar{8}$	8	-71.5	.965	1	$\bar{8}$	3
	1.375	1	$\bar{9}$	9	-72	1.325	1	$\bar{11}$	4
-52.5	1.31	1	$\bar{9}$	8	-73.5	.36	1	$\bar{3}$	1
-53	1.01	1	$\bar{7}$	6		.72	1	$\bar{6}$	2
-54	.855	1	$\bar{6}$	5		1.08	1	$\bar{9}$	3
-55	.705	1	$\bar{5}$	4	-75	1.19	1	$\bar{10}$	3
-56.5	.56	1	$\bar{4}$	3	-75.5	.83	1	$\bar{7}$	2
-58	.95	1	$\bar{9}$	5	-77	.48	1	$\bar{4}$	1
-58.8	.40	1	$\bar{3}$	2		.935	1	$\bar{8}$	2
	.80	1	$\bar{6}$	4	76.5	1.30	1	$\bar{11}$	3
	1.20	1	$\bar{9}$	6	-78	1.05	1	$\bar{9}$	2
-61.5	1.045	1	$\bar{8}$	5	-79.5	.59	1	$\bar{5}$	1
-62	.65	1	$\bar{5}$	2		1.165	1	$\bar{10}$	2

φ (°)	ξ (r.l.u.)	h	k	l	φ (°)	ξ (r.l.u.)	h	k	l
-80.5	1.28	1	$\bar{11}$	2	-95.4	1.15	1	$\bar{10}$	$\bar{1}$
-81	.70	1	$\bar{6}$	1	-96	1.04	1	$\bar{9}$	$\bar{1}$
	1.38	1	$\bar{12}$	2	-96.5	.92	1	$\bar{8}$	$\bar{1}$
-82	1.51	1	$\bar{13}$	2	-97.8	.815	1	$\bar{7}$	$\bar{1}$
-82.2	.815	1	$\bar{7}$	1	-98	1.51	1	$\bar{13}$	$\bar{2}$
-82.6	1.62	1	$\bar{14}$	2	-99	.70	1	$\bar{6}$	$\bar{1}$
-83.5	.92	1	$\bar{8}$	1		1.38	1	$\bar{12}$	$\bar{2}$
-84	1.04	1	$\bar{9}$	1	-99.5	1.28	1	$\bar{11}$	$\bar{2}$
-84.6	1.15	1	$\bar{10}$	1	-100.5	.59	1	$\bar{5}$	$\bar{1}$
-85.3	1.265	1	$\bar{11}$	1		1.165	1	$\bar{10}$	$\bar{2}$
-85.5	1.375	1	$\bar{12}$	1	-102	1.05	1	$\bar{9}$	$\bar{2}$
-86	1.50	1	$\bar{13}$	1	-103.5	1.30	1	$\bar{11}$	$\bar{3}$
-90(b*)	.23	1	$\bar{2}$	0	-103	.48	1	$\bar{4}$	$\bar{1}$
	.345	1	$\bar{3}$	0		.935	1	$\bar{8}$	$\bar{2}$
	.575	1	$\bar{5}$	0	-104.5	.83	1	$\bar{7}$	$\bar{2}$
	.685	1	$\bar{6}$	0	-105	1.19	1	$\bar{10}$	$\bar{3}$
	.80	1	$\bar{7}$	0	-106.5	.36	1	$\bar{3}$	$\bar{1}$
	.91	1	$\bar{8}$	0		.72	1	$\bar{6}$	$\bar{2}$
	1.03	1	$\bar{9}$	0		1.08	1	$\bar{9}$	$\bar{3}$
	1.26	1	$\bar{11}$	0	-108	1.325	1	$\bar{11}$	$\bar{4}$
	1.37	1	$\bar{12}$	0	-108.5	.965	1	$\bar{8}$	$\bar{3}$
-94	1.50	1	$\bar{13}$	$\bar{1}$	-109.5	.61	1	$\bar{5}$	$\bar{2}$
-94.5	1.375	1	$\bar{12}$	$\bar{1}$		1.21	1	$\bar{10}$	$\bar{4}$
-94.7	1.265	1	$\bar{11}$	$\bar{1}$	-111	.86	1	$\bar{7}$	$\bar{3}$

φ (°)	$\mathcal{G}$ (n.l.u.)	h	k	l	φ (°)	$\mathcal{G}$ (n.l.u.)	h	k	l
-111.8	1.15	1	$\bar{9}$	$\bar{4}$		1.07	1	$\bar{7}$	$\bar{7}$
-114.5	.255	1	$\bar{2}$	$\bar{1}$		1.215	1	$\bar{8}$	$\bar{8}$
	.51	1	$\bar{4}$	$\bar{2}$		1.375	1	$\bar{9}$	$\bar{9}$
	.755	1	$\bar{6}$	$\bar{3}$	-134	1.44	1	$\bar{9}$	$\bar{10}$
	1.00	1	$\bar{8}$	$\bar{4}$	-134.5	1.135	1	$\bar{7}$	$\bar{8}$
	1.25	1	$\bar{10}$	$\bar{5}$		1.28	1	$\bar{8}$	$\bar{9}$
-116	1.15	1	$\bar{9}$	$\bar{5}$	-135	.98	1	$\bar{6}$	$\bar{7}$
-116.5	.90	1	$\bar{7}$	$\bar{4}$	-136	.835	1	$\bar{5}$	$\bar{6}$
-118	.65	1	$\bar{5}$	$\bar{3}$	-137	.68	1	$\bar{4}$	$\bar{5}$
	1.30	1	$\bar{10}$	$\bar{6}$	-137.5	1.35	1	$\bar{8}$	$\bar{10}$
-118.5	1.045	1	$\bar{8}$	$\bar{5}$	-138	1.21	1	$\bar{7}$	$\bar{9}$
-121.2	.40	1	$\bar{3}$	$\bar{2}$	-139	.53	1	$\bar{3}$	$\bar{4}$
	1.20	1	$\bar{9}$	$\bar{6}$		1.055	1	$\bar{6}$	$\bar{8}$
-122	.95	1	$\bar{7}$	$\bar{5}$	-140	.91	1	$\bar{5}$	$\bar{7}$
-123.5	.56	1	$\bar{4}$	$\bar{3}$	-142.2	.76	1	$\bar{4}$	$\bar{6}$
-125	.705	1	$\bar{5}$	$\bar{4}$		1.13	1	$\bar{6}$	$\bar{9}$
-126	.855	1	$\bar{6}$	$\bar{5}$	-143	.38	1	$\bar{2}$	$\bar{3}$
-127	1.01	1	$\bar{7}$	$\bar{6}$	-145	1.215	1	$\bar{6}$	$\bar{10}$
-127.5	1.31	1	$\bar{9}$	$\bar{8}$	-145.2	.608	1	$\bar{3}$	$\bar{5}$
-131	.31	1	$\bar{2}$	$\bar{2}$		1.435	1	$\bar{7}$	$\bar{12}$
	.46	1	$\bar{3}$	$\bar{3}$	-146	.84	1	$\bar{4}$	$\bar{7}$
	.615	1	$\bar{4}$	$\bar{4}$	-147	1.07	1	$\bar{5}$	$\bar{9}$
	.765	1	$\bar{5}$	$\bar{5}$	-149.5	.24	1	$\bar{1}$	$\bar{2}$
	.915	1	$\bar{6}$	$\bar{6}$		1.365	1	$\bar{6}$	$\bar{12}$

φ (°)	$\mathcal{G}$ (r.l.u.)	h	k	l	φ (°)	$\mathcal{G}$ (r.l.u.)	h	k	l
-149.8	.92	1	$\bar{4}$	$\bar{8}$		1.50	1	$\bar{3}$	$\bar{15}$
-150.5	.47	1	$\bar{2}$	$\bar{4}$	-168.5	.61	1	$\bar{1}$	$\bar{6}$
	.695	1	$\bar{3}$	$\bar{6}$	-169.5	1.29	1	$\bar{2}$	$\bar{13}$
-151.5	1.23	1	$\bar{5}$	$\bar{11}$	-170	.705	1	$\bar{1}$	$\bar{8}$
-152.5	1.01	1	$\bar{4}$	$\bar{9}$	-171.5	.80	1	$\bar{1}$	$\bar{8}$
-153.6	.78	1	$\bar{3}$	$\bar{7}$	-172	..905	1	$\bar{1}$	$\bar{9}$
	1.31	1	$\bar{5}$	$\bar{12}$	-173	1.00	1	$\bar{1}$	$\bar{10}$
-155.5	.55	1	$\bar{2}$	$\bar{5}$	-180(-c*)	.20	1	0	$\bar{2}$
	1.49	1	$\bar{5}$	$\bar{14}$		.40	1	0	$\bar{4}$
-156.5	.87	1	$\bar{3}$	$\bar{8}$		.495	1	0	$\bar{5}$
	1.18	1	$\bar{4}$	$\bar{11}$		.595	1	0	$\bar{6}$
-158	1.27	1	$\bar{4}$	$\bar{12}$		.695	1	0	$\bar{7}$
-159	.32	1	$\bar{1}$	$\bar{3}$		.705	1	0	$\bar{8}$
	.96	1	$\bar{3}$	$\bar{9}$		1.08	1	0	$\bar{10}$
-160	1.36	1	$\bar{4}$	$\bar{13}$	-187	1.00	1	1	$\bar{10}$
-161.4	.735	1	$\bar{2}$	$\bar{7}$	-188	.905	1	1	$\bar{9}$
-162	1.14	1	$\bar{3}$	$\bar{11}$	-188.5	.80	1	1	$\bar{8}$
-163.5	.42	1	$\bar{1}$	$\bar{4}$	-190	.705	1	1	$\bar{7}$
	.83	1	$\bar{2}$	$\bar{8}$	-191.5	.61	1	1	$\bar{6}$
-164.7	1.32	1	$\bar{3}$	$\bar{13}$	-193.5	.51	1	1	$\bar{5}$
-165.5	.925	1	$\bar{2}$	$\bar{4}$		1.02	1	2	$\bar{10}$
	1.41	1	$\bar{3}$	$\bar{14}$	-194.5	.925	1	2	$\bar{9}$
-166.5	.51	1	$\bar{1}$	$\bar{5}$	-196.5	.42	1	1	$\bar{4}$
	1.02	1	$\bar{2}$	$\bar{10}$		..83	1	2	$\bar{8}$

Table 4.4 (c)

Indicies of spots from plane (2 k ℓ)

[100] Rotation axis, 2nd layer with h = 2

φ (°) degree	$\mathcal{S}$ (r.l.u.)	h	k	ℓ	φ (°)	$\mathcal{S}$ (r.l.u.)	h	k	ℓ
0 (c*)	.10	2	0	1	13.3	1.01	2	2	10
	.20	2	0	2	14.5	.92	2	2	9
	.30	2	0	3	15.3	1.32	2	3	13
	.40	2	0	4	16	.825	2	2	8
	.50	2	0	5	16.5	.415	2	1	4
	.60	2	0	6		1.25	2	3	12
	.695	2	0	7	18	1.13	2	3	11
	.795	2	0	8	18.3	.73	2	2	7
	.89	2	0	9	19.5	1.04	2	3	10
	.99	2	0	10	19.6	1.35	2	4	13
	1.085	2	0	11	21	.64	2	2	6
5	1.37	2	1	14	21.5	.955	2	3	9
5.5	1.28	2	1	13		1.265	2	4	12
7	.99	2	1	10	22	.32	2	1	3
7.8	.90	2	1	9	23	1.17	2	4	1
9.5	.805	2	1	8	23.6	.865	2	3	8
10	.70	2	1	7	24	.55	2	2	5
10.5	1.29	2	2	13		1.39	2	5	13
11	.61	2	1	6	25	1.085	2	4	10
	1.20	2	2	12	26	1.31	2	5	12

φ (°)	$\S$ (r.l.u.)	h	k	l	φ (°)	$\S$ (r.l.u.)	h	k	l
26.4	.775	2	3	7	43.5	.825	2	5	6
27	1.00	2	4	9	45	1.125	2	7	8
28	1.22	2	5	11	45.8	1.27	2	8	9
28.2	1.45	2	6	13	49	.155	2	1	1
30	.23	2	1	2		.305	2	2	2
	..46	2	2	4		.46	2	3	3
	.69	2	3	6		.605	2	4	4
	.92	2	4	8		.76	2	5	5
	1.14	2	5	10		.91	2	6	6
32.3	1.275	2	6	1		1.06	2	7	7
32.5	1.06	2	5	9	51.8	1.29	2	8	8
33.4	.83	2	4	7	52.6	1.41	2	9	8
34	1.20	2	6	10	53.2	1.00	2	7	6
36.5	1.34	2	7	11	53.5	.845	2	6	5
37.2	.75	2	4	6	55	.695	2	5	4
37.5	.38	2	2	3	57	.545	2	4	3
	1.12	2	6	9	58	.94	2	7	5
39	1.265	2	7	10	59.5	1.18	2	9	6
39.2	.90	2	5	7	60	.40	2	3	2
40.5	1.05	2	6	8		.80	2	8	4
41	.53	2	3	4	62.5	.64	2	5	3
42	.675	2	4	5	63.5	.89	2	7	4
	1.19	2	7	9	64.6	1.385	2	11	6

φ (°)	ρ (r.l.u.)	h	k	l	φ (°)	ρ (r.l.u.)	h	k	l
66	.25	2	2	1	83.8	.915	2	8	1
	.50	2	4	2	85.2	1.145	2	10	1
	.75	2	6	3	85.5	1.26	2	11	1
	1.00	2	8	4	90(b*)	.115	2	1	0
66.4	1.24	2	10	5		.23	2	2	0
68.2	1.345	2	11	5		.345	2	3	0
68.5	1.09	2	9	4		.455	2	4	0
69.5	.85	2	7	3		.57	2	5	0
70.4	.605	2	5	2		.685	2	6	0
70.8	1.205	2	10	4		.80	2	7	0
72	.96	2	8	3		1.02	2	9	0
73.6	.365	2	3	1		1.14	2	10	0
	.71	2	6	2	94.5	1.26	2	11	$\bar{1}$
75.8	1.18	2	10	3	94.8	1.145	2	10	$\bar{1}$
76	.825	2	7	2	96.2	.915	2	8	$\bar{1}$
76.8	1.29	2	11	3	97.2	.805	2	7	$\bar{1}$
77.6	.47	2	4	1	98.5	.69	2	6	$\bar{1}$
77.8	.93	2	8	2	98.8	1.27	2	11	$\bar{2}$
79.6	.58	2	5	1	99.6	1.155	2	10	$\bar{2}$
80.4	1.155	2	10	2	100.4	.58	2	5	$\bar{1}$
81.2	1.27	2	11	2	102.2	.93	2	8	$\bar{2}$
81.5	.69	2	6	1	102.4	.47	2	4	$\bar{1}$
82.8	.805	2	7	1	103.2	1.29	2	11	$\bar{3}$

φ (°)	$\mathfrak{J}$ (r.l.u.)	h	k	l	φ (°)	$\mathfrak{J}$ (r.l.u.)	h	k	l
104	.825	2	7	$\bar{2}$	123	.545	2	4	$\bar{3}$
104.2	1.18	2	10	$\bar{3}$	123.5	1.09	2	8	$\bar{6}$
106.4	.365	2	3	$\bar{5}$	125	.695	2	5	$\bar{4}$
	.71	2	6	$\bar{2}$	126.5	.845	2	6	$\bar{5}$
107.5	1.31	2	11	$\bar{4}$	126.5	1.00	2	7	$\bar{6}$
108	.96	2	8	$\bar{3}$	131	.15	2	1	$\bar{1}$
109.2	1.205	2	10	$\bar{4}$		.30	2	2	$\bar{2}$
109.6	.605	2	5	$\bar{2}$		.46	2	3	$\bar{3}$
110.5	.85	2	7	$\bar{3}$		.605	2	4	$\bar{4}$
111.5	1.09	2	9	$\bar{4}$		.76	2	5	$\bar{5}$
111.8	1.345	2	11	$\bar{5}$		.91	2	6	$\bar{6}$
113.6	1.24	2	10	$\bar{5}$	136.5	.825	2	5	$\bar{5}$
114	.25	2	2	$\bar{1}$	138	.675	2	4	$\bar{5}$
	.50	2	4	$\bar{2}$	139	.53	2	3	$\bar{4}$
	.75	2	6	$\bar{3}$	142.5	.38	2	2	$\bar{3}$
	1.00	2	8	$\bar{4}$					
115.4	1.385	2	11	$\bar{6}$	-5	1.37	2	$\bar{1}$	14
116.5	.89	2	7	$\bar{4}$	-5.5	1.28	2	$\bar{1}$	13
117.5	.64	2	5	$\bar{3}$	-6	1.185	2	$\bar{1}$	12
118.6	1.035	2	8	$\bar{5}$	-7	.99	2	$\bar{1}$	10
120	.40	2	3	$\bar{2}$	-7.8	.90	2	$\bar{1}$	9
	.80	2	6	$\bar{4}$	-9.5	.805	2	$\bar{1}$	8
122	.94	2	7	$\bar{5}$	-10	.70	2	$\bar{1}$	7

φ (°)	$\mathfrak{G}$ (r.l.u.)	h	k	l
-10.5	1.29	2	$\bar{2}$	13
-11	.61	2	$\bar{1}$	6
	1.20	2	$\bar{2}$	12
-13.2	1.01	2	$\bar{2}$	10
-14.5	.92	2	$\bar{2}$	9
-15.3	1.32	2	$\bar{3}$	13
-16	.825	2	$\bar{2}$	8
16.5	.415	2	$\bar{1}$	4
	1.25	2	$\bar{3}$	12
-18	1.13	2	$\bar{3}$	11
-18.3	.73	2	$\bar{2}$	7
-18.5	1.445	2	$\bar{4}$	14
-19.6	1.35	2	$\bar{4}$	13
-21	.64	2	$\bar{2}$	6
-21.5	.955	2	$\bar{3}$	9
	1.265	2	$\bar{4}$	12
-22	.32	2	$\bar{1}$	3
-23	1.17	2	$\bar{4}$	11
-23.6	.865	2	$\bar{3}$	8
-24	.55	2	$\bar{2}$	5
	1.39	2	$\bar{5}$	13
-25	1.085	2	$\bar{4}$	10
-26	1.31	2	$\bar{5}$	12
26.4	.775	2	$\bar{3}$	7
-28	1.22	2	$\bar{5}$	11
-28.2	1.45	2	$\bar{6}$	13
-30	.23	2	$\bar{1}$	2
	.46	2	$\bar{2}$	4
	.69	2	$\bar{3}$	6
	.92	2	$\bar{4}$	8
	1.14	2	$\bar{5}$	10
-32.3	1.275	2	$\bar{6}$	11
	1.50	2	$\bar{7}$	13
-33.4	.83	2	$\bar{4}$	7
-34	1.20	2	$\bar{6}$	10
-36.5	1.34	2	$\bar{7}$	11
-37.2	.75	2	$\bar{4}$	6
-37.5	.38	2	$\bar{2}$	3
	1.12	2	$\bar{6}$	9
-39	1.265	2	$\bar{7}$	10
-39.2	.90	2	$\bar{5}$	7
-40.5	1.05	2	$\bar{6}$	8
-41	.53	2	$\bar{3}$	4
-42	.675	2	$\bar{4}$	5
	1.19	2	$\bar{7}$	9
-43.5	.825	2	$\bar{5}$	6

φ (°)	$\mathfrak{F}$ (r.l.u.)	h	k	l	φ (°)	$\mathfrak{F}$ (r.l.u.)	h	k	l
-45	1.125	2	$\bar{7}$	8	-66	.25	2	$\bar{2}$	1
-45.8	1.27	2	$\bar{8}$	9		.50	2	$\bar{4}$	2
-49	.15	2	$\bar{1}$	1		.75	2	$\bar{6}$	3
	.30	2	$\bar{2}$	2		1.00	2	$\bar{5}$	4
	.46	2	$\bar{3}$	3	-66,4	1.24	2	$\bar{10}$	5
	.61	2	$\bar{4}$	4	-68.2	1.345	2	$\bar{11}$	5
	.76	2	$\bar{5}$	5	-68.5	1.09	2	$\bar{9}$	4
	.91	2	$\bar{6}$	6	-69.5	.85	2	$\bar{7}$	3
	1.06	2	$\bar{7}$	7	-70.4	.605	2	$\bar{5}$	2
-51.8	1.29	2	$\bar{9}$	8	-70.8	1.205	2	$\bar{7}$	4
-52.6	1.44	2	$\bar{10}$	9	-72	.96	2	$\bar{8}$	3
-53.2	1.00	2	$\bar{7}$	6	-72.5	1.31	2	$\bar{11}$	4
-53.5	.845	2	$\bar{6}$	5	-73.6	.365	2	$\bar{3}$	1
-55	.695	2	$\bar{5}$	4		.71	2	$\bar{6}$	2
-55.9	1.23	2	$\bar{9}$	7	-75.8	1.18	2	$\bar{10}$	3
-57	.545	2	$\bar{4}$	3	-76	.825	2	$\bar{7}$	2
-58	.94	2	$\bar{7}$	5	-76.8	1.29	2	$\bar{11}$	3
-59.5	1.18	2	$\bar{9}$	6	77.6	.49	2	$\bar{4}$	1
-60	.40	2	$\bar{3}$	2	-77.8	.93	2	$\bar{8}$	2
	.80	2	$\bar{6}$	4	-78	1.40	2	$\bar{12}$	3
-62.5	.64	2	$\bar{5}$	3	-79	1.515	2	$\bar{13}$	3
-63.5	.89	2	$\bar{7}$	4	-79.6	.58	2	$\bar{5}$	1
-64.6	1.385	2	$\bar{11}$	6	-80.4	1.155	2	$\bar{10}$	2

φ (°)	$\mathcal{G}$ (r.l.u.)	h	k	l	φ (°)	$\mathcal{G}$ (r.l.u.)	h	k	l
-81.2	1.27	2	$\bar{11}$	2	98.5	.69	2	$\bar{6}$	$\bar{1}$
-81.5	.69	2	$\bar{6}$	1	98.8	1.27	2	$\bar{11}$	$\bar{2}$
-82	1.37	2	$\bar{12}$	2	99.6	1.155	2	$\bar{10}$	$\bar{2}$
-82.6	1.50	2	$\bar{13}$	2	100.4	.58	2	$\bar{5}$	$\bar{1}$
-82.8	.805	2	$\bar{7}$	1	-101	1.515	2	$\bar{13}$	$\bar{3}$
-83.8	.915	2	$\bar{8}$	1	102	1.40	2	$\bar{12}$	$\bar{3}$
-85.2	1.145	2	$\bar{10}$	1	102.2	.93	2	$\bar{8}$	$\bar{2}$
85.5	1.26	2	$\bar{11}$	1	-102.4	.47	2	$\bar{4}$	$\bar{1}$
-90(-b*)	.115	2	$\bar{1}$	0	-103.2	1.29	2	$\bar{11}$	$\bar{3}$
	.23	2	$\bar{2}$	0	-104	.825	2	$\bar{7}$	$\bar{2}$
	.345	2	$\bar{3}$	0	-104.2	1.18	2	$\bar{10}$	$\bar{3}$
	.455	2	$\bar{4}$	0	-106.4	.365	2	$\bar{3}$	$\bar{1}$
	.57	2	$\bar{5}$	0		.71	2	$\bar{6}$	$\bar{2}$
	.685	2	$\bar{6}$	0	-107.5	1.31	2	$\bar{11}$	$\bar{4}$
	.80	2	$\bar{7}$	0	-108	.96	2	$\bar{8}$	$\bar{3}$
	1.02	2	$\bar{9}$	0	-109.2	1.205	2	$\bar{10}$	$\bar{4}$
	1.14	2	$\bar{10}$	0	-109.6	.605	2	$\bar{5}$	$\bar{2}$
-94.5	1.26	2	$\bar{11}$	$\bar{1}$	-110.5	.85	2	$\bar{7}$	$\bar{3}$
-94.8	1.145	2	$\bar{10}$	$\bar{1}$	-111.5	1.09	2	$\bar{9}$	$\bar{4}$
-96.2	.915	2	$\bar{8}$	$\bar{1}$	-111.8	1.345	2	$\bar{11}$	$\bar{5}$
-97.2	.805	2	$\bar{7}$	$\bar{1}$	-113.6	1.24	2	$\bar{10}$	$\bar{5}$
-97.4	1.50	2	$\bar{13}$	$\bar{2}$	-114	.25	2	$\bar{2}$	$\bar{1}$
-98	1.37	2	$\bar{12}$	$\bar{2}$		.50	2	$\bar{4}$	$\bar{2}$

φ (°)	$\mathcal{F}$ (r.l.u.)	h	k	l	φ (°)	$\mathcal{F}$ (r.l.u.)	h	k	l
	.70	2	$\bar{6}$	$\bar{3}$		1.21	2	$\bar{8}$	$\bar{8}$
	1.00	2	$\bar{8}$	$\bar{4}$	-134.2	1.27	2	$\bar{8}$	$\bar{9}$
-115.4	1.385	2	$\bar{11}$	$\bar{6}$	-135	1.125	2	$\bar{7}$	$\bar{8}$
-116.5	.89	2	$\bar{7}$	$\bar{4}$	136.5	.825	2	$\bar{5}$	$\bar{6}$
-117.5	.64	2	$\bar{5}$	$\bar{3}$	-138	.675	2	$\bar{4}$	$\bar{5}$
-120	.40	2	$\bar{3}$	$\bar{2}$		1.19	2	$\bar{7}$	$\bar{9}$
	.80	2	$\bar{6}$	$\bar{4}$	-139	.53	2	$\bar{3}$	$\bar{4}$
-120.5	1.18	2	$\bar{9}$	$\bar{6}$	-139.5	1.05	2	$\bar{6}$	$\bar{8}$
-122	.94	2	$\bar{7}$	$\bar{5}$	-140.8	.90	2	$\bar{5}$	$\bar{7}$
-123	.545	2	$\bar{4}$	$\bar{3}$	-141	1.265	2	$\bar{7}$	$\bar{10}$
-123.5	1.09	2	$\bar{8}$	$\bar{6}$	-142.5	.38	2	$\bar{2}$	$\bar{3}$
-125	.695	2	$\bar{5}$	$\bar{4}$		1.12	2	$\bar{6}$	$\bar{9}$
-126.5	.845	2	$\bar{6}$	$\bar{5}$	-142.8	.75	2	$\bar{4}$	$\bar{6}$
-126.8		2	$\bar{7}$	$\bar{6}$	-143.5	1.34	2	$\bar{7}$	$\bar{11}$
-127.4	1.45	2	$\bar{10}$	$\bar{9}$	-146	1.20	2	$\bar{6}$	$\bar{10}$
-128.2	1.29	2	$\bar{9}$	$\bar{8}$	-146.6	.83	2	$\bar{4}$	$\bar{7}$
-131	.15	2	$\bar{1}$	$\bar{1}$	-147.7	1.275	2	$\bar{6}$	$\bar{11}$
	.30	2	$\bar{2}$	$\bar{2}$		1.50	2	$\bar{7}$	$\bar{13}$
	.46	2	$\bar{3}$	$\bar{3}$	-150	.23	2	$\bar{1}$	$\bar{2}$
	.605	2	$\bar{4}$	$\bar{4}$		.46	2	$\bar{2}$	$\bar{4}$
	.76	2	$\bar{5}$	$\bar{5}$		.69	2	$\bar{3}$	$\bar{6}$
	.91	2	$\bar{6}$	$\bar{6}$		.92	2	$\bar{4}$	$\bar{8}$
	1.06	2	$\bar{7}$	$\bar{7}$		1.14	2	$\bar{5}$	$\bar{10}$

φ (°)	$\mathfrak{F}$ (r.l.u.)	h	k	l	φ (°)	$\mathfrak{F}$ (r.l.u.)	h	k	l
-151.8	1.45	2	$\bar{6}$	$\bar{13}$	-170	.70	2	$\bar{1}$	$\bar{7}$
-152	1.22	2	$\bar{5}$	$\bar{11}$	-170.5	.805	2	$\bar{1}$	$\bar{8}$
-153.6	.775	2	$\bar{3}$	$\bar{7}$	-172.2	.90	2	$\bar{1}$	$\bar{9}$
-154	1.31	2	$\bar{5}$	$\bar{12}$	-173	.99	2	$\bar{1}$	$\bar{10}$
-155	1.085	2	$\bar{4}$	$\bar{10}$	-174	1.185	2	$\bar{1}$	$\bar{12}$
-156	.55	2	$\bar{4}$	$\bar{5}$	-174.5	1.28	2	$\bar{1}$	$\bar{13}$
	1.39	2	$\bar{5}$	$\bar{13}$	-175	1.37	2	$\bar{1}$	$\bar{14}$
							h	l	k
-156.4	.865	2	$\bar{3}$	$\bar{8}$	-180(-c*)	.10	2	1	0
-157	1.17	2	$\bar{4}$	$\bar{11}$		.20	2	$\bar{2}$	0
-158	.32	2	$\bar{1}$	$\bar{3}$		.30	2	$\bar{3}$	0
-158.5	.955	2	$\bar{3}$	$\bar{9}$		.40	2	$\bar{4}$	0
-159	.64	2	$\bar{2}$	$\bar{6}$		.50	2	$\bar{5}$	0
-160.4	1.35	2	$\bar{4}$	$\bar{13}$		.60	2	$\bar{6}$	0
-161.5	1.445	2	$\bar{4}$	$\bar{14}$		.695	2	$\bar{7}$	0
-161.7	.73	2	$\bar{2}$	$\bar{7}$		.79	2	$\bar{8}$	
-162	1.13	2	$\bar{3}$	$\bar{11}$		.89	2	$\bar{9}$	0
-163.5	.415	2	$\bar{1}$	$\bar{4}$		.99	2	$\bar{10}$	0
	1.25	2	$\bar{3}$	$\bar{12}$		1.085	2	$\bar{11}$	
-164.7	1.32	2	$\bar{3}$	$\bar{13}$	-185.5	1.275	2	$\bar{1}$	13
-165.5	.92	2	$\bar{2}$	$\bar{9}$	-186	1.185	2	$\bar{1}$	12
-166.7	1.01	2	$\bar{2}$	$\bar{10}$	-187	.99	2	$\bar{1}$	10
-169	.61	2	$\bar{1}$	$\bar{6}$	-187.8	.90	2	$\bar{1}$	9
	1.20	2	$\bar{2}$	$\bar{12}$	-189.5	.805	2	$\bar{1}$	8
-169.5	1.29	2	$\bar{2}$	$\bar{13}$	-190	.70	2	$\bar{1}$	7

φ (°)	ψ (r.l.u.)	h	l	k	h k
-191	.61	2	$\bar{1}$	6	
-193.5	1.01	2	$\bar{2}$	10	
-194.5	.92	2	$\bar{2}$	9	
-196.5	.415	2	1	4	
-198.3	.73	2	$\bar{2}$	7	
-201	.64	2	$\bar{2}$	6	
-202	.32	2	$\bar{1}$	3	
-204.5	.55	2	$\bar{2}$	5	
-210	.23	2	1	2	
	.46	2	$\bar{2}$	4	

Table 4.4 (d)

Indicies of spots from plane (3 k l)

[100] Rotation axis, 3rd layer with h = 3

φ (°) degree	ξ (r.l.u.)	h	k	l	φ (°)	ξ (r.l.u.)	h	k	l
0 (c*)	.10	3	0	1	10	1.395	3	2	14
	.20	3	0	2	10.5	1.30	3	2	13
	.30	3	0	3	10.8	.602	3	1	6
	.40	3	0	4	11.3	1.21	3	2	12
	.495	3	0	5	12.4	1.12	3	2	11
	.595	3	0	6	13	.905	3	1	5
	.695	3	0	7	13.4	1.01	3	2	10
	.79	3	0	8	15	.918	3	2	9
	.89	3	0	9	16	.41	3	1	4
	1.09	3	0	11	16.3	.82	3	2	8
	1.48	3	0	15	18.6	.73	3	2	7
5	1.38	3	1	14	20.5	.32	3	1	3
5.5	1.29	3	1	13	21.3	.635	3	2	6
5.8	1.19	3	1	12		.95	3	3	9
6.3	1.09	3	1	11		1.27	3	4	12
6.8	.99	3	1	10	23°	1.18	3	4	11
7.5	.899	3	1	9	23.6	.95	3	3	9
8.4	.795	3	1	8	25	.945	3	2	5
9.5	.70	3	1	7		1.085	3	4	10

φ (°)	(r. l.u.)	h	k	l	φ (°)	(r. l.u.)	h	k	l
25.8	1.32	3	5	12	45.5	1.125	3	7	8
26.5	.77	3	3	9	48	.15	3	1	1
27.8	1.23	3	5	11	48.6	.30	3	2	2
29	.23	3	1	2		.45	3	3	3
30	1.375	3	6	12		.60	3	4	4
30.3	.46	3	2	4	49°	.755	3	5	5
30.2	.689	3	3	6		.91	3	6	6
	.91	3	4	8		1.355	3	9	9
32.5	1.29	3	6	11	49.2	1.06	3	7	7
33	1.055	3	4	9	53.5	1.00	3	7	6
33.5	.83	3	4	7	54.3	.845	3	6	5
34	1.43	3	7	12	55	.695	3	5	4
35	.60	3	3	5	56.5	.54	3	4	3
36	.975	3	5	8	59.5	.395	3	3	2
37	.375	3	2	3	60	.79	3	6	4
37.5	.75	3	4	6	61.5	1.30	3	10	6
39.2	1.27	3	7	10	62	.64	3	5	3
39.4	.895	3	5	7	63.5	.89	3	7	4
40.6	.525	3	3	4	65.8	.25	3	2	1
41	1.045	3	6	8		.50	3	4	2
42	1.195	3	7	9	66	.75.	3	6	3
42.8	.67	3	4	5		.99	3	8	4
43.5	.82	3	5	6	66.6	1.25	3	10	5
44.8	.975	3	6	7	70.5	.60	3	5	2

φ (°)	(r. l.u.)	h	k	l	φ (°)	(r. l.u.)	h	k	l
71	1.21	3	10	4		.57	3	5	0
71.5	.955	3	8	3		.685	3	6	0
73	.355	3	3	1		.80	3	7	0
73.5	.715	3	6	2		1.02	3	9	0
73.8	1.065	3	9	3		1.14	3	10	0
	1.43	3	12	4		1.37	3	12	0
75.5	1.185	3	10	3	94	1.37	3	$\bar{12}$	$\bar{1}$
76	.82	3	7	2	94.5	1.26	3	$\bar{11}$	$\bar{1}$
76.6	1.29	3	11	3	97	.80	3	$\bar{7}$	$\bar{1}$
77	.465	3	4	1	98.5	.69	3	$\bar{6}$	$\bar{1}$
78	1.42	3	12	3	99	1.38	3	$\bar{12}$	$\bar{2}$
79	1.04	3	9	2	100	.575	3	$\bar{5}$	$\bar{1}$
80	.575	3	5	1		1.165	3	$\bar{10}$	$\bar{2}$
	1.165	3	10	2	103	.465	3	$\bar{4}$	$\bar{1}$
81.5	.69	3	6	1	103.5	.935	3	$\bar{8}$	$\bar{2}$
83	.80	3	7	1		1.29	3	$\bar{11}$	$\bar{3}$
85.5	1.26	3	11	1	104	.82	3	$\bar{7}$	$\bar{2}$
86	1.37	3	12	1	104.5	1.182	3	$\bar{10}$	$\bar{3}$
86.2	1.45	3	13	1	106	1.065	3	$\bar{9}$	$\bar{3}$
90(b*)	1.15	3	1	0	106.5	.715	3	$\bar{6}$	$\bar{2}$
	.23	3	2	0	107	.355	3	$\bar{3}$	$\bar{1}$
	.345	3	3	0	108.5	.955	3	$\bar{8}$	$\bar{3}$
	.455	3	4	0	109	1.21	3	$\bar{10}$	$\bar{4}$

φ (°)	ξ (r.l.u.)	h	k	l	φ (°)	ξ (r.l.u.)	h	k	l
109.5	.60	3	5	$\bar{2}$	139.4	.525	3	3	$\bar{4}$
110.5	.86	3	7	$\bar{3}$	143	.375	3	2	$\bar{3}$
111.2	1.10	3	9	$\bar{4}$					
113.5	1.25	3	10	$\bar{5}$	-5	1.38	3	$\bar{1}$	14
114	.25	3	2	$\bar{1}$	-5.5	1.29	3	$\bar{1}$	13
	.50	3	4	$\bar{2}$	-5.8	1.19	3	$\bar{1}$	12
	.75	3	6	$\bar{3}$	-6.3	1.09	3	$\bar{1}$	11
	.99	3	8	$\bar{4}$	-6.8	.99	3	$\bar{1}$	10
116.5	.89	3	7	$\bar{4}$	-7.5	.895	3	$\bar{1}$	9
118	.64	3	5	$\bar{3}$	-8.4	.795	3	$\bar{1}$	8
120	.79	3	6	$\bar{4}$	-9.5	.70	3	$\bar{1}$	7
120.5	.395	3	3	$\bar{2}$	-10	1.395	3	$\bar{2}$	14
123.5	.54	3	4	$\bar{3}$	-10.5	1.30	3	$\bar{2}$	13
125	.695	3	5	$\bar{4}$	-10.7	.602	3	$\bar{1}$	6
125.8	.845	3	6	$\bar{5}$	-11.2	1.21	3	$\bar{2}$	12
131	.755	3	5	$\bar{5}$	-12.4	1.10	3	$\bar{2}$	11
	.91	3	6	$\bar{6}$	-13	.505	3	$\bar{1}$	5
131.5	.30	3	2	$\bar{2}$		1.01	3	$\bar{2}$	10
	.45	3	3	$\bar{3}$	-15	.918	3	$\bar{2}$	9
	.60	3	4	$\bar{4}$	-16	.41	3	$\bar{1}$	4
132	.15	3	1	$\bar{1}$		.82	3	$\bar{2}$	8
136.5	.82	3	5	$\bar{6}$	-18.5	.73	3	$\bar{2}$	7
137.3	.67	3	4	$\bar{5}$	-21	.32	3	$\bar{1}$	3

φ (°)	ρ (r. l.u.)	h	k	l	φ (°)	ρ (r. l.u.)	h	k	l
	.635	3	$\bar{2}$	6	-38	1.12	3	$\bar{6}$	9
	.95	3	$\bar{3}$	9	-39.2	.895	3	$\bar{5}$	7
	1.27	3	$\bar{4}$	12	-40.5	.525	3	$\bar{3}$	4
-3	1.18	3	$\bar{4}$	11	-41	1.045	3	$\bar{6}$	8
-23.6	.95	3	$\bar{3}$	9	-42	1.195	3	$\bar{7}$	9
-25	.545	3	$\bar{2}$	5	-42.8	.67	3	$\bar{4}$	5
	1.085	3	$\bar{4}$	10	-43.5	.82	3	$\bar{5}$	6
-25.8	1.32	3	$\bar{5}$	12	-44.8	.975	3	$\bar{6}$	7
-26.5	.77	3	$\bar{3}$	9	-45.5	1.125	3	$\bar{7}$	8
-28	1.23	3	$\bar{5}$	11	-48	.15	3	$\bar{1}$	1
-29	.23	3	$\bar{1}$	2		.30	3	$\bar{2}$	2
-30	1.37	3	$\bar{6}$	12		.45	3	$\bar{3}$	3
-30.2	.46	3	$\bar{2}$	4		.60	3	$\bar{4}$	4
	.685	3	$\bar{3}$	6	-49	.75	3	$\bar{5}$	5
	.91	3	$\bar{4}$	8		.91	3	$\bar{6}$	6
-32.5	1.29	3	$\bar{6}$	11		1.355	3	$\bar{9}$	9
-33	1.055	3	$\bar{5}$	9	-49.2	1.06	3	$\bar{7}$	7
-33.5	.83	3	$\bar{4}$	7	-53.5	1.00	3	$\bar{7}$	6
-34	1.43	3	$\bar{7}$	12	-54.2	.845	3	$\bar{6}$	5
-35	.60	3	$\bar{3}$	5	-55	.695	3	$\bar{5}$	4
-36	.975	3	$\bar{5}$	8	-56.5	.54	3	$\bar{4}$	3
-37	.375	3	$\bar{2}$	3	-60	.395	3	$\bar{3}$	2
	.75	3	$\bar{4}$	6		.79	3	$\bar{6}$	4

φ (°)	ω (r.l.u.)	h	k	l
-61.5	1.30	3	$\bar{10}$	6
-62	.64	3	$\bar{5}$	3
-63.5	.89	3	$\bar{7}$	4
-65.8	.25	3	$\bar{2}$	1
	.50	3	$\bar{4}$	2
-66	.75	3	$\bar{6}$	3
	.99	3	$\bar{8}$	4
	1.25	3	$\bar{10}$	5
-71	.60	3	$\bar{5}$	2
	1.20	3	$\bar{10}$	4
-71.5	.955	3	$\bar{8}$	3
-73	.355	3	$\bar{3}$	1
-73.5	.715	3	$\bar{6}$	2
	1.43	3	$\bar{12}$	4
-73.8	1.065	3	$\bar{9}$	3
-75.5	1.185	3	$\bar{10}$	3
-76	.82	3	$\bar{7}$	2
-76.6	1.29	3	$\bar{11}$	3
-77	.465	3	$\bar{4}$	1
-78	1.42	3	$\bar{12}$	3
-79	1.04	3	$\bar{9}$	2
-80	.575	3	$\bar{5}$	1
	1.165	3	$\bar{10}$	2
-81.5	.69	3	$\bar{6}$	1
-83	.80	3	$\bar{7}$	1
-85.5	1.26	3	$\bar{11}$	1
-86	1.37	3	$\bar{12}$	1
-86.2	1.45	3	$\bar{13}$	1
-90(-b*)	1.15	3	$\bar{1}$	0
	.23	3	$\bar{2}$	0
	.345	3	$\bar{3}$	0
	.455	3	$\bar{4}$	0
	.57	3	$\bar{5}$	0
	.685	3	$\bar{6}$	0
	.80	3	$\bar{7}$	0
	1.02	3	$\bar{9}$	0
	1.14	3	$\bar{10}$	0
	1.37	3	$\bar{12}$	0
-93.8	1.49	3	$\bar{13}$	$\bar{1}$
-94	1.37	3	$\bar{12}$	$\bar{1}$
-94.5	1.26	3	$\bar{11}$	$\bar{1}$
-97	.80	3	$\bar{7}$	$\bar{1}$
-18.5	.69	3	$\bar{6}$	$\bar{1}$
-100	.575	3	$\bar{5}$	$\bar{1}$
-101	1.165	3	$\bar{10}$	$\bar{2}$
	1.04	3	$\bar{9}$	$\bar{2}$

φ (°)	$\sin\frac{\theta}{2}$ (r. l.u.)	h	k	l
-102	1.42	3	$\bar{12}$	$\bar{3}$
-103	.465	3	$\bar{4}$	$\bar{1}$
-103.4	1.29	3	$\bar{11}$	$\bar{3}$
-104	.82	3	$\bar{7}$	$\bar{2}$
-104.5	1.18	3	$\bar{10}$	$\bar{3}$
-106.2	1.065	3	$\bar{9}$	$\bar{3}$
106.5	.715	3	$\bar{7}$	$\bar{2}$
	1.43	3	$\bar{12}$	$\bar{4}$
-107	.355	3	$\bar{3}$	$\bar{1}$
108.5	.95	3	$\bar{8}$	$\bar{3}$
-109	.60	3	$\bar{5}$	$\bar{2}$
	1.20	3	$\bar{10}$	$\bar{4}$
-114	.75	3	$\bar{6}$	$\bar{3}$
	.99	3	$\bar{8}$	$\bar{4}$
	1.25	3	$\bar{10}$	$\bar{5}$
-114.3	.25	3	$\bar{2}$	$\bar{1}$
	.50	3	$\bar{4}$	$\bar{2}$
-116.5	.85	3	$\bar{7}$	$\bar{4}$
-118	.64	3	$\bar{5}$	$\bar{3}$
-118.5	1.30	3	$\bar{10}$	$\bar{6}$
-120	.395	3	$\bar{3}$	$\bar{2}$
	.79	3	$\bar{6}$	$\bar{4}$
-123.5	.54	3	$\bar{4}$	$\bar{3}$

φ (°)	$\sin\frac{\theta}{2}$ (r. l.u.)	h	k	l
-125	.695	3	$\bar{5}$	$\bar{4}$
-125.7	.845	3	$\bar{6}$	$\bar{5}$
-126.7	1.00	3	$\bar{7}$	$\bar{6}$
-130.8	1.06	3	$\bar{7}$	$\bar{7}$
-131	.75	3	$\bar{5}$	$\bar{5}$
	.91	3	$\bar{6}$	$\bar{6}$
	1.355	3	$\bar{9}$	$\bar{9}$
-131.5	.15	3	$\bar{1}$	$\bar{1}$
	.30	3	$\bar{2}$	$\bar{2}$
	.45	3	$\bar{3}$	$\bar{3}$
	.60	3	$\bar{4}$	$\bar{4}$
-134.5	1.125	3	$\bar{7}$	$\bar{8}$
-135.3	.975	3	$\bar{6}$	$\bar{7}$
-136.5	.82	3	$\bar{5}$	$\bar{6}$
-137.3	.67	3	$\bar{4}$	$\bar{5}$
-138	1.195	3	$\bar{7}$	$\bar{9}$
-139	1.04	3	$\bar{6}$	$\bar{8}$
-139.5	.525	3	$\bar{3}$	$\bar{4}$
-140.5	.895	3	$\bar{5}$	$\bar{7}$
-140.8	1.27	3	$\bar{7}$	$\bar{10}$
-142	1.12	3	$\bar{6}$	$\bar{9}$
-142.5	.75	3	$\bar{4}$	$\bar{6}$
-143	.375	3	$\bar{2}$	$\bar{3}$

φ (°)	ϑ_l (r.l.u.)	h	k	l	φ (°)	ϑ_l (r.l.u.)	h	k	l
-144	.97	3	$\bar{5}$	$\bar{8}$	-163.7	.82	3	$\bar{2}$	$\bar{8}$
-145	.60	3	$\bar{3}$	$\bar{5}$	-164	.41	3	$\bar{1}$	$\bar{4}$
-146	1.43	3	$\bar{7}$	$\bar{12}$	-165	.918	3	$\bar{2}$	$\bar{9}$
-146.5	.83	3	$\bar{4}$	$\bar{7}$	-166.5	1.01	3	$\bar{2}$	$\bar{10}$
-147	1.05	3	$\bar{5}$	$\bar{9}$	-167	.505	3	$\bar{1}$	$\bar{5}$
-147.5	1.29	3	$\bar{6}$	$\bar{11}$	-167.6	1.15	3	$\bar{2}$	$\bar{11}$
-149.7	.46	3	$\bar{2}$	$\bar{4}$	-168.7	1.21	3	$\bar{2}$	$\bar{12}$
	.685	3	$\bar{3}$	$\bar{6}$	-169.2	.602	3	$\bar{1}$	$\bar{6}$
	.91	3	$\bar{4}$	$\bar{8}$	-169.5	1.30	3	$\bar{2}$	$\bar{13}$
-150	1.375	3	$\bar{6}$	$\bar{12}$	-170	1.395	3	$\bar{2}$	$\bar{14}$
-151	.23	3	$\bar{1}$	$\bar{2}$	-170.5	.70	3	$\bar{1}$	$\bar{7}$
-151.8	1.23	3	$\bar{5}$	$\bar{11}$	-171.6	.795	3	$\bar{1}$	$\bar{8}$
-153.5	.77	3	$\bar{3}$	$\bar{7}$	-172.5	.895	3	$\bar{1}$	$\bar{9}$
-154.2	1.32	3	$\bar{5}$	$\bar{12}$	-173.2	.99	3	$\bar{1}$	$\bar{10}$
-155	.545	3	$\bar{2}$	$\bar{5}$	-173.7	1.09	3	$\bar{1}$	$\bar{11}$
	1.085	3	$\bar{4}$	$\bar{10}$	-174.2	1.19	3	$\bar{1}$	$\bar{12}$
-156.5	.95	3	$\bar{3}$	$\bar{9}$	-174.5	1.29	3	$\bar{1}$	$\bar{13}$
-157	1.18	3	$\bar{4}$	$\bar{11}$	-175	1.38	3	$\bar{1}$	$\bar{14}$
-158.7	.635	3	$\bar{3}$	$\bar{6}$	-180	.10	3	0	$\bar{1}$
	.95	3	$\bar{3}$	$\bar{9}$		.20	3	0	$\bar{2}$
	1.27	3	$\bar{4}$	$\bar{12}$		.30	3	0	$\bar{3}$
-159.5	.32	3	$\bar{1}$	$\bar{3}$		.40	3	0	$\bar{4}$
-161.5	.73	3	$\bar{2}$	$\bar{7}$		.495	3	0	$\bar{5}$

φ (°)	ξ (r.l.u.)	h	k	ℓ
	.595	3	0	$\bar{6}$
	.695	3	0	$\bar{5}$
	.79	3	0	$\bar{8}$
	.89	3	0	$\bar{9}$
	1.02	3	0	$\bar{11}$
	1.48	3	0	$\bar{15}$
-186.3	1.09	3	1	$\bar{11}$
-186.8	.99	3	1	$\bar{10}$
-187.5	.895	3	1	$\bar{9}$
-188.5	.795	3	1	$\bar{8}$
-189.5	.70	3	1	$\bar{7}$
-190.7	.602	3	1	$\bar{6}$
-193	.505	3	1	$\bar{5}$
	1.01	3	2	$\bar{10}$
-196	.41	3	1	$\bar{4}$
	.82	3	2	$\bar{8}$
-198.5	.73	3	2	$\bar{7}$
-200.5	.32	3	1	$\bar{3}$
-201.2	.63	3	2	$\bar{6}$
-205	.545	3	2	$\bar{5}$
-210.2	.46	3	2	$\bar{4}$

Table 4.4 (e)

Indicies of spots from plane (h0ℓ)

[010] Rotation axis, 0th layer with k = 0

φ (°) degree	ξ (r.l.u.)	h	k	ℓ	φ (°) degree	ξ (r.l.u.)	h	k	ℓ
0 (a*)	.42	2	0	0	25	.70	3	0	3
	.84	4	0	0		.925	4	0	4
	1.26	6	0	0		1.16	5	0	5
5	1.26	6	0	1	29.6	1.21	5	0	6
5.5	1.055	5	0	1		1.425	6	0	7
6.6	.85	4	0	1	30.6	.97	4	0	5
9	.64	3	0	1	32.4	.75	3	0	4
	1.27	6	0	2	34	1.25	5	0	7
13.4	.44	2	0	1	35.2	1.03	4	0	6
	.865	4	0	2	35.4	.52	2	0	3
16	1.10	5	0	3	37.2	1.31	5	0	8
17.6	.655	3	0	2	38.4	.81	3	0	5
	1.32	6	0	4	40	1.095	4	0	7
19.6	.895	4	0	3	43	.295	1	0	2
21.2	1.12	5	0	4		.58	2	0	4
21.8	1.36	6	0	5		.87	3	0	6
25	.24	1	0	1	43.4	1.16	4	0	8
	.47	2	0	2		1.43	5	0	10
80	1.21	1	0	12	145	1.03	4	0	6
90(c*)	.20	0	0	2	115	.24	1	0	1

φ (°)	$\mathfrak{E}$ (r.l.u.)	h	k	l	φ (°)	$\mathfrak{E}$ (r.l.u.)	h	k	l
48	.945	3	0	5	90	.40	0	0	4
	.65	2	0	5		.60	0	0	6
	1.30	4	0	10		.80	0	0	8
52	1.02	3	0	8		1.00	0	0	10
55	.725	2	0	6		1.20	0	0	12
	1.10	3	0	9	100	1.21	1	0	12
59	.82	2	0	7	101	1.11	1	0	11
60.8	1.26	3	0	11	101.2	1.01	1	0	10
62	.91	2	0	8	102	.915	1	0	9
62.2	.45	1	0	4	105	.825	1	0	8
64.2	1.43	3	0	13	107	.725	1	0	7
65	.99	2	0	9	109	.635	1	0	6
67.6	.545	1	0	5		1.26	2	0	2
	1.08	2	0	10	110.8	1.175	2	0	11
69.2	1.175	2	0	11	112.4	.545	1	0	5
71	.635	1	0	6		1.08	2	0	10
	1.26	2	0	12	117.8	.45	1	0	4
72.3	1.36	2	0	13	130	.65	2	0	5
73	.725	1	0	7		1.30	4	0	10
73.6	1.455	2	0	14	132	.945	3	0	7
75	.825	1	0	8	137	.295	1	0	2
78	.915	1	0	9		.87	3	0	6
78.8	1.01	1	0	10	140	1.095	4	0	7
79	1.11	1	0	11	141.6	.52	2	0	3

φ (°)	$\sin\frac{\theta}{\lambda}$ (r.l.u.)	h	k	l	φ (°)	$\sin\frac{\theta}{\lambda}$ (r.l.u.)	h	k	l
155	.47	$\bar{2}$	0	2	-25	.47	2	0	$\bar{2}$
	.70	$\bar{3}$	0	3		.70	3	0	$\bar{3}$
162.4	.665	$\bar{3}$	0	2		.925	4	0	$\bar{4}$
166.6	.44	$\bar{2}$	0	1		1.16	5	0	$\bar{5}$
171	.64	$\bar{3}$	0	1	-29.6	1.21	5	0	$\bar{6}$
173.4	.85	$\bar{4}$	0	1		1.425	6	0	$\bar{7}$
174.5	1.06	$\bar{5}$	0	1	-30.6	.97	4	0	$\bar{5}$
180(-a*)	.42	$\bar{2}$	0	0	-32.4	.75	3	0	$\bar{4}$
	.84	$\bar{4}$	0	0	-34	1.25	5	0	$\bar{7}$
	1.26	$\bar{6}$	0	0	-35.2	1.03	4	0	$\bar{6}$
-5	1.26	6	0	$\bar{1}$	-35.4	.52	2	0	$\bar{3}$
-5.5	1.055	5	0	$\bar{1}$	-37.2	1.31	5	0	$\bar{8}$
-6.6	.85	4	0	$\bar{1}$	-38.4	.81	3	0	$\bar{5}$
-9	.64	3	0	$\bar{1}$	-40	1.095	4	0	$\bar{7}$
	1.27	6	0	$\bar{2}$	-43	.295	1	0	$\bar{2}$
-13.4	.44	2	0	$\bar{1}$		.58	2	0	$\bar{4}$
	.865	4	0	$\bar{2}$		.87	3	0	$\bar{6}$
-16	1.10	5	0	$\bar{3}$	-43.4	1.16	4	0	$\bar{8}$
-17.6	.665	3	0	$\bar{2}$		1.43	5	0	$\bar{10}$
	1.32	6	0	$\bar{4}$	-48	.945	3	0	$\bar{7}$
-19.6	.895	4	0	$\bar{3}$	-50	.65	2	0	$\bar{5}$
-21.1	1.12	5	0	$\bar{4}$		1.30	4	0	$\bar{10}$
-21.8	1.36	6	0	$\bar{5}$	-52	1.02	3	0	$\bar{8}$
-25	.24	1	0	$\bar{1}$	-55	.725	2	0	$\bar{6}$

φ (°)	(r.l.u.)	h	k	l	φ (°)	(r.l.u.)	h	k	l
-55	1.10	3	0	$\bar{9}$	-90(c*)	1.20	0	0	$\bar{12}$
-59	.82	2	0	$\bar{7}$	-100	1.21	$\bar{1}$	0	$\bar{12}$
-60.8	1.26	3	0	$\bar{11}$	-101	1.11	$\bar{1}$	0	$\bar{11}$
-62	.91	2	0	$\bar{8}$	-101.2	1.01	$\bar{1}$	0	$\bar{10}$
-62.2	.45	1	0	$\bar{4}$	-102	.915	$\bar{1}$	0	$\bar{9}$
-65	.99	2	0	$\bar{9}$	-105	.825	$\bar{1}$	0	$\bar{8}$
-67.6	.545	1	0	$\bar{5}$	-106.4	1.455	$\bar{2}$	0	$\bar{14}$
	1.08	2	0	$\bar{10}$	-107	.725	$\bar{1}$	0	$\bar{7}$
-69.2	1.175	2	0	$\bar{11}$	-107.8	1.36	$\bar{2}$	0	$\bar{13}$
-71	.635	1	0	$\bar{6}$	-109	.635	$\bar{1}$	0	$\bar{6}$
	1.26	2	0	$\bar{2}$		1.26	$\bar{2}$	0	$\bar{12}$
-72.2	1.36	2	0	$\bar{13}$	-110.8	1.175	$\bar{2}$	0	$\bar{11}$
-73	.725	1	0	$\bar{7}$	-112.4	.545	$\bar{1}$	0	$\bar{5}$
-73.6	1.455	2	0	$\bar{14}$	-115	1.08	$\bar{2}$	0	$\bar{10}$
-75	.825	1	0	$\bar{8}$		.99	$\bar{2}$	0	$\bar{9}$
-78	.915	1	0	$\bar{9}$	-117.8	.45	$\bar{1}$	0	$\bar{4}$
-78.8	1.01	1	0	$\bar{10}$	-118	.91	$\bar{2}$	0	$\bar{8}$
-79	1.11	1	0	$\bar{11}$	-119.2	1.26	$\bar{3}$	0	$\bar{11}$
-80	1.21	1	0	$\bar{12}$	-121	.82	$\bar{2}$	0	$\bar{7}$
-90 (c*)	.20	0	0	$\bar{2}$	-125	.725	$\bar{2}$	0	$\bar{6}$
	.40	0	0	$\bar{4}$		1.10	$\bar{3}$	0	$\bar{9}$
	.60	0	0	$\bar{6}$	-128	1.02	$\bar{3}$	0	$\bar{8}$
	.80	0	0	$\bar{8}$	-130	.65	$\bar{2}$	0	$\bar{5}$
	1.00	0	0	$\bar{10}$		1.30	$\bar{4}$	0	$\bar{10}$

φ (°)	$\sin^2\frac{\varphi}{2}$ (r.l.u.)	h	k	l	φ (°)	$\sin^2\frac{\varphi}{2}$ (r.l.u.)	h	k	l
-132	.945	$\bar{3}$	0	$\bar{7}$	-162.4	.665	$\bar{3}$	0	$\bar{2}$
-136.6	1.16	$\bar{4}$	0	$\bar{8}$		1.32	$\bar{6}$	0	$\bar{4}$
	1.43	$\bar{5}$	0	$\bar{10}$	-164	1.10	$\bar{5}$	0	$\bar{3}$
-137	.295	$\bar{1}$	0	$\bar{2}$	-166.6	.44	$\bar{2}$	0	$\bar{1}$
	.58	$\bar{2}$	0	$\bar{4}$		.865	$\bar{4}$	0	$\bar{2}$
	.87	$\bar{3}$	0	$\bar{6}$	-171	.64	$\bar{3}$	0	$\bar{1}$
-140	1.095	$\bar{4}$	0	$\bar{7}$		1.27	$\bar{6}$	0	$\bar{2}$
-141.6	.81	$\bar{3}$	0	$\bar{5}$	-173.4	.85	$\bar{4}$	0	$\bar{1}$
-142.8	1.31	$\bar{5}$	0	$\bar{8}$	-174.5	1.055	$\bar{5}$	0	$\bar{1}$
-144.6	.52	$\bar{2}$	0	$\bar{3}$	-175	1.26	$\bar{6}$	0	$\bar{1}$
-144.8	1.03	$\bar{4}$	0	$\bar{6}$					
-146	1.25	$\bar{5}$	0	$\bar{7}$					
-147.6	.75	$\bar{3}$	0	$\bar{4}$					
-149.4	.97	$\bar{4}$	0	$\bar{5}$					
-150.4	1.21	$\bar{5}$	0	$\bar{6}$					
	1.425	$\bar{6}$	0	$\bar{7}$					
-155	.24	$\bar{1}$	0	$\bar{1}$					
	.47	$\bar{2}$	0	$\bar{2}$					
	.70	$\bar{3}$	0	$\bar{3}$					
	.925	$\bar{4}$	0	$\bar{4}$					
	1.16	$\bar{5}$	0	$\bar{5}$					
-158	1.36	$\bar{6}$	0	$\bar{5}$					
-158.8	1.12	$\bar{5}$	0	$\bar{4}$					
-160.4	.895	$\bar{4}$	0	$\bar{3}$					

Table 4.4 (f)

Indicies of spots from plane (hlℓ)

[010] Rotation axis, 1st layer with k = 1

φ (°) degree	(r.l.u.)	h	k	ℓ	φ (°)	(r.l.u.)	h	k	ℓ
0 (a*)	.21	1	1	0	71.8	.63	1	1	6
	.42	2	1	0	71	1.255	2	1	12
	.63	3	1	0	73.6	.72	1	1	7
	.84	4	1	0	75.4	.82	1	1	8
	1.25	6	1	0	77	.90	1	1	9
25	2.35	1	1	1	78.6	1.01	1	1	10
	.46	2	1	2	80.8	1.30	1	1	13
	.69	3	1	3	81.8	1.40	1	1	14
	1.15	5	1	5	82.4	1.50	1	1	15
44	.295	1	1	2	13.2	.435	2	1	1
	.58	2	1	4	35.2	.51	2	1	3
	.865	3	1	6	50	.65	2	1	5
	1.15	4	1	8	59	.81	2	1	7
55	.365	1	1	3	65	.98	2	1	9
	.72	2	1	6	72.4	1.35	2	1	13
55.2	1.09	3	1	9	73.6	1.445	2	1	14
62.4	.45	1	1	4	9	.64	3	1	1
	1.34	3	1	12	117.6	.655	3	1	2
62.6	.895	2	1	8	32.4	.75	3	1	4
67.6	.545	1	1	5	38.6	.80	3	1	5
	1.075	2	1	10	48.4	.935	3	1	7

φ (°)	(r. .u.)	h	k	l	φ (°)	(r. .u.)	h	k	l
52.4	1.01	3	1	8	9.2	1.27	6	1	2
58	1.175	3	1	10	13.6	1.295	6	1	3
60.4	1.26	3	1	11	18	1.32	6	1	4
66	1.52	3	1	14	22	1.35	6	1	5
6.8	.845	4	1	1	90° (c*)	.20	0	1	2
13.6	.86	4	1	2		.30	0	1	3
20	.89	4	1	3		.40	0	1	4
25.6	.92	4	1	4		.50	0	1	5
31	.975	4	1	5		.60	0	1	6
35.6	1.025	4	1	6		.70	0	1	7
40	1.09	4	1	7		.80	0	1	8
47.2	1.225	4	1	9		.895	0	1	9
50.2	1.30	4	1	10		.995	0	1	10
53	1.37	4	1	11		1.195	0	1	12
56	1.45	4	1	12		1.29	0	1	13
59.6	1.615	4	1	14		1.395	0	1	14
11	1.065	5	1	2		1.495	0	1	15
16	1.095	5	1	3	97.6	1.50	$\bar{1}$	1	15
21.2	1.12	5	1	4	98.2	1.40	$\bar{1}$	1	14
26	1.165	5	1	5	101.4	1.01	$\bar{1}$	1	10
30	1.205	5	1	6	103	.92	$\bar{1}$	1	9
34	1.25	5	1	7	140.6	.82	$\bar{1}$	1	8
41.6	1.38	5	1	8	106.4	.72	1	1	7
5	1.26	6	1	1	108.2	.63	1	1	6

φ (°)	$\mathfrak{E}$ (r.l.u.)	h	k	l	φ (°)	$\mathfrak{E}$ (r.l.u.)	h	k	l
112.5	.545	$\bar{1}$	1	5	132	.935	$\bar{3}$	1	7
117.6	.45	$\bar{1}$	1	4	136	.865	$\bar{3}$	1	6
125	.365	$\bar{1}$	1	3	141.6	.82	$\bar{3}$	1	5
136	.295	$\bar{1}$	1	2	162.4	.655	$\bar{3}$	1	2
155.2	.235	$\bar{1}$	1	1	171	.64	$\bar{3}$	1	1
106.4	1.445	$\bar{2}$	1	14	173.2	.845	$\bar{4}$	1	1
107.6	1.35	$\bar{2}$	1	13	165.4	.86	$\bar{4}$	1	2
109	1.255	$\bar{2}$	1	12	169	1.065	$\bar{5}$	1	2
112.4	1.075	$\bar{2}$	1	10	180 (-a*)	.21	$\bar{1}$	1	0
115	.98	$\bar{2}$	1	9		.42	$\bar{2}$	1	0
117.4	.895	$\bar{2}$	1	8		.63	$\bar{3}$	1	0
121.	.81	$\bar{2}$	1	7		.84	$\bar{4}$	1	0
125	.72	$\bar{2}$	1	6		1.25	$\bar{6}$	1	0
130	.65	$\bar{2}$	1	5	0° (a*)	.21	1	1	0
136	.58	$\bar{2}$	1	4		.42	2	1	0
144.8	.51	$\bar{2}$	1	3		.61	3	1	0
154	.46	$\bar{2}$	1	2		.84	4	1	0
166.8	.435	$\bar{2}$	1	1		1.25	6	1	0
114	1.52	$\bar{3}$	1	14	-9	.64	3	1	$\bar{1}$
117.6	1.34	$\bar{3}$	1	12	-11	1.065	5	1	$\bar{2}$
119.6	1.26	$\bar{3}$	1	11	-13.2	.435	2	1	$\bar{1}$
122	1.175	$\bar{3}$	1	10	-16	1.095	5	1	$\bar{3}$
124.8	1.09	$\bar{3}$	1	9	-5	1.26	6	1	$\bar{1}$
128	1.01	$\bar{3}$	1	8	-6.8	.845	4	1	$\bar{1}$

φ (°)	(r.l.u.)	h	k	l	φ (°)	(r.l.u.)	h	k	l
-9.2	1.27	6	1	$\bar{2}$	-44	.58	2	1	$\bar{4}$
-13.6	.86	4	1	$\bar{2}$		.865	3	1	$\bar{6}$
	1.295	6	1	$\bar{3}$		1.15	4	1	$\bar{8}$
-17.6	.655	3	1	$\bar{2}$	-47.2	1.225	4	1	$\bar{9}$
-18	1.32	6	1	$\bar{4}$	-48.4	.935	3	1	$\bar{7}$
-20	.89	4	1	$\bar{3}$	-50	.65	2	1	$\bar{5}$
-21.2	1.12	5	1	$\bar{4}$	-50.2	1.30	4	1	$\bar{10}$
-22	1.35	6	1	$\bar{5}$	-52.4	1.01	3	1	$\bar{8}$
-25	.235	1	1	$\bar{1}$	-53	1.37	4	1	$\bar{11}$
	.46	2	1	$\bar{2}$	-55	.365	1	1	$\bar{3}$
	.69	3	1	$\bar{3}$		.72	2	1	$\bar{6}$
	1.15	5	1	$\bar{5}$	-55.2	1.09	3	1	$\bar{9}$
-25.6	.92	4	1	$\bar{4}$	-56	1.45	4	1	$\bar{12}$
-26	1.165	5	1	$\bar{5}$	-58	1.175	3	1	$\bar{10}$
-30	1.205	5	1	$\bar{6}$	-59	.81	2	1	$\bar{7}$
-31	.975	4	1	$\bar{5}$	-59.6	1.615	4	1	$\bar{14}$
-32.4	.75	3	1	$\bar{4}$	-60.4	1.26	3	1	$\bar{11}$
-34	1.25	5	1	$\bar{7}$	-62.4	.45	1	1	$\bar{4}$
-35.2	.51	2		$\bar{3}$		1.34	3	1	$\bar{12}$
-35.6	1.025	4	1	$\bar{6}$	-62.1	.895	2	1	$\bar{8}$
-38.6	.80	3	1	$\bar{5}$	-65	.98	2	1	$\bar{9}$
-40	1.09	4	1	$\bar{7}$	-66	1.52	3	1	$\bar{14}$
-41.6	1.38	5	1	$\bar{9}$	-67.6	.545	1	1	$\bar{5}$
-44	.295	2	1	$\bar{2}$		1.075	2	1	$\bar{10}$

φ (°)	$\frac{\lambda}{2}$ (r.l.u.)	h	k	l	φ (°)	$\frac{\lambda}{2}$ (r.l.u.)	h	k	l
-71	1.255	2	1	$\bar{12}$	-90 (-c*)	1.495	0	1	$\bar{15}$
-71.8	.63	1	1	$\bar{6}$	-97.6	1.50	$\bar{1}$	1	$\bar{15}$
-72.4	1.35	2	1	$\bar{13}$	-98.2	1.40	$\bar{1}$	1	$\bar{14}$
-73.6	.72	1	1	$\bar{7}$	-99.2	1.30	$\bar{1}$	1	$\bar{13}$
	1.455	2	1	$\bar{14}$	-101.4	1.01	$\bar{1}$	1	$\bar{10}$
-75.4	.82	1	1	$\bar{8}$	-103	.90	$\bar{1}$	1	$\bar{9}$
-77	.90	1	1	$\bar{9}$		.82	$\bar{1}$	1	$\bar{8}$
-78.6	1.01	1	1	$\bar{10}$	-106.4	.72	$\bar{1}$	1	$\bar{7}$
80.8	1.30	1	1	$\bar{13}$		1.455	$\bar{1}$	1	$\bar{14}$
-81.8	1.30	1	1	$\bar{13}$	-107.6	1.35	$\bar{2}$	1	$\bar{13}$
-81.8	1.40	1	1	$\bar{14}$	-108.2	.63	$\bar{1}$	1	$\bar{6}$
-82.4	1.50	1	1	$\bar{15}$	-109	1.255	$\bar{2}$	1	$\bar{12}$
-90 (-c*)	.20	0	1	$\bar{2}$	-112.4	.545	$\bar{1}$	1	$\bar{5}$
	.30	0	1	$\bar{3}$		1.075	$\bar{2}$	1	$\bar{10}$
	.40	0	1	$\bar{4}$	-114	1.52	$\bar{3}$	1	$\bar{14}$
	.50	0	1	$\bar{5}$	-115	.98	$\bar{2}$	1	$\bar{9}$
	.60	0	1	$\bar{6}$	-117.4	.895	$\bar{2}$	1	$\bar{8}$
	.70	0	1	$\bar{7}$	117.6	.45	$\bar{1}$	1	$\bar{4}$
	.80	0	1	$\bar{8}$		1.34	$\bar{5}$	1	12
	.895	0	1	$\bar{9}$	-119.6	1.61	$\bar{3}$	1	$\bar{11}$
	.995	0	1	$\bar{10}$	-120.4	1.615	$\bar{4}$	1	$\bar{14}$
	1.195	0	1	$\bar{12}$	-121	.81	$\bar{2}$	1	$\bar{7}$
	1.295	0		$\bar{13}$	-122	1.175	$\bar{3}$	1	$\bar{10}$
	1.395	0	1	$\bar{14}$	-124	1.45	$\bar{4}$	1	$\bar{12}$

φ (°)	$\mathcal{E}$ (r.l.u.)	h	k	l	φ (°)	$\mathcal{E}$ (r.l.u.)	h	k	l
-124.8	1.09	$\bar{3}$	1	$\bar{9}$	-155	.235	$\bar{1}$	1	$\bar{1}$
-125	.365	$\bar{1}$	1	$\bar{3}$		.46	$\bar{2}$	1	$\bar{2}$
	.72	$\bar{2}$	1	$\bar{6}$		.69	$\bar{3}$	1	$\bar{3}$
-127	1.37	$\bar{4}$	1	$\bar{11}$		1.15	$\bar{5}$	1	$\bar{5}$
-127.6	1.01	$\bar{3}$	1	$\bar{5}$	-158	1.35	$\bar{6}$	1	$\bar{5}$
-129.8	1.30	$\bar{4}$	1	$\bar{10}$	-158.8	1.12	$\bar{5}$	1	$\bar{4}$
-130	.65	$\bar{2}$	1	$\bar{5}$	-162	1.32	$\bar{6}$	1	$\bar{4}$
-131.6	.935	$\bar{3}$	1	$\bar{7}$	-162.4	.655	$\bar{3}$	1	$\bar{2}$
-132.8	1.225	$\bar{4}$	1	$\bar{9}$	-164	1.095	$\bar{5}$	1	$\bar{3}$
-136	.295	$\bar{1}$	1	$\bar{2}$	-166.4	.86	$\bar{4}$	1	$\bar{2}$
	.58	$\bar{2}$	1	$\bar{4}$		1.295	$\bar{6}$	1	$\bar{3}$
	.865	$\bar{3}$	1	$\bar{6}$	-166.8	.435	$\bar{2}$	1	$\bar{1}$
	1.15	$\bar{4}$	1	$\bar{8}$	-169	1.065	$\bar{5}$	1	$\bar{2}$
-138.4	1.38	$\bar{5}$	1	$\bar{9}$	-170.8	1.27	$\bar{6}$	1	$\bar{2}$
-140	1.09	$\bar{4}$	1	$\bar{7}$	-171	.64	$\bar{3}$	1	$\bar{1}$
-141.4	.80	$\bar{3}$	1	$\bar{5}$	-173.2	.845	$\bar{4}$	1	$\bar{1}$
-144.4	1.025	$\bar{4}$	1	$\bar{6}$	-175	1.26	$\bar{6}$	1	$\bar{1}$
-144.8	.51	$\bar{2}$	1	$\bar{3}$	180(-a*)	.21	$\bar{1}$	1	0
-146	1.25	$\bar{5}$	1	$\bar{7}$		.42	$\bar{2}$	1	0
-147	.75	$\bar{3}$	1	$\bar{4}$		.63	$\bar{3}$	1	0
-149	.975	$\bar{4}$	1	$\bar{5}$		.84	$\bar{4}$	1	0
-150	1.205	$\bar{5}$	1	$\bar{6}$		1.25	$\bar{6}$	1	0
-154	1.165	$\bar{5}$	1	$\bar{5}$					
-154.4	.92	$\bar{4}$	1	$\bar{4}$					

Table 4.4 (g)

Indicies of spots from (h 2 ℓ)

[010] Rotation axis, 2nd layer with k = 2

φ(°) degree	ξ (r.l.u.)	h	k	ℓ	φ(°)	ξ (r.l.u.)	h	k	ℓ
0 (a*)	.205	1	2	0	16	1.075	5	2	3
	.415	2	2	0	17.8	.65	3	2	2
	.625	3	2	0		1.30	6	2	4
	.83	4	2	0	18.6	1.53	7	2	5
	1.035	5	2	0	19.5	.875	4	2	3
	1.25	6	2	0	25	.225	1	2	1
4	1.45	7	2	1		.46	2	2	2
4.8	1.245	6	2	1		.69	3	2	3
6.5	1.04	5	2	1		.915	4	2	4
7	.835	4	2	1		1.37	6	2	6
8	1.465	7	2	2	25.5	1.15	5	2	5
9	.63	3	2	2	29.5	1.185	5	2	6
	1.255	6	2	2	31	.915	4	2	5
11	1.05	5	2	2	32	.735	3	2	4
11.5	1.475	7	2	3	32.5	1.46	6	2	8
13	.425	2	2	1	33.8	1.235	5	2	7
13.5	.85	4	2	2	35	.50	2	2	3
	1.225	6	2	3		1.01	4	2	6
15.4	1.50	7	2	4	37	1.29	5	2	8

φ (°)	ξ (r.l.u.)	h	k	l	φ (°)	ξ (r.l.u.)	h	k	l
38	.795	3	2	5		1.245	3	2	11
	1.575	6	2	10	66.5	.53	1	2	5
39.5	1.075	4	2	7		1.06	2	2	10
43	.285	1	2	2	64.4	.97	2	2	9
	.575	2	2	4	63.5	1.415	3	2	13
	.85	3	2	6	65.2	1.50	3	2	14
	1.135	4	2	8	67	1.16	3	2	10
44	1.42	5	2	10	67.6	1.685	3	2	16
46.3	1.49	5	2	11	69	1.15	2	2	11
50	.64	2	2	5	70	.625	1	2	6
	1.28	4	2	10	70.2	1.235	2	2	12
51	1.00	3	2	8	72	1.34	2	2	13
52.5	1.355	4	2	11	72.5	.71	1	2	7
54.5	.355	1	2	3	73	1.43	2	2	14
	.71	2	2	6	74	1.52	2	2	15
	1.075	3	2	9	75	.80	1	2	8
	1.43	4	2	12	76	.90	1	2	9
57	1.205	4	2	9	77.5	1.00	1	2	10
58	.925	3	2	7	79	1.10	1	2	11
59	.80	2	2	7	80.5	1.29	1	2	13
60.5	1.685	4	2	15	81	1.39	1	2	14
61.5	.44	1	2	4	81.4	1.485	1	2	15
	.88	2	2	8	90(c*)	.20	0	2	2
	1.325	3	2	12		.295	0	2	3

φ (°)	$\mathcal{S}$ (r. l.u.)	h	k	l	φ (°)	$\mathcal{S}$ (r. l.u.)	h	k	l
	.395	0	2	4		1.06	$\bar{2}$	2	10
	.495	0	2	5	115.6	.97	$\bar{2}$	2	9
	.88	0	2	9	114.8	1.50	$\bar{3}$	2	14
	.985	0	2	10	116.5	1.415	$\bar{3}$	2	13
	1.085	0	2	11	118.5	.44	$\bar{1}$	2	4
	1.175	0	2	12		.88	$\bar{2}$	2	8
	1.56	0	2	16		1.325	$\bar{3}$	2	12
	.775	0	2	8	120.2	1.245	$\bar{3}$	2	11
98.6	1.48	$\bar{1}$	2	15	121	.80	$\bar{2}$	2	7
99	1.39	$\bar{1}$	2	14	122	.925	$\bar{3}$	2	7
99.5	1.29	$\bar{1}$	2	13	125.5	.355	$\bar{1}$	2	3
101	1.10	$\bar{1}$	2	11		.71	$\bar{2}$	2	6
102.5	1.00	$\bar{1}$	2	10		1.675	$\bar{3}$	2	9
104	.90	$\bar{1}$	2	9	129	1.00	$\bar{3}$	2	8
105	.80	$\bar{1}$	2	8	130	.64	$\bar{2}$	2	5
106	1.52	$\bar{2}$	2	15	137	.285	$\bar{1}$	2	2
107	1.43	$\bar{2}$	2	14		.57	$\bar{2}$	2	4
107.5	.71	$\bar{1}$	2	7		.85	$\bar{3}$	2	6
108	1.34	$\bar{2}$	2	13	142	.795	$\bar{3}$	2	5
109.8	1.235	$\bar{2}$	2	12	145	.50	$\bar{2}$	2	3
110	.625	$\bar{1}$	2	6					
111	1.10	$\bar{2}$	2	11	0 (a*)	.205	1	2	0
113	1.16	$\bar{3}$	2	10		.415	2	2	0
113.5	.53	$\bar{1}$	2	5		.625	3	2	0

φ (°)	$\mathcal{G}$ (r.l.u.)	h	k	l	φ (°)	$\mathcal{G}$ (r.l.u.)	h	k	l
	.83	4	2	0		.915	4	2	$\bar{4}$
	1.035	5	2	0		1.37	6	2	$\bar{6}$
	1.25	6	2	0	-25.5	1.15	5	2	$\bar{5}$
-4	1.45	7	2	$\bar{1}$	-29.5	1.185	5	2	$\bar{6}$
-4.8	1.245	6	2	$\bar{1}$	-31	.915	4	2	$\bar{5}$
-6.5	1.04	5	2	$\bar{1}$	-32	.735	3	2	$\bar{4}$
-7	.835	4	2	$\bar{1}$	-32.5	1.46	6	2	$\bar{8}$
-8	1.465	7	2	$\bar{2}$	-33.8	1.235	5	2	$\bar{7}$
-9	.63	3	2	$\bar{1}$	-35	.50	2	2	$\bar{3}$
	1.255	6	2	$\bar{2}$		1.01	4	2	$\bar{6}$
-11	1.05	5	2	$\bar{2}$	-37	1.29	5	2	$\bar{8}$
-11.5	1.475	7	2	$\bar{5}$	-38	.795	3	2	$\bar{5}$
-13	.425	2	2	$\bar{1}$		1.575	6	2	$\bar{10}$
-13.5	.85	4	2	$\bar{2}$	-39.5	1.075	4	2	$\bar{7}$
	1.225	6	2	$\bar{3}$	-43	.285	1	2	$\bar{2}$
-15.4	1.50	7	2	$\bar{4}$		.57	2	2	$\bar{4}$
-16	1.075	5	2	$\bar{3}$		.88	3	2	$\bar{6}$
-17.8	.65	3	2	$\bar{2}$		1.135	4	2	$\bar{8}$
	1.30	6	2	$\bar{4}$	-44	1.42	5	2	$\bar{10}$
-18.6	1.53	7	2	$\bar{5}$	-46.3	1.49	5	2	$\bar{11}$
-19.5	.875	4	2	$\bar{3}$	-50	.64	2	2	$\bar{5}$
-25	.225	1	2	$\bar{1}$		1.28	4	2	$\bar{10}$
	.46	2	2	$\bar{2}$	-51	1.00	3	2	$\bar{8}$
	.69	3	2	$\bar{3}$	-52.5	1.355	4	2	$\bar{11}$

φ(°)	ρ (r. l.u.)	h	k	l	φ(°)	ρ (r. l.u.)	h	k	l
-54.5	.355	1	2	$\bar{3}$	-73	1.43	2	2	$\bar{14}$
	.71	2	2	$\bar{6}$	-74	1.52	2	2	$\bar{15}$
	1.075	3	2	$\bar{9}$	-75	..80	1	2	$\bar{8}$
	1.43	4	2	$\bar{12}$	-76	.90	1	2	$\bar{9}$
-57	1.205	4	2	$\bar{9}$	-77.5	1.00	1	2	$\bar{10}$
-58	.925	3	2	$\bar{7}$	-79	1.10	1	2	$\bar{11}$
-59	.80	2	2	$\bar{7}$	-80.5	1.29	1	2	$\bar{13}$
-60.5	1.685	4	2	$\bar{15}$	-81	1.39	1	2	$\bar{14}$
-61.5	.44	1	2	$\bar{4}$	-81.4	1.485	1	2	$\bar{15}$
	.88	2	2	$\bar{8}$	-90(=c*)	.20	0	2	$\bar{2}$
	1.325	3	2	$\bar{12}$		.295	0	2	$\bar{3}$
-59.8	1.245	3	2	$\bar{11}$		.395	0	2	$\bar{4}$
-66.5	.53	1	2	$\bar{5}$		.495	0	2	$\bar{5}$
	1.06	2	2	$\bar{10}$		.88	0	2	$\bar{9}$
-63.5	1.415	3	2	$\bar{13}$		.985	0	2	$\bar{10}$
-64.4	.97	2	2	$\bar{9}$		1.085	0	2	$\bar{11}$
-66.2	1.50	3	2	$\bar{14}$		1.175	0	2	$\bar{12}$
-67	1.16	3	2	$\bar{10}$		1.56	0	2	$\bar{16}$
67.6	1.685	3	2	$\bar{16}$		.775	0	2	$\bar{8}$
-69	1.15	2	2	$\bar{11}$		1.485	$\bar{1}$	2	$\bar{15}$
-70	.625	1	2	$\bar{6}$		1.39	$\bar{1}$	2	$\bar{14}$
70.2	1.235	2	2	$\bar{12}$		1.29	$\bar{1}$	2	$\bar{13}$
-72	1.34	2	2	$\bar{13}$		1.10	$\bar{1}$	2	$\bar{11}$
-72	71	1	2	$\bar{7}$	-102.5	1.00	$\bar{1}$	2	$\bar{10}$

φ (°)	ρ (r. l.u.)	h	k	l	φ (°)	ρ (r. l.u.)	h	k	l
-104	.90	$\bar{1}$	2	$\bar{9}$	-125.5	.71	$\bar{2}$	2	$\bar{6}$
-105	.80	$\bar{1}$	2	$\bar{6}$		1.675	$\bar{3}$	2	$\bar{9}$
-106	1.43	$\bar{2}$	2	$\bar{14}$		1.43	$\bar{4}$	2	$\bar{12}$
-107.5	.71	$\bar{1}$	2	$\bar{7}$	-127	1.355	$\bar{4}$	2	$\bar{11}$
-108	1.34	$\bar{2}$	2	$\bar{13}$	-129	1.00	$\bar{3}$	2	$\bar{8}$
-109.8	1.235	$\bar{2}$	2	$\bar{12}$	-130	.64	$\bar{2}$	2	$\bar{5}$
-110	.625	$\bar{1}$	2	$\bar{6}$		1.28	$\bar{4}$	2	$\bar{10}$
-111	1.15	$\bar{2}$	2	$\bar{4}$	-133.7	1.49	$\bar{5}$	2	$\bar{11}$
-112.4	1.685	$\bar{3}$	2	$\bar{16}$	-136	1.42	$\bar{5}$	2	$\bar{10}$
-113	1.16	$\bar{3}$	2		-137	.285	$\bar{1}$	2	$\bar{2}$
-114.8	1.50	$\bar{3}$	2	$\bar{14}$		.57	$\bar{2}$	2	$\bar{4}$
-115.6	.97	$\bar{2}$	2	$\bar{9}$		.85	$\bar{3}$	2	$\bar{6}$
-116.5	1.415	$\bar{3}$	2	$\bar{13}$		1.135	$\bar{4}$	2	$\bar{8}$
-113.5	.53	1	2	$\bar{5}$	-140.5	1.075	$\bar{4}$	2	$\bar{7}$
	1.06	$\bar{2}$	2	$\bar{10}$	-142	.795	$\bar{3}$	2	$\bar{5}$
-118.5	.44	$\bar{1}$	2	$\bar{4}$		1.575	$\bar{6}$	2	$\bar{10}$
	.88	$\bar{2}$	2	$\bar{8}$	-143	1.29	$\bar{5}$	2	$\bar{8}$
	1.32	$\bar{3}$	2	$\bar{12}$	-145	.50	$\bar{2}$	2	$\bar{3}$
-119.5	1.685	$\bar{4}$	2	$\bar{15}$		1.01	$\bar{4}$	2	$\bar{6}$
-120.2	1.245	$\bar{3}$	2	$\bar{11}$	-146.2	1.235	$\bar{5}$	2	$\bar{7}$
-121	.86	$\bar{2}$	2	$\bar{7}$	-147.5	1.46	$\bar{6}$	2	$\bar{8}$
-122	.925	$\bar{3}$	2	$\bar{7}$	-148	.735	$\bar{3}$	2	$\bar{4}$
-123	1.265	$\bar{4}$	2	$\bar{9}$	-149	.915	$\bar{4}$	2	$\bar{5}$
-125.5	.355	$\bar{1}$	2	$\bar{3}$	-150.5	1.185	$\bar{5}$	2	$\bar{6}$

ψ (°)	(r.l.u.)	h	k	l	ψ (°)	(r.l.u.)	h	k	l
-154.5	1.15	$\bar{5}$	2	$\bar{5}$		.415	$\bar{2}$	2	0
-155	.225	$\bar{1}$	2	$\bar{1}$		.625	$\bar{3}$	2	0
	.46	$\bar{2}$	2	$\bar{2}$		.83	$\bar{4}$	2	0
	.69	$\bar{3}$	2	$\bar{3}$		1.035	$\bar{5}$	2	0
	.915	$\bar{4}$	2	$\bar{4}$		1.25	$\bar{6}$	2	0
	1.37	$\bar{6}$	2	$\bar{6}$	-186.5	1.04	$\bar{5}$	2	1
-150.5	.875	$\bar{4}$	2	$\bar{3}$	-187	.835	$\bar{4}$	2	1
-161.4	1.53	$\bar{7}$	2	$\bar{5}$	-189	.63	$\bar{3}$	6	1
-162.2	.65	$\bar{3}$	2	$\bar{2}$	-193.5	.85	$\bar{4}$	2	2
	1.30	$\bar{6}$	2	$\bar{4}$	-197.5	.65	$\bar{3}$	2	2
-164	1.075	$\bar{5}$	2	$\bar{3}$	-193	.425	$\bar{2}$	2	1
-164.6	1.50	$\bar{7}$	2	$\bar{4}$	-205	.225	$\bar{1}$	2	1
-166.5	.85	$\bar{4}$	2	$\bar{2}$		.46	$\bar{2}$	2	2
	1.225	$\bar{6}$	2	$\bar{3}$					
-167	.425	$\bar{2}$	2	$\bar{1}$					
-168.5	1.475	$\bar{7}$	2	$\bar{3}$					
-169	1.05	$\bar{5}$	2	$\bar{2}$					
-171	.63	$\bar{3}$	2	$\bar{1}$					
	1.255	$\bar{6}$	2	$\bar{2}$					
-173	.835	$\bar{4}$	2	$\bar{1}$					
-173.5	1.04	$\bar{5}$	2	$\bar{1}$					
-175.2	1.245	$\bar{6}$	2	$\bar{1}$					
-180(-a*)	.205	$\bar{1}$	2	0					

Table 4.4 (h)

Indicies of spots from plane (h3ℓ)

[010] Rotation axis, 3rd layer with k = 3.

φ (°) degree	$\mathfrak{S}$ (r.l.u.)	h	k	ℓ	φ (°)	$\mathfrak{S}$ (r.l.u.)	h	k	ℓ
0 (a*)	.21	1	3	0	21	1.12	5	3	4
	.42	2	3	0	22	1.355	6	3	5
	.64	3	3	0	22.8	1.58	7	3	6
	1.05	5	3	0	25	.245	1	3	1
	1.26	6	3	0		.475	2	3	2
4.8	1.26	6	3	1	25.5	.70	3	3	3
5.5	1.055	5	3	1		.925	4	3	4
6.8	.85	4	3	1		1.16	5	3	5
8	1.48	7	3	2		1.34	6	3	6
9	.64	3	3	1	26	1.625	7	3	7
11	1.07	5	3	2	29.6	1.455	6	3	7
11.8	1.50	7	3	3	31	.98	4	3	5
13	.44	2	3	1	32.5	.75	3	3	4
13.2	.87	4	3	2	33	1.495	6	3	8
14	1.30	6	3	3	35	.525	2	3	3
15.6	1.52	7	3	4	36	1.035	4	3	6
16.4	1.09	5	3	3	37.6	1.32	5	3	8
17.5	.66	3	3	2	38.5	.805	3	3	5
18.2	1.32	6	3	4	40	1.10	4	3	7
20	.89	4	3	3	43.2	.295	1	3	2

φ (°)	$\mathscr{E}$ (r.l.u.)	h	k	l	φ (°)	$\mathscr{E}$ (r.l.u.)	h	k	l
	.585	2	3	4	67	.545	1	3	5
43.5	.87	3	3	6		1.09	2	3	10
	1.155	4	3	8	67.2	1.61	3	3	15
44	1.45	5	3	10	68.6	1.17	2	3	11
46.5	1.515	5	3	11	70.5	.635	1	3	6
47	1.23	4	3	9	71	1.26	2	3	12
48	.945	3	3	7	72	1.35	2	3	13
50	1.31	4	3	10	73	.73	1	3	7
52	1.02	3	3	8	73.5	1.455	2	3	14
52.8	1.33	4	3	11	74.5	1.545	2	3	15
54	.37	1	3	3	75	.83	1	3	8
54.8	.725	2	3	6	76	1.64	2	3	16
55	1.10	3	3	9	77	.915	1	3	9
	1.44	4	3	12	78	1.03	1	3	10
57	1.54	4	3	13	78.6	1.15	1	3	11
58	1.185	3	3	10	81	1.30	1	3	12
58.6	.86	2	3	7	82	1.40	1	3	13
60	1.26	3	3	11	82.5	1.50	1	3	14
61.5	.455	1	3	4	90(c*)	.10	0	3	1
62	.90	2	3	8		.20	0	3	2
62.5	1.35	3	3	12		.30	0	3	3
64	1.43	3	3	13		.40	0	3	4
64.8	1.00	2	3	9		.60	0	3	6
65.6	1.52	3	3	14		.70	0	3	7

φ (°)	$\mathfrak{E}$ (r.E.u.)	h	k	l	φ (°)	$\mathfrak{E}$ (r.E.u.)	h	k	l
	.80	0	3	8	118	.90	$\bar{2}$	3	8
	.90	0	3	9	118.5	.455	$\bar{1}$	3	4
	.995	0	3	10	120	1.26	$\bar{3}$	3	11
	1.095	0	3	11	121.4	.82	$\bar{2}$	3	7
90°	1.19	0	3	12	122	1.185	$\bar{3}$	3	10
97.5	1.50	$\bar{1}$	3	15	125	1.10	$\bar{3}$	3	9
98	1.40	$\bar{1}$	3	14	125.5	.725	$\bar{2}$	3	6
99	1.30	$\bar{1}$	3	13	126	.367	$\bar{1}$	3	3
101.4	1.15	$\bar{1}$	3	11	128	1.02	$\bar{3}$	3	8
102	1.30	$\bar{1}$	3	10	132	.945	$\bar{3}$	3	7
103	.915	$\bar{1}$	3	9	136.5	.87	$\bar{3}$	3	6
104	1.64	$\bar{2}$	3	16	136.8	.295	$\bar{1}$	3	2
105	.83	$\bar{1}$	3	8		.585	$\bar{2}$	3	4
105.5	1.545	$\bar{2}$	3	15	141.5	.805	$\bar{3}$	3	5
106.5	1.445	$\bar{2}$	3	14	145	.525	$\bar{2}$	3	3
107	.73	$\bar{1}$	3	7	155	.245	$\bar{1}$	3	1
108	1.35	$\bar{2}$	3	13	-4.8	1.26	6	3	$\bar{1}$
109	1.26	$\bar{2}$	3	12	-5.5	1.055	5	3	$\bar{1}$
109.5	.635	$\bar{1}$	3	6	-6.8	.85	4	3	$\bar{1}$
111.4	1.17	$\bar{2}$	3	11	-8	1.48	7	3	$\bar{2}$
112.8	1.61	$\bar{3}$	3	15	-9	.64	3	3	$\bar{1}$
113	.545	$\bar{1}$	3	5	-9.2	1.27	6	3	$\bar{2}$
	1.09	$\bar{2}$	3	10	-11	1.07	5	3	$\bar{2}$
114.4	1.52	$\bar{3}$	3	14	-11.8	1.50	7	3	$\bar{3}$
115.2	1.00	$\bar{2}$	3	4	-13	.44	2	3	$\bar{1}$
116	1.43	$\bar{3}$	3	13	-13.2	.82	4	3	$\bar{2}$
117.5	1.35	$\bar{3}$	3	12	-14	1.30	6	3	$\bar{3}$

φ (°)	ψ (r.l.u.)	h	k	l	φ (°)	ψ (r.l.u.)	h	k	l
-15.6	1.52	7	3	$\bar{4}$	-40	1.10	4	3	$\bar{7}$
-16.4	1.09	5	3	$\bar{3}$	-43.3	.295	1	3	$\bar{2}$
-17.5	.66	3	3	$\bar{2}$		.585	2	3	$\bar{4}$
-18.2	1.32	6	3	$\bar{4}$	-43.5	.87	3	3	$\bar{6}$
-20	.89	4	3	$\bar{3}$		1.155	4	3	$\bar{8}$
-21	1.12	5	3	$\bar{4}$	-44	1.45	5	3	$\bar{10}$
-22	1.355	6	3	$\bar{5}$	-46.5	1.515	5	3	$\bar{11}$
-22.8	1.58	7	3	$\bar{5}$	-47	1.23	4	3	$\bar{9}$
-25	.245	1	3	$\bar{1}$	-48	.945	3	3	$\bar{7}$
	.475	2	3	$\bar{2}$	-50	1.31	4	3	$\bar{10}$
-25.5	.70	3	3	$\bar{3}$	-52	1.02	3	3	$\bar{8}$
	.925	4	3	$\bar{4}$	-52.8	1.33	4	3	$\bar{11}$
	1.16	5	3	$\bar{5}$	-54	.37	1	3	$\bar{3}$
	1.34	6	3	$\bar{6}$	-54.8	.725	2	3	$\bar{6}$
-26	1.625	7	3	$\bar{6}$	-55	1.10	3	3	$\bar{9}$
-29.6	1.455	6	3	$\bar{7}$		1.46	4	3	$\bar{12}$
-30	1.21	5	3	$\bar{6}$	-57	1.54	4	3	$\bar{13}$
-31	.98	4	3	$\bar{5}$	-58	1.185	3	3	$\bar{10}$
-32.5	.75	3	3	$\bar{4}$	-58.6	.86	2	3	$\bar{7}$
-33	1.495	6	3	$\bar{8}$	-60	1.26	3	3	$\bar{11}$
-35	.525	2	3	$\bar{3}$	-61.5	.455	1	3	$\bar{4}$
-36	1.035	4	3	$\bar{6}$	-62	.90	2	3	$\bar{8}$
-37.6	1.32	5	3	$\bar{8}$	-64	1.43	3	3	$\bar{13}$
-38.5	.805	3	3	$\bar{5}$	-64.8	1.00	2	3	$\bar{9}$

φ (°)	ζ (r.l.u.)	h	k	l	φ (°)	ζ (r.l.u.)	h	k	l
-67	.545	1	3	$\bar{5}$		.70	0	3	$\bar{7}$
	1.09	2	3	$\bar{10}$		.80	0	3	$\bar{8}$
-67.2	1.61	3	3	$\bar{15}$		.90	0	3	$\bar{9}$
-68.6	1.17	2	3	$\bar{11}$		.995	0	3	$\bar{10}$
-70.5	.635	1	3	$\bar{6}$		1.095	0	3	$\bar{11}$
-71	1.26	2	3	$\bar{12}$		1.19	0	3	$\bar{12}$
-72	1.35	2	3	$\bar{13}$		1.385	0	3	$\bar{14}$
-73	.73	1	3	$\bar{7}$	-97.5	1.50	$\bar{1}$	3	$\bar{15}$
-73.5	1.455	2	3	$\bar{14}$	-98	1.40	$\bar{1}$	3	$\bar{14}$
-74.5	1.545	2	3	$\bar{15}$	-99	1.30	$\bar{1}$	3	$\bar{13}$
-75	.83	1	3	$\bar{8}$	-101.4	1.15	$\bar{1}$	3	$\bar{11}$
-76	1.64	2	3	$\bar{16}$	-102	1.03	$\bar{1}$	3	$\bar{10}$
-77	.915	1	3	$\bar{9}$	-103	.915	$\bar{1}$	3	$\bar{9}$
-78	1.03	1	3	$\bar{10}$	-104	1.64	$\bar{2}$	3	$\bar{16}$
-78.6	1.15	1	3	$\bar{11}$	-105	.83	$\bar{1}$	3	$\bar{8}$
-81	1.30	1	3	$\bar{13}$	-105.5	1.545	$\bar{2}$	3	$\bar{15}$
-82	1.40	1	3	$\bar{14}$	-106.5	1.455	$\bar{2}$	3	$\bar{14}$
-82.5	1.50	1	3	$\bar{15}$	-107	.73	$\bar{1}$	3	$\bar{7}$
-90(c*)	.10	0	3	$\bar{1}$	-108	1.35	$\bar{2}$	3	$\bar{13}$
	.20	0	3	$\bar{2}$	-109	1.26	$\bar{2}$	3	$\bar{12}$
	.30	0	3	$\bar{3}$	-109.5	.635	$\bar{1}$	3	$\bar{6}$
-90	.40	0	3	$\bar{4}$	-111.4	1.17	$\bar{2}$	3	$\bar{11}$
	.60	0	3	$\bar{6}$	-136.8	.295	$\bar{1}$	3	$\bar{2}$

φ (°)	$\mathcal{S}$ (r.l.u.)	h	k	l	φ (°)	$\mathcal{S}$ (r.l.u.)	h	k	l
-140	1.10	$\bar{4}$	3	$\bar{7}$	-164.4	1.52	$\bar{7}$	3	$\bar{4}$
-141.5	.805	$\bar{3}$	3	$\bar{5}$	-166	1.30	$\bar{6}$	3	$\bar{3}$
-142.4	1.32	$\bar{5}$	3	$\bar{8}$	-166.8	.87	$\bar{4}$	3	$\bar{2}$
-144	1.035	$\bar{4}$	3	$\bar{6}$	-167	.44	$\bar{2}$	3	$\bar{1}$
-145	.525	$\bar{2}$	3	$\bar{3}$	-168.2	1.50	$\bar{7}$	3	$\bar{3}$
-147	1.495	$\bar{6}$	3	$\bar{8}$	-169	1.07	$\bar{5}$	3	$\bar{2}$
-147.5	.75	$\bar{3}$	3	$\bar{4}$	-170.8	1.27	$\bar{6}$	3	$\bar{2}$
-149	.98	$\bar{4}$	3	$\bar{5}$	-171	.64	$\bar{4}$	3	$\bar{1}$
-150	1.21	$\bar{5}$	3	$\bar{6}$	-172	1.48	$\bar{7}$	3	$\bar{2}$
-150.4	1.455	$\bar{6}$	3	$\bar{7}$	-173.2	.85	$\bar{4}$	3	$\bar{1}$
-156	1.625	$\bar{7}$	3	$\bar{6}$	-174.5	1.055	$\bar{5}$	3	$\bar{1}$
154.8	.70	$\bar{3}$	3	$\bar{3}$	-175.2	1.26	$\bar{6}$	3	$\bar{1}$
	.925	$\bar{4}$	3	$\bar{4}$	-180(-a*)	.21	$\bar{1}$	3	0
	1.16	$\bar{5}$	3	$\bar{5}$		.42	$\bar{2}$	3	0
	1.34	$\bar{6}$	3	$\bar{6}$		.64	$\bar{3}$	3	0
-155	.245	$\bar{1}$	3	$\bar{1}$		1.05	$\bar{5}$	3	0
	.475	$\bar{2}$	3	$\bar{2}$		1.26	$\bar{6}$	3	0
-157.2	1.58	$\bar{7}$	3	$\bar{6}$	-185.5	1.055	$\bar{5}$	3	1
-158	1.355	$\bar{6}$	3	$\bar{5}$	-186.8	.85	$\bar{4}$	3	1
-59	1.12	$\bar{5}$	3	$\bar{4}$	-189	.64	$\bar{3}$	3	1
-160	.89	$\bar{4}$	3	$\bar{3}$	-193	.44	$\bar{2}$	3	1
-161.8	1.32	$\bar{6}$	3	$\bar{4}$	-193.2	.87	$\bar{4}$	3	2
-162.5	.66	$\bar{3}$	3	$\bar{2}$	-197.5	.475	$\bar{2}$	3	2
-163,6	1.09	$\bar{5}$	3	$\bar{3}$	-205	.475	$\bar{2}$	3	2