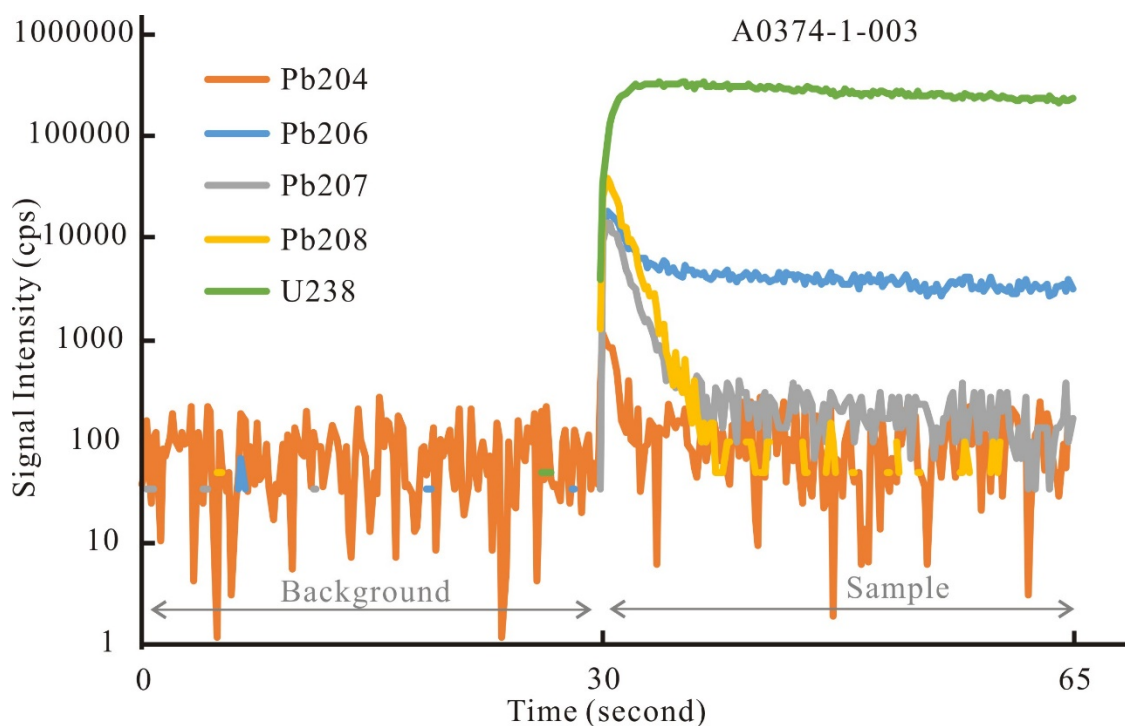


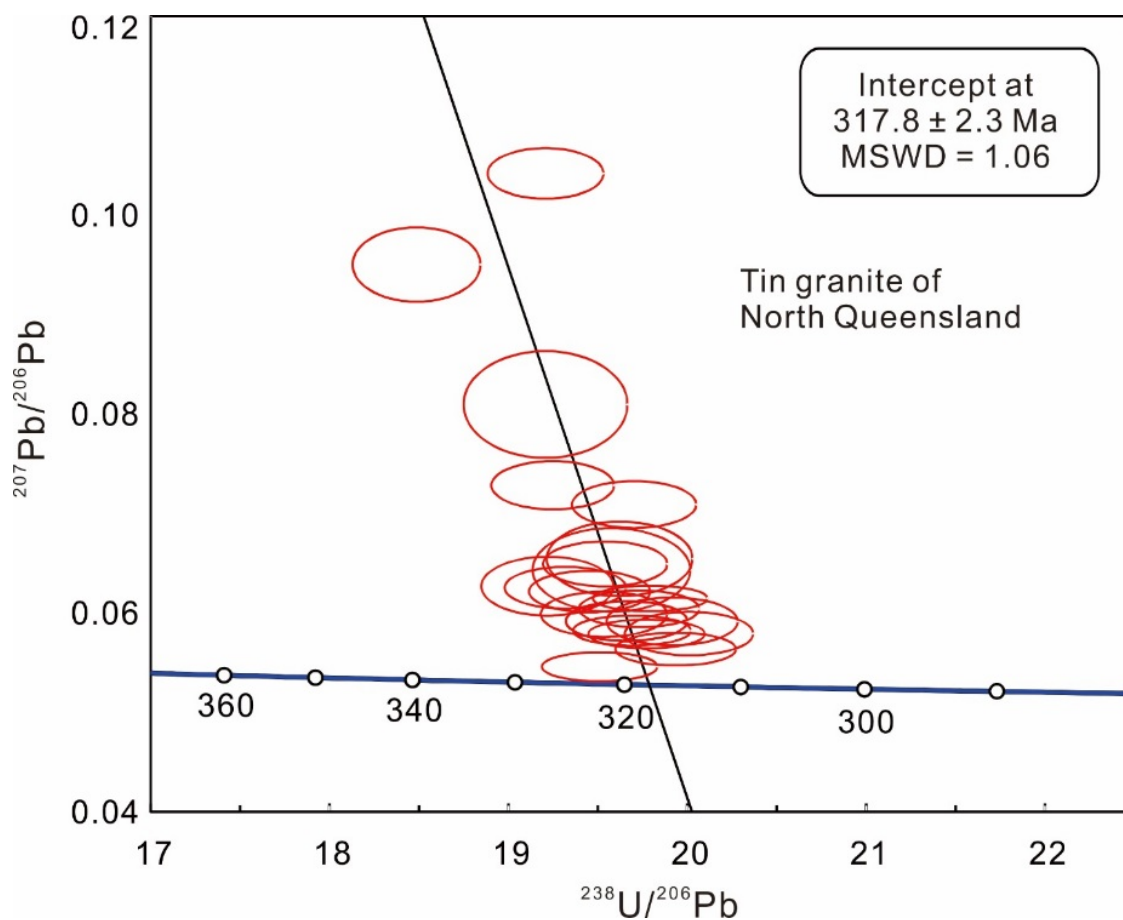
Appendix 2-1 Comparison of down-hole Pb/U fractionation for cassiterite, NIST612 and zircon during LA-ICP-MS analysis. Note, the downhole Pb/U evolution for cassiterite and NIST612 are similar to each other, but significantly different from zircon. Thus NIST612 glass is able to accurately calibrate LA-ICP-MS U-Pb dating result in cassiterite.



Appendix 2-2 Laser ablation ICP-MS spectra showing intensity (counts per second) vs. number of readings for ^{204}Pb , ^{206}Pb , ^{207}Pb , ^{208}Pb and ^{238}U of the analysis spot A0374-1-003 of this study.

Appendix 2-3 Uranium-Pb dating results for the Herberton sample of Queensland (Australia) analyzed by LA-ICP-MS.

Analysis spot	Isotope ratios				Age estimates			
	$^{207}\text{Pb}/^{206}\text{Pb}$	$\pm 1\text{s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 1\text{s}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$\pm 1\text{s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 1\text{s}$
TK0904_1	0.0592	0.0013	0.0509	0.0006	574	48	320	4
TK0904_2	0.0649	0.0015	0.0512	0.0006	772	48	322	4
TK0904_3	0.0627	0.0020	0.0520	0.0007	697	65	327	4
TK0904_4	0.0622	0.0014	0.0514	0.0006	679	46	323	4
TK0904_5	0.0950	0.0025	0.0541	0.0007	1529	48	340	4
TK0904_6	0.0599	0.0015	0.0512	0.0006	599	53	322	4
TK0904_7	0.0625	0.0014	0.0518	0.0006	692	47	325	4
TK0904_8	0.0582	0.0010	0.0508	0.0006	538	38	319	3
TK0904_9	0.0728	0.0016	0.0520	0.0006	1009	44	327	4
TK0904_10	0.0709	0.0016	0.0508	0.0006	955	44	319	4
TK0904_11	0.0615	0.0009	0.0505	0.0005	655	30	318	3
TK0904_13	0.1042	0.0017	0.0521	0.0006	1700	29	327	4
TK0904_14	0.0604	0.0012	0.0507	0.0006	618	43	319	4
TK0904_15	0.0579	0.0010	0.0506	0.0006	525	36	318	3
TK0904_16	0.0643	0.0028	0.0511	0.0008	752	88	321	5
TK0904_17	0.0579	0.0014	0.0500	0.0006	527	54	314	4
TK0904_18	0.0591	0.0016	0.0502	0.0006	572	58	316	4
TK0904_19	0.0546	0.0010	0.0513	0.0006	396	39	322	3
TK0904_20	0.0654	0.0025	0.0510	0.0007	789	77	320	4
TK0904_21	0.0810	0.0035	0.0521	0.0008	1220	83	327	5
TK0904_22	0.0564	0.0011	0.0502	0.0006	466	43	316	3



Appendix 2-4 LA-ICP-MS U-Pb dating result for cassiterite from the Herberton field, Queensland.

Note: The above analysis returned a weighted mean $^{206}\text{Pb}/^{238}\text{U}$ age of 318 ± 2 Ma (corrected for common lead using the 207 method) (see figure above, and data next page), which is consistent with high precision hydrothermal alteration ages, and also falls well within the age range (330-315 Ma) of the Sn-W mineralised O'Brien's Supersuite granitic rocks emplaced in this area (Murgulov et al., 2013; Cheng et al., 2018).

References

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- Murgulov, V., Griffin, W. L., O'Reilly, S. Y., 2013, Carboniferous and Permian granites of the northern Tasman orogenic belt, Queensland, Australia: insights into petrogenesis and crustal evolution from an in situ zircon study: *International Journal of Earth Sciences*, 102, 647-669.