Ye Wang, Xuanhua Chen, Yaoyao Zhang, Zheng Yin, Andrew V. Zuza, An Yin, Yongchao Wang, Weicui Ding, Shenglin Xu, Yiping Zhang, Bing Li, and Zhaogang Shao, 2021, Superposition of Cretaceous and Cenozoic deformation in northern Tibet: A far-field response to the tectonic evolution of the Tethyan orogenic system: GSA Bulletin, <https://doi.org/10.1130/B35944.1>.

Supplemental Material

Table S1. U-Pb isotope dating results for the detrital zircons from sample S1 (SQL2017-404-2)

Table S2. U-Pb isotope dating results for the detrital zircons from sample S5 (SQL2017-419-1)

Table S3. U-Pb isotope dating results for the detrital zircons from sample S2 (QL2017-4-4)

Table S4. U-Pb isotope dating results for the detrital zircons from sample S3 (QL0921-7-1)

Table S5. U-Pb isotope dating results for the detrital zircons from sample S4 (QL2017-36-1)

Table S6. U-Pb isotope dating results for the detrital zircons from sample S6 (QL2017-28-1)

Table S7. U-Pb isotope dating results for the detrital zircons from sample S7 (QL2018007-1)

Table S8. U-Pb isotope dating results for the detrital zircons from sample S8 (SQL2017-425-1)

Table S9. U-Pb isotope dating results for the detrital zircons from sample S9 (QL2018021-1)

Table S10. U-Pb isotope dating results for the detrital zircons from sample S10 (QL2017-8-1)

Table S11. U-Pb isotope dating results for the detrital zircons from sample S11 (SQL2017-410-1)

Table S12. U-Pb isotope dating results for the detrital zircons from sample S12 (QL2017-12-1)

Table S13. U-Pb isotope dating results for the detrital zircons from sample S13 (QL2018060-1)

Table S1 U-Pb isotope dating results for the detrital zircons from sample S1 (SQL2017-404-2)

test	Th	U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	
point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	3.7539	12.3035	0.1156	0.0027	0.3229	0.0045	0.3051	1889.3560	41.6370	1803.6418	24.9263	95.4633
2	168.8010	134.2522	0.0533	0.0013	0.0418	0.0006	1.2573	341.3690	57.3246	264.0941	3.4912	97.0646
3	1039.4574	834.4113	0.0617	0.0008	0.0929	0.0012	1.2457	665.3888	29.3623	572.5292	7.6351	96.7782
4	140.8575	157.5198	0.0533	0.0012	0.0413	0.0005	0.8942	339.4659	52.0446	260.8529	3.2440	97.0114
5	136.6107	227.5753	0.1567	0.0020	0.3814	0.0043	0.6003	2420.2292	21.7216	2083.0297	23.5279	86.0675
6	233.4215	228.6527	0.0603	0.0014	0.0493	0.0008	1.0209	614.9586	48.4406	310.1772	4.7907	88.9186
7	1163.9272	1204.7669	0.0910	0.0017	0.0462	0.0010	0.9661	1446.2113	34.8942	290.8571	6.0223	62.7126
8	696.3315	1121.2839	0.0577	0.0008	0.0679	0.0009	0.6210	520.1836	31.0846	423.4688	5.4849	96.5013
9	193.6337	260.7562	0.0557	0.0009	0.0694	0.0009	0.7426	439.8275	36.2894	432.7909	5.4788	99.7431
10	338.6471	220.9988	0.0522	0.0011	0.0430	0.0005	1.5323	296.0754	46.0704	271.6669	3.4282	99.0686
11	155.6642	139.2239	0.0540	0.0015	0.0412	0.0005	1.1181	370.3895	63.5272	260.1978	3.2118	98.8745
12	378.7471	381.1169	0.1174	0.0016	0.3225	0.0042	0.9938	1917.1713	24.6199	1801.9032	23.2964	98.2666
13	296.1711	148.1090	0.0563	0.0013	0.0690	0.0009	1.9997	462.8835	50.2543	429.9214	5.8026	99.1528
14	1032.7347	902.0618	0.0534	0.0010	0.0419	0.0005	1.1449	347.1969	41.4898	264.4634	3.2779	98.6673
15	393.7276	187.7180	0.0542	0.0012	0.0589	0.0007	2.0974	380.5438	48.4482	368.8648	4.4293	95.8270
16	104.8857	75.2979	0.0544	0.0018	0.0586	0.0008	1.3929	385.7786	73.4629	367.2695	4.7411	93.9876
17	363.4557	427.2871	0.1365	0.0017	0.3942	0.0049	0.8506	2183.7619	22.0115	2142.2124	26.8197	98.7996
18	653.3654	535.4959	0.0561	0.0012	0.0696	0.0009	1.2201	456.4518	48.2621	433.7507	5.3685	99.5660
19	124.8458	355.5061	0.0556	0.0009	0.0688	0.0009	0.3512	437.3507	35.8725	428.6850	5.4764	96.8597
20	247.7169	238.4055	0.1502	0.0020	0.4357	0.0049	1.0391	2348.6713	22.3313	2331.4153	26.1345	99.3125
21	317.2752	392.0713	0.0531	0.0011	0.0418	0.0005	0.8092	334.9572	46.0380	263.8918	3.1561	98.0973
22	647.1807	777.5829	0.1210	0.0016	0.1306	0.0028	0.8323	1971.5106	23.9410	791.2658	17.1658	99.1731
23	262.5985	279.3272	0.0524	0.0026	0.0434	0.0006	0.9401	303.3120	111.7934	274.0110	3.8111	99.6833
24	363.7368	108.5679	0.1509	0.0020	0.4355	0.0053	3.3503	2355.8007	23.1818	2330.3409	28.1009	99.2653
25	82.2546	77.3651	0.1520	0.0022	0.4361	0.0051	1.0632	2369.0700	24.2043	2333.1168	27.2358	97.2981

26	326.0299	681.9500	0.1701	0.0022	0.4308	0.0062	0.4781	2558.3190	21.2797	2309.3917	33.0292	67.3713
27	384.7773	377.1351	0.0558	0.0010	0.0407	0.0005	1.0203	443.2666	39.6277	257.4748	3.2790	98.8834
28	28.8317	54.0109	0.1347	0.0021	0.3947	0.0055	0.5338	2160.4116	27.5197	2144.5945	29.8996	98.9193
29	170.5204	175.4475	0.0545	0.0022	0.0413	0.0006	0.9719	392.8778	90.3858	261.0708	3.5838	98.4824
30	441.5784	446.0708	0.0526	0.0009	0.0421	0.0005	0.9899	311.8457	37.7979	265.8607	3.2046	90.2699
31	94.9299	102.4920	0.0520	0.0019	0.0427	0.0006	0.9262	286.1227	84.2916	269.4417	3.5099	93.0272
32	93.9668	226.0354	0.1143	0.0015	0.3223	0.0039	0.4157	1868.4497	24.1553	1801.1434	22.0469	99.2679
33	249.5811	532.3148	0.0573	0.0009	0.0684	0.0008	0.4689	502.6096	34.1078	426.4974	5.2774	95.0237
34	227.1646	273.0042	0.0532	0.0012	0.0419	0.0005	0.8321	337.0593	49.8156	264.4737	3.2478	98.2471
35	580.9255	629.9285	0.0528	0.0008	0.0429	0.0005	0.9222	319.2682	33.8905	270.7292	3.2645	99.3624
36	715.2416	1320.0254	0.0638	0.0010	0.0606	0.0008	0.5418	735.7970	31.9666	379.2555	4.7579	96.3977
37	920.6577	600.0561	0.0527	0.0008	0.0421	0.0005	1.5343	317.1656	35.2080	265.6862	3.1407	97.2414
38	433.3658	408.1115	0.0573	0.0009	0.0679	0.0008	1.0619	502.7739	32.9163	423.2978	5.1573	97.2413
39	234.3200	282.0822	0.1138	0.0015	0.3224	0.0039	0.8307	1861.4798	23.1681	1801.4686	21.6455	98.1530
40	83.1506	77.6093	0.1355	0.0019	0.3923	0.0052	1.0714	2170.0516	24.6652	2133.5933	28.1614	87.3925
41	236.7413	331.5343	0.0522	0.0012	0.0422	0.0005	0.7141	292.6452	51.3222	266.2818	3.2853	98.0389
42	363.6118	318.2199	0.0535	0.0011	0.0413	0.0005	1.1426	348.9939	44.7842	260.6628	3.3187	97.1181
43	193.9151	261.0327	0.0529	0.0010	0.0417	0.0005	0.7429	323.6521	42.1525	263.6198	3.4313	96.7762
44	536.0054	666.3474	0.0567	0.0009	0.0683	0.0009	0.8044	477.9602	36.9865	425.6868	5.3283	98.3199
45	11.2676	433.5233	0.0549	0.0013	0.0588	0.0007	0.0260	407.3189	54.8120	368.4501	4.4918	98.9927
46	935.7774	642.0856	0.0534	0.0009	0.0417	0.0005	1.4574	344.2792	36.6054	263.2964	3.1392	96.6459
47	65.7442	364.1664	0.0834	0.0014	0.2019	0.0028	0.1805	1277.6890	32.2286	1185.4365	16.5880	98.5605
48	50.0111	337.8130	0.0746	0.0011	0.1469	0.0018	0.1480	1058.5568	29.3991	883.7640	10.7177	97.7142
49	244.0341	309.2107	0.1351	0.0019	0.3927	0.0059	0.7892	2164.7936	23.9228	2135.1557	31.9223	98.0989
50	85.4382	131.2933	0.1660	0.0022	0.4681	0.0058	0.6507	2517.5900	22.2237	2475.4200	30.4104	96.9245
51	179.1335	192.9126	0.1329	0.0017	0.3378	0.0042	0.9286	2136.4045	22.4569	1876.0698	23.4655	92.7797
52	183.7184	144.1824	0.0511	0.0016	0.0431	0.0006	1.2742	246.8723	71.6984	271.8936	3.5916	94.4964
53	55.0307	68.9372	0.0543	0.0024	0.0588	0.0009	0.7983	385.3496	97.7440	368.2408	5.6498	98.6309

54	385.3630	485.5475	0.0519	0.0009	0.0427	0.0005	0.7937	279.2206	37.6461	269.5160	3.2856	98.3250
55	164.3273	267.0881	0.0834	0.0014	0.2018	0.0027	0.6153	1277.9798	32.6144	1185.2074	16.0387	87.8144
56	1277.6727	491.1035	0.1130	0.0015	0.3238	0.0038	2.6016	1848.4243	23.4281	1808.3184	21.4522	99.0485
57	100.4731	144.6196	0.0525	0.0013	0.0417	0.0005	0.6947	308.4599	58.2334	263.5956	3.4229	99.3645
58	338.3460	432.1137	0.0534	0.0011	0.0416	0.0005	0.7830	344.8873	47.6184	262.5920	3.4540	99.6288
59	443.9217	328.7215	0.0541	0.0010	0.0413	0.0005	1.3504	377.1572	40.4885	260.6003	3.1501	92.7407
60	186.9999	190.4402	0.1423	0.0018	0.4071	0.0047	0.9819	2255.8903	22.0192	2201.7027	25.3862	97.8303
61	265.4114	280.3672	0.0541	0.0011	0.0416	0.0005	0.9467	373.9063	44.3418	262.5079	3.4313	98.2884
62	75.7554	207.9140	0.1215	0.0016	0.3573	0.0044	0.3644	1978.6567	23.0597	1969.5611	24.4681	96.8745
63	213.0943	235.1401	0.0561	0.0010	0.0689	0.0009	0.9062	456.2825	40.3608	429.4570	5.3954	95.5901
64	109.2057	284.6016	0.1539	0.0021	0.4330	0.0074	0.3837	2390.1109	22.9025	2319.2258	39.6892	97.5980
65	418.2511	508.0379	0.0672	0.0012	0.0455	0.0005	0.8233	844.1839	37.8958	286.8287	3.4326	95.7849
66	64.7668	134.6520	0.0820	0.0012	0.2048	0.0027	0.4810	1244.9423	27.9224	1201.1537	16.0196	99.5403
67	232.3968	300.7968	0.0531	0.0010	0.0413	0.0005	0.7726	331.3232	42.6761	260.9077	3.1613	99.0222
68	743.9068	979.6790	0.0558	0.0012	0.0588	0.0009	0.7593	444.2459	45.9191	368.1934	5.5493	97.0342
69	103.4326	346.7813	0.1147	0.0015	0.2649	0.0039	0.2983	1874.4558	23.0696	1514.6199	22.3684	80.2981
70	128.9705	144.5649	0.0847	0.0024	0.0827	0.0013	0.8921	1308.5497	54.3089	512.1479	8.2804	96.4827
71	174.9574	1018.6645	0.0551	0.0008	0.0697	0.0009	0.1718	417.0378	30.7380	434.4560	5.5561	97.3203
72	218.7634	192.7302	0.0509	0.0022	0.0440	0.0006	1.1351	238.3278	99.8807	277.4865	3.9837	97.1969
73	160.1803	218.8141	0.0525	0.0010	0.0423	0.0005	0.7320	307.4352	44.5173	266.7901	3.2650	80.8032
74	104.0107	138.1271	0.0518	0.0013	0.0432	0.0006	0.7530	274.9491	59.2640	272.6398	3.4919	74.6359
75	162.0520	196.6666	0.1142	0.0015	0.3206	0.0041	0.8240	1866.7625	23.4608	1792.7939	22.9562	99.3663
76	214.4848	233.1754	0.0532	0.0011	0.0421	0.0005	0.9198	335.2838	46.4558	265.9333	3.2993	98.5186
77	287.9337	237.6931	0.0927	0.0012	0.2504	0.0032	1.2114	1482.6946	24.7801	1440.4882	18.5231	98.4500
78	475.4845	422.9965	0.0572	0.0009	0.0686	0.0008	1.1241	500.8024	35.8701	427.8061	5.2183	99.9117
79	658.9540	700.6427	0.0526	0.0008	0.0419	0.0005	0.9405	312.8109	35.2194	264.3565	3.2625	96.0376
80	260.5603	305.5561	0.0533	0.0010	0.0417	0.0005	0.8527	342.5405	43.5689	263.1832	3.1660	97.3643
81	289.1958	291.0744	0.0522	0.0014	0.0426	0.0006	0.9935	294.7050	62.0086	269.2143	3.7785	97.1534

82	205.9583	134.3334	0.0539	0.0014	0.0418	0.0005	1.5332	367.8416	59.1646	263.8635	3.1979	97.3542
83	187.0036	700.9142	0.0794	0.0010	0.1638	0.0019	0.2668	1183.0967	25.0268	977.7273	11.5090	98.1527
84	431.4896	468.5413	0.0550	0.0011	0.0407	0.0005	0.9209	410.8123	45.8459	257.1432	3.3171	96.9855
85	102.0179	338.7378	0.1158	0.0015	0.3204	0.0039	0.3012	1892.2051	22.8422	1791.6355	21.9662	99.0267
86	542.1171	576.1071	0.0528	0.0009	0.0423	0.0005	0.9410	320.6339	37.3801	266.7805	3.3340	96.0634
87	92.5720	86.3866	0.0526	0.0016	0.0420	0.0005	1.0716	311.4570	67.8041	265.3391	3.4719	93.7216
88	56.6995	67.0610	0.0789	0.0016	0.1959	0.0022	0.8455	1170.4065	41.1334	1153.4029	12.7195	94.2079
89	508.5448	127.7320	0.1302	0.0018	0.2988	0.0034	3.9813	2101.1943	24.1478	1685.2492	19.2458	94.6851
90	138.2141	67.4882	0.1152	0.0016	0.3387	0.0042	2.0480	1883.5744	24.8266	1880.2591	23.2755	97.9498
91	380.4792	172.7119	0.0542	0.0010	0.0523	0.0006	2.2030	378.1117	39.5079	328.5496	3.5381	98.2418
92	140.7578	106.6281	0.0529	0.0021	0.0425	0.0005	1.3201	325.1705	90.2723	268.2105	2.8432	98.5472
93	237.0936	184.0569	0.0733	0.0010	0.1587	0.0017	1.2882	1023.4464	28.6075	949.8253	9.9132	80.2043
94	192.5091	106.1519	0.1316	0.0018	0.3873	0.0041	1.8135	2119.1763	24.2205	2110.2702	22.4759	99.8240
95	105.1316	26.5680	0.1197	0.0017	0.3493	0.0039	3.9571	1951.8063	25.1404	1931.1111	21.6798	98.1458
96	146.2086	178.6726	0.0571	0.0016	0.0711	0.0008	0.8183	493.8182	62.1163	442.8350	4.8078	97.8333
97	99.2645	106.7157	0.0545	0.0021	0.0509	0.0006	0.9302	392.2060	85.7194	319.9415	3.6365	97.6883
98	210.9754	101.7260	0.1250	0.0017	0.3240	0.0038	2.0740	2028.9214	24.2914	1809.1454	21.2805	99.5797
99	301.6126	152.7970	0.1088	0.0015	0.2515	0.0027	1.9739	1779.6468	25.0053	1446.2332	15.3193	98.9397
100	155.0443	81.8581	0.0747	0.0011	0.1767	0.0019	1.8941	1060.8250	29.3064	1048.8851	11.2837	98.1546
101	235.7739	327.4587	0.0527	0.0013	0.0430	0.0005	0.7200	316.9991	54.0777	271.4539	2.9160	97.2976
102	518.3552	448.9799	0.0533	0.0009	0.0506	0.0006	1.1545	340.5191	39.8937	318.0222	3.4794	89.1678
103	396.4922	324.3038	0.0526	0.0010	0.0437	0.0005	1.2226	310.8539	43.4628	275.8391	3.0591	81.2652

Table S3 U-Pb isotope dating results for the detrital zircons from sample S2 (QL2017-4-4)

test	Th	U	²⁰⁷ Pb/ ²⁰⁶ Pb	²⁰⁷ Pb/ ²⁰⁶ Pb	²⁰⁶ Pb/ ²³⁸ U	²⁰⁶ Pb/ ²³⁸ U	Th/U	²⁰⁷ Pb/ ²⁰⁶ Pb	²⁰⁷ Pb/ ²⁰⁶ Pb	²⁰⁶ Pb/ ²³⁸ U	²⁰⁶ Pb/ ²³⁸ U	
point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	141.5625	1044.4782	0.0566	0.0010	0.0647	0.0008	0.1355	474.5414	38.9105	404.1151	5.1589	97.4291
2	64.6224	63.7568	0.1197	0.0017	0.3512	0.0046	1.0136	1951.3580	24.9351	1940.1348	25.1975	99.4248
3	195.0420	249.7070	0.0528	0.0011	0.0437	0.0005	0.7811	321.9351	45.6030	275.5299	3.3148	98.2362

4	365.8053	474.4463	0.0571	0.0009	0.0649	0.0008	0.7710	496.1258	35.4152	405.2678	5.2575	96.6934
5	135.1663	346.6152	0.0716	0.0010	0.1571	0.0020	0.3900	974.7057	27.1283	940.4668	11.9470	98.9160
6	376.9747	1197.1707	0.0589	0.0008	0.0852	0.0011	0.3149	564.7715	28.4868	527.3570	7.0256	98.6753
7	55.2553	155.2500	0.0661	0.0011	0.1336	0.0016	0.3559	810.1912	36.3425	808.2713	9.8349	99.9368
8	534.0619	564.4870	0.0564	0.0008	0.0658	0.0009	0.9461	469.0176	31.7798	410.5946	5.4417	97.8678
9	290.4223	305.4661	0.0566	0.0014	0.0648	0.0009	0.9508	477.5360	55.6567	404.6079	5.8485	97.3390
10	175.8178	374.4569	0.1062	0.0014	0.2489	0.0030	0.4695	1735.6947	24.5627	1432.6290	17.4618	82.5392
11	299.0560	302.2218	0.0575	0.0011	0.0626	0.0008	0.9895	510.4811	43.3240	391.1529	4.9097	95.6561
12	133.1684	293.5381	0.1630	0.0026	0.2664	0.0050	0.4537	2486.8026	27.0520	1522.4385	28.7348	61.2207
13	113.6200	318.1224	0.0759	0.0010	0.1806	0.0022	0.3572	1092.0843	26.1513	1070.0482	12.9376	97.9822
14	146.3198	206.5692	0.1147	0.0015	0.3313	0.0039	0.7083	1875.6571	23.7148	1844.6986	21.9684	98.3495
15	489.9948	1197.2250	0.0677	0.0009	0.0670	0.0008	0.4093	859.4909	28.7036	418.1228	4.9062	84.7574
16	91.1270	93.5607	0.1142	0.0016	0.3346	0.0045	0.9740	1868.0631	25.7560	1860.5220	24.9118	99.5963
17	85.9745	129.7968	0.0550	0.0012	0.0657	0.0009	0.6624	413.6468	47.6357	410.2226	5.4376	99.8741
18	126.2850	191.9340	0.0568	0.0012	0.0649	0.0009	0.6580	483.3861	45.6487	405.1079	5.7686	97.1463
19	45.5859	107.2087	0.1223	0.0016	0.3492	0.0043	0.4252	1990.3984	23.9279	1930.9759	23.5771	97.0145
20	97.3060	173.7832	0.0556	0.0011	0.0657	0.0009	0.5599	434.6191	42.5980	410.2432	5.5299	99.1063
21	152.0592	219.0726	0.1954	0.0026	0.5249	0.0062	0.6941	2788.4711	21.7771	2719.7765	32.1780	97.5365
22	31.5349	187.1208	0.0558	0.0021	0.0645	0.0009	0.1685	445.5106	83.5369	402.8642	5.8350	98.4369
23	130.5221	108.8977	0.0515	0.0017	0.0450	0.0006	1.1986	264.9269	76.4368	283.7926	3.6880	99.2839
24	524.8531	611.1980	0.0565	0.0009	0.0664	0.0009	0.8587	473.1033	34.0089	414.1507	5.6467	97.8509
25	161.9214	85.1119	0.1152	0.0016	0.3320	0.0040	1.9025	1882.9162	25.2378	1848.0638	22.4142	98.1490
26	352.2760	561.3167	0.0550	0.0008	0.0675	0.0009	0.6276	413.5175	31.1228	421.1038	5.5040	99.7223
27	252.3198	458.3543	0.0713	0.0009	0.1568	0.0019	0.5505	967.3839	26.2639	938.8246	11.5152	99.0947
28	135.8858	126.8278	0.1129	0.0016	0.3339	0.0044	1.0714	1846.5182	25.9186	1857.3981	24.6274	99.4142
29	68.0232	488.0108	0.0823	0.0010	0.2176	0.0029	0.1394	1252.4592	24.8730	1269.1908	16.9097	98.6817
30	194.6690	211.3990	0.0548	0.0010	0.0673	0.0008	0.9209	405.2896	42.3817	419.6736	5.2701	99.4741
31	41.6150	43.6475	0.1219	0.0019	0.3487	0.0046	0.9534	1984.2239	27.2588	1928.2804	25.1720	97.1806

32	146.7774	307.7954	0.0557	0.0010	0.0659	0.0009	0.4769	439.8405	39.6817	411.3051	5.3410	98.9547
33	153.9819	282.4941	0.0572	0.0013	0.0663	0.0011	0.5451	500.7166	51.0332	413.8244	6.9958	96.8438
34	261.4708	557.0883	0.0565	0.0008	0.0662	0.0008	0.4694	472.9156	31.2579	413.2600	5.2281	97.8249
35	142.9770	271.5113	0.0560	0.0010	0.0669	0.0008	0.5266	451.9504	38.8561	417.1642	5.2149	98.7289
36	215.8776	455.2756	0.0570	0.0009	0.0654	0.0010	0.4742	490.0982	34.2594	408.6643	6.4591	97.0355
37	318.3513	402.3726	0.0552	0.0009	0.0657	0.0009	0.7912	420.5488	35.0993	410.0466	5.4509	99.6142
38	104.2434	157.3458	0.1886	0.0024	0.5129	0.0066	0.6625	2729.9126	20.9458	2668.9169	34.2112	97.7657
39	110.0901	131.9352	0.0519	0.0024	0.0451	0.0008	0.8344	280.6297	103.7595	284.1246	5.0983	99.8668
40	56.6224	63.8055	0.0548	0.0024	0.0440	0.0007	0.8874	404.6368	99.7809	277.8195	4.4657	95.2326
41	106.2046	175.2636	0.0670	0.0010	0.1340	0.0019	0.6060	837.6418	31.1461	810.3909	11.4301	99.1060
42	327.0497	612.2439	0.0566	0.0013	0.0648	0.0009	0.5342	475.9697	52.6378	404.6426	5.8102	97.3969
43	50.9834	837.4503	0.0901	0.0012	0.2178	0.0028	0.0609	1426.9162	24.9442	1269.9986	16.5823	89.0030
44	160.1707	534.9072	0.0712	0.0010	0.1566	0.0022	0.2994	964.2462	27.6307	937.6531	13.1124	99.1565
45	117.8761	166.0026	0.1460	0.0018	0.4196	0.0061	0.7101	2299.8769	21.6957	2258.5461	32.7093	98.2029
46	417.8654	311.8848	0.0563	0.0014	0.0653	0.0010	1.3398	464.5122	53.6774	407.7797	6.1460	97.9274
47	445.3409	1069.0253	0.0821	0.0012	0.0667	0.0008	0.4166	1247.3840	28.4123	416.1493	4.8375	72.8901
48	91.9376	112.0951	0.0554	0.0016	0.0648	0.0009	0.8202	428.3075	65.2157	404.4754	5.8359	99.1247
49	262.0374	244.1646	0.0571	0.0033	0.0645	0.0016	1.0732	496.5538	126.2603	403.1266	10.2462	96.5989
50	109.4392	117.3713	0.0538	0.0024	0.0448	0.0007	0.9324	363.0424	101.0434	282.6011	4.1896	96.9621
51	318.3000	244.6130	0.0567	0.0014	0.0662	0.0009	1.3012	480.0100	55.5860	413.2117	5.3970	97.5667
52	197.9201	278.5251	0.0525	0.0011	0.0441	0.0006	0.7106	305.6987	48.8910	278.3841	3.8098	98.9601
53	174.9544	189.1187	0.0553	0.0010	0.0650	0.0008	0.9251	422.4330	39.7290	405.7753	5.0901	99.3879
54	333.9413	264.9159	0.1014	0.0013	0.2656	0.0035	1.2606	1650.5699	24.0467	1518.5330	20.1383	92.0005
55	201.3543	361.6764	0.0716	0.0010	0.1572	0.0020	0.5567	975.9992	27.1203	941.3137	11.8508	98.9022
56	63.4827	41.6382	0.0794	0.0017	0.1485	0.0019	1.5246	1183.1666	41.6411	892.8015	11.4322	91.0343
57	209.6495	351.0555	0.0692	0.0010	0.1337	0.0029	0.5972	905.0833	29.0878	808.8699	17.6236	96.8734
58	243.4232	546.9620	0.0555	0.0008	0.0662	0.0009	0.4450	433.4740	32.3303	413.1368	5.5245	99.2546
59	733.3597	1570.1534	0.0882	0.0013	0.0543	0.0008	0.4671	1386.3775	29.1828	340.9731	5.1822	66.2271

60	66.8036	32.2565	0.1157	0.0017	0.3325	0.0041	2.0710	1890.4466	26.8590	1850.3555	22.8269	97.8793
61	127.3895	210.3629	0.0533	0.0013	0.0450	0.0006	0.6056	343.5988	54.1760	283.9067	3.6422	97.7405
62	165.0027	231.0407	0.1824	0.0023	0.4931	0.0064	0.7142	2674.5833	20.7520	2584.0702	33.7415	96.6158
63	81.0808	65.1266	0.1559	0.0022	0.4480	0.0056	1.2450	2411.9748	23.4222	2386.2476	29.6423	98.9334
64	69.1350	148.8390	0.1458	0.0021	0.3801	0.0048	0.4645	2297.3807	24.1846	2076.8394	26.3784	90.4003
65	251.1829	425.2470	0.0578	0.0009	0.0643	0.0008	0.5907	522.7325	32.2876	401.4641	5.0080	95.5998
66	335.8156	490.0882	0.0547	0.0018	0.0446	0.0008	0.6852	399.0084	73.3513	281.0635	5.1119	95.5653
67	222.9708	324.3924	0.0697	0.0011	0.1339	0.0017	0.6873	918.8177	32.0048	809.8535	10.0853	96.4665
68	132.1084	204.9363	0.1422	0.0018	0.4185	0.0053	0.6446	2254.5999	21.5610	2253.7085	28.7821	99.9605
69	179.4346	172.2087	0.0551	0.0011	0.0667	0.0012	1.0420	415.8224	46.3918	416.2547	7.6618	99.9841
70	91.0371	345.2091	0.0799	0.0012	0.1364	0.0016	0.2637	1193.5087	29.3477	824.3251	9.7062	88.5232
71	163.2223	316.5271	0.0518	0.0010	0.0444	0.0006	0.5157	275.1518	44.3598	279.8470	3.8532	99.8209
72	330.3887	384.7921	0.0997	0.0016	0.0696	0.0010	0.8586	1619.1718	30.0411	434.0040	6.4936	63.6270
73	114.5422	216.2973	0.0532	0.0018	0.0444	0.0005	0.5296	336.1782	78.8247	279.9468	3.0750	97.8681
74	507.8030	262.0232	0.0701	0.0010	0.1556	0.0019	1.9380	929.9575	29.5729	932.2707	11.6187	99.9263
75	213.8343	124.0398	0.1236	0.0017	0.3305	0.0035	1.7239	2009.3867	25.0995	1840.5757	19.3273	91.5989
76	301.0780	160.6523	0.1224	0.0017	0.3040	0.0032	1.8741	1991.6816	25.0707	1710.9485	17.8689	85.9047
77	310.6352	190.4897	0.0696	0.0010	0.1529	0.0016	1.6307	917.9323	29.7177	917.1655	9.5554	99.9755
78	312.0186	242.2638	0.0574	0.0010	0.0750	0.0008	1.2879	506.5148	36.6374	466.4724	4.9999	98.5582
79	434.9247	266.7008	0.0769	0.0011	0.1794	0.0020	1.6308	1119.1809	28.5723	1063.5382	11.9603	95.0283
80	394.8425	198.0368	0.0559	0.0009	0.0712	0.0008	1.9938	447.1885	35.9569	443.2674	4.8545	99.8572
81	404.9021	276.6089	0.0778	0.0011	0.1775	0.0019	1.4638	1141.4366	28.6901	1053.4783	11.0650	92.2941
82	403.4261	227.3092	0.0563	0.0009	0.0707	0.0007	1.7748	464.6462	34.8705	440.6077	4.5975	99.1262
83	244.4544	111.4557	0.0558	0.0011	0.0677	0.0007	2.1933	443.7660	42.4005	422.3730	4.4771	99.2181
84	166.8003	119.5781	0.0525	0.0018	0.0408	0.0004	1.3949	306.7961	76.5014	257.9725	2.7193	98.1353
85	85.5808	46.4686	0.0960	0.0015	0.2682	0.0030	1.8417	1547.1320	28.8022	1531.8916	16.9331	99.0149
86	434.2227	74.1681	0.0972	0.0016	0.2342	0.0042	5.8546	1570.5078	29.8918	1356.2996	24.3763	86.3606
87	577.0239	624.5706	0.0542	0.0009	0.0603	0.0007	0.9239	379.0653	35.4892	377.2491	4.3438	99.9326

88	462.2846	139.7529	0.0724	0.0010	0.1706	0.0020	3.3079	996.0619	29.1101	1015.4673	11.9188	98.0890
89	227.1283	41.4985	0.1160	0.0016	0.3413	0.0036	5.4732	1895.2517	25.3851	1892.9401	20.0669	99.8780
90	375.6836	258.8825	0.0557	0.0009	0.0692	0.0007	1.4512	440.4655	34.7723	431.3553	4.4579	99.6673
91	181.6809	64.7256	0.1260	0.0018	0.3539	0.0038	2.8069	2043.5928	25.2003	1953.3347	20.8887	95.5834
92	139.1747	186.5581	0.1181	0.0017	0.3048	0.0032	0.7460	1927.0505	25.9959	1714.8711	18.1212	88.9894

Table S4 U-Pb isotope dating results for the detrital zircons from sample S3 (QL0921-7-1)

test	Th	U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	
point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	47.4797	85.4016	0.0574	0.0024	0.0758	0.0008	0.5560	508.4449	90.4506	471.0639	4.9307	98.6553
2	85.9877	193.3056	0.0568	0.0013	0.0719	0.0007	0.4448	482.4337	49.7472	447.6192	4.6226	98.7388
3	116.9920	258.6487	0.0523	0.0014	0.0498	0.0005	0.4523	298.6441	61.5607	313.3310	3.1551	99.4466
4	36.5334	73.7135	0.0516	0.0048	0.0424	0.0005	0.4956	266.0423	214.8010	267.6330	3.0434	99.9391
5	10.1263	51.7097	0.0558	0.0054	0.0578	0.0007	0.1958	444.9880	213.4002	362.2589	4.4309	96.9483
6	308.7812	270.6751	0.0595	0.0011	0.0973	0.0012	1.1408	586.6208	39.3322	598.5386	7.3507	99.5852
7	136.4999	429.3699	0.1763	0.0021	0.4863	0.0049	0.3179	2618.1988	20.1344	2554.5251	25.9361	97.5680
8	35.1265	50.9633	0.0558	0.0043	0.0768	0.0008	0.6893	443.5041	169.7409	476.7197	5.2707	98.8101
9	39.6976	39.7355	0.1151	0.0018	0.3372	0.0034	0.9990	1881.4960	28.3229	1873.3318	19.0064	99.5661
10	20.7981	25.6829	0.1536	0.0027	0.4365	0.0045	0.8098	2386.6590	30.1457	2334.9871	23.9811	97.8350
11	51.8342	115.4437	0.1855	0.0022	0.5205	0.0054	0.4490	2702.9673	19.8930	2701.4453	28.2765	99.9437
12	16.3390	32.5233	0.1070	0.0020	0.3149	0.0032	0.5024	1749.6349	34.1491	1764.9001	18.1599	99.1351
13	24.2478	19.5934	0.1009	0.0027	0.2882	0.0032	1.2376	1639.8699	50.3850	1632.6245	18.3975	99.5582
14	62.6293	214.5420	0.1059	0.0013	0.3063	0.0031	0.2919	1729.7540	22.1556	1722.3796	17.3031	99.5737
15	546.9130	601.9502	0.0578	0.0008	0.0801	0.0008	0.9086	522.3939	29.6216	496.9529	5.0224	99.0900
16	79.6452	191.9414	0.0567	0.0017	0.0680	0.0007	0.4149	478.0374	65.0416	424.3781	4.3460	98.0482
17	94.8152	151.7758	0.0648	0.0011	0.1367	0.0014	0.6247	767.4701	35.3761	826.1109	8.5111	98.0977
18	31.3726	1170.0776	0.1171	0.0014	0.3489	0.0039	0.0268	1912.2412	21.5573	1929.3109	21.3106	99.1152
19	13.1177	165.8451	0.0567	0.0013	0.0789	0.0008	0.0791	481.3778	52.0765	489.8287	4.9820	99.6967

20	99.9578	200.6417	0.1615	0.0019	0.4654	0.0046	0.4982	2471.3255	20.2133	2463.3406	24.4282	99.6769
21	89.3083	166.4342	0.1868	0.0022	0.5230	0.0053	0.5366	2714.1457	19.4585	2711.9351	27.6685	99.9186
22	25.3854	48.0811	0.1064	0.0018	0.3080	0.0031	0.5280	1738.1148	30.5852	1730.8040	17.2328	99.5794
23	43.9753	78.4428	0.0573	0.0030	0.0775	0.0008	0.5606	501.5981	115.8626	481.1778	5.1548	99.2659
24	116.8649	411.6692	0.0544	0.0009	0.0713	0.0008	0.2839	389.3334	37.0569	443.7720	4.7719	98.0415
25	21.3833	26.5059	0.1030	0.0024	0.2972	0.0030	0.8067	1678.7192	42.8567	1677.1958	17.1565	99.9093
26	23.7286	21.9913	0.1036	0.0027	0.2944	0.0030	1.0790	1688.9467	47.2127	1663.5210	17.0631	98.4946
27	70.5419	193.1242	0.1156	0.0014	0.3476	0.0035	0.3653	1889.8495	21.4957	1923.3213	19.3286	98.2597
28	147.1309	192.1310	0.0509	0.0020	0.0466	0.0005	0.7658	234.4616	90.1911	293.7666	3.0272	97.7781
29	49.8161	280.1134	0.1183	0.0014	0.3631	0.0036	0.1778	1930.7424	21.3041	1996.7103	19.6717	96.6962
30	10.6364	26.3586	0.0681	0.0044	0.1444	0.0016	0.4035	870.4405	135.2771	869.2832	9.7002	99.9625
31	190.5048	225.5361	0.1062	0.0013	0.3061	0.0032	0.8447	1735.0607	22.3164	1721.2401	17.9326	99.2034
32	2.9379	25.8278	0.0548	0.0086	0.0679	0.0010	0.1137	402.5646	350.4231	423.4741	6.1016	99.2375
33	43.9053	86.5132	0.1094	0.0014	0.3105	0.0031	0.5075	1790.0724	24.0425	1743.3153	17.3977	97.3880
34	181.1458	334.2328	0.0533	0.0011	0.0447	0.0004	0.5420	341.1861	47.3792	282.0059	2.8181	97.7585
35	78.3775	123.6116	0.0944	0.0012	0.2644	0.0026	0.6341	1516.8626	24.3673	1512.2519	15.0053	99.6960
36	45.8789	239.7642	0.1260	0.0016	0.3715	0.0043	0.1914	2042.7740	22.5561	2036.3597	23.4606	99.6860
37	20.2110	47.6423	0.1063	0.0018	0.3050	0.0030	0.4242	1736.4659	30.7984	1716.2181	16.9251	98.8340
38	112.5717	206.9535	0.0533	0.0017	0.0458	0.0005	0.5439	341.1591	70.2383	288.3835	3.0265	98.0032
39	148.5783	180.4064	0.0965	0.0012	0.2780	0.0027	0.8236	1557.8174	23.5304	1581.0679	15.5873	98.5294
40	99.8167	421.3705	0.0689	0.0009	0.1583	0.0016	0.2369	895.6994	26.4821	947.5266	9.5174	98.3689
41	208.7485	205.2667	0.0664	0.0010	0.1329	0.0013	1.0170	820.1363	30.2170	804.5784	7.8992	99.4880
42	119.4229	175.5619	0.0573	0.0013	0.0691	0.0007	0.6802	502.7725	50.4036	430.8651	4.2686	97.3956
43	21.0605	52.3933	0.1064	0.0016	0.3124	0.0031	0.4020	1738.5564	27.3694	1752.6819	17.4759	99.1941
44	14.4677	17.8717	0.1103	0.0032	0.3049	0.0033	0.8095	1803.5995	53.5694	1715.4121	18.4804	95.1105
45	23.6755	51.2014	0.0506	0.0061	0.0474	0.0006	0.4624	220.6122	280.3793	298.3900	3.7227	97.1033
46	48.8859	188.6934	0.1068	0.0013	0.3213	0.0034	0.2591	1745.0416	22.6877	1796.2423	19.0646	97.1496
47	168.1378	178.2843	0.0550	0.0015	0.0668	0.0007	0.9431	410.8465	59.1188	416.9997	4.1218	99.7744

48	63.5155	117.1560	0.0549	0.0018	0.0701	0.0007	0.5421	407.3653	72.8951	436.9439	4.3614	98.9277
49	33.9048	80.8313	0.1442	0.0020	0.4224	0.0044	0.4195	2278.6593	23.9041	2271.4272	23.4257	99.6826
50	20.3140	20.3693	0.1631	0.0038	0.4621	0.0048	0.9973	2487.8141	39.3721	2448.7607	25.6609	98.4302
51	62.8564	115.7142	0.0557	0.0022	0.0651	0.0007	0.5432	438.9218	88.5056	406.8605	4.0779	98.8246
52	72.5405	135.2864	0.0564	0.0016	0.0740	0.0008	0.5362	469.7863	63.6334	459.9873	4.8615	99.6451
53	27.2850	242.8753	0.1142	0.0014	0.3295	0.0034	0.1123	1866.5800	21.9086	1836.1403	18.7892	98.3692
54	22.1576	26.0847	0.1040	0.0029	0.3008	0.0031	0.8494	1696.9785	50.7042	1695.1500	17.2579	99.8923
55	93.7177	92.7227	0.1623	0.0020	0.4651	0.0046	1.0107	2479.9360	20.9341	2462.2034	24.2820	99.2850
56	282.4827	817.1081	0.1095	0.0014	0.3142	0.0032	0.3457	1790.4231	22.6311	1761.2090	18.0497	98.3683
57	15.1946	27.0481	0.1020	0.0023	0.2956	0.0030	0.5618	1660.8667	41.9179	1669.4876	16.7915	99.4836
58	17.5024	38.2759	0.1646	0.0022	0.4635	0.0046	0.4573	2503.9145	22.8783	2455.0660	24.3838	98.0491
59	134.6381	261.7789	0.0992	0.0012	0.2753	0.0028	0.5143	1610.0304	22.8049	1567.4449	15.7286	97.3550
60	138.9637	280.1581	0.0506	0.0015	0.0385	0.0004	0.4960	224.3887	67.5868	243.3136	2.4085	99.2732
61	118.6817	206.2677	0.0493	0.0018	0.0433	0.0004	0.5754	160.0038	84.3609	273.0942	2.7395	95.7964
62	19.1732	31.3312	0.0560	0.0106	0.0527	0.0009	0.6120	453.5824	419.5632	331.1921	5.3678	95.4680
63	56.5171	118.2498	0.1606	0.0021	0.4647	0.0046	0.4779	2461.7606	21.7686	2460.4763	24.2770	99.9478
64	25.7486	101.4231	0.1095	0.0015	0.3130	0.0031	0.2539	1791.9331	24.1836	1755.6110	17.2717	97.9730
65	43.5627	28.6133	0.1061	0.0021	0.3130	0.0032	1.5225	1733.4288	35.6920	1755.2686	17.8190	98.7558
66	126.6333	237.7669	0.1117	0.0014	0.3144	0.0032	0.5326	1827.4872	22.7317	1762.3658	18.1356	96.4366
67	11.2443	32.4530	0.1099	0.0030	0.3148	0.0034	0.3465	1797.9531	50.1677	1764.2876	18.8704	98.1276
68	56.7777	60.4497	0.1113	0.0016	0.3241	0.0032	0.9393	1821.0487	26.2265	1809.8352	17.8232	99.3842
69	2.3055	18.2407	0.1177	0.0026	0.3449	0.0035	0.1264	1922.0603	39.1725	1910.3789	19.2376	99.3922
70	40.0349	378.0479	0.0706	0.0009	0.1561	0.0015	0.1059	946.1054	25.8651	935.1631	9.2674	99.6519
71	22.0702	55.5250	0.0505	0.0080	0.0439	0.0006	0.3975	220.0152	364.2190	276.7248	3.7273	97.8637
72	105.0422	138.8884	0.1448	0.0019	0.4202	0.0042	0.7563	2285.8374	22.1896	2261.1883	22.5266	98.9217
73	108.7246	199.9044	0.0512	0.0019	0.0419	0.0004	0.5439	250.9029	86.3366	264.7432	2.6433	99.4711
74	13.3308	20.8273	0.1180	0.0023	0.3407	0.0035	0.6401	1926.7707	35.2714	1890.0461	19.1484	98.0940
75	15.1910	114.2594	0.1202	0.0015	0.3579	0.0036	0.1330	1959.1876	22.3211	1972.1227	19.6656	99.3441

76	21.2405	50.4910	0.0512	0.0065	0.0443	0.0006	0.4207	248.4416	290.8756	279.7160	3.6393	98.8152
77	24.8759	170.8419	0.0553	0.0015	0.0659	0.0007	0.1456	422.8036	60.1841	411.3131	4.0657	99.5781
78	7.4541	111.3192	0.0543	0.0020	0.0664	0.0007	0.0670	381.5730	81.4372	414.3215	4.1188	98.8061
79	45.1628	458.2028	0.0563	0.0008	0.0815	0.0008	0.0986	463.1038	31.5221	504.7799	4.9343	98.5213
80	24.3112	37.1660	0.1514	0.0021	0.4355	0.0043	0.6541	2362.2901	23.4720	2330.6638	23.0683	98.6612
81	20.9913	38.7920	0.0852	0.0024	0.2264	0.0023	0.5411	1319.1722	54.5591	1315.7979	13.5137	99.7442
82	29.4762	84.8917	0.0520	0.0044	0.0407	0.0004	0.3472	283.2508	195.7622	257.1012	2.7844	98.9981
83	174.5888	203.5312	0.0545	0.0019	0.0433	0.0004	0.8578	389.9216	80.0458	273.3625	2.8391	95.6066
84	33.7980	61.4991	0.0568	0.0032	0.0749	0.0008	0.5496	484.1643	122.9871	465.8512	4.8713	99.3386
85	31.8309	76.0001	0.1114	0.0015	0.3073	0.0030	0.4188	1821.5699	24.6562	1727.3420	16.8211	94.8271
86	145.2134	291.8265	0.0568	0.0010	0.0758	0.0007	0.4976	481.8712	37.0906	471.2994	4.6507	99.6184
87	23.5741	54.1532	0.1095	0.0016	0.3050	0.0030	0.4353	1790.9493	27.3566	1715.9217	16.7569	95.8107
88	7.8309	75.6772	0.1069	0.0016	0.2855	0.0032	0.1035	1746.7844	27.0375	1618.9597	18.0476	92.6823
89	3.8889	10.0509	0.0719	0.0111	0.1492	0.0023	0.3869	982.0416	315.3690	896.2579	13.6434	97.2727
90	34.4764	41.0965	0.1618	0.0025	0.4698	0.0062	0.8389	2474.7347	25.7288	2482.6345	32.8198	99.6818
91	74.5992	191.8288	0.0531	0.0019	0.0521	0.0006	0.3889	332.6154	81.3045	327.4644	4.0730	99.8061
92	410.9303	770.3283	0.0527	0.0008	0.0407	0.0004	0.5334	316.0790	34.9999	257.3643	2.6540	97.7599
93	50.3115	66.7793	0.1089	0.0016	0.2896	0.0030	0.7534	1780.7200	27.2887	1639.5653	17.0079	92.0732
94	150.9719	137.7243	0.0524	0.0021	0.0378	0.0004	1.0962	303.7401	89.9964	239.2284	2.5185	97.5274
95	96.9557	170.8746	0.1131	0.0016	0.3145	0.0033	0.5674	1849.3472	25.7353	1762.8461	18.6384	95.3226
96	188.7537	349.9514	0.1095	0.0016	0.2827	0.0029	0.5394	1790.6265	26.2215	1605.0277	16.7087	89.6350
97	130.3818	270.5460	0.0527	0.0013	0.0437	0.0005	0.4819	317.1944	54.0587	275.5336	2.8807	98.4155
98	74.2727	127.0749	0.0555	0.0016	0.0663	0.0007	0.5845	433.3996	62.4936	413.6919	4.3469	99.2777
99	672.0276	549.1008	0.0547	0.0008	0.0625	0.0006	1.2239	401.0210	34.5377	390.8202	3.9666	99.6232
100	172.1328	331.6101	0.0562	0.0010	0.0695	0.0007	0.5191	460.9869	37.8032	432.9963	4.4645	98.9809
101	91.9346	87.7335	0.1589	0.0024	0.4602	0.0048	1.0479	2443.4653	25.1199	2440.2252	25.5757	99.8674
102	110.6208	66.3989	0.0844	0.0018	0.1635	0.0017	1.6660	1302.5141	41.9889	976.0307	10.2966	90.1940
103	313.8106	345.6445	0.0518	0.0012	0.0413	0.0005	0.9079	276.4903	51.2985	260.8550	2.8669	99.4008

104	312.1771	239.3279	0.0562	0.0011	0.0710	0.0008	1.3044	459.4397	41.6541	442.0035	4.6844	99.3659
105	335.0493	301.6543	0.1617	0.0025	0.4281	0.0045	1.1107	2473.2887	25.7679	2297.2671	24.1880	92.8831
106	531.1108	421.6722	0.0547	0.0009	0.0607	0.0006	1.2595	401.0964	37.7742	379.7158	3.8351	99.2089
107	22.2640	33.5815	0.1110	0.0019	0.3210	0.0036	0.6630	1816.3670	31.4080	1794.7016	20.0774	98.8072
108	131.5459	268.2282	0.0564	0.0010	0.0705	0.0007	0.4904	466.3028	39.7816	438.9288	4.5303	99.0049
109	39.1468	86.7164	0.0863	0.0013	0.2316	0.0025	0.4514	1345.9723	30.0165	1342.8414	14.5317	99.7674

Table S5 U-Pb isotope dating results for the detrital zircons from sample S4 (QL2017-36-1)

test	Th	U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	
point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	70.0057	366.0106	0.0560	0.0009	0.0677	0.0007	0.19127	452.3215	37.3056	422.0135	4.2099	98.8934
2	72.8141	192.9849	0.1089	0.0014	0.2599	0.0026	0.3773	1780.6409	22.8021	1489.3785	14.6628	83.6428
3	79.2707	158.0908	0.0612	0.0024	0.0431	0.0004	0.50143	644.8997	84.3829	271.9735	2.7427	86.4106
4	106.4022	142.0421	0.0544	0.0018	0.0682	0.0007	0.74909	388.8896	73.3203	425.1370	4.2161	98.6836
5	12.5890	21.0456	0.1125	0.0030	0.3272	0.0035	0.59818	1839.9606	48.2022	1824.5581	19.4158	99.1629
6	49.1662	212.2029	0.0565	0.0012	0.0705	0.0007	0.23169	471.2473	47.3530	439.4053	4.4893	98.8434
7	154.0620	221.6766	0.0552	0.0012	0.0710	0.0007	0.69499	419.3960	50.2475	441.9625	4.3395	99.1817
8	46.4983	75.3719	0.1110	0.0015	0.3495	0.0035	0.61692	1816.3527	24.4045	1931.9758	19.5918	94.0153
9	151.0458	234.7735	0.0571	0.0012	0.0723	0.0007	0.64337	495.0026	44.9142	449.9477	4.4374	98.3712
10	80.0496	108.1650	0.1137	0.0015	0.3336	0.0033	0.74007	1859.2176	23.0452	1855.6327	18.2110	99.8072
11	47.6267	66.7112	0.0522	0.0055	0.0423	0.0005	0.71392	293.6925	241.4400	266.8773	2.9948	98.9757
12	46.9411	86.4466	0.1035	0.0014	0.3387	0.0033	0.54301	1687.3286	24.5940	1880.2959	18.4832	89.7374
13	82.4643	358.0315	0.1628	0.0019	0.4717	0.0049	0.23033	2485.0990	20.0522	2491.0123	25.7286	99.7626
14	2.6322	5.0836	0.0510	0.0755	0.0511	0.0037	0.51778	240.8451	3414.2314	321.3007	23.5608	97.0245
15	17.9608	235.5542	0.1128	0.0014	0.3365	0.0039	0.07625	1844.5466	22.1016	1869.6839	21.6629	98.6555
16	24.3561	58.4093	0.0975	0.0018	0.2739	0.0038	0.41699	1577.1616	34.7493	1560.8131	21.5716	98.9634
17	108.8600	206.1137	0.1160	0.0014	0.3331	0.0034	0.52815	1895.0220	22.3557	1853.3024	18.9032	97.7985
18	162.9543	635.4705	0.0583	0.0008	0.0714	0.0007	0.25643	540.6087	30.6968	444.6980	4.5650	96.5511

19	45.7498	186.9604	0.1598	0.0019	0.4510	0.0044	0.2447	2453.6113	20.3229	2399.9000	23.4563	97.8109
20	168.6985	502.1903	0.0546	0.0010	0.0446	0.0004	0.33593	393.8558	41.8136	281.4782	2.8133	95.7721
21	107.3870	669.0371	0.0510	0.0008	0.0452	0.0004	0.16051	239.0093	36.9937	284.7739	2.8042	98.2751
22	80.4890	194.3090	0.1599	0.0019	0.4595	0.0048	0.41423	2454.2190	20.4899	2437.5543	25.2352	99.3210
23	201.4436	138.8940	0.1127	0.0015	0.3388	0.0034	1.45034	1843.6485	23.9370	1880.8237	18.8960	98.0235
24	112.1767	770.1976	0.1146	0.0014	0.3299	0.0043	0.14565	1873.7623	22.4564	1838.0662	24.0182	98.0950
25	57.1545	105.0773	0.1074	0.0014	0.3079	0.0030	0.54393	1756.1127	24.4504	1730.5864	16.8877	98.5464
26	90.6813	166.5938	0.0583	0.0013	0.0842	0.0008	0.54433	542.7373	48.3427	521.2148	5.1427	99.2350
27	27.4474	84.7696	0.0564	0.0026	0.0640	0.0007	0.32379	466.2362	102.2176	400.2087	4.0941	97.5856
28	64.0713	103.1457	0.0519	0.0034	0.0423	0.0004	0.62117	281.3332	152.0045	266.9790	2.8257	99.4508
29	97.9026	209.5033	0.0566	0.0013	0.0674	0.0007	0.46731	476.3780	50.0915	420.5300	4.1197	97.9669
30	96.3574	128.8155	0.0545	0.0026	0.0509	0.0005	0.74803	391.4872	108.2854	320.0497	3.2313	97.3284
31	95.2962	197.0029	0.1767	0.0022	0.4969	0.0051	0.48373	2621.8908	20.6104	2600.5044	26.4830	99.1843
32	39.5712	109.8311	0.1145	0.0015	0.3369	0.0034	0.36029	1872.7602	24.3097	1871.5838	18.7274	99.9372
33	574.9359	728.7778	0.0564	0.0009	0.0721	0.0009	0.7889	466.5976	34.3821	448.8248	5.5599	99.3549
34	66.3865	80.1092	0.1886	0.0024	0.5108	0.0050	0.8287	2730.3304	20.7216	2659.8331	26.2169	97.4180
35	16.0323	94.3486	0.0513	0.0038	0.0398	0.0004	0.16993	255.6927	172.0947	251.3383	2.6989	99.8324
36	94.3382	142.8328	0.1080	0.0016	0.3062	0.0031	0.66048	1766.6622	26.8269	1722.1945	17.2746	97.4830
37	78.3674	83.5938	0.1116	0.0015	0.3322	0.0032	0.93748	1825.0273	25.1658	1848.9805	17.9713	98.7045
38	90.1364	200.1010	0.0500	0.0018	0.0471	0.0005	0.45045	193.6410	84.7888	296.6427	3.0508	96.1863
39	39.6087	53.1782	0.0519	0.0074	0.0424	0.0006	0.74483	279.4814	324.8231	267.7465	3.5600	99.5510
40	133.2599	464.1015	0.0717	0.0009	0.1661	0.0017	0.28714	978.2599	26.4436	990.3912	9.9267	99.6198
41	43.0624	243.2708	0.1193	0.0015	0.3398	0.0033	0.17701	1945.0945	22.8467	1885.7068	18.4138	96.9468
42	64.8136	241.1248	0.1138	0.0014	0.3215	0.0031	0.2688	1860.6123	22.5536	1797.2439	17.4947	96.5942
43	239.2692	301.1144	0.0497	0.0014	0.0419	0.0004	0.79461	183.1689	65.6832	264.5900	2.6039	96.9418
44	731.1863	619.8267	0.0513	0.0009	0.0433	0.0004	1.17966	255.6277	38.7993	273.0213	2.7281	99.3375
45	15.5141	24.7701	0.0819	0.0034	0.1958	0.0021	0.62632	1242.0698	81.3151	1152.5761	12.1746	92.7948
46	165.1590	403.8905	0.0523	0.0011	0.0447	0.0005	0.40892	299.2346	47.7095	281.9808	2.9084	99.3430

47	19.8237	35.3775	0.0581	0.0061	0.0759	0.0009	0.56035	534.2981	228.9565	471.6178	5.5000	97.7532
48	289.9832	466.7067	0.1134	0.0014	0.3406	0.0036	0.62134	1854.2800	22.7508	1889.7558	20.0380	98.1227
49	81.7041	176.5086	0.1648	0.0021	0.4641	0.0046	0.46289	2505.9367	21.2014	2457.5373	24.3026	98.0686
50	73.5913	118.4646	0.0523	0.0030	0.0474	0.0005	0.62121	298.6927	128.9855	298.7147	3.0968	99.9992
51	199.7359	164.5571	0.0656	0.0011	0.1300	0.0013	1.21378	792.9321	34.7503	787.7497	7.7389	99.8284
52	18.2200	26.9255	0.1083	0.0031	0.3138	0.0032	0.67668	1771.0301	52.5541	1759.2897	18.2106	99.3371
53	45.6184	40.6232	0.0526	0.0277	0.0441	0.0017	1.12296	312.8672	1197.5876	278.3877	10.6231	98.6886
54	295.2183	340.8387	0.0555	0.0009	0.0745	0.0007	0.86615	431.7429	37.3293	463.1514	4.6464	98.8701
55	133.7442	109.3720	0.0528	0.0036	0.0400	0.0004	1.22284	318.0953	153.1548	252.8804	2.6515	97.5107
56	166.2648	248.9689	0.0572	0.0011	0.0809	0.0008	0.66781	499.9941	41.7336	501.2235	5.0342	99.9559
57	163.3612	113.4345	0.0514	0.0030	0.0451	0.0005	1.44014	257.0712	133.5354	284.6099	3.0858	98.9572
58	223.3355	370.2402	0.0499	0.0011	0.0435	0.0004	0.60322	191.7896	52.3767	274.7693	2.7472	96.8933
59	31.5562	68.2237	0.1080	0.0015	0.3140	0.0031	0.46254	1765.5160	25.6862	1760.4359	17.3501	99.7123
60	55.6124	72.2395	0.0528	0.0055	0.0415	0.0005	0.76983	322.2650	236.8195	262.2658	2.9990	97.7146
61	38.1717	51.1239	0.0658	0.0025	0.1319	0.0013	0.74665	798.7358	79.3376	798.7988	8.0328	99.9979
62	114.1755	217.9747	0.1074	0.0013	0.3087	0.0030	0.5238	1756.4817	22.7675	1734.1910	16.8630	98.7309
63	3.1264	4.0731	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.76758	#VALUE!	#VALUE!	#DIV/0!	#DIV/0!	#VALUE!
64	20.9552	32.9100	0.1089	0.0020	0.3115	0.0031	0.63674	1781.2994	33.7213	1748.1035	17.5326	98.1364
65	17.5447	42.4461	0.1042	0.0018	0.3002	0.0030	0.41334	1699.6459	32.0541	1692.1887	16.8511	99.5612
66	130.9243	103.9948	0.0528	0.0029	0.0545	0.0006	1.25895	320.5107	125.6617	341.8792	3.5955	99.2027
67	132.5679	225.5901	0.0576	0.0012	0.0702	0.0007	0.58765	515.6062	44.7364	437.1352	4.5354	97.1655
68	14.2885	29.1494	0.1136	0.0022	0.3232	0.0034	0.49018	1857.0059	34.5058	1805.5239	18.8346	97.2277
69	137.6637	227.9332	0.1078	0.0013	0.3050	0.0030	0.60396	1762.9677	22.5584	1715.8968	16.8840	97.3300
70	163.4324	269.5615	0.0709	0.0009	0.1593	0.0016	0.60629	953.7401	26.7832	952.7556	9.5705	99.9688
71	235.5415	187.9008	0.0580	0.0013	0.0777	0.0008	1.25354	529.7209	50.9004	482.6324	4.8516	98.3138
72	128.2918	392.4567	0.0932	0.0012	0.2606	0.0027	0.32689	1492.4377	24.0784	1492.9459	15.2416	99.9660
73	108.9449	134.0770	0.1712	0.0022	0.4773	0.0048	0.81255	2569.3493	21.2372	2515.3298	25.0584	97.8975
74	88.3060	186.1970	0.1789	0.0022	0.4976	0.0049	0.47426	2642.2608	20.7333	2603.4792	25.8204	98.5323

75	19.8898	70.5788	0.2361	0.0030	0.6129	0.0068	0.28181	3093.6226	20.3622	3081.7945	34.0228	99.6177
76	110.3482	241.2133	0.1719	0.0021	0.4899	0.0050	0.45747	2576.0547	20.2907	2570.3987	25.9807	99.7804
77	8.1715	13.7330	0.1176	0.0044	0.3429	0.0038	0.59502	1920.1684	67.3346	1900.5440	20.9502	98.9780
78	17.1547	30.7829	0.1030	0.0021	0.2951	0.0030	0.55728	1678.3651	36.8729	1666.7696	16.8465	99.3091
79	134.0781	148.0220	0.1291	0.0017	0.3788	0.0037	0.9058	2086.1964	22.5590	2070.6057	20.2247	99.2527
80	91.7594	181.3475	0.0551	0.0014	0.0689	0.0007	0.50599	415.6602	57.4390	429.5969	4.2692	99.4919
81	18.9948	48.2982	0.1097	0.0038	0.3145	0.0035	0.39328	1794.7426	62.2577	1762.6816	19.8630	98.2136
82	63.4002	132.9923	0.0563	0.0031	0.0526	0.0006	0.47672	462.4307	120.7031	330.3742	3.6622	95.1152
83	44.5652	136.6802	0.0538	0.0024	0.0505	0.0005	0.32605	363.9968	100.1361	317.6924	3.2260	98.2615
84	35.6883	49.3131	0.1027	0.0016	0.2955	0.0029	0.72371	1673.4116	29.4330	1668.9265	16.3184	99.7320
85	121.4741	171.8889	0.1125	0.0015	0.3234	0.0032	0.7067	1839.6093	23.9170	1806.2752	17.7240	98.1880
86	38.3642	119.9840	0.1701	0.0021	0.4837	0.0050	0.31974	2558.7950	20.7093	2543.1663	26.3229	99.3892
87	138.4320	186.6794	0.1228	0.0015	0.3646	0.0037	0.74155	1997.9614	21.9237	2003.9198	20.1462	99.7027
88	94.3106	211.0149	0.1162	0.0015	0.3290	0.0032	0.44694	1898.9585	22.5990	1833.5511	17.8032	96.5556
89	40.5073	60.7469	0.0883	0.0016	0.2332	0.0023	0.66682	1388.2487	35.1099	1351.5013	13.2259	97.3530
90	30.9701	62.1084	0.1729	0.0024	0.4889	0.0050	0.49864	2586.2965	22.8894	2565.9348	26.4619	99.2127
91	121.0836	530.7951	0.0553	0.0008	0.0755	0.0008	0.22812	424.6137	33.2554	468.9412	4.7681	98.4126
92	521.3057	294.5834	0.0492	0.0015	0.0388	0.0004	1.76964	158.7185	70.6879	245.5579	2.4353	96.7255
93	43.9807	37.1484	0.0765	0.0026	0.1871	0.0021	1.18392	1107.5677	68.1489	1105.4032	12.5007	99.8046
94	32.1088	178.3480	0.0561	0.0014	0.0659	0.0007	0.18003	457.3563	57.1094	411.6012	4.1902	98.3278
95	86.3299	94.4588	0.0527	0.0041	0.0422	0.0005	0.91394	314.1544	177.4407	266.5791	2.8624	98.1872
96	93.9521	226.8051	0.0511	0.0021	0.0463	0.0005	0.41424	244.6294	93.0281	291.6803	3.1419	98.2307
97	43.5799	26.1038	0.1142	0.0026	0.3230	0.0033	1.66948	1866.5391	41.8413	1804.2035	18.5016	96.6604
98	38.2674	56.8741	0.1054	0.0019	0.2817	0.0028	0.67284	1722.0414	32.6873	1600.0146	16.1639	92.9138
99	201.7562	240.8525	0.0500	0.0019	0.0464	0.0005	0.83768	194.3394	86.0660	292.4791	3.0411	96.3577

Table S2 U-Pb isotope dating results for the detrital zircons from sample S5 (SQL2017-419-1)

test	Th	U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$

point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	396.6742	348.5386	0.0531	0.0010	0.0486	0.0006	1.1381	333.8948	44.0162	306.0555	4.0100	98.9487
2	853.7221	1330.9018	0.0583	0.0011	0.0599	0.0008	0.6415	541.2094	41.2198	374.8948	4.8475	93.9553
3	831.8804	352.7855	0.1185	0.0016	0.2380	0.0033	2.3580	1933.6223	23.6770	1376.2219	18.9582	71.1733
4	155.0902	148.7567	0.1189	0.0020	0.2868	0.0039	1.0426	1939.9325	30.0571	1625.3992	22.0534	83.7864
5	417.1361	639.7433	0.0527	0.0009	0.0488	0.0006	0.6520	317.4204	38.2664	307.4431	3.7860	99.6225
6	199.6276	405.3617	0.0646	0.0011	0.0904	0.0011	0.4925	761.7954	36.4086	558.0662	6.9443	93.0120
7	295.9925	1097.8321	0.0557	0.0008	0.0644	0.0009	0.2696	442.2383	32.4583	402.4804	5.6542	98.5421
8	474.3516	534.4482	0.0559	0.0010	0.0639	0.0008	0.8876	447.9385	37.9471	399.2348	4.7862	98.2144
9	220.9629	194.8544	0.1165	0.0016	0.3065	0.0035	1.1340	1903.1959	25.1781	1723.4986	19.8805	90.5581
10	356.7819	297.7457	0.0517	0.0012	0.0450	0.0006	1.1983	270.8557	51.3521	283.7977	3.4697	99.5080
11	200.4403	290.6468	0.1629	0.0023	0.4708	0.0061	0.6896	2485.8543	23.8781	2487.2343	32.0231	99.9445
12	942.2687	965.9520	0.0834	0.0028	0.0198	0.0003	0.9755	1279.4397	65.5348	126.5007	1.8184	60.6629
13	264.1827	360.1317	0.0670	0.0021	0.0396	0.0005	0.7336	838.0843	66.1123	250.4314	3.1820	79.0802
14	223.0196	258.4299	0.0531	0.0012	0.0480	0.0007	0.8630	332.7243	51.5528	302.5233	4.1585	98.8587
15	597.1487	556.8585	0.0526	0.0010	0.0443	0.0006	1.0724	311.6575	44.6343	279.6061	3.9595	98.7810
16	590.6133	857.9956	0.0532	0.0008	0.0493	0.0007	0.6884	335.3668	36.1829	310.2252	4.1763	99.0514
17	365.7627	608.6267	0.0523	0.0009	0.0495	0.0006	0.6010	296.9082	37.9271	311.3802	3.9277	99.4544
18	745.3779	1855.3438	0.0567	0.0008	0.0566	0.0006	0.4017	478.5810	31.0020	355.0379	4.0734	95.4578
19	164.6054	364.4154	0.1223	0.0016	0.3345	0.0042	0.4517	1989.4025	23.0254	1860.3713	23.5493	93.5141
20	391.9257	538.0962	0.0640	0.0014	0.0381	0.0004	0.7284	742.8982	47.1631	241.2332	2.7904	81.8712
21	61.1842	121.2901	0.1548	0.0021	0.3992	0.0047	0.5044	2399.2791	22.7037	2165.4155	25.5741	90.2528
22	151.5963	417.3527	0.1220	0.0016	0.3346	0.0046	0.3632	1985.1095	23.3194	1860.8040	25.3075	93.7381
23	238.3367	453.7627	0.0527	0.0010	0.0492	0.0006	0.5252	314.1895	42.2083	309.8944	3.9607	99.8375
24	506.4810	608.3368	0.0536	0.0011	0.0541	0.0007	0.8326	354.2978	44.4182	339.4666	4.5174	99.4444
25	2090.7308	2729.3204	0.0875	0.0019	0.0286	0.0007	0.7660	1371.5067	41.4051	181.6703	4.1853	60.3908
26	661.7830	364.6614	0.0518	0.0010	0.0442	0.0006	1.8148	274.6948	46.1975	278.6409	3.5308	99.8494
27	496.5710	1095.4004	0.0550	0.0009	0.0645	0.0008	0.4533	412.9247	35.3833	402.9384	4.8674	99.6324

28	148.1489	301.8450	0.0544	0.0013	0.0477	0.0006	0.4908	386.2470	53.7970	300.1844	3.7561	96.7688
29	504.6594	1218.6598	0.0555	0.0009	0.0643	0.0008	0.4141	432.8427	35.1348	401.5531	4.9060	98.8510
30	504.5549	416.0820	0.0519	0.0011	0.0445	0.0006	1.2126	279.9269	47.2425	280.8405	3.5035	99.9651
31	110.4848	116.0820	0.0748	0.0015	0.1722	0.0022	0.9518	1062.8380	39.0319	1024.0039	13.0567	96.3462
32	523.5389	858.5220	0.0550	0.0011	0.0641	0.0009	0.6098	413.3672	45.8793	400.7128	5.4150	99.5341
33	881.1949	342.3958	0.0562	0.0012	0.0641	0.0008	2.5736	459.7272	46.0162	400.2094	5.0166	97.8217
34	118.4423	141.0940	0.1172	0.0028	0.3390	0.0055	0.8395	1913.6809	42.1835	1881.8541	30.4181	98.3369
35	95.2685	64.6547	0.0561	0.0020	0.0642	0.0009	1.4735	457.1877	77.6331	400.8527	5.6679	97.9377
36	450.3667	489.7036	0.0504	0.0010	0.0450	0.0007	0.9197	211.7811	45.5022	283.5394	4.1850	97.3123
37	453.9478	331.0354	0.0581	0.0012	0.0596	0.0007	1.3713	534.1901	46.1990	373.3122	4.6689	94.1459
38	287.9010	287.0849	0.1185	0.0016	0.3393	0.0045	1.0028	1933.8431	23.4298	1883.2238	24.7299	97.3825
39	289.1132	523.8613	0.1468	0.0019	0.4242	0.0049	0.5519	2308.4680	21.9478	2279.5331	26.2822	98.7466
40	59.8280	59.2333	0.1200	0.0020	0.3369	0.0044	1.0100	1956.6445	29.5836	1871.9384	24.5662	95.6708
41	18.7001	155.9823	0.1182	0.0016	0.3397	0.0042	0.1199	1928.8221	24.8942	1885.3092	23.5208	97.7441
42	198.1416	216.8765	0.1177	0.0016	0.3401	0.0043	0.9136	1921.3644	23.9356	1886.9135	24.1199	98.2070
43	120.2949	108.0195	0.1197	0.0017	0.3383	0.0041	1.1136	1952.2477	25.3859	1878.2718	22.5412	96.2107
44	177.5877	231.7746	0.1182	0.0015	0.3402	0.0042	0.7662	1928.5797	23.3945	1887.4734	23.4963	97.8686
45	577.2793	197.1100	0.0754	0.0031	0.1694	0.0030	2.9287	1080.2553	83.2806	1008.6407	17.9758	93.3706
46	150.4807	150.1282	0.1540	0.0020	0.4430	0.0055	1.0023	2390.4933	22.0834	2363.9288	29.1727	98.8887
47	315.6439	265.0603	0.0561	0.0012	0.0644	0.0008	1.1908	455.8726	45.9696	402.5989	5.1929	98.0500
48	557.5506	493.9662	0.0526	0.0010	0.0438	0.0006	1.1287	310.2688	42.2415	276.4196	3.6029	98.7117
49	394.8063	334.6501	0.0554	0.0011	0.0640	0.0008	1.1798	428.3961	42.8876	400.1895	4.9520	98.9634
50	178.0476	226.1571	0.0558	0.0011	0.0638	0.0008	0.7873	444.2686	43.6362	398.9170	5.1843	98.3365
51	258.0812	348.4406	0.0527	0.0014	0.0436	0.0006	0.7407	315.9266	62.1934	275.3925	3.5026	98.4581
52	567.8209	943.2486	0.0751	0.0011	0.1718	0.0024	0.6020	1070.1535	28.2418	1021.9728	14.1474	95.4978
53	1771.0320	2162.8359	0.0657	0.0010	0.0473	0.0006	0.8188	797.6158	32.4133	297.7035	3.8105	82.2435
54	125.7310	532.1446	0.1180	0.0023	0.3399	0.0058	0.2363	1926.8841	34.8323	1886.3333	32.4094	97.8955
55	980.4183	1074.9551	0.0531	0.0011	0.0398	0.0005	0.9121	334.4161	46.8200	251.3270	3.2978	96.8342

56	362.4007	472.2856	0.0744	0.0012	0.1727	0.0026	0.7673	1052.0321	31.3942	1027.0156	15.3116	97.6221
57	273.5486	420.9409	0.1186	0.0019	0.2696	0.0058	0.6499	1935.2388	28.0080	1538.8604	33.1561	79.5179
58	95.2333	184.1714	0.1379	0.0019	0.4036	0.0051	0.5171	2201.5809	24.0563	2185.6281	27.7561	99.2754
59	311.4192	210.0998	0.0536	0.0018	0.0396	0.0005	1.4822	356.2985	75.2651	250.1291	3.3130	95.9653
60	437.7864	772.6450	0.1190	0.0037	0.2690	0.0053	0.5666	1940.5173	55.7743	1535.8847	30.1111	79.1482
61	58.5699	39.1767	0.1199	0.0025	0.3354	0.0043	1.4950	1954.7751	36.9451	1864.5810	23.6693	95.3860
62	138.8160	134.9787	0.0538	0.0019	0.0479	0.0007	1.0284	360.7564	78.3935	301.3855	4.4207	97.7640
63	186.3508	254.2057	0.0540	0.0027	0.0535	0.0008	0.7331	372.8365	111.0732	336.1176	4.9582	98.6270
64	435.4193	557.0262	0.0535	0.0011	0.0402	0.0005	0.7817	348.0975	44.7197	254.3353	3.3312	96.4355
65	118.7428	210.7112	0.0863	0.0014	0.2227	0.0027	0.5635	1344.2662	32.3979	1296.0762	15.5160	96.4151
66	1007.6793	1030.0208	0.0530	0.0010	0.0400	0.0005	0.9783	327.9590	41.2756	252.8597	3.0553	97.1370
67	564.8039	395.3083	0.0624	0.0013	0.0447	0.0005	1.4288	687.9646	45.0236	282.0439	3.4435	85.3206
68	336.7293	435.9016	0.0520	0.0018	0.0443	0.0007	0.7725	285.3007	78.8332	279.1500	4.3527	99.7653
69	378.5917	528.8767	0.0516	0.0010	0.0404	0.0005	0.7158	268.9657	44.5714	255.5018	3.2391	99.4831
70	978.4188	715.8583	0.1199	0.0020	0.2788	0.0043	1.3668	1954.9766	30.5144	1585.1049	24.5907	81.0805
71	210.6685	300.3464	0.0526	0.0015	0.0399	0.0005	0.7014	310.3212	63.5777	252.4928	3.2038	97.7903
72	161.5913	764.1263	0.0552	0.0009	0.0645	0.0009	0.2115	420.8888	35.7502	403.2348	5.8735	99.3509
73	795.5557	598.2555	0.0534	0.0009	0.0484	0.0006	1.3298	346.6543	39.6426	304.8924	3.9616	98.4252
74	466.8412	474.7825	0.0590	0.0010	0.0591	0.0007	0.9833	566.2032	37.5118	370.2152	4.4595	92.8956
75	498.3484	433.7636	0.0640	0.0015	0.0443	0.0006	1.1489	741.6518	50.3122	279.5017	3.5227	83.4046
76	469.8261	578.5614	0.0535	0.0012	0.0435	0.0006	0.8121	349.2155	48.6790	274.5325	3.5099	97.1708
77	56.3853	48.4292	0.1186	0.0020	0.3369	0.0042	1.1643	1935.5997	30.1388	1871.7169	23.1423	96.6996
78	205.9872	270.0888	0.1210	0.0016	0.3371	0.0042	0.7627	1971.4522	23.9478	1872.8226	23.2100	94.9971
79	221.1933	290.4044	0.1166	0.0026	0.3111	0.0056	0.7617	1904.3208	39.8173	1746.2156	31.5330	91.6976
80	327.0347	329.8928	0.0544	0.0012	0.0480	0.0006	0.9913	388.7130	48.9171	301.9503	3.6876	96.7445
81	704.4734	406.4001	0.1250	0.0017	0.1874	0.0019	1.7334	2028.1435	24.6450	1107.2168	11.1771	54.5926
82	642.4668	306.8405	0.0565	0.0008	0.0677	0.0007	2.0938	473.0822	32.5272	422.0946	4.3325	98.1435
83	200.2615	116.4310	0.0541	0.0014	0.0515	0.0005	1.7200	375.2009	57.5216	323.9234	3.4215	98.0795

84	246.9854	87.9872	0.1384	0.0019	0.2766	0.0035	2.8071	2206.9514	24.2011	1574.3506	19.6432	71.3360
85	602.7115	211.8486	0.0512	0.0008	0.0392	0.0004	2.8450	251.1641	38.1688	247.7339	2.4973	99.8678
86	369.9113	359.5120	0.0673	0.0009	0.1370	0.0014	1.0289	846.6837	29.3407	827.5270	8.3738	99.3737
87	450.6081	248.3366	0.0526	0.0009	0.0469	0.0005	1.8145	313.3230	39.1404	295.2193	3.1229	99.3134
88	144.7886	69.7738	0.0524	0.0025	0.0381	0.0004	2.0751	301.9220	109.2110	240.8985	2.5655	97.6612
89	96.8821	25.6534	0.1210	0.0017	0.3461	0.0037	3.7766	1970.8135	25.7192	1916.0270	20.5101	97.2201
90	622.7738	237.5611	0.0533	0.0009	0.0420	0.0004	2.6215	339.6225	37.0656	265.5010	2.7655	97.1844
91	56.1887	150.1449	0.1219	0.0018	0.3583	0.0039	0.3742	1984.8992	26.6320	1974.2956	21.2765	99.4658
92	223.6773	227.2344	0.0836	0.0015	0.0572	0.0006	0.9843	1284.3551	34.4661	358.3833	3.8716	69.6959
93	219.9227	114.1942	0.1397	0.0019	0.3714	0.0038	1.9259	2223.0590	24.0509	2035.9312	20.7209	91.5824
94	94.3182	88.7704	0.1189	0.0017	0.3477	0.0038	1.0625	1940.1847	25.2642	1923.7043	21.2134	99.1506
95	166.5015	143.9498	0.0994	0.0014	0.2252	0.0024	1.1567	1612.0816	26.1741	1309.3719	13.8938	81.2224
96	155.1602	94.3162	0.1406	0.0019	0.3769	0.0039	1.6451	2235.0280	23.9205	2061.7486	21.3785	92.2471
97	76.9141	84.4026	0.1167	0.0017	0.3380	0.0035	0.9113	1906.7476	25.9318	1876.8406	19.6091	98.4315
98	173.8924	153.0498	0.0527	0.0016	0.0495	0.0005	1.1362	313.9866	67.9972	311.5498	3.3744	99.9078
99	70.6621	74.3303	0.1231	0.0018	0.3637	0.0038	0.9507	2002.1105	25.8923	1999.9233	21.0115	99.8908

Table S6 U-Pb isotope dating results for the detrital zircons from sample S6 (QL2017-28-1)

test	Th	U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	
point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	33.8886	77.2372	0.1061	0.0017	0.3128	0.0031	0.43876	1734.3190	29.1445	1754.4807	17.1760	98.8508
2	111.0094	117.6383	0.1136	0.0014	0.3350	0.0032	0.94365	1857.3226	22.1468	1862.5265	18.0364	99.7206
3	107.3890	135.4555	0.0533	0.0022	0.0456	0.0005	0.7928	339.6951	94.8506	287.5406	2.9624	98.0260
4	144.4976	301.3974	0.0501	0.0010	0.0506	0.0005	0.47943	198.5199	48.3644	318.4853	3.1038	95.6033
5	159.4332	210.8269	0.0580	0.0011	0.0746	0.0007	0.75623	530.0799	40.4025	463.5538	4.5312	97.6111
6	58.8531	125.5121	0.1169	0.0014	0.3455	0.0034	0.4689	1909.4189	21.9109	1912.9976	18.9222	99.8129
7	52.4577	81.9023	0.0567	0.0021	0.0763	0.0008	0.64049	480.6665	82.5796	473.7450	4.7048	99.7502
8	124.4254	216.6622	0.1160	0.0017	0.3508	0.0035	0.57428	1896.1577	26.5810	1938.2916	19.0759	97.8262

9	26.1245	46.4910	0.1128	0.0017	0.3334	0.0033	0.56192	1844.7477	26.4868	1855.0433	18.2637	99.4450
10	27.7791	25.5552	0.1122	0.0022	0.3330	0.0033	1.08702	1834.5939	34.7693	1852.7468	18.3103	99.0202
11	75.4026	261.1327	0.0585	0.0012	0.0801	0.0008	0.28875	549.3325	45.0179	496.4745	4.8886	98.1161
12	178.6458	265.9634	0.1284	0.0015	0.3824	0.0041	0.67169	2076.1140	20.7534	2087.4118	22.1236	99.4588
13	187.4209	325.9832	0.0563	0.0008	0.0754	0.0007	0.57494	464.1769	32.9876	468.6423	4.6505	99.8386
14	136.8576	245.1498	0.0546	0.0013	0.0444	0.0004	0.55826	396.8055	54.4656	280.2567	2.8295	95.6159
15	22.7854	108.2720	0.1212	0.0021	0.3641	0.0038	0.21045	1974.1915	30.5845	2001.6408	20.8793	98.6287
16	38.4137	50.0778	0.1077	0.0032	0.3111	0.0032	0.76708	1760.1850	55.1408	1746.2841	18.0764	99.2103
17	10.7450	18.3146	0.0531	0.0264	0.0611	0.0012	0.58669	331.4507	1126.2513	382.0867	7.4166	98.1452
18	113.4263	186.2709	0.0559	0.0011	0.0764	0.0008	0.60893	449.3745	45.4215	474.4925	4.7906	99.0979
19	140.4471	260.4609	0.0519	0.0011	0.0531	0.0005	0.53923	279.7903	48.3360	333.3014	3.3274	98.0144
20	186.2379	528.6984	0.0550	0.0007	0.0679	0.0007	0.35226	413.2007	29.8468	423.2842	4.2843	99.6314
21	50.9390	230.9438	0.1314	0.0016	0.3879	0.0048	0.22057	2116.5240	20.9680	2113.1521	26.1908	99.8407
22	82.0945	394.4065	0.0719	0.0009	0.1663	0.0016	0.20815	982.4558	25.0555	991.6808	9.6757	99.7109
23	121.4389	339.4666	0.0758	0.0010	0.1876	0.0018	0.35773	1089.5969	25.7121	1108.1060	10.8944	98.3297
24	312.4494	387.2784	0.0568	0.0008	0.0765	0.0007	0.80678	483.6440	31.5987	474.9544	4.6312	99.6866
25	16.6734	54.5014	0.1080	0.0017	0.3161	0.0033	0.30593	1766.1273	29.5260	1770.4570	18.5925	99.7554
26	94.1685	228.7082	0.0565	0.0010	0.0713	0.0007	0.41174	470.9886	38.2060	443.8064	4.3496	99.0132
27	76.2438	121.2450	0.0515	0.0021	0.0468	0.0005	0.62884	261.4426	92.5259	294.9409	2.9956	98.7372
28	179.5430	203.0349	0.0584	0.0011	0.0778	0.0008	0.8843	544.7040	42.4397	482.7760	5.0097	97.7870
29	43.0020	104.6652	0.0726	0.0011	0.1647	0.0016	0.41085	1002.4229	31.2204	982.8404	9.8439	99.3856
30	72.9444	148.7744	0.1626	0.0019	0.4688	0.0047	0.4903	2483.2179	20.1141	2478.3657	24.6190	99.8046
31	63.3099	83.4979	0.0488	0.0039	0.0453	0.0005	0.75822	137.4140	188.2865	285.6580	3.1106	94.5572
32	50.3172	44.4828	0.1002	0.0018	0.2761	0.0028	1.13116	1627.4738	33.1314	1571.5479	15.7841	96.5636
33	59.1498	379.1436	0.1435	0.0017	0.4193	0.0043	0.15601	2269.4529	20.9566	2257.4323	22.9769	99.4703
34	88.7169	156.7767	0.0509	0.0018	0.0460	0.0005	0.56588	235.5502	83.4188	289.8169	3.0353	97.9620
35	14.4012	87.2267	0.1489	0.0018	0.4275	0.0049	0.1651	2332.8445	20.4607	2294.4820	26.2817	98.3555
36	217.8151	551.4899	0.0682	0.0008	0.1478	0.0014	0.39496	875.1417	24.7359	888.4143	8.6519	99.5729

37	43.3625	74.0015	0.0525	0.0033	0.0550	0.0006	0.58597	306.7817	141.7261	345.4007	3.8269	98.5666
38	166.6882	435.2801	0.1660	0.0019	0.4814	0.0047	0.38294	2517.6139	19.6096	2533.4286	24.6564	99.3758
39	182.5315	232.1079	0.0568	0.0010	0.0725	0.0007	0.78641	484.0938	39.1571	451.4855	4.4206	98.8197
40	304.6831	872.0231	0.0582	0.0008	0.0724	0.0007	0.3494	535.8996	28.3274	450.4778	4.4757	96.9290
41	267.2557	378.8276	0.0546	0.0010	0.0484	0.0005	0.70548	394.1933	43.1301	304.4423	3.1238	96.6362
42	82.7550	550.5920	0.1138	0.0013	0.3389	0.0040	0.1503	1860.2006	21.1679	1881.1807	22.2693	98.8847
43	23.2078	225.3634	0.1153	0.0014	0.3429	0.0034	0.10298	1884.5622	21.1023	1900.5655	18.5731	99.1580
44	169.2156	579.2212	0.0522	0.0008	0.0450	0.0004	0.29214	295.7019	35.0772	283.6791	2.7885	99.5421
45	192.8857	207.6183	0.0559	0.0013	0.0537	0.0005	0.92904	447.0466	51.6571	337.3797	3.4081	95.9397
46	105.3912	535.3691	0.0555	0.0008	0.0712	0.0007	0.19686	433.7707	30.2154	443.5048	4.5933	99.6461
47	100.5373	186.9263	0.0517	0.0020	0.0425	0.0004	0.53784	271.8580	88.5838	268.2693	2.7367	99.8626
48	184.0660	232.1079	0.0580	0.0010	0.0727	0.0007	0.79302	529.6032	39.2838	452.5102	4.4448	97.2269
49	153.2195	162.6442	0.0517	0.0024	0.0428	0.0004	0.94205	273.5678	105.6272	270.2678	2.7686	99.8737
50	157.9307	244.8930	0.1228	0.0015	0.3596	0.0036	0.6449	1997.4316	21.1736	1980.0842	19.6998	99.1315
51	264.8473	258.0702	0.0506	0.0011	0.0480	0.0005	1.02626	224.1060	51.8475	302.0718	3.0075	97.0994
52	97.0200	140.1756	0.0579	0.0017	0.0668	0.0007	0.69213	525.0050	65.9545	416.7720	4.4189	96.0832
53	57.8108	188.8460	0.1606	0.0020	0.4513	0.0044	0.30613	2461.7100	20.6943	2401.1147	23.5592	97.5385
54	85.0025	151.6053	0.1488	0.0018	0.4298	0.0042	0.56068	2332.6608	20.3025	2304.9727	22.7104	98.8130
55	128.5395	175.0075	0.1466	0.0018	0.4231	0.0042	0.73448	2306.3132	21.0581	2274.6536	22.7203	98.6273
56	202.9922	372.1664	0.0566	0.0009	0.0714	0.0007	0.54543	474.9867	33.2371	444.3681	4.4526	98.8892
57	186.9631	107.4292	0.0546	0.0028	0.0525	0.0006	1.74034	396.6904	115.9238	329.6432	3.8530	97.4981
58	208.3775	224.0210	0.0575	0.0010	0.0767	0.0008	0.93017	512.3655	39.0443	476.2440	4.7749	98.7023
59	92.7002	164.0168	0.1080	0.0013	0.3155	0.0031	0.56519	1765.3605	22.1325	1767.7463	17.4143	99.8650
60	129.6570	67.9830	0.0595	0.0020	0.0903	0.0009	1.9072	584.5092	74.3224	557.0845	5.7046	99.0357
61	89.8904	363.5377	0.0705	0.0008	0.1629	0.0016	0.24727	944.2521	24.6676	972.9197	9.6079	99.1001
62	32.7235	108.8198	0.1149	0.0014	0.3348	0.0033	0.30071	1879.0926	21.9249	1861.6526	18.4114	99.0719
63	162.1580	169.3251	0.0527	0.0016	0.0505	0.0005	0.95767	316.7530	68.1098	317.4080	3.2323	99.9753
64	8.0472	25.1090	0.0723	0.0032	0.1601	0.0017	0.32049	993.9148	91.3784	957.4731	10.2324	98.8518

65	41.6208	77.6459	0.1125	0.0015	0.3303	0.0033	0.53603	1839.7622	23.3915	1840.0544	18.5408	99.9841
66	155.5070	195.1250	0.1082	0.0013	0.3183	0.0032	0.79696	1769.0251	21.8348	1781.5816	17.7342	99.2952
67	97.7170	172.9298	0.0531	0.0017	0.0454	0.0005	0.56507	334.4868	72.6952	286.4365	3.1476	98.1798
68	29.1895	82.6338	0.0570	0.0024	0.0694	0.0007	0.35324	492.1379	91.4596	432.3658	4.4422	97.8325
69	137.2213	565.8205	0.1206	0.0014	0.3624	0.0036	0.24252	1965.4479	20.8042	1993.3633	19.8551	98.5996
70	54.1347	301.5314	0.0561	0.0010	0.0694	0.0007	0.17953	455.6512	38.6227	432.3015	4.4579	99.1492
71	226.8073	374.7557	0.0528	0.0011	0.0465	0.0005	0.60521	320.7013	45.4425	293.0314	3.1185	98.9511
72	206.1919	597.3132	0.0719	0.0009	0.1635	0.0017	0.3452	981.8622	24.6112	976.1853	10.0344	99.8212
73	88.1859	217.5293	0.1538	0.0019	0.4483	0.0050	0.4054	2388.6451	20.7337	2387.6299	26.6399	99.9575
74	197.3243	325.0689	0.0570	0.0009	0.0752	0.0008	0.60702	490.9668	32.9312	467.6037	4.6724	99.1572
75	105.9072	177.9181	0.0582	0.0016	0.0579	0.0006	0.59526	535.9920	60.0363	362.7300	4.0073	93.6862
76	46.4512	303.4530	0.1091	0.0013	0.3108	0.0031	0.15308	1783.8960	21.4236	1744.4279	17.2970	97.7875
77	224.8121	293.1065	0.0538	0.0012	0.0484	0.0005	0.767	361.0957	48.2926	304.6170	3.3155	97.8742
78	62.2093	105.1665	0.0533	0.0026	0.0478	0.0005	0.59153	341.1103	111.6268	300.9529	3.1849	98.4837
79	40.3508	57.7297	0.1713	0.0021	0.4906	0.0049	0.69896	2570.4258	20.6355	2573.1223	25.8683	99.8952
80	80.9077	185.5424	0.0559	0.0012	0.0707	0.0007	0.43606	447.9154	48.9419	440.5992	4.4505	99.7335
81	43.9984	505.2682	0.0829	0.0010	0.2191	0.0022	0.08708	1266.6698	23.7697	1277.2872	12.8999	99.1688
82	101.1848	150.4685	0.1388	0.0017	0.4091	0.0042	0.67247	2212.6452	21.0109	2210.7249	22.7511	99.9132
83	115.6467	352.5128	0.1205	0.0014	0.3606	0.0039	0.32806	1963.3090	21.1863	1984.9348	21.2740	98.9105
84	84.8417	206.7012	0.0526	0.0014	0.0508	0.0005	0.41046	309.6688	61.1290	319.6295	3.1784	99.6249
85	140.9497	324.9942	0.0560	0.0009	0.0717	0.0007	0.4337	453.2575	34.8095	446.2401	4.5327	99.7448
86	71.2911	136.7787	0.0525	0.0019	0.0501	0.0006	0.52121	306.4612	82.1089	315.1346	3.7376	99.6729
87	78.8110	142.7956	0.0551	0.0015	0.0687	0.0007	0.55191	414.9351	62.8385	428.3087	4.3737	99.5121
88	50.7128	231.0711	0.1075	0.0013	0.3136	0.0031	0.21947	1757.6908	21.9105	1758.3716	17.3969	99.9613
89	27.8805	40.5662	0.1125	0.0019	0.3282	0.0033	0.68728	1839.9072	29.9462	1829.7758	18.4986	99.4494
90	59.9974	140.0568	0.0565	0.0017	0.0555	0.0006	0.42838	470.3953	67.9206	348.0353	3.7006	95.4914
91	40.7067	61.6701	0.1756	0.0021	0.4953	0.0050	0.66007	2611.3769	20.3443	2593.6498	26.2145	99.3212
92	140.3182	137.6674	0.0565	0.0013	0.0744	0.0007	1.01925	472.5501	52.5215	462.5542	4.6584	99.6382

93	61.6275	106.4533	0.0544	0.0024	0.0535	0.0006	0.57892	386.5877	97.2021	336.0153	3.7796	98.1123
94	68.8790	99.1058	0.0576	0.0017	0.0765	0.0008	0.69501	515.2733	65.8190	475.0871	4.8202	98.5566
95	117.8232	388.8591	0.1271	0.0015	0.3788	0.0046	0.303	2058.3386	20.7392	2070.6575	25.0971	99.4051
96	33.8370	65.7720	0.0535	0.0040	0.0454	0.0005	0.51446	348.0304	171.2873	286.0653	3.4027	97.6567
97	54.0914	55.2678	0.0545	0.0041	0.0529	0.0006	0.97871	392.7440	169.7468	332.0384	3.8066	97.7345
98	66.1038	128.6648	0.1145	0.0014	0.3440	0.0034	0.51377	1872.2180	22.6157	1905.9256	18.9071	98.2314
99	21.4493	88.8099	0.0558	0.0020	0.0761	0.0008	0.24152	445.7851	78.4310	473.0694	4.8682	99.0203

Table S7 U-Pb isotope dating results for the detrital zircons from sample S7 (QL2018007-1)

test	Th	U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	
point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	86.4988	172.3131	0.1630	0.0022	0.4699	0.0054	0.50199	2486.5983	23.0113	2483.3232	28.4731	99.8683
2	213.7591	264.7481	0.0539	0.0012	0.0487	0.0005	0.80741	368.4544	48.2886	306.7644	3.4198	97.6810
3	231.7572	272.2338	0.1642	0.0022	0.4726	0.0053	0.85132	2499.4614	22.7546	2494.9167	28.0455	99.8182
4	84.3958	166.2124	0.0686	0.0010	0.1427	0.0017	0.50776	887.1937	30.6336	859.7613	10.1300	99.1119
5	484.7161	576.7669	0.1246	0.0017	0.3180	0.0037	0.8404	2023.3072	24.1277	1779.7917	20.5549	87.9645
6	49.6137	70.6902	0.0529	0.0052	0.0471	0.0007	0.70185	325.7933	222.2454	296.7630	4.4084	98.9010
7	168.2741	391.2364	0.1189	0.0016	0.3460	0.0051	0.43011	1940.0722	24.5914	1915.3246	28.1922	98.7244
8	43.6142	214.7282	0.1119	0.0016	0.3083	0.0035	0.20311	1830.6820	25.1963	1732.3799	19.6757	94.6303
9	78.4991	193.1581	0.1155	0.0016	0.3239	0.0034	0.4064	1887.3090	25.0370	1808.5718	18.8557	95.8281
10	89.3091	83.5972	0.0533	0.0033	0.0417	0.0005	1.06833	341.4770	138.7201	263.3958	2.8736	97.0336
11	101.9366	118.7217	0.1006	0.0014	0.2688	0.0028	0.85862	1634.4070	25.8874	1534.8117	15.8755	93.9063
12	601.4922	1008.4867	0.0518	0.0007	0.0454	0.0005	0.59643	274.8964	32.6814	286.0459	2.9517	99.5762
13	125.4869	522.7588	0.0563	0.0008	0.0690	0.0007	0.24005	462.9980	32.3695	430.3042	4.4542	98.8095
14	229.8438	355.4374	0.0549	0.0009	0.0599	0.0006	0.64665	408.5491	35.5004	374.7635	3.8699	98.7502
15	231.5521	326.2856	0.1074	0.0015	0.2555	0.0027	0.70966	1756.2279	24.9019	1466.8115	15.6535	83.5206
16	180.2597	194.2938	0.0983	0.0014	0.2454	0.0025	0.92777	1591.2360	25.7710	1414.6388	14.4425	88.9019
17	63.7251	121.8338	0.1054	0.0015	0.2636	0.0028	0.52305	1722.1166	25.6324	1507.9971	15.7789	87.5665

18	251.8586	529.7745	0.0517	0.0008	0.0375	0.0004	0.47541	271.6121	36.2897	237.5197	2.4472	98.6876
19	103.9183	327.0021	0.1643	0.0022	0.4717	0.0054	0.31779	2500.7631	22.7307	2491.1422	28.2771	99.6153
20	337.3211	267.4035	0.1144	0.0015	0.3112	0.0032	1.26147	1870.3893	24.3492	1746.8325	18.2027	93.3941
21	614.6968	531.8089	0.0533	0.0009	0.0414	0.0004	1.15586	341.9003	36.4450	261.2572	2.6999	96.9354
22	112.8576	326.5482	0.1178	0.0016	0.3400	0.0036	0.34561	1922.8097	24.2752	1886.6276	20.1700	98.1183
23	93.0802	414.3033	0.1193	0.0016	0.3278	0.0036	0.22467	1945.0724	24.3496	1827.6672	20.2074	93.9640
24	89.5742	56.7785	0.0545	0.0028	0.0541	0.0006	1.57761	392.8195	113.6620	339.3529	3.9433	98.0070
25	97.6710	123.2257	0.0658	0.0011	0.1318	0.0015	0.79262	798.8524	34.2818	797.8931	8.8258	99.9683
26	57.4721	172.3755	0.1674	0.0023	0.4904	0.0052	0.33341	2531.7724	22.8885	2572.2634	27.2482	98.4259
27	330.0343	194.7290	0.1192	0.0016	0.3388	0.0035	1.69484	1943.7822	24.2809	1880.9873	19.6819	96.7695
28	149.3321	111.1255	0.1154	0.0016	0.3070	0.0033	1.34381	1886.8414	24.6716	1725.6816	18.3087	91.4588
29	31.7687	23.8106	0.1248	0.0032	0.1644	0.0020	1.33423	2026.1901	44.8737	981.2401	12.0363	71.9714
30	375.9100	522.0346	0.0512	0.0009	0.0385	0.0004	0.72009	248.7472	38.7599	243.7741	2.5327	99.8082
31	85.8823	131.2376	0.1876	0.0026	0.4535	0.0047	0.6544	2721.5842	22.4011	2410.9289	24.7724	88.5855
32	104.0234	85.9512	0.0670	0.0012	0.1354	0.0014	1.21026	838.5317	38.5340	818.6239	8.6140	99.3477
41	94.4410	180.8988	0.1476	0.0020	0.4339	0.0049	0.52207	2318.7064	23.6109	2323.4805	26.4279	99.7945
42	141.8009	108.3669	0.0531	0.0020	0.0438	0.0005	1.30853	331.0253	85.0415	276.1632	3.0581	97.9174
43	94.8191	75.7207	0.1122	0.0016	0.3126	0.0034	1.25222	1834.6015	25.8263	1753.3056	18.9716	95.5687
44	206.7380	291.0613	0.0568	0.0009	0.0693	0.0007	0.71029	484.1112	36.0928	431.6811	4.5007	98.0965
45	24.5039	63.0821	0.1831	0.0025	0.5118	0.0055	0.38844	2681.4481	22.6771	2664.4176	28.5772	99.3649
46	136.9250	382.8895	0.1164	0.0016	0.3062	0.0033	0.35761	1902.3105	24.3645	1722.1814	18.6046	90.5310
47	188.6367	350.3508	0.0537	0.0010	0.0486	0.0005	0.53842	359.0243	41.8537	305.7444	3.2312	97.9944
48	71.1017	102.0997	0.2350	0.0032	0.5799	0.0063	0.69639	3086.1549	21.8861	2948.2089	31.9852	95.5302
49	125.7350	247.1393	0.1125	0.0015	0.3184	0.0034	0.50876	1840.7005	24.9024	1781.8956	19.0891	96.8053
50	61.2503	47.6252	0.0527	0.0042	0.0462	0.0006	1.28609	316.8429	180.6759	291.4060	3.4940	99.0350
51	77.0118	247.4462	0.1177	0.0016	0.3398	0.0037	0.31123	1922.1540	24.3578	1885.5427	20.6833	98.0953
52	77.3414	286.9618	0.1138	0.0015	0.3229	0.0035	0.26952	1860.6821	24.4742	1804.0789	19.4856	96.9579
53	50.6033	86.5849	0.1339	0.0018	0.3857	0.0042	0.58444	2149.6632	24.0293	2102.9072	22.6410	97.8250

54	179.5174	139.6057	0.1633	0.0022	0.4677	0.0052	1.28589	2490.5762	22.9380	2473.6322	27.6799	99.3197
55	107.9640	388.0259	0.1136	0.0016	0.3352	0.0035	0.27824	1857.7241	24.7534	1863.7031	19.4929	99.6792
56	58.1773	108.9314	0.0587	0.0013	0.0900	0.0010	0.53407	555.1945	48.6966	555.7941	6.0563	99.9788
57	281.2042	355.0002	0.0515	0.0011	0.0399	0.0004	0.79212	264.3079	46.7907	252.2993	2.6102	99.5385
58	1109.3526	651.7502	0.1596	0.0022	0.4218	0.0045	1.70211	2451.2391	23.1351	2268.5904	24.0153	92.5487
59	133.7618	153.1690	0.1639	0.0022	0.4212	0.0044	0.8733	2496.2240	22.9557	2265.8960	23.4433	90.7729
60	30.7888	109.2717	0.1242	0.0017	0.3672	0.0038	0.28176	2017.4298	24.1988	2015.9856	21.1089	99.9284
61	179.8828	120.5092	0.1097	0.0015	0.3168	0.0037	1.49269	1795.2380	24.9629	1774.2388	20.9339	98.8303
62	263.4990	396.1433	0.0554	0.0008	0.0657	0.0007	0.66516	430.2596	33.0626	410.2801	4.2792	99.2671
63	54.9470	150.1970	0.1189	0.0016	0.3540	0.0041	0.36583	1940.3824	24.7200	1953.7411	22.7663	99.3162
64	101.9051	549.8804	0.0521	0.0008	0.0427	0.0004	0.18532	290.4071	36.1771	269.5714	2.8149	99.2041
65	314.6923	285.4180	0.1328	0.0018	0.3637	0.0038	1.10257	2135.2894	23.7102	1999.6293	21.0644	93.6468
66	27.5796	58.2566	0.1262	0.0018	0.3526	0.0039	0.47342	2044.9971	25.0202	1947.0206	21.2912	95.2090
67	317.9385	725.3199	0.1119	0.0015	0.3122	0.0033	0.43834	1830.8347	24.3976	1751.6914	18.3453	95.6772
68	484.4052	328.8908	0.0536	0.0011	0.0448	0.0005	1.47285	353.7735	45.5014	282.7562	3.1646	97.3149
70	164.3072	115.0124	0.1575	0.0021	0.4518	0.0048	1.4286	2429.4235	23.0909	2403.4669	25.3678	98.9316
71	96.0187	354.5560	0.1160	0.0016	0.3452	0.0038	0.27081	1895.7229	24.6349	1911.7357	20.7929	99.1624
72	111.4115	96.1627	0.1549	0.0022	0.4440	0.0050	1.15857	2400.2670	23.6559	2368.5435	26.6572	98.6783
73	69.6838	152.2879	0.1610	0.0022	0.4645	0.0059	0.45758	2466.5227	23.4978	2459.5690	31.4335	99.7181
74	43.2022	233.0275	0.1205	0.0017	0.3333	0.0038	0.1854	1963.0919	24.6471	1854.5582	21.3715	94.4713
75	336.4409	388.7925	0.1261	0.0017	0.3753	0.0042	0.86535	2044.7588	24.0823	2054.2446	22.9548	99.5382
76	61.4006	184.7873	0.1378	0.0019	0.3967	0.0044	0.33228	2199.3794	23.6404	2153.8894	23.7455	97.9317
77	94.5920	245.5357	0.0552	0.0010	0.0652	0.0007	0.38525	420.2721	40.5521	406.9611	4.3097	99.5108
78	183.3961	232.5289	0.1063	0.0015	0.2885	0.0030	0.7887	1736.9997	25.0216	1633.9373	17.0395	94.0666
79	80.5727	181.5276	0.1355	0.0019	0.3595	0.0037	0.44386	2171.0052	23.9930	1979.8120	20.6127	91.1933
80	555.5998	428.4983	0.0553	0.0009	0.0667	0.0007	1.29662	426.2639	34.4264	416.2407	4.2849	99.6324
81	47.7224	115.5096	0.0909	0.0015	0.1244	0.0013	0.41315	1444.9157	30.9609	755.8780	8.1079	79.2082
82	174.9226	220.1071	0.0549	0.0011	0.0548	0.0006	0.79472	407.5567	45.7352	343.9237	3.7785	97.6343

83	267.1964	429.4687	0.0529	0.0009	0.0467	0.0005	0.62216	326.4627	38.0259	294.2807	3.0471	98.7812
84	212.9218	285.0661	0.1065	0.0014	0.3125	0.0035	0.74692	1740.4335	24.9137	1752.9035	19.8499	99.2886
85	176.7684	110.3692	0.0534	0.0023	0.0441	0.0005	1.60161	345.2911	99.3908	278.1960	3.0658	97.4585
86	191.7413	288.8081	0.1136	0.0015	0.3431	0.0038	0.66391	1857.3558	24.4307	1901.4625	20.9151	97.6804
87	60.1535	105.1072	0.1102	0.0015	0.3166	0.0033	0.57231	1803.2775	25.3920	1773.1393	18.4031	98.3287
88	45.3776	185.1706	0.1024	0.0014	0.2939	0.0033	0.24506	1668.3249	25.6195	1661.1781	18.8688	99.5716
89	72.5110	45.7424	0.0913	0.0055	0.0529	0.0007	1.5852	1452.5754	115.4529	332.3490	4.1891	64.1314
90	114.3378	288.8138	0.1061	0.0015	0.2522	0.0027	0.39589	1733.0010	25.1418	1450.0268	15.2839	83.6714
91	43.4176	47.4503	0.1088	0.0018	0.3184	0.0039	0.91501	1778.7199	30.2258	1782.1397	22.0771	99.8081
92	160.7223	161.3520	0.0540	0.0020	0.0479	0.0005	0.9961	369.8953	82.9190	301.3677	3.2822	97.4222
93	88.4555	110.7595	0.0913	0.0013	0.2477	0.0037	0.79863	1453.3711	27.3076	1426.3454	21.4653	98.1405
94	75.2176	96.9360	0.1669	0.0023	0.4816	0.0054	0.77595	2526.6591	22.8050	2534.2258	28.6684	99.7014
95	305.2901	203.9271	0.0517	0.0015	0.0435	0.0005	1.49706	273.7918	67.4606	274.5435	3.0682	99.9713
96	165.6488	439.7279	0.0513	0.0009	0.0435	0.0005	0.37671	253.9387	42.3401	274.6390	2.9772	99.2125
97	94.4559	228.9332	0.1111	0.0015	0.3265	0.0034	0.41259	1817.2091	24.8097	1821.1914	19.1463	99.7813
98	168.2063	291.6807	0.0563	0.0009	0.0695	0.0007	0.57668	465.5971	36.4588	433.4325	4.5549	98.8297
99	87.9707	196.8205	0.1607	0.0022	0.4607	0.0051	0.44696	2462.6633	22.7512	2442.6662	27.1763	99.1880
100	145.1235	174.2779	0.1728	0.0023	0.4413	0.0045	0.83271	2584.9489	22.5113	2356.3922	24.0901	91.1582
101	245.1980	179.3511	0.1556	0.0021	0.4482	0.0047	1.36714	2408.6955	22.8210	2387.2808	25.0868	99.1109
102	217.9690	468.5539	0.0522	0.0008	0.0444	0.0005	0.4652	295.6848	36.5754	279.9478	2.9234	99.4003
103	103.9352	388.3346	0.1138	0.0015	0.3331	0.0035	0.26764	1860.2431	24.3887	1853.5257	19.4327	99.6389
104	146.1244	194.2090	0.1212	0.0017	0.3479	0.0036	0.75241	1973.8356	24.2764	1924.6686	20.1427	97.5091
105	259.2376	355.9342	0.0583	0.0009	0.0790	0.0008	0.72833	540.7872	32.5785	490.0450	5.1572	98.1877
106	83.0464	87.3192	0.1634	0.0022	0.4408	0.0046	0.95107	2491.1964	22.8156	2354.2020	24.6410	94.5009
107	94.9685	101.6866	0.0955	0.0013	0.2431	0.0029	0.93393	1536.9727	26.5226	1402.5790	16.6474	91.2560
108	239.9295	288.3848	0.1663	0.0022	0.3939	0.0043	0.83198	2520.5329	22.6365	2141.0423	23.1929	84.9440
109	141.0300	198.2367	0.1055	0.0014	0.2469	0.0027	0.71142	1723.3420	25.1517	1422.6327	15.3272	82.5508
110	40.2361	54.8934	0.0531	0.0037	0.0496	0.0006	0.73299	332.5226	158.9969	311.7677	3.6647	99.2168

Table S8 U-Pb isotope dating results for the detrital zircons from sample S8 (SQL2017-425-1)

test	Th	U	²⁰⁷ Pb/ ²⁰⁶ Pb	²⁰⁷ Pb/ ²⁰⁶ Pb	²⁰⁶ Pb/ ²³⁸ U	²⁰⁶ Pb/ ²³⁸ U	Th/U	²⁰⁷ Pb/ ²⁰⁶ Pb	²⁰⁷ Pb/ ²⁰⁶ Pb	²⁰⁶ Pb/ ²³⁸ U	²⁰⁶ Pb/ ²³⁸ U	
point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	508.3431	1127.5275	0.0636	0.0014	0.0444	0.0004	0.4508	728.3515	48.2252	279.8595	2.7722	83.8660
2	49.2816	499.9450	0.0962	0.0012	0.2086	0.0024	0.0986	1550.7877	23.6141	1221.1138	14.2763	78.7415
3	182.5722	231.5800	0.0953	0.0012	0.2507	0.0026	0.7884	1533.5535	23.2356	1441.8681	14.7345	94.0214
4	171.5847	581.0563	0.0559	0.0011	0.0706	0.0007	0.2953	448.5839	42.0124	439.6221	4.3070	99.6735
5	315.1268	252.2181	0.0546	0.0045	0.0430	0.0005	1.2494	396.0307	183.3773	271.1911	2.9332	95.2966
6	200.0949	428.8331	0.0676	0.0011	0.0728	0.0007	0.4666	857.1244	34.2202	453.1749	4.4397	86.1194
7	230.8867	362.0787	0.0557	0.0014	0.0513	0.0005	0.6377	440.7702	55.7290	322.7193	3.3551	95.6154
8	233.4636	465.4234	0.0554	0.0012	0.0674	0.0007	0.5016	427.1982	48.9442	420.4508	4.0892	99.7528
9	162.2435	827.7892	0.1223	0.0015	0.3309	0.0034	0.1960	1989.5425	21.5633	1842.6518	19.1035	92.6169
10	117.0738	386.6126	0.0601	0.0010	0.0839	0.0008	0.3028	608.1038	35.7253	519.4287	5.0745	96.8753
12	601.6801	797.2725	0.0573	0.0008	0.0712	0.0007	0.7547	502.4674	31.8988	443.3495	4.2818	97.8628
13	146.4091	77.7769	0.0662	0.0028	0.1284	0.0013	1.8824	813.9116	88.0659	778.9872	7.7955	98.8458
14	178.9005	3397.1708	0.0557	0.0007	0.0697	0.0007	0.0527	440.1626	26.5609	434.4446	4.2185	99.7913
15	98.3552	226.7118	0.0677	0.0013	0.1415	0.0014	0.4338	858.5188	38.5055	853.1657	8.5772	99.8258
16	90.7196	720.1767	0.1608	0.0020	0.4734	0.0046	0.1260	2464.2424	20.6691	2498.2402	24.4520	98.6391
17	75.4569	244.1276	0.0641	0.0045	0.0407	0.0004	0.3091	744.6556	147.6987	256.9377	2.7294	82.4269
18	375.3513	1040.0657	0.0555	0.0007	0.0687	0.0007	0.3609	432.1764	29.1736	428.5260	4.1623	99.8665
19	296.5222	596.4169	0.0547	0.0010	0.0481	0.0005	0.4972	401.0033	39.4525	302.8874	2.9236	96.3250
20	132.6999	782.4768	0.0573	0.0008	0.0701	0.0007	0.1696	503.7591	29.6739	436.7958	4.2806	97.5772
21	141.1876	211.1418	0.0578	0.0015	0.0682	0.0007	0.6687	523.4389	56.5330	425.3846	4.1306	96.4555
22	136.0771	203.3286	0.0558	0.0021	0.0530	0.0006	0.6692	445.0048	83.7690	332.7818	3.4922	95.8409
23	62.6011	154.8232	0.0607	0.0020	0.0740	0.0007	0.4043	627.5999	70.3461	460.3430	4.6211	94.0705
24	841.2912	334.8602	0.0605	0.0011	0.0708	0.0007	2.5124	620.0020	39.7732	441.0362	4.3268	93.6302
25	4.4537	626.7849	0.0997	0.0012	0.2816	0.0027	0.0071	1617.8482	22.7791	1599.5825	15.4082	98.8710
26	1138.5491	1284.4716	0.0522	0.0025	0.0064	0.0001	0.8864	296.3054	107.7773	41.1073	0.4149	89.8560

27	59.4838	287.6553	0.1165	0.0015	0.3408	0.0034	0.2068	1902.6190	23.4498	1890.6807	18.6579	99.3725
28	93.7367	257.4854	0.0742	0.0010	0.1746	0.0017	0.3640	1047.9971	28.4222	1037.3648	10.1787	98.9855
29	73.9872	358.0930	0.0564	0.0016	0.0466	0.0005	0.2066	467.6201	61.9587	293.7834	3.1142	93.5358
30	0.3407	157.9654	0.0807	0.0013	0.1914	0.0019	0.0022	1213.2117	31.7544	1129.1076	11.0626	93.0676
31	165.0420	174.1472	0.0572	0.0026	0.0489	0.0005	0.9477	498.8159	98.3768	307.7510	3.2524	92.9407
32	196.6433	424.5542	0.0718	0.0009	0.1639	0.0016	0.4632	979.0290	26.3638	978.4154	9.4343	99.9807
33	155.9254	214.9758	0.0569	0.0021	0.0749	0.0008	0.7253	488.8924	80.7350	465.8493	4.6687	99.1683
34	83.7965	218.4211	0.0579	0.0078	0.0520	0.0005	0.3836	526.5466	296.3485	326.8194	3.2241	92.6706
35	53.6146	110.8923	0.1014	0.0015	0.2902	0.0028	0.4835	1650.4061	26.8127	1642.7519	16.0269	99.5362
36	335.6725	552.3611	0.1668	0.0020	0.4794	0.0046	0.6077	2525.6430	19.8667	2524.6214	24.2663	99.9595
37	501.1512	798.0215	0.0576	0.0008	0.0715	0.0009	0.6280	515.2681	30.8995	445.4428	5.4341	97.4808
38	65.6238	141.9249	0.0712	0.0024	0.1529	0.0017	0.4624	963.4373	69.8283	917.0316	10.4444	98.5243
39	267.2680	364.0776	0.0547	0.0013	0.0487	0.0005	0.7341	400.0000	55.0280	306.2844	2.9793	96.4913
40	182.0032	373.1240	0.0650	0.0009	0.1241	0.0012	0.4878	775.0046	29.1583	754.2468	7.2878	99.3080
41	151.0943	347.0249	0.1208	0.0015	0.3567	0.0034	0.4354	1968.1508	21.9057	1966.4938	18.9527	99.9158
42	34.2864	54.6437	0.1106	0.0032	0.3764	0.0038	0.6275	1808.6778	51.8204	2059.3861	20.5363	87.8261
43	154.7629	355.5950	0.0549	0.0020	0.0463	0.0005	0.4352	410.0754	80.9230	292.0573	2.9032	95.5769
44	19.1674	39.7392	0.1223	0.0028	0.3608	0.0036	0.4823	1989.5645	40.2478	1986.1560	20.0093	99.8287
45	229.9550	1293.8142	0.0752	0.0011	0.0651	0.0010	0.1777	1072.7641	28.1362	406.3077	6.1898	77.6502
46	32.2407	98.2506	0.1637	0.0023	0.4691	0.0046	0.3281	2494.2530	23.8163	2479.5589	24.0642	99.4109
47	648.7373	820.8983	0.0825	0.0010	0.2150	0.0021	0.7903	1258.1581	24.2645	1255.3859	12.1139	99.7797
48	158.1863	181.7207	0.0819	0.0017	0.2344	0.0023	0.8705	1242.3099	39.7349	1357.7050	13.5068	91.5007
49	467.1935	414.9617	0.0593	0.0009	0.0821	0.0008	1.1259	577.2242	33.1468	508.8530	4.9684	97.5768
50	625.9879	1066.5830	0.1115	0.0014	0.3228	0.0031	0.5869	1823.7474	22.0156	1803.2346	17.3839	98.8752
51	148.8827	282.8123	0.0717	0.0010	0.1601	0.0015	0.5264	977.1992	29.8005	957.4053	9.2230	99.3748
52	57.9194	157.6939	0.0700	0.0017	0.1521	0.0015	0.3673	929.0314	49.9686	912.5310	9.0031	99.4724
53	77.6952	111.3744	0.0542	0.0037	0.0465	0.0005	0.6976	380.0114	155.4464	293.1980	3.1004	96.7343
54	58.8762	123.0241	0.0782	0.0012	0.1944	0.0019	0.4786	1152.4260	31.0826	1145.1978	11.0604	99.3728

55	183.8449	498.9467	0.1676	0.0020	0.4799	0.0048	0.3685	2533.7428	20.2487	2526.6913	25.1866	99.7217
56	18.9851	12.7448	0.6685	0.0171	0.2615	0.0043	1.4896	4664.4671	36.7844	1497.6867	24.3564	32.1084
57	138.4231	211.4115	0.0533	0.0039	0.0509	0.0005	0.6548	342.0497	163.7382	320.2416	3.3474	99.1792
58	96.3594	275.0731	0.0644	0.0010	0.1235	0.0012	0.3503	755.1005	34.2653	750.4135	7.2580	99.8432
59	245.4900	662.7514	0.0654	0.0010	0.0728	0.0007	0.3704	787.6459	33.4905	452.9734	4.3955	88.3849
60	83.4554	233.4141	0.1619	0.0019	0.4650	0.0045	0.3575	2475.7668	19.9068	2461.7377	23.7043	99.4333
61	85.2032	214.5521	0.0561	0.0014	0.0700	0.0007	0.3971	458.2677	55.6971	436.3706	4.2426	99.2029
62	249.1508	968.9450	0.1141	0.0013	0.3338	0.0032	0.2571	1865.4823	21.3122	1856.7401	17.8523	99.5314
63	590.1939	943.6718	0.0576	0.0007	0.0829	0.0008	0.6254	513.1055	28.2094	513.4170	5.1787	99.9889
64	298.5547	772.6431	0.0653	0.0008	0.1291	0.0013	0.3864	782.7816	26.0849	782.7368	7.8100	99.9985
65	61.3092	128.5044	0.0583	0.0061	0.0699	0.0010	0.4771	539.8265	230.1931	435.6541	6.4396	96.2485
66	105.3070	195.3090	0.0696	0.0016	0.1052	0.0010	0.5392	917.9948	47.5062	644.8029	6.3966	90.9467
67	209.1130	277.9372	0.0623	0.0013	0.0706	0.0007	0.7524	684.0738	44.2843	440.0092	4.2967	91.3885
68	297.3362	1361.6252	0.0515	0.0015	0.0411	0.0004	0.2184	263.1175	64.7605	259.5797	2.5116	99.8642
69	149.7402	237.1019	0.0591	0.0019	0.0508	0.0005	0.6315	572.0855	71.5968	319.5464	3.3485	90.7785
70	89.0088	525.8910	0.1160	0.0014	0.3288	0.0032	0.1693	1894.8651	21.3257	1832.7054	17.7311	96.7196
71	148.0852	280.2771	0.1660	0.0020	0.4745	0.0046	0.5284	2517.7830	20.0217	2503.3117	24.0985	99.4252
72	227.2077	682.3230	0.0756	0.0011	0.1607	0.0017	0.3330	1084.1690	27.8740	960.8521	9.9070	96.1670
73	187.8451	612.0617	0.0675	0.0009	0.1207	0.0013	0.3069	852.0737	28.5969	734.7653	8.0457	96.1221
74	329.0397	1078.5276	0.0587	0.0008	0.0794	0.0008	0.3051	555.0702	27.8974	492.4475	4.8265	97.7685
75	209.7317	169.8518	0.0580	0.0039	0.0415	0.0005	1.2348	528.5746	148.2702	262.0126	2.8667	90.1157
76	23.9164	56.8636	0.1032	0.0019	0.2972	0.0029	0.4206	1682.7455	33.2099	1677.1794	16.3393	99.6692
77	114.4920	245.7592	0.0559	0.0030	0.0436	0.0004	0.4659	447.6894	118.8021	274.9974	2.8140	93.5415
78	264.9095	95.6673	0.1118	0.0014	0.3208	0.0031	2.7691	1829.1086	23.3956	1793.4444	17.3850	98.0502
79	385.4086	556.3282	0.1769	0.0023	0.5011	0.0048	0.6928	2623.6718	21.3816	2618.5867	25.3060	99.8062
80	284.6685	435.3431	0.1516	0.0018	0.4252	0.0041	0.6539	2364.1728	20.2608	2284.0402	22.2455	96.6105
81	58.0958	107.4292	0.0721	0.0014	0.1653	0.0016	0.5408	987.6881	39.8971	985.9844	9.6493	99.9465
82	144.9748	728.7004	0.0845	0.0011	0.2217	0.0024	0.1989	1304.1291	24.4332	1290.8732	13.7266	98.9835

83	92.4841	291.8400	0.0971	0.0012	0.2727	0.0027	0.3169	1570.0445	23.1500	1554.6155	15.2169	99.0173
84	116.9963	428.0078	0.0573	0.0012	0.0668	0.0007	0.2734	502.3756	45.1017	416.6069	4.0682	96.8866
85	357.5942	380.1160	0.1469	0.0021	0.2353	0.0028	0.9408	2309.8946	25.0911	1362.2247	16.1181	58.9735
86	207.0716	184.3478	0.0533	0.0014	0.0428	0.0005	1.1233	340.4340	60.9227	270.0366	2.9725	97.3281
87	617.9332	327.2861	0.0520	0.0009	0.0368	0.0004	1.8881	287.1491	39.0526	232.7366	2.3912	97.9078
88	236.6377	318.1651	0.0634	0.0010	0.1157	0.0012	0.7438	722.9301	32.3908	705.5724	7.3946	99.4134
89	221.0295	138.9663	0.0963	0.0015	0.2448	0.0027	1.5905	1553.0454	28.7774	1411.4238	15.7553	90.8810
90	93.1881	51.2045	0.1068	0.0016	0.2753	0.0030	1.8199	1745.2716	27.1378	1567.5337	16.8176	89.8160
91	1103.3689	440.4036	0.1031	0.0015	0.2085	0.0022	2.5054	1680.1911	26.4642	1220.7821	13.1717	72.6573
92	630.3850	428.9031	0.0724	0.0010	0.1568	0.0016	1.4698	996.0775	29.2241	939.0690	9.8429	98.2005
93	245.0482	151.0014	0.0520	0.0012	0.0449	0.0005	1.6228	283.5595	54.3278	282.9660	2.9762	99.9774
94	190.9446	101.0667	0.0791	0.0012	0.1869	0.0020	1.8893	1173.5104	29.1682	1104.4798	11.9250	94.1176
95	410.5044	219.0561	0.0875	0.0012	0.2043	0.0021	1.8740	1372.3279	27.2257	1198.6178	12.2067	87.3419
96	130.4533	101.6743	0.0567	0.0014	0.0726	0.0008	1.2831	478.1572	54.4994	451.9825	4.7846	99.0519
97	157.1657	191.2484	0.1621	0.0023	0.4294	0.0048	0.8218	2477.6614	23.8324	2302.8158	25.9671	92.9431
98	214.5705	138.1773	0.1024	0.0015	0.2945	0.0034	1.5529	1668.0595	26.5034	1663.7770	19.0248	99.7433
99	80.6886	140.6205	0.0519	0.0036	0.0397	0.0005	0.5738	281.4743	159.4053	250.9117	3.0995	98.8276

Table S9 U-Pb isotope dating results for the detrital zircons from sample S9 (QL2018021-1)

test	Th	U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	
point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	236.3085	291.6866	0.0571	0.0009	0.0721	0.0008	0.81015	495.8565	36.3856	449.0263	4.7057	98.3070
2	87.8026	86.7483	0.0718	0.0012	0.1566	0.0017	1.01215	981.1083	33.8013	937.9933	9.9769	98.6359
3	46.8617	54.3451	0.1218	0.0019	0.2943	0.0031	0.8623	1982.1298	28.2689	1662.9908	17.5196	83.8992
4	324.2178	237.2395	0.0567	0.0010	0.0684	0.0007	1.36663	480.8166	38.3786	426.6699	4.3720	98.0319
5	103.2542	102.2240	0.1125	0.0016	0.3324	0.0035	1.01008	1840.4322	25.6078	1850.1781	19.2484	99.4733
6	97.2206	215.7012	0.1518	0.0030	0.0468	0.0005	0.45072	2366.2364	33.9233	294.7793	3.3198	42.5225
7	77.0536	132.6362	0.0563	0.0014	0.0691	0.0008	0.58094	462.9639	54.5931	430.9754	4.7270	98.8353

8	15.8690	24.0628	0.0831	0.0029	0.1767	0.0020	0.65948	1270.8418	68.8809	1049.1570	11.8921	82.5561
9	63.4001	87.4820	0.0529	0.0029	0.0454	0.0005	0.72472	324.3730	124.4328	286.2452	3.3393	98.5538
10	120.4573	131.8304	0.1208	0.0017	0.3527	0.0038	0.91373	1967.8105	25.1517	1947.5680	20.8300	98.9713
11	57.5686	117.0572	0.0926	0.0013	0.2582	0.0029	0.4918	1480.3471	27.6057	1480.5064	16.8726	99.9892
12	124.2523	93.6916	0.0534	0.0022	0.0527	0.0006	1.32618	346.0075	95.0226	331.1923	3.5802	99.4437
13	264.1658	264.2073	0.1174	0.0016	0.3376	0.0035	0.99984	1917.6777	25.0508	1875.2408	19.5307	97.7871
14	126.0811	134.8005	0.0533	0.0017	0.0433	0.0005	0.93532	341.0757	74.1077	272.9880	2.9146	97.4173
15	193.3859	269.7645	0.0512	0.0012	0.0389	0.0004	0.71687	248.9250	53.1069	245.7445	2.5640	99.8774
16	139.3921	184.0860	0.0518	0.0014	0.0447	0.0005	0.75721	278.3268	63.9763	281.8625	3.0534	99.8652
17	417.2719	397.4995	0.0567	0.0009	0.0704	0.0007	1.04974	480.3822	34.7532	438.4335	4.5669	98.4779
18	73.7902	146.3877	0.0532	0.0015	0.0441	0.0005	0.50407	335.4694	65.0630	278.4815	2.8933	97.8387
19	157.0298	371.5956	0.1408	0.0020	0.3808	0.0039	0.42258	2236.7959	24.3444	2080.0348	21.2262	92.9917
20	78.9465	116.4734	0.0571	0.0014	0.0724	0.0008	0.67781	494.8899	52.3918	450.6787	4.9076	98.4018
21	122.8969	211.7766	0.1026	0.0014	0.2936	0.0031	0.58031	1671.3886	25.7222	1659.3014	17.4629	99.2768
22	174.7880	150.6017	0.1592	0.0022	0.4489	0.0047	1.1606	2446.6509	23.4241	2390.5249	24.8745	97.7060
23	196.8333	291.7002	0.1399	0.0019	0.3339	0.0034	0.67478	2226.0954	24.0176	1857.1512	19.0152	83.4264
24	355.4278	260.7261	0.0534	0.0011	0.0451	0.0005	1.36322	344.7906	47.7090	284.5444	2.9571	97.7201
25	143.6905	175.7198	0.0530	0.0014	0.0500	0.0005	0.81773	330.1579	61.9657	314.5867	3.4574	99.4125
26	514.5802	289.3681	0.0536	0.0013	0.0467	0.0005	1.77829	354.1398	53.2919	293.9473	3.0676	97.7284
27	95.3343	72.3083	0.1181	0.0017	0.3437	0.0036	1.31844	1927.2722	25.4369	1904.2860	20.0120	98.8073
28	131.0577	266.1208	0.0527	0.0011	0.0447	0.0005	0.49247	314.7004	48.3250	282.0779	3.0034	98.7602
29	103.3665	244.1458	0.0771	0.0011	0.1866	0.0020	0.42338	1123.7505	28.1697	1102.8611	12.1093	98.1411
30	382.8560	663.6445	0.1019	0.0014	0.2741	0.0029	0.5769	1658.9029	25.5077	1561.3979	16.3096	94.1223
31	48.3245	43.5159	0.0928	0.0039	0.0595	0.0007	1.1105	1483.4383	80.5132	372.4556	4.1248	64.8280
32	187.5352	895.6756	0.0669	0.0009	0.1387	0.0014	0.20938	836.1411	29.5551	837.4973	8.7438	99.9557
33	77.1732	88.7320	0.0526	0.0019	0.0478	0.0005	0.86973	310.1619	81.9891	301.0823	3.4167	99.6558
34	87.9188	54.2700	0.1586	0.0022	0.4561	0.0052	1.62003	2441.3199	23.9490	2422.3730	27.6874	99.2239
35	39.1556	168.5693	0.0920	0.0013	0.1694	0.0018	0.23228	1467.0607	27.3114	1008.5657	10.5120	68.7474

36	73.1315	54.3250	0.0537	0.0037	0.0444	0.0005	1.34619	358.9858	154.4717	280.1566	3.0809	97.0202
37	102.5413	70.3727	0.0533	0.0031	0.0484	0.0006	1.45712	342.2072	133.4664	304.5977	3.4841	98.5810
38	15.3016	18.6305	0.1136	0.0023	0.2990	0.0036	0.82132	1857.5204	36.7456	1686.1610	20.2213	90.7748
39	144.5380	222.9267	0.1175	0.0016	0.3465	0.0042	0.64837	1917.8171	24.9274	1917.9260	23.3583	99.9943
40	138.3935	198.6649	0.0577	0.0011	0.0768	0.0008	0.69662	517.7202	40.5525	476.7890	5.0071	98.5307
41	125.1426	95.5704	0.0523	0.0024	0.0441	0.0005	1.30943	296.4500	105.0910	278.4803	2.9402	99.3151
42	102.6127	42.4153	0.0525	0.0070	0.0388	0.0005	2.41924	305.6822	303.4419	245.5064	3.2564	97.6966
43	266.3506	440.2769	0.0537	0.0009	0.0446	0.0005	0.60496	357.4566	37.7709	281.5061	2.9045	97.1291
44	156.2397	203.0548	0.0520	0.0020	0.0382	0.0004	0.76945	284.9505	86.9973	241.9319	2.7777	98.3480
45	189.2635	128.3942	0.0978	0.0014	0.2697	0.0029	1.47408	1582.6013	26.1907	1539.2755	16.3619	97.2624
46	48.3529	52.2075	0.1243	0.0018	0.2966	0.0032	0.92617	2018.7950	25.9074	1674.6030	18.1239	82.9506
47	25.7659	55.3238	0.0519	0.0036	0.0418	0.0005	0.46573	279.2808	156.9761	263.9679	3.1067	99.4137
48	50.4221	161.9172	0.1676	0.0023	0.4656	0.0051	0.31141	2534.0194	23.4099	2464.3923	27.1620	97.2523
49	55.5506	101.9475	0.1161	0.0016	0.3188	0.0034	0.54489	1896.4994	25.4971	1783.9653	18.9823	94.0662
50	253.4274	441.2279	0.0537	0.0009	0.0455	0.0005	0.57437	359.5520	38.5620	286.8111	2.9518	97.2536
51	133.0459	151.0477	0.0723	0.0011	0.1551	0.0016	0.88082	993.3260	30.7661	929.5820	9.7757	97.9848
52	330.6941	279.5684	0.0509	0.0012	0.0368	0.0004	1.18287	235.1879	55.0444	232.9810	2.3969	99.9146
53	300.8009	348.0827	0.0579	0.0009	0.0779	0.0009	0.86416	527.4504	33.9528	483.8721	5.4062	98.4393
54	192.1713	204.1621	0.0588	0.0010	0.0844	0.0009	0.94127	559.2387	37.0635	522.1806	5.4615	98.6859
55	170.1939	200.8471	0.0521	0.0015	0.0441	0.0005	0.84738	289.2093	65.3262	278.2604	2.9311	99.5823
56	126.9439	428.8721	0.0550	0.0009	0.0612	0.0006	0.29599	410.2116	35.9048	382.9354	3.9780	98.9925
57	83.2084	89.4610	0.1554	0.0022	0.4365	0.0045	0.93011	2405.9451	23.8049	2334.7778	24.1111	97.0420
58	387.5386	247.2606	0.1665	0.0023	0.4509	0.0046	1.56733	2523.2482	23.2140	2399.4591	24.5968	95.0941
59	92.2379	323.3156	0.1154	0.0016	0.3425	0.0038	0.28529	1886.5109	24.8898	1898.6616	21.0140	99.3600
60	147.0384	210.6442	0.1615	0.0022	0.4635	0.0058	0.69804	2471.9057	23.3076	2454.9325	30.5512	99.3134
61	77.9278	127.3088	0.2618	0.0036	0.6613	0.0077	0.61212	3257.7526	21.7553	3272.2483	38.0787	99.5570
62	72.8273	89.0734	0.1628	0.0023	0.4596	0.0049	0.81761	2484.9892	23.5560	2437.5966	26.1477	98.0928
63	120.3233	186.6663	0.0558	0.0012	0.0617	0.0007	0.64459	446.3269	48.9031	386.0456	4.1640	97.7850

64	37.8089	48.4378	0.0532	0.0053	0.0428	0.0005	0.78057	338.9248	227.1075	270.1426	3.4259	97.3890
65	109.2234	135.1161	0.0531	0.0016	0.0472	0.0005	0.80837	332.3036	68.6484	297.1473	3.2111	98.6702
66	83.9306	125.7917	0.0530	0.0016	0.0517	0.0007	0.66722	329.7133	69.4697	325.0724	4.0910	99.8252
67	59.4332	87.5292	0.0539	0.0026	0.0457	0.0005	0.67901	368.9017	110.2648	288.0074	3.4107	96.9500
68	31.4478	50.5712	0.1060	0.0016	0.3134	0.0033	0.62185	1731.1959	27.3454	1757.2905	18.7387	98.5151
69	26.8668	26.3034	0.1132	0.0020	0.3340	0.0038	1.02142	1850.7683	32.5608	1857.5869	21.3281	99.6329
70	91.8546	144.6057	0.0674	0.0011	0.1348	0.0015	0.63521	848.6578	33.0599	815.0753	9.1389	98.9007
71	83.4990	99.2223	0.1478	0.0021	0.4183	0.0044	0.84153	2320.4646	24.0891	2252.6742	23.5377	97.0786
72	288.1537	174.4031	0.1158	0.0016	0.3380	0.0038	1.65223	1893.0714	25.4237	1877.1275	20.8703	99.1578
73	16.4104	19.8085	0.1049	0.0024	0.3105	0.0034	0.82845	1712.0644	42.0720	1743.3591	19.2504	98.2049
74	146.5907	162.1400	0.0532	0.0013	0.0532	0.0006	0.9041	335.2710	54.2432	334.0650	3.5959	99.9547
75	79.6378	75.9173	0.1122	0.0016	0.3293	0.0035	1.04901	1835.2404	25.7772	1835.1640	19.2865	99.9958
76	243.7304	348.2676	0.0594	0.0009	0.0884	0.0010	0.69984	581.6903	31.5218	546.0898	5.9621	98.7458
77	171.8544	415.3073	0.0529	0.0009	0.0391	0.0004	0.4138	326.4593	40.3925	247.1157	2.5945	96.9717
78	87.9306	84.9430	0.0574	0.0014	0.0798	0.0008	1.03517	506.2119	55.5363	495.0028	5.2044	99.5981
79	103.6576	94.0236	0.1530	0.0021	0.3611	0.0037	1.10246	2380.1884	23.7146	1987.4390	20.6315	83.4992
80	46.3066	279.5415	0.1253	0.0017	0.3661	0.0040	0.16565	2033.5051	24.6512	2010.9885	22.1605	98.8927
81	72.0797	120.5860	0.1439	0.0020	0.4212	0.0049	0.59775	2274.7139	24.1166	2266.1042	26.6032	99.6215
82	87.1781	218.2613	0.0710	0.0010	0.1551	0.0017	0.39942	957.9478	29.3756	929.2195	9.9173	99.0871
83	57.8331	116.7885	0.1367	0.0019	0.4037	0.0042	0.4952	2185.7999	23.9967	2186.0933	22.4745	99.9866
84	116.0727	112.3298	0.1515	0.0021	0.4179	0.0044	1.03332	2362.5583	23.5757	2251.0535	23.5276	95.2803
85	327.3053	350.9462	0.0527	0.0009	0.0446	0.0005	0.93264	315.3773	39.9454	281.4261	2.9417	98.7097
86	112.8812	90.0407	0.0708	0.0012	0.1579	0.0017	1.25367	952.5345	35.6568	944.8428	10.0036	99.7558
87	84.2645	288.4263	0.1125	0.0016	0.3319	0.0035	0.29215	1840.2525	25.0742	1847.6477	19.6927	99.5997
88	96.0169	204.5717	0.0561	0.0011	0.0682	0.0007	0.46936	458.0442	42.6835	425.2442	4.4304	98.8039
89	125.2064	144.3064	0.1047	0.0015	0.3055	0.0033	0.86764	1708.2920	25.8733	1718.5902	18.2823	99.4008
90	72.2268	112.5045	0.1216	0.0017	0.3574	0.0041	0.64199	1979.2304	25.1553	1969.8838	22.5785	99.5278
91	50.5903	35.7813	0.1086	0.0017	0.2949	0.0035	1.41387	1776.7026	28.7468	1666.2066	19.8515	93.7808

92	190.1750	213.1470	0.0527	0.0013	0.0439	0.0005	0.89222	315.0064	55.5212	276.7779	2.8989	98.5460
93	207.0160	180.6398	0.0530	0.0015	0.0437	0.0005	1.14602	329.0781	63.4395	275.7435	2.8605	97.9747
94	59.0939	58.4816	0.0563	0.0025	0.0743	0.0008	1.01047	464.8455	98.6383	461.8360	5.0078	99.8910
95	79.0192	141.1689	0.1380	0.0019	0.4070	0.0048	0.55975	2201.6443	24.2656	2200.9804	25.7016	99.9698
96	34.6323	44.8733	0.1075	0.0017	0.3133	0.0036	0.77178	1756.7144	28.5777	1757.1192	20.1295	99.9770
97	62.2559	107.9459	0.0524	0.0019	0.0475	0.0005	0.57673	303.0518	82.4571	299.1292	3.1278	99.8511
98	101.0429	93.2841	0.1133	0.0016	0.3005	0.0030	1.08317	1853.0745	25.8114	1693.7746	17.1575	91.4035
99	148.5501	203.9537	0.0570	0.0010	0.0739	0.0009	0.72835	491.7432	40.0512	459.6251	5.4048	98.8400
100	557.6094	560.2302	0.0532	0.0008	0.0535	0.0006	0.99532	338.2964	34.7311	335.7282	3.6715	99.9035
101	159.0459	176.6767	0.0530	0.0012	0.0494	0.0006	0.90021	327.6846	52.9577	310.6400	3.4999	99.3563

Table S10 U-Pb isotope dating results for the detrital zircons from sample S10 (QL2017-8-1)

test	Th	U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	
point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	180.4920	363.7856	0.0521	0.0011	0.0533	0.0005	0.49615	289.6299	49.0310	334.7594	3.3031	98.3226
2	75.6270	19.3752	0.1134	0.0033	0.3187	0.0033	3.90328	1855.3348	51.9377	1783.2035	18.4557	96.1122
3	115.3856	67.5953	0.0731	0.0017	0.1609	0.0016	1.70701	1017.7309	47.9673	961.9753	9.6068	98.2503
4	41.4700	67.4282	0.0782	0.0016	0.1946	0.0019	0.61502	1153.1327	41.0601	1146.3548	11.4001	99.4122
5	127.5640	622.9256	0.0779	0.0010	0.2016	0.0020	0.20478	1143.6521	24.2824	1183.9188	11.8633	96.5989
6	222.0435	653.1386	0.0725	0.0009	0.1721	0.0018	0.33996	999.2081	25.1043	1023.3967	10.9007	97.6364
7	168.2695	603.1699	0.0531	0.0009	0.0454	0.0004	0.27898	332.5936	39.3585	285.9575	2.8283	98.2328
8	256.5914	998.5109	0.0716	0.0010	0.0599	0.0008	0.25697	975.8257	28.3582	374.8125	4.9632	79.4528
9	56.1335	124.6349	0.1046	0.0014	0.3037	0.0030	0.45038	1707.4078	24.6371	1709.7858	16.8165	99.8609
10	30.7308	73.1015	0.1067	0.0017	0.3134	0.0031	0.42038	1742.9964	29.5269	1757.5460	17.5485	99.1722
11	75.0188	139.4448	0.1264	0.0019	0.2971	0.0029	0.53798	2048.6317	26.4952	1677.0705	16.5642	81.8630
12	103.0506	226.9745	0.0586	0.0012	0.0756	0.0008	0.45402	553.2770	46.4125	469.9831	4.7673	97.0213
13	74.3935	226.7742	0.1236	0.0015	0.3661	0.0036	0.32805	2008.3324	21.5042	2010.9318	19.6764	99.8707
14	109.9748	166.2715	0.0569	0.0017	0.0705	0.0007	0.66142	487.6279	64.2085	439.2196	4.3400	98.2454

15	95.2725	179.3415	0.0575	0.0014	0.0773	0.0008	0.53124	512.4079	51.9993	480.2507	4.7382	98.8454
16	51.3065	60.5267	0.1664	0.0025	0.4871	0.0048	0.84767	2521.5545	24.8473	2558.1992	25.3664	98.5676
17	123.8833	274.5346	0.0569	0.0017	0.0527	0.0005	0.45125	486.5306	64.8916	330.8554	3.2761	94.2603
18	60.2113	129.1485	0.1110	0.0015	0.3240	0.0032	0.46622	1815.2057	24.2856	1809.1849	17.7479	99.6683
19	52.3694	178.2377	0.1465	0.0018	0.4416	0.0043	0.29382	2305.0990	20.7953	2357.6506	22.9530	97.7710
20	71.1635	142.9123	0.0514	0.0032	0.0420	0.0005	0.49795	259.6864	144.7751	265.0439	2.8995	99.7948
21	138.5414	761.8265	0.1186	0.0014	0.3110	0.0041	0.18185	1935.4256	21.3374	1745.8158	23.1872	90.2032
22	18.2319	72.0885	0.0568	0.0033	0.0758	0.0008	0.25291	484.7679	128.7598	471.2488	5.0232	99.5121
23	67.7847	66.7456	0.1656	0.0021	0.4716	0.0046	1.01557	2513.1573	21.7342	2490.6894	24.3173	99.1060
24	20.1606	113.7916	0.2134	0.0027	0.5624	0.0055	0.17717	2931.7221	20.1358	2876.7265	28.1487	98.1241
25	60.2658	653.5945	0.0559	0.0008	0.0717	0.0007	0.09221	448.7196	30.7414	446.3698	4.4641	99.9145
26	435.1421	486.2351	0.0511	0.0010	0.0446	0.0004	0.89492	246.6945	44.7655	281.1633	2.8358	98.6958
27	166.2886	335.4169	0.0524	0.0013	0.0438	0.0004	0.49577	302.1734	57.3635	276.3735	2.7526	99.0170
28	146.5366	336.9129	0.0579	0.0009	0.0734	0.0008	0.43494	524.1694	35.7831	456.8882	4.6661	97.5797
29	88.6881	246.5019	0.1897	0.0023	0.5278	0.0051	0.35979	2739.6074	19.6703	2732.3141	26.5890	99.7338
30	78.8775	172.2787	0.1546	0.0019	0.4254	0.0042	0.45785	2397.0075	20.9348	2284.8649	22.4282	95.3216
31	168.8287	284.6460	0.0680	0.0009	0.1330	0.0013	0.59312	868.8555	28.8686	804.8320	7.8478	97.9075
32	260.0289	253.2373	0.1359	0.0018	0.1763	0.0022	1.02682	2176.1806	22.7603	1046.7484	13.0481	48.1003
33	94.4464	180.9702	0.1319	0.0017	0.3845	0.0041	0.52189	2123.9343	22.5306	2097.4919	22.1520	98.7550
34	103.6703	304.9046	0.1248	0.0015	0.3614	0.0035	0.34001	2025.3033	21.6639	1988.5879	19.4635	98.1872
35	225.7840	341.9463	0.1066	0.0014	0.3132	0.0032	0.66029	1742.5132	23.2090	1756.5726	17.9879	99.1996
36	20.4109	36.6059	0.1087	0.0020	0.3162	0.0031	0.55758	1777.4188	33.3804	1771.1034	17.4805	99.6447
37	164.6851	138.8406	0.0539	0.0022	0.0590	0.0006	1.18615	365.7142	92.1715	369.3032	3.7219	99.8666
38	56.7561	398.9952	0.0575	0.0009	0.0681	0.0007	0.14225	512.6686	36.2173	424.8058	4.1625	96.8190
39	186.5510	317.1938	0.0522	0.0014	0.0454	0.0005	0.58813	295.6350	61.3825	286.3055	2.9297	99.6448
40	34.1654	133.3140	0.1655	0.0021	0.4698	0.0047	0.25628	2513.1393	21.2422	2482.7802	24.7331	98.7920
41	40.3762	105.0986	0.1431	0.0019	0.4130	0.0042	0.38417	2265.6495	22.8066	2228.5237	22.8294	98.3614
42	326.0589	1037.8847	0.0577	0.0008	0.0726	0.0008	0.31416	517.4443	28.9108	451.5383	4.9030	97.6251

43	73.9608	447.7310	0.0772	0.0010	0.1969	0.0020	0.16519	1126.4343	24.8960	1158.4866	11.8635	97.2333
44	205.3325	221.2032	0.0545	0.0016	0.0489	0.0005	0.92825	389.9670	64.4320	307.9121	3.0676	96.9247
45	98.6199	207.3804	0.1649	0.0020	0.4693	0.0046	0.47555	2506.7324	20.4362	2480.7040	24.1792	98.9617
46	81.1447	186.3513	0.0504	0.0022	0.0422	0.0004	0.43544	211.7308	100.8822	266.3566	2.6809	97.9351
47	45.4531	116.2615	0.0573	0.0021	0.0722	0.0007	0.39096	501.8104	79.3982	449.6882	4.5137	98.1173
48	74.1431	115.3217	0.0570	0.0021	0.0827	0.0009	0.64292	491.0941	80.7155	512.3643	5.3295	99.2435
49	134.3000	247.2768	0.0546	0.0016	0.0498	0.0005	0.54312	395.7504	64.3697	313.2537	3.1595	96.9131
50	52.4986	99.2278	0.0566	0.0026	0.0660	0.0007	0.52907	477.9182	103.3866	412.3117	4.2219	97.6091
51	84.5349	152.9548	0.1627	0.0020	0.4684	0.0046	0.55268	2483.4372	20.8368	2476.4780	24.4399	99.7198
52	105.1154	216.5727	0.0541	0.0019	0.0442	0.0004	0.48536	374.5408	78.2132	278.8995	2.8078	96.3912
53	29.6712	78.1937	0.1180	0.0015	0.3451	0.0034	0.37946	1926.0857	23.2825	1911.1517	18.7152	99.2246
54	48.7065	123.1458	0.1646	0.0021	0.4649	0.0047	0.39552	2503.3931	21.3389	2461.3517	24.9101	98.3206
55	6.9492	16.8018	0.1167	0.0044	0.3342	0.0037	0.4136	1905.8383	67.2744	1858.5805	20.3068	97.5204
56	45.8099	101.0600	0.1058	0.0015	0.3120	0.0031	0.45329	1728.4360	25.7289	1750.5428	17.4071	98.7371
57	108.7924	304.0641	0.1220	0.0016	0.3677	0.0036	0.35779	1985.5691	22.6498	2018.5378	19.8945	98.3667
58	39.5334	56.4433	0.1105	0.0016	0.3248	0.0032	0.70041	1807.2486	26.6240	1813.2777	17.8668	99.6675
59	103.9665	183.3042	0.0587	0.0015	0.0752	0.0007	0.56718	554.6230	56.1256	467.2470	4.5933	96.8746
60	10.7372	265.7933	0.0538	0.0011	0.0745	0.0007	0.0404	362.2707	47.5127	463.3195	4.5489	96.4225
61	59.8925	248.0600	0.0574	0.0011	0.0834	0.0008	0.24144	506.9767	41.6853	516.6110	5.0618	99.6568
62	154.3929	279.6879	0.1397	0.0018	0.4210	0.0043	0.55202	2223.5436	22.0734	2264.9688	22.9681	98.1710
63	171.2315	264.1578	0.0528	0.0015	0.0543	0.0006	0.64822	321.8673	65.2324	340.9038	3.4902	99.2891
64	55.4352	158.2829	0.1252	0.0017	0.3762	0.0037	0.35023	2031.8973	23.9044	2058.5857	20.1248	98.7036
65	169.0693	154.0935	0.1174	0.0016	0.3510	0.0034	1.09719	1916.6197	24.8410	1939.5262	18.9291	98.8190
66	250.0163	238.7137	0.0566	0.0016	0.0520	0.0005	1.04735	474.9976	60.7949	326.6479	3.2390	94.5183
67	68.1655	79.9187	0.0547	0.0028	0.0752	0.0008	0.85294	401.2542	115.1958	467.1434	4.7723	97.6509
68	64.7962	112.0898	0.1753	0.0022	0.5075	0.0049	0.57807	2608.9817	21.2018	2645.9391	25.7803	98.6032
69	142.6271	280.8588	0.0524	0.0011	0.0652	0.0006	0.50783	301.7524	47.7305	407.0874	4.0208	96.2176
70	95.6391	241.6903	0.0718	0.0010	0.1817	0.0018	0.39571	980.0200	27.3314	1075.9949	10.6138	91.0804

71	17.0925	76.8815	0.0526	0.0033	0.0710	0.0008	0.22232	312.0276	143.3801	442.3051	4.8259	95.3928
72	99.1674	73.3057	0.0687	0.0019	0.1340	0.0014	1.35279	889.5539	58.4471	810.8926	8.3388	97.4387
73	160.4923	270.4577	0.0993	0.0013	0.2857	0.0028	0.59341	1610.1578	24.2825	1619.7956	15.8463	99.4050
74	51.4437	203.4569	0.0566	0.0015	0.0653	0.0007	0.25285	474.2525	59.2179	407.9889	4.2148	97.5824
75	61.7623	130.5621	0.0560	0.0020	0.0695	0.0007	0.47305	451.6644	77.8382	433.3994	4.3283	99.3342
76	108.7348	221.2961	0.0723	0.0010	0.1686	0.0017	0.49135	995.3941	28.4430	1004.6355	9.8304	99.0801
77	59.7794	127.6298	0.1289	0.0016	0.3849	0.0038	0.46838	2083.4364	22.0084	2099.0965	20.5374	99.2540
78	78.1213	198.2162	0.0705	0.0010	0.1631	0.0016	0.39412	942.3896	29.3693	973.8911	9.5931	99.0118
79	106.0840	143.6792	0.0800	0.0012	0.2053	0.0020	0.73834	1196.8437	28.3965	1203.5126	11.9608	99.4459
80	183.0710	347.7002	0.0520	0.0012	0.0471	0.0005	0.52652	285.5456	54.8053	296.7407	2.9732	99.5758
81	75.5065	170.0093	0.1243	0.0016	0.3739	0.0037	0.44413	2018.8744	23.0648	2047.5733	20.1655	98.5984
82	181.2569	291.6808	0.1126	0.0014	0.3282	0.0033	0.62142	1842.3940	23.1239	1829.8380	18.3493	99.3185
83	464.4640	265.5794	0.0555	0.0016	0.0409	0.0004	1.74887	430.8231	66.0449	258.4296	2.5879	93.5205
84	116.4676	249.6821	0.0547	0.0011	0.0776	0.0008	0.46646	400.0871	46.2266	481.5766	5.0096	97.1164
85	83.2890	108.8558	0.1648	0.0020	0.4633	0.0046	0.76513	2505.5613	20.7570	2453.9504	24.1401	97.9401
86	296.8354	470.1422	0.1454	0.0018	0.4360	0.0043	0.63137	2292.9012	21.4381	2332.5484	22.8037	98.3003
87	184.7314	346.8859	0.1397	0.0017	0.3885	0.0040	0.53254	2222.9979	21.5600	2115.7602	21.5911	95.1760
88	84.2233	113.9291	0.0534	0.0030	0.0506	0.0006	0.73926	345.7266	127.8577	317.8984	3.4607	98.9527
89	87.8647	356.2860	0.1207	0.0016	0.3475	0.0035	0.24661	1966.5559	23.0564	1922.7158	19.4502	97.7707

Table S11 U-Pb isotope dating results for the detrital zircons from sample S11 (SQL2017-410-1)

test	Th	U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	
point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	163.5531	96.3391	0.1661	0.0022	0.5449	0.0054	1.6977	2518.6349	22.2245	2803.8443	27.7597	89.8279
2	312.1303	566.2575	0.0520	0.0011	0.0448	0.0004	0.5512	286.7659	47.5811	282.5609	2.7578	99.8396
3	108.8669	548.0925	0.0541	0.0014	0.0440	0.0004	0.1986	376.2399	58.7289	277.8372	2.7179	96.2872
4	243.1525	475.1518	0.0571	0.0012	0.0701	0.0007	0.5117	496.5156	47.1749	436.6454	4.2765	97.8317
5	312.5111	803.4703	0.2454	0.0029	0.6292	0.0101	0.3890	3155.6039	18.8101	3146.2352	50.5588	99.7031

6	271.3867	1311.9363	0.0564	0.0008	0.0747	0.0008	0.2069	466.2722	32.4747	464.5384	4.7408	99.9372
7	230.7472	366.2437	0.0584	0.0010	0.0797	0.0008	0.6300	546.4570	36.1298	494.4065	4.8120	98.1436
8	134.5706	216.8012	0.1395	0.0017	0.3956	0.0056	0.6207	2221.3103	21.1710	2148.5262	30.3523	96.7234
9	389.7589	643.6229	0.0614	0.0008	0.1030	0.0010	0.6056	654.5253	27.7027	632.2108	6.1233	99.2311
10	1395.8260	1092.6933	0.0574	0.0007	0.0748	0.0008	1.2774	505.6733	27.7920	465.2212	5.1188	98.5430
11	318.4142	804.3073	0.0558	0.0008	0.0706	0.0007	0.3959	446.3741	32.7750	440.0217	4.2719	99.1836
12	133.3801	329.2003	0.1206	0.0015	0.3555	0.0035	0.4052	1964.9382	22.7309	1960.6312	19.2031	91.0918
13	156.0583	479.6737	0.0552	0.0009	0.0667	0.0006	0.3253	418.8594	35.5843	416.3215	4.0398	99.7685
14	112.6454	156.4635	0.1057	0.0014	0.3067	0.0032	0.7199	1726.7624	24.7902	1724.5692	17.8419	99.7808
15	303.5699	964.3370	0.0913	0.0013	0.1060	0.0014	0.3148	1453.3380	27.7018	649.5793	8.6744	99.9068
16	32.4905	76.6293	0.0967	0.0016	0.2722	0.0027	0.4240	1561.7819	30.1902	1551.9608	15.2815	99.8730
17	124.6453	390.5421	0.0554	0.0010	0.0678	0.0007	0.3192	428.5839	40.5772	423.1526	4.1767	75.4425
18	104.0433	213.4804	0.0556	0.0017	0.0675	0.0008	0.4874	437.3883	66.1663	421.2086	4.8257	99.3712
19	448.0600	480.2990	0.0547	0.0010	0.0479	0.0005	0.9329	399.8040	40.4683	301.4253	2.9963	99.8011
20	260.3097	418.9645	0.0590	0.0010	0.0731	0.0007	0.6213	566.3997	35.6602	455.0641	4.4233	99.4080
21	191.7999	420.7796	0.0568	0.0011	0.0747	0.0007	0.4558	484.1070	44.1402	464.2498	4.6245	96.3137
22	500.2456	563.7245	0.0558	0.0008	0.0692	0.0007	0.8874	445.0884	33.2474	431.4410	4.2056	96.0166
23	99.1236	155.2698	0.0627	0.0025	0.0497	0.0005	0.6384	699.3399	83.6098	312.4355	3.3018	99.2826
24	200.6727	495.8003	0.0567	0.0020	0.0770	0.0009	0.4047	479.2916	76.3393	478.3528	5.8332	99.5019
25	21.1041	69.2575	0.1261	0.0024	0.3569	0.0052	0.3047	2044.0411	34.2173	1967.3888	28.6328	86.1005
26	43.3148	204.9216	0.0717	0.0016	0.1582	0.0016	0.2114	976.4996	44.9102	946.5601	9.4447	99.9661
27	191.0105	260.1289	0.1013	0.0012	0.2842	0.0028	0.7343	1647.6506	22.8051	1612.3405	15.6552	96.2500
28	236.5011	768.8264	0.1148	0.0014	0.3344	0.0036	0.3076	1876.7894	21.5549	1859.8176	20.2771	99.0531
29	154.4543	1654.8175	0.1589	0.0019	0.4596	0.0063	0.0933	2444.0674	20.1660	2437.8667	33.4715	97.8569
30	63.3257	94.6570	0.1256	0.0019	0.3640	0.0036	0.6690	2036.7477	26.5776	2001.2228	19.7928	99.0957
31	141.1567	462.9576	0.0691	0.0009	0.1497	0.0015	0.3049	900.4924	26.2313	899.2621	8.8448	99.7463
32	1126.9511	815.0297	0.0515	0.0011	0.0404	0.0004	1.3827	261.5671	51.1954	255.3482	2.5085	98.2558
33	115.2888	179.2023	0.0607	0.0016	0.0731	0.0007	0.6433	629.1334	56.4293	454.6506	4.4730	99.9604

34	104.9530	319.2128	0.0581	0.0012	0.0798	0.0009	0.3288	534.2214	45.0178	494.7556	5.4608	99.7610
35	62.7139	195.5523	0.0854	0.0013	0.2283	0.0023	0.3207	1325.7037	29.8467	1325.6396	13.2858	93.8103
36	160.2765	311.3326	0.0665	0.0009	0.1360	0.0014	0.5148	821.8847	29.1908	822.0171	8.2612	98.5902
37	112.6923	128.1735	0.0906	0.0012	0.2450	0.0024	0.8792	1438.9789	26.0136	1412.8750	13.7216	99.9952
38	103.6354	278.6773	0.0726	0.0010	0.1624	0.0016	0.3719	1003.2162	26.9169	969.9323	9.5612	99.9956
39	405.7755	714.4370	0.0526	0.0009	0.0426	0.0004	0.5680	312.8579	40.3926	269.0096	2.6119	98.1859
40	157.3252	304.1254	0.1687	0.0020	0.4798	0.0047	0.5173	2545.0203	19.8323	2526.2864	24.8051	98.9543
41	132.3123	659.5560	0.0803	0.0010	0.1827	0.0021	0.2006	1205.5403	23.8224	1081.9720	12.4504	98.3296
42	220.8776	1525.3159	0.1254	0.0015	0.1050	0.0015	0.1448	2033.7918	21.8596	643.9181	8.9069	99.2639
43	279.3587	311.6399	0.0552	0.0015	0.0477	0.0005	0.8964	419.5079	60.6665	300.1508	3.0318	89.7500
44	66.0357	200.4005	0.1175	0.0014	0.3441	0.0033	0.3295	1918.7016	21.8303	1906.3308	18.4786	61.2614
45	157.9797	1232.7115	0.0702	0.0008	0.1553	0.0015	0.1282	934.7685	24.5350	930.4312	9.0310	95.5382
46	81.1588	810.5090	0.2301	0.0027	0.4259	0.0054	0.1001	3053.0230	18.9699	2287.4230	29.0683	99.3553
47	168.1998	336.8600	0.0863	0.0010	0.2277	0.0022	0.4993	1343.8230	23.3147	1322.6719	12.9192	99.8617
48	289.7742	420.3418	0.1142	0.0014	0.3322	0.0032	0.6894	1867.3297	21.4287	1849.1857	17.9840	74.9232
49	162.2858	551.8308	0.0726	0.0009	0.1644	0.0016	0.2941	1004.0025	24.8909	981.1639	9.7262	98.4260
50	122.9180	860.3055	0.1066	0.0013	0.3073	0.0030	0.1429	1741.9113	22.2381	1727.3685	16.8588	99.0283
51	352.6594	1030.2890	0.0917	0.0011	0.2522	0.0025	0.3423	1461.5033	23.0401	1449.8928	14.0853	99.2835
52	34.9274	760.6958	0.0722	0.0009	0.1643	0.0016	0.0459	991.6553	24.5650	980.6998	9.5016	99.1651
53	747.5018	841.1808	0.0548	0.0013	0.0421	0.0004	0.8886	404.0119	54.0240	265.6867	2.6389	99.2056
54	184.1789	180.9514	0.0555	0.0030	0.0406	0.0004	1.0178	431.1624	121.5936	256.5279	2.6022	99.6556
55	366.3096	521.0942	0.0575	0.0010	0.0606	0.0006	0.7030	512.1527	37.2890	379.5459	3.7830	94.7891
56	160.2773	533.0260	0.1708	0.0020	0.4829	0.0047	0.3007	2565.9856	19.7476	2539.7077	24.9009	93.4345
57	117.7605	179.7785	0.0951	0.0012	0.2677	0.0026	0.6550	1530.5821	23.5216	1529.1682	15.0596	95.1650
58	258.6760	379.5910	0.0851	0.0011	0.2141	0.0022	0.6815	1317.8836	24.2513	1250.4940	12.7652	98.9759
59	536.2261	724.7493	0.0563	0.0011	0.0702	0.0007	0.7399	465.1221	43.6473	437.4928	4.3135	99.9076
60	55.4638	634.3213	0.0579	0.0008	0.0819	0.0008	0.0874	524.3839	29.4185	507.5247	4.9071	94.8865
61	162.5630	196.9145	0.0588	0.0023	0.0825	0.0008	0.8256	558.7826	86.7568	511.2838	5.1885	98.9953

62	363.5751	1072.2111	0.0558	0.0008	0.0448	0.0005	0.3391	443.3863	31.8703	282.8044	3.0886	99.3981
63	191.2360	408.5057	0.0623	0.0009	0.1109	0.0011	0.4681	684.8368	29.7433	678.0086	6.5677	98.3129
64	186.5282	377.8914	0.1548	0.0018	0.4383	0.0043	0.4936	2399.8629	20.0071	2343.2024	22.7519	93.9988
65	148.2451	383.0651	0.0722	0.0009	0.1626	0.0016	0.3870	992.7578	25.5593	971.0224	9.8006	99.7671
66	136.7923	186.3712	0.0536	0.0026	0.0507	0.0005	0.7340	353.7561	108.4932	319.0881	3.2563	97.6390
67	263.6527	639.4727	0.0564	0.0008	0.0676	0.0007	0.4123	467.8482	31.7421	421.6062	4.1032	99.3161
68	148.5966	144.3817	0.1500	0.0019	0.4137	0.0041	1.0292	2345.7323	22.0769	2231.8238	22.0283	98.6969
69	71.2679	125.4004	0.1286	0.0018	0.3803	0.0037	0.5683	2078.8841	25.1114	2077.8540	20.3928	98.3150
70	46.0004	170.1041	0.1002	0.0013	0.2868	0.0028	0.2704	1627.5449	23.7074	1625.6266	15.7357	95.1440
71	95.6567	218.9847	0.1587	0.0019	0.4596	0.0045	0.4368	2442.2517	20.6384	2437.9163	23.7799	99.9504
72	103.8722	117.4181	0.1600	0.0022	0.4631	0.0049	0.8846	2455.8225	23.0820	2453.3347	25.7668	99.8821
73	417.8808	451.6195	0.0529	0.0013	0.0469	0.0005	0.9253	324.9241	54.4973	295.6413	3.0955	99.8225
74	363.8664	583.8021	0.0943	0.0012	0.2510	0.0024	0.6233	1513.9443	23.1325	1443.5891	13.9693	99.8987
75	85.7091	136.0365	0.1001	0.0013	0.2861	0.0028	0.6300	1625.7559	24.3829	1621.9263	15.7879	98.8911
76	333.1564	610.8106	0.0556	0.0013	0.0695	0.0007	0.5454	436.5604	53.6202	433.0496	4.2283	95.3529
77	93.0849	206.3760	0.0640	0.0019	0.1187	0.0012	0.4510	741.8061	62.6203	723.0118	7.2245	99.7644
78	349.0798	290.8619	0.0809	0.0010	0.1977	0.0019	1.2002	1217.8526	24.6386	1162.9795	11.2396	99.8718
79	15.2936	40.2155	0.1095	0.0038	0.3118	0.0032	0.3803	1791.2299	62.8582	1749.6123	17.8538	99.3680
80	190.6265	1019.8555	0.0583	0.0008	0.0727	0.0007	0.1869	540.6456	30.7607	452.6503	4.5107	95.4943
81	78.4887	424.7067	0.1165	0.0014	0.3429	0.0033	0.1848	1903.1663	21.5393	1900.4124	18.3287	97.6766
82	471.6356	1539.5490	0.0646	0.0010	0.0677	0.0007	0.3063	760.1110	31.2810	422.2692	4.4480	96.8396
83	593.0756	348.5811	0.1201	0.0017	0.2597	0.0030	1.7014	1957.0529	24.7667	1488.0931	17.0157	99.8553
84	340.5752	203.6592	0.0554	0.0009	0.0588	0.0006	1.6723	430.2529	37.4241	368.0954	3.8328	88.1740
85	293.3219	159.8642	0.0569	0.0009	0.0712	0.0010	1.8348	488.8466	35.4756	443.3657	5.9627	76.0374
86	155.8822	183.4094	0.0847	0.0013	0.1788	0.0019	0.8499	1308.1840	28.9396	1060.6439	11.3516	97.7048
87	79.8189	95.7334	0.1220	0.0018	0.2430	0.0026	0.8338	1985.5173	26.7873	1402.1893	14.9495	98.3528
88	110.4368	94.0948	0.0531	0.0017	0.0469	0.0005	1.1737	331.7223	71.1929	295.1634	3.1274	81.0776
89	108.0266	39.6487	0.0571	0.0016	0.0779	0.0008	2.7246	493.9657	60.8570	483.2908	5.1037	70.6209

90	434.0501	423.7382	0.0884	0.0012	0.2265	0.0024	1.0243	1390.6880	27.0208	1315.9905	13.6764	98.6166
91	583.7316	260.6131	0.0558	0.0008	0.0685	0.0008	2.2398	445.3356	32.7505	426.9796	4.9011	99.6159
92	340.5490	399.7896	0.0797	0.0035	0.0100	0.0001	0.8518	1190.7112	85.6314	64.1761	0.7542	94.6287
93	287.6175	21.4046	0.0597	0.0009	0.0901	0.0009	13.4372	592.0780	32.5869	555.9151	5.8341	99.3297
94	204.9535	85.5496	0.0643	0.0010	0.1218	0.0013	2.3957	751.8091	32.2401	740.7565	8.1006	60.5585
95	204.9172	132.4246	0.1038	0.0014	0.2711	0.0028	1.5474	1693.1754	25.6432	1546.4349	16.1922	98.7296
96	153.6191	164.7751	0.0910	0.0013	0.1849	0.0021	0.9323	1447.6161	27.5168	1093.6471	12.4223	99.6297
97	303.8166	50.8689	0.0651	0.0010	0.1221	0.0015	5.9725	778.5670	31.4105	742.3649	8.9140	91.3334
98	371.5421	642.9563	0.1495	0.0021	0.2329	0.0035	0.5779	2340.4967	23.5454	1349.8837	20.2161	75.5481
99	1348.8783	453.1714	0.0551	0.0008	0.0659	0.0007	2.9765	417.6085	31.0708	411.6181	4.3021	98.7919
100	613.4560	170.9427	0.0712	0.0010	0.1563	0.0017	3.5887	961.8454	28.3846	936.1205	10.2892	57.6751
101	545.6128	357.2893	0.1375	0.0019	0.3638	0.0038	1.5271	2195.8018	24.1591	2000.1950	20.6534	99.7799

Table S12 U-Pb isotope dating results for the detrital zircons from sample S12 (QL2017-12-1)

test	Th	U	²⁰⁷ Pb/ ²⁰⁶ Pb	²⁰⁷ Pb/ ²⁰⁶ Pb	²⁰⁶ Pb/ ²³⁸ U	²⁰⁶ Pb/ ²³⁸ U	Th/U	²⁰⁷ Pb/ ²⁰⁶ Pb	²⁰⁷ Pb/ ²⁰⁶ Pb	²⁰⁶ Pb/ ²³⁸ U	²⁰⁶ Pb/ ²³⁸ U	
point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	73.2121	119.5435	0.0533	0.0025	0.0431	0.0005	0.612431	343.5883	106.3864	271.7800	2.8953	97.2765
2	69.1951	161.6330	0.0554	0.0012	0.0821	0.0009	0.4281	427.7340	47.4404	508.5022	5.8002	97.1622
3	462.6968	831.8190	0.1134	0.0018	0.0632	0.0007	0.556247	1855.0182	28.1002	394.9425	4.2386	56.6022
4	76.8546	129.9244	0.0530	0.0024	0.0480	0.0006	0.591534	328.4844	102.5228	302.1970	3.4668	99.0060
5	39.6170	60.6698	0.0542	0.0031	0.0688	0.0007	0.652993	381.3176	127.5662	428.6796	4.5322	98.2861
6	165.0018	308.5085	0.0531	0.0011	0.0490	0.0005	0.534837	334.0296	45.0229	308.3777	3.1966	99.0317
7	113.0082	254.5621	0.1149	0.0014	0.3335	0.0033	0.443932	1878.4187	21.5517	1855.3723	18.5535	98.7731
8	71.1563	365.2742	0.0563	0.0009	0.0691	0.0007	0.194803	465.7691	33.7121	430.9446	4.3757	98.7325
9	9.9891	27.2347	0.1026	0.0021	0.2970	0.0031	0.366779	1671.0969	38.7004	1676.4210	17.4228	99.6824
10	24.6558	54.8062	0.0526	0.0058	0.0457	0.0006	0.449873	313.0506	251.7388	287.7793	3.6845	99.0403
11	103.4136	225.7158	0.0564	0.0011	0.0725	0.0007	0.458158	467.8218	44.7517	451.3406	4.6240	99.4021
12	41.9134	77.0312	0.1211	0.0015	0.3570	0.0036	0.54411	1972.6244	21.7974	1968.0660	19.9753	99.7689

13	31.4876	191.5766	0.1161	0.0014	0.3456	0.0035	0.16436	1897.2296	21.2448	1913.6552	19.2542	99.1417
14	110.2914	140.4284	0.0768	0.0010	0.1784	0.0018	0.785392	1116.7341	27.2088	1058.3059	10.6498	94.7679
15	182.2600	706.5594	0.0549	0.0007	0.0717	0.0007	0.257954	408.6829	28.8351	446.6116	4.4794	98.6313
16	263.2508	254.8234	0.0580	0.0009	0.0706	0.0007	1.033072	531.4315	35.6906	439.8498	4.4952	96.7003
17	42.7567	61.4191	0.1127	0.0015	0.3341	0.0034	0.696146	1843.7886	24.1096	1858.3453	18.9080	99.2167
18	104.7053	203.0974	0.0538	0.0013	0.0566	0.0006	0.515542	362.8351	53.9525	354.6901	3.5870	99.6959
19	99.5242	95.7965	0.0570	0.0019	0.0750	0.0008	1.038913	492.9611	74.5785	466.1245	4.7493	99.0319
20	110.7132	204.9132	0.0508	0.0014	0.0484	0.0005	0.540293	233.9971	62.0676	304.6432	3.4508	97.3688
21	79.1974	85.9567	0.0499	0.0041	0.0411	0.0005	0.921365	190.9315	190.6866	259.6134	2.9393	97.4082
22	17.8780	47.3801	0.1040	0.0015	0.3036	0.0030	0.377332	1696.9200	27.0482	1709.0657	16.9359	99.2893
23	104.1353	218.9071	0.1248	0.0015	0.3737	0.0041	0.475705	2025.6963	21.1462	2046.8416	22.5037	98.9669
24	56.9694	94.9845	0.0559	0.0022	0.0710	0.0016	0.599776	449.9928	87.5854	442.1651	9.9630	99.7150
25	456.4221	562.7765	0.0558	0.0008	0.0703	0.0007	0.811018	445.9452	30.0100	438.2241	4.4629	99.7185
26	70.8229	153.3171	0.0556	0.0014	0.0725	0.0007	0.461937	437.5491	54.8302	451.3929	4.5636	99.4983
27	88.5573	159.8209	0.0540	0.0018	0.0546	0.0006	0.554103	372.2236	76.2861	342.5287	4.0083	98.8907
28	124.5553	171.8622	0.0567	0.0010	0.0870	0.0010	0.724739	478.6761	39.2256	537.7746	6.2007	97.9300
29	61.1673	99.6778	0.0528	0.0029	0.0469	0.0005	0.613651	319.9403	123.7221	295.5698	3.1837	99.0765
30	133.4477	330.9800	0.0569	0.0008	0.0802	0.0009	0.40319	488.7144	32.9217	497.1320	5.5057	99.6985
31	114.3789	187.8286	0.0567	0.0015	0.0752	0.0008	0.608954	480.3938	57.2450	467.3650	4.7165	99.5293
32	48.5248	74.2620	0.0537	0.0031	0.0586	0.0007	0.653427	358.6544	129.1314	366.9940	4.2176	99.6901
33	46.9921	91.2675	0.0564	0.0022	0.0712	0.0008	0.514883	466.4982	88.2044	443.6434	4.7873	99.1698
34	109.7772	254.1996	0.0858	0.0010	0.2306	0.0023	0.431854	1333.7288	23.5449	1337.6808	13.5020	99.7046
35	62.8404	141.3348	0.0528	0.0018	0.0544	0.0006	0.444621	321.0852	75.5717	341.5877	3.8243	99.2348
36	134.2430	153.3929	0.0532	0.0021	0.0463	0.0005	0.875158	336.9238	90.8708	291.4712	3.0444	98.2802
37	66.2490	121.4010	0.0524	0.0029	0.0481	0.0005	0.545704	302.1479	126.9227	302.5701	3.3621	99.9840
38	33.8934	60.4444	0.0521	0.0050	0.0436	0.0005	0.560737	290.4700	218.1825	275.0420	3.2490	99.4112
39	106.6549	114.5782	0.0528	0.0033	0.0459	0.0005	0.930849	320.3351	143.4992	289.2353	3.2301	98.8203
40	55.5355	141.6145	0.0531	0.0020	0.0503	0.0005	0.39216	333.6465	86.8471	316.5102	3.4564	99.3540

41	32.2694	274.6971	0.1159	0.0014	0.3446	0.0035	0.117473	1893.8003	21.7305	1908.5973	19.5437	99.2247
42	148.3007	801.9398	0.0551	0.0007	0.0710	0.0007	0.184927	415.7106	28.2596	442.0771	4.6408	99.0448
43	75.4568	123.8031	0.0531	0.0024	0.0446	0.0005	0.60949	332.5921	101.5070	281.2052	2.9598	98.0513
44	91.5568	180.6677	0.1134	0.0013	0.3382	0.0034	0.506769	1854.8084	21.4286	1878.1410	18.8134	98.7577
45	42.5921	130.7179	0.0575	0.0017	0.0698	0.0007	0.325832	511.9629	64.1307	435.0112	4.4215	97.2181
46	96.3189	315.8419	0.0564	0.0009	0.0684	0.0007	0.304959	469.8560	35.2095	426.2578	4.2127	98.4129
47	127.8375	512.2783	0.0506	0.0008	0.0432	0.0004	0.249547	221.1926	38.2294	272.8460	2.7997	98.0496
48	154.5074	195.6955	0.1140	0.0014	0.3339	0.0036	0.78953	1864.5335	22.1553	1857.4390	19.8622	99.6195
49	118.2698	230.0469	0.0516	0.0014	0.0487	0.0005	0.514112	267.7002	61.8368	306.6463	3.1491	98.5387
50	154.1783	200.4437	0.0522	0.0016	0.0432	0.0004	0.769185	292.3019	71.4147	272.4972	2.8012	99.2440
51	78.8243	178.0022	0.0543	0.0015	0.0495	0.0005	0.442828	382.4949	60.7478	311.4028	3.3240	97.3345
52	96.6886	65.9381	0.0547	0.0031	0.0676	0.0007	1.466354	400.2800	124.9611	421.3923	4.5331	99.2297
53	145.9168	288.2276	0.0519	0.0011	0.0437	0.0004	0.506255	280.9426	48.2065	275.7023	2.7941	99.7998
54	23.8807	584.1650	0.1129	0.0013	0.3352	0.0034	0.04088	1845.9578	21.2112	1863.3773	19.1541	99.0652
55	286.9571	283.3170	0.0530	0.0011	0.0479	0.0005	1.012848	327.2271	48.2125	301.5712	3.2158	99.0296
56	42.5940	52.8973	0.0638	0.0022	0.1189	0.0012	0.805222	733.9707	74.0997	724.2083	7.6042	99.6714
57	99.6284	288.8315	0.1149	0.0014	0.3412	0.0037	0.344936	1878.3374	21.6569	1892.6309	20.2633	99.2448
58	54.2840	127.6951	0.0532	0.0020	0.0449	0.0005	0.425106	335.3250	85.7965	283.1259	3.0819	98.0218
59	144.0487	214.8137	0.0527	0.0013	0.0570	0.0006	0.670575	315.6003	57.2110	357.5938	4.0431	98.4480
60	248.7828	331.0418	0.1651	0.0019	0.4746	0.0049	0.751515	2508.9903	19.6813	2503.7657	26.0443	99.7918
61	153.3125	398.9162	0.0560	0.0008	0.0690	0.0007	0.384323	454.1501	32.4205	430.0739	4.3402	99.1222
62	93.0448	160.0515	0.0544	0.0019	0.0531	0.0006	0.581343	387.3686	76.5747	333.7624	3.9531	97.9986
63	205.0111	379.2373	0.0533	0.0009	0.0538	0.0006	0.540588	340.9329	37.1932	337.8702	3.6346	99.8850
64	274.8546	379.5576	0.0527	0.0011	0.0443	0.0005	0.724145	315.6003	45.3564	279.2298	2.8732	98.6173
65	74.1466	588.1888	0.0697	0.0009	0.1476	0.0019	0.126059	920.2515	25.2891	887.2494	11.3039	98.9402
66	75.3224	86.2334	0.1211	0.0015	0.3535	0.0035	0.873471	1972.5535	22.0455	1951.2145	19.4978	98.9182
67	36.4972	105.8391	0.1101	0.0013	0.3246	0.0034	0.344837	1801.7912	22.2039	1812.3734	18.7985	99.4161
68	295.8244	776.4400	0.0542	0.0007	0.0544	0.0006	0.381001	379.5840	29.0331	341.5670	3.5250	98.5809

69	16.8100	35.7859	0.1123	0.0017	0.3284	0.0035	0.469739	1837.6285	27.4031	1830.5922	19.2811	99.6171
70	85.8411	96.9993	0.0535	0.0031	0.0440	0.0005	0.884966	351.8294	129.6870	277.3247	3.2083	97.1798
71	297.7206	469.8807	0.0528	0.0010	0.0449	0.0005	0.633609	318.1721	42.5721	283.1032	2.9875	98.6681
72	96.3742	361.7599	0.0532	0.0011	0.0406	0.0004	0.266404	339.2403	46.2992	256.7251	2.6193	96.8608
73	112.6138	140.9381	0.0542	0.0021	0.0555	0.0006	0.799031	378.4131	87.9810	348.2177	3.9693	98.8739
74	292.5106	449.4764	0.0549	0.0009	0.0553	0.0006	0.650781	406.8384	37.9402	347.2834	3.6675	97.7869
75	93.5135	196.3776	0.0523	0.0017	0.0407	0.0005	0.476192	299.7109	74.5555	257.1368	2.9927	98.3723
76	192.8875	118.4473	0.0537	0.0025	0.0467	0.0005	1.628467	357.5522	105.4599	294.0559	3.1729	97.6048
77	166.8508	223.4621	0.0535	0.0016	0.0450	0.0005	0.746663	350.2650	69.3482	284.0138	2.9499	97.4945
78	41.3010	130.8389	0.0524	0.0023	0.0482	0.0005	0.315663	300.8164	100.4243	303.3663	3.3905	99.9033
79	35.2622	104.1727	0.0540	0.0021	0.0651	0.0007	0.338497	370.6503	86.8811	406.2798	4.0934	98.6990
80	44.8911	99.3246	0.1088	0.0014	0.3149	0.0032	0.451964	1779.6463	23.0808	1764.7335	17.8509	99.1620
81	351.0623	364.8466	0.0786	0.0010	0.1978	0.0021	0.962219	1162.7769	24.5474	1163.7106	12.1268	99.9198
82	462.5336	646.6706	0.0545	0.0008	0.0497	0.0005	0.715254	391.7766	32.0763	312.3839	3.2354	97.0273
83	69.2757	527.9923	0.0712	0.0009	0.1661	0.0017	0.131206	963.0749	24.3879	990.3503	10.1174	99.1474
84	92.6324	182.1442	0.0511	0.0015	0.0486	0.0005	0.508566	246.5135	67.6023	305.7288	3.1495	97.7889
85	138.0750	192.6494	0.1348	0.0016	0.3979	0.0040	0.716717	2160.7822	20.5729	2159.1838	21.7309	99.9260
86	34.9138	264.3507	0.0550	0.0010	0.0668	0.0007	0.132074	412.9735	39.5174	416.8396	4.2914	99.8582
87	96.7717	244.0276	0.0580	0.0011	0.0808	0.0010	0.396561	528.9532	40.1934	501.0626	5.9748	99.0039
88	256.1656	286.7138	0.0579	0.0010	0.0765	0.0008	0.893454	527.5367	36.7453	475.1637	5.2602	98.1220
89	112.3192	142.5791	0.0548	0.0018	0.0550	0.0006	0.787768	403.7335	73.7596	344.8716	3.5422	97.8109
90	147.0190	147.9949	0.0691	0.0011	0.1460	0.0015	0.993405	903.1138	33.0701	878.7801	8.9110	99.2158
91	30.1956	51.1879	0.1093	0.0017	0.3189	0.0034	0.589897	1787.8869	28.7543	1784.5139	19.0188	99.8113
92	225.9086	374.8912	0.0563	0.0009	0.0662	0.0007	0.602598	465.1761	36.9266	413.3295	4.1400	98.1077
93	113.2657	441.0630	0.1155	0.0016	0.3176	0.0033	0.256802	1887.9844	25.2950	1778.2341	18.4423	94.1869
94	311.4454	438.5115	0.1666	0.0024	0.4570	0.0046	0.710233	2524.1736	23.7103	2426.2925	24.4933	96.1223
95	107.9882	287.0745	0.1155	0.0016	0.3275	0.0033	0.376168	1887.2114	25.6906	1826.0394	18.2887	96.7586
96	16.5611	25.2522	0.1136	0.0023	0.3047	0.0031	0.655583	1858.3540	37.3139	1714.7085	17.6316	92.2703

97	354.5273	381.5150	0.0528	0.0009	0.0483	0.0005	0.929262	320.1794	39.1441	304.0810	3.0880	99.3908
98	214.4518	283.1794	0.0509	0.0014	0.0387	0.0004	0.7573	236.1981	62.1540	244.9045	2.5503	99.6649
99	634.6045	810.6022	0.0562	0.0010	0.0660	0.0007	0.78288	461.2517	37.7361	411.9090	4.1641	98.1977
100	214.7503	302.9083	0.0535	0.0010	0.0483	0.0005	0.708961	348.8379	42.9715	304.2019	3.1286	98.3172
101	490.1172	334.3137	0.0564	0.0009	0.0667	0.0007	1.46604	469.7228	36.8843	415.9877	4.1772	98.0407
102	490.4638	651.8729	0.0528	0.0009	0.0386	0.0004	0.752392	318.1231	37.6556	244.1652	2.4352	97.1728
103	267.4061	259.3419	0.0515	0.0013	0.0398	0.0004	1.031095	261.1285	56.0483	251.3013	2.5389	99.6221
104	81.0056	62.4078	0.1104	0.0017	0.2732	0.0028	1.298005	1806.1927	27.6799	1557.2762	15.9012	86.2187

Table S13 U-Pb isotope dating results for the detrital zircons from sample S13 (QL2018060-1)

test	Th	U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	
point	ppm	ppm	Ratio	1sigma	Ratio	1sigma	Ratio	Age (Ma)	1sigma	Age (Ma)	1sigma	Concordance
1	169.6493	153.6664	0.0537	0.0018	0.0444	0.0005	1.10401	357.7473	75.3415	280.2553	3.0614	97.0703
2	217.8838	202.8422	0.0560	0.0010	0.0702	0.0008	1.07415	451.8294	39.2375	437.5457	4.7646	99.4797
3	137.2128	100.6390	0.0532	0.0016	0.0532	0.0006	1.36342	337.7474	67.8121	334.2623	3.8747	99.8691
4	286.5527	357.9722	0.1436	0.0020	0.4073	0.0043	0.80049	2270.8211	23.7813	2202.7553	23.0166	97.0026
5	99.8500	289.5048	0.0792	0.0011	0.2008	0.0021	0.3449	1175.8912	27.9964	1179.7558	12.4711	99.6724
6	183.4350	116.3215	0.1101	0.0015	0.3191	0.0036	1.57697	1800.5658	25.5309	1785.2870	20.2183	99.1514
7	61.9347	79.8178	0.1180	0.0017	0.3482	0.0036	0.77595	1925.8558	25.4904	1925.9959	19.8208	99.9927
8	261.6083	269.1894	0.0523	0.0011	0.0462	0.0005	0.97184	300.3766	45.9588	290.8495	3.0792	99.6378
9	26.1504	72.3718	0.1169	0.0017	0.3475	0.0043	0.36133	1908.6878	26.8179	1922.7588	23.9437	99.2682
10	256.6539	218.3666	0.1105	0.0015	0.3086	0.0036	1.17534	1806.9614	25.2474	1733.6341	19.9897	95.9420
11	30.9404	45.3018	0.1090	0.0017	0.2920	0.0031	0.68298	1783.2574	28.2820	1651.3642	17.3463	92.6038
12	70.1681	252.0664	0.1163	0.0016	0.3264	0.0034	0.27837	1899.5352	24.7822	1821.1467	18.7818	95.8733
13	311.5781	191.1888	0.0524	0.0017	0.0406	0.0004	1.62969	304.4902	73.4265	256.5188	2.7477	98.1668
14	55.2371	65.8153	0.0739	0.0015	0.1809	0.0020	0.83927	1039.9531	40.1934	1071.6573	12.0217	97.0416
15	106.4058	302.7438	0.0581	0.0009	0.0853	0.0009	0.35147	532.8552	33.1928	527.4298	5.6068	99.8071
16	290.8670	324.5128	0.0795	0.0011	0.1534	0.0017	0.89632	1184.7362	28.1517	920.2639	9.9895	91.8624

17	121.6674	126.1301	0.0525	0.0019	0.0458	0.0005	0.96462	309.1228	83.3888	288.4934	3.3260	99.2163
18	704.2569	505.9257	0.0530	0.0009	0.0405	0.0004	1.39202	328.9961	38.3087	255.8533	2.7465	97.2133
19	172.9386	231.8600	0.1074	0.0015	0.3016	0.0033	0.74588	1756.2887	25.4007	1699.3188	18.3909	96.7562
20	84.4729	68.3513	0.1008	0.0015	0.2845	0.0031	1.23586	1639.4867	27.2256	1613.8487	17.5327	98.4362
21	330.0859	884.1520	0.0926	0.0013	0.2000	0.0021	0.37334	1479.3750	26.2477	1175.1195	12.0665	79.4335
22	270.1676	395.0718	0.0561	0.0009	0.0717	0.0007	0.68384	456.2945	36.2425	446.3572	4.5920	99.6387
23	78.8614	119.9018	0.1502	0.0021	0.4204	0.0045	0.65772	2348.4767	23.9293	2262.2702	24.2683	96.3293
24	87.7535	194.1617	0.0543	0.0014	0.0489	0.0005	0.45196	382.1155	58.7030	307.5637	3.4322	97.2029
25	54.0719	24.1734	0.0527	0.0107	0.0454	0.0008	2.23684	317.4592	460.4386	286.1137	4.8743	98.8100
26	70.5675	158.3040	0.0565	0.0012	0.0723	0.0007	0.44577	473.2549	46.5754	449.9516	4.6608	99.1551
27	146.6819	187.7400	0.1556	0.0022	0.4540	0.0049	0.7813	2408.4840	23.5383	2412.9353	25.9032	99.8155
28	70.9494	81.4136	0.0526	0.0031	0.0440	0.0005	0.87147	313.4075	135.1238	277.8301	3.0247	98.6468
29	332.3753	402.8757	0.0539	0.0009	0.0468	0.0005	0.82501	366.0770	38.6438	295.0798	3.0930	97.3253
30	198.7631	167.6400	0.0547	0.0016	0.0525	0.0006	1.18565	400.9623	66.9487	329.7685	3.5923	97.3449
31	320.2165	176.3909	0.1685	0.0023	0.4486	0.0046	1.81538	2543.1210	23.2646	2388.9662	24.7134	93.9384
32	68.9736	135.3198	0.1272	0.0018	0.3777	0.0043	0.50971	2059.2515	24.8082	2065.5452	23.5128	99.6953
33	293.8118	389.5377	0.0568	0.0009	0.0750	0.0008	0.75426	482.4959	33.5985	466.3747	5.1246	99.4176
34	27.3230	31.1739	0.1174	0.0021	0.3449	0.0039	0.87647	1916.6005	31.8951	1910.3763	21.6348	99.6753
35	41.6200	43.6562	0.0531	0.0049	0.0485	0.0006	0.95336	334.1398	210.6386	305.5262	3.7130	98.9194
36	49.9292	303.1001	0.0756	0.0011	0.1794	0.0020	0.16473	1084.4814	28.4878	1063.4266	11.9240	98.0585
37	202.4826	183.0392	0.0527	0.0013	0.0466	0.0005	1.10623	317.4391	55.2169	293.8514	3.0968	99.1056
38	215.6218	379.0899	0.0557	0.0009	0.0691	0.0007	0.56879	440.3521	34.2228	430.9766	4.4595	99.6576
39	230.6681	281.9345	0.1198	0.0017	0.3086	0.0035	0.81816	1953.5517	24.9731	1733.9097	19.6708	88.7568
40	232.4153	334.5321	0.0533	0.0010	0.0434	0.0005	0.69475	340.3771	41.7087	274.0483	2.8860	97.4842
41	232.2155	313.1726	0.0557	0.0009	0.0676	0.0007	0.74149	440.9101	37.4070	421.3928	4.5971	99.2862
42	516.4038	468.7084	0.0559	0.0008	0.0677	0.0007	1.10176	447.0902	33.1567	422.1914	4.4813	99.0903
43	499.7736	457.7339	0.0519	0.0009	0.0390	0.0004	1.09184	281.5161	38.7588	246.4453	2.5890	98.6537
44	133.0052	140.5103	0.1640	0.0023	0.4351	0.0045	0.94659	2497.3869	23.3254	2328.7022	24.2666	93.2456

45	44.9753	65.5078	0.0526	0.0038	0.0462	0.0005	0.68656	310.8980	162.3345	290.9240	3.3254	99.2417
46	203.8632	182.1869	0.1078	0.0015	0.2840	0.0029	1.11898	1762.6032	25.5857	1611.4992	16.4325	91.4272
47	194.5328	588.9693	0.0792	0.0011	0.1358	0.0015	0.33029	1177.3031	27.8302	820.6884	9.0155	88.8820
48	56.4923	123.3357	0.1183	0.0017	0.3460	0.0039	0.45804	1930.8531	25.4393	1915.3655	21.4280	99.1979
49	41.8791	36.1266	0.0543	0.0052	0.0502	0.0006	1.15923	384.1375	216.7697	315.6081	3.9914	97.4328
50	40.3097	98.1784	0.1664	0.0023	0.4811	0.0057	0.41058	2521.4795	23.5854	2532.0181	29.8044	99.5838
51	165.2558	275.0802	0.1126	0.0016	0.3116	0.0036	0.60076	1841.9917	25.1645	1748.4049	20.4210	94.9193
52	42.5301	40.8442	0.0529	0.0046	0.0491	0.0008	1.04127	323.9557	197.5372	308.7690	5.2093	99.4260
53	421.3270	448.3784	0.0530	0.0010	0.0410	0.0004	0.93967	330.1924	43.0312	259.1145	2.7613	97.2939
54	322.1916	460.7875	0.0544	0.0010	0.0541	0.0006	0.69922	386.6557	42.1296	339.7215	3.6740	98.2492
55	279.9195	338.8362	0.0513	0.0014	0.0397	0.0004	0.82612	255.0606	62.0600	250.6871	2.6789	99.8317
56	182.4320	156.4265	0.0713	0.0011	0.1511	0.0016	1.16625	964.9780	30.6431	907.3099	9.5253	98.1645
57	139.1130	111.1438	0.0798	0.0012	0.1904	0.0020	1.25165	1191.4823	29.6903	1123.6644	11.7894	94.3081
58	122.8345	180.8068	0.1536	0.0021	0.3939	0.0041	0.67937	2386.9328	23.5810	2140.8819	22.4049	89.6918
59	87.2099	160.2046	0.1535	0.0021	0.4420	0.0053	0.54437	2385.0628	23.5052	2359.5613	28.1647	98.9308
60	411.9501	362.3350	0.0553	0.0009	0.0658	0.0007	1.13693	423.8983	35.5227	410.8398	4.4508	99.5206
61	55.0324	72.4675	0.1708	0.0024	0.4872	0.0055	0.75941	2565.9719	23.1417	2558.4998	28.8922	99.7088
62	150.6161	136.1608	0.1098	0.0015	0.3197	0.0034	1.10616	1796.4534	25.3853	1788.2987	19.0817	99.5461
63	148.8088	115.4122	0.1612	0.0022	0.4657	0.0056	1.28937	2468.4108	23.4888	2464.5936	29.4799	99.8454
64	128.1181	84.8259	0.0532	0.0028	0.0449	0.0005	1.51036	338.6254	121.1643	283.2071	3.3652	97.9007
65	198.6891	189.4027	0.0523	0.0013	0.0463	0.0005	1.04903	300.6105	56.2890	291.9046	3.3827	99.6691
66	167.5040	156.3532	0.0669	0.0010	0.1365	0.0015	1.07132	834.6935	32.4328	824.9806	9.2160	99.6818
67	57.9644	86.2985	0.0562	0.0020	0.0738	0.0008	0.67167	461.9935	77.1653	458.9167	5.1582	99.8884
68	112.6105	251.5890	0.1174	0.0016	0.3467	0.0039	0.4476	1917.3777	24.8995	1918.9597	21.7952	99.9176
69	211.6765	174.6508	0.0538	0.0016	0.0449	0.0005	1.212	360.9571	66.3782	283.3615	3.3129	97.0691
70	227.7536	182.5989	0.0574	0.0011	0.0746	0.0008	1.24729	506.6735	41.8675	463.7066	5.0529	98.4523
71	229.1839	170.9213	0.1656	0.0023	0.4446	0.0046	1.34087	2513.3366	23.5712	2371.1007	24.6844	94.3408
72	346.8496	177.8968	0.1208	0.0018	0.3375	0.0037	1.94972	1967.5661	26.9547	1874.7776	20.6825	95.2841

73	238.2941	410.8043	0.0796	0.0014	0.0660	0.0008	0.58007	1187.7771	35.8629	411.8717	5.0424	74.4474
74	222.3931	238.4773	0.0528	0.0012	0.0457	0.0005	0.93255	318.6923	53.7763	288.0747	3.0984	98.8382
75	130.6993	149.9488	0.1677	0.0023	0.4789	0.0053	0.87163	2535.2619	23.2835	2522.4600	27.9302	99.4950
76	422.6040	290.1924	0.0522	0.0011	0.0413	0.0004	1.45629	293.2473	48.2913	260.9303	2.6745	98.7642
77	187.9869	278.1952	0.0521	0.0011	0.0423	0.0005	0.67574	290.4701	48.3130	267.3006	2.8756	99.1146
78	102.4022	148.5410	0.1002	0.0014	0.2851	0.0030	0.68939	1628.4169	25.9209	1617.1818	17.0561	99.3101
79	127.2120	192.1729	0.0527	0.0013	0.0500	0.0005	0.66197	317.6610	56.6852	314.7698	3.2866	99.8907
80	129.0102	69.7542	0.0530	0.0039	0.0413	0.0005	1.8495	327.0128	167.8650	260.7723	3.0324	97.4777
81	381.9202	313.3139	0.0535	0.0010	0.0501	0.0005	1.21897	350.7310	41.9207	315.2698	3.3423	98.6658
82	61.9618	145.3085	0.1095	0.0015	0.2845	0.0030	0.42642	1791.0521	25.7574	1613.8334	17.0396	90.1053
83	144.0998	240.7660	0.1408	0.0020	0.3426	0.0036	0.59851	2236.8244	23.9899	1898.9403	19.8576	84.8945
84	136.8325	207.9823	0.1418	0.0020	0.3692	0.0039	0.6579	2249.7574	23.9800	2025.7889	21.2213	90.0448
85	54.6248	52.4706	0.1569	0.0022	0.4556	0.0051	1.04105	2422.4629	24.2633	2420.3079	27.0749	99.9110
86	368.3940	509.0661	0.0565	0.0008	0.0723	0.0008	0.72367	470.1860	33.1771	450.1665	4.8515	99.2739
87	183.3633	140.0499	0.1623	0.0023	0.4238	0.0045	1.30927	2479.9218	23.9700	2277.4913	23.9811	91.8372
88	138.1269	142.3414	0.1434	0.0021	0.4199	0.0055	0.97039	2268.9044	24.8998	2259.8440	29.5033	99.6007
89	35.7420	163.0190	0.1156	0.0017	0.3406	0.0044	0.21925	1889.9450	25.9219	1889.7029	24.5907	99.9872
90	183.4255	187.6760	0.0531	0.0015	0.0432	0.0005	0.97735	334.5965	64.3831	272.7443	2.8738	97.6518
91	236.7510	395.0904	0.0560	0.0009	0.0683	0.0007	0.59923	451.3237	34.3565	426.0314	4.4733	99.0770
92	175.0864	282.7211	0.0558	0.0009	0.0658	0.0007	0.61929	445.5920	37.4303	410.7252	4.2916	98.7236
93	118.6819	166.2091	0.1553	0.0022	0.4481	0.0053	0.71405	2404.7695	23.6318	2386.8750	28.2547	99.2559
94	276.4316	348.1258	0.0531	0.0009	0.0462	0.0005	0.79406	333.4599	40.2164	291.3330	3.2675	98.4053
95	187.7813	481.8893	0.0843	0.0012	0.2293	0.0027	0.38968	1299.7668	27.2327	1330.6612	15.8377	97.6783
96	107.1362	222.2894	0.1182	0.0018	0.3211	0.0034	0.48197	1929.7154	27.4037	1795.2149	18.8262	93.0300
97	85.0933	119.6075	0.0535	0.0023	0.0430	0.0005	0.71144	350.3286	95.4877	271.2444	2.9039	97.0028
98	69.3851	602.0757	0.1082	0.0015	0.3116	0.0033	0.11524	1769.5237	25.1352	1748.7052	18.5926	98.8235
99	243.3653	188.8956	0.0598	0.0010	0.0972	0.0010	1.28836	595.7431	35.8061	598.1587	6.4088	99.9158
100	64.7477	121.3252	0.0967	0.0014	0.2742	0.0032	0.53367	1562.0399	26.9396	1561.9632	18.0150	99.9951