

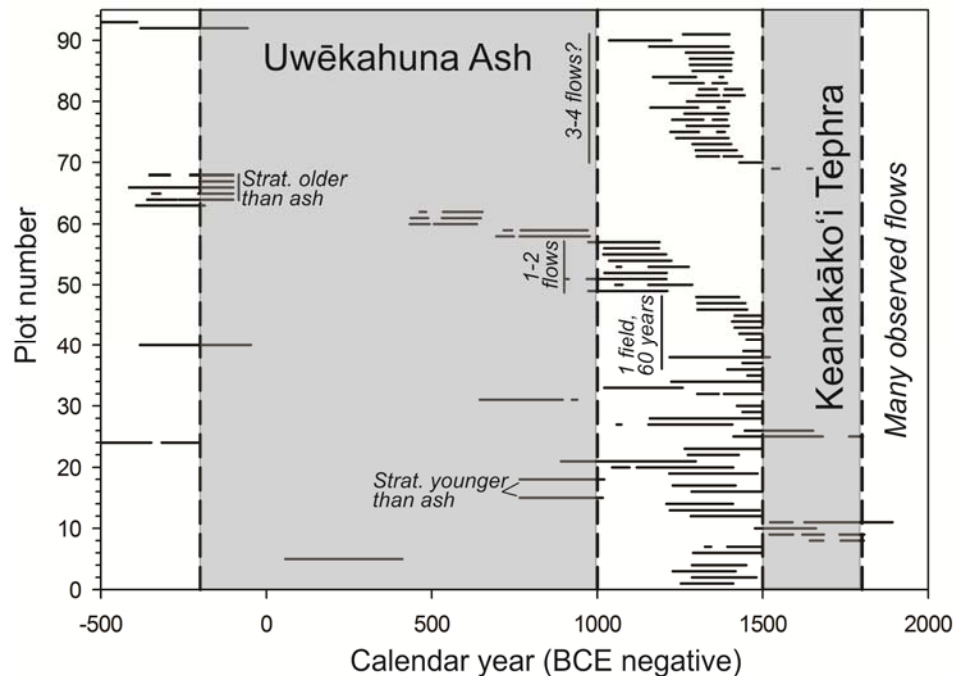


Figure DR1. Calendar-calibrated ages for lava flows younger than 500 BCE relative to ages of the Uwēkahuna Ash and Keakakākoʻi Tephra. Several flows have multiple possible calendar ages, as indicated. The ʻAilāʻau flow field was emplaced over a ca. 60-year period. Some ages are truncated at 1500 CE, because the flows are overlain by the lower part of the Keanakākoʻi Tephra, the basal reticulite of which was erupted in about 1500 CE (Swanson et al., 2012a). Analytical data are presented in Data Repository Table 1, arranged by plot number in this figure.

Table DR1. ¹⁴C ages of lava flows on Kīlauea

Plot no.	Lab no.	N Latitude	W Longitude	¹⁴ C age	1-σ error	Calendar 2-σ range 1	Calendar 2-σ range 2	Calendar 2-σ range 3	Reference
1	W3860	19.23200	155.45960	670	60	1252-1411			1
2	W4404	19.21290	155.40100	530	70	1286-1481			1
3	W4410	19.17720	155.47680	660	70	1228-1418			1
4	W5218	19.15950	155.44780	550	70	1286-1451			1
5	W4119	19.24730	155.34920	1800	80	56-411			1
6	W5932	19.24032	155.33299	462	111	1289-1500			1
7	W3842	19.33250	155.40560	450	60	1325-1500			1
8	KSW108	19.24691	155.41328	220	30	1642-1683	1735-1805		2
9	KSW227A	19.29798	155.39556	240	40	1530-1539	1635-1677	1766-1800	2
10	KSW432C	19.28002	155.33748	300	40	1519-1593	1619-1647		2
11	W3938	19.26070	155.40980	210	60	1522-1590	1625-1892		1
12	W5757	19.35002	155.39219	410	150	1282-1500			1
13	W5771	19.34301	155.39734	590	100	1219-1491			1
14	W4402	19.29580	155.31320	700	70	1208-1410			1
15	W5135	19.32930	155.28020	1150	70	765-1017			1
16	W5145	19.30450	155.34100	500	100	1285-1500			1
17	W5152	19.32810	155.33750	660	70	1228-1418			1
18	W5212	19.29790	155.31110	1140	70	765-1021			1
19	W5785	19.33932	155.28101	600	100	1217-1485			1
20	W5973	19.32453	155.29586	740	100	1044-1098	1119-1411		1
21	W5975	19.30598	155.28828	900	120	890-1298			1
22	W4337	19.33730	155.22430	620	70	1273-1428			1
23	W5983	19.32474	155.24727	550	100	1264-1500			1
24	W5052	19.37360	154.95890	2360	90	765-348 BCE	317-207 BCE		1
25	W6269	19.33669	155.06229	350	90	1411-1500			1
26	W5048	19.48320	154.86810	340	60	1445-1653			1
26	W5048	19.48320	154.86810	340	60	1445-1653			1
27	W3999	19.44970	155.23900	730	80	1058-1073	1154-1409		1
28	W5897	19.43967	155.24660	550	150	1158-1500			1
29	WW117	19.43660	155.02940	320	70	1438-1500			1
30	WW117	19.43660	155.02940	340	80	1422-1500			1
31	W4674	19.47170	154.89240	1270	70	645-896	923-940		1

32	W4688	19.45870	154.92880	490	60	1301-1367	1382-1517	1
33	W4690	19.45210	154.94830	900	70	1020-1258		1
34	W6007	19.44906	155.25463	580	100	1223-1496		1
35	W3881	19.54640	155.09850	260	70	1453-1500		1
36	W3941	19.58740	155.01700	450	60	1393-1500		1
37	W4661	19.55310	155.00230	320	70	1438-1500		1
38	W5631	19.50760	155.12800	580	20	1218-1522		3
39	W4162	19.47139	155.16944	310	70	1441-1500		3
40	W3885	19.31780	155.21810	2160	70	383-46 BCE		3
41	WW620	19.56980	155.07290	350	50	1451-1500		3
42	WW308	19.35890	155.23530	400	50	1429-1500		3
43	WW619	19.58630	154.97180	420	50	1415-1500		3
44	WW371	19.59800	154.93500	430	60	1407-1500		3
45	3631	19.58680	155.01140	420	50	1415-1500		3
46	WW1524	19.58280	154.91600	520	50	1303-1453		3
47	WW1520	19.57000	154.90600	530	50	1302-1448		3
48	WW1525	19.58420	154.92090	570	40	1299-1429		3
49	WW301	19.33955	155.27711	970	60	973-1212		4
50	WW303	19.32264	155.28080	800	50	1054-1077	1154-1287	4
51	WW304	19.31778	155.28030	980	60	903-915	968-1209	4
52	WW2415	19.34750	155.26840	930	50	1021-1210		4
53	WW3524	19.33955	155.27711	820	40	1058-1072	1155-1277	4
54	WW3530	19.32267	155.28076	880	40	1035-1251		4
55	WW3916	19.31746	155.28061	942	48	1018-1208		4
56	WW3918	19.33955	155.27711	938	42	1020-1205		4
57	WW3919	19.33955	155.27711	978	54	972-1206		4
58	WW2408	19.31839	155.29715	1180	50	694-748	765-977	4
59	WW2409	19.30303	155.30590	1180	40	717-743	768-971	4
60	WW2877	19.30778	155.30414	1510	40	433-637		4
61	WW2879	19.30882	155.30417	1490	40	436-489	513-648	4
62	WW4094	19.30861	155.30413	1475	40	443-483	533-653	4
63	WW3528	19.31969	155.22338	2230	50	394-186 BCE		4
64	WW3908	19.32533	155.22290	2158	41	361-90 BCE	72-59 BCE	4
65	WW4754	19.32533	155.22290	2100	40	346-320 BCE	206-20 BCE	4

66	WW5292	19.46528	155.25694	2080	150	481-468 BCE	415 BCE-259 CE	296-321	4
67	WW2920	19.46068	155.24786	2090	40	337-330 BCE	203 BCE-1 CE		4
68	WW3526	19.46068	155.24786	2130	40	354-291 BCE	231-46 BCE		4
69	WW5412	19.36545	155.17662	200	55	1634-1650	1528-1551		5
70	WW308	19.35953	155.23517	400	50	1429-1500			5
71	WW3909	19.32340	155.25617	554	45	1300-1368	1381-1438		5
72	WW2880	19.33051	155.30472	580	40	1297-1422			5
73	WW2412	19.43668	155.28286	620	40	1288-1405			5
74	WW2413	19.43668	155.28286	690	50	1238-1397			5
75	WW2410	19.29583	155.31105	720	40	1221-1308	1362-1386		5
76	WW1934	19.33944	155.28056	665	45	1270-1398			5
77	WW1926	19.34937	155.27746	700	45	1226-1321	1349-1392		5
78	WW1927	19.34937	155.27746	675	45	1263-1397			5
79	WW1928	19.32390	155.24686	760	55	1160-1305	1364-1385		5
80	WW1694	19.31514	155.30653	660	50	1271-1401			5
81	WW1695	19.36611	155.26264	540	50	1300-1368	1381-1445		5
82	WW3906	19.32590	155.23504	546	38	1307-1362	138-1438		5
83	WW1696	19.32458	155.24786	710	50	1219-1322	1348-1392		5
84	WW1697	19.28667	155.33250	760	50	1168-1299	1369-1380		5
85	WW1698	19.34764	155.27847	620	40	1288-1405			5
86	WW1692	19.34931	155.27750	640	50	1279-1405			5
87	WW1690	19.35319	155.25889	640	50	1279-1405			5
88	WW302	19.35067	155.27294	650	60	1267-1411			5
89	WW307	19.32453	155.29586	740	70	1157-1398			5
90	WW3530	19.32267	155.28076	880	40	1035-1225			5
91	WW305	19.30639	155.27775	680	50	1258-1400			5
92	WW1931	19.30652	155.31413	2170	60	381-56 BCE			5
93	WW2411	19.32235	155.25123	2400	50	752-634 BCE	596-391 BCE		5

References for data:

- 1 Wolfe, E.W., and Morris, Jean, 1996, Sample data for the geologic map of the Island of Hawaii: U.S. Geological Survey Miscellaneous Investigations Series Map I-2524B, scale 1:100,000,3 sheets, 51 p. text.
- 2 D.R. Sherrod, unpubished data

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Clague, D.A., Hagstrum, J.T., Champion, D.E., and Beeson, M.H., 1999, Kīlauea summit overflows: their ages and distribution in the Puna District, Hawai‘i: Bulletin of Volcanology, v. 61, p. 363-381.

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Fiske, R.S., Rose, T.R., Swanson, D.A., Champion, D.E., and McGeehin, J.P., 2009, Kulanaokuaiki Tephra (ca. A.D. 400-1000): newly recognized evidence for highly explosive eruptions at Kīlauea Volcano, Hawai‘i: Geological Society of America Bulletin, v. 121, p. 712-728.

5

R.S. Fiske, T.R. Rose, and D.A. Swanson, unpublished data

Column A, plot number in Data Repository Figure 1
Column B: W, conventional age; WW, AMS age
Columns C-D: coordinates in Old Hawaiian Datum
Columns E-F, reported ages with 1 sigma error.

Columns G-N, two-sigma calendar-calibrated age ranges, calculated using the CALIB software (Stuiver and Reimer, 1993) and the IntCal04 calibration datasets (Reimer et al., 2004). All calendar ages in CE unless otherwise noted.

The italicized number 1500 in some entries in column H is a truncated calibration range, reflecting the stratigraphic control given by the presence of reticulite in the Keanakako‘i Tephra on top of the dated flow (Swanson et al., 2012).

The italicized number 1650 for number 69 is a truncated calibration age, reflecting the fact that the dated spatter underlies Keanakāko‘i layer 6 of approximate 1650 age (Swanson et al., 2012)

Reimer, P.J., et al., 2004, IntCal04 terrestrial radiocarbon age calibration, 26-0 ka BP: Radiocarbon, v. 46, p. 1029-1058.

Swanson, D.A., Rose, T.R., Fiske, R.S., and McGeehin, J.P., 2012, Keanakāko‘i Tephra produced by 300 years of explosive eruptions following collapse of Kīlauea's caldera in about 1500 CE: Journal of Volcanology and Geothermal Research, v. 215-216, p. 8-25.

Stuiver, M, and Reimer, P.J., 1993, Extended ¹⁴C database and revised CALIB radiocarbon calibration program: Radiocarbon, v. 35, p. 215-230.

Table DR2. 14C ages of Keanakākoʻi tephra

Lab No.	Field No.	N Latitude	W Longitude	¹⁴ C age	1-σ error	Calendar 2-σ range 1	Calendar 2-σ range 2	Calendar 2-σ range 3	No. in Fig. 12 of Swanson et al. (2012)
WW3904	F01-58-2	19.47841	155.26865	678	37	1267-1323	1347-1392		1
WW3540	F01-1-4B	19.47188	155.26202	390	50	1435-1531	1537-1635		2
WW2049	9-11-98-2A	19.42651	155.25218	210	40	1530-1537	1635-1696	1725-1814	3
WW2255	S9-28-6C	19.46528	155.25694	550	50	1299-1370	1380-1441		4
WW5405	S03-1B	19.43609	155.24148	680	40	1263-1325	1344-1394		5
WW5901	S06-53Z	19.43973	155.23837	495	45	1317-1354	1389-1470		6
WW2997	S0-25B	19.39438	155.24795	490	40	1324-1345	1393-1465		7
WW2048	9-11-98-1B	19.42940	155.24178	490	50	1311-1359	1387-1489		8
WW6379 ¹	S07-40	19.44702	155.23773	305	30	1488-1603	1609-1651		9
WW2292	10-22-98-2A	19.40293	155.23499	314	30	1486-1604	1607-1647		10
WW5891	S02-23	19.44754	155.27539	305	35	1482-1654			11
WW5892	S03-2-1	19.43553	155.24218	370	35	1446-1529	1543-1634		12
WW2249	10-27-98-2A	19.39658	155.25361	380	50	1441-1635			13
WW2999	S0-27B	19.38608	155.24692	490	40	1407-1513	1601-1616		14
WW7578 ²	S09-2	19.37492	155.24582	330	25	1483-1641			15
WW3905	F01-1-4C	19.47188	155.26202	358	41	1451-1635			16
WW2245	10-14-98-2	19.44425	155.31096	390	40	1437-1528	1545-1634		17
WW2246	10-16-98-1	19.46133	155.24859	360	40	1450-1635			18
WW5403	S02-21A	19.44432	155.25185	390	40	1437-1528	1545-1634		19
WW3899	S01-51	19.43152	155.25732	558	38	1303-1366	1383-1434		20
WW3900	S01-60	19.43185	155.23837	342	44	1457-1642			21
WW5900	S06-53C	19.43973	155.23837	345	35	1463-1639			22
WW3902	S01-13A	19.41920	155.24522	239	37	1522-1588	1626-1684	1733-1807	23
WW2855	S0-12C1	19.39437	155.24873	330	50	1454-1648			24
WW3903	S01-21	19.38880	155.25375	303	37	1481-1657			25
WW2847	S9-74A	19.40821	155.25584	260	40	1491-1681	1763-1802		26

Table DR3. 14C ages of Uwēkahuna Ash

No. in Fig. 8 of Fiske et al. (2009)	Lab ID no.	Field site	N Latitude	W Longitude	¹⁴ C age	1-σ error	Calendar 2-σ range 1	Calendar 2-σ range 2	Calendar 2-σ range 3	Calendar 2-σ range 4
1	WW301	F4-36	19.33955	155.27711	970	60	973-1212			
2	WW303	F4-38C	19.32264	155.28080	800	50	1054-1077	1154-1287		
3	WW304	F4-39C	19.31778	155.28030	980	60	903-915	968-1209		
4	WW2415	F9-4C	19.34750	155.26840	930	50	1021-1210			
5	WW3524	F01-F4-36B	19.33955	155.27711	820	40	1058-1072	1155-1277		
6	WW3530	F01-9c	19.32267	155.28076	880	40	1035-1225	1234-1238	1248-1251	
7	WW3916	F01-12C	19.31746	155.28061	942	48	1018-1208			
8	WW3918	F01-F4-36C	19.33955	155.27711	938	42	1020-1186	1200-1205		
9	WW3919	F01-F4-36D	19.33955	155.27711	978	54	909-910	972-1188	1198-1206	
10	WW2408	S9-2C	19.31839	155.29715	1180	50	694-702	707- 748	765-977	
11	WW2409	S9-4C	19.30303	155.30590	1180	40	717-743	768-907	911-971	
12	WW2877	S0-6C	19.30778	155.30414	1510	40	433-494	505-637		
13	WW2879	S0-4-3C	19.30882	155.30417	1490	40	436-489	513-516	530-648	
14	WW4094	F02-9-1	19.30861	155.30413	1475	40	443-450	462-483	533-653	
15	WW3528	F01-4c	19.31969	155.22338	2230	50	394- 186 BCE			
16	WW3908	F01-7C	19.32533	155.22290	2158	41	361-270 BCE	264- 90 BCE	72-59 BCE	
17	WW4754	F04-9C-2	19.32533	155.22290	2100	40	346-320 BCE	206-36 BCE	30-20 BCE	12-1 BCE
18	WW2439	S9-49-3C	19.34683	155.23290	1310	40	647-778			
19	WW2884	S0-7-6	19.32751	155.25546	1290	50	652-829	837-867		
20	WW2885	S0-7-7C	19.32751	155.25546	1310	50	641-783	787-824	841-861	
21	WW2925	F0-15-7	19.32396	155.23868	1370	40	599-712	746-767		
22	WW2936	S0-8-12	19.32281	155.25260	1410	50	544-687			
23	WW3913	F01-54-3C	19.30911	155.25682	1278	38	659-783	788-822	842-860	
24	WW3915	F01-62-2C	19.32678	155.22757	1292	61	647-880			
25	WW4204	F02-19-9	19.33520	155.22492	1235	40	683-884			
26	WW4755	F04-15-1C	19.35288	155.25310	1215	50	675-898	920-945		
27	W5292		19.46528	155.25694	2080	150	481-468 BCE	415 BCE-259 CE	296-321	
28	WW2920	F0-1-10C	19.46068	155.24786	2090	40	337-330 BCE	203 BCE-1 CE		
29	WW3526	F0-1-10c	19.46068	155.24786	2130	40	354-291 BCE	231-46 BCE		
30	WW2414	S9-28-11C	19.46528	155.25690	1980	50	109 BCE-129 CE			
31	WW2608	S9-32C		in dense forest	1315	60	621-832	836-869		
32	WW2611	S9-35B	19.46896	155.24250	1185	80	673-991			
33	WW2612	S9-35C	19.46896	155.24250	1780	55	92-98	125-392		
34	WW2615	S9-37A	19.45172	155.25613	1530	55	421-634			
35	WW2887	S9-34-6C		in dense forest	1260	40	668-832	836-869		
36	WW2888	F0-1-7C	19.46068	155.24786	1470	40	467-481	534-655		
37	WW3523	S9-17-9c	19.43671	155.28290	1200	50	687-900	917-965		
38	W3856		19.46722	155.25139	1040	70	783-787	816-843	859-1163	
39	W3859		19.46722	155.25139	2080	70	356-286 BCE	252-251 BCE	234 BCE-68 CE	
40	W4837		19.46528	155.25694	1480	60	433-495	503-656		
41	W5097		19.47778	155.28972	1790	70	79-397			
42	W5303		19.46528	155.25694	1650	150	67-658			

Data from Fiske et al. (2009)

Column B: W, conventional age; WW, AMS age
Columns D-E: coordinates in Old Hawaiian Datum
Columns F-G, reported ages with 1 sigma error.
Columns H-K, two-sigma calendar-calibrated age ranges, calculated using the CALIB software (Stuiver and Reimer, 1993) and the IntCal04 calibration datasets (Reimer et al., 2004). All calendar ages in CE unless otherwise noted.

Fiske, R.S., Rose, T.R., Swanson, D.A., Champion, D.E., and McGeehin, J.P., 2009, Kulanaokuaiki Tephra (ca. A.D. 400-1000): newly recognized evidence for highly explosive eruptions at Kīlauea Volcano, Hawai'i: Geological Society of America Bulletin, v. 121, p. 712-728.

Reimer, P.J., et al., 2004, IntCal04 terrestrial radiocarbon age calibration, 26-0 ka BP: Radiocarbon, v. 46, p. 1029-1058.
Stuiver, M, and Reimer, P.J., 1993, Extended ¹⁴C database and revised CALIB radiocarbon calibration program: Radiocarbon, v. 35, p. 215-230.

Table DR4. Microprobe analyses of high MgO and highly fractionated glasses from Keanakākoʻi Tephra

Sample	Stratigraphic												N latitude	W longitude
	height (cm)	SiO ₂	TiO ₂	Al ₂ O ₃	FeO ⁺	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	Total		
Site S07-39													19.40000	155.27493
S07-39-22	800	50.94	4.50	11.61	16.19	0.20	3.98	8.52	2.58	1.02	0.59	100.12		
S07-39-21	800	52.47	3.96	12.64	13.16	0.17	4.90	9.45	2.50	0.71	0.38	100.34		
S07-39-20	783	50.12	2.44	12.54	11.72	0.16	10.07	10.41	2.16	0.44	0.22	100.28		
S07-39-20	783	49.69	2.52	12.41	11.71	0.17	9.81	11.14	1.98	0.49	0.23	100.15		
S07-39-19	712	49.78	2.42	12.87	11.82	0.13	9.63	10.53	2.21	0.45	0.21	100.03		
S07-39-18	673	50.10	2.39	12.59	11.70	0.18	9.86	10.43	2.17	0.45	0.24	100.11		
S07-39-18	673	49.91	2.40	12.69	11.70	0.16	9.23	10.46	2.17	0.44	0.22	99.38		
S07-39-17*	620	51.01	3.12	13.21	12.10	0.16	6.16	10.49	2.46	0.58	0.29	99.58		
S07-39-16	600	49.83	2.20	11.86	11.98	0.17	10.75	10.10	2.08	0.40	0.18	99.55		
S07-39-16	600	49.84	2.27	12.29	12.00	0.19	10.38	10.35	2.11	0.42	0.21	100.06		
S07-39-15*	552	50.24	2.19	12.19	11.63	0.18	11.19	10.13	2.01	0.38	0.19	100.32		
S07-39-15*	552	50.09	2.22	12.20	11.76	0.18	10.69	10.20	2.04	0.40	0.21	99.99		
S07-39-15	552	49.40	2.22	12.17	12.01	0.16	10.29	10.13	2.04	0.39	0.21	99.03		
S07-39-13	453	49.93	2.26	12.14	12.03	0.18	11.01	10.12	2.06	0.39	0.22	100.34		
S07-39-11	344	50.27	2.33	12.62	11.80	0.18	9.49	10.52	2.16	0.42	0.21	99.99		
S07-39-10*	267	49.61	2.23	12.32	12.08	0.18	10.54	10.32	2.05	0.41	0.21	99.96		
S07-39-7	186	49.82	2.29	12.39	11.96	0.18	10.12	10.41	2.09	0.41	0.18	99.84		
S07-39-5	108	49.77	2.26	12.16	12.07	0.18	10.57	10.15	2.04	0.40	0.21	99.80		
S07-39-4	76	49.76	2.24	12.44	11.91	0.16	9.85	10.33	2.10	0.40	0.21	99.38		
S07-39-2	7	50.16	2.31	12.55	11.99	0.17	9.82	10.52	2.12	0.41	0.21	100.26		
Site S08-4													19.39421	155.29698
S08-4-19	564	50.02	2.40	12.57	11.64	0.16	9.51	10.65	2.10	0.43	0.23	99.73		
S08-4-18	513	49.67	2.41	12.59	11.68	0.16	9.42	10.60	2.16	0.44	0.23	99.36		
S08-4-17	504	49.95	2.42	12.57	11.67	0.16	9.41	10.66	2.12	0.44	0.24	99.65		
S08-4-16	452	49.87	2.41	12.71	11.59	0.15	9.52	10.59	2.12	0.44	0.22	99.61		

S08-4-15	387	49.94	2.40	12.57	11.64	0.16	9.62	10.61	2.11	0.44	0.22	99.72		
S08-4-12	295	49.61	2.26	12.33	11.96	0.17	10.17	10.46	2.05	0.40	0.21	99.62		
S08-4-11	245	49.51	2.23	12.36	11.94	0.17	10.14	10.44	2.02	0.40	0.21	99.41		
S08-4-11	245	49.63	2.26	12.41	11.87	0.18	9.94	10.47	2.01	0.41	0.21	99.37		
S08-4-10	208	49.57	2.29	12.50	11.90	0.16	9.74	10.61	2.08	0.40	0.21	99.45		
S08-4-9	201	49.80	2.28	12.58	11.91	0.16	9.82	10.55	2.09	0.41	0.21	99.81		
S08-4-2	1	49.54	2.25	12.40	11.96	0.17	9.88	10.45	2.08	0.40	0.22	99.36		
Site S01-16													19.40446	155.26938
S01-16-1	12	49.23	2.21	12.02	12.00	0.18	10.52	10.19	2.05	0.42	0.20	99.02		
S01-16-1	12	49.40	2.27	12.38	12.02	0.16	10.33	10.35	2.10	0.41	0.20	99.62		
S01-16-2	0.5	49.44	2.31	12.55	11.90	0.16	9.63	10.58	2.14	0.42	0.21	99.35		

*pumice; FeO⁺ total iron

Locations in Old Hawaiian Datum

Garcia, M., Mucek, A., and Swanson, D., 2011, Geochemistry of glass and olivine from Keanakako'i Tephra at Kilauea Volcano, Hawai'i: Eos (Transactions American Geophysical Union), Fall meeting supplement, abstract V41A-2480.

Mucek, A., 2012, Geochemistry of glasses from the Keanakāko'i Tephra, Kīlauea, Hawai'i [undergraduate thesis]: Honolulu, University of Hawai'i, 85 p.

TableDR 5A. Electron microprobe analyses of high magnesian glass in Kulanaokuaiki Tephra

n	SiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	TiO ₂	MnO	P ₂ O ₅	Total	Grain number	N latitude	W longitude
5	49.55	12.09	11.34	11.30	9.78	1.94	0.39	2.09	0.17	0.21	98.86	grain 2	19.42446	155.28783
5	49.72	12.13	11.42	11.52	9.81	1.95	0.38	2.11	0.18	0.21	99.43	grain 3	19.42446	155.28783
5	49.81	12.21	11.36	11.60	9.76	1.73	0.38	2.06	0.19	0.21	99.32	grain 4	19.42446	155.28783
5	49.91	12.19	11.41	11.17	9.88	1.80	0.37	2.11	0.17	0.21	99.22	grain 8	19.42446	155.28783
5	49.84	12.21	11.44	11.16	9.82	1.79	0.38	2.04	0.16	0.21	99.05	grain 29	19.42446	155.28783
5	49.55	11.75	11.52	12.78	9.58	1.89	0.37	2.00	0.18	0.20	99.83	grain 13	19.42446	155.28783
7	49.62	11.86	11.45	12.45	9.58	1.86	0.36	1.98	0.19	0.21	99.58	grain 11-12	19.42446	155.28783

n = number of spots analyzed in given average for each grain

Sample F02-26-25, Uwekahuna Bluff section above block D. Layer is second down from top of tephra section.

Table DR5B. Electron microprobe analyses of high TiO₂ glass in Kulanaokuaiki Tephra

n	SiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	TiO ₂	MnO	P ₂ O ₅	Total	Sample name(s)	N latitude	W longitude
20	49.23	13.76	11.07	6.76	11.45	2.57	0.75	3.07	0.19	0.34	99.18	F4-36, S8-19c	19.33955	155.27711
19	49.57	13.95	11.35	6.77	11.43	2.62	0.76	3.08	0.17	0.34	100.04	S9-17-11	19.43671	155.28290
8	49.45	13.80	10.89	6.66	11.43	2.53	0.74	3.12	0.21	0.33	99.16	F7-33-7, KSF1	19.34427	155.27344
14	49.67	14.00	10.95	6.65	11.53	2.59	0.71	2.91	0.16	0.34	99.50	S9-49-4	19.34683	155.23290
12	49.36	14.00	11.32	6.62	11.87	2.46	0.74	3.11	0.17	0.33	99.97	F01-43J	19.33345	155.26874
27	49.53	13.94	11.06	6.64	11.44	2.50	0.75	3.10	0.18	0.34	99.49	S06-104A	19.44254	155.27165
26	49.12	13.80	11.20	6.61	11.46	2.52	0.74	3.11	0.15	0.34	99.05	S9-35-6	19.46896	155.24250
15	49.69	13.91	11.06	6.73	11.46	2.60	0.75	3.10	0.13	0.30	99.74	S9-18-7	19.44425	155.31096

n= number of analyses in given average

All analyses are of glass in unit 2 of Kulanaokuaiki Tephra

Locations in Old Hawaiian Datum

Fiske, R.S., Rose, T.R., Swanson, D.A., Champion, D.E., and McGeehin, J.P., 2009, Kulanaokuaiki Tephra (ca. A.D. 400-1000): newly recognized evidence for highly explosive eruptions at Kilauea Volcano, Hawai'i: Geological Society of America Bulletin, v. 121, p. 712-728.

Rose, T.R., Fiske, R.S., and Swanson, D.A., 2011, High-MgO vitric ash in upper Kulanaokuaiki Tephra, Kilauea Volcano, Hawai'i: Eos (Transactions American Geophysical Union), Fall meeting supplement, abstract V41A-2481.