

Appendix Table DR1. Major, trace element and Sr-Nd isotope data of whole-rock samples

sample	Jurassic	northern magmatic belt				Gangdese
	Gangdese	T006B	T006C	T109A	T109B	ST104A
locality	Wuyu	Jiangda	Jiangda	Luozha	Luozha	Zedong
longitude	89.62°E	93.04°E	93.04°E	89.13°E	89.13°E	91.81°E
latitude	29.52°N	29.99°N	29.99°N	30.09°N	30.09°N	29.27°N
elevation (m)	4052	3634	3634	4442	4442	3566
age (Ma) ^a	188.1	141.3	141.3	~120	~120	60.1
XRF - major element (wt.%)						
SiO ₂	72.37	72.65	67.29	74.43	73.09	65.58
TiO ₂	0.30	0.33	0.64	0.30	0.16	0.43
Al ₂ O ₃	15.07	14.06	15.40	15.49	15.16	16.57
ΣFe ₂ O ₃	2.09	2.39	4.30	0.34	0.84	3.99
MnO	0.08	0.04	0.06	0.01	0.01	0.07
MgO	0.65	0.57	1.24	0.45	0.11	1.71
CaO	2.14	1.99	4.69	1.20	1.04	4.25
Na ₂ O	4.15	2.56	2.31	5.08	2.15	3.21
K ₂ O	2.36	3.74	1.89	1.26	6.99	2.70
P ₂ O ₅	0.06	0.09	0.44	0.16	0.19	0.10
ASI ^b	1.14	1.18	1.07	1.30	1.17	1.04
ICP-MS - trace element (ppm)						
Sc	12.0	19.1	18.0	4.9	16.1	13.8
V	64	8.2	45	58	70	116
Cr	2.90	13.5	17.5	4.3	2.5	11.9
Co	3.3	3.2	7.2	0.4	0.5	10.1
Ni	1.0	5.9	6.0	0.6	0.2	4.6
Cu	6.70	1.20	0.43	3.68	2.87	17.8
Zn	37	26	61	28	9	47.4
Ga	13.1	15.1	18.7	19.6	21.2	15.5
Rb	65.1	153	107	73.2	360	69.2
Sr	458	242	315	318	56.9	336
Y	14.7	25.5	32.0	13.8	8.1	12.3
Zr	141	220	295	142	65	107
Nb	5.08	13.9	14.1	12.9	16.1	3.88
Cs	2.19	5.33	6.11	5.78	14.7	3.68
Ba	561	507	272	82.3	140	446
La	15.4	39.6	79.3	32.7	9.57	13.5
Ce	28.6	76.9	152	72.2	20.6	26.5
Pr	3.03	8.33	16.1	8.57	2.83	2.96
Nd	11.4	31.0	59.2	33.1	11.1	11.7
Sm	2.25	5.95	9.94	6.60	2.90	2.30
Eu	0.74	1.15	1.63	0.57	0.33	0.75
Gd	2.17	5.24	8.63	4.70	2.32	2.10
Tb	0.37	0.80	1.23	0.58	0.33	0.34
Dy	2.28	4.41	6.37	2.35	1.34	2.01
Ho	0.49	0.89	1.20	0.37	0.20	0.41
Er	1.49	2.57	3.15	0.95	0.51	1.22
Tm	0.24	0.39	0.40	0.12	0.074	0.20
Yb	1.71	2.49	2.46	0.78	0.48	1.31
Lu	0.28	0.39	0.38	0.12	0.068	0.21
Hf	3.56	5.68	7.31	3.68	1.84	3.09
Ta	0.52	1.24	1.05	1.49	2.48	0.38
Pb	13.7	41.8	14.8	8.30	53.4	12.7
Th	5.37	18.00	19.0	46.9	17.3	8.52
U	1.24	2.56	1.41	4.98	6.16	1.51
Isotope ratios						
⁸⁷ Sr/ ⁸⁶ Sr	0.705203		0.713394	0.713288		0.705043
1 _{Sr}	0.705203		0.713394	0.713288		0.705043
¹⁴³ Nd/ ¹⁴⁴ Nd	0.512826		0.512068	0.512101		0.512707
ε Nd(T)	5.5		-9.4	-9.3		1.9
T _{DMr} -Nd (Ma)	522		1467	1712		714

Major and trace elements were determined at National Taiwan University by X-ray fluorescence method using a Rigaku RIX-2000 spectrometer and by inductively coupled plasma-mass spectrometry using an Agilent 7500s quadrupole ICP-MS, respectively. The routine analytical precision and accuracy for most elements measured are estimated to be <5%. Sr and Nd isotope ratios were measured using Finnigan MAT 262® mass spectrometer. Detailed analytical procedures can be found in Wang et al. (2004, Journal of petrology, v. 45, no. 5, p. 975-1011).

^a Ages of the Nyainqentanglha and Gangdese samples are from Wen et al. (2003 and 2005).

^b ASI (aluminum saturation index): the molecular ratio of Al₂O₃/(Na₂O+K₂O+CaO)

$$^{87}\text{Sr}/^{86}\text{Sr}(t) = ^{87}\text{Sr}/^{86}\text{Sr} - (^{87}\text{Rb}/^{86}\text{Sr}) \times (e^{\lambda t} - 1)$$

$$^{87}\text{Rb}/^{86}\text{Sr} = (\text{Rb}/\text{Sr}) \times 2.8956$$

$$\lambda_{\text{Rb-Sr}} = 0.0142 \text{ Ga}^{-1}$$

$$\epsilon \text{Nd}(T) = [({}^{143}\text{Nd}/{}^{144}\text{Nd})_{\text{Sample}}(T) / ({}^{143}\text{Nd}/{}^{144}\text{Nd})_{\text{CHUR}}(T) - 1] \times 10^4$$

$$\lambda_{\text{Sm-Nd}} = 0.00654 \text{ Ga}^{-1}$$

$$({}^{143}\text{Nd}/{}^{144}\text{Nd})_{\text{Sample}}(T) = ({}^{143}\text{Nd}/{}^{144}\text{Nd})_{\text{Sample}} - ({}^{147}\text{Sm}/{}^{144}\text{Nd})_{\text{Sample}} \times (e^{\lambda t} - 1)$$

$${}^{147}\text{Sm}/{}^{144}\text{Nd} = (\text{Sm}/\text{Nd}) \times 0.60456$$

$$({}^{143}\text{Nd}/{}^{144}\text{Nd})_{\text{CHUR}}(T) = 0.512638 - 0.1967 \times (e^{\lambda t} - 1)$$

$$T_{\text{DMr}}\text{-Nd} = 1/\lambda \times \ln \{1 + [({}^{143}\text{Nd}/{}^{144}\text{Nd})_{\text{Sample}} - 0.51315] / [({}^{147}\text{Sm}/{}^{144}\text{Nd})_{\text{Sample}} - 0.2137]\}$$

Appendix Table DR2. SHRIMP U-Pb zircon data

Sample	grain ^a	U (ppm)	Th (ppm)	Th/U	f ₂₀₆ (%)	²⁰⁶ Pb/ ²³⁸ U	±1σ	²⁰⁷ Pb/ ²³⁵ U	±1σ	error corr.	²⁰⁶ Pb/ ²³⁸ U age (Ma)	±1σ	²⁰⁷ Pb/ ²⁰⁶ Pb age (Ma)	±1σ
ST134A	ST134a-01	125	74	0.591	1.56	0.02987	0.00054	0.208	0.016	0.237	189.7	3.3		
	ST134a-02	71	37	0.52	3.31	0.03005	0.00069	0.252	0.043	0.137	190.9	4.4		
	ST134a-03	538	588	1.093	-0.07	0.03036	0.00043	0.235	0.005	0.642	192.8	2.7		
	ST134a-04	125	77	0.617	3.55	0.03103	0.00062	0.207	0.035	0.114	197.0	3.8		
	ST134a-05	143	80	0.563	1.62	0.03057	0.00058	0.247	0.030	0.155	194.1	3.6		
	ST134a-06	169	144	0.855	1.20	0.03004	0.00051	0.265	0.024	0.193	190.8	3.2		
	ST134a-07	125	70	0.559	1.59	0.03130	0.00063	0.243	0.034	0.139	198.7	3.9		
	ST134a2-01	118	72	0.607	3.04	0.02963	0.00053	0.184	0.034	0.097	188.3	3.3		
	ST134a2-02	104	63	0.608	3.99	0.02899	0.00060	0.143	0.043	0.069	184.2	3.7		
	ST134a2-03	150	94	0.63	1.04	0.02964	0.00042	0.236	0.018	0.186	188.3	2.6		
	ST134a2-04	122	77	0.627	2.70	0.02960	0.00050	0.187	0.035	0.092	188.1	3.2		
	ST134a2-05	116	61	0.527	2.94	0.02904	0.00054	0.185	0.035	0.098	184.5	3.4		
	ST134a2-06	115	64	0.553	3.31	0.02886	0.00052	0.137	0.043	0.057	183.4	3.2		
	ST134a2-07	160	119	0.747	2.00	0.03063	0.00049	0.201	0.028	0.115	194.5	3.1		
	ST134a2-08	166	89	0.538	1.36	0.02915	0.00040	0.216	0.016	0.182	185.2	2.5		
	ST134a2-09	144	86	0.595	1.72	0.02982	0.00046	0.230	0.029	0.122	189.4	2.9		
	ST134a2-10	60	29	0.479	6.60	0.03077	0.00088	0.200	0.100	0.056	195.3	5.5		
	ST134a2-11	134	81	0.605	3.56	0.02909	0.00053	0.164	0.043	0.069	184.9	3.3		
	ST134a2-12	104	59	0.562	4.21	0.02840	0.00058	0.170	0.043	0.081	180.5	3.6		
	ST134a2-13	158	106	0.671	2.81	0.02984	0.00045	0.155	0.028	0.085	189.5	2.8		
	ST134a2-14	120	66	0.551	3.28	0.03012	0.00063	0.228	0.059	0.080	191.3	3.9		
	ST134a2-15	142	93	0.653	2.75	0.02844	0.00045	0.163	0.027	0.096	180.8	2.8		
	ST134a2-16	135	85	0.632	2.34	0.02932	0.00044	0.218	0.030	0.111	186.3	2.8		
	ST134a2-17	128	74	0.576	2.19	0.02937	0.00044	0.232	0.026	0.136	186.6	2.8		
	ST134a2-18	131	83	0.631	2.65	0.02923	0.00048	0.233	0.037	0.103	185.7	3.0		
	ST134a2-19	162	136	0.838	2.05	0.02983	0.00047	0.209	0.039	0.084	189.5	3.0		
	ST134a2-20	126	69	0.542	2.71	0.02980	0.00074	0.224	0.039	0.142	189.3	4.6		
ST134a2-21	158	108	0.686	2.29	0.03009	0.00044	0.234	0.027	0.128	191.1	2.8			
ST134a2-22	183	127	0.693	1.97	0.02874	0.00039	0.214	0.020	0.142	182.6	2.4			
ST134a2-23	117	70	0.597	3.53	0.02976	0.00053	0.183	0.038	0.085	189.0	3.3			
ST134a2-24	129	71	0.547	1.57	0.02988	0.00076	0.227	0.037	0.156	189.8	4.8			
ST134a2-25	92	64	0.695	5.10	0.02897	0.00059	0.143	0.049	0.060	184.1	3.7			
ST134a2-26	106	65	0.614	3.08	0.02948	0.00052	0.174	0.034	0.091	187.3	3.2			
ST134a2-27	87	40	0.454	4.65	0.02952	0.00059	0.188	0.049	0.078	187.5	3.7			
T006C	T006c-01	56	21	0.371	0.86	0.10460	0.00167	0.849	0.047	0.292	641.4	9.9		
	T006c-02	560	165	0.296	0.09	0.04920	0.00064	0.359	0.007	0.676	309.6	4.0		
	T006c-03	121	99	0.816	2.13	0.02965	0.00056	0.139	0.019	0.139	188.4	3.6		
	T006c-04	455	252	0.555	0.23	0.03019	0.00045	0.205	0.006	0.560	191.7	2.9		
	T006c-05	116	102	0.881	0.39	0.03065	0.00049	0.217	0.014	0.253	194.6	3.0		
	T006c-06	523	373	0.714	0.31	0.02992	0.00042	0.108	0.009	0.159	190.0	2.5		
	T006c-07	284	60	0.212	0.15	0.08090	0.00113	0.485	0.082	0.081	501.8	6.6		
	T006c-08	162	162	0.998	1.73	0.03029	0.00051	0.096	0.028	0.057	192.3	3.2		
	T006c-09	351	386	1.102	0.10	0.03115	0.00047	0.167	0.007	0.334	197.7	2.8		
	T006c-10	388	1195	3.075	0.04	0.07870	0.00102	0.468	0.019	0.331	488.6	6.3		
	T006c-11	121	102	0.845	0.59	0.03166	0.00057	0.191	0.012	0.289	200.9	3.6		
	T006c-12	56	40	0.708	4.96	0.03046	0.00085				193.4	5.4		
	T006c-13	211	184	0.869	0.79	0.02981	0.00048	0.184	0.009	0.319	189.4	3.0		
	T006c-14	1144	641	0.56	0.01	0.03020	0.00049	5.174	0.067	0.982	1839.0	21.0	1858	5
	T006c-15	161	149	0.925	0.50	0.03137	0.00047	0.205	0.010	0.319	199.1	2.9		
	T006c-16	376	235	0.626	0.76	0.03038	0.00043	0.183	0.007	0.375	192.9	2.9		
	T006c-17	403	45	0.112	0.08	0.16330	0.00359	2.177	0.057	0.850	975.0	20.0	1561	25
	T006c-18	571	70	0.123	0.04	0.13550	0.00190	1.659	0.038	0.626	819.0	11.0	1399	34
	T006c-19	404	157	0.388	0.18	0.14830	0.00222	1.567	0.028	0.841	891.0	13.0	1112	19
	T006c-20	43	37	0.859	-0.05	0.12000	0.00204	1.074	0.033	0.533	730.0	11.0		
	T006c-21	175	199	1.137	0.21	0.03029	0.00045	0.211	0.014	0.226	192.3	2.9		
	T006c-22	130	120	0.921	1.18	0.03006	0.00048	0.181	0.022	0.140	190.9	3.1		
T109B	T109b-01	1698	734	0.432	0.04	0.03276	0.00024	0.231	0.003	0.535	207.8	1.5		
	T109b-02	814	396	0.486	0.10	0.03279	0.00026	0.230	0.004	0.402	208.0	1.6		
	T109b-03	1855	532	0.287	0.07	0.03162	0.00023	0.219	0.003	0.581	200.7	1.4		
	T109b-04.c	2364	394	0.167	0.08	0.03232	0.00032	0.225	0.003	0.735	205.0	2.0		
	T109b-04.r	4407	1477	0.335	0.48	0.02693	0.00019	0.193	0.003	0.512	171.3	1.2		
	T109b-05	126	99	0.782	0.25	0.08261	0.00091	0.666	0.026	0.272	511.7	5.2		
	T109b-06.c	895	405	0.453	0.29	0.03172	0.00025	0.238	0.005	0.366	201.3	1.6		
	T109b-06.r	3408	3048	0.894	3.82	0.02387	0.00019	0.203	0.009	0.169	152.1	1.2		
	T109b-07	2039	872	0.428	0.91	0.03146	0.00023	0.230	0.008	0.208	199.7	1.4		
	T109b-08.c	2296	1653	0.72	1.96	0.02640	0.00020	0.204	0.006	0.258	168.0	1.2		
	T109b-08.r	3269	1498	0.458	1.47	0.02657	0.00053	0.225	0.008	0.764	169.0	3.4		
	T109b-09	156	78	0.503	0.10	0.03043	0.00277	4.476	0.054	0.501	1712.0	14.0	1744	14
	T109b-10	1059	712	0.672	0.11	0.06327	0.00049	0.487	0.007	0.709	395.5	3.0		
	T109b-11	288	3	0.01	0.00	0.18810	0.00156	2.054	0.025	0.841	1111.2	8.4	1177	16
	T109b-12	840	500	0.595	0.03	0.17310	0.00154	1.812	0.020	0.129	1029.1	8.5	1093	12
	T109b-13	344	291	0.847	0.77	0.01898	0.00021	0.111	0.010	0.712	121.2	1.3		
	T109b-14	312	128	0.409	0.15	0.18140	0.00161	2.214	0.027	0.823	1074.4	8.8	1394	17
	T109b-15	3764	1789	0.475	0.84	0.03194	0.00064	0.251	0.006	0.841	202.7	4.0		
T109b-16	4786	1822	0.381	0.74	0.03078	0.00062	0.237	0.006	0.547	195.4	3.9			
T109b-17	703	437	0.621	0.61	0.03318	0.00070	0.216	0.008	0.858	210.4	4.2			
T109b-18	4385	654	0.149	0.44	0.03093	0.00062	0.228	0.005	0.555	196.4	3.9			

^a c=core: r=rims

Appendix Table DR3. Hf isotope data on zircons

sample	grain ^a	age (Ma) ^b	± 2σ	¹⁷⁶ Lu/ ¹⁷⁷ Hf	± 2σ	¹⁷⁶ Yb/ ¹⁷⁷ Hf	± 2σ	¹⁷⁶ Hf/ ¹⁷⁷ Hf	± 2σ	ε _{Hf} (T)	T _{DM}	T _{DM} ^c		
ST134A	ST134a-01	189.7	6.6	0.00142	0.00006	0.03378	0.00122	0.283011	0.000040	12.6	334	417		
	ST134a-02	190.9	8.8	0.00182	0.00003	0.04420	0.00086	0.283006	0.000032	12.4	344	431		
	ST134a-03	192.8	5.4	0.00500	0.00013	0.12887	0.00340	0.282960	0.000028	10.4	448	557		
	ST134a-04	197.	7.6	0.00123	0.00002	0.02912	0.00074	0.283029	0.000032	13.4	307	372		
	ST134a-05	194.1	7.2	0.00171	0.00005	0.04092	0.00136	0.283052	0.000034	14.1	279	327		
	ST134a-06	190.8	6.4	0.00167	0.00010	0.03968	0.00300	0.283059	0.000030	14.3	269	313		
	ST134a-07	198.7	7.8	0.00206	0.00005	0.04882	0.00106	0.283119	0.000070	16.5	186	180		
	ST134a2-04	188.1	6.4	0.00175	0.00026	0.05807	0.00580	0.283043	0.000058	13.6	292	351		
	ST134a2-07	194.5	6.2	0.00171	0.00014	0.06426	0.00640	0.283086	0.000034	15.3	231	252		
	ST134a2-08	185.2	5.	0.00116	0.00002	0.04686	0.00140	0.283098	0.000024	15.6	211	226		
	ST134a2-10	195.3	11.	0.00093	0.00012	0.03406	0.00184	0.283081	0.000020	15.2	233	256		
	ST134a2-12	180.5	7.2	0.00120	0.00003	0.04787	0.00058	0.283074	0.000032	14.6	245	282		
	ST134a2-14	191.3	7.8	0.00172	0.00011	0.06538	0.00420	0.283107	0.000018	16.0	202	207		
	ST134a2-15	180.8	5.6	0.00165	0.00002	0.06915	0.00070	0.283060	0.000054	14.1	267	316		
	ST134a2-17	186.6	5.6	0.00164	0.00017	0.05900	0.00200	0.283072	0.000042	14.6	250	287		
	ST134a2-19	189.5	6.	0.00165	0.00006	0.06970	0.00240	0.283125	0.000048	16.6	176	168		
	ST134a2-20	189.3	9.2	0.00125	0.00003	0.04984	0.00090	0.283109	0.000026	16.1	196	200		
	ST134a2-22	182.6	4.8	0.00170	0.00006	0.07031	0.00220	0.283137	0.000050	16.8	159	146		
	ST134a2-26	187.3	6.4	0.00163	0.00007	0.06833	0.00360	0.283124	0.000040	16.5	177	172		
	ST134a2-27	187.5	7.4	0.00091	0.00004	0.03297	0.00070	0.283102	0.000028	15.8	204	214		
	T006C	T006c-01	641.4	19.8	0.00034	0.00000	0.00872	0.00012	0.282186	0.000024	-6.3	1429	1922	
		T006c-02	309.6	8.	0.00093	0.00002	0.02230	0.00070	0.282350	0.000040	-8.1	1230	1783	
		T006c-03	188.4	7.2	0.00105	0.00007	0.02602	0.00182	0.282421	0.000046	-8.3	1137	1703	
		T006c-04	191.7	5.8	0.00143	0.00004	0.03658	0.00110	0.282341	0.000032	-11.1	1258	1877	
			c			0.00146	0.00004	0.03744	0.00134	0.282438	0.000056		1127	
			r			0.00144	0.00011	0.03713	0.00280	0.282377	0.000032	-9.7	1210	1798
		T006c-05	194.6	6.	0.00170	0.00010	0.04316	0.00300	0.282377	0.000050	-9.9	1218	1802	
T006c-06		190.	5.	0.00075	0.00008	0.01770	0.00220	0.282425	0.000028	-1.1	1123	1501		
T006c-07		501.8	13.2	0.00119	0.00016	0.02926	0.00420	0.282507	0.000036	-5.2	1025	1516		
T006c-08		192.3	6.4	0.00106	0.00010	0.02553	0.00240	0.282451	0.000042	-7.0	1097	1633		
T006c-09		197.7	5.6	0.00072	0.00002	0.01722	0.00048	0.282370	0.000062		1196			
		c			0.00269	0.00005	0.07126	0.00144	0.282259	0.000048	-7.9	1418	1907	
		r			0.00238	0.00004	0.06332	0.00096	0.282132	0.000056		1584		
T006c-10		488.6	12.6	0.00155	0.00003	0.04006	0.00056	0.282516	0.000034	-4.7	1022	1494		
		c			0.00105	0.00012	0.02683	0.00320	0.282439	0.000046		1113		
		r			0.00116	0.00009	0.02983	0.00220	0.282392	0.000044	-9.2	1180	1764	
T006c-11		200.9	7.2	0.00165	0.00001	0.04197	0.00052	0.282452	0.000048	-7.2	1113	1640		
		c			0.00140	0.00004	0.03490	0.00100	0.282632	0.000056		858		
		r			0.00120	0.00002	0.03229	0.00064	0.281783	0.000036	6.4	2004	2090	
T006c-12		193.4	10.8	0.00108	0.00005	0.02762	0.00144	0.282410	0.000028	-8.4	1153	1721		
T006c-13		189.4	6.	0.00124	0.00002	0.03229	0.00120	0.282454	0.000020	-7.0	1098	1631		
		c			0.00127	0.00010	0.03251	0.00300	0.282402	0.000040	-8.9	1170	1744	
	r			0.00216	0.00014	0.05603	0.00380	0.282499	0.000040	-5.6	1063	1541		
T109B	T109b-01	207.8	3.	0.00117	0.00002	0.03092	0.00090	0.282532	0.000038	-3.9	990	1452		
	T109b-02	208.	3.2	0.00162	0.00015	0.04375	0.00420	0.282479	0.000040	-5.9	1075	1571		
	T109b-03	200.7	2.8	0.00164	0.00003	0.04650	0.00114	0.282418	0.000050	-8.2	1160	1707		
	T109b-04.c	205.	4.	0.00378	0.00062	0.10761	0.02000	0.282496	0.000054	-5.6	1116	1553		
	T109b-04.r	171.3	2.4	0.00257	0.00005	0.06925	0.00200	0.282318	0.000036	-12.5	1331	1946		
	T109b-05	511.7	10.4	0.00088	0.00010	0.02332	0.00280	0.282259	0.000044	-6.8	1351	1857		
	T109b-06.c	201.3	3.2	0.00197	0.00007	0.05357	0.00186	0.282501	0.000040	-5.3	1054	1530		
	T109b-06.r	152.1	2.4	0.00202	0.00006	0.06087	0.00300	0.282429	0.000046	-8.9	1156	1713		
	T109b-07	199.7	2.8	0.00229	0.00005	0.06423	0.00112	0.282491	0.000038	-5.7	1078	1555		
	T109b-08.c	168.	2.4	0.00198	0.00009	0.05538	0.00280	0.282464	0.000054	-7.3	1106	1628		
	T109b-08.r	169.	6.8	0.00152	0.00004	0.04118	0.00138	0.282464	0.000040	-7.2	1093	1625		
	T109b-09	1744.	28.	0.00116	0.00005	0.03011	0.00122	0.281699	0.000044	0.8	2114	2334		
	T109b-10	395.5	6.	0.00161	0.00006	0.04105	0.00122	0.282356	0.000044	-6.2	1244	1729		
	T109b-11	1177.	32.	0.00030	0.00003	0.00826	0.00054	0.282103	0.000026	3.1	1537	1763		
	T109b-12	1093.	24.	0.00152	0.00010	0.04230	0.00280	0.282034	0.000034	-2.2	1681	2019		
		c			0.00131	0.00003	0.03602	0.00088	0.282106	0.000070		1574		
		r			0.00133	0.00005	0.02881	0.00120	0.282726	0.000032	1.0	727	1081	
	T109b-13	121.2	2.6	0.00105	0.00002	0.02237	0.00044	0.282621	0.000058	-2.7	865	1309		
		c			0.00260	0.00009	0.06817	0.00240	0.281914	0.000044	-0.8	1898	2165	
		r			0.00177	0.00003	0.04579	0.00102	0.282471	0.000052	-6.3	1090	1592	
T109b-14	1394.	34.	0.00096	0.00002	0.02579	0.00090	0.282264	0.000038	-13.7	1347	2038			
T109b-15	202.7	8.	0.00131	0.00003	0.03511	0.00082	0.282439	0.000026	-7.2	1121	1653			
T109b-16	195.4	7.8	0.00156	0.00002	0.04028	0.00056	0.282313	0.000034	-12.0	1301	1936			
T109b-17	210.4	8.4												
T109b-18	196.4	7.8												

^a c = core; r = rim.

^b ²⁰⁶Pb/²³⁸U ages; except those in *italic* that indicate ²⁰⁷Pb/²⁰⁶Pb ages.

^{*} ε_{Hf}(T) and T_{DM}^c values calculated by assuming its U-Pb age identical to the core.

$$\lambda_{Lu-Hf} = 1.93 \times 10^{-11} \text{ year}^{-1}$$

$$\epsilon_{Hf}(T) = [((^{176}\text{Hf}/^{177}\text{Hf})_{\text{Sample}} / (^{176}\text{Hf}/^{177}\text{Hf})_{\text{CHUR}} - 1) \times 10^4]$$

$$\epsilon_{Hf}(T) = \{ [((^{176}\text{Hf}/^{177}\text{Hf})_{\text{Sample}} / (^{176}\text{Lu}/^{177}\text{Hf})_{\text{Sample}} - 1) / (e^{\lambda t} - 1) - ((^{176}\text{Hf}/^{177}\text{Hf})_{\text{CHUR}} / (^{176}\text{Lu}/^{177}\text{Hf})_{\text{CHUR}} - 1) / (e^{\lambda t} - 1)] \} \times 10^4$$

$$T_{DM} = 1/\lambda \times \ln \{ 1 + [((^{176}\text{Hf}/^{177}\text{Hf})_{\text{Sample}} / (^{176}\text{Lu}/^{177}\text{Hf})_{\text{DM}} - 1) / ((^{176}\text{Hf}/^{177}\text{Hf})_{\text{Sample}} / (^{176}\text{Lu}/^{177}\text{Hf})_{\text{DM}} - 1)] \}$$

$$T_{DM}^c = T_{DM} - (T_{DM} - t) \times [(f_{cc} - f_s) / (f_{cc} - f_{DM})]$$

$$f_{LuHf} = [(^{176}\text{Lu}/^{177}\text{Hf})_{\text{Source}} / (^{176}\text{Lu}/^{177}\text{Hf})_{\text{CHUR}, 0}] - 1$$

$$(^{176}\text{Lu}/^{177}\text{Hf})_{\text{CHUR}, 0} = 0.0332 \pm 2$$

$$(^{176}\text{Hf}/^{177}\text{Hf})_{\text{CHUR}, 0} = 0.282772 \pm 29$$

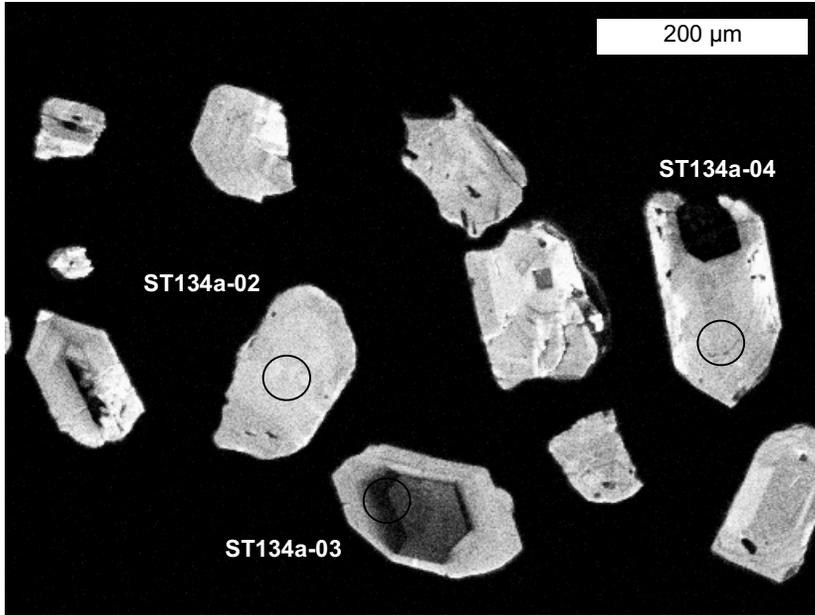
$$(^{176}\text{Lu}/^{177}\text{Hf})_{\text{DM}} = 0.0384$$

$$(^{176}\text{Hf}/^{177}\text{Hf})_{\text{DM}} = 0.28325$$

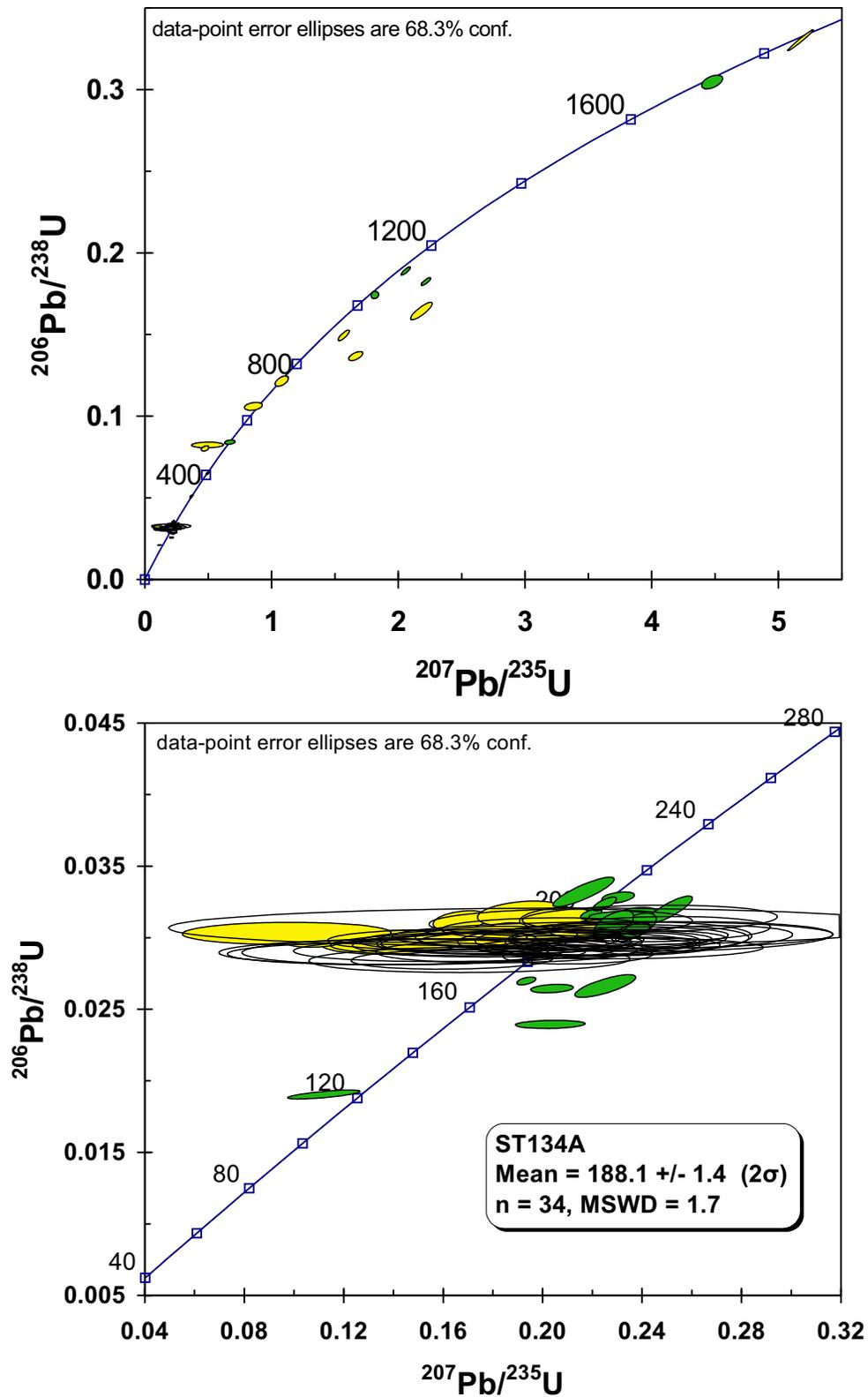
$$(^{176}\text{Lu}/^{177}\text{Hf})_{\text{mean crust}} = 0.015$$

$$f_{cc} = (0.015/0.0332) - 1 = -0.5482$$

$$f_{DM} = (0.0384/0.0332) - 1 = 0.1566$$



Appendix Figure DR-1. Representative CL images of ST134A zircon; Circles mark positions of SHRIMP and LAM-MC-ICPMS analyses.



Appendix Figure DR-2. Concordia plots of U-Pb data for zircon separates from T006C (yellow ellipses), T109B (green ellipses) and ST134A (white ellipses).