TABLE DR1. SUMMARY OF PALEOMAGNETIC DATA FROM LACUSTRINE SEDIMENTARY ROCKS AND BASALT FLOWS

Site	Rock type	N/N_o	α_{95}	k	D (°, in situ)	I (°, in situ)	S/D (°/°)	D (°, cor)	I (°, cor)	North (Y)	East (X)	Comments
West Lake sedimentary samples												
34	Ts_3	15/21	6.0	42.1	352.6	60.9	175/40	*305.1*	*41.0*	4185351.6	427087.8	Remagnetized
35a	Ts_3	3/10	13.2	88.0	326.5	68.5	235/25	*325.8*	*43.5*	4186064.0	422789.8	Remagnetized
35b	Ts_3	5/10	6.4	142.9	21.0	71.3	235/25	*350.3*	*51.5*	4186064.0	422789.8	Remagnetized
36	Ts_3	4/8	11.4	65.4	7.9	64.9	235/25	*348.5*	*43.6*	4186054.2	423052.3	Remagnetized
37	Ts_3	3/10	11.1	124.6	346.5	58.6	273/24	*352.6*	*35.2*	4186217.2	423024.5	Remagnetized
38*	Ts_3	3/10	28.9	19.3	18.4	64.5	273/24	*11.7*	*41.0*	4180767.5	434530.8	Remagnetized
44*	Ts_3	5/12	18.5	17.9	256.9	51.3	207/15	*265.8*	*39.1*	4186704.6	422719.6	Remagnetized
45*	Ts_3						217/21			4186704.6	422719.6	Remagnetized
46	Ts_3	9/14	4.5	132.6	339.1	63.6	193/17	*319.5*	*51.6*	4187641.6	423570.3	Remagnetized
47	Ts_3	8/12	8.2	46.3	341.5	53.6	193/17	*326.6*	*42.8*	4187091.8	423229.3	Remagnetized
48	Ts_3	11/14	6.6	48.2	47.8	52.4	201/32	*2.1*	*54.9*	4187091.8	423229.3	Remagnetized
East Lake sedimentary samples												
39	Ts_3	10/10	6.2	61.6	160.9	–47.5	030/35	*210.6*	*-63.7*	4180767.5	434530.8	Remagnetized
40	Ts_3	8/8	8.6	45.2	163.9	–35.8	028/35	*191.8*	*-52.7*	4180767.5	434530.8	Remagnetized
41	Ts_3	6/8	10.1	44.7	165.4	–55.2	023/41	*234.4*	*-58.0*	4180767.5	434530.8	Remagnetized
102	Ts_3	7/9	15.5	16.0	146.6	–28.7	204/18	*143.0*	*-13.2*	4181821.0	433218.2	Remagnetized
103	Ts_3	5/8	14.9	27.2	152.0	–48.5	204/18	*143.3*	*-33.4*	4181821.0	433218.2	Remagnetized
104*	Ts_3	4/8					204/18			4181808.4	433184.4	Remagnetized
105	Ts_3	5/8	18.6	17.9	122.7	–26.6	204/18	*121.9*	*-8.8*	4180197.6	433188.9	Remagnetized
106*	Ts_3	5/9					204/18			4180197.6	433188.9	Remagnetized
Monocline												
1	MC	6/7	8.4	65.3	34.6	70.4	005/37	72.4	40.7	4189365.4	443695.2	
2*	MC						005/37			4189365.4	443695.2	Rejected
3†							015/14			4189365.4	443695.2	No data
4	MC	9/9	4.2	133.8	6.5	55.2	065/11	17.9	64.0	4189365.4	443695.2	
5	Ts2	8/9	6.7	70.1	3.8	35.6	020/15	15.0	38.4	4189365.4	443695.2	

Note: Ts_3—Tertiary sedimentary unit 3 (Albers and Stewart, 1972); MC—Tertiary (Holocene) basalt flows; Ts_2—Tertiary (Holocene) lacustrine sediment; N/N_o—ratio of samples used (N) to samples collected (N_o); α_{95}—95% confidence interval about the estimated mean direction, assuming a circular Fisher distribution; κ—best estimate of (Fisher) precision parameter; D/I (in situ)—in situ declination and inclination; S/D—strike and dip, dip direction clockwise from strike; D/I (corr)—corrected declination and inclination; North (Y) and East (X); site location in Universal Transverse Mercator (UTM) coordinate system. The underlined numbers are the strike and dip of the intrusions or bedding plane measurements of stratified flow units. The italic numbers are the corrected site mean directions.

*Dispersion at site level unacceptably high and therefore rejected from further analysis.

†No physically coherent specimens could be obtained from block sample collected.

TABLE DR2. REMAGNETIZATION CIRCLE DATA FROM MAFIC DIKES

Site	Rock type	N/N_o	α_{3-1}	α_{3-2}	K_1	Oval azimuth	D (°, in situ)	I (°, in situ)	S/D (°/°)	North (Y)	East (X)	Comments
Coyote Canyon												
56	Td	8/9	4.1	12.9	–72.4	96.3	37.3	57.2	215/45	4180565.6	436218.9	
57	Td	7/8	4.2	10.8	–81.5	90.4	33.3	62.1	090/90	4180528.3	436264.1	
58	Td	8/9	3.9	3.9	–636.5	45.2	1.7	58.6	000/00	4180610.5	436393.9	
60	Td	10/10	7.2	7.2	–189.8	68.1	322.8	7.8	160/24	4180511.4	436058.4	
63	Td	7/10	4.1	14.8	–94.0	0.7	11.3	57.8	164/42	4180511.4	436058.4	
Vanderbilt Peak												
68*	Td	10/10	23.8	57.9	–3.9	3.8	325.7	30.0	053/45	4179167.0	441537.6	Rejected
69	Td	9/13	8.6	10.5	–26.8	149.7	124.4	4.9	"	4179167.0	441537.6	
71*	Td	8/9	6.8	20.8	–31.7	31.5	359.2	64.9	"	4178594.2	440684.8	Rejected
North Start mine												
81	Td	10/10	10.7	10.8	–43.6	73.8	7.0	55.0	080/90	4185730.9	434312.1	
83	Td	11/13	3.9	22.1	–63.5	108.6	24.5	30.8	011/85	4183020.4	434943.5	
Mary mine												
85	Td	10/13	8.4	12.6	–22.2	86.5	354.3	59.2	290/10	4183272.6	437472.5	
89*	Td	10/10	15.3	24.6	–7.2	26.4	322.9	20.9	055/30	4183434.5	438324.8	Rejected
95	Td	8/11	11.3	15.2	–16.8	133.1	117.6	–26.0	202/80	4183599.2	437573.3	
Tarantula Canyon												
111	Td	9/8	3.9	11.0	–83.9	161.9	356.0	59.7	335/85	4181414.5	437172.2	
North Spring												
116	Td	8/8	10.6	83.5	–13.0		62.7	45.9	020/90	4181157.5	437405.1	Rejected

Note: Td—Tertiary mafic intrusive rocks; N/N_o—ratio of samples used (N) to samples collected (N_o); α_{3-1}—approximate 95% confidence angle of the major semi-axis in Bingham statistics; α_{3-2}—approximate 95% confidence angle of the minor semi-axis in Bingham statistics; K_1—Bingham concentration parameter; oval azimuth—orientation of the Bingham 95% confidence ellipse; D/I (in situ)—in situ direction of the minimum eigenvector determined with Bingham statistics; S/D—strike and dip, dip direction clockwise from strike; North (Y) and East (X); site location in Universal Transverse Mercator (UTM) coordinate system. The underlined numbers are the strike and dip of the intrusions or bedding plane measurements of stratified flow units. The italic numbers are the corrected site mean directions.

*Dispersion at site level unacceptably high and therefore rejected from further analysis.

Table DR3. $^{40}Ar/^{39}Ar$ analytical data from Silver Peak mafic intrusions.

ID	Temp (°C)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	Cl/K (x 10^{-3})	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)		±1s (Ma)	
SP-55, groundmass, 21.59 mg, J=0.0007632±0.10%, D=1.00362±0.00105, NM-93, Lab#=9505-01													
A#	625	187.2	0.6846	509.5	1.27	0.75	1.8	19.5	4.3	49.67	±	1.21	
B#	700	41.25	0.3298	82.15	1.54	1.5	0.38	41.1	9.5	23.27	±	0.42	
C	750	17.63	0.1875	23.93	1.46	2.7	0.55	59.9	14.4	14.52	±	0.20	
D	800	15.04	0.1313	16.87	1.45	3.9	0.76	66.9	19.2	13.83	±	0.17	
E	875	16.40	0.2432	20.24	1.87	2.1	-0.071	63.6	25.5	14.33	±	0.19	
F	975	16.17	0.6442	18.85	3.68	0.79	0.51	65.8	37.9	14.63	±	0.13	
G#	1075	19.58	3.114	28.72	5.02	0.16	0.82	57.8	54.8	15.58	±	0.14	
H#	1250	21.21	4.098	19.85	9.89	0.12	0.72	73.8	88.0	21.53	±	0.10	
I#	1650	52.98	3.710	67.58	3.55	0.14	0.44	62.8	100.0	45.45	±	0.34	
total gas age			n=9		29.7	0.75				22.7	±	0.4	*
plateau age		MSWD = 4.3**	n=4	steps C-F	8.5	1.95			28.4	14.4	±	0.8	*
isochron age		MSWD = 2.1	n=6	steps B-G		$^{40}Ar/^{36}Ar$=399±6				**11.6**	±	**0.4**	*
SP-69, groundmass, 22.21 mg, J=0.0007628±0.10%, D=1.00362±0.00105, NM-93, Lab#=9506-01													
A#	625	184.6	0.9649	585.6	4.39	0.53	1.9	6.2	3.4	15.61	±	1.14	
B	700	40.56	0.4173	107.5	5.65	1.2	0.089	21.6	7.8	12.06	±	0.29	
C	750	23.93	0.3053	51.32	5.12	1.7	0.59	36.6	11.7	12.05	±	0.18	
D	800	22.63	0.2154	45.61	4.85	2.4	0.62	40.4	15.5	12.57	±	0.20	
E	875	21.24	0.1116	41.96	5.81	4.6	0.83	41.6	19.9	12.13	±	0.17	
F	975	21.25	0.2575	42.84	12.5	2.0	0.45	40.4	29.6	11.81	±	0.11	
G	1075	20.51	0.3459	41.41	16.5	1.5	0.43	40.4	42.3	11.39	±	0.11	
H	1250	25.07	0.6240	55.91	50.8	0.82	0.75	34.2	81.6	11.78	±	0.12	
I#	1650	32.01	0.3238	76.76	23.8	1.6	0.56	29.1	100.0	12.80	±	0.18	
total gas age			n=9		129.4	1.4				12.1	±	0.4	*
plateau age		MSWD = 6.7**	n=7	steps B-H	101.2	1.4			78.2	11.8	±	0.8	*
isochron age		MSWD = 6.7**	n=9	steps A-I		$^{40}Ar/^{36}Ar$=302.6±1.4				**11.4**	±	**0.6**	*
SP-75, groundmass, 17.75 mg, J=0.0007626±0.10%, D=1.00362±0.00105, NM-93, Lab#=9507-01													
A#	625	230.9	1.223	690.2	1.88	0.42	2.0	11.6	2.5	36.47	±	1.55	
B	700	22.71	0.4689	45.64	3.24	1.1	0.39	40.7	6.7	12.69	±	0.24	
C	750	12.63	0.2451	13.94	3.25	2.1	0.47	67.5	11.0	11.71	±	0.10	
D	800	11.97	0.1791	11.22	3.60	2.8	0.37	72.4	15.8	11.91	±	0.12	
E	875	15.64	0.2748	21.65	5.39	1.9	0.53	59.2	22.9	12.72	±	0.12	
F#	975	20.14	1.458	34.27	7.47	0.35	0.64	50.2	32.7	13.90	±	0.12	
G#	1075	16.49	2.444	23.37	8.58	0.21	0.84	59.2	44.0	13.44	±	0.10	
H#	1250	21.27	2.044	30.49	32.9	0.25	0.56	58.3	87.3	17.05	±	0.09	
I#	1650	42.96	1.197	80.44	9.66	0.43	0.77	44.8	100.0	26.36	±	0.23	
total gas age			n=9		76.0	0.63				17.0	±	0.3	*
plateau age		MSWD = 17.5**	n=4	steps B-E	15.5	1.97			20.4	12.1	±	2.2	*
isochron age		MSWD = 2.5	n=4	steps A-D		$^{40}Ar/^{36}Ar$=321±1.8				**11.3**	±	**0.2**	*
SP-92, groundmass, 34.56 mg, J=0.000326±0.10%, D=1.00362±0.00105, NM-96, Lab#=9599-01													
A#	550	4616.7	0.9289	15357.1	0.223	0.55	9.1	1.5	0.6	41.43	±	12.98	
B#	625	341.7	0.9687	1067.6	1.04	0.53	-0.129	7.5	3.5	15.15	±	0.96	

K#	1650	65.95	3.307	142.7	2.19	0.15	1.2	36.3	100.0	14.10	±	0.20	
total gas age			n=11		36.0	0.56				12.2	±	0.5	*
plateau age	MSWD = 2.7**		n=6	steps D-I	17.2	0.75			47.8	10.8	±	0.4	*
isochron age	MSWD = 3.8**		n=9	steps A-I		$^{40}Ar/^{36}Ar$=300.3±1.0				**10.5**	±	**0.8**	*

SP-96, groundmass, 23.17 mg, J=0.0007633±0.10%, D=1.00362±0.00105, NM-93, Lab#=9504-01

A#	625	113.0	0.0935	355.7	9.32	5.5	1.2	6.8	11.6	10.62	±	0.72	
B	700	19.94	0.1216	33.67	8.79	4.2	0.50	50.1	22.6	13.73	±	0.11	
C	750	15.63	0.1737	17.41	6.15	2.9	0.35	67.1	30.3	14.43	±	0.10	
D	800	14.79	0.3619	17.11	3.68	1.4	0.60	65.9	34.9	13.41	±	0.09	
E	875	16.88	0.3581	24.38	4.41	1.4	0.54	57.4	40.4	13.33	±	0.10	
F	975	16.45	0.2570	22.73	8.59	2.0	0.43	59.2	51.1	13.40	±	0.08	
G	1075	15.59	0.1632	19.66	15.9	3.1	0.54	62.8	70.9	13.46	±	0.07	
H#	1250	14.41	0.7834	18.10	18.5	0.65	0.55	63.2	94.0	12.54	±	0.07	
I#	1650	17.64	1.637	26.82	4.84	0.31	1.1	55.7	100.0	13.53	±	0.19	
total gas age			n=9		80.1	2.5				13.0	±	0.3	*
plateau age	MSWD = 18.0**		n=6	steps B-G	47.5	2.8			59.3	13.6	±	1.3	*
isochron age	MSWD =36.0**		n=8	steps B-I		$^{40}Ar/^{36}Ar$=329±6				**12.4**	±	**1.9**	*

SP-112, groundmass, 20.00 mg, J=0.0007632±0.10%, D=1.00362±0.00105, NM-93, Lab#=9503-01

A#	625	453.4	0.5424	1434.5	1.84	0.94	1.8	6.4	2.4	39.32	±	2.84	
B#	700	31.26	0.2007	72.24	3.44	2.5	0.97	31.6	6.9	13.60	±	0.25	
C	750	11.83	0.1360	13.24	2.55	3.8	0.78	67.0	10.3	10.90	±	0.10	
D	800	11.15	0.1097	11.00	3.07	4.6	0.57	70.9	14.3	10.88	±	0.09	
E#	875	11.66	0.1335	12.12	4.52	3.8	0.60	69.3	20.2	11.12	±	0.07	
F#	975	12.20	0.2231	13.42	7.30	2.3	0.44	67.6	29.8	11.34	±	0.07	
G#	1075	13.19	0.5298	16.34	8.70	0.96	0.63	63.6	41.3	11.55	±	0.08	
H#	1250	16.95	1.518	19.76	31.8	0.34	0.69	66.2	83.0	15.44	±	0.07	
I#	1650	24.63	0.7215	33.67	12.9	0.71	0.42	59.8	100.0	20.21	±	0.12	
total gas age			n=9		76.2	1.3				15.3	±	0.3	*
plateau age	MSWD = 1.1		n=2	steps C-D	5.6	4.2			7.4	10.9	±	0.1	*
isochron age	MSWD = 9.6**		n=7	steps A-G		$^{40}Ar/^{36}Ar$=314.0±1.4				**10.9**	±	**0.3**	*

SP-64, hornblende, 2.83 mg, J=0.0007722±0.10%, D=1.00362±0.00105, NM-93, Lab#=9500-01

A	800	310.4	5.344	1016.7	0.349	0.095	0.95	3.2	12.6	13.86	±	2.88	
B	850	228.5	-34.0184	597.2	0.023	-	-0.566	21.5	13.4	65.78	±	10.99	
C	950	47.14	5.024	115.5	0.221	0.10	2.4	28.3	21.4	18.58	±	1.13	
D	1020	41.29	6.932	74.79	0.279	0.074	0.047	47.7	31.5	27.41	±	0.86	
E	1080	46.70	5.293	44.15	0.432	0.096	0.94	72.9	47.1	47.08	±	0.56	
F	1120	29.06	5.559	53.43	0.160	0.092	5.5	47.0	52.9	19.07	±	1.01	
G	1160	24.64	5.932	32.36	0.413	0.086	0.50	63.0	67.8	21.63	±	0.44	
H	1200	25.23	6.564	27.96	0.386	0.078	1.6	69.2	81.7	24.32	±	0.46	
I	1300	27.92	8.708	38.26	0.128	0.059	12.0	61.8	86.4	24.10	±	1.14	
J	1400	41.74	12.99	97.87	0.048	0.039	16.3	33.0	88.1	19.30	±	2.43	
K	1650	34.09	14.91	51.71	0.328	0.034	28.2	58.5	100.0	27.91	±	0.74	
total gas age - no plateau			n=11		2.77	0.080				26.4	±	2.2	*
isochron age	MSWD = 190**		n=11	steps A-K		$^{40}Ar/^{36}Ar$=309±2				**27.4**	±	**8.3**	*

SP-108, hornblende, 14.92 mg, J=0.0007741±0.10%, D=1.00362±0.00105, NM-93, Lab#=9499-01

A	800	366.0	1.738	1102.1	3.51	0.29	1.4	10.9	12.8	55.12	±	2.11	
B	850	194.1	0.7643	455.2	0.872	0.67	1.5	30.6	16.0	81.30	±	1.23	
C	950	75.91	2.127	131.3	2.74	0.24	0.94	49.0	26.0	51.44	±	0.42	

total gas age - no plateau	n=11		27.4	0.16	50.0	±	1.0	*
isochron age MSWD = 2000*[3]	n=11	steps A-K		$^{40}Ar/^{36}Ar$=375.9±1.5	**47.5**	±	**9.8**	*

Notes: * denotes 2 simgma error stated for weighted mean ages; ** denotes MSWD which excceds exceeding criteria of Mahon (1991), weighted me increased by multiplying by square root of WSWD; # denotes analyses excluded from mean age calculations.

Isotopic ratios corrected for blank, radioactive decay, and mass discrimination, not corrected for interferring reactions.

Individual analyses show analytical error only; mean age errors also include error in J and irradiation parameters.

Correction factors:

$(^{39}Ar/^{37}Ar)_{Ca}$ = 0.00070±0.00005

$(^{36}Ar/^{37}Ar)_{Ca}$ = 0.00026±0.00002

$(^{38}Ar/^{39}Ar)_{K}$ = 0.0108

$(^{40}Ar/^{39}Ar)_{K}$ = 0.0002±0.0003