

Table S1. Sample locations and dating information from low-relief plateau surfaces in eastern Tibet.

Sample	Lithology	Era	Longitude	Latitude	Elevation	Zircon U-Pb age (Ma)	Zircon (U-Th)/He age (Ma)	Apatite FT age (Ma)	Apatite (U-Th)/He age (Ma)	Reference
			(°E)	(°N)	(m)					
Zuogong plateau										
CD270	Granite	late Triassic	98.3030	29.5510	3868				14.8 ± 1.8	This study
CD272	Granite	late Triassic	98.2099	29.5531	3622	212 ± 3	60.2 ± 5.2	20.9 ± 2.5	24.3 ± 2.5	This study
CD273	Granite	late Triassic	98.1936	29.5608	3757			22.0 ± 3.2	28.4 ± 1.8	This study
CD274	Granite	late Triassic	98.1814	29.5791	3894	216 ± 2	50.6 ± 2.2	20.8 ± 1.9	19.7 ± 1.4	This study
CD275	Granite	late Triassic	98.1663	29.5995	4020			16.2 ± 2.8	25.0 ± 2.4	This study
CD276	Granite	late Triassic	98.1401	29.6327	4197		37.0± 0.3	15.3 ± 2.0	17.0 ± 0.6	This study
CD277	Granite	late Triassic	98.1301	29.6626	4436			24.2 ± 2.4	18.6 ± 0.4	This study
CD279	Granite	late Triassic	98.0459	29.7234	4822			17.7 ± 3.9	12.5 ± 0.9	This study
CD280	Granite	late Triassic	98.0137	29.7181	4991	214 ± 3		23.6 ± 5.2	27.4 ± 2.8	This study
CD282	Granite	late Triassic	97.9599	29.7323	4703			25.6 ± 2.7	28.7 ± 1.5	This study
TL09-8A	Granodiorite	late Triassic	98.0900	29.7200	4724				18.6 ± 1.1	Xiao et al., 2015
TL09-6A	Granite	late Triassic	98.0100	29.7200	4981				17.6 ± 1.3	Xiao et al., 2015
TL09-11A	Granite	late Triassic	98.1500	29.6200	4143				19.4 ± 0.2	Xiao et al., 2015
TL09-12A	Granite	late Triassic	98.1800	29.5800	3741				22.8 ± 1.6	Xiao et al., 2015
TL09-14A	Granite	late Triassic	98.2000	29.5600	3741				16.1 ± 0.9	Xiao et al., 2015
Markam plateau										
CD260	Sandstone	late Cretaceous	98.5356	29.6949	4325			76.3 ± 12.7	41.3 ± 2.5	This study
YA15	Sandstone	Paleozoic	98.6700	29.7400	3718			70.9 ± 5.9		Wilson and Fowler, 2011
YA21	sandstone	Jurassic	98.6400	29.4400	3672			43.7 ± 6.8		Wilson and Fowler, 2011
YA14	sandstone	Triassic	98.6700	29.2800	4142			59.4 ± 10		Wilson and Fowler, 2011
Weixi plateau										
CD252	Granite	late Triassic	99.2993	27.3477	2878		117 ± 7	118 ± 12		This study
CD253	Granodiorite	late Triassic	99.3463	27.3608	2703	232 ± 9		95.0 ± 7.8	61.9 ± 10.1	This study
CD254	Granite Porphy	late Triassic	99.3479	27.4155	2509			61.3 ± 8.9		This study
CD255	Granite	late Triassic	99.3470	27.4731	2376				30.7 ± 1.3	This study
WX11_03	Rhyolite	late Triassic	99.3031	27.4307	3150		88 ± 14	102 ± 5	52.9 ± 7.1	Liu-Zeng et al., 2018

WX11_07	Syenite	late Triassic	99.3052	27.4351	2848		121 ± 13	116 ± 5	50.0 ± 6.9	Liu-Zeng et al., 2018
WX11_08	Granite Porph	late Triassic	99.3080	27.4478	2620		132 ± 7	72.7 ± 3.3	43.5 ± 3.8	Liu-Zeng et al., 2018
WX11_10	Granite	late Triassic	99.3327	27.4629	2439		115 ± 8	53.2 ± 2.4	33.6 ± 1.1	Liu-Zeng et al., 2018
TL09-27	Granodiorite	late Triassic	99.3504	27.4790	2298			58.2 ± 5.4	19.8 ± 0.3	Liu-Zeng et al., 2018
TL09-28	Granite Porph	late Triassic	99.3473	27.4264	2476			88.6 ± 5.0	51.6 ± 2.5	Liu-Zeng et al., 2018
TL09-29	Granodiorite	late Triassic	99.3466	27.3609	2682				78.2 ± 4.9	Liu-Zeng et al., 2018
TL09-30	Granite Porph	late Triassic	99.2892	27.3476	2919			58.1 ± 8.3	80.0 ± 6.1	Liu-Zeng et al., 2018
TL09-31	Syenite	late Triassic	99.2723	27.3716	3140			88.3 ± 6.5		Liu-Zeng et al., 2018
CD144	Granite	late Triassic	99.5151	27.0599	2595	228 ± 5	121 ± 2	35.8 ± 2.8	-	Cao et al., 2020
CD145	Granite	late Triassic	99.5034	27.0696	2635		108 ± 5	-	35.9 ± 3.2	Cao et al., 2020
CD146	Granite	late Triassic	99.4895	27.0908	2710		-	45.3 ± 3.7	-	Cao et al., 2020
CD147	Granite	late Triassic	99.4851	27.1013	2789		-	41.6 ± 3.4	-	Cao et al., 2020
CD148	Granite	late Triassic	99.4927	27.1031	2939		119 ± 7	38.7 ± 3.2	41.7 ± 2.6	Cao et al., 2020
CD149	Granite	late Triassic	99.4999	27.0996	2985	235 ± 5		44.0 ± 3.5	-	Cao et al., 2020
YAN07	Granodiorite	late Triassic	99.3474	27.4739	2345		131 ± 8		$30.8 \pm 2.0/29.0 \pm 1.7$	Yang et al., 2016

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