

SUPPLEMENTARY FILE 4. (U-Th-Sm)/He apatite data (single grain) - BK Zealandia

Sample No.	Lab. no.	He no.	⁴ He (ncc)	Mass (mg)	U ppm	Th ppm	Sm ppm	Th/U ratio	^a [eU] ppm	^b Mean F _r	Age (Ma)	Error (±1σ)	Grain radius (μm)	Grain length (μm)	^c R _s	^d Grain morphology
Wishbone Ridge																
P67415	6432	18815	0.368	0.0164	0.9	2.7	141.1	2.99	1.5	0.82	111.9	8.8	75.6	396.3	95.3	1T
P67415	6433	18812	0.294	0.0102	1.2	3.4	151.8	2.79	2.0	0.78	106.6	8.5	68.8	259.1	81.5	2T
P67415	6434	18809	0.268	0.0078	1.4	3.8	159.8	2.65	2.3	0.76	112.4	9.3	65.8	217.8	75.8	2T
											*110.0	10.0				
Takahe Seamount, E. Chatham Rise																
P67437	8515	25519	0.278	0.0027	4.6	29.2	350.0	6.40	11.5	0.66	107.3	4.4	48.4	139.6	53.9	2T
P67437	8516	25521	0.312	0.0027	7.0	35.0	474.2	5.00	15.2	0.64	95.6	3.8	41.6	184.9	50.9	2T
											100.6	5.8				
South Island, Murihiku																
P80920	7463	22030	8.648	0.00805	14.4	14.2	293.6	0.99	17.7	0.77	468.3	29.0	70.3	196.0	77.6	2T
P80920	7464	22052	8.249	0.00956	11.9	126.0	479.2	10.59	41.5	0.79	166.9	10.4	69.3	285.8	83.6	1T
P80920	7465	22054	3.099	0.00337	14.1	8.0	392.6	0.56	16.0	0.70	439.6	27.3	42.2	255.7	54.3	1T
Bounty Islands																
10721	7580	22446	1.740	0.0031	36.3	34.7	590.5	0.95	44.5	0.67	101.8	6.3	41.7	240.8	53.3	1T
10721	7581	22444	1.547	0.0039	27.5	16.3	336.9	0.59	31.3	0.73	102.6	6.4	50.0	154.2	56.6	0T
10721	7460	22046	13.370	0.0065	15.8	26.4	330.9	1.67	22.0	0.76	710.3	44.0	55.2	211.8	65.7	0T
10721	7461	22034	9.031	0.0033	55.0	22.1	512.6	0.40	60.2	0.71	352.9	21.9	45.2	226.8	56.6	1T
10721	7462	22032	1.419	0.0050	14.5	25.2	387.9	1.74	20.4	0.74	109.9	6.8	52.8	179.4	61.2	0T
											*104.5	7.3				
Campbell Plateau																
R6865	6430	18821	61.010	0.0189	117.2	193.2	642.4	1.65	162.6	0.84	160.3	11.9	87.5	371.8	106.3	1T
R6865	6827	20017	55.384	0.0194	100.1	146.4	448.0	1.46	134.5	0.81	171.1	10.6	77.3	443.0	98.7	1T
R6865	6828	20019	39.967	0.0058	191.3	288.0	718.6	1.51	259.0	0.68	215.4	13.4	50.8	269.1	64.1	2T
R6865	6829	20021	53.104	0.0110	142.4	149.8	438.9	1.05	177.6	0.75	218.9	13.6	56.8	338.7	73.0	0T

^aEffective uranium concentration (U ppm + 0.235 Th ppm).

^bF_r is the α-ejection correction after Farley et al. (1996).

^cR_s is the equivalent sphere radius of the crystal.

^dGrain morphology - 0T = no terminations, 1T = one termination, 2T = 2 terminations.

^eWeighted mean at the 95% confidence level (calculated using IsoPlot by K. Ludwig.)

^fAnalysis excluded from calculation of weighted mean.