GSA Data Repository Table 1: Field data for Crack and Rock characteristics. See text of manuscript for

¹Each clast was assigned a unique number for each field trip. Letters indicate a different crack-set or c ² Crack Width (mm) : i = <.1; t = .1-1; m = 1-3; I = 3+

≽ separated

³ Crack type: B = longitudinal; J = planar surface-parallel; F = fabric; O = other; M = meridional

<u> →</u>3 = <u> </u> (

⁵ Unless otherwise noted, crack dip was 90° +/- 30°

<u>₽</u>=_(

--- = data not collected for this property

				Clast	Clast
	Clast	Age of	Rock	Width	Length
	Number ¹	Surface	Туре	(cm)	(cm)
Site 1	1	Late Pleistocene	basalt	13	17
Angela's Flow	2	Late Pleistocene	basalt	10	15.5
Cima	3	Late Pleistocene	basalt	12	14
	4	Late Pleistocene	basalt	22	31
	5	Late Pleistocene	basalt	21	28.5
	6	Late Pleistocene	basalt	17	28
	7	Late Pleistocene	basalt	24	30
	8	Late Pleistocene	basalt	18	31
	9	Late Pleistocene	basalt	14.5	25.5
	10	Late Pleistocene	basalt	10	11
	11	Late Pleistocene	basalt	5	8.5
	12	Late Pleistocene	basalt	32	34
	13	Late Pleistocene	basalt	8	9
	14	Late Pleistocene	basalt	6	6
	15	Late Pleistocene	basalt	8	10
	16	Late Pleistocene	basalt	6.5	14
	17	Late Pleistocene	basalt	9	14
	18	Late Pleistocene	basalt	8	12.5
	19	Late Pleistocene	basalt	8	12
	20	Late Pleistocene	basalt	6	7
	21	Late Pleistocene	basalt	18	34
	22	Late Pleistocene	basalt	19	24
	23	Late Pleistocene	basalt	14	22
	25	Late Pleistocene	basalt	23	38
	26	Late Pleistocene	basalt	20	38
	27a	Late Pleistocene	basalt	22	31
	27b	Late Pleistocene	basalt	22	31
	28	Late Pleistocene	basalt	13.5	19
Site 2	1a	Early Holocene	gneiss	30	77
McDonald's	1b	Early Holocene	gneiss	30	77
VX Fans	2a	Early Holocene	metasedimentary	34	51
Providence Mtn	2b	Early Holocene	metasedimentary	34	51
	3a	Early Holocene	volcanic	18	35
	3b	Early Holocene	volcanic	18	35
	4a	Early Holocene	volcanic	33	44
	4b	Early Holocene	volcanic	33	44
	5	Early Holocene	granite	30	33
	6a	Early Holocene	limestone	37	40
	6b	Early Holocene	limestone	37	40

	7a	Early Holocene	volcanic	16	31
	7b	Early Holocene	volcanic	16	31
	8a	Early Holocene	limestone	28	37
	8b	Early Holocene	limestone	28	37
	9	Early Holocene	granite	18	25
	10a	Early Holocene	limestone	18	22
	10b	Early Holocene	limestone	18	22
	11a	Early Holocene	volcanic	27	35
	11b	Early Holocene	volcanic	27	35
	12a	Early Holocene	granite	50	54
	12b	Early Holocene	granite	50	54
	12c	Early Holocene	granite	50	54
	13	Early Holocene	volcanic	18	40
	14a	Early Holocene	granite	12	15
	14b	Early Holocene	granite	12	15
	140 15a	Early Holocene	granite	12	34
	15a 15b	-	granite	12	34 34
	16a	Early Holocene	•	21	
		Early Holocene	granite		49 40
	16b	Early Holocene	granite	21	49
	16c	Early Holocene	granite	21	49
	17a	Early Holocene	granite	21	36
	17b	Early Holocene	granite	21	36
	17c	Early Holocene	granite	21	36
	17d	Early Holocene	granite	21	36
	18a	Early Holocene	mvolcanic	31	60
	18b	Early Holocene	mvolcanic	31	60
	18c	Early Holocene	mvolcanic	31	60
	19a	Early Holocene	volcanic	20	35
	19b	Early Holocene	volcanic	20	35
Site 3	1a	Early Holocene	granite	36	57
Eric's	1b	Early Holocene	granite	36	57
QM-QF6	2	Early Holocene	granite	10	11.5
Providence Mtn	3	Early Holocene	granite	13.5	15.5
	4	Early Holocene	granite	12	34
	5	Early Holocene	granite	13	20
	6	Early Holocene	granite	12	25
	7	Early Holocene	granite	5	5
	8	Early Holocene	granite	29	39
	9a	Early Holocene	granite	23	40
	9b	Early Holocene	granite	23	40
	10a	Early Holocene	granite	11	26
	10b	Early Holocene	granite	11	26
	11	Early Holocene	granite	12	30
	12	Early Holocene	granite	10	29
	13a	Early Holocene	granite	36	37
	13b	Early Holocene	granite	36	37
		•	-		46
	14a 14b	Early Holocene	granite	30 30	46 46
		Early Holocene	granite	30	
	15a 15b	Early Holocene	granite	29	44
	15b	Early Holocene	granite	29	44
	16	Early Holocene	granite	34	11
	17	Early Holocene	granite	27	40

	40			0.4	
	18	Early Holocene	granite	24	57
	19	Early Holocene	granite	59	91
	20a	Early Holocene	granite	45	57
	20b	Early Holocene	granite	45	57
	21	Early Holocene	granite	13	17
	22a	Early Holocene	granite	20	30
.	22b	Early Holocene	granite	20	30
Site 4	1	Late Pleistocene	basalt	4.5	6
Continuation of	2	Late Pleistocene	basalt	6	8
Angela's Flow	3	Late Pleistocene	basalt	9	9.5
Cima	4	Late Pleistocene	basalt	10	16
	5	Late Pleistocene	basalt	16	21
	6	Late Pleistocene	basalt	19	24
	7	Late Pleistocene	basalt	3.5	11
	8a	Late Pleistocene	basalt	12	14.5
	8b	Late Pleistocene	basalt	12	14.5
	9	Late Pleistocene	basalt	7.5	12
	10	Late Pleistocene	basalt	16.5	22
	11	Late Pleistocene	basalt	6	9
	12	Late Pleistocene	basalt	19	28
	13	Late Pleistocene	basalt	10	15
	14	Late Pleistocene	basalt	12	21
	15	Late Pleistocene	basalt	8	17
	16	Late Pleistocene	basalt	13	14
	17	Late Pleistocene	basalt	8	11
	18	Late Pleistocene	basalt	7	11.5
	19	Late Pleistocene	basalt	13	13.5
	20	Late Pleistocene	basalt	13	16
	21	Late Pleistocene	basalt	27	28
	22	Late Pleistocene	basalt	9	10
	23	Late Pleistocene	basalt	7	10
	24	Late Pleistocene	basalt	5	11
Site 5	1	Middle to Late Holocene	quartzite	10	13
Palo Duro	2a	Middle to Late Holocene	quartzite	27	34
	2b	Middle to Late Holocene	quartzite	27	34
	3	Middle to Late Holocene	volcanic	10	13
	4	Middle to Late Holocene	limestone	14	17
	5a	Middle to Late Holocene	basalt	70	110
	5b	Middle to Late Holocene	basalt	70	110
	6a	Middle to Late Holocene	granite	16	27
	6b	Middle to Late Holocene	granite	16	27
	7	Middle to Late Holocene	sandstone	11	20
	8a	Middle to Late Holocene	sandstone	22	36
	8b	Middle to Late Holocene	sandstone	22	36
	9	Middle to Late Holocene	limestone	24	34
	10	Middle to Late Holocene	basalt	14	31
	11a	Middle to Late Holocene	volcanic	19	21
	11b	Middle to Late Holocene	volcanic	19	21
	12	Middle to Late Holocene	basalt	16	26
	13a	Middle to Late Holocene	sandstone	20	28
	13b	Middle to Late Holocene	sandstone	20	28
	14	Middle to Late Holocene	basalt	36	50

	15	Middle to Late Holocene	limestone	12	19
	16a	Middle to Late Holocene	mvolcanic	17	88
	16b	Middle to Late Holocene	mvolcanic	17	88
	17	Middle to Late Holocene	sandstone	11	27
	18a	Middle to Late Holocene	limestone	28	51
	18b	Middle to Late Holocene	limestone	28	51
	18c	Middle to Late Holocene	limestone	28	51
	19a	Middle to Late Holocene	limestone	16	30
	19b	Middle to Late Holocene	limestone	16	30
	19c	Middle to Late Holocene	limestone	16	30
	20a	Middle to Late Holocene	limestone	10	12
	20b	Middle to Late Holocene	limestone	10	12
	21	Middle to Late Holocene	mvolcanic	10	22
	22	Middle to Late Holocene	sandstone	4	22
	23a	Middle to Late Holocene	basalt	37	54
	23b	Middle to Late Holocene	basalt	37	54
	24a	Middle to Late Holocene	sandstone	23	28
	24b	Middle to Late Holocene	sandstone	23	28
	25	Middle to Late Holocene	basalt	12	27
	26	Middle to Late Holocene	gneiss	23	40
	27a	Middle to Late Holocene	granite	27	39
	27b	Middle to Late Holocene	granite	27	39
	27c	Middle to Late Holocene	granite	27	39
	28	Middle to Late Holocene	basalt	14	27
	29	Middle to Late Holocene	sandstone	14	27
	30a	Middle to Late Holocene	sandstone	11	16
	30b	Middle to Late Holocene	sandstone	11	16
	31a	Middle to Late Holocene	sandstone	7	23
	31b	Middle to Late Holocene	sandstone	7	23
	32	Middle to Late Holocene	limestone	17	22
	33a	Middle to Late Holocene	limestone	13	17
	33b	Middle to Late Holocene	limestone	13	17
	34	Middle to Late Holocene	basalt	12	22
Site 6	1a	Early Holocene	granite	20	43
San Bernardino	1b	Early Holocene	granite	20	43
	2	Early Holocene	granite	24	48
	3	Early Holocene	granite	39	46
	4a	Early Holocene	limestone	36	47
	4b	Early Holocene	limestone	36	47
	5a	Early Holocene	granite	58	73
	5b	Early Holocene	granite	58	73
	6a	Early Holocene	gneiss	31	36
	6b	Early Holocene	gneiss	31	36
	7	Early Holocene	granite	44	43
	8a	Early Holocene	granite	80	130
	8b	Early Holocene	granite	80	130
	9a	Early Holocene	gneiss	70	110
	9b	Early Holocene	gneiss	70	110
	9c	Early Holocene	gneiss	70	110
	10a	Early Holocene	granite	65	108
	10a	Early Holocene	granite	65	108
	11a	Early Holocene	metagranite	86	143
	iia		metagranite	00	140

11b	Early Holocene	metagranite	86	143
12a	Early Holocene	metagranite	50	80
12b	Early Holocene	metagranite	50	80
13	Early Holocene	metagranite	53	100
14a	Early Holocene	granite	74	93
14b	Early Holocene	granite	74	93
14c	Early Holocene	granite	74	93
15a	Early Holocene	granite	46	80
15b	Early Holocene	granite	46	80
16a	Early Holocene	gneiss	33	84
16b	Early Holocene	gneiss	33	84
17a	Early Holocene	granite	56	59
17b	Early Holocene	granite	56	59
17c	Early Holocene	granite	56	59 59
18a	-	-	25	23
	Early Holocene	gneiss		
18b	Early Holocene	gneiss	25	23
19	Early Holocene	metagranite	44	52
20	Early Holocene	granite	53	90
21	Early Holocene	granite	65	74
22a	Early Holocene	granite	62	80
22b	Early Holocene	granite	62	80
23a	Early Holocene	metagranite	47	88
23b	Early Holocene	metagranite	47	88
23c	Early Holocene	metagranite	47	88
24a	Early Holocene	granite	48	57
24b	Early Holocene	granite	48	57
1	Early Holocene	quartzite	19	30
2a	Early to Middle Pleistocene	quartzite	17	24
2b	Early to Middle Pleistocene	quartzite	17	24
3	Early to Middle Pleistocene	quartzite	14	22
4a	Early to Middle Pleistocene	quartzite	19	24
4b	Early to Middle Pleistocene	quartzite	19	24
5	Early to Middle Pleistocene	quartzite	12	27
6a	Early to Middle Pleistocene	quartzite	15	34
6b	Early to Middle Pleistocene	quartzite	15	34
7a	Early to Middle Pleistocene	quartzite	8	22
7b	Early to Middle Pleistocene	quartzite	8	22
8a	Early to Middle Pleistocene	metasedimentary	26	32
8b	Early to Middle Pleistocene	metasedimentary	26	32
9a	Early to Middle Pleistocene	metasedimentary	44	77
9b	Early to Middle Pleistocene	metasedimentary	44	77
9c	Early to Middle Pleistocene	metasedimentary	44	77
10a	Early to Middle Pleistocene	quartzite	40	60
10b	Early to Middle Pleistocene	quartzite	40	60
11	Early to Middle Pleistocene	quartzite	14	22
12a	Early to Middle Pleistocene	quartzite	32	31
12b	Early to Middle Pleistocene	quartzite	32	31
12c	Early to Middle Pleistocene	quartzite	32	31
13a	Early to Middle Pleistocene	quartzite	45	49
13a 13b	Early to Middle Pleistocene	quartzite	45 45	49 49
14a	Early to Middle Pleistocene	•	45 30	49 57
14a 14b	Early to Middle Pleistocene	quartzite quartzite	30 30	57
0-10		qualizite	50	51

Site 7 Harrison LTER west Sevilleta

15a	Early to Middle Pleistocene	quartzite	19	21
15b	Early to Middle Pleistocene	quartzite	19	21
16a	Early to Middle Pleistocene	metasedimentary	17	30
16b	Early to Middle Pleistocene	metasedimentary	17	30
17a	Early to Middle Pleistocene	quartzite	34	58
17b	Early to Middle Pleistocene	quartzite	34	58
18a	Early to Middle Pleistocene	quartzite	47	49
18b	Early to Middle Pleistocene	quartzite	47	49
19a	Early to Middle Pleistocene	quartzite	37	79
19b	Early to Middle Pleistocene	quartzite	37	79
19c	Early to Middle Pleistocene	quartzite	37	79
20a	Early to Middle Pleistocene	quartzite	31	66
20b	Early to Middle Pleistocene	quartzite	31	66
21a	Early to Middle Pleistocene	quartzite	33	45
21b	Early to Middle Pleistocene	quartzite	33	45
22	Early to Middle Pleistocene	quartzite	34	55
23	Early to Middle Pleistocene	metasedimentary	21	25
1	Early to Middle Pleistocene	granite	44	50
2	Early Holocene	granite	36	41
3a	Early Holocene	granite	43	44
3b	Early Holocene	granite	43	44
4a	Early Holocene	granite	56	62
4b	Early Holocene	granite	56	62
5a	Early Holocene	granite	53	73
5b	Early Holocene	granite	53	73
6a	Early Holocene	granite	47	62
6b	Early Holocene	granite	47	62
7a	Early Holocene	granite	36	42
7b	Early Holocene	granite	36	42
8a	Early Holocene	granite	40	57
8b	Early Holocene	granite	40	57
8c	Early Holocene	granite	40	57
9a	Early Holocene	granite	41	57
9b	Early Holocene	granite	41	57
9c	Early Holocene	granite	41	57
10a	Early Holocene	granite	32	57
10b	Early Holocene	granite	32	57
10c	Early Holocene	granite	32	57
11a	Early Holocene	granite	56	59
11b	Early Holocene	granite	56	59
11c	Early Holocene	granite	56	59
12a	Early Holocene	volcanic	52	55
12b	Early Holocene	volcanic	52	55
13a	Early Holocene	granite	30	77
13b	Early Holocene	granite	30	77
14a	Early Holocene	granite	71	84
14b	Early Holocene	granite	71	84
14c	Early Holocene	granite	71	84
15a	Early Holocene	granite	53	87
15b	Early Holocene	granite	53	87
15c	Early Holocene	granite	53	87
16a	Early Holocene	metagranite	42	53
	-	-		

Site 8 Los Pinos West side

16b	Early Holocene	metagranite	42	53
17	Early Holocene	granite	39	87
18	Early Holocene	granite	42	62
19a	Early Holocene	granite	50	114
19b	Early Holocene	granite	50	114
20	Early Holocene	granite	54	68
21a	Early Holocene	granite	66	68
21b	Early Holocene	granite	66	68
22	Early Holocene	granite	85	104
23a	Early Holocene	granite	45	58
23b	Early Holocene	granite	45	58
23c	Early Holocene	granite	45	58
24	Early Holocene	granite	34	67
25a	Early Holocene	granite	42	60
25b	Early Holocene	granite	42	60
26	Early Holocene	granite	47	69
27	Early Holocene	granite	38	60
28a	Early Holocene	metagranite	44	49
28b	Early Holocene	metagranite	44	49
28c	Early Holocene	metagranite	44	49
29	Early Holocene	granite	52	83
30a	Early Holocene	granite	71	78
30b	Early Holocene	granite	71	78
31a	Early Holocene	granite	33	52
31b	Early Holocene	granite	33	52
32a	Early Holocene	granite	66	80
32b	Early Holocene	granite	66	80
33a	Early Holocene	granite	40	42
33b	Early Holocene	granite	40	42
33c	Early Holocene	granite	40	42
34	Early Holocene	granite	57	98
35a	Early Holocene	granite	62	101
35b	Early Holocene	granite	62	101
36a	Early Holocene	granite	54	60
36b	Early Holocene	granite	54	60
37a	Early Holocene	granite	42	63
37b	Early Holocene	granite	42	63
38a	Early Holocene	granite	45	52
38b	Early Holocene	granite	45	52
39a	Early Holocene	granite	46	54
39b	Early Holocene	granite	46	54
39c	Early Holocene	granite	46	54
40a	Early Holocene	granite	47	64
40b	Early Holocene	granite	47	64
41a	Early Holocene	gneiss	41	66
41b	Early Holocene	gneiss	41	66
41c	Early Holocene	gneiss	41	66
42a	Early Holocene	granite	58	66
42b	Early Holocene	granite	58	66
42c	Early Holocene	granite	58	66
43a	Early Holocene	granite	22	53
43b	Early Holocene	granite	22	53

	44a	Early Holocene	granite	39	42
	44b	Early Holocene	granite	39	42
	45a	Early Holocene	granite	56	77
	45b	Early Holocene	granite	56	77
	45c	Early Holocene	granite	56	77
	46	Early Holocene	granite	58	70
	47a	Early Holocene	granite	43	69
	47b	Early Holocene	granite	43	69
	48a	Early Holocene	granite	35	52
	48b	Early Holocene	granite	35	52
	49a	Early Holocene	granite	56	74
	49b	Early Holocene	granite	56	74
	49c	Early Holocene	granite	56	74
	50a	Early Holocene	granite	38	47
	50b	Early Holocene	granite	38	47
	51a	Early Holocene	granite	86	99
	51b	Early Holocene	granite	86	99
	51c	Early Holocene	granite	86	99
	52a	Early Holocene	granite	62	90
	52b	Early Holocene	granite	62	90
	53a	Early Holocene	granite	47	113
	53b	Early Holocene	granite	47	113
	53c	Early Holocene	granite	47	113
Site 9	1a	Late Pleistocene	granite	86	114
Sandia Mountai	1b	Late Pleistocene	granite	86	114
Piedmont	2a	Late Pleistocene	granite	54	68
above Elrich	2b	Late Pleistocene	granite	54	68
	3a	Late Pleistocene	granite	50	55
	3b	Late Pleistocene	granite	50	55
	3c	Late Pleistocene	granite	50	55
	4a	Late Pleistocene	granite	34	48
	4b	Late Pleistocene	granite	34	48
	5	Late Pleistocene	granite	170	217
	6a	Late Pleistocene	granite	43	90
	6b	Late Pleistocene	granite	43	90
	7a	Late Pleistocene	granite	100	180
	7b	Late Pleistocene	granite	100	180
	8a	Late Pleistocene	granite	70	90
	8b	Late Pleistocene	granite	70	90
	9a	Late Pleistocene	granite	44	92
	9b	Late Pleistocene	granite	44	92
	9c	Late Pleistocene	granite	44	92
	10a	Late Pleistocene	granite	70	160
	10b	Late Pleistocene	granite	70	160
	11a	Late Pleistocene	granite	87	90
	11b	Late Pleistocene	granite	87	90 90
	11c	Late Pleistocene	granite	87	90 90
	11d	Late Pleistocene	granite	87	90 90
	12a	Late Pleistocene	granite	90	90 107
	12a 12b	Late Pleistocene	granite	90 90	107
	120 13a	Late Pleistocene	granite	90 60	68
	13a 13b	Late Pleistocene	granite	60 60	68
	150		granite	00	00

	13c	Lata Disistegana	grapita	60	68
Site 10	130 1a	Late Pleistocene Latest Holocene	granite volcanic	18	32
San Lorenzo	1b	Latest Holocene	volcanic	18	32
Wash	2	Latest Holocene	conglomerate	22	27
Wash	2 3a	Latest Holocene	volcanic	17	25
	3b	Latest Holocene	volcanic	17	25 25
	3c	Latest Holocene	volcanic	17	25 25
	4a	Latest Holocene	volcanic	25	23 44
	4a 4b	Latest Holocene	volcanic	25	44
	40 4c	Latest Holocene	volcanic	25	44
	40 4d	Latest Holocene	volcanic	25 25	44
	4u 4e	Latest Holocene	volcanic	25	44
	40 5a	Latest Holocene	basalt	26	44
	5a 5b	Latest Holocene	basalt	26	40 46
	50 50	Latest Holocene	basalt	26	40 46
	50 5d	Latest Holocene	basalt	26	40 46
	50 6a	Latest Holocene	volcanic	20	40 28
	6b	Latest Holocene	volcanic	20	28
	60 60	Latest Holocene	volcanic	20	28
	6d	Latest Holocene	volcanic	20	28 28
	00 7a	Latest Holocene	volcanic	20 14	20 21
	7a 7b			14	21
		Latest Holocene	volcanic		21
	7c	Latest Holocene	volcanic	14	
	7d	Latest Holocene	volcanic	14	21
	8a	Latest Holocene	basalt	19	21
	8b	Latest Holocene	basalt	19	21
	8c	Latest Holocene	basalt	19	21
	9a	Latest Holocene	volcanic	15	21
	9b	Latest Holocene	volcanic	15	21
	10a	Latest Holocene	volcanic	24	33
	10b	Latest Holocene	volcanic	24	33
	10c	Latest Holocene	volcanic	24	33
	11a	Latest Holocene	volcanic	25	28
	11b	Latest Holocene	volcanic	25	28
	11c	Latest Holocene	volcanic	25	28
	12a	Latest Holocene	volcanic	25	30
	12b	Latest Holocene	volcanic	25	30
	12c	Latest Holocene	volcanic	25	30
	12d	Latest Holocene	volcanic	25	30
	13a	Latest Holocene	conglomerate	21	24
	13b	Latest Holocene	conglomerate	21	24
	14a	Latest Holocene	conglomerate	20	42
	14b	Latest Holocene	conglomerate	20	42
	15a	Latest Holocene	conglomerate	37	38
	15b	Latest Holocene	conglomerate	37	38
	15c	Latest Holocene	conglomerate	37	38
	16a	Latest Holocene	volcanic	14	21
	16b	Latest Holocene	volcanic	14	21
	17a	Latest Holocene	volcanic	16	22
	17b	Latest Holocene	volcanic	16	22
	18a	Latest Holocene	conglomerate	23	32
	18b	Latest Holocene	conglomerate	23	32

19a	Latest Holocene	volcanic	28	29
19b	Latest Holocene	volcanic	28	29
19c	Latest Holocene	volcanic	28	29
19d	Latest Holocene	volcanic	28	29
20a	Latest Holocene	volcanic	19	26
20b	Latest Holocene	volcanic	19	26
20c	Latest Holocene	volcanic	19	26
21a	Latest Holocene	volcanic	20	25
21b	Latest Holocene	volcanic	20	25
21c	Latest Holocene	volcanic	20	25
22a	Latest Holocene	volcanic	29	34
22b	Latest Holocene	volcanic	29	34
22c	Latest Holocene	volcanic	29	34
23a	Latest Holocene	conglomerate	35	49
23b	Latest Holocene	conglomerate	35	49
23c	Latest Holocene	conglomerate	35	49
23d	Latest Holocene	conglomerate	35	49
24a	Latest Holocene	volcanic	15	23
24b	Latest Holocene	volcanic	15	23
25a	Latest Holocene	volcanic	14	22
25b	Latest Holocene	volcanic	14	22
25c	Latest Holocene	volcanic	14	22
26a	Latest Holocene	volcanic	29	48
26b	Latest Holocene	volcanic	29	48
26c	Latest Holocene	volcanic	29	48
27a	Latest Holocene	volcanic	16	21
27b	Latest Holocene	volcanic	16	21
28a	Latest Holocene	conglomerate	17	23
28b	Latest Holocene	conglomerate	17	23
28c	Latest Holocene	conglomerate	17	23
29a	Latest Holocene	conglomerate	28	45
29b	Latest Holocene	conglomerate	28	45
29c	Latest Holocene	conglomerate	28	45
30a	Latest Holocene	volcanic	16	26
30b	Latest Holocene	volcanic	16	26
30c	Latest Holocene	volcanic	16	26
30d	Latest Holocene	volcanic	16	26
30e	Latest Holocene	volcanic	16	26
31a	Latest Holocene	basalt	17	20
31b	Latest Holocene	basalt	17	20
32a	Latest Holocene	volcanic	16	29
32b	Latest Holocene	volcanic	16	29
32c	Latest Holocene	volcanic	16	29
33a	Latest Holocene	volcanic	30	30
33b	Latest Holocene	volcanic	30	30
33c	Latest Holocene	volcanic	30	30
34a	Latest Holocene	volcanic	25	40
34b	Latest Holocene	volcanic	25	40
34c	Latest Holocene	volcanic	25	40
35a	Latest Holocene	volcanic	21	26
35b	Latest Holocene	volcanic	21	26
35c	Latest Holocene	volcanic	21	26
		, cicalito	<u> </u>	20

36a	Latest Holocene	volcanic	35	60
36b	Latest Holocene	volcanic	35	60
36c	Latest Holocene	volcanic	35	60
37a	Latest Holocene	volcanic	23	35
37b	Latest Holocene	volcanic	23	35
37c	Latest Holocene	volcanic	23	35
38a	Latest Holocene	volcanic	27	52
38b	Latest Holocene	volcanic	27	52
38c	Latest Holocene	volcanic	27	52
38d	Latest Holocene	volcanic	27	52
39a	Latest Holocene	volcanic	18	27
39b	Latest Holocene	volcanic	18	27
39c	Latest Holocene	volcanic	18	27
40a	Latest Holocene	conglomerate	80	115
40b	Latest Holocene	conglomerate	80	115
40c	Latest Holocene	conglomerate	80	115
40d	Latest Holocene	conglomerate	80	115
41a	Latest Holocene	sandstone	25	30
41b	Latest Holocene	sandstone	25	30
42a	Latest Holocene	volcanic	21	37
42b	Latest Holocene	volcanic	21	37
42c	Latest Holocene	volcanic	21	37
43a	Latest Holocene	volcanic	25	31
43b	Latest Holocene	volcanic	25	31
43c	Latest Holocene	volcanic	25	31
44a	Latest Holocene	conglomerate	40	50
44b	Latest Holocene	conglomerate	40	50
44c	Latest Holocene	conglomerate	40	50
45a	Latest Holocene	sandstone	23	33
45b	Latest Holocene	sandstone	23	33
46a	Latest Holocene	conglomerate	25	30
46b	Latest Holocene	conglomerate	25	30
47a	Latest Holocene	conglomerate	26	45
47b	Latest Holocene	conglomerate	26	45
48a	Latest Holocene	conglomerate	34	46
48b	Latest Holocene	conglomerate	34	46
48c	Latest Holocene	conglomerate	34	46
49a	Latest Holocene	sandstone	25	42
49b	Latest Holocene	sandstone	25	42
49c	Latest Holocene	sandstone	25	42
50a	Latest Holocene	volcanic	25	29
50b	Latest Holocene	volcanic	25	29
50c	Latest Holocene	volcanic	25	29
51a	Latest Holocene	volcanic	19	27
51b	Latest Holocene	volcanic	19	27
51c	Latest Holocene	volcanic	19	27
52a	Latest Holocene	volcanic	22	23
52b	Latest Holocene	volcanic	22	23
53a	Latest Holocene	sandstone	43	51
53b	Latest Holocene	sandstone	43	51
53c	Latest Holocene	sandstone	43	51
54a	Latest Holocene	volcanic	21	30
0-10		voicanic	21	50

	54b	Latest Holocene	volcanic	21	30
	54c	Latest Holocene	volcanic	21	30
	55a	Latest Holocene	volcanic	37	47
	55b	Latest Holocene	volcanic	37	47
	55c	Latest Holocene	volcanic	37	47
Site 11	1a	Latest Holocene	granite	25	32
Harquakala	1b	Early-Mid Holocene	granite	25	32
Eagle Eye Fan	2	Early-Mid Holocene	granite	26	35
Lagie Lye i all	2 3a	Early-Mid Holocene	granite	45	89
	3b	Early-Mid Holocene	granite	45	89
	4	Early-Mid Holocene	gneiss	35	46
	- 5a	Early-Mid Holocene	granite	18	34
	5b	Early-Mid Holocene	granite	18	34
	50 50	Early-Mid Holocene	granite	18	34
	5d	Early-Mid Holocene	granite	18	34
	6a	Early-Mid Holocene	granite	36	54
	6b	Early-Mid Holocene	granite	36	54
	60 60	Early-Mid Holocene	granite	36	54 54
	6d	-	-	36	54 54
		Early-Mid Holocene	granite	30 24	34 31
	7a 7h	Early-Mid Holocene	metagranite		
	7b 7a	Early-Mid Holocene	metagranite	24	31
	7c	Early-Mid Holocene	metagranite	24	31
	8a	Early-Mid Holocene	metagranite	40	37
	8b	Early-Mid Holocene	metagranite	40	37
	8c	Early-Mid Holocene	metagranite	40	37
	8d	Early-Mid Holocene	metagranite	40	37
	9a	Early-Mid Holocene	granite	22	42
	9b	Early-Mid Holocene	granite	22	42
	9c	Early-Mid Holocene	granite	22	42
	10a	Early-Mid Holocene	granite	30	32
	10b	Early-Mid Holocene	granite	30	32
	11a	Early-Mid Holocene	granite	37	52
	11b	Early-Mid Holocene	granite	37	52
	11c	Early-Mid Holocene	granite	37	52
	11d	Early-Mid Holocene	granite	37	52
	11e	Early-Mid Holocene	granite	37	52
	12a	Early-Mid Holocene	gneiss	10	34
	12b	Early-Mid Holocene	gneiss	10	34
	13a	Early-Mid Holocene	granite	75	98
	13b	Early-Mid Holocene	granite	75	98
	13c	Early-Mid Holocene	granite	75	98
	13d	Early-Mid Holocene	granite	75	98
	13e	Early-Mid Holocene	granite	75	98
	14a	Early-Mid Holocene	granite	28	44
	14b	Early-Mid Holocene	granite	28	44
	14c	Early-Mid Holocene	granite	28	44
	15	Early-Mid Holocene	granite	33	50
	16a	Early-Mid Holocene	granite	47	59
	16b	Early-Mid Holocene	granite	47	59
	16c	Early-Mid Holocene	granite	47	59
	16d	Early-Mid Holocene	granite	47	59
	16e	Early-Mid Holocene	granite	47	59

17a	Early-Mid Holocene	metagranite	53	110
17b	Early-Mid Holocene	metagranite	53	110
17c	Early-Mid Holocene	metagranite	53	110
18a	Early-Mid Holocene	metagranite	28	51
18b	Early-Mid Holocene	metagranite	28	51
18c	Early-Mid Holocene	metagranite	28	51
18d	Early-Mid Holocene	metagranite	28	51
18e	Early-Mid Holocene	metagranite	28	51
19a	Early-Mid Holocene	granite	49	62
19b	Early-Mid Holocene	granite	53	62
20a	Early-Mid Holocene	metagranite	24	34
20b	Early-Mid Holocene	metagranite	24	34
21a	Early-Mid Holocene	metagranite	52	60
21b	Early-Mid Holocene	metagranite	52	60
21c	Early-Mid Holocene	metagranite	52	60
21d	Early-Mid Holocene	metagranite	52	60
21e	Early-Mid Holocene	metagranite	52	60
21f	Early-Mid Holocene	metagranite	52	60
22a	Early-Mid Holocene	granite	25	45
22b	Early-Mid Holocene	granite	25	45
22c	Early-Mid Holocene	granite	25	45
22d	Early-Mid Holocene	granite	25	45
23a	Early-Mid Holocene	granite	24	33
23b	Early-Mid Holocene	granite	24	33
24a	Early-Mid Holocene	granite	18	37
24b	Early-Mid Holocene	granite	18	37
24c	Early-Mid Holocene	granite	18	37
25a	Early-Mid Holocene	granite	30	46
25b	Early-Mid Holocene	granite	30	46
26a	Early-Mid Holocene	granite	34	51
26b	Early-Mid Holocene	granite	34	51
26c	Early-Mid Holocene	granite	34	51

or methodology and locations of field sites.

crack observed for the same clast.

Max clast height	Avg. clast Depth	Crack	Crack	Encircles	Strike of clast	Strike
above surface (cm)	below surface (cm)	width ²	Type ³	Stone ⁴	long axis (°)	Fabric (°)
4	3	m	0		225	
3.5	3	I	0		335	
5.5	3	I	0		300	
7.5	6.5	m	0		98	
4	6	m	Μ		300	
5.5	6	I	Μ		40	
3.5	3	m	Μ		90	
11	5	m	J		30	
7.5	4.5	m	М		75	
2.5	4	t	М		45	
2	2.5	m	0		345	
11	4.5	m	0		36	
1	3	t	Μ		10	
2	2	t	0		5	
3.5	3	m	Μ		300	
3	3.5	m	В		237	
2	3	I	М		265	
4	2	t	М		232	
3.5	2.5	t	0		10	
3.5	1.5	t	0		355	
5	4	m	М		105	
10	3	m	Μ		70	
6	3	m	В		170	
15	3.5	I	Μ		82	
24	10	I	М		25	
5	9	m	0			
5	9	m	0			
8	3	m	0		350	
36	5	t	М		295	
36	5	t	J		295	
34	5	m	F		20	100
34	5	m	В		100	100
15	5	I	В		25	
15	5	t	М		25	
10	5	m	0		0	
10	5	t	М		0	
13	5	m	М		90	
20	5	m	М		45	
20	5	m	0		45	

15	5	m	bj	 330	
15	5	t	Ó	 330	
21	0		Õ	20	
		m			
21		m	М	 20	
16		m	М	 55	
4	4.5	m	F	 355	
4	4.5	m	F	 355	
	4.5				
4.5		m	В	 80	
4.5		m	0	 80	
38		m	М	 340	
38		m	М	 340	
38			0	340	
		m			
13	5	t	0	 15	
11	3.5	m	0	 340	
11	3.5	m	М	 340	
4		m	В	 25	
4					
		m	В	 25	
17	5	m	0	 350	
17	5	t	0	 350	
17	5	t	М	 350	
17	5	t	В	 60	
17	5	t	M	 60	
17	5	t	J	 60	
17	5	t	J	 60	
17.5		t	b,f	 25	
17.5		t	F	 25	
		t	F	25	
17.5					
12	5	m	М	 345	
12	5	t	М	 345	
9	5	m	В	 80	
9	5	m	В	 80	
3	3.5		Ō	10	
		m			
3	8	t	М	 300	
9	5	t	М	 350	
2.5	5	m	М	 345	
2	8	I	0	 355	
1	4.5	m	0	305	
22	4	t	М	 340	
7	5	m	0	 305	
7	5	t	В	 305	
3	5	t	0	 310	
3	5		B	310	
		m			
3	5	m	М	 355	
7	4	m	М	 335	
20	5	m	0	 30	
20	5	t	J	 30	
9	5		Õ		
		t		 195	
9	5	t	В	 195	
22	5	t	М	 336	
22	5	t	0	 336	
13		I	0	 330	
14	5		В	 60	
14	5	m	D	 00	

24	5	Ι	М		10	
	5					
42	5	t	М		350	
20	5		0		310	
20	5	t	0		310	
9	9	t	М		295	
6	5	t	0		15	
	5					
6		t	М		15	
2	1	m	М		110	
3	1	m	М		350	
4	1.5	I	М		5	
7	3	I	0		30	
10	3	m	М		260	
5	4	I	М		275	
1.5	2	m	М		28	
6	1.5	m	М		330	
6	1.5	m	0		330	
5	2.5		М		70	
		m				
8	5	I	0		55	
3.5	5	m	М		28	
4.5	9	m	М		15	
4.5	5	I	М		250	
13	2.5	m	0		3	
5.5	4	m	В		60	
7	3.5	m	0		70	
5	2.5	t	0		60	
2.5	4.5	t	0		330	
3	4	t	М		70	
			0			
5.5	1.5	t			320	
9	4	t	0		335	
4	1.5	m	М		2	
2.5	3	t	М		250	
3.5	2	m	В		45	
4	1	t	М	1	95	
10	5	t	BJ	1	30	
10	5	t	J	1	30	
2	2	t	0	3	30	
2	3	i	BJ	3	75	
30	10	t	М	2	15	
30	10	t	0	2	15	
10	5	t	М	4	70	
10	5	t	В	4	70	
3	0.5	m	BJ	4	35	
15	10	m	J	1	345	45
15	10	t	М	1	345	
6	10	I	BO	1	40	
2	3	i	BJ	1	90	
9	7	t	M	3		
9	7	t	0	3		
5	1	i	0	3	290	
	·			1		
16		I	В	I	0	
16		m	F		0	
16	10	i	В	1	30	
	10	•	2	'	20	

1	3	;	Ν.4	1	55	
15	10	i	M F	1 2	20	260
15	10	t	B	2	20	200
7	5	t	Fm		20	20
6	6	t	M	2	90	20
6	6	t	O	1	90	
6	6	i	M	3	90	
5	5	i	В	1	320	
5	5	i	0	3	320	
5	5	i	M	1	320	
4	7	ť	Ö	3		
4	7	t	Ö	3		
4	5	i	Jm	3	40	40
9	5	t.	M	3	350	
24	10	t	M	3	5	
24	10	t	0	1	5	
4	5	t	Bm	2	355	90
4	5	t	F	2	355	90
7	4	i	B	1	3	
9		i	BJ	1	2	4
6		m	M	2	5	
6		i	0	1	5	
6		t	J	0	5	
10	14	t	F	3	355	315
5	3	t	B	3	350	
3	5		M	0	110	
3		i	F	3	110	
3		i	В	1	86	
3	1	t	M	1	86	
6	6	i	0	1	30	
6	7	m	М	4	30	
6	7	m	0	4	30	
6	6	i	М	1	18	
14	3	m	В	4	30	
14	3	m	J	2	30	
17	5	I	bm	0	337	
12	5	I	М	3	88	
14	5	t	F	2		
14	5		М	2		
12	5	I	М	2	9	
12	5	m	0	2	9	
12	5	I	Μ	0	29	
12	5	I	F	0	29	
12	5	t	М	1		
50	5	t	В	1	60	
50	5	I	J	2	60	
61	5	t	В	1	52	
61	5	t	F	1	52	
61	5	t	М	1	52	
89	5	m	В	1	14	
89	5 5	t	J	2	14	
55	5	t	М	2	83	92

55	5	t	F	1	83	
	5					70
43	5	t	BF		79	79
43	5	i	М		79	
51	5	i	М	1	308	308
	5		M	2		000
64		t				
64	5	t	0	1		
64	5	t	0	1		
47	5		М	2	84	
		4				
47	5	t	BJ	2	84	
32	5	m	М	2	109	109
32	5	t	BF	1	109	
18	5	1	М	2		
18	5	I	J	1		
18	5	i	J	1		
6	5	t	0	0		4
6	5	i	F	1		
		, ,			70	100
37	5	t	М		72	130
35	5				58	
35	5	I	М	0	114	
27	5	i	М	1	344	
27	5	I	0	1	344	
43	5	I	0	0	0	62
43	5	i	Bm	1	0	
43	5	I	J	0	0	
		:				
53	5	I	М	2	47	
53	5	t	J	2	47	
8	5	t	М	3	16	
6	5	t	М	2		
	5	۲ ۲	M	1		
6		i .				
8	5	I	М	2		
2	5	t	В	1	295	
2	5	i	0	1	295	
5	5		M	0	280	
8	5	I	BJ	3	284	
8	5	i	Μ	1	284	
5	5		F	0		293
5	5	i	М			
	5			2	210	
12		m	М	3	310	
12	5	m	М	1	310	
18	5	m	0	3	308	
18	5	i	0	2	308	
18	5	i	M	1	308	
27	5	m	М	4	301	
27	5	t	BJ	2	301	
3	5	t	0	3	7	
22	5	t	M	3	•	
	5					
22	5	I	0	2		
22	5	t	J	1		
10	5	Ι	0	0		
10	5	t	M	3	_	
	5			5		
21	5	t	В	2	300	
21	5	t	Μ	1	300	

8	5	t	М	3		
8	5	i	J	2		
6	5	i	М	2	355	
6	5		BF	2	355	
		I				
5	5	t	0	2	357	
5	5		Bm		357	
12	5	m	0	4		
12	5	t	0	1		
14	5	t	BF	2	35	
14	5	t	М	1	35	
14	5	i	0	1	35	
17	5	t	В	2	50	
17	5	t	М	1	50	
9	5	i	В	2	254	
9	5	t	0	2	254	
13	5	i	М	1	22	
9	Ū	t	M	2		
15		t	J	1	50	
16		t	0	2		
19		t	0	2		
19		m	J	2		
27		t	0	2		
27			0			
39		t	В	2	35	
39		m	0	3	35	
18		t	M	3	00	
18		t	0	1		
20		t	JO			
20		t	М	3		
22		m	М	3		
22			M	2		
		m				
22			0	2		
23		m	0	2		
23		t	J	2		
23		m	М	3		
20		t	0	2		
20			0			
20			М			
37		t	J	2		
37		t	М	2		
37		t	0	1		
30		t	М	1		
30		t	0	1		
42		t	В	2	340	
42		i	J	2	340	
		I			040	
59		I	М	1		
59		t	J	1		
59		i	М			
35		t	F	2		
25		-		1		
35		Î	0	I		
35			М			
22		I	М	3		

22	 	F			30
24	 t	Jm	2	330	50
29	 t	M	2		
	 i		2		
16	 :	Bm		349	
16	 I	В	2	349	
10	 t	М	2		
27	 m	М	3		
27	 t	0	3		
63	 	0			
23	 t	М	1		
23	 t	J	1		
23	 t	М	2		
17	 I	0	0	48	
25	 m	0	2		
25	 t	Μ	2		
32	 i	0	1		
30	 t	М	2		
10	 m	F	2		80
10	 t	M	2		
10	 t	M	2		
28	i	M	1		
		O	0		
29	 t				
29	 m	М	2		
12	 t	М	2		
12	 t	М	2		
25	 t	0	2		
25	 t	0	3		
11	 t	М	2		
11	 t	0	3		
11	 i	0	1		
32	 i	М	1		
54	 t	М	2		
54	 	BJ		100	
23	 t	0	2		
23	 i	0	1		
26	 t	М	1		
26	 t	J	2		
27	 i	М	2		
27	 i	M	2		
35	 t	M	2		
35	 ť	0	2		
35	 i	0	2		
36	 +	M	1		
	 t +				
36	 t	0	1		
51	 m	F	2		45
51	 i	J	2		
51	 t	J	3		
28	 i	0	1		
28	 t	0	2		
28	 t	М			
15	 I	В	0	69	
15	 i	М	1		

18	 t	М	1		
18	 t	J	1		
50	 t	Ō	1		
50	 t	M	1		
50	 m	J	3		
26	 t	M	2		
14	 m	M	3		
14	 t	M			
23	 i	O	2		
			Z		
23	 i	M			
38	 t	M	1		
38	 t	0	1		
38	 m	JF	2		
9	 m	0	0		
9	 m	0	0		
30	 I	0	0		
30	 t	0	3		
30	 t	0			
31	 I	М	0		
31	 m	М	3		
58	 t	М	1		60
58	 t	0	2		
58	 t	0	1		
40	 t	0	3		
40	 i	М	3		
20	 m	М	4		
20	 i	0	3		
68	 t	0	2		
68	 t	M	4		
68	 t	J			
54	 t	õ	4		
54	 i	M	2		
60	 I I	M	0		
70	 t	BJ	1	65	
70	 t	M	2	00	
78	 t	BO	2	101	
	 i	M		101	
78 50			1		
50 50	 t	0	4		
50	 i	M	1		
52	 m	0	3		
52	 m	0	3		
52	 i	М	1		
66	 i	М	2		
66	 Ì	В	1		
90	 i	М	1		
90	 	F			
90	 	F			
90	 	F			
53	 t	М	3		
53	 t	0	2		
60	 t	М	2		
60	 t	0	3		

60		+	0	2		
11	5	t t	B	3 2	40	
11	5	L	F	2	40 40	90
12	5	 i	M	1	40	30
7	5	i	JF	1	90	
7	5	i	B	1	90	
7	5	1	M	1	90	
	5	1		2		
16 16		t	JF	Z	285	
16 16			JF		285	
16		i	M	1	285	
16		t	M	2	285	
16		I I	М	1	285	
22		t	М	2	0	
22		t	В	2	0	
22		I	0	1	0	
22		I	М	1	0	
12		t	М	3		
12		t	М	2		
12		t	М	1		
12		t	0	2		
13		i	М	1	315	
13		i	0	1	315	
13		t	0	2	315	
13		i	JF	1	315	
13	5	i	М	1		
13	5	i	0	1		
13	5	i	М	1		
13	5	i	М	1		
13	5	i	0	1		
14		i	М	1		
14		t	J	1		
14		i	Μ	1		
13	10	i	FO	2		34
13	10	i	Μ	1		
13	10	i	J	1		
20	10	t	0	2		
20	10	t	М	1		
20	10	i	J	1		
20	10	t	0	1		
12		t	М	2		
12		m	F	4		310
9		i	0	1	56	
9		i	В	1	56	
26	10	m	0	2		
26	10	i	М	1		
26	10	i	М	1		
5	5	i	F	1		35
5	5	i	Ō	1		
11	5	i	Õ	1		
11	5	i	J	1		
13	10	i	Õ	1		
13	10	i	M	1		
10	10	I	141	·		

10	10	i	М	1		
10	10	i	0	2		
10	10	t	0	1		
10	10	i	М	1		
10	5	i	М	2		
	5	:		1		
10	5	1	0			
10	5	I	J	1		
13	10	i	Μ	1		
13	10	i	J	1		
13	10	i	0	1		
16		t	М	2		71
16		t	J	2		
		ι :				
16			J	1		
15		i	М	1	50	
15		m	М	2	50	
15		m	JF	1	50	
15		i	JF	1	50	
15	5	i	0	1	80	
15	5		B	1	80	
11	5	:				
	5		0	1	60	
11	5	I	В	1	60	
11	5	i	J	1	60	
10	10	t	М	1	78	
10	10	t	В	1	78	
10	10	i	М	2	78	
11	5	i	М	2		
11	5	i	J	1		
12	5	i	0	2		
12	5	i	M	2		
12	5	i	J	2		
25	10	-	F	2		290
		m				290
25	10	m	0	2		
25	10	m	J	4		
9	5	i	В	2	36	
9	5	i	М	1	36	
9	5	t	J	2	36	
9	5	i	М	1	36	
9	5		0	2	36	
11	5	:	Fm	1	00	330
		:				550
11	5		J	1		
11	5	I	F	1		296
11	5	İ	М	1		
11	5	i	0	2		
20	5	i	М	1		
20	5	i	0	1		
20	5	i	М	1		
18	5	t	F	2		55
18	5	t	J	2		
18	5	i	M	2		
5	5	t	J	2		
5	5	i	M	1		
5	5		M	1		
5	J		171	I		

25	10	t	В	1	2	100
25	10	t	J	1		
25	10	i	J	1		
15		i	F	1		105
15		i	М	1		
15		i	0	1		
18	10	t	В	1	16	110
18	10	t	М	1		
18	10	t	0	1		
18	10	t	J	1		
11	5	i	М	2		
11	5	i	0	1		
11	5	i	М	1		
30	10	m	М	2		33
30	10	m	J	2		
30	10	t	М	1		
30	10	t	0	1		
5	10	t	0	2		
5	10	i	0	1		
16	10	i	Fm	2		349
16	10	i	0	1		
16	10	i	М	1		
14	5	i	0	1		
14	5	i	М	1		
14	5	i	J	1		
18	10	i	0	1		24
18	10		0	0		
18	10	t	J	1		
12	5	t	0	1		
12	5	t	М	1		
15	10	t	0	2		
15	10		М	1		
13	10		B	2	10	
13	10	1	0	1		
18	10	1	M	1		
18	10	 ;	0	1		
18	10	i	M	1		
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18	10	1	М	1		
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14	10	1	M	1		
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17 17	10	m		1		45
17 14	10	m +	M	2		 250
14 14	10	t t	0 0	1 1		350
14 14	10 10					
14 11	10	t +	M	2 2		
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11	5	t	J	2		
11	5	t	F	2		
15	10	t	0	1		0
15	10	m	F	2		
15	10	t	М	1		
14	14	i	0	1		
14	14	t	0	3		
9	5	i	М	1		
13	5	i	В	2		110
13	5	t	М	3	77	110
15	5					
14	5	i	В	1	160	
14	5	t	В			
14	5	t	0	3		
14	5	t	J	2		
18	5	t	J	2	15	
	5	ι :			15	
18		1	J	2		
18	5	t	J	2		
18	5		М	1		
12	12	t	J	3		
12	12	m	J	3		
12	12	i	0	1		
20	12	i	0	1		
20	12	i	0	1		
20	12	t	J	2		
20	12	t	J	2		
12	17	t	0	1	358	
12	17	t	0	3		
12	17	i	M	1		
8		t	0	3		
8		t	Õ	3		
21	5	t	Ö	1		
21	5	i	M	1		
21	5	i	J			
	5	1		1		
21	5	t	J	2		
21		t	J	1		
7	8	I	В	1	195	295
7	8	I	J	1	195	295
53	5	t	М	1		
53	5	t	0	1		
53	5	t	0	1		
53	5	t	J	1		
53	5	t	J	1		
28		t	В	1	326	
28		t	0	3		
28		i	F	1		58
50	5	i	В	1	325	
53	5	t	Ō	1		
53	5	t	M	1		
53	5	t	J	1		
53	5	t	J	2		
	5		J	2		
53	σ	t	J	I		

40	5	t	М	1	326	315
40	5	t	М	1		
40	5		F	2		
31		i	В	1	20	70
31		i	J	1		
31		t	J	1		
31		i	J	1		
31		i	JF	1		
22	5		М			
22	5		0			
15	5	i	0	1		0
15	5	i	М	1		
17	5	i	J	1		
17	5	t	J	3		
17	5	t	М	2		
17	5	t	М	2		
17	5	i	0	1		
17	5	i	J	1		
13	5	i	В	1	0	
13	5	t	М	1		
13	5	t	М	2		
13	5	i	J	1		
13	5	i	0	1		
13	5	i	0	1		
12	5	i	В	1	268	
12	5	i	0	1		
12	5	i	М	1		
16	5	m	В	3	298	
16	5	t	0	2		
15	5	i	В	1	82	
15	5	i	М	1		
15	5	t	J	1		

			Spalling	Rock	CaCO3	
o	Ξ.	Ξ.	adjacent stones	Spalling	ring	.,
Strike	Dip	Dip	1=yes	1=yes	1=yes	Varnish
Crack (°)	Fabric (°)	Crack ⁵ (°)	0=no	0=no	0=no	% cover
305			0	0	0	100
55			0	0	0	100
300			0	0	0	100
98			0	0	0	100
20			0	0	0	100
10			0	0	0	100
347			0	0	0	100
100			0	0	0	100
335			0	0	0	100
30			0	0	0	100
62			0	0	0	100
36			0	0	0	100
10			0	0	0	100
120			0	0	0	100
4				0	0	100
320			0	0	0	100
357			0	0	0	100
347			0	0	0	100
65			0	0	0	100
63			0	0	0	100
345			0			100
340			0			100
178			0			100
356			0	0	0	10
25			0	0	1	100
320					0	100
35					0	100
310					1	100
15			1	0	0	10-15
295				0	0	
20			1	0	0	5-75
100			1	0	0	5-75
55				1	0	10-90
340					0	
80			1	0	0	10-70
335			1	0	0	10-70
355			1	1	1	10-50
355			1	0	1	0
70			1	0	1	0

335				1	10-30
40				1	10-30
305				1	
20					
10		1	1	1	
2		1	0	1	0
85		1	0	1	0
75		1	0	1	5-15
320		1	0	1	5-15
5		1	1		5
		1	1		5
345					
70		1	1		
50		1	0		5-40
66		1	0	1	5-50
345		1	0	1	5-50
45			1	1	10-95
10			1	1	10-95
65		1	0		5-95
260		1	0		5-95
25		1	0		5-95
		I	0		
90					50-100
345					50-100
60					50-100
320					50-100
10		1	0		10-50
125		1	0		10-50
330		1	0		10-50
25					
330					
65		1	1	0	20
80		1	1	0	20
80		0	0		0
352		0	0		0
25		0	0		0
340		0	1		0
85			1		10
315			0		0
340			1		10
55		0	0		10-70
310		0	0		
40		0	1		
			I		20-50
305					
355		0	0		20
335					10
35			1		10-50
115			1		10-50
295			1		5
195		1	1		5
346		1	1		0-100
60		1	1		
45		1	1		5
		1	1		
65		I	I		0-10

$\begin{array}{c} 0 \\ 26 \\ 35 \\ 310 \\ 25 \\ 58 \\ 30 \\ 15 \\ 350 \\ 5 \\ 300 \\ 25 \\ 320 \\ 55 \\ 300 \\ 25 \\ 320 \\ 55 \\ 300 \\ 25 \\ 310 \\ 320 \\ 60 \\ 300 \\ 300 \\ 300 \\ 300 \\ 300 \\ 300 \\ 300 \\ 300 \\ 300 \\ 300 \\ 300 \\ 300 \\ 300 \\ 25 \\ 45 \end{array}$		55	$ \begin{array}{c} 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\$	$ \begin{array}{c} 1 \\ 1 \\ 1 \\ 0 \\ 1 \\ 1 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ $	$ \begin{array}{c} \\ \\ \\ \\ 0 \\ 0 \\ 0 \\ 0 \\$	10-20 5-80 5-20 10 10 10 100 100 100 100 100
70			0			
45 10	30 		1	1	1	
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90			0	0	1	
25			1	0	1	
60			1	0	1	
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350			1	0	1	
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35			0	0	1	

348		0	0	0	
260	90	0	0		
200		0	0	0	
3	90	0	0	1	
330		0	0	1	
50		0	0	1	
345		0	0	1	
320		0	0	1	
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345		0	0	1	
35		0	0	1	
224		0	0	1	
2	0	0	0	1	
330		1		1	
330		0	0		
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358	90	0	0	1	
90	90	0	0	1	
30				1	
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2	90	0	1	1	
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110		1		1	
315		0	0	1	
350		0	0	1	
15		0	0	1	
110		0	0	1	
86		0	0	1	
350		0	0	1	
110				1	
355		0	0	1	
110		0	0	1	
341		0	0	1	
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85		1	1	0	0
345		1	1		0
21		1	1		
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341					
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341		1	1		
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94			1	0		
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17			1	1		
341			1	1		
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359			1	1		
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15	68		1	1		
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49			1	1		
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348			0	1		
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4			1	1	1	5
348			1	1	1	5
358			1	1	1	
295			1	1	1	
40			1	1	1	
350			1	0		
275			1	1		
8			1	1	0	
293			1	1		
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335			1	1	1	
31			1	1	1	
315		38	1	1	1	
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14			1	1	1	
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329			1	1		
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297			1	1		
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325		1	1	0	
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109		1	1	0	
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134		1	1	0	
325		1	1	0	
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336		1	1	0	
332		1	1	0	
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69	 50	1	1	0	
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295		1	1	0	
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193			1	1	0	80
318						
347			1	1	0	10
66	35		1	1		50
30	208		1			
160			1	1		10-20
190		60	1			
262			1			
215			1			
66			1	1		50
53						
48						
15						
297			1	1		10
312						
167						
218						25
310						
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212						
99			1	1		10
99						
27						
215			1	1		10
245						
320			1			10
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352						
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175	30		1			
270	300					
351			1	1		
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326 292			I	I		
292 58						
325			1	1		
310			1	1		
356			I 			
312						
40						
314						
V 17						

21	 1	1	 	
3	 		 	
320	 		 	
16	 1	1	 	
18	 		 	
308	 		 	
28	 		 	
88	 		 	
342	 1	1	 10	
58	 		 	
46	 1	1	 30	
22	 		 	
0	 1	1	 5	
8	 		 	
348	 		 	
3	 		 	
273	 		 	
55	 		 	
0	 1	1	 0	
12	 		 	
33	 		 	
67	 		 	
314	 1	1	 15-20	
233	 		 	
295	 1	1	 5	
234	 		 	
348	 		 	
299	 		 5	
37	 		 	
78	 		 5	
352	 		 	
99	 		 	

Data Repository Table 2: Rock Surface Temperature measurements for 9 clasts. Rocks 1-7 are located in the San Bernardino Mountains and data was collected in summer. Rock 8 is located in San Lorenzo Site and data was collected in winter. See manuscript text for details on methodology and field locations.

= no data co	ollected										
Rock #1		Crack types and orientations	o, 336		20						
		Clast length (cm), orientation	38, 93								
		Clast width (cm)		25							
		Ht. Above surface (cm)		24							
		Location	Qyf3;		9						
		Color	Buff ta								
		Ground Surface Aspect		240							
		Ground Surface Slope		8							
		Clast Lithology	Meta-	sed							
	North	East	South		West		Тор		Time	Air Temp (°F)	
	#1	#2	#3		#4		#5			• • • •	
herm. Orient											
ace Orient.											
	Temp °C	Temp °C	Temp	°C	Temp	°C	Temp ^c	ъС			
	40.5	5 58		55		48		53	11:00 AM		
	44	4 58	3	58		53		56	12		
	52	2 58	3	60		60		62	14:30		99
	50) 54	ŀ	56		58		59	15:30		
Rock #2		Crack types and orientations B-axis length (cm), orientation A axis length (cm) Ht. Above surface (cm) Location	o,4 33 Qyf2	,260 26 17							
		Color Ground Surface Aspect Ground Surface Slope	white/ - flat	off w	hite						

Them. Orient = the orientation of a line projected from the top of the clast to the position of the center of the thermometer. face orientation = dip direction, angle of the surface on which the thermometer is located

		Lithology		Meta-	sed							
Therm. Orient Face Orient.			100	South #3	180	West #4	256	Top #5 none 		Time	Air Temp (°F)	
Face Offent.	5 6	 Temp ºC 0 4 0 2	55 60 66 68	Temp	°C 48 53 61 66	Temp	42 52 62	Temp °	С	12:0	0	84 99
Rock #3		Crack types and orientation B-axis length (cm), orientati A axis length (cm) Ht. Above surface (cm) Location Color Ground Surface Aspect Ground Surface Slope Lithology			19 12 n 24 ey							
	North #1	East #2		South #3		West #4		Тор #5		Time	Air Temp (°F)	
Therm. Orient Face Orient.	34 30/34 Temp °C	5 120/90 Temp °C	90	215/9 Temp		275/38 Temp		30/34 Temp °	60 C			
Temp ⁰C	3 4 5 5	4 6 2 6	42 56 58 55		26 46 50 56		26 44 51 58		41 54 57 61	12:0 13:0	0 0 0	71
	5 5	6 5 3 6	54 52 48 38		58 58 57 40		60 58 59 46		60 56 52 38	16:0	0 10 10 10	90

		39	35	34	40	34	19:00		
Rock #4		Crack types and orie B-axis length (cm), o A axis length (cm) Ht. Above surface (c Location Color Ground Surface Asp Ground Surface Slop Lithology	rientation m) Bla Da ect - be fla	42;o,310;c 15 14 8 ackhawk ark Grey t mestone	o,350				
	North	East				•	Time	Air Temp (°F)	
Therm. Orient Face Orient.	#1 0/90 Temp ⁰C	#2 0 70/55 Temp °C 44 46 50 53 56 57 58 57 58 57 53		170 5/80 2	275 75/28 4	#5 45/32 Temp ℃ 50 56 62 63 63 63 63 60 55 47	9:30 10:00 11:00 12:00 13:00 14:00 15:30 16:30 17:30		80 86 90 92 94 93 89
Rock #5		Crack types and orie B-axis length (cm), o A axis length (cm) Ht. Above surface (c Location Color Ground Surface Asp Ground Surface Slop Lithology	rientation 20 m) Qv ros ect - be fla	350; j,285),80 15 6 vof2 se pink/wh t zite	ite				

The second	North #1	50	East #2	05	South #3	West #4		Тор #5	Time	Air Temp (°F)	
Therm. Orient Face Orient.	0/53 Temp °C	50	130/58 Temp °C	85	210 240/90 Temp °C	3 0/53 Temp °C	30	- 235/12 Temp °C			
	Temp C	50 54		57 62	44	-	, 49 52	50 54			80
		60 64		64 64	58		52 54 58	56 62	12:00		
		66 66		64 56	64		62 60	62	14:00		99
		59		52			58	62			96
Rock #6			Crack types and orientations B-axis length (cm), orientation A axis length (cm) Ht. Above surface (cm) Location Color Ground Surface Aspect Ground Surface Slope Lithology		b/j, 320 ~40 ~20 ~20 old debris f dark brown - flat granit			Note: The	'east' therm.	Was falling off c	luring the day.
	North #1		East		South #3	West		Top	Time	Air Temp (°F)	
Therm. Orient	#1	10	#2	130		#4 3	10	#5 -			
Face Orient.	50/90 Temp °C		125/-65 (overhung);post 1pr Temp °C		220/90 Temp °C	310/37 Temp °C)	70/25 Temp ⁰C	Temp °C		
		48		36			26	40			63
		50 50		38 52			30 34	46 49			64 67
		48		54			39	43 52			67
		40		46			42	51	13:00		69
		34		32			46	45			68
		34		41	44		40	42			63
		30		33	40		41	37	16:00		

Rock #7			Crack types and orientation B-axis length (cm), orientati A axis length (cm) Ht. Above surface (cm) Location Color Ground Surface Aspect Ground Surface Slope Lithology		o,5;o,349;j ~2 m ~1.5m ~1.5m Qof3 grey/browr - flat granit						
	North #1		East #2		South #3	West #4	Тор #5		Time	Ai	r Temp (ºF)
Therm. Orient		70		106			- 00				
Face Orient.	4/55		142/59		226/90	305/61	128/9				
	Temp ⁰C		Temp °C		Temp °C	Temp °C					
		51		62			86	54		30	
		49		56			6	56		30	
		54 52		51 43	60 52		55 58	59 52		30 00	
Rock #8 San Lorenzo Ca New Mexico 1/14/2002	-		Crack types and orientation B-axis length (cm), orientati A axis length (cm) Ht. Above surface (cm) Location Color Ground Surface Aspect Ground Surface Slope Lithology		o,315;o,20 46 38 28 cm late Holoce dove grey - flat Rhyolite		rrace				
	North #1		East #2		South #3	West #4	Тор #5		Time	Ai	r Temp (°C)
Therm. Orient	same as fa	ace	orientation							~^	10
Face Orient.	230/64		30/50		300/45	30/90	90/10				
	Temp ⁰C		Temp °C		Temp ⁰C	Temp °C	Temp				
		6		20	10		-4	12	9:	20	-

6	25	18	-4	19	10:00:00 <i>A</i>
6	33	28	1	27	11:00
7	38	34	5	32	12:00 wind picks up
6	32	32	11	25	13:00 10 km/hr southeasterly
8	28	29	16	27	14:00
10	20	24	18	19	15:00
10	15	20	18	16	16:00

Data Repository Table 3: Rock Surface Temperature Measurements on							
a Subrounded Granite Gneiss Boulder, January 9, 2004. These data are not reported in the manuscript.							

a Subround	ded Granite	Gneiss Bol	lider, January
	SE face	Top face	NW face
Time (am)	temp (°C)	temp (°C)	temp (°C)
8:35	-6	-7	-4
8:38	-7	-8	-4
8:40	-7	-8	-4
8:45	-7	-8	-4
8:50	-7	-3	-4
8:55	-6.5	0	-4
9:00	6	2	-4
9:05	12	2	-3.5
9:10	15	3	-3
9:15	16	3.5	-2.5
9:20	16.5	4	-2
9:25	17	4	-2
9:30	18	4	-2
9:35	20	6	-1.5
9:40	21	6	-1.5
9:45	22	6	-1.5
9:50	22	7.5	-1.5
9:55	23	8	-1
10:00	23	8	-1
10:05	23	8	-1
10:10	22.5	9	-1
10:15	20	8	-1
10:20	20	8	-0.5
10:22	17	6	-0.5
10:23	14	6	-0.5
10:24	13	6	-0.5
10:25	10	6	-0.5
10:26	9.5	6	-0.5
10:27	9	6	-0.5
10:28	8	5.5	0
10:29	8	5.5	0
10:30	7.5	5.5	0
10:32	6	6	0
10:35	6	6	0
10:37	6	7	0
10:40	5	4	0
10:45	5	4	0
10:47	6	4.5	0
10:48	7	5.5	0
10:49	7.5	6	0
10:50	8	6	0
10:51	8	7	0
10:52	8	7.5	0
10:52	8	7.5	0
10:53	9	7.5	0.5
10:54	11	6	0.5
10:55	15	4	0.5
10:57	15	4	0.5

11:00	17.5	5	0.5
11:03	20	8	1
11:05	21	9	1
11:07	19.5	8.5	1

Notes

- 1. Rock dimensions: Width 105 cm; Length 170 cm; Height 45 cm
- 2. Windiness: very light to none
- 3. Initially higher NW (Shaded side) temperatures attributed to radiant heat produced by large, sunlit buildings 25 m NW of boulder location; this side not illuminated during entire period of temperature meassurement
- 4. First sunlight on top of boulder surface at 8:47 a.m.
- 5. First sunlight on SE side of boulder at 8:55 a.m.
- 6. Temporarily shaded SE side of boulder at 10:21 a.m.; re-exposed to sunlight at 10:46 a.m.
- 7. Wind speed moderately increased at 10:32 a.m., but gradually decreased to very light winds by 11:00 a.m.
- 8. Boulder top in shade of branch at 10:53 a.m., out of shade at 11:00 a.m.
- 9. SE side of boulder slightly shaded by branch at until 10:54 a.m.