

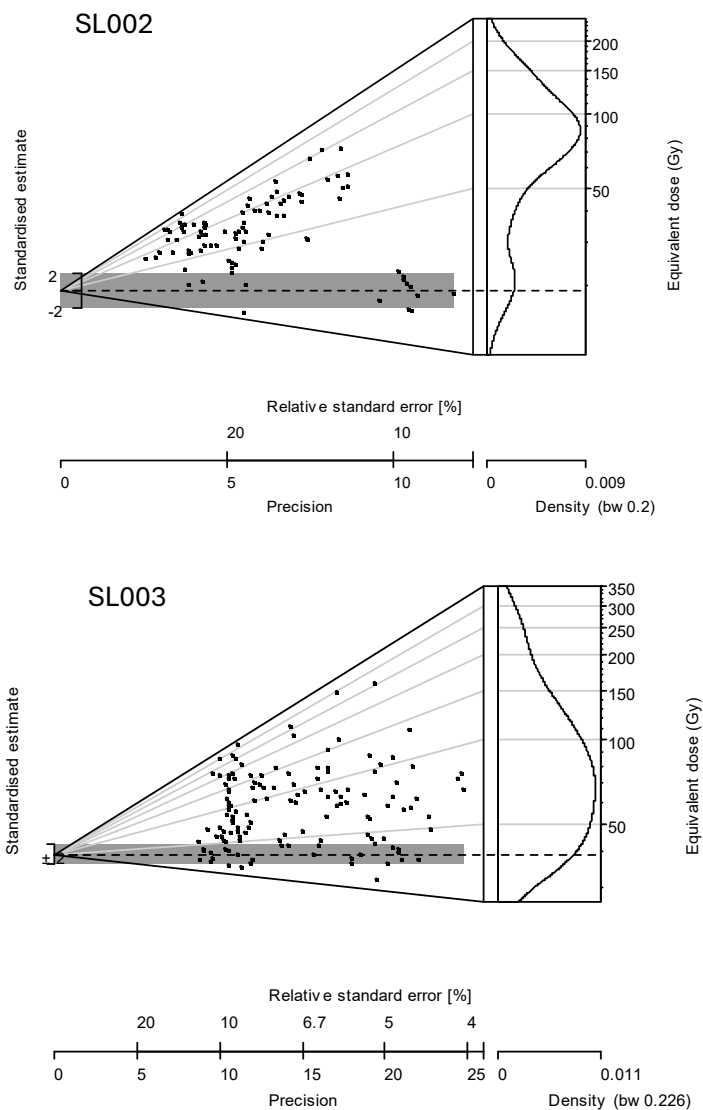
SUPPLEMENTAL MATERIAL

for

Luminescence Dating Reveals Multiple Late Quaternary Eruptions at the Soda Lake Volcanic Center, Nevada

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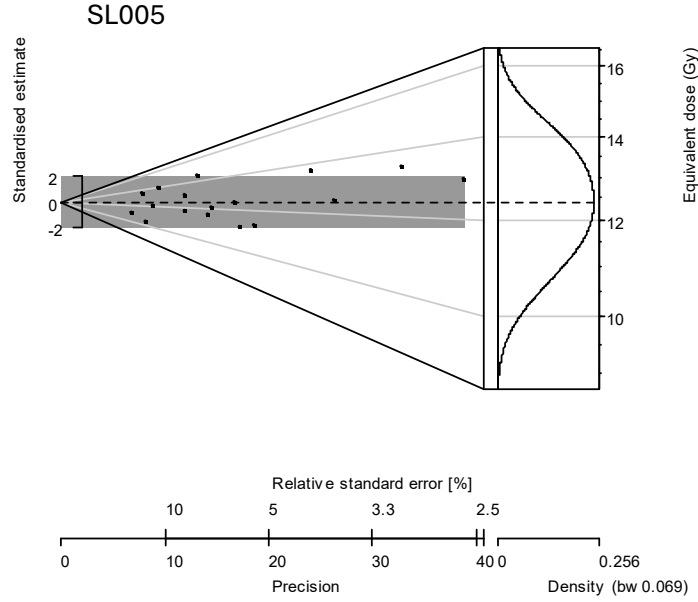


Figure S1. Abanico plots showing equivalent dose (D_e) distributions for samples SL002, SL003, and SL005. Individual accepted grains are shown with their associated 1σ uncertainties. Dashed horizontal lines indicate the D_e estimates calculated using the Minimum Age Model (MAM) for samples SL002 and SL003, and the Central Age Model (CAM) for sample SL005. Shaded bands represent the $\pm 2\sigma$ uncertainty envelope surrounding each D_e estimate. Kernel density functions illustrating the D_e distributions are shown on the right side of each plot.

Table S1. Summary of dose rate data used for age calculation.

Sample ID	Depth (m)	U (ppm) ^a	Th (ppm) ^a	K (%) ^a	Beta dose rate (Gy/ka) ^b	Gamma dose rate (Gy/ka) ^c	Cosmic dose rate (Gy/ka) ^d	Total dose rate (Gy/ka) ^e
SL001	6.00	2.28	4.65	2.08	1.90 ± 0.20	1.02 ± 0.08	0.13 ± 0.01	4.01 ± 0.26
SL002	5.85	2.39	4.85	2.33	2.10 ± 0.22	1.09 ± 0.08	0.14 ± 0.01	4.28 ± 0.28
SL003	0.75	2.06	4.42	1.97	1.79 ± 0.77	0.77 ± 0.06	0.24 ± 0.02	3.75 ± 0.25
SL004	5.00	1.77	4.47	1.77	1.66 ± 0.14	0.98 ± 0.09	0.10 ± 0.01	2.76 ± 0.17
SL005	4.10	1.69	4.38	1.75	1.63 ± 0.14	0.71 ± 0.09	0.12 ± 0.01	2.47 ± 0.17

^a Radionuclide concentration measurement uncertainties are 10% for U, Th, and K.

^b Beta and gamma dose rates were calculated using the conversion factors of Liritzis et al. (2013) and attenuation factors were based on Guérin et al. (2011) and Brennan (2003).

^c Gamma dose rates include measured *in-situ* contributions for sediment samples (SL001-SL003) and modeled geometric contributions from both the bomb interior and surrounding sediments for basalt bomb samples (SL004-SL005).

^d Cosmic dose rates (Gy/ka) are calculated according to Prescott and Hutton (1994).

^e Total dose rates include internal dose rate contributions assuming $12.5 \pm 0.5\%$ K for K-feldspar (SL001-SL003) and $0.2 \pm 0.1\%$ K for calcic plagioclase (SL004-SL005).