AM-77-045

Paul H. Ribbe, Gerald V. Gibbs and Martha M. Hamil

A refinement of the structure of dioptase

Table 5. Observed and calculated structure factors for dioptase

American Mineralogist, 62, pages 807-811

DIOPTASE

(Ribbe, Gibbs & Hamil)

h	k	ℓ	F_{obs}	F_{calc}
-6	8	1	16.53	12.28
6	-4	1	16.94	11.82
1	11	2	17.82	19.97
1	4	6	18.53	8.30
10	1	3	18.53	21.36
0	14	1	18.37	14.60
8	-2	1	18.33	12.28
-12	16	2	19.33	10.50
-1	3	2	19.63	16.60
4	8	2	19.31	13.21
13	-11	0	19.60	17.15
9	-4	1	19.46	22.15
3	-2	2	19.91	16.60
10	4	3	20.73	17.56
-2	15	4	21.89	20.28
-5	9	1	21.68	22.15
9	5	1	21.15	19.93
5	4	1	21.20	21.39
13	-6	1	21.31	2.19
15	-4	1	21.62	25.08
-5	16	3	22.10	23.94
7	3	4	22.68	18.98
-9	14	1	22.99	20.34
-13	15	2	22.68	21.51
-10	11	3	22.06	15.82
-1	10	1	22.06	24.45
3	8	1	22.41	15.76
10	3	1	22.99	22.61
12	-8	5	22.41	22.09
1	12	4	23.12	18.94
13	2	5	23.11	16.19
3	5	10	23.88	25.60
-11	15	1	23.04	25.08
11	5	3	23.43	20.87
-1	11	3	23.31	19.68
7	5	2	23.69	23.22
11	-4	0	23.38	21.72
18	-10	1	23.68	12.18
16	0	1	23.95	21.33
13	-4	2	23.24	20.03
18	-14	2	23.51	25.98
18	-9	3	23.59	16.11
1	0	4	23.94	17.85
8	7	4	24.95	25.64
11	6	5	24.67	15.52
12	4	5	24.36	26.00
-1	14	6	24.86	13.08
7	2	8	24.55	17.64
-1	15	5	24.18	14.50
-5	6	1	24.88	21.31
0	3	3	24.36	13.52
10	-9	1	24.07	24.45
14	-5	1	24.65	20.34
4	-4	2	24.32	8.50
19	-10	2	24.20	22.37
3	-3	3	24.38	13.52
12	-10	4	24.98	11.16

4	11	3	25.09	24.26
4	4	6	25.09	21.88
-1	10	7	25.17	19.21
-9	19	2	25.11	22.37
-3	15	3	25.38	26.98
-14	17	2	25.61	17.43
-5	7	3	25.97	24.67
-8	10	6	25.00	22.91
6	-6	9	25.92	15.82
4	0	10	25.59	22.62
8	1	1	25.61	21.68
-3	17	1	25.69	22.52
6	8	1	25.52	21.75
11	9	2	25.56	18.54
4	11	2	25.90	23.95
6	-1	1	25.01	21.31
15	-7	4	25.12	24.70
-5	16	6	26.59	27.75
-9	17	1	26.52	6.86
-4	7	4	26.92	23.18
-12	13	5	26.75	26.56
-10	12	5	26.97	28.68
-9	15	6	26.77	24.84
-9	14	7	26.05	26.50
-7	11	9	26.96	20.46
-3	6	6	26.69	37.05
15	-6	6	26.14	24.84
6	11	1	26.16	26.09
14	2	3	26.25	33.05
14	3	2	26.60	28.19
11	0	2	26.74	27.38
15	-6	3	26.50	22.77
9	0	3	26.15	24.84
13	-1	5	26.69	26.56
4	-2	6	26.42	6.01
9	8	4	27.70	30.44
2	10	4	27.56	20.63
4	5	5	27.45	28.40
9	3	6	27.69	26.76
-2	16	3	27.95	27.10
0	15	3	27.05	26.56
3	15	3	27.03	29.50
-1	3	8	27.79	19.47
-3	16	5	27.26	25.56
-9	13	2	27.39	20.03
-8	15	4	27.53	24.70
-7	9	8	27.97	31.63
16	-11	6	27.49	27.75
8	-6	8	27.96	21.60
11	1	1	27.52	24.85
2	16	1	27.36	22.43
-3	11	1	27.18	24.71
0	8	1	27.97	30.22
4	6	1	27.50	29.75
20	-11	1	27.77	27.33
15	-15	3	27.72	26.57
7	-2	3	27.94	24.67
8	-1	3	27.96	23.95
7	-3	4	27.01	23.18
13	-10	5	27.02	30.81
7	11	5	28.82	31.73
-6	15	6	28.07	30.88
-8	17	2	28.33	28.47
1	4	9	28.36	36.02
-5	18	4	28.51	27.43
-8	13	3	28.09	28.96
12	-4	7	[illegible]	[illegible]
13	-4	8	28.60	9.92
9	1	5	28.17	25.58
0	12	3	28.69	27.73
1	6	1	28.50	27.39
19	-15	1	28.95	28.87
17	-2	1	28.31	27.95
17	-8	1	28.39	6.86
4	0	4	28.28	22.31
5	12	2	29.31	26.25
1	10	6	29.26	22.65
-4	18	2	29.44	25.98
3	3	9	29.39	24.84
-1	16	4	29.81	30.65
-14	16	3	29.29	30.01
14	-5	7	29.81	26.50
13	0	7	29.25	31.30
4	-4	8	29.03	27.78
-4	13	1	29.54	28.60
12	3	3	29.24	23.98
9	10	2	29.02	26.44
17	-9	2	29.75	28.47
15	-1	4	29.86	36.00
14	-12	5	29.45	31.04
10	6	4	30.99	18.34
2	13	4	30.76	28.81
-3	15	6	30.12	29.79
4	3	7	30.17	25.90
-10	16	1	30.38	32.73
-7	8	3	30.29	23.95
-9	17	4	30.53	32.19
-8	12	7	30.93	26.39
15	-12	6	30.81	29.79
10	-6	7	30.51	22.93
3	-3	9	30.97	29.28
4	15	1	30.34	26.56
3	14	1	30.76	26.03
7	12	1	30.44	30.55
-2	14	5	30.93	31.04
5	6	2	30.20	16.44
16	-14	0	30.45	26.93
12	-12	3	30.13	27.73
3	-1	4	30.05	32.78
10	-7	5	30.24	24.24
8	9	5	31.98	36.83
10	2	5	31.53	29.57
8	5	6	31.16	30.36
0	9	9	31.53	33.40
-15	17	1	31.05	27.95
-8	11	2	31.59	27.14
17	-10	6	31.56	32.27
11	-4	9	31.02	20.46
-9	20	1	31.80	27.33
-4	19	1	31.16	28.87
-3	13	2	31.63	31.96
6	7	2	31.20	31.48
6	10	2	31.71	26.77
11	-3	2	31.23	27.14
17	-11	4	31.74	30.94
16	-13	5	31.22	25.56
6	5	4	32.50	34.27
2	7	4	32.77	30.61
6	0	0	32.27	27.60
5	3	5	32.62	30.44
7	6	7	32.31	28.83
0	3	9	32.61	29.28

-16	18	2	32.63	31.91
1	14	2	32.87	31.85
6	-6	0	32.48	27.59
16	-10	2	32.69	33.66
16	-11	3	32.11	23.94
10	0	4	32.55	12.90
18	-13	4	32.71	27.43
15	-3	6	32.53	35.61
-4	9	5	33.12	31.90
10	4	6	33.48	35.13
3	11	7	33.63	34.55
0	4	8	33.32	27.78
2	9	8	33.44	28.81
-6	17	4	33.03	30.94
-2	3	4	33.40	32.78
-5	6	10	33.19	36.60
7	1	9	33.39	33.50
4	10	3	33.96	33.14
9	8	1	33.29	35.12
19	-8	0	33.83	36.89
8	-8	1	33.67	30.22
16	-6	1	33.01	32.73
15	-12	3	33.16	26.98
-3	13	5	34.44	30.81
2	3	5	34.49	35.08
12	2	7	34.08	37.70
2	6	8	34.50	30.25
6	0	0	34.09	27.60
6	13	2	34.47	34.50
2	11	3	34.87	33.12
-3	10	2	34.62	32.89
6	-3	0	34.41	30.07
19	-11	0	34.51	34.97
13	-10	2	34.63	31.96
13	-5	3	34.00	28.96
17	-8	4	34.95	32.19
1	16	3	35.42	34.03
5	4	7	35.50	36.86
-14	18	1	35.25	32.87
-11	16	3	35.15	36.41
-10	11	6	35.35	37.98
-5	8	8	35.76	36.46
9	-2	8	35.47	31.63
-6	16	2	35.36	33.66
4	13	3	35.63	37.29
11	4	1	35.58	33.67
6	4	2	35.30	40.86
19	-12	1	35.62	33.98
18	-4	1	35.84	32.87
16	-1	2	35.27	32.92
18	-2	2	35.08	31.91
10	-7	2	35.51	32.89
16	0	4	35.57	32.92
16	-15	4	35.24	30.65
-7	17	6	36.63	32.27
2	4	7	36.82	39.88
-10	12	2	36.12	37.66
9	-3	0	36.01	33.79
12	-2	2	36.80	37.66
16	-5	3	36.23	36.41
17	-2	4	36.94	40.47
15	-4	4	36.40	36.24
9	-5	5	36.22	31.90
12	-3	6	36.19	38.66
4	5	8	37.48	33.32

-15	16	2	[illegible]	[illegible]
-10	18	2	37.14	33.43
-14	15	4	37.16	36.00
-9	12	6	37.27	38.66
15	-9	6	37.53	30.83
15	-7	7	37.25	38.99
8	-3	8	37.55	36.45
6	-4	10	37.46	39.76
-6	17	1	37.61	40.29
8	2	3	37.28	36.54
11	6	2	37.83	37.07
-3	7	2	37.70	40.10
12	-9	0	37.57	34.35
19	-11	0	37.12	34.97
18	-13	1	37.49	34.23
17	-16	3	37.56	38.20
12	-3	3	37.20	40.29
6	-3	6	37.00	37.05
2	12	2	38.25	35.16
14	3	5	38.54	42.20
1	11	8	38.39	40.20
2	8	9	38.50	36.03
-7	10	4	38.85	40.08
-11	15	4	38.40	36.24
-12	15	6	38.48	35.61
-6	9	9	38.23	41.40
-5	18	1	38.29	34.23
1	15	1	38.10	36.06
-6	13	2	38.64	37.53
7	-4	2	38.45	40.10
11	-1	6	38.53	37.98
7	4	6	39.48	42.61
4	2	8	39.47	35.21
1	5	8	39.39	33.62
3	14	4	39.69	38.95
-9	12	3	39.34	40.29
-8	15	7	39.17	38.99
12	-9	6	39.86	42.29
7	7	6	39.06	39.18
14	1	1	39.32	38.33
-7	19	1	39. [illegible]	33.98
9	6	3	39.15	38.47
6	12	3	39.46	41.96
13	-7	2	39.41	37.58
14	-10	3	39.91	38.17
1	-1	5	39.39	37.81
9	0	6	39.68	37.41
1	5	5	40.61	39.85
1	2	5	40.54	43.79
3	12	6	40.54	39.80
-1	7	7	40.13	43.08
6	2	10	40.79	46.15
10	-8	6	40.20	38.03
9	-3	9	40.17	41.40
7	0	10	40.81	40.03
0	1	5	40.38	37.81
-4	14	3	40.35	38.17
10	-3	4	40.29	40.08
7	-2	6	40.90	38.50
8	2	6	41.66	40.92
4	3	4	41.12	46.24
15	1	5	41.89	44.83
2	11	6	42.96	44.07
0	2	7	42.22	38.82
-3	13	8	42.13	42.90
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

1	1	[illegible]	[illegible]	[illegible]
2	10	1	42.32	42.32
18	-3	0	42.37	37.50
14	-12	2	42.48	42.28
19	-14	3	42.24	44.86
16	-8	3	42.72	40.22
7	8	5	43.89	44.08
-2	10	6	43.49	38.03
-3	12	6	43.00	42.29
0	12	6	43.77	47.39
0	2	4	43.42	43.08
-1	12	8	43.16	48.99
7	4	9	43.69	45.39
-15	17	4	43.21	40.47
-7	9	5	43.79	42.05
-5	7	6	43.63	38.50
-10	17	6	43.10	42.33
8	-2	7	43.49	39.93
13	-10	8	43.24	42.90
3	-1	10	43.62	43.32
-2	8	2	43.50	37.60
11	-10	0	43.15	44.66
17	-16	0	43.36	47.27
18	-8	2	43.60	39.48
9	-2	5	43.21	42.05
11	0	5	43.63	45.90
9	5	4	44.92	44.69
0	14	4	44.62	41.85
11	5	6	44.90	40.97
-5	19	3	44.24	44.86
2	3	8	44.80	46.53
-11	14	5	44.36	45.76
-6	8	7	44.39	39.93
-8	10	9	44.50	48.56
15	-4	7	44.27	41.77
12	-1	7	44.55	44.67
3	11	1	44.88	43.80
11	8	3	44.70	46.05
-2	14	2	44.81	42.28
1	10	3	44.29	45.00
11	3	2	44.57	44.38
13	5	2	44.30	46.46
13	-5	0	44.64	45.53
17	-11	1	44.34	40.29
17	-1	3	44.90	47.38
14	-2	4	44.56	38.43
14	-14	4	44.81	41.85
14	-9	5	44.73	43.46
3	7	5	45.41	45.37
2	6	5	45.04	44.58
7	2	5	45.15	46.65
3	8	7	45.67	50.86
4	8	8	45.72	43.74
-6	16	5	45.58	46.59
-13	19	1	45.63	44.16
-12	14	4	45.92	38.43
2	-2	7	45.92	38.82
17	1	1	45.41	46.05
-5	14	5	45.33	43.46
12	4	2	45.80	47.86
19	-6	1	45.24	44.16
8	-6	2	45.08	37.60
18	-12	3	45.66	42.95
7	-5	3	45.91	47.70
5	-1	3	45.30	44.07
3	4	5	46.79	40.90

-5	18	3	[illegible]	[illegible]
4	9	7	46.34	48.45
11	4	7	45.33	44.16
-2	6	10	46.42	39.76
-11	15	7	46.28	41.77
17	-7	6	46.94	42.33
-1	5	3	46.41	47.68
4	3	1	46.01	47.68
5	-4	3	46.82	47.68
8	10	4	47.73	48.41
2	2	6	47.91	46.11
-10	18	5	47.36	47.50
-11	12	7	47.67	44.67
-2	3	10	47.97	43.32
2	8	6	47.10	49.61
12	-12	6	47.22	47.39
7	-6	7	47.02	43.09
7	-1	8	47.57	51.56
14	4	1	47.91	49.69
20	-7	0	47.83	50.99
16	-3	4	47.24	51.44
16	-10	5	47.68	46.59
14	-3	5	47.35	45.76
10	-1	5	47.66	47.63
6	7	5	48.72	49.21
-12	19	2	48.73	48.88
-16	17	3	48.30	47.38
-4	5	3	48.34	44.07
5	-4	6	48.42	45.49
-1	5	6	48.44	45.49
10	-2	9	48.16	48.56
-2	7	3	48.93	47.70
3	3	3	48.83	50.57
15	-12	0	48.58	54.12
8	0	2	48.59	48.35
2	-2	4	48.21	43.08
18	-8	5	48.73	47.50
0	11	4	49.67	49.67
5	4	4	49.99	49.34
-3	10	8	49.08	52.51
-9	10	5	49.67	47.63
5	1	7	49.68	48.23
11	7	1	49.97	52.05
6	5	1	49.83	49.01
13	3	1	49.61	47.04
17	-4	0	49.53	50.49
17	-9	5	49.62	51.35
-6	14	4	50.92	47.48
6	2	4	50.68	53.99
5	7	7	50.72	51.48
-7	18	5	50.24	55.80
-8	17	5	50.49	51.35
11	0	8	50.37	48.28
12	-11	8	50.90	48.99
5	-4	0	50.84	49.42
18	-12	0	50.78	51.78
15	-5	2	50.36	48.47
19	-7	2	50.00	48.98
13	-6	4	50.26	50.76
9	4	5	51.10	56.68
7	10	6	51.47	47.04
9	5	7	51.43	49.16
-3	5	4	51.91	48.14
-7	12	5	51.13	49.42
14	-4	6	51.82	50.10
9	11	1	51.08	48.17

1	7	3	51.91	52.08
14	-8	4	51.92	47.48
9	-8	5	51.21	50.76
1	11	5	52.57	54.75
2	10	7	52.97	51.56
3	2	10	52.94	51.19
-13	16	4	52.34	51.44
-10	14	6	52.05	50.10
8	8	6	52.49	55.49
5	-2	4	52.05	48.14
14	-5	4	52.99	52.58
18	-11	5	52.51	55.80
2	-1	6	52.92	48.99
4	2	5	53.30	55.23
7	3	7	53.62	54.78
5	2	9	53.69	52.71
-17	18	1	53.41	52.84
-7	12	2	53.77	53.75
-10	15	2	53.14	48.47
-7	13	4	53.68	50.76
13	-11	6	53.97	54.46
8	0	8	53.37	50.48
4	7	3	53.74	53.36
3	12	3	53.97	54.12
14	-3	2	53.30	53.40
12	-5	2	53.46	53.75
10	-5	3	53.17	52.69
11	-11	4	53.20	49.67
12	-5	5	53.30	49.42
-2	13	6	54.28	54.45
10	-7	8	54.17	52.51
12	5	1	54.31	58.87
13	2	2	54.51	55.35
10	5	2	54.40	55.49
7	8	2	54.53	52.68
14	-7	3	54.72	54.27
-1	9	5	55.07	50.76
11	7	4	55.02	55.96
-2	8	5	55.83	54.80
4	10	6	55.30	59.71
9	2	4	55.41	53.73
-11	14	2	55.26	53.40
-15	19	2	55.58	54.89
-14	17	5	55.34	54.91
-6	7	8	55.68	51.57
10	-1	8	55.93	55.70
4	-1	8	55.87	54.44
-5	12	1	55.79	56.60
-2	17	2	55.59	58.29
11	-11	1	55.94	54.95
8	-6	5	55.08	54.80
8	0	5	55.99	53.73
-8	20	2	56.05	56.95
-1	7	10	56.58	56.75
-9	14	4	56.39	52.58
-6	10	5	56.91	58.01
-3	4	8	56.56	54.44
0	11	1	56.19	54.95
0	9	3	56.87	57.80
8	12	2	56.87	57.16
2	15	2	56.08	58.57
2	3	2	56.53	58.55
8	9	2	56.52	59.41
16	-3	1	56.41	55.54
19	-4	2	56.09	54.89
20	-12	2	56.73	56.95

17	-3	5	56.95	[illegible]
11	2	6	57.18	57.[illegible]
12	2	4	57.[illegible]	57.[illegible]
13	-3	7	57.98	61.13
7	-6	10	57.18	55.75
2	13	1	57.59	54.[illegible]
12	-7	1	57.50	59.[illegible]
18	-6	3	57.74	56.21
12	-1	4	57.74	57.[illegible]
15	-5	5	57.80	56.46
5	12	5	58.4[illegible]	61.51
0	8	4	58.38	56.57
8	4	4	58.58	57.86
14	4	4	58.73	59.71
-13	16	1	58.29	55.54
-11	17	2	58.18	59.24
-10	15	5	58.63	55.46
12	-5	8	58.73	60.30
-3	16	2	58.67	57.90
3	10	2	58.54	57.58
14	-7	0	58.10	55.32
17	-15	2	58.96	58.29
17	-10	3	58.53	56.32
12	0	6	58.75	57.24
6	2	7	59.08	61.07
1	7	9	59.44	56.31
-9	10	8	59.89	55.70
-7	12	8	59.17	60.30
5	5	3	59.61	61.87
8	11	3	59.90	60.51
8	-8	4	59.93	56.57
10	-4	5	59.08	58.01
-4	13	7	60.93	59.91
-7	17	3	60.00	56.32
1	2	8	60.66	62.75
-10	13	1	60.18	60.03
-9	16	2	60.21	58.21
-11	12	4	60.20	57.06
-10	13	7	60.25	61.13
1	9	1	60.10	63.23
9	7	2	60.35	63.11
14	-1	0	60.23	60.08
16	-7	2	60.78	58.21
16	-13	2	60.31	57.90
9	-9	3	60.60	57.80
15	0	3	60.66	61.51
3	8	4	61.45	62.84
13	-9	7	61.98	59.91
6	-1	7	61.92	67.21
17	-6	2	61.01	59.24
-1	3	5	62.86	62.14
6	-3	9	62.49	60.05
13	4	3	62.36	64.31
-2	13	3	62.38	64.11
-3	12	3	62.21	64.14
12	8	1	62.14	63.53
7	2	2	62.42	64.44
15	0	0	62.77	62.43
20	-10	0	62.50	64.90
13	-3	1	62.51	60.03
17	0	2	62.85	66.01
14	-10	6	63.02	63.34
7	-7	8	63.25	62.69
2	-1	9	63.48	63.15
9	9	3	63.85	65.73
17	-7	0	63.50	64.81

13	-11	3	63.59	64.11
3	5	4	64.73	66.38
-4	14	6	64.58	63.34
0	7	3	64.60	62.59
2	2	9	64.34	64.63
-5	10	3	64.91	62.69
9	-6	9	64.97	64.50
15	-15	0	64.99	62.43
13	-1	2	64.07	64.62
17	-12	2	64.76	63.58
13	-2	3	64.30	63.33
16	-12	4	64.64	64.84
3	-2	5	64.42	62.14
3	4	8	65.58	64.85
-3	9	9	65.35	64.49
2	0	8	65.51	66.49
13	1	3	65.13	65.39
-5	14	2	65.74	63.30
5	3	2	65.79	69.30
14	-9	2	65.38	63.30
12	-9	3	65.51	64.14
7	0	4	65.82	65.36
-4	13	4	66.04	64.06
-5	17	2	66.91	63.58
6	8	7	66.26	65.77
9	4	8	66.25	70.73
6	3	9	66.69	67.10
-4	16	4	66.90	64.84
-12	13	2	66.97	64.62
-11	16	6	66.21	64.14
1	4	3	66.66	65.07
-1	6	2	66.16	63.58
13	-9	4	66.67	64.06
4	12	4	67.65	69.61
8	2	9	67.35	68.29
-11	13	3	67.22	63.33
-5	6	7	67.05	67.21
6	-5	2	67.70	63.58
16	-5	6	68.60	64.14
1	2	2	68.02	68.22
14	-13	0	68.05	67.86
4	0	1	68.65	77.70
18	-7	4	68.86	70.76
16	-4	5	68.81	70.67
8	7	7	69.29	68.57
-6	11	1	69.95	71.12
8	-7	0	69.14	70.61
13	-5	6	70.94	69.01
6	6	6	70.45	74.01
8	1	7	70.26	70.42
3	4	2	70.17	70.30
-3	8	7	71.05	71.81
-12	16	5	71.97	70.67
-5	8	5	71.52	70.28
11	-5	7	71.11	73.52
10	7	6	71.51	73.35
13	-7	8	71.02	72.64
11	-5	1	71.69	71.12
8	-3	5	71.60	70.28
-2	9	4	72.03	71.60
1	6	7	72.68	73.59
-2	5	8	72.15	72.48
-6	13	8	72.12	72.64
-12	14	1	72.82	71.35
-6	10	2	72.92	72.70
-10	14	3	72.78	70.93

-11	13	4	[illegible]	[illegible]
-8	13	6	72.70	69.01
-6	11	7	72.83	73.52
14	-2	1	72.20	71.35
10	-4	2	72.59	72.70
17	-4	3	72.68	76.20
5	5	9	73.82	75.99
4	4	9	73.33	74.53
5	-3	8	73.08	72.48
4	12	1	73.35	75.23
18	-9	0	73.18	70.59
14	-4	3	73.33	70.93
9	-7	4	73.83	71.60
3	13	5	74.80	76.32
-12	15	3	74.08	74.97
-1	16	1	74.98	75.08
7	9	1	74.26	77.82
9	-9	0	74.47	75.76
11	-4	3	74.49	73.80
15	-3	3	74.71	74.97
-2	10	9	75.38	78.40
-3	5	7	75.05	75.03
8	-5	7	75.26	71.81
0	17	1	75.25	75.54
15	2	1	75.98	77.22
12	0	0	75.02	74.68
10	-2	0	75.00	74.98
16	-15	1	75.48	75.08
2	5	9	76.24	79.82
2	4	10	76.08	79.33
-7	9	2	76.38	76.77
5	-2	7	76.08	75.03
1	1	3	76.40	79.30
10	6	1	76.53	78.49
16	2	2	76.18	77.04
9	0	0	76.92	75.75
16	-5	0	76.55	76.53
16	-11	0	76.36	76.74
12	-12	0	76.73	74.68
17	-17	1	76.40	75.54
9	-2	2	76.13	76.77
5	10	7	77.30	78.04
-13	17	3	77.01	76.20
-4	5	6	77.65	76.56
11	-4	6	77.36	78.02
20	-13	0	77.68	79.14
17	-13	0	77.77	80.52
17	-5	1	77.89	77.50
7	0	1	77.88	80.71
5	-1	6	77.34	76.56
4	9	4	78.61	81.50
1	9	4	78.82	77.38
-1	6	5	78.54	78.40
1	8	8	78.51	78.90
-9	11	1	78.40	76.42
-7	11	6	78.34	78.02
-5	10	9	78.86	82.13
10	-8	9	78.44	78.40
-2	15	1	78.30	78.04
11	-2	1	78.05	76.42
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-1	10	4	79.82	79.80
7	5	8	79.93	81.57
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7	-5	6	79.52	79.17

9	14	2	79.29	82.29
11	-7	0	79.22	79.90
17	-10	0	79.85	78.27
2	0	5	79.79	80.29
7	9	4	80.91	84.47
11	-6	8	80.39	77.68
0	16	2	80.36	81.51
15	-13	1	80.97	78.04
6	-5	5	80.79	78.40
5	2	6	81.42	80.50
13	-12	7	81.91	82.14
-2	7	6	81.47	79.17
10	-5	9	81.74	82.13
8	8	3	81.36	81.49
-4	11	3	81.42	81.13
16	-9	4	81.83	81.06
11	-9	5	81.85	79.79
-6	19	2	82.51	83.98
-12	20	1	82.78	83.78
-10	19	1	82.12	78.79
12	-10	7	82.85	83.02
9	-8	8	82.25	80.84
-5	15	1	82.75	82.38
15	-10	1	82.93	82.38
20	-8	1	82.15	83.78
12	-4	1	82.95	82.54
11	-7	3	82.42	81.13
10	-9	4	82.11	79.80
-3	9	6	83.09	80.55
3	7	8	83.14	85.59
-1	4	10	83.02	81.10
-7	16	4	83.17	81.06
-8	12	1	83.37	82.54
9	-6	6	83.44	80.55
5	5	6	83.55	84.28
4	-3	10	83.36	81.10
7	5	5	84.54	86.50
-2	12	7	84.01	83.02
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5	1	1	84.03	82.80
7	6	1	84.87	84.96
14	-8	1	84.87	82.05
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-1	13	7	85.47	82.14
-6	14	1	85.70	82.05
3	2	4	86.69	87.30
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-8	12	4	86.61	84.38
10	-3	7	86.39	87.82
19	-13	2	86.02	83.98
12	-4	4	86.08	84.38
-7	10	7	87.86	87.82
-5	10	6	87.45	83.86
10	-5	6	87.84	83.86
7	11	2	87.67	89.45
6	-2	2	87.72	85.24
19	-11	3	87.02	89.02
13	-12	4	87.55	85.95
3	2	7	88.87	94.36
3	6	6	88.15	90.76
12	-6	3	88.10	86.27
-1	12	2	89.77	90.42
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10	2	8	89.40	93.23
7	-5	9	89.97	90.76
3	0	9	89.72	91.79
12	6	3	89.62	89.94
12	-1	1	89.25	90.94
10	-2	3	89.06	89.53
-11	12	1	90.61	90.95
-8	10	3	90.97	89.53
-3	11	4	91.20	90.39
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5	11	3	91.43	92.16
7	3	1	91.75	93.33
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7	-1	5	91.16	90.51
3	5	7	92.36	92.65
-2	7	9	92.24	90.76
-2	11	2	92.15	93.62
12	-11	2	92.16	90.42
19	-8	3	92.36	94.08
6	-3	3	92.76	91.65
7	-4	5	92.20	89.94
13	-2	6	92.70	93.17
2	9	5	93.73	93.77
-6	7	5	93.17	90.51
10	0	7	93.29	96.42
5	-5	10	93.37	92.88
5	7	1	93.63	93.98
11	-9	2	93.37	93.62
-2	6	7	94.12	93.89
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8	-4	6	94.17	90.03
6	-4	7	94.77	93.39
6	1	5	94.44	94.75
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6	-2	8	95.10	96.39
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11	-1	0	96.73	97.00
4	8	5	97.32	98.33
5	10	1	97.60	97.67
5	2	3	97.62	99.60
8	-5	4	97.16	98.11
13	-4	5	97.31	95.57
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-10	19	4	99.63	100.45
7	-2	0	100.53	101.36
14	-6	2	100.93	100.14
14	-13	3	100.70	99.50
19	-9	4	100.94	100.45
-1	8	6	100.91	102.88
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-6	13	5	102.40	101.46
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8	-2	4	103.32	104.04
16	-7	5	103.53	100.64
10	2	2	103.31	104.72
13	3	4	103.43	102.41
13	-7	5	104.18	101.46

7	-6	4	104.09	101.30
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9	3	3	105.16	106.85
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12	1	5	106.96	109.47
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8	6	5	106.02	109.21
1	13	6	106.58	108.46
9	-5	2	107.84	107.25
8	-4	3	107.45	104.45
2	5	6	107.99	107.71
-1	9	2	108.28	109.48
9	-3	3	109.91	108.68
10	-10	5	109.36	106.44
-4	9	2	109.32	107.25
0	10	2	109.24	111.95
6	8	4	111.08	113.67
-6	9	3	111.75	108.68
9	-8	2	112.73	109.48
11	3	5	112.52	115.03
5	-2	1	113.57	111.20
14	-6	5	113.75	112.49
-3	14	4	113.31	113.07
-3	5	1	113.23	111.20
-1	8	3	114.57	114.03
1	13	3	114.86	117.03
14	-11	4	115.32	113.07
11	2	3	115.35	117.76
0	5	7	115.59	115.54
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10	-10	2	116.01	111.95
5	-1	0	117.49	118.68
8	-3	2	117.08	116.30
8	-7	3	117.80	114.03
5	-5	7	117.99	115.54
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15	-3	0	119.10	122.09
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9	4	2	119.01	122.92
-4	11	6	119.67	120.87
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10	-8	3	121.45	120.72
9	-1	4	121.89	123.60
0	7	2	121.39	123.04
3	0	3	122.83	121.17
7	0	7	122.79	124.39
-5	11	2	122.51	120.66
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11	-2	7	122.38	124.88
11	-7	6	123.56	120.87
11	-6	2	124.53	120.66
12	-6	0	125.13	126.86
10	-8	0	125.11	128.23
1	6	4	126.20	126.61
0	10	8	126.38	127.92
-8	9	4	126.60	123.60
7	-7	2	127.66	123.04
9	-6	0	128.96	132.10
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14	-1	3	13[illegible]	[illegible]
7	4	3	133.43	139.55
8	7	1	134.76	137.18
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4	9	1	135.86	139.64
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11	-2	4	138.03	141.16
3	7	2	138.10	144.51
7	6	4	139.03	142.29
0	0	9	140.53	141.01
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1	8	5	143.14	144.72
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4	2	2	148.29	153.67
12	-10	1	149.06	146.37
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6	2	1	149.22	152.69
4	-1	5	152.39	155.21
1	3	7	153.85	160.13
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14	-11	1	154.37	151.47
7	1	3	162.38	165.98
0	5	1	164.59	172.37
2	-1	3	165.63	172.41
9	-1	1	170.23	172.84
6	-2	5	170.46	172.74
2	9	2	170.19	175.91
3	5	1	171.56	179.22
3	2	1	171.20	173.50
-2	6	4	171.70	171.29
-1	4	4	171.03	173.93
4	-3	4	172.36	173.93
-8	9	1	172.90	172.84
-4	6	5	173.20	172.74
7	-5	0	175.43	184.78
5	-5	1	175.83	172.37
4	4	3	176.13	185.10
10	-5	0	177.35	186.79
6	3	6	178.93	186.82
2	4	1	179.49	194.01
10	0	1	182.14	186.27
3	1	5	191.80	200.32
7	-1	2	200.92	211.84
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0	0	6	211.93	217.85
1	3	4	215.29	229.99
2	4	4	222.23	240.62
10	-3	1	228.24	231.03
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-3	9	3	238.62	248.25
9	-6	3	242.13	248.25