AM-89-509

STRUCTURE AND TWINNING OF SINGLE-CRYSTAL $MgSiO_3$ GARNET SYNTHESIZED AT 17 GPa AND 1800°C

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FOR DEPOSIT: TABLE 3

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Supplementary Material for

Crystal structure and twinning of $MgSiO_3$ garnet

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Table 3: Observed and calculated structure factors for $MgSiO_3$ garnet refined in space group $I4_1/a$. Observed structure factors have been corrected for absorption, a contribution from a (110) twin fraction of 48%, and have been scaled to the calculated structure factors. Reflections marked with an asterisk are less-thans, and were excluded from the refinements. Refined structural parameters are reported in Table 2 of the paper.

... TETRAGONAL GARNET, SPACE GROUP I4.1/A

FACTOR = 1.00

K	OBS	CALC
0 K 0		
0	0	1088
4	253	248
6	4*	6
8	244	247
14	9*	9
16	90	90
2 K 0		
-14	14*	31
-12	131	130
-10	28	31
-8	6	6
-4	201	207
-2	30	21
6	61	53
8	76	71
10	59	63
4 K 0		
-14	61	61
-8	140	142
-2	158	161
4	50	52
6	174	175
10	120	122
14	50	48
6 K 0		
-12	39	39
-10	28*	42
-8	17	18
2	99	93
4	276	231
6	20*	2
8	27*	39
14	9*	33
8 K 0		
-14	20*	20
-12	52	55
-8	211	216
-4	167	166
10	20*	15
12	97	99
10 K 0		
-12	54	56
-10	59	60
-6	8	8
0	12*	9
4	101	109
8	15*	22
12 K 0		
-10	53	49
-6	89	88
-4	29*	40
-2	57	58
0	54	62
4	19	24
14 K 0		
-2	4*	3
6	19*	18
16 K 0		
-2	3*	4
2	27*	40
-15 K 1		
4	17*	20
-14 K 1		
-7	5*	5
-3	21*	2
-13 K 1		
-5	19*	20
-12 K 1		
[illegible]	23*	23
-1	16*	6
[illegible]	20*	17
-11 K 1		
-6	15*	15
0	10*	7
2	5*	7
-10 K 1		
-7	1*	0
1	46	46
[illegible]	12*	7
11	7*	10
-9 K 1		
-2	12*	12
4	38	41
[illegible]	10*	12
[illegible]	20*	9
12	5*	3
-8 K 1		
[illegible]	7*	5
[illegible]	28	26
[illegible]	4*	4
[illegible]	29*	12
[illegible]	27	27
[illegible]	[illegible]	15

K	OBS	CALC
-7 K 1		
-14	12*	3
0	16*	23
8	13*	7
-6 K 1		
-13	10*	13
7	74	74
-5 K 1		
6	19*	14
12	18*	15
-4 K 1		
-11	30*	30
5	10*	8
9	47	52
11	18	17
15	15*	17
-3 K 1		
-14	3*	0
-12	11*	17
4	100	92
-2 K 1		
-13	20*	24
3	12	14
15	7*	5
-1 K 1		
-16	10*	2
-14	6*	8
-12	21*	8
-2	37	37
2	15	16
6	97	92
8	21	20
10	49	52
14	18*	21
0 K 1		
-15	16*	2
[illegible]	14*	4
-5	12*	0
-1	8*	12
3	10*	13
13	14*	11
1 K 1		
-16	13*	1
8	25	24
2 K 1		
-11	21*	21
-7	23*	20
9	17*	12
3 K 1		
-10	11*	7
-6	21	22
-2	39	43
10	26*	16
4 K 1		
-13	18*	5
-3	66	63
-1	9*	7
1	17*	6
5	24*	18
7	45	43
13	11*	3
5 K 1		
-14	36	31
-10	7*	3
-8	55	49
-2	36	34
2	72	70
8	24	25
12	6*	6
14	31	31
6 K 1		
-5	0*	0
-3	35	36
-1	88	83
11	18*	28
15	28*	24
7 K 1		
-12	14*	10
-6	40	41
-2	4*	5
4	36	36
8 K 1		
-11	16*	14
3	15*	12
11	17*	14
9 K 1		
6	3*	3
10	6*	5
10 K 1		
-5	15*	8

K	OBS	CALC
11 K 1		
-10	24*	23
12 K 1		
-7	20*	14
13 K 1		
2	34	35
15 K 1		
-2	22*	12
6	7*	8
-16 K 2		
0	23*	9
-14 K 2		
-4	83	53
2	24*	25
-13 K 2		
-9	10*	9
-7	14*	4
-3	22*	6
1	33	31
3	5*	2
-12 K 2		
-8	68	59
-4	32*	21
6	75	66
10	96	92
-11 K 2		
9	4*	1
11	21*	13
-10 K 2		
-8	40	45
-2	28	24
12	53	50
-9 K 2		
-13	16*	15
1	21*	14
5	17*	13
9	14*	3
-8 K 2		
-10	3*	4
-7 K 2		
-13	4*	1
-7	12*	8
-3	48	47
-6 K 2		
-12	50	48
-6	34	33
8	40	38
12	95	97
14	26	26
-5 K 2		
-11	25*	23
5	24	26
9	23*	18
11	17*	18
-4 K 2		
-14	102	99
-4	17*	1
2	113	113
8	113	109
10	163	159
-3 K 2		
-15	27*	14
-9	6*	4
-5	47	46
1	9	10
15	3*	2
-2 K 2		
-12	172	171
-10	32	26
-2	32	35
0	33	23
-1 K 2		
-7	0*	1
9	16*	11
13	31	29
0 K 2		
-10	37	38
4	177	183
6	85	78
8	44	40
1 K 2		
-11	12*	2
-7	20*	18
-3	42	44
1	28	28
11	10*	2

K	OBS	CALC
1 K 2		
15	7*	5
2 K 2		
-8	9	9
8	69	74
3 K 2		
-11	11*	16
-9	10*	5
-3	123	118
7	35	36
11	7*	12
4 K 2		
-6	157	155
2	99	100
8	137	133
10	68	86
5 K 2		
-1	56	52
1	55	54
3	53	53
7	36	36
13	31	28
15	22*	17
6 K 2		
-4	226	222
-2	19*	19
2	15*	18
10	11*	10
7 K 2		
-9	20*	21
5	41	40
9	30*	32
8 K 2		
-8	12*	12
-6	38	37
9 K 2		
-11	14*	11
10 K 2		
-10	47	45
6	27*	28
11 K 2		
-7	17*	14
7	22*	21
12 K 2		
-4	2*	2
0	92	88
2	100	97
13 K 2		
5	39	41
14 K 2		
-6	38	41
0	20*	23
2	22*	22
15 K 2		
1	30*	10
5	15*	12
-15 K 3		
4	8*	6
-14 K 3		
-3	3*	3
-13 K 3		
-6	18*	15
2	4*	1
6	25*	23
-12 K 3		
3	14*	6
5	24*	16
9	22*	19
-11 K 3		
-6	17*	11
-10 K 3		
-11	41	34
-9	26*	24
-7	0*	0
-1	18*	11
3	9*	3
7	11*	12
-9 K 3		
-4	24	24
2	18*	14
12	13*	9

K	OBS	CALC
-8 K 3		
-5	39	43
-3	11*	6
-1	11*	8
5	59	61
9	20*	20
-7 K 3		
-8	9*	12
4	13*	16
6	5*	6
-6 K 3		
-9	14*	14
-5	42	42
9	1*	0
-5 K 3		
-14	13*	15
-10	5*	8
-6	57	55
-2	60	56
-4 K 3		
5	11*	8
7	25*	30
11	4*	12
13	6*	6
-3 K 3		
-14	24*	18
-4	20*	16
12	17*	7
-2 K 3		
-15	7*	3
-11	15*	17
-1 K 3		
-10	21*	14
-8	12*	8
-4	71	69
-2	37	40
14	16*	9
0 K 3		
-13	9*	2
-9	15*	9
3	15*	13
5	16*	20
7	13*	13
11	8*	0
1 K 3		
-12	23*	18
-4	87	84
-2	16	17
0	14*	13
6	32	34
14	17*	12
2 K 3		
-15	14*	10
-11	15*	16
-9	13*	14
-7	29	28
7	57	57
3 K 3		
-4	16*	14
-2	128	122
2	118	113
4 K 3		
-15	22*	19
11	14*	10
13	20*	22
5 K 3		
-14	24*	24
-12	17*	14
-10	11*	7
-4	24*	17
-2	35	33
6 K 3		
-3	12*	4
1	30	30
3	6*	3
11	28*	22
15	3*	1
0 K 4		
-14	18*	15
-12	20*	19
6	19*	26
8 K 3		
-13	14*	13
-3	9*	3
7	14*	26
9	4*	4
9 K 3		
-4	37	39
10 K 3		
-9	9*	13
3	13*	6

K	OBS	CALC
11 K 3		
-8	7*	4
8	20*	16
10	17*	17
12 K 3		
-7	25*	23
-1	19*	17
13 K 3		
-8	19*	18
2	12*	6
14 K 3		
-7	13*	10
15 K 3		
0	16*	2
-15 K 4		
-3	1*	1
-14 K 4		
-6	56	54
6	77	80
-12 K 4		
4	54	49
6	32	29
10	18*	18
-11 K 4		
-3	8*	11
3	32*	32
9	7*	7
-10 K 4		
-6	65	71
-4	10*	18
-2	151	153
2	106	108
10	82	88
12	10*	10
-9 K 4		
7	15*	11
11	15*	13
-8 K 4		
-8	105	100
-2	87	87
2	163	160
10	111	113
12	36*	11
-7 K 4		
5	43	48
9	22*	19
-6 K 4		
-4	6*	5
-2	226	225
4	13*	10
-5 K 4		
-11	22*	7
-9	10*	9
-4 K 4		
-8	42	39
-2	24	28
14	10*	9
-3 K 4		
-13	15*	22
-7	17*	22
7	22*	24
-2 K 4		
-6	165	163
2	106	106
12	28*	31
-1 K 4		
-11	38	36
-3	83	82
10	16*	17
-10 K 5		
-14	51	55
-6	197	200
-4	45	50
0	252	249
2	178	185
10	110	114
12	17*	20
1 K 4		
-11	16	15
-9	51	53
-7	71	74
-3	75	70
1	19	21
5	14*	12
7	1	1
9	30	34

K	OBS	CALC
1 K 4		
15	29*	11
2 K 4		
12	25	25
3 K 4		
-13	2*	2
-3	21	22
15	28*	19
4 K 4		
-8	39	37
-4	186	191
-2	31	33
5 K 4		
-5	13*	4
-3	39	40
1	6*	5
3	22	25
6 K 4		
-12	23*	23
-8	108	111
-6	136	136
8	76	76
7 K 4		
-11	20*	21
-7	17*	13
5	36	38
11	11*	13
8 K 4		
0	150	146
9 K 4		
-3	13	11
3	38	40
5	7*	14
9	21*	23
10 K 4		
-8	64	60
-6	113	120
-4	6*	6
11 K 4		
5	2*	1
11	12*	6
12 K 4		
-8	2*	2
4	43	40
13 K 4		
-7	13*	4
-5	2*	2
-1	8*	9
1	14*	18
5	31*	26
14 K 4		
-4	27*	23
-2	73	74
2	119	118
-15 K 5		
2	15*	23
-14 K 5		
1	12*	15
3	26*	14
5	35*	28
-13 K 5		
-8	8*	5
-12 K 5		
-7	8*	9
-3	7*	8
9	27*	20
-11 K 5		
-4	13*	4
7 K 3		
-7	33	25
-5	3*	4
-1	10*	9
7	25	20
9	31*	31
-9 K 5		
12	0*	0
-8 K 5		
-13	17*	21
-11	33*	25
-9	12*	15
-5	4*	0

K	OBS	CALC
-7 K 5		
-8	1*	1
-4	34	36
-6 K 5		
-3	46	47
1	26*	7
-5 K 5		
-10	17*	22
-8	10*	0
-4	10*	14
0	10*	5
14	19*	15
-4 K 5		
-13	18*	8
-11	11*	4
-1	6*	11
3	21*	15
9	17*	11
13	11*	8
-3 K 5		
-12	23*	25
-10	6*	3
-8	40	43
-6	49	49
4	15*	10
10	10*	6
-2 K 5		
-13	28	29
-9	27*	29
-5	21*	21
9	9*	9
15	5*	4
-1 K 5		
-10	21*	14
-2	69	66
0 K 5		
-7	12*	9
-3	12*	7
11	14*	6
12	12*	2
15	11*	10
1 K 5		
-12	15*	9
-5	25	24
-2	41	39
0	20	27
2 K 5		
-10	48	52
-7	41	41
-5	24	23
7	34	33
11	38	37
3 K 5		
-14*	1*	1
-2	42	42
2	56	52
4 K 5		
-1	16*	18
5	11*	9
5 K 5		
-12	0*	1
6	32	31
12	18*	3
6 K 5		
-9	4*	3
-7	9*	7
1	4*	2
9	20	21
11	16*	11
13	8*	3
7 K 5		
-8	20*	19
-6	25*	20
-4	46	47
8 K 5		
-9	19*	16
-1	59	55
3	61	66
9 K 5		
-10	8*	12
-6	21*	11
-4	2*	2
0	15*	14
10 K 5		
-11	20*	17
11 K 5		
2	8*	10
6	16*	13
8	14*	13

K	OBS	CALC
12 K 5		
-7	15*	17
-1	11*	4
13 K 5		
6	20*	7
14 K 5		
1	42	43
-14 K 6		
2	31*	23
-13 K 6		
7	20*	11
-12 K 6		
-2	44	46
0	61	61
-11 K 6		
-7	35*	37
-5	15*	6
7	6*	6
9	37	37
-10 K 6		
8	13*	15
10	31	35
-9 K 6		
-9	39	40
-7	10*	9
1	17*	7
11	26	24
-8 K 6		
-12	66	58
-2	37	36
10	36	31
-6 K 6		
5	31	34
12	91	91
-5 K 6		
-9	12*	6
-3	36	36
-4 K 6		
-14	67	72
-12	18*	12
8	92	93
10	94	95
12	21*	14
14	47	46
-3 K 6		
-9	2*	2
-7	27*	34
7	19*	22
-2 K 6		
-8	29	27
-4	205	205
0	83	72
4	179	180
-1 K 6		
-15	17*	18
-1	92	90
3	14	17
7	64	57
11	14	12
15	22*	18
0 K 6		
-10	21*	6
-8	17*	3
-6	7*	4
-4	199	203
1 K 6		
-9	9*	3
-5	34	33
3	44	47
13	16*	13
2 K 6		
-2	16*	19
3 K 6		
-11	38	34
-9	24*	18
-3	10*	6
5	65	67
11	16*	16
4 K 6		
-6	113	114
6	142	148
5 K 6		
-9	20*	8
-7	7*	8
8	20*	10

K	OBS	CALC
5 K 6		
-1	26	26
5	12*	1
11	19*	8
13	16*	9
6 K 6		
-2	15*	10
2	15*	13
7 K 6		
-13	4*	5
-5	34	31
-1	60	60
7	34	35
9	31*	30
8 K 6		
-8	18*	2
-6	13*	11
-4	92	89
6	23*	19
10 K 6		
-6	12*	11
-4	87	86
-2	2*	2
2	35*	42
6	19*	10
11 K 6		
-1	36	32
12 K 6		
-6	69	68
-2	109	105
8	67	64
13 K 6		
-3	21*	21
1	8*	12
3	24*	23
5	20*	9
14 K 6		
0	21*	12
2	6*	7
-13 K 7		
0	13*	15
-12 K 7		
-7	4*	0
1	13*	6
3	29*	27
-11 K 7		
-6	23*	23
-4	25*	25
4	18*	27
-10 K 7		
-7	10*	16
-3	17*	12
-1	14*	7
3	8*	3
5	28	24
-9 K 7		
-4	19*	18
-8 K 7		
-9	24*	13
-5	12*	8
-1	11*	7
1	17*	15
5	17*	14
11	18*	14
-7 K 7		
-10	23*	20
-8	26*	16
-6	35	34
-2	4*	3
2	11*	8
8	21*	15
-6 K 7		
-9	5*	7
-5 K 7		
-4	44	46
-2	52	51
10	31	26
-4 K 7		
-7	7*	4
-3 K 7		
8	8*	10
14	9*	6
-2 K 7		
3	60	61

K	OBS	CALC
-1 K 7		
-14	21*	18
-10	24*	10
-4	39	37
-2	28*	30
6	65	66
0 K 7		
-7	10*	1
-3	15*	19
1	12*	4
9	15*	9
1 K 7		
-12	6*	3
-4	41	37
-2	4*	5
2 K 7		
-9	28	29
11	17*	2
13	21*	16
3 K 7		
-12	24	16
-2	28	30
4	35	37
14	14*	11
4 K 7		
-13	17*	13
-7	11*	3
3	9	10
5 K 7		
-12	11*	2
-4	38	41
-2	23	27
0	11*	8
12	20*	5
6 K 7		
-13	14*	13
-5	12*	11
-3	18*	7
-1	47	47
3	17*	9
5	24*	17
11	6*	5
13	15*	13
7 K 7		
-6	38	37
8 K 7		
-9	4*	2
-3	21*	26
9 K 7		
-4	12*	11
-2	27	25
6	24*	12
10	15*	10
10 K 7		
9	11*	11
11 K 7		
-8	14*	12
0	11*	1
2	6*	0
12 K 7		
-7	15*	2
13 K 7		
2	12*	13
14 K 7		
1	5*	5
-12 K 8		
3	10*	9
-12 K 8		
0	74	76
2	52	52
4	3*	2
-11 K 8		
5	33*	33
-10 K 8		
-6	8	9
-2	29*	38
8	22*	18
-9 K 8		
-5	17*	11
-1	41	41
9	18*	13
-8 K 8		
-2	23*	13
0	212	210

K	OBS	CALC
-7 K 8		
-7	30	34
-3	13*	15
1	45	43
3	17*	11
-6 K 8		
-4	117	117
5	11*	5
8	29	29
-5 K 8		
-7	22*	16
11	26	23
13	26*	27
-4 K 8		
-8	105	101
-4	47	42
10	78	77
-3 K 8		
-11	28*	39
-3	18*	22
-2 K 8		
-6	40	36
-4	123	120
4	127	124
-1 K 8		
1	27	30
5	42	42
13	22*	6
0 K 8		
-14	17*	4
-6	14*	6
-4	152	149
0	241	240
2	43	34
1 K 8		
-11	15*	15
-7	13	15
3	2*	1
5	44	44
9	4	4
11	18*	17
13	23*	7
2 K 8		
-12	93	92
-6	26	25
2	39	33
10	1*	1
3 K 8		
-13	24*	27
-11	23	25
-9	25*	24
1	8*	13
5	75	79
9	12*	12
4 K 8		
-8	112	111
8	69	65
10	87	91
5 K 8		
-5	17*	17
3	12	14
9	9*	3
13	1*	2
6 K 8		
-12	50	47
10	52	55
7 K 8		
5	7*	5
9	7*	6
11	18*	8
8 K 8		
-10	13*	10
-8	162	160
-6	35	36
-2	9*	7
9 K 8		
7	24*	22
10 K 8		
0	15*	10
11 K 8		
7	14*	5
12 K 8		
-6	91	87
-13 K 9		
-8	16*	9
-2	21*	13

K	OBS	CALC
-12 K 9		
-5	4*	3
-1	20*	8
1	10*	5
-11 K 9		
6	29*	28
-10 K 9		
-7	20*	18
7	9*	8
9	16*	8
-9 K 9		
-4	19*	3
2	1*	1
10	12*	4
-8 K 9		
5	15*	17
-7 K 9		
-8	24*	14
-2	40	37
2	16	17
4	21*	17
-6 K 9		
-7	14*	12
-1	12*	8
3	9*	6
7	21*	19
-5 K 9		
-12	11*	14
-4	7*	4
-2	41	39
10	33*	32
-4 K 9		
-5	19*	11
-1	53	55
7	8*	5
11	2*	2
-3 K 9		
-12	22*	15
0	13*	19
6	9*	14
10	16*	19
12	5*	6
-2 K 9		
-11	19*	16
-5	1	1
-1 K 9		
-6	15*	20
-4	39	40
-2	19*	19
8	23*	22
0 K 9		
-13	17*	2
-9	11*	3
-7	10*	18
-1	8*	3
5	11*	5
11	15*	6
1 K 9		
-10	21*	18
-2	5*	8
2 K 9		
-11	7*	5
-9	2*	10
-3	12*	9
3	9*	4
3 K 9		
-4	34	37
8	18*	11
4 K 9		
-3	14*	15
9	9*	1
5 K 9		
-8	21*	18
6	3*	2
6 K 9		
-11	28	24
-9	42	46
5	18*	11
8 K 9		
-1	26*	24
3	6*	4
7	2*	2
9 K 9		
-6	37	45

K	OBS	CALC
10 K 9		
-5	11*	12
-3	15*	19
-1	3*	3
11 K 9		
-4	27*	18
13 K 9		
-2	10*	12
-12 K 10		
2	83	80
4	16*	3
-11 K 10		
-1	26*	32
1	12*	12
-10 K 10		
4	82	84
-9 K 10		
-9	18*	9
7	4*	6
-8 K 10		
-8	17*	3
-6	34*	33
2	26*	29
6	13*	12
-7 K 10		
-7	7*	11
-6 K 10		
0	17*	13
-5 K 10		
-11	34*	30
-7	50	53
1	29	20
3	12*	2
5	9*	12
7	0	0
-4 K 10		
-6	92	92
-2	116	118
2	131	143
4	15*	8
-3 K 10		
-11	35*	32
-9	18*	25
9	7*	9
-2 K 10		
-10	33	21
8	11*	9
-1 K 10		
7	1*	1
0 K 10		
-12	47	46
-8	7*	8
2	38	40
4	109	116
10	67	68
1 K 10		
-9	24*	27
-5	20*	18
1	46	50
3	27	32
7	18*	19
9	1*	1
2 K 10		
-12	64	62
-10	32	24
-6	8*	11
-2	17*	11
6	24*	30
3 K 10		
-11	23*	20
1	46	52
3	12*	0
4 K 10		
-12	1*	0
-10	82	87
-8	88	89
-6	86	91
5 K 10		
-11	15*	14
-9	39*	41
3	4*	1
9	2*	2

[illegible] TETRAGONAL GARNET, SPACE GROUP I4 1/A
FACTOR = 1.00

K	OBS	CALC
6 K 10		
5	17*	29
7 K 10		
-9	16*	17
-3	8*	9
3	20*	23
8 K 10		
-4	76	78
10 K 10		
-6	21*	9
6	10*	8
-11 K 11		
3	21*	17
-10 K 11		
3	31*	27
-9 K 11		
-4	21*	16
4	2*	2
-8 K 11		
-5	14*	12
7	14*	13
-7 K 11		
-3	15*	10
4	27*	28
-6 K 11		
-9	29*	28
-7	20*	14
-1	32*	31
3	10*	12
-5 K 11		
-4	17*	9
3	25*	27
5	8*	4
-4 K 11		
-3	18*	11
3	10*	6
11	23*	11
-3 K 11		
-10	0*	7
-2	20*	17
0	20*	18

K	OBS	CALC
-2 K 11		
-9	7*	6
1	10*	6
-1 K 11		
-10	15*	22
0	12*	6
2	12*	11
4	24*	24
0 K 11		
-11	12*	15
-5	13*	0
1 K 11		
-10	1*	1
4	24*	22
6	14*	14
8	19*	13
2 K 11		
-11	6*	4
-9	19*	21
-5	20*	22
3	16*	10
3 K 11		
-10	39*	37
-6	27*	26
6	22*	9
4 K 11		
-7	20*	25
11	11*	5
5 K 11		
-10	13*	13
-4	4*	7
8	35*	33
6 K 11		
-9	25*	25
-7	17*	13
-5	17*	12
7 K 11		
-8	15*	12
-2	15*	10
0	13*	11
8 K 11		
1	17*	12
3	16*	7

K	OBS	CALC
9 K 11		
0	7*	2
-10 K 12		
4	20*	12
-9 K 12		
5	10*	5
-8 K 12		
0	71	79
4	20*	6
-7 K 12		
-7	22*	23
-5	14*	3
-1	6*	10
3	24*	24
5	11*	4
-6 K 12		
-6	78	78
2	62	56
8	73	69
-5 K 12		
5	13*	15
-4 K 12		
-6	1*	1
0	22*	26
2	26*	18
3	5*	1
-3 K 12		
-5	4*	6
-3	23*	25
9	5*	5
-2 K 12		
-10	73	70
-2	141	133
6	92	88
10	88	82
-1 K 12		
-3	24*	19
1	34	34
3	12*	10
9	7*	19
0 K 12		
-6	61	59
-2	94	89
0	48	56

K	OBS	CALC
0 K 12		
10	49	47
1 K 12		
7	29*	22
2 K 12		
-4	12*	9
3 K 12		
-7	33	31
-5	31*	44
9	29*	24
4 K 12		
4	47	41
5 K 12		
-9	21*	6
-1	23*	16
1	4*	3
6 K 12		
4	23*	18
8 K 12		
-6	66	63
-2	89	86
2	60	58
9 K 12		
-1	11*	12
10 K 12		
4	13*	15
-8 K 13		
-3	11*	17
1	13*	13
5	10*	11
-7 K 13		
-2	9*	6
-6 K 13		
-5	14*	9
7	23*	16
-5 K 13		
-6	16*	8
4	1*	1

K	OBS	CALC
-4 K 13		
-7	10*	5
-3 K 13		
4	15*	11
6	12*	13
-2 K 13		
-9	10*	13
-7	16*	12
-1 K 13		
6	19*	24
0 K 13		
-7	11*	13
-5	18*	10
-1	10*	1
3	14*	16
9	17*	1
1 K 13		
-8	21*	10
2	35	32
4	25*	6
2 K 13		
-9	21*	14
1	28	30
3	15*	15
3 K 13		
2	4*	7
4	23*	20
4 K 13		
-7	4*	1
1	14*	5
5 K 13		
-8	12*	19
-2	45	43
2	35	36
4	23*	16
6 K 13		
-3	32*	32
-1	18*	15
8 K 13		
-3	20*	17

K	OBS	CALC
-7 K 14		
-1	28*	17
-6 K 14		
-2	28*	19
2	17*	9
-5 K 14		
-5	22*	26
-1	52	56
-4 K 14		
-6	58	61
6	62	62
-3 K 14		
-5	21*	4
-1	21*	22
-2 K 14		
0	21*	16
4	80	84
-1 K 14		
-7	0*	0
0 K 14		
-4	43	52
1 K 14		
-1	14*	13
3	21*	24
2 K 14		
-2	21*	10
4	102	103
3 K 14		
-5	10*	3
-3	9*	10
4 K 14		
-4	17*	14
5 K 14		
-1	3	3
6 K 14		
0	15*	6

K	OBS	CALC
7 K 14		
-3	30*	34
3	17*	18
8 K 14		
0	14*	9
-5 K 15		
-2	19*	20
-4 K 15		
-1	16*	14
-3 K 15		
4	21*	12
-2 K 15		
-5	15*	11
3	25*	16
0 K 15		
-5	14*	7
-3	6*	7
1	16*	16
1 K 15		
2	12*	7
2 K 15		
1	11*	3
3	2*	1
4 K 15		
-3	2*	2
-1	1*	1
0 K 16		
-2	16*	17
0	93	91
1 K 16		
1	21*	22